Improving Productivity with ISPF Productivity Tool V6.1

- Access the ISPF environment easily
- Enhance your system navigation
- Learn how to point and shoot objects

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Preface

This IBM® Redbooks® publication introduces the Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS®. IPT operates as a seamlessly integrated front end to ISPF:

- IPT functionality is available from any panel without a need to modify any ISPF Primary Options Menu. All IPT functions are totally integrated. IPT can perform almost any activity within ISPF, or internally invoke the function that can perform the task.
- IPT combines separately provided ISPF utility functions and new ISPF Productivity Tool features into the Object List (OLIST) and Member Selection List (MSL). The resulting member, dataset, and object lists become powerful platforms where you can perform many tasks without navigating to other utilities.
- IPT relates objects to applications in a similar manner to the way that a PC performs Object Linking and Embedding (OLE). By extending the dataset objects that are used by ISPF to other object classes, IPT lets you specify the object to be processed and the action that is performed (such as EDIT or BROWSE). The facility that is appropriate to the object class for the action that you have requested is invoked automatically.
- IPT provides extensive search capabilities that are both rapid and intuitive. You can easily search for volumes, datasets, members, and text within members. ISPF Productivity Tool also furnishes automatic drill-down system navigation to examine volumes, datasets, and members.
- IPT provides a menu-driven facility to display and recover all of the deleted members of a partitioned dataset (PDS) library.
- IPT extends the ISPF Action Bar with options that provide access to new functionality so that you do not have to learn new commands or syntax. In addition to the ISPF point-and-shoot capabilities, IPT provides new concepts, such as hotbars (user-defined fields that execute commands), field-sensitive areas in MSLs and OLISTs, automatic recognition of a dataset name on any ISPF panel as a parameter to BROWSE, EDIT, or VIEW, or parameters within any Time Sharing Option (TSO) command.
- IPT provides integrated and enhanced IBM Software Configuration and Library Manager (SCLM) support within the standard member and dataset lists. SCLM is a source library management component of ISPF that provides change control, multiple source versions, auditing, a built-in make facility, and automatic check-in/sign-out using standard libraries (PDS and partitioned dataset extended (PDSE)). IPT includes built-in interfaces to various IBM and ISV products.

This book is intended as a supplement to existing product manuals. It starts with an overview of the main IPT concepts and facilities. It then follows with detailed chapters, each dedicated to a major IPT function, such as:

- Object lists
- Member selection lists
- Enhanced point-and-shoot
- EDIT CUT and PASTE
- IPT with IBM File Manager
- IPT with IBM SCLM
- TSO Shell
- IPT installation and customization
- An example of implementing an IPT user-defined object list

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An appendix explores selected topics.

Practical scenarios, accompanied by detailed screen captures and coding examples, demonstrate how to take advantage of the IPT enhanced functionality in every case.

The team who wrote this book

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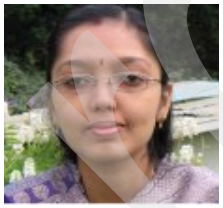

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Introduction to the ISPF Productivity Tool

In this chapter, we provide a general description of the Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS. We discuss the features, functions, and facilities that ISPF Productivity Tool provides to enhance ISPF.

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1.1 Targeted audience

This book addresses the questions of IPT users. However, anyone, who uses ISPF, benefits from IPT. Frequent users benefit the most.

This book also provides information for the product installation team.

1.2 Definition of terms

This document references several acronyms:

- **ISPF Productivity Tool (IPT)**

  This book focuses on the ISPF Productivity Tool. The ISPF Productivity Tool previously was known as SPIFFY.

- **Object List (OLIST)**

  An *Object List* is a series of references to your data stores. Using an object list, you can organize all the data stores that are required for your project. An object list can contain sequential, Virtual Storage Access Method (VSAM), partitioned dataset (PDS), or PC files, DB2 tables, imbedded OLISTS, IBM Software Configuration and Library Manager (SCLM) hierarchies, Panvalet or Librarian files, UNIX® System Service files, data definition (DD) name references, and user-defined processes.

- **Partitioned dataset (PDS)**

  PDS is a dataset organization for holding collections of related records in groups called “members”.

- **Partitioned dataset extended (PDSE)**

  The PDSE is identical to the PDS organization, but it has additional sharing and space management capabilities.

- **Member Selection List (MSL)**

  A *Member Selection List* is similar to the ISPF member list that is presented when opening a PDS or PDSE. However, an IPT Member Selection List provides enhancements, which perform complex functions, minimizing the keystrokes and navigation that are required to perform a task.

- **IBM Software Configuration and Library Manager (SCLM)**

  SCLM is a z/OS Software Configuration Management product that manages changes to your application data, performs auditing and versioning, and controls the movement of application data from one set of libraries to the next.

- **User Defined Objects (UDO)**

  User Defined Objects provide the functionality of your choice. They are installed, defined, and tailored to handle the user objects. You can specify a User Defined Object as an Object List entry with a leading greater than (>) symbol. For example, the following Object List command invokes the MYOBJECT User Defined Object:

  ```
  >MYOBJECT
  ```

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1.3 IPT seamless integration with ISPF

The ISPF Productivity Tool (IPT) works as an extension of ISPF. You do not have to initiate a separate product within ISPF to use the ISPF Productivity Tool. ISPF and IPT work together as one product. For example, you can use OLIST commands to locate files, use MSL commands to locate the correct PDS member, edit the member using ISPF, and use ISPF and IPT commands during the edit session.

1.4 Learning IPT

You do not have to spend hours learning IPT to use it. ISPF functions are still available after the IPT product installation. As you learn more about IPT, you can begin to become more productive using the new shortcuts and tools available.

IPT provides many features that make it easy to learn:

- The **IPT?** command presents a list of IPT shortcuts.
- Action bars are available to guide you to the correct command.
- When using an Object List, the ASSIST (or A) command summarizes each Object List primary and line command available

  You can also display the command syntax and examples by entering ASSIST *olistcommand* (or `A` *olistcommand*). For example, A FINDTEXT provides the details of the FINDTEXT command.
- The Member Selection List ASSIST command summarizes each MSL primary and line command syntax and examples of each MSL command.

  You can also display the command syntax and examples by entering ASSIST *mslcommand* (or `A` *mslcommand*). For example, A WHERE provides the details of the WHERE command.

The ISPF Productivity Tool invocation uses an ISPF logon procedure that is designed for IPT. You can turn off IPT for the duration of your ISPF session, by entering IPTOFF;=X without leaving ISPF. To turn it back on, you can enter IPTON;=X.

1.5 Increased productivity

A development organization's time is valuable. Programmers often write shortcuts, using CLIST or REXX programs, to help with repetitive tasks, and share these tools with their peers. IPT standardizes the shortcuts and tools that you need to be productive with ISPF. Think of the time that IPT will save everyone.

For example, have you ever seen the "`No space in directory`" message when adding members to a PDS? Think of the number of panels and keystrokes that ISPF requires when allocating a new PDS, copying the members, and renaming the dataset. With IPT, you will see a confirmation window to expand the PDS directory. Press Enter, and the PDS directory is compressed, without leaving the edit session of your PDS member.

IPT uses hotbars, field-sensitive areas in the Object List, Member Selection Lists, and 47 shortcut commands to minimize the time that is required to get the job done.

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Using a single command invoked from an Object List, you can search multiple files for a member name, data within a member, or data in sequential files from an Object List. With IPT, you can make Global changes to PDS or PDSe members.

These features are a few of the time-saving tips that you will find in this book. IPT is full of shortcuts, making more efficient use of your time when working on a z/OS mainframe.

1.6 Integration with other products

The ISPF Productivity Tool enhances the standard Time Sharing Option (TSO)/ISPF to improve productivity and performance. IPT integrates seamlessly into the ISPF product. IPT extends the functions provided by ISPF to other dataset objects, including Virtual Storage Access Method (VSAM) files, SCLM libraries, Librarian or Panvalet libraries, z/OS UNIX System Services, PC Files, and DB2 tables, as well as other object classes.

Using the IPT customization wizard, you can define the CLIST that is used by the various products. Then, you will be able to access the following files directly from an Object List:

- VSAM Files:
  - IBM File Manager for z/OS
  - Other third-party products
- Software Configuration Management Systems:
  - IBM Software Configuration and Library Manager
  - Other third-party products
- DB2 tables:
  - IBM File Manager/DB2 for z/OS (with IPT Version 5.10)
  - Other third-party products

1.7 Object Linking and Embedding (OLE)

With ISPF, you might need to navigate using many panels and products to search for data, browse data, or edit data, when the data is stored on DB2 tables, VSAM files, Panvalet or Librarian files, UNIX System Services files, or PC Files. IPT relates objects to applications in a similar manner to the way that a PC performs Object Linking and Embedding (OLE).

OLE is the process by which a specified object (such as a VSAM file) is registered to a method (for example, File Manager) that performs a task that the user requests. Usually, it is sufficient to select the object in order to take the appropriate action. IPT will resolve the class of object, the desired action, and determine what program or product will perform the requested function.

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1.8 z/OS panel images

This document depicts many panel images of IPT. The images are captured in a “reverse image” color scheme, to minimize the black background of standard 3270 images. The panels will look similar to what you will see on your mainframe. However, you might notice other differences, such as:

- Most panels do not show the Program Function (PF) keys. The PF keys are the same as the standard ISPF PF keys. They can be turned on or off by the following commands:
  - PFSHOW ON
  - PFSHOW OFF
- Circles, arrows, and callout boxes, which are not part of the IPT product, are shown on several of the panel images.

1.9 The Object List

IPT introduces a new concept – an Object List. An object list is a data store reference, which is used to organize your work into a single folder. With an Object List, you can organize all the required files into a single project folder, an OLIST.

Consider the following example. You are developing and testing an application. You created an Object List with 10 objects, as shown in Table 1-1.

Table 1-1 MYPROJ Object List

Object	Type of object	Object name
1	SCLM Hierarchy	<USBAPP.DEV1.SOURCE
2	JCL	‘MYID.JCLLIB’
3	PROC	‘MYID.PROCLIB’
4	DB2 Table	USBAPP.CUSTORDER
5	SEQ File	‘MYID.CUST.ORDER’
6	SEQ File	‘MYID.CUST.ORDER.REPORT’
7	VSAM File	‘MYID.CUST.MASTER.FILE’
8	USS File	)/U/MYID/Project Documentation
9	Imbedded Olist	‘USBAPP*PROJECT’
10	Control Data	‘MYID.CONTROL’

The Object List in Table 1-1 represents all the files that you need to modify an application for a customer change request. Think of this Object List as a “Project File” for the customer change request. Using the SCLM Hierarchy, you can easily reference all the levels in the SCLM tree, and all SCLM library types. Files containing the test JCL, PROC, and Control members are contained in the OLIST. Project documentation can reside in a UNIX System Services file. The application also uses VSAM, and DB2 files, which you can easily reference. With this OLIST, you can access any of your project files by simply selecting the file that you need. The Object Linking and Embedding process will invoke the correct utility to reference the file. An Object List is persistent. Therefore, changes that you make to the Object List are not lost when you log off the TSO session.

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1.10 IPT functional overview

IPT offers the following functions:

- Point-and-Shoot: Provides extensive Point-and-Shoot capabilities on datasets and member names, column headings, hotbars, and action fields.
- TSO Command Shell enhancements: Create permanent TSO command lists and execute TSO commands from any ISPF panel.
- Enhanced clipboards: Temporary and permanent numbered or named clipboards.
- Automatic PDS compression: Invokes compress command when a PDS is full.
- Automatic PDS directory expansion: Invokes EXPDIR command when a PDS directory is full.
- SCLM, Librarian, and Panvalet support: Edit and browse files from your ISPF panels. There is no need to navigate to Library Management products.
- Enhanced dataset patterns: Dataset patterns do not require a period. For example, SYS*S is a valid dataset name pattern request.
- Extensive search capabilities: Locate volumes, datasets, members, and text.
- Automatic integrated access: Edit and browse VSAM files, DB2 tables, hierarchical file system (HFS) files, PC files, catalog levels, and other objects. There is no need to navigate to other products.
- Extremely fast results: Many IPT functions invoke a single utility to process a request with multiple files.

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2

Object Lists

The Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS introduces us to a new concept – an Object List, as shown in Figure 2-1. An Object List is a data store reference, which is used to organize your work into a single folder. With an Object List, you can organize all of the required files into a single project folder, which is called an *OLIST*.

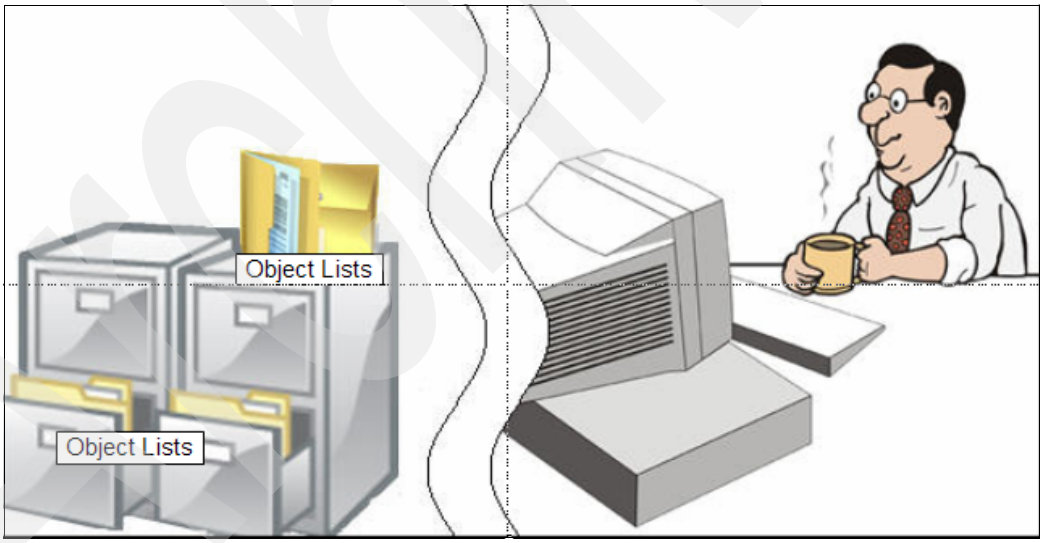

Figure 2-1 Working with the Object List so that now all of the user's project files are together

ISPF Productivity Tool (IPT) is really useful in helping you to explore the system using the system catalog. Imagine that you are a new user to a system or investigating an unfamiliar area. The catalog is the obvious starting point. In this section, we examine the concepts of Catalog navigation and concentrate on several of the Group execution techniques.

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2.1 Catalog navigation

In this section, we explore the new system to which we were assigned. We start by reviewing our environment, which includes all files that are currently allocated to our session.

2.1.1 Exploring the system

Let us start by creating a temporary OLIST, which we can do using the OLDDNAME command, which has a shortcut of OLDD. You can supply a particular DDname, for example, OLDD SYSHELP, to see all of the Time Sharing Option (TSO) Help libraries. However, we omit the parameter to see all of the DDnames that are allocated, as shown in Figure 2-2.

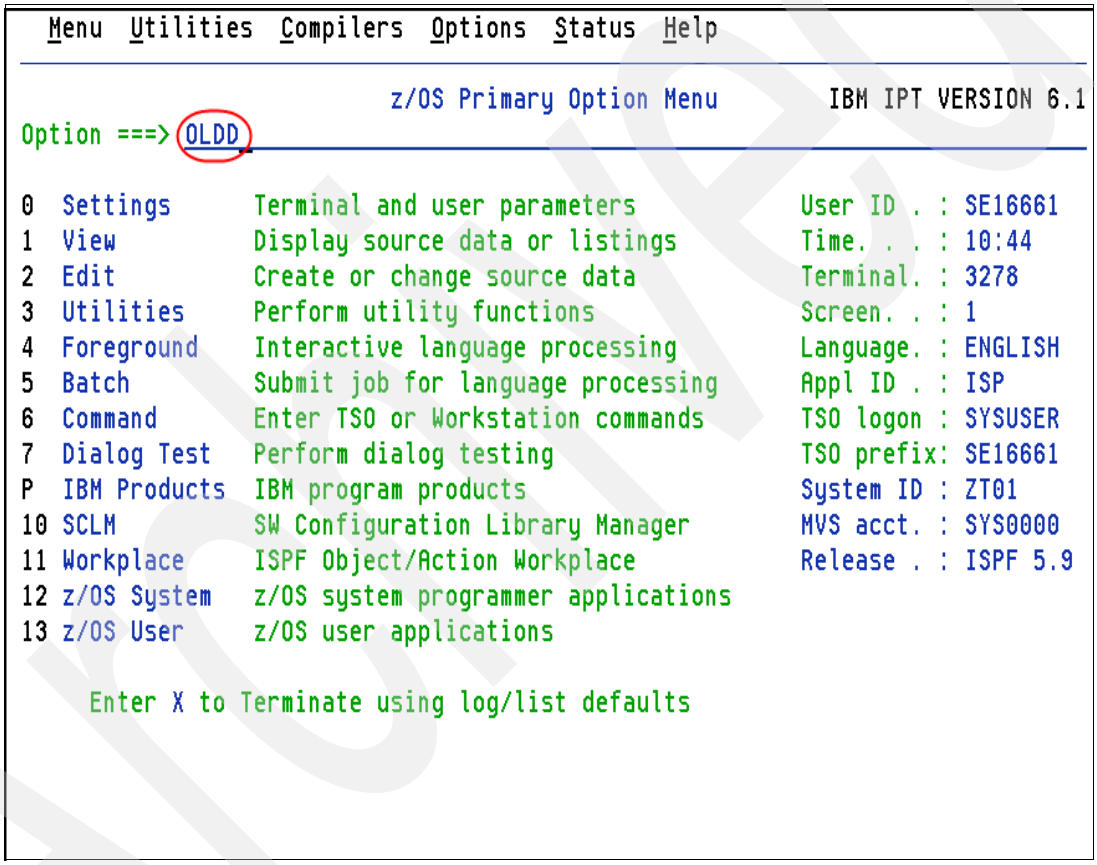

Figure 2-2 Issuing an OLDD command without a DDname parameter

Issuing an OLDD command without a DDname parameter displays a panel similar to Figure 2-3 on page 9.

Archive

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- ALLOCATION LIST ---------- "A" will display assist
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                      *TEMPORARY LIST*

TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
-STEPLIB              1 'IMS.V9R1.SDFSRESL'
                      2 'ROTTER.V6R1.SIQILPA'
                      3 'COBOL.V3R4.SIGYCOMP'
-ADMPC                4 'GDDM.SADMPCF'
-ADMPROJ              5 'GDDM.SADMMAP'
-SYSLBC               6 'SYS1.BRODCAST'
-SYSPRINT             7 'NULLFILE'
-SYSTERM              8 'NULLFILE'
-SYSIN                9 'NULLFILE'
-ISPLOG              10 'SE16661.PLEX0000.SPFLOG1'
-ISPLIST             11 'SE16661.PLEX0000.LIST1'
-ISPPROF             12 'SE16661.ISPF.ISPPROF'
-ADMIMG              13 'GDDM.SADMMAP'
-ADMGIMP             14 'GDDM.SADMMAP'
-ADMGGMAP            15 'GDDM.SADMMAP'
```

Figure 2-3 Displaying the Allocation List from an OLDD command without a DDname parameter

Scroll down to view more, as shown in Figure 2-4.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- ALLOCATION LIST -------------- Row 16 to 30 of 159
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                      *TEMPORARY LIST*

TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
-SYSHELP             16 'SYS1.HELP'
                     17 'SYS1.SEDGHLP1'
                     18 'ISP.SISPHELP'
                     19 'SYS1.HELPENP'
                     20 'TCPIP.SEZAHELP'
-ADMGDF              21 'GDDM.SADMMAP'
-ADMSYMBL            22 'GDDM.SADMSYM'
-SYSTCPD  TCPDATA    23 'CENTER.PARMLIB'
-SMPTABL             24 'SE16661.ISPF.ISPPROF'
-CIDTABL             25 'GIM.CIDTABL'
-IQITLIB             26 'ROTTER.V6R1.SIQITLIB'
-ISPILIB             27 'ISP.SISPSAMP'
-ISPTABL             28 'SE16661.ISPF.ISPPROF'
-SDSFDUMP            29 'NULLFILE'
-SYSPROC             30 'ROTTER.V6R1.SIQICLIB'
```

Figure 2-4 Issuing an OLDD command without a DDname parameter

Continue to scroll down, as shown in Figure 2-5 on page 10.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- ALLOCATION LIST ------------- Row 31 to 45 of 159
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ---------------------------------------- -------
                     31 'CENTER.CLIST'
                     32 'SYS1.SBLSCLI0'
                     33 'BOOKMAN.SEOYCLIB'
                     34 'CBC.SCBCUTL'
                     35 'SYS1.DGTCLIB'
                     36 'DFSORT.SICECLIB'
                     37 'FFST.SEPWCENU'
                     38 'SYS1.SCBDCLST'
                     39 'ISP.SISPCLIB'
                     40 'RMF.SERBCLS'
                     41 'SYS1.HRFCLST'
                     42 'GIM.SGIMCLS0'
                     43 'ICQ.ICQCCLIB'
                     44 'CCCA.V2R1.SABJCLST'
                     45 'DEBUG.V9R1.SEQAEXEC'
```

Figure 2-5 Issuing an OLDD command without a DDname parameter

There are many libraries allocated at this installation, so we stopped scrolling here. Your list will differ.

Seeing all of the libraries that are allocated, we must focus on particular subsets, one at a time. We can start by looking at the first library in the STEPLIB concatenation, as shown in Figure 2-3 on page 9.

2.2 Object List generic searches with dataset patterns

Generic pattern searching in IPT is more inclusive than ISPF. The patterns follow a common and well defined system, similar to ISPF:

- Use the asterisk (*) to search for any number of characters.
- Use the percent symbol (%) to search for any single character.
- Note that the IPT wildcard % includes dots. Standard ISPF does not include dots.
- Because the IPT system is so much less restrictive, it is preferable to force this type of search by ensuring that the pattern does not conform to the more restrictive ISPF standard. Table 2-1 on page 11 shows examples.

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Table 2-1 Patterns

Generic pattern	Datasets found by intuitive search
SYS%**CLIB -or- SYS%.****CLIB	'SYS030.EPS.PROCLIB' 'SYS1.DGTCLIB' 'SYS1.MACLIB' 'SYS1.PROCLIB' 'SYS1.PROCLIB.ZT00PLEX.MOP' 'SYS1.SISTCLIB' 'SYS1.SPROCLIB' 'SYS1.SVCLIB' 'SYS2.PROCLIB' 'SYS2.PROCLIB.FLEXES' 'SYS2.PROCLIB.FO' 'SYS2.PROCLIB.ZT00PLEX.MOP'
SYS1**LIB*.%%%	'SYS1.PARMLIB.ZT00PLEX.MOP' 'SYS1.PROCLIB.ZT00PLEX.MOP'

For more information: Refer to 5.3, “Generic searches with dataset patterns” on page 159.

To focus on only the datasets that match, we create a temporary OLIST using `IMS*` as a pattern. This command displays all datasets that begin with `IMS`, as shown in Figure 2-6.

```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                          z/OS Primary Option Menu
Option ===> OL IMS*
 ------------------------------------------------------------------------------

0  Settings      Terminal and user parameters           User ID . : SE16661
1  View          Display source data or listings        Time. . . : 10:44
2  Edit          Create or change source data           Terminal. : 3278
3  Utilities     Perform utility functions              Screen. . : 1
4  Foreground    Interactive language processing        Language. : ENGLISH
5  Batch         Submit job for language processing     Appl ID . : ISP
6  Command       Enter TSO or Workstation commands      TSO logon : SYSUSER
7  Dialog Test   Perform dialog testing                 TSO prefix: SE16661
P  IBM Products  IBM program products                   System ID : ZT01
10 SCLM          SW Configuration Library Manager       MVS acct. : SYS0000
11 Workplace     ISPF Object/Action Workplace           Release . : ISPF 5.9
12 z/OS System   z/OS system programmer applications
13 z/OS User     z/OS user applications

     Enter X to Terminate using log/list defaults
```

Figure 2-6 Temporary Object List matching a pattern

When the IPT search finds more than 1,000 entries (this limit can be modified at installation time), IPT prompts you after each 1,000 of the first 3,000 as shown in Figure 2-7 on page 12.

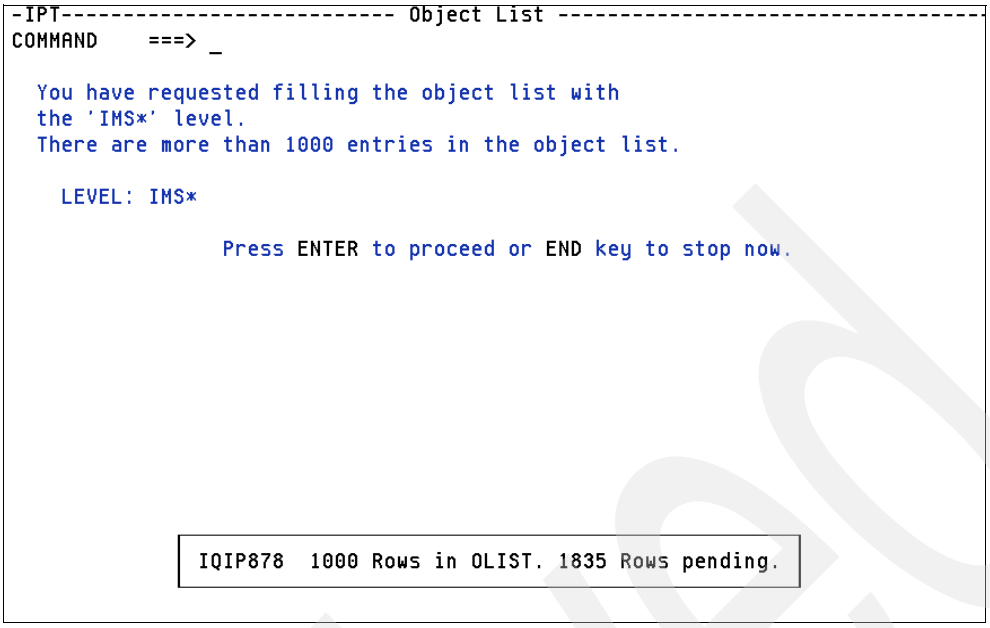

Figure 2-7 Prompting for more than 1,000 entries in the Object List

Another prompt is issued when the 2,835 rows are pending. Finally, the whole list is displayed, as shown in Figure 2-8.

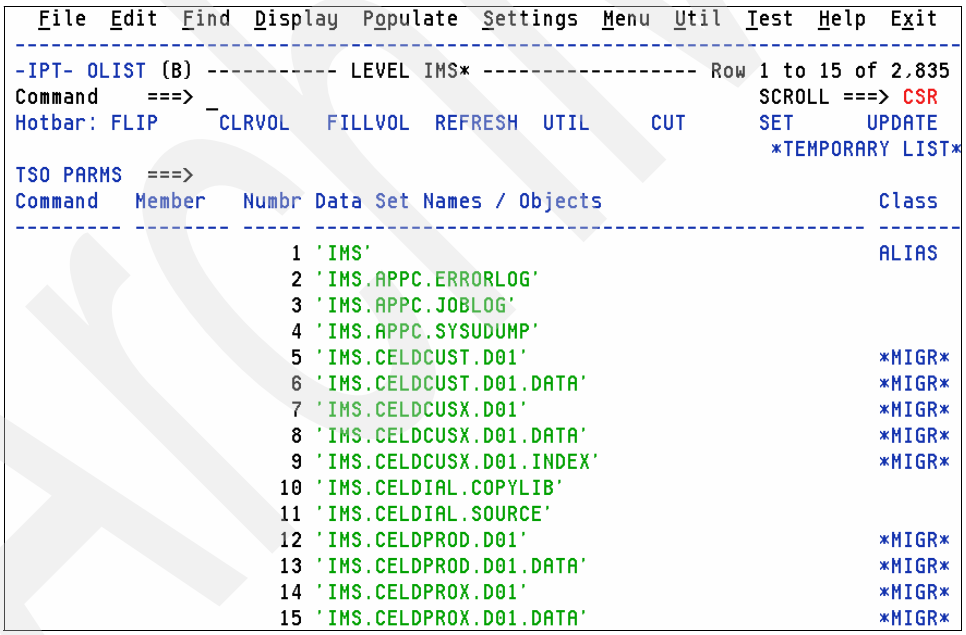

Figure 2-8 Complete Object List displayed after all prompts are cleared

We are interested in Java™ component. We want to see only the datasets in this list that contain the string JAVA. We use the FILTER command, as shown in Figure 2-9 on page 13.

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```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ----------------- Row 1 to 15 of 2,835
Command    ===> FILT JAVA                                SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                       *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ------------------------------------------ -------
                      1 'IMS'                                      ALIAS
                      2 'IMS.APPC.ERRORLOG'
                      3 'IMS.APPC.JOBLOG'
                      4 'IMS.APPC.SYSUDUMP'
                      5 'IMS.CELDCUST.D01'                         *MIGR*
                      6 'IMS.CELDCUST.D01.DATA'                    *MIGR*
                      7 'IMS.CELDCUSX.D01'                         *MIGR*
                      8 'IMS.CELDCUSX.D01.DATA'                    *MIGR*
                      9 'IMS.CELDCUSX.D01.INDEX'                   *MIGR*
                     10 'IMS.CELDIAL.COPYLIB'
                     11 'IMS.CELDIAL.SOURCE'
                     12 'IMS.CELDPROD.D01'                         *MIGR*
                     13 'IMS.CELDPROD.D01.DATA'                    *MIGR*
                     14 'IMS.CELDPROX.D01'                         *MIGR*
                     15 'IMS.CELDPROX.D01.DATA'                    *MIGR*
```

Figure 2-9 Using the Object List FILTER command to scope the results

Figure 2-10 shows the results of the FILTER command.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* -------------  2832 LINES FILTERED OUT
Command    ===> _                                        SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                       *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects    *FILTER*          Class
--------- -------- ----- ------------------------------------------ -------
                     17 'IMS.JAVADEMO.CNTL'                        *MIGR*
                     18 'IMS.JAVADEMO.JAVADB1'                     *MIGR*
                     19 'IMS.JAVADEMO.JAVADB1.DATA'                *MIGR*
                       ---------------- END OF LIST ----------------
```

Figure 2-10 Using the Object List FILTER shows only datasets containing the string JAVA

Figure 2-11 on page 14 shows us how to select all of the datasets that we have just excluded, by using the FLIP command.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* -------------  2832 LINES FILTERED OUT
Command    ===> FLIP_                                    SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects    *FILTER*          Class
--------- -------- ----- ---------------------------------------------- -------
                     17 'IMS.JAVADEMO.CNTL'                            *MIGR*
                     18 'IMS.JAVADEMO.JAVADB1'                         *MIGR*
                     19 'IMS.JAVADEMO.JAVADB1.DATA'                    *MIGR*
                       ---------------- END OF LIST ----------------
```

Figure 2-11 Reversing the list with the FLIP command

Figure 2-12 displays all of the IMS* datasets, except for the datasets that contain the string JAVA.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ---------------------- Row 1 from 2835
Command    ===> _                                        SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects          *EXCLUDE* Class
--------- -------- ----- ---------------------------------------------- -------
                      1 'IMS'                                          ALIAS
                      2 'IMS.APPC.ERRORLOG'
                      3 'IMS.APPC.JOBLOG'
                      4 'IMS.APPC.SYSUDUMP'
                      5 'IMS.CELDCUST.D01'                             *MIGR*
                      6 'IMS.CELDCUST.D01.DATA'                        *MIGR*
                      7 'IMS.CELDCUSX.D01'                             *MIGR*
                      8 'IMS.CELDCUSX.D01.DATA'                        *MIGR*
                      9 'IMS.CELDCUSX.D01.INDEX'                       *MIGR*
                     10 'IMS.CELDIAL.COPYLIB'
                     11 'IMS.CELDIAL.SOURCE'
                                                                      *MIGR*
          IQIP923 Visible rows excluded. Invisible rows revealed.     *MIGR*
                                                                      *MIGR*
                     15 'IMS.CELDPROX.D01.DATA'                        *MIGR*
```

Figure 2-12 After using FLIP, the Object List shows only datasets that do not contain the string JAVA

Note: The *EXCLUDE* and the *FILTER* function are dynamic or “hot” functions. At any time, you can return to the base IMS* list by placing your cursor on the *EXCLUDE* column heading and pressing Enter. You can use the *FILTER* function in the same way.

2.2.1 Hot functions or hot buttons

At this point, let us take a diversion to see what happens when we place the cursor on the Class column heading and press Enter. Figure 2-13 shows the results of this action.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- LEVEL IMS* ---------------------- Row 1 from 2835
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Volume
--------- -------- ----- ------------------------------------------- -------
                      1 'IMS'
                      2 'IMS.APPC.ERRORLOG'
                      3 'IMS.APPC.JOBLOG'
                      4 'IMS.APPC.SYSUDUMP'
                      5 'IMS.CELDCUST.D01'                          MIGRAT
                      6 'IMS.CELDCUST.D01.DATA'                     MIGRAT
                      7 'IMS.CELDCUSX.D01'                          MIGRAT
                      8 'IMS.CELDCUSX.D01.DATA'                     MIGRAT
                      9 'IMS.CELDCUSX.D01.INDEX'                    MIGRAT
                     10 'IMS.CELDIAL.COPYLIB'
                     11 'IMS.CELDIAL.SOURCE'
                     12 'IMS.CELDPROD.D01'                          MIGRAT
                     13 'IMS.CELDPROD.D01.DATA'                     MIGRAT
                     14 'IMS.CELDPROX.D01'                          MIGRAT
                     15 'IMS.CELDPROX.D01.DATA'                     MIGRAT
```

Figure 2-13 Toggling from the Class column to the Volume column display

The result is that the Class column is toggled to display the dataset Volume column. Program function key or PF6 achieves the same result, as do the commands: VOLUME or SHOWVOL. To change back, toggle back by placing the cursor on the Class column and pressing Enter, or issue the commands: CLASS or SHOWCLAS.

2.2.2 Further exploration of system datasets

Let us look at another way to explore the system allocations. We can use the OL/ command, as shown in Figure 2-14.

```
  Menu  Utilities  Compilers  Options  Status  Help
--------------------------------------------------------------------------------
                          z/OS Primary Option Menu
Option ===> OL/_

0  Settings      Terminal and user parameters          User ID . : SE16661
1  View          Display source data or listings       Time. . . : 10:44
2  Edit          Create or change source data          Terminal. : 3278
3  Utilities     Perform utility functions             Screen. . : 1
```

Figure 2-14 Using the OL/ command to display the system files

The OL/ command displays a pop-up panel, as shown in Figure 2-15 on page 16, where you can choose several alternative ways to populate the generated OLIST.

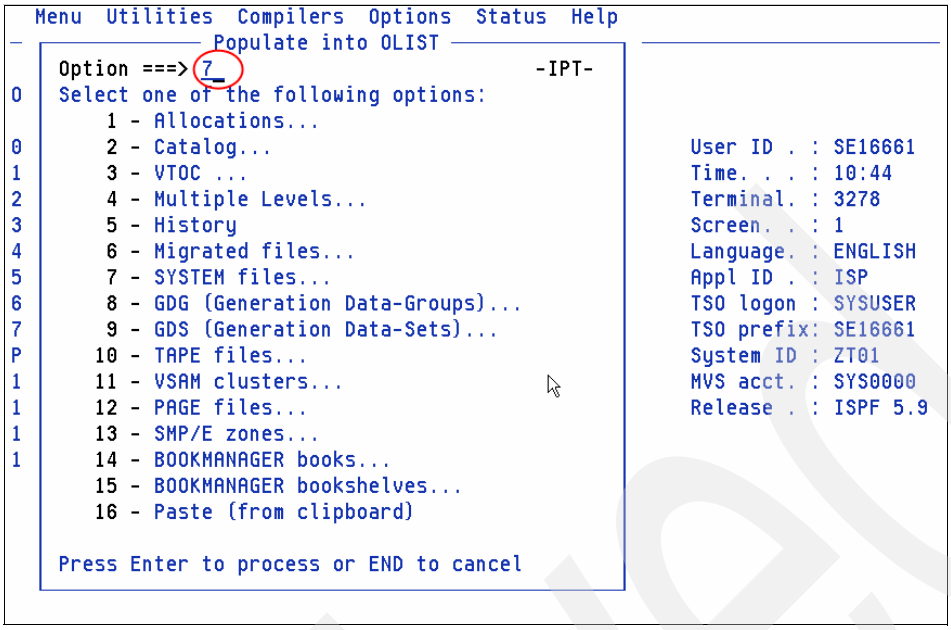

Figure 2-15 Pop-up selection panel to select Object List population criteria

At the top of Figure 2-15, we see the option that we selected before when we discussed OLDD, 1 – Allocations.

Let us investigate option 7 – SYSTEM files. Either enter a 7 in the Option field, or use the cursor to point-and-shoot[1] at the line System libraries by category. The panel shown in Figure 2-16 is displayed. Select option **5 All of the above**.

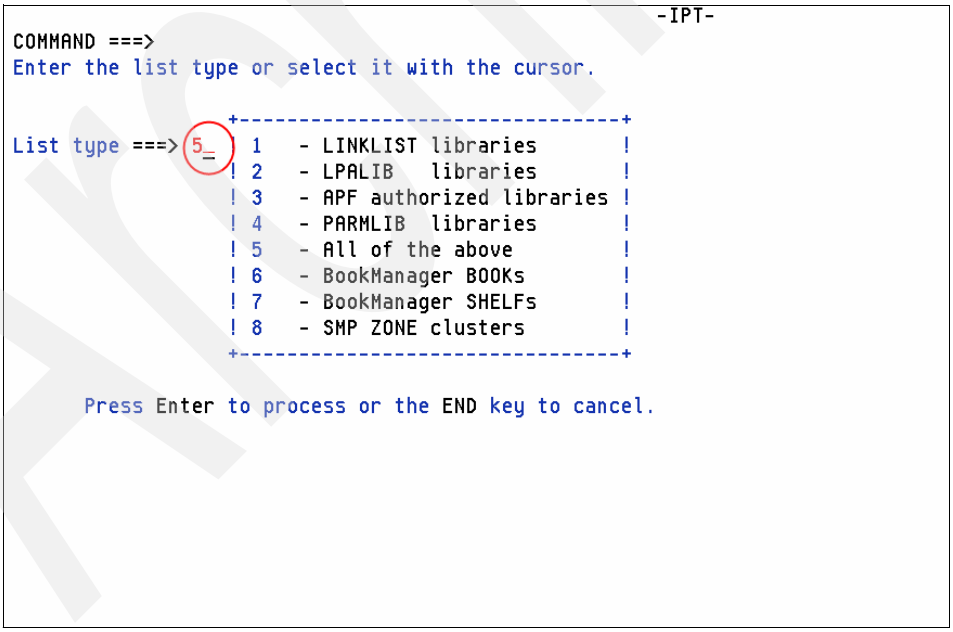

Figure 2-16 Select the type of list to display

Figure 2-17 on page 17 shows the results that we obtained.

[1] You might also want to refer to Appendix A, “Customizing IBM Personal Communications” on page 379.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- OBJECTS LIST ------------------- Row 1 to 15 of 26
Command    ===>                                             SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
-LPALIB   ********     1 €--------------------- Link Pack Area
                       2 'SYS1.LPALIB'
                       3 'LPALST.IPT.V5R10M0.SIQILPA'
                       4 'ISP.SISPLPA'
                       5 'ISF.SISFLPA'
                       6 'CEE.SCEELPA'
                       7 'RMF.SERBLPA'
                       8 'TCPIP.SEZALPA'
                       9 'DFSORT.SICELPA'
                      10 'DFSORT.SORTLPA'
                      11 'BOOKMAN.SEOYLPA'
                      12 'DCE.SEUVLPA'
                      13 'CENTER.LPALIB'
                      14 'LPALST.CICSTS.V3R2.CICS.SDFHLPA'
                      15 'LPALST.CICSTS.V3R2.CPSM.SEYULPA'
```

Figure 2-17 Selected all of LINKLIST, LPALIB, APF, and PARMLIB libraries

The list is long. Each category is separated by a comment line that describes the libraries that follow, which we can show using the FILTER command, as shown in Figure 2-18.

Note: Because the codepage used in Figure 2-17 is Swedish, the Euro symbol displays at the beginning of the comment line instead of the exclamation mark (!), which is typical. This symbol might vary if you use a different codepage.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- OBJECTS LIST ------------------- Row 1 to 15 of 26
Command    ===> FILT €                                      SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
-LPALIB   ********     1 €--------------------- Link Pack Area
                       2 'SYS1.LPALIB'
                       3 'LPALST.IPT.V5R10M0.SIQILPA'
                       4 'ISP.SISPLPA'
```

Figure 2-18 Using the FILTER command to show only the category separator comment lines

Figure 2-19 on page 18 shows only the lines that begin with symbols, signifying that they are comments.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- SYSTEM   LIBRARIES ------  0433 LINES FILTERED OUT
Command    ===>                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                       *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects    *FILTER*          Class
--------- -------- ----- ------------------------------------------- -------
-LPALIB   ********     1 €-------------------- Link Pack Area
-LINKLIST *ACTIVE*    26 €NAME=LNKLST75        Link List (current)
-APFLIST  ********   102 €-------------------- APF List (dynamic)
-PARMLIB  ********   434 €-------------------- PARMLIB List
-******** ********   438 €-------------------- End of ÖLISTSYS output
                         ---------------- END OF LIST ----------------
```

Figure 2-19 Result of using the FILTER command to show only the category separator comment lines

To show only the libraries, we can use the FLIP command as shown in Figure 2-20.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ------------  0433 LINES FILTERED OUT
Command    ===> FLIP                                     SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                       *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects    *FILTER*          Class
--------- -------- ----- ------------------------------------------- -------
-LPALIB   ********     1 €-------------------- Link Pack Area
-LINKLIST *ACTIVE*    26 €NAME=LNKLST75        Link List (current)
-APFLIST  ********   102 €-------------------- APF List (dynamic)
-PARMLIB  ********   434 €-------------------- PARMLIB List
-******** ********   438 €-------------------- End of ÖLISTSYS output
                         ---------------- END OF LIST ----------------
```

Figure 2-20 Using the FLIP command to reverse the display

Figure 2-21 on page 19 shows the result from entering the FLIP command.

Archived

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ---------------------- Row 2 from 438
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects           *EXCLUDE* Class
--------- -------- ----- ---------------------------------------- -------
                     2 'SYS1.LPALIB'
                     3 'LPALST.IPT.V5R10M0.SIQILPA'
                     4 'ISP.SISPLPA'
                     5 'ISF.SISFLPA'
                     6 'CEE.SCEELPA'
                     7 'RMF.SERBLPA'
                     8 'TCPIP.SEZALPA'
                     9 'DFSORT.SICELPA'
                    10 'DFSORT.SORTLPA'
                    11 'BOOKMAN.SEOYLPA'
                    12 'DCE.SEUVLPA'

          IQIP923 Visible rows excluded. Invisible rows revealed.

                    16 'LPALST.CICSVT.V1R2.SVIDLPA'
```

Figure 2-21 Result of using FLIP on the Object List shows all but the category separator comment lines

Now, we can analyze what is contained on each volume. We can use the SORT command, for example, to see which libraries are on the Z00RES system pack (Figure 2-22).

Note: Remember that if at any time within an OLIST (or an MSL), you are unsure of the syntax of a command or of which commands are available, you can use the ASSIST command, for example, A SORT for the SORT command.

First ensure that the Volume column is populated by use of the FILLVOL command in Figure n-22…

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ---------------------- Row 2 from 438
Command    ===> FILLVOL_                                   SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
```

Figure 2-22 Using the SORT command: Complete the volume information

Next, SORT the entries as shown in Figure 2-23 on page 20.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- OBJECTS LIST ---------------------- Row 2 from 438
Command    ===> SORT VOL DSN_                                SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                              *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects              *EXCLUDE* Volume
--------- -------- ----- ------------------------------------------------ ------
                      2 'CENTER.LPALIB'                                    Z00CAT
                      3 'LPALST.CICSTS.V3R2.CICS.SDFHLPA'                  Z00CAT
                      4 'LPALST.CICSTS.V3R2.CPSM.SEYULPA'                  Z00CAT
                      5 'LPALST.CICSVR.V4R1.SDWWLPA'                       Z00CAT
                      6 'LPALST.CICSVT.V1R2.SVIDLPA'                       Z00CAT
                      7 'LPALST.DEBUG.V9R1.SEQALPA'                        Z00CAT
                      8 'LPALST.FAULTANL.V9R1.SIDIALPA'                    Z00CAT
                      9 'LPALST.FAULTANL.V9R1.SIDILPA1'                    Z00CAT
                     10 'LPALST.IMS.V9R1.LPALIB'                           Z00CAT
                     11 'LPALST.IMSDPROP.V3R1.LPALIB'                      Z00CAT
                     12 'LPALST.IPT.V5R10M0.SIQILPA'                       Z00CAT
                     13 'LPALST.WMQ.V7R0.SCSQLINK'                         Z00CAT
                     14 'BOOKMAN.SEOYLPA'                                  Z00OS1
                     15 'DFSORT.SICELPA'                                   Z00OS1
                     16 'DFSORT.SORTLPA'                                   Z00OS1
```

Volume Information Displayed

Figure 2-23 Using the SORT command: Sort the list by volume and then by dataset name

Scroll to locate the correct volume, as shown in Figure 2-24.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- OBJECTS LIST --------------------- Row 17 from 438
Command    ===> _                                            SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                              *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects              *EXCLUDE* Volume
--------- -------- ----- ------------------------------------------------ ------
                     17 'REXX.SEAGLPA'                                    Z00OS1
                     18 'RMF.SERBLPA'                                     Z00OS1
                     19 'DCE.SEUVLPA'                                     Z00OS3
                     20 'CEE.SCEELPA'                                     Z00RES
                     21 'ISF.SISFLPA'                                     Z00RES
                     22 'ISP.SISPLPA'                                     Z00RES
                     23 'SYS1.LPALIB'                                     Z00RES
                     24 'SYS1.SDWWDLPA'                                   Z00RES
                     25 'TCPIP.SEZALPA'                                   Z00RES
                     27 'CENTER.LINKLIB'                                  Z00CAT
```

Figure 2-24 Using the SORT command: Scroll to locate the six libraries on the required volume

IPT is versatile. You can also obtain all of the datasets on the same pack by listing by VTOC, as shown in Figure 2-25 on page 21, instead of using the catalog.

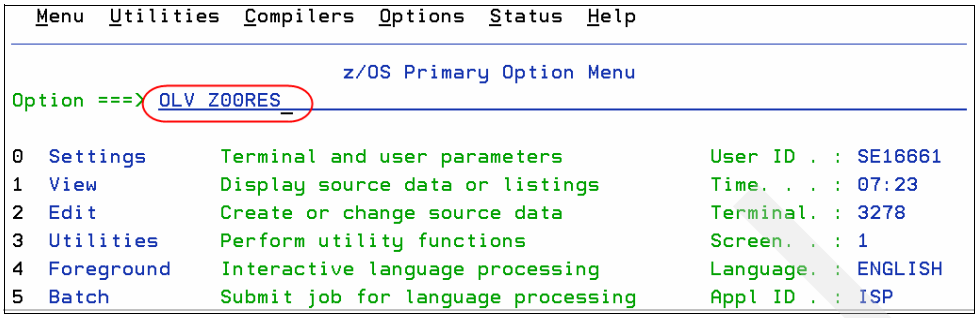

Figure 2-25 Displaying an OLIST of the VTOC of a disk volume

Figure 2-26 lists the VTOC for the pack Z00RES.

Note: The status panel appears briefly. If you had a slow response or the volume-serial was generic (for example, requesting a volume-serial pattern of Z00*), this panel might have displayed for a longer amount of time.

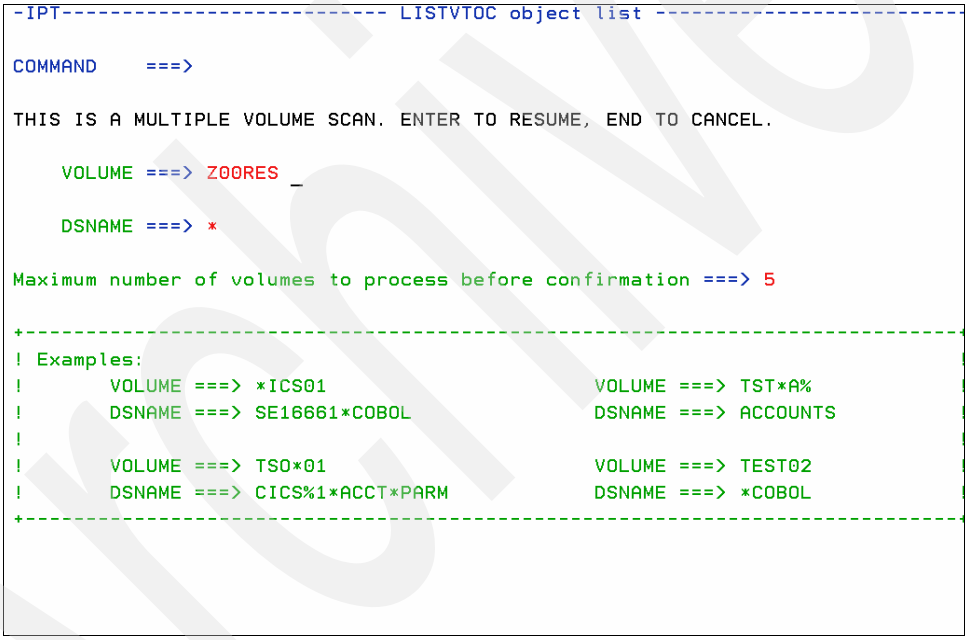

Figure 2-26 Status panel displayed while the LISTVTOC Object List is built

Figure 2-27 on page 22 lists the VTOC display.

Archived

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- VOLUME(Z00RES) DATASETS ------- Row 1 to 15 of 243
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                       1 'CEE.SAFHFORT'                           Z00RES
                       2 'CEE.SCEEBIND'                           Z00RES
                       3 'CEE.SCEEBND2'                           Z00RES
                       4 'CEE.SCEECICS'                           Z00RES
                       5 'CEE.SCEECLST'                           Z00RES
                       6 'CEE.SCEECMAP'                           Z00RES
                       7 'CEE.SCEECPP'                            Z00RES
                       8 'CEE.SCEEGXLT'                           Z00RES
                       9 'CEE.SCEEH.ARPA.H'                       Z00RES
                      10 'CEE.SCEEH.H'                            Z00RES
                      11 'CEE.SCEEH.NET.H'                        Z00RES
                      12 'CEE.SCEEH.NETINET.H'                    Z00RES
                      13 'CEE.SCEEH.SYS.H'                        Z00RES
                      14 'CEE.SCEEH.T'                            Z00RES
                      15 'CEE.SCEEH'                              Z00RES
```

Figure 2-27 Displaying the VTOC of a disk volume

Remember that a complete list of available commands is available, from any panel, at any time, by using the IPT? command, as shown in Figure 2-28.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- VOLUME(Z00RES) DATASETS ------- Row 1 to 15 of 243
Command    ===> IPT?_                                      SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
```

Figure 2-28 Using the IPT? command: Issuing the command

Figure 2-29 shows the result of issuing the IPT? command.

```
-IPT-                        COMMAND SHORTCUTS                Row 1 to 16 of 55

COMMAND ===> _                                                SCROLL ===> PAGE
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
IPT      IPTHELP  IPT HELP
ISET              IPT SET OPTIONS
IVER     IVERSION IPT VERSION REPORT
IPTCMD   IPTCMDS  <OFF!ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
BR       BROWSE   '<DSNpat>(<MEMpat>)' - BROWSE
ED       EDIT     '<DSNpat>(<MEMpat>)' - EDIT
VI       VIEW     '<DSNpat>(<MEMpat>)' - VIEW
BF       BFILE    '<DSNpat>(<MEMpat>)' - BROWSE VSAM
EF       EFILE    '<DSNpat>(<MEMpat>)' - EDIT VSAM
VF       VFILE    '<DSNpat>(<MEMpat>)' - VIEW VSAM
O*                SHOW ALL OBJECT-LISTS
O/                POPULATE NEW OBJECT-LIST
OH       OHIST    HISTORY LIST OF ACCESSED DATASETS
OLIS     OLIST    <parm1>,<parm2> - OBJECT-LIST
OL                <parm1>,<parm2> - OBJECT-LIST
```

Figure 2-29 Using the IPT? command: Command descriptions

Scroll down to see the remainder of the (currently 55) command descriptions.

2.3 Validating APF libraries

Validating APF libraries is an especially useful attribute of IPT. In development shops, the APF libraries are often a problem. They are frequently out-of-date, because changes are made and the APF list is not maintained. Often deletions are overlooked. Going back to the O/ list, select option **7** (see Figure 2-15 on page 23), for System files, and then from this panel, select option **3** to generate an OLIST for the APF authorized libraries, as shown in Figure 2-30.

```
                                                          -IPT-
COMMAND ===>
Enter the list type or select it with the cursor.

                      +---------------------------------+
List type ===> 3_     ! 1   - LINKLIST libraries        !
                      ! 2   - LPALIB   libraries        !
                      ! 3   - APF authorized libraries  !
                      ! 4   - PARMLIB  libraries        !
                      ! 5   - All of the above          !
                      ! 6   - BookManager BOOKs         !
                      ! 7   - BookManager SHELFs        !
                      ! 8   - SMP ZONE clusters         !
                      +---------------------------------+

      Press Enter to process or the END key to cancel.
```

Figure 2-30 OLIST for APF authorized libraries

Figure 2-31 displays the current APF library objects list.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- OBJECTS LIST ------------------ Row 1 to 15 of 333
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ---------------------------------------------- ------
-APFLIST  ********     1 €--------------------- APF List (dynamic)
                       2 'SYS1.LINKLIB'                                 Z00RES
                       3 'SYS1.SVCLIB'                                  Z00RES
                       4 'SYS1.CMDLIB'                                  Z00RES
                       5 'SYS1.MIGLIB'                                  Z00RES
                       6 'SYS1.VTAMLIB'                                 Z00RES
                       7 'SYS1.DFQLLIB'                                 Z00RES
                       8 'SYS1.DGTLLIB'                                 Z00RES
                       9 'SYS1.CSSLIB'                                  Z00RES
                      10 'SYS1.SAPPMOD1'                                Z00RES
                      11 'SYS1.SHASLNKE'                                Z00RES
                                                                        Z00RES
            IQIP686  Dataset TIVCFG.VG.VANLOAD not cataloged            Z00RES
                                                                        Z00RES
                      15 'SYS1.SCUNIMG'                                 Z00RES
```

Oops!?

Figure 2-31 Current APF library objects (but one is missing?)

If you place the cursor on the Volume column heading and press Enter, Figure 2-32 appears.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 1 to 15 of 333
Command    ===>                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
```

Figure 2-32 Toggling from Volume display to Class

The column toggles to display the Class, as shown in Figure 2-33.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 1 to 15 of 333
Command    ===> _                                        SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ---------------------------------------- -------
-APFLIST  ********     1 €--------------------- APF List (dynamic)
                       2 'SYS1.LINKLIB'
                       3 'SYS1.SVCLIB'
                       4 'SYS1.CMDLIB'
                       5 'SYS1.MIGLIB'
                       6 'SYS1.VTAMLIB'
                       7 'SYS1.DFQLLIB'
```

Figure 2-33 Toggling to Class from Volume

Notice that the library Class fields are empty in Figure 2-33. To check the validity of the entries, we need to issue a VALIDATE command.

First, we use the ASSIST command to see exactly what the VALIDATE command does (refer to Figure 2-34 where the command is issued).

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 1 to 15 of 333
Command    ===> A VALIDATE                               SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                     Class
--------- -------- ----- ---------------------------------------- -------
-APFLIST  ********     1 €--------------------- APF List (dynamic)
                       2 'SYS1.LINKLIB'
```

Figure 2-34 Using ASSIST to explain the VALIDATE command: Issuing the command

Figure 2-35 on page 25 displays the result.

```
-IPT-                    OLIST Command Assistance
Cmd ====> _

          Validate existence of OLIST dataset objects
Type:     Main command.
Syntax:   VALIDate
Examples: VALID - for dataset objects with a blank VOLSER, check the
                  catalog and if catalogued, their corresponding VTOCs.
                  for dataset objects with a valid VOLSER, check their
                  corresponding VTOCs.
Notes:    OLIST entries of datasets that do not exist, are marked with
            a feedback message -NOT FND- in the Command field.
          OLIST RESET DEL command can be used to remove all entries
            marked -NOT FND- .
```

Figure 2-35 Using ASSIST to explain the VALIDATE command: Assistance displayed

Now, as an alternative, we run the VALIDATE command. Figure 2-36 shows where we issue the command.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- OBJECTS LIST ----------------- Row 1 to 15 of 333
Command    ===> VALIDATE                                  SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
-APFLIST  ********     1 €---------------------- APF List (dynamic)
                       2 'SYS1.LINKLIB'
```

Figure 2-36 Using the VALIDATE command: Issuing the command

Figure 2-37 on page 26 displays a dynamic status message as the individual entries are validated.

Archived

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST -------------------------------------
Command    ===> VALIDATE                                  SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ------------------------------------------ -------
-APFLIST  ********     1 €--------------------- APF List (dynamic)
                       2 'SYS1.LINKLIB'
                       3 'SYS1.SVCLIB'
                       4 'SYS1.CMDLIB'
                       5 'SYS1.MIGLIB'
                       6 'SYS1.VTAMLIB'
                       7 'SYS1.DFQLLIB'
                       8 'SYS1.DGTLLIB'
                       9 'SYS1.CSSLIB'
                      10 'SYS1.SAPPMOD1'
                      11 'SYS1.SHASLNKE'
          IQIP985  Validating data sets (236 were processed)
                      15 'SYS1.SCUNIMG'
```

Status of validation

Figure 2-37 Using the VALIDATE command: Dynamic status display

Figure 2-38 shows the results of validation.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 1 to 10 of 333
Command    ===> _                                        Scroll ===> CSR

Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
+------------------------------------------------------------------ Assist -+
! NOTE: Enter the "RESET DEL" command to remove items marked as deleted      !
!       (Those with "-NOT FND-" in the COMMAND column)                       !
+---------------------------------------------------------------------------+
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   NUM  Data Set Names / Objects                      Class
--------- -------- ---- ---------------------------------------------- -------
-APFLIST  ********    1 €--------------------- APF List (dynamic)
                      2 'SYS1.LINKLIB'                                PDS
                      3 'SYS1.SVCLIB'                                 PDS
                      4 'SYS1.CMDLIB'                                 PDS
                      5 'SYS1.MIGLIB'                                 PDS
                      6 'SYS1.VTAMLIB'                                PDS
                                                                      PDS
          IQIP988  29 item(s) not found, 1 archived                   PDS
                                                                      PDS
                     10 'SYS1.SAPPMOD1'                               PDS
```

Figure 2-38 Using the VALIDATE command: Validation result

You can easily identify the files that are not found (- NOT FND-) or archived (ARCHIVE).

First, sort the list by Class to get them all together. Figure 2-39 shows issuing the command.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 1 to 15 of 333
Command    ===>SORT CLASS                                SCROLL ===> CSR
```

Figure 2-39 Using the VALIDATE command: Sorting the results

Figure 2-40 shows the results of the sort. Datasets not found contain a *DEL* flag in their Class column.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 1 to 15 of 333
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
-APFLIST  ********     1 €--------------------- APF List (dynamic)
-NOT FND-              2 'CEE.SCEERUN2'                              *DEL*
-NOT FND-              3 'CICSBAC.V1R1M1.SCBKLOAD'                   *DEL*
-NOT FND-              4 'CICSBEP.V1R1.SCBMAUTH'                     *DEL*
-NOT FND-              5 'DATAHUB.V1R2M0.SEMQMLIB'                   *DEL*
-NOT FND-              6 'DB2.V9R1.SDSNLINK'                         *DEL*
-NOT FND-              7 'DB2ADMIN.V7R1.SADBLINK'                    *DEL*
-NOT FND-              8 'DB2ADMIN.V7R1.SADBLLIB'                    *DEL*
-NOT FND-              9 'DB2HPU.V2R1.SINZLINK'                      *DEL*
-NOT FND-             10 'DB2OR.V2R1.SFECLOAD'                       *DEL*
-NOT FND-             11 'DB2PM.V8R1.SFPELOAD'                       *DEL*
-NOT FND-             12 'DJX.V2R1M1.SDJXLOAD'                       *DEL*
-NOT FND-             13 'FIREWALL.SICALMOD'                         *DEL*
-NOT FND-             14 'GIM.SGIMLMD0'                              *DEL*
-NOT FND-             15 'LNKLST.DB2.V7R1M0.SDSNLINK'                *DEL*
```

*Figure 2-40 Using the VALIDATE command: *DEL* Not found for the -NOT FND- libraries*

Scrolling down, we can see the single archived library, displayed in Figure 2-41, where the archived dataset contains a *MIGR* flag in its Class column.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 31 to 45 of 333
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
-MIGRATED             31 'IMSIB.V2R3.SIIULMOD'                       *MIGR*
                      32 'BOOKMAN.SEOYLOAD'                          PDS
```

*Figure 2-41 Using the VALIDATE command: *MIGR* is the archived MIGRATED library*

When you first performed the VALIDATE, you received an on-panel message, under the Hotbar (refer back to Figure 2-38), which said that to remove the -NOT FND- libraries from the list, issue the RESET DEL command, as shown in Figure 2-42.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- OBJECTS LIST ----------------- Row 1 to 15 of 333
Command    ===> RESET DEL                                  SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
-APFLIST  ********     1 €--------------------- APF List (dynamic)
-NOT FND-              2 'CEE.SCEERUN2'                              *DEL*
```

Figure 2-42 RESET DEL command: Issuing the command

Figure 2-43 shows the results obtained from the RESET DEL command. The *DEL* marked libraries are no longer visible. The archived datasets are unaffected, of course.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- OBJECTS LIST ----------------- Row 1 to 15 of 304
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
-APFLIST  ********     1 €---------------------- APF List (dynamic)
-MIGRATED              2 'IMSIB.V2R3.SIIULMOD'                         *MIGR*
                       3 'BOOKMAN.SEOYLOAD'                            PDS
                       4 'BOOKMAN.SEOYLPA'                             PDS
                       5 'CANDLET.AOIRM.TKANMOD'                       PDS
                       6 'CANDLET.AOIRM.TKANMODL'                      PDS
                       7 'CANDLET.AOIRM.TKANMODS'                      PDS
                       8 'CANDLET.AOIRM.TKAULOAD'                      PDS
                       9 'CANDLET.XEGA.VTAMLIB'                        PDS
                      10 'CANDLET.XEGA.ZT01.RKANMOD'                   PDS
                      11 'CANDLET.XEGA.ZT01.RKANMODL'                  PDS
                      12 'CANDLET.XEGA.ZT01.RKANMODU'                  PDS
                      13 'CANDLET.XEGA.ZT02.RKANMOD'                   PDS
                      14 'CANDLET.XEGA.ZT02.RKANMODU'                  PDS
                      15 'CAT0641.LOAD'                               PDS
```

Figure 2-43 RESET DEL command: Results of the command

Note: You can also use the VALIDATE command for older OLISTs, for example, permanent OLISTs that might be out-of-date.

2.4 Group execution

Let us start again by looking at an OLIST for IMS* (refer to Figure 2-6 on page 11). We create this temporary OLIST again, which is shown in Figure 2-44.

```
  Menu  Utilities  Compilers  Options  Status  Help
--------------------------------------------------------------------------------
                          z/OS Primary Option Menu
Option ===> OL IMS*_

0  Settings      Terminal and user parameters          User ID . : SE16661
1  View          Display source data or listings       Time. . . : 08:45
2  Edit          Create or change source data          Terminal. : 3278
3  Utilities     Perform utility functions             Screen. . : 1
4  Foreground    Interactive language processing       Language. : ENGLISH
5  Batch         Submit job for language processing    Appl ID . : ISP
6  Command       Enter TSO or Workstation commands     TSO logon : SYSUSER
```

Figure 2-44 A temporary OLIST for IMS: Issuing the command*

The result, after the various prompt panels that we saw before, is the temporary OLIST that is shown in Figure 2-45 on page 29.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- LEVEL IMS* ----------------- Row 1 to 15 of 2,769
Command    ===> _                                        SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                       *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                  Class
--------- -------- ----- ---------------------------------------- -------
                     1 'IMS'                                      ALIAS
                     2 'IMS.APPC.ERRORLOG'
                     3 'IMS.APPC.JOBLOG'
                     4 'IMS.APPC.SYSUDUMP'
                     5 'IMS.CELDCUST.D01'                         *MIGR*
                     6 'IMS.CELDCUST.D01.DATA'                    *MIGR*
                     7 'IMS.CELDCUSX.D01'                         *MIGR*
                     8 'IMS.CELDCUSX.D01.DATA'                    *MIGR*
                     9 'IMS.CELDCUSX.D01.INDEX'                   *MIGR*
                    10 'IMS.CELDIAL.COPYLIB'
                    11 'IMS.CELDIAL.SOURCE'
                    12 'IMS.CELDPROD.D01'                         *MIGR*
                    13 'IMS.CELDPROD.D01.DATA'                    *MIGR*
                    14 'IMS.CELDPROX.D01'                         *MIGR*
                    15 'IMS.CELDPROX.D01.DATA'                    *MIGR*
```

Figure 2-45 A temporary OLIST for IMS: Results from the command*

2.4.1 Group execution by line command

We first exclude the catalog entry, number 1 in the list, by entering a `/X` line command, as shown in Figure 2-46.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- LEVEL IMS* ----------------- Row 1 to 15 of 2,769
Command    ===>                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                       *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                  Class
--------- -------- ----- ---------------------------------------- -------
/X_                  1 'IMS'                                      ALIAS
                     2 'IMS.APPC.ERRORLOG'
```

Figure 2-46 Excluding a catalog entry from an Object List: Issuing a line command

The first line of the list is excluded. Notice in Figure 2-47 on page 30 that line 1 is no longer displayed, and the *EXCLUDE* flag is displayed, signifying that certain lines are excluded.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ---------------------- Row 2 from 2769
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects             *EXCLUDE* Class
--------- -------- ----- ------------------------------------------- -------
                     2 'IMS.APPC.ERRORLOG'
```

Figure 2-47 Excluding a catalog entry from an Object List: Results of the command

2.4.2 Group execution by number reference

First, include any lines, which have been excluded, by placing the cursor on the *EXCLUDE* flag and pressing Enter, as shown in Figure 2-48.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ---------------------- Row 2 from 2769
Command    ===>                                            SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects             *EXCLUDE* Class
--------- -------- ----- ------------------------------------------- -------
                     2 'IMS.APPC.ERRORLOG'
```

Figure 2-48 Including the excluded lines

To perform the same action as the /X line command for a single line by number reference, enter 1 X on the command line, as shown in Figure 2-49.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ------------------ Migrated are hidden
Command    ===> 1 X_                                       SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects             *EXCLUDE* Class
--------- -------- ----- ------------------------------------------- -------
                     1 'IMS'                                           ALIAS
                     2 'IMS.APPC.ERRORLOG'
                     3 'IMS.APPC.JOBLOG'
                     4 'IMS.APPC.SYSUDUMP'
                    10 'IMS.CELDIAL.COPYLIB'
                    11 'IMS.CELDIAL.SOURCE'
                    20 'IMS.V10R1.ADFSLOAD'
                    21 'IMS.V10R1.ADFSMAC'
                    22 'IMS.V10R1.HFS'                               VSAM
                    23 'IMS.V10R1.HFS.DATA'                          VSAMDA
                    24 'IMS.V10R1.IASNSLIB'
                    25 'IMS.V10R1.ICO.HFS'                           VSAM
                    26 'IMS.V10R1.ICO.HFS.DATA'                      VSAMDA
                    27 'IMS.V10R1.MODBLKS'
                    28 'IMS.V10R1.OBJDSET'
```

Figure 2-49 Excluding a catalog entry from an Object List by number reference

Figure 2-50 on page 31 shows that the first line of the list is excluded.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ---------------------- Row 2 from 2769
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Volume
--------- -------- ----- ------------------------------------------- -------
                     2 'IMS.APPC.ERRORLOG'                             MIGRAT
                     3 'IMS.APPC.JOBLOG'                               MIGRAT
                     4 'IMS.APPC.SYSUDUMP'                             MIGRAT
                     5 'IMS.CELDCUST.D01'                              MIGRAT
                     6 'IMS.CELDCUST.D01.DATA'                         MIGRAT
                     7 'IMS.CELDCUSX.D01'                              MIGRAT
                     8 'IMS.CELDCUSX.D01.DATA'                         MIGRAT
                     9 'IMS.CELDCUSX.D01.INDEX'                        MIGRAT
                    10 'IMS.CELDIAL.COPYLIB'
                    11 'IMS.CELDIAL.SOURCE'
                    12 'IMS.CELDPROD.D01'                              MIGRAT
                    13 'IMS.CELDPROD.D01.DATA'                         MIGRAT
                    14 'IMS.CELDPROX.D01'                              MIGRAT
                    15 'IMS.CELDPROX.D01.DATA'                         MIGRAT
                    16 'IMS.CELDPROX.D01.INDEX'                        MIGRAT
```

Figure 2-50 Excluded list by number reference

We can see that many of these datasets are migrated (refer to the Volume column).

Note that from the Volume view, we see the value `MIGRAT`. If we need to recall all of the `IMS.APPC.*` datasets[2], we can, as shown in Figure 2-51.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ---------------------- Row 2 from 2769
Command    ===> 2-4 HRECA_                                 SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Volume
--------- -------- ----- ------------------------------------------- -------
                     2 'IMS.APPC.ERRORLOG'                             MIGRAT
                     3 'IMS.APPC.JOBLOG'                               MIGRAT
                     4 'IMS.APPC.SYSUDUMP'                             MIGRAT
                     5 'IMS.CELDCUST.D01'                              MIGRAT
```

Figure 2-51 Recalling a group of datasets in one IPT command, by number reference

As shown, recalls are issued for datasets with 2-4 in their “Numbr” column. Figure 2-52 on page 32 shows the result.

[2] Note that there is a better way of working in the current version of IPT. See the section 2.16, “SHOWMIG command” on page 78.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ---------------------- Row 2 from 2769
Command    ===> 2-4 HRECA                                  SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Volume
--------- -------- ----- ------------------------------------------- ------
ARC1007I  RECALL REQUEST 00003095 SENT TO DFSMSHSM
ARC1007I  RECALL REQUEST 00003096 SENT TO DFSMSHSM
ARC1007I  RECALL REQUEST 00003097 SENT TO DFSMSHSM
ARC1000I IMS.APPC.ERRORLOG  RECALL PROCESSING ENDED
ARC1000I IMS.APPC.JOBLOG  RECALL PROCESSING ENDED
ARC1000I IMS.APPC.SYSUDUMP  RECALL PROCESSING ENDED
*** _
```

Recall reqested

Recall complete

Figure 2-52 Recalls requested and completed for a group of migrated datasets

To view a subset of datasets, enter the command, as shown in Figure 2-53.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IMS* ---------------------- Row 2 from 2771
Command    ===> 9-10 V                                     SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                             *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Volume
--------- -------- ----- ------------------------------------------- ------
                      2 'IMS.APPC.ERRORLOG'
                      3 'IMS.APPC.JOBLOG'
                      4 'IMS.APPC.SYSUDUMP'
                      5 'IMS.CELDCUST.D01'                          MIGRAT
                      6 'IMS.CELDCUST.D01.DATA'                     MIGRAT
                      7 'IMS.CELDCUSX.D01'                          MIGRAT
                      8 'IMS.CELDCUSX.D01.DATA'                     MIGRAT
                      9 'IMS.CELDCUSX.D01.INDEX'                    MIGRAT
                     10 'IMS.CELDIAL.COPYLIB'
                     11 'IMS.CELDIAL.SOURCE'
                     12 'IMS.CELDPROD.D01'                          MIGRAT
                     13 'IMS.CELDPROD.D01.DATA'                     MIGRAT
                     14 'IMS.CELDPROX.D01'                          MIGRAT
                     15 'IMS.CELDPROX.D01.DATA'                     MIGRAT
                     16 'IMS.CELDPROX.D01.INDEX'                    MIGRAT
```

Figure 2-53 Requesting to view a group of datasets

In Figure 2-53, we inadvertently selected 9-10 instead of 10-11, and the first of these datasets is a migrated dataset (and it is the Index of a VSAM dataset). IPT knows that the dataset is migrated and that we do not want the standard TSO response, which is to WAIT or press Attention. Therefore, IPT provides certain alternative options to use, as shown in Figure 2-54 on page 33.

Archive

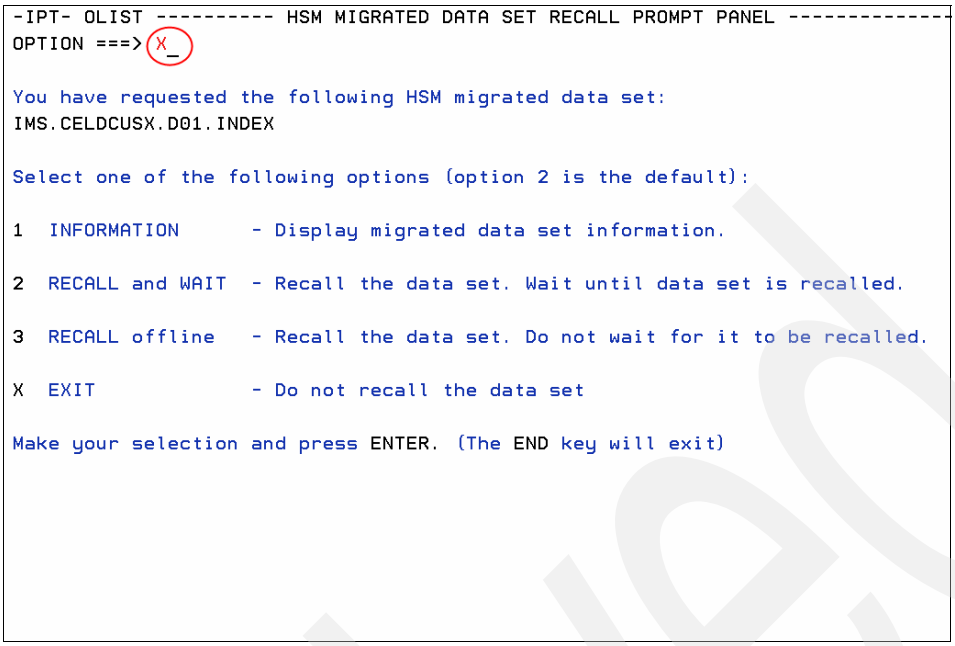

Figure 2-54 Migrated dataset recall prompt

We chose option X to ignore our previous action. We then proceed to VIEW the next dataset, as shown in Figure 2-55.

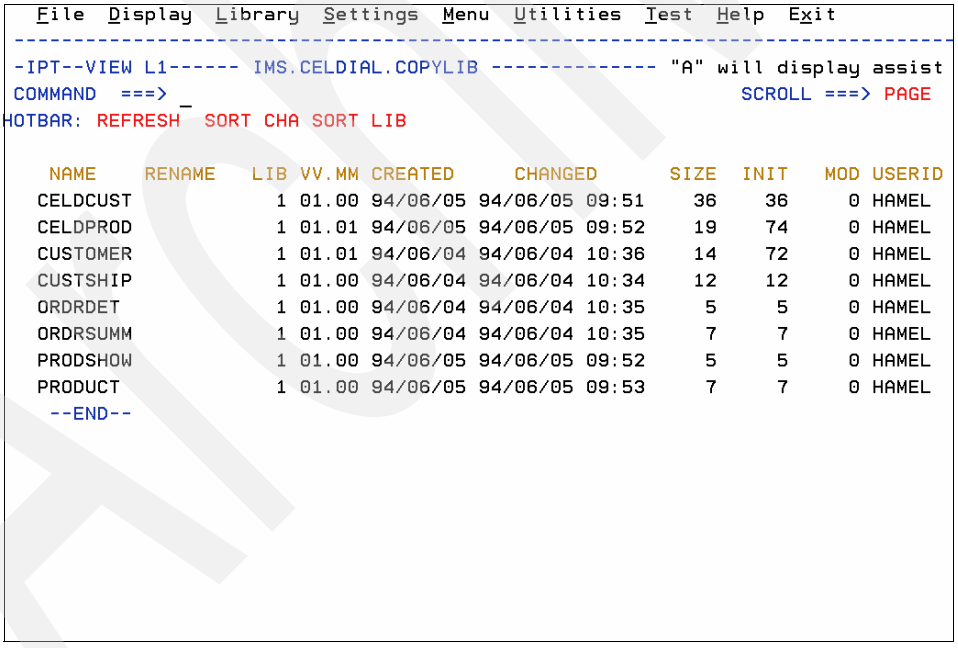

Figure 2-55 Viewing a COPYLIB library's directory

We can now go back to correctly view dataset 11 from Figure 2-53 on page 32 independently; however, we will skip this step.

2.4.3 Group execution by generic reference

We can act on a whole range of datasets by issuing a generic reference.

The * DELETE command, for instance, might sound risky if you have ever issued a TSO DELETE TEST.* command. However, IPT makes certain that you really want to delete a dataset. IPT gives you the option to cancel one or all actions. In Figure 2-56, we have added a FILTER for IMS.APPC. Note the *FILTER* flag. Let us try to DELETE all the datasets at one time.

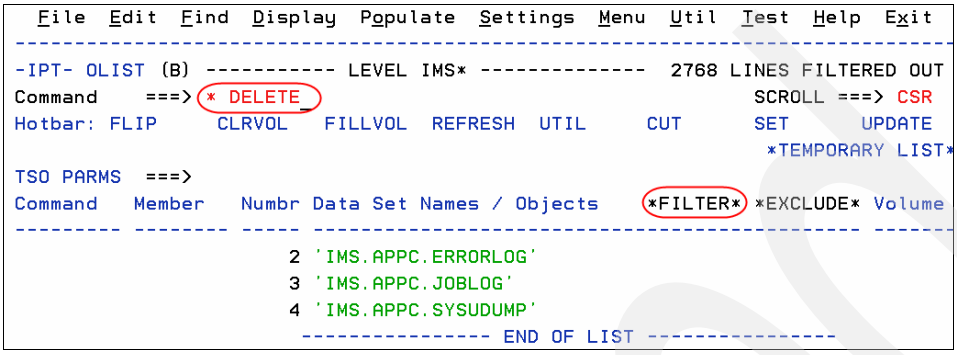

Figure 2-56 Generically deleting datasets

We see in Figure 2-57 that IPT gives you the option to cancel one or all actions.

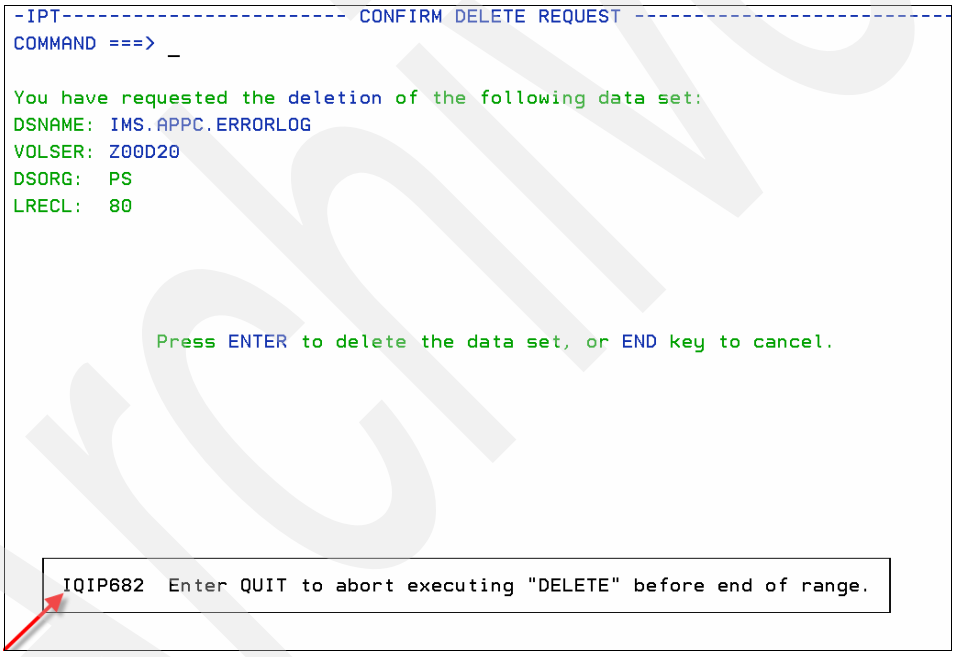

Figure 2-57 Confirming the request to delete a dataset

In this case, we press End to cancel and SKIP to the next dataset in the list, see Figure 2-58 on page 35.

Archived

```
-IPT----------------------- CONFIRM DELETE REQUEST ----------------------------
COMMAND ===> _

You have requested the deletion of the following data set:
DSNAME: IMS.APPC.JOBLOG
VOLSER: Z00D18, DSORG:PS, RECFM:FB, LRECL:133

            Press ENTER to delete the data set, or END key to cancel.

--------------------------------- TOP OF DATA ---------------------------------
IEF212I CFNAPPC IMSCFN SYSUDUMP - DATA SET NOT FOUND
14.01.55 A0000003  IEF453I CFNAPPC - JOB FAILED - JCL ERROR - TIME=14.01.55
IEF272I CFNAPPC IMSCFN - STEP WAS NOT EXECUTED.
--------------------------------- END OF DATA ---------------------------------
```

Figure 2-58 Skipping to the next dataset

Here, we can press End again and proceed through all the datasets in the range one by one, but we decide to QUIT and terminate the deletion process altogether. See Figure 2-59.

```
-IPT----------------------- CONFIRM DELETE REQUEST ----------------------------
COMMAND ===> QUIT_

You have requested the deletion of the following data set:
DSNAME: IMS.APPC.JOBLOG
VOLSER: Z00D18, DSORG:PS, RECFM:FB, LRECL:133
```

Figure 2-59 Quitting to terminate the deletion process

After you enter QUIT, you get the option to continue to quit this set of deletes or to resume the delete actions on the list by entering the QUIT STOP command. See Figure 2-60.

```
-IPT----------------------- CONFIRM DELETE REQUEST ----------------------------
COMMAND ===> _

You have requested the deletion of the following data set:
DSNAME: IMS.APPC.JOBLOG
VOLSER: Z00D18, DSORG:PS, RECFM:FB, LRECL:133

            Press ENTER to delete the data set, or END key to cancel.

--------------------------------- TOP OF DATA ---------------------------------
IEF212I CFNAPPC IMSCFN SYSUDUMP - DATA SET NOT FOUND
14.01.55 A0000003  IEF453I CFNAPPC - JOB FAILED - JCL ERROR - TIME=14.01.55
IEF272I CFNAPPC IMSCFN - STEP WAS NOT EXECUTED.
--------------------------------- END OF DATA ---------------------------------

 IQIQ002 Pending commands will not be executed. Enter "QUIT STOP" to resume.
```

Figure 2-60 Quitting to terminate the deletion process: Continue or resume

Here, we do not take this option, but instead press Enter, as shown in Figure 2-61 on page 36.

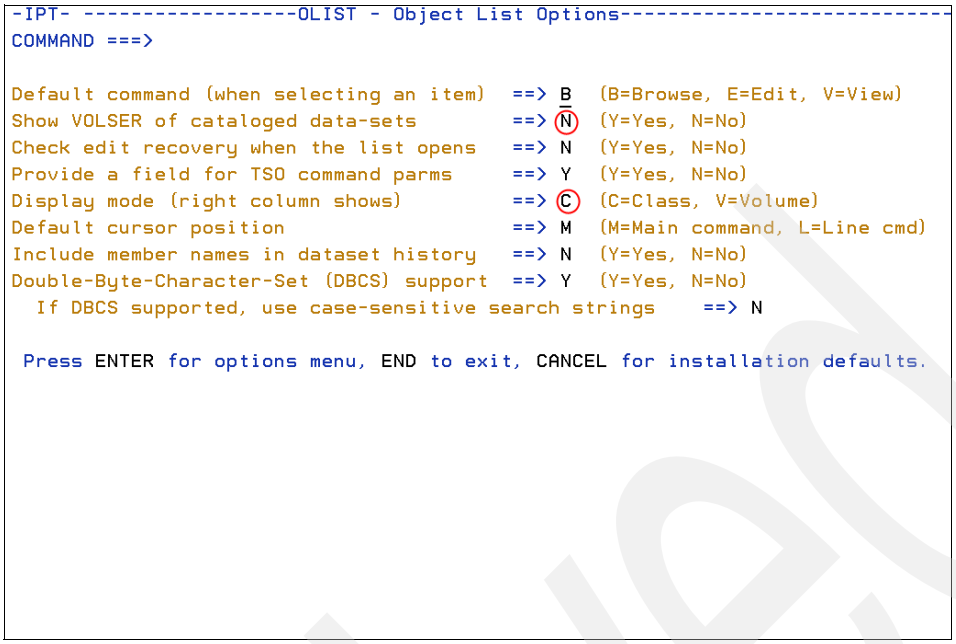

Figure 2-61 Quitting to terminate the deletion process: Confirming a QUIT

Alternatively, you can enter `QUIT STOP`, as shown in Figure 2-62.

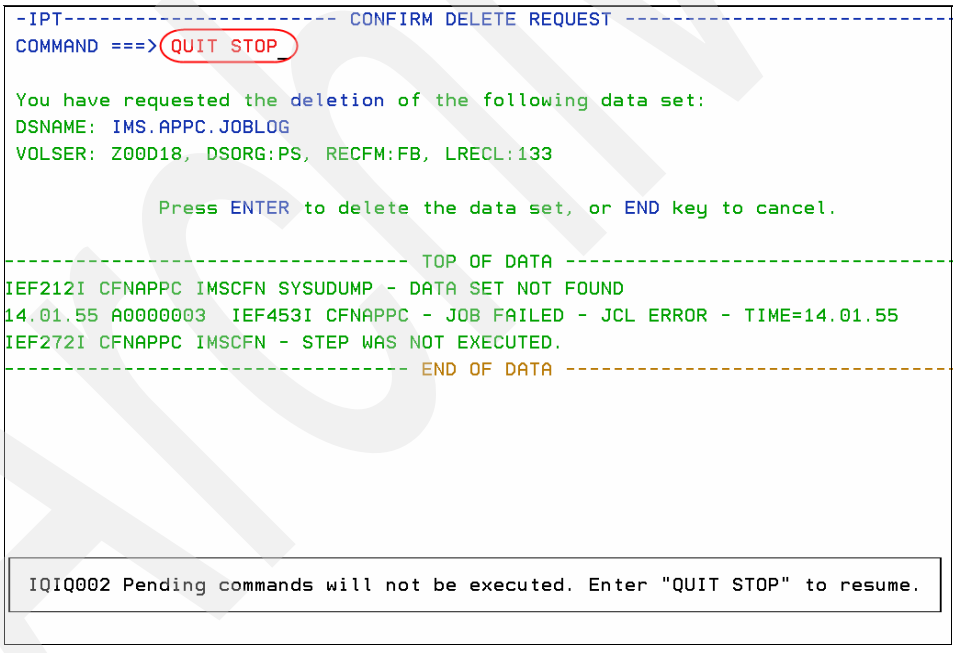

Figure 2-62 Issuing QUIT STOP to terminate a whole group action

Then, the DELETE action proceeds with the message **"**`QUIT stopped`**"** as in Figure 2-63 on page 37.

```
-IPT----------------------- CONFIRM DELETE REQUEST -------------- QUIT stopped
COMMAND ===> _

You have requested the deletion of the following data set:
DSNAME: IMS.APPC.JOBLOG
VOLSER: Z00D18, DSORG:PS, RECFM:FB, LRECL:133

            Press ENTER to delete the data set, or END key to cancel.

---------------------------------- TOP OF DATA ----------------------------------
IEF212I CFNAPPC IMSCFN SYSUDUMP - DATA SET NOT FOUND
14.01.55 A0000003  IEF453I CFNAPPC - JOB FAILED - JCL ERROR - TIME=14.01.55
IEF272I CFNAPPC IMSCFN - STEP WAS NOT EXECUTED.
---------------------------------- END OF DATA ----------------------------------
```

Figure 2-63 QUIT stopped: Return to the dataset within the list

2.5 Permanent Object List

In this section, we discuss creating a permanent Object List.

Figure 2-64 Permanent Object List

Creating a temporary view of data objects is useful, but sometimes you might want to save a certain set of objects that you can use frequently in a particular operation. The set of objects can be something as simple as the set of libraries that you use the most or the set of databases that you monitor or maintain.

2.5.1 Permanent Object List for projects

To help explain the permanent OLIST, in this section, we describe a real-life scenario (project). This project is not large, which helps to keep things understandable. This project does not involve all of the IPT features.

This scenario involves one activity that frequently occurs for a particular development center programmer, who was called on to assist senior auditors in the Asset Management department in the complicated cross-matching of data. This request became a periodic on-demand task for this professional.

The asset manager has several massive Excel® spreadsheets that have various details, such as assets, contacts, orders, shipments, deliveries, and so on that they update and manipulate, attempting reconciliations. The senior auditors were unable to manipulate extremely large volumes by using LOOKUPs VLOOKUPs. So, they call upon the assistance of the development center programmer.

The development center programmer can, of course, resolve the problem in several ways. DB2 tables might be a solution, if they were consistent and precise in their use of the spreadsheets, but they are not. This particular programmer is adept in REXX and has a large processor available. The programmer saves and uploads the spreadsheets as comma-separated value (CSV) files and processes them using compiled REXX programs.

Although the file formats, content, and requirements change each time, the activity is similar each time that it is requested. The spreadsheets to be matched (two, three, sometimes up to six) are sent to the programmer, who uploads them to the host. A new REXX exec is then tailored based on previous examples, compiled, and tested, and any required modifications are applied. The results from the match are downloaded to the PC and then e-mailed to the auditors.

The following list summarizes the tasks that are completed on the host. Files are sent and received using Lotus® Notes® attachments:

- Upload CSV files to host.
- Modify and run JCL to accept new input and output file names.
- Modify the compile JCL to compile the new exec.
- Create a new REXX exec, and compile the REXX exec to a load module.
- Run the REXX program.
- Review the output of the CSV file.
- Download the output CSV to the PC.

Note: As a general suggestion for permanent OLISTs, most entries need to be patterns, which automatically handle any catalog changes to those datasets. You might typically have only a couple of stable datasets, such as JCL or PROC libraries, as explicit dataset names within any OLIST. The other datasets are various patterns. Even if only a single name matches that pattern, there is a good chance that new names matching those patterns might be added later.

2.5.2 Creating project ELUX OLIST

Before we look at the final OLIST, which has been around for a while, let us look at how the first ELUX project OLIST was created from the beginning. Creating the first ELUX project OLIST does not map exactly to the order in the previous bulleted list, because there are a few additional stages in the initial setup.

Set the defaults that you want for OLISTs, in general, with the ISET command, as shown in Figure 2-65.

```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                          z/OS Primary Option Menu
Option ===> ISET_
 ------------------------------------------------------------------------------
0  Settings      Terminal and user parameters           User ID . : SE16661
1  View          Display source data or listings        Time. . . : 06:29
2  Edit          Create or change source data           Terminal. : 3278
3  Utilities     Perform utility functions              Screen. . : 1
```

Figure 2-65 Setting OLIST defaults using ISET

Enter option 0 to select your defaults, as shown in Figure 2-66.

```
-IPT- --------------------Setting IBMIPT Defaults-----------------------------
COMMAND ===> O_
Select options by number, name, with cursor selection, or with line commands:
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
 IBMIPT is running under ISPF version 5.9

 _  A - ALL       - Select all the below displayed options
 _  M - MSL       - Member Selection List options
 _  O - OLIST     - Object list options
 _  G - GLOBAL    - Global edit and Findtext options
 _  P - PRINT     - Print options
 _  D - DSLIST    - DSLIST options
 _  T - TSO       - TSO shell options
 _  E - EDIT      - Edit, Browse and View options
 _  I - INTERFACE - Specify user interface options
 _  N - DIAGNOSE  - Diagnose ISPF errors
 _  L - LIBRARY   - Persistent table library options
 _  B - BOOKMGR   - BookManager interface options

   Make your selection and press the ENTER key or press the END key to exit
```

Figure 2-66 Setting OLIST defaults using ISET option O

Figure 2-67 on page 40 is displayed where you can set your Object List Options.

Archived

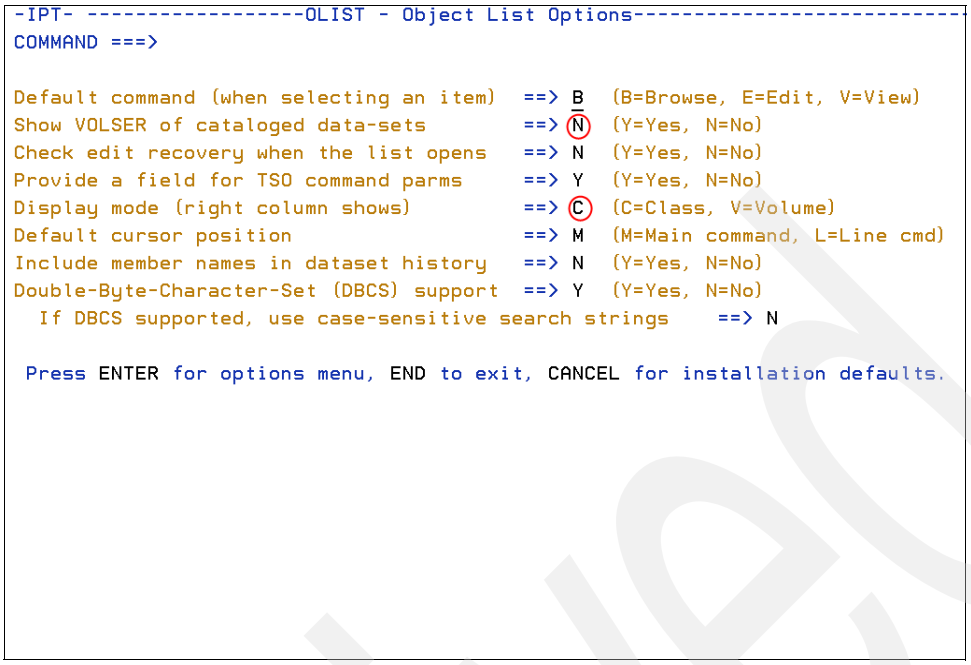

Figure 2-67 Setting OLIST defaults on the Object List Options panel

In Figure 2-67, we chose `N` for the option “Show VOLSER of cataloged data-sets” and `C` for the option “Display mode (right column shows)”, because, typically, using uncataloged datasets is rare for most users. The actual location of the data is unimportant, because most environments use system-managed storage.

Choose your own preferences for the default actions. You can always come back at any time and amend them.

Return directly to the main menu by pressing End.

Create an empty permanent OLIST as shown in Figure 2-68.

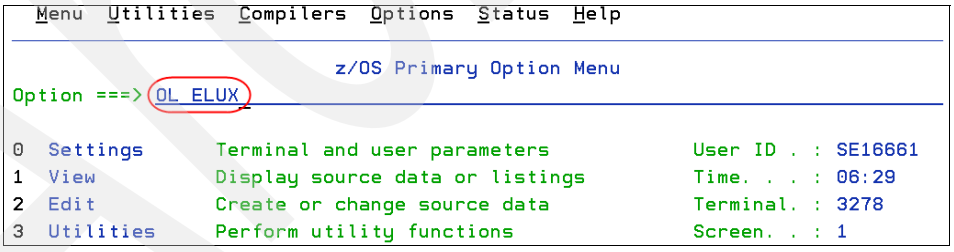

Figure 2-68 Creating a permanent OLIST

This option creates an empty OLIST named ELUX, as shown in Figure 2-69 on page 41.

Archived

```
-IPT--------------------------- Object List ---------------------------------
COMMAND  ===>

Specify the DSNAME pattern you would like to populate into the OLIST:

  DSNAME ===>ELUX

Optionally specify a VOLUME pattern:

  VOLUME ===>        (To filter data sets catalogued to this volume pattern)

+-------------------------------------------------------------------------------+
! Examples:                                                                     !
!       DSNAME ===> SE16661*PAY%%%*DATA        DSNAME ===> SE16661*COBOL      !
!       VOLUME ===>                            VOLUME ===> PROD*              !
+-------------------------------------------------------------------------------+

Press ENTER to proceed or END key to cancel the catalog search command.


                    IQIP883  "ELUX" not in catalog
```

Figure 2-69 ELUX Object List

Press End to continue.

First, for the ELUX project, we add the FTP control members. We need to upload the files from the PC to the host and back. We do not have the workstation connections set up here, because the programmers are all familiar with, and prefer to use, FTP for this task. The file names and password in the FTP commands might change, but the basic process is the same. After you set up the FTP command, the FTP command does not change for this particular project, which we show in Figure 2-70.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List --------------------- Row 1 to 9 of 9
Command    ===>                                              SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Class
--------- -------- ----- ------------------------------------------------ -------
                    1
                    2 _
                    3 _
                    4 _
                    5 _
                    6 _
                    7 _
                    8 _
                    9 _
                     ---------------- END OF LIST ----------------
```

Figure 2-70 Setting up the FTP command to start to populate the permanent OLIST

Place the cursor under the first Data Set Names / Objects field, and type the library in which control elements for this permanent object list are kept, `SE16661.ELUX.PCTL`, as shown in Figure 2-71 on page 42. In the member name field, we type the member name where this particular control element will be, `FTPUPLD`; however, there needs to be a similar member into

which to download the results afterward, which will be called `FTPDNLD`. We will use a member mask of `FTP%%LD` to match both members.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List -------------------- Row 1 to 9 of 9
Command    ===>                                              SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
          FTP%%LD_     1 'SE16661.ELUX.PCTL'                           PDSE
                       2 _
                       3 _
                       4 _
                       5 _
                       6 _
                       7 _
                       8 _
                       9 _
                        ---------------- END OF LIST ----------------
```

Figure 2-71 Populating the Object List

But, let us also give the OLIST a meaningful description in the title line. At the moment, we see that the description (center-padded by dashes) is `Objects List`. Place the cursor in this area, and press Enter as shown in Figure 2-72.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List -------------------- Row 1 to 9 of 9
Command    ===>                                              SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
```

Figure 2-72 Adding an OLIST description: Selecting the default name

A pop-up panel is displayed, where you can type the description of your choice, as shown in Figure 2-73.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
---------  ------------------- DEFINE OLIST DESCRIPTION ------------------  -----
-IPT- OLI  |                                                   -IPT-    |  of 9
Command    | COMMAND ===>                                               |  CSR
Hotbar: F  |                                                            |  ATE
Open list  | OLIST name . . . . . . ELUX                                |
TSO PARMS  | OLIST description ===> _                                   |
Command    |                                                            |  ass
---------  | Note: The description is preserved in the reference list.  |  -----
           |                                                            |  SE
           |       Press ENTER to accept or the END key to cancel.      |
           |____________________________________________________________|
                       4 _
                       5 _
                       6 _
                       7 _
                       8 _
                       9 _
                        ---------------- END OF LIST ----------------
```

Figure 2-73 Adding an OLIST description: Blank description field

Next, we add the title `Asset Management`, as shown in Figure 2-74 on page 43.

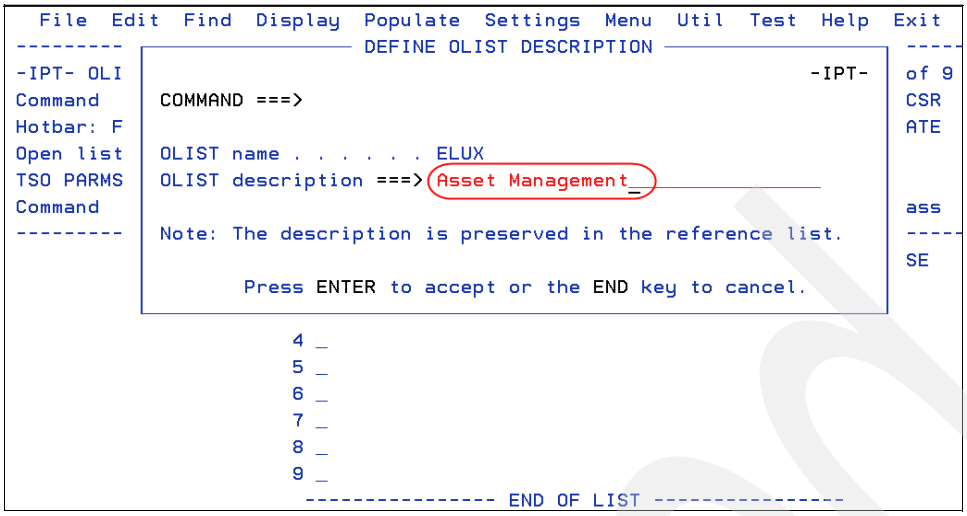

Figure 2-74 Adding an OLIST description: Add a meaningful description

Press Enter to accept the name[3], and Figure 2-75 is displayed.

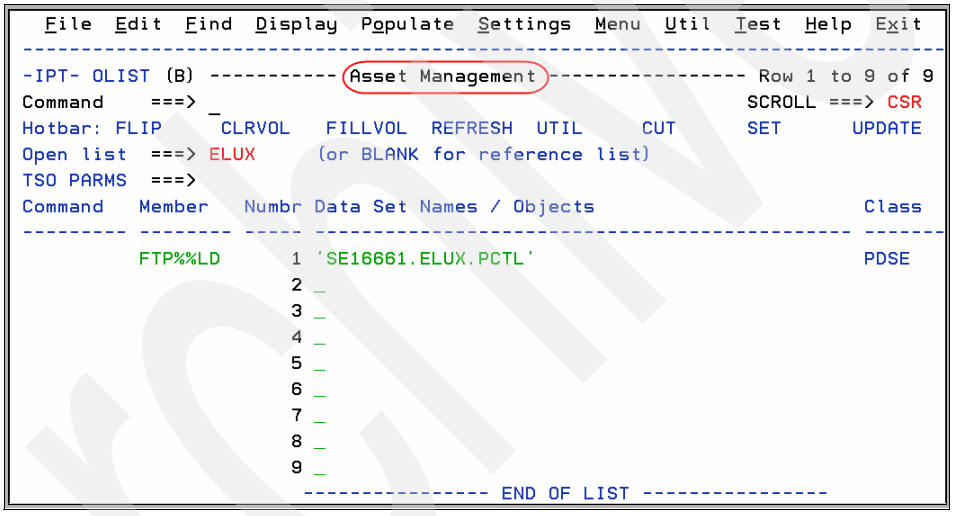

Figure 2-75 Adding an OLIST description: Redisplaying the OLIST

Enter the SAVE command and press Enter as shown in Figure 2-76.

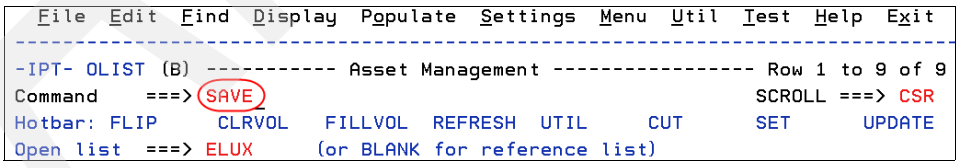

Figure 2-76 Adding an OLIST description: Saving the OLIST

The OLIST is saved with this single entry, as shown in Figure 2-77 on page 44.

[3] If at anytime you want to change the name, repeat this procedure.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Asset Management ---------------------- ELUX saved
Command    ===> _                                              SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
          FTP%%LD      1 'SE16661.ELUX.PCTL'                         PDSE
                          ---------------- END OF LIST ----------------
```

Figure 2-77 Adding an OLIST description: The saved OLIST

To save time, we have already set up the two members with FTP up and download commands.

Type `E` in the command field for line 1, and press Enter to edit the members that match this mask, as shown in Figure 2-78.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Asset Management ---------------------- ELUX saved
Command    ===>                                                SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
E_        FTP%%LD      1 'SE16661.ELUX.PCTL'                         PDSE
                          ---------------- END OF LIST ----------------
```

Figure 2-78 EDIT the member mask of the library

Figure 2-79 shows us the two members that match that pattern. We have skipped a little ahead here and have already entered an `S` against member `FTPUPLD`, which we are ready to edit.

```
 File  Display  Library  Settings  Menu  Utilities  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT--EDIT L1------ SE16661.ELUX.PCTL ----------------------ROW 00001 OF 00002
COMMAND  ===>                                               SCROLL ===> PAGE
HOTBAR: REFRESH  SORT CHA SORT LIB

   NAME     RENAME   LIB VV.MM CREATED     CHANGED       SIZE  INIT   MOD USERID
  FTPDNLD             1 01.01 07/09/20 07/10/24 07:14      7     7     0 SE16661
S FTPUPLD  _          1 01.03 07/09/20 07/10/24 07:28      9     8     0 SE16661
   --END--
```

Figure 2-79 Member list of members matching the mask

We selected the member `FTPUPLD`. Having already placed an `S` for Select against the member name, we press Enter. The `FTPPUPLD` member is displayed as shown in Figure 2-80 on page 45.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT SE16661.ELUX.PCTL(FTPUPLD) - 01.03              Columns 00001 00072
Command ===> _____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ********************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
000001 CLS
000002 FTP
000003 OPEN 9.212.143.123
000004 SE16661
000005 LLEWEDIH
000006 QUOTE SITE LRECL=4096 RECFM=VB BLKSIZE=32760
000007 PUT C:/TEMP/ASSETS.CSV   ELUX.ASSETS.CSV
000008 PUT C:/TEMP/CONTACTS.CSV ELUX.CONTACTS.CSV
000009 QUIT
****** **************************** Bottom of Data ******************************
```

Figure 2-80 Editing the FTP upload member

Press End to save. Because we have not made any changes, `-NO SAVE` is displayed in Figure 2-81.

```
 File  Display  Library  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ SE16661.ELUX.PCTL ----------------------ROW 00002 OF 00002
 COMMAND  ===> _                                          SCROLL ===> PAGE
HOTBAR: REFRESH  SORT CHA SORT LIB

   NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  FTPUPLD  -NO SAVE    1 01.03 07/09/20 07/10/24 07:28     9     8     0 SE16661
    --END--
```

Figure 2-81 Edited member shows that changes were made and these changes have been saved

Press End again, and you are returned to the ELUX Asset Management OLIST, as shown in Figure 2-82.

The line Command field shows the command that was just edited preceded by a dash (-).

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Asset Management ----------------- Row 1 to 1 of 1
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
-E        FTP%%LD      1 'SE16661.ELUX.PCTL'                          PDSE
                         ---------------- END OF LIST ----------------
```

Figure 2-82 Return to the OLIST after editing

Next, we add entries for the CSV files that are referenced here, and the file that we decided will be the output file. The easiest way to add entries for these files, because they do not yet exist on the system, is to use the UPDATE command (UPD for short), as shown in Figure 2-83 on page 46. The UPDATE command is a great feature of OLISTs that gives you complete control over the order of the entries and the appearance of the list. Enter `UPD`.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Asset Management ---------------- Row 1 to 1 of 1
Command    ===> UPD_                                        SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ------------------------------------------ -------
-E        FTP%%LD      1 'SE16661.ELUX.PCTL'                        PDSE
                         ---------------- END OF LIST ----------------
```

Figure 2-83 Using the UPDATE command to edit the OLIST content

Press Enter, and Figure 2-83 is displayed.

```
-IPT- ----------------------- Updating OLIST ELUX ---------------------------
COMMAND ===> _                                          SCROLL ===> CSR
Use the standard EDIT commands to edit the OLIST entries.
Press the END key to change the OLIST or enter CANCEL to cancel.

ENTRY  MEMBER   DATA SET NAME                                VOLUME
****** ****************************** Top of Data ******************************
000001 FTP%%LD  'SE16661.ELUX.PCTL'
****** ***************************** Bottom of Data ****************************
```

Figure 2-84 The OLIST Update panel: Customized Edit panel

We are now in a customized EDIT panel, as shown in Figure 2-85. The panel has fixed tab positions, depicted by a green oblong character that shows directly before the DATA SET NAME and VOLUME columns.

After the first ENTRY line, insert a line. Here, we can see the line has already been inserted, and, in the DATA SET NAME field, a generic entry, which matches all of the Excel spreadsheets held for this asset management, has been added.

```
-IPT- ----------------------- Updating OLIST ELUX ---------------------------
COMMAND ===>                                            SCROLL ===> CSR
Use the standard EDIT commands to edit the OLIST entries.
Press the END key to change the OLIST or enter CANCEL to cancel.

ENTRY  MEMBER   DATA SET NAME                                VOLUME
****** ****************************** Top of Data ******************************
000001 FTP%%LD  'SE16661.ELUX.PCTL'
'''''' ''       'SE16661*ELUX*CSV'_
****** ***************************** Bottom of Data ****************************
```

Fixed tab positions

Figure 2-85 The OLIST Update panel: Adding a new generic entry

We can press End to save the changes. But, it is better to add several comment lines to describe the activity, or phase within the project, that these changes address. The comment lines are a useful feature that can help to make each permanent OLIST like your private desktop.

We insert a line above each of the current lines and add descriptive comments (Note that Figure 2-86 on page 47 used a Swedish language keyboard; therefore, the ’5A’X characters denoting comment lines are displayed as Euros rather than the more common exclamation point).

```
-IPT- ------------------------ Updating OLIST ELUX ----------------------------
COMMAND ===>                                                  SCROLL ===> CSR
Use the standard EDIT commands to edit the OLIST entries.
Press the END key to change the OLIST or enter CANCEL to cancel.

ENTRY  MEMBER   DATA SET NAME                                  VOLUME
****** ****************************** Top of Data ******************************
000001          €------- FTP Up/Download ---------------------
000002 FTP%%LD  'SE16661.ELUX.PCTL'
000003          €------- Spreadsheets ------------------------ _
000004          'SE16661*ELUX*CSV'
****** ***************************** Bottom of Data ****************************
```

Figure 2-86 The OLIST update panel: Adding comments for clarity

Again, we can press End to change the OLIST and save the changes, but we will continue to edit our OLIST.

The REXX exec that we plan to write will match the two Excel spreadsheets' CSV files, CONTACTS and ASSETS, to create a match file CONASS. To be able to create and edit the REXX exec, we need to add an entry. At the same time, we similarly need to add entries for the JCL job to compile the exec and the JCL job to run the compiled exec.

We perform all of these actions at one time under a new section named Program Elements, as shown in Figure 2-87.

```
-IPT- ------------------------ Updating OLIST ELUX ----------------------------
COMMAND ===>                                                  SCROLL ===> CSR
Use the standard EDIT commands to edit the OLIST entries.
Press the END key to change the OLIST or enter CANCEL to cancel.

ENTRY  MEMBER   DATA SET NAME                                  VOLUME
****** ****************************** Top of Data ******************************
000001          €------- FTP Up/Download ---------------------
000002 FTP%%LD  'SE16661.ELUX.PCTL'
000003          €------- Spreadsheets ------------------------
000004          'SE16661*ELUX*CSV'
''''''          €------- Program ELements _--------------------
000005 CONASS   'SE16661.ELUX.EXEC'
000006 REXXCL   'SE16661.ELUX.JCL'
000007 CONASS   'SE16661.ELUX.JCL'
****** ***************************** Bottom of Data ****************************
```

Figure 2-87 The OLIST Update panel: Adding entries for the program elements

We want to check the status of the job outputs along the way. Here, we can use a User Defined Object, or we can save a TSO command to check the job output status.

Let us do both.

We continue editing and add a new section called Job status and the two objects, as shown in Figure 2-88 on page 48.

Archived

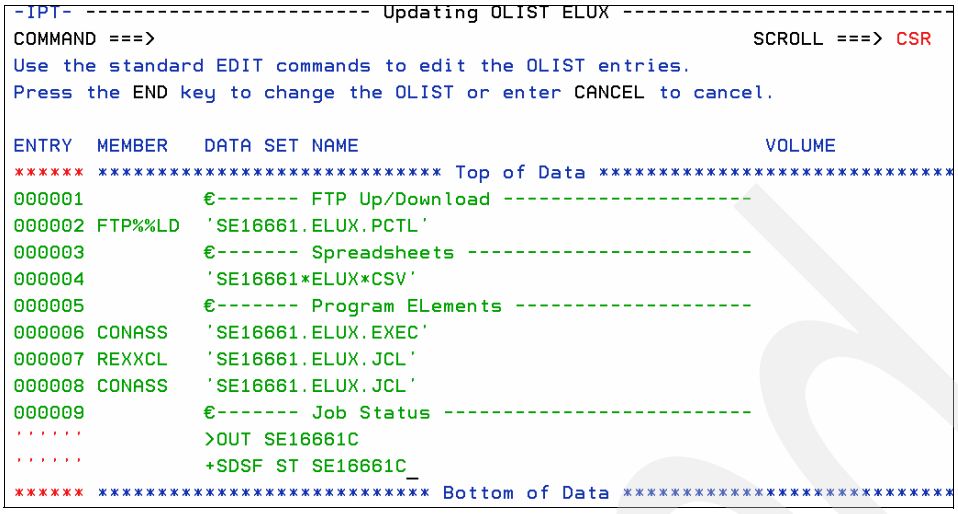

Figure 2-88 The OLIST Update panel: Adding job status objects for the OUT UDO and an SDSF command

Finally, we plan to use a REXX exec, which runs under UNIX (OMVS) to perform the download and to send the file directly to the contact in asset management. It is still being written, but it is running late and we want to accommodate it in advance.

We have this section that contains the exec in the list so that we can browse the status of it, as shown in Figure 2-89.

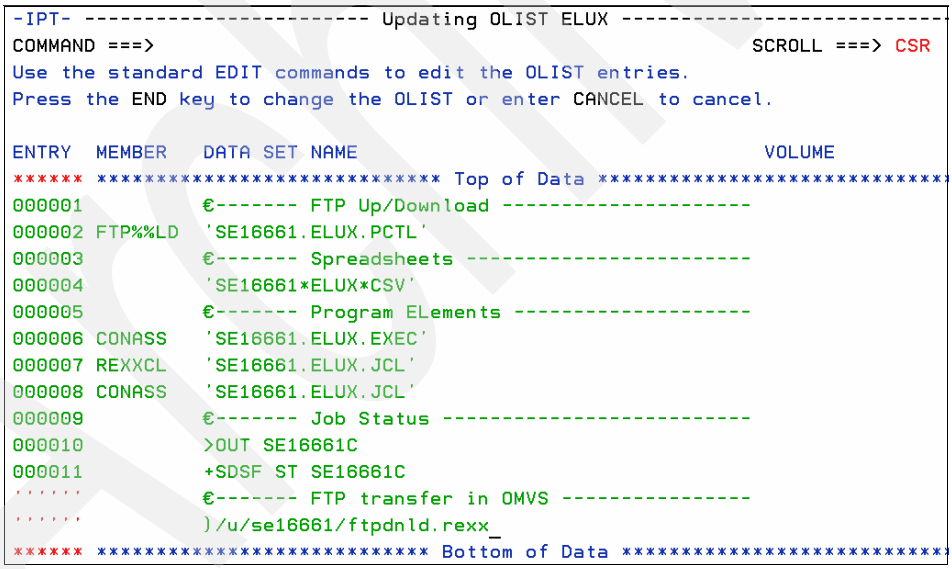

Figure 2-89 The OLIST Update panel: Adding an OMVS object

Press End to SAVE and display the final OLIST, as shown in Figure 2-90 on page 49.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Asset Management --------------- Row 1 to 13 of 13
Command    ===> _                                            SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ------------------------------------------ -------
                      1 €------- FTP Up/Download -------------------- ------
          FTP%%LD     2 'SE16661.ELUX.PCTL'
                      3 €------- Spreadsheets ----------------------- ------
                      4 'SE16661*ELUX*CSV'                           LIST
                      5 €------- Program ELements -------------------- ------
          CONASS      6 'SE16661.ELUX.EXEC'
          REXXCL      7 'SE16661.ELUX.JCL'
          CONASS      8 'SE16661.ELUX.JCL'
                      9 €------- Job Status ------------------------- ------
                     10 >OUT SE16661C                                USER
                     11 +SDSF ST SE16661C                            CMD
                     12 €------- FTP transfer in OMVS ---------------- ------
                     13 )/u/se16661/ftpdnld.rexx                     OE
                       ---------------- END OF LIST ----------------
```

Figure 2-90 The final OLIST displayed

Note: We still have to tailor the exec and the JCLs that must compile, and we must run the job, but we will run the job when those elements are complete.

Notice that the object Class is missing from several of the objects on our OLIST. We can straighten up our list by either entering the command `FILLVOL` or placing the cursor on the FILLVOL command (which was previously loaded into the Hotbar) and pressing Enter. Refer to Figure 2-91.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Asset Management --------------- Row 1 to 13 of 13
Command    ===>                                              SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
```

Figure 2-91 Using the FILLVOL command: Populating the Class column and positioning the cursor

Press Enter to populate all of the values in the Class column, showing the object types, as displayed in Figure 2-92 on page 50.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Asset Management -------------- Row 1 to 13 of 13
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
                     1 €------- FTP Up/Download ---------------------- ------
          FTP%%LD    2 'SE16661.ELUX.PCTL'                           PDSE
                     3 €------- Spreadsheets ------------------------- ------
                     4 'SE16661*ELUX*CSV'                            LIST
                     5 €------- Program ELements --------------------- ------
          CONASS     6 'SE16661.ELUX.EXEC'                           PDSE
          REXXCL     7 'SE16661.ELUX.JCL'                            PDSE
          CONASS     8 'SE16661.ELUX.JCL'                            PDSE
                     9 €------- Job Status --------------------------- ------
                    10 >OUT SE16661C                                 USER
                    11 +SDSF ST SE16661C                             CMD
                    12 €------- FTP transfer in OMVS ----------------- ------
                    13 )/u/se16661/ftpdnld.rexx                      OE
                      ---------------- END OF LIST ----------------
```

Figure 2-92 Using the FILLVOL command: Populating the Class column

To understand the rather special generic nature of IPT patterns, enter a B against line 4 (or place the cursor on the line because Browse is the default command), and press Enter, as shown in Figure 2-93. Notice that the Class for line 4 is LIST, meaning that it is a list of objects.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Asset Management -------------- Row 1 to 13 of 13
Command    ===>                                            SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
                     1 €------- FTP Up/Download ---------------------- ------
          FTP%%LD    2 'SE16661.ELUX.PCTL'                           PDSE
                     3 €------- Spreadsheets ------------------------- ------
B_                   4 'SE16661*ELUX*CSV'                            LIST
                     5 €------- Program ELements --------------------- ------
          CONASS     6 'SE16661.ELUX.EXEC'                           PDSE
          REXXCL     7 'SE16661.ELUX.JCL'                            PDSE
          CONASS     8 'SE16661.ELUX.JCL'                            PDSE
                     9 €------- Job Status --------------------------- ------
                    10 >OUT SE16661C                                 USER
                    11 +SDSF ST SE16661C                             CMD
                    12 €------- FTP transfer in OMVS ----------------- ------
                    13 )/u/se16661/ftpdnld.rexx                      OE
                      ---------------- END OF LIST ----------------
```

Figure 2-93 Intuitive searches using generic patterns: Browse command against a LIST

The CSV files that match this intuitive search on the generic pattern are displayed in Figure 2-94 on page 51.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- LEVEL SE16661*ELUX*CSV ---------- Row 1 to 8 of 8
Command    ===> _                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                      *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ---------------------------------------- -------
                      1 'SE16661.ELUX.ASSETS.CSV'
                      2 'SE16661.ELUX.CONASS.CSV'
                      3 'SE16661.ELUX.CONTACTS.CSV'
                      4 'SE16661.ELUX.UK260907.CSV'
                      5 'SE16661.ELUX.US260907.CSV'
                      6 'SE16661.ELUX.ZO260907.CSV'
                      7 'SE16661.ELUX.ZS260907.CSV'
                      8 'SE16661.ELUX.ZU260907.CSV'
                       ---------------- END OF LIST ----------------
```

Figure 2-94 Intuitive searches using generic patterns: Browsing a list of objects

2.5.3 Project ELUX workflow

In this section, we cover the workflow of this project.

Upload CSV files to the host, and then, enter `B` to browse (View or Edit) the FTP command members, as shown in Figure 2-95.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Asset Management -------------- Row 1 to 13 of 13
Command    ===>                                           SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ---------------------------------------- -------
                      1 €------- FTP Up/Download ---------------------- ------
B_        FTP%%LD     2 'SE16661.ELUX.PCTL'                          PDSE
                      3 €------- Spreadsheets ------------------------ ------
```

Figure 2-95 Browsing the FTP up/download masked member list

Select the upload by entering `S` in front of `FTPUPLD`, as shown in Figure 2-96.

```
 File  Display  Library  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--BROWSE L1---- SE16661.ELUX.PCTL ----------------------ROW 00001 OF 00002
COMMAND  ===>                                               SCROLL ===> PAGE
HOTBAR: REFRESH  SORT CHA SORT LIB
                                                  ON VOLUME SHAR04
   NAME    RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  FTPDNLD             1 01.01 07/09/20 07/10/24 07:14     7     7     0 SE16661
S FTPUPLD  _          1 01.03 07/09/20 07/10/24 07:28     9     8     0 SE16661
   --END--
```

Figure 2-96 Browsing the FTP upload member

Select the command lines using the mouse or Ctrl and the arrow keys, as shown in Figure 2-97 on page 52.

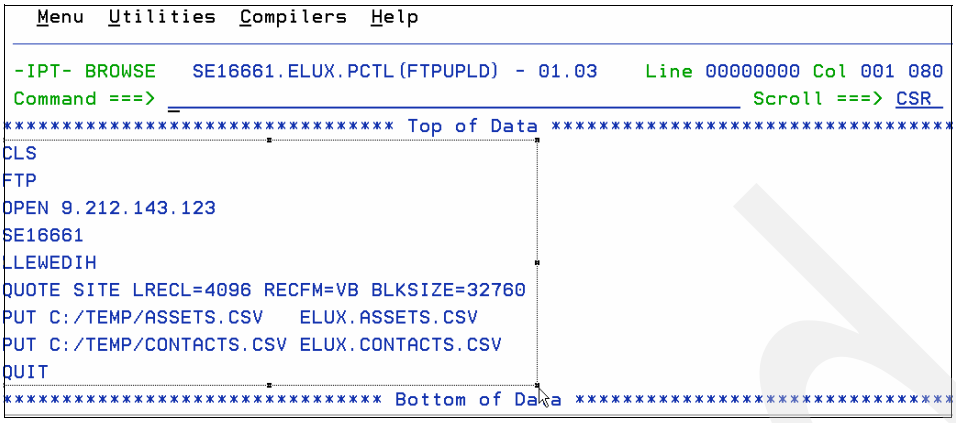

Figure 2-97 Selecting and cutting the FTP upload command

Cut them to the Clipboard as shown in Figure 2-98.

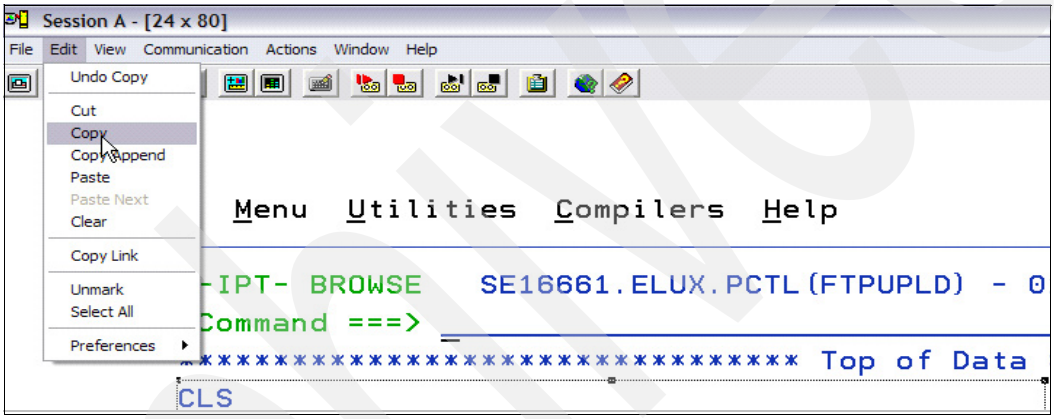

Figure 2-98 Copying the FTP upload command onto the clipboard

Select the prompt line within an MSDOS panel, and paste (right-click and select **Paste**), as shown in Figure 2-99.

Figure 2-99 Pasting the FTP upload command onto the prompt of an MSDOS panel

The files are uploaded as shown in Figure 2-100 on page 53.

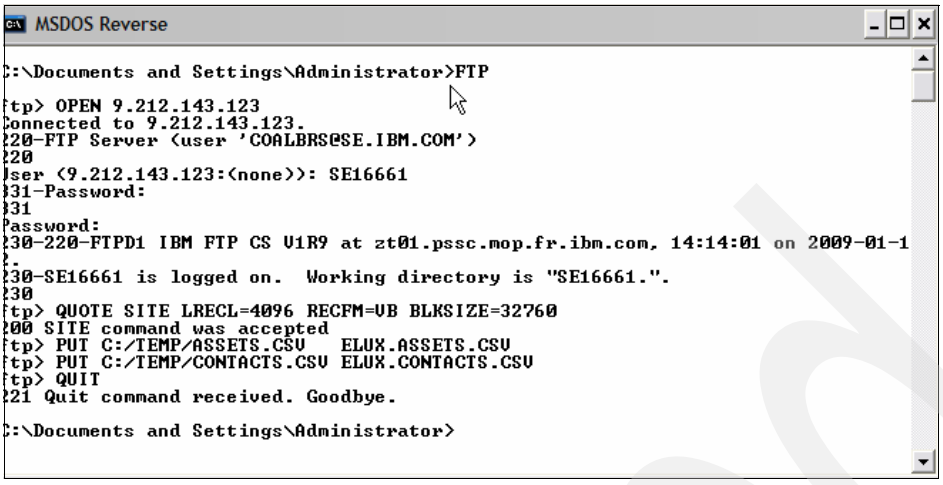

Figure 2-100 FTP uploading the assets and contacts lists saved from EXCEL in the CSV format

Looking back to the OLIST, we can check that the two files are uploaded, as shown in Figure 2-101.

We skip browsing the file data, because these files are actual customer files.

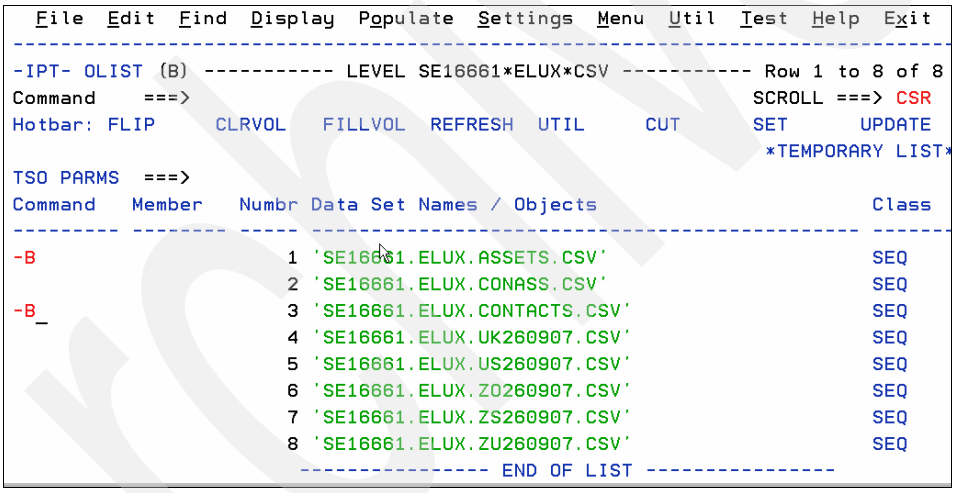

Figure 2-101 Browsing the uploaded FTP files to ensure that they were correctly uploaded

Modify the run JCL to accept new input and output filenames by entering `E` against line 8, as shown in Figure 2-102 on page 54.

Archived

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Asset Management -------------- Row 1 to 13 of 13
Command    ===>                                             SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
                     1 €------- FTP Up/Download --------------------- ------
          FTP%%LD    2 'SE16661.ELUX.PCTL'                           PDSE
                     3 €------- Spreadsheets ------------------------ ------
                     4 'SE16661*ELUX*CSV'                            LIST
                     5 €------- Program ELements -------------------- ------
          CONASS     6 'SE16661.ELUX.EXEC'                           PDSE
          REXXCL     7 'SE16661.ELUX.JCL'                            PDSE
E_        CONASS     8 'SE16661.ELUX.JCL'                            PDSE
                     9 €------- Job Status --------------------------- ------
                    10 >OUT SE16661C                                 USER
                    11 +SDSF ST SE16661C                             CMD
                    12 €------- FTP transfer in OMVS ----------------- ------
                    13 )/u/se16661/ftpdnld.rexx                      OE
                      ---------------- END OF LIST ----------------
```

Figure 2-102 Editing the run JCL to check that the dataset names are correct for this file match: Open JCL in Edit

Make any necessary adjustments to file names and so forth, and press End to save the changes that were made in Figure 2-103.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Asset Management --------- "A" will display assist
Command    ===>                                             SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
                     1 €------- FTP Up/Download --------------------- ------
          FTP%%LD    2 'SE16661.ELUX.PCTL'                           PDSE
                     3 €------- Spreadsheets ------------------------ ------
                     4 'SE16661*ELUX*CSV'                            LIST
                     5 €------- Program ELements -------------------- ------
          CONASS     6 'SE16661.ELUX.EXEC'                           PDSE
E_        REXXCL     7 'SE16661.ELUX.JCL'                            PDSE
-E        CONASS     8 'SE16661.ELUX.JCL'                            PDSE
                     9 €------- Job Status --------------------------- ------
                    10 >OUT SE16661C                                 USER
                    11 +SDSF ST SE16661C                             CMD
                    12 €------- FTP transfer in OMVS ----------------- ------
                    13 )/u/se16661/ftpdnld.rexx                      OE
                      ---------------- END OF LIST ----------------
```

Figure 2-103 Editing the run JCL to check that the dataset names are correct for this file match: Updating filenames

Next, we want to modify and compile the JCL to compile the new REXX exec. To start, enter `E` against line 7 as shown in Figure 2-104 on page 55.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Asset Management --------- "A" will display assist
Command    ===>                                            SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
Open list  ===> ELUX     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ------------------------------------------ ------
                       1 €------- FTP Up/Download ------------------- ------
          FTP%%LD      2 'SE16661.ELUX.PCTL'                         PDSE
                       3 €------- Spreadsheets ---------------------- ------
                       4 'SE16661*ELUX*CSV'                          LIST
                       5 €------- Program ELements ------------------ ------
          CONASS       6 'SE16661.ELUX.EXEC'                         PDSE
E_        REXXCL       7 'SE16661.ELUX.JCL'                          PDSE
-E        CONASS       8 'SE16661.ELUX.JCL'                          PDSE
                       9 €------- Job Status ------------------------ ------
                      10 >OUT SE16661C                               USER
                      11 +SDSF ST SE16661C                           CMD
                      12 €------- FTP transfer in OMVS ---------------- ------
                      13 )/u/se16661/ftpdnld.rexx                    OE
                        ---------------- END OF LIST ----------------
```

Figure 2-104 Selecting the compile JCL to check that the dataset names are correct for this file match

We are now in Edit on the JCL, which compiles and link-edits the REXX exec, as shown in Figure 2-105.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
--------------------------------------------------------------------------------
-IPT- EDIT SE16661.ELUX.JCL(REXXCL) - 01.05              Columns 00001 00072
Command ===> _____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ******************************
000001 //SE16661C JOB (DUMMY),'REXXCL',MSGCLASS=H,
000002 //         MSGLEVEL=(1,1),CLASS=A,TIME=(5,0),NOTIFY=&SYSUID
000003 //JOBPROC  JCLLIB ORDER=SE16661.USER.PROC
000004 //REXXCL   EXEC REXXCL,NAME=CONASS,
000005 //            HLI='SE16661.ELUX',
000006 //            OPT='OBJECT CEXEC SLINE DLINK SOURCE' XREF'
000007 //*
****** **************************** Bottom of Data ****************************
```

Figure 2-105 Editing the compile JCL to check that the dataset names are correct for this file match

The compile/link-edit routine that is invoked by this job is a cataloged procedure. The exec/program name is passed together with the HLI of the program libraries and the compile options. Confirm that the exec/program name is correct, or update it.

Press End to save any changes. The result of this action is shown in Figure 2-106.

```
 -E        REXXCL       7 'SE16661.ELUX.JCL'                          PDSE
```

Figure 2-106 Saving the edited compile JCL

Create a new REXX exec by typing an `E` against member `CONASS` in the ELUX EXEC library that is listed, as shown in Figure 2-107.

```
 E_        CONASS       6 'SE16661.ELUX.EXEC'                         PDSE
```

Figure 2-107 Creating the CONASS REXX

Write the new REXX exec, as shown in Figure 2-108, either from the beginning or by copying an existing, similar REXX exec.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-------------------------------------------------------------------------------
-IPT- EDIT SE16661.ELUX.EXEC(CONASS) - 01.22               Columns 00001 00072
Command ===> ____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ********************************
000001 /*REXX*/
000002
000003 "EXECIO 0 DISKR SYSIASS (OPEN"
000004 IF( RC<>0 )THEN EXIT RC
000005 "EXECIO 0 DISKR SYSICON (OPEN"
000006 IF( RC<>0 )THEN EXIT RC
000007 "EXECIO 0 DISKW SYSOASS (OPEN"
000008 IF( RC<>0 )THEN EXIT RC
000009
000010 PARSE VALUE 0 WITH ass. 1 con. 1 nas.
000011 "EXECIO * DISKR SYSIASS (STEM ASS. FINIS"
000012 SAY "SYSIASS file contains" ass.0 "records."
000013 "EXECIO * DISKR SYSICON (STEM CON. FINIS"
000014 SAY "SYSICON file contains" con.0 "records."
000015 PARSE VALUE ass.1",,,,,,,,,,",
000016       WITH  aa","ab","ac","ad","ae","af",".
000017 PARSE VALUE con.1",,,,,,,,,,",
000018       WITH  ca","cb","cc","cd","ce","cf","cg","ch","ci","cj","ck",".
'''''' nas1 = aa","ab","ac","ad","ae","af","ck","ce_
```

Figure 2-108 Editing the REXX code for the file match program

Press End to save the program when completed, as seen in Figure 2-109.

```
-E          CONASS        6 'SE16661.ELUX.EXEC'                          PDSE
```

Figure 2-109 Saving after editing the REXX code for the file match program

Compile the REXX exec to a load module. Submit the compile+linkedit job, either by typing the TSO command SUB (Figure 2-110) or by typing option J in the command field on line 7, as shown in Figure 2-111.

```
SUB_       REXXCL        7 'SE16661.ELUX.JCL'                           PDSE
```

Figure 2-110 Typing the SUB command to submit the job

```
J_         REXXCL        7 'SE16661.ELUX.JCL'                           PDSE
```

Figure 2-111 Submitting the job to compile and link-edit the REXX code

We take the second option. Press Enter to SUBMIT the job. A line message is displayed "IKJ56259I JOB SE16661C(JOB01234) SUBMITTED". Then, another message appears in Figure 2-112 on page 57:

"14.38.19 JOB01234 AHASP165 SE16661C ENDED AT MOPZTOO – JCL ERROR CN(INTERNAL)"

Figure 2-112 JCL error

So, fix the problem. Remember renaming those system libraries? And, rerun the job until you see this message:

“14.43.22 JOB01234 ÅHASP165 SE16661C ENDED AT MOPZTOO MAXCC=0 CN(INTERNAL)”

Run the REXX program.

We can check the status of the job by using the custom user defined object (UDO[4], OUT) on line 10. However, we invoke the TSO command SDSF with the status parameter ST (on line 11). Type S against line 11, and press Enter, as shown in Figure 2-113.

```
S_              11 +SDSF ST SE16661C                                  CMD
                12 €------- FTP transfer in OMVS ---------------- ------
                13 )/u/se16661/ftpdnld.rexx                           OE
                  ---------------- END OF LIST ----------------
```

Figure 2-113 SDSF status command

This action invokes the TSO command (notice the + prefix) SDSF with the two parameters (ST SE16661C), which requests a status list of all jobs with jobname SE16661C, as shown in Figure 2-114.

```
SDSF STATUS DISPLAY ALL CLASSES                        LINE 1-1 (1)
COMMAND INPUT ===> _                                   SCROLL ===> PAGE
NP   JOBNAME  JobID    Owner    Prty Queue      C  Pos  SAff  ASys Status
     SE16661C JOB03932 SE16661     1 PRINT      A  1407
```

Figure 2-114 Display the status of the executing file match job by invoking the SDSF command

[4] User Defined Object. These UDOs are not covered in detail in this book, but you can refer to a detailed discussion of them in *Improving Your Productivity with the ISPF Productivity Tool V5.9 on z/OS*, SG24-7587-00.

Select the job and view the output. Press End until you return to the IPT OLIST display, as shown in Figure 2-115.

```
-S                    11 +SDSF ST SE16661C                              CMD
```

Figure 2-115 Command field of the OLIST updated after invocation of TSO command SDSF

Type `S` against line 4 to browse the generic LIST of CSV spreadsheet files, as shown in Figure 2-116.

```
S_                    4 'SE16661*ELUX*CSV'                              LIST
```

Figure 2-116 Browse a generic list of CSV spreadsheet files

Select line 2 by typing `S` to the left of it to browse the output from the program, as shown in Figure 2-117.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- LEVEL SE16661*ELUX*CSV ---------- Row 1 to 8 of 8
Command    ===>                                          SCROLL ===> CSR
Hotbar: FLIP     CLRVOL   FILLVOL  REFRESH  UTIL     CUT      SET      UPDATE
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ---------------------------------------- -------
                      1 'SE16661.ELUX.ASSETS.CSV'
S_                    2 'SE16661.ELUX.CONASS.CSV'
                      3 'SE16661.ELUX.CONTACTS.CSV'
                      4 'SE16661.ELUX.UK260907.CSV'
                      5 'SE16661.ELUX.US260907.CSV'
                      6 'SE16661.ELUX.ZO260907.CSV'
                      7 'SE16661.ELUX.ZS260907.CSV'
                      8 'SE16661.ELUX.ZU260907.CSV'
                       ---------------- END OF LIST ----------------
```

Figure 2-117 Browse the results of the file match: Select the generic spreadsheets

Figure 2-118 shows browsing the displayed output.

```
  Menu  Utilities  Compilers  Help
-------------------------------------------------------------------------------
-IPT- BROWSE   SE16661.ELUX.CONASS.CSV              Line 00000000 Col 001 080
Command ===> _                                              Scroll ===> CSR
******************************** Top of Data ********************************
ComputerName,SerialNumber,Manufacturer,Model,Surname,First name,Site,Contact ID
```

Figure 2-118 Browse the results of the file match: Looking at the output

Again, here we cannot show the file content, because it is actual customer data.

Next, we download this output CSV to the PC, as we did with the upload FTP command.

Return to the top of the OLIST, and browse (View or Edit) the FTP commands in member `FTPDNLD` from the Member Selection List. These steps are not explicitly displayed but refer back to Figure 2-95 on page 51 to Figure 2-96 on page 51 for the general procedure.

Browse the download member `FTPDNLD`. Select the download commands and copy them (Ctrl+c) to the clipboard, as shown in Figure 2-119 on page 59.

```
  Menu  Utilities  Compilers  Help
 -IPT- BROWSE    SE16661.ELUX.PCTL(FTPDNLD) - 01.01     Line 00000000 Col 001 080
 Command ===> _                                              Scroll ===> CSR
****************************** Top of Data ******************************
CLS
FTP
OPEN 9.212.143.123
SE16661
LLEWEDIH
GET ELUX.CONASS.CSV  C:/TEMP/CONASS.CSV
QUIT
****************************** Bottom of Data ***************************
```

Figure 2-119 Browsing the FTP download member. Selecting and copying the FTP download command

Select the prompt line within an MSDOS panel, and paste (right-click + click **Paste**) the lines of the download command, as shown in Figure 2-120.

Figure 2-120 Pasting the FTP download command onto the prompt of an MSDOS window

The files get downloaded, as shown in Figure 2-121.

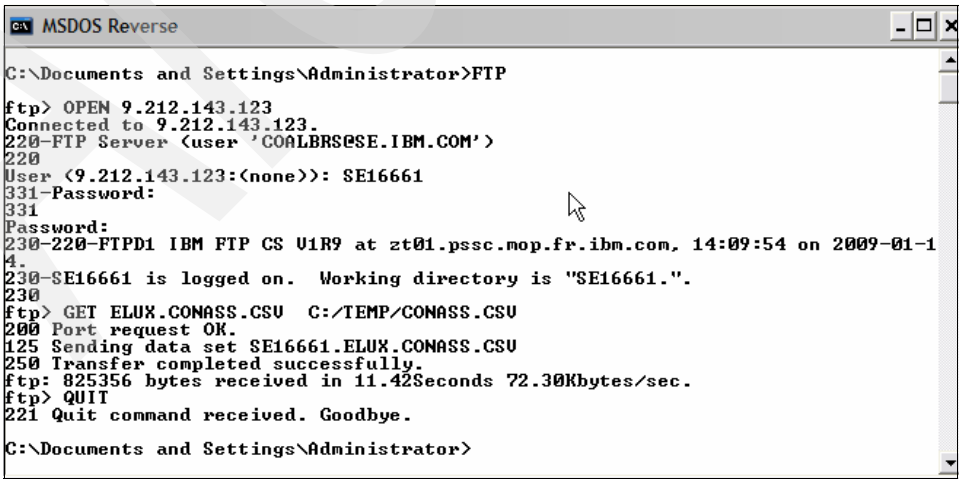

Figure 2-121 FTP downloading the result of the file match in CSV format

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Then, the programmer rapidly sends the output back to the audit team as a Lotus Notes attachment to use, or to request modifications to the process, and the cycle is repeated.

But remember, we are still waiting to be told that the UNIX download-and-send routine is ready for use. Browse it by typing B against line 13, as shown in Figure 2-122.

```
                      12 €------- FTP transfer in OMVS ---------------- ------
S_                    13 )/u/se16661/ftpdnld.rexx                        OE
                        ---------------- END OF LIST ----------------
```

Figure 2-122 Error in trying to look at the HFS file holding the REXX exec

This action results in an error, which is shown in Figure 2-123. Perhaps we got an error because we set this job up in IPT V5.9 when OMVS support was introduced.

```
IKJ56479I COMMAND OBROWSE NOT FOUND OR REXX IDENTIFIER IS MISSING+
IKJ56479I SUPPLY '/* REXX */' AS THE FIRST RECORD TO EXECUTE AS A REXX EXEC OR,
FOR AN EXPLICIT EXEC, SUPPLY THE EXEC KEYWORD ON THE EXEC COMMAND
*** _
```

Figure 2-123 Error in trying to look at the HFS file holding the REXX exec

Note: In IPT V6.1, a ZUNIX object name must start with "/", "~", or ".". There is no longer a need to add a closing parenthesis ")" in front of the object name to indicate the type of object. The same object in z/OS V1.8 and earlier will be treated as an Open Edition (OE) object and thus processed via CLIST IQI$OE. Under z/OS V1.9 and later, the object will be processed by native ISPF UNIX support.

So, that is our problem. The closing parenthesis character,), is redundant and erroneous, so we try again.

This attempt is shown in Figure 2-124.

```
                      12 €------- FTP transfer in OMVS ---------------- ------
S_                    13 /u/se16661/ftpdnld.rexx                         OE
                        ---------------- END OF LIST ----------------
```

Figure 2-124 Attempting to look at the HFS file holding the REXX exec again

The developers have not progressed too far, as we can see in Figure 2-125.

```
  Menu  Utilities  Compilers  Help
 -IPT- BROWSE   /u/se16661/ftpdnld.rexx            Line 00000000 Col 001 033
 Command ===> _                                          Scroll ===> CSR
******************************** Top of Data ********************************
/*REXX(/u/se16661/ftpdnld.rexx)*/
SAY "Hello World"
****************************** Bottom of Data ******************************
```

Figure 2-125 Browsing the HFS file holding the REXX exec to see the stage of development

We clearly see that the promised code has not yet been delivered; it is only a stub.

2.6 MEMFIND command

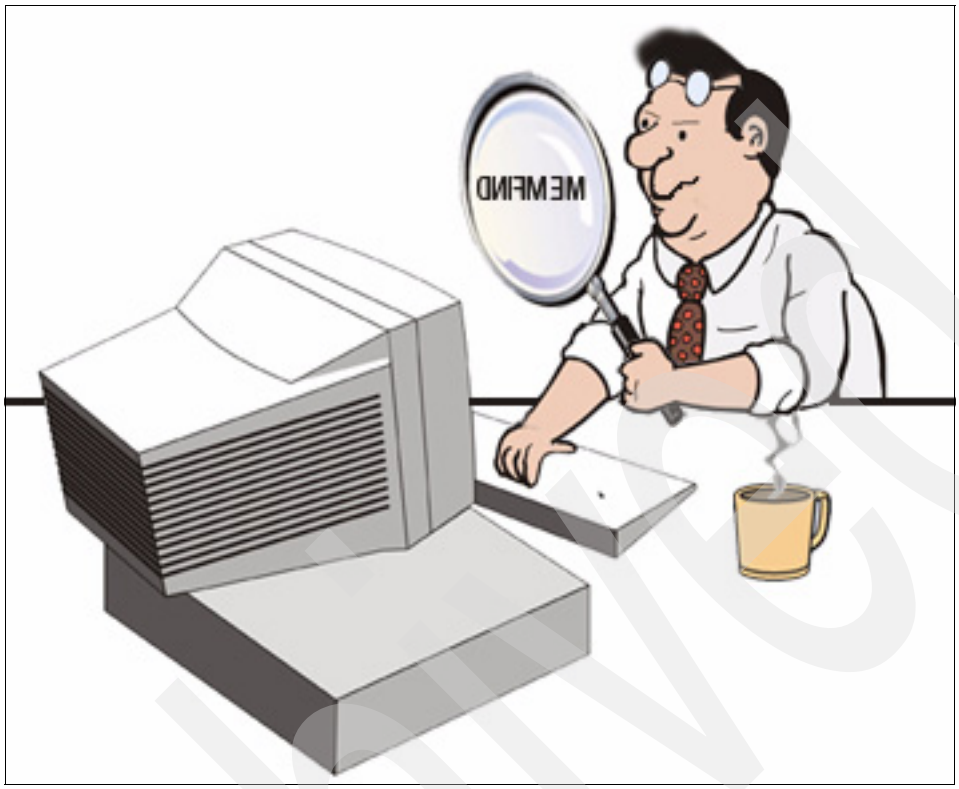

Figure 2-126 MEMFIND command

Using the MEMFIND command within an OLIST, you can search multiple partitioned datasets (PDS) or partitioned datasets extended (PDSE) for a specific member name or even search for members that follow a particular pattern.

The MEMFIND or MF command locates the first, next, or all libraries in the OLIST that contain the specified member.

Figure 2-127 on page 62 shows a temporary OLIST, OL CICSTS* issuing the MEMFIND (MF) command, which is entered here without a text string specified.

We issue a `MEMFIND` command in Figure 2-126.

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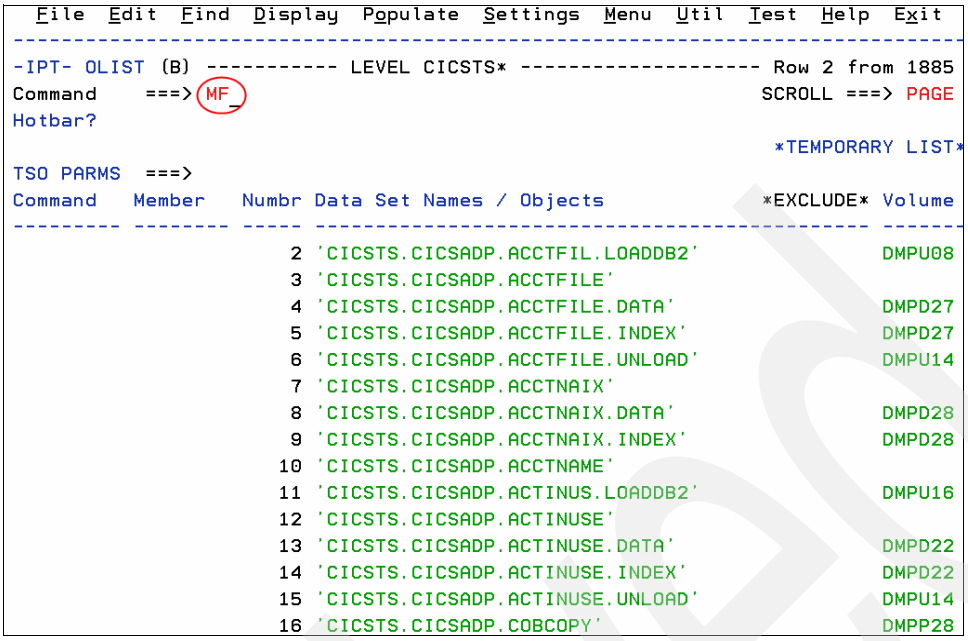

Figure 2-127 MEMFIND command: Issued without parameters

On the pop-up panel that displays, which is shown in Figure 2-128 on page 63, you enter the search argument, and you can also limit the search scope:

- A member name or member name mask. The MEMFIND (alias MF or FINDMEM) command for Version 6.1 supports unrestricted member name patterns (not only by common prefix):
  - ASMTDLI
  - ASM*
  - ASM%DL*
  - *MTDL*

All of these commands must include the first member name in their results:

- The scope that each command's search differs slightly:
  - **1NEXT** searches the list for the next library containing the specified member (default).
  - **2FIRST** searches the list in order and stops as soon as the library is found that contains the member.
  - **3ALL** searches all libraries for the specified member.
- You must specify whether to exclude failures: Y/N.

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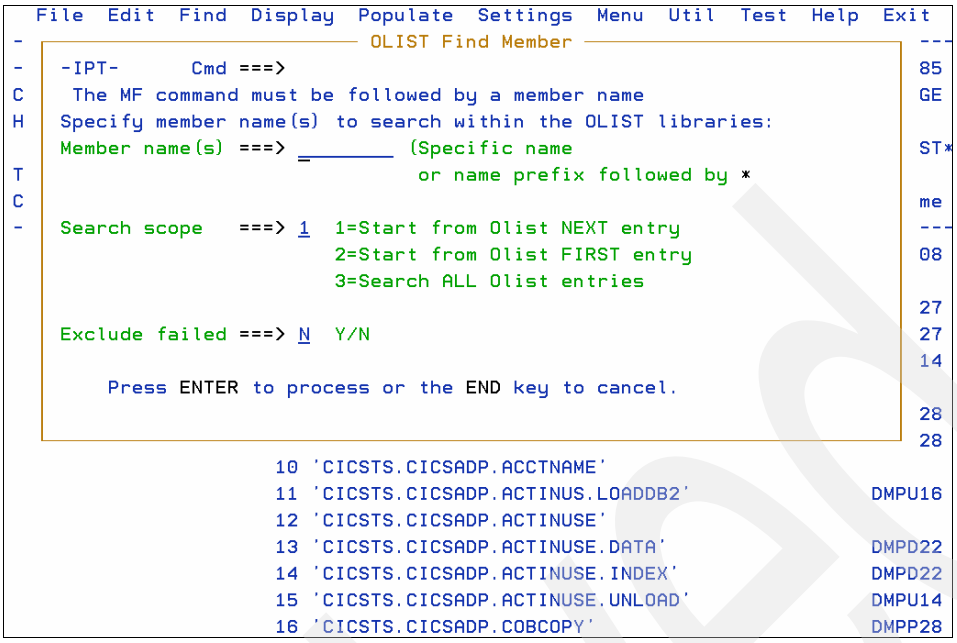

Figure 2-128 MEMFIND search panel

We use the example as a line command to search for ALL occurrences, which is the most likely usage. If, however, you choose to run the command without specifying ALL, you must RFIND through the entire OLIST. This procedure is not illustrated here.

Figure 2-129 shows the MEMFIND command with a specified text string being issued on a temporary OLIST for CICSTS* just before you press Enter.

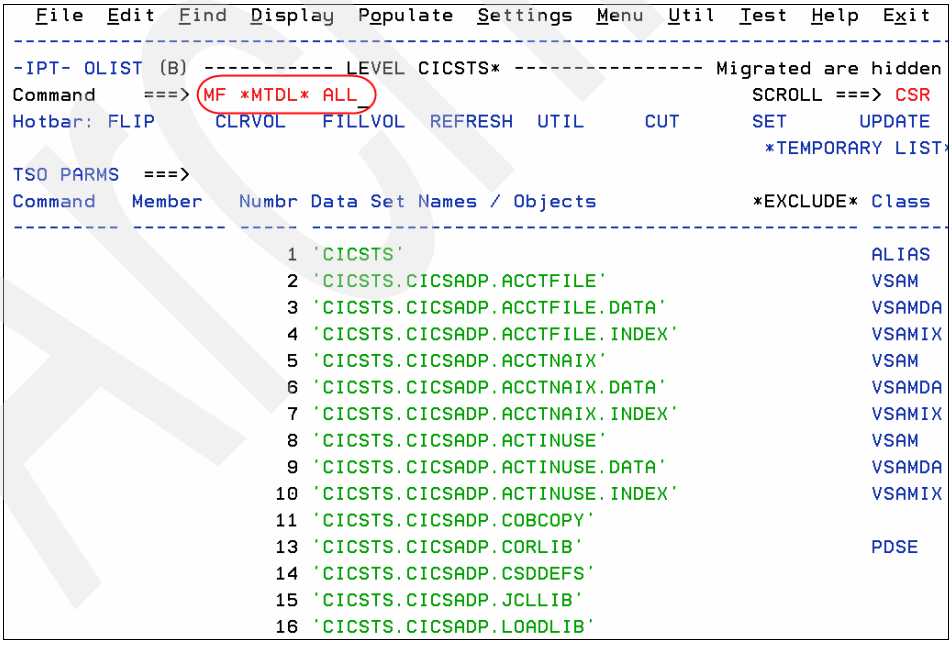

Figure 2-129 OLIST MEMFIND ALL command on a complex member name pattern

It is a large OLIST, and it takes time to search. The dynamic status message shown in Figure 2-130 on page 64 is displayed while it is searching.

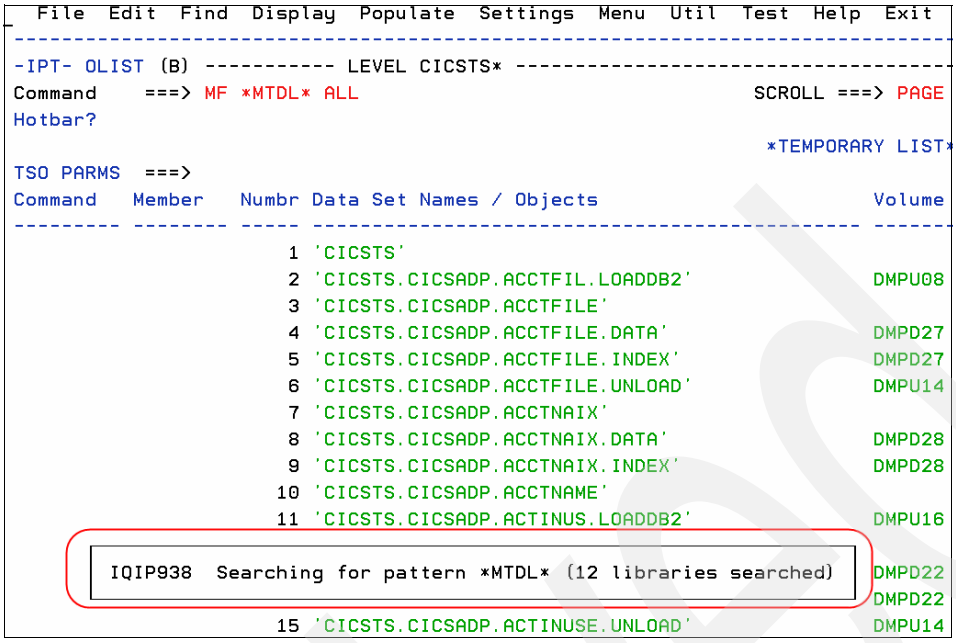

Figure 2-130 OLIST MEMFIND ALL dynamic status message while searching

When it has completed searching, the display looks like Figure 2-131 on page 65. Several panels have been shown together for completeness. As you can see by the “Numbr” fields, the rows with `--FOUND--` entries are widely spaced.

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```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL CICSTS* ------------ Row 421 to 435 of 1,885
Command    ===> _                                          SCROLL ===> PAGE
Hotbar?
                                                            *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ---------------------------------------------- -------
--FOUND-- *MTDL*     421 'CICSTS.V2R3.CICS.SDFHLOAD'                    DMPP30
                     422 'CICSTS.V2R3.CICS.SDFHMAC'                     DMPP10
                     423 'CICSTS.V2R3.CICS.SDFHMLIB'                    DMPP02
                     424 'CICSTS.V2R3.CICS.SDFHMSGS'                    DMPP05
                     425 'CICSTS.V2R3.CICS.SDFHMSRC'                    DMPP17
                     426 'CICSTS.V2R3.CICS.SDFHPARM'                    DMPP22
                     427 'CICSTS.V2R3.CICS.SDFHPLIB'                    DMPP13
                     428 'CICSTS.V2R3.CICS.SDFHPL1'                     DMPP13
                     429 'CICSTS.V2R3.CICS.SDFHPROC'                    DMPP32
                     430 'CICSTS.V2R3.CICS.SDFHSAMP'                    DMPP06
                     431 'CICSTS.V2R3.CICS.SDFHSDCK'                    DMPP39
                                                                        DMPP31
              IQIP936  Pattern *MTDL* found in 3 libraries              DMPP09
                                                                        DMPP38
                     435 'CICSTS.V2R3.CI                                DMPP02
                     640 [illegible].CICS.SDFHLLIB'                     [illegible]
--FOUND-- *MTDL*     647 'CICSTS.V3R1.CICS.SDFHLOAD'                    DMPP30
                     648 'CICSTS.V3R1.CICS.SDFHLODX'                    DMPP21
                     649 'CICSTS.V3R1.CIC                               DMPP34
                    1261 [illegible].CICS.SDFHLLIB'                     [illegible]
--FOUND-- *MTDL*    1262 'CICSTS.V3R2.CICS.SDFHLOAD'                    DMPP33
                    1263 'CICSTS.V3R2.CICS.SDFHLODX'                    DMPP41
```

Figure 2-131 OLIST MEMFIND ALL results spaced over rows in dataset name order

Rather than paging up and down to find the libraries that contain the member, you can use the SORT MEM command, which moves the libraries that contain members that match the selection to the top of the OLIST.

Figure 2-132 shows issuing this command.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL CICSTS* ------------ Row 421 to 435 of 1,885
Command    ===> SORT MEM_                                  SCROLL ===> PAGE
Hotbar?
                                                            *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ---------------------------------------------- -------
--FOUND-- *MTDL*     421 'CICSTS.V2R3.CICS.SDFHLOAD'                    DMPP30
                     422 'CICSTS.V2R3.CICS.SDFHMAC'                     DMPP10
```

Figure 2-132 OLIST MEMFIND ALL issuing SORT MEM command

And, Figure 2-133 on page 66 shows the result of the SORT MEM command.

Archived

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL CICSTS* --------------- Row 1 to 15 of 1,885
Command    ===> _                                          SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
--FOUND-- *MTDL*      1 'CICSTS.V2R3.CICS.SDFHLOAD'                DMPP30
--FOUND-- *MTDL*      2 'CICSTS.V3R1.CICS.SDFHLOAD'                DMPP30
--FOUND-- *MTDL*      3 'CICSTS.V3R2.CICS.SDFHLOAD'                DMPP33
                      4 'CICSTS'
                      5 'CICSTS.CICSADP.ACCTFIL.LOADDB2'           DMPU08
```

Figure 2-133 OLIST MEMFIND ALL: Result of the SORT MEM command

To simplify the display, you can set the GLOBAL EXCLUDE flag to YES by using the ISET command. Selecting YES for the GLOBAL EXCLUDE flag prevents datasets that do not contain members matching the request from displaying. This option can affect the appearance of the results lists.

Figure 2-131 shows issuing the ISET GLOBAL command.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL CICSTS* --------------- Row 1 to 15 of 1,885
Command    ===> ISET GLOBAL _                              SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                      1 'CICSTS'
                      2 'CICSTS.CICSADP.ACCTFIL.LOADDB2'           DMPU08
                      3 'CICSTS.CICSADP.ACCTFILE'
```

Figure 2-134 Issuing the ISET GLOBAL command

Figure 2-135 on page 67 shows setting the GLOBAL EXCLUDE option for OLISTs to YES. Note that the panel is divided in two sections: the top section shows the MSL GLOBAL controls and the bottom section shows OLIST FINDTEXT/MEMFIND.

Archive

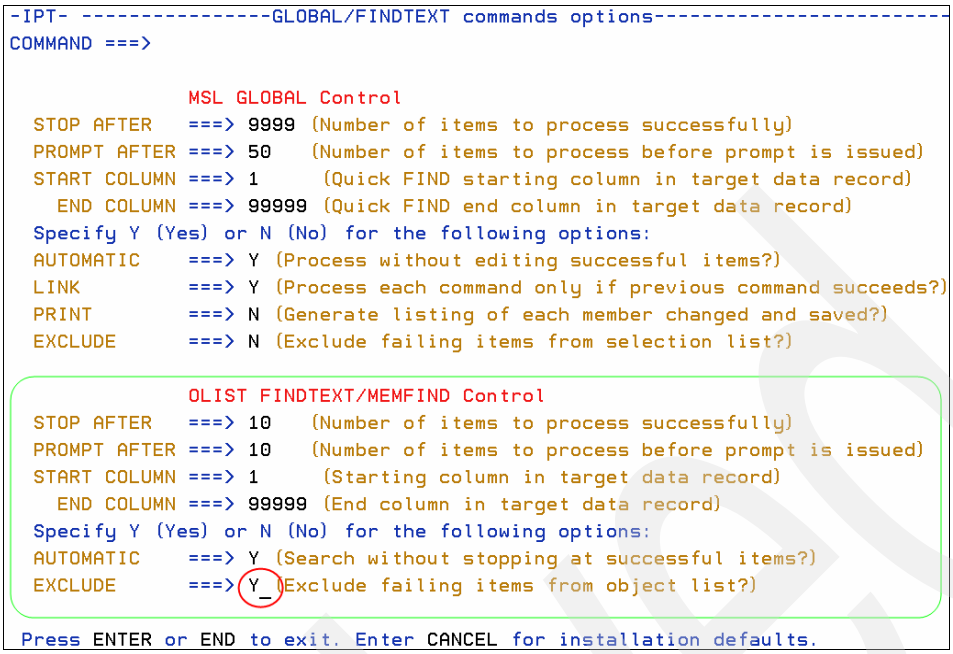

Figure 2-135 ISET GLOBAL altering the EXCLUDE setting to YES

Figure 2-136 shows the result of the same MEMFIND ALL command being issued with the GLOBAL EXCLUDE now set to YES. Notice that the sequence numbers of the libraries did not change.

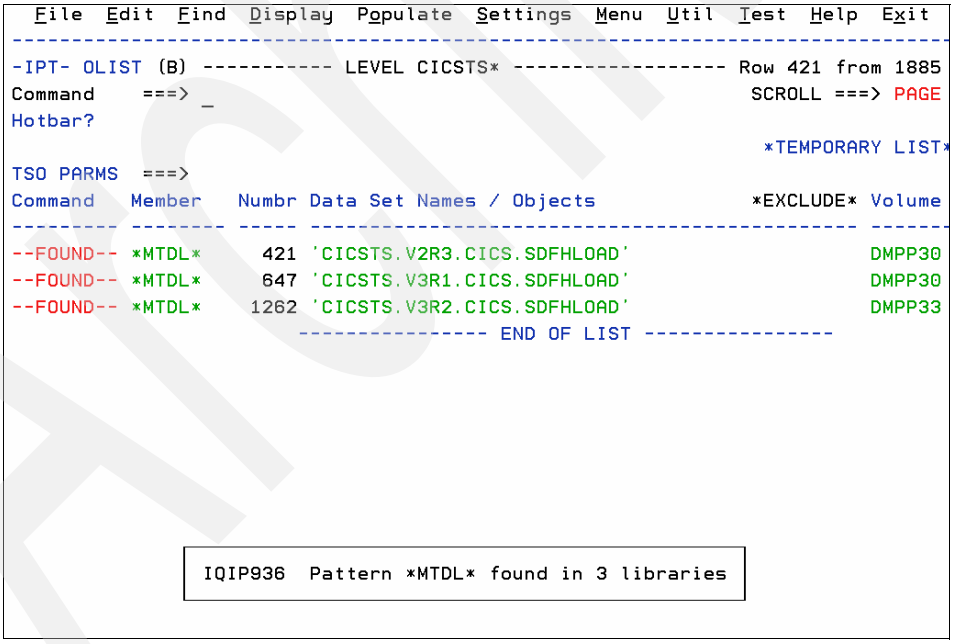

Figure 2-136 MEMFIND command with GLOBAL EXCLUDE set to YES

At the end of this search, only the libraries that contain the member are displayed. Use the FLIP command to see the libraries that are excluded because they did not contain the member, as shown in Figure 2-137 on page 68.

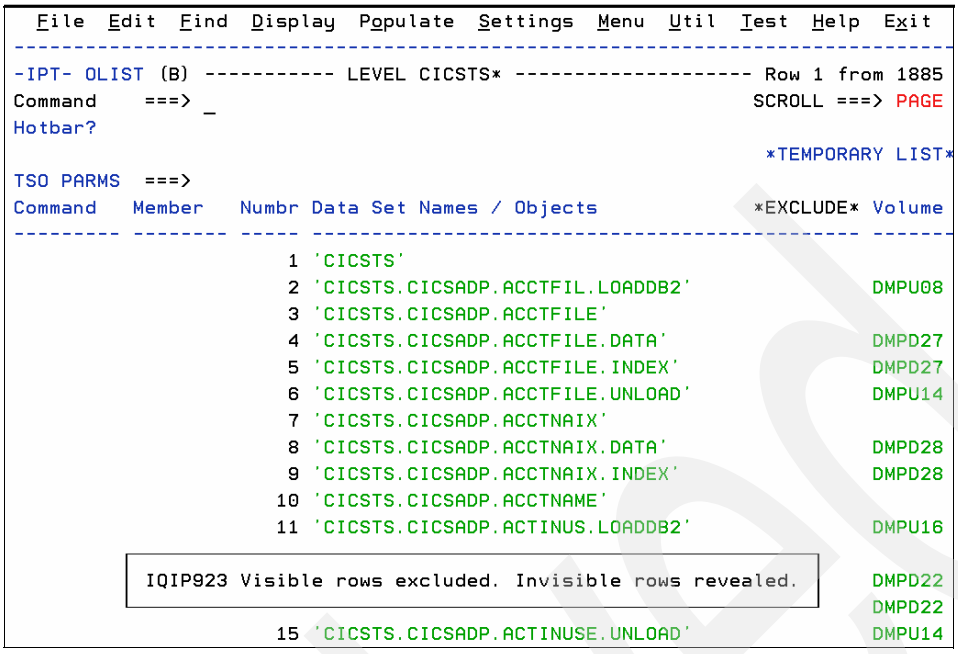

Figure 2-137 Result of the FLIP command

To remove the text box displayed, simply press Enter.

When you complete your work in the OLIST, you can end or exit the panel using PF3.

You can use the REFRESH (REF) command to refresh the current OLIST from its original parameters.

These various forms of RESET(RES) are also useful commands:

RESET Clears the command column.

RESET M Clears the member column.

RESET EXCLUDE Shows all of the libraries in the OLIST.

RESET ALL Resets all of the fields and returns the OLIST to its original state.

You can issue the ASSIST RESET command to see the full range of options.

2.7 FINDTEXT command

Using FINDTEXT (or FT) on an OLIST, you can search up to 99,999 Sequential, PDS, and PDSE datasets for a text string and return the results with incredible speed[5].

Note: DB2 tables, VSAM files, UNIX System Services files, embedded Object Lists, and dynamic Object Lists are bypassed when you use the FINDTEXT command.

The OLIST FINDTEXT command uses the same syntax as the MSL FINDTEXT command. However, for the OLIST variant, the search stops at the first member in that object (sequential dataset or member of a library) unless the ALL parameter is specified. Refer to the 2.7, “FINDTEXT command” on page 68. The ALL parameter overrides any global settings.

[5] You can customize the maximum number of objects in a temporary OLIST up to 99,999 by using IQIWIZRD.

If the GLOBAL AUTOMATIC control is set to N, the search also stops at the first member in the object for the entire list of datasets. If the GLOBAL AUTOMATIC control is set to Y, the search continues for all valid objects within the list.

If the GLOBAL EXCLUDE control is set to Y, all objects that did not match the text string on the search are omitted from the display. If the GLOBAL EXCLUDE control is set to N, the whole list is shown.

So, if you want to search for multiple members within the libraries, set the GLOBAL AUTOMATIC control to Y. Another option is, after you have found every object in which the text is found, to use the MSL GLOBAL FIND or FINDTEXT commands within each object. Refer to Chapter 3, “Member Selection Lists” on page 91” for more details.

If the search string contains blanks or special characters, enclose the text-string in quotation marks, for example, FT ‘this & that’. If the text-string contains single quotation marks, enclose the text-string in double quotation marks. Or, if the text-string contains double quotation marks, enclose the text-string in single quotation marks.

The command is not case sensitive, for example, the command FIND TRACE returns the lines with the word: “TRACE”, “trace”, “TrAcE”, or any combination of upper and lower case. If a case-sensitive search is required, use the C‘xxxx’ formats. If a hexadecimal search is required, use the X‘xxxx’ formats. To see all of the options at one time, you can simply issue the FINDTEXT (FT) command without an argument.

We start by setting our OLIST GLOBAL AUTOMATIC control to Y and run a scenario using a search for a simple text string 'XYZ'.

Then, we switch the GLOBAL AUTOMATIC control to N and run the same scenario, or a portion of it, as a comparison.

We will keep the GLOBAL EXCLUDE control set to Y to reduce confusion.

Figure 2-138 shows issuing the SET GLOBAL command from the command line of a temporary OLIST for ‘DDS1113.IPT*’.

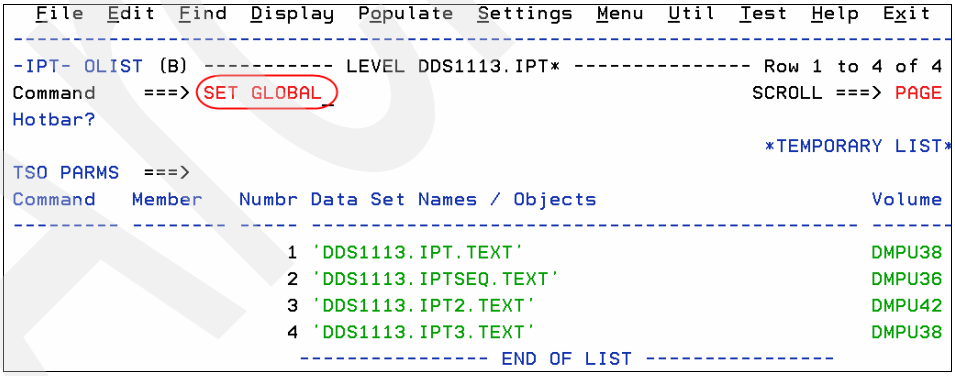

Figure 2-138 SET GLOBAL command

Figure 2-139 on page 70 shows the SET GLOBAL panel. The top half of the panel relates to MSLs, and the bottom half of the panel relates to OLISTs.

Both AUTOMATIC and EXCLUDE are set to Y.

```
-IPT- ----------------GLOBAL/FINDTEXT commands options-------------------------
COMMAND ===>

               MSL GLOBAL Control
  STOP AFTER    ===> 9999 (Number of items to process successfully)
  PROMPT AFTER ===> 50    (Number of items to process before prompt is issued)
  START COLUMN ===> 1      (Quick FIND starting column in target data record)
    END COLUMN ===> 99999 (Quick FIND end column in target data record)
  Specify Y (Yes) or N (No) for the following options:
  AUTOMATIC     ===> Y (Process without editing successful items?)
  LINK          ===> Y (Process each command only if previous command succeeds?)
  PRINT         ===> N (Generate listing of each member changed and saved?)
  EXCLUDE       ===> N (Exclude failing items from selection list?)

               OLIST FINDTEXT/MEMFIND Control
  STOP AFTER    ===> 10    (Number of items to process successfully)
  PROMPT AFTER ===> 10    (Number of items to process before prompt is issued)
  START COLUMN ===> 1      (Starting column in target data record)
    END COLUMN ===> 99999 (End column in target data record)
  Specify Y (Yes) or N (No) for the following options:
  AUTOMATIC     ===> Y (Search without stopping at successful items?)
  EXCLUDE       ===> Y (Exclude failing items from object list?)

 Press ENTER or END to exit. Enter CANCEL for installation defaults.
```

Figure 2-139 Setting the AUTOMATIC and EXCLUDE GLOBAL controls

Note: For more information about Global Find Settings, refer to 12.5, “Settings for GLOBAL FINDTEXT” on page 317.

2.8 AUTOMATIC Yes

In Figure 2-140, the box shows the contents of the first library in the OLIST for ‘DDS1113.IPT*’. Each member is a single line, except member ALL which contains all four lines in the order shown. The other two libraries (on the third and fourth rows) are copies. The sequential dataset (on the second row) is identical to member ALL.

```
  File  Display  Library  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--BROWSE L1---- DDS1113.IPT.TEXT ----------------------ROW 00001 OF 00005
 COMMAND  ===> _                                          SCROLL ===> PAGE
HOTBAR?

   NAME    RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  ALL                 1 01.02 09/01/21 09/01/21 07:11                  DDS1113
  CASE                1 01.00 09/01/21 09/01/21 07:10                  DDS1113
  HEX                 1 01.00 09/01/21 09/01/21 07:10                  DDS1113
  QUOTES              1 01.00 09/01/21 09/01/21 07:10                  DDS1113
  SIMPLE              1 01.01 09/01/21 09/01/21 07:09                  DDS1113
   --END--
```

'XYZ'
"x'aBc'Y"
c'IBM copy'
X'81ab93' (a¿l)

Figure 2-140 OLIST DDS1113.IPT contents of libraries and the sequential dataset*

Figure 2-141 on page 71 shows issuing the FT XYZ command.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* --------------- Row 1 to 4 of 4
Command    ===> FT XYZ                                      SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                      1 'DDS1113.IPT.TEXT'
                      2 'DDS1113.IPTSEQ.TEXT'
                      3 'DDS1113.IPT2.TEXT'
                      4 'DDS1113.IPT3.TEXT'
                       ---------------- END OF LIST ----------------
```

Figure 2-141 FINDTEXT OLIST command: FT 'XYZ'

A status message is displayed, which is shown in Figure 2-142, which might show for a while for a long OLIST or briefly for a short OLIST, such as this one.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* ------------------------------
Command    ===> FT XYZ                                      SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
          ALL          1 'DDS1113.IPT.TEXT'                       DMPU38
                       2 'DDS1113.IPTSEQ.TEXT'                    DMPU36
          ALL          3 'DDS1113.IPT2.TEXT'                      DMPU42
          ALL          4 'DDS1113.IPT3.TEXT'                      DMPU38
                        ---------------- END OF LIST ----------------

                    IQIP1062 Searching for XYZ
```

Figure 2-142 Issuing the FINDTEXT OLIST command: FT 'XYZ'

Figure 2-143 on page 72 shows the results of the command.

Archived

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* -------------- Search completec
Command    ===> _                                             SCROLL ===> PAGE
Hotbar?
                                                               *TEMPORARY LIST
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Volume
--------- -------- ----- ------------------------------------------- ------
-TXT FND- ALL          1 'DDS1113.IPT.TEXT'                            DMPU38
-TXT FND-              2 'DDS1113.IPTSEQ.TEXT'                         DMPU36
-TXT FND- ALL          3 'DDS1113.IPT2.TEXT'                           DMPU42
-TXT FND- ALL          4 'DDS1113.IPT3.TEXT'                           DMPU38
                        ---------------- END OF LIST ----------------
```

Figure 2-143 FINDTEXT OLIST command: FT 'XYZ' results

We see, in the case of the libraries for each one, the first member in which the search string was found. We can type an S against the first member of the first library ('DDS1113.IPT.TEXT(ALL)'). Figure 2-144 shows its contents. Notice that a FIND command for the search string has been generated in the Command field.

```
  Menu  Utilities  Compilers  Help
-------------------------------------------------------------------------------
-IPT- BROWSE   DDS1113.IPT.TEXT(ALL) - 01.02               CHARS 'XYZ' found
Command ===> _____________________________________________ Scroll ===> PAGE
********************************* Top of Data ********************************
'XYZ'
c'IBM copy'
'x'aBc'Y"
X'81ab93' (a¿l)
******************************** Bottom of Data ******************************
```

Figure 2-144 FINDTEXT OLIST command: FT 'XYZ' results for member ALL

Figure 2-145 shows the effect of pressing Enter to issue the generated command, and the search string is located.

```
  Menu  Utilities  Compilers  Help
-------------------------------------------------------------------------------
-IPT- BROWSE   DDS1113.IPT.TEXT(ALL) - 01.02               CHARS 'XYZ' found
Command ===> _____________________________________________ Scroll ===> PAGE
********************************* Top of Data ********************************
'XYZ'
c'IBM copy'
'x'aBc'Y"
X'81ab93' (a¿l)
******************************** Bottom of Data ******************************
```

Figure 2-145 FINDTEXT OLIST command: FT 'XYZ' results for member ALL

2.9 AUTOMATIC No

Let us now switch the GLOBAL AUTOMATIC control to N. We will run the same scenario, or a portion of it, as a comparison. Issue a RESET ALL to clear the results of previous FINDTEXT actions. Figure 2-146 on page 73 shows the results after both of these actions have been done.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* -------------- Row 1 to 4 of 4
Command    ===> _                                          SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                        1 'DDS1113.IPT.TEXT'
                        2 'DDS1113.IPTSEQ.TEXT'
                        3 'DDS1113.IPT2.TEXT'
                        4 'DDS1113.IPT3.TEXT'
                         ---------------- END OF LIST ----------------
```

Figure 2-146 FINDTEXT OLIST: GLOBAL AUTOMATIC set to N and the OLIST is RESET

We issue the same command as before and see what happens now (Figure 2-147).

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* -------------- Row 1 to 4 of 4
Command    ===>FT XYZ_                                     SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                        1 'DDS1113.IPT.TEXT'
                        2 'DDS1113.IPTSEQ.TEXT'
                        3 'DDS1113.IPT2.TEXT'
                        4 'DDS1113.IPT3.TEXT'
                         ---------------- END OF LIST ----------------
```

Figure 2-147 FINDTEXT OLIST command: FT 'XYZ'

This time, we get a similar dynamic status message (but for a shorter duration). We see the results of the search in Figure 2-148. Notice that only the first occurrence in the first object is displayed.

```
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* ------------- Search completed
Command    ===> _                                          SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
-TXT FND- ALL          1 'DDS1113.IPT.TEXT'                       DMPU38
                       2 'DDS1113.IPTSEQ.TEXT'
                       3 'DDS1113.IPT2.TEXT'
                       4 'DDS1113.IPT3.TEXT'
                        ---------------- END OF LIST ----------------
```

Figure 2-148 FINDTEXT OLIST command: FT 'XYZ' results

2.10 FINDTEXT parameters

FINDTEXT is most often used as plain FINDTEXT where, after an initial invocation, RFIND can be used to chain through the objects. However, you can use the FINDTEXT command with the following parameters: ALL / FIRST / NEXT / PREV / LAST to modify the normal

sequence of searching. Because you are searching for objects, which can be mixed sequential and partitioned formats, the search sequence is similar to, but not identical to, searching within a single sequential file.

2.11 FINDTEXT ALL

In Figure 2-149, we see a search for ALL of the occurrences of a string.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List --------------------------- IPT saved
Command    ===> FT 'XYZ' ALL_                                SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
                      1 'DDS1113.IPT.TEXT'                           PDSE
                      2 'DDS1113.IPTSEQ.TEXT'                        SEQ
                      3 'DDS1113.IPT2.TEXT'                          PDSE
                      4 'DDS1113.IPT3.TEXT'                          PDSE
          IPT         5 'DDS1113.ISPF.IPITBLIB'                      PDSE
                       ---------------- END OF LIST ----------------
```

Figure 2-149 Issuing the command to find all of the occurrences of a string

As we see in Figure 2-150, each of the objects containing the string has been labeled '–TXT FND-'[6]. The first member in each library where the string occurs was labeled, in preparation for direct selection of that member. Where the dataset was sequential (note SEQ as opposed to PDSE in the Class column), then clearly no labeling is possible or necessary.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List -------------------- Search completed
Command    ===> _                                            SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects             *EXCLUDE* Class
--------- -------- ----- ------------------------------------------- -------
-TXT FND- ALL        1 'DDS1113.IPT.TEXT'                           PDSE
-TXT FND-            2 'DDS1113.IPTSEQ.TEXT'                        SEQ
-TXT FND- ALL        3 'DDS1113.IPT2.TEXT'                          PDSE
-TXT FND- ALL        4 'DDS1113.IPT3.TEXT'                          PDSE
                       ---------------- END OF LIST ----------------
```

Figure 2-150 The result of the command to find all occurrences of a string

In Figure 2-151 on page 75, we type an S against row 1 for member ALL of DDS1113.IPT.TEXT.

[6] Notice here that the object on row 5 is EXCLUDED now. Why is it excluded? Because every object in the list is tested to see if it contains any occurrences of the string. As it searches and verifies objects that do not, it excludes them and continues its search.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List -------------------- Search completed
Command    ===>                                               SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Class
--------- -------- ----- ---------------------------------------------- -------
S XT FND- ALL          1 'DDS1113.IPT.TEXT'                              PDSE
-TXT FND-              2 'DDS1113.IPTSEQ.TEXT'                           SEQ
```

Figure 2-151 Finding all occurrences of a string: Selecting the first occurrence

We see in Figure 2-152 that IPT has prepared an EDIT command of FIND 'XYZ', which is ready for us to FIND and RFIND occurrences of the string.

```
  Menu  Utilities  Compilers  Help
-------------------------------------------------------------------------------
-IPT- BROWSE   DDS1113.IPT.TEXT(ALL) - 01.02        Line 00000000 Col 001 080
Command ===> FIND    'XYZ'                                  Scroll ===> PAGE
******************************** Top of Data ********************************
'XYZ'
c'IBM copy'
"x'aBc'Y"
X'81ab93' (a¿l)
******************************* Bottom of Data ******************************
```

Figure 2-152 Finding all occurrences of a string: FIND the string within the dataset/library member

Pressing Enter here locates the string in the second position of the first line.

2.12 FINDTEXT FIRST

Next, we try searching for the FIRST occurrence of the same string. You typically use the FIRST parameter to alter the sequence and jump back to the first occurrence of a string, as shown in Figure 2-153.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List -------------------- Row 4 to 5 of 5
Command    ===> FT 'XYZ' FIRST                                SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                       Class
--------- -------- ----- ---------------------------------------------- -------
-TXT FND- ALL          4 'DDS1113.IPT3.TEXT'                             PDSE
                       5 'DDS1113.ISPF.IPITBLIB'
                        ---------------- END OF LIST ----------------
```

Figure 2-153 Issuing the command to find the first occurrence of a string

In Figure 2-154 on page 76, we can see the result of this command.

Archived

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Objects List -------------------- Search completed
Command    ===> _                                           SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
-TXT FND- ALL          1 'DDS1113.IPT.TEXT'                          PDSE
                       2 'DDS1113.IPTSEQ.TEXT'                       SEQ
                       3 'DDS1113.IPT2.TEXT'                         PDSE
                       4 'DDS1113.IPT3.TEXT'                         PDSE
                       5 'DDS1113.ISPF.IPITBLIB'                     PDSE
                        ---------------- END OF LIST ----------------
```

Figure 2-154 Finding the first occurrence of a string: The result of the command

The first occurrence (in the first member) is located.

2.13 FINDTEXT NEXT

You can use the FINDTEXT NEXT command to find the next occurrence of a string, perhaps after you have been searching backwards (see 2.15, “FINDTEXT PREV” on page 77), as in Figure 2-155. Here, we assume that, as a starting point, we had issued a PREV search, which “wrapped” from the first to the last occurrence[7]. Then, we repeated the PREV search, taking us to row number 3. Now, issuing a NEXT search will reverse the direction of search.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Objects List ----------------------- Row 3 from 5
Command    ===> FT 'XYZ' NEXT_                                SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects             *EXCLUDE* Class
--------- -------- ----- ------------------------------------------- -------
-TXT FND- ALL          3 'DDS1113.IPT2.TEXT'                         PDSE
                       4 'DDS1113.IPT3.TEXT'                         PDSE
                        ---------------- END OF LIST ----------------
```

Figure 2-155 Issuing the command to find the next occurrence of a string

In Figure 2-156 on page 77 we see the results of this FINDTEXT NEXT, and we find the next occurrence from our current position.

[7] Notice here that the object on row 5 is EXCLUDED now. Why is this object excluded? Because, in wrapping, the object has to be tested to see if it contains any occurrences of the string. Having verified that it does not, IPT excludes the object and continues its search.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Objects List -------------------- Search completed
Command    ===> _                                           SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Class
--------- -------- ----- ------------------------------------------------ -------
-TXT FND- ALL          4 'DDS1113.IPT3.TEXT'                               PDSE
                       ---------------- END OF LIST ----------------
```

Figure 2-156 Finding the next occurrence of a string: Result of the command

2.14 FINDTEXT LAST

The FINDTEXT LAST command finds the last object in which the string occurs. We might, for instance, have checked the first instance and then want to test the last instance. In Figure 2-157, we assume that we have issued an FT 'XYZ' FIRST command, and now, we issue the FT 'XYZ' LAST command.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List ------------------------ Row 1 from 5
Command    ===> FT 'XYZ' LAST _                             SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Class
--------- -------- ----- ------------------------------------------------ -------
-TXT FND- ALL          1 'DDS1113.IPT.TEXT'                                PDSE
                       2 'DDS1113.IPTSEQ.TEXT'                             SEQ
                       3 'DDS1113.IPT2.TEXT'                               PDSE
                       4 'DDS1113.IPT3.TEXT'                               PDSE
                        ---------------- END OF LIST ----------------
```

Figure 2-157 Issuing the command to find the last occurrence of a string

In Figure 2-158, we see the results of the FINDTEXT 'XYZ' LAST command, and we find the next occurrence from our current position.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Objects List -------------------- Search completed
Command    ===> _                                           SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Class
--------- -------- ----- ------------------------------------------------ -------
-TXT FND- ALL          4 'DDS1113.IPT3.TEXT'                               PDSE
                       ---------------- END OF LIST ----------------
```

Figure 2-158 Finding the last occurrence of a string: Result of the command

2.15 FINDTEXT PREV

Now, we try to find the previous object in the list containing the string. In Figure 2-159 on page 78, we issue this command using our scenario.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Objects List -------------------- Search completed
Command    ===> _                                           SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Class
--------- -------- ----- ------------------------------------------- -------
-TXT FND- ALL          3 'DDS1113.IPT2.TEXT'                          PDSE
                       4 'DDS1113.IPT3.TEXT'                          PDSE
                        ---------------- END OF LIST ----------------
```

Figure 2-159 Issuing the command to find the previous occurrence of a string

Figure 2-160 shows the result of issuing this command.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Objects List -------------------- Search completed
Command    ===> _                                           SCROLL ===> PAGE
Hotbar?
Open list  ===> IPT      (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects            *EXCLUDE* Class
--------- -------- ----- ------------------------------------------- -------
-TXT FND- ALL          3 'DDS1113.IPT2.TEXT'                          PDSE
                       4 'DDS1113.IPT3.TEXT'                          PDSE
                        ---------------- END OF LIST ----------------
```

Figure 2-160 Finding the previous occurrence of a string: Result of the command

2.16 SHOWMIG command

This new feature provides for an easier way of working for many people who work in a storage-managed environment. The SHOWMIG command allows you to automatically split migrated datasets. The command can be issued in one of three ways. When you select how you want to issue the command, your selection is saved in your user PROFILE:

- SHOWMIG ON sets SHOWMIG status to ON.
- SHOWMIG OFF sets SHOWMIG status to OFF.
- SHOWMIG toggles between ON and OFF.

When SHOWMIG status is OFF[8], and we issue an OLIST command that will display objects, including migrated objects, the migrated objects are excluded. We issue a command OL SYS*.TEMP in Figure 2-158.

```
 Menu  Utilities  Compilers  Options  Status  Help
--------------------------------------------------------------------------------
                          ISPF Primary Option Menu
Option ===> OL SYS*.TEMP

0  Settings      Terminal and user parameters          User ID . : DDS1113
1  View          Display source data or listings       Time. . . : 01:05
2  Edit          Create or change source data          Terminal. : 3278
3  Utilities     Perform utility functions             Screen. . : 1
```

Figure 2-161 OLIST for SYS.TEMP*

[8] [SHOWMIG] OFF here means “hide migrated”, ON means “show migrated”.

The OLIST displays as in Figure 2-162 where all datasets, wherever they are located, are shown.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL SYS*.TEMP ------------------ Row 1 to 4 of 4
Command    ===> _                                              SCROLL ===> PAGE
Hotbar?
                                                                *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Volume
--------- -------- ----- ---------------------------------------------- -------
                       1 'SYSUSR1.TEMP'                                  MIGRAT
                       2 'SYS028.TEMP.VCMISPF'                           DMPU28
                       3 'SYS089.TEMP'                                   DMPU36
                       4 'SYS248.TEMP.ANLOUT'                            DMPU27
                        ---------------- END OF LIST ----------------
```

Figure 2-162 SHOWMIG ON: All datasets are displayed

If we now issue a SHOWMIG OFF command, as shown in Figure 2-163, the migrated (MIGRAT) datasets are excluded.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL SYS*.TEMP ------------------ Row 1 to 4 of 4
Command    ===> SHOWMIG OFF _                                  SCROLL ===> PAGE
Hotbar?
                                                                *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Volume
--------- -------- ----- ---------------------------------------------- -------
                       1 'SYSUSR1.TEMP'                                  MIGRAT
                       2 'SYS028.TEMP.VCMISPF'                           DMPU28
                       3 'SYS089.TEMP'                                   DMPU36
                       4 'SYS248.TEMP.ANLOUT'                            DMPU27
                        ---------------- END OF LIST ----------------
```

Figure 2-163 SHOWMIG OFF: Issuing the command

In Figure 2-164, notice the ISPF short message “`Migrated are hidden`”. The *EXCLUDE* flag is showing, and the migrated datasets are no longer visible.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL SYS*.TEMP -------------- Migrated are hidden
Command    ===> _                                              SCROLL ===> PAGE
Hotbar?
                                                                *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects              *EXCLUDE* Volume
--------- -------- ----- ---------------------------------------------- -------
                       2 'SYS028.TEMP.VCMISPF'                           DMPU28
                       3 'SYS089.TEMP'                                   DMPU36
                       4 'SYS248.TEMP.ANLOUT'                            DMPU27
                        ---------------- END OF LIST ----------------
```

Figure 2-164 SHOWMIG OFF: Results of the command, viewing the non-migrated datasets

To see the migrated datasets, we need to FLIP to show only the currently excluded rows. Figure 2-165 on page 80 shows the FLIP command being issued.

Archived

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL SYS*.TEMP -------------- Migrated are hidden
Command    ===> FLIP_                                      SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects          *EXCLUDE* Volume
--------- -------- ----- ---------------------------------------- -------
                       2 'SYS028.TEMP.VCMISPF'                      DMPU28
                       3 'SYS089.TEMP'                              DMPU36
                       4 'SYS248.TEMP.ANLOUT'                       DMPU27
                        ---------------- END OF LIST ----------------
```

Figure 2-165 SHOWMIG OFF: FLIP to show the currently excluded datasets

Figure 2-166 shows the display after the FLIP command has been issued.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL SYS*.TEMP --------------------- Row 1 from 4
Command    ===> _                                          SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects          *EXCLUDE* Volume
--------- -------- ----- ---------------------------------------- -------
                       1 'SYSUSR1.TEMP'                             MIGRAT
                        ---------------- END OF LIST ----------------

IQIP923 Visible rows excluded. Invisible rows revealed.
```

Figure 2-166 SHOWMIG OFF: The migrated datasets show after issuing a FLIP command

FLIP back to show the non-migrated datasets.

2.17 EMPTY Object List command

Figure 2-168 on page 81 reflects the EMPTY Object List command.

Figure 2-167 Concept of the EMPTY Object List command

The EMPTY command empties a library of all members. Use this command if you need to empty a library prior to copying or moving members from another library. Figure 2-168 shows issuing the OL DDS1113.IPT* command.

```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------
                          ISPF Primary Option Menu
Option ===> OL DDS1113.IPT*
 ------------------------------------------------------------------------
0  Settings      Terminal and user parameters          User ID . : DDS1113
```

Figure 2-168 EMPTY a library: Create an OLIST to demonstrate

We see the results of these EMPTY commands in Figure 2-169 on page 82 to Figure 2-172 on page 83. First, we have to confirm that we really meant to empty the library. We change the N shown here to `Y` (if we want to empty the library).

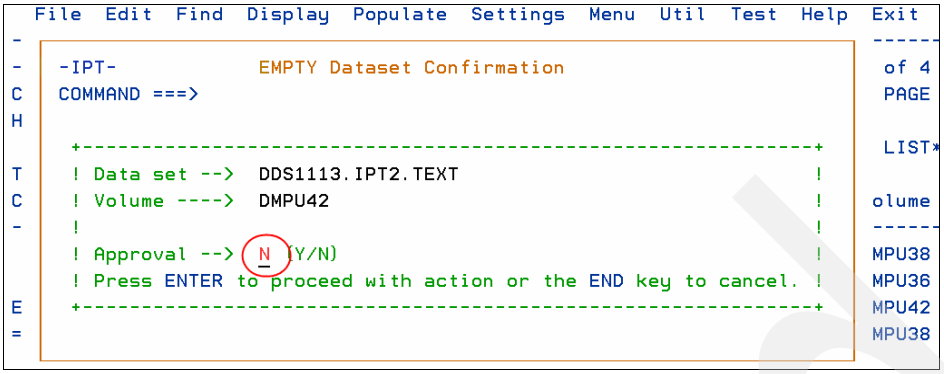

Figure 2-169 EMPTY a library: Confirming the empty instruction for IPT2

Having entered a `Y` in the Approval field and pressing Enter, we see a display as in Figure 2-170.

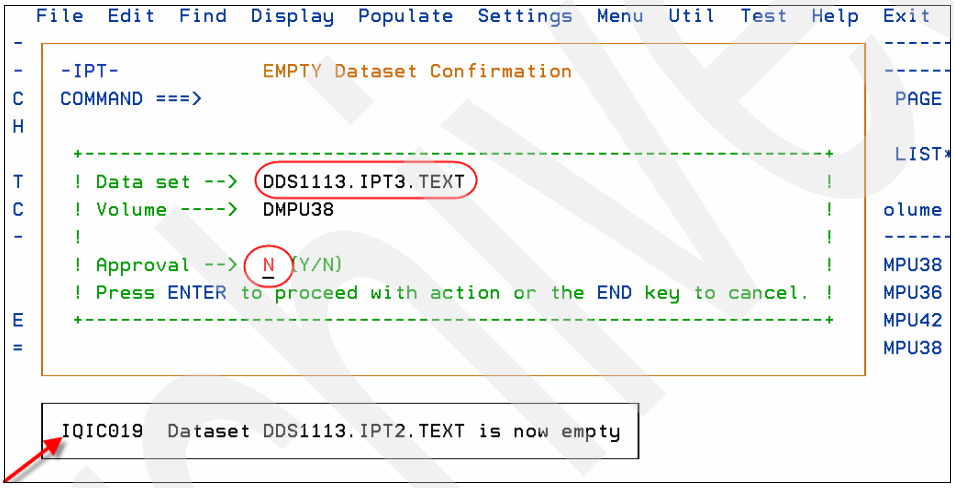

Figure 2-170 EMPTY a library: IPT2 emptied, confirming the empty instruction for IPT3

We now confirm that we really meant to empty the second library by again entering a `Y` in the Approval field and pressing Enter. We see a display as in Figure 2-171 on page 83.

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```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* --------------- Row 1 to 4 of 4
Command    ===> _                                          SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                     1 'DDS1113.IPT.TEXT'                          DMPU38
                     2 'DDS1113.IPTSEQ.TEXT'                       DMPU36
-EMPTY               3 'DDS1113.IPT2.TEXT'                         DMPU42
-EMPTY               4 'DDS1113.IPT3.TEXT'                         DMPU38
                       ---------------- END OF LIST ----------------

 IQIC019  Dataset DDS1113.IPT3.TEXT is now empty
```

Figure 2-171 EMPTY a library: Both libraries (IPT2 and IPT3) have been emptied

We empty the sequential dataset on row 2, as well. We use another method.

Figure 2-172 shows the command that we issued to empty this dataset.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* --------------- Row 1 to 4 of 4
Command    ===> 2 empty_                                   SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                     1 'DDS1113.IPT.TEXT'                          DMPU38
                     2 'DDS1113.IPTSEQ.TEXT'                       DMPU36
                     3 'DDS1113.IPT2.TEXT'                         DMPU42
                     4 'DDS1113.IPT3.TEXT'                         DMPU38
                       ---------------- END OF LIST ----------------
```

Figure 2-172 EMPTY a sequential dataset: Command issued to empty IPTSEQ

We again have to confirm that we really meant to empty the second library by again entering a `Y` in the Approval field and pressing Enter. We see a display as in Figure 2-173 on page 84.

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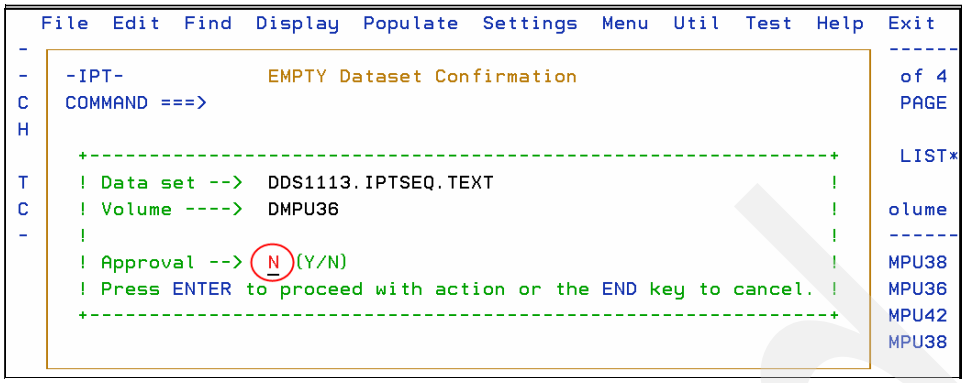

Figure 2-173 EMPTY a sequential dataset: Confirming the empty instruction for IPTSEQ

We now do the same to confirm that we really meant to empty the sequential dataset by again entering a `Y` in the Approval field and pressing Enter. Figure 2-174 shows the result.

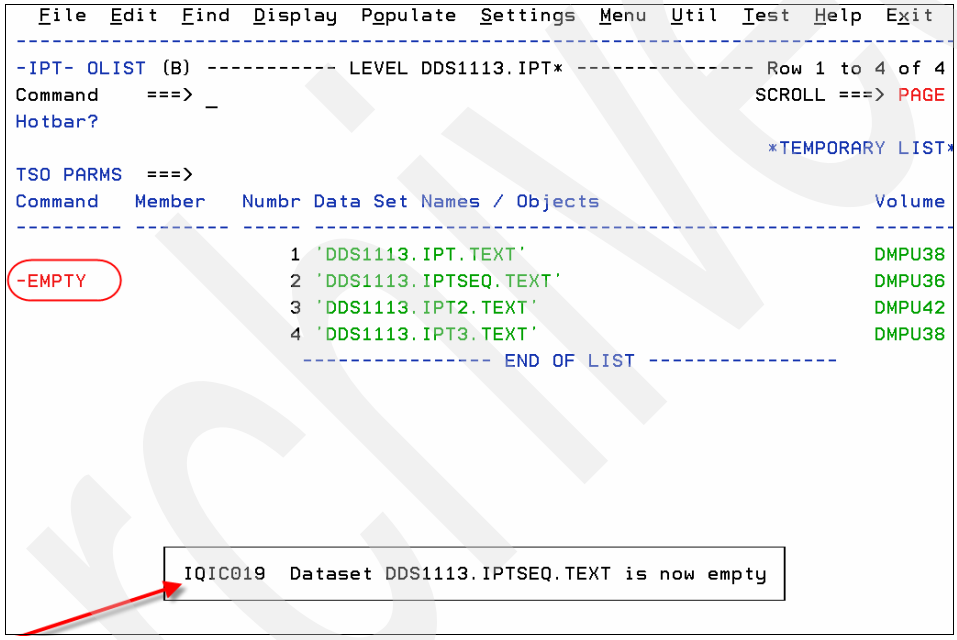

Figure 2-174 EMPTY a sequential dataset: Dataset IPTSEQ empty

2.18 COPYALL and MOVEALL commands

Figure 2-176 on page 85 introduces the COPYALL and MOVEALL commands.

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Figure 2-175 Using the COPYALL command

Having emptied both the IPT2 and IPT3 libraries and the sequential dataset IPTSEQ in 2.17, “EMPTY Object List command” on page 80, we show you how to repopulate them by using the COPYALL command.

Figure 2-176 shows the COPYALL command issued against the base library DDS1113.IPT.TEXT.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT* --------------- Row 1 to 4 of 4
Command    ===>                                          SCROLL ===> PAGE
Hotbar?

                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ---------------------------------------------- -------
COPYALL_             1 'DDS1113.IPT.TEXT'                             DMPU38
                     2 'DDS1113.IPTSEQ.TEXT'                          DMPU36
                     3 'DDS1113.IPT2.TEXT'                            DMPU42
                     4 'DDS1113.IPT3.TEXT'                            DMPU38
                      ---------------- END OF LIST ----------------
```

Figure 2-176 COPYALL: Copy a base library to another

Figure 2-177 on page 86 shows the target or “to” library. Notice that we have already changed the “group” name of the target library to IPT2. We press Enter to copy the five members.

```
-IPT---------- COPY ALL from DDS1113.IPT.TEXT
COMMAND   ===>


Specify "TO" data set below:
  PROJECT ===> DDS1113
  GROUP   ===> IPT2_
  TYPE    ===> TEXT

Or other Partitioned or ÖH (History List):
  DATASET ===>
  VOLUME  ===>        (If not catalogued)

COPY options:
  REPLACE like-named library members ===> N    (Y=Yes, N=No)

Note: you are about to copy 5 members.

                  Press ENTER to copy or END key to cancel.
```

Figure 2-177 COPYALL: Typing the details of the target library

Figure 2-178 shows the members that were copied.

```
  File  Display  Library  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--BROWSE L1---- DDS1113.IPT.TEXT ----------------------ROW 00001 OF 00005
COMMAND  ===> _                                          SCROLL ===> PAGE
HOTBAR?
                                                 ON VOLUME DMPU38
   NAME     RENAME   LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  ALL       -COPIED    1 01.02 09/01/21 09/01/21 07:11     4     4     0 DDS1113
  CASE      -COPIED    1 01.00 09/01/21 09/01/21 07:10     1     1     0 DDS1113
  HEX       -COPIED    1 01.00 09/01/21 09/01/21 07:10     1     1     0 DDS1113
  QUOTES    -COPIED    1 01.00 09/01/21 09/01/21 07:10     1     1     0 DDS1113
  SIMPLE    -COPIED    1 01.01 09/01/21 09/01/21 07:09     1     1     0 DDS1113
   --END--
```

Figure 2-178 COPYALL: List of members that were copied

Press End to return to the OLIST display. Figure 2-179 shows the updated display.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- LEVEL DDS1113.IPT* --------------- Row 1 to 4 of 4
Command    ===> _                                          SCROLL ===> PAGE
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ------------------------------------------ ------
-COPYALL             1 'DDS1113.IPT.TEXT'                          DMPU38
                     2 'DDS1113.IPTSEQ.TEXT'                       DMPU36
                     3 'DDS1113.IPT2.TEXT'                         DMPU42
                     4 'DDS1113.IPT3.TEXT'                         DMPU38
                      ---------------- END OF LIST ----------------
```

Figure 2-179 COPYALL: Status is updated after the command

We repeat the same process to populate the IPT3 library. Populating the IPTSEQ sequential dataset does not require a COPYALL. We use the EDIT command to edit IPTSEQ and perform a standard ISPF EDIT COPY of DDS1113.IPT.TEXT(ALL).

MOVEALL works in exactly the same way as COPYALL, except that the source library is deleted afterward.

2.19 BOOK and SHELF Objects

It is easy to access an IPT manual or product documentation[9]. As long as you know the high-level name of the manual, which is typically BOOK. For example, to get the IPT manuals, which, at the time of writing this book, were the V5.10 manuals, type the `OLSH BOOK.IQI*` command, where `IQI` is the IBM prefix for IPT. See Figure 2-180.

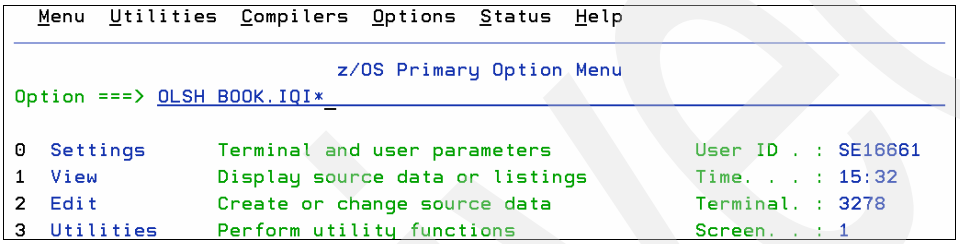

Figure 2-180 Getting a list of bookshelves

Select the appropriate bookshelf. There is only one bookshelf shown in Figure 2-181.

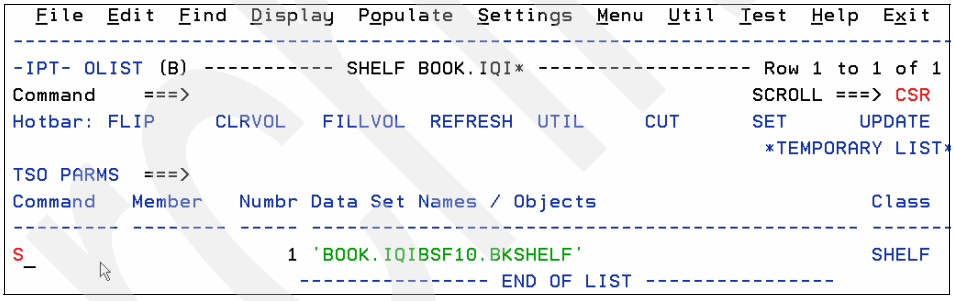

Figure 2-181 Getting a list of bookshelves

Accept the copyright notice by pressing End. See Figure 2-182 on page 88.

[9] Assuming, of course, that the BookManager® shelf and books have been correctly installed. See Chapter 11, “Installing IPT V6.1 on z/OS” on page 273.

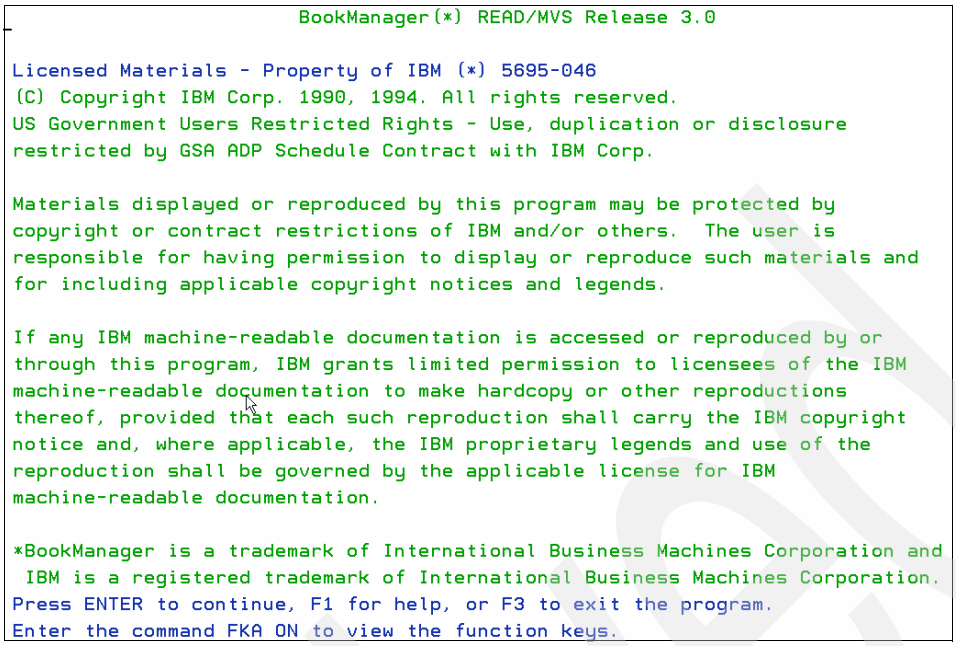

Figure 2-182 Accepting the copyright notice

Next, we select the *ISPF Productivity Tool V5 R10 M0 User's Guide*. See Figure 2-183.

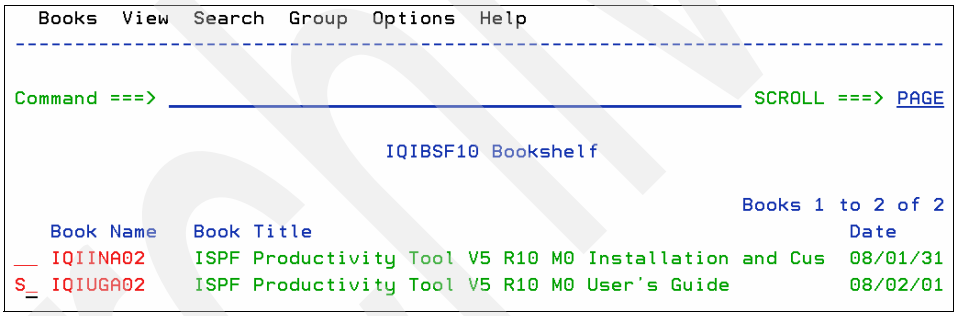

Figure 2-183 Selecting the IPT User's Guide

Figure 2-184 on page 89 displays the table of contents for our book. We scroll down and browse to see what is available about BOOK and SHELF.

Archive

```
  Books  GoTo  Search  Notes  Services  Options  Help
--------------------------------------------------------------------------------

Command ===> _____________________________________________ SCROLL ===> PAGE

CONTENTS  Table of Contents                  © Copyright IBM Corp. 2000, 2008
                                                    Topic lines 1 to 17 of 256
COVER          Book Cover
NOTICES        Notices
EDITION        Edition Notice
CONTENTS       Table of Contents
FIGURES        Figures
1.0            About this manual
1.1              Assumptions
1.2              Organization of this guide
1.3              Other information resources
1.4              Text conventions in this guide
1.5              How to read a syntax diagram
2.0            An overview of the ISPF Productivity Tool
2.1              What is ISPF Productivity Tool
2.2              Features and benefits
2.3              What's new in release 5.10
2.4              What's new in release 5.9
3.0            Using ISPF Productivity Tool
```

Figure 2-184 IPT User's Guide Table Of Contents

Figure 2-185 shows the "What's new in release 5.10" panel, which contains the same information that is shown by the IPTNEW command.

```
  Books  GoTo  Search  Notes  Services  Options  Help
--------------------------------------------------------------------------------

Command ===> _____________________________________________ SCROLL ===> PAGE

2.3  What's new in release 5.10              © Copyright IBM Corp. 2000, 2008
                                                    Topic lines 1 to 17 of 116
   OLIST enhancements

   •  New object classes recognized: BOOK (BookManager®), SHELF
      (BookManager), ZONE (SMP/E).

   •  IBM BookManager invoked when selecting BOOK and SHELF objects.

   •  VSAM object handler invoked when selecting a VSAM PATH or ALTINDEX
      file.

   •  FINDTEXT command now fully supports the GLOBAL AUTO and EXCLUDE
      settings.  All displayed data sets may be searched in one shot (like
      MSL GLOBAL).

   •  New command EMPTY, empties (with a confirmation) partitioned and
      sequential data sets.
```

Figure 2-185 IPT User's Guide: What's new in release 5.10

2.20 MAPPDS command

We briefly mention the MAPPDS command here. We fully explain it in the refer to this command, which is fully covered in Chapter 3, "Member Selection Lists" on page 91. The MAPPDS command is useful for recovering members that have been deleted from a PDS

(note, not a PDSE, which manages its own content differently). You can, as always, issue the ASSIST command for assistance. In Figure 2-186, we issue the MAPPDS command against our IPT OLIST[10].

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1113.IPT*.TEXT ---------- Row 1 to 5 of 5
Command    ===>                                          SCROLL ===> PAGE
Hotbar?
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ---------------------------------------- -------
                     1 'DDS1113.IPT.TEXT'                          PDSE
MAPPDS_              2 'DDS1113.IPTPDS.TEXT'                       PDS
                     3 'DDS1113.IPTSEQ.TEXT'
                     4 'DDS1113.IPT2.TEXT'                         PDSE
                     5 'DDS1113.IPT3.TEXT'                         PDSE
                      ---------------- END OF LIST ----------------
```

Figure 2-186 MAPPDS: Issuing the command against a PDS dataset

We see the directory map that is displayed in Figure 2-187. The deleted members are clearly visible. The member names for the deleted members do not show.

```
-IPT--PDS-MAP  L1-- DDS1113.IPTPDS.TEXT -------------- "A" will display assist
COMMAND  ===> _                                        SCROLL ===> PAGE
                                                ON VOLUME DMPU35
   NAME     SYNONYM  SEQNUM    TTR DATASIZE BLKNUM RECNUM
  SIMPLE                 1 000020 00000035      1
  QUOTES                 2 000022 00000039      1
  CASE                   3 000024 0000003C      1
  HEX                    4 000026 00000041      1
  ALL                    5 000028 000000DF      1
  X                      6 00002A 00000221      1
  IPTCUT                 7 00002C 00000202      1
           9Z00002E      8 00002E 00000035      1
           9Z000030      9 000030 0000003C      1
           9Z000032     10 000032 00000039      1
           9Z000034     11 000034 00000041      1
   --END--
```

Figure 2-187 MAPPDS: Directory map

There are a number of commands available to use at this point, including the most useful:

- B (Browse)
- E (Edit)
- V (View)
- R (Restore) You can “undelete” any mistakenly deleted members.

[10] We changed the OLIST to be more generic, replacing DDS1113.IPT.TEXT, DDS1113.IPT2.TEXT, DDS1113.IPT3.TEXT, and DDS1113.IPTSEQ.TEXT with a single entry, DDS1113.IPT*.

3

Member Selection Lists

In this chapter, we explore Member Selection Lists (MSL) and the functions that can be performed when working with a list of members. This chapter is divided into sections for what we consider Basic and Advanced commands. We have included the more frequently used functions in the Basic MSL section and the more infrequently used, but extremely useful, functions in the Advanced MSL section. Table 3-1 on page 92 and Figure 3-2 on page 96 provide a listing of the functions included in each section.

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Table 3-1 Basic MSL commands and functions

Main command	Line command	Command function
ASSIST	N/A	The ASSIST command controls the display of MSL assist panels on the Member Selection List panel.
N/A	B	The B command invokes the BROWSE process on the specified members. The B command can be used as a line command or a main command.
Copy	C	The Copy command copies the specified members to the same or a different library. Copy can be used as a main command. C can be used as a line command or a main command.
COPYALL	N/A	The COPYALL command invokes IEBCOPY to copy all members of a partitioned dataset (PDS) library concatenation to another dataset.
Delete	D	The Delete command deletes one or more members specified from the library containing them. Delete can be used as a main command. D can be used as a line command or a main command.
DSName	N/A	The DSName command is used to change the Member Selection List to another library, to refresh the current display, or to invoke the current process (BROWSE, EDIT, or VIEW) on a specified dataset.
Edit	E	The E command invokes the EDIT process on the named member.
EXCLude	X	The EXCLude command is used to eliminate members from the Member Selection List display (or to unexclude all excluded members). The line command equivalent of EXCLude is X.
FILter	N/A	The FILter command is used to selectively tailor the display of members in the Member Selection List (or to remove all filtering).
Find	N/A	The Find command locates a particular member in the Member Selection List. If the member is in the hidden list, it is displayed in the MSL.
FINDTEXT	N/A	The FINDTEXT (or FT) command locates the next member in the displayed list that contains a specified text string.
FLIP	N/A	The FLIP command toggles between visible and invisible (excluded and filtered-out) lines.
Global	N/A	The Global command is used to initiate global editing of the members in the displayed member list.
Locate	N/A	The Locate command positions the cursor in the member selection list panel at the first member matching the specified character string.
REFRESH	N/A	The REFRESH command refreshes the Member Selection List display from the current directory.
Rename	N/A	The Rename command renames a member in the current Member Selection List.
S	S	The S line command selects an item and invokes the default process for that item. (The default process depends on the type of object, how MSL was invoked, and the setting on the Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS Options panel for MSL.) S can be used as a line command or, following a member, as a main command.
SELECT	N/A	The SELECT command processes members under the default process (BROWSE, EDIT, or VIEW) or another line command specified.
SORT	N/A	The SORT command is used to put the Member Selection List into a specified order.
SUBmit	N/A	The SUBmit command submits a member as a batch job.
TYPE	N/A	The TYPE command changes the library (or libraries) being processed to one (or ones) with the same name (or names) as currently displayed.
View	V	The V command invokes the view process on the one or more members specified.

Table 3-2 Advanced MSL commands and functions

Main command	Line command	Command function
ALIAS	N/A	The ALIAS command adds a new name to an existing member.
COMPress	N/A	The COMPress command is used to compress one or more of the libraries in the current concatenation hierarchy. It is to be distinguished from the EDIT and VIEW subcommand COMPress, which is used to compress the library currently in EDIT or VIEW.
CONFIRM	N/A	The CONFIRM command activates or deactivates the member-delete confirmation panel.
DEFault	N/A	The DEFault command is used to change the default process invoked by the SELECT and S commands during the current MSL session.
EMPty	N/A	The EMPty command is used to empty one or more of the libraries in the current concatenation hierarchy.
EXIT	N/A	The EXIT command is used to return directly to the panel from which MSL was invoked.
EXPDIR	N/A	The EXPDIR command is used to expand the directory of one of the libraries in the current concatenation hierarchy, thereby allowing it to contain more members. It is to be distinguished from the EDIT and VIEW subcommand EXPDIR, which is used to compress the library currently in EDIT or VIEW.
N/A	H	The H command indicates in which libraries of the concatenation one or more members occur. The synonym for H is WHERE.
INFO	N/A	The INFO command is used to display information about the libraries in the current concatenation sequence of the MSL.
ISPEXEC		The ISPEXEC command invokes ISPEXEC on the one or more members specified.
	J	The J command submits a member as a batch job. The synonym for J is SUBMIT.
	K	The K command is used for library management functions, under IBM Software Configuration and Library Manager (SCLM).
LIB	N/A	The LIB command allows you to switch to other libraries by changing the middle-level qualifier (GROUP) of the currently displayed libraries. In a hierarchy, the LIB command adds or removes a library to the concatenation.
LMAP	N/A	The LMAP command is used to display a load module mapping.
MAPpds		The MAPPDS command displays a map of all existing and deleted members of a PDS library. Members may be Browsed, Viewed, or Restored.
Move (PDS only)		The Move (PDS only) command moves one or more specified members to another dataset.
MOVEALL		The MOVEALL command invokes IEBCOPY to move all members of a PDS library concatenation to another dataset.
P	P	The P (Main command) command prints one or more specified members to a printer or to the ISPF LIST dataset, as specified on the SET panel. The P (Line command) command copies the one or more specified members.
PROJECT	N/A	The PROJECT command changes the library (or libraries) being processed to one (or ones) with the same name (or names) as currently displayed, except that the high-level qualifier is as specified in the command.
RELease	N/A	The RELease command is used to close or delete the current print group. The RELease command is applicable only if the PRINT processing mode is set to GROUP.
RESet	N/A	The RESet command is used to reset some or all of the tailoring of the current member list. It can be used to unexclude all excluded members, remove all filters, clear the RENAME field, and restore the default sorting (ascending by member name).
SAVE		The SAVE command writes the currently displayed Member Selection List to a user-specified dataset, a printer, or the ISPF LIST dataset.

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SCLMCMD		The SCLMCMD command performs the specified SCLM function on the members (active only if SCLM support is active for the user).
SCLMPARM		The SCLMPARM command displays the SCLM parameters active for the current library (active only if SCLM support is active for the user).
SSI		The SSI command displays SSI information for the specified members.
STATS		The STATS command creates, removes, or allows the user to change statistics of members.
TAG		The TAG command places a character string in the RENAME field of the member list of members that match the specified name or pattern.
TAILOR		The TAILOR command executes the MSL command or commands defined as your tailoring macro. The TAILOR command can also be used to display and change the current definition.
TOTALS		The TOTALS command displays statistics' totals for the non-excluded, non-filtered members.
TSO	T	The T command invokes the specified Time Sharing Option (TSO) command or CLIST on the one or more members that are specified.
UNFilter		The UNFilter command removes the most recently applied filter, or all filters.
USAGE		The USAGE command lists library members currently in use under ISPF from the displayed list, including the user IDs of the TSO users accessing them.
W		The W command displays a preview panel in the Member Selection List for the named member.
WHERE		WHERE is a synonym of the H command.
X		Use the X command to eliminate members from the Member Selection List display (or to unexclude all excluded members).
Z		The Z command creates, removes, or changes statistics of members.
=		The = command repeats the preceding line command.
%		The % command executes the CLIST/REXX EXEC that is specified on the RENAME column.

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3.1 Basic MSL functions

A Member Selection List allows you to perform these tasks:

- Identify specific members for subsequent actions by using commands, such as:
  - FILTER to select members using various field headings, including statistics with wildcard characters
  - GLOBAL Find and Change to locate or change data in several or all members of a PDS or partition dataset extended (PDSE)
  - EXCLUDE to exclude specific members
  - FLIP to switch between excluded members and included members
  - Assist to obtain information about Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS commands, such as the SORT command, on various field headings, including statistics
- Combine multiple utility functions into a single common Member list.
- Find text using either of these methods:
  - Global search capabilities
  - Locate or filter member lists prior to performing a search
- Perform global edits.
- Invoke immediate access to other libraries using library switching.
- Preview data.
- Issue multiple commands on multiple members using extended patterns.

3.2 Using IPT Member Selection List Assist

IPT provides an *Assist* feature when working with objects from a Member Selection List (MSL). The Assist feature is a convenient reminder of the functions that are available in the MSL. In this section, we show you how to use the MSL Assist.

To activate the Assist feature, type an `A` on the command line, as shown in Figure 3-1.

```
-IPT--EDIT L1------ DNET187.ADLAB.JCL ----------------------ROW 00001 OF 00096
COMMAND  ===> a                                              SCROLL ===> PAGE
HOTBAR?
                                                  ON VOLUME DMPU29
   NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  $JOBCARD           +-----------------------------------------------Assist --
  APAXX              |          ---- -IPT- MSL MAIN COMMANDS ----
  BADSTAT            | Assist   ALIas    COMPress CONFirm  COPYALl  DEFault
  BAPAAPI            | DSName   EMPty    eXclude  EXIT     EXPDIR   FILter
  BASAM1             | Find     FindText FLIP     Global   INFO     LIB
  BASAM1DR           | LMAP     Locate   MAPpdst  MOVEALl  PROject  QUIT
  BATCDEMO           | REFresh  RELease  RESet    RFind    SAVE     SClm
  BATM01             | SCLMPARM SET      SORT     SSI      STATS    SUBmit
  BCOBTIMS           | TAG      TAILOR   TOTALS   TYPE     UNFilter USAGE
  BCOBVSAM           | VLF      WHERE    XFER
  BCPROG             |          ---- -IPT- MSL LINE COMMANDS ----
  BC01               | A (alias)  B (browse)  C (copy)    D (Delete) E (edit)
  BDTDEMO            | H (where)  I (ISPEXEC) J (submit)  K (SCLM)   L (lmap)
  BLABTWO            | M (move)   P (print)   R (rename)  S (select) T (TSO)
  BPLILAN            | V (view)   W (preview) X (exclude) Z(stats)
  BPLIMVS            | = (repeat) % (CLIST/REXX call)
  BPTM01             |  Use "A <cmd_name>" to display details window.
  BSAM1              +-----------------------------------------------------------
  BSAM2               1 01.01 07/08/10 08/09/04 09:14    37    37     0 DNET18
```

Figure 3-1 Activating the Assist panel

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As shown in Figure 3-1 on page 95, the Assist feature provides an overlay showing the main (command line) commands and the line commands that can be used when working with objects in an MSL. You can obtain additional information for each command by entering `A command`, where *command* represents one of the IPT MSL main commands or line commands. In Figure 3-2, we ask for additional assistance with the DEFault command.

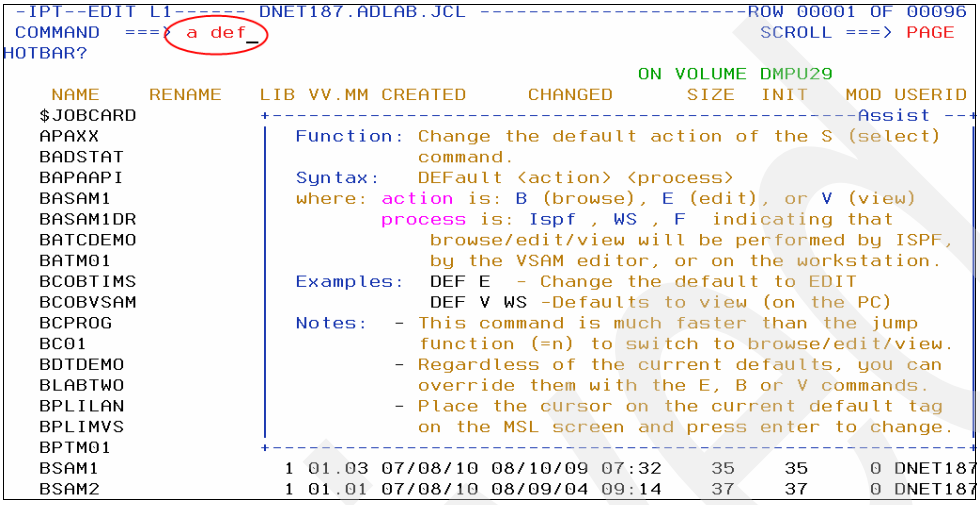

Figure 3-2 Getting assistance with a specific MSL command

3.3 IPT Search commands

IPT provides two methods to find or locate data in your datasets. You can use the FINDTEXT or FT command with an Object List (OLIST) or with a Member Selection List. The FINDTEXT command performs these functions:

- Locate the occurrences of specified data
- Search for multiple datasets in an OLIST:
  - Search PDS and PDSE libraries.
  - Search sequential files.
  - Ignore all other Object List entries.
  - Search for text, case sensitive, hexadecimal, or double-byte character set (DBCS) strings.

Use the Global Find command:

- For use only with Member Selection Lists
- To find all occurrences of the specified data in a PDS or PDSE

  The Global Find command can search for text, case-sensitive, hexadecimal, or DBCS strings.
- With Link, Find, or Change commands

In the following sections, we describe the MSL FINDTEXT and Global Find and Change commands.

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3.4 Global Find and Global Change command

The Global command initiates global editing of the members in the displayed member list. You can locate (FIND) members by context and perform Global Find operations. Using the Global Find command, you can locate members, filter the Member List for only members containing specific text, and display found text along with the member names. You can also change members by context and perform global change operations.

3.5 Changing the Global IPT defaults for your session

You can display or modify any of your current Global settings in your IPT profile by issuing the ISET command. Select the Global settings by selecting the GLOBAL option by typing an S line command, as shown in Figure 3-3.

```
-IPT- --------------------Setting IBMIPT Defaults-------------------------------
COMMAND ===>
Select options by number, name, with cursor selection, or with line commands:
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
 IBMIPT is running under ISPF version 5.9

_  A - ALL         - Select all the below displayed options
_  M - MSL         - Member Selection List options
_  O - OLIST       - Object list options
S  G - GLOBAL      - Global edit and Findtext options
_  P - PRINT       - Print options
_  D - DSLIST      - DSLIST options
_  T - TSO         - TSO shell options
_  E - EDIT        - Edit, Browse and View options
_  I - INTERFACE   - Specify user interface options
_  N - DIAGNOSE    - Diagnose ISPF errors
_  L - LIBRARY     - Persistent table library options
_  B - BOOKMGR     - BookManager interface options

   Make your selection and press the ENTER key or press the END key to exit
```

Figure 3-3 Results of the ISET command

Figure 3-4 shows the results of selecting the Global option.

```
-IPT- ----------------GLOBAL/FINDTEXT commands options-------------------------
COMMAND ===>

                MSL GLOBAL Control
  STOP AFTER    ===> 9999 (Number of items to process successfully)
  PROMPT AFTER ===> 200  (Number of items to process before prompt is issued)
  START COLUMN ===> 1      (Quick FIND starting column in target data record)
    END COLUMN ===> 99999 (Quick FIND end column in target data record)
  Specify Y (Yes) or N (No) for the following options:
  AUTOMATIC     ===> Y (Process without editing successful items?)
  LINK          ===> Y (Process each command only if previous command succeeds?)
  PRINT         ===> N (Generate listing of each member changed and saved?)
  EXCLUDE       ===> N (Exclude failing items from selection list?)

                OLIST FINDTEXT/MEMFIND Control
  STOP AFTER    ===> 5000 (Number of items to process successfully)
  PROMPT AFTER ===> 5000 (Number of items to process before prompt is issued)
  START COLUMN ===> 1      (Starting column in target data record)
    END COLUMN ===> 99999 (End column in target data record)
  Specify Y (Yes) or N (No) for the following options:
  AUTOMATIC     ===> Y (Search without stopping at successful items?)
  EXCLUDE       ===> N (Exclude failing items from object list?)

 Press ENTER for options menu, END to exit, CANCEL for installation defaults.
```

Figure 3-4 Results of choosing option G from the Setting IBMIPT Defaults panel

3.6 The Global Edit command settings and parameters

In this section, we review the parameters and settings that are available in the Global dialog (Figure 3-4 on page 97):

- STOP AFTER

  This option allows you to limit the number of members to be processed. There will be times when you might need to process only a few members, for example, if you are looking for a member that contains the program IEBCOPY. Instead of searching your entire MSL, you can set this number to a low value that stops the process after it finds the first occurrence or the first 10 occurrences. The search argument can appear in a member multiple times, but it is only counted as found one time per member. Setting this number to a high number ensures that the entire MSL is processed without any additional keystrokes from you.

- PROMPT AFTER

  This option lets you decide how many members will be processed before you are prompted again and must press Enter again. The default is 50, and the maximum number is 9999. Setting these numbers to the maximum allows your Find or Change to run uninterrupted.

- START COLUMN

  This option initiates the find of the specified text in a specific column and is similar in function to the ISPF start-column function of the Find command.

- END COLUMN

  This option ends the search for the specified string at a specific column and is similar in function to the ISPF end-column function of the Find command.

- AUTOMATIC===>Y/N (Process without editing successful members?)

  A setting of Y allows IPT to provide a list of the members where the target of the Find or Change command was found. The STOP AFTER and PROMPT AFTER values are enforced with the AUTOMATIC parameter.

- LINK===>Y/N (Process each command only if previous command succeeds?)
- PRINT===>Y/N (Generate listing of each member changed and saved?)

  A setting of Y allows IPT to present a prompt to confirm the printing of members that were altered as the result of a CHANGE command. This feature serves as an audit trail of changed members in a dataset.

- EXCLUDE===> Y/N (Exclude failing members from selection list?)

  When this option is set to Y, all members in your MSL, which did not contain a match to the FIND or CHANGE argument, are automatically excluded When set to N, it shows all of the members in your MSL, even if they did not contain a match to the FIND or CHANGE argument.

You can easily change the settings for Global commands when viewing a list of members from a dataset by issuing the G or Global command. Figure 3-5 depicts the Global EDIT command panel.

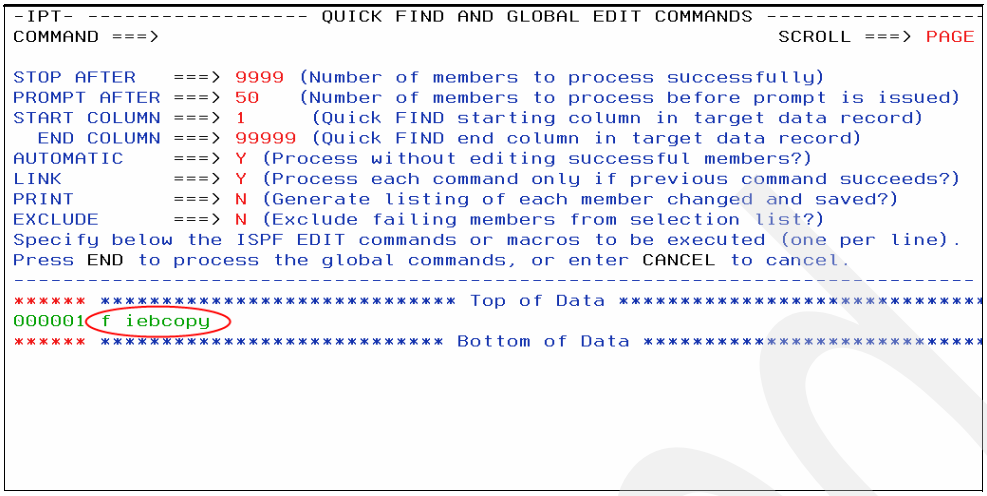

Figure 3-5 Changing global settings for a specific search

3.7 Invoking a Find or Change command globally

There are two ways to invoke the Global FIND and CHANGE command:

- Option 1: Issue a primary command from the MSL, as shown in the following examples:
  - `gl find RUSS`
  - `global FIND 'Russell'`
  - `g change abc def all`
- Option 2: Use the Global Edit Command panel shown in Figure 3-6 on page 100:
  - `G`
  - `Global`

When you use a Global FIND/CHANGE with parameters from the MSL primary command, which we described in Option 1, the ISPF Productivity Tool performs the Global FIND/Change operation:

- The searches are more efficient, requiring less time, CPU, and I/O:
  - A Global Find command locates the data, regardless of the case that is entered on the command line or the text within the members.
  - Global Find commands support case-sensitive, hexadecimal, and DBCS searches.

When you use the Global Edit Command panel, which we described in Option 2, ISPF functions are used to perform the Global Find and Change:

- Global Find and Change commands are case-insensitive, unless otherwise specified.
- Global Find and Change commands can be case sensitive:
  - You can use `FIND C'Sample'` to locate text in members that contain the word "`Sample`". The "`C`" prefix ensures that the case matches during the search operation.
  - A command, such as `Change c'SAMPLE' c'Sample' all`, changes all syntax of `SAMPLE` to `Sample`.
  - Commands can be linked together.

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- Global Find and Change commands can be hex sensitive.
- To locate or change a series of characters in hex:
  - `G  F x'81'`
  - `C x'81'  x'82'`
- Global Find and Change commands can include a column limit by specifying the start and end columns in the ISET Global setting.

3.8 Examples using the Global Find and Change commands

This section provides examples of the Global Find and Change commands. Figure 3-6 shows the results of a Global Find command G F IEBCOPY with the Global option AUTOMATIC=Y, EXCLUDE=Y, and PROMPT AFTER=50.

```
-IPT--GLOBAL EDIT ----DNET047.ADLAB.JCL on DMPU37-------------------------------
COMMAND ===> _                                                Using quick search
50     of 68     members were processed. Member  LINKLEXI is being processed.

STOP   AFTER ===> 9999 (Number of members to process successfully)
PROMPT AFTER ===> 50   (Number of members to process before a prompt is issued)

  Member   Result     Member   Result     Member   Result     Member   Result
  $JOBCARD -G:FAIL    BADSTAT  -G:FAIL    BAPAAPI  -G:FAIL    BASAM1   -G:FAIL
  BASAM1DR -G:FAIL    BASSEM   -G:FAIL    BCOBOLE  -G:FAIL    BCOBOLO  -G:FAIL
  BCOBOL2  -G:FAIL    BCOBTIMS -G:FAIL    BCPROG   -G:FAIL    BC01     -G:FAIL
  BPLIE    -G:FAIL    BPLIE34  -G:FAIL    BPLIMV   -G:FAIL    BSAM1    -G:FAIL
  BSAM2    -G:FAIL    CEEUOPT  -G:FAIL    CEEUOPTS -G:FAIL    CMPPROC  -G:FAIL
  CMPRPT   -G:FAIL    COBILINK -G:FAIL    DTSAVSET -G:FAIL    FMBATDSC -G:FAIL
  FMBATDSU -G:FAIL    FMBATFCH -G:FAIL    FMDSC00  -G:FAIL    FMDSC01  -G:FAIL
  FMDSC02  -G:FAIL    FMDSEB00 -G:FAIL    FMDSEB01 -G:FAIL    FMDSP00  -G:FAIL
  FMDSP01  -G:FAIL    FMDSU00  -G:FAIL    FMFCHMEM -G:OK      FMFCH00  -G:FAIL
  FMFCH01  -G:FAIL    FMNCPY01 -G:FAIL    FMNCPY02 -G:FAIL    FMNCPY03 -G:FAIL
  FMRIP    -G:FAIL    FMUNRIP  -G:FAIL    GAPAAPI  -G:FAIL    GCPROG   -G:FAIL
  GC01     -G:FAIL    IDILANGP -G:FAIL    IMSINIT  -G:OK      LABCOPY  -G:FAIL

 IQIM376  50 Members processed. Press ENTER to continue or END key to quit
```

Figure 3-6 Results of a Global Find command with AUTOMATIC=Y, EXCLUDE=Y, and PROMPT=50

Figure 3-6 shows that IPT has processed 50 of the 67 members in the dataset. The summary panel indicates the status of each member – G:FAIL or G:OK. You can continue the search in order to process the remaining 17 members simply by pressing Enter. Notice that the upper lines of the display are a summary of the processing that has taken place. Just beneath the summary line, we have an opportunity to alter the current settings for the STOP AFTER and PROMPT AFTER global options.

Figure 3-7 on page 101 shows the result of the Global Find command with EXCLUDE.

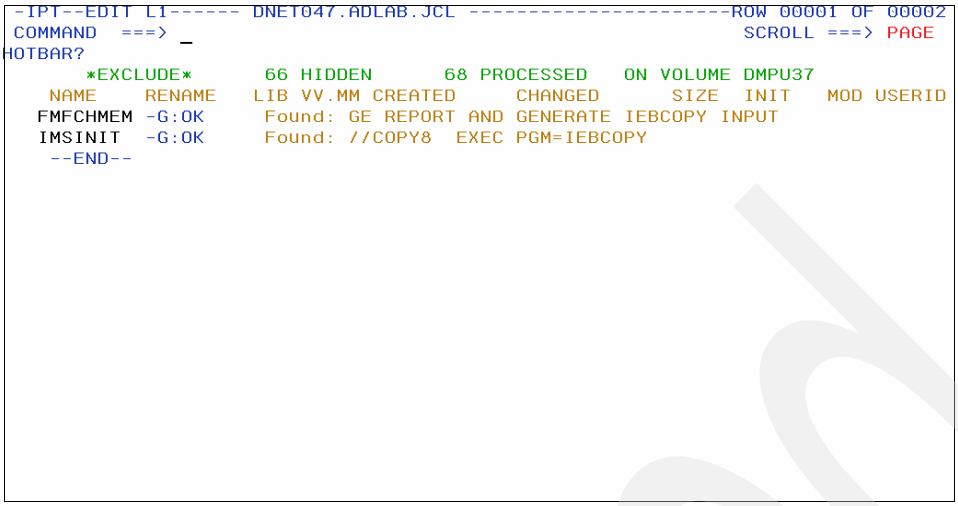

Figure 3-7 Result of Global Find command with EXCLUDE

If AUTOMATIC is set to N, the Find or Change command stops on each member where your global argument is found. To advance to the next member that meets the global argument, you must press the END key to get out of the member that is displayed.

Figure 3-8 shows the first results of the Global Find command G F IEBCOPY with AUTOMATIC set to N and EXCLUDE set to N.

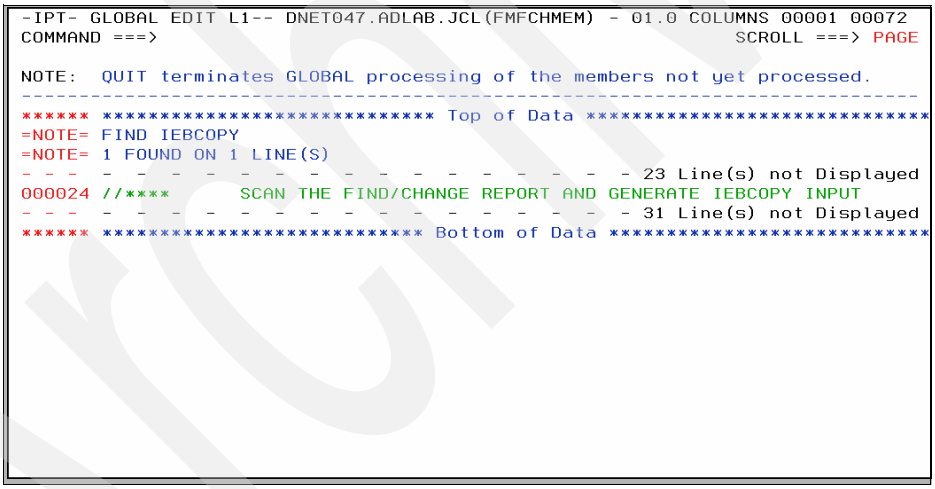

Figure 3-8 Results of the Global Find command with AUTOMATIC=N and EXCLUDE=N

For more information: Refer to 12.5, “Settings for GLOBAL FINDTEXT” on page 317.

Setting the LINK field to Y allows you to link multiple find or change commands when you are working in an MSL. To specify the commands or macros which need to be executed, enter the command `GLOBAL` or `G` without operands. On the resulting panel, you can specify GLOBAL EDIT options and any number of ISPF EDIT commands using the EDIT facility in the lower half of the display.

If the LINK field is set to N, all of the augments are processed without regard to the success or failure of the previous argument.

Figure 3-9 shows an example of specifying two FIND commands and one CHANGE command in the GLOBAL EDIT panel.

```
-IPT- ------------------ QUICK FIND AND GLOBAL EDIT COMMANDS ------------------
COMMAND ===>                                                  SCROLL ===> PAGE

STOP AFTER   ===> 9999 (Number of members to process successfully)
PROMPT AFTER ===> 50   (Number of members to process before prompt is issued)
START COLUMN ===> 1     (Quick FIND starting column in target data record)
  END COLUMN ===> 99999 (Quick FIND end column in target data record)
AUTOMATIC    ===> N (Process without editing successful members?)
LINK         ===> Y (Process each command only if previous command succeeds?)
PRINT        ===> N (Generate listing of each member changed and saved?)
EXCLUDE      ===> Y (Exclude failing members from selection list?)
Specify below the ISPF EDIT commands or macros to be executed (one per line).
Press END to process the global commands, or enter CANCEL to cancel.
------------------------------------------------------------------------------
****** ***************************** Top of Data ******************************
000001 FIND iebcopy all
000002 FIND cics all
000003 change cics kics all
****** **************************** Bottom of Data ****************************
```

Figure 3-9 Global Find example using the Global Edit commands panel

If you do not use the word ALL, and the member contains the find or change argument more than one time, IPT only changes the first reference that it finds.

Figure 3-10 depicts the final results of a Global Find with the EXCLUDE option set to N. You have the option of paging through your MSL to see all of the members that met the Global Find argument, or you can enter the SORT TEXT command or the SORT NOTE command, and the member list (regardless of the EXCLUDE setting) is sorted by the text of the first found row in each member.

```
-IPT--EDIT L1------ DNET047.ADLAB.JCL ----------------------ROW 00026 OF 00068
COMMAND  ===> _                                              SCROLL ===> PAGE
HOTBAR?

   NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  FMBATFCH -G:FAIL     1
  FMDSC00  -G:FAIL     1
  FMDSC01  -G:FAIL     1
  FMDSC02  -G:FAIL     1
  FMDSEB00 -G:FAIL     1
  FMDSEB01 -G:FAIL     1
  FMDSP00  -G:FAIL     1
  FMDSP01  -G:FAIL     1
  FMDSU00  -G:FAIL     1
  FMFCHMEM -G:OK      Found: GE REPORT AND GENERATE IEBCOPY INPUT
  FMFCH00  -G:FAIL     1
  FMFCH01  -G:FAIL     1
  FMNCPY01 -G:FAIL     1
  FMNCPY02 -G:FAIL     1
  FMNCPY03 -G:FAIL     1
  FMRIP    -G:FAIL     1
  FMUNRIP  -G:FAIL     1
  GAPAAPI  -G:FAIL     1
  GCPROG   -G:FAIL     1 01.01 08/12/23 08/12/23 16:41    40    40      0 DNET047
```

Figure 3-10 Results of the Global Find with EXCLUDE=N

Figure 3-11 on page 103 below shows the results of the same Global Find statement with the EXCLUDE option set to Y. Note the informational message showing that of the 68 members that IPT processed, 66 members are hidden members. With EXCLUDE=Y, IPT displays only the members that contained the search argument.

```
-IPT--EDIT L1------ DNET047.ADLAB.JCL ----------------------ROW 00001 OF 00002
COMMAND  ===> _                                              SCROLL ===> PAGE
HOTBAR?
      *EXCLUDE*       66 HIDDEN       68 PROCESSED
   NAME    RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  FMFCHMEM -G:OK     Found: GE REPORT AND GENERATE IEBCOPY INPUT
  IMSINIT  -G:OK     Found: //COPY8  EXEC PGM=IEBCOPY
   --END--
```

Figure 3-11 Result of Global Find with EXCLUDE=Y

We can easily reveal the hidden members by issuing the FLIP command. Figure 3-12 shows the result of the FLIP command. This command acts as a toggle between the excluded members and the members that met the criteria of the command that was issued.

```
-IPT--EDIT L1------ DNET047.ADLAB.JCL ----------------------ROW 00001 OF 00066
COMMAND  ===>                                                SCROLL ===> PAGE
HOTBAR?
      *EXCLUDE*       2 HIDDEN
   NAME    RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  $JOBCARD -G:FAIL    1 01.00 08/12/23 08/12/23 14:45     2     2     0 DNET047
  BADSTAT  -G:FAIL    1
  BAPAAPI  -G:FAIL    1
  BASAM1   -G:FAIL    1
  BASAM1DR -G:FAIL    1
  BASSEM   -G:FAIL    1
  BCOBOLE  -G:FAIL    1 01.00 09/01/14 09/01/14 12:08    76    76     0 DNET047
  BCOBOLO  -G:FAIL    1
  BCOBOL2  -G:FAIL    1 01.00 09/01/14 09/01/14 12:08    71    71     0 DNET047
  BCOBTIMS -G:FAIL    1
  BCPROG   -G:FAIL    1 01.01 08/12/23 08/12/23 16:30   418   418     0 DNET047
  BC01     -G:FAIL    1
  BPLIE    -G:FAIL    1 01.00 09/01/14 09/01/14 12:08   126   126     0 DNET047
  BPLIE34  -G:FAIL    1 01.00 09/01/14 09/01/14 12:08   121   121     0 DNET047
  BPLIMV   -G:FAIL    1 01.00 09/01/14 09/01/14 12:08   103   103     0 DNET047
  BSAM1    -G:FAIL    1
  BSAM2    -G:FAIL    1
  CEEUOPT  -G:FAIL    1
  CEEUOPTS -G:FAIL    1
```

Figure 3-12 Results of the FLIP command

3.9 MSL FINDTEXT

The FINDTEXT or FT command locates the first occurrence of the text string that is specified as the argument of the command.

The syntax of the command is simply FT <*text_string*> <*kwd*>, where *text_string* is the string to be found. The *kwd* can be `FIRST`, `LAST`, `PREV`, or `NEXT`. If the text_string contains blanks or special characters, enclose the text_string in quotation marks. Figure 3-13 on page 104 shows a FINDTEXT command.

```
-IPT--EDIT L1------ DNET047.ADLAB.JCL ----------------------ROW 00001 OF 00068
 COMMAND  ===> ft vtam%dnet047                                SCROLL ===> PAGE
HOTBAR?

   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  $JOBCARD             1 01.00 08/12/23 08/12/23 14:45      2     2     0 DNET047
  BADSTAT              1
  BAPAAPI              1
  BASAM1               1
  BASAM1DR             1
  BASSEM               1
  BCOBOLE              1 01.00 09/01/14 09/01/14 12:08     76    76     0 DNET047
  BCOBOLO              1
  BCOBOL2              1 01.00 09/01/14 09/01/14 12:08     71    71     0 DNET047
  BCOBTIMS             1
  BCPROG               1 01.01 08/12/23 08/12/23 16:30    418   418     0 DNET047
  BC01                 1
  BPLIE                1 01.00 09/01/14 09/01/14 12:08    126   126     0 DNET047
  BPLIE34              1 01.00 09/01/14 09/01/14 12:08    121   121     0 DNET047
  BPLIMV               1 01.00 09/01/14 09/01/14 12:08    103   103     0 DNET047
  BSAM1                1
  BSAM2                1
  CEEUOPT              1
  CEEUOPTS             1
```

Figure 3-13 Issuing a FINDTEXT command

Figure 3-14 shows the results of the FT command. IPT uses the RENAME column to provide the message "-TXT FND" next to the member containing the found item. At the same time, IPT displays the beginning of the member to provide the developer with a context to where the object was found.

```
-IPT--EDIT L1------ DNET047.ADLAB.JCL ------------------- Text found in GCPROG
 COMMAND  ===>                                                SCROLL ===> PAGE
HOTBAR?

   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  GCPROG   -TXT FND +-----------------------------------------------Preview --
  GC01              | ....+....1....+....2.. GCPROG ....+....4....+....5...
  IDILANGP          | //DNET047X JOB (ACCTG),'PD TOOLS GROUP',REGION=4M,CLASS
  IMSINIT           | //          MSGCLASS=H,NOTIFY=&SYSUID,MSGLEVEL=(1,1)
  LABCOPY           | //*****************************************************
  LINKLEX           | //*
  LINKLEXI          | //* FUNCTION:
  PDSSTATX          | //*   RUN JCL FOR Z/OS C/C++ WITH DEBUG TOOL SUPPORT
  XADSTAT           | //*
  XASAM1            | //* DISCRIPTION:
  XCOBTIMS          | //*   THIS JCL WILL EXECUTE A C/C++ PROGRAM WITH SUPPOR
  XIMSSTUB          | //*   INVOKE IBM DEBUG TOOL.
  XPADSTAT          | //*
  XPSAMM1           | //* SETUP:
  XPSAMOS1          | //*   THE VALUES OF THE BELOW LISTED SET STATEMENTS MUS
  XPSAM1            | //*   TO THE FOLLOWING:
  XSAM              | //*
  XSAMAPA           | //*       DTLIB: THE PDS WHERE DEBUG TOOL RUNTIME IS
  XSAMDT            | //*
```

Figure 3-14 Results of a FINDTEXT command

You can limit the number of members that you want IPT to process by setting the PROMPT AFTER option of the GLOBAL processing options. You can set these options using the ISET command or by typing a G when you are in an MSL, which we described in 3.5, "Changing the Global IPT defaults for your session" on page 97.

> **Note:** Entering the FINDTEXT (FT) command without an argument brings up the Global Options panel, allowing you to change the Global Options for the FT command.

You can use the RFIND (repeat find) command to advance to the next occurrence of the FINDTEXT string. If you enter SORT TEXT or SORT NOTE, the members that contained the FINDTEXT string are sorted to the top of the member list.

When you view or edit a member that contains the data string, the FIND command, along with the object of the find, is automatically displayed on the command line. Figure 3-15 shows a selected member with the FINDTEXT string on the command line.

```
-IPT- EDIT DNET047.ADLAB.JCL(GCPROG) - 01.01                Columns 00001 00072
Command ===> FIND    VTAM%DNET047                            Scroll ===> PAGE
****** ***************************** Top of Data ******************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
000001 //DNET047X JOB (ACCTG),'PD TOOLS GROUP',REGION=4M,CLASS=A,
000002 //          MSGCLASS=H,NOTIFY=&SYSUID,MSGLEVEL=(1,1)
000003 //*****************************************************************
000004 //*                                                               *
000005 //* FUNCTION:                                                     *
000006 //*   RUN JCL FOR Z/OS C/C++ WITH DEBUG TOOL SUPPORT              *
000007 //*                                                               *
000008 //* DISCRIPTION:                                                  *
000009 //*   THIS JCL WILL EXECUTE A C/C++ PROGRAM WITH SUPPORT TO       *
000010 //*   INVOKE IBM DEBUG TOOL.                                      *
000011 //*                                                               *
000012 //* SETUP:                                                        *
000013 //*   THE VALUES OF THE BELOW LISTED SET STATEMENTS MUST BE SET    *
000014 //*   TO THE FOLLOWING:                                           *
000015 //*                                                               *
000016 //*       DTLIB: THE PDS WHERE DEBUG TOOL RUNTIME IS              *
000017 //*                                                               *
000018 //*****************************************************************
000019 //*****************************************************************
```

Figure 3-15 Selected member that contains the FINDTEXT string on the command line

In the example in Figure 3-16, the FINDTEXT command is combined with positioning keywords to identify where to start the search and the direction for the subsequent find. The FT ORDERS command identifies all of the members that contain the text `ORDERS`.

```
 -IPT--EDIT L1------ DNET187.ADLAB.COPYLIB -----------------ROW 00001 OF 00037
 COMMAND  ===> ft orders all                                 SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL   COMPRESS INFO     EXPDIR
                                                   ON VOLUME DMPU30
    NAME     RENAME    LIB VV.MM CREATED      CHANGED      SIZE  INIT   MOD USERID
   CEETEST1              1
   CEETEST2              1
   CUSTCOPY              1
   CUSTMAST              1
   CUSTREC               1
   CUSTREC1              1
   CUSTREC2              1
   CUSTVSAM              1
   CUST1                 1 01.01 07/05/18 07/05/23 08:54    23    23      0 DNET187
   CUST1V2               1
   CUST2                 1
   CUST2COB              1
   CUST2CPY              1
   CUST2CUS              1
   CUST2PRO              1
   CUST2RDF              1
   CUST2SEG              1
   IGZEDT4               1
   ORDREC                1
```

Figure 3-16 Enter the FT orders all command

Figure 3-17 on page 106 shows the results of the FT ORDERS ALL command. The text string `Orders` was found in several members, which is indicated by **"–** `TXT FND`**"**.

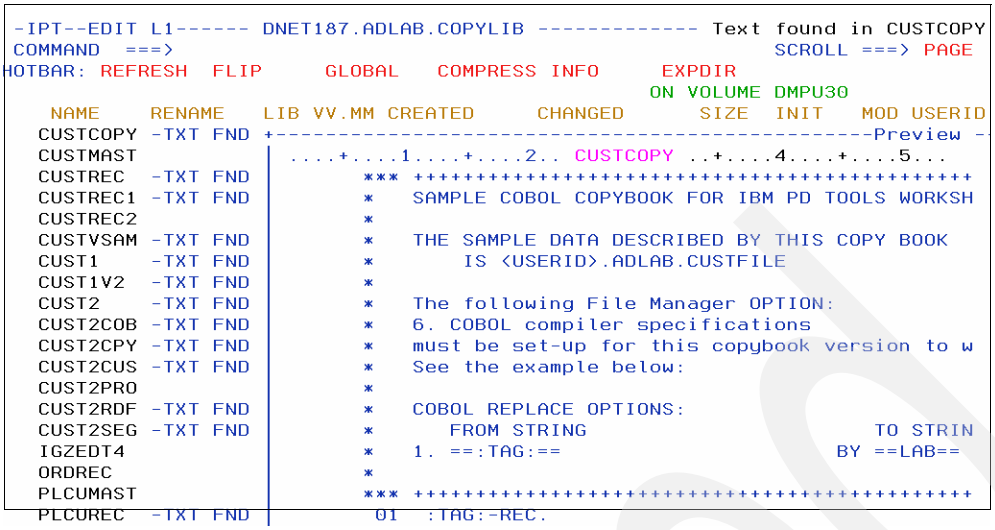

Figure 3-17 Result of FT ORDERS ALL command

In Figure 3-18, we used the FT ORDERS LAST command to identify the last member in the partitioned dataset (PDS) that contains the text string `ORDERS`.

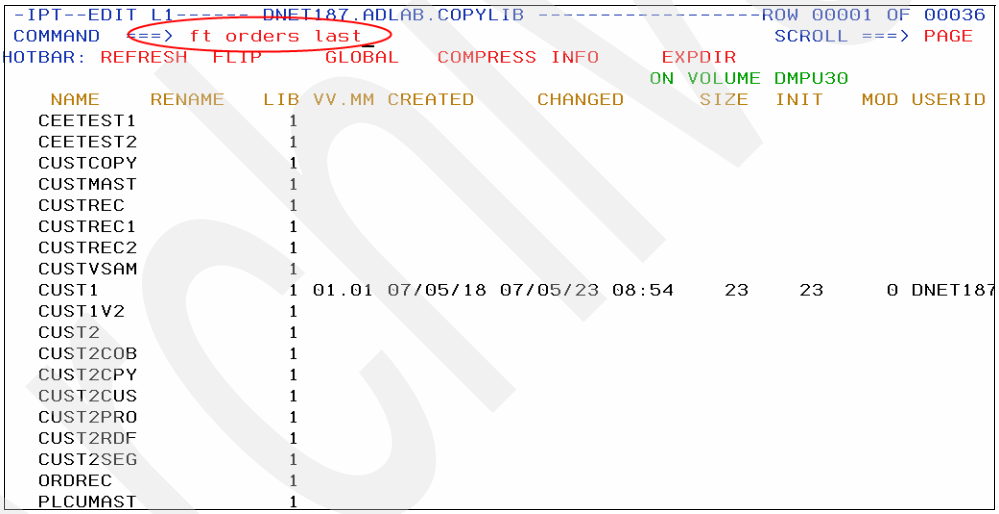

Figure 3-18 Result of the FT ORDERS LAST command

The result of the FT ORDERS LAST command positions you at the last member where it found the text `ORDERS`. In Figure 3-19 on page 107, we did not issue the RFIND command to find the next reference to `orders`. Because we used the FT LAST command, the search will start from the bottom to the top.

Archived

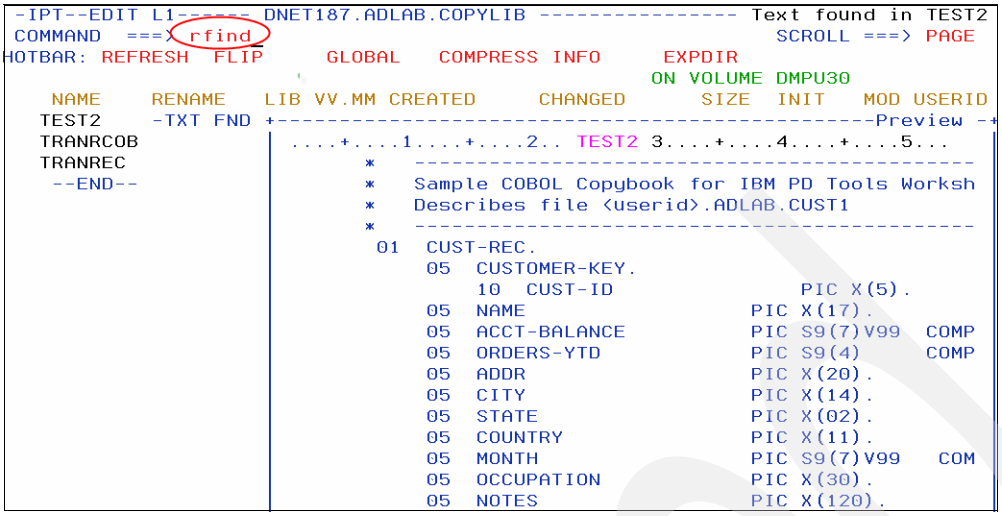

Figure 3-19 Result of FT ORDERS LAST command and entering the Rfind Command

In Figure 3-20, the RFIND command finds the next reference to `orders`. Because the search starts at the last reference, the search continues toward the top of the dataset.

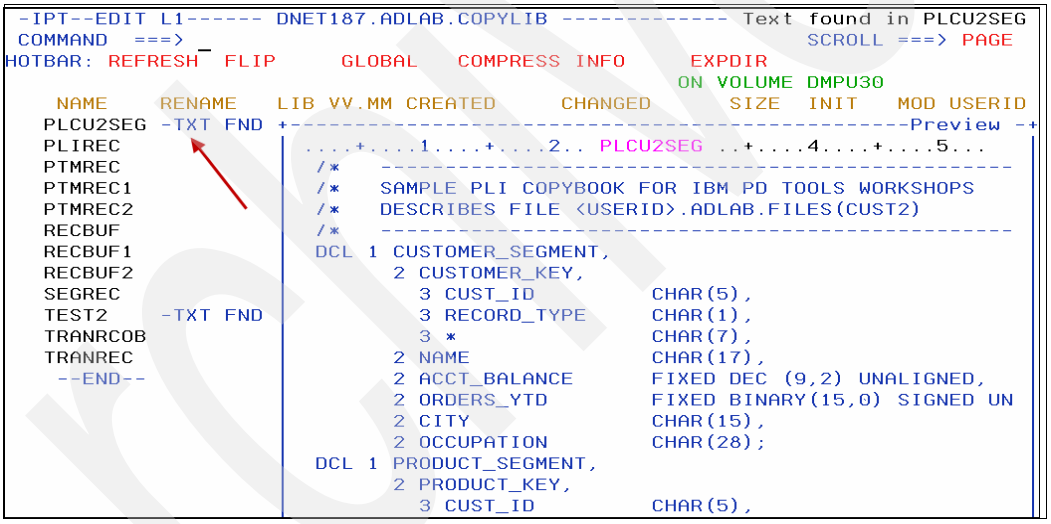

Figure 3-20 Result of RFIND command

3.10 Partitioned dataset extended

Several years ago, IBM introduced a feature for the z/OS operating system called the partitioned dataset extended (PDSE). If you are unfamiliar with the advantages of using PDSEs over PDS datasets, refer to the following Web site for additional information about PDSE libraries:

`http://www.ibm.com/systems/storage/software/sms/whatis_sms/pdse.html`

A PDSE provides many advantages over a PDS:

- Directory searches are more efficient, because the directory is indexed and can be cached.
- Multiple members can be created simultaneously.

- A PDSE allows dataset-level sharing and member-level sharing.
- There are a maximum of 123 extents.
- You can load only a portion of a program object before control is passed.
- Additional control information is stored in the PDSE directory for program libraries.
- PDSE provides more efficient buffer management and caching capability for program libraries.
- PDSE offers improved alias management for PDSE program libraries.

3.11 Defining PDSEs

If your installation is installed as DFSMS/MVS with storage management subsystem (SMS) active, you can allocate PDSEs in SMS storage groups. The following parameters are required:

- Directory space greater than zero or DSORG=PO
- DSNTYPE=LIBRARY
- You can specify these parameters in one of these ways:
  - In a data class definition
  - On a JCL DD statement
  - Using the LIKE keyword
  - On a TSO/E ALLOCATE command
  - On the DYNALLOC macro
  - Through an installation default

3.12 When to use PDSs instead of PDSEs

Generally, a PDSE dataset is preferred because of the advantages that we have listed. However, there are certain situations when you need to continue to use PDSs rather than PDSEs:

- Use a PDS when allocating a checkpoint dataset. You cannot use a PDSE as a checkpoint dataset.
- When you define a program library that is used during initial program load (IPL), such as SYS1.NUCLEUS, SYS1.LPALIB, or SYS1.SVCLIB, use a PDS.
- You need to ship the dataset to or share the dataset with a system that does not support PDSEs.
- An application that uses the dataset does not support PDSEs. For example, it uses EXCP, EXCPVR, or XDAP.
- An application that uses the dataset is dependent on processing short blocks or sequential access method (SAM) record null segments.

Archived

3.13 Using ISPF concatenated libraries to manage change

An *ISPF library* is a cataloged partitioned dataset with a three-level dataset name in this format:

project.group.type

Using ISPF, you can concatenate up to four ISPF libraries with the same project and type, as shown in Figure 3-21.

```
ISPF Library:
   Project . . . PAYROLL
   Group . . . . SMITH    . . . DEVELOP  . . . MASTER_  . . . ________
   Type  . . . . PLI
   Member  . . . ________        (Blank or pattern for member selection list)
```

Figure 3-21 ISPF library

Using an ISPF Productivity Tool Object List, you can specify the same library structure as:

=project group1 … group4 type

Figure 3-22 shows how you can define an ISPF library using an IPT Object List.

```
-IPT- OLIST (E) ----------- Objects List --------------------- Row 1 to 1 of 1
Command    ===> _                                              SCROLL ===> PAGE
Hotbar: FILT JCL
Open list  ===> TEST     (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Class
--------- -------- ----- ------------------------------------------------ -------
                      1 =DNET187 TEST PROD COPYLIB                       ISPF
                         ---------------- END OF LIST -----------------
```

Figure 3-22 SPF library defined by an Object List

ISPF libraries can be PDS or PDSE libraries. They might also be IBM Software Configuration and Library Manager (SCLM) libraries.

Chapter 13, “SCLM integration with IPT” on page 329 demonstrates the use of SCLM with the IPT Member Selection Lists.

ISPF libraries provide an easy way to separate the changes that you make from the “production” library. If a member is modified, a version is saved in library1 or group1. Therefore, if the original member is not in group1, the original version is not lost.

There are several IPT commands that are designed to expedite your work when you use ISPF libraries or SCLM libraries:

- PROject: Switch to another project qualifier.
- LIB: Add, remove, or switch to another library.

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- TYPE: Switch to another library type.
- WHERE or the H line command: Shows which libraries contain the member.

Let us look at how to use the ISPF libraries with IPT, beginning with Figure 3-23. Here, we use an Object List Concatenated dataset.

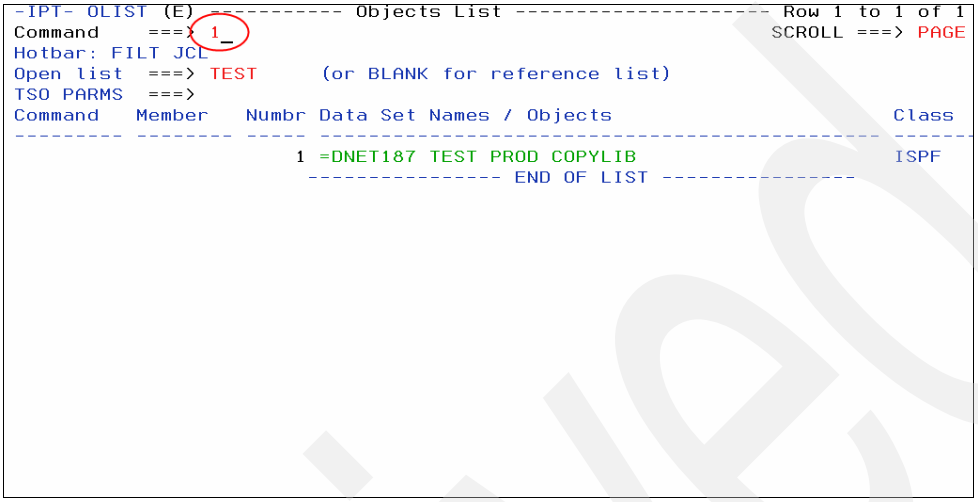

Figure 3-23 Using an Object List Concatenated dataset

In Figure 3-24, DNET187.TEST.COPYLIB identifies the group1 library. The LIB2=PROD identifies the second library in the concatenation. To switch from SOURCE to JCL libraries, use the TYPE command.

Note: In Figure 3-23, the ISPF value is in the Class field. The equal (=) sign denotes an ISPF library in the OLIST.

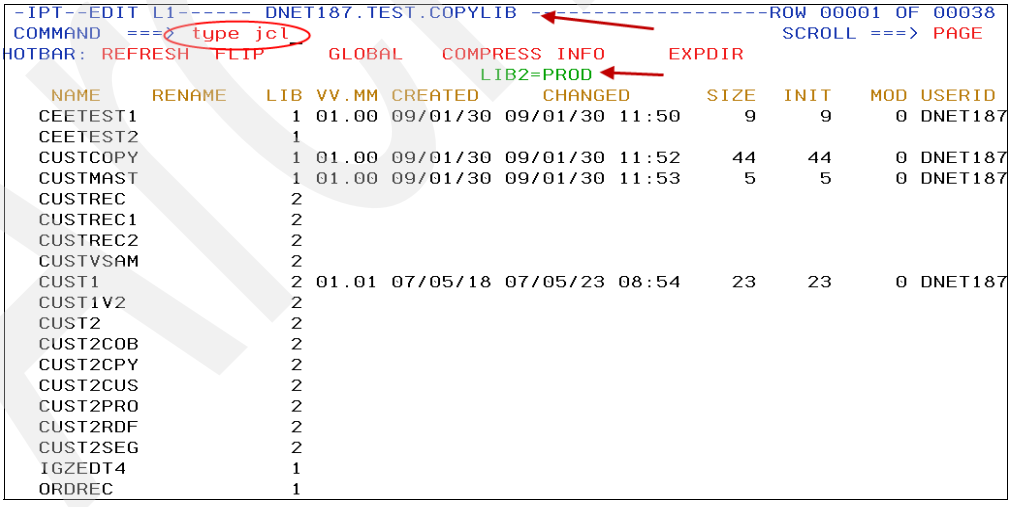

Figure 3-24 ISPF library with an MSL

As we see in Figure 3-25 on page 111, we are editing the ISPF library type of JCL. The LIB command adds or removes libraries. Enter A LIB if you want to see the syntax of the LIB command. We used the LIB 3 BACKUP command to add the BACKUP library as the third library.

```
-IPT--EDIT L1------ DNET187.TEST.JCL ----------------------ROW 00001 OF 00095
 COMMAND  ===> lib 3 backup                                  SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL   COMPRESS INFO     EXPDIR
                                    LIB2=PROD
   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  $JOBCARD              1
  APAXX                 1 01.02 07/06/27 08/10/09 07:12     67    67     0 DNET187
  BADSTAT               1 01.00 07/05/24 07/05/24 08:52     36    36     0 DNET187
  BAPAAPI               1
  BASAM1DR              1 01.00 07/05/31 07/05/31 13:34     37    37     0 DNET187
  BATCDEMO              1 01.00 07/08/30 07/08/30 09:54    163   163     0 DNET187
  BATM01                1
  BCOBTIMS              1
  BCOBVSAM              1
  BCPROG                1
  BC01                  1
  BDTDEMO               1
  BLABTWO               1
  BPLILAN               1
  BPLIMVS               1
  BPTM01                1
  BSAM1                 1 01.03 07/08/10 08/10/09 07:32     35    35     0 DNET187
  BSAM2                 1 01.01 07/08/10 08/09/04 09:14     37    37     0 DNET187
  BTDMOSVS              1
```

Figure 3-25 Results of TYPE JCL Command and then executing the lib 3 backup command

Now, there are three libraries concatenated:

- DNET187.TEST.JCL
- DNET187.PROD.JCL
- DNET187.BACKUP.JCL

In Figure 3-26, we use the **lib 3-** command to remove the backup library that was added.

```
-IPT--EDIT L1------ DNET187.TEST.JCL ----------------------ROW 00001 OF 00095
 COMMAND  ===> lib 3 -                                       SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL   COMPRESS INFO     EXPDIR
                                    LIB2=PROD     LIB3=BACKUP
   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  $JOBCARD              1
  APAXX                 1 01.02 07/06/27 08/10/09 07:12     67    67     0 DNET187
  BADSTAT               1 01.00 07/05/24 07/05/24 08:52     36    36     0 DNET187
  BAPAAPI               1
  BASAM1DR              1 01.00 07/05/31 07/05/31 13:34     37    37     0 DNET187
  BATCDEMO              1 01.00 07/08/30 07/08/30 09:54    163   163     0 DNET187
  BATM01                1
  BCOBTIMS              1
  BCOBVSAM              1
  BCPROG                1
  BC01                  1
  BDTDEMO               1
  BLABTWO               1
  BPLILAN               1
  BPLIMVS               1
  BPTM01                1
  BSAM1                 1 01.03 07/08/10 08/10/09 07:32     35    35     0 DNET187
  BSAM2                 1 01.01 07/08/10 08/09/04 09:14     37    37     0 DNET187
  BTDMOSVS              1
```

Figure 3-26 Results of adding lib 3, and then executing the lib 3 – command to remove the Backup library

In Figure 3-27 on page 112, lib 3 has been deleted, and we use the Where command or **h** to identify the libraries in which a member has been found in the concatenation.

Archived

```
-IPT--EDIT L1------ DNET187.TEST.JCL ------------------------ROW 00001 OF 00095
COMMAND  ===>                                                 SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP      GLOBAL    COMPRESS INFO      EXPDIR
                                       LIB2=PROD
   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  $JOBCARD              1
  APAXX                 1 01.02 07/06/27 08/10/09 07:12     67    67     0 DNET187
  BADSTAT               1 01.00 07/05/24 07/05/24 08:52     36    36     0 DNET187
h BAPAAPI               1
  BASAM1DR              1 01.00 07/05/31 07/05/31 13:34     37    37     0 DNET187
  BATCDEMO              1 01.00 07/08/30 07/08/30 09:54    163   163     0 DNET187
  BATM01                1
  BCOBTIMS              1
  BCOBVSAM              1
  BCPROG                1
  BC01                  1
  BDTDEMO               1
  BLABTWO               1
  BPLILAN               1
  BPLIMVS               1
  BPTM01                1
  BSAM1                 1 01.03 07/08/10 08/10/09 07:32     35    35     0 DNET187
  BSAM2                 1 01.01 07/08/10 08/09/04 09:14     37    37     0 DNET187
  BTDMOSVS              1
```

Figure 3-27 Lib 3 removed and the execution of the WHERE command

In Figure 3-28, the BASAM1 member resides in libraries 1 and 2 or TEST.JCL and PROD.JCL, which are depicted in the RENAME column in Figure 3-28.

```
-IPT--EDIT L1------ DNET187.TEST.JCL ------------------------ROW 00004 OF 00095
COMMAND  ===> dsn                                             SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP      GLOBAL    COMPRESS INFO      EXPDIR
                                       LIB2=PROD
   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  BAPAAPI   -IN:12      1
  BASAM1DR              1 01.00 07/05/31 07/05/31 13:34     37    37     0 DNET187
  BATCDEMO              1 01.00 07/08/30 07/08/30 09:54    163   163     0 DNET187
  BATM01                1
  BCOBTIMS              1
  BCOBVSAM              1
  BCPROG                1
  BC01                  1
  BDTDEMO               1
  BLABTWO               1
  BPLILAN               1
  BPLIMVS               1
  BPTM01                1
  BSAM1                 1 01.03 07/08/10 08/10/09 07:32     35    35     0 DNET187
  BSAM2                 1 01.01 07/08/10 08/09/04 09:14     37    37     0 DNET187
  BTDMOSVS              1
  BTDMZOS               1
  BVSAM                 1
  CEEUOPT               2
```

Figure 3-28 Result of the WHERE MSL command

The DSN command switches the Member Selection List to another dataset. If the DSN command is entered without parameters, it invokes Option 2 of IPT.

The DSN command allows you to change the library name or the invocation parameters that might not be available using the Member Selection List; for example, you can enter an EDIT/VIEW initial Macro or profile name. In Figure 3-29 on page 113, we entered `LOAD` for the library TYPE in Figure 3-29 on page 113.

```
-IPT--L1 ------------ EDIT - ENTRY PANEL ---------------------------------------
COMMAND ===> ____________________________________________________________
HOTBAR?


ISPF Project  ==> DNET187
     Group    ==> TEST      ==> PROD      ==> _________   ==> _________
     Type     ==> LOAD
     Member   ==> _____________ (Blank or member name or extended pattern)
Other data set, VSAM file, or z/OS UNIX file:
@H for History-List or @L for 'DNET187.TEST.LOAD'
Name/Pattern  ==> ____________________________________________________________ +
Volume serial ==> ______   (Optional VOLSER or pattern for selection list)
Password      ==>          (If password protected)
Default func. ==> E        (B=Browse, V=View, E=Edit, BF, EF, VF, or ?)
Do TAILOR     ==> N        (Y=Yes ,N=no, D=define commands)
EDIT/VIEW parameters:
Initial Macro ==> _________       Confirm Cancel/Move/Replace     ==> N (Y,N)
Profile Name  ==> _________       Action Bar in Edit/View         ==> N (Y,N)
Format  Name  ==> _________       Highlight coloring in Edit/View ==> Y (Y,N)
Record Length ==> _____           Exclusive access of viewed file ==> Y (Y,N)
Preserve VB record length ==> N   Mixed Mode (NLS DBCS char. set) ==> N (Y,N)
```

Figure 3-29 DSN command

Hint: You can navigate directly to another dataset using the DSN command with parameters. For example, the command DSN CUSTFILE.KSDS navigates directly to the user ID.CUSTFILE.KSDS file from a Member Selection List.

Figure 3-30 displays information about the load module.

```
-IPT--EDIT L1------ DNET187.TEST.LOAD ----------------------ROW 00001 OF 00017
COMMAND  ===>                                                SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL    COMPRESS INFO     EXPDIR
                                      LIB2=PROD
  NAME     RENAME    LIB      SIZE     TTR ALIAS-OF AC RENT REFR REUS TEST AM  RM
l ADSTAT              1 00001EE0 00020C          00                      ANY 24
  ASAMDRV             1 000013C8 000226          00                      ANY 24
  ATCDEMO             1 00032C70 000323          00                      ANY 24
  ATCDEM2             1 00001568 000808          00                      ANY 24
  ATCDEM4             1 00001350 000815          00                      ANY 24
  ATCDEM5             1 000023B8 000822          00                      ANY 24
  COBISTUB            1 00001AC0 000309          00                      ANY 24
  DTDEMO              1 00001380 000219          00                      ANY 24
  IMSSTUB             1 000017E8 000316          00                      31  ANY
  SAMII1              1 00007BB0 000021          00                      ANY 24
  SAMII2              1 00002B38 000106          00                      ANY 24
  SAMII3              1 00002B68 000112          00                      ANY 24
  SAM1                1 0000A7E8 000913          00                      ANY 24
  SAM1V               1 00003DF0 000007          00                      ANY 24
  SAM2                1 00003C50 000A07          00                      ANY 24
  SAM2V               1 00001A08 000014          00                      ANY 24
  SAM3                1 00001488 000906          00                      ANY 24
   --END--
```

Figure 3-30 MSL L line command

Figure 3-31 on page 114 shows using PF11 to view the right part of the report, which is the list of the Load Module Members.

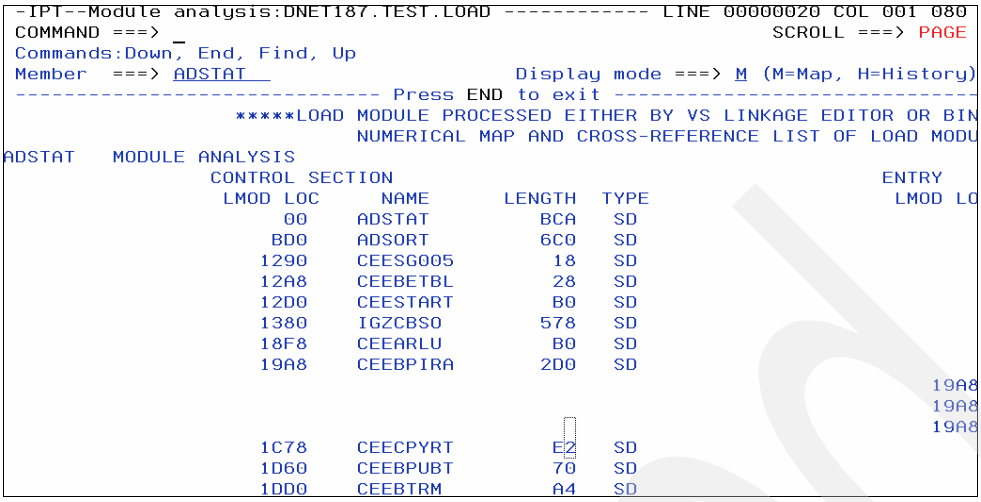

Figure 3-31 Load Module Members displayed

3.14 MSL Point-and-Shoot fields

The ISPF Productivity Tool provides a large number of Point-and-Shoot fields on the Object List and Member Selection panels. To use a Point-and-Shoot field, put your cursor under the field label, and press Enter.

The Member Selection List panel provides the following Point-and-Shoot fields:

- EDIT/BROWSE/VIEW
- Dataset history
- Tailor Messages
- Column headings:
  - NAME
  - RENAME
  - LIB
  - VV.MM
  - CREATED
  - CHANGED
  - SIZE
  - INIT
  - MOD
  - USERID
- HOTBAR

In this section, we describe the location and use of each of the fields listed.

In Figure 3-32 on page 115, the action field changes from EDIT to BROWSE to VIEW when using the Point-and-Shoot function. This action equates to using the DEFAULT command.

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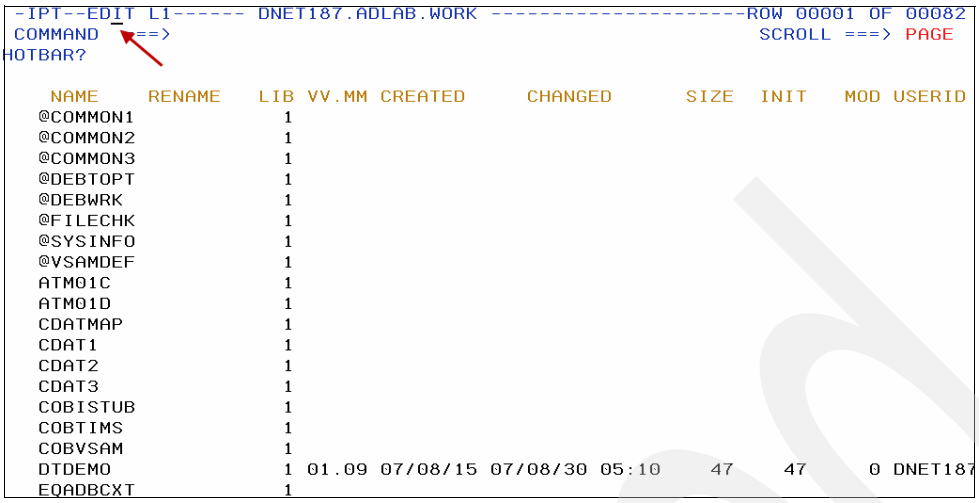

Figure 3-32 Point-and-Shoot field EDIT/BROWSE/VIEW

Figure 3-33 shows the Dataset history Point-and-Shoot field.

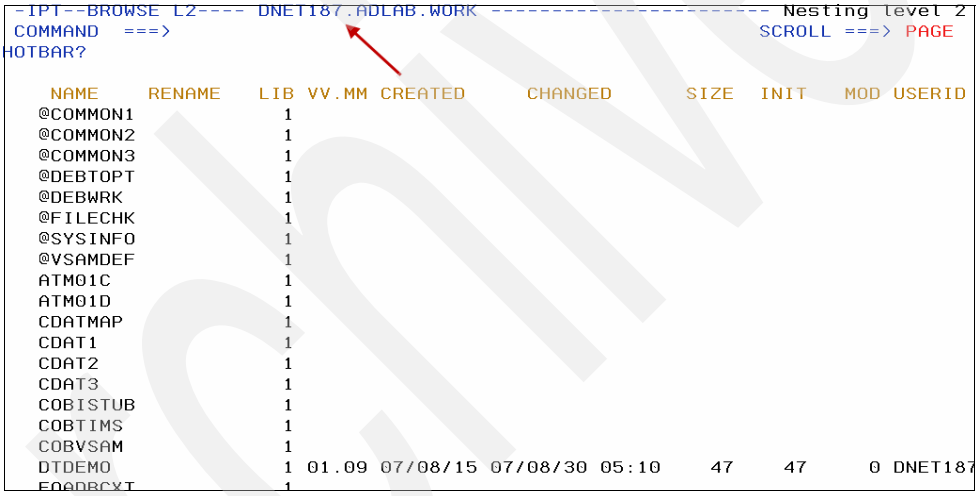

Figure 3-33 Dataset history Point-and-Shoot field

In Figure 3-34 on page 116, using the Dataset history Point-and-Shoot field results in a dynamic Object List of the most recently used datasets, as shown in Figure 3-34 on page 116.

Archived

```
-IPT- OLIST (B) ------------ DATA SET HISTORY --------------- Row 1 to 17 of 100
Command    ===> _                                              SCROLL ===> PAGE
Hotbar: FILT JCL

                                                              *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Volume
--------- -------- ----- ------------------------------------------------ ------
                       1 'DNET187.ADLAB.WORK'
                       2 'DNET187.ADLAB.LOAD'
                       3 'DNET187.ADLAB.SOURCE'
          XSAMTEST     4 'DNET187.ADLAB.JCL1'
          XSAMTEST     5 'DNET187.ADLAB.JCL'
                       6 'DNET187.ADLAB.JCL1'
                       7 'DNET187.ADLAB.JCL'
          XSAM1        8 'DNET187.ADLAB.JCL1'
          X*           9 'DNET187.ADLAB.JCL1'
          X*          10 'DNET187.ADLAB.JCL'
          *           11 'DNET187.ADLAB.JCL'
                      12 'DNET047.ADLAB.JCL'
                      13 'OPTIM.V5R5.INSTALL'
                      14 'DNET187.ADLAB.CNTL'
                      15 'DDS0200.ADLAB.JCL'
                      16 'FILEMGR.V9R1.SFMNSAM1'
                      17 'DNET187.ADLAB.SYSDEBUG'
```

Figure 3-34 Dataset history Object List

IPT automatically retains the last 100 datasets that you have used, which are presented when you request the history datasets by using the Point-and-Shoot action.

The Tailor Message field can also be a Point-and-Shoot field. The example in Figure 3-35 shows the results of the FILTER C* command, which reduced the number of members shown.

```
-IPT--EDIT L1------ DNET187.ADLAB.COPYLIB ------------------ROW 00001 OF 00017
 COMMAND  ===> _                                            SCROLL ===> PAGE
HOTBAR?
*FILTER*          20 HIDDEN      37 PROCESSED    ON VOLUME DMPU30
    NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
   CEETEST1             1
   CEETEST2             1
   CUSTCOPY             1
   CUSTMAST             1
   CUSTREC              1
   CUSTREC1             1
   CUSTREC2             1
   CUSTVSAM             1
   CUST1                1 01.01 07/05/18 07/05/23 08:54    23    23      0 DNET187
   CUST1V2              1
   CUST2                1
   CUST2COB             1
   CUST2CPY             1
   CUST2CUS             1
   CUST2PRO             1
   CUST2RDF             1
   CUST2SEG             1
    --END--
```

Figure 3-35 Tailor Message Point-and-Shoot

To remove the filtering, use the Point-and-Shoot field that is circled in Figure 3-36 on page 117, which is equivalent to the UNFilter command.

You can point-and-shoot using any of the column headings to sort the members. In Figure 3-36 on page 117, we chose to sort the members by the CREATED date.

Archived

```
-IPT--EDIT L1------ DNET187.ADLAB.COPYLIB ------------------ROW 00001 OF 00017
 COMMAND  ===>                                               SCROLL ===> PAGE
HOTBAR?
*FILTER*              20 HIDDEN      37 PROCESSED   ON VOLUME DMPU30
    NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
   CEETEST1              1
   CEETEST2              1
   CUSTCOPY              1
   CUSTMAST              1
   CUSTREC               1
   CUSTREC1              1
   CUSTREC2              1
   CUSTVSAM              1
   CUST1                 1 01.01 07/05/18 07/05/23 08:54     23     23      0 DNET187
   CUST1V2               1
   CUST2                 1
   CUST2COB              1
   CUST2CPY              1
   CUST2CUS              1
   CUST2PRO              1
   CUST2RDF              1
   CUST2SEG              1
    --END--
```

Figure 3-36 Point-and-Shoot using MSL column headings

Figure 3-37 shows the members, sorted in CREATED sequence.

```
-IPT--EDIT L1------ DNET187.ADLAB.COPYLIB ------------------ROW 00001 OF 00038
 COMMAND  ===>                                               SCROLL ===> PAGE
HOTBAR?
          *SORT*                                  ON VOLUME DMPU30
    NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
   TEST2                 1 01.00 09/01/30 09/01/30 09:06     23     23      0 DNET187
   XXXX                  1 01.00 07/05/31 07/05/31 12:02 65535 65535      0 DNET187
   CUST1                 1 01.01 07/05/18 07/05/23 08:54     23     23      0 DNET187
   CEETEST1              1
   CEETEST2              1
   CUSTCOPY              1
   CUSTMAST              1
   CUSTREC               1
   CUSTREC1              1
   CUSTREC2              1
   CUSTVSAM              1
   CUST1V2               1
   CUST2                 1
   CUST2COB              1
   CUST2CPY              1
   CUST2CUS              1
   CUST2PRO              1
   CUST2RDF              1
   CUST2SEG              1
```

Figure 3-37 Results of Point-and-Shoot using MSL column heading CREATED

3.15 MSL HOTBARS

The MSL HOTBAR feature provides a unique way for you to tailor your MSL panel with frequently used IPT commands using Point-and-Shoot technology.

When you first use IPT, the HOTBAR fields are not populated. You can update the HOTBAR fields by using the HOTBAR? heading as a Point-and-Shoot field, as shown in Figure 3-38 on page 118.

Archived

```
-IPT--EDIT L1------ DNET187.ADLAB.COPYLIB ------------ Specify HOTBAR commands
 COMMAND  ===>                                                  SCROLL ===> PAGE
HOTBAR= _________ _________ _________ _________ _________ _________ _________ _________
              *SORT*                                  ON VOLUME DMPU30
   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT    MOD USERID
  TEST2                 1 01.00 09/01/30 09/01/30 09:06     23    23      0 DNET187
  XXXX                  1 01.00 07/05/31 07/05/31 12:02 65535 65535      0 DNET187
  CUST1                 1 01.01 07/05/18 07/05/23 08:54     23    23      0 DNET187
  CEETEST1              1
  CEETEST2              1
  CUSTCOPY              1
  CUSTMAST              1
  CUSTREC               1
  CUSTREC1              1
  CUSTREC2              1
  CUSTVSAM              1
  CUST1V2               1
  CUST2                 1
  CUST2COB              1
  CUST2CPY              1
  CUST2CUS              1
  CUST2PRO              1
  CUST2RDF              1
  CUST2SEG              1
```

Figure 3-38 Updating the MSL HOTBAR

As shown in Figure 3-39, by updating the MSL HOTBAR, you can enter up to eight MSL commands in the HOTBAR fields.

```
-IPT--EDIT L1------ DNET187.ADLAB.COPYLIB ------------------ROW 00001 OF 00038
 COMMAND  ===>                                                  SCROLL ===> PAGE
HOTBAR?
              *SORT*                                  ON VOLUME DMPU30
   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT    MOD USERID
  TEST2                 1 01.00 09/01/30 09/01/30 09:06     23    23      0 DNET187
  XXXX                  1 01.00 07/05/31 07/05/31 12:02 65535 65535      0 DNET187
  CUST1                 1 01.01 07/05/18 07/05/23 08:54     23    23      0 DNET187
  CEETEST1              1
  CEETEST2              1
  CUSTCOPY              1
  CUSTMAST              1
  CUSTREC               1
  CUSTREC1              1
  CUSTREC2              1
  CUSTVSAM              1
  CUST1V2               1
  CUST2                 1
  CUST2COB              1
  CUST2CPY              1
  CUST2CUS              1
  CUST2PRO              1
  CUST2RDF              1
  CUST2SEG              1
```

Figure 3-39 Updating the MSL HOTBAR

You can use any valid MSL command for a HOTBAR command. You can invoke the HOTBAR commands using Point-and-Shoot functions. The MSL panel permanently retains your HOTBAR commands. Figure 3-40 on page 119, Updated HOTBAR, shows the HOTBAR fields filled with MSL commands.

Archived

```
-IPT--EDIT L1------ DNET187.ADLAB.COPYLIB ------------------ROW 00001 OF 00038
COMMAND  ===> _                                              SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP      GLOBAL    COMPRESS INFO      EXPDIR
              *SORT*                                  ON VOLUME DMPU30
   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  TEST2                1 01.00 09/01/30 09/01/30 09:06     23    23     0 DNET187
  XXXX                 1 01.00 07/05/31 07/05/31 12:02 65535 65535     0 DNET187
  CUST1                1 01.01 07/05/18 07/05/23 08:54     23    23     0 DNET187
  CEETEST1             1
  CEETEST2             1
  CUSTCOPY             1
  CUSTMAST             1
  CUSTREC              1
  CUSTREC1             1
  CUSTREC2             1
  CUSTVSAM             1
  CUST1V2              1
  CUST2                1
  CUST2COB             1
  CUST2CPY             1
  CUST2CUS             1
  CUST2PRO             1
  CUST2RDF             1
  CUST2SEG             1
```

Figure 3-40 Updated HOTBAR

You can use the mouse to Point-and-Shoot. See Appendix A, “Customizing IBM Personal Communications” on page 379.

3.16 Advanced Member Selection List functions

The Advanced Functions in the Member Selection List allow you to perform maintenance type functions on PDS libraries and advanced utility functions on members and data. In this section, we show you how to use several of the advanced MSL functions to improve ISPF productivity:

- `Compress`: Compress the displayed library or libraries.
- `Empty`: Empty all data from a partitioned dataset or a sequential dataset.
- `Expdir`: Expand the directory of a partitioned-library dataset object.
- `Info`: Display dataset information for the library or libraries being processed.
- `Lmap`: Display the module members for Load Library.
- `Move`: Move one or more members to a target library.
- `Mappds`: Display a data map of a PDS library.
- `Tailor`: Define and use a string of MSL commands.

3.16.1 IPT Support for PDS libraries: Automated compress/directory expansion

Even though most z/OS mainframes support PDSE libraries, many people still use PDS libraries. If the PDS you use requires maintenance, IPT can guide you through the required steps to correct the problem.

The Save command attempts to save a new member `XSAMTEST` as shown in Figure 3-41 on page 120.

```
-IPT- EDIT DNET187.ADLAB.JCL1(XSAMTEST) - 01.00              Columns 00001 00072
Command ===> save_____________________________________________ Scroll ===> PAGE
***** ***************************** Top of Data ******************************
000001 //DNET187X JOB (ACCTG),'DNET187',CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),
000002 //             REGION=5000K,NOTIFY=DNET187
000003 //*************************************************************
000004 //*********************************************************************
000005 //*   RUN SAMPLE PROGRAM SAM1
000006 //*   INSTRUCTIONS FOR DEBUG TOOL:
000007 //*    1) PREPARE THE DEBUG TOOL INTERFACE (TERMINAL OR GUI)
000008 //*    2) ADD A JOB CARD
000009 //*    3) CUSTOMIZE AND UN-COMMENT EITHER AN EXEC TEST PARM OR CEEOPTS
000010 //*    4) SUBMIT
000011 //*********************************************************************
000012 //*RUNSAM1 EXEC PGM=SAM1,
000013 //*   PARM='/TEST(,,,VTAM%DNET187:)',
000014 //         REGION=4M
000015 //**  //CEEOPTS  DD *    (CEEOPTS IS AN OPTIONAL WAY TO START DT )
000016 //**  TEST(,,,MFI%TRMLU999:)
000017 //STEPLIB  DD DSN=&SYSUID..ADLAB.LOAD,DISP=SHR
000018 //**         DD DSN=DEBUG.V9R1.SEQAMOD,DISP=SHR
000019 //**       DD DISP=SHR,DSN=DEBUG.V6R1.SEQAMOD     (UNCOMMENT IF NEEDED)
000020 //**       DD DSN=CEE.SCEERUN,DISP=SHR            (UNCOMMENT IF NEEDED)
000021 //**  //INSPPREF DD DSN=&SYSUID..ADLAB.DTPREF,DISP=SHR
```

Figure 3-41 Saving a PDS member

The DNET187.ADLAB.JCL PDS has no directory blocks available, and saving the member fails as shown in the IPT Intercepts Directory Stow error in Figure 3-42.

```
-IPT- EDIT -------------- DNET187.ADLAB.JCL1(XSAMTEST) on DMPU38 -------------
COMMAND ===>

You have issued a SAVE request for the following member:  XSAMTEST

Your request has failed because there is not enough room in the library
directory.

The SAVE request may be successful if IBMIPT expands the directory.

Expand the directory and then save? ===> Y (Y=yes,N=no)

                Specify your choice and press ENTER.

  IQIS038 Please confirm the EXPDIR request before saving the member
```

Figure 3-42 IPT Intercepts Directory Stow error

To expand the directory, press Enter to continue. IPT has expanded the directory and successfully allows the member to be created as shown in Figure 3-43 on page 121.

Archive

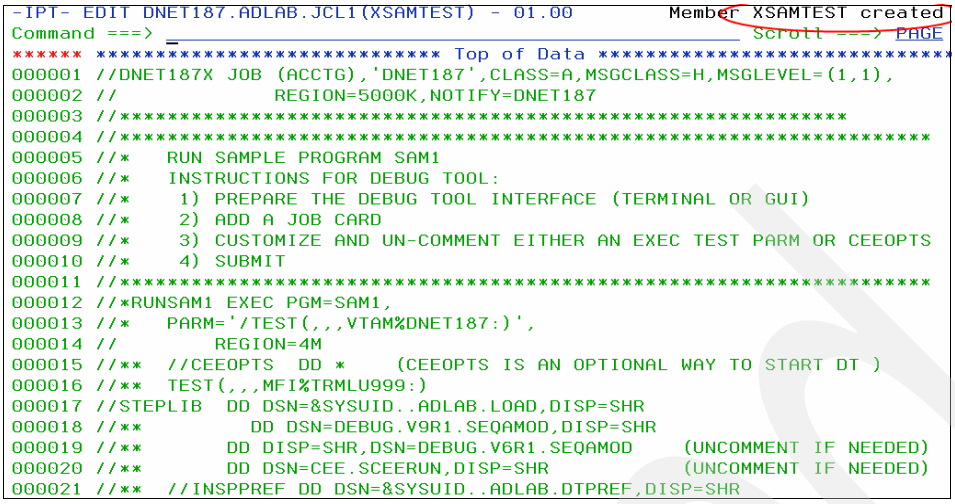

Figure 3-43 Member created

IPT expanded the directory and saved the member XSAMTEST, which is a significant improvement over ISPF. ISPF requires steps similar to the following steps:

1. Split the panel.
2. Navigate to ISPF option 3.2.
3. View the DNET187.ADLAB.JCL.CNTL1.
4. Exit.
5. Allocate a similar library with additional directory blocks as DNE187.ADLAB.JCL.CNTL1.NEW.
6. Navigate to ISPF option 3.3.
7. Copy all members from DNET187.ADLAB.JCL.CNTL1 to the newly allocated library.
8. Swap to the original library.
9. Save the new library with the line command **C9999** to save the member in the new PDS.
10. Exit from option 2.
11. Delete the original PDS library.
12. Rename the new PDS library to DNET187.ADLAB.JCL.CNTL1.

Figure 3-44 on page 122 shows issuing the save command and shows the changes that were made to DNET187.ADLAB.JCL1(XSAMRDZ). The **save** command is issued to save the changes.

Archived

```
-IPT- EDIT DNET187.ADLAB.JCL(XSAMRDZ) - 02.17                Columns 00001 00072
Command ===> save                                            Scroll ===> PAGE
****** ***************************** Top of Data ******************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
000001 //DNET187X JOB (ACCTG),'DNET187',CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),
000002 //             REGION=5000K,NOTIFY=DNET187
000003 //*************************************************************
000004 //*****************************************************************
000005 //*   RUN SAMPLE PROGRAM SAM1
000006 //*   INSTRUCTIONS FOR DEBUG TOOL:
000007 //*    1) PREPARE THE DEBUG TOOL INTERFACE (TERMINAL OR GUI)
000008 //*    2) ADD A JOB CARD
000009 //*    3) CUSTOMIZE AND UN-COMMENT EITHER AN EXEC TEST PARM OR CEEOPTS
000010 //*    4) SUBMIT
000011 //*****************************************************************
000012 //RUNSAM1 EXEC PGM=SAM1,
000013 // PARM='/TEST(,,,TCPIP&9.76.84.34%8001:)',
000014 //*PARM='/TEST(,,,TCPIP&9.65.145.277%8001:)',
000015 //         REGION=4M
000016 //**  //CEEOPTS  DD *    (CEEOPTS IS AN OPTIONAL WAY TO START DT )
000017 //**  TEST(,,,MFI%TRMLU999:)
000018 //STEPLIB  DD DSN=&SYSUID..ADLAB.LOAD,DISP=SHR
000019 //         DD DSN=DEBUG.V8R1.SEQAMOD,DISP=SHR
```

Figure 3-44 Issuing the save command

However, the save request failed, because there is insufficient room in the library. IPT captures the failure and provides the function to dynamically compress the library and continue to save the file. In Figure 3-45, the confirmation is set to `Y` to continue with compressing the library.

```
-IPT- EDIT -------------- DNET187.ADLAB.JCL1(XSAMRDZ) on DMPU38 --------------
COMMAND ===>

You have issued a SAVE request for the following member:  XSAMRDZ

Your request has failed because there is not enough room in the library.

The SAVE request may be successful if IBMIPT first compresses the library.

Compress the library and then save? ===> Y (Y=yes,N=no)

               Specify your choice and press ENTER.

   IQIS035 Please confirm the COMPRESS request before saving the member
```

Figure 3-45 IPT captures the save failure

Figure 3-46 on page 123 depicts pressing Enter to compress the library and to continue to save the library. The member is successfully saved. This function, which is provided with IPT, saves you many steps compared to the same actions in native ISPF.

Archived

```
-IPT- EDIT DNET187.ADLAB.JCL1(XSAMRDZ) - 02.18              Member XSAMRDZ Saved
Command ===> _____________________________________________ Scroll ===> PAGE
****** ***************************** Top of Data ******************************
000001 //DNET187X JOB (ACCTG),'DNET187',CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),
000002 //             REGION=5000K,NOTIFY=DNET187
000003 //*************************************************************
000004 //*********************************************************************
000005 //*   RUN SAMPLE PROGRAM SAM1
000006 //*   INSTRUCTIONS FOR DEBUG TOOL:
000007 //*    1) PREPARE THE DEBUG TOOL INTERFACE (TERMINAL OR GUI)
000008 //*    2) ADD A JOB CARD
000009 //*    3) CUSTOMIZE AND UN-COMMENT EITHER AN EXEC TEST PARM OR CEEOPTS
000010 //*    4) SUBMIT
000011 //*********************************************************************
000012 //RUNSAM1 EXEC PGM=SAM1,
000013 // PARM='/TEST(,,,TCPIP&9.76.84.34%8001:)',
000014 //*PARM='/TEST(,,,TCPIP&9.65.145.277%8001:)',
000015 //        REGION=4M
000016 //**  //CEEOPTS  DD *    (CEEOPTS IS AN OPTIONAL WAY TO START DT )
000017 //**  TEST(,,,MFI%TRMLU999:)
000018 //STEPLIB  DD DSN=&SYSUID..ADLAB.LOAD,DISP=SHR
000019 //         DD DSN=DEBUG.V8R1.SEQAMOD,DISP=SHR
000020 //         DD DSN=DEBUG.V8R1.SEQAMOD,DISP=SHR
000021 //         DD DSN=DEBUG.V8R1.SEQAMOD,DISP=SHR
```

Figure 3-46 Member saved successfully

3.16.2 Using EMPTY and COMPRESS on a PDS

IPT provides an easy method to delete all of the members in a PDS and to compress the library. In Figure 3-47, we entered the **empty** command to delete all of the members in the PDS library DNET187.ADLAB.TESTJCL.

```
-IPT--EDIT L1------ DNET187.ADLAB.TESTJCL ------------------ROW 00001 OF 00096
COMMAND  ===> empty                                        SCROLL ===> PAGE
HOTBAR?

   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  $JOBCARD             1
  APAXX                1 01.02 07/06/27 08/10/09 07:12     67    67     0 DNET187
  BADSTAT              1 01.00 07/05/24 07/05/24 08:52     36    36     0 DNET187
  BAPAAPI              1
  BASAM1               1
  BASAM1DR             1 01.00 07/05/31 07/05/31 13:34     37    37     0 DNET187
  BATCDEMO             1 01.00 07/08/30 07/08/30 09:54    163   163     0 DNET187
  BATM01               1
  BCOBTIMS             1
  BCOBVSAM             1
  BCPROG               1
  BC01                 1
  BDTDEMO              1
  BLABTWO              1
  BPLILAN              1
  BPLIMVS              1
  BPTM01               1
  BSAM1                1 01.03 07/08/10 08/10/09 07:32     35    35     0 DNET187
  BSAM2                1 01.01 07/08/10 08/09/04 09:14     37    37     0 DNET187
```

Figure 3-47 Empty PDS DN187.ADLAB.TESTJCL

In Figure 3-48 on page 124, which is the confirmation to empty PDS panel, we changed the Approval field to Y and pressed Enter to confirm that all members in the PDS will be deleted.

Archived

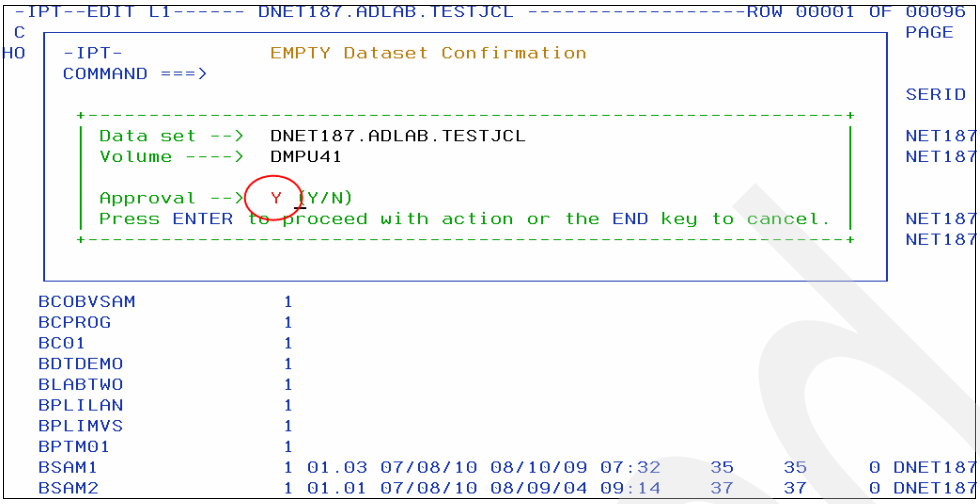

Figure 3-48 Confirmation to empty the PDS

Figure 3-49 shows that the library has been successfully compressed. The empty command provides a time-saving method to perform maintenance on a PDS.

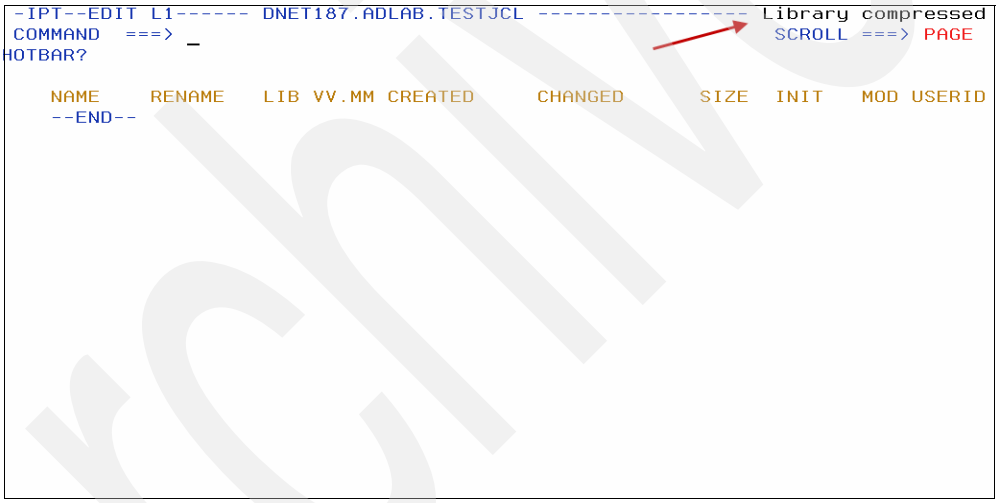

Figure 3-49 PDS is empty and compressed

3.16.3 Identify members and move them to another PDS

In Figure 3-50 on page 125 through Figure 3-56 on page 128, we move several members that are identified by a member-naming convention and move them to another library. In Figure 3-50 on page 125, we entered the **2 e** command to select a file to edit.

```
-IPT- OLIST (E) ----------- LEVEL DNET187.TEST ------------ Row 1 to 14 of 14
Command    ===> 2 e                                          SCROLL ===> PAGE
Hotbar: FILT JCL

                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Volume
--------- -------- ----- ------------------------------------------- -------
                       1 'DNET187.TEST.CONVERT'                        DMPU42
                       2 'DNET187.TEST.COPYLIB'                        DMPU09
                       3 'DNET187.TEST.DATA'
                       4 'DNET187.TEST.DATA.G0001V00'                  DMPU23
                       5 'DNET187.TEST.DATA.G0002V00'                  DMPU39
                       6 'DNET187.TEST.DATA.G0003V00'                  DMPU36
                       7 'DNET187.TEST.EXTRACTX'                       DMPU04
                       8 'DNET187.TEST.OUTPUT'                         DMPU41
                       9 'DNET187.TEST.OUTPUT1'                        DMPU30
                      10 'DNET187.TEST.OUTPUT2'                        DMPU39
                      11 'DNET187.TEST.OUTPUT3'                        DMPU27
                      12 'DNET187.TEST.SUNTX'                          DMPU34
                      13 'DNET187.TEST.SUNT1'                          DMPU35
                      14 'DNET187.TEST.SUNT2'                          DMPU34
                        ---------------- END OF LIST ----------------
```

Figure 3-50 E command to edit DNET187.TEST.COPYLIB

In Figure 3-51, we entered the FILTER CUST* command to select only the members that begin with CUST.

```
-IPT--EDIT L1------ DNET187.TEST.COPYLIB -------------------ROW 00001 OF 00038
COMMAND  ===> filt cust*                                   SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL   COMPRESS INFO     EXPDIR
                                                  ON VOLUME DMPU09
   NAME     RENAME   LIB VV.MM CREATED     CHANGED       SIZE  INIT   MOD USERID
  CEETEST1             1
  CEETEST2             1
  CUSTCOPY             1
  CUSTMAST             1
  CUSTREC              1
  CUSTREC1             1
  CUSTREC2             1
  CUSTVSAM             1
  CUST1                1 01.01 07/05/18 07/05/23 08:54    23    23      0 DNET187
  CUST1V2              1
  CUST2                1
  CUST2COB             1
  CUST2CPY             1
  CUST2CUS             1
  CUST2PRO             1
  CUST2RDF             1
  CUST2SEG             1
  IGZEDT4              1
  ORDREC               1
```

Figure 3-51 Filter only members that begin with CUST

In Figure 3-52 on page 126, the FILTER command results in 15 members. Then, in Figure 3-52 on page 126, we issued the **move *** command to move only the 15 members that resulted from the FILTER command.

Archive

```
-IPT--EDIT L1------ DNET187.TEST.COPYLIB --------------------ROW 00001 OF 00015
 COMMAND  ===> move *                                        SCROLL ===> PAGE
HOTBAR: REFRESH   FLIP      GLOBAL    COMPRESS INFO      EXPDIR
*FILTER*               23 HIDDEN       38 PROCESSED    ON VOLUME DMPU09
    NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
   CUSTCOPY              1
   CUSTMAST              1
   CUSTREC               1
   CUSTREC1              1
   CUSTREC2              1
   CUSTVSAM              1
   CUST1                 1 01.01 07/05/18 07/05/23 08:54    23    23     0 DNET187
   CUST1V2               1
   CUST2                 1
   CUST2COB              1
   CUST2CPY              1
   CUST2CUS              1
   CUST2PRO              1
   CUST2RDF              1
   CUST2SEG              1
    --END--
```

*Figure 3-52 Move * command*

You will be prompted for a target library to receive the members that are being moved. We entered `DNET187.PROD.COPYLIB` in the Dataset Name field to identify the target library as shown in Figure 3-53.

```
-IPT--------- MOVE from DNET187.TEST.COPYLIB ---------------------------------
COMMAND ===>

15 members will be processed.
Specify "TO" data set below:

  PROJECT ===> DNET187
  GROUP   ===> TEST
  TYPE    ===> COPYLIB

Or other Partitioned, Sequential Data Set or @H (History List):
  DATA SET NAME ===> 'dnet187.prod.copylib'
  VOLUME SERIAL ===>          (If not catalogued)
  PASSWORD      ===>          (If password protected)

 MOVE OPTIONS:
  REPLACE like-named library members ===> N   (Y=Yes, N=No, O=Target is Older)
  Disposition for sequential target  ===> OLD (OLD or MOD)
 Note: If statistics are not available, replace option O (older) is
 treated as option Y (Yes).
                Press ENTER to move   END key to cancel.
```

Figure 3-53 Identify target library

Note: In Figure 3-53, the “REPLACE like-named library members” selection of `O` allows the MOVE operation to occur only if the target member is older than the source member, which minimizes the risk of accidentally destroying your data.

Figure 3-54 on page 127 depicts all of the members prior to the MOVE operation, which gives you an opportunity to rename members.

Archived

```
-IPT--EDIT------------- MOVE GROUP ---------------------------------------------
COMMAND ===> _

You have requested that 15 members be MOVED to DNET187.PROD.COPYLIB.

Indicate a new member name in the RENAME column, or leave it blank to
use the same member name.

           Press ENTER to process the list, or the END key to cancel.
           (Use the PF keys for scrolling to see the entire list.)

   NAME     RENAME    LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
 CUSTCOPY              1
 CUSTMAST              1
 CUSTREC               1
 CUSTREC1              1
 CUSTREC2              1
 CUSTVSAM              1
 CUST1                 1 01 01 07/05/18 07/05/23 08:54    23    23     0 DNET187
 CUST1V2               1
 CUST2                 1
 CUST2COB              1
 CUST2CPY              1
 CUST2CUS              1
```

Figure 3-54 Move panel

Members were all copied with the original member name. Figure 3-55 shows the result of pressing Enter. No members remain in the source library, because they were all copied to the target library. The fifteen members were moved to the target library, and the remaining members in the library are hidden by a filter.

```
-IPT--EDIT L1------ DNET187.TEST.COPYLIB --------------ALL MEMBERS ARE HIDDEN
COMMAND  ===> _                                          SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL   COMPRESS INFO     EXPDIR
*FILTER*              23 HIDDEN
    NAME     RENAME    LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
    --END--
```

Figure 3-55 Move results

Figure 3-56 on page 128 shows the edit of `DNET187.PROD.COPYLIB` and the 15 members that were moved that begin with `CUST`.

Archived

```
-IPT--EDIT L2------ DNET187.PROD.COPYLIB --------------------ROW 00001 OF 00015
COMMAND  ===>                                                 SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL   COMPRESS INFO     EXPDIR

   NAME     RENAME    LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  CUSTCOPY             1
  CUSTMAST             1
  CUSTREC              1
  CUSTREC1             1
  CUSTREC2             1
  CUSTVSAM             1
  CUST1                1 01.01 07/05/18 07/05/23 08:54    23    23     0 DNET187
  CUST1V2              1
  CUST2                1
  CUST2COB             1
  CUST2CPY             1
  CUST2CUS             1
  CUST2PRO             1
  CUST2RDF             1
  CUST2SEG             1
   --END--
```

Figure 3-56 Target dataset

3.17 Using the TAILOR command

The TAILOR command defines and initiates one or more MSL commands. You can define the commands using Option 1, Option 2, or by using a Member Selection List.

As shown in the IPT Option 1 or 2, the Browse/View or View panel provides a field that is labeled Do TAILOR (Figure 3-57).

```
-IPT--L1 ------------ EDIT - ENTRY PANEL ------------------------------------
COMMAND ===> ____________________________________________________________
HOTBAR?


ISPF Project  ==> DNET187
     Group    ==> ADLAB     ==> ________  ==> ________  ==> ________
     Type     ==> JCL1
     Member   ==> _______________ (Blank or member name or extended pattern)
Other data set, VSAM file, or z/OS UNIX file:
@H for History-List or @L for 'DNET187.ADLAB.COPYLIB'
Name/Pattern  ==> ____________________________________________________________ +
Volume serial ==> ______    (Optional VOLSER or pattern for selection list)
Password      ==>           (If password protected)
Default func. ==> E         (B=Browse, V=View, E=Edit, BF, EF, VF, or ?)
Do TAILOR     ==> d         (Y=Yes ,N=no, D=define commands)
EDIT/VIEW parameters:
Initial Macro ==> ________        Confirm Cancel/Move/Replace     ==> N (Y,N)
Profile Name  ==> ________        Action Bar in Edit/View         ==> N (Y,N)
Format  Name  ==> ________        Highlight coloring in Edit/View ==> Y (Y,N)
Record Length ==> _____           Exclusive access of viewed file ==> Y (Y,N)
Preserve VB record length ==> N   Mixed Mode (NLS DBCS char. set) ==> N (Y,N)
```

Figure 3-57 Tailor command

Entering **d** allows you to define commands, as shown in Figure 3-58 on page 129.

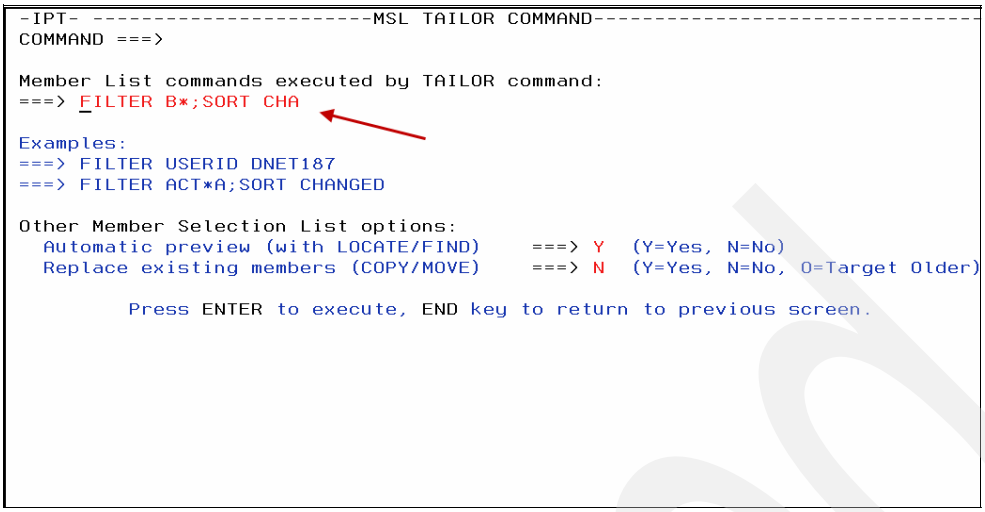

Figure 3-58 Tailor command definition

Figure 3-58 shows the command FILTER B*, which retains only members starting with B. The SORT CHA command sorts the remaining members by descending date and time. You can update the Automatic preview field and the Replace existing members field on this panel.

As shown in Figure 3-59, the Do TAILOR command, which executes the tailoring, is automatically set to Y. Press Enter to browse the MSL using the Tailor commands.

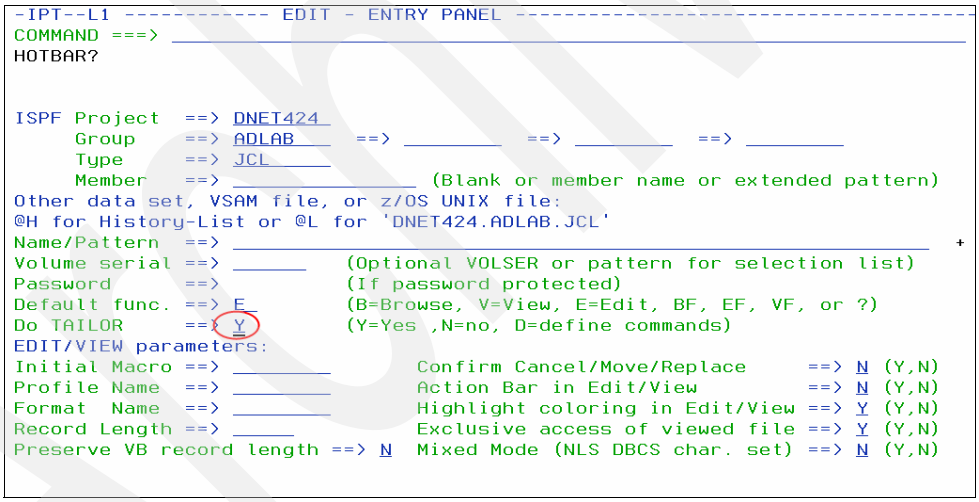

Figure 3-59 Tailor command

Figure 3-60 on page 130 shows only members starting with B and sorted by the changed column.

```
-IPT--EDIT L1------ DNET424.ADLAB.JCL ----------------------ROW 00001 OF 00039
 COMMAND  ===> _                                             SCROLL ===> PAGE
HOTBAR: REFRESH  FLIP     GLOBAL   COMPRESS INFO     EXPDIR
*FILTER*       *SORT* 83 HIDDEN
    NAME    RENAME   LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
   BSAMXV               1 01.07 07/09/13 09/01/09 14:51   110    40     0 DNET424
   BSAM2                1 01.09 07/09/13 08/12/04 11:54    44    43     0 DNET424
   BX                   1 01.01 08/11/24 08/11/24 15:44    60    54     0 DNET424
   BPLIMV               1 01.05 08/11/14 08/11/14 09:48   109   107     0 DNET424
   BSAM1                1 01.26 07/09/13 08/11/13 08:47    54    41     0 DNET424
   BPLIMVS              1 01.00 08/09/24 08/09/24 13:15   229   229     0 DNET424
   BPLIE37              1 01.02 08/09/24 08/09/24 10:26   125   128     0 DNET424
   BPLIE34              1 01.16 07/09/20 08/09/24 09:36   128   125     0 DNET424
   BASAM1               1 01.06 07/10/25 08/09/04 15:48    97    97     0 DNET424
   BSAM1ND              1 01.03 08/08/14 08/08/14 08:58    38    38     0 DNET424
   BSAM2ND              1 01.02 08/08/14 08/08/14 08:40    43    43     0 DNET424
   BASAMDRV             1 01.02 07/10/26 08/06/18 13:20    36    38     0 DNET424
   BJIM                 1 01.01 08/05/01 08/05/01 13:44    53    53     0 DNET424
   BDTDEMO              1 01.00 08/02/23 08/02/23 07:40    36    36     0 DNET424
   BADSTAT              1 01.10 07/10/23 08/02/01 08:37   105   110     0 DNET424
   BCOBOL2              1 01.01 08/01/31 08/01/31 15:28    73    73     0 DNET424
   BADRIVER             1 01.00 08/01/07 08/01/07 15:02    69    69     0 DNET424
   BSAM1V4              1 01.03 08/01/02 08/01/02 10:15    53    53     0 DNET424
   BSAMULK              1 01.06 07/12/07 07/12/07 08:32    17    17     0 DNET424
```

Figure 3-60 Tailor command used with the MSL

Members are listed in the Changed column in descending date and time sequence. There are 83 hidden members that do not meet the Tailor criteria.

You can invoke the TAILOR command directly from the MSL panel that is shown in Figure 3-60, for example, the command “TAILOR?” invokes the MSL TAILOR COMMAND panel. The command TAILOR executes the currently defined commands from the Member Selection List.

3.17.1 Using the MAPPDS command to recover deleted PDS members

The MAPpds command provides a method to display and recover members that were deleted from a PDS. In this scenario, members will be deleted and recovered.

> Note: This function is available until the library is compressed and is not available for PDSE.

In the following scenario, we will delete and recover members from a PDS. In Figure 3-61, we used the **d b*** command to delete all members that begin with B.

```
-IPT--EDIT L1------ DNET187.ADLAB.TESTJCL ----------------ROW 00001 OF 00095
 COMMAND  ===> d b*                                          SCROLL ===> PAGE
HOTBAR?

    NAME    RENAME   LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
   $JOBCARD             1
   APAXX                1 01.02 07/06/27 08/10/09 07:12    67    67     0 DNET187
   BADSTAT              1 01.00 07/05/24 07/05/24 08:52    36    36     0 DNET187
   BAPAAPI              1
   BASAM1DR             1 01.00 07/05/31 07/05/31 13:34    37    37     0 DNET187
   BATCDEMO             1 01.00 07/08/30 07/08/30 09:54   163   163     0 DNET187
   BATM01               1
   BCOBTIMS             1
   BCOBVSAM             1
   BCPROG               1
   BC01                 1
   BDTDEMO              1
   BLABTWO              1
   BPLILAN              1
   BPLIMVS              1
   BPTM01               1
   BSAM1                1 01.03 07/08/10 08/10/09 07:32    35    35     0 DNET187
   BSAM2                1 01.01 07/08/10 08/09/04 09:14    37    37     0 DNET187
   BTDMOSVS             1
```

Figure 3-61 Delete members

Figure 3-62 shows the results of the delete member or D B* command. The members were deleted, but they are available to be restored using IPT up until the PDS is compressed.

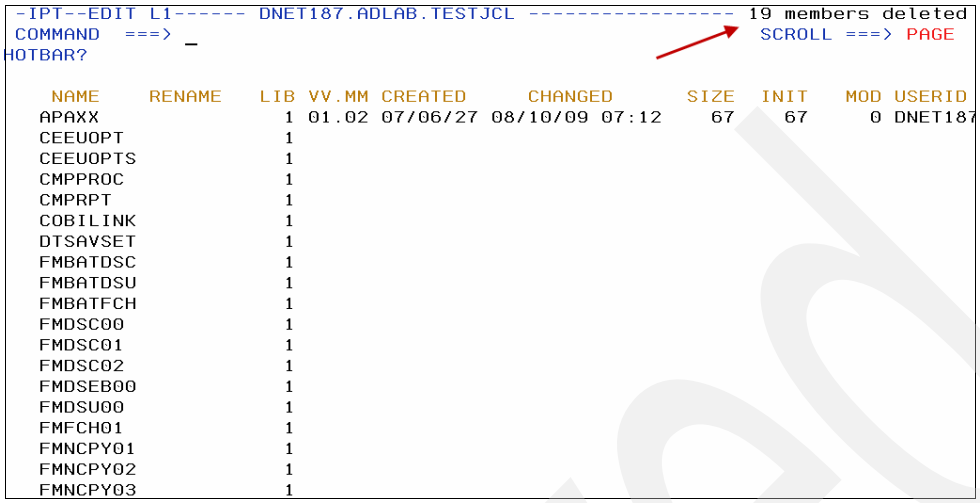

Figure 3-62 Results of Delete Member command

Use the MAPpds command to display all members including deleted members. You can View, Browse, and Restore any deleted member.

In Figure 3-63, which shows the Execute Map Command, we used the **map** command to display all members, including the deleted members.

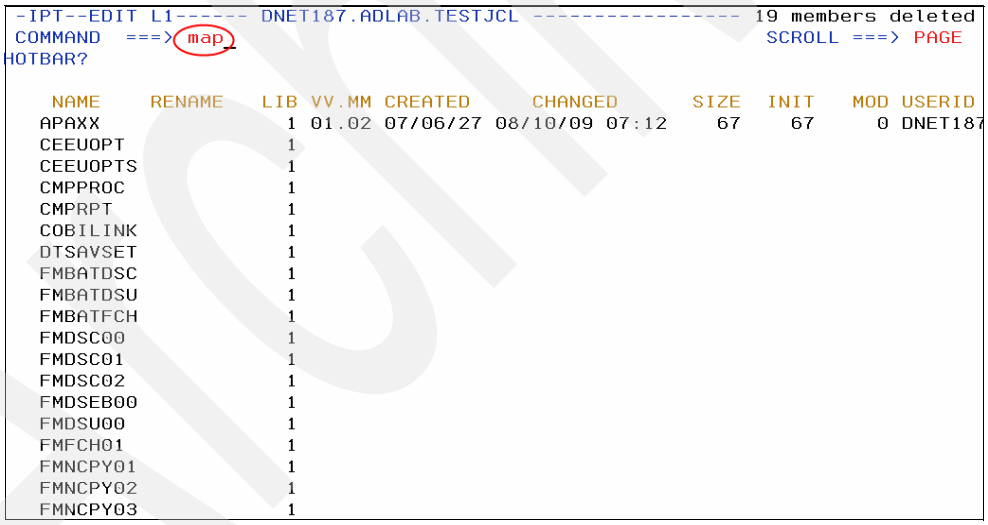

Figure 3-63 Execute the MAP command

Figure 3-64 on page 132, which shows the results of the Map or MAPpds command. The deleted members are identified in the Synonym column. You can use the Point-and-Shoot feature on the Synonym column to group all of the deleted members. You can use the B (browse), E (edit), and V (view) line commands to view the contents of all members.

Archived

```
-IPT--PDS-MAP  L2-- DNET187.ADLAB.TESTJCL ------------ "A" will display assist
COMMAND  ===>                                                SCROLL ===> PAGE
                                                      ON VOLUME DMPU41
   NAME     SYNONYM  SEQNUM     TTR DATASIZE BLKNUM RECNUM
  FMRIP                    1 000020 000013B0       1
  LABCOPY                  2 000022 00000910       1
  XCOBTIMS                 3 000024 00001720       1
  XIMSSTUB                 4 000101 00001E00       1
  $JOBCARD                 5 000103 000000A0       1
           9Z000105        6 000105 00003E80       1
           9Z000107        7 000107 00002DA0       1
  COBILINK                 8 000109 00000AF0       1
  IDILANGP                 9 00010B 000001E0       1
  XTDMOSVS                10 00010D 00000CD0       1
  XTDMZOS                 11 00010F 00000B90       1
  XASAM1                  12 000201 000019F0       1
  XDTDEMO                 13 000203 00001540       1
  XSAMDTU                 14 000205 00001450       1
           9Z000207       15 000207 00002620       1
           9Z000209       16 000209 000029E0       1
           9Z000301       17 000301 000036B0       1
  GC01                    18 000303 00000870       1
  XPSAMM1                 19 000305 00001BD0       1
  XPSAMOS1                20 000307 00001BD0       1
```

Figure 3-64 Results of the map command

Figure 3-65, which is the Assist on Restore Command, shows entering the **a r** command to display the assist information for the Restore command.

```
-IPT--PDS-MAP  L2-- DNET187.ADLAB.TESTJCL -----------------ROW 00001 OF 00095
COMMAND  ===> a r                                            SCROLL ===> PAGE
              *SORT*                                 ON VOLUME DMPU41
   NAME     SYNONYM  SEQNUM     TTR DATASIZE BLKNUM RECNUM
           9Z000901       55 000901 000032F0       1
           9Z000809       49 000809 00000B40       1
           9Z00080B       50 00080B 00000B90       1
           9Z000605       37 000605 000019A0       1
           9Z000603       36 000603 00004650       1
           9Z000601       35 000601 00006770       1
           9Z000503       34 000503 00008430       2
           9Z000501       33 000501 000014F0       1
           9Z000413       32 000413 00001270       1
           9Z000301       17 000301 000036B0       1
           9Z000209       16 000209 000029E0       1
           9Z000207       15 000207 00002620       1
           9Z000107        7 000107 00002DA0       1
           9Z000105        6 000105 00003E80       1
           9Z000D17       93 000D17 00000AF0       1
           9Z000D03       83 000D03 00000B40       1
           9Z000D01       82 000D01 00000B40       1
           9Z000C07       76 000C07 00000B90       1
           9Z000C0F       80 000C0F 00001950       1
  FMRIP                    1 000020 000013B0       1
```

Figure 3-65 Assist on the Restore Command

The restore command allows you to restore one or more deleted members in a PDS that has not been compressed. If you specify a member name in the name column or on the line command for the restore, the specified member name must be unique. The default member name is the synonym.

Figure 3-66 on page 133 is the result of the Assist on Restore command and shows the information that is provided by IPT for the syntax of the Restore command.

```
-IPT--PDS-MAP  L2-- DNET187.ADLAB.TESTJCL ------------------ROW 00001 OF 00095
COMMAND  ===> _                                              SCROLL ===> PAGE
              *SORT*                                 ON VOLUME DMPU41
   NAME     SYNONYM  SEQNUM    TTR DATASIZE BLKNUM RECNUM
            9Z000901 +-----------------------------------------------Assist --+
            9Z000809 |  Function: Restore one or more deleted members          |
            9Z00080B |                                                         |
            9Z000605 |  Syntax:   Restore <seqn> <name>                        |
            9Z000603 |            R <Fseq>-<Lseq>                              |
            9Z000601 |  Where:    <seqn> is a deleted member sequence number.  |
            9Z000503 |            <name> is a deleted member unique name.      |
            9Z000501 |            <Fseq> is first sequence number or "*" .     |
            9Z000413 |            <Lseq> is last sequence number or "*" .      |
            9Z000301 |                                                         |
            9Z000209 |  Examples: R 5 OLDONE - Restore deleted member number 5 |
            9Z000207 |                         as member name OLDONE .         |
            9Z000107 |            R *   - Restore all deleted members.         |
            9Z000105 |            R 7-9 - Restore deleted at entries: 7 8 9    |
            9Z000D17 |                                                         |
            9Z000D03 |  Notes:  - The specified member name must be unique.    |
            9Z000D01 |          - NAME field may be input with restored name.  |
            9Z000C07 |          - The default member name is the SYNONYM.      |
            9Z000C0F |          - Deleted members are lost after a COMPRESS!   |
  FMRIP              +-------------------------------------------------------+
```

Figure 3-66 Results of the Assist on Restore command

These examples demonstrate the Assist on Restore command:

- `R 5 OLDONE`: Restores deleted member number 5 as the member name `OLDONE`.
- `R *`: Restores all deleted members. This command renames all of the deleted members to Synonym names.
- `R 7-9`: Restores deleted member entries: 7, 8, and 9

Figure 3-67 shows the Restore command, which is used to restore one deleted member to a member named `BCCOB`.

```
-IPT--PDS-MAP  L2-- DNET187.ADLAB.TESTJCL ------------------ROW 00001 OF 00095
COMMAND  ===>                                                SCROLL ===> PAGE
              *SORT*                                 ON VOLUME DMPU41
   NAME     SYNONYM  SEQNUM    TTR DATASIZE BLKNUM RECNUM
r bccob_    9Z000901     55 000901 000032F0      1
            9Z000809     49 000809 00000B40      1
            9Z00080B     50 00080B 00000B90      1
            9Z000605     37 000605 000019A0      1
            9Z000603     36 000603 00004650      1
            9Z000601     35 000601 00006770      1
            9Z000503     34 000503 00008430      2
            9Z000501     33 000501 000014F0      1
            9Z000413     32 000413 00001270      1
            9Z000301     17 000301 000036B0      1
            9Z000209     16 000209 000029E0      1
            9Z000207     15 000207 00002620      1
            9Z000107      7 000107 00002DA0      1
            9Z000105      6 000105 00003E80      1
            9Z000D17     93 000D17 00000AF0      1
            9Z000D03     83 000D03 00000B40      1
            9Z000D01     82 000D01 00000B40      1
            9Z000C07     76 000C07 00000B90      1
            9Z000C0F     80 000C0F 00001950      1
  FMRIP                   1 000020 000013B0      1
```

Figure 3-67 Restore command

Figure 3-68 on page 134 shows the restore results for a deleted member to member name `BCCOB`.

Archived

```
-IPT--PDS-MAP  L2-- DNET187.ADLAB.TESTJCL ------------------ROW 00001 OF 00095
COMMAND  ===> _                                              SCROLL ===> PAGE
              *SORT*                                 ON VOLUME DMPU41
   NAME     SYNONYM  SEQNUM    TTR DATASIZE BLKNUM RECNUM
  BCCOB                 55 000901 000032F0      1
            9Z000809     49 000809 00000B40      1
            9Z00080B     50 00080B 00000B90      1
            9Z000605     37 000605 000019A0      1
            9Z000603     36 000603 00004650      1
            9Z000601     35 000601 00006770      1
            9Z000503     34 000503 00008430      2
            9Z000501     33 000501 000014F0      1
            9Z000413     32 000413 00001270      1
            9Z000301     17 000301 000036B0      1
            9Z000209     16 000209 000029E0      1
            9Z000207     15 000207 00002620      1
            9Z000107      7 000107 00002DA0      1
            9Z000105      6 000105 00003E80      1
            9Z000D17     93 000D17 00000AF0      1
            9Z000D03     83 000D03 00000B40      1

          IQIM423  Deleted member "BCCOB" successfully restored.

  FMRIP                  1 000020 000013B0      1
```

Figure 3-68 Restore results

3.17.2 Using the expanded member name field

The expanded member field in IPT was introduced to support finding member names with patterns that exceed eight characters. For example, if you have members ABCDEFGH and BCDEFGHX, the minimum way to find them in a single pattern is *BCDEFGH* or **B*C*DEFGH*.

This function is available in the ISPF Browse and Edit views. It is also available in the IPT shortcuts BR, ED, and VI.

Figure 3-69 shows an example of the expanded Member name field. The Member field is populated with pattern **b*c*defgh*, which is longer than eight characters.

```
-IPT--L1 ------------ EDIT - ENTRY PANEL ------------------
COMMAND ===> ____________________________________________________
HOTBAR?


ISPF Project  ==> DNET187
     Group    ==> ADLAB    ==> ________   ==> _________   ==>
     Type     ==> INSTALL
     Member   ==> **B*C*DEFGH*    (Blank or member name or
Other data set, VSAM file, or z/OS UNIX file:
@H for History-List or @L for 'DNET187.ADLAB.INSTALL'
Name/Pattern  ==> ____________________________________________
Volume serial ==> ______    (Optional VOLSER or pattern for
Password      ==>           (If password protected)
Default func. ==> E         (B=Browse, V=View, E=Edit, BF, I
Do TAILOR     ==> Y         (Y=Yes ,N=no, D=define commands)
EDIT/VIEW parameters:
Initial Macro ==> ________       Confirm Cancel/Move/Replac
Profile Name  ==> ________       Action Bar in Edit/View
Format  Name  ==> ________       Highlight coloring in Edi
Record Length ==> _____          Exclusive access of viewed
Preserve VB record length ==> N  Mixed Mode (NLS DBCS char
```

Figure 3-69 Expanded member name field

4

TSO Command Shell

In this chapter, we discuss the enhanced Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS functions that the Time Sharing Option (TSO) Command Shell provides.

The TSO Command Shell generally provides two sets of command lists:

- History Command List
- Permanent Command List

The maximum capacity of the IPT TSO Command Shell Permanent Command List and the History Command List is up to 999 commands. The TSO shell commands are retained after you log off from TSO and are available when you log on again.

The 999 history commands can be executed from TSO Option 6, and the 999 permanent commands can be executed from any ISPF panel.

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4.1 Validating the TSO Command Shell options in IPT

In this section, we provide information about the IBM IPT Version 6.1 TSO Command Shell.

To validate the TSO shell options in IPT, type `ISET` as a primary command as shown in Figure 4-1.

```
 Menu  Utilities  Compilers  Options  Status  Help
------------------------------------------------------------------------------
                          ISPF Primary Option Menu          IBM IPT VERSION 6.1
Option ===> ISET
------------------------------------------------------------------------------
                                                More:      +
0  Settings      Terminal and user parameters          User ID . : R09713
1  View          Display source data or listings       Time. . . : 15:19
2  Edit          Create or change source data          Terminal. : 3278
3  Utilities     Perform utility functions             Screen. . : 1
4  Foreground    Interactive language processing       Language. : ENGLISH
5  Batch         Submit job for language processing    Appl ID . : ISP
6  Command       Enter TSO or Workstation commands     TSO logon : IPTBETA
7  Dialog Test   Perform dialog testing                TSO prefix: R09713
9  IBM Products  IBM program development products      System ID : EARTH
10 SCLM          SW Configuration Library Manager      MVS acct. : ACCT#
11 Workplace     ISPF Object/Action Workplace          Release . : ISPF 5.8
D  DB2           Perform DB2 Interactive Functions
Q  QMF           Query Management Facility
S  SDFII         Screen Definition Facility
O  OmegaMon      Omegamon XE for DB2 PM v4.1
SD SDSF          System Display and Search Facility
P  Master        Primary Master Menu

    Enter X to Terminate using log/list defaults
```

Figure 4-1 Showing the ISET command for IPT Version 6.1

Note: Alternatively, you can type the ISET T command from any ISPF panel as a shortcut to select the IPT TSO shell options panel that is shown in Figure 4-3.

Select the TSO shell options (Figure 4-2).

```
-IPT- --------------------Setting IBMIPT Defaults-----------------------------
COMMAND ===>
Select options by number, name, with cursor selection, or with line commands:
 IBMIPT is running under ISPF version 5.8

  _  A - ALL        - Select all the below displayed options
  _  M - MSL        - Member Selection List options
  _  O - OLIST      - Object list options
  _  G - GLOBAL     - Global edit and Findtext options
  _  P - PRINT      - Print options
  _  D - DSLIST     - DSLIST options
  S  T - TSO        - TSO shell options
  _  E - EDIT       - Edit, Browse and View options
  _  I - INTERFACE  - Specify user interface options
  _  N - DIAGNOSE   - Diagnose ISPF errors
  _  L - LIBRARY    - Persistent table library options
  _  B - BOOKMGR    - BookManager interface options

    Make your selection and press the ENTER key or press the END key to exit
```

Figure 4-2 TSO shell options selection

Make sure that you set the “Use IBM IPT TSO shell” option to Y, as shown in Figure 4-3.

```
-IPT- ----------------------TSO shell options--------------------------------
COMMAND ===>

IBMIPT TSO command shell options:

  Use IBMIPT TSO shell ===> Y  (Y=Yes - Use the IBMIPT TSO shell)
                               (N=No  - Use the standard ISPF TSO shell)

  If IBMIPT shell active:

  Initial screen      ===> H   (H=History list, P=Permanent list)
  Automatic filling   ===> Y   (Y=Yes - Automatically fill permanent list, N=No)
  Output line number  ===> 7   (Number of screen line where the output of TSO
                                commands is displayed)
  Command list limit  ===> 999 (History and Permanent maximum number of entries)


 Press ENTER or END to exit. Enter CANCEL for installation defaults.
```

Figure 4-3 TSO shell options in ISET

Note: The IPT normal setting for new users is 100 instead of 999. However, the Command list limit that is circled in Figure 4-3 allows you to override the History and Permanent command list limit. In addition, the Automatic filling option that is circled in Figure 4-3 enters your TSO shell commands into the Permanent Command List, in the next available empty slot.

The maximum number of rows in the TSO shell command lists is fixed as 999 for each list. Hence, the Permanent or History table can accommodate approximately 999 x 234 bytes of virtual memory. Thus, these tables together can occupy almost 2 MB of virtual memory and external space in the persistent table library. However, users can lower or customize the maximum number of rows in the TSO shell command lists by using the IPT customization wizard IQIWIZRD.

4.2 Using IQIWIZRD to customize the TSO shell command list

Type the IQIWIZRD command in the ready prompt as shown in Figure 4-4 on page 138.

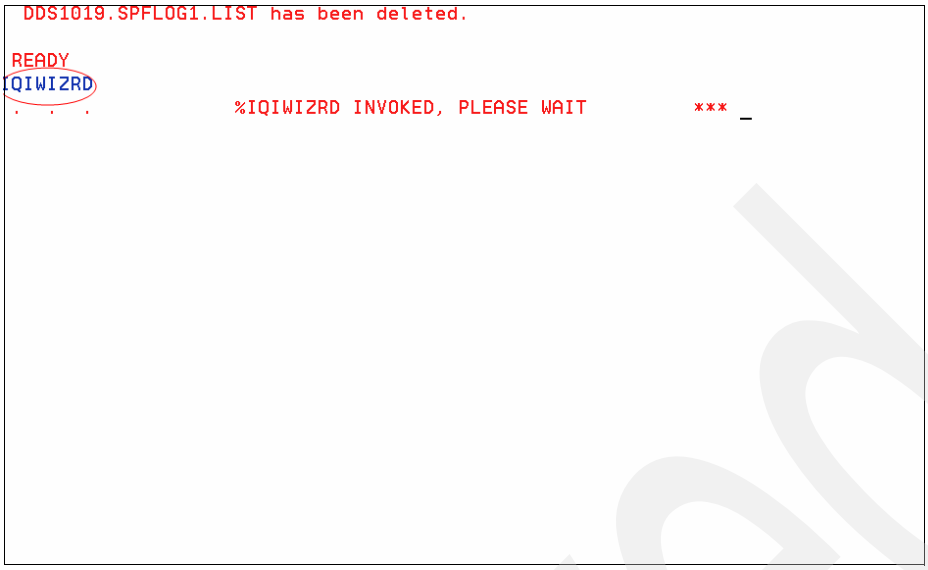

Figure 4-4 IQIWIZRD to invoke IPT Customization wizard

When prompted, type the SIQITLIB library name as shown in Figure 4-5.

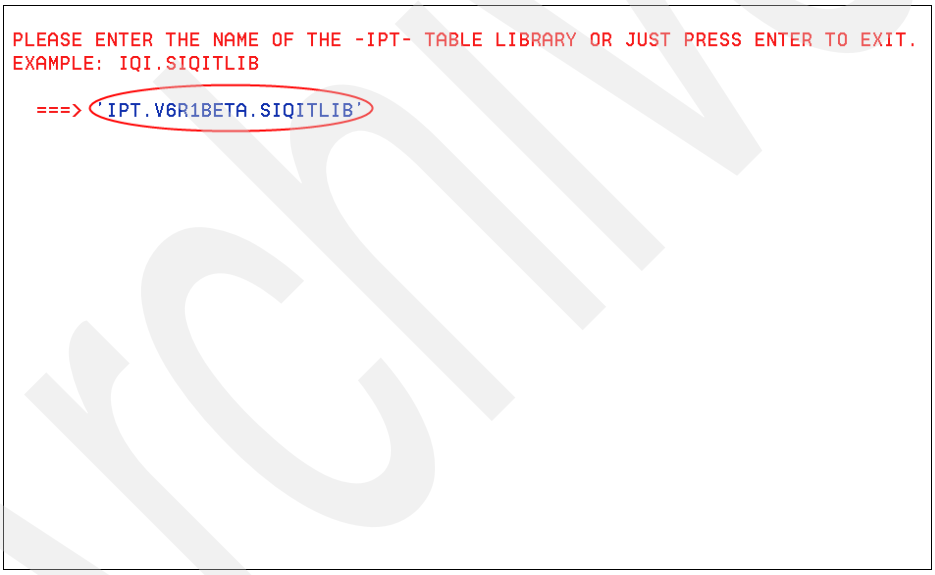

Figure 4-5 SIQITLIB dataset library in IQIWIZRD

Again when prompted, type the IQIPLIB library name as shown in Figure 4-6 on page 139.

Archived

```
PLEASE ENTER THE NAME OF THE -IPT- TABLE LIBRARY OR JUST PRESS ENTER TO EXIT.
EXAMPLE: IQI.SIQITLIB

  ===> 'IPT.V6R1BETA.SIQITLIB'

PLEASE ENTER THE NAME OF THE -IPT- PANEL LIBRARY OR JUST PRESS ENTER TO EXIT.
EXAMPLE: IQI.SIQIPLIB

  ===> 'IPT.V6R1BETA.SIQIPLIB'_
```

Figure 4-6 SIQIPLIB dataset library in IQIWIZRD

Follow the instructions that are provided by the IPT Installation, and press Enter to see the IBMIPT - Customization Wizard as shown in Figure 4-7.

```
------------------------ IBMIPT - Customization Wizard -----------------------
COMMAND ===> 1_

Please select which tasks you want to perform:

1 Customization      - Set up IBMIPT options and defaults.

X EXIT               - Exit - do not customize, do not set up password.

Make selection and press the Enter key or press the END key to exit.

======================== Web Link ===========================================
      http://www.ibm.com/software/awdtools/ispfproductivitytool
================================================================================

     PREVIOUS DEFAULTS WERE UPDATED BY DDS1019 ON 02/12/09 AT 01:40:03
```

Figure 4-7 IPT Customization Wizard

Continue to press Enter until you get the TSO Command Shell option in the Customization Wizard (Figure 4-8 on page 140).

Archived

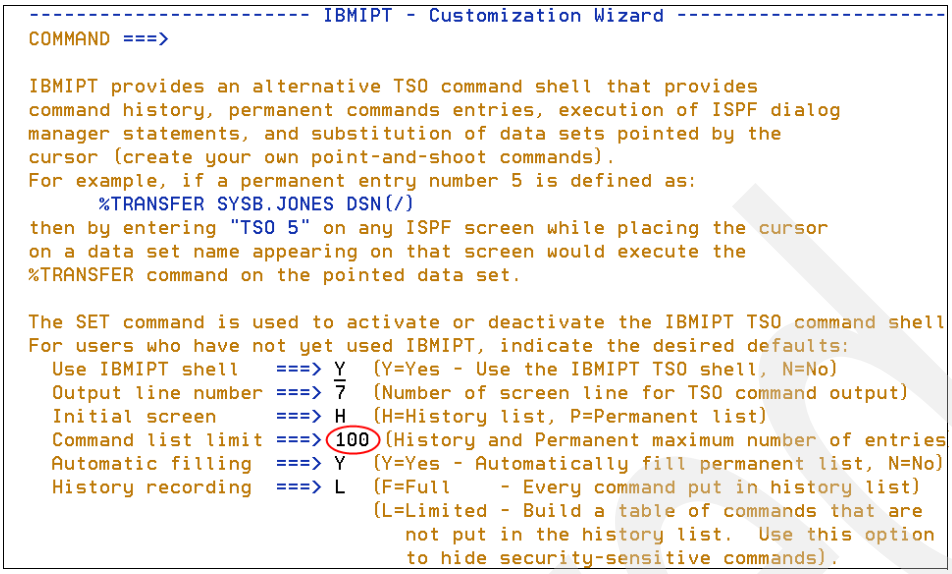

Figure 4-8 TSO shell options in the IBMIPT - Customization Wizard

The users can customize the Command list limit as is shown (circled) in Figure 4-8. However, the ISET T command allows the user to override this Customization Wizard setting.

4.3 IPT History Commands List

The IPT History Commands List can store up to 999 entries automatically. When you enter a new command in the History Commands list, the new command is added as the first entry and the remaining commands are pushed down the list.

4.3.1 Using the TSO Command Shell with the IPT History Command List

Follow these steps:

1. Select **Option 6** in TSO to use the command shell.
2. Invoke a command in TSO Command Shell by typing *n* on the TSO Command Shell, where *n* is the command number.
3. Invoke a command in TSO Command Shell by entering ?*n*, which allows you to modify the command prior to execution.
4. Edit the IPT History Command List, and update the IPT History Command List by typing the **/EH** command.
5. Type the IPT History Command shortcut EX= to display the most recent History Command. The EX= command always displays the History Command List regardless of the TSO shell default settings.

Use slash (/) as a variable for substitution point-and-shoot variables.

Figure 4-9 on page 141 shows the History Command List.

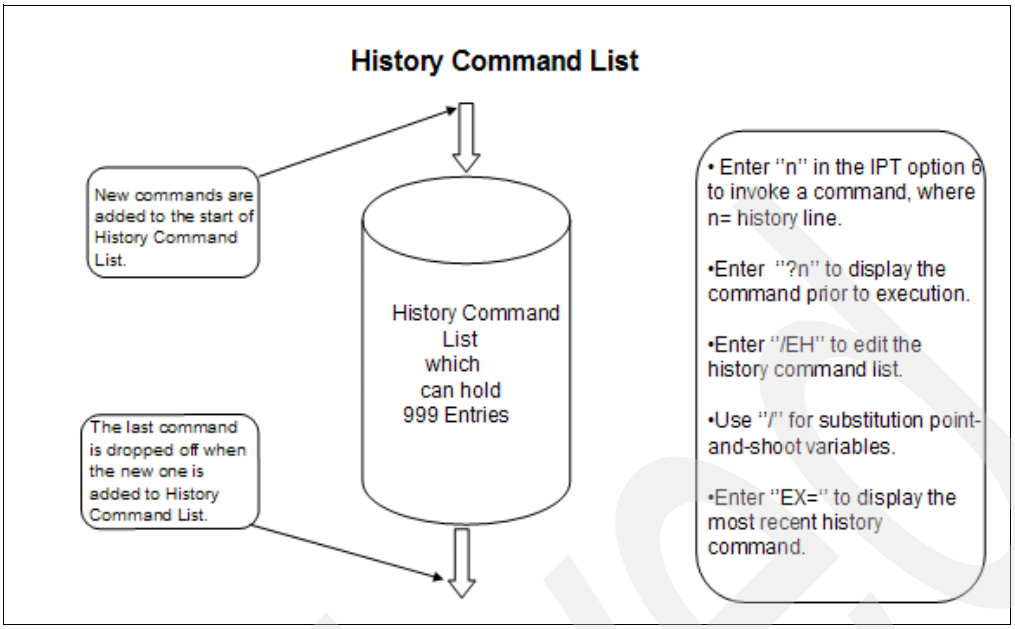

Figure 4-9 IPT History Command List

4.4 IPT Permanent Command List

The IPT Permanent Command List can store up to 999 entries automatically. You can invoke Permanent Commands from any ISPF panel.

4.4.1 Using the TSO Command Shell with the IPT Permanent Command List

Follow these steps:

1. Enter **Option 6** in TSO to use the command shell.
2. Invoke a command in TSO Command Shell by typing ***n*** on the TSO Command Shell, where ***n*** is the permanent command line.
3. Invoke a command in TSO Command Shell by typing **?*n***, which allows you to modify the command prior to execution.
4. Edit the IPT Permanent Command List and update the IPT Permanent Command List by typing the **/EP** command.
5. Enter the IPT Permanent Command shortcut `EX?` to identify how many Permanent Commands are present and their respective sequence numbers. The **EX?** command always displays the Permanent Command List regardless of the TSO shell default settings.

Use slash (/) as a variable for substitution point-and-shoot variables.

You can invoke the Permanent Command List from any ISPF panel by performing these tasks:

- Typing **EX*n***, where ***n*** = 1 to 9, representing one of the first nine permanent commands.
- Typing **TSO *n*** where ***n*** = 1 to 999.

Figure 4-10 on page 142 shows the Permanent Command List.

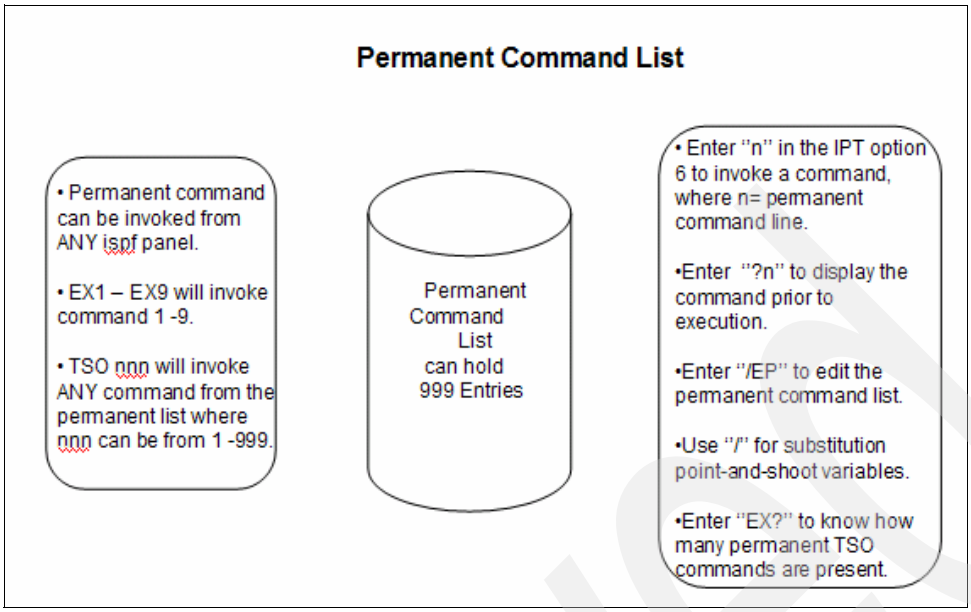

Figure 4-10 IPT Permanent Command List

4.5 TSO Command Shell list

IPT Option 6 displays the panel that is shown in Figure 4-11 on page 143. You can enter the following commands from this panel:

n	Executes any of the 999 commands.
?*n*	Displays any of the 999 prior to execution.
/IS	Navigates to the ISPF command shell option.
/EH	Allows you to edit and update the History Command List.
EX=	Displays the most recent History Command.
/P	Displays the Permanent Command List.
EX?	Identifies how many Permanent Commands were entered.
/EP	Allows you to edit and update the Permanent Command List.
/SAV	Saves the Command List that is shown.
/RES	Restores the Command List that is shown.

Use the **/SAV** command to save the Command List. However, when you exit IPT, both Permanent Command Lists and History Command Lists are automatically saved. But if the user gets cancelled without a prior **/SAV** after modifying or accidentally deleting the Permanent Command List, the changes will be lost from the memory.

Note: The **EX=** command can be used as a shortcut to display the History Command List from the TSO Command Shell regardless of the TSO Shell Default settings. Similarly, the **EX?** command can be used as a shortcut to display the Permanent Command List from the TSO Command Shell regardless of the TSO Shell Default settings.

Archive

4.5.1 Demonstration of TSO History Command List options

Next, we demonstrate the *n* command in the TSO History option:

Figure 4-11 and Figure 4-12 demonstrate the use of the ***n*** command from the History Command List where *n* is any number from 1 to 999.

```
-IPT-                          TSO COMMAND SHELL                  Row 1 to 13 of 25
IQIP627  LISTA executed. Return code is zero.
Command ===> ?5


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.      Scroll => CSR
       /IS standard ISPF/TSO, /P permanent
       /EH edit history, /EP edit permanent, /SAV save, /RES restore
       <c><entry number> where <c> is ? or / or omitted.

-------------------------  HISTORY COMMAND LIST  ------------------------------
  1 | lista                                                                  ->
  2 | xmit dalmvs50.d659713 da('R09713.SAMPLE.TEST')                         ->
  3 | HOMETEST                                                               ->
  4 | obrowse                                                                ->
  5 | racf                                                                   ->
  6 | lu                                                                     ->
  7 | FM                                                                     ->
  8 | N                                                                      ->
  9 | DITTO                                                                  ->
 10 |                                                                        ->
 11 |                                                                        ->
 12 |                                                                        ->
 13 |                                                                        ->
```

Figure 4-11 History Command List in the TSO Command Shell

The LISTA command will be invoked when you type 1 in the History Command List.

```
-IPT-                          TSO COMMAND SHELL                  Row 1 to 13 of 25
IQIP627  LISTA executed. Return code is zero.
Command ===> 1


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.      Scroll => CSR
IQI.BETA610.SIQILPA
MQM.SCSQANLE
MQM.SCSQAUTH
QMF.SDSQEXIT
QMF.SDSQLOAD
SYS1.DSN810.SDSNEXIT
DSN810.SDSNLOAD
GDDM.SADMMOD
SYS1.HELP
ISF.SISFHELP
SYS1.SBDTHELP
SYS1.HELPENP
ISP.SISPHELP
SYS1.BRODCAST
TERMFILE
TERMFILE
QMF.SDSQMAPE
***
```

Figure 4-12 Results of LISTA command

Demonstrating the ?n command in the TSO History option

Figure 4-13 on page 144 demonstrates the use of the **?*n*** command from the History Command List where *n* is any number from 1 to 999. The **?*n*** command provides you with the exclusive option to display the command and modify the command if needed prior to executing the command.

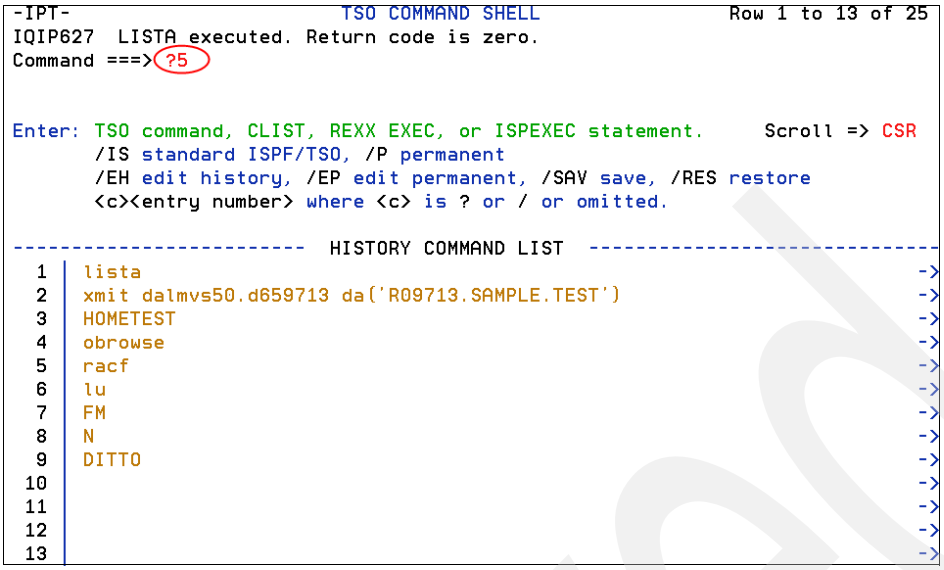

Figure 4-13 TSO History Command List in the TSO Command Shell showing a ?n entry

The RACF® command can be modified prior to execution, as shown in Figure 4-14.

Figure 4-14 RACF command available for modification if required

Demonstrating the /IS command in the TSO History option

Figure 4-15 on page 145 demonstrates the use of the **/IS** command. You can navigate to the ISPF Command shell by using the IS command from both the History Command List and the Permanent Command List.

Archived

```
-IPT-                          TSO COMMAND SHELL                Row 1 to 13 of 25
*** Press ENTER to execute the displayed command. ***
Command ===> /IS_


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.     Scroll => CSR
       /IS standard ISPF/TSO, /P permanent
       /EH edit history, /EP edit permanent, /SAV save, /RES restore
       <c><entry number> where <c> is ? or / or omitted.

------------------------  HISTORY COMMAND LIST  ------------------------------
  1 | lista                                                                 ->
  2 | xmit dalmvs50.d659713 da('R09713.SAMPLE.TEST')                        ->
  3 | HOMETEST                                                              ->
  4 | obrowse                                                               ->
  5 | racf                                                                  ->
  6 | lu                                                                    ->
  7 | FM                                                                    ->
  8 | N                                                                     ->
  9 | DITTO                                                                 ->
 10 |                                                                       ->
 11 |                                                                       ->
 12 |                                                                       ->
 13 |                                                                       ->
```

Figure 4-15 TSO History Command shell showing /IS entry

Figure 4-16 shows the result of the **/IS** command. You can use the ISPF Command Shell to enter TSO or other workstation commands.

```
  Menu  List  Mode  Functions  Utilities  Help
____________________________________________________________________________

                              ISPF Command Shell
Enter TSO or Workstation commands below:

===> _________________________________________________________________________

Place cursor on choice and press enter to Retrieve command

=> XMIT DALMVS50.D659713 DA('R09713.SAMPLE.TEST')
=>
=>
=>
=>
=>
=>
=>
=>
=>
```

Figure 4-16 ISPF Command Shell

Demonstrating the /EH command in the TSO History option

Figure 4-17 on page 146 demonstrates the use of the **/EH** command. You can edit and modify the commands in the History Command List using the **/EH** command.

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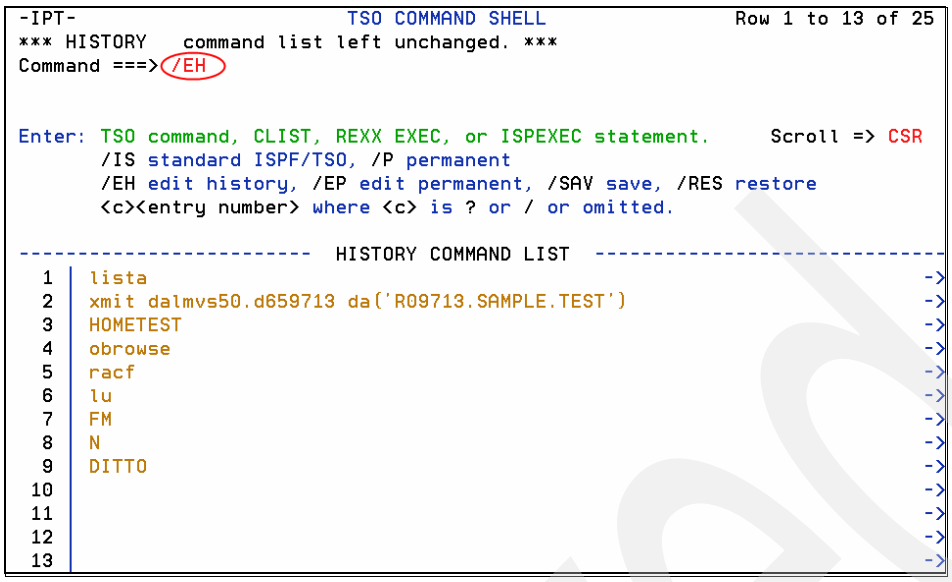

Figure 4-17 TSO History Command List in the TSO Command Shell showing the /EH entry

The **/EH** command allows you to modify, insert, or delete the History Command List using standard ISPF editor commands. Figure 4-18 shows the resulting Edit panel for the TSO Command Shell History.

Figure 4-18 Result of the /EH entry in the TSO Command Shell History

Demonstrating the EX= command to get most recent History listing

Figure 4-19 on page 147 demonstrates the use of the **EX=** command, which helps to display the most recent History command entered in the History Command List.

Archived

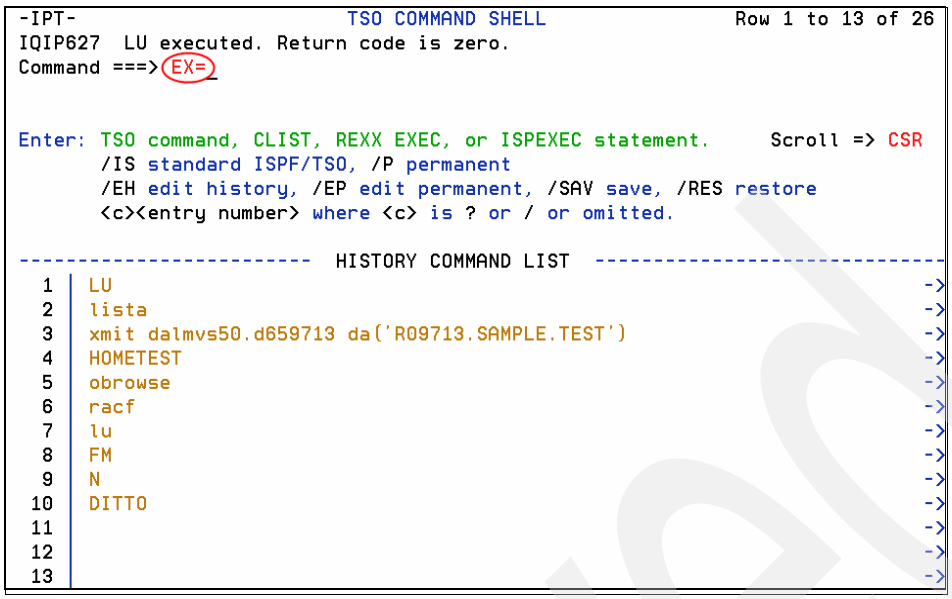

Figure 4-19 TSO History Command shell showing the EX= entry

Figure 4-20 displays the TSO LU command, which is the most recent History command entered in the History Command List.

Figure 4-20 The result of the /EH entry in the TSO History Command Shell

Note: You can also use the **TSO =** command as a shortcut to display the History Command List from the TSO Command Shell, regardless of the TSO Shell Default settings. This command is identical to the **EX=** command previously demonstrated. The only difference between the **TSO =** command and the **EX=** command is that the **TSO =** command has an embedded space whereas **EX=** does not an embedded space. In addition, you can also use the **TSO?** command as a shortcut to display the History Command List. However, the **TSO ?** command does not recall the last History command that was executed.

4.5.2 Demonstrating TSO Permanent Command List options

Next, we demonstrate the **/P** command to get the TSO Permanent Command Listing. Figure 4-21 demonstrates the use of the **/P** command, which helps to display the Permanent Command List from the TSO Command Shell panel. You can type the **/P** command in ISPF Option 6 to display the Permanent command list.

```
-IPT-                          TSO COMMAND SHELL                  Row 1 to 13 of 26
*** Press ENTER to execute the displayed command. ***
Command ===> _


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.      Scroll => CSR
       /IS standard ISPF/TSO, /P permanent
       /EH edit history, /EP edit permanent, /SAV save, /RES restore
       <c><entry number> where <c> is ? or / or omitted.

-------------------------  HISTORY COMMAND LIST  ------------------------------
  1 | LU                                                                    ->
  2 | lista                                                                 ->
  3 | xmit dalmvs50.d659713 da('R09713.SAMPLE.TEST')                        ->
  4 | HOMETEST                                                              ->
  5 | obrowse                                                               ->
  6 | racf                                                                  ->
  7 | lu                                                                    ->
  8 | FM                                                                    ->
  9 | N                                                                     ->
 10 | DITTO                                                                 ->
 11 |                                                                       ->
 12 |                                                                       ->
 13 |                                                                       ->
```

Figure 4-21 History Command List in the TSO Command Shell in ISPF Option 6

Figure 4-22 displays the Permanent Command List as a result of the **/P** command in the TSO History Command Shell.

```
-IPT-                          TSO COMMAND SHELL                  Row 1 to 13 of 999
PF6/F6=Standard SPF/TSO, PF10/F10=Set Linenum
Command ===> EX?


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.      Scroll => CSR
       /IS standard ISPF/TSO, /H history
       /EH edit history, /EP edit permanent, /SAV save, /RES restore
       <c><entry number> where <c> is ? or / or omitted.

------------------------- PERMANENT COMMAND LIST ------------------------------
  1 | FM                                                                    ->
  2 | DITTO                          _                                      ->
  3 | lu                                                                    ->
  4 | racf                                                                  ->
  5 | obrowse                                                               ->
  6 | lista                                                                 ->
  7 | HOMETEST                                                              ->
  8 | xmit dalmvs50.d659713 da('R09713.SAMPLE.TEST')                        ->
  9 | LU                                                                    ->
 10 |                                                                       ->
 11 |                                                                       ->
 12 |                                                                       ->
 13 |                                                                       ->
```

Figure 4-22 Result of the /P entry showing the Permanent Command List in the TSO Command Shell

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Demonstrating the EX? command in the TSO Permanent Command List option

Figure 4-23 displays the result of the **EX?** command in the Permanent Command List of the TSO Command Shell. Figure 4-23 helps to identify how many permanent commands are entered in the Permanent Command List shell. The **EX?** command always displays the TSO Permanent Command List shell from any TSO panel, regardless of the default settings.

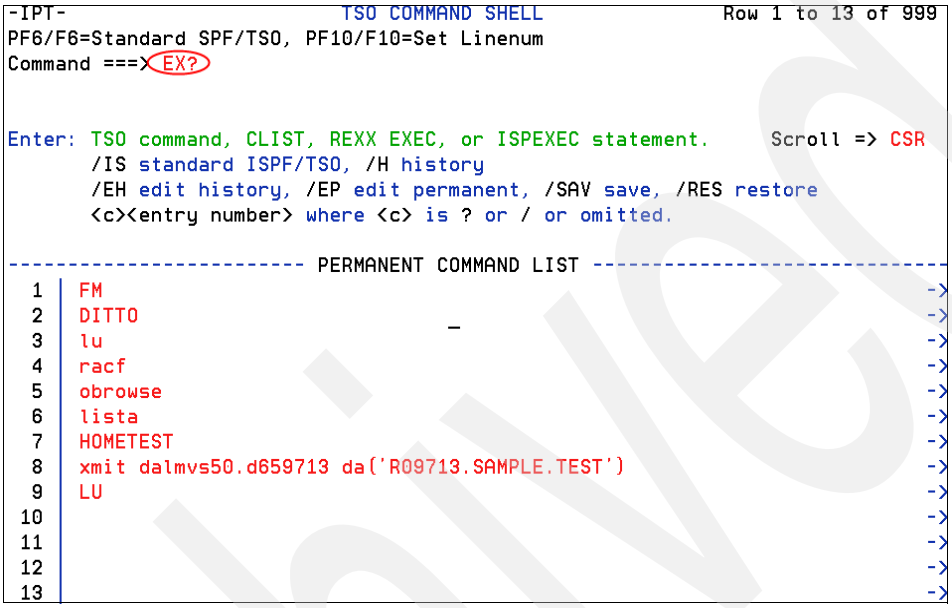

Figure 4-23 The result of the EX? entry showing the Permanent Commands

Demonstrating the use of the EXn command from any ISPF panel to invoke the Permanent TSO option

Figure 4-24 displays the **EX2** command entered in the IPT dataset display list with the cursor positioned in dataset number 2.

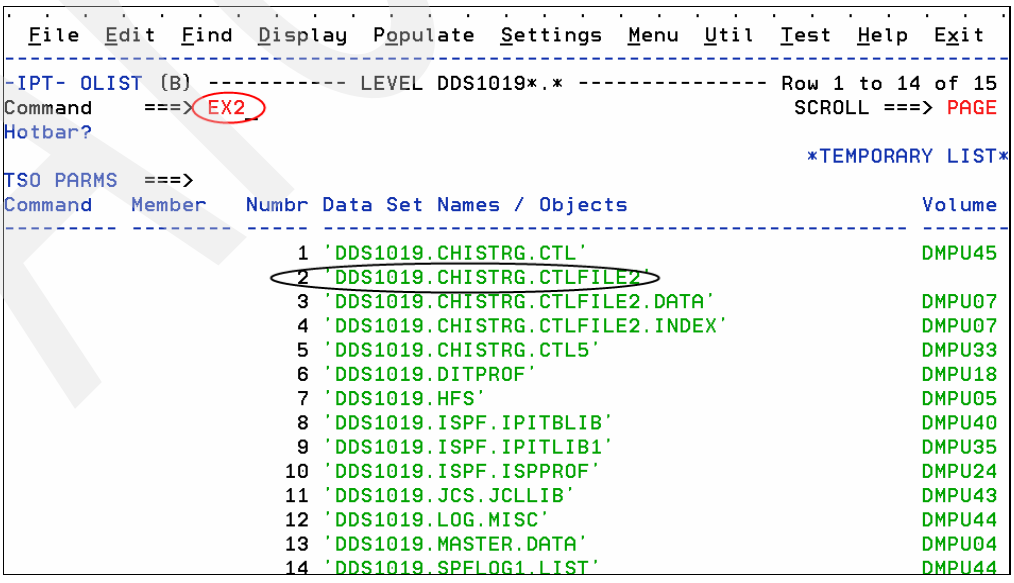

Figure 4-24 Entering the EX2 command with the cursor positioned on dataset number 2

Archived

Figure 4-25 indicates that the TSO DITTO command is invoked from the TSO Permanent Command list line number 2.

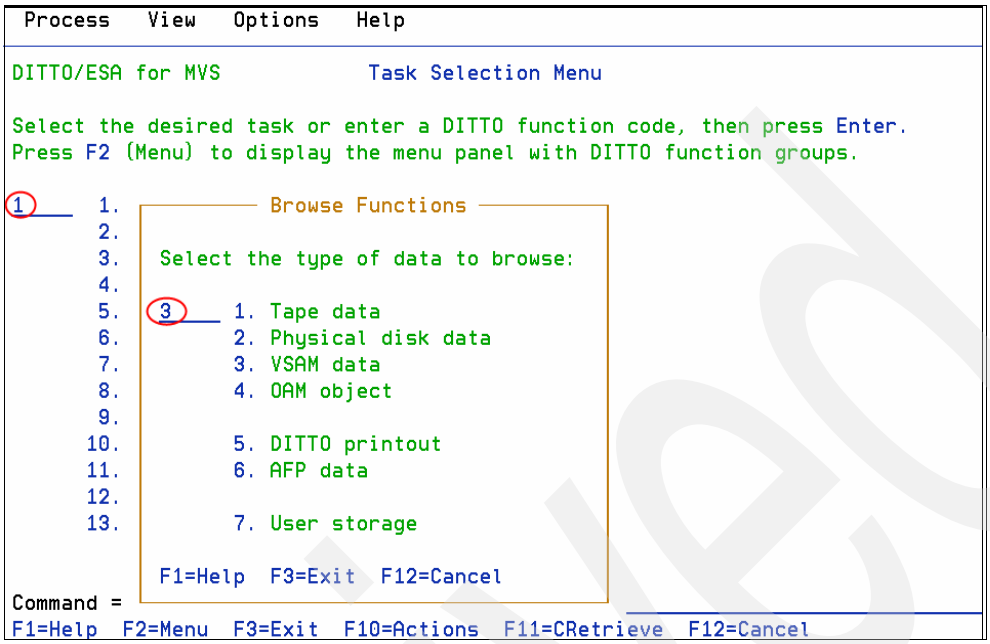

Figure 4-25 Result of entering EX2 which invoked the DITTO command

Demonstrating the /EP command in the TSO Permanent option

Figure 4-26 demonstrates the use of the **/EP** command, which helps you to edit and update the Permanent Command List.

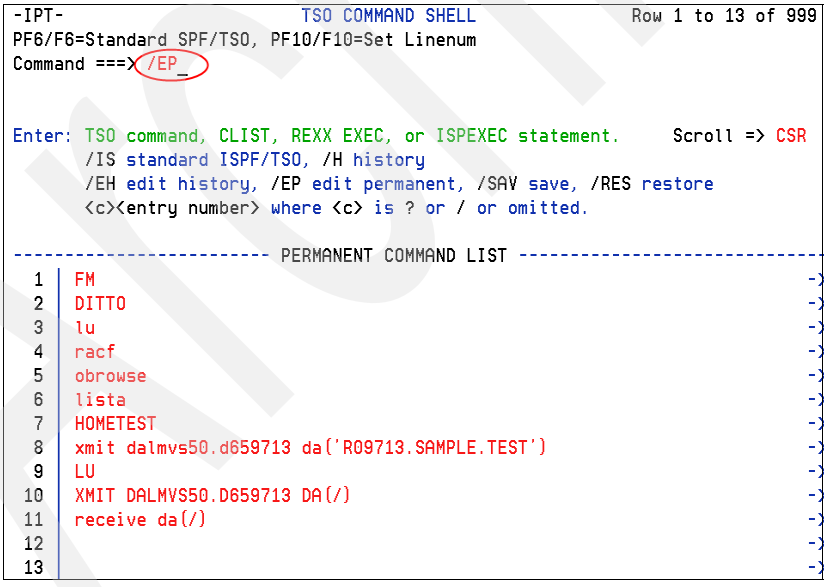

Figure 4-26 TSO Permanent Command List shell with the /EP entry

You can edit and modify the commands in the Permanent Command List using the **/EP** command, as seen in Figure 4-27 on page 151.

```
-IPT- EDIT-------- .......TSO_COMMAND_SHELL....PERMANENT- COLUMNS 00001 00072
COMMAND ===>                                                 SCROLL ===> PAGE
****** ***************************** Top of Data ******************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
000001 FM
000002 DITTO
000003 lu
000004 racf
000005 obrowse
000006 lista
000007 HOMETEST
000008 xmit dalmvs50.d659713 da('R09713.SAMPLE.TEST')
000009 LU
000010 XMIT DALMVS50.D659713 DA(/)
000011 receive da(/)
****** **************************** Bottom of Data ****************************
```

Figure 4-27 Result of entering the /EP command showing TSO Permanent Command shell

Demonstrating the TSO Shell place holder feature

When you enter a TSO Permanent or History shell command that contains a forward slash character (/), you will be prompted to enter a replacement character string. This string is usually a dataset name as shown in Figure 4-28.

```
-IPT-                        TSO COMMAND SHELL                  Row 1 to 13 of 22
IQIP629  LISTDS ended. Return code of 20
Command ===>1


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.     Scroll => CSR
       /IS standard ISPF/TSO, /P permanent
       /EH edit history, /EP edit permanent, /SAV save, /RES restore
       <c><entry number> where <c> is ? or / or omitted.

------------------------  HISTORY COMMAND LIST  -------------------------------
  1 | listds /                                                              ->
  2 | RACF                                                                  ->
  3 | o symbols                                                             ->
  4 | d symbols                                                             ->
  5 |                                                                       ->
  6 | *** The above commands copied from your initial PROFILE ***           ->
  7 |                                                                       ->
  8 |                                                                       ->
  9 |                                                                       ->
 10 |                                                                       ->
 11 |                                                                       ->
 12 |                                                                       ->
 13 |                                                                       ->
```

Figure 4-28 LISTDS / entry in TSO History Command List shell

Figure 4-29 on page 152 prompts you to enter the dataset name.

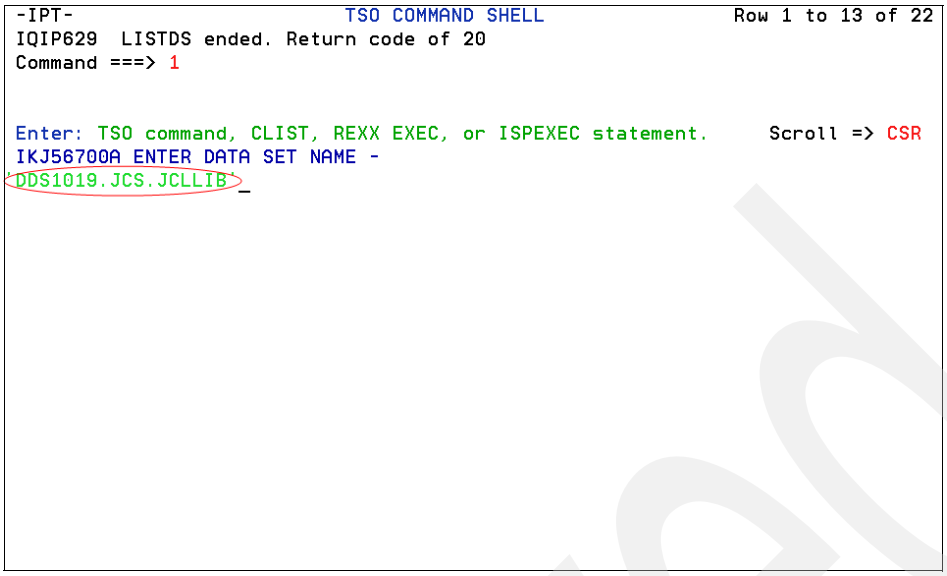

Figure 4-29 Prompt to enter dataset name showing / prompting for the dataset name

Figure 4-30 displays the LISTDS command result for the dataset DDS1019.JCS.JCLLIB.

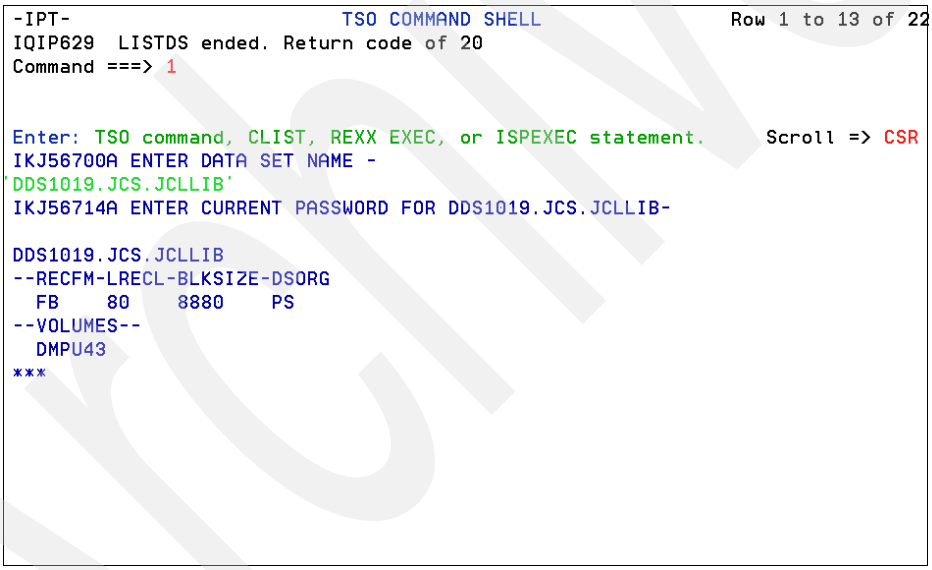

Figure 4-30 Result of LISTDS / entry in the TSO Command Shell

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5

IPT Global Commands

Are you new to Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS? IPT is powerful, fast, rich in features, and complex. However, all you really need to know is the **`IPT?`** command.

Note: IPT Global Commands are also known as *IPT Command Shortcuts*.

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5.1 IPT Global commands

Type IPT? on a command line in any ISPF or IPT panel (Figure 5-1).

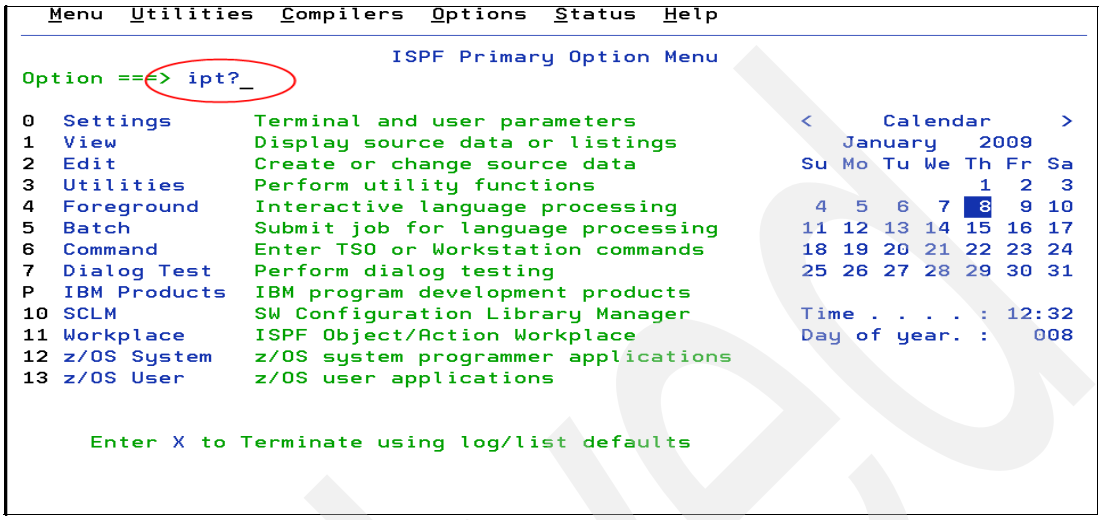

Figure 5-1 Command line with ipt? command

Press Enter. Figure 5-2 shows the Command Shortcuts panel.

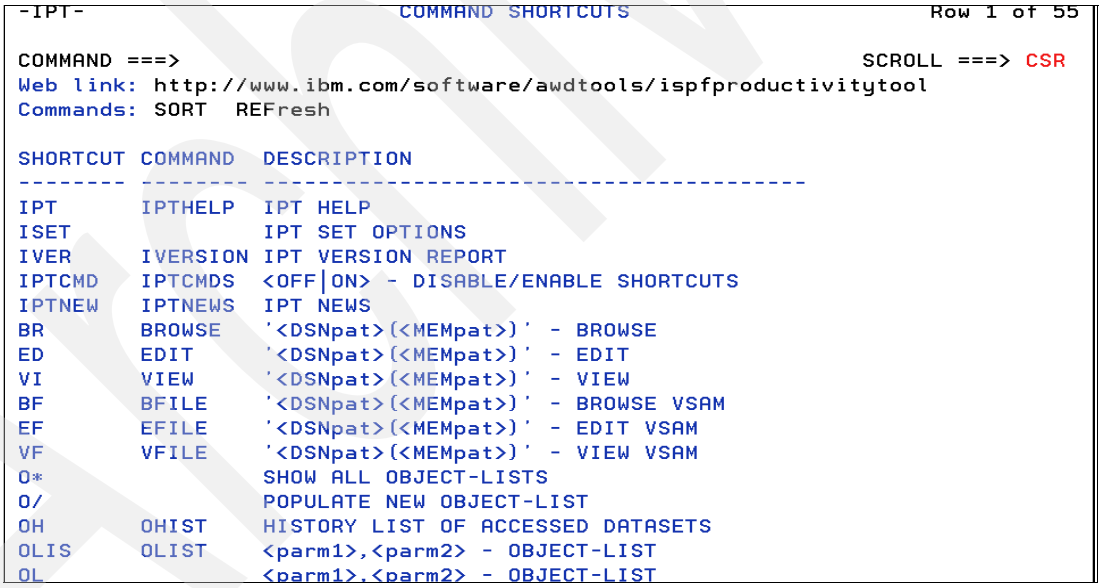

Figure 5-2 First Command Shortcuts panel

Whether you are unfamiliar with IPT or whether you are an experienced user looking for a particular command's syntax, the **IPT?** command is your quick, concise, online resource for IPT information.

5.1.1 Command Shortcuts panels tour

If you navigate to the Web site that is shown beneath the command line on Figure 5-2 by using your favorite browser, you see more information about the IBM ISPF tool family. See Figure 5-3 on page 155.

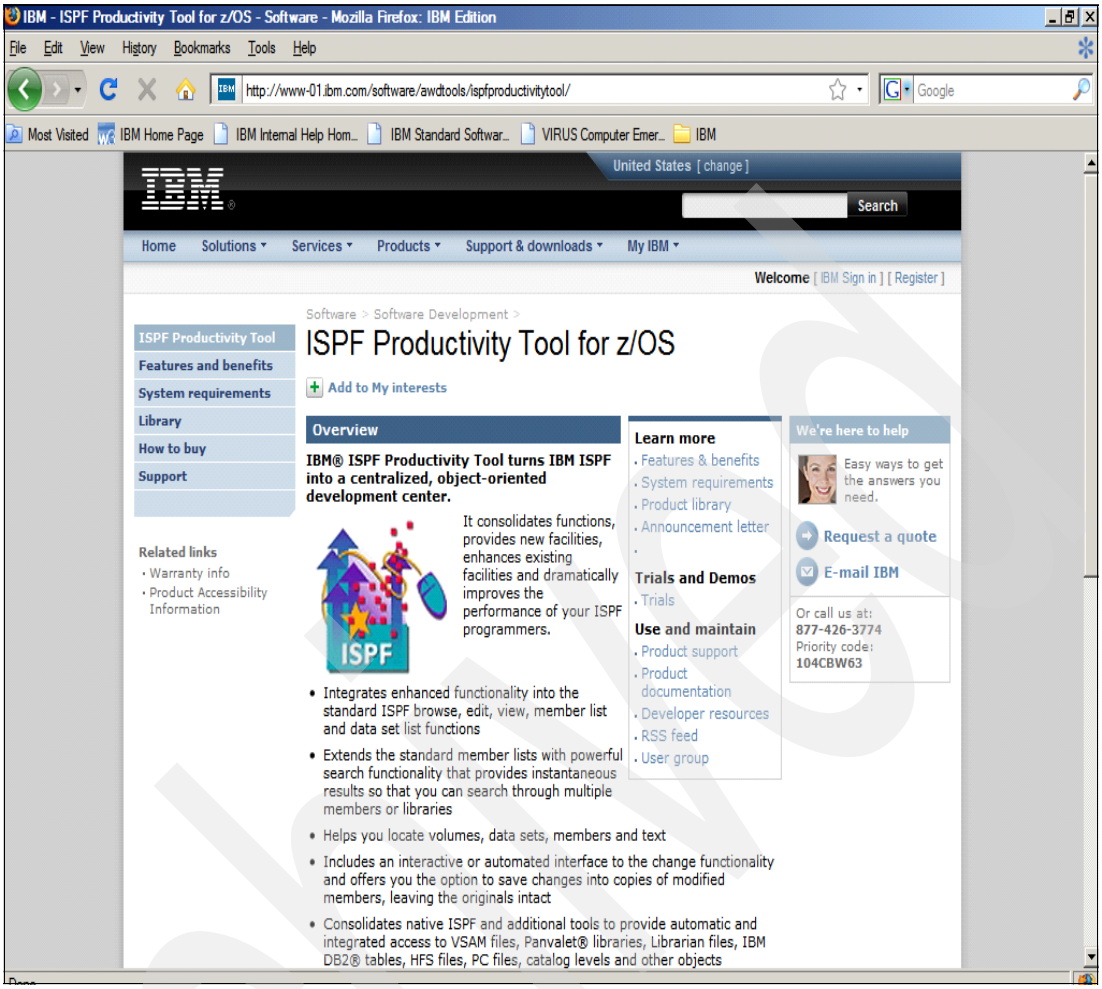

Figure 5-3 IBM ISPF Web site

Go to this Web site:

`http://www.ibm.com/software/awdtools/ispfproductivitytool`

Notice the upper right corner of Figure 5-4 on page 156.

```
-IPT-                          COMMAND SHORTCUTS                        Row 1 of 55

COMMAND ===>                                                          SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
IPT      IPTHELP  IPT HELP
ISET              IPT SET OPTIONS
IVER     IVERSION IPT VERSION REPORT
IPTCMD   IPTCMDS  <OFF|ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
BR       BROWSE   '<DSNpat>(<MEMpat>)' - BROWSE
ED       EDIT     '<DSNpat>(<MEMpat>)' - EDIT
VI       VIEW     '<DSNpat>(<MEMpat>)' - VIEW
BF       BFILE    '<DSNpat>(<MEMpat>)' - BROWSE VSAM
EF       EFILE    '<DSNpat>(<MEMpat>)' - EDIT VSAM
VF       VFILE    '<DSNpat>(<MEMpat>)' - VIEW VSAM
O*                SHOW ALL OBJECT-LISTS
O/                POPULATE NEW OBJECT-LIST
OH       OHIST    HISTORY LIST OF ACCESSED DATASETS
OLIS     OLIST    <parm1>,<parm2> - OBJECT-LIST
OL                <parm1>,<parm2> - OBJECT-LIST
```

Figure 5-4 Command Shortcuts panels

There are 55 rows through which to scroll. **IPT?** has a rich set of command shortcuts. Notice that the commands listed on the panel are not displayed in alphabetical order. Instead, the list is displayed with the commands grouped in a functional order to help you get to the most commonly used information quickly.

The shortcut commands for IPT are listed first. Using these commands takes you to information about IPT and how to use it, to panels for configuring IPT to your personal preferences, and to the latest news about IPT. Next, we find the most commonly used ISPF/IPT commands and the commands that are most immediately helpful. Following these commands are the object list commands and the execute commands.

The two commands that display next to the Commands: label in Figure 5-4, SORT and REFresh, will switch the list to an alphabetically ordered list or return the list to its normal state.

You might find an alphabetically ordered list easier to search than the functionally ordered list. To display the list alphabetically, type SORT on the command line and press Enter. Refer to Figure 5-5 on page 157.

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```
-IPT-                          COMMAND SHORTCUTS                          Row 1 of 55

COMMAND ===> sort_                                                  SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
IPT      IPTHELP  IPT HELP
ISET              IPT SET OPTIONS
IVER     IVERSION IPT VERSION REPORT
IPTCMD   IPTCMDS  <OFF|ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
BR       BROWSE   '<DSNpat>(<MEMpat>)' - BROWSE
ED       EDIT     '<DSNpat>(<MEMpat>)' - EDIT
VI       VIEW     '<DSNpat>(<MEMpat>)' - VIEW
BF       BFILE    '<DSNpat>(<MEMpat>)' - BROWSE VSAM
EF       EFILE    '<DSNpat>(<MEMpat>)' - EDIT VSAM
VF       VFILE    '<DSNpat>(<MEMpat>)' - VIEW VSAM
O*                SHOW ALL OBJECT-LISTS
O/                POPULATE NEW OBJECT-LIST
OH       OHIST    HISTORY LIST OF ACCESSED DATASETS
OLIS     OLIST    <parm1>,<parm2> - OBJECT-LIST
OL                <parm1>,<parm2> - OBJECT-LIST
```

Figure 5-5 Changing to sort

Figure 5-6 shows the alphabetically ordered command list.

```
-IPT-                          COMMAND SHORTCUTS                          Row 1 of 55

COMMAND ===> _                                                      SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
BF       BFILE    '<DSNpat>(<MEMpat>)' - BROWSE VSAM
BR       BROWSE   '<DSNpat>(<MEMpat>)' - BROWSE
ED       EDIT     '<DSNpat>(<MEMpat>)' - EDIT
EF       EFILE    '<DSNpat>(<MEMpat>)' - EDIT VSAM
EX?      EX?????? DISPLAY TSO PERMANENT COMMANDS
EX=               DISPLAY TSO MOST RECENT COMMAND
EX1               EXECUTE TSO PERMANENT COMMAND #1
EX2               EXECUTE TSO PERMANENT COMMAND #2
EX3               EXECUTE TSO PERMANENT COMMAND #3
EX4               EXECUTE TSO PERMANENT COMMAND #4
EX5               EXECUTE TSO PERMANENT COMMAND #5
EX6               EXECUTE TSO PERMANENT COMMAND #6
EX7               EXECUTE TSO PERMANENT COMMAND #7
EX8               EXECUTE TSO PERMANENT COMMAND #8
EX9               EXECUTE TSO PERMANENT COMMAND #9
IDIAG             <parm1>,<parm2> - IPT DIAGNOSTICS
```

Figure 5-6 Alphabetically ordered command list

Typing `REF` on the command line and pressing Enter restores the panel display to its normal configuration, as previously shown in Figure 5-4 on page 156.

5.2 IPT syntax definitions

Figure 5-7 shows parts of the **IPT?** panels where the dataset commands are listed. The third column contains shorthand notations that require explanation.

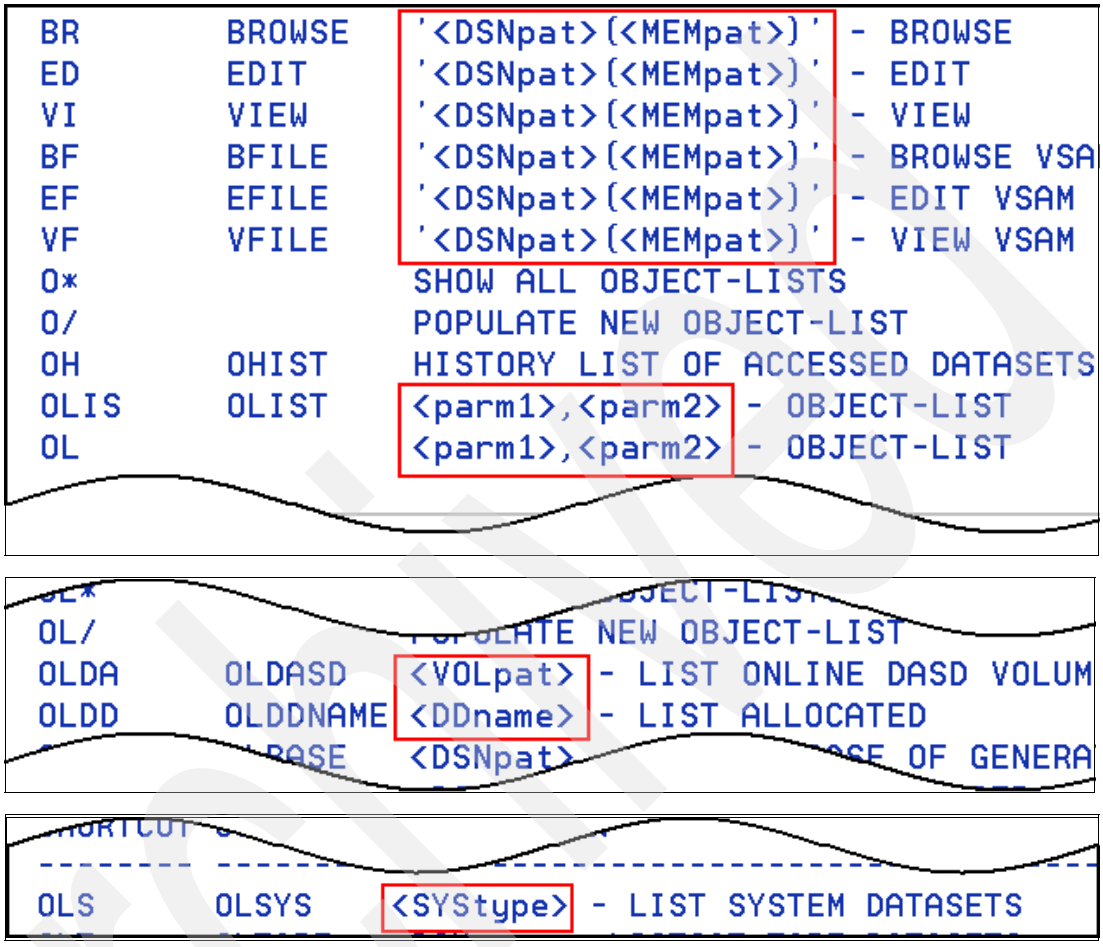

Figure 5-7 Shorthand notations

Refer to Figure 5-7 for these explanations:

- “pat”: pattern. Explains patterns as seen by IPT
- “parm”: parameter. Explains parameter as seen by IPT
- DSNpat: Dataset name pattern. Required by patterns enclosed in apostrophes
- MEMpat: MEMber name pattern
- VOL: VOLume pattern
- DDname: Data Definition name (from JCL DD statement)
- SYStype: System type

Using the **IPT?** command shows that various shortcut commands can be used in conjunction with parameters to produce a result with less navigation. We next look at performing a generic search and the capabilities of **IPT?** searches.

Archive

5.3 Generic searches with dataset patterns

Note: Generic pattern searching in IPT is more inclusive than in ISPF.

Generic pattern searches are performed using the wildcard characters asterisk (*) and percentage symbol (%). If IPT encounters a pattern that fits the standard ISPF pattern syntax, it uses the ISPF generic search. When IPT encounters a nonconforming pattern, it uses its own search method. Use the wildcard characters for these purposes:

- The asterisk (*) represents any number of characters.
- The percentage symbol (%) represents any single character.

Note: The wildcard character % in IPT includes dots. Standard ISPF does not include dots.

Figure 5-8 shows a standard ISPF 3.4 dataset pattern search setup.

```
  Menu  RefList  RefMode  Utilities  Help
------------------------------------------------------------------------------
                          Data Set List Utility
Option ===>

   blank Display data set list              P Print data set list
       V Display VTOC information          PV Print VTOC information

Enter one or both of the parameters below:
   Dsname Level . . . G%%%*
   Volume serial  . .

Data set list options
   Initial View                 Enter "/" to select option
   1  1. Volume                 /  Confirm Data Set Delete
      2. Space                  /  Confirm Member Delete
      3. Attrib                 /  Include Additional Qualifiers
      4. Total                  /  Display Catalog Name
                                /  Display Total Tracks

When the data set list is displayed, enter either:
  "/" on the data set list command field for the command prompt pop-up,
  an ISPF line command, the name of a TSO command, CLIST, or REXX exec, or
  "=" to execute the previous command.
```

Figure 5-8 Setting up an ISPF generic search

Pressing Enter performs the search. As shown in Figure 5-9 on page 160, only names that begin with “G” and have at least three more characters before the dot are listed.

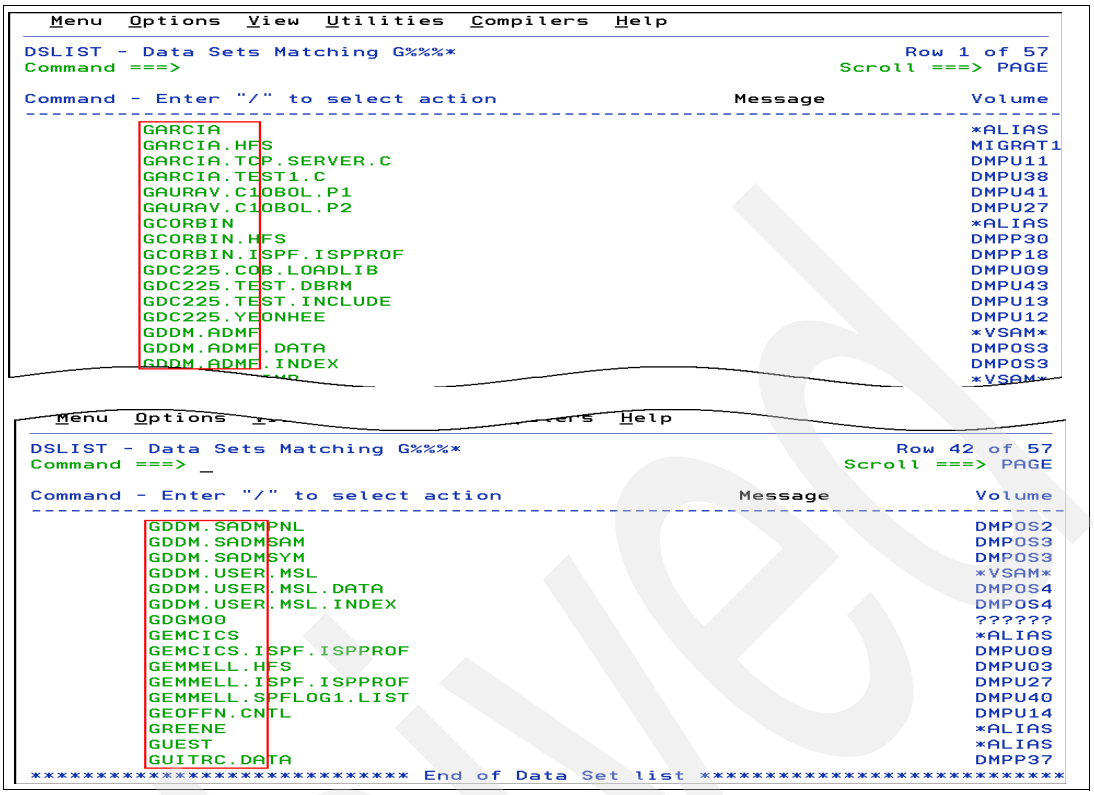

Figure 5-9 Results of ISPF generic pattern search

To achieve a similar but more extensive search in IPT, you can use the BR command shortcut that includes a generic pattern search. Browse, Edit, and View patterns are interpreted in the following ways (assume the use of the Browse command for the following examples):

- Strings of eight or fewer characters (including the wildcard characters) and without enclosing apostrophes are seen as MEMBER names. The resulting search will be made on the most recently accessed dataset. If this dataset is not a PDS, or a PDS that has no pattern matching members, you will be presented with the Browse – Entry panel. You can then add more detailed information to define your search.
- Strings without enclosing apostrophes that are longer than eight characters (including wildcard characters) or strings without enclosing apostrophes that contain dots will be seen as DATASET NAMES. This type of string will be concatenated with your Time Sharing Option (TSO) ID as a prefix for the name search. If this name is not found, you will be presented with the Browse – Entry panel.
- Strings, regardless of length (including the wildcard characters), enclosed with apostrophes will be seen as DATASET NAMES. The search will be performed as specified. Again, if no dataset name is found, you will be presented with the Browse – Entry panel.

So, BR patterns can be made more general by enclosing them with apostrophes. We will enter the search using them. Figure 5-10 on page 161 shows a BR search using the IPT pattern search capability.

Archived

```
-IPT-                          COMMAND SHORTCUTS                          Row 1 of 55

COMMAND ===> br 'g%%%*'_                                          SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
IPT      IPTHELP  IPT HELP
ISET              IPT SET OPTIONS
IVER     IVERSION IPT VERSION REPORT
IPTCMD   IPTCMDS  <OFF|ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
BR       BROWSE   '<DSNpat>(<MEMpat>)' - BROWSE
ED       EDIT     '<DSNpat>(<MEMpat>)' - EDIT
VI       VIEW     '<DSNpat>(<MEMpat>)' - VIEW
BF       BFILE    '<DSNpat>(<MEMpat>)' - BROWSE VSAM
EF       EFILE    '<DSNpat>(<MEMpat>)' - EDIT VSAM
VF       VFILE    '<DSNpat>(<MEMpat>)' - VIEW VSAM
O*                SHOW ALL OBJECT-LISTS
O/                POPULATE NEW OBJECT-LIST
OH       OHIST    HISTORY LIST OF ACCESSED DATASETS
OLIS     OLIST    <parm1>,<parm2> - OBJECT-LIST
OL                <parm1>,<parm2> - OBJECT-LIST
```

Figure 5-10 Setting an IPT pattern search with the BR command

An IPT search looks similar to an ISPF search. However, the result includes more datasets. Figure 5-11 shows the result. Notice that 15 more rows have been retrieved than with ISPF alone.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL G%%%* -------------------------- Row 1 of 72
Command    ===> _                                          SCROLL ===> CSR
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Class
--------- -------- ----- ---------------------------------------- -------
                      1 'GARCIA'                                    ALIAS
                      2 'GARCIA.HFS'                                *MIGR*
                      3 'GARCIA.TCP.SERVER.C'
                      4 'GARCIA.TEST1.C'
                      5 'GAURAV.C10BOL.P1'
                      6 'GAURAV.C10BOL.P2'
                      7 'GCORBIN'                                   ALIAS
                      8 'GCORBIN.HFS'                               HFS
                      9 'GCORBIN.ISPF.ISPPROF'
                     10 'GDC225.COB.LOADLIB'
                     11 'GDC225.TEST.DBRM'
                     12 'GDC225.TEST.INCLUDE'
                     13 'GDC225.YEONHEE'
                     14 'GDDM.ADMF'                                 VSAM
                     15 'GDDM.ADMF.DATA'                            VSAMDA
```

72, 15 Rows more than ISPF alone

Figure 5-11 Results of IPT pattern search

More rows were retrieved because of the IPT inclusion of dots in the % wildcard pattern. Figure 5-12 on page 162 shows that we have scrolled down the list to display several of the rows that were not found in an ISPF search. You can see that the shorter first-part names have been included.

Archived

```
 File  Edit  Find                    Settings  Menu  Util
-----------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL G%%%* ------------------------- Row 61 of 72
Command    ===>                                                SCROLL ===> CSR
Hotbar?
                                                                *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Volume
--------- -------- ----- ---------------------------------------------- -------
                      61  GIM.SGIMPENU'                                  DMPRES
                      62  GIM.SGIMPJPN'                                  DMPOS2
                      63  GIM.SGIMSENU'                                  DMPRES
                      64  GIM.SGIMTENU'                                  DMPRES
                      65  GIM.SGIMTJPN'                                  DMPOS2
                      66  GIO.DNET467.GLWS001.P00000.DNET467'            DMPU24
                      67  GREENE'
                      68  GUEST'
                      69  GUITRC.DATA'                                   DMPP37
                      70  G1.DDS0482.CBL'                                DMPU43
                      71  G1.DDS0482.CPY'                                DMPU13
                      72  G1.DDS0482.MAK'                                DMPU44
                        ---------------- END OF LIST ----------------
```

Figure 5-12 IPT pattern search result

You might have noticed that the panel is labeled OLIST in the upper left corner of Figure 5-12. If you consider datasets as objects, you can achieve the same result using the shortcut command **OL**. Figure 5-13 shows the **OL** shortcut command with a “parm” and Figure 5-14 on page 163 shows the result. Notice that the parm with the **OL** command does not need apostrophes.

```
-IPT-                        COMMAND SHORTCUTS                      Row 1 of 55

COMMAND ===> ol g%%%*                                          SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ---------------------------------------
IPT      IPTHELP  IPT HELP
ISET              IPT SET OPTIONS
IVER     IVERSION IPT VERSION REPORT
IPTCMD   IPTCMDS  <OFF|ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
BR       BROWSE   '<DSNpat>(<MEMpat>)' - BROWSE
ED       EDIT     '<DSNpat>(<MEMpat>)' - EDIT
VI       VIEW     '<DSNpat>(<MEMpat>)' - VIEW
BF       BFILE    '<DSNpat>(<MEMpat>)' - BROWSE VSAM
EF       EFILE    '<DSNpat>(<MEMpat>)' - EDIT VSAM
VF       VFILE    '<DSNpat>(<MEMpat>)' - VIEW VSAM
O*                SHOW ALL OBJECT-LISTS
O/                POPULATE NEW OBJECT-LIST
OH       OHIST    HISTORY LIST OF ACCESSED DATASETS
OLIS     OLIST    <parm1>,<parm2> - OBJECT-LIST
OL                <parm1>,<parm2> - OBJECT-LIST
```

Figure 5-13 OL shortcut command with parm

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL G%%%* -------------------------- Row 1 of 72
Command    ===> _                                          SCROLL ===> CSR
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
                       1 'GARCIA'                                       ALIAS
                       2 'GARCIA.HFS'                                   *MIGR*
                       3 'GARCIA.TCP.SERVER.C'
                       4 'GARCIA.TEST1.C'
                       5 'GAURAV.C1OBOL.P1'
                       6 'GAURAV.C1OBOL.P2'
                       7 'GCORBIN'                                      ALIAS
                       8 'GCORBIN.HFS'                                  HFS
                       9 'GCORBIN.ISPF.ISPPROF'
                      10 'GDC225.COB.LOADLIB'
                      11 'GDC225.TEST.DBRM'
                      12 'GDC225.TEST.INCLUDE'
                      13 'GDC225.YEONHEE'
                      14 'GDDM.ADMF'                                   VSAM
                      15 'GDDM.ADMF.DATA'                              VSAMDA
```

Figure 5-14 OL shortcut command result

We did not show all of the panels that are associated with the Figure 5-14 search, but you can see by the row count that the result is the same.

If your searches do not perform as we have described them, check your TSO prefix. The prefix is usually set to your TSO USER ID. To check your TSO USER ID, use the TSO PROFILE command. You can type this command on any command line. Figure 5-15 shows the command.

```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                          ISPF Primary Option Menu
 Option ===> tso profile

 0  Settings      Terminal and user parameters          User ID . : DDS0946
 1  View          Display source data or listings       Time. . . : 12:53
 2  Edit          Create or change source data          Terminal. : 3278
```

Figure 5-15 TSO profile command

If you have no prefix set, you will get the result that is shown in Figure 5-16.

```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                          ISPF Primary Option Menu
 Option ===> tso profile

 0  Settings      Terminal and user parameters          User ID . : DDS0946
 IKJ56688I CHAR(0)  LINE(0)    PROMPT   INTERCOM   NOPAUSE MSGID   MODE    WTPMS
G   NORECOVER NOPREFIX          PLANGUAGE(ENU) SLANGUAGE(ENU) VARSTORAGE(LOW)
 IKJ56689I DEFAULT LINE/CHARACTER DELETE CHARACTERS IN EFFECT FOR THIS TERMINAL
 ***
```

Figure 5-16 A NOPREFIX result

Setting a prefix is done with the TSO PROFILE PREFIX command. Type it on any command line. Figure 5-17 shows the command.

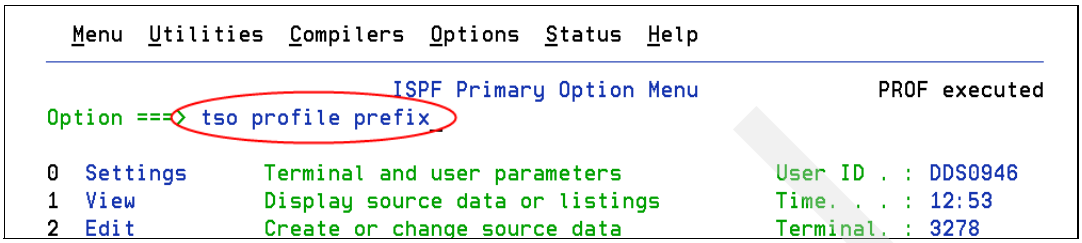

Figure 5-17 Prefix command

When you press Enter, you are prompted for the prefix. Type your TSO USER ID as a prefix. Figure 5-18 shows the result after the USER ID has been typed.

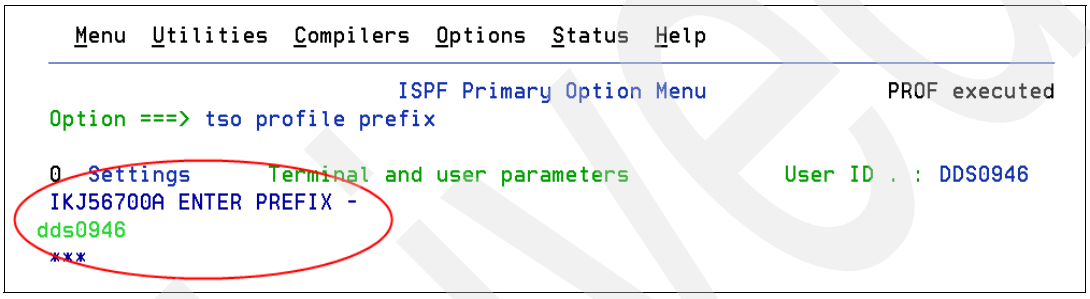

Figure 5-18 Command results

Now, entering a TSO PROFILE command will show your prefix (Figure 5-19).

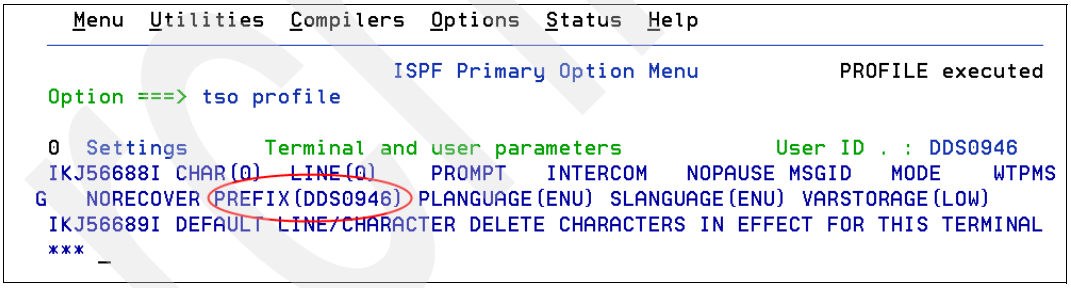

Figure 5-19 A profile with a prefix

Now, your prefix will be embedded in the Browse, Edit, and View search commands as described.

The Session Status view of the ISPF Primary Option Menu displays your TSO prefix. Figure 5-20 on page 165 shows an example.

Archived

```
 Menu  Utilities  Compilers  Options  Status  Help
-------------------------------------------------------------------------------
                          ISPF Primary Option Menu
Option ===> _

0  Settings      Terminal and user parameters          User ID . : DDS0946
1  View          Display source data or listings       Time. . . : 13:09
2  Edit          Create or change source data          Terminal. : 3278
3  Utilities     Perform utility functions             Screen. . : 1
4  Foreground    Interactive language processing       Language. : ENGLISH
5  Batch         Submit job for language processing    Appl ID . : ISP
6  Command       Enter TSO or Workstation commands     TSO logon : SPIFFY
7  Dialog Test   Perform dialog testing                TSO prefix: DDS0946
P  IBM Products  IBM program development products      System ID : DEMOMVS
10 SCLM          SW Configuration Library Manager      MVS acct. : 12345678
11 Workplace     ISPF Object/Action Workplace          Release . : ISPF 5.9
12 z/OS System   z/OS system programmer applications
13 z/OS User     z/OS user applications

     Enter X to Terminate using log/list defaults
```

Figure 5-20 Session status display

5.4 Object List commands

After the basic IPT dataset navigational commands are the 26 Object List (OL) commands. We discuss the OL commands in great detail in other chapters. All of these OL commands are extremely useful in large development environments and large production environments where there are a great number of objects of all kinds.

Two OL commands will be of particular interest to a new user. The first OL command is useful because of its research implications, and the second OL command is useful because of its nature as a persistent memory device.

First, OLDD lists the datasets that are associated with a DDname in order. For example, in Figure 5-21, the OLDD command is issued with no parameters.

```
 Menu  Utilities  Compilers  Options  Status  Help
-------------------------------------------------------------------------------
                          ISPF Primary Option Menu
Option ===> oldd

0  Settings      Terminal and user parameters          <     Calendar     >
```

Figure 5-21 OLDD command

Figure 5-22 on page 166 shows the result. You can see by looking at the red oval that a large number of objects have been listed.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- ALLOCATION LIST --------------------- Row 1 of 215
Command    ===>                                                SCROLL ===> CSR
Hotbar?
                                                                *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                       Class
--------- -------- ----- ------------------------------------------- -------
-STEPLIB              1 'IPT.V6R1BETA.SIQILPA'
                      2 'IPT.V6R1BETA.SIQILOAD'
-ADMPC                3 'GDDM.SADMPCF'
-ADMPROJ              4 'GDDM.SADMMAP'
-SYSLBC               5 'SYS1.BRODCAST'
-SYSPRINT             6 'NULLFILE'
-SYSTERM              7 'NULLFILE'
-SYSIN                8 'NULLFILE'
-ISPPROF              9 'DDS0946.ISPF.ISPPROF'
-ADMIMG              10 'GDDM.SADMMAP'
-ADMGIMP             11 'GDDM.SADMMAP'
-ADMGGMAP            12 'GDDM.SADMMAP'
-SYSHELP             13 'SYS1.HELP'
                    14 'ISP.SISPHELP'
                    15 'SYS1.SEDGHLP1'
```

Figure 5-22 OLDD Object List

If you want to narrow the search and you know the DDname in which you are interested, use it as a parameter with the command. Figure 5-23 shows an OLDD command with a DDname.

```
 -IPT-                        COMMAND SHORTCUTS                  Row 17 of 55

 COMMAND ===> oldd steplib                                     SCROLL ===> CSR
 Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
 Commands: SORT  REFresh

 SHORTCUT COMMAND  DESCRIPTION
 -------- -------- ----------------------------------------
 OL*               SHOW ALL OBJECT-LISTS
 OL/               POPULATE NEW OBJECT-LIST
 OLDA     OLDASD   <VOLpat> - LIST ONLINE DASD VOLUMES
 OLDD     OLDDNAME <DDname> - LIST ALLOCATED
 OLB      OLBASE   <DSNpat> - LISTCAT BASE OF GENERATION
```

Figure 5-23 OLDD command with a parameter

Figure 5-24 shows the result of using this command. You see a much shorter list of datasets.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- ALLOCATION LIST FOR "STEPLIB" --------- Row 1 of 2
Command    ===> _                                              SCROLL ===> CSR
Hotbar?
                                                                *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                       Class
--------- -------- ----- ------------------------------------------- -------
-STEPLIB              1 'IPT.V6R1BETA.SIQILPA'
                      2 'IPT.V6R1BETA.SIQILOAD'
                       ---------------- END OF LIST ----------------
```

Figure 5-24 OLDD execution result

OLH, which is short for OLHIST, is the second most commonly used command. This command displays a temporary Object List with your most recently accessed dataset names, so that you do not have to remember the last dataset name that you used. Figure 5-25 shows the result of entering the OLH command.

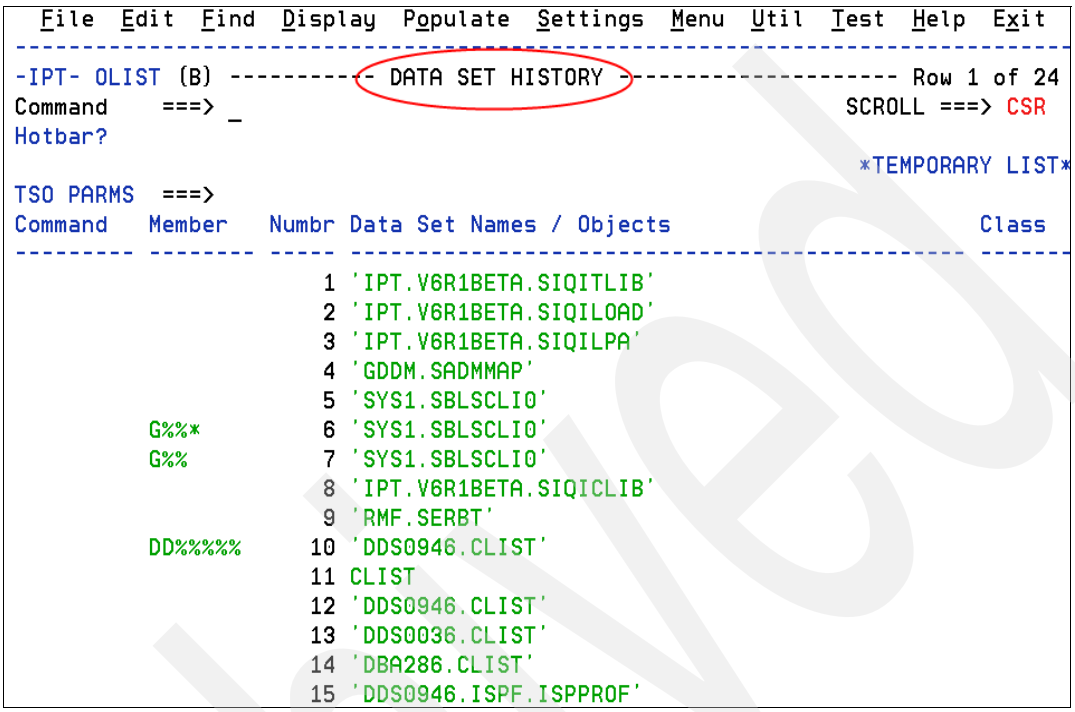

Figure 5-25 OLH command results

5.5 IPT OL, OLIS, and PLIST commands

PLIST is the former name for what is now the OL/OLIS command. The OI/OLIS command uses the same parameters and behaves the same way as PLIST. PLIST is maintained for the convenience of long time users of IPT.

The syntax for PLIST and OLIS is shown in Figure 5-26 on page 168. The IPT display was reordered using the SORT command.

Archived

```
-IPT-                          COMMAND SHORTCUTS                    Row 42 of 55

COMMAND ===>                                                   SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ---------------------------------------
OLI      OLINFO   <DSNpat>,<VOLpat> - LISTCAT + INFO
OLIS     OLIST    <parm1>,<parm2> - OBJECT-LIST
OLM      OLMIG    <DSNpat> - LISTCAT MIGRATED
OLP      OLPAGE   <DSNpat> - LISTCAT PAGE-SPACE DATASETS
OLPDSE            <DSNpat> - LISTCAT PDSE LIBRARIES
OLS      OLSYS    <SYStype> - LIST SYSTEM DATASETS
OLSH     OLSHELF  <DSNpat> - LISTCAT BOOKMANAGER SHELVES
OLT      OLTAPE   <DSNpat> - LISTCAT TAPE DATASETS
OLV      OLVTOC   <VOLpat>,<DSNpat> - LISTVTOC DATASETS
OLVS     OLVSAM   <DSNpat> - LISTCAT VSAM CLUSTERS
OLZ      OLZONE   <DSNpat> - LISTCAT SMP/E ZONES
PLIST             <parm1>,<parm2> - OBJECT-LIST
VF       VFILE    '<DSNpat>(<MEMpat>)' - VIEW VSAM
VI       VIEW     '<DSNpat>(<MEMpat>)' - VIEW
--------------------------- END OF LIST ---------
```

Figure 5-26 PLIST and OLIS

5.6 TSO Permanent commands

The TSO Permanent command-related functions are extremely useful. Entering **IPT?** shows the available IPT TSO-related commands. In Figure 5-27, we have paged to these commands and placed the first one at the top of the panel by using the cursor location scrolling.

```
-IPT-                                                  COMMAND SHORTCUTS

COMMAND ===> _                                                 SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ---------------------------------------
EX?      EX?????? DISPLAY TSO PERMANENT COMMANDS
EX=               DISPLAY TSO MOST RECENT COMMAND
EX1               EXECUTE TSO PERMANENT COMMAND #1
EX2               EXECUTE TSO PERMANENT COMMAND #2
EX3               EXECUTE TSO PERMANENT COMMAND #3
EX4               EXECUTE TSO PERMANENT COMMAND #4
EX5               EXECUTE TSO PERMANENT COMMAND #5
EX6               EXECUTE TSO PERMANENT COMMAND #6
EX7               EXECUTE TSO PERMANENT COMMAND #7
EX8               EXECUTE TSO PERMANENT COMMAND #8
EX9               EXECUTE TSO PERMANENT COMMAND #9
IPTOF    IPTOFF   *DISABLE IPT
IPTON             *ENABLE IPT
IDIAG             <parm1>,<parm2> - IPT DIAGNOSTICS
ISNAP             <parm1> - IPT SNAP
IMAINT            IPT MAINTENANCE REPORT
```

Figure 5-27 TSO-related shortcuts

Typing the `EX?` command displays the current list of your permanent commands. Previously, we developed a list of commands in the TSO Command Shell to use with this demonstration. Figure 5-28 is the result of executing the **EX?** shortcut.

```
-IPT-                          TSO COMMAND SHELL                          Row 1 of 999
PF6=Standard SPF/TSO, PF10/PF10=Set Linenum
Command ===> _


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.      Scroll => CSR
       /IS standard ISPF/TSO, /H history
       /EH edit history, /EP edit permanent, /SAV save, /RES restore
       <c><entry number> where <c> is ? or / or omitted.

------------------------- PERMANENT COMMAND LIST --------------------------------
  1 | transmit demomvs.dds0947 da('DDS0946.DEMO.JCL')                          ->
  2 | pe 'dds0946*' id(xxxx01) acc(read)                                       ->
  3 | x                                                                        ->
  4 | transmit mbgmvsu.greeng  da('DDS0945.TEST.SRC')                          ->
  5 |                                                                          ->
  6 | transmit mbgmvsu.greeng  da('DDS0946.CLIST')                             ->
  7 | transmit mbgmvsu.greeng  da('DDS0946.DEMO.JCL')                          ->
  8 | transmit mbgmvsu.greeng  da('DDS0946.HFS')                               ->
  9 | transmit mbgmvsu.greeng  da('DDS0946.ISPF.IPITBLIB')                     ->
 10 | transmit mbgmvsu.greeng  da('DDS0946.ISPF.ISPPROF')                      ->
 11 | transmit mbgmvsu.greeng  da('DDS0946.ISR6567.BACKUP')                    ->
 12 | transmit mbgmvsu.greeng  da('DDS0946.SPFLOG1.LIST')                      ->
 13 |                                                                          ->
```

Figure 5-28 An example of a Permanent Command List

Your command list will differ, of course. Notice that these commands are a number of transmit commands. We did it this way simply to populate the list for this demonstration. You can return to the IPT display by pressing PF3.

Often, when using a TSO command, you find that you need to use a particular command repeatedly. Notice in Figure 5-27 on page 168 that there are EX1 through EX9 commands. You can execute the first through the ninth permanent TSO command in your permanent list simply by entering its same-numbered shortcut. For example, the first command listed in Figure 5-28 is a dataset transmit to another system. Type `EX1`, and IPT will execute TSO permanent command 1, as shown in Figure 5-29. The result shows in Figure 5-30 on page 170.

```
-IPT-                          COMMAND SHORTCUTS                          Row 39 of 55

COMMAND ===> ex1_                                                  SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
EX?      EX?????? DISPLAY TSO PERMANENT COMMANDS
EX=               DISPLAY TSO MOST RECENT COMMAND
EX1               EXECUTE TSO PERMANENT COMMAND #1
```

Figure 5-29 The EX1 shortcut

```
-IPT-                          COMMAND SHORTCUTS                          Row 39 of 55

COMMAND ===> ex1                                                        SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

                                                 IEBCOPY MESSAGES AND CONTROL STATEMENT
S                                  PAGE     1
 IEB1135I IEBCOPY  FMID HDZ1180  SERVICE LEVEL NONE     DATED 20070408 DFSMS 01.
09.00 z/OS    01.09.00 HBB7740  CPU 2094
 IEB1035I DDS0946  SPIFFY   IPTBETA  09:57:04 MON 19 JAN 2009 PARM='WORK=4M,SIZE
=1M'
  COPY OUTDD=SYS00219,INDD=((SYS00215,R))
 IEB1013I COPYING FROM PDS   INDD=SYS00215 VOL=DMPU42 DSN=DDS0946.DEMO.JCL
 IEB1014I           TO PDSU OUTDD=SYS00219 VOL=DMPW03 DSN=SYS09019.T095704.RA000
.DDS0946.R0174403
 IEB167I FOLLOWING MEMBER(S) UNLOADED FROM INPUT DATA SET REFERENCED BY SYS00215
 IEB154I DMOJOB1  HAS BEEN SUCCESSFULLY UNLOADED
 IEB154I JOB2     HAS BEEN SUCCESSFULLY UNLOADED
 IEB1098I 2 OF 2 MEMBERS UNLOADED FROM INPUT DATA SET REFERENCED BY SYS00215
 IEB147I END OF JOB - 0 WAS HIGHEST SEVERITY CODE
 INMX000I 0 message and 5 data records sent as 49 records to DEMOMVS.DDS0947
 INMX001I Transmission occurred on 01/19/2009 at 09:57:04.
 ***
```

Figure 5-30 Shortcut EX1 command result

You can display your most recently entered TSO command by entering **EX=** on any command line. For example, Figure 5-31 shows that the **EX=** command has been entered. The result is shown in Figure 5-32.

```
-IPT-                          COMMAND SHORTCUTS                          Row 39 of 55

COMMAND ===> ex=                                                        SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
EX?      EX?????? DISPLAY TSO PERMANENT COMMANDS
EX=               DISPLAY TSO MOST RECENT COMMAND
```

Figure 5-31 The EX= shortcut command

```
-IPT-                          TSO COMMAND SHELL                          Row 1 of 22
*** Press ENTER to execute the displayed command. ***
Command ===> transmit demomvs.dds0947 da('DDS0946.DEMO.JCL')


Enter: TSO command, CLIST, REXX EXEC, or ISPEXEC statement.     Scroll => CSR
       /IS standard ISPF/TSO, /P permanent
       /EH edit history, /EP edit permanent, /SAV save, /RES restore
       <c><entry number> where <c> is ? or / or omitted.

-------------------------  HISTORY COMMAND LIST  ------------------------------
 1  transmit demomvs.dds0947 da('DDS0946.DEMO.JCL')                          ->
```

Figure 5-32 The EX= shortcut command result

You will notice that the top entry in the history list is the most recent command. It is also located on the command line, ready to be executed.

5.7 IPT-related IPT shortcuts

IPT has several shortcut commands related to its use and status. Figure 5-33 shows the IPT panel, which has been reordered using the SORT command. Then, we scroll to the page containing the shortcuts beginning with the letter “I” to group the IPT commands together to see them on one panel.

```
-IPT-                          COMMAND SHORTCUTS                        Row 16 of 55

COMMAND ===>                                                          SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
IDIAG             <parm1>,<parm2> - IPT DIAGNOSTICS
IMAINT            IPT MAINTENANCE REPORT
IPT      IPTHELP  IPT HELP
IPT?     IPT????? DISPLAY IPT SHORTCUTS
IPTCMD   IPTCMDS  <OFF|ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
IPTOF    IPTOFF   *DISABLE IPT
IPTON             *ENABLE IPT
ISET              IPT SET OPTIONS
ISNAP             <parm1> - IPT SNAP
IVER     IVERSION IPT VERSION REPORT
O*                SHOW ALL OBJECT-LISTS
O/                POPULATE NEW OBJECT-LIST
OH       OHIST    HISTORY LIST OF ACCESSED DATASETS
OL                <parm1>,<parm2> - OBJECT-LIST
OL*               SHOW ALL OBJECT-LISTS
```

Figure 5-33 IPT-related shortcuts

Most of these shortcuts are obvious. There are other shortcuts that you only use when there might be a problem with IPT, such as ISNAP or IDIAG. IPTNEW, as shown in Figure 5-34 and Figure 5-35 on page 172, shows a readme file of changes and enhancements to IPT.

```
-IPT-                          COMMAND SHORTCUTS                        Row 16 of 55

COMMAND ===> iptnew_                                                  SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
```

Figure 5-34 IPTNEW shortcut command

```
-IPT-                          COMMAND SHORTCUTS                          Row 16 of 55

COMMAND ===> _                                                          SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
IDIAG             <parm1>,<parm2> - IPT DIAGNOSTICS
IMAINT            IPT MAINTENANCE REPORT
IPT      IPTHELP  IPT HELP
IPT?     IPT????? DISPLAY IPT SHORTCUTS
IPTCMD   IPTCMDS  <OFF|ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
IPTOF    IPTOFF   *DISABLE IPT
IPTON             *ENABLE IPT
ISET              IPT SET OPTIONS
ISNAP             <parm1> - IPT SNAP
IVER     IVERSION IPT VERSION REPORT
O*                SHOW ALL OBJECT-LISTS
O/
OH   IQII025 IBMIPT will be disabled when you exit the main menu (=X)
OL
OL*               SHOW ALL OBJECT-LISTS
```

Figure 5-35 The first page of IPTNEW

Two commands are included that might surprise you: IPTOF and IPTON. You can turn off the functionality of IPT. And, when it has been turned off, you can turn it on again.

Figure 5-36 through Figure 5-39 on page 173 demonstrate the IPTOF shortcut sequence.

```
-IPT-                          COMMAND SHORTCUTS                          Row 16 of 55

COMMAND ===> iptof_                                                     SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh
```

Figure 5-36 IPTOF shortcut

```
-IPT-                          COMMAND SHORTCUTS                        Row 16 of 55

COMMAND ===> _                                                     SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh

SHORTCUT COMMAND  DESCRIPTION
-------- -------- ----------------------------------------
IDIAG             <parm1>,<parm2> - IPT DIAGNOSTICS
IMAINT            IPT MAINTENANCE REPORT
IPT      IPTHELP  IPT HELP
IPT?     IPT????? DISPLAY IPT SHORTCUTS
IPTCMD   IPTCMDS  <OFF|ON> - DISABLE/ENABLE SHORTCUTS
IPTNEW   IPTNEWS  IPT NEWS
IPTOF    IPTOFF   *DISABLE IPT
IPTON             *ENABLE IPT
ISET              IPT SET OPTIONS
ISNAP             <parm1> - IPT SNAP
IVER     IVERSION IPT VERSION REPORT
O*                SHOW ALL OBJECT-LISTS
O/
OH   IQII025 IBMIPT will be disabled when you exit the main menu (=X)
OL
OL*               SHOW ALL OBJECT-LISTS
```

Figure 5-37 IPTOF message

```
-IPT-                          COMMAND SHORTCUTS                        Row 16 of 55

COMMAND ===> =x_                                                   SCROLL ===> CSR
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
Commands: SORT  REFresh
```

Figure 5-38 Navigate to the ISPF main menu

```
 Menu  Utilities  Compilers  Options  Status  Help
-------------------------------------------------------------------------------
                          ISPF Primary Option Menu        IBMIPT DEACTIVATED
Option ===> _

0  Settings      Terminal and user parameters          User ID . : DDS0946
1  View          Display source data or listings       Time. . . : 12:08
2  Edit          Create or change source data          Terminal  : 3278
```

Figure 5-39 IPT is no longer active

Figure 5-40 through Figure 5-42 on page 174 show the IPTON process.

```
 Menu  Utilities  Compilers  Options  Status  Help
-------------------------------------------------------------------------------
                          ISPF Primary Option Menu        IBMIPT DEACTIVATED
Option ===> ipton

0  Settings      Terminal and user parameters          User ID . : DDS0946
```

Figure 5-40 IPTON shortcut

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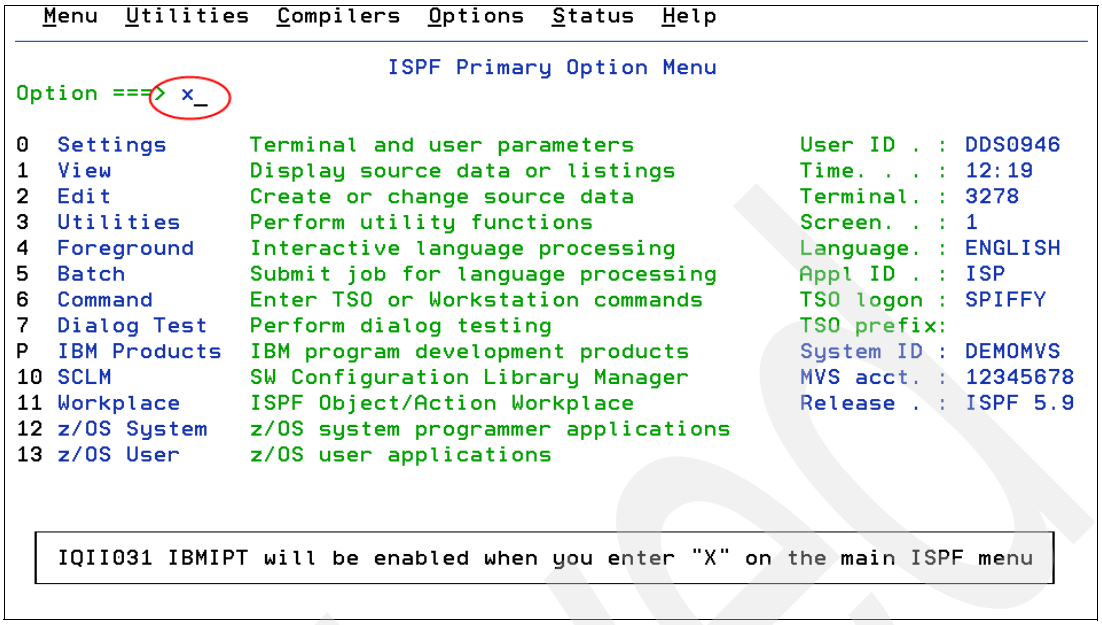

Figure 5-41 IPTON message

Type x and press Enter, as shown in Figure 5-41. The result is shown in Figure 5-42.

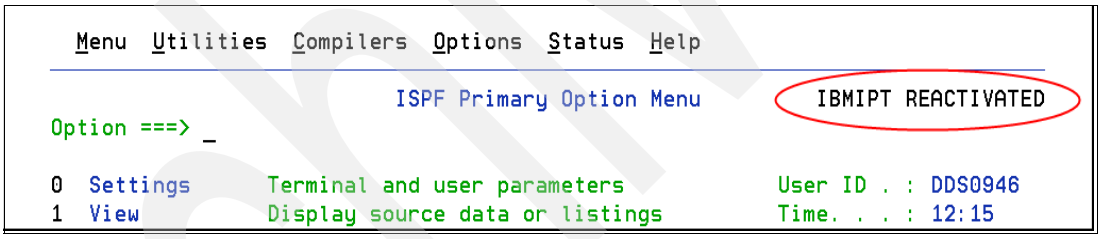

Figure 5-42 IPT is now active

Now, IPT is available again.

5.8 List of IPT shortcut commands

You can type these commands on any ISPF panel.

Table 5-1 IPT shortcut commands

Command	Shortcut	Comment
IPT?????	IPT?	Display IPT shortcuts
IPTHELP	IPT	IPT help
IPTOFF	IPTOF	Disable IPT
IPTON	IPTON	Enable IPT
IPTCMDS	IPTCMD	Disable/enable IPT shortcuts
IPTNEWS	IPTNEW	IPT news

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Command	Shortcut	Comment
IDIAG	IDIAG	IPT diagnostics
ISET	ISET	IPT SET options
ISNAP	ISNAP	IPT snap
IMAINT	IMAINT	IPT maintenance report
IVERSION	IVER	IPT version report
BROWSE	BR	Browse dataset
EDIT	ED	Edit dataset
VIEW	VI	View dataset
BFILE	BF	Browse VSAM file
EFILE	EF	Edit VSAM file
VFILE	VF	View VSAM file
O*	O*	Show all Permanent Object Lists
O/	O/	Populate a new Object List
OHIST	OH	Display History List of Accessed datasets
OLIST	OLIS	Display Object List
OL	OL	Display Object List
OL*	OL*	Show all Permanent Object Lists
OL/	OL/	Populate a new Object List
OLDDNAME	OLDD	Display allocated datasets by DDNAME
OLBASE	OLB	Listcat base of generation
OLBK	OLBK	Listcat Bookmanager books
OLBOOK	OLBO	Listcat Bookmanager books
OLCAT	OLC	Listcat multiple patterns
OLDA	OLDASD	List DASD online volumes
OLE	OLE	Listcat PDSE libraries
OLPDSE	OLPDSE	Listcat PDSE libraries
OLGDG	OLG	Listcat GDG datasets
OLHIST	OLH	Display History List of accessed datasets
OLINFO	OLI	Listcat + INFO
OLMIG	OLM	Listcat migrated
OLPAGE	OLP	Listcat page-space datasets

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Command	Shortcut	Comment
OLSHELF	OLSH	Listcat Bookmanager shelves
OLSYS	OLS	List system datasets
OLTAPE	OLT	Listcat tape datasets
OLVTOC	OLV	ListVTOC datasets
OLVSAM	OLVS	Listcat VSAM clusters
OLZONE	OLZ	Listcat SMP/E zones
PLIST	PLIST	Display Object List
EX??????	EX?	Display TSO Permanent Commands
EX=	EX=	Display TSO most recent command
EX1	EX1	Execute TSO Permanent Command #1
EX2	EX2	Execute TSO Permanent Command #2
EX3	EX3	Execute TSO Permanent Command #3
EX4	EX4	Execute TSO Permanent Command #4
EX5	EX5	Execute TSO Permanent Command #5
EX6	EX6	Execute TSO Permanent Command #6
EX7	EX7	Execute TSO Permanent Command #7
EX8	EX8	Execute TSO Permanent Command #8
EX9	EX9	Execute TSO Permanent Command #9

Archive

6

Invoking IPT from ISPF Option 3.4

IPT is the Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS. You are probably quite familiar with the Dataset List Facility, ISPF option 3.4. Option 3.4 is ISPF's main dataset handling tool. IPT has made this option even more useful. The option has been integrated with IPT extended search capabilities and with IPT Object List functionality; therefore, we have the look and feel of ISPF 3.4 with the power of IPT.

The IPT philosophy behind this approach is that every Object List becomes a "launch pad" for action upon any of the objects or any related objects. This simple approach makes it more powerful and easy to use. When you display any list, as with option 3.4 or a direct command, there is a good chance that there is IPT function available to enable you to move directly into the action that you intend to take on the object. If you are unsure as to what those actions are, enter `IPT?` or `A` on the command line.

Object Lists, for example, and other IPT features are covered in-depth in other chapters. We do not examine these features here, except as they relate to option 3.4.

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6.1 IPT Option 3.4 panel changes

Figure 6-1 shows the ISPF Option 3.4 Data Set List Utility.

```
  Menu  RefList  RefMode  Utilities  Help
 ------------------------------------------------------------------------------
                          Data Set List Utility
Option ===> _

   blank Display data set list               P Print data set list
       V Display VTOC information           PV Print VTOC information

Enter one or both of the parameters below:
   Dsname Level . . .
   Volume serial  . .

Data set list options
   Initial View                 Enter "/" to select option
   4  1. Volume                 /  Confirm Data Set Delete
      2. Space                  /  Confirm Member Delete
      3. Attrib                 /  Include Additional Qualifiers
      4. Total                  /  Display Catalog Name
                                /  Display Total Tracks

When the data set list is displayed, enter either:
  "/" on the data set list command field for the command prompt pop-up,
  an ISPF line command, the name of a TSO command, CLIST, or REXX exec, or
  "=" to execute the previous command.
```

Figure 6-1 ISPF Option 3.4 panel

You can retrieve information about datasets or volumes by using various combinations of the dataset list options. The default view is the dataset list.

Figure 6-2 is the IPT enhanced option 3.4 Data Set List Utility panel.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===> _
   DS - Display dataset list                P  - Print data set list
blank - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                   (* for selection list, = for DDS0946)
   Dsname Level   ===>                                          More? ===> N
   Volume Serial  ===>                   (Leave BLANK for catalog scan,
                                          volser or pattern for VTOC scan)
Data set list options:
   Initial View   ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete       / Additional Dataset Qualifiers
   / Display Catalog Name          / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-2 IPT Option 3.4 panel

The immediately noticeable difference is that the panel contains more options and its layout has been altered to accommodate these additional options. It still contains the original ISPF options and parameters. DS is the Display dataset list command, and it behaves as the standard ISPF 3.4 command does when used. Blank is the default list type in Figure 6-2 on page 178, which is the Temporary Object List. PL is your permanent Object List. GDG is the enhanced IPT generation dataset display. P, PV, and V are command options from standard ISPF 3.4. XV is an enhanced volume data display.

Note: You can activate all of these commands by either typing a command on the command line, or by moving the cursor to the command and pressing Enter.

Figure 6-3 shows a typed command. In this example, it is a DS command with a generic search. Figure 6-4 on page 180 shows the result.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------- Data Set List Utility -------------------------
Command ===>  ds                                          Missing parameters
   DS - Display dataset list                P  - Print data set list
blank - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                    (* for selection list, = for MYLIST)
   Dsname Level   ===> G%%%*_                                  More? ===> N
   Volume Serial  ===>                    (Leave BLANK for catalog scan,
                                           volser or pattern for VTOC scan)
Data set list options:
   Initial View   ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-3 A typed command

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```
 Menu  Options  View  Utilities  Compilers  Help
-------------------------------------------------------------------------------
-IPT-  - Data Sets Matching G%%%*                                  Row 1 of 57
Command ===> _                                                Scroll ===> PAGE

Command - Enter "/" to select action                 Message          Volume
-------------------------------------------------------------------------------
         GARCIA                                                       *ALIAS
         GARCIA.HFS                                                   MIGRAT1
         GARCIA.TCP.SERVER.C                                          DMPU11
         GARCIA.TEST1.C                                               DMPU38
         GAURAV.C1OBOL.P1                                             DMPU41
         GAURAV.C1OBOL.P2                                             DMPU27
         GCORBIN                                                      *ALIAS
         GCORBIN.HFS                                                  DMPP30
         GCORBIN.ISPF.ISPPROF                                         DMPP18
         GDC225.COB.LOADLIB                                           DMPU09
         GDC225.TEST.DBRM                                             DMPU43
         GDC225.TEST.INCLUDE                                          DMPU13
         GDC225.YEONHEE                                               DMPU12
         GDDM.ADMF                                                    *VSAM*
         GDDM.ADMF.DATA                                               DMPOS3
         GDDM.ADMF.INDEX                                              DMPOS3
         GDDM.ADMGIMP                                                 *VSAM*
```

Figure 6-4 Typed DS command result

Figure 6-5 shows the same command executed using cursor placement instead of typing a command. Notice the cursor is under the DS on the panel.

```
 Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===>
  DS  - Display dataset list              P  - Print data set list
blank - Temporary Object List            PV - Print VTOC information
   PL - Permanent Object List            V  - Display VTOC information
  GDG - Display Generation Datasets      XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List   ===>                    (* for selection list, = for MYLIST)
   Dsname Level  ===> G%%%*                                   More? ===> N
   Volume Serial ===>                    (Leave BLANK for catalog scan,
                                          volser or pattern for VTOC scan)
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-5 Preparing to use a cursor-indicated command

Press Enter, and the command where the cursor is placed executes. Figure 6-6 on page 181 shows that it yields the same result as the command typed in Figure 6-3 on page 179.

```
 Menu  Options  View  Utilities  Compilers  Help
-------------------------------------------------------------------------------
-IPT-  - Data Sets Matching G%%%*                              Row 1 of 57
Command ===>                                                 Scroll ===> PAGE

Command - Enter "/" to select action                 Message          Volume
-------------------------------------------------------------------------------
         GARCIA                                                       *ALIAS
         GARCIA.HFS                                                   MIGRAT1
         GARCIA.TCP.SERVER.C                                          DMPU11
         GARCIA.TEST1.C                                               DMPU38
         GAURAV.C1OBOL.P1                                             DMPU41
         GAURAV.C1OBOL.P2                                             DMPU27
         GCORBIN                                                      *ALIAS
         GCORBIN.HFS                                                  DMPP30
         GCORBIN.ISPF.ISPPROF                                         DMPP18
         GDC225.COB.LOADLIB                                           DMPU09
         GDC225.TEST.DBRM                                             DMPU43
         GDC225.TEST.INCLUDE                                          DMPU13
         GDC225.YEONHEE                                               DMPU12
         GDDM.ADMF                                                    *VSAM*
         GDDM.ADMF.DATA                                               DMPOS3
         GDDM.ADMF.INDEX                                              DMPOS3
         GDDM.ADMGIMP                                                 *VSAM*
```

Figure 6-6 Results of the cursor-indicated command

Depending on which list command you want to execute (object-related, dataset-related, or volume-related), you must fill in the appropriate information for the command execution in the center part of the panel. This approach is similar to the standard ISPF Option 3.4 action. Figure 6-7 shows the area.

```
 Enter an option or select it by placing cursor on the option code
 Specify parameters below:
   Object List    ===>                    (* for selection list, = for MYLIST)
   Dsname Level   ===>                                          More? ===> N
   Volume Serial  ===>                    (Leave BLANK for catalog scan,
                                           volser or pattern for VTOC scan)
```

Figure 6-7 Additional command information location

We are sure that you have noticed more options and information to the right in Figure 6-7. We will discuss this additional information in detail later.

The bottom part of the panel shows the display control options found in the standard option 3.4. You are, most likely, familiar with these various combinations. For general use, most users have the options set as they are shown in Figure 6-8.

```
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-8 Display control options

6.2 Displaying a Temporary Object List

Blank means perform the default command action. IPT sets the default action to Temporary Object List. You, of course, can change this default command action to your preference. Figure 6-9 shows how blank is displayed on the Option 3.4 panel.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===> _
   DS - Display dataset list                P  - Print data set list
blank - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary
```

Figure 6-9 Blank specifies the default command

If you consistently use option 3.4 to display a temporary Object List, having that command set as the default action is useful. Then, when using the option, you only need to enter the search criteria to use to produce the list. An example is shown in Figure 6-10 where a temporary object list of objects beginning with G is to be generated.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===> _
   DS - Display dataset list                P  - Print data set list
blank - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                    (* for selection list, = for MYLIST)
   Dsname Level   ===> G*                                    More? ===> N
   Volume Serial ===>                     (Leave BLANK for catalog scan,
                                           volser or pattern for VTOC scan)
Data set list options:
   Initial View   ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-10 Default command setup

Notice that no command is entered on the command line in Figure 6-10. Pressing Enter executes the command, and the result is shown in Figure 6-11 on page 183.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL G* ----------------------------- Row 1 of 72
Command    ===> _                                          SCROLL ===> CSR
Hotbar?
                                                            *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ---------------------------------------------- -------
                      1 'GARCIA'
                      2 'GARCIA.HFS'                                   MIGRAT
                      3 'GARCIA.TCP.SERVER.C'                          DMPU11
                      4 'GARCIA.TEST1.C'                               DMPU38
                      5 'GAURAV.C1OBOL.P1'                             DMPU41
                      6 'GAURAV.C1OBOL.P2'                             DMPU27
                      7 'GCORBIN'
                      8 'GCORBIN.HFS'                                  DMPP30
                      9 'GCORBIN.ISPF.ISPPROF'                         DMPP18
                     10 'GDC225.COB.LOADLIB'                           DMPU09
                     11 'GDC225.TEST.DBRM'                             DMPU43
                     12 'GDC225.TEST.INCLUDE'                          DMPU13
                     13 'GDC225.YEONHEE'                               DMPU12
                     14 'GDDM.ADMF'
                     15 'GDDM.ADMF.DATA'                               DMPOS3
```

Figure 6-11 Default command result

You can achieve the same search and result without using option 3.4 at all. You can type an Object List command from *any* command line with the same generic search parameters (as shown in Figure 6-12 and the result is shown in Figure 6-13 on page 184).

```
   Menu  Utilities  Compilers  Options  Status  Help
  ------------------------------------------------------------------------
                          ISPF Primary Option Menu
  Option ===> ol g*_

  0  Settings      Terminal and user parameters          User ID . : DDS0946
  1  View          Display source data or listings       Time. . . : 08:24
```

Figure 6-12 OL command with generic search conditions

Archived

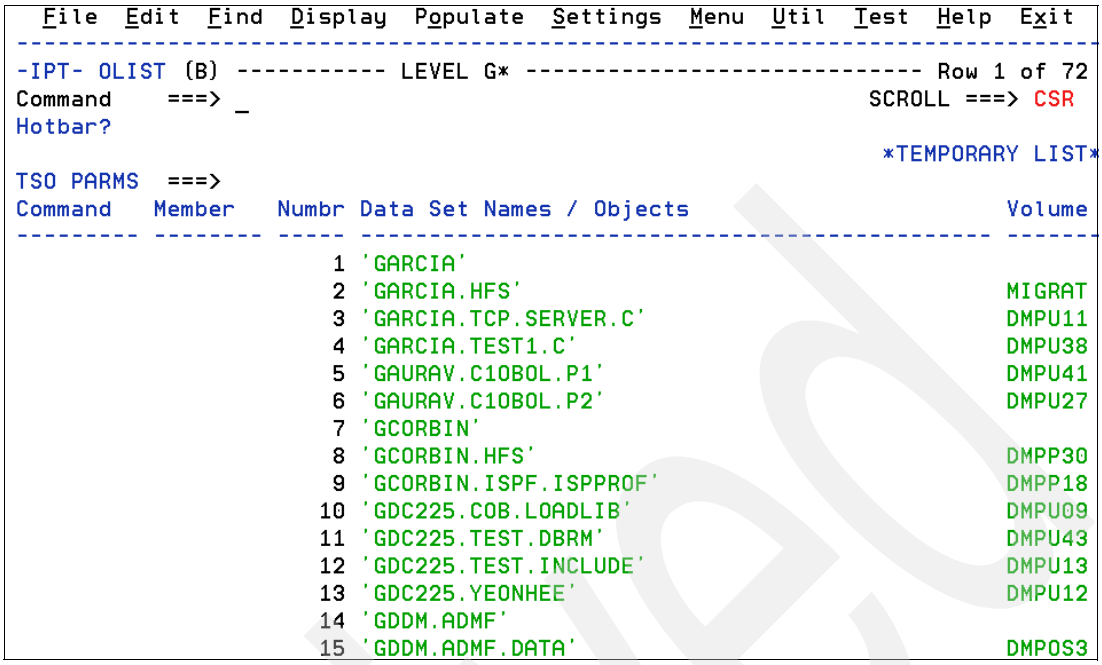

Figure 6-13 The OL search result

Note: Part of the underlying philosophy of IPT is that a user does not have to change a work habit in order to use IPT.

This philosophy is demonstrated by the ability of a user to perform a search using option 3.4, or to be able to get the same result using an IPT command from anywhere in ISPF. For example, if you were in a program edit session and needed to check on a particular data value before continuing, there is no need to save the work and navigate to ISPF option 3.4, find and access the data, locate the value, and then reverse the process to return to the work. You only need to enter the `OL` command on the command line in the edit session. We hope that as you become more familiar with IPT, you will begin using the IPT commands directly.

Now, we return to the meaning of blank. Because “BLANK” is intended to indicate your personal default list action, the ability to change it is implied. Changing it is easy to do. To change the “default command,” use the IPT SET, or ISET shortcut IPT command. Figure 6-14 on page 185 shows the ISET command entered on the Option 3.4 panel.

Archived

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===> iset_
   DS - Display dataset list                P  - Print data set list
blank - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List   ===>                    (* for selection list, = for MYLIST)
   Dsname Level  ===>                                          More? ===> N
   Volume Serial ===>                    (Leave BLANK for catalog scan,
                                          volser or pattern for VTOC scan)
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-14 ISET command

Pressing Enter executes the command, and Figure 6-15 shows the result. We have circled the DSLIST options, which are of interest to us.

```
-IPT- --------------------Setting IBMIPT Defaults-----------------------------
COMMAND ===>
Select options by number, name, with cursor selection, or with line commands:
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool
 IBMIPT is running under ISPF version 5.9

_   A - ALL        - Select all the below displayed options
_   M - MSL        - Member Selection List options
_   O - OLIST      - Object list options
_   G - GLOBAL     - Global edit and Findtext options
_   P - PRINT      - Print options
s   D - DSLIST     - DSLIST options
=   T - TSO        - TSO shell options
_   E - EDIT       - Edit, Browse and View options
_   I - INTERFACE  - Specify user interface options
_   N - DIAGNOSE   - Diagnose ISPF errors
_   L - LIBRARY    - Persistent table library options
_   B - BOOKMGR    - BookManager interface options

   Make your selection and press the ENTER key or press the END key to exit
```

Figure 6-15 The ISET panel

You can open the DSLIST options in several ways. You can type the option on the command line as `D` and press Enter. You can tab to the position in front of the D and either press Enter, or type a character and press Enter. Finally, you can place the cursor anywhere on the line with the D option and press Enter. For emphasis, we have marked the line, as shown in Figure 6-15. Pressing Enter executes the option, and Figure 6-16 on page 186 shows the result.

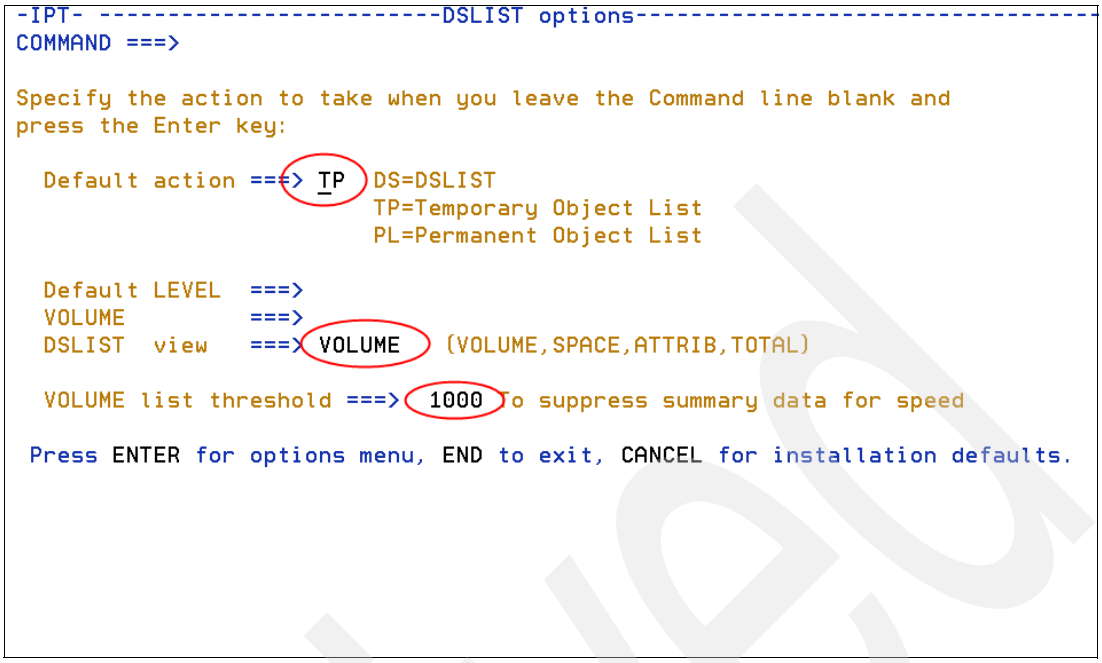

Figure 6-16 DSLIST options

Recall that in Figure 6-9 on page 182, “BLANK” is next to “Temporary Object List,” which is indicated by the circled default action in Figure 6-16. You can change the default action by simply typing the desired default action from the list. You can establish these other defaults:

- The default name level, which is useful if you consistently access a certain high-level qualifier. The first level must be fully qualified, but lower levels can be specified by wildcard characters.
- The VOLUME, which is useful if you consistently access information on a volume.
- The “DSLIST view” option is carried over from the 3.4 panel and can be changed in either location.
- The “VOLUME list threshold” (set at 1000) means that 1000 volumes can be searched before the search is stopped. In large systems with many volumes, it is essential to limit searches. The IPT initial setting for the threshold is 100. We discuss this option more later.

Note: If you know the ISET option that you want to change, you can type the ISET command with that option. The command appears as ISET D.

We change our default list type to DS by typing `DS` in the field provided and pressing Enter (Figure 6-17 on page 187).

Archived

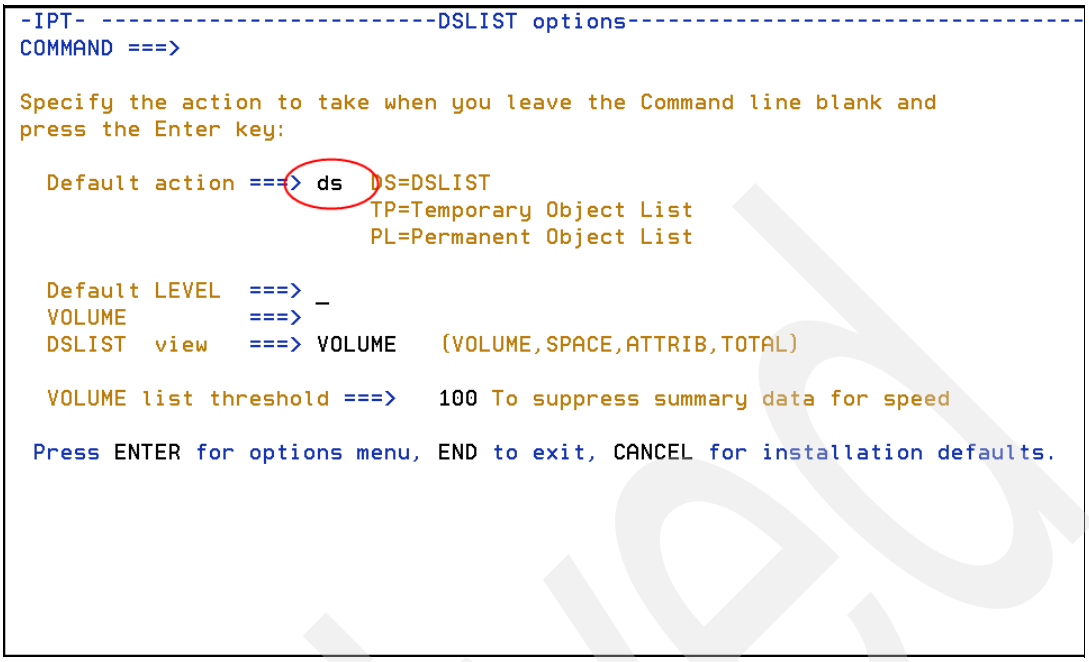

Figure 6-17 Changing to DS

The “Setting IBMIPT Defaults” menu appears, and pressing PF3 returns us to the 3.4 panel. If you had typed the ISET D command, pressing Enter returns you to the 3.4 panel, because there is no intervening panel.

Yet another way to change this default is to place the cursor on the Settings option on the action bar at the top of the 3.4 panel. Figure 6-18 shows the pop-up menu that appears after you place the cursor on the Settings option on the action bar. The current default is marked with an asterisk (*). You then type the number of the type of list that you want as a default, which, in our case, is 1, and press Enter.

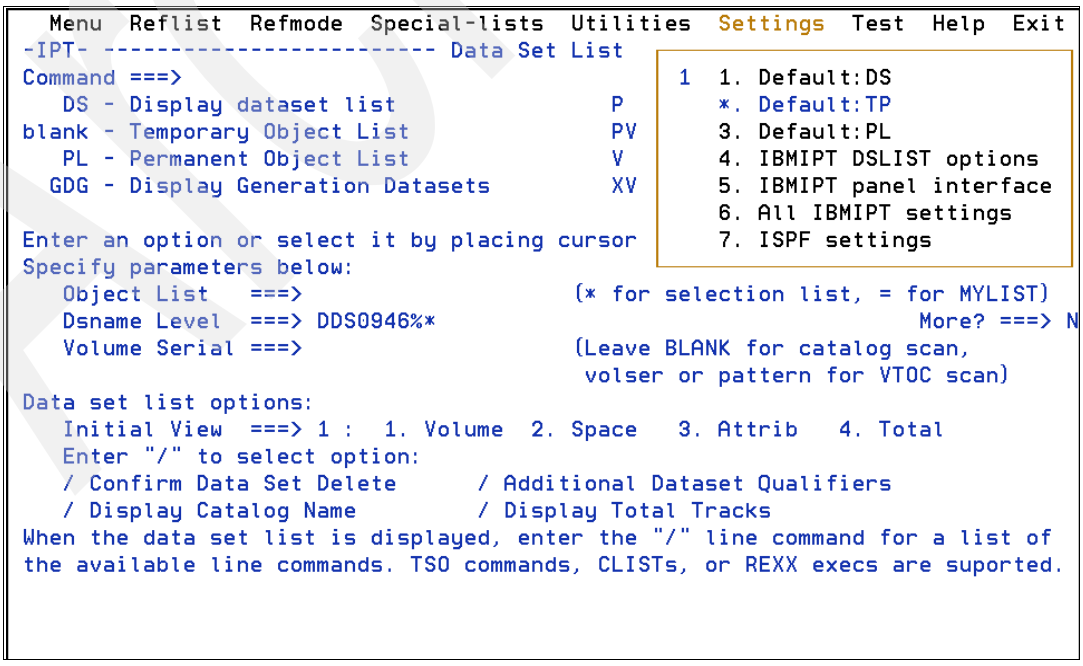

Figure 6-18 The ISPF action bar settings pop-up menu

The changes made to the defaults by using the ISET command become active when you *next* enter option 3.4. So, if you want them to become active immediately, you must exit and re-enter option 3.4. A change made using Settings from the action bar becomes active when made.

6.3 Dataset list (DS) and NON-ISPF generic searches

We have changed our default list type to DS for DSLIST. By using DS as a default, now when a generic search pattern is entered in the Dsname Level field, an ISPF 3.4 type search will be performed. You *cannot* force an IPT search by using a non-conforming generic search pattern.

For example, Figure 6-19 shows option 3.4 with a DS search and a generic search pattern that conforms to ISPF 3.4. Figure 6-20 on page 189 shows the result.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility ------------------------
Command ===>
blank - Display dataset list              P  - Print data set list
   TP - Temporary Object List             PV - Print VTOC information
   PL - Permanent Object List             V  - Display VTOC information
  GDG - Display Generation Datasets       XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                    (* for selection list, = for MYLIST)
   Dsname Level   ===> DDS0946                                  More? ===> N
   Volume Serial  ===>                    (Leave BLANK for catalog scan,
                                           volser or pattern for VTOC scan)
Data set list options:
   Initial View   ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-19 Regular ISPF option 3.4 search

```
 Menu  Options  View  Utilities  Compilers  Help
-------------------------------------------------------------------------------
-IPT-  - Data Sets Matching DDS0946                                  Row 1 of 20
Command ===> _                                                Scroll ===> PAGE

Command - Enter "/" to select action                 Message          Volume
-------------------------------------------------------------------------------
         DDS0946                                                      *ALIAS
         DDS0946.CLIST                                                DMPU41
         DDS0946.DEMO.JCL                                             DMPU42
         DDS0946.HFS                                                  DMPU20
         DDS0946.ISPF.IPITBLIB                                        DMPU38
         DDS0946.ISPF.ISPPROF                                         DMPU37
         DDS0946.LOG.MISC                                             DMPU40
         DDS0946.SPFLOG0.LIST                                         DMPU33
         DDS0946.SPFLOG1.LIST                                         DMPU11
         DDS0946.SPFLOG2.LIST                                         DMPU34
         DDS0946.SPFLOG3.LIST                                         DMPU14
         DDS0946.SPFLOG4.LIST                                         DMPU20
         DDS0946.SPFLOG5.LIST                                         DMPU41
         DDS0946.SPFLOG6.LIST                                         DMPU20
         DDS0946.SPFLOG7.LIST                                         DMPU41
         DDS0946.SPFLOG8.LIST                                         DMPU18
         DDS0946.SPFLOG9.LIST                                         DMPU18
```

Figure 6-20 Regular search result

Figure 6-21 shows a DS search using a pattern that conforms to an IPT generic search pattern. Figure 6-22 on page 190 shows the result. Remember, in IPT, the % wildcard can represent dots.

```
 Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===>
blank - Display dataset list              P  - Print data set list
   TP - Temporary Object List             PV - Print VTOC information
   PL - Permanent Object List             V  - Display VTOC information
  GDG - Display Generation Datasets       XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                    (* for selection list, = for MYLIST)
   Dsname Level   ===> DDS0946%*                                 More? ===> N
   Volume Serial  ===>                    (Leave BLANK for catalog scan,
                                           volser or pattern for VTOC scan)
Data set list options:
   Initial View   ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete       / Additional Dataset Qualifiers
   / Display Catalog Name          / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-21 DS and non-conforming search pattern

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===>                                          Invalid data set level
blank - Display dataset list                P  - Print data set list
   TP - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List   ===>                    (* for selection list, = for MYLIST)
   Dsname Level  ===> DDS0946%*                                  More? ===> N
   Volume Serial ===>                    (Leave BLANK for catalog scan,
                                          volser or pattern for VTOC scan)
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-22 DS non-conforming search result

The message is due to the % wildcard character in a position where ISPF 3.4 expected to find a blank, a dot, and another dataset level, or an asterisk (*) wildcard character.

In option 3.4, if you want to employ IPT generic searches, you must enter `TP` on the command line, because our default command is DS. The other action is to change the default list type `tp` to `TP`. Figure 6-23 shows using a TP list type and an IPT generic search pattern. Figure 6-24 on page 191 shows the result.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===> tp
blank - Display dataset list                P  - Print data set list
   TP - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List   ===>                    (* for selection list, = for MYLIST)
   Dsname Level  ===> DDS0946%*                                  More? ===> N
   Volume Serial ===>                    (Leave BLANK for catalog scan,
                                          volser or pattern for VTOC scan)
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-23 Using an IPT generic search

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS0946%* ---------------------- Row 1 of 19
Command     ===> _                                          SCROLL ===> CSR
Hotbar?
                                                          *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ------------------------------------------- -------
                       1 'DDS0946.CLIST'                             DMPU41
                       2 'DDS0946.DEMO.JCL'                          DMPU42
                       3 'DDS0946.HFS'                               DMPU20
                       4 'DDS0946.ISPF.IPITBLIB'                     DMPU38
                       5 'DDS0946.ISPF.ISPPROF'                      DMPU37
                       6 'DDS0946.LOG.MISC'                          DMPU40
                       7 'DDS0946.SPFLOG0.LIST'                      DMPU33
                       8 'DDS0946.SPFLOG1.LIST'                      DMPU11
                       9 'DDS0946.SPFLOG2.LIST'                      DMPU34
                      10 'DDS0946.SPFLOG3.LIST'                      DMPU14
                      11 'DDS0946.SPFLOG4.LIST'                      DMPU20
                      12 'DDS0946.SPFLOG5.LIST'                      DMPU41
                      13 'DDS0946.SPFLOG6.LIST'                      DMPU20
                      14 'DDS0946.SPFLOG7.LIST'                      DMPU41
                      15 'DDS0946.SPFLOG8.LIST'                      DMPU18
```

Figure 6-24 TP OLIST result for 3.4

6.4 The MORE? indicator

During our discussion of DSLIST, we not yet mentioned the 3.4 panel field labeled MORE?. Figure 6-25 shows the center section of the 3.4 panel containing the field.

```
Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                    (* for selection list, = for MYLIST)
   Dsname Level   ===> DDS0946%*                                More? ===> N
   Volume Serial  ===>                    (Leave BLANK for catalog scan,
                                           volser or pattern for VTOC scan)
```

Figure 6-25 The MORE? field

Changing the N to Y and pressing Enter opens a pop-up panel where you can specify multiple DSNAME levels and volumes in the search. This action will produce an OLIST containing matching datasets. Figure 6-26 on page 192 shows the pop-up panel.

Archived

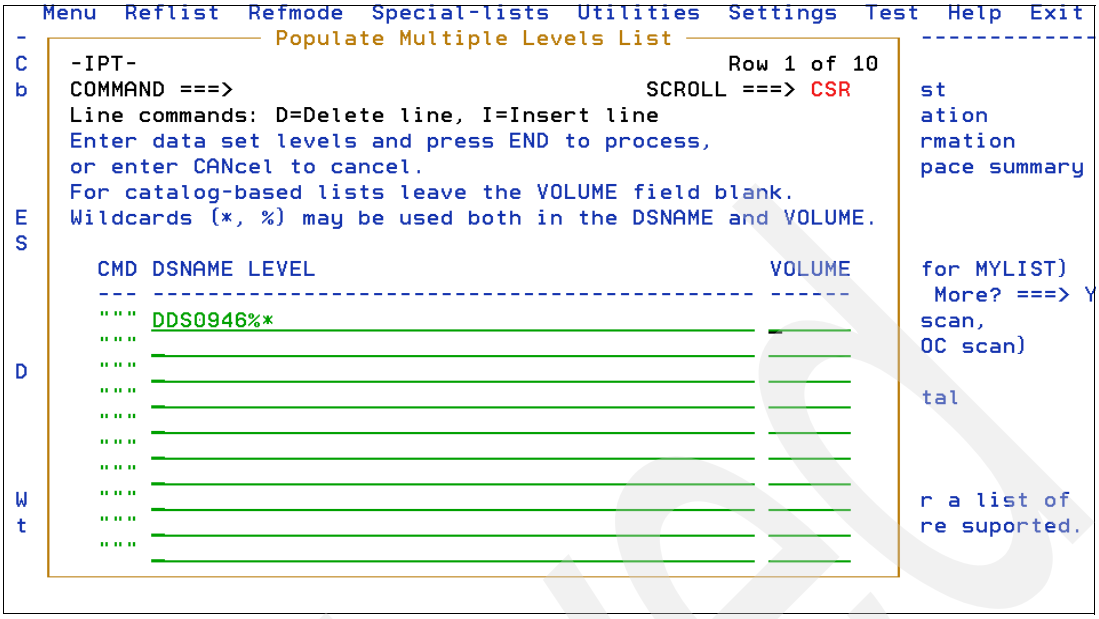

Figure 6-26 More? pop-up panel

Notice that the pop-up panel is displayed with the generic search that was already entered in the previous panel. You can add more DSname levels, as shown in Figure 6-27. Pressing End (PF3) performs the search, and the result is displayed in Figure 6-28 on page 193.

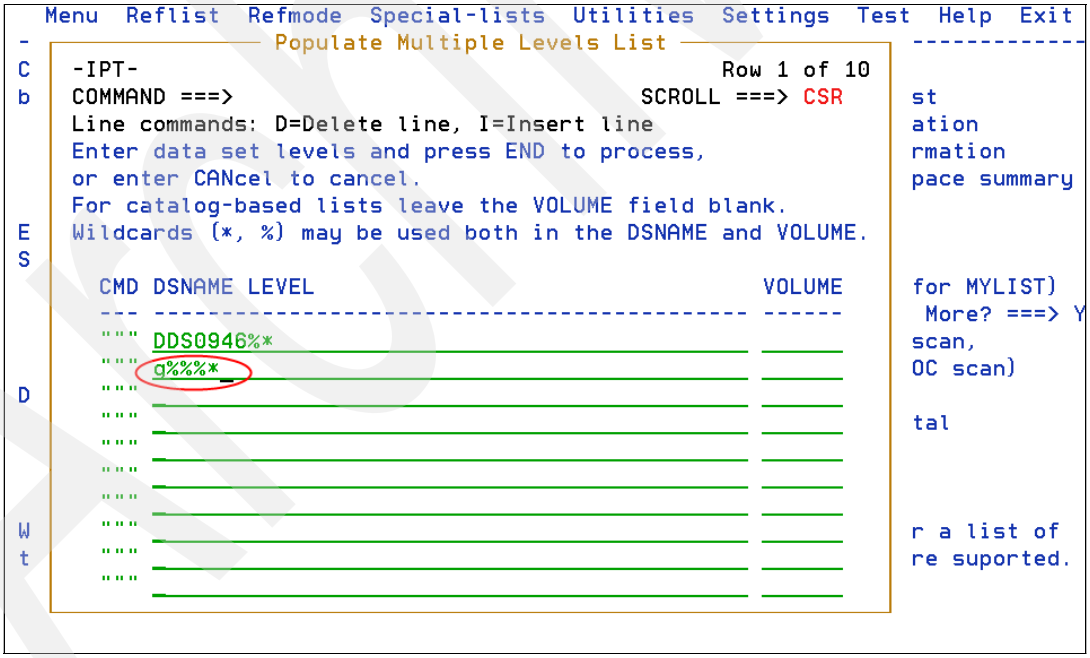

Figure 6-27 Adding more levels

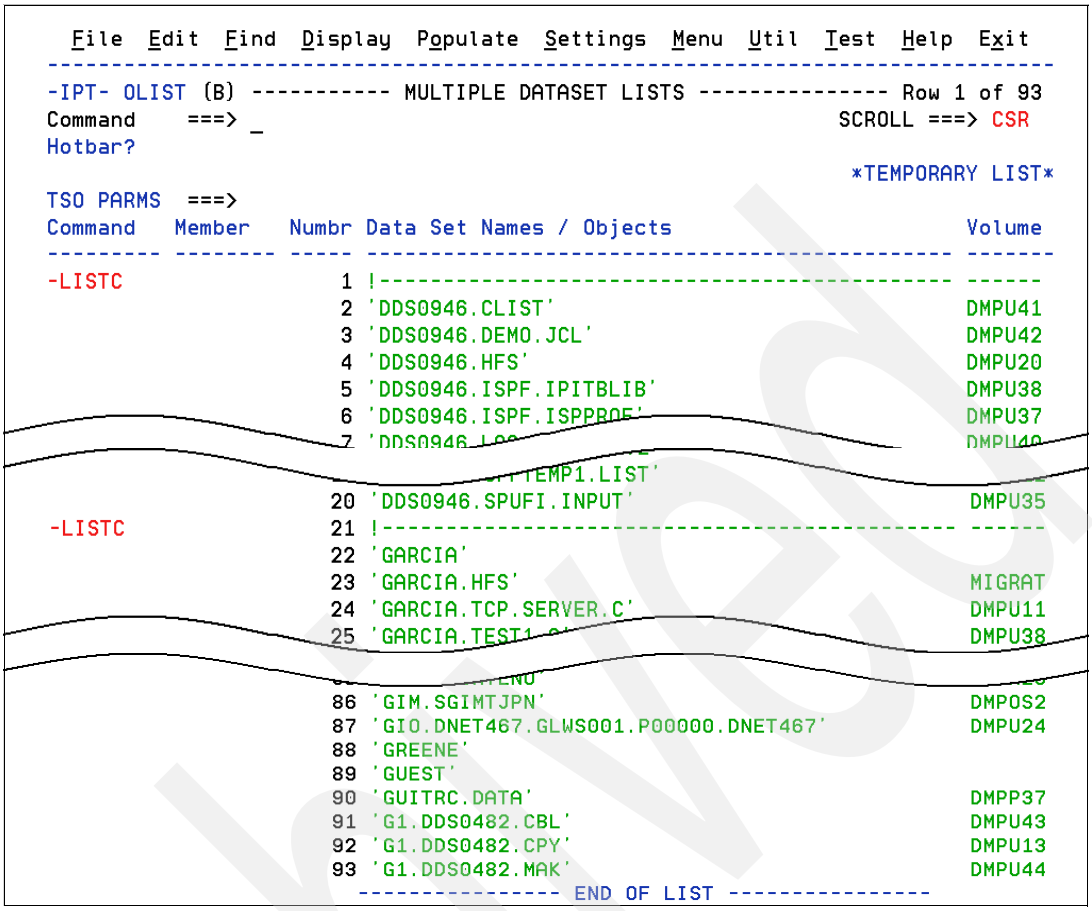

Figure 6-28 MORE search result

Note: Using an exclamation point (!) in an OLIST, as seen in Figure 6-28, is a comment line.

You can see from Figure 6-28 that both generic searches were performed and the results were displayed in a temporary list. This approach is an obvious advantage over the standard ISPF 3.4 dataset search, which must be done one at a time.

Another way to access and use Multiple Levels lists is by placing your cursor on the Special-lists option on the action bar at the top of the option 3.4 panel (shown in Figure 6-29).

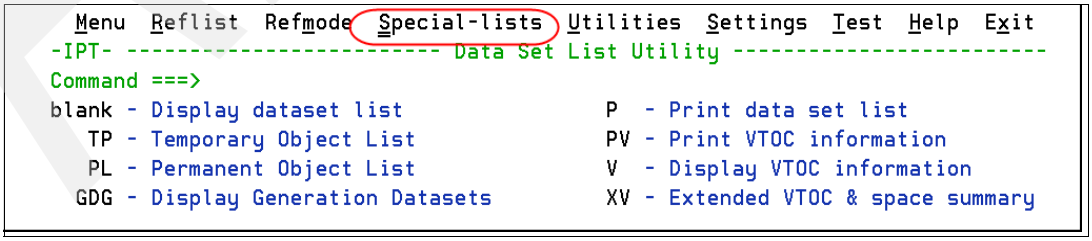

Figure 6-29 Action bar item Special-lists

Figure 6-30 on page 194 shows the result. The Special-lists pop-up panel appears. Typing number 4 and pressing Enter starts the Multiple Levels function.

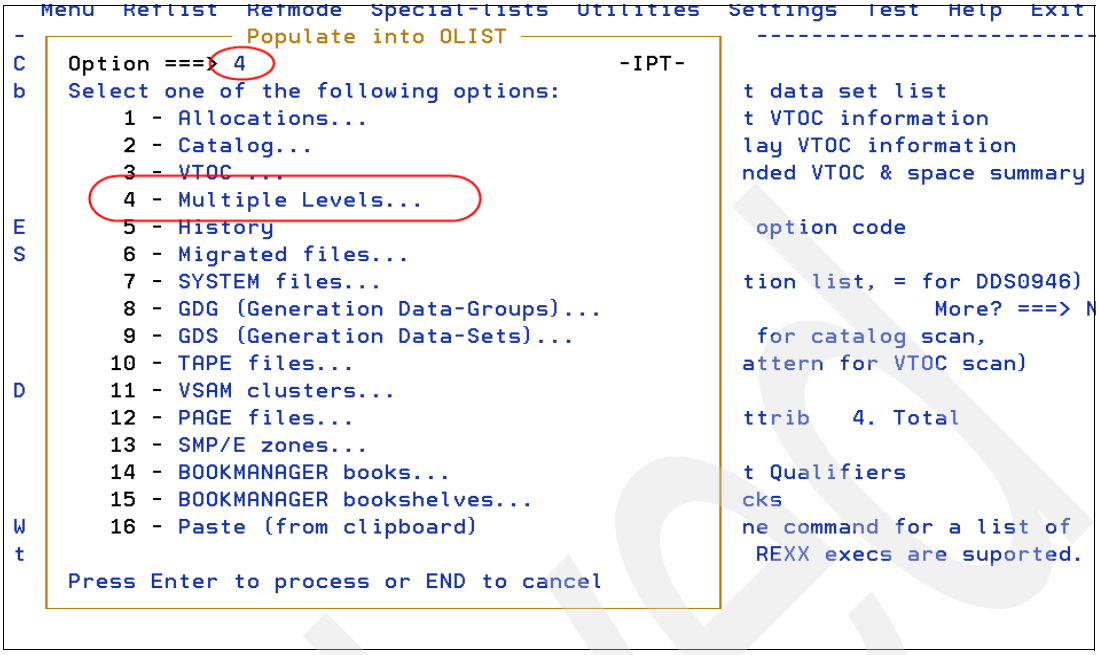

Figure 6-30 Special-Lists pop-up panel

Figure 6-31 shows the Multiple Levels pop-up panel. Notice that the MORE? field is still set to N as this pop-up panel was supplied from the Special-lists option on the action bar.

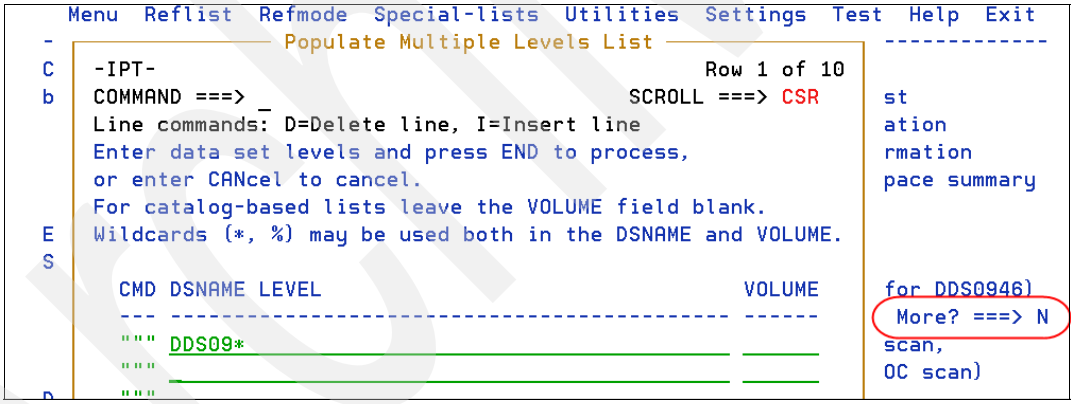

Figure 6-31 The More? field still is N

From this point, executing a multiple level search is the same as setting MORE? to Y.

6.5 Additional field panel

An additional field is provided for the TP and PL commands, which invoke IPT functionality. While the TP command can be performed using information from the Dsname Level field, you can enter an Object List name in the Object List field and IPT will prompt you to enter more information.

Typing a Permanent Object List name in the field will display the contents of that Object List. You can then select a member of that list and display its contents. If you have no Permanent

Object Lists and you type the PL command, you will be prompted for a name. See Figure 6-32.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===> PL                                        Enter required field
blank - Display dataset list                P  - Print data set list
   TP - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                    (* for selection list)
   Dsname Level   ===>                                        More? ===> N
   Volume Serial  ===>                   (Leave BLANK for catalog scan,
                                          volser or pattern for VTOC scan)
Data set list options:
   Initial View   ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete       / Additional Dataset Qualifiers
   / Display Catalog Name          / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-32 PL command with no list name

You can type a name or an asterisk (*) in the Object List field, and you will be presented with a panel to allow you to enter a name. See Figure 6-33.

```
-IPT-                      Permanent Object Lists                    Row 1 of 1
Command    ===>                                                 Scroll ===> CSR

Your default OLIST is
Object lists saved in 'DDS0946.ISPF.IPITBLIB'

Main commands:S=Select OLIST, L=Locate OLIST, QUIT, SORT, VALIDATE the list
Line commands:D=Delete, DYN=Dynamic OLIST, IMP=Import, N=Next default, R=Rename
Create a new OLIST by typing over an existing name.
CMD NAME              DESCRIPTION            ENTRIES CREATED     UPDATED
--- --------   ------------------------------ ------- -------- --------------
___
   --------------- END OF LIST ---------------

          IQIP1029 Please name the OLIST you want to work with
```

Figure 6-33 The result of using an asterisk (*)

At this point, you can type a name for your list and develop a list. However, for the purposes of investigating the option 3.4 PL command, assume that there are permanent lists available. See Figure 6-34 on page 196.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------- Data Set List Utility -------------------------
Command ===>
blank - Display dataset list                P  - Print data set list
   TP - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List   ===>                   (* for selection list, = for MYLIST)
   Dsname Level  ===>                                          More? ===> N
   Volume Serial ===>                   (Leave BLANK for catalog scan,
                                         volser or pattern for VTOC scan)
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
   / Confirm Data Set Delete      / Additional Dataset Qualifiers
   / Display Catalog Name         / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-34 Option 3.4 display with a permanent list name

You will see the most recently used list name. Typing = and pressing Enter executes that list. Typing MYLIST and pressing Enter will execute that list also. If you enter an asterisk (*) and press Enter, you see a selection panel. See Figure 6-35.

```
-IPT-                    Permanent Object Lists                    Row 1 of 2
Command     ===> _                                          Scroll ===> CSR

Your default OLIST is NEWLIST1
Object lists saved in 'DDS0946.ISPF.IPITBLIB'

Main commands:S=Select OLIST, L=Locate OLIST, QUIT, SORT, VALIDATE the list
Line commands:D=Delete, DYN=Dynamic OLIST, IMP=Import, N=Next default, R=Rename
Create a new OLIST by typing over an existing name.
CMD NAME                DESCRIPTION            ENTRIES CREATED     UPDATED
--- --------   ------------------------------- ------- -------- --------------
___ MYLIST                                          20 09/02/11 09/02/11 15:18
___ NEWLIST1                                       106 09/02/11 09/02/11 15:22
    --------------- END OF LIST ---------------
```

Figure 6-35 The Permanent Object List

At this point, you can select a list and see its contents.

> **Note:** Beware of naming a permanent OLIST with your Time Sharing Option (TSO) PREFIX, which will create a source of confusion. You will want searches for objects beginning with your prefix to yield lists of dataset objects, not the name of an object list.

6.6 How to list Generation Data Groups

A new command line feature, as compared to standard ISPF option 3.4, is the Generation Data Group (GDG) command to display of generation data groups. It is true that GDGs can be found and accessed through the regular DS function. However, the new command

handles only GDGs. To use the command, enter the command on the command line and provide a GDG name if you know it or generic search criteria as shown in Figure 6-36.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility ------------------------
Command ===> gdg
blank - Display dataset list              P  - Print data set list
   TP - Temporary Object List             PV - Print VTOC information
   PL - Permanent Object List             V  - Display VTOC information
  GDG - Display Generation Datasets       XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List   ===>                  (* for selection list)
   Dsname Level  ===> A*                                    More? ===> N
   Volume Serial ===>                  (Leave BLANK for catalog scan,
                                        volser or pattern for VTOC scan)
```

Figure 6-36 GDG search setup

The information in Figure 6-36 will be used to search for GDGs beginning with A. The search result is shown in Figure 6-37.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- GDG A* ------------------------------ Row 1 of 11
Command    ===> _                                      SCROLL ===> CSR
Hotbar?
                                                        *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ------------------------------------------ -------
                       1 'ADPOT01.ADLAB.GDG'
                       2 'ADPOT06.GREG'
                       3 'ADPOT10.ADLAB.GDG'
                       4 'APERKIN.DB2II.CACRCVD'
                       5 'APERKIN.DB2II.CACRCVX'
                       6 'APERKIN.TEST.IMAGCOPY.AIRB1DD6.C001'
                       7 'APERKIN.TEST.IMAGCOPY.AIRB1DD6.C002'
                       8 'ARCHFILE.TESTING1'
-     (-2)             9 'ARCHFILE.TESTING1.G0001V00'               DMPU35
-     (-1)            10 'ARCHFILE.TESTING1.G0002V00'               DMPU07
-      (0)            11 'ARCHFILE.TESTING1.G0003V00'               DMPU15
                        ---------------- END OF LIST ----------------
```

Figure 6-37 GDG search result

In Figure 6-37, the red outlined area shows a GDG base name, or group, and three generations of that base. Notice that the base does not have a volume associated with it. In GDG style, the generations are labeled on the left as they are used in the dataset name in JCL. The file named ARCHFILE.TESTING1.G0003V00 and labeled as (0) is the current, or most recent generation, for example.

Using IPT OLG with a parameter achieves the same result as the 3.4 GDG search. You type OLG A* on *any* command line and press Enter, as shown in Figure 6-38 on page 198.

```
   Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                            ISPF Primary Option Menu
 Option ===> olg a*_

 0  Settings      Terminal and user parameters           User ID . : DDS0946
 1  View          Display source data or listings        Time. . . : 06:49
 2  Edit          Create or change source data           Terminal. : 3278
```

Figure 6-38 The OLG command

Figure 6-39 shows that the same list has been generated.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT- OLIST (B) ----------- GDG A* ------------------------------- Row 1 of 11
 Command    ===> _                                          SCROLL ===> CSR
 Hotbar?
                                                             *TEMPORARY LIST*
 TSO PARMS  ===>
 Command   Member   Numbr Data Set Names / Objects                      Volume
 --------- -------- ----- ---------------------------------------------- -------
                        1 'ADPOT01.ADLAB.GDG'
                        2 'ADPOT06.GREG'
                        3 'ADPOT10.ADLAB.GDG'
                        4 'APERKIN.DB2II.CACRCVD'
                        5 'APERKIN.DB2II.CACRCVX'
                        6 'APERKIN.TEST.IMAGCOPY.AIRB1DD6.C001'
                        7 'APERKIN.TEST.IMAGCOPY.AIRB1DD6.C002'
                        8 'ARCHFILE.TESTING1'
 -    (-2)              9 'ARCHFILE.TESTING1.G0001V00'                   DMPU35
 -    (-1)             10 'ARCHFILE.TESTING1.G0002V00'                   DMPU07
 -     (0)             11 'ARCHFILE.TESTING1.G0003V00'                   DMPU15
                         ---------------- END OF LIST ----------------
```

Figure 6-39 OLG result

6.7 List files by volumes

Another new feature is XV, compared to standard ISPF option 3.4. Combining the command with Volume Serial search criteria in either a volume name, or a name pattern, retrieves extended DASD information. Figure 6-40 on page 199 shows a volume name search that is ready to execute. Figure 6-41 on page 199 shows the result.

Archived

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility -------------------------
Command ===> xv
   DS - Display dataset list                P  - Print data set list
blank - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List    ===>                     (* for selection list)
   Dsname Level   ===>                                        More? ===> N
   Volume Serial ===> DMPA01               (Leave BLANK for catalog scan,
                                            volser or pattern for VTOC scan)
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
     Confirm Data Set Delete       / Additional Dataset Qualifiers
   / Display Catalog Name          / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-40 XV search setup

```
-IPT- EXTENDED VTOC INFORMATION FOR VOLUME DMPA01 ----------------------------
COMMAND ===>

VOLUME  ===> DMPA01 (Change for another volume)

 +---- VOLUME DATA ----+----- VTOC DATA -----+------- FREE SPACE DATA ------+
 | TRACKS:       33405 | TRACKS:          60 |         ..TRACKS   ....CYLS |
 | %USED:           93 | %USED:            2 | SIZE:        2474        149 |
 | TRKS/CYLS:       15 | FREE DSCBS:    2935 | LARGEST:     1099         72 |
 | UNIT TYPE:     3390 |                     |                              |
 | CYLINDERS:     2227 | VTOC EXTENTS:     1 | EXTENTS:       19            |
 | TRACK LEN:    58786 | DSCBS/TRK:       50 |                              |
 | UCB ADDR.:     0E20 | INDEX VTOC:  ACTIVE |                              |
 | SHARED:         YES | VIRs:           620 |                              |
 | ATTRIBUTES: PRIVATE |                     |                              |
 | OPEN FILES:       1 |                     |                              |
 | DEFRAG IX:      281 |                     |                              |
 | SMS:    SMS MANAGED |                     |                              |
 +---------------------+---------------------+------------------------------+
    SPACE: 0...v....50...v....60...v....70...v....80...v....90...v.....100%
    USAGE: ----------------------------------------------------> 93%

Press ENTER to refresh, END key to exit.
```

Figure 6-41 XV result for a single volume

Extended volume searches with patterns yield volume lists, which can then be explored. Figure 6-42 on page 200 shows a pattern search setup. The result is shown in Figure 6-43 on page 200.

```
  Menu  Reflist  Refmode  Special-lists  Utilities  Settings  Test  Help  Exit
-IPT- ------------------------ Data Set List Utility ------------------------
Command ===> xv_
   DS - Display dataset list                P  - Print data set list
blank - Temporary Object List               PV - Print VTOC information
   PL - Permanent Object List               V  - Display VTOC information
  GDG - Display Generation Datasets         XV - Extended VTOC & space summary

Enter an option or select it by placing cursor on the option code
Specify parameters below:
   Object List   ===>                    (* for selection list)
   Dsname Level  ===>                                          More? ===> N
   Volume Serial ===> DMPA*              (Leave BLANK for catalog scan,
                                          volser or pattern for VTOC scan)
Data set list options:
   Initial View  ===> 1 :  1. Volume  2. Space   3. Attrib   4. Total
   Enter "/" to select option:
     Confirm Data Set Delete       / Additional Dataset Qualifiers
   / Display Catalog Name          / Display Total Tracks
When the data set list is displayed, enter the "/" line command for a list of
the available line commands. TSO commands, CLISTs, or REXX execs are suported.
```

Figure 6-42 XV pattern search

```
-IPT-                  SPACE SUMMARY VOLUME SELECTION LIST          Row 1 of 12
COMMAND ===> _                                              SCROLL ===> CSR

Main commands: DOWN, END, L=Locate, S=Select, UP, SORT V|T|%|F|L|S|D|A
Line commands: TP=OLIST, DS=DSLIST, S=VTOC information, V=VTOC summary, =
 LEVEL  ===>                                                (For TP, DS commands)

                    %... ...FREE SPACE... .LARGEST EXTENT. *=EAV
CMD VOLUME TYPE     FREE     CYLS     TRKS     CYLS     TRKS SMS DYN ATTRIBUTES
    DMPA01 3390        7      149     2474       72     1099   Y       PRIV SHAR
    DMPA02 3390       60     1305    19971      755    11350   Y       PRIV SHAR
    DMPA03 3390       18      387     6103       98     1473   Y       PRIV SHAR
    DMPA04 3390       15      305     4963       34      522   Y       PRIV SHAR
    DMPA05 3390       36      785    12163      205     3083   Y       PRIV SHAR
    DMPA06 3390       83     1823    27655     1531    22974   Y       PRIV SHAR
    DMPA07 3390       72     1601    24124     1131    16965   Y       PRIV SHAR
    DMPA08 3390       33      718    11163      248     3726   Y       PRIV SHAR
    DMPA09 3390       38     1247    18907      926    13892   Y       PRIV SHAR
    DMPA10 3390       66     2191    33078      865    13000   Y       PRIV SHAR
    DMPA11 3390       91     3021    45374     2838    42582   Y       PRIV SHAR
    DMPA12 3390       87     2887    43395     2724    40869   Y       PRIV SHAR
****************************** Bottom of data ********************************
```

Figure 6-43 XV pattern search result

In Figure 6-43, notice that there are several commands shown above the list of volumes that were retrieved by the search. Most of the commands are obvious in their intent. The SORT command can be performed with several qualifiers. Each letter in the list following the SORT label and separated by the vertical bar (|) relates to a column heading in the display. The relationship is shown in Table 6-1 on page 201.

Archived

Table 6-1 Sort letter and relationship

Sort letter	Related column
V	VOLUME
T	TYPE
%	% FREE
F	FREE SPACE
L	LARGEST EXTENT
S	SMS
D	DYN
A	ATTRIBUTES

Assume that we are searching for space for a large dataset. To put the volume with the most space at the top, sort by %, F, or L. An example of a sort using FREE SPACE is shown in Figure 6-44, and the result is shown in Figure 6-45 on page 202.

```
-IPT-                  SPACE SUMMARY VOLUME SELECTION LIST          Row 1 of 12
COMMAND ===> sort f                                          SCROLL ===> CSR

Main commands: DOWN, END, L=Locate, S=Select, UP, SORT V|T|%|F|L|S|D|A
Line commands: TP=OLIST, DS=DSLIST, S=VTOC information, V=VTOC summary, =
 LEVEL  ===>                                              (For TP, DS commands)

                      %... ...FREE SPACE... .LARGEST EXTENT. *=EAV
CMD VOLUME TYPE     FREE     CYLS     TRKS     CYLS     TRKS SMS DYN ATTRIBUTES
    DMPA01 3390        7      149     2474       72     1099   Y       PRIV SHAR
    DMPA02 3390       60     1305    19971      755    11350   Y       PRIV SHAR
    DMPA03 3390       18      387     6103       98     1473   Y       PRIV SHAR
    DMPA04 3390       15      305     4963       34      522   Y       PRIV SHAR
    DMPA05 3390       36      785    12163      205     3083   Y       PRIV SHAR
    DMPA06 3390       83     1823    27655     1531    22974   Y       PRIV SHAR
    DMPA07 3390       72     1601    24124     1131    16965   Y       PRIV SHAR
    DMPA08 3390       33      718    11163      248     3726   Y       PRIV SHAR
    DMPA09 3390       38     1247    18907      926    13892   Y       PRIV SHAR
    DMPA10 3390       66     2191    33078      865    13000   Y       PRIV SHAR
    DMPA11 3390       91     3021    45374     2838    42582   Y       PRIV SHAR
    DMPA12 3390       87     2887    43395     2724    40869   Y       PRIV SHAR
****************************** Bottom of data ********************************
```

Figure 6-44 SORT F command

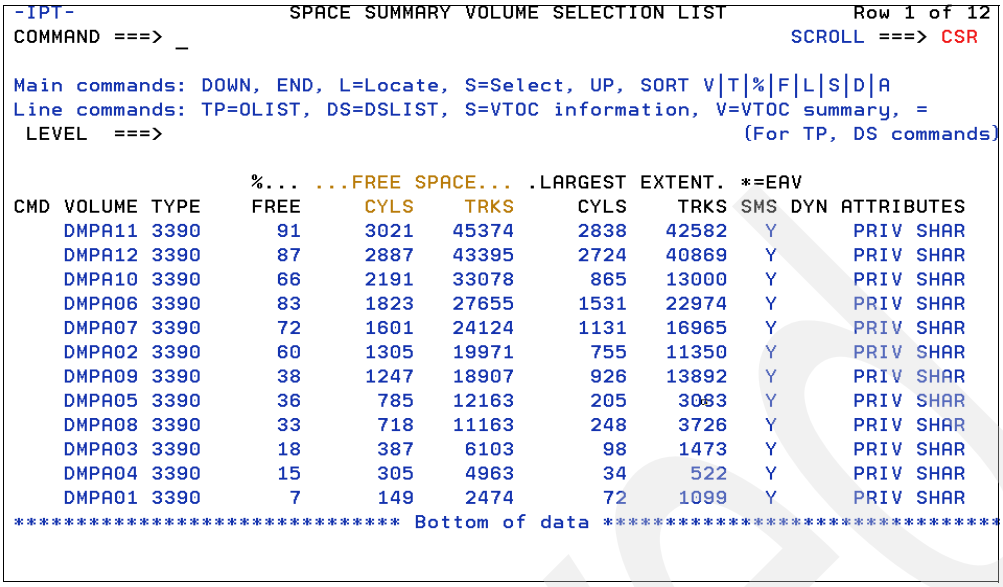

Figure 6-45 SORT F result

As you can see in Figure 6-45, the volumes with the largest free space are now at the top of the list, and the columns that have been sorted are a different color.

Another convenient way to sort the display to your needs is to use point-and-shoot. Place the cursor on the column that you want to sort and press Enter.

Use the line commands that are listed beneath the main commands to see the volume table of contents (VTOC) for a volume or to see a list of the resident dataset names. Typing S beside DMPA11 and pressing Enter shows you a panel like the panel in Figure 6-41 on page 199. You can view a list of datasets by typing DS next to the volume.

In Figure 6-45, notice the column label *=EAV. If you are using z/OS V1.10, you can take advantage of Extended Address Volume (EAV) DASD architecture. This architecture allows for bigger volumes by using an expanded addressing scheme. Volumes using the EAV scheme show an asterisk (*) in the System Managed Storage or SMS column.

Recall from our earlier discussion about setting IPT defaults for DSLIST. We mentioned the Volume List Threshold (see Figure 6-16 on page 186). Although you can change this number to suit your needs, maintain a reasonable number. As you can see from the examples shown, you need to avoid an XV command with only an asterisk (*) in the Volume Serial field. On a large system, this setup can cause a search that consumes an extensive amount of time and resource. We recommend that you use the smallest number feasible with your system that will produce a quick result.

We have been pointing out as we examine the IPT enhanced option 3.4 that you can easily substitute an appropriate IPT command for the panel and command driven approach to navigation that is common in ISPF. This approach is also true for XV.

To achieve the result that we have seen with the XV command, you can use the OLDA command from *any* command line. Figure 6-46 on page 203 shows the OLDA command with a parameter, and Figure 6-47 on page 203 shows the result.

```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                          ISPF Primary Option Menu
 Option ===> olda dmpa*

 0  Settings      Terminal and user parameters           User ID . : DDS0946
 1  View          Display source data or listings        Time. . . : 11:40
 2  Edit          Create or change source data           Terminal. : 3278
 3  Utilities     Perform utility functions              Screen. . : 1
```

Figure 6-46 OLDA command

```
-IPT-                  SPACE SUMMARY VOLUME SELECTION LIST          Row 1 of 12
COMMAND ===>                                                  SCROLL ===> CSR

Main commands: DOWN, END, L=Locate, S=Select, UP, SORT V|T|%|F|L|S|D|A
Line commands: TP=OLIST, DS=DSLIST, S=VTOC information, V=VTOC summary, =
 LEVEL  ===>                                                (For TP, DS commands)

                   %... ...FREE SPACE... .LARGEST EXTENT. *=EAV
CMD VOLUME TYPE    FREE     CYLS    TRKS     CYLS    TRKS SMS DYN ATTRIBUTES
    DMPA01 3390       7      149    2474       72    1099   Y      PRIV SHAR
    DMPA02 3390      60     1305   19971      755   11350   Y      PRIV SHAR
    DMPA03 3390      18      387    6103       98    1473   Y      PRIV SHAR
    DMPA04 3390      15      305    4963       34     522   Y      PRIV SHAR
    DMPA05 3390      36      785   12163      205    3083   Y      PRIV SHAR
    DMPA06 3390      83     1823   27655     1531   22974   Y      PRIV SHAR
    DMPA07 3390      72     1601   24124     1131   16965   Y      PRIV SHAR
    DMPA08 3390      33      718   11163      248    3726   Y      PRIV SHAR
    DMPA09 3390      38     1247   18907      926   13892   Y      PRIV SHAR
    DMPA10 3390      66     2191   33078      865   13000   Y      PRIV SHAR
    DMPA11 3390      91     3021   45374     2838   42582   Y      PRIV SHAR
    DMPA12 3390      87     2887   43395     2724   40869   Y      PRIV SHAR
******************************* Bottom of data ********************************
```

Figure 6-47 OLDA result

Notice that the result is the same as the XV command. When you perform a search that results in access to a large number of volumes, IPT does not gather the statistics for individual volumes. Figure 6-48 shows this condition.

```
 -IPT-                  SPACE SUMMARY VOLUME SELECTION                Expedited
 COMMAND ===>                                                  SCROLL ===> CSR
 ******* SPACE SUMMARY INFO SUPPRESSED DUE TO NUMBER OF VOLUMES
 Main commands: DOWN, END, L=Locate, S=Select, UP, SORT V|T|%|F|L|S|D|A
 Line commands: TP=OLIST, DS=DSLIST, S=VTOC information, V=VTOC summary, =
  LEVEL  ===>                                                (For TP, DS commands)

                   %... ...FREE SPACE... .LARGEST EXTENT. *=EAV
 CMD VOLUME TYPE    FREE     CYLS    TRKS     CYLS    TRKS SMS DYN ATTRIBUTES
     BLD001 3390                                                   PRIV SHAR
     BLD002 3390                                                   PRIV SHAR
     BLD003 3390                                                   PRIV SHAR
```

Figure 6-48 Summary information suppression

You can see, as highlighted by the empty area in Figure 6-48, that there is no data in the statistical columns. If you want to display the data for any individual volume, you can use the S or V line commands and the data will be displayed. When you return to the list, the statistics for that volume will be displayed. Figure 6-49 on page 204 shows the result of an S line command after returning to the list display.

Archived

```
-IPT-                  SPACE SUMMARY VOLUME SELECTION LIST        Row 1 of 1114
COMMAND ===>                                                   SCROLL ===> CSR

Main commands: DOWN, END, L=Locate, S=Select, UP, SORT V|T|%|F|L|S|D|A
Line commands: TP=OLIST, DS=DSLIST, S=VTOC information, V=VTOC summary, =
 LEVEL  ===>                                                 (For TP, DS commands)

                    %... ...FREE SPACE... .LARGEST EXTENT. *=EAV
CMD VOLUME TYPE     FREE     CYLS     TRKS     CYLS     TRKS SMS DYN ATTRIBUTES
    BLD001 3390        0        0        0        0        0          PRIV SHAR
    BLD002 3390                                                      PRIV SHAR
```

Figure 6-49 Updated columns

We are sure that you noticed that these columns are all zero, which tells us that there is no space left on this volume. If we take another look at the VTOC information, as Figure 6-50 shows, we can confirm that there is no space left on this volume.

```
-IPT- EXTENDED VTOC INFORMATION FOR VOLUME BLD001 ----------------------------
COMMAND ===>

VOLUME  ===> BLD001 (Change for another volume)

 +---- VOLUME DATA ----+----- VTOC DATA -----+------- FREE SPACE DATA ------+
 | TRACKS:      150255 | TRACKS:           1 |          ..TRACKS    ....CYLS |
 | %USED:          100 | %USED:          100 | SIZE:           0          0 |
 | TRKS/CYLS:       15 | FREE DSCBS:       0 | LARGEST:        0          0 |
 | UNIT TYPE:     3390 |                     |                              |
 | CYLINDERS:    10017 | VTOC EXTENTS:     1 | EXTENTS:        0             |
 | TRACK LEN:    58786 | DSCBS/TRK:       50 |                               |
 | UCB ADDR.:     E080 | INDEX VTOC:    NONE |                               |
 | SHARED:         YES |                   0 |                               |
 | ATTRIBUTES: PRIVATE |                     |                               |
 | OPEN FILES:       0 |                     |                               |
 | DEFRAG IX:        0 |                     |                               |
 |                     |                     |                               |
 +---------------------+---------------------+-------------------------------+
   SPACE: 0...v....50...v....60...v....70...v....80...v....90...v.....100%
   USAGE: ------------------------------------------------------------> 100%

Press ENTER to refresh, END key to exit.
```

Figure 6-50 100% utilization on this volume

The warning about large searches applies to the OLDA command, as well as to the XV command. The combination OLDA * will look for *every* volume in the system.

6.8 Object List compared to DSLIST volume handling

OLIST looks only for *cataloged* datasets that reside on all volumes, or only datasets that are specified by a volume serial generic pattern.

DSLIST displays the VTOC contents of the volumes accessed, which includes *both* cataloged datasets and uncataloged datasets.

Your results will vary with the two searches, because the approaches of DSLIST and OLIST vary to compiling search results. The IPT command OLV uses the same approach as DSLIST and gives the same result.

6.9 Populating an Object List

The IBM ISPF Productivity Tool for z/OS User's Guide Version 6 Release 1 Modification 0, SC14-7221, states,

> *"The Action Bar contains a new option: Special-lists. When selected, ISPF Productivity Tool will present options that let you open OLISTs containing datasets from special sources, like the allocated datasets, the migrated datasets, and other sources."*

Earlier in this chapter, we used a special-list option to demonstrate another way to gain access to the Multiple Levels list panel. The specifically tailored approach to object selection lets you get this kind of information quickly. As you can see in Figure 6-51, there are a number of lists available.

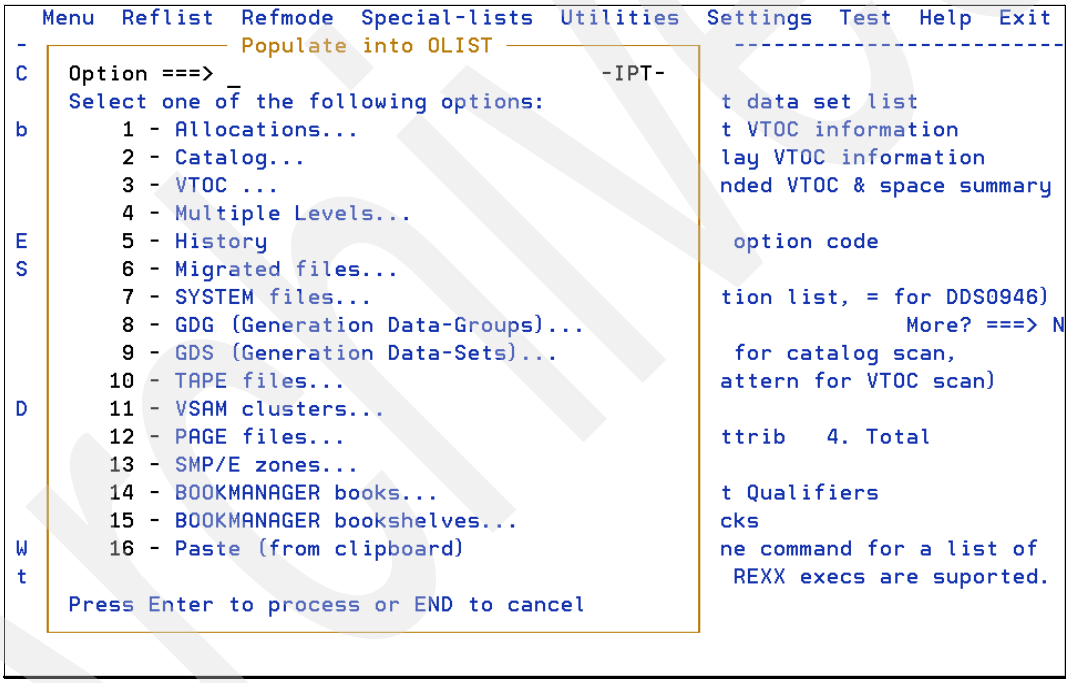

Figure 6-51 Special lists pop-up window

If you take time to explore the Special-lists options, you see that they are panel input versions of IPT commands. These versions are available for users, who prefer this approach. For example, if you type 1, as shown in Figure 6-52, and press Enter, you will see the allocations panel. Figure 6-53 on page 206 shows the resulting input panel.

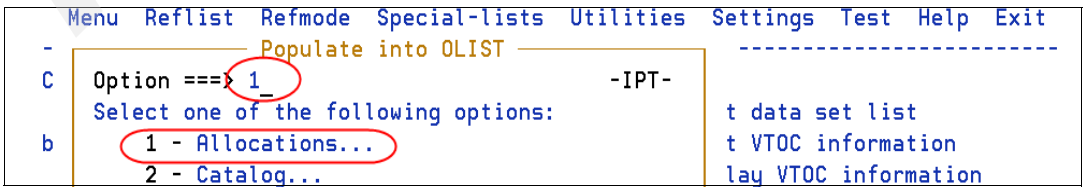

Figure 6-52 Special list 1 access

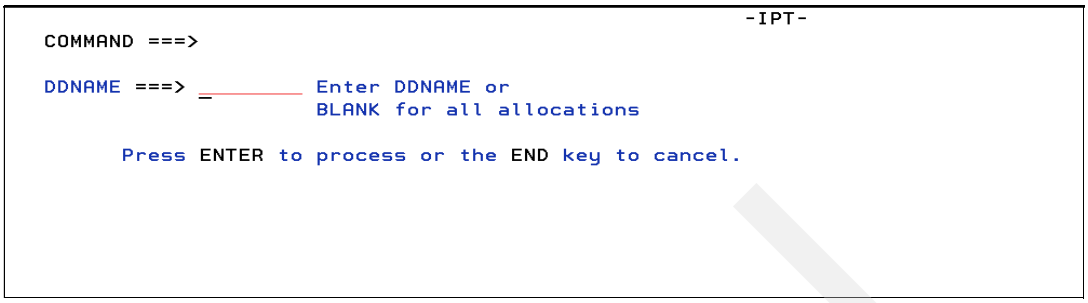

Figure 6-53 List 1 input panel

Without typing a DDNAME, we press Enter. Figure 6-54 shows the result.

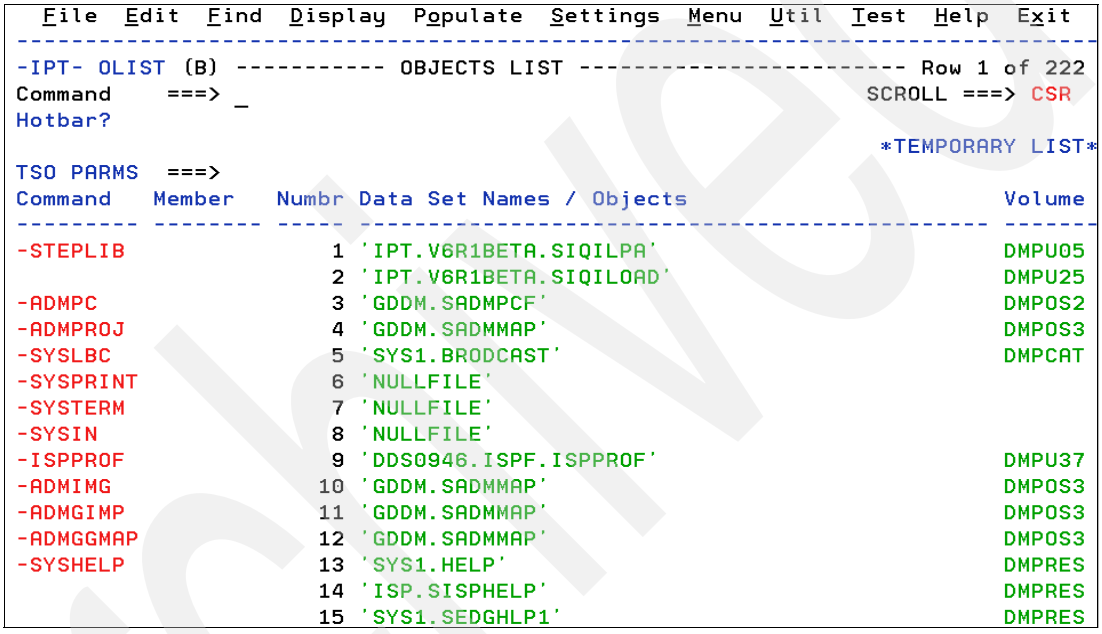

Figure 6-54 Resulting OLIST

You can achieve the same result with the IPT command OLDD, which is also true for the other Special Lists.

Use IPT ISPF option 3.4 to enjoy its power and versatility. Hopefully, the IPT capability of being able to use an IPT command from any ISPF command line will, in time, allow you to move beyond option 3.4.

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7

Enhanced cut and paste

In this chapter, we look at Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS CUT and PASTE commands.

The ISPF Productivity Tool CUT and PASTE commands provide these benefits:

- ISPF IPT supports up to 200 CUT/PASTE clipboards.
- Clipboards can be named or numbered. You can edit, browse, copy, save, restore, and rename these clipboards.
- You have the ability to CUT excluded and non-excluded lines.
- You can CUT context-sensitive lines by combining the EXCLUDE and FIND commands with the CUT command.
- Both CUT and PASTE commands support the STAtus keyword to display the list of all existing clipboards. You can use this display to select a new or existing clipboard to CUT into or from which to PASTE.
- You can paste lines from various sources:
  - Previously cut lines
  - Lines from another member
  - Captured output of Time Sharing Option (TSO) commands
  - Member names of a specified directory
  - Contents of a previously cut Object List (OLIST).
- You can paste lines from the various sources of CUT directly to the printer.

Assistance for the CUT and PASTE commands is available by typing the word CUT or PASTE on the command line of a member (but not in a browse session) and pressing Enter.

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7.1 Cutting text into a clipboard

To use the CUT command, you must be in a view or an edit session. Using the CUT command, you are able to perform these functions:

- Cut the entire partitioned dataset or member being edited into a clipboard by specifying the ALL operand. See Figure 7-1 for an example.
- Cut a part of the partitioned dataset or member being edited into a clipboard by specifying one of these types of information:
  - The labels of the first and last lines that you want copied to the clipboard. See Figure 7-3 on page 210 for an example.
  - The relative line numbers of the first and last lines that you want copied to the clipboard. See Figure 7-4 on page 211 for an example.
  - Use the C, CC, M, or MM editor line commands to specify the lines that you want copied or moved to the clipboard. See Figure 7-5 on page 212 for an example.
  - Specify the NX operand on the CUT command to specify that only the displayed (non-excluded) lines are copied to the clipboard. See Figure 7-8 on page 213 for an example.
  - Use the X operand on the CUT command to specify that only excluded (non-displayed) lines are copied to the clipboard. See Figure 7-10 on page 214 for an example.

Figure 7-1 shows the command that is used to copy the entire member to the default clip board (00).

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM1) - 01.02                 Columns 00001 00072
Command ===> cut all_                                   Scroll ===> CSR
****** ***************************** Top of Data ********************************
000100 //IEBCOPY JOB (IMS,PE22),'IEBCOPY',CLASS=A,
000200 //         MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID,REGION=32M
000300 //*
000400 //COPY1    EXEC PGM=IEBCOPY
000500 //INDD     DD DSN=IPT.DEV.LOAD,DISP=SHR
000600 //OUTDD    DD DSN=IPT.TEST.LOAD,DISP=SHR
000700 //SYSPRINT DD SYSOUT=*
000800 //SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,2)
000900 //SYSUT4   DD UNIT=SYSALLDA,SPACE=(CYL,2)
001000 //SYSIN    DD *
001100  COPY INDD=((INDD,R)),OUTDD=OUTDD
001200  SELECT MEMBER=(ABCCOMN1)
001300  SELECT MEMBER=(ABCCONS1)
001400  SELECT MEMBER=(ABCXTRN1)
001500  SELECT MEMBER=(ABC1POPD)
001600  SELECT MEMBER=(ABC1POPI)
001700  SELECT MEMBER=(ABC1POPS)
001800 //*
****** **************************** Bottom of Data ******************************
```

Figure 7-1 CUT ALL command

After you have entered the CUT ALL command and pressed Enter, all the lines in the member are copied into the default clipboard (00).

Figure 7-2 on page 209 shows that all 18 lines in the member were copied to the default clipboard (board-0).

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM1) - 01.02                    18 to board-0
Command ===> _____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 //IEBCOPY JOB (IMS,PE22),'IEBCOPY',CLASS=A,
000200 //         MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID,REGION=32M
000300 //*
000400 //COPY1    EXEC PGM=IEBCOPY
000500 //INDD     DD DSN=IPT.DEV.LOAD,DISP=SHR
000600 //OUTDD    DD DSN=IPT.TEST.LOAD,DISP=SHR
000700 //SYSPRINT DD SYSOUT=*
000800 //SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,2)
000900 //SYSUT4   DD UNIT=SYSALLDA,SPACE=(CYL,2)
001000 //SYSIN    DD *
001100  COPY INDD=((INDD,R)),OUTDD=OUTDD
001200  SELECT MEMBER=(ABCCOMN1)
001300  SELECT MEMBER=(ABCCONS1)
001400  SELECT MEMBER=(ABCXTRN1)
001500  SELECT MEMBER=(ABC1POPD)
001600  SELECT MEMBER=(ABC1POPI)
001700  SELECT MEMBER=(ABC1POPS)
001800 //*
****** **************************** Bottom of Data ****************************
```

Figure 7-2 Results of the CUT command

7.2 Cut using labels

When using the CUT command, you can use labels to specify the start line and the end line of the text to be copied to the clipboard. The lines beginning with the first label and ending with the second label specified on the CUT command will be copied to the clipboard.

Archived

Figure 7-3 on page 210 shows a cut of the lines starting at the .a label and ending at the .b label.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
_____________________________________________________________________________
-IPT- EDIT IPT.TEST.DATA(MEM1) - 01.02                    Columns 00001 00072
Command ===> CUT  .A .B                                     Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 //IEBCOPY  JOB (IMS,PE22),'IEBCOPY',CLASS=A,
000200 //  MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID,REGION=32M
000300 //*
.A0400 //COPY1    EXEC PGM=IEBCOPY,REGION=0M
000500 //INDD     DD  DISP=SHR,DSN=IPT.DEV.LOAD
000600 //OUTDD    DD  DISP=SHR,DSN=IPT.TEST.LOAD
000700 //SYSPRINT DD  SYSOUT=*
000800 //SYSUT3   DD  UNIT=SYSALLDA,SPACE=(CYL,2)
000900 //SYSUT4   DD  UNIT=SYSALLDA,SPACE=(CYL,2)
.B1000 //SYSIN    DD  *
001100  COPY INDD=((INDD,R)),OUTDD=OUTDD
001200  SELECT MEMBER=(ABCCOMN1)
001300  SELECT MEMBER=(ABCCONS1)
001400  SELECT MEMBER=(ABCXTRN1)
001500  SELECT MEMBER=(ABC1POPD)
001600  SELECT MEMBER=(ABC1POPI)
001700  SELECT MEMBER=(ABC1POPS)
001800 /*
****** **************************** Bottom of Data ****************************
```

Figure 7-3 Cut using labels

7.3 Cut using relative line numbers

You can use relative line numbers to specify the lines that are to be copied to the clipboard. Specifying the first line number and the last line number on the CUT command causes all lines starting at the first line number and ending with the second line number to be copied to the clipboard.

Figure 7-4 shows a cut of the lines between line 4 and line 11.

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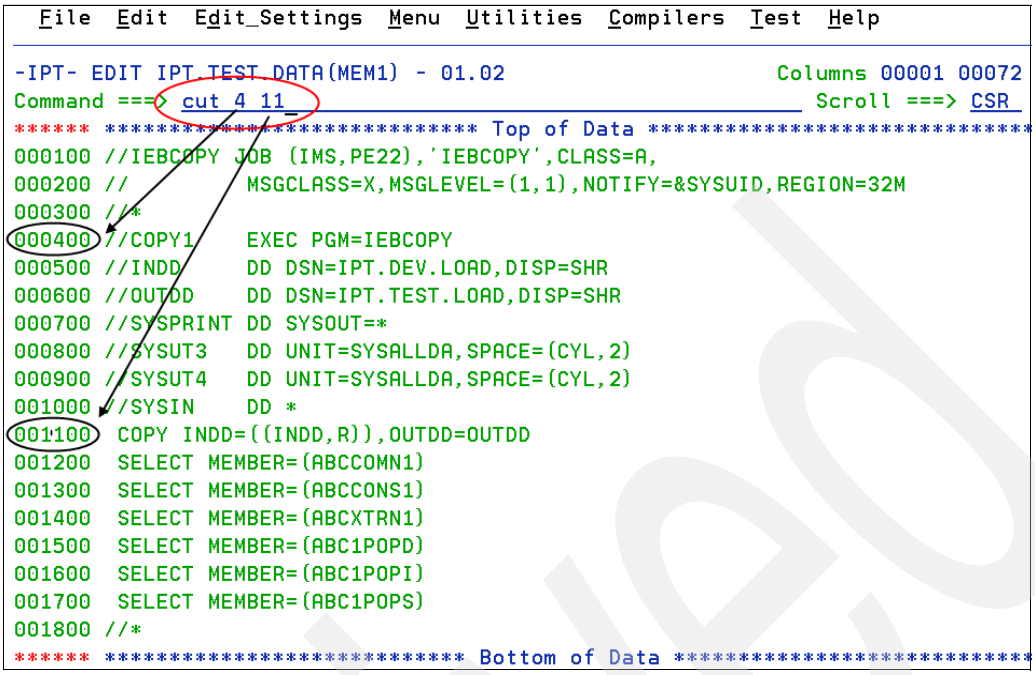

Figure 7-4 CUT command using relative numbers

Note: The numbers are the relative line numbers. If lines were deleted or inserted, the relative numbers might not correspond to the numbers down the left side of the member.

7.4 Cut using C, CC, M, or MM editor line commands

You can use the C, CC, M, or MM editor line commands to specify the lines that are to be copied or moved to the clipboard. By using the C or CC line commands, the lines will be copied from the member. The M or MM commands will cause the selected lines to be moved to the clipboard and hence deleted from the member.

Figure 7-5 on page 212 shows copying lines using the MM editor commands.

Archive

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM1) - 01.02                MOVE/COPY is pending
Command ===> cut_                                      Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 //IEBCOPY JOB (IMS,PE22),'IEBCOPY',CLASS=A,
000200 //         MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID,REGION=32M
000300 //*
MM     //COPY1    EXEC PGM=IEBCOPY
000500 //INDD     DD DSN=IPT.DEV.LOAD,DISP=SHR
000600 //OUTDD    DD DSN=IPT.TEST.LOAD,DISP=SHR
000700 //SYSPRINT DD SYSOUT=*
000800 //SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,2)
000900 //SYSUT4   DD UNIT=SYSALLDA,SPACE=(CYL,2)
001000 //SYSIN    DD *
MM       COPY INDD=((INDD,R)),OUTDD=OUTDD
001200   SELECT MEMBER=(ABCCOMN1)
001300   SELECT MEMBER=(ABCCONS1)
001400   SELECT MEMBER=(ABCXTRN1)
001500   SELECT MEMBER=(ABC1POPD)
001600   SELECT MEMBER=(ABC1POPI)
001700   SELECT MEMBER=(ABC1POPS)
001800 //*
****** ***************************** Bottom of Data ***************************
```

Figure 7-5 CUT using MM line commands

If you use the M or MM editor line commands, the selected lines will be moved from the member being viewed or edited into the clipboard.

Figure 7-6 shows that the lines were deleted by using the MM editor line commands with the CUT command.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM1) - 01.03                  8 to board-0
Command ===>                                           Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 //IEBCOPY JOB (IMS,PE22),'IEBCOPY',CLASS=A,
000200 //         MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID,REGION=32M
000300 //*                                  Lines deleted
001200   SELECT MEMBER=(ABCCOMN1)
001300   SELECT MEMBER=(ABCCONS1)
001400   SELECT MEMBER=(ABCXTRN1)
001500   SELECT MEMBER=(ABC1POPD)
001600   SELECT MEMBER=(ABC1POPI)
001700   SELECT MEMBER=(ABC1POPS)
001800 //*
****** ***************************** Bottom of Data ***************************
```

Figure 7-6 Results of CUT using MM line commands

7.5 Cut using NX or X operands

When editing or viewing a dataset/member, you can exclude lines by using these commands:

- EXCLUDE/X editor primary command
- X or XX editor line commands
- ONLY editor primary command

The CUT command can use the X or NX operand to copy the excluded or not excluded lines.

Figure 7-7 shows issuing the EXCLUDE and FIND primary commands to display only the lines that contain the characters D$US5.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                Columns 00001 00072
Command ===> X ALL; F D$US5 all_                      Scroll ===> CSR
****** ***************************** Top of Data ********************************
000100 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
000200 ------   ----   ----- ------   ------ ------ ----- -------- -------
000300 D$US47   E63E   3390  PRIM     150255 126358  84    23897      N/A
000400 D$US48   E64D   3390  PRIM     150255 134232  89    16023      N/A
000500 D$US49   E64F   3390  PRIM     150255 134047  89    16208      N/A
000600 D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000800 D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
000900 D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
001000 D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
001500 D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
001600 D$US60   E816   3390  PRIM     150255 132818  88    17437      N/A
001700 D$US61   E81B   3390  PRIM     150255 146146  97     4109      N/A
001800 D$US62   EC11   3390  PRIM     150255 130430  87    19825      N/A
001900 D$UX01   E082   3390  SGUN      50085  26755  53    23330      N/A
```

Figure 7-7 Excluding lines in Edit

Figure 7-8 shows using the NX operand with the CUT command to copy the not-excluded lines (lines containing D$US5) to the clipboard. The BROWSE operand will allow the clipboard to be viewed after the CUT command has completed.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                10 CHARS 'D$US5'
Command ===> CUT ALL NX BROWSE_                       Scroll ===> CSR
****** ***************************** Top of Data ********************************
- - -  - - -  - - - - - - - - - - - - - - - - - - - -  5 Line(s) not Displayed
000600 D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000800 D$US52   E81     3390  PRIM     150255 129356  86    20899      N/A
000900 D$US53                          0255 134480  89    15775      N/A
001000 D$US54   E9                     0255 124070  82    26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
001500 D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
- - -  - - -  - - - - - - - - - - - - - - - - - - - -  6 Line(s) not Displayed
****** ***************************** Bottom of Data *****************************
```

Displayed lines cut (non excluded)

Figure 7-8 CUT using the NX operand

Figure 7-9 on page 214 shows the clipboard after the NX operand was used with the CUT command to copy the not-excluded lines (lines containing D$US5).

```
 -IPT- BROWSE   ..............Clipboard..00.......... Line 00000000 Col 001 080
 Command ===> _____________________________________________ Scroll ===> PAGE
******************************** Top of Data ********************************
D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
****************************** Bottom of Data ******************************
```

Figure 7-9 Results of CUT using the NX operand

Figure 7-10 shows the using the X operand with the CUT command to copy the excluded lines (lines not containing `D$US5`) to the clipboard. The browse operand will allow the clipboard to be viewed after the CUT command has completed.

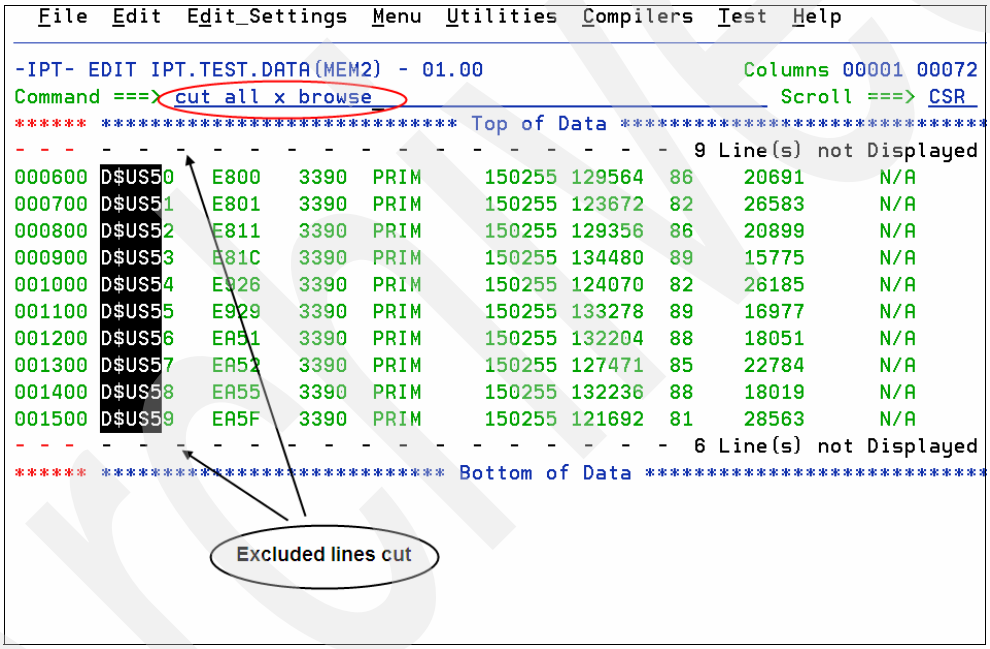

Figure 7-10 CUT using the X operand

Figure 7-11 on page 215 shows the clipboard after using the X operand with the CUT command to copy the excluded lines (lines not containing `D$US5`).

```
 -IPT- BROWSE   ..............Clipboard..00.......... Line 00000000 Col 001 080
 Command ===> _____________________________________________ Scroll ===> PAGE
********************************* Top of Data ***********************************
VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
------   ----   ----- ------   ------ ------ ----- -------- -------
D$US47   E63E   3390  PRIM     150255 126358  84    23897      N/A
D$US48   E64D   3390  PRIM     150255 134232  89    16023      N/A
D$US49   E64F   3390  PRIM     150255 134047  89    16208      N/A
D$US60   E816   3390  PRIM     150255 132818  88    17437      N/A
D$US61   E81B   3390  PRIM     150255 146146  97     4109      N/A
D$US62   EC11   3390  PRIM     150255 130430  87    19825      N/A
D$UX01   E082   3390  SGUN      50085  26755  53    23330      N/A
D$UX02   E16F   3390  SGUN      50085  49195  98      890      N/A
D$UX03   E02C   3390  SGUN      50085  49311  98      774      N/A
******************************** Bottom of Data ********************************
```

Figure 7-11 Results of CUT using X operand

7.6 Specifying a clipboard on the CUT command

If the TO or STAtus operand is not specified on the CUT command, the text is placed in the default (00) clipboard.

You can specify a clipboard into which to copy or move the data by using one of these operands:

- Use the TO operand on the CUT command to specify the clipboard into which the text will be placed. This clipboard will be available until you exit the IPT session unless you specify the SAVE operand to permanently save the clipboard for future IPT sessions.
- Use the STAtus operand on the CUT command to display the Active Clipboards panel. By typing an S line command against a clipboard will cause the data to be copied or moved into that clipboard.

Figure 7-12 shows using the TO operand to cut 10 lines of data to the ABC clipboard.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-------------------------------------------------------------------------------
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                 Columns 00001 00072
Command ===> cut .a .b TO abc                          Scroll ===> CSR
****** ******************************** Top of Data ********************************
000100 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
000200 ------   ----   ----- ------   ------ ------ ----- -------- -------
000300 D$US47   E63E   3390  PRIM     150255 126358  84    23897      N/A
000400 D$US48   E64D   3390  PRIM     150255 134232  89    16023      N/A
000500 D$US49   E64F   3390  PRIM     150255 134047  89    16208      N/A
.A     D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000800 D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
000900 D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
001000 D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
.B     D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
001600 D$US60   E816   3390  PRIM     150255 132818  88    17437      N/A
001700 D$US61   E81B   3390  PRIM     150255 146146  97     4109      N/A
001800 D$US62   EC11   3390  PRIM     150255 130430  87    19825      N/A
001900 D$UX01   E082   3390  SGUN      50085  26755  53    23330      N/A
```

Figure 7-12 CUT specifying a clipboard

Figure 7-13 shows selecting a clipboard using the STAtus operand on the CUT command.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
 ------------------------------------------------------------------------------
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                    MOVE/COPY is pending
Command ===> CUT STAtus_                                   Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
000200 ------   ----   ----- ------   ------ ------ ----- -------- -------
000300 D$US47   E63E   3390  PRIM     150255 126358  84    23897      N/A
000400 D$US48   E64D   3390  PRIM     150255 134232  89    16023      N/A
000500 D$US49   E64F   3390  PRIM     150255 134047  89    16208      N/A
CC     D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000800 D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
000900 D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
001000 D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
CC     D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
001600 D$US60   E816   3390  PRIM     150255 132818  88    17437      N/A
001700 D$US61   E81B   3390  PRIM     150255 146146  97     4109      N/A
001800 D$US62   EC11   3390  PRIM     150255 130430  87    19825      N/A
001900 D$UX01   E082   3390  SGUN      50085  26755  53    23330      N/A
```

Figure 7-13 CUT command with the STAtus operand

By selecting a clipboard using the S line command, the data that you selected in the member that you are viewing or editing will be copied or moved into the selected clipboard.

Figure 7-14 shows selecting the ABC clipboard.

```
-IPT---------------------- ACTIVE CLIPBOARDS ---------------------------------
Command ===>                                                Scroll ===> CSR

Command line clipboard selection: 0 to 99 or name
Line commands: B browse  C copy  E edit  P print  S select  V view
               DEL delete  REN rename  RES restore  SAV save
Press ENTER to process or F3    to cancel.

  4 active clipboards out of 200
Persistent clipboard repository JPHILP.APC1.ISPF.IPITBLIB
Persistent clipboards marked by *
    Clip-
Cmd    board Records Size  First line of text in clipboard
--- -------- ------- ----- ---------------------------------------------------
S.. ABC           10    80 D$US50   E800   3390  PRIM     150255 129564  86
... MEM1          18    80 //IEBCOPY JOB (IMS,PE22),'IEBCOPY',CLASS=A,
... MEM2          21    80 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used
... 00            21    80 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used
                 ----------------------------------------------------
```

Type 'S' against the clipboard to be used for the CUT command

Figure 7-14 Cut ACTIVE CLIPBOARDS panel

7.7 Appending text to an existing clipboard

When using the CUT command, the data in the clipboard will be replaced with the data being copied or moved unless the APPEND operand is used. By using the BEFORE or AFTER operands, you can specify that the data being copied will be appended before or after the existing text.

Figure 7-15 shows cutting 10 lines of data and appending the copied lines after the existing data in the ABC clipboard.

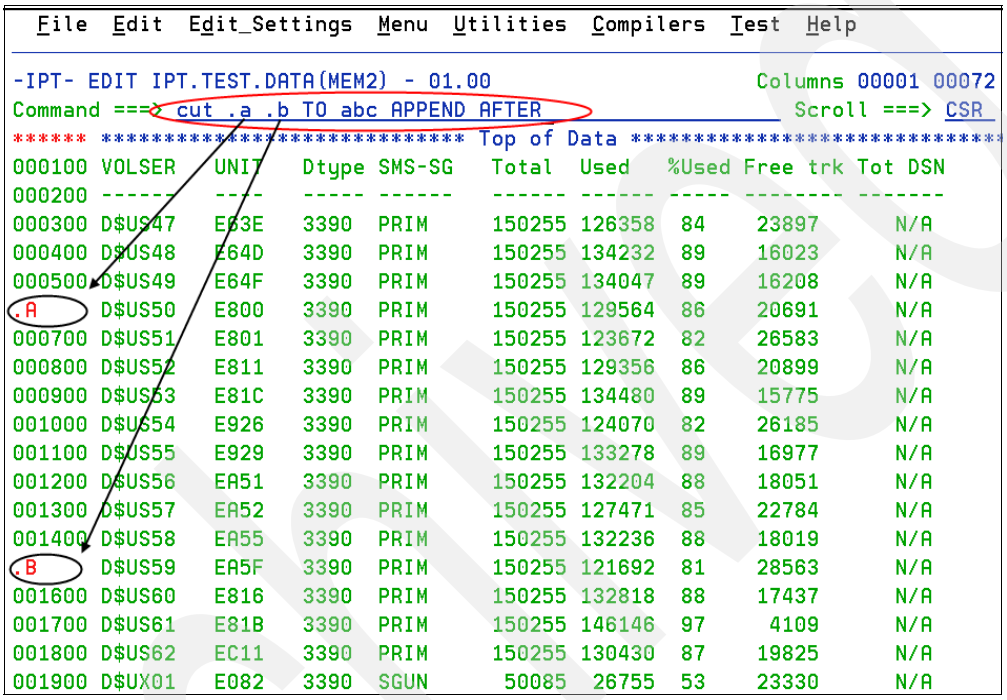

Figure 7-15 CUT this text and append it to the end of the clipboard data

Figure 7-16 on page 218 shows cutting 10 lines of data and appending the copied lines before the existing data in the ABC clipboard.

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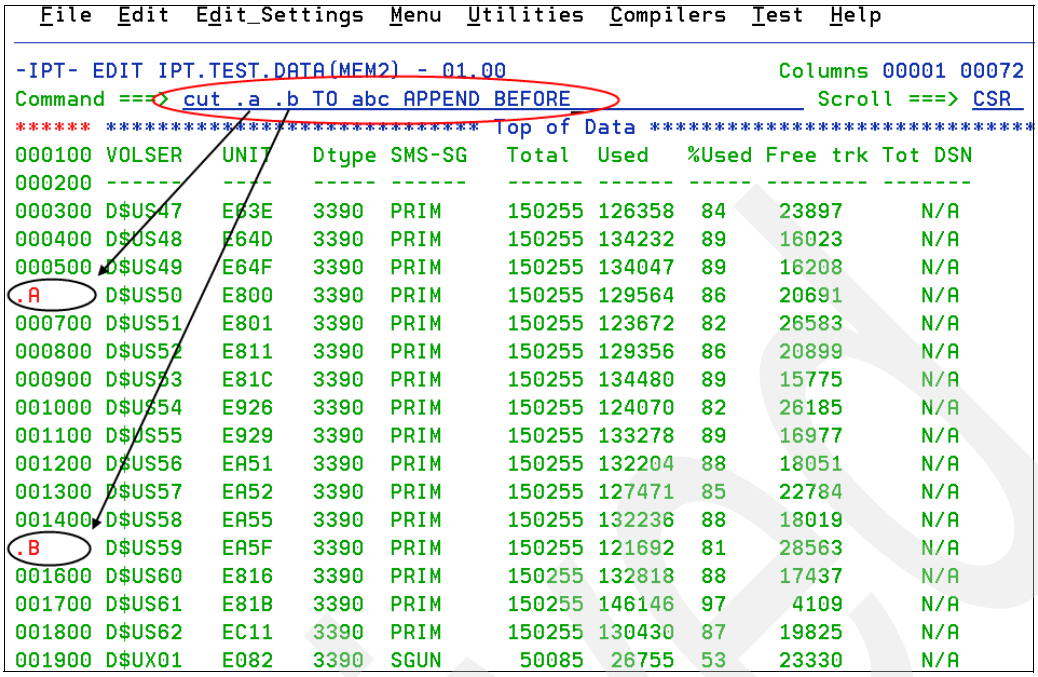

Figure 7-16 Append the text to the beginning of the clipboard

7.8 Saving the clipboard for future use

When you leave ISPF, the clipboard will be deleted, unless you specify the SAVE operand on the CUT command when cutting text to a clipboard or unless the clipboard exists and is specified as being permanent (see Figure 7-21 on page 221).

There are two ways that you can make a clipboard permanent so that it can be used in future ISPF sessions:

- Issue the CUT command with the SAVE operand
- Issue the CUT STA command, and when you are at the Active Clipboards panel, enter the SAV line command against the clipboards to be saved and made permanent.

Figure 7-17 on page 219 shows using the SAVE operand to make a clipboard permanent and available for future ISPF sessions.

Archive

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                Columns 00001 00072
Command ===> cut TO abc SAVE                          Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
000200 ------   ----   ----- ------   ------ ------ ----- -------- -------
000300 D$US47   E63E   3390  PRIM     150255 126358  84     23897      N/A
000400 D$US48   E64D   3390  PRIM     150255 134232  89     16023      N/A
000500 D$US49   E64F   3390  PRIM     150255 134047  89     16208      N/A
CC     D$US50   E800   3390  PRIM     150255 129564  86     20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82     26583      N/A
000800 D$US52   E811   3390  PRIM     150255 129356  86     20899      N/A
000900 D$US53   E81C   3390  PRIM     150255 134480  89     15775      N/A
001000 D$US54   E926   3390  PRIM     150255 124070  82     26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89     16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88     18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85     22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88     18019      N/A
CC     D$US59   EA5F   3390  PRIM     150255 121692  81     28563      N/A
001600 D$US60   E816   3390  PRIM     150255 132818  88     17437      N/A
001700 D$US61   E81B   3390  PRIM     150255 146146  97      4109      N/A
001800 D$US62   EC11   3390  PRIM     150255 130430  87     19825      N/A
001900 D$UX01   E082   3390  SGUN      50085  26755  53     23330      N/A
```

Figure 7-17 Using the CUT command and saving a clipboard for future use

7.9 Browsing and editing the clipboard data

You can browse or edit the clipboard data with either of these methods:

- Use the BROWSE or EDIT operand on the CUT command, which allows the data in the clipboard to be browsed or edited after it has been copied or moved to the clipboard. By using the EDIT operand, the data can be modified prior to being saved to the clipboard.
- Issue the CUT STA command to view the Active Clipboards panel. From this panel, you can issue a B (Browse) or E (Edit) line command against a clipboard.

Figure 7-18 on page 220 shows using the EDIT operand on the CUT command to edit the data in the clipboard after the data has been copied or moved.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                Columns 00001 00072
Command ===> cut TO abc EDIT                          Scroll ===> CSR
****** ******************************** Top of Data ********************************
000100 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
000200 ------   ----   ----- ------   ------ ------ ----- -------- -------
000300 D$US47   E63E   3390  PRIM     150255 126358  84     23897      N/A
000400 D$US48   E64D   3390  PRIM     150255 134232  89     16023      N/A
000500 D$US49   E64F   3390  PRIM     150255 134047  89     16208      N/A
CC     D$US50   E800   3390  PRIM     150255 129564  86     20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82     26583      N/A
000800 D$US52   E811   3390  PRIM     150255 129356  86     20899      N/A
000900 D$US53   E81C   3390  PRIM     150255 134480  89     15775      N/A
001000 D$US54   E926   3390  PRIM     150255 124070  82     26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89     16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88     18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85     22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88     18019      N/A
CC     D$US59   EA5F   3390  PRIM     150255 121692  81     28563      N/A
001600 D$US60   E816   3390  PRIM     150255 132818  88     17437      N/A
001700 D$US61   E81B   3390  PRIM     150255 146146  97      4109      N/A
001800 D$US62   EC11   3390  PRIM     150255 130430  87     19825      N/A
001900 D$UX01   E082   3390  SGUN      50085  26755  53     23330      N/A
```

Figure 7-18 CUT using the EDIT operand

Figure 7-19 shows editing the clipboard data prior to saving it to the clipboard.

```
-IPT- EDIT-------- ..............CLIPBOARD..00........... COLUMNS 00001 00072
COMMAND ===> _                                            SCROLL ===> CSR
****** ******************************** Top of Data ********************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
000001 D$US50   E800   3390  PRIM     150255 129564  86     20691      N/A
000002 D$US51   E801   3390  PRIM     150255 123672  82     26583      N/A
000003 D$US52   E811   3390  PRIM     150255 129356  86     20899      N/A
000004 D$US53   E81C   3390  PRIM     150255 134480  89     15775      N/A
000005 D$US54   E926   3390  PRIM     150255 124070  82     26185      N/A
000006 D$US55   E929   3390  PRIM     150255 133278  89     16977      N/A
000007 D$US56   EA51   3390  PRIM     150255 132204  88     18051      N/A
000008 D$US57   EA52   3390  PRIM     150255 127471  85     22784      N/A
000009 D$US58   EA55   3390  PRIM     150255 132236  88     18019      N/A
000010 D$US59   EA5F   3390  PRIM     150255 121692  81     28563      N/A
****** ***************************** Bottom of Data ******************************
```

Figure 7-19 Editing the clipboard after issuing the CUT command using the EDIT operand

7.10 Displaying and maintaining the current clipboards

To display a list of active clipboards, you can issue either the CUT STAtus or PASTE STAtus command. Either command causes the Active Clipboards panel to be displayed. From the Active Clipboards panel, you can perform these tasks:

- Browse a clipboard to see what it contains.
- Copy an existing clipboard to a new or existing clipboard.
- Delete a clipboard.
- Edit clipboards to modify the data that is stored in the clipboard.
- Print the clipboard.
- Rename a clipboard.

- Restore a clipboard to its state as of the last save or when you logged on.
- Save a clipboard so that it is available after you exit ISPF IPT.
- View the clipboard and possibly select the lines to be pasted.

Figure 7-20 shows issuing the CUT STAtus command to display the Active Clipboards panel.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
 ------------------------------------------------------------------------------
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                    Columns 00001 00072
Command ===> cut sta                                       Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
000200 ------   ----   ----- ------   ------ ------ ----- -------- -------
000300 D$US47   E63E   3390  PRIM     150255 126358  84    23897      N/A
000400 D$US48   E64D   3390  PRIM     150255 134232  89    16023      N/A
000500 D$US49   E64F   3390  PRIM     150255 134047  89    16208      N/A
000600 D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000800 D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
000900 D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
001000 D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
001500 D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
001600 D$US60   E816   3390  PRIM     150255 132818  88    17437      N/A
001700 D$US61   E81B   3390  PRIM     150255 146146  97     4109      N/A
001800 D$US62   EC11   3390  PRIM     150255 130430  87    19825      N/A
001900 D$UX01   E082   3390  SGUN      50085  26755  53    23330      N/A
```

Figure 7-20 CUT using the STATUS operand

Figure 7-21 shows the Active Clipboards panel, which displays the active clipboards that are available for use. An asterisk shows a permanent clipboard.

```
-IPT---------------------- ACTIVE CLIPBOARDS ---------------------------------
Command ===>                                                Scroll ===> CSR

Command line clipboard selection: 0 to 99 or name
Line commands: B browse  C copy  E edit  P print  S select  V view
               DEL delete  REN rename  RES restore  SAV save
Press ENTER to process or F3    to cancel.

  2 active clipboards out of 200
Persistent clipboard repository JPHILP.APC1.ISPF.IPITBLIB
Persistent clipboards marked by *
    Clip-
Cmd    board Records Size  First line of text in clipboard
--- -------- ------- ----- ---------------------------------------------------
*.. ABC          10    80 D$US50   E800   3390  PRIM     150255 129564  86
... 00           10    80 D$US50   E800   3390  PRIM     150255 129564  86
                ----------------------------------------------------
```

Shows a permanent clipboard

Figure 7-21 Showing the STATUS of the active clipboards

Note: Only temporary (non-persistent) clipboards are deleted when you exit IPT. However, you can choose to make even clipboard 00 a persistent one.

7.11 Pasting text from a clipboard

To use the PASTE command, you must be in a view or edit session. You can perform these actions when using the paste command:

- Paste the contents of a clipboard into the member.
- Paste the contents of an existing member in the partitioned dataset into the member being viewed or edited.
- Paste the directory list for a partitioned dataset into the member that is being viewed or edited, which can include the ISPF statistics for each of the members.
- Paste the output from a TSO command that you enter into the member that is being viewed or edited.
- Paste a part of the clipboard by specifying the EDIT/VIEW operand and using the C, CC, M, or MM editor line commands to specify the lines in the clipboard to be copied or moved into the member that is being viewed or edited.
- Paste the data as a temporary msg or note lines in the member that is being viewed or edited.
- Print the data that is being copied or moved into the member prior to it being pasted.
- Use the STAtus operand to display a list of clipboards from which you are able to perform these tasks:
  - Select a clipboard to be pasted.
  - Browse, edit, print, or view the contents of a clipboard.
  - Delete, rename, or restore a clipboard.
  - Save a clipboard for future use.

When issuing the PASTE command, you must specify where to paste the text:

- Use A (after) or B (before) editor line commands to specify to paste the text either after or before the line that you enter with either the A or B editor line command.
- Specify the AFTer or BEFore operand and a target on the PASTE command. The target can be one of these values:
  - The target can be an editor label that you have previously set up, for example, .LB1.
  - The target can be a relative line number of the member that is being viewed or edited.
  - .ZF is a special editor label that causes text to be pasted before or after the first line of the member, depending on the AFTer or BEFore operand.
  - .ZL is a special editor label that causes text to be pasted before or after the last line of the member, depending on the AFTer or BEFore operand.
  - .ZCSR is a special editor label that causes text to be pasted after or before the line where the cursor is positioned, depending on the AFTer or BEFore operand.

7.12 Paste using A or B editor line commands

When using the CUT command, you can use labels to specify the start line and the end line of the text to be copied.

Figure 7-22 on page 223 shows a paste using the A editor line command to insert the clipboard data after the 2nd line.

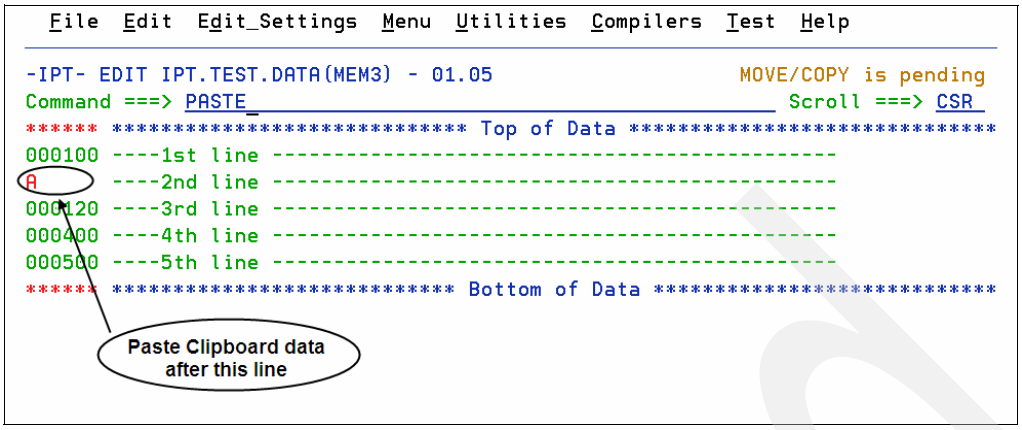

Figure 7-22 Paste using A editor line command

Figure 7-23 shows that 6 lines from the default clipboard (00) were inserted after the 2nd line.

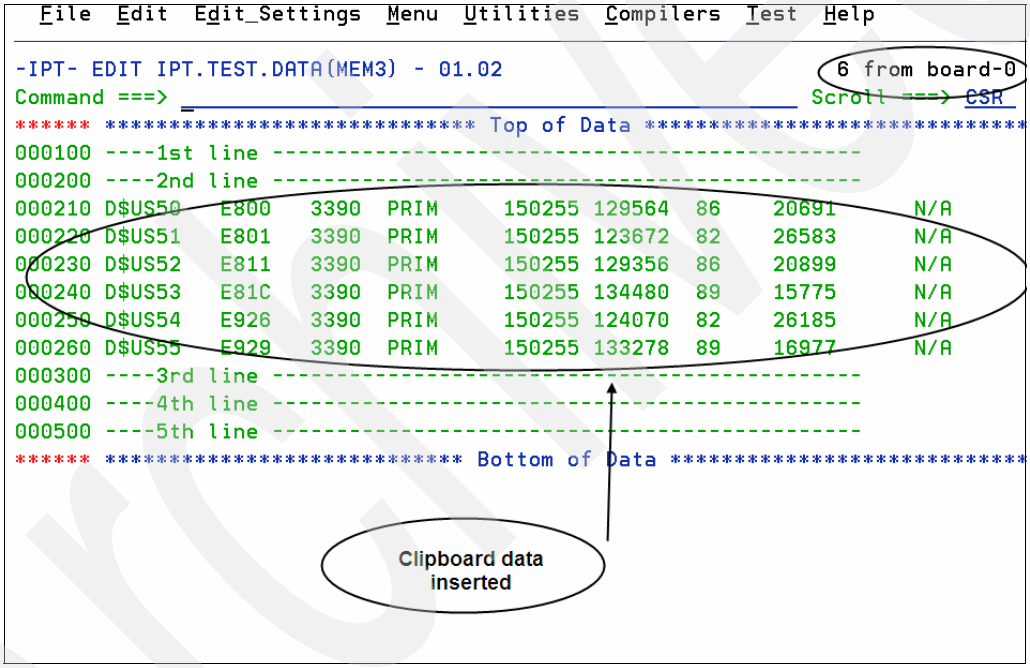

Figure 7-23 Results of a paste using an A editor line command

7.13 Paste using BEFore or AFTer operands

By using the BEFore or AFTer operands and a target on the PASTE command, you can specify where to insert the data is to be inserted. The target can be any of these elements:

- You can specify an editor label that you have previously set up, for example, .LB1.
- You can specify a relative line number of the member that is being viewed or edited.
- .ZF is a special editor label that will cause text to be pasted before or after the first line of the member, depending on whether you use the AFTer or BEFore operand.
- .ZL is a special editor label that will cause text to be pasted before or after the last line of the member, depending on whether you use the AFTer or BEFore operand.

- .ZCSR is a special editor label that will cause text to be pasted after or before the line where the cursor is positioned, depending on whether you use the AFTer or BEFore operand.

Figure 7-24 shows an editor label of .A being used to insert six lines before this label.

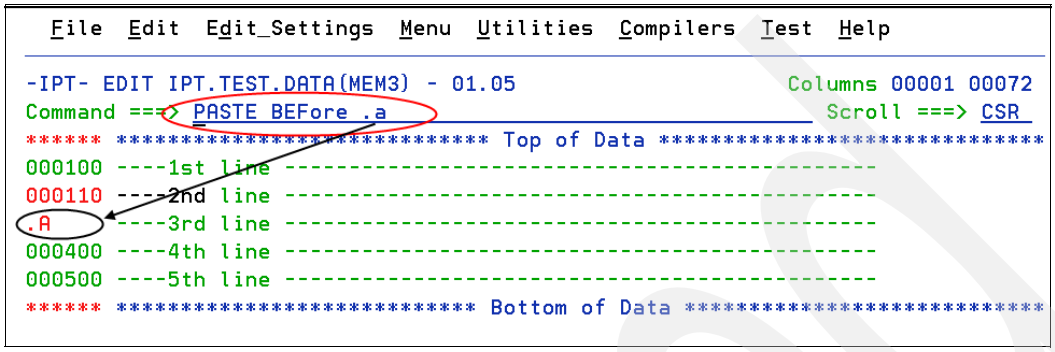

Figure 7-24 Paste using a BEFore operand and an editor label of .A

Figure 7-25 shows a relative line number being used to insert six lines after the 3rd line.

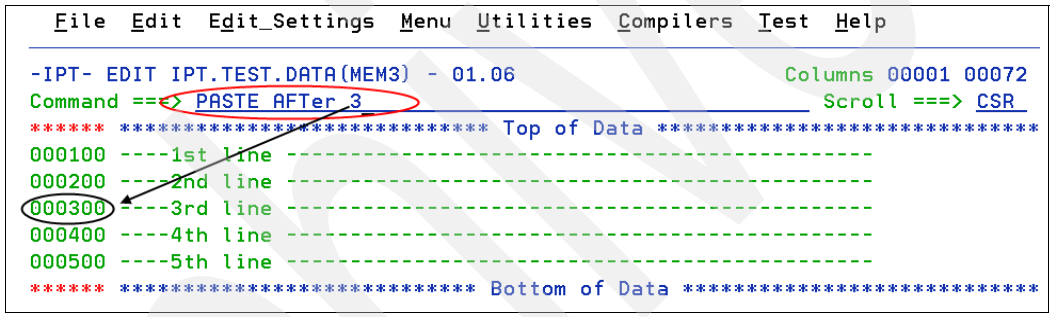

Figure 7-25 Paste using an AFTer operand and a relative line number of 3

7.14 Specifying a clipboard on the PASTE command

If you do not specify the FROM or STAtus operand on the PASTE command, the data is copied from the default (00) clipboard.

You can specify a clipboard from which the data will be copied by using one of these operands:

- Use the FROM operand on the PASTE command to specify the clipboard from which the text will be copied.
- Use the STAtus operand on the PASTE command to display the Active Clipboards panel. Typing an S line command against a clipboard causes the data to be copied from that clipboard.

Figure 7-26 on page 225 shows pasting the data in clipboard ABC into the current member that is being viewed or edited.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.06                MOVE/COPY is pending
Command ===> PASTE STAtus                              Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 ----1st line ---------------------------------------------
000200 ----2nd line ---------------------------------------------
A      ----3rd line ---------------------------------------------
000400 ----4th line ---------------------------------------------
000500 ----5th line ---------------------------------------------
****** **************************** Bottom of Data ****************************
```

Figure 7-26 Paste specifying a clipboard

Figure 7-27 shows selecting a clipboard using the STAtus operand on the PASTE command.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.06                MOVE/COPY is pending
Command ===> PASTE STAtus                              Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 ----1st line ---------------------------------------------
000200 ----2nd line ---------------------------------------------
A      ----3rd line ---------------------------------------------
000400 ----4th line ---------------------------------------------
000500 ----5th line ---------------------------------------------
****** **************************** Bottom of Data ****************************
```

Figure 7-27 PASTE command with the STAtus operand

The command and the STAtus operand will display the Active Clipboards panel. By selecting a clipboard using the S line command, the clipboard data will be pasted into the member you are viewing or editing.

Figure 7-28 shows the clipboard ABC being selected.

```
-IPT---------------------- ACTIVE CLIPBOARDS -------------------------------
Command ===>                                                Scroll ===> CSR

Command line clipboard selection: 0 to 99 or name
Line commands: B browse  C copy  E edit  P print  S select  V view
               DEL delete  REN rename  RES restore  SAV save
Press ENTER to process or F3    to cancel.

  3 active clipboards out of 200
Persistent clipboard repository JPHILP.APC1.ISPF.IPITBLIB
Persistent clipboards marked by *
    Clip-
Cmd   board Records Size  First line of text in clipboard
--- -------- ------- ----- ----------------------------------------------------
S_. ABC          10    80 D$US50   E800   3390  PRIM     150255 129564  86
... MEM1         18    80 //IEBCOPY JOB (IMS,PE22),'IEBCOPY',CLASS=A,
... MEM2         21    80 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used
             ------------------------------------------------------

   Type 'S' against the clip board
   to be used for the paste
```

Figure 7-28 Paste ACTIVE CLIPBOARD panel

7.15 Pasting the contents of a member

You can use the Member operand on the PASTE command to copy all the lines from a member within the current partitioned dataset (PDS) into the current member being viewed or edited.

Figure 7-29 shows pasting the XXX member into the current member that is being viewed or edited.

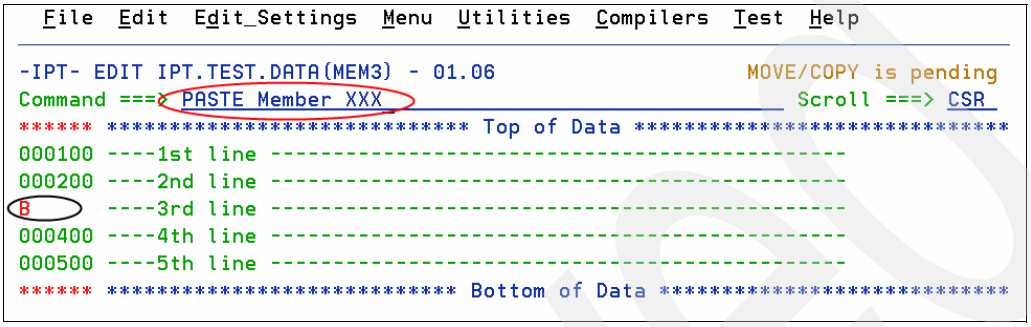

Figure 7-29 Pasting an entire member

7.16 Pasting the directory list of a PDS

The DIR operand on the PASTE command allows you to copy the member directory information for a partitioned dataset (PDS) into your member.

Figure 7-30 shows the PASTE DIR command.

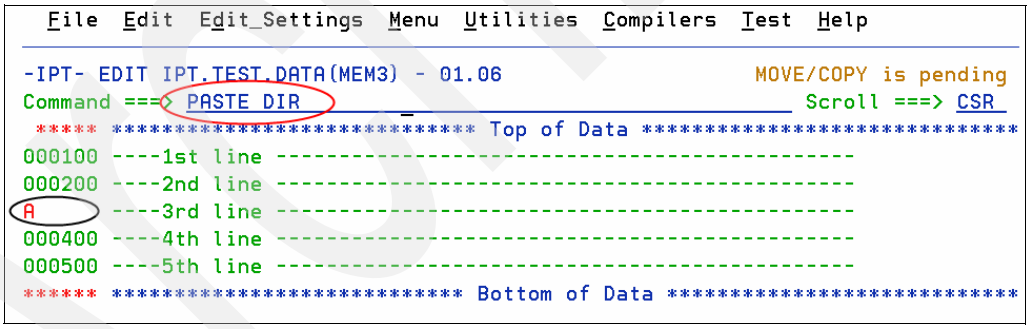

Figure 7-30 PASTE DIR command

After you press Enter after issuing the PASTE DIR command, IPT displays the PASTE MEMBER LIST panel. On this panel, you need to specify the partition dataset whose directory information you want copied and if you want the directory statistics copied, as well.

Figure 7-31 on page 227 shows that the member directory and statistical information for the dataset named IPT.TEST.DATA is to be copied.

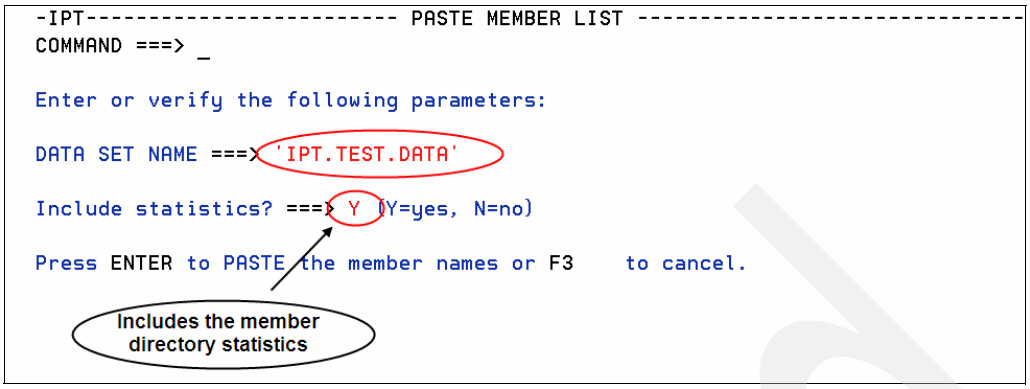

Figure 7-31 PASTE MEMBER LIST panel

After you press Enter, the member directory information is copied into the member that is being viewed or edited.

Figure 7-32 shows the results of the PASTE DIR command.

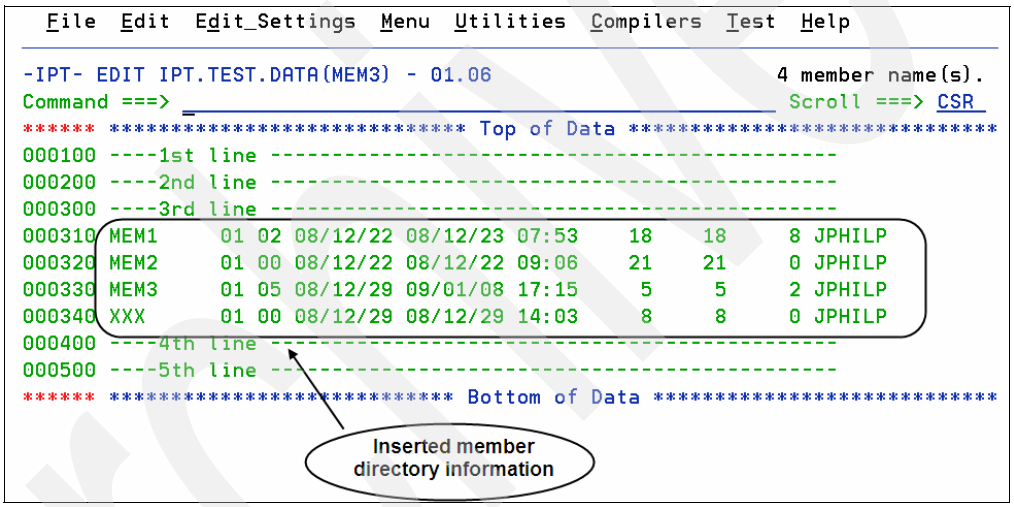

Figure 7-32 Results of the PASTE DIR command

7.17 Pasting the output from a TSO command

Using the TSO operand on the PASTE command, you can copy the output from a TSO command, CLIST, or REXX exec into your member.

In the following example, we want to run the LISTDS command to list the IPT.TEST.DATA dataset and copy the results into the member that we are currently editing.

Figure 7-33 on page 228 shows the PASTE TSO command.

Archived

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.06                  MOVE/COPY is pending
Command ===> PASTE TSO_                                  Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 ----1st line ---------------------------------------------
000200 ----2nd line ---------------------------------------------
A      ----3rd line ---------------------------------------------
000400 ----4th line ---------------------------------------------
000500 ----5th line ---------------------------------------------
****** **************************** Bottom of Data ****************************
```

Figure 7-33 Paste using the TSO operand

After pressing Enter, the PASTE TSO COMMAND panel is displayed on which you can enter the TSO command, CLIST, or REXX exec that you want to run.

Figure 7-34 shows typing the `LISTDS 'IPT.TEST.DATA'` command.

```
-IPT------------------------ PASTE TSO COMMAND -------------------------------
COMMAND ===>


Enter a TSO command to be pasted:

===> listds 'IPT.TEST.DATA'_



Press ENTER to PASTE the TSO output or F3    to cancel.
```

Figure 7-34 PASTE TSO COMMAND panel

After you press Enter, the command that you have entered is executed and the results are pasted into the member that you are currently viewing or editing.

Figure 7-35 on page 229 show the results of the `LISTDS 'IPT.TEST.DATA'` command pasted into the member.

Archived

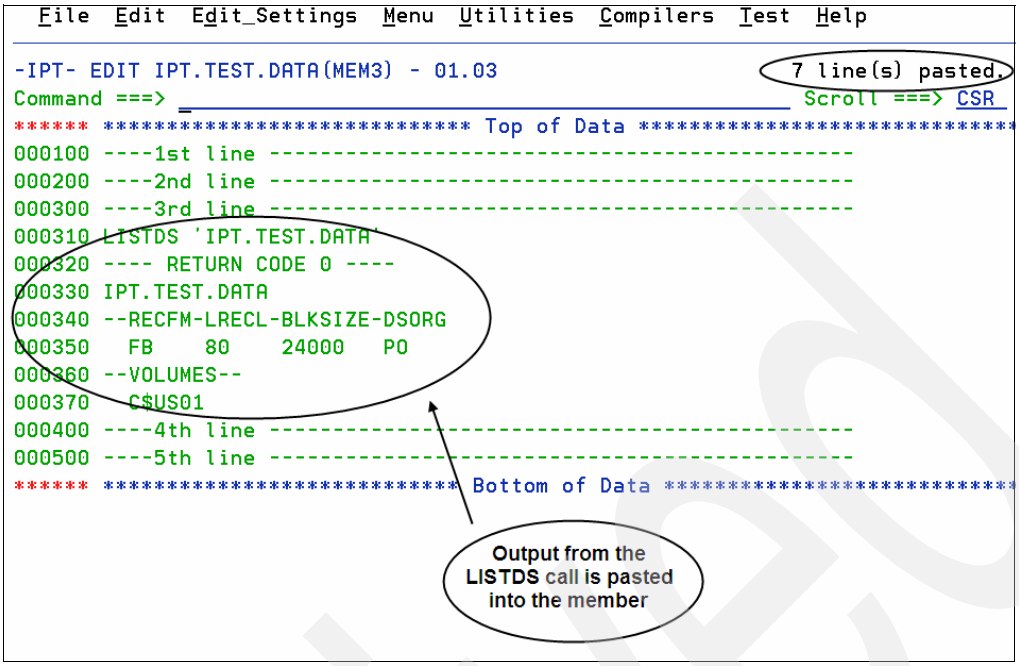

Figure 7-35 Results of the PASTE TSO command

7.18 Pasting a portion of the clipboard

If you want to copy a portion of the data that is in the clipboard, you can use the VIEW operand on the PASTE command to view the clipboard. While viewing the clipboard, you can use the C or CC line commands to specify the data to be copied into the member being viewed or edited.

Figure 7-36 shows pasting the data from the ABC clipboard with the VIEW operand.

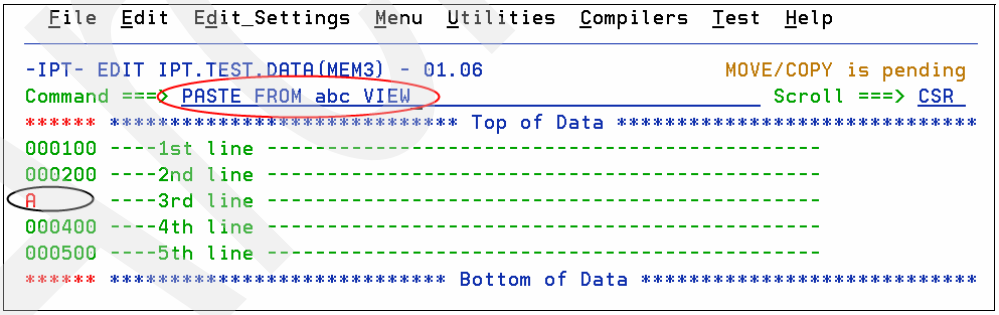

Figure 7-36 PASTE form a clipboard with the VIEW operand

Figure 7-37 on page 230 shows the ABC clipboard being viewed. On the PASTE DISPLAY panel, you can select the lines to be copied using the C or CC line commands.

Archived

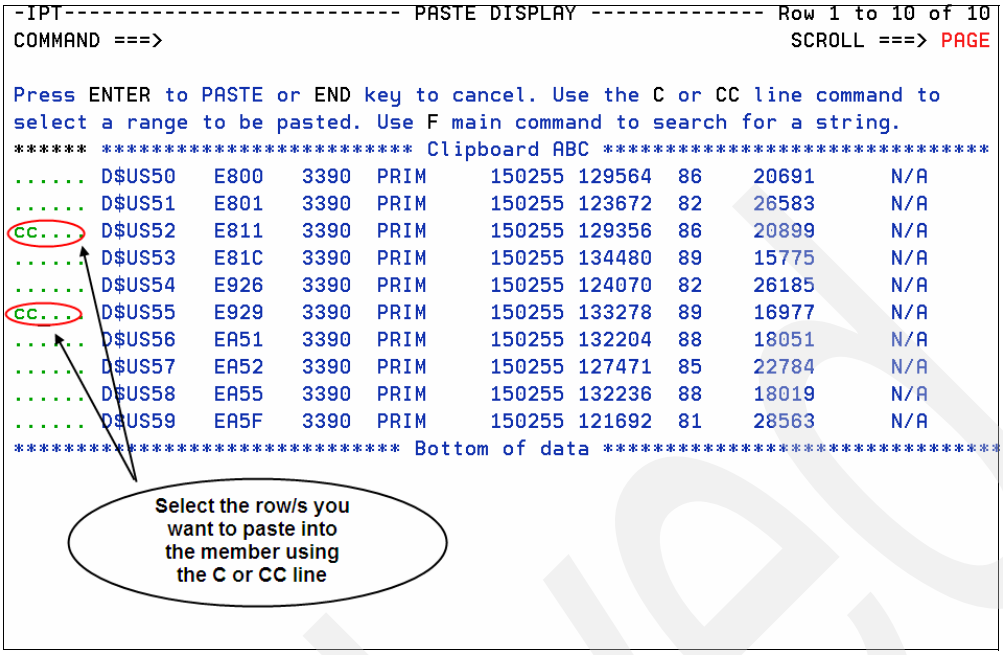

Figure 7-37 ABC clipboard View

After pressing Enter, the line that you selected will be pasted into the member that is currently being viewed or edited.

Figure 7-38 shows that the four selected lines have been copied into the member.

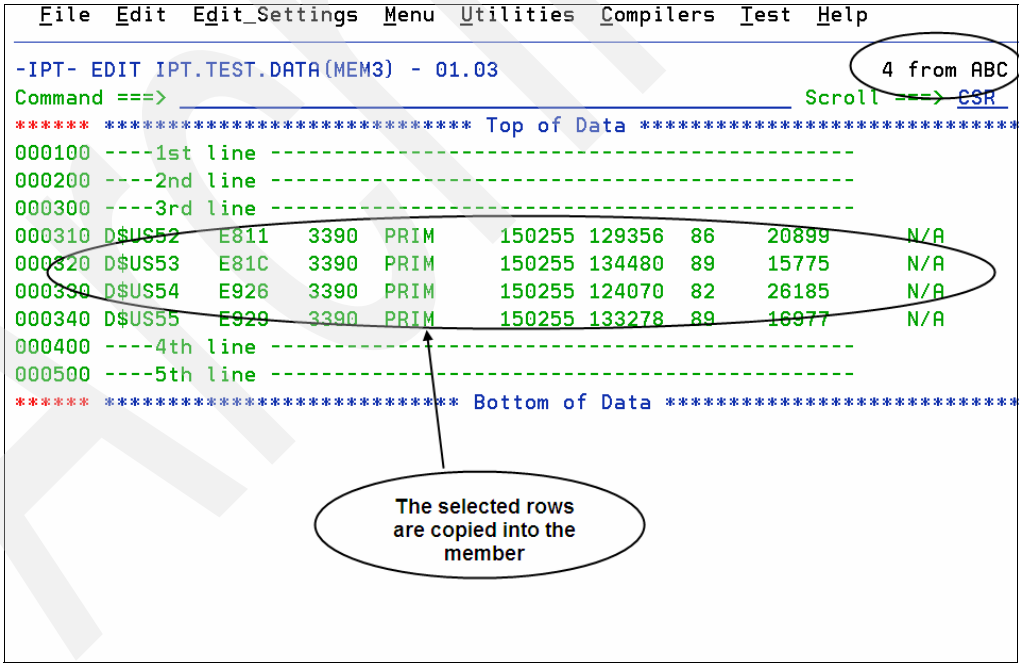

Figure 7-38 Results of the PASTE VIEW command

7.19 Editing the clipboard prior to copying it

You can edit the clipboard before you copy it by using the EDIT operand on the PASTE command.

Figure 7-39 shows the EDIT operand used with the PASTE command to copy the clipboard ABC.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.06                MOVE/COPY is pending
Command ===> PASTE FROM abc EDIT                        Scroll ===> CSR
****** ***************************** Top of Data ********************************
000100 ----1st line ------------------------------------------------
000200 ----2nd line ------------------------------------------------
A      ----3rd line ------------------------------------------------
000400 ----4th line ------------------------------------------------
000500 ----5th line ------------------------------------------------
****** **************************** Bottom of Data ******************************
```

Figure 7-39 PASTE command using the EDIT operand

While editing the clipboard, you can insert, delete, and change lines. After you exit the clipboard edit session, the modified data will be copied into the member that is being viewed or edited.

Figure 7-40 shows a new line that was added and an existing line that was changed in the ABC clipboard.

```
-IPT- EDIT-------- ..............CLIPBOARD..ABC.......... COLUMNS 00001 00072
COMMAND ===>                                                 SCROLL ===> CSR
****** ***************************** Top of Data ********************************
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
000001 D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000002 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000003 D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
''''''  THIS LINE WAS INSERTED
000004 D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
000005 D$US54   THIS LINE WAS MODIFIED      124070  82    26185      N/A
000006 D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
000007 D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
000008 D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
000009 D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
000010 D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
****** **************************** Bottom of Data ******************************
```

Figure 7-40 Editing the clipboard prior to copying the clipboard

Figure 7-41 on page 232 shows the modified clipboard lines being copied into the member that is being edited.

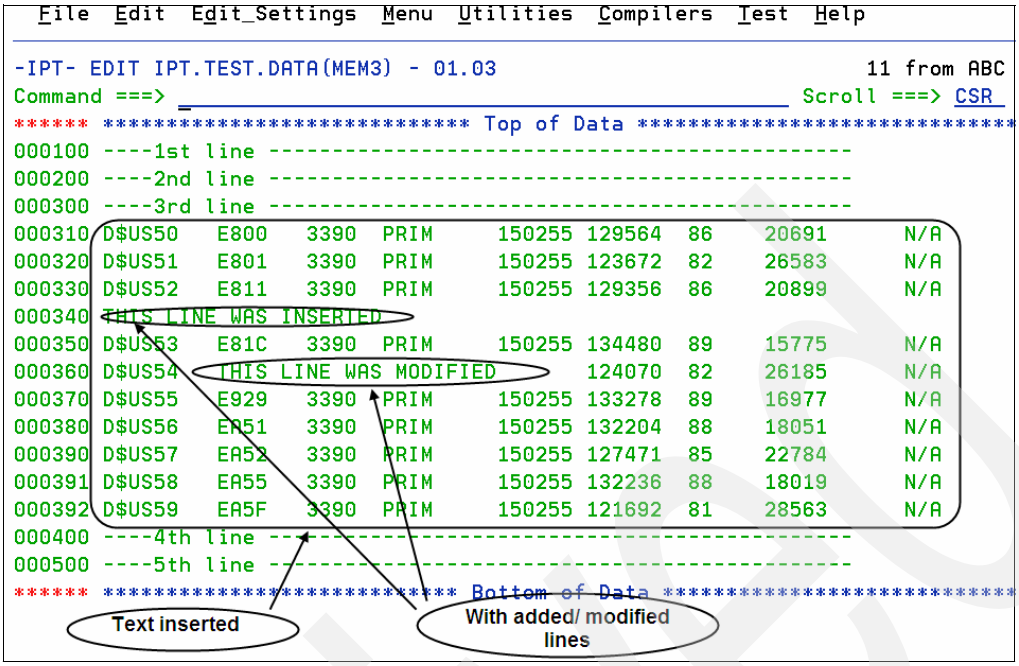

Figure 7-41 Results of the PASTE using the EDIT operand

7.20 Pasting text as temporary MSG or NOTE lines

Instead of pasting lines as DATA into the member being edited, you can copy the lines as MSG lines (identified by ==MSG>) or Note lines (identified by =NOTE=). These lines are temporary and are not saved when you exit the member that is being viewed or edited.

Figure 7-42 shows the ABC clipboard being pasted using the MSGs operand on the PASTE command.

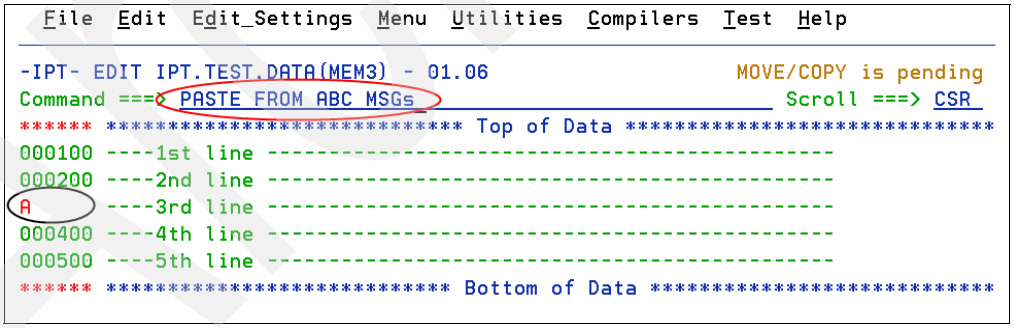

Figure 7-42 PASTE using the MSGs operand

Figure 7-43 on page 233 shows the lines pasted as temporary ==MSG> lines.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.04                          10 from ABC
Command ===> _                                                 Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 ----1st line ---------------------------------------------
000110 ----2nd line ---------------------------------------------
000120 ----3rd line ---------------------------------------------
==MSG> D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
==MSG> D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
==MSG> D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
==MSG> D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
==MSG> D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
==MSG> D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
==MSG> D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
==MSG> D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
==MSG> D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
==MSG> D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
000400 ----4th line ---------------------------------------------
000500 ----5th line ---------------------------------------------
****** ***************************** Bottom of Data ***************************

          Data inserted as
          temporary MSG lines
```

Figure 7-43 Results of the PASTE command using the MSGs operand

Figure 7-44 shows the lines pasted as temporary =NOTE= lines.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.04                          10 from ABC
Command ===> _                                                 Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 ----1st line ---------------------------------------------
000110 ----2nd line ---------------------------------------------
000120 ----3rd line ---------------------------------------------
=NOTE= D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
=NOTE= D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
=NOTE= D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
=NOTE= D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
=NOTE= D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
=NOTE= D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
=NOTE= D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
=NOTE= D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
=NOTE= D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
=NOTE= D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
000400 ----4th line ---------------------------------------------
000500 ----5th line ---------------------------------------------
****** ***************************** Bottom of Data ***************************

          Data inserted as
          temporary NOTE lines
```

Figure 7-44 Results of the PASTE command using the NOTE operand

The ==MSG> or =NOTE= lines are temporary, but you can make them permanent lines by using the MD (Make Data) editor line command.

Figure 7-45 on page 234 shows the MD5 line command being used to change the first 5 note temporary lines into permanent data lines.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.06                          10 from ABC
Command ===> ____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 ----1st line ----------------------------------------------
000200 ----2nd line ----------------------------------------------
000300 ----3rd line ----------------------------------------------
MD5    D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
=NOTE= D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
=NOTE= D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
=NOTE= D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
=NOTE= D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
=NOTE= D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
=NOTE= D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
=NOTE= D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
=NOTE= D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
=NOTE= D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
000400 ----4th line ----------------------------------------------
000500 ----5th line ----------------------------------------------
****** ***************************** Bottom of Data ***************************
```

Figure 7-45 Issuing the MD editor line command

Figure 7-46 shows that the first five note lines have now been made data lines. They will be saved when you exit the member.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.TEST.DATA(MEM3) - 01.07                    Columns 00001 00072
Command ===> ____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ******************************
000100 ----1st line ----------------------------------------------
000200 ----2nd line ----------------------------------------------
000300 ----3rd line ----------------------------------------------
000310 D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000320 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000330 D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
000340 D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
000350 D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
=NOTE= D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
=NOTE= D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
=NOTE= D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
=NOTE= D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
=NOTE= D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
000400 ----4th line ----------------------------------------------
000500 ----5th line ----------------------------------------------
****** ***************************** Bottom of Data ***************************
```

Lines are now data lines

Figure 7-46 Results of issuing the MD editor line command

7.21 Printing the clipboard

You can print the clipboard data by using any of these methods:

- Use the PRINT operand on the CUT command, which causes the data in the clipboard to be printed after the data has been copied or moved to the clipboard.
- Use the PRINT operand on the PASTE command, which causes the data in the clipboard to be printed before the data has been copied from the clipboard.
- Issue the CUT STA command to view the Active Clipboards panel. From this panel, you can issue a P line command to print a clipboard.

Figure 7-47 shows using the PRINT operand on the CUT command to print the clipboard data.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-------------------------------------------------------------------------------
-IPT- EDIT IPT.TEST.DATA(MEM2) - 01.00                MOVE/COPY is pending
Command ===> cut TO abc PRINT                          Scroll ===> CSR
****** ***************************** Top of Data ********************************
000100 VOLSER   UNIT   Dtype SMS-SG   Total  Used   %Used Free trk Tot DSN
000200 ------   ----   ----- ------   ------ ------ ----- -------- -------
000300 D$US47   E63E   3390  PRIM     150255 126358  84    23897      N/A
000400 D$US48   E64D   3390  PRIM     150255 134232  89    16023      N/A
000500 D$US49   E64F   3390  PRIM     150255 134047  89    16208      N/A
CC     D$US50   E800   3390  PRIM     150255 129564  86    20691      N/A
000700 D$US51   E801   3390  PRIM     150255 123672  82    26583      N/A
000800 D$US52   E811   3390  PRIM     150255 129356  86    20899      N/A
000900 D$US53   E81C   3390  PRIM     150255 134480  89    15775      N/A
001000 D$US54   E926   3390  PRIM     150255 124070  82    26185      N/A
001100 D$US55   E929   3390  PRIM     150255 133278  89    16977      N/A
001200 D$US56   EA51   3390  PRIM     150255 132204  88    18051      N/A
001300 D$US57   EA52   3390  PRIM     150255 127471  85    22784      N/A
001400 D$US58   EA55   3390  PRIM     150255 132236  88    18019      N/A
CC     D$US59   EA5F   3390  PRIM     150255 121692  81    28563      N/A
001600 D$US60   E816   3390  PRIM     150255 132818  88    17437      N/A
001700 D$US61   E81B   3390  PRIM     150255 146146  97     4109      N/A
001800 D$US62   EC11   3390  PRIM     150255 130430  87    19825      N/A
001900 D$UX01   E082   3390  SGUN      50085  26755  53    23330      N/A
```

Figure 7-47 CUT using the PRINT operand

If you want to modify how the clipboard data is printed or where it is printed, you can issue the SET PRINT command. The SET PRINT command displays the Printing Defaults panel on which you can change the print destination, as well as select options about how the clipboard data is printed.

Figure 7-48 on page 236 shows the Printing Defaults panel, which is used to determine how the data is printed.

```
-IPT------------------------ PRINTING DEFAULTS ---------- Enter required field
COMMAND ===>
Press ENTER to accept the following print options or the END key to cancel.
  Suppress page formatting    ===> N (N=No, Y=Yes - file is already formatted)
  Print changed lines in bold ===> N (N=No, Y=Yes)
  Highlight program elements  ===> _ (N=No, Y=Yes - emphasize recognized items)
  Process mode                ===> G (I=print immediately)
                                     (G=Group requests for later printing)
                                     (L=print direct to the ISPF LIST data set)
  For process modes I and G:

    DESTINATION ID     ===>                 (Node-id<.User-id>)
    CLASS              ===> A               (or Sysout class)
    WRITER name        ===>                 (Output WRITER)
    Number of copies   ===> 1               (How many?)
    Lines per page     ===> 60              (page size)
    Keep in HOLD queue ===> N               (Y=Yes, N=No)
    FORM number        ===>
    FCB name           ===>

  NOTE: Under process modes I and G, your USERID will be on the separator page.
```

Figure 7-48 Printing defaults panel

Archived

8

Using IBM File Manager for z/OS with IPT

In this chapter, we look at how File Manager for z/OS works with Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS. You can customize the ISPF Productivity Tool to invoke a VSAM file, DB2 Table Browser, or Editor when you access files from an Object List.

We teach you how to customize IPT to invoke the IBM product, File Manager. We also teach you File Manager commands and how to use a copybook with File Manager.

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8.1 IBM File Manager Publications

IBM File Manager for z/OS provides four features:

- File Manager Base
- File Manager for DB2
- File Manager for IMS
- File Manager for CICS

With the current release of the ISPF Productivity Tool, an Object List can invoke only the File Manager Base and DB2 features of the IBM File Manager for z/OS product.

This chapter will help you get started with IPT and File Manager. We do not cover all of the functions that the File Manager provides. For additional information about the File Manager for z/OS products, see the *IBM File Manager for z/OS User's Guide and Reference*, SC19-2495, using the following Web site:

`http://www.ibm.com/software/awdtools/filemanager/library/`

You can also review the User's Guide and Reference for additional information about the File Manager Base.

8.2 Customizing IPT to invoke File Manager

Using the File Manager Base and DB2 products in IPT requires the customization of IPT. For more information about the customization process, refer to *Improving Your Productivity with the ISPF Productivity Tool V5.9 on z/OS*, SG24-7587.

You use the IQIWIZRD command to customize the ISPF Productivity Tool to invoke the File Manager from an Object List to process both VSAM and DB2 tables.

The following steps guide you through the customization procedure:

- Log on to ISPF using a valid IPT LOGON procedure.
- Type `TSO IQIWIZRD` on the command line to invoke the IPT Customization Wizard.
- When prompted, enter the `SIQITLIB` and `SIQIPLIB` library names.

Figure 8-1 on page 239 shows entering the TSO IQIWIZRD command and being requested to enter the `SIQITLIB` and `SIQIPLIB` library names.

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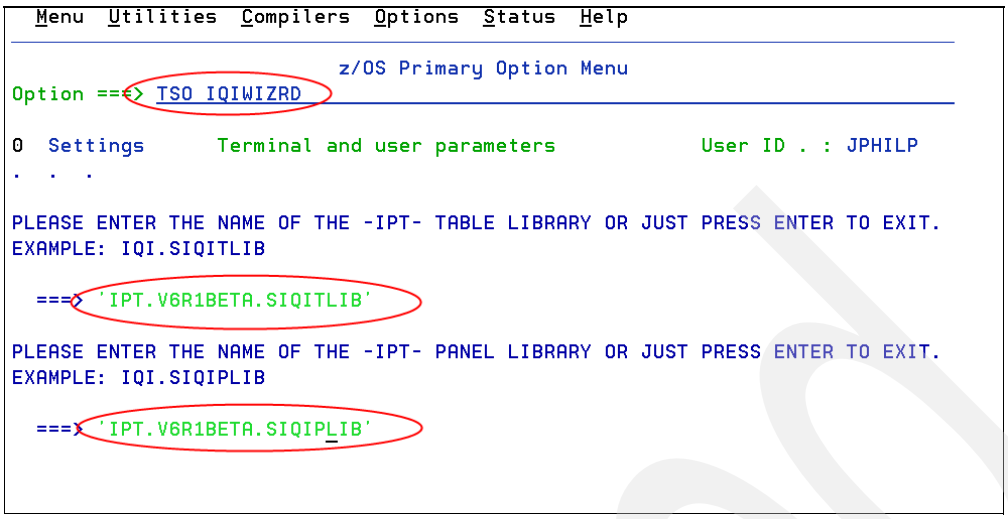

Figure 8-1 Entering the IQIWIZRD command

After you press Enter, the IBMIPT – Customization Wizard panel will be displayed. On this panel, you select Customization (enter option 1) and press Enter.

Figure 8-2 shows selecting customization (option 1).

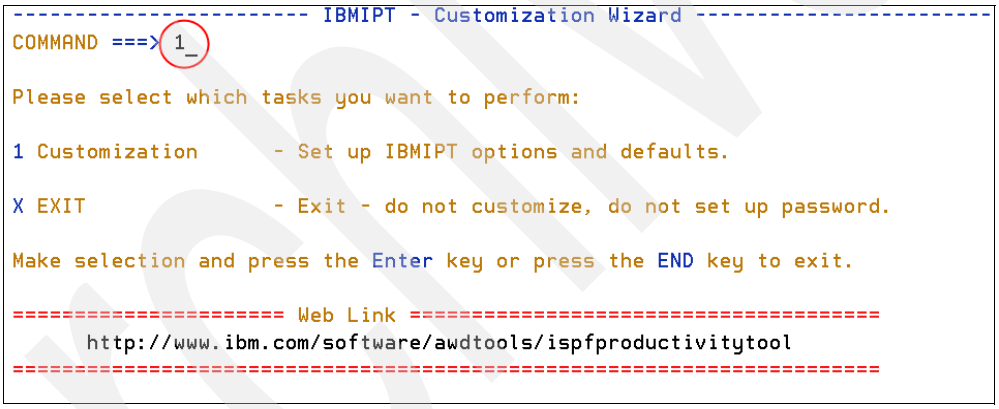

Figure 8-2 IBMIPT – Customization Wizard panel

Follow the installation instructions that are provided by the *IBM ISPF Productivity Tool for z/OS Installation and Customization Guide Version 6 Release 1 Modification 0*, SC14-7222, for the installation wizard.

When you reach the Object Class panel that is shown in Figure 8-3 on page 240, ensure that the **VSAM data sets** and **DB2 tables** are selected.

Figure 8-3 on page 240 shows that third-party products will be used to process VSAM datasets and DB2 tables.

Archived

```
------------------------ IBMIPT - Customization Wizard ------------------------
COMMAND ===> ____________________________________________________________________

    Select the optional object classes to be supported.  Internal
    object classes are already preselected.  If you are unsure, select
    all options to get more information about each one.  You will be
    able to de-select undesired option later.

Select   Object Class                          Notes
-------  ------------------------------------- ----------------------
  S      Open Edition files (IQI$UNIX CLIST)   Requires z/OS UNIX Services
  S      PC files (IQI$PC CLIST)               Requires ISPF workstation
  S      IBM BookManager data sets             Interfaces to IBM BookManager
  S      IBM SCLM support                      Activates built-in support
  =      Panvalet libraries                    Interfaces to third party product
  _      Librarian files                       Interfaces to third party product
  _      PDSMAN libraries                      Activates built-in support
  S      VSAM data sets                        Interfaces to third party product
  S      DB2 tables                            Interfaces to third party product
  _      User defined objects                  Define your own interface

Press ENTER to proceed or the END key to return to the initial screen.
```

Figure 8-3 Object Classes selection for VSAM datasets and DB2 tables

After pressing Enter on Figure 8-3, several options panels will be displayed, depending on the options that were selected. When you reach the VSAM dataset panel that is shown in Figure 8-4, select **IBM File Manager for z/OS**.

Figure 8-4 shows selecting File Manager for z/OS to process VSAM datasets from an IPT Object List.

```
------------------------ IBMIPT - Customization Wizard ------------------------
COMMAND ===>
When IBMIPT detects a VSAM data set (in BROWSE, EDIT, VIEW, DSLIST, or object
list), it may use an interface to process it. You may select which kind
of VSAM support you want in your installation, if any. The table below
shows what CLIST will handle the support you have selected.

     VSAM interface ===> 2   (Select one of the following options)
Option Invoked VSAM interface                                Interface CLIST
------ ------------------------------------------------------ ---------------
  0    None (IBMIPT will not handle VSAM files.) . . . . . .  Not applicable
  1    Installation-written VSAM interface . . . . . . . . .  IQIVSAM
  2    IBM File Manager for z/OS . . . . . . . . . . . . . .  IQI$FMGR
  3    File-Aid VSAM browser/editor(For Version 6 or below) .  IQI$FAID
  4    File-Aid VSAM browser/editor(Version 7.0). . . . . . .  IQI$XPRT
  5    File-Aid VSAM browser/editor(Version 8.0 or above) . .  IQI$FAR8
  6    Data-Xpert VSAM browser/editor . . . . . . . . . . . .  IQI$XPRT
  7    MacKinney ISPF VSAM Utility  . . . . . . . . . . . . .  IQI$MCKN
  8    IBM Ditto/ESA . . . . . . . . . . . . . . . . . . . .  IQI$DIT
  9    Serena STARTOOL . . . . . . . . . . . . . . . . . . .  IQI$STOL
  10   VSAM RECORD BROWSER (A SAMPLE WORKING INTERFACE) . . .  IQIVBRO

NOTES:- Options 2-9 require a third-party product. If such a product uses
        LIBDEFS, include the LIBDEF statements in the interface CLIST.
```

Figure 8-4 File Manager for z/OS being selected to process VSAM datasets

After pressing Enter on Figure 8-4, IPT displays a panel on which you can select the product to be used, and browse, edit, or view a DB2 table from the Object List.

Figure 8-5 shows selecting option **9 IBM File Manager/DB2 for z/OS table browser/editor** to process DB2 tables from the IPT Object List.

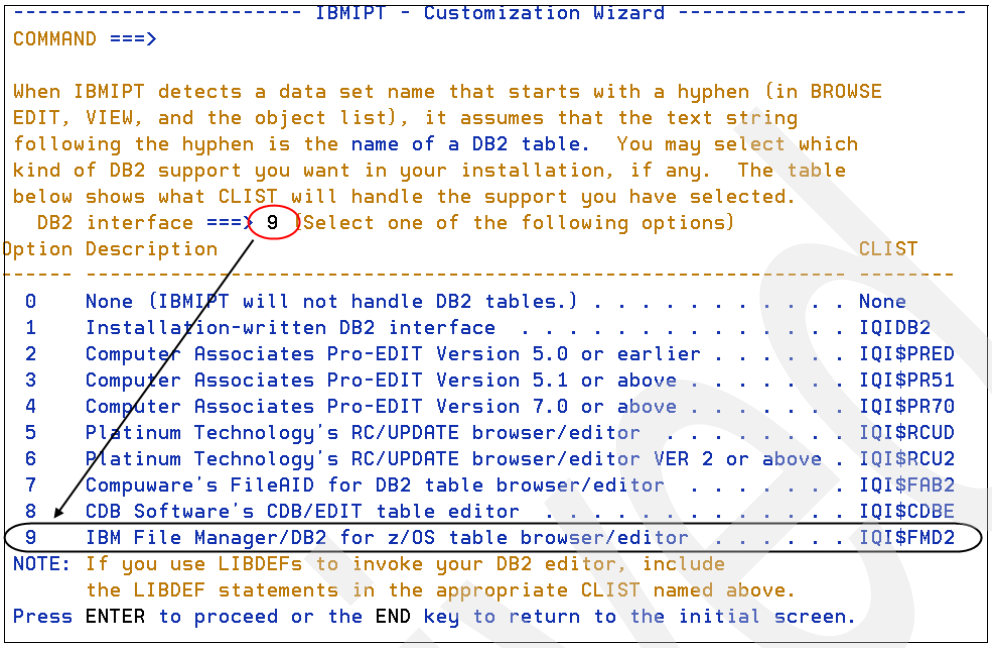

Figure 8-5 File Manager/DB2 for z/OS being selected to process DB2 tables

Complete the IPT Customization Wizard steps.

Now that the IPT customization process is complete, IPT is set up to invoke these routines:

- IQI$FMGR CLIST if a VSAM dataset is selected via the IPT Object List.
- IQI$FMD2 CLIST if a DB2 object is select via the IPT Object List.

If the ISPF logon procedures being used by users to access IPT have not been modified to allocate the File Manager for z/OS and File Manager/DB2 for z/OS datasets, you need to modify the IQI$FMGR and IQI$FMD2 routines to ensure that LIBDEF statements are used to allocate the required File Manager datasets.

8.3 Invoking File Manager using LIBDEFS to allocate required datasets

Prior to IPT Release 6.10, it was always necessary to modify the IQI$FMGR and IQI$FMD2 CLISTS to allow File Manager Base and DB2 to be invoked. In IPT 6.10, the IQI$FMGR and IQI$FMD2 CLISTS were modified as though the File Manager Base and DB2 datasets were allocated by the ISPF logon procedure, and after you have performed the customization described in 8.2, “Customizing IPT to invoke File Manager” on page 238, File Manager Base and DB2 are ready for use.

When editing or viewing a VSAM file or a DB2 table from the Object List if the File Manager Base or DB2 dataset is not allocated, you receive the following messages:

- `'IKJ56500I COMMAND FILEMGR NOT FOUND'` when attempting to edit, browse, or view a VSAM dataset or attempting to access a dataset using File Manager Base.
- `'IKJ56500I COMMAND FMN2INEX NOT FOUND'` when attempting to edit, browse, or view a DB2 table.

If the File Manager Base and DB2 datasets are not allocated, the CLISTS IQI$FMGR and IQI$FMD2 will need to be modified to specify the required parameters to allocate the required dataset using LIBDEF statements.

To use LIBDEFs to allocate the File Manager Base datasets, modify the IQI$FMGR CLIST to specify these values:

- Modify NOLDEF() to ensure that the LIBDEF statements are used to allocate the File Manager Base datasets.
- The FMQUAL parameter, which contains the high-level qualifier of the installed File Manager Base datasets. If the sets are in the format FMN.SFMNMOD1, the parameter will be FMQUAL(FMN).
- The FMOPTS parameter, which contains the load library containing the File Manager Base options module (that is, FMN0POPT) that was set up during the File Manager Base customization.

Figure 8-6 shows the CLIST IQI$FMGR setup to allocate the File Manager Base datasets using LIBDEFs.

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.V6R1BETA.SIQICLIB(IQI$FMGR) - 61.15          Columns 00001 00072
Command ===> _____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ******************************
000001 PROC 0 /******************** IQI$FMGR ********************************/ +
000002        APPLID(FMN)               /*Required ISPF APPLICATION ID     */ +
000003        FMQUAL(FILEMGR.V910)      /*FileManager High-level qualifier */ +
000004        FMOPTS(FILEMGR.OPTIONS.IPT)/*FileManager site options dataset*/ +
000005        HANDLER(FILEMGR)          /*Name of the VSAM handler         */ +
000006        NOLDEF()                  /*LIBDEFs and ALTLIB control       */ +
000007        LIST()                    /*Limited diagnostics              */ +
000008        TRACE()                   /*Full diagnostics                 */ +
000009        SHOW()                    /*Display invocation statement     */
000010 /*-------------------------------------------------------------------*/
000011 /* 5698-R21 (C) COPYRIGHT IBM CORP 2000,2009                         */
000012 /* ISPF PRODUCTIVITY TOOL: 6.1.0                                     */
000013 /*-------------------------------------------------------------------*/
000014 /*                                                                   */
000015 /*-------------------------------------------------------------------*/
000016 /* This is the -IPT- CLIST interface that handles VSAM files         */
000017 /* by calling the IBM "File Manager for z/OS and OS/390"(tm).        */
000018 /*-------------------------------------------------------------------*/
000019 /*                                                                   */
```

Figure 8-6 CLIST IQI$FMGR allocating File Manager Base datasets using LIBDEFS

To use LIBDEFs to allocate the File Manager DB2 datasets, modify the IQI$FMD2 CLIST to specify these values:

- Modify NOLDEF() to ensure that the LIBDEF statements are used to allocate the File Manager DB2 datasets.
- Change the FMQUAL parameter, which contains the high-level qualifier of the installed File Manager DB2 datasets. If the sets are in the format FMN.SFMNMOD1, the parameter will be FMQUAL(FMN).
- Modify the FMOPTS parameter, which contains the load library containing the File Manager DB2 options module (that is, FMN2POPT) that was set up during the File Manager Base customization.
- Change the DB2QUAL parameter, which contains the qualifier of the DB2 ISPF panel datasets (that is, DSN.SDSNPFPE and DSN.SDSNSPFP). These datasets are required, because File Manager DB2 invokes DB2 processes, such as SQL Processor Using File Input (SPUFI).

Figure 8-7 shows the CLIST IQI$FMD2 setup to allocate File Manager DB2 datasets using LIBDEFs.

```
  File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT IPT.V6R1BETA.SIQICLIB(IQI$FMD2) - 61.16          Columns 00001 00072
Command ===> _                                               Scroll ===> CSR
****** ***************************** Top of Data ******************************
000001 PROC 0 /******************** IQI$FMD2 ********************************/ +
000002       APPLID(FMN2)              /*Required ISPF APPLICATION ID      */ +
000003       FMQUAL(FILEMGR.V910)      /*FileManager High-level qualifier  */ +
000004       FMOPTS(FILEMGR.OPTIONS.IPT)/*FileManager site options dataset*/ +
000005       DB2QUAL(DB2.V810)         /*DB2 High-level qualifier          */ +
000006       HANDLER(%FMN2INEX)        /*Name of the DB2 handler           */ +
000007       NOLDEF()                  /*LIBDEFs and ALTLIB control        */ +
000008       LIST()                    /*Limited diagnostics               */ +
000009       TRACE()                   /*Full diagnostics                  */ +
000010       SHOW()                    /*Display invocation statement      */
000011 /*-------------------------------------------------------------------*/
000012 /* 5698-R21 (C) COPYRIGHT IBM CORP 2000,2009                          */
000013 /* ISPF PRODUCTIVITY TOOL: 6.1.0                                      */
000014 /*-------------------------------------------------------------------*/
000015 /*                                                                    */
000016 /*-------------------------------------------------------------------*/
000017 /* This is the -IPT- CLIST interface that handles DB2(tm) tables      */
000018 /* by calling the IBM "File Manager for z/OS and OS/390"(tm).         */
```

Figure 8-7 CLIST IQI$FMD2 allocating File Manager DB2 datasets using LIBDEFS

8.4 Using File Manager Base with IPT

After the customization is complete, you can use IPT to invoke File Manager Base from an Object List to browse, edit, or view sequential datasets, partitioned datasets (PDS) or partitioned datasets extended (PDSE), or VSAM datasets.

There are several reasons to invoke the File Manager Base from IPT:

- VSAM Browse or Edit
- File is too large to Edit with ISPF.
- Apply a copybook to File Manager:
  - Visibility to Packed Decimal and Binary fields in readable format

  - Table and Single views
  - Many more functions
- File Manager supports the following types of VSAM files:
  - Entry Sequence Dataset (ESDS)
  - Key Sequence Dataset (KSDS)
  - Relative Record Dataset (RRDS)
  - Fixed-length or variable-length
  - PATH
  - PATHs that are related to an alternate index are restricted to browse only
  - Alternate Index (AIX®)

Invoking the File Manager Base from IPT shows the object list commands and point-and-shoot main commands (Table 8-1) that can be used to browse, edit, or view sequential datasets, partitioned datasets (PDS or PDSE), or VSAM datasets.

Table 8-1 Object List commands and point-and-shoot main commands to invoke File Manager Base

File type	Object List line command	Point-and-Shoot main command	Product invoked
VSAM (all types)	B or V	BR or VI	File Manager – Browse
VSAM (all types)	BF or VF	BF or VF	File Manager – Browse
VSAM (all types)	E or EF	ED or EF	File Manager – Edit
Sequential files	B, V, E	BR, VI, or ED	ISPF – Browse, View, or Edit
Sequential files	BF, VF, or EF	BF, VF, or EF	File Manager browses or edits the file, which is useful if you want to apply a copybook when accessing the file.
Sequential files that are too large for Time Sharing Option (TSO) address space memory	V, E	VI or ED	ISPF changes the format to Browse. The file is too large to fit into the TSO Address space memory, so Browse is invoked instead.
Sequential Files too large for TSO address space memory	EF	EF	File Manager will edit the file. Because the file will not fit in the TSO Address space, File Manager will use the “Auxiliary Edit” mode to allow you to edit the file.

Note: You can use the File Manager to browse or edit sequential files or PDS members. With File Manager, you can apply a copybook to a sequential file, or you can edit a large sequential file that ISPF is unable to edit. Use the BF or EF Object List or Point-and-Shoot command to invoke the File Manager in Browse or Edit mode for sequential files.

Figure 8-8 shows the E line command being issued against a VSAM dataset in the IPT Object List.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL IPT.TEST ------------------- Row 1 to 5 of 5
Command    ===>                                              SCROLL ===> CSR
Hotbar?
                                                              *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ---------------------------------------------- -------
                      1 'IPT.TEST.COPYLIB'                             C$US02
                      2 'IPT.TEST.DATA'                                C$US01
E_                    3 'IPT.TEST.KSDS'
                      4 'IPT.TEST.KSDSN.DATA'                          C$US01
                      5 'IPT.TEST.KSDSN.INDEX'                         C$US01
                       ---------------- END OF LIST ----------------
```

Figure 8-8 Editing a VSAM dataset in the Object List

After pressing Enter, type the E line command to invoke the IQI$FMGR CLIST to invoke File Manager Base to edit the VSAM file.

Figure 8-9 shows the VSAM dataset IPT.TEST.KSDS being editing by File Manager Base.

```
 Process   Options   Help
-------------------------------------------------------------------------------
Edit              IPT.TEST.KSDS                                   Top of 5
Command ===> ____________________________________________________ Scroll PAGE
                          Type KSDS     RBA ____________________ Format CHAR
Key ____________________________________     Col 1      Insert Length 32000
      <===+====>----+----20---+----3----+----4----+----5----+----6----+----7--
******* ****  Top of data  ****
000001 0000000010..Joe         F..Bloggs        11 213  01/08/87  CEO     ..M14
000002 0000000020..Fred        J..Bling         12 268  02/07/03  ASSIST  ..M23
000003 0000000030..Nancy       C..Wright        21 753  06/08/95  MARKET  ..F11
000004 0000000040..John        G..Dierre        31 666  05/12/08  SALES   ..M14
000005 0000000050..Christine    ..Bright        11 832  10/03/99  IT      ..F06
****** ****  End of data  ****
```

Indicates the key of the VSAM file

Non-displayable characters

Figure 8-9 File Manager Base editing a VSAM dataset

As you can see in Figure 8-9, the VSAM dataset contains non-displayable characters, which are shown as a dot (.). To be able to maintain these characters, you will either need to maintain the data in Hexadecimal mode or use a copybook that maps the data to edit the data in file Manager. We discuss these topics in further detail in 8.4.1, “Maintaining data in hexadecimal mode using File Manager” on page 246 or 8.4.2, “Using copybooks to maintain data using File Manager” on page 247.

8.4.1 Maintaining data in hexadecimal mode using File Manager

In File Manager Base, you can view the data in hexadecimal format or in long hexadecimal format.

In hexadecimal mode, File Manager will display three lines for each line in the sequential dataset, PDS, or VSAM dataset. The first line shows the character representation and the second and third lines show the hexadecimal representation of each character. To show data in hexadecimal format in File Manager, either enter the FH primary command or change the Format field on the panel to `HEX`.

Figure 8-10 shows the data after entering the FH primary command or changing the Format field to `HEX`.

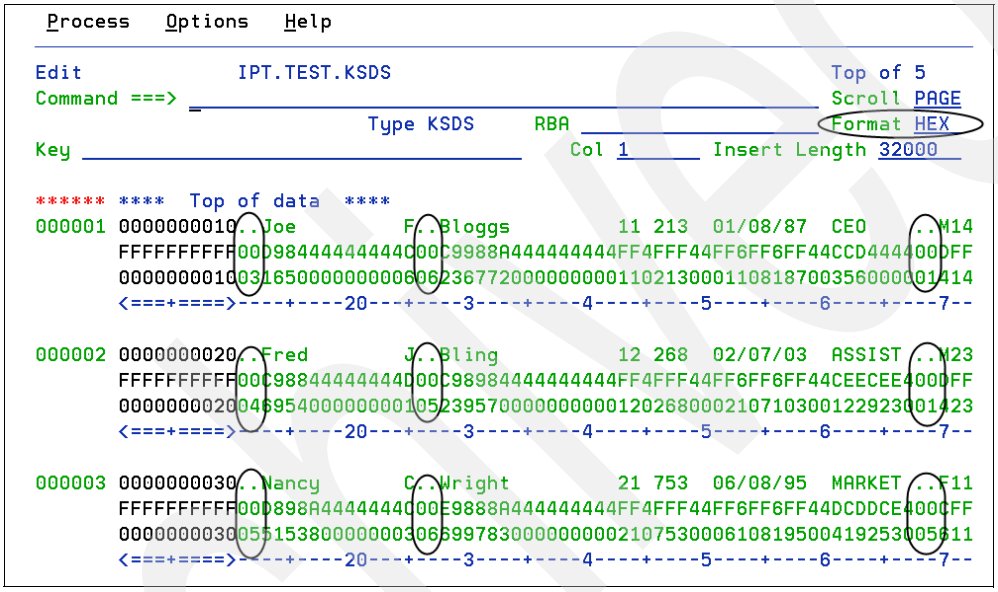

Figure 8-10 File Manager editing data in hexadecimal format

In long hexadecimal mode, File Manager displays a single line showing the hexadecimal representation. To show data in long hexadecimal format in File Manager, either enter the FL primary command or change the Format field on the panel to `LHEX`.

Figure 8-11 on page 247 shows the data after entering the FL primary command or changing the Format field to `LHEX`.

```
 Process   Options   Help
 ------------------------------------------------------------------------------
 Edit            IPT.TEST.KSDS                                    Top of 5
 Command ===> _____________________________________________________ Scroll PAGE
                          Type KSDS     RBA ____________________ Format LHEX
 Key ____________________________________   Col 1_____ Insert Length 32000
        < = = = + = = = = > - - - - + - - - - 20 - - - + - - - - 3 - - - - + -
****** ****  Top of data  ****
000001 F0F0F0F0F0F0F0F0F1F00003D19685404040404040404040C60006C293968787A2404040
000002 F0F0F0F0F0F0F0F0F2F00004C69985844040404040404040D10005C29389958740404040
000003 F0F0F0F0F0F0F0F0F3F00005D5819583A840404040404040C30006E699898788A3404040
000004 F0F0F0F0F0F0F0F0F4F00004D19688954040404040404040C70006C48985999985404040
000005 F0F0F0F0F0F0F0F0F5F00009C3889989A2A38995854040404000006C299898788A3404040
****** ****  End of data  ****

Character 0        Character 5
```

Figure 8-11 File Manager editing data in long hexadecimal format

8.4.2 Using copybooks to maintain data using File Manager

Maintaining data in either character, hexadecimal, or long hexadecimal mode can be difficult if the data was created using copybooks with numeric fields. File Manager Base allows you to maintain the data using a copybook that maps the data.

Figure 8-12 shows the copybook EMP, which was used to create the data in the IPT.TEST.KSDS VSAM dataset.

```
  Menu  Utilities  Compilers  Help
 ------------------------------------------------------------------------------
 -IPT- BROWSE   IPT.TEST.COPYLIB(EMP) - 01.00        Line 00000004 Col 001 080
 Command ===> ____________________________________________ Scroll ===> CSR
       01  DCLEMP._                                                    00040000
           10 EMPNO                PIC X(10).                          00050000
           10 FIRSTNME.                                                00060000
              49 FIRSTNME-LEN      PIC S9(4) USAGE COMP.               00070000
              49 FIRSTNME-TEXT     PIC X(12).                          00080000
           10 MIDINIT              PIC X(1).                           00090000
           10 LASTNAME.                                                00100000
              49 LASTNAME-LEN      PIC S9(4) USAGE COMP.               00110000
              49 LASTNAME-TEXT     PIC X(15).                          00120000
           10 WORKDEPT             PIC X(3).                           00130000
           10 PHONENO              PIC X(4).                           00140000
           10 HIREDATE             PIC X(10).                          00150000
           10 JOB                  PIC X(8).                           00160000
           10 EDLEVEL              PIC S9(4) USAGE COMP.               00170000
           10 SEX                  PIC X(1).                           00180000
           10 BIRTHDATE            PIC X(10).                          00190000
           10 SALARY               PIC S9(7)V9(2) USAGE COMP-3.        00200000
           10 BONUS                PIC S9(7)V9(2) USAGE COMP-3.        00210000
           10 COMM                 PIC S9(7)V9(2) USAGE COMP-3.        00220000
******************************** Bottom of Data ********************************
```

Figure 8-12 COBOL copybook EMP that will be used to map the VSAM data

To run the File Manager Base editor session using a copybook, issue the template edit (TE) primary command by typing `TE` in the Edit session.

Figure 8-13 on page 248 shows issuing the TE command to run using a copybook.

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```
 Process   Options   Help
 ------------------------------------------------------------------------------
Edit              IPT.TEST.KSDS                                    Top of 5
Command ===> TE_____________________________________________________ Scroll PAGE
                              Type KSDS     RBA ____________________ Format CHAR
Key ____________________________________     Col 1_____ Insert Length 32000__
       <===+====>----+----20---+----3----+----4----+----5----+----6----+----7--
****** ****  Top of data  ****
000001 0000000010..Joe         F..Bloggs         11 213  01/08/87  CEO    ..M14
000002 0000000020..Fred        J..Bling          12 268  02/07/03  ASSIST ..M23
000003 0000000030..Nancy       C..Wright         21 753  06/08/95  MARKET ..F11
000004 0000000040..John        G..Dierre         31 666  05/12/08  SALES  ..M14
000005 0000000050..Christine    ..Bright         11 832  10/03/99  IT     ..F06
****** ****  End of data  ****
```

Figure 8-13 TE command issued in the File Manager edit session

After issuing the TE command and pressing Enter, File Manager displays the Template Workbench panel, from which you can perform these tasks:

- Use a copybook to maintain the data in the File Manager Edit session.
- Create a template that allows you to select records and change the way in which the data is displayed.
- Maintain existing templates.

Figure 8-14 shows typing the RC primary command to maintain the data using the copybook `'IPT.TEST.COPYLIB(EMP)'`.

```
 Process   Options   Help
 ------------------------------------------------------------------------------
File Manager                    Template Workbench
Command ===> rc_____________________________________________________________

RC Run using copybook                    RT Run using template
CC Create template from copybook         E  Edit field/record in template
CM Create template from model            U  Update template from copybook
MC Map from copybook                     MT Map from template

Copybook:
   Data set name . 'IPT.TEST.COPYLIB'_____________________________________
   Member  . . . . EMP_____
Template:
   Data set name . ______________________________________________________
   Member  . . . . ________
Model Template:
   Data set name . ______________________________________________________
   Member  . . . . ________

Processing Options:
 Enter "/" to select option
 _  Advanced copybook selection
```

Figure 8-14 Issuing the RC command on the Template Workbench panel

After pressing Enter on the Template Workbench panel, File Manager returns you to the Edit session and displays the data in TABL format with a column for each field in the COBOL copybook EMP.

Figure 8-15 on page 249 shows the data in TABL format displayed using the information contained in the EMP copybook.

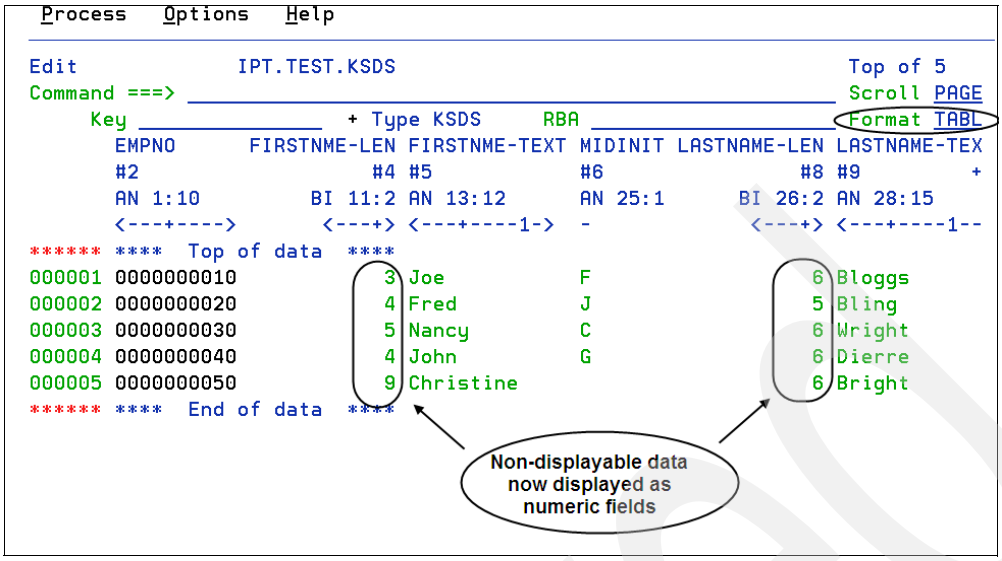

Figure 8-15 File Manager displaying data in TABL format

File Manager allows a single row to be displayed on the panel with the fields shown vertically. To display the rows in SNGL format, type the FS primary command or change the format field to SNGL.

Figure 8-16 shows the data displayed in SNGL format after issuing the FS primary command or changing the format field to SNGL.

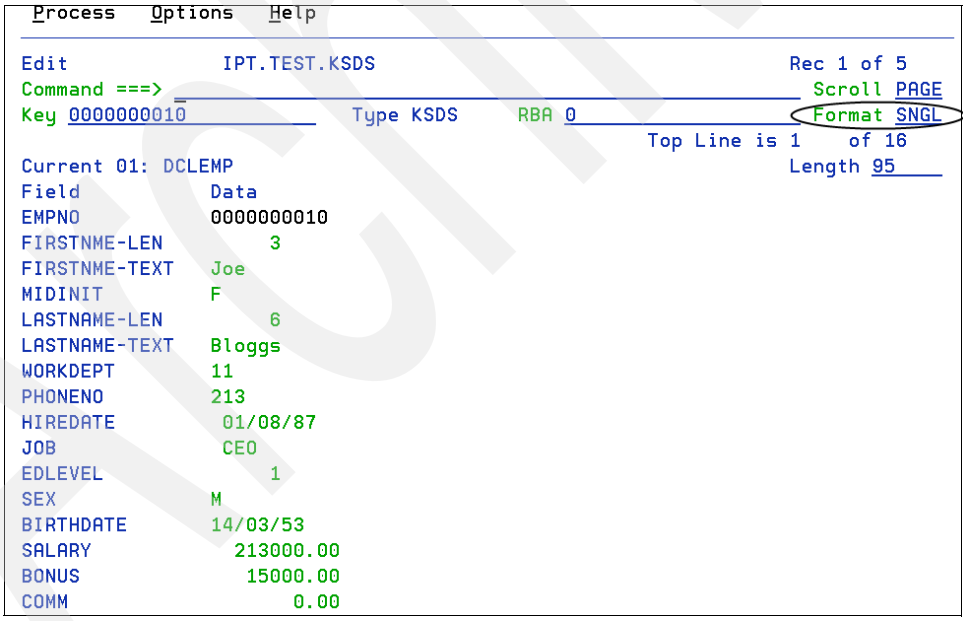

Figure 8-16 File Manager displaying data in SNGL format

To redisplay the data in TABL format, you can issue the FT primary command or change the format field to TABL.

8.4.3 Additional features of File Manager Base

File Manager Base has many features (too many to describe here) for browsing, editing, or viewing sequential datasets, PDSs, PDSEs, or VSAM files. For more information about the features that are available, see the *IBM File Manager for z/OS User's Guide and Reference*, using the following Web site:

http://www.ibm.com/software/awdtools/filemanager/library

8.5 Using File Manager/DB2 with IPT

From an Object List, you can browse, edit, or view a single DB2 table or receive a list of DB2 tables from which you can select a DB2 table to browse, edit, or view.

In the Object List, use the following format to specify a DB2 table:

subsys_owner.tabname

In this format:

- *subsys* refers to the DB2 subsystem name.
- *owner* refers to the owner of the DB2 table.
- *tabname* refers to the name of the DB2 table.

So for example, given a DB2 subsystem of DI11, a table called EDEPT, with an owner of DSN8810, you specify the following entry in the IPT Object List:

```
DI11_DSN8810.EDEPT
```

Also, within the Object List, you can specify a generic name for the DB2 table. For example, if you know that the DB2 owner of the DB2 table starts with DSN, but you do not know the exact owner or name of the table, you specify this format:

```
DI11_DSN*.**
```

For more information about specifying generic Object List entries, refer to the Chapter 2, "Object Lists" on page 7.

Figure 8-17 shows the DB2TAB Object List with both a single DB2 table entry, as well as a generic DB2 table entry.

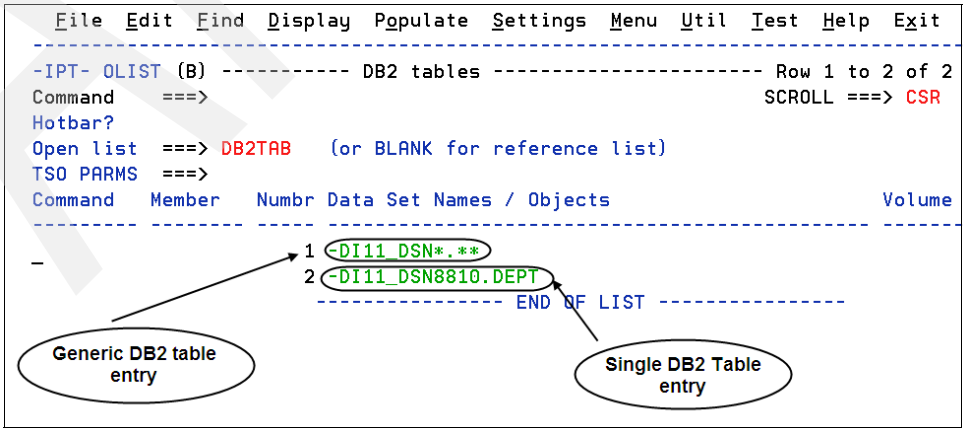

Figure 8-17 Object List showing a single DB2 table entry and a generic DB2 table entry

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After File Manager DB2 has been customized to be invoked by IPT, issuing the B (browse), E (edit), or V (view) line commands against a DB2 table entry will invoke File Manager DB2.

8.5.1 Browsing, editing, or viewing a fully qualified DB2 table in IPT

By issuing a B (Browse), E (edit), or V (View) line command against a fully qualified DB2 table in the object list will cause File Manager to display the DB2 table automatically.

Figure 8-18 shows issuing a V line command against a fully qualified DB2 table Object List entry.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- DB2 tables ---------------------- Row 1 to 2 of 2
Command    ===>                                              SCROLL ===> CSR
Hotbar?
Open list  ===> DB2TAB   (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ------------------------------------------- -------
                       1 -DI11_DSN*.**
V                      2 -DI11_DSN8810.DEPT
                        ---------------- END OF LIST ----------------
```

Figure 8-18 issuing a V line command in the DB2 Object List

After you press Enter, IPT will invoke File Manager DB2 to display the DB2 table data.

Figure 8-19 shows File Manager DB2 viewing the DSN8810.DEPT DB2 table in the DI11 DB2 subsystem.

```
 Process   Options   Utilities   Help
-------------------------------------------------------------------------------
FM/DB2 (DI11)                    Table View                        Top of 14
Command ===> _____________________________________________________ Scroll PAGE
14 rows fetched                                                    Format TABL
      DEPTNO DEPTNAME                          MGRNO  ADMRDEPT LOCATION
      #1     #2                                #3     #4       #5        +
      CH(3)  VARCHAR(36)                       CH(6)  CH(3)    CHARACTER(1
      PU>    <---+----1----+----2----+----3----+> <-N-+> <-N     <---+----1-
****** ****  Top of data  ****
000001 A00    SPIFFY COMPUTER SERVICE DIV.<      000010 A00
000002 B01    PLANNING<                         000020 A00
000003 C01    INFORMATION CENTER<               000030 A00
000004 D01    DEVELOPMENT CENTER<               _      A00
000005 E01    SUPPORT SERVICES<                 000050 A00
000006 D11    MANUFACTURING SYSTEMS<            000060 D01
000007 D21    ADMINISTRATION SYSTEMS<           000070 D01
000008 E11    OPERATIONS<                       000090 E01
000009 E21    SOFTWARE SUPPORT<                 000100 E01
000010 F22    BRANCH OFFICE F2<                 _      E01
000011 G22    BRANCH OFFICE G2<                 _      E01
000012 H22    BRANCH OFFICE H2<                 _      E01
000013 I22    BRANCH OFFICE I2<                 _      E01
000014 J22    BRANCH OFFICE J2<                 _      E01
```

Figure 8-19 File Manager DB2 viewing a DB2 table

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8.5.2 Browsing, editing, or viewing a generic DB2 table in IPT

Issuing a B (Browse), E (edit), or V (View) line command against a partially qualified DB2 table in the Object List causes File Manager to list the available DB2 tables. Then, you can select a DB2 table to browse, edit, or view.

Figure 8-20 shows issuing an E line command against a partially qualified DB2 table Object List entry.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT- OLIST (B) ----------- DB2 tables ----------------------- Row 1 to 2 of 2
 Command    ===>                                                SCROLL ===> CSR
 Hotbar?
 Open list  ===> DB2TAB   (or BLANK for reference list)
 TSO PARMS  ===>
 Command   Member   Numbr Data Set Names / Objects                      Volume
 --------- -------- ----- ---------------------------------------------- -------
 E                     1 -DI11_DSN*.**
                       2 -DI11_DSN8810.DEPT
                        ---------------- END OF LIST ----------------
```

Figure 8-20 Issuing an E line command in the DB2 Object List

After you press Enter, IPT invokes File Manager DB2, which displays a list of DB2 tables that match the pattern that was entered on the Object List entry that you selected.

Figure 8-21 shows File Manager DB2 displaying a list of the DB2 tables in the DB2 subsystem `DI11` that have an owner of `DSN*`.

```
 Process   Options   Utilities   Help
 ------------------------------------------------------------------------------
 FM/DB2 (DI11)            Table/View/Alias Selection                Top of 41
 Command ===> ____________________________________________________ Scroll PAGE
 41 rows fetched                                                   Format TABL
                                                TABLE
        TABLE    TABLE              DATABASE SPACE    OBJECT
 SEL    OWNER    NAME               NAME     NAME     TYPE
        *        *                  *        *        *
 ----   #2--+--- #1--+----1----+-- #4--+--- #5--+--- #7--+-
 ****  Top of data  ****
 ____   DSN8810  ACT                DSN8D81A DSN8S81P TABLE
 ____   DSN8810  DEPT               DSN8D81A DSN8S81D TABLE
 ____   DSN8810  EACT               DSN8D81A DSN8S81R TABLE
 ____   DSN8810  EDEPT              DSN8D81A DSN8S81R TABLE
 ____   DSN8810  EEMP               DSN8D81A DSN8S81R TABLE
 ____   DSN8810  EEPA               DSN8D81A DSN8S81R TABLE
 S___   DSN8810  EMP                DSN8D81A DSN8S81E TABLE
 ____   DSN8810  EMPPROJACT         DSN8D81A DSN8S81P TABLE
 ____   DSN8810  EPROJ              DSN8D81A DSN8S81R TABLE
 ____   DSN8810  EPROJACT           DSN8D81A DSN8S81R TABLE
 ____   DSN8810  MAP_TBL            DSN8D81P DSN8S81Q TABLE
 ____   DSN8810  PARTS              DSN8D81A DSN8S81S TABLE
 ____   DSN8810  PROJ               DSN8D81A DSN8S81P TABLE
```

Figure 8-21 File Manager DB2 displaying a list of DB2 tables

Typing an S against the DSN8810.EMP DB2 table causes this table to be selected for editing. After you press Enter, File Manager displays the DB2 table so that you can edit it.

Figure 8-22 on page 253 shows the DB2 table DSN8810.EMP in the DB2 subsystem DI11 being edited by File Manager DB2.

```
 Process   Options   Utilities   Help
------------------------------------------------------------------------------
FM/DB2 (DI11)                    Table Edit                        Top of 42
Command ===> _____________________________________________________ Scroll PAGE
42 rows fetched                                                    Format TABL
       EMPNO  FIRSTNME     MIDINIT LASTNAME        WORKDEPT PHONENO HIREDATE
       #1     #2           #3      #4              #5       #6      #7
       CH(6)  VARCHAR(12)  CH(1)   VARCHAR(15)     CH(3)    CH(4)   DATE
       PU--+> <---+----1-> -       <---+----1----> <-N      <-->    <---+---->
****** **** Top of data  ****
000001 000010 CHRISTINE<   I       HAAS<           A00      3978    01.01.1965
000002 000020 MICHAEL<     L       THOMPSON<       B01      3476    10.10.1973
000003 000030 SALLY<       A       KWAN<           C01      4738    05.04.1975
000004 000050 JOHN<        B       GEYER<          E01      6789    17.08.1949
000005 000060 IRVING<      F       STERN<          D11      6423    14.09.1973
000006 000070 EVA<         D       PULASKI<        D21      7831    30.09.1980
000007 000090 EILEEN<      W       HENDERSON<      E11      5498    15.08.1970
000008 000100 THEODORE<    Q       SPENSER<        E21      0972    19.06.1980
000009 000110 VINCENZO<    G       LUCCHESI<       A00      3490    16.05.1958
000010 000120 SEAN<                O'CONNELL<      A00      2167    05.12.1963
000011 000130 DOLORES<     M       QUINTANA<       C01      4578    28.07.1971
000012 000140 HEATHER<     A       NICHOLLS<       C01      1793    15.12.1976
000013 000150 BRUCE<               ADAMSON<        D11      4510    12.02.1972
000014 000160 ELIZABETH<   R       PIANKA<         D11      3782    11.10.1977
```

Figure 8-22 File Manager DB2 editing a DB2 table

8.5.3 Additional features of File Manager DB2

File Manager DB2 has many features (too many features to describe here) for browsing, editing, or viewing a DB2 table. For more information about the features that are available, see the *IBM File Manager for z/OS User's Guide and Reference for DB2 Data,* SC19-2496, using the following Web address:

http://www.ibm.com/software/awdtools/filemanager/library/

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9

IPT customization: First-time logon

In this chapter, we describe the process of configuring the logon process and using Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS for the first time.

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9.1 IPT LOGON procedure

The IPT requires a different LOGON procedure. Consult your z/OS system programming team to determine the correct LOGON procedure name to use for the IPT. Specify the LOGON procedure name on the Time Sharing Option (TSO) or TSO/E LOGON panel, as shown in Figure 9-1.

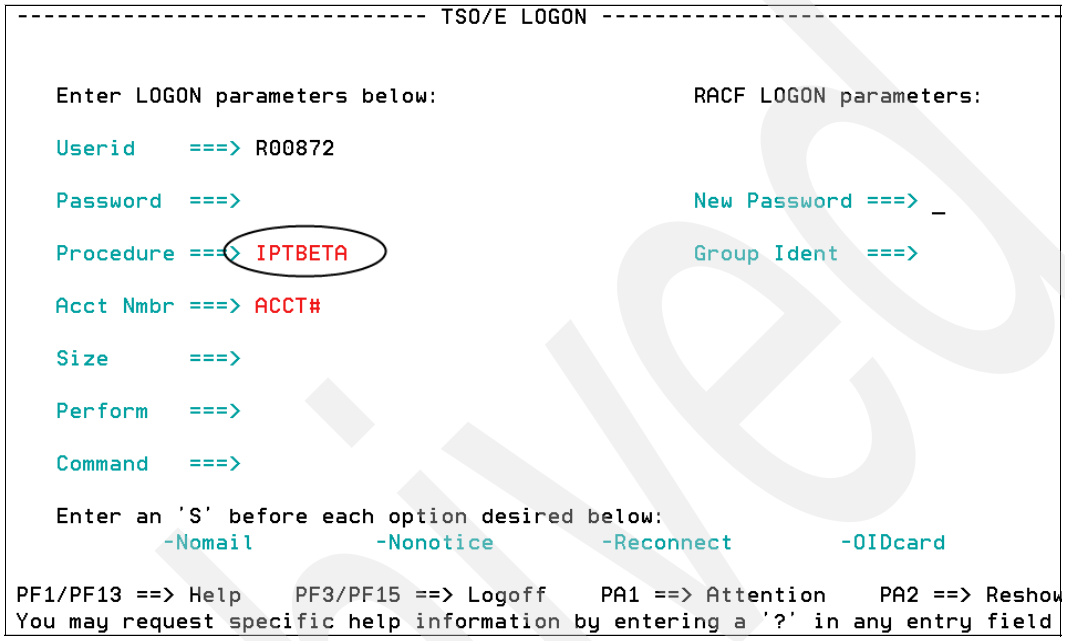

Figure 9-1 IPT LOGON procedure

We use the IPT LOGON procedure named IPTBETA. Authorization might be required for the IPTBETA procedure name. The LOGON procedure name is retained until the next time that you log on to ISPF.

9.2 IPT persistent tables

IPT maintains a significant number of persistent tables, such as clipboards, Object Lists, Member Selection Lists (MSL) settings, and IPT settings. This data is retained after you log off from ISPF. During your IPT session, most persistent tables are stored in a partitioned data set (PDS) or partitioned data set extended (PDSE) library that is allocated to the DD IPITBLIB.

The IPT customization wizard defines how persistent tables are stored. Persistent tables can be defined during your first logon, pre-allocated by the z/OS system programmer, or not defined.

9.2.1 IPT persistent tables defined with first logon

The IPT customization wizard recommends that the allocation of persistent tables occurs during your first logon. If this option is set, you will see the panel that is shown in Figure 9-2 on page 257 when you first log on to IPT.

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This panel offers one of three choices:

- Specify an existing library for persistent tables.
- Allocate a new library for persistent tables.
- Operate without a persistent tables library.

```
-IPT-------------------- Persistent Table Management ---- IPITBLIB unavailable
COMMAND ===> _

  -IPT- recommends a dedicated library (PDSE) for storing its
  persistent tables. DD(IPITBLIB) is currently not allocated or may
  be associated with an unusable dataset.
* You may either specify an existing library or dynamically allocate a
  new library to be used for this purpose.
* After successfully allocating a valid library, its name is stored in
  your profile and will be automatically used from now on, as long as
  DD(IPITBLIB) is not explicitly included in your LOGON procedure.
* The library name first suggested by -IPT- is either your permanent
  OLIST library (if PDSE), or a cataloged name derived from your
  PROFILE library name.
Note: you may choose to operate without saving any -IPT- persistent
  tables by declining to allocate DD(IPITBLIB).

Main line commands:  D Disable  S Select (default)
Press ENTER to process or F3    to cancel.

    LIBRARY NAME --> 'R00872.ISPF.IPITBLIB'
```

Figure 9-2 Persistent table management panel

IPT recommends a dedicated PDSE library to store persistent tables. IPT uses the naming convention *userid*.ISPF.IPITBLIB for the DD IPITBLIB allocation. To allocate a PDSE with this naming convention, press Enter. Note that the dataset name type is LIBRARY in Figure 9-3.

```
  Menu  RefList  Utilities  Help
 ------------------------------------------------------------------------------
                          Allocate New Data Set
                                                                  More:     +
Data Set Name  . . . : R00872.ISPF.IPITBLIB

Management class . . . _________        (Blank for default management class)
Storage class  . . . . _________        (Blank for default storage class)
 Volume serial . . . . ______           (Blank for system default volume) **
 Device type . . . . . _________        (Generic unit or device address) **
Data class . . . . . . _________        (Blank for default data class)
 Space units . . . . . BLOCK_____       (BLKS, TRKS, CYLS, KB, MB, BYTES
                                         or RECORDS)
 Average record unit   _                (M, K, or U)
 Primary quantity  . . 320__________    (In above units)
 Secondary quantity    160__________    (In above units)
 Directory blocks  . . 50____           (Zero for sequential data set) *
 Record format . . . . FB____
 Record length . . . . 80____
 Block size  . . . . . 6160
 Data set name type    LIBRARY          (LIBRARY, HFS, PDS, LARGE, BASIC, *
                                         EXTREQ, EXTPREF or blank)
 Expiration date . . . __________       (YY/MM/DD, YYYY/MM/DD
Command ===>
```

Figure 9-3 IPITBLIB allocation

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Figure 9-3 on page 257 defines the persistent table library as a PDSE. PDSE libraries have significant benefits. Your installation might require data, such as Management Class or Storage Class. Complete the necessary fields, and press Enter to allocate to the library.

The "IPITBLIB now available" message in Figure 9-4 confirms a successful persistent table library allocation.

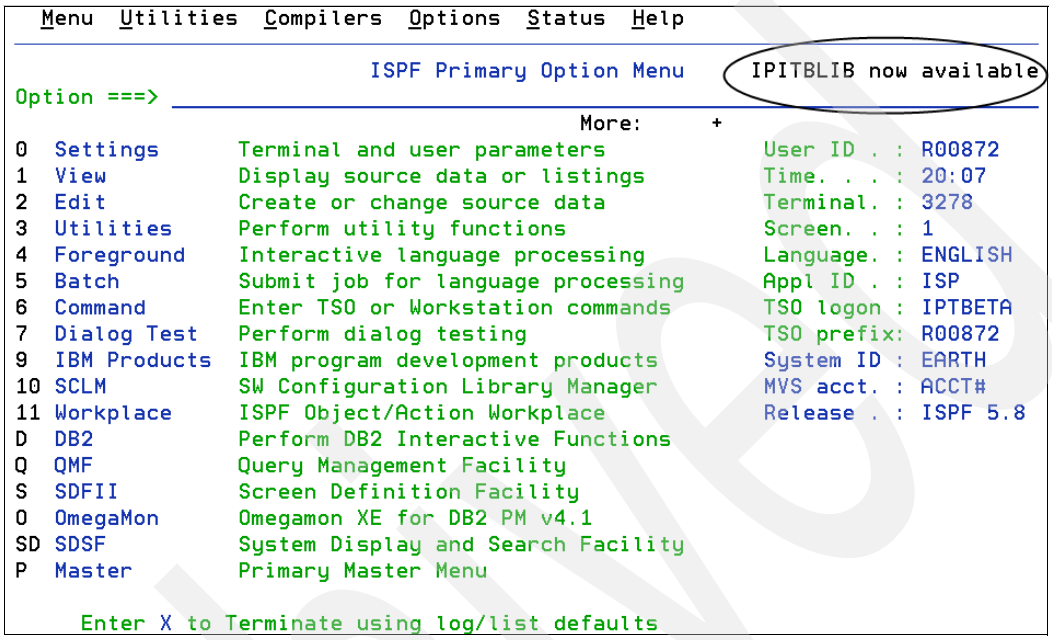

Figure 9-4 IPITBLIB allocation

9.2.2 IPT persistent tables defined by the system programmer

The system programmer can predefine your IPT persistent library for you. If this task is completed, no action is required on your part to use all IPT functions.

9.2.3 IPT persistent tables defined by user customization

If the Elect Persistent Table Use is set to N during the IPT customization, you might receive a message, such as *** HISTORY command list not saved. DD(IPITBLIB)unavailable. ***.

To activate your persistent tables, use the ISET command to invoke IPT defaults as shown in Figure 9-5 on page 259.

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```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                          ISPF Primary Option Menu
Option ===> ISET_
                                                  More:     +
0  Settings      Terminal and user parameters            User ID . : R00872
1  View          Display source data or listings         Time. . . : 20:11
2  Edit          Create or change source data            Terminal. : 3278
3  Utilities     Perform utility functions               Screen. . : 1
4  Foreground    Interactive language processing         Language. : ENGLISH
5  Batch         Submit job for language processing      Appl ID . : ISP
6  Command       Enter TSO or Workstation commands       TSO logon : IPTBETA
7  Dialog Test   Perform dialog testing                  TSO prefix: R00872
9  IBM Products  IBM program development products        System ID : EARTH
10 SCLM          SW Configuration Library Manager        MVS acct. : ACCT#
11 Workplace     ISPF Object/Action Workplace            Release . : ISPF 5.8
D  DB2           Perform DB2 Interactive Functions
Q  QMF           Query Management Facility
S  SDFII         Screen Definition Facility
O  OmegaMon      Omegamon XE for DB2 PM v4.1
SD SDSF          System Display and Search Facility
P  Master        Primary Master Menu

     Enter X to Terminate using log/list defaults
```

Figure 9-5 Using ISET to invoke IPT defaults

From the Setting IBMIPT Defaults menu, enter L to navigate to the persistent table library options panel, as shown in Figure 9-6 and Figure 9-7 on page 260.

```
-IPT- --------------------Setting IBMIPT Defaults------------------------------
COMMAND ===> L_
Select options by number, name, with cursor selection, or with line commands:
 IBMIPT is running under ISPF version 5.8

 _  A - ALL       - Select all the below displayed options
 _  M - MSL       - Member Selection List options
 _  O - OLIST     - Object list options
 _  G - GLOBAL    - Global edit and Findtext options
 _  P - PRINT     - Print options
 _  D - DSLIST    - DSLIST options
 _  T - TSO       - TSO shell options
 _  E - EDIT      - Edit, Browse and View options
 _  I - INTERFACE - Specify user interface options
 _  N - DIAGNOSE  - Diagnose ISPF errors
 _  L - LIBRARY   - Persistent table library options
 _  B - BOOKMGR   - BookManager interface options

   Make your selection and press the ENTER key or press the END key to exit
```

Figure 9-6 Selecting IPT persistent table options

Figure 9-7 shows the options for you to choose an action regarding the use of persistent table libraries. We suggest that you choose option A. Option A allocates and enables the use of persistent table libraries while you are logged on to IPT.

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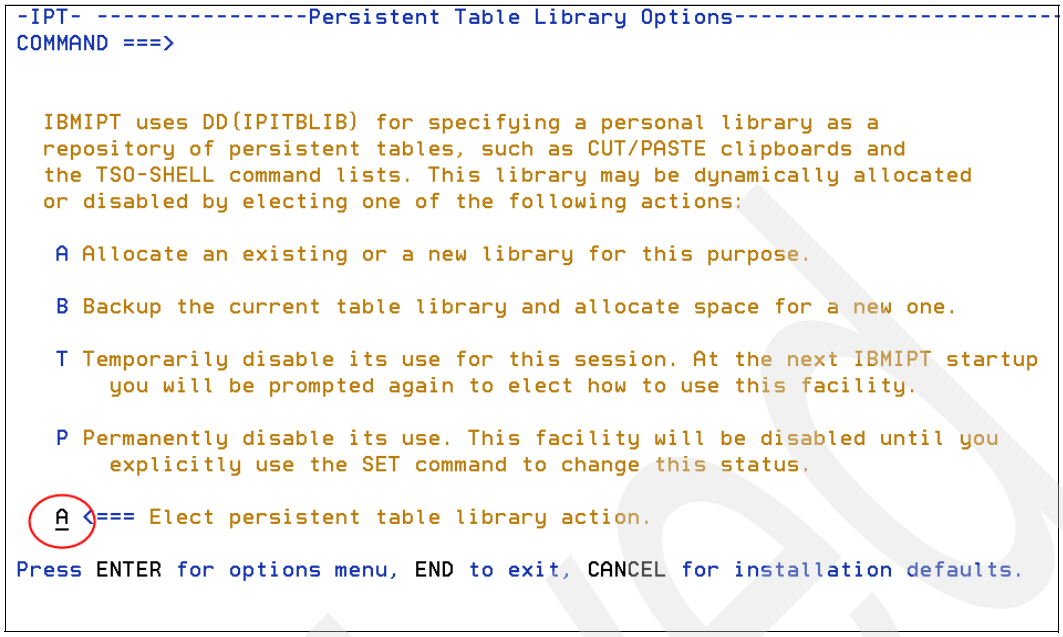

Figure 9-7 Selecting the option to use persistent table library

We describe the remaining options in detail in Chapter 12, “IPT user customization using the IPT SET command” on page 313.

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10

Customizing your ISPF keys for Point-and-Shoot

In this chapter, we show you how to effectively use the Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS Point-and-Shoot functions.

You can use the standard ISPF function keys to minimize the keystrokes that are required when you use the ISPF Productivity Tool Point-and-Shoot functions. In the following sections, we show you how to define the PF4 key to initiate the VIEW primary command when using System Display and Search Facility (SDSF). You can choose to define a PF key for a Browse or Edit command or any of the ISPF Productivity Tool shortcuts that the **IPT?** command shows. You can choose to define any function key to view the file.

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10.1 Customizing IPT with View using PF4

Using IPT, you can view a file by typing `VIEW` *`filename`* on any primary panel. You can also use the Point-and-Shoot capabilities to identify the file by placing your cursor on the file. If you define a PF key for the VI command, you do not have to type the VIEW command to view the file contents.

ISPF has various KEYLIST files that are used to define function keys for various panels. Defining a VIEW command on one panel might not be applicable to other panels. The VIEW command is useful when viewing printed output using SDSF or when using VIEW from an Member Selection List (MSL) or an Object List (OLIST).

Perform these tasks to define the function key that you want to use:

1. Navigate to the panel where you want to set the PF keys, for example, SDSF.
2. Enter `KEYS`.
3. Update the PF key command.
4. Optionally, update the PF key label.
5. Exit from the PF Key Definition and Labels panel.

10.1.1 Defining PF4 for the IPT View command for SDSF

In this section, we show you how to define a PF key to view files with SDSF. Because separate KEYLISTS are used for an Object List and Member Selection Lists, repeat the following steps when you view the Object List and again when you view a Member Selection List.

Figure 10-1 depicts a job in the SDSF output queue.

```
 Display  Filter  View  Print  Options  Help
--------------------------------------------------------------------------------
SDSF STATUS DISPLAY ALL CLASSES                      LINE 1097-1115 (2750)
COMMAND INPUT ===> KEYS                                SCROLL ===> PAGE
NP   JOBNAME  JobID    Owner    Prty Queue      C  Pos  SAff  ASys Status
     DNET9743 JOB03370 DNET974     1 PRINT      A   534
     VSAMNEW  JOB03395 DDS1019     1 PRINT      A   535
     DNET9744 JOB03423 DNET974     1 PRINT      A   536
     DNET9740 JOB03430 DNET974     1 PRINT      A   537
     DNET249Y JOB03795 DNET249     1 PRINT      A   538
     DNET163S JOB03899 DNET163     1 PRINT      A   539
     BPXAS    STC03848 OMVS        1 PRINT          540            PROT
     DBA282D  JOB03925 DBA282      1 PRINT      A   541
     DNET9749 JOB03954 DNET974     1 PRINT      A   542
     DNET9748 JOB03956 DNET974     1 PRINT      A   543
     DNET9749 JOB03960 DNET974     1 PRINT      A   544
     DMPREST  JOB03959 KLTAYLO     1 PRINT      A   545
     DMPFIX2  JOB03968 KLTAYLO     1 PRINT      A   546
     DMPFIX2  JOB03969 KLTAYLO     1 PRINT      A   547
     SELUP2   JOB04138 DNET066     1 PRINT      A   548
     SELUP2   JOB04142 DNET066     1 PRINT      A   549
     DAFLINK  JOB04230 DDS0280     1 PRINT      A   550
     DDS0734R JOB04302 DDS0734     1 PRINT      A   551
     DDS07341 JOB04303 DDS0734     1 PRINT      A   552
```

Figure 10-1 SDSF queue: Invocation of PF Key Definitions and Labels panel

The KEYS command displays the PF Key Definitions and Labels panel, as shown in Figure 10-2. Change the PF4 setting to `VI`. Optionally, you can add a Label. Press PF3 to return to the SDSF list of output Jobs.

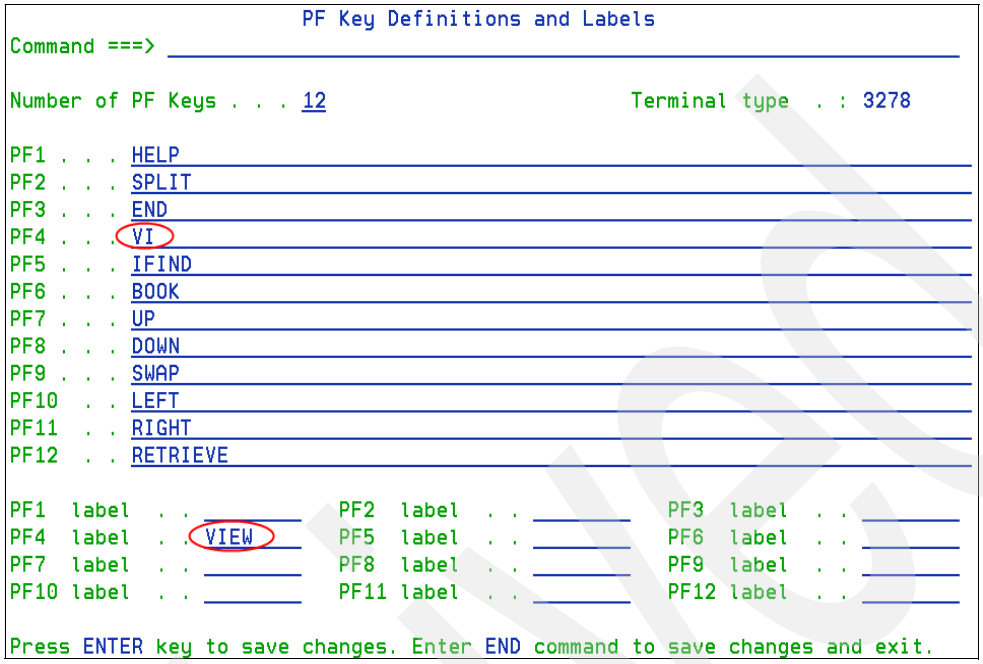

Figure 10-2 PF Key Definitions and Labels panel

Note: It is better to assign the primary commands to Alternate PF keys (F13-F24) so that we retain the functionality of the Primary PF keys (F1-F12), which are extensively used.

Select a job from the output queue, as shown in Figure 10-3 on page 264.

Archive

```
  Display  Filter  View  Print  Options  Help
--------------------------------------------------------------------------------
SDSF STATUS DISPLAY ALL CLASSES                          LINE 1097-1115 (2750)
COMMAND INPUT ===>                                         SCROLL ===> PAGE
NP   JOBNAME  JobID    Owner    Prty Queue      C  Pos  SAff  ASys Status
     DNET9743 JOB03370 DNET974     1 PRINT      A   534
S    VSAMNEW  JOB03395 DDS1019     1 PRINT      A   535
     DNET9744 JOB03423 DNET974     1 PRINT      A   536
     DNET9740 JOB03430 DNET974     1 PRINT      A   537
     DNET249Y JOB03795 DNET249     1 PRINT      A   538
     DNET163S JOB03899 DNET163     1 PRINT      A   539
     BPXAS    STC03848 OMVS        1 PRINT          540           PROT
     DBA282D  JOB03925 DBA282      1 PRINT      A   541
     DNET9749 JOB03954 DNET974     1 PRINT      A   542
     DNET9748 JOB03956 DNET974     1 PRINT      A   543
     DNET9749 JOB03960 DNET974     1 PRINT      A   544
     DMPREST  JOB03959 KLTAYLO     1 PRINT      A   545
     DMPFIX2  JOB03968 KLTAYLO     1 PRINT      A   546
     DMPFIX2  JOB03969 KLTAYLO     1 PRINT      A   547
     SELUP2   JOB04138 DNET066     1 PRINT      A   548
     SELUP2   JOB04142 DNET066     1 PRINT      A   549
     DAFLINK  JOB04230 DDS0280     1 PRINT      A   550
     DDS0734R JOB04302 DDS0734     1 PRINT      A   551
     DDS07341 JOB04303 DDS0734     1 PRINT      A   552
```

Figure 10-3 SDSF: Select a job from the output queue

The Find command locates the file and puts the cursor under the file name, as shown in Figure 10-4 and Figure 10-5 on page 265.

```
  Display  Filter  View  Print  Options  Help
--------------------------------------------------------------------------------
SDSF OUTPUT DISPLAY VSAMNEW  JOB02184  DSID     2 LINE 0       COLUMNS 02- 81
COMMAND INPUT ===> F CHISTRG.CTL                             SCROLL ===> PAGE
******************************** TOP OF DATA ***********************************
                 J E S 2  J O B  L O G  --  S Y S T E M  M V S A  --  N O D E

13.39.48 JOB02184 ---- FRIDAY,    23 JAN 2009 ----
13.39.48 JOB02184  ICH70001I DDS1019  LAST ACCESS AT 12:21:27 ON FRIDAY, JANUARY
13.39.48 JOB02184  $HASP373 VSAMNEW  STARTED - INIT 26   - CLASS A - SYS MVSA
13.39.48 JOB02184  IEF403I VSAMNEW - STARTED - TIME=13.39.48
13.39.48 JOB02184  -                                     --TIMINGS (MINS.)--
13.39.48 JOB02184  -JOBNAME  STEPNAME PROCSTEP    RC   EXCP    CPU    SRB  CLOCK
13.39.48 JOB02184  -VSAMNEW           VSAM01      08    175    .00    .00    .00
13.39.49 JOB02184  -VSAMNEW           VSAM02      12     41    .00    .00    .00
13.39.49 JOB02184  IEF404I VSAMNEW - ENDED - TIME=13.39.49
13.39.49 JOB02184  -VSAMNEW  ENDED.  NAME-CHAITRA             TOTAL CPU TIME=
13.39.49 JOB02184  $HASP395 VSAMNEW  ENDED
------ JES2 JOB STATISTICS ------
 23 JAN 2009 JOB EXECUTION DATE
         32 CARDS READ
        240 SYSOUT PRINT RECORDS
 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=IFIND     F6=BOOK
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 10-4 Locating a file in the SDSF output

Figure 10-5 on page 265 shows where the file DDS1019.CHISTRG.CTLFILE2 is located. Use PF4 to View the file.

```
  Display  Filter  View  Print  Options  Help
 ------------------------------------------------------------------------------
 SDSF OUTPUT DISPLAY VSAMNEW  JOB03395  DSID   102 LINE  CHARS 'DDS1019.CHISTRG.
 COMMAND INPUT ===>                                          SCROLL ===> PAGE
   DEFINE CLUSTER (NAME(DDS1019.CHISTRG.CTLFILE2) -                      00001500
                  SHAREOPTIONS (1 3) -                                   00001700
                  IXD KEYS (8 0) -                                       00001800
                  TRK (3 1) -                                            00001900
                  RECORDSIZE (100 100) -                                 00002000
                  RECOVERY -                                             00002100
                  REUSE) -                                               00002200
          DATA    (NAME(DDS1019.CHISTRG.CTLFILE2.DATA)) -                00002300
          INDEX   (NAME(DDS1019.CHISTRG.CTLFILE2.INDEX))                 00002400
IDC0508I DATA ALLOCATION STATUS FOR VOLUME DMPU45 IS 0
IDC0509I INDEX ALLOCATION STATUS FOR VOLUME DMPU45 IS 0
IDC0181I STORAGECLASS USED IS USRBASE
IDC0181I MANAGEMENTCLASS USED IS USRMGMT
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

   REPRO -                                                               00002500
          INFILE(INDD) -                                                 00002600
  F1=HELP      F2=SPLIT     F3=END      F4=VIEW      F5=IFIND     F6=BOOK  F4
  F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRI
```

Figure 10-5 SDSF output: VSAM file has been located – Use PF4 to View

IPT is customized to invoke the File Manager product when you View, Browse, or Edit a VSAM file, as shown in Figure 10-6.

```
 Process   Options   Help
 ------------------------------------------------------------------------------
 Browse          DDS1019.CHISTRG.CTLFILE2                        Top of 13
 Command ===> ____________________________________________________ Scroll PAGE
                          Type KSDS     RBA ____________________ Format CHAR
 Key ____________________________________    Col 1______
 <===+==>-10---+----2----+----3----+----4----+----5----+----6----+----7----+----
 ****  Top of data  ****
 CHCNS0                                  199902000000000
 CHCNS0 . .            .             19992000012113221756   .
 CHCNS0 . .            .             19992000012415263822   .
 CHCNS0 . .            .             19992000012616143261   j
 CHCNS0 . .            .             19992000012815051146   4
 CHCNS0 . .            .             19992000020114355106
 CHCNS0 . .            .             19992000020408140295   r
 CHCNS0 . .            .             19992000020411174282
 CHCNS0 . .            .             19992000022211331704   2
 CHCNS0 . .            .             19992000031009514390   {
 CHCNS0 ¢ ¢            ¢             19992000032210252470   Ý
 CHCNS0 . .            .             19992000032213064471
 CHCNS0 < <            <             19992000032708001130   6
 ****  End of data  ****
```

Figure 10-6 File Manager invoked with PF4 for View

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A prior FIND command in Figure 10-4 on page 264 has positioned the cursor on the second qualifier of the file. IPT recognizes this file name and appends the user DDS1019 prefix to the file name when using PF4, as shown in Figure 10-7.

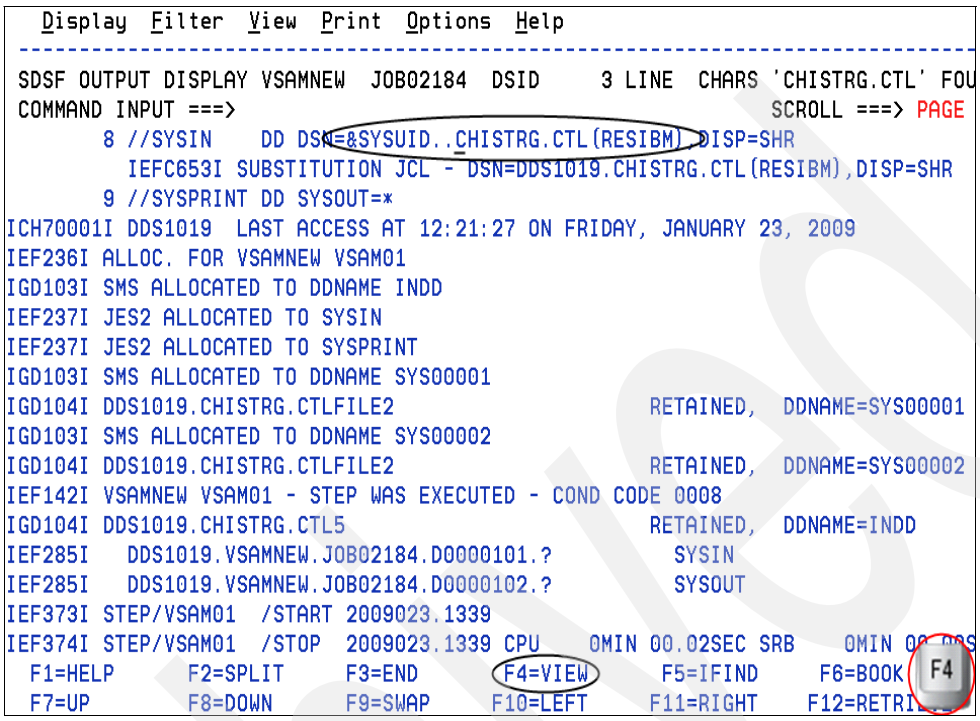

Figure 10-7 SDSF output: Sequential file located

IPT displays the file DDS1019.CHISTRG.CTL(RESIBM), as shown in Figure 10-8.

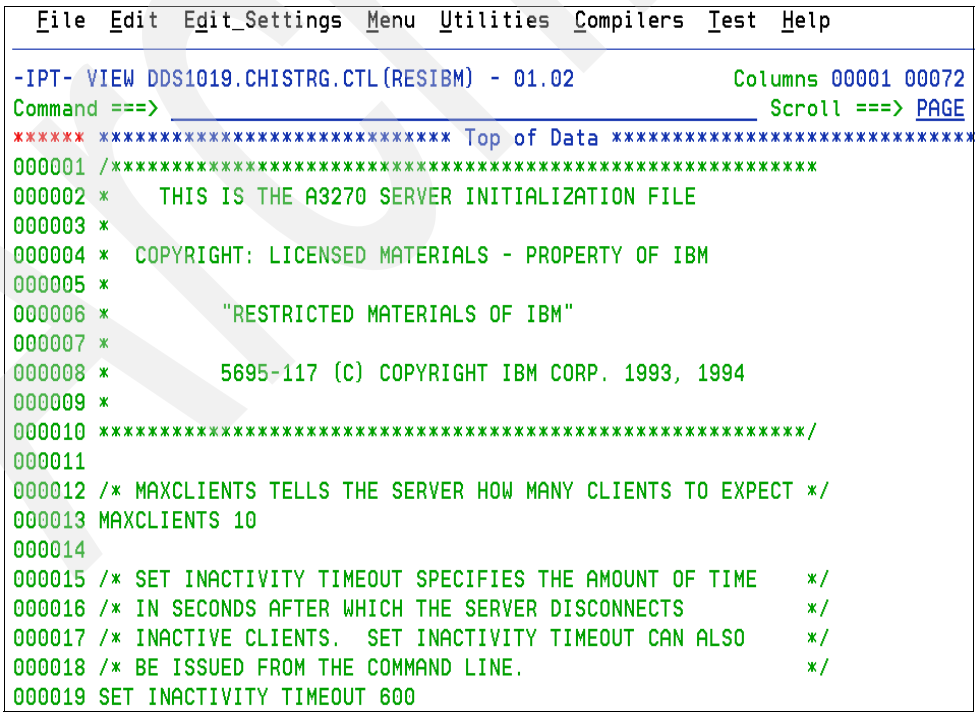

Figure 10-8 IPT View invoked

10.2 IPT Point-and-Shoot to invoke an Object List

You can assign the primary command OL to a PF key, as shown in Figure 10-9.

```
                        PF Key Definitions and Labels
Command ===> ____________________________________________________________
                                                                More:     +
Number of PF Keys . . . 12                        Terminal type  . : 3278

PF1 . . . HELP
PF2 . . . SPLIT
PF3 . . . END
PF4 . . . OL
PF5 . . . IFIND
PF6 . . . BOOK
PF7 . . . UP
PF8 . . . DOWN
PF9 . . . SWAP
PF10  . . LEFT
PF11  . . RIGHT
PF12  . . RETRIEVE

PF1  label  . . ________   PF2  label  . . ________   PF3  label  . . ________
PF4  label  . . OLIST___   PF5  label  . . ________   PF6  label  . . ________
PF7  label  . . ________   PF8  label  . . ________   PF9  label  . . ________
PF10 label  . . ________   PF11 label  . . ________   PF12 label  . . ________
```

Figure 10-9 Assigning the OL command to the PF4 key

While browsing through the SDSF panel, you can invoke the Object List of a file by keeping the cursor on the file name and pressing PF4 as shown in Figure 10-10.

```
  Display  Filter  View  Print  Options  Help
 ------------------------------------------------------------------------------
 SDSF OUTPUT DISPLAY VSAMNEW  JOB02184  DSID   102 LINE 1       COLUMNS 02- 81
 COMMAND INPUT ===>                                          SCROLL ===> PAGE
IDCAMS  SYSTEM SERVICES                                        TIME: 13:39:48

   DELETE      (DDS1019.CHISTRG.CTLFILE2) CLUSTER PURGE                 00001300
IDC0550I ENTRY (D) DDS1019.CHISTRG.CTLFILE2.DATA DELETED
IDC0550I ENTRY (I) DDS1019.CHISTRG.CTLFILE2.INDEX DELETED
IDC0550I ENTRY (C) DDS1019.CHISTRG.CTLFILE2 DELETED
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

   SET MAXCC=0                                                          00001400

   DEFINE CLUSTER (NAME(DDS1019.CHISTRG.CTLFILE2) -                     00001500
                   SHAREOPTIONS (1 3) -                                 00001700
                   IXD KEYS (8 0) -                                     00001800
                   TRK (3 1) -                                          00001900
                   RECORDSIZE (100 100) -                               00002000
                   RECOVERY -                                           00002100
                   REUSE) -                                             00002200
  F1=HELP      F2=SPLIT     F3=END       F4=OLIST     F5=IFIND     F6=BOOK
  F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIE
```

Figure 10-10 Place the cursor on the file and press PF4 to view the Object List

IPT displays the Object List of the file DDS1019.CHISTRG.CTLFILE2, as shown in Figure 10-11.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1019.CHISTRG.CTLFILE2 --- Row 1 to 3 of 3
Command    ===>                                              SCROLL ===> PAGE
Hotbar?
                                                           *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ------------------------------------------- -------
                      1 'DDS1019.CHISTRG.CTLFILE2'
                      2 'DDS1019.CHISTRG.CTLFILE2.DATA'               DMPU07
                      3 'DDS1019.CHISTRG.CTLFILE2.INDEX'              DMPU07
                       ---------------- END OF LIST ----------------
```

Figure 10-11 IPT Object List invoked

10.3 Using the IPT Point-and-Shoot Commands with an MSL

In this section, PF4 invokes the VIEW command. Select the $INDEX member from the DDS1019.MASTER.DATA dataset. This member contains a list of important members within this PDS, as shown in Figure 10-12.

```
 File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
--------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- LEVEL DDS1019.* ---------------- Row 1 to 12 of 12
Command    ===>  10 V $INDEX                                 SCROLL ===> PAGE
Hotbar?
                                                           *TEMPORARY LIST*
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Volume
--------- -------- ----- ------------------------------------------- -------
                      1 'DDS1019.CHISTRG.CTL'                         DMPU45
                      2 'DDS1019.CHISTRG.CTLFILE2'
                      3 'DDS1019.CHISTRG.CTLFILE2.DATA'               DMPU07
                      4 'DDS1019.CHISTRG.CTLFILE2.INDEX'              DMPU07
                      5 'DDS1019.CHISTRG.CTL5'                        DMPU33
                      6 'DDS1019.HFS'                                 DMPU05
                      7 'DDS1019.ISPF.IPITBLIB'                       DMPU41
                      8 'DDS1019.ISPF.ISPPROF'                        DMPU24
                      9 'DDS1019.JCS.JCLLIB'                          DMPU43
                     10 'DDS1019.MASTER.DATA'                         DMPU04
                     11 'DDS1019.SPFLOG1.LIST'                        DMPU43
                     12 'DDS1019.SPFTEMP0.CNTL'                       DMPU18
```

Figure 10-12 View the $INDEX member

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With IPT, you can view datasets or members using the VIEW command. When you are in an MSL, an OLIST, or a Hierarchy, you can view members by putting your cursor on the member name and pressing PF4 to invoke the VIEW command, as shown in Figure 10-13.

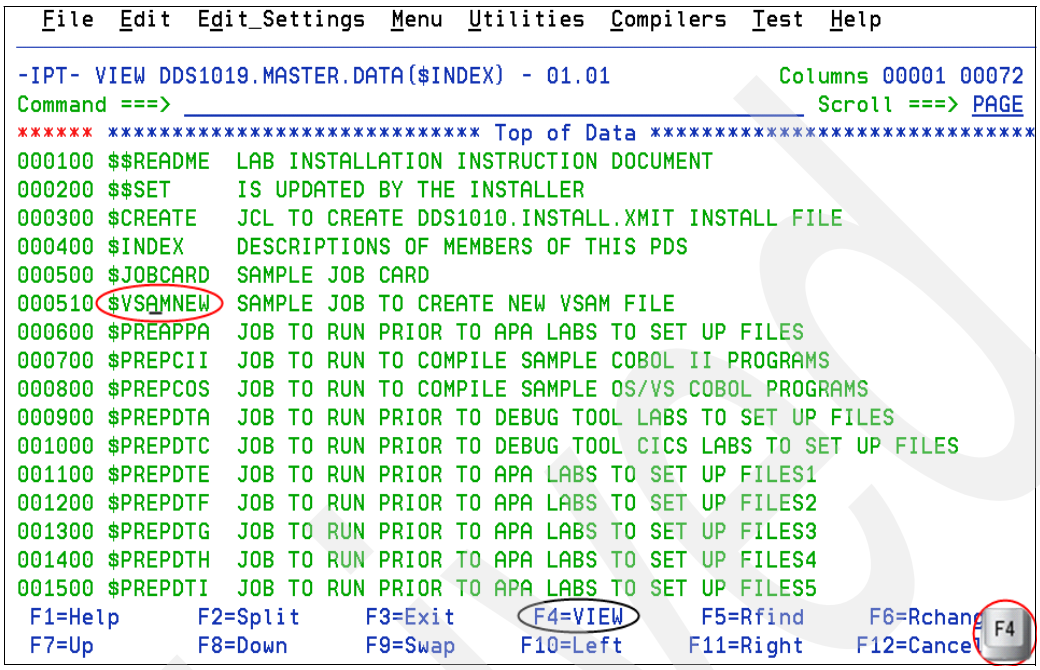

Figure 10-13 Using Point-and-Shoot VIEW command within an MSL member

The member viewed with PF4 is shown in Figure 10-14.

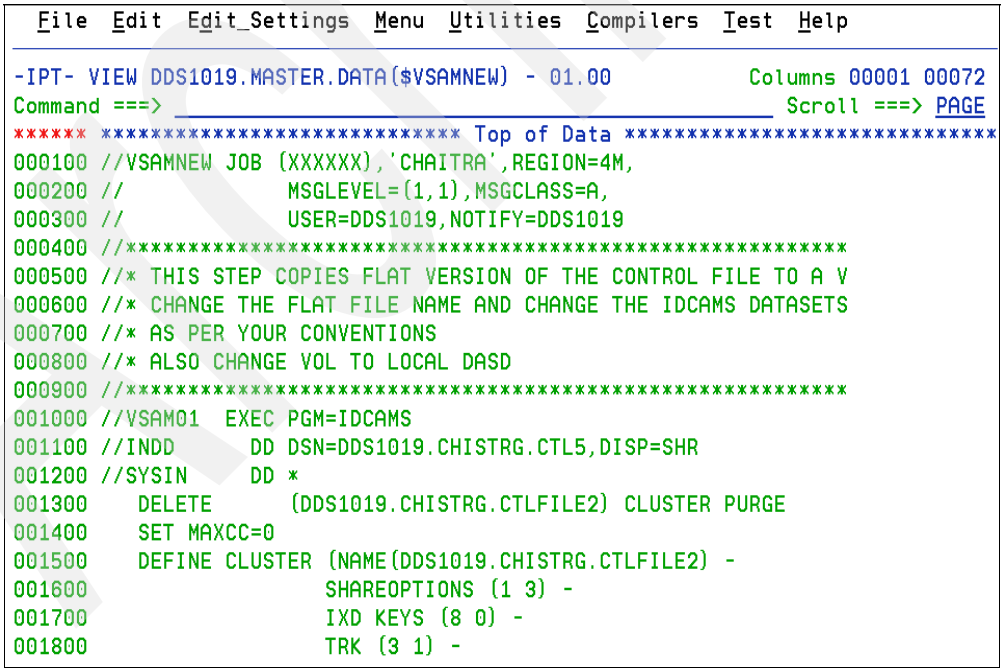

Figure 10-14 MSL member viewed with PF4 key

10.4 Invoking z/OS UNIX Object names using Point-and-Shoot

In this section, PF4 invokes the EDIT command. Keep the cursor under the z/OS UNIX file name DDS1019.NEW and press PF4 to invoke the EDIT command, as shown in Figure 10-15.

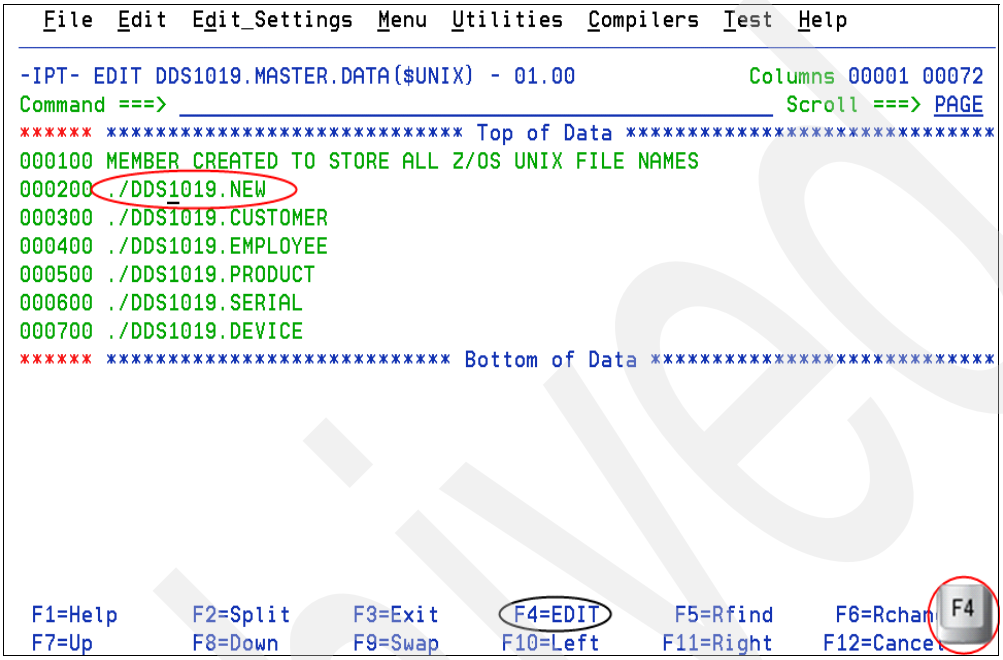

Figure 10-15 Invoking a UNIX file for Edit using Point-and-Shoot

The UNIX file is opened for Edit, as shown in Figure 10-16.

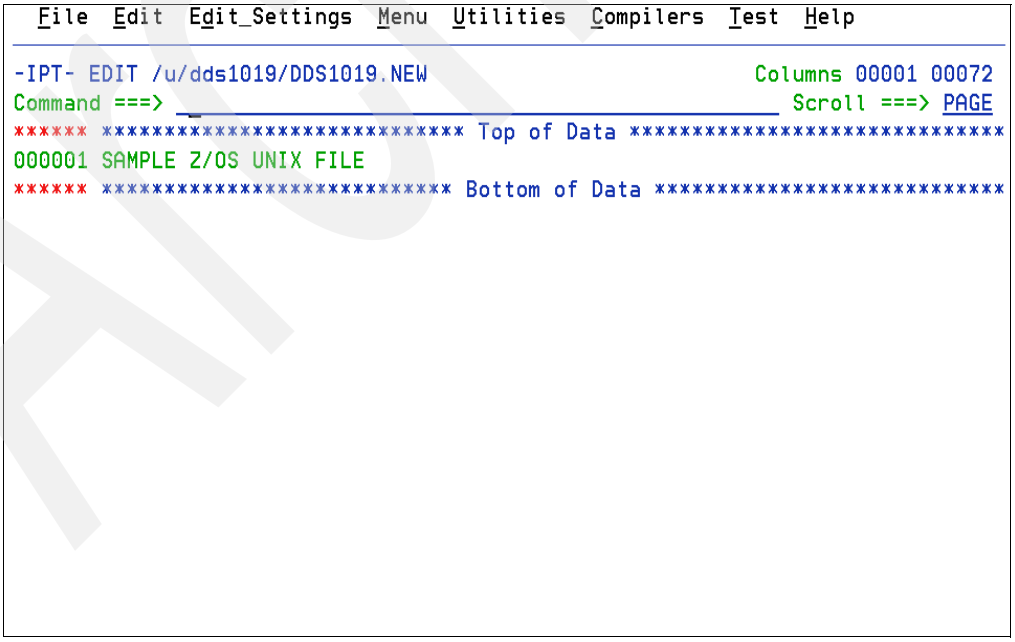

Figure 10-16 UNIX file opened for Edit

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10.5 Translation of symbolic information using Point-and-Shoot

The IPT Point-and-Shoot function resolves a set of defined System symbols, which can be displayed using the MVS operator command D SYMBOLS, as shown in Figure 10-17.

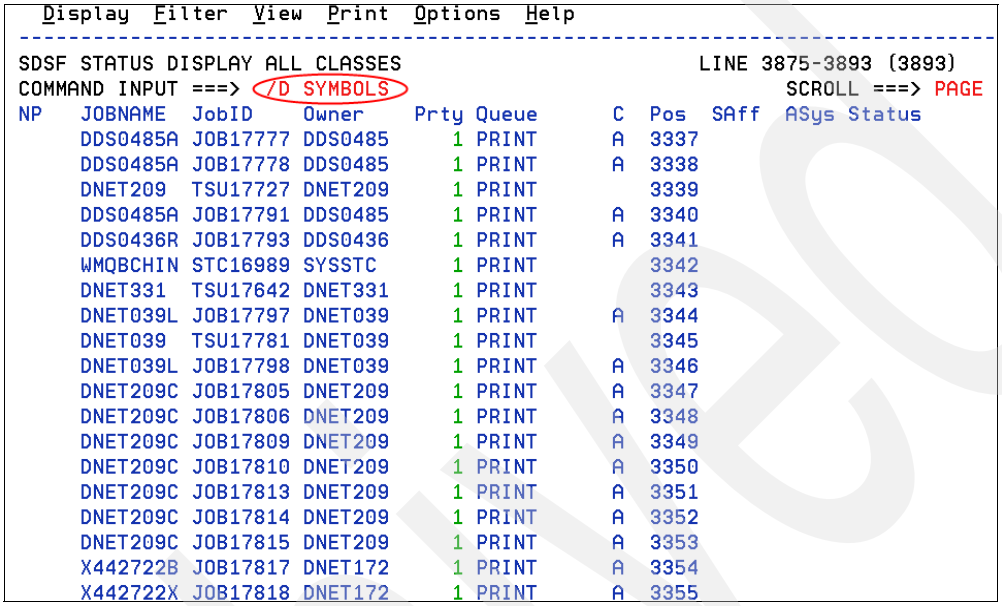

Figure 10-17 Enter the MVS operator command in the SDSF panel and press Enter

The System symbols are displayed as shown in Figure 10-18.

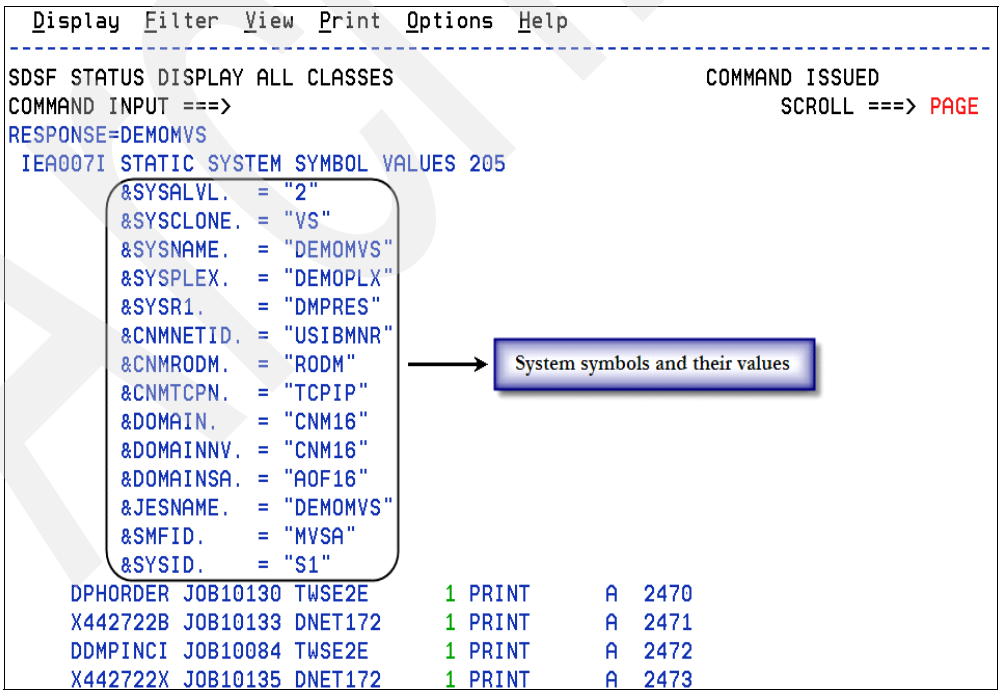

Figure 10-18 System symbols and their values

The System symbol &SYSR1 is defined with the value of DMPRES. The DMPRES is the disk volume on which the datasets reside. You can display the Volume Table of Contents (VTOC) that provides a way of locating the datasets that reside on the DMPRES disk volume. Type the command OLV on the main command line, position the cursor on the System symbol **&SYSR1**, and then press Enter, as illustrated in Figure 10-19.

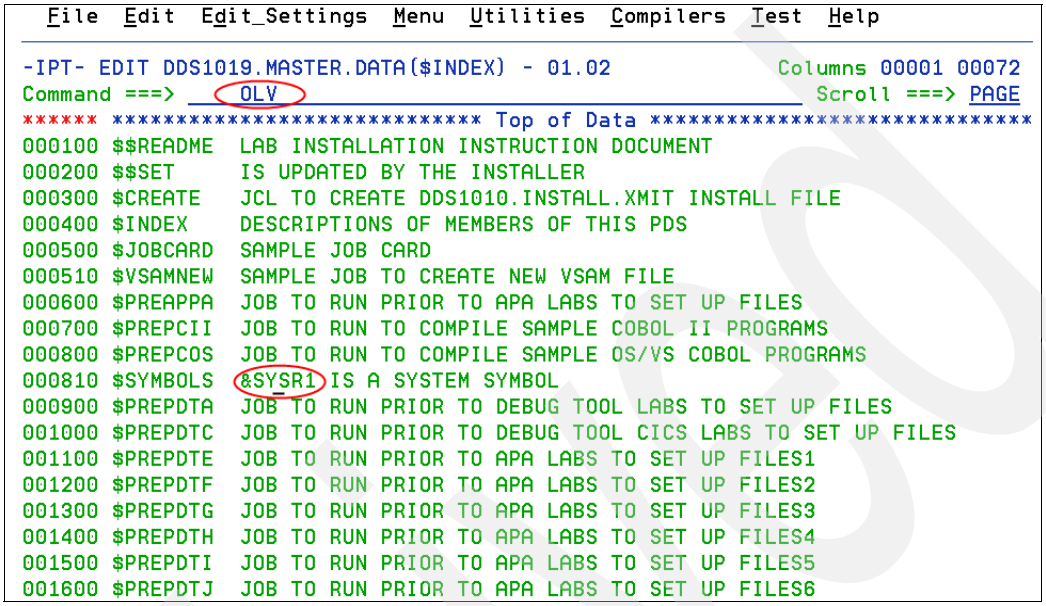

Figure 10-19 Type OLV in command line, position the cursor on &SYSR1, and press Enter

The VTOC list of datasets residing on the DMPRES disk volume is displayed as shown in Figure 10-20.

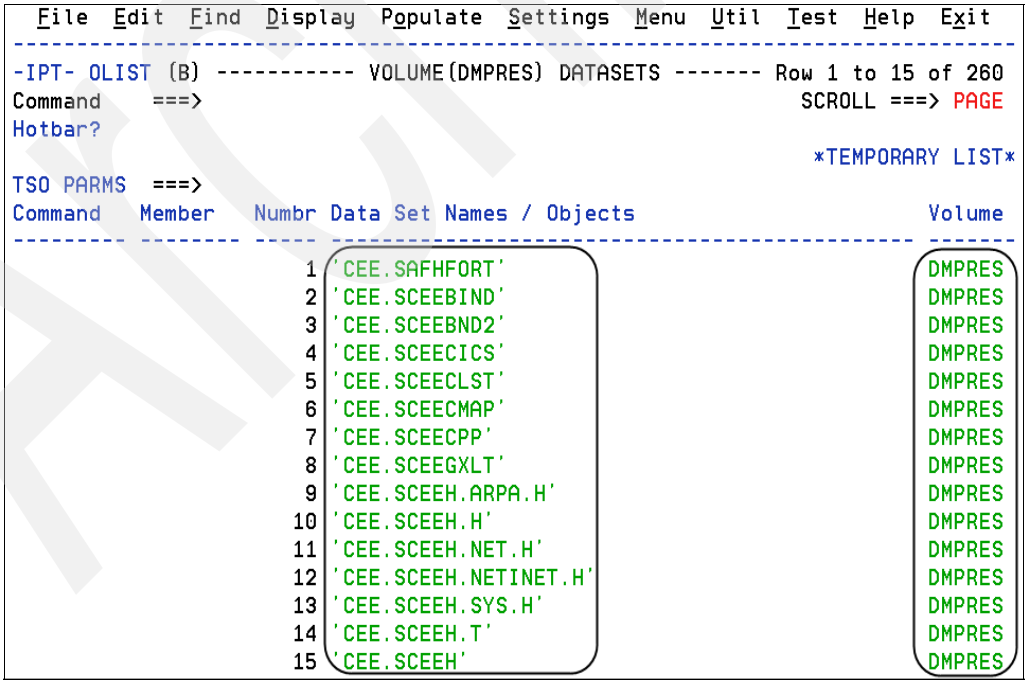

Figure 10-20 VTOC list of datasets residing on the DMPRES disk volume

11

Installing IPT V6.1 on z/OS

In this chapter, we describe the installation procedures for Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS on the z/OS environment.

IBM delivers IPT V6.1 in tapes as a custom-built product delivery offering (CDBPO) to you at the address that was specified during the ordering process.

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11.1 Installation requirements for IPT V6.1

Figure 11-1 shows the beginning of our IPT installation.

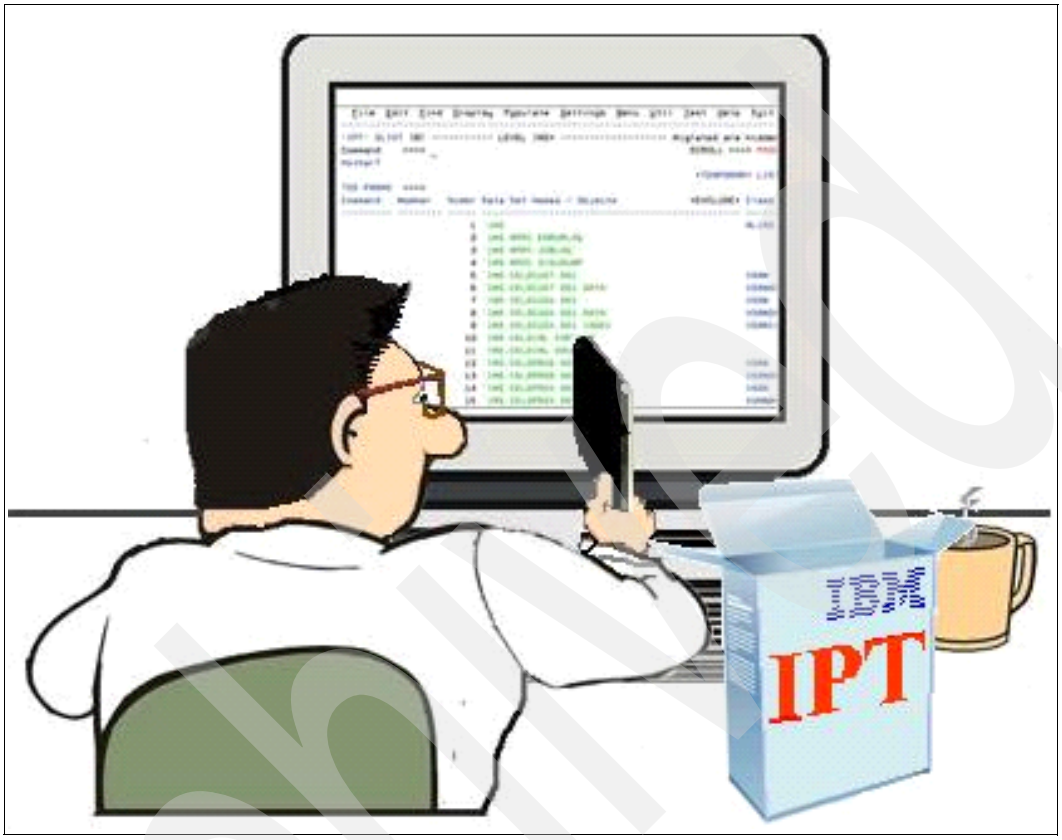

Figure 11-1 Installation

The operating system z/OS Version 1 Release 7 or later is the system software required for the installation and operation of IPT Version 6 Release 1.

Installing IPT does not require an IPL or authorized mode. While you invoke IPT, it uses the libraries to which the Time Sharing Option (TSO) LOGON procedure or the CLIST point.

Therefore, we can install IPT on a system-wide basis or only for selected programmers. The IPT code is fully reentrant. Most of the IPT code resides above the 16 MB line. Mostly, IPT acquires working storage above the 16 MB line.

11.2 Contents of the IPT product package

In this section, we describe the contents of the IPT product package.

11.2.1 Custom-built product delivery offering tapes

A custom-built product delivery offering (CBPDO) tape is usually for a particular feature (CICS, database system, MVS, or NCP). These features correspond to the SRELs to which products are applicable. A CBPDO tape contains the PTFs, HOLDDATA, and preventive

service planning (PSP) upgrade files to bring your system up to a service level that you select.

The CBPDO tape is a standard label (SL) tape, with files arranged in the format that is shown in Table 11-1.

Table 11-1 Format of a CBPDO tape

File number	Processed by SMP/E	Contents
	No	Documents
	No	Installation RDBMS Interface Module (RIMs)
	Yes	HOLDDATA for exception SYSMODs
	No	Program directories and PSP information
	Yes	SMPMCS file (MCS statements for SYSMODs on the tape), PTFs, and cover letters
6 – 14	Yes	Relative files (RELFILEs) for products on the tape

CBPDO contains a product and services on a single logical tape. It contains the following installation materials:

- Sample jobs to receive products and service
- Program directories for the products that you have ordered
- Installation manuals for the products that you have ordered
- The IPT V6.1 CDBPO package that is delivered to customer contains these items:
  - Relative file (RELFILE) tape
  - Object code only (OCO)
  - Source code (optional)
- Program directory (installation manual)

Relative file tape

A relative file tape, or RELFILE tape, is a standard label tape made up of two or more files. It contains a file of the MCS for one or more functions. It also contains one or more relative files that contain unloaded source datasets and unloaded link-edited datasets that contain executable modules. The relative files might also contain other data, such as sample procedures. These unloaded partitioned datasets (PDSs) are in a format for installation on a z/OS system or subsystem by SMP/E.

The product distribution tape contains the following files in JES2 XMIT format, as shown in Table 11-3 on page 277. The file attributes are the attributes of the resulting files when loaded onto disk. Use the TSO RECEIVE command to process the product distribution tape files.

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Table 11-2 Table 11-3 on page 277 Contents of product distribution tape

File	Library
Relative File 1	AIQIINST library: JCL and other members required to install and maintain IPT File name: IBM.HIQI610.F1.XMIT RECFM=FB, LRECL=80, BLKSIZE=8800
Relative File 2	AIQICLIB CLIST library: CLISTs used by IPT in fixed-length format File name: IBM.HIQI610.F2.XMIT RECFM=FB, LRECL=80, BLKSIZE=8800
Relative File 3	AIQICLBV library: same as File 2, but in variable-length format File name: IBM.HIQI610.F3.XMIT RECFM=VB, LRECL=251, BLKSIZE=8785
Relative File 4	AIQILOAD library: IPT load modules for private use File name: File name: IBM.HIQI610.F4.XMIT RECFM=U, LRECL=0, BLKSIZE=6144
Relative File 5	AIQILPA library: IPT load modules for LPA File name: IBM.HIQI610.F5.XMIT RECFM=U, LRECL=0, BLKSIZE=6144
Relative File 6	AIQIMLIB IPT message library File name: IBM.HIQI610.F6.XMIT RECFM=FB, LRECL=80, BLKSIZE=8800
Relative File 7	AIQIPLIB IPT panel library File name: IBM.HIQI610.F7.XMIT RECFM=FB, LRECL=80, BLKSIZE=32720
Relative File 8	AIQISLIB IPT skeleton library File name: IPT.BETA610.SIQISLIB RECFM=FB, LRECL=80, BLKSIZE=8800
Relative File 9	AIQITLIB IPT ISPF table library File name: IPT.BETA610.SIQITLIB RECFM=FB, LRECL=80, BLKSIZE=8800

Program directory (installation manual)

The program directory (installation manual) is a document that ships with each release of a product. Its primary purpose is to document the installation of the product.

The program directory is part of the informal documentation of the product. It does not contain changes that are unrelated to installation or detailed information that is available in a technical newsletter or replacement publication.

Contents of the program directory

The program directory model explains what information is to be included in the program directory. The program directory performs the following functions:

- Describes all of the machine-readable material and publications
- Documents which systems, concurrent programs, and machines are required
- Provides details about how to install the product
- Documents the support that is available for the product
- Identifies program and service levels to use when communicating with personnel
- Identifies the resources needed to install the program and the impact of its use on an existing data processing system

11.3 IPT installation

You must install and maintain the delivered product code using SMP/E, as described in the Program Directory for IBM IPT V6.1.0, program number 5698-R21, FMID HIQI610.
Table 11-3 and Table 11-4 list the target and distribution libraries (datasets) that are used by IPT and their contents.

Table 11-3 Distribution dataset descriptions

Library	Description
AIQICLBV	IPT CLIST library (variable blocked)
AIQICLIB	IPT CLIST library (fixed blocked)
AIQIINST	IPT installation and maintenance sample JCL library
AIQILOAD	IPT Linklist load library
AIQILPA	IPT link pack area (LPA) load library
AIQIMLIB	IPT ISPF-message library
AIQIPLIB	IPT ISPF-panel library
AIQISLIB	IPT ISPF-skeleton library
AIQITLIB	IPT ISPF-table library

Table 11-4 Target dataset descriptions

Library	Description
SIQICLBV	IPT CLIST library (variable blocked)
SIQICLIB	IPT CLIST library (fixed blocked)
SIQIINST	IPT installation and maintenance sample JCL library
SIQILOAD	IPT Linklist load library
SIQILPA	IPT LPA load library
SIQIMLIB	IPT ISPF-message library
SIQIPLIB	IPT ISPF-panel library
SIQISLIB	IPT ISPF-skeleton library
SIQICLBV	IPT CLIST library (variable blocked)
SIQITLIB	IPT ISPF-table library

11.3.1 Sample jobs

Table 11-5 on page 278 shows sample installation jobs that are part of the product. It is useful during the installation of IPT.

Table 11-5 Sample installation jobs

Job name	Job type	Description	RELFILE
IQIJRECV	RECEIVE	Sample RECEIVE job	IBM.HIQI610.F1
IQIJALIB	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HIQI610.F1
IQIJDDDF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HIQI610.F1
IQIJAPLY	APPLY	Sample APPLY job	IBM.HIQI610.F1
IQIJACPT	ACCEPT	Sample ACCEPT job	IBM.HIQI610.F1

The mainframe enterprise that we selected has multiple logical partitions (LPARs) running various z/OS releases. We wanted to use the same IPT target libraries on all LPARs, regardless of their z/OS level. The IPT is independent of the z/OS and ISPF release. It dynamically enables or disables any IPT functions that are dependent on certain z/OS or ISPF releases. Consider maintaining a dedicated SMP/E global zone that serves as single point of IPT maintenance for all of the z/OS images of your enterprise, which is called the *IPT single point of maintenance option*.

To access the sample installation jobs

Follow these steps to access the sample installation jobs:

1. Perform an SMP/E RECEIVE, and then, copy the jobs from the RELFILES to a work dataset for editing and submission. See Table 11-5 to find the appropriate RELFILE dataset.
2. Copy the files numbered 3, 5, and 6-14, which we mentioned in Table 11-1 on page 275, to DASD on the LPAR.
3. The job in Example 11-1 shows the JCL statements to use to copy the contents of RELFILE 1 into DASD. Use either the `//TAPEIN` or the `//FILEIN DD` statement, depending on the distribution medium, and comment out or delete the other statement:
   - Add a job card, and change the lowercase parameters to uppercase values to meet your site's requirements before you submit.

Example 11-1 Sample job

```
//STEP1     EXEC PGM=IEBCOPY
//SYSPRINT  DD SYSOUT=*
//TAPEIN     DD DSN=IBM.HIQI610.F1,UNIT=tunit
//          VOL=SER=volser,LABEL=(x,SL),
//          DISP=(OLD,KEEP)
//FILEIN    DD DSN=IBM.HIQI610.F1,UNIT=SYSALLDA,DISP=SHR,
//          VOL=SER=filevol
//OUT       DD DSNAME=jcl-library-name,
//          DISP=(NEW,CATLG,DELETE),
//          VOL=SER=dasdvol,UNIT=SYSALLDA,
//          SPACE=(TRK,(5,1,3))
//SYSUT3    DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN     DD *
      COPY INDD=xxxxIN,OUTDD=OUT
/*
```

Archive

– If using TAPEIN:
  - *tunit* is the unit value that matches the product tape.
  - *volser* is the volume serial matching the product tape.
  - *x* is the tape file number where the dataset name is on the tape.
  - Refer to the documentation provided by CBPDO to see where IBM.HIQI610.F1 is on the tape.
– If using FILEIN:
  - *filevol* is the volume serial of the DASD device where the downloaded files reside.
– OUT:
  - *jcl-library-name* is the name of the output dataset where the sample jobs are stored.
  - *dasdvol* is the volume serial of the DASD device where the output dataset will reside.
– SYSIN:
  - *xxxxIN* is either TAPEIN or FILEIN depending on your input DD statement.

11.3.2 Allocating SMP/E global zone consolidated software inventory libraries

Edit and submit sample job IQIJALIB to allocate the SMP/E target and distribution libraries for the IPT. Consult the instructions in the sample job for more information.

We used the JCL named IQIJALGZ to delete, define, and prime the VSAM files for Global Zone consolidated software inventory (CSI), as shown in Example 11-2.

Example 11-2 JCL IQIJALGZ

```
//IQIJALGZ JOB  'ACCOUNT INFORMATION','ALLOC GLOBAL ZONE',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//       NOTIFY=&SYSUID
//DELDEF1  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DELETE IQI.V6R1M0.GLOBAL.CSI                          /* <==1  */

  DEFINE CLUSTER(NAME(IQI.V6R1M0.GLOBAL.CSI)            /* <==1  */ -
                 FREESPACE(20, 5)                            -
                 KEYS(24 0)                                  -
                 RECORDSIZE(24 143)                          -
                 SHAREOPTIONS(2)                             -
                 UNIQUE                                      -
                 VOLUME(SUPT01))                   /* <==2  */ -
           DATA(NAME(IQI.V6R1M0.GLOBAL.CSI.DATA)       /* <==1  */ -
                 CONTROLINTERVALSIZE(4096)                   -
                 CYLINDER(10 1))                             -
           INDEX(NAME(IQI.V6R1M0.GLOBAL.CSI.INDEX)     /* <==1  */ -
                 CONTROLINTERVALSIZE(1024)                   -
                 TRACK(15 1)                                 -
                 IMBED)
/*
//PRIMCSI2 EXEC PGM=IDCAMS
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR        /* <==1  */
//ZPOOL    DD DSN=SYS1.MACLIB(GIMZPOOL),DISP=SHR
```

```
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  REPRO OUTFILE(SMPCSI) INFILE(ZPOOL)
//
```

Look for the expected return code or message for this job. The job is considered successful if a return code of `0` is received.

11.3.3 Allocating SMP/E target and distribution zone libraries

We used the JCL named IQIJALTZ to delete, define, and prime VSAM target and distribution libraries, as shown in Example 11-3.

Example 11-3 JCL IQIJALTZ

```
//IQIJALTZ JOB  'ACCOUNT INFORMATION','ALLOC TZONE/DZONE',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//       NOTIFY=&SYSUID
//DELDEF1  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DELETE IQI.V6R1M0.TZONE.CSI                        /* <==1,3 */
  DELETE IQI.V6R1M0.DZONE.CSI                        /* <==1,4 */

  DEFINE CLUSTER(NAME(IQI.V6R1M0.TZONE.CSI)          /* <==1,3 */  -
                 FREESPACE(20, 5)                                  -
                 KEYS(24 0)                                        -
                 RECORDSIZE(24 143)                                -
                 SHAREOPTIONS(2)                                   -
                 UNIQUE)                                           -
                 VOLUME(SUPT01))                     /* <==2 */    -
            DATA(NAME(IQI.V6R1M0.TZONE.CSI.DATA)     /* <==1,3 */  -
                 CONTROLINTERVALSIZE(4096)                         -
                 CYLINDER(10 1))                                   -
            INDEX(NAME(IQI.V6R1M0.TZONE.CSI.INDEX)   /* <==1,3 */  -
                 CONTROLINTERVALSIZE(1024)                         -
                 TRACK(15 1)                                       -
                 IMBED)

 DEFINE CLUSTER(NAME(IQI.V6R1M0.DZONE.CSI)           /* <==1,4 */  -
                 FREESPACE(20, 5)                                  -
                 KEYS(24 0)                                        -
                 RECORDSIZE(24 143)                                -
                 SHAREOPTIONS(2)                                   -
                 UNIQUE)                                           -
                 VOLUME(SUPT01))                     /* <==2   */  -
            DATA(NAME(IQI.V6R1M0.DZONE.CSI.DATA)     /* <==1,4 */  -
                 CONTROLINTERVALSIZE(4096)                         -
                 CYLINDER(10 1))                                   -
            INDEX(NAME(IQI.V6R1M0.DZONE.CSI.INDEX)   /* <==1,4 */  -
                 CONTROLINTERVALSIZE(1024)                         -
                 TRACK(15 1)                                       -
                 IMBED)
/*
//PRIMCSI2 EXEC PGM=IDCAMS
```

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```
//SMPCSI   DD DSN=IQI.V6R1M0.TZONE.CSI,DISP=SHR         /* <==1,3 */
//ZPOOL    DD DSN=SYS1.MACLIB(GIMZPOOL),DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
REPRO OUTFILE(SMPCSI) INFILE(ZPOOL)
/*
//PRIMCSI3 EXEC PGM=IDCAMS
//SMPCSI   DD DSN=IQI.V6R1M0.DZONE.CSI,DISP=SHR         /* <==1,4 */
//ZPOOL    DD DSN=SYS1.MACLIB(GIMZPOOL),DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  REPRO OUTFILE(SMPCSI) INFILE(ZPOOL)
/*
//
```

As far as expected return codes and messages, the job is considered successful if a return code of 0 is received.

11.3.4 Allocating SMP/E temporary libraries for global zone

We used the JCL named IQIJALSM to allocate the needed SMP/E temporary libraries, while setting up a new global zone for installation and maintenance, as shown in Example 11-4.

Example 11-4 JCL IQIJALSM

```
//IQIJALTZ JOB  'ACCOUNT INFORMATION','ALLOC TZONE/DZONE',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//       NOTIFY=&SYSUID
//DELDEF1  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  DELETE IQI.V6R1M0.TZONE.CSI                          /* <==1,3 */
  DELETE IQI.V6R1M0.DZONE.CSI                          /* <==1,4 */

  DEFINE CLUSTER(NAME(IQI.V6R1M0.TZONE.CSI)            /* <==1,3 */  -
                 FREESPACE(20, 5)                             -
                 KEYS(24 0)                                   -
                 RECORDSIZE(24 143)                           -
                 SHAREOPTIONS(2)                              -
                 UNIQUE)                                      -
                 VOLUME(SUPT01))                       /* <==2 */    -
            DATA(NAME(IQI.V6R1M0.TZONE.CSI.DATA)       /* <==1,3 */  -
                 CONTROLINTERVALSIZE(4096)                    -
                 CYLINDER(10 1))                              -
            INDEX(NAME(IQI.V6R1M0.TZONE.CSI.INDEX)     /* <==1,3 */  -
                 CONTROLINTERVALSIZE(1024)                    -
                 TRACK(15 1)                                  -
                 IMBED)

 DEFINE CLUSTER(NAME(IQI.V6R1M0.DZONE.CSI)             /* <==1,4 */  -
                 FREESPACE(20, 5)                             -
                 KEYS(24 0)                                   -
                 RECORDSIZE(24 143)                           -
                 SHAREOPTIONS(2)                              -
                 UNIQUE)                                      -
```

```
                VOLUME(SUPT01))                         /* <==2   */  -
             DATA(NAME(IQI.V6R1M0.DZONE.CSI.DATA)       /* <==1,4 */  -
                CONTROLINTERVALSIZE(4096)                       -
                CYLINDER(10 1))                                 -
             INDEX(NAME(IQI.V6R1M0.DZONE.CSI.INDEX)     /* <==1,4 */  -
                CONTROLINTERVALSIZE(1024)                       -
                TRACK(15 1)                                     -
                IMBED)
/*
//PRIMCSI2 EXEC PGM=IDCAMS
//SMPCSI   DD DSN=IQI.V6R1M0.TZONE.CSI,DISP=SHR         /* <==1,3 */
//ZPOOL    DD DSN=SYS1.MACLIB(GIMZPOOL),DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  REPRO OUTFILE(SMPCSI) INFILE(ZPOOL)
/*
//PRIMCSI3 EXEC PGM=IDCAMS
//SMPCSI   DD DSN=IQI.V6R1M0.DZONE.CSI,DISP=SHR         /* <==1,4 */
//ZPOOL    DD DSN=SYS1.MACLIB(GIMZPOOL),DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
  REPRO OUTFILE(SMPCSI) INFILE(ZPOOL)
/*
//
```

11.3.5 Allocating libraries for target and distribution zones

We used the following JCL named IQIJALIB to allocate files for the target and distribution libraries for the IBM IPT, as shown in Example 11-5.

Example 11-5 JCL IQIJALIB

```
//IQIJALIB JOB  'ACCOUNT INFORMATION','ALLOCATE LIBS',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//       NOTIFY=&SYSUID
//IQIRALOC PROC TGTHLQ=,DSTHLQ=,TUNIT=,DUNIT=,TVOLID1=,TVOLID2=,DVOLID=
//ALLOC    EXEC PGM=IEFBR14
//*
//*  ALLOCATE TARGET LIBRARIES
//*
//SIQIINST DD DSN=&TGTHLQ.SIQIINST,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(5,1,3)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//SIQICLIB DD DSN=&TGTHLQ.SIQICLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(16,1,10)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//SIQICLBV DD DSN=&TGTHLQ.SIQICLBV,
```

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```
//SIQIMLIB DD DSN=&TGTHLQ.SIQIMLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(3,1,5)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//SIQIPLIB DD DSN=&TGTHLQ.SIQIPLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(110,10,230)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//SIQISLIB DD DSN=&TGTHLQ.SIQISLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(1,1,1)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//SIQITLIB DD DSN=&TGTHLQ.SIQITLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(6,2,25)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//*  ALLOCATE DISTRIBUTION LIBRARIES
//*
//AIQIINST DD DSN=&DSTHLQ.AIQIINST,
//            UNIT=&DUNIT,
//            VOL=SER=&DVOLID,
//            SPACE=(TRK,(5,1,3)),
//            DISP=(NEW,CATLG)
//*
//AIQICLIB DD DSN=&DSTHLQ.AIQICLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(16,1,10)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//AIQICLBV DD DSN=&DSTHLQ.AIQICLBV,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(16,1,10)),
//            DCB=(RECFM=VB,LRECL=251,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//AIQILOAD DD DSN=&DSTHLQ.AIQILOAD,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID1,
//            SPACE=(TRK,(35,2,10)),
//            DCB=(RECFM=U,LRECL=0,BLKSIZE=32760),
```

Archived

```
//            DISP=(NEW,CATLG)
//*
//AIQILPA  DD DSN=&DSTHLQ.AIQILPA,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID1,
//            SPACE=(TRK,(125,5,40)),
//            DCB=(RECFM=U,LRECL=0,BLKSIZE=32760),
//            DISP=(NEW,CATLG)
//*
//AIQIMLIB DD DSN=&DSTHLQ.AIQIMLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(3,1,5)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//AIQIPLIB DD DSN=&DSTHLQ.AIQIPLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(110,10,230)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//AIQISLIB DD DSN=&DSTHLQ.AIQISLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(1,1,1)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//AIQITLIB DD DSN=&DSTHLQ.AIQITLIB,
//            UNIT=&TUNIT,
//            VOL=SER=&TVOLID2,
//            SPACE=(TRK,(6,2,25)),
//            DCB=(RECFM=FB,LRECL=80,BLKSIZE=0),
//            DISP=(NEW,CATLG)
//*
//         PEND
//ALLOCATE EXEC IQIRALOC,
//            TGTHLQ='IQI.V6R1M0.',  <== TGT LIB HIGH LEVEL QUAL.
//            TUNIT=SYSALLDA,        <== TGT LIB UNIT TYPE
//            TVOLID1=Z18R52,        <== TGT LIB VOLUME 1
//            TVOLID2=Z18R52,        <== TGT LIB VOLUME 2
//            DSTHLQ='IQI.V6R1M0.',  <== DIST LIB HIGH LEVEL QUAL.
//            DUNIT=SYSALLDA,        <== DIST LIB UNIT TYPE
//            DVOLID Z18D52    <== DIST LIB VOLSER
/*
```

Archived

11.3.6 Defining global, target, and distribution zone options and DDDEF entries

Edit and submit sample job IQIJDEFZ to create DDDEF entries for the SMP/E target and distribution libraries for the IPT. Consult the instructions in the sample job for more information.

We used the JCL named IQIJDEFZ to define the global, target, and distribution zone options to SMP/E, as well as to define the DDDEFs for SMP/E libraries, as shown in Example 11-6.

Example 11-6 JCL IQIJDEFZ

```
//IQIJDEFZ JOB  'ACCOUNT INFORMATION','DEFINE SMP ZONES',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//       NOTIFY=&SYSUID
//CZONES1  EXEC PGM=GIMSMP,PARM='DATE=U',REGION=0M
//SMPCSI    DD DISP=SHR,DSN=IQI.V6R1M0.GLOBAL.CSI    <==1,2
//SMPLOG    DD DISP=SHR,DSN=IQI.V6R1M0.SMPLOG        <==1
//SMPPTS    DD DISP=SHR,DSN=IQI.V6R1M0.SMPPTS        <==1
//SMPOUT    DD SYSOUT=*
//SMPLIST   DD SYSOUT=*
//SMPRPT    DD SYSOUT=*
//SMPSNAP   DD DUMMY
//SYSUDUMP  DD DUMMY
//SMPCNTL   DD *
SET BOUNDARY(GLOBAL)
 .
UCLIN
 .
   ADD GLOBALZONE
        SREL(Z038)
        OPTIONS(DEFOPT)          /* <==7 OPTIONS ENTRY NAME     */
        ZONEINDEX((TZONE,IQI.V6R1M0.TZONE.CSI,TARGET),    /* <==3,4 */
                  (DZONE,IQI.V6R1M0.DZONE.CSI,DLIB))      /* <==3,5 */
ADD OPTIONS(DEFOPT)           /* <==7 OPTIONS ENTRY NAME     */
        DSSPACE(300,500,900)
        DSPREFIX(IQI.V6R1M0)        /* <==1,6 PREFIX FOR SMPTLIBS  */
        NOPURGE
        NOREJECT
        SAVEMTS
        SAVESTS
      /* NUCID(1) */
        PAGELEN(60)
        PEMAX(9999)
        RETRYDDN(ALL)
    .
ENDUCL
 .
SET BOUNDARY(TZONE)                              /* <==3   */
 .
UCLIN
 .
   ADD TARGETZONE(TZONE)                         /* <==3   */
        OPTIONS(DEFOPT)       /* <==7 OPTIONS ENTRY NAME     */
        SREL(Z038)
        RELATED(DZONE)                           /* <==3   */
```

Archived

```
ENDUCL
 .
SET BOUNDARY(DZONE)                                 /* <==3   */
 .
UCLIN
 .
   ADD DLIBZONE(DZONE)                              /* <==3   */
        OPTIONS(DEFOPT)       /* <==7 OPTIONS ENTRY NAME     */
        SREL(Z038)
        RELATED(TZONE)                              /* <==3   */
   .
ENDUCL
 .
SET BOUNDARY(GLOBAL)
 .
LIST
  ALLZONES
 .
.
//*******************************************************************
//*  Create DDDEFs for SMP/E libraries                              *
//*******************************************************************
//DDDEF    EXEC PGM=GIMSMP,COND=(0,LT),REGION=0M
//SMPCSI    DD DISP=SHR,DSN=IQI.V6R1M0.GLOBAL.CSI    <==1,2
//SMPLOG    DD DISP=SHR,DSN=IQI.V6R1M0.SMPLOG        <==1
//SMPPTS    DD DISP=SHR,DSN=IQI.V6R1M0.SMPPTS        <==1
//SMPOUT    DD SYSOUT=*
//SMPLIST   DD SYSOUT=*
//SMPRPT    DD SYSOUT=*
//SMPCNTL   DD *
SET BOUNDARY(GLOBAL)
 .
     UCLIN.
      ADD DDDEF (SMPDEBUG)
          SYSOUT(*).
      ADD DDDEF (SMPLIST)
          SYSOUT(*).
      ADD DDDEF (SMPLOG)
          DATASET(IQI.V6R1M0.SMPLOG)                /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                          /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPLOGA)
          DATASET(IQI.V6R1M0.SMPLOGA)               /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                            /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPOUT)
          SYSOUT(*).
      ADD DDDEF (SMPPTS)
          DATASET(IQI.V6R1M0.SMPPTS)                /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                            /* <==8  */
```

Archived

```
         WAITFORDSN
SHR.
      ADD DDDEF (SMPPUNCH)
          SYSOUT(B).
      ADD DDDEF (SMPRPT)
          SYSOUT(*).
      ADD DDDEF (SMPSNAP)
          SYSOUT(*).
      ADD DDDEF (SMPTLIB)
          UNIT(SYSALLDA)
          VOLUME(SUPT01).                          /* <==8  */
      ADD DDDEF (SMPNTS)
          PATH('/u/userid/HIQI610/').              /* <==9  */
      ADD DDDEF (SYSPRINT)
          SYSOUT(*).
      ADD DDDEF(SYSUT1)
          UNIT(SYSALLDA)
          SPACE(2   ,1   )
          CYL.
      ADD DDDEF(SYSUT2)
          UNIT(SYSALLDA)
          SPACE(2   ,1   )
          CYL.
      ADD DDDEF(SYSUT3)
          UNIT(SYSALLDA)
          SPACE(2   ,1   )
CYL.
      ADD DDDEF(SYSUT4)
          UNIT(SYSALLDA)
          SPACE(2   ,1   )
          CYL.
     ENDUCL
     .
SET BOUNDARY(TZONE)                                /* <==3  */
 .
     UCLIN.
      ADD DDDEF (MACLIB)
          DATASET(SYS1.MACLIB)                    /* <==10 */
      /*  UNIT(SYSALLDA) */
      /*  VOLUME(MACVOL) */                       /* <==11 */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPDEBUG)
          SYSOUT(*).
      ADD DDDEF (SMPLIST)
          SYSOUT(*).
      ADD DDDEF (SMPLOG)
          DATASET(IQI.V6R1M0.SMPLOG)              /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                          /* <==8  */
          WAITFORDSN
          SHR.
ADD DDDEF (SMPLOGA)
          DATASET(IQI.V6R1M0.SMPLOGA)             /* <==1  */
          UNIT(SYSALLDA)
```

Archived

```
          VOLUME(SUPT01)                      /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPLTS)
          DATASET(IQI.V6R1M0.SMPLTS)          /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                      /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPMTS)
          DATASET(IQI.V6R1M0.SMPMTS)          /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                      /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPPTS)
          DATASET(IQI.V6R1M0.SMPPTS)        /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPPUNCH)
          SYSOUT(B).
      ADD DDDEF (SMPRPT)
          SYSOUT(*).
      ADD DDDEF (SMPSCDS)
          DATASET(IQI.V6R1M0.SMPSCDS)       /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
ADD DDDEF (SMPSNAP)
          SYSOUT(*).
      ADD DDDEF (SMPSTS)
          DATASET(IQI.V6R1M0.SMPSTS)        /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPWRK1)
                UNIT(SYSALLDA)
                SPACE(10  ,5   )
                DIR(250)
                CYL.
      ADD DDDEF (SMPWRK2)
                UNIT(SYSALLDA)
                SPACE(10  ,5   )
                DIR(250)
                CYL.
      ADD DDDEF (SMPWRK3)
                UNIT(SYSALLDA)
                SPACE(10  ,5   )
                DIR(250)
                CYL.
      ADD DDDEF (SMPWRK4)
```

Archived

```
               UNIT(SYSALLDA)
               SPACE(10  ,5   )
               DIR(250)
CYL.
      ADD DDDEF (SMPWRK6)
               UNIT(SYSALLDA)
               SPACE(10  ,5   )
               DIR(250)
               CYL.
      ADD DDDEF (SYSLIB)
                CONCAT(SMPMTS
                       MACLIB).
      ADD DDDEF (SYSPRINT)
          SYSOUT(*).
      ADD DDDEF(SYSUT1)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
      ADD DDDEF(SYSUT2)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
      ADD DDDEF(SYSUT3)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
      ADD DDDEF(SYSUT4)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
    ENDUCL
SET BOUNDARY(DZONE)                        /* <==3  */
 .
    UCLIN.
     ADD DDDEF (MACLIB)
         DATASET(SYS1.MACLIB)              /* <==10 */
      /* UNIT(SYSALLDA) */
      /* VOLUME(MACVOL)  */                /* <==11 */
         WAITFORDSN
         SHR.
      ADD DDDEF (SMPDEBUG)
         SYSOUT(*).
      ADD DDDEF (SMPLIST)
         SYSOUT(*).
      ADD DDDEF (SMPLOG)
         DATASET(IQI.V6R1M0.SMPLOG)        /* <==1  */
         UNIT(SYSALLDA)
         VOLUME(SUPT01)                    /* <==8  */
         WAITFORDSN
         SHR.
      ADD DDDEF (SMPLOGA)
         DATASET(IQI.V6R1M0.SMPLOGA)       /* <==1  */
         UNIT(SYSALLDA)
         VOLUME(SUPT01)                    /* <==8  */
         WAITFORDSN
```

Archived

```
          SHR.
      ADD DDDEF (SMPLTS)
DATASET(IQI.V6R1M0.SMPLTS)        /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPMTS)
          DATASET(IQI.V6R1M0.SMPMTS)        /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPPTS)
          DATASET(IQI.V6R1M0.SMPPTS)        /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPPUNCH)
          SYSOUT(B).
      ADD DDDEF (SMPRPT)
          SYSOUT(*).
      ADD DDDEF (SMPSCDS)
          DATASET(IQI.V6R1M0.SMPSCDS)       /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPSNAP)
          SYSOUT(*).
      ADD DDDEF (SMPSTS)
          DATASET(IQI.V6R1M0.SMPSTS)        /* <==1  */
          UNIT(SYSALLDA)
          VOLUME(SUPT01)                    /* <==8  */
          WAITFORDSN
          SHR.
      ADD DDDEF (SMPWRK1)
                UNIT(SYSALLDA)
                SPACE(10  ,5   )
                DIR(250)
                CYL.
      ADD DDDEF (SMPWRK2)
                UNIT(SYSALLDA)
                SPACE(10  ,5   )
                DIR(250)
                CYL.
      ADD DDDEF (SMPWRK3)
UNIT(SYSALLDA)
                SPACE(10  ,5   )
                DIR(250)
                CYL.
      ADD DDDEF (SMPWRK4)
                UNIT(SYSALLDA)
                SPACE(10  ,5   )
```

Archived

```
              DIR(250)
              CYL.
      ADD DDDEF (SMPWRK6)
              UNIT(SYSALLDA)
              SPACE(10  ,5   )
              DIR(250)
              CYL.
      ADD DDDEF (SYSLIB)
               CONCAT(SMPMTS
                      MACLIB).
      ADD DDDEF (SYSPRINT)
          SYSOUT(*).
      ADD DDDEF(SYSUT1)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
      ADD DDDEF(SYSUT2)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
      ADD DDDEF(SYSUT3)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
      ADD DDDEF(SYSUT4)
          UNIT(SYSALLDA)
          SPACE(5   ,1   )
          CYL.
     ENDUCL.
//
```

As far as expected return codes and messages, the job is considered successful if a return code of `0` is received.

Sample job to define the SMP/E DDDEF zone entries

Next, we show the sample job IQIJDDDF that we used to define the SMP/E DDDEF zone entries, as shown in Example 11-7.

Example 11-7 JCL IQIJDDDF

```
//IQIJDDDF JOB  'ACCOUNT INFORMATION','ADD DDDEF',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//     NOTIFY=&SYSUID
//DDDEF    EXEC PGM=GIMSMP,REGION=0M
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR /* <=== NOTE 2 */
//SMPCNTL  DD  *
  SET BDY(TZONE) .                        /* <=== NOTE 3 */
  UCLIN .
    ADD DDDEF(SIQIINST)
        DA(IQI.V6R1M0.SIQIINST)          /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)                    /* <=== 3 TVOL2 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(SIQICLIB)
```

Archived

```
        DA(IQI.V6R1M0.SIQICLIB)        /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)                  /* <=== 3 TVOL1 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(SIQICLBV)
        DA(IQI.V6R1M0.SIQICLBV)        /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 TVOL1 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(SIQILOAD)
        DA(IQI.V6R1M0.SIQILOAD)        /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 TVOL1 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(SIQILPA)
        DA(IQI.V6R1M0.SIQILPA)         /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 TVOL1 VOLUME    */
        WAITFORDSN
SHR .
    ADD DDDEF(SIQIMLIB)
        DA(IQI.V6R1M0.SIQIMLIB)        /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 TVOL2 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(SIQIPLIB)
        DA(IQI.V6R1M0.SIQIPLIB)        /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 TVOL2 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(SIQISLIB)
        DA(IQI.V6R1M0.SIQISLIB)        /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 TVOL2 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(SIQITLIB)
        DA(IQI.V6R1M0.SIQITLIB)        /* <=== 3 TARGET LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 TVOL2 VOLUME    */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQIINST)
        DA(IQI.V6R1M0.AIQIINST)        /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)               /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQICLIB)
        DA(IQI.V6R1M0.AIQICLIB)        /* <=== 3 DIST. LIBRARY  */
```

Archived

```
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
ADD DDDEF(AIQICLBV)
        DA(IQI.V6R1M0.AIQICLBV)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQILOAD)
        DA(IQI.V6R1M0.AIQILOAD)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQILPA)
        DA(IQI.V6R1M0.AIQILPA)        /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQIMLIB)
        DA(IQI.V6R1M0.AIQIMLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQIPLIB)
        DA(IQI.V6R1M0.AIQIPLIB)       /* <=== 3 DIST. LIBRARY  */
UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQISLIB)
        DA(IQI.V6R1M0.AIQISLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQITLIB)
        DA(IQI.V6R1M0.AIQITLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
   ENDUCL .
//*
//DDDEF2   EXEC PGM=GIMSMP,REGION=0M
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR /* <=== NOTE 2 */
//SMPCNTL  DD  *
  SET BDY(DZONE) .                  /* <=== NOTE 3 */
  UCLIN .
    ADD DDDEF(AIQIINST)
        DA(IQI.V6R1M0.AIQIINST)       /* <=== 3 DIST. LIBRARY  */
```

Archived

```
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQICLIB)
        DA(IQI.V6R1M0.AIQICLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
ADD DDDEF(AIQICLBV)
        DA(IQI.V6R1M0.AIQICLBV)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQILOAD)
        DA(IQI.V6R1M0.AIQILOAD)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQILPA)
        DA(dstIQI.V6R1M0.AIQILPA)        /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQIMLIB)
        DA(IQI.V6R1M0.AIQIMLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQIPLIB)
        DA(IQI.V6R1M0.AIQIPLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
    ADD DDDEF(AIQISLIB)
        DA(IQI.V6R1M0.AIQISLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
ADD DDDEF(AIQITLIB)
        DA(IQI.V6R1M0.AIQITLIB)       /* <=== 3 DIST. LIBRARY  */
        UNIT(SYSALLDA)
        VOLUME(SUPT01)              /* <=== 3 DIST. VOLUME   */
        WAITFORDSN
        SHR .
  ENDUCL .
//
```

Archived

11.3.7 Performing SMP/E RECEIVE

If you obtained the IPT as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB dataset to RECEIVE the IPT FMIDs and any service, HOLDDATA, or preventive service planning information included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

You can also choose to edit and submit sample job IQIJRECV to perform the SMP/E RECEIVE for the IPT. Consult the instructions in the sample job for more information.

We used the JCL to RECEIVE IPT, as shown in Example 11-8.

Example 11-8 JCL IQIJRECV

```
//IQIJRECV JOB  'ACCOUNT INFORMATION','RECEIVE PROD',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//    NOTIFY=&SYSUID
//RECEIVE  EXEC PGM=GIMSMP,REGION=0M      /* <=== NOTE 2 */
//*
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR /* <=== NOTE 3 */
//*
//*SMPTLIB  DD UNIT=SYSALLDA,DISP=OLD,    /* <=== NOTE 4 */
//*            VOL=SER=volser
//*
//SMPPTFIN DD DSN=SMPMCS,UNIT=SYSALLDA,       /* <=== NOTE 5 */
//          VOL=SER=IQI610,DISP=OLD
//*
//SMPLOG   DD DSN=IQI.V6R1M0.SMPLOG,DISP=SHR     /* <== NOTE 6 */
//SMPPTS   DD DSN=IQI.V6R1M0.SMPPTS,DISP=SHR     /* <== NOTE 6 */
//*
//*
//SMPCNTL  DD  *
  SET BDY(GLOBAL) .

  RECEIVE SELECT(HIQI610)
          SYSMODS
          LIST
          .
/*
//
```

As far as expected return codes and messages, the job is considered successful if a return code of 0 is received.

11.3.8 Performing SMP/E APPLY

Edit and submit sample job IQIJPTAP to perform an SMP/E APPLY CHECK for IPT. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do not bypass the following information on the APPLY CHECK: PRE, ID, REQ, and IFREQ. The SMP/E root cause analysis identifies only the cause of ERRORS and not the cause of WARNINGS (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

We used the JCL to APPLY the IPT, as shown in Example 11-9 on page 296.

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Example 11-9 JCL IQIJPTAP

```
//IQIJPTAP JOB  'ACCOUNT INFORMATION','APPLY PTF',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//    NOTIFY=&SYSUID
//APPLY    EXEC PGM=GIMSMP,REGION=0M        /* <=== Note 2 */
//*
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR   /* <=== NOTE 3 */
//SMPLOG   DD DSN=IQI.V6R1M0.SMPLOG,DISP=SHR       /* <=== NOTE 3 */
//SMPLOGA  DD DSN=IQI.V6R1M0.SMPLOGA,DISP=SHR      /* <=== NOTE 3 */
//SMPMTS   DD DSN=IQI.V6R1M0.SMPMTS,DISP=SHR
//SMPSTS   DD DSN=IQI.V6R1M0.SMPSTS,DISP=SHR       /* <=== NOTE 3 */
//SMPPTS   DD DSN=IQI.V6R1M0.SMPPTS,DISP=SHR       /* <=== NOTE 3 */
//SMPSCDS  DD DSN=IQI.V6R1M0.SMPSCDS,DISP=SHR      /* <=== NOTE 3 */
//*
//SMPCNTL   DD  *
  SET BDY(TZONE).                          /* <=== NOTE 4 */

  APPLY SELECT(HIQI610)                    /* <=== NOTE 5 */
        FORFMID(HIQI610)
        GROUPEXTEND
     /* CHECK */                           /* <=== Note 6 */
          .
//
```

As far as the expected return codes and messages from APPLY, the job is considered successful if a return code of 0 is received.

11.3.9 Performing SMP/E ACCEPT

Edit and submit the IQIJACPT sample job to perform a SMP/E ACCEPT CHECK for the IPT.

Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do not bypass the following information on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. The SMP/E root cause analysis only identifies the cause of ERRORS and not the cause of WARNINGS (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Set the ACCJCLIN indicator in the distribution zone before you use SMP/E to load new distribution libraries, which saves the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is ACCEPTed. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

After you take any of the actions that are indicated by the ACCEPT CHECK, remove the CHECK operand, and run the job again to perform the ACCEPT.

We used the JCL to ACCEPT the IPT, as shown in Example 11-10.

Example 11-10 JCL IQIJACPT

```
//IQIJACPT JOB  'ACCOUNT INFORMATION','ACCEPT PROD',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//    NOTIFY=&SYSUID
//ACCEPT   EXEC PGM=GIMSMP,REGION=0M            /* <=== Note 2 */
//*
```

```
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR /* <=== Note 3 */
//*
//SMPCNTL   DD  *
  SET BDY(DZONE) .                        /* <=== Note 4 */

  ACCEPT SELECT(HIQI610)
         FORFMID(HIQI610)
         GROUPEXTEND
       /* CHECK */                        /* <=== Note 5 */
           .
//
```

Expected return codes and messages from ACCEPT CHECK

If PTFs that contain replacement modules are accepted (ACCEPT step), SMP/E ACCEPT processing will link-edit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that document unresolved external references, which result in a return code of 4 from the ACCEPT step. Ignore these messages. The distribution libraries are not executable, and the unresolved external references do not affect the executable system libraries.

Expected return codes and messages from ACCEPT

The job is considered successful if a return code of 0 is received.

11.3.10 List SYSMODS for IPT

The sample JCL named IQIJLIST can be used to list the SYSMODS for IPT. The JCL is shown in Example 11-11.

Example 11-11 JCL IQIJLIST

```
//IQIJLIST JOB  'ACCOUNT INFORMATION','LIST SYSMODS',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),

//LIST     EXEC PGM=GIMSMP,REGION=0M      /* <=== Note 2 */
//*
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR /* <=== Note 3 */
//*
//SMPCNTL   DD  *
  SET BDY(TZONE) .                        /* <=== Note 4 */

  LIST  SYSMODS
          .
//
```

11.3.11 Installing PTF for IPT releases

The procedure to RECEIVE, APPLY, and ACCEPT PTF for IPT is similar to installing IPT. The only change required in JCL to process PTF is to replace the parameter for SELECT with the PTF name.

In the case of PTF, there are two additional options: REJECT and RESTORE.

Example 11-12 on page 298 shows the sample JCL named IQIJRJCT for REJECT.

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Example 11-12 JCL IQIJRJCT

```
//IQIJRJCT JOB  'ACCOUNT INFORMATION','REJECT PTF',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//    NOTIFY=&SYSUID

//REJECT   EXEC PGM=GIMSMP,REGION=0M      /* <=== NOTE 2 */
//*
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR /* <=== NOTE 3 */
//*
//*SMPTLIB  DD UNIT=SYSALLDA,DISP=OLD,    /* <=== NOTE 4 */
//*            VOL=SER=volser
//*
//SMPLOG   DD DSN=IQI.V6R1M0.SMPLOG,DISP=SHR     /* <== NOTE 5 */
//SMPPTS   DD DSN=IQI.V6R1M0.SMPPTS,DISP=SHR     /* <== NOTE 5 */
//*
//SMPCNTL  DD  *
  SET BDY(GLOBAL) .

  REJECT  SELECT(PTF)                     /* <== NOTE 6 */
          BYPASS(
                 APPCHK)
          .
/*
//
```

Example 11-13 shows the sample JCL for RESTORE.

Example 11-13 RESTORE JCL

```
//IQIJRSTR JOB  'ACCOUNT INFORMATION','RESTORE PTF',
//       CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),
//    NOTIFY=&SYSUID
//RESTORE  EXEC PGM=GIMSMP,REGION=0M      /* <=== Note 2 */
//*
//SMPCSI   DD DSN=IQI.V6R1M0.GLOBAL.CSI,DISP=SHR /* <=== NOTE 3 */
//*
//*SMPTLIB  DD UNIT=SYSALLDA,DISP=OLD,    /* <=== NOTE 4 */
//*            VOL=SER=volser
//*
//SMPLOG   DD DSN=IQI.V6R1M0.SMPLOG,DISP=SHR     /* <=== NOTE 5 */
//SMPLOGA  DD DSN=IQI.V6R1M0.SMPLOGA,DISP=SHR    /* <=== NOTE 5 */
//SMPMTS   DD DSN=IQI.V6R1M0.SMPMTS,DISP=SHR     /* <=== NOTE 5 */
//SMPSTS   DD DSN=IQI.V6R1M0.SMPSTS,DISP=SHR     /* <=== NOTE 5 */
//SMPPTS   DD DSN=IQI.V6R1M0.SMPPTS,DISP=SHR     /* <=== NOTE 5 */
//SMPSCDS  DD DSN=IQI.V6R1M0.SMPSCDS,DISP=SHR    /* <=== NOTE 5 */
//*
//SMPCNTL   DD  *
  SET BDY(TZONE)                          /* <=== NOTE 6 */
      OPTIONS(DEFOPT) .

  RESTORE SELECT(PTF)                     /* <=== NOTE 7 */
          GROUP
          .
//
```

11.4 Customizing the LOGON PROC to invoke IPT

The IPT target libraries, installed above, are ready to be used in any already existing ISPF environment. The only requirement for creating an IPT base environment is to modify an existing TSO LOGON procedure. However, it is better to create a new Time Sharing Option (TSO) LOGON procedure for IPT rather than modify the existing procedure.

We created the new TSO LOGON procedure by copying the existing TSO LOGON procedure for ISPF. The new IPT LOGON procedure is IPTBETA.

Example 11-14 illustrates the changes for you to make to the copy of your LOGON procedure, or you can incorporate the changes into a new LOGON procedure that you create.

Example 11-14 Logon procedure changes

```
//*-------------------------------------------------------------------
//* SERVERPAC LOGON PROCEDURE
//*
//* THIS PROCEDURE ENABLES USERS TO LOG ON TO TSO/E.
//* THE CLIST ISPBET, WHICH RESIDES IN CPAC.CMDPROC,
//* IS EXECUTED AT FIRST TO INVOKE THE ISPF.
//*-------------------------------------------------------------------
//IPTBETA  PROC
//IPTBETA  EXEC PGM=IKJEFT01,DYNAMNBR=500,PARM=ISPBET
//STEPLIB  DD DISP=SHR,DSN=IQI.V6R1M0.SIQILPA
//         DD DISP=SHR,DSN=MQM.SCSQANLE
//         DD DISP=SHR,DSN=MQM.SCSQAUTH
//         DD DSN=QMF.SDSQEXIT,DISP=SHR         * QMF MODULES *
//         DD DSN=QMF.SDSQLOAD,DISP=SHR         * QMF MODULES *
//         DD DSN=SYS1.DSN810.SDSNEXIT,DISP=SHR * DB2 MODULES *
//         DD DSN=DSN810.SDSNLOAD,DISP=SHR      * DB2 MODULES *
//         DD DSN=GDDM.SADMMOD,DISP=SHR         * GDDM MODULES *
//SYSPROC  DD DISP=SHR,DSN=CPAC.CMDPROC
//         DD DISP=SHR,DSN=IQI.V6R1M0.SIQICLIB
//SYSHELP  DD DISP=SHR,DSN=SYS1.HELP
//         DD DISP=SHR,DSN=ISF.SISFHELP
//         DD DISP=SHR,DSN=SYS1.SBDTHELP
//         DD DISP=SHR,DSN=SYS1.HELPENP
//         DD DISP=SHR,DSN=ISP.SISPHELP
//SYSLBC   DD DISP=SHR,DSN=SYS1.BRODCAST
//SYSPRINT DD TERM=TS,SYSOUT=*
//SYSTERM  DD TERM=TS,SYSOUT=*
//ISPPLIB  DD DSN=QMF.SDSQPLBE,DISP=SHR
//ISPMLIB  DD DSN=QMF.SDSQMLBE,DISP=SHR
//ISPSLIB  DD DSN=QMF.SDSQSLBE,DISP=SHR
//*********************************************************
//* QMF/GDDM DATA SETS *
//*********************************************************
//ADMGGMAP  DD DSN=QMF.SDSQMAPE,DISP=SHR
//ADMCFORM  DD DSN=QMF.SDSQCHRT,DISP=SHR
//*DSQUCFRM DD DSN=AAAAAAA,DISP=SHR
//ADMCDATA  DD DSN=GDDM.SADMCDA,DISP=SHR
//ADMGDF    DD DSN=GDDM.SADMGDF,DISP=SHR
//ADMSYMBL  DD DSN=GDDM.SADMSYM,DISP=SHR
//*********************************************************
//* DATASETS USED BY QMF *
```

```
//*********************************************************
//DSQPNLE   DD DSN=QMF.DSQPNLE,DISP=SHR
//DSQPRINT  DD SYSOUT=A,DCB=(RECFM=FBA,LRECL=133,BLKSIZE=1330)
//DSQDEBUG  DD SYSOUT=A,DCB=(RECFM=FBA,LRECL=121,BLKSIZE=1210)
//DSQEDIT   DD UNIT=SYSDA,DCB=(RECFM=FBA,LRECL=79,BLKSIZE=4029),
// DISP=NEW,SPACE=(CYL,(1,1))
//DSQUDUMP  DD SYSOUT=A,DCB=(RECFM=VBA,LRECL=125,BLKSIZE=1632)
//SYSUDUMP  DD SYSOUT=A
//DSQSPILL  DD DSN=&&SPILL,DISP=(NEW,DELETE),
// UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE),
// DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096)
//SYSIN    DD TERM=TS
//*
//*********************************************************
//* IPT/IQI DATA SETS *
//*********************************************************
//IQITLIB  DD DISP=SHR,DSN=IQI.V6R1M0.SIQITLIB
```

We created the IPTBETA TSO LOGON procedure as shown in Example 11-15.

11.4.1 LPA load library SIQILPA

The IPT target library, SIQILPA, is specified at the first of DD (STEPLIB).

11.4.2 CLIST library SIQICLIB

Add the CLIST library to the DD (SYSPROC) concatenation. We recommend that you place the IPT CLIST library as the first library in the concatenation. We created the new CLIST PROC ISPBET and placed it in the CPAC.CMDPROC. PROC name. ISPBET is the parameter to IKJEFT01.

11.4.3 Table library SIQITLIB

Add a new statement for the table library with DD (IQITLIB). Do not confuse this DD name with ISPF's ISPTLIB.

Remember that the IPT target libraries must always be ahead of ISPF's SISPLPA and SISPLOAD.

The new procedure IPTBETA invokes the CLIST ISPIPT. We created the CLIST ISPBET as shown in Figure 11-15.

Example 11-15 CLIST ISPIPT

```
/*                                                                 */
/* 5751-CS9                                                        */
/* (C) COPYRIGHT IBM CORP. 1996, 2006                              */
/*                                                                 */
/* LIB: CPAC.CMDPROC(ISPPDF)                                       */
/* DOC: THIS CLIST ALLOCATES THE FILES REQUIRED BY ISPF AND PDF    */
/*      AND THEN INVOKES PDF.                                      */
/*                                                                 */
/* NOTE: SYSPROC IS FREED AND REALLOCATED TO INCLUDE THE PDF CLIST */
/*       DATASET. THIS MAY RESULT IN A DIFFERENT CONCATENATION     */
```

```
/*       THAN EXISTED BEFORE THIS CLIST WAS INVOKED.                */
/*                                                                   */
/*********************************************************************/
CONTROL NOFLUSH NOMSG MAIN
PROFILE MODE WTPMSG MSGID
FREE FILE(ISPLLIB,ISPPLIB,ISPMLIB,ISPTLIB,ISPSLIB, +
          ISPPROF,ISPTABL,SMPTABL,IPCSPARM,ISPPALT,ISPMALT,ISPILIB)
/*********************************************************************/
WRITE
WRITE LOGON PROC IS IPTBETA
WRITENR ALLOCATING ISPF AND PRODUCT DATASETS
/*********************************************************************/
FREE FI(SYSPROC)
ALLOC FI(SYSPROC) SHR DA( +
'CPAC.CMDPROC'                              +
                        'IQI.V6R1M0.SIQICLIB'                      +
                        'DSN810.SDSNCLST'                          +
                        'SYS1.SBLSCLIO'                            +
                        'SYS1.SERBCLS'                             +
                        'DBATOOL.SADBCLST'                         +
                        'DBATOOL.SADBEXEC'                         +
                        'SYS1.HRFCLST'                             +
                        'GIM.SGIMCLSO'                             +
                        'CBC.SCCNUTL'                              +
                        'SYS1.SICECLIB'                            +
                        'SYS1.SBDTCLIO'                            +
                        'SYS1.SCBDCLST'                            +
                        'CSF.SCSFCLIO'                             +
                        'EOY.SEOYCLIB'                             +
                        'EOX.SEPHCLB1'                             +
                        'ICQ.ICQCCLIB'                             +
                        'ISP.SISPCLIB'                             +
                        'GDDM.SADMSAM'                             +
                        'FFST.V12OESA.SEPWCENU'                    +
                        'SYS1.DGTCLIB')
FREE FI(SYSEXEC)
ALLOC FI(SYSEXEC) SHR DA( +
                        'MQM.SCSQEXEC'                             +
                        'QMF.SDSQEXCE'                             +
                        'EUV.SEUVEXEC'                             +
                        'ISF.SISFEXEC'                             +
                        'AOP.SAOPEXEC'                             +
                        'IOE.SIOEEXEC'                             +
                        'EOY.SEOYCLIB'                             +
                        'EOX.SEPHCLB1'                             +
                        'SYS1.SBPXEXEC'                            +
                        'EUVF.SEUVFEXC'                            +
                        'GLD.SGLDEXEC'                             +
                        'ISP.SISPEXEC'                             +
                        'FFST.V12OESA.SEPWSRC1'                    +
                        'SYS1.SEDGEXE1')
WRITENR .
SET &DSNAME = &SYSUID..ISPF.ISPPROF
ALLOC FI(ISPPROF) SHR  DA('&DSNAME.')
IF &LASTCC = 0 THEN +
```

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```
  DO
    FREE FI(ISPCRTE)
    CONTROL MSG
    ATTRIB ISPCRTE DSORG(PO) RECFM(F B) LRECL(80) BLKSIZE(6160)
    ALLOC DA('&DSNAME.') SP(5,1) CYLINDERS DIR(20) USING(ISPCRTE) +
        FI(ISPPROF)
    IF &LASTCC = 0 THEN +
      WRITE *** ISPF PROFILE DATA SET '&DSNAME.' HAS BEEN CREATED
    ELSE +
     DO
      WRITE  *** UNABLE TO ALLOCATE ISPF PROFILE DATA SET '&DSNAME.'
      FREE FI(ISPCRTE)
      EXIT CODE(12)
     END
    FREE FI(ISPCRTE)
  END
CONTROL MSG
ERROR EXIT
IF &PANEL = &STR() THEN +
  SET &PNL = PANEL(ISR@PRIM)
ELSE +
  SET &PNL = PANEL(&PANEL)
ALLOC FI(ISPTABL) SHR DA( +
                         '&DSNAME'                                +
                               )
ALLOC FI(SMPTABL) SHR DA('&DSNAME.')
ALLOC FI(ISPLLIB) SHR DA( +
                         'IQI.V6R1M0.SIQILPA'                     +
                         'IQI.V6R1M0.SIQILOAD'                    +
                         'MQM.SCSQANLE'                           +
                         'SYS1.DFQLLIB'                           +
                         'DBATOOL.SADBLLIB'                       +
                         'SYS1.DGTLLIB')
WRITENR .
ALLOC FI(ISPPLIB) SHR DA( +
                         'CPAC.ISPPLIB'                           +
                         'IQI.V6R1M0.SIQIPLIB'                    +
                         'DSN810.SDSNPFPE'                        +
                         'DBATOOL.SADBPLIB'                       +
                         'ISP.SISPPENU'                           +
                         'SYS1.SERBPENU'                          +
                         'SYS1.HRFPANL'                           +
                         'MQM.SCSQPNLE'                           +
                         'GIM.SGIMPENU'                           +
                         'EUV.SEUVPNL'                            +
                         'TCPIP.SEZAPENU'                         +
                         'SYS1.SBLSPNL0'                          +
                         'ISF.SISFPLIB'                           +
                         'SYS1.SHASPNL0'                          +
                         'AOP.SAOPPENU'                           +
                         'SYS1.SICEPENU'                          +
                         'EOY.SEOYPENU'                           +
                         'SYS1.SBDTPNL0'                          +
                         'IOE.SIOEPNLE'                           +
                         'SYS1.SCBDPENU'                          +
```

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```
                        'CSF.SCSFPNL0'                                +
                        'EOX.SEPHPNL1'                                +
                        'SYS1.SBPXPENU'                               +
                        'ICQ.ICQPLIB'                                 +
                        'GDDM.SADMPNL'                                +
                        'FFST.V12OESA.SEPWPENU'                       +
                        'SYS1.DFQPLIB'                                +
                        'SYS1.DGTPLIB'                                +
                        'SYS1.SEDGPENU')
WRITENR .
ALLOC FI(ISPMLIB) SHR DA( +
                        'SYS1.SERBMENU'                               +
                        'IQI.V6R1M0.SIQIMLIB'                         +
                        'DSN810.SDSNSPFM'                             +
                        'DBATOOL.SADBMLIB'                            +
                        'SYS1.HRFMSG'                                 +
                        'MQM.SCSQMSGE'                                +
                        'GIM.SGIMMENU'                                +
                        'EUV.SEUVMSG'                                 +
                        'TCPIP.SEZAMENU'                              +
                        'ISF.SISFMLIB'                                +
                        'AOP.SAOPMENU'                                +
                        'SYS1.SICEMENU'                               +
                        'EOY.SEOYMENU'                                +
                        'SYS1.SBDTMSG'                                +
                        'IOE.SIOEMSGE'                                +
                        'SYS1.SCBDMENU'                               +
                        'CSF.SCSFMSG0'                                +
                        'EOY.SEOYBENU'                                +
                        'EOX.SEPHMSG1'                                +
                        'SYS1.SBLSMSG0'                               +
                        'SYS1.SBPXMENU'                               +
                        'ICQ.ICQMLIB'                                 +
                        'ISP.SISPMENU'                                +
                        'GDDM.SADMMSG'                                +
                        'SYS1.DGTMLIB'                                +
                        'SYS1.DFQMLIB'                                +
                        'SYS1.SEDGMENU')
ALLOC FI(IPCSPARM) SHR DA( +
                        'SYS1.SHASPARM'                              +
                        'SYS1.IBM.PARMLIB')
WRITENR .
ALLOC FI(ISPTLIB) SHR DA( +
                        '&DSNAME'                                    +
                        'SYS1.SERBT' +
                        'SYS1.SERBTENU' +
                        'DBATOOL.SADBTLIB' +
                        'MQM.SCSQTBLE' +
                        'GIM.SGIMTENU' +
                        'ISF.SISFTLIB' +
                        'SYS1.SICETLIB' +
                        'EOY.SEOYTENU' +
                        'SYS1.SCBDTENU' +
                        'CSF.SCSFTLIB' +
                        'EOX.SEPHTBL1' +
```

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```
                        'SYS1.SBLSTBLO' +
                        'SYS1.SBPXTENU' +
                        'ICQ.ICQTABLS' +
                        'ISP.SISPTENU' +
                        'SYS1.DGTTLIB')
WRITENR .
ALLOC FI(ISPSLIB) SHR DA( +
                        'SYS1.HRFSKEL'                          +
                        'IQI.V6R1M0.SIQISLIB'                   +
                        'GIM.SGIMSENU'                          +
                        'DBATOOL.SADBSLIB'                      +
                        'ISF.SISFSLIB'                          +
                        'SYS1.SICESLIB'                         +
                        'CSF.SCSFSKLO'                          +
                        'SYS1.SBLSKELO'                         +
                        'ICQ.ICQSLIB'                           +
                        'ISP.SISPSLIB'                          +
                        'ISP.SISPSENU'                          +
                        'SYS1.DGTSLIB')
WRITENR .
ALLOC FI(ISPILIB) SHR DA( +
                        'ISP.SISPSAMP')
ALLOC FI(DITPLIB) SHR DA('DIT.V1R3M0.SDITPLIB')
WRITE
BRODCAST
ERROR RETURN
PDF &PNL
```

We recommend that you perform the following changes to CLIST ISPNEW before invoking it.

11.4.4 IPT load library SIQILOAD

Place the IPT load library, SIQILOAD, in DD(ISPLLIB) or DD(STEPLIB).

11.4.5 CLIST library SIQICLIB

Add the CLIST library to the DD(SYSPROC) concatenation. We recommend that you place the IPT CLIST library as the first library in the concatenation.

11.4.6 Message library SIQIMLIB

Add the message library to the DD(ISPMLIB) concatenation.

11.4.7 Panel library SIQIPLIB

Add the panel library to the DD(ISPPLIB) concatenation. We recommend that you place the ISPF Productivity Tool panel library as the first library in the concatenation.

11.4.8 Skeleton library SIQISLIB

Add the skeleton library to the DD(ISPSLIB) concatenation.

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11.5 Creating RACF profile to use the customized TSO LOGON PROC for IPT

To create the RACF profile to use the customized TSO LOGON PROC for IPT:

1. Choose the RACF - Resource Access Control Facility menu from ISPF.
2. Choose option **2** - GENERAL RESOURCE PROFILES from the RACF menu, as shown in Figure 11-2.

```
                          RACF - SERVICES OPTION MENU
OPTION ===> 2

SELECT ONE OF THE FOLLOWING:

   1  DATA SET PROFILES

   2  GENERAL RESOURCE PROFILES

   3  GROUP PROFILES AND USER-TO-GROUP CONNECTIONS

   4  USER PROFILES AND YOUR OWN PASSWORD

   5  SYSTEM OPTIONS

   6  REMOTE SHARING FACILITY

   7  DIGITAL CERTIFICATES, KEY RINGS, AND TOKENS
  99  EXIT
                Licensed Materials - Property of IBM
                5647-A01 (C) Copyright IBM Corp. 1983, 2000
                All Rights Reserved - U.S. Government Users
                Restricted Rights, Use, Duplication or Disclosure
                restricted by GSA ADP Schedule Contract with IBM Corp.
```

Figure 11-2 RACF Services Option Menu

3. Choose option **1**: ADD - Add a profile on the RACF - General Resource Profile Services menu, as shown in Figure 11-3.

```
              RACF - GENERAL RESOURCE PROFILE SERVICES
OPTION ===> 1

   SELECT ONE OF THE FOLLOWING:

        1   ADD           Add a profile
        2   CHANGE        Change a profile
        3   DELETE        Delete a profile
        4   ACCESS        Maintain access list
        5   AUDIT         Monitor access attempts (Auditors only)


   D or 8   DISPLAY       Display profile contents
   S or 9   SEARCH        Search the RACF data base for profiles
```

Figure 11-3 RACF Services options

4. Add the profile information. We specified CLASS as `TSOPROC` and PROFILE as `IPTBETA`, as shown in Figure 11-4.

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```
                        RACF - GENERAL RESOURCE SERVICES -  ADD
OPTION ===>

ENTER THE FOLLOWING PROFILE INFORMATION:

   CLASS     ===> TSOPROC

   PROFILE   ===> IPTBETA


                          <==end of data

   USE A MODEL         ===>        YES or NO


      NOTE: Embedded Blanks are NOT ALLOWED in class or profile names.
            The profile name may be case sensitive.  View the help and
            select PROFILE NAME for more detail.
```

Figure 11-4 7 RACF Add profile

5. In Figure 11-5, we have specified the relevant parameters. We recommend that you specify UACC as READ, as shown in Figure 11-5. Press Enter. The profile IPTBETA is ready to use.

```
                      RACF - ADD GENERAL RESOURCE PROFILE
 COMMAND ===>

   CLASS:          TSOPROC
   PROFILE       _ IPTBETA


ENTER OR CHANGE THE FOLLOWING INFORMATION:

   OWNER                      ===> AMIT        Userid or group name
   LEVEL                      ===> 0           0-99
   FAILED ACCESSES            ===> FAIL        FAIL or WARN
   UACC                       ===> READ        NONE, READ, UPDATE,
                                               CONTROL, ALTER or EXECUTE
   AUDIT SUCCESSES            ===> NOAUDIT     READ, UPDATE, CONTROL,
                                               ALTER, or NOAUDIT
   AUDIT FAILURES             ===> READ        READ, UPDATE, CONTROL,
                                               ALTER, or NOAUDIT
   NOTIFY                     ===>             Userid

 TO ADD OPTIONAL INFORMATION, ENTER YES     ===>
```

Figure 11-5 Adding the profile information

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11.6 Using the new TSO LOGON procedure to invoke IPT

Use the following steps to invoke IPT using the new TSO LOGON procedure:

1. When you log on for the first time using the new IPTBETA procedure, you see the IPT panel, which provides the option to read more about IPT or to continue to the ISPF session, as shown in Figure 11-6.

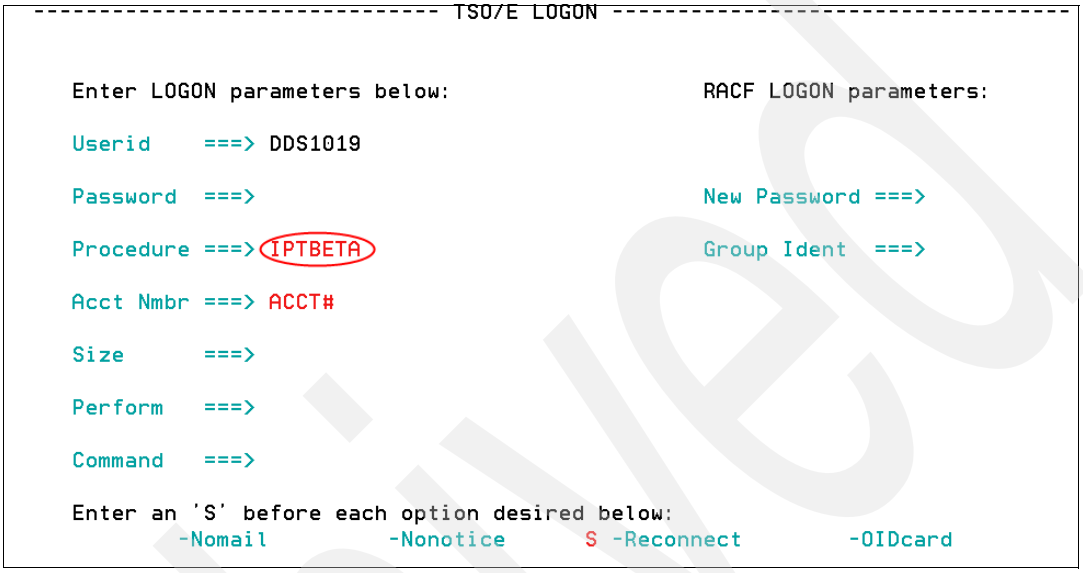

Figure 11-6 TSO/E LOGON panel

2. Press Enter to read more about IPT, as shown in Figure 11-7.

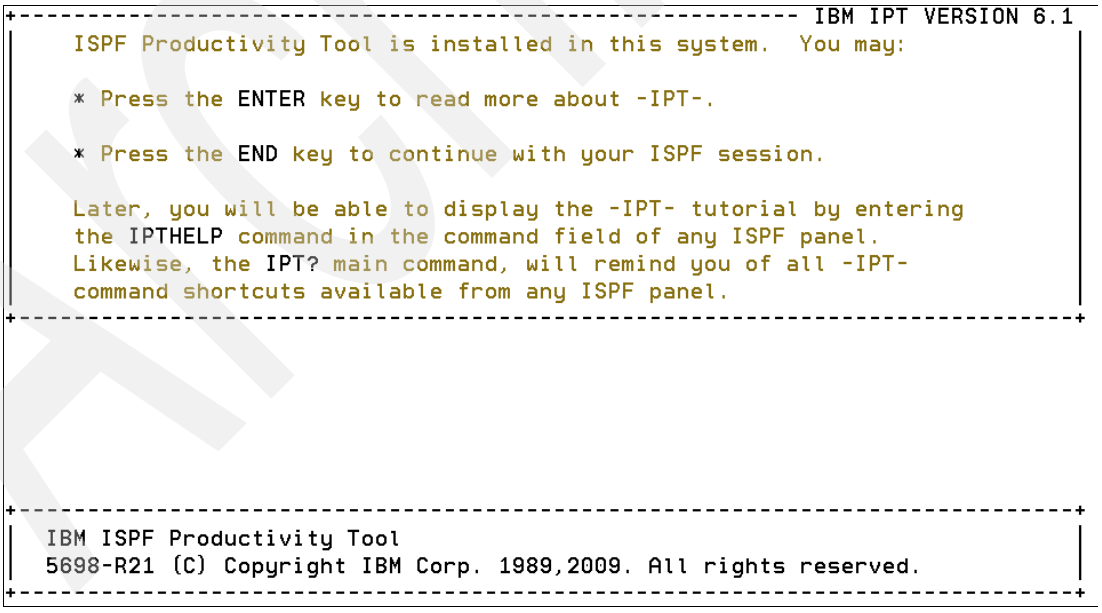

Figure 11-7 IPT information

3. IPT gives us the option to choose the topic of our choice or to learn about IPT. Press F3 to exit from the IPT general information.

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```
--------------------------- ISPF Productivity Tool --------------------TUTORIAL
                          ----------------------------
                          |    GENERAL INFORMATION    |
                          ----------------------------

The following topics are presented in sequence, or may be selected by number:

 1  Introduction                        9  OLIST - Objects List
 2  General Commands                   10  MSL - Member Selection List
 3  Enhanced EDIT, BROWSE, and VIEW    11  Enhanced TSO Command Support
 4  The Point-and-Shoot Interface      12  Enhanced EDIT Commands
 5  Data Set History Facility          13  Enhanced BROWSE Commands
 6  Access to Data Sets by DD Name     14  The VIEW Facility-EDIT-Comp.Browse
 7  Enhanced Data Set List Utility     15  Setting IBMIPT Options
 8  Enhanced Printing Facilities       16  IPTHELP-Displaying This Tutorial




SELECTION ===>
```

Figure 11-8 IPT General Information

4. When you exit the IPT General Information panel, you see the Persistent Table Management panel, as shown in Figure 11-9. The Persistent Table Management panel indicates that IPITBLIB is unavailable. Press Enter to continue.

```
 -IPT-------------------- Persistent Table Management ---- IPITBLIB unavailable
 COMMAND ===>

   -IPT- recommends a dedicated library (PDSE) for storing its
   persistent tables. DD(IPITBLIB) is currently not allocated or may
   be associated with an unusable dataset.
 * You may either specify an existing library or dynamically allocate a
   new library to be used for this purpose.
 * After successfully allocating a valid library, its name is stored in
   your profile and will be automatically used from now on, as long as
   DD(IPITBLIB) is not explicitly included in your LOGON procedure.
 * The library name first suggested by -IPT- is either your permanent
   OLIST library (if PDSE), or a cataloged name derived from your
   PROFILE library name.
 Note: you may choose to operate without saving any -IPT- persistent
   tables by declining to allocate DD(IPITBLIB).

 Main line commands:  D Disable  S Select (default)
 Press ENTER to process or F3    to cancel.

    LIBRARY NAME --> 'DDS1019.ISPF.IPITBLIB'
```

Figure 11-9 IPT Persistent Table Management assignment

5. Allocate the datasets so that the procedure IPTBETA can use them. Specify the relevant fields, and press Enter to continue, as shown in Figure 11-10 on page 309.

```
  Menu  RefList  Utilities  Help
 ------------------------------------------------------------------------------
                          Allocate New Data Set
                                                                  More:      +
Data Set Name  . . . : DDS1019.ISPF.IPITBLIB

Management class . . . ________        (Blank for default management class)
Storage class  . . . . ________        (Blank for default storage class)
 Volume serial . . . . ______          (Blank for system default volume) **
 Device type . . . . . ________        (Generic unit or device address) **
Data class . . . . . . ________        (Blank for default data class)
 Space units . . . . . BLOCK____       (BLKS, TRKS, CYLS, KB, MB, BYTES
                                        or RECORDS)
 Average record unit   _               (M, K, or U)
 Primary quantity  . . 320_________    (In above units)
 Secondary quantity    160_________    (In above units)
 Directory blocks  . . 50____          (Zero for sequential data set) *
 Record format . . . . FB____
 Record length . . . . 80____
 Block size  . . . . . 6160__
 Data set name type    LIBRARY_        (LIBRARY, HFS, PDS, LARGE, BASIC, *
                                        EXTREQ, EXTPREF or blank)
 Expiration date . . . _________       (YY/MM/DD, YYYY/MM/DD
```

Figure 11-10 Allocate persistent dataset

6. After the allocation is successful, ISPF displays a message that IPITBLIB is now available for use, as shown in Figure 11-11.

```
  Menu  Utilities  Compilers  Options  Status  Help
 ------------------------------------------------------------------------------
                          ISPF Primary Option Menu    IPITBLIB now available
Option ===> ____________________________________________________________________

0  Settings      Terminal and user parameters           User ID . : DDS1019
1  View          Display source data or listings        Time. . . : 22:54
2  Edit          Create or change source data           Terminal. : 3278
3  Utilities     Perform utility functions              Screen. . : 1
4  Foreground    Interactive language processing        Language. : ENGLISH
5  Batch         Submit job for language processing     Appl ID . : ISP
6  Command       Enter TSO or Workstation commands      TSO logon : SPIFFY
7  Dialog Test   Perform dialog testing                 TSO prefix: DDS1019
P  IBM Products  IBM program development products       System ID : DEMOMVS
10 SCLM          SW Configuration Library Manager       MVS acct. : 12345678
11 Workplace     ISPF Object/Action Workplace           Release . : ISPF 5.9
12 z/OS System   z/OS system programmer applications
13 z/OS User     z/OS user applications


     Enter X to Terminate using log/list defaults
```

Figure 11-11 IPITBLIB now available

We can continue to work after IPITBLIB is available.

On every instance after the first logon, when we log on using IPTBETA PROC, the ISPF main menu displays IBM IPT VERSION 6.1, as shown in Figure 11-12 on page 310.

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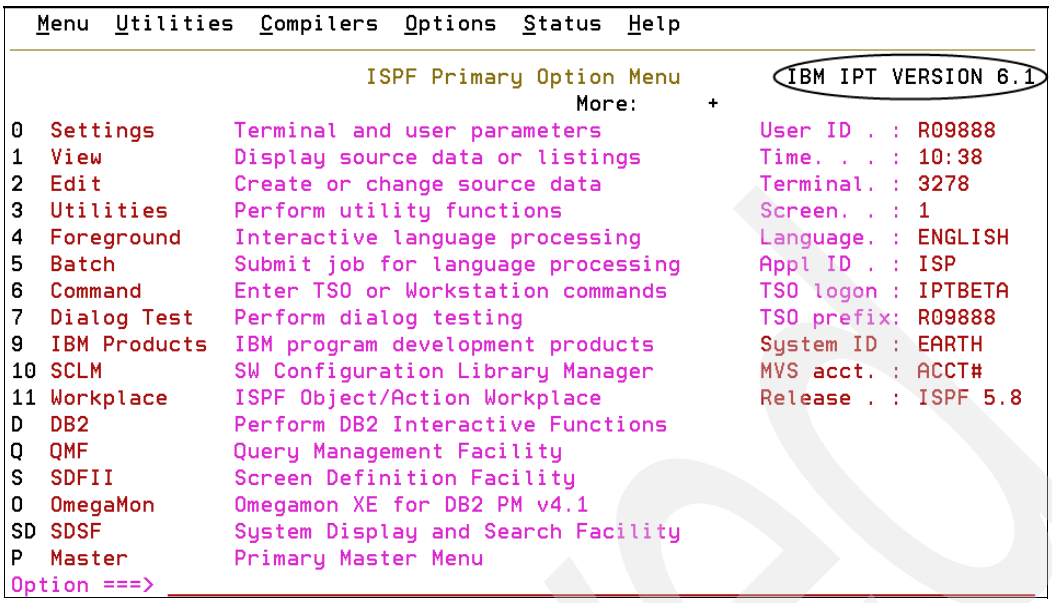

Figure 11-12 IBM IPT Version 6.1 displayed

11.7 IPT maintenance

SMP/E controls the maintenance of the IPT. You must periodically review and apply all of the available maintenance, as posted on the IBM IPT Web site at:

http://www-01.ibm.com/software/awdtools/ispfproductivitytool/support/

To determine the maintenance level of the IPT at your installation, enter the following command on any IPT panel:

`IPT VER` or enter the shortcut `IVER`

The initial panel displays the range of installed APARs, as shown in Figure 11-13 on page 311, which is the IPT VER output. The scrollable list displays the date and maintenance level of each IPT module.

Archive

```
-IPT- -------  IBMIPT MODULE LIST - 02/09/09 (09.040) 22:27 Row 1 to 13 of 149
Commands: CONFIG, DOWN, END, FIND, REPORT, SORT, UP
          USERID:DDS1019  LOGON PROC:SPIFFY   ISPF VERSION:5.9
          CPU SERIAL NUMBER:1A43D MODEL:2094 GROUP:00 OS:MVS SP7.0.9 (HBB7740 )
          IBMIPT version 6.1.0 with applied APARs OA14649 through OA27781.
Web link: http://www.ibm.com/software/awdtools/ispfproductivitytool

 COMMENTS            MODULE      LEVEL D A T E    TIME      FIX-MARKER
-------------------- --------     ---- -------- - -----     ----------
                     IQICLIPM LVL:6001 01/30/09 - 16.43 FIX:OA27781___
                     IQIDAMTH LVL:6001 02/02/09 - 17.25 FIX:OA27781___
                     IQIMSL   LVL:6001 01/28/09 - 17.24 FIX:OA27781___
                     IQISPF31 LVL:6001 01/28/09 - 17.29 FIX:OA27781___
                     IQIOBT   LVL:6001 01/09/09 - 13.42 FIX:OA27464___
                     IQIPLST  LVL:6001 01/29/09 - 08.23 FIX:OA27464___
                     IQISPF24 LVL:6001 01/09/09 - 13.41 FIX:OA27464___
                     IQIUCBS  LVL:6001 01/09/09 - 13.42 FIX:OA27464___
                     IQIUDL   LVL:6001 01/09/09 - 13.28 FIX:OA27464___
                     IQIVTOCR LVL:6001 01/09/09 - 13.41 FIX:OA27464___
                     IQIINFO  LVL:6001 01/09/09 - 13.41 FIX:OA27045___
                     IQICOPY  LVL:6001 01/09/09 - 13.26 FIX:OA26121___
                     IQIESAV  LVL:6001 01/09/09 - 13.27 FIX:OA26121___

COMMAND ===> _                                              SCROLL ===> PAGE
```

Figure 11-13 IPT VER output

11.8 Ordering IPT V6.1 for clients in India

In this section, we provide information about the procedure to order IPT V6.1, which is called Shopzseries. Shopzseries is the common way to buy IBM System z® software products. However, Shopzseries is not available for India clients. IPT is a custom-built product delivery offering (CBPDO), product number 5698-R21.

India clients can order IPT V6.1 by calling the IBM help desk for India/SA, which is also known as Shop by phone. The details about the IBM help desk are available at this Web site:

http://www.ibm.com

The help desk technician gathers information about the client and the hardware environment in which IPT will be installed.

India clients can also express interest in placing an order using e-mail. Send an e-mail to inswtech@in.ibm.com asking to purchase IPT V6.1. This Internet e-mail ID is India/SA Techline Support. An India/SA Techline Specialist will respond by e-mail or telephone.

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12

IPT user customization using the IPT SET command

In this chapter, we describe various options that are available and the process of customizing your Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS user settings. You can set these options to default or modify them as required. The IPT settings cater to various IPT functions, such as Member Selection Lists (MSLs), Object Lists (OLISTs), Time Sharing Option (TSO) Command shell, and so forth. You will find that we have described several of the options for certain functions in other chapters pertaining to the corresponding functions.

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12.1 Invoke IPT SET menu

The primary menu for setting IPT defaults is invoked by the command IPT SET or ISET as shown in Figure 12-1.

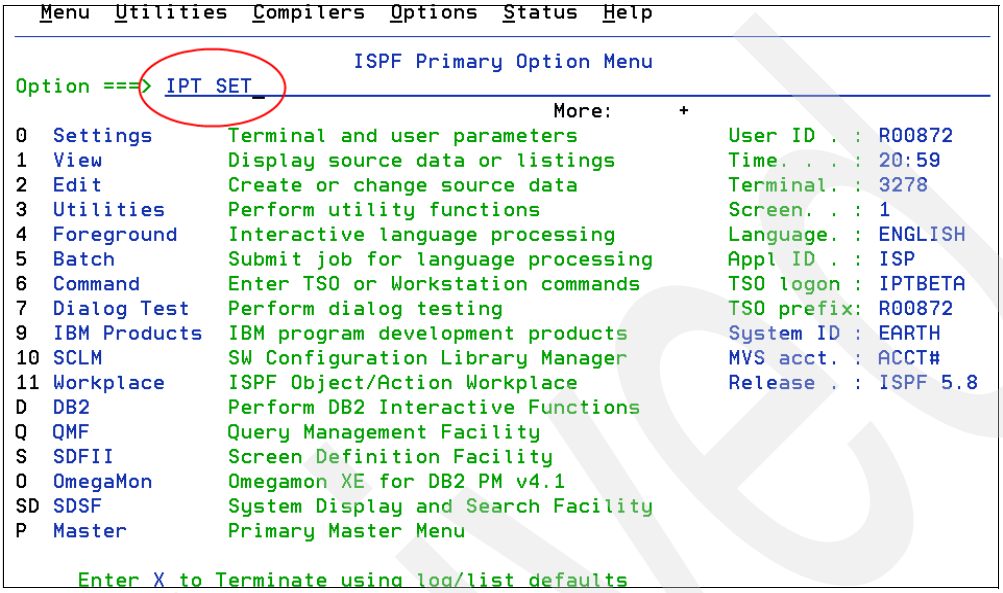

Figure 12-1 Invoke IPT SET menu

Figure 12-2 shows the menu for setting IPT defaults. As an IPT user, you can set the preference for each of the functions. We describe eleven settings in detail.

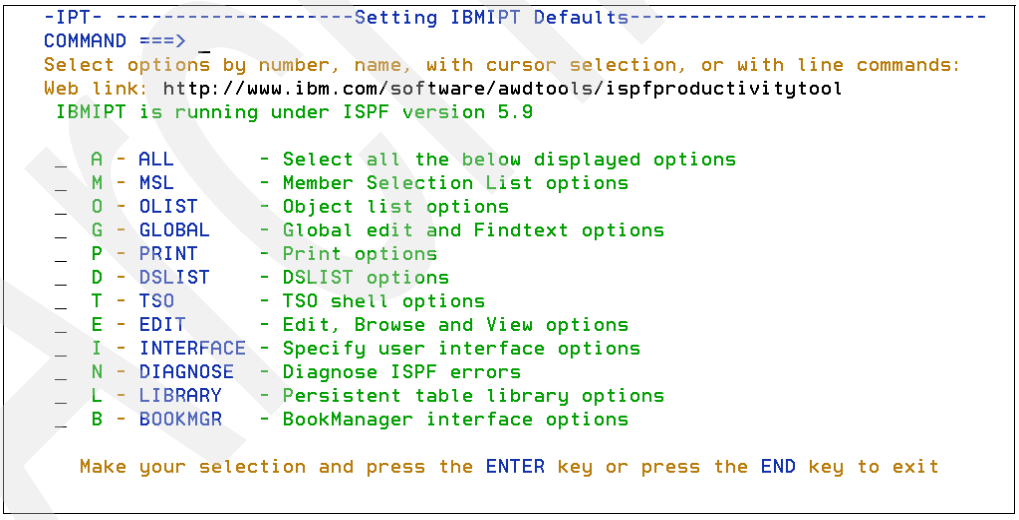

Figure 12-2 Setting IBMIPT Defaults menu

12.2 Using the single option to set ALL IPT defaults

The first option A stands for ALL. By selecting this option, you will be provided with each of the options one after another. We suggest you use this option to review your choices after you have set all of the options.

12.3 Settings for Member Selection List (MSL)

Figure 12-3 shows that the MSL setting menu is invoked by typing `M`. Chapter 3, “Member Selection Lists” on page 91discusses Member Selection Lists in detail.

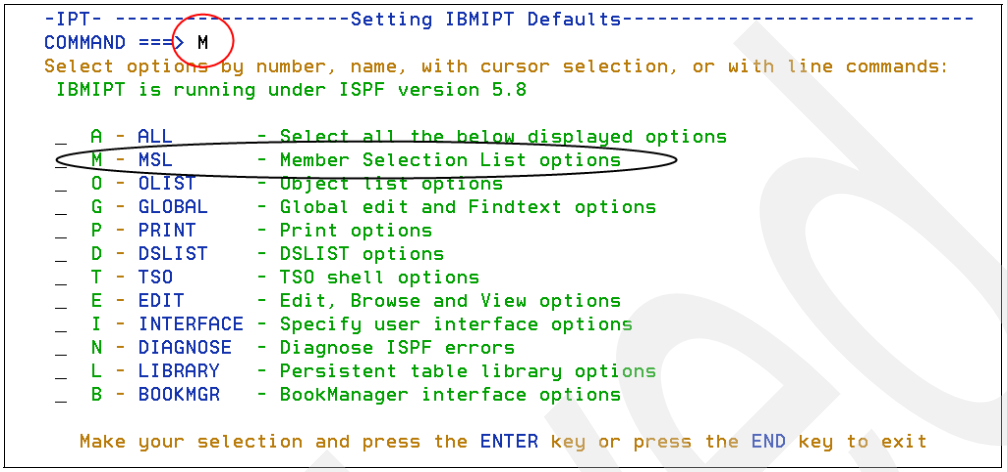

Figure 12-3 Invoke MSL setting

Figure 12-4 provides the various options that you can set in the IPT profile for MSLs.

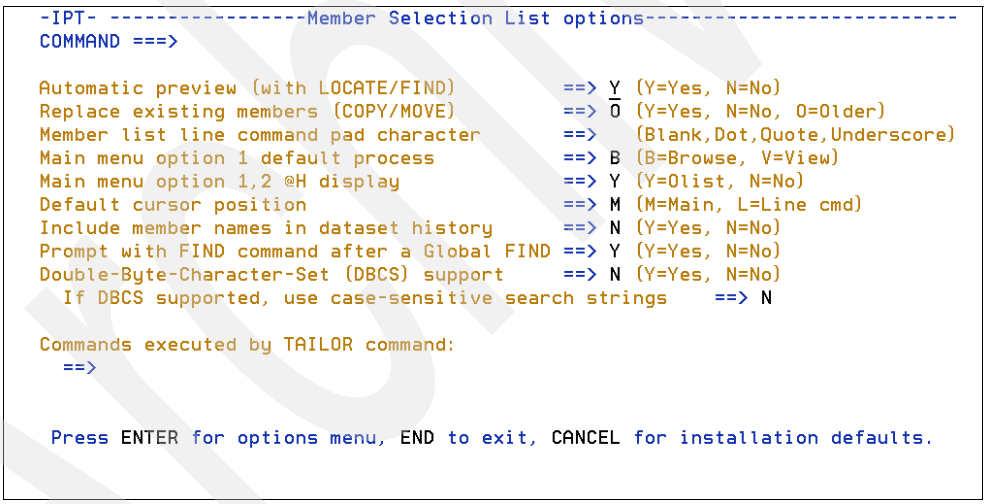

Figure 12-4 MSL options

Table 12-1 on page 316 defines the available options for MSLs.

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Table 12-1 MSL settings and descriptions

MSL setting	Description
Automatic preview (with LOCATE/FIND)	You can watch the preview of the results of LOCATE/FIND by setting this option to Y.
Replace existing members (COPY/MOVE)	As an IPT user, you are being provided an option while replacing existing members of PDS or PDSE. During COPY/MOVE, you can opt to proceed with replace, avoid replace, or replace if the version is old.
Member list line command pad character	You can choose the pad character to be used in member list line commands, such as Blank, Dot, Quote, or Underscore.
Main menu option 1 default process	You can choose the default process as Browse or View.
Main menu option 1, 2 @H display	Here, you can specify whether to view the result as an OLIST or not. Specify Y for OLIST.
Default cursor position	This option is the typical option where you can choose for the cursor to be positioned at the Main command or the Line command.
Include member names in dataset history	Specify this option to Y, if you want to view the member names while viewing the results of dataset history or @H.
Prompt with FIND command after a Global FIND	You can set this option to Y in order to view the FIND panel after viewing the results of Global FIND.
Double-byte-character-set (DBCS) support	This option has to be set as Y to support DBCS.
If DBCS is supported, use case-sensitive search strings	This option has to be set as Y to support case-sensitive DBCS search strings.
Commands executed by the TAILOR command	As an IPT user, you can specify the MSL commands that have to be executed when you use the TAILOR command on MSL. These commands will be the default commands that are executed when the TAILOR command is invoked.

12.4 Settings for Object List (OLIST)

You invoke the OLIST - Object List Options menu by typing 0 (for OLIST) in the IPT SET menu. Figure 12-5 on page 317 shows the various options for OLIST. Chapter 2, “Object Lists” on page 7 describes OLISTs in detail.

```
-IPT- ------------------OLIST - Object List Options----------------------------
COMMAND ===>

Default command (when selecting an item)  ==> B  (B=Browse, E=Edit, V=View)
Show VOLSER of cataloged data-sets        ==> Y  (Y=Yes, N=No)
Check edit recovery when the list opens   ==> N  (Y=Yes, N=No)
Provide a field for TSO command parms     ==> Y  (Y=Yes, N=No)
Display mode (right column shows)         ==> V  (C=Class, V=Volume)
Default cursor position                   ==> M  (M=Main command, L=Line cmd)
Include member names in dataset history   ==> N  (Y=Yes, N=No)
Double-Byte-Character-Set (DBCS) support  ==> N  (Y=Yes, N=No)
  If DBCS supported, use case-sensitive search strings    ==> N

 Press ENTER for options menu, END to exit, CANCEL for installation defaults.
```

Figure 12-5 OLIST options

Table 12-2 describes the various options with their attributes that you can set for OLIST.

Table 12-2 OLIST settings and descriptions

OLIST setting	Description
Default command (when selecting an item)	This option provides the flexibility to open the dataset in one of three modes: Browse, Edit, and View.
Show the VOLSER of the cataloged datasets	This option provides the option to view the VOLSER of the dataset in the Object List view.
Check edit recovery when the list opens	This option allows you to include/exclude the edit recovery option when an object list is opened.
Provide a field for TSO command parameters	Setting this option to `Y` provides the line to issue TSO commands.
Display mode (the right column shows)	This option gives you the choice to view the CLASS or VOLUME of the dataset in the list.
Default cursor position	This option is the option to decide the default cursor position at the Main command and the Line command.
Include member names in the dataset history	Setting this option to `Y` allows you to view the most recently accessed member of the PDS or PDSE in the dataset history.
Double-byte-character-set (DBCS) support	This option must be set as `Y` to support DBCS.
DBCS case-sensitive search strings	This option must be set as `Y` to support case-sensitive DBCS search strings.

12.5 Settings for GLOBAL FINDTEXT

There are settings specific to the GLOBAL commands that are used for OLIST and MSL. You invoke the GLOBAL settings menu by typing `G` on the IPT SET menu. Figure 12-6 on page 318 shows the various options for the GLOBAL commands that are used with MSL and OLIST.

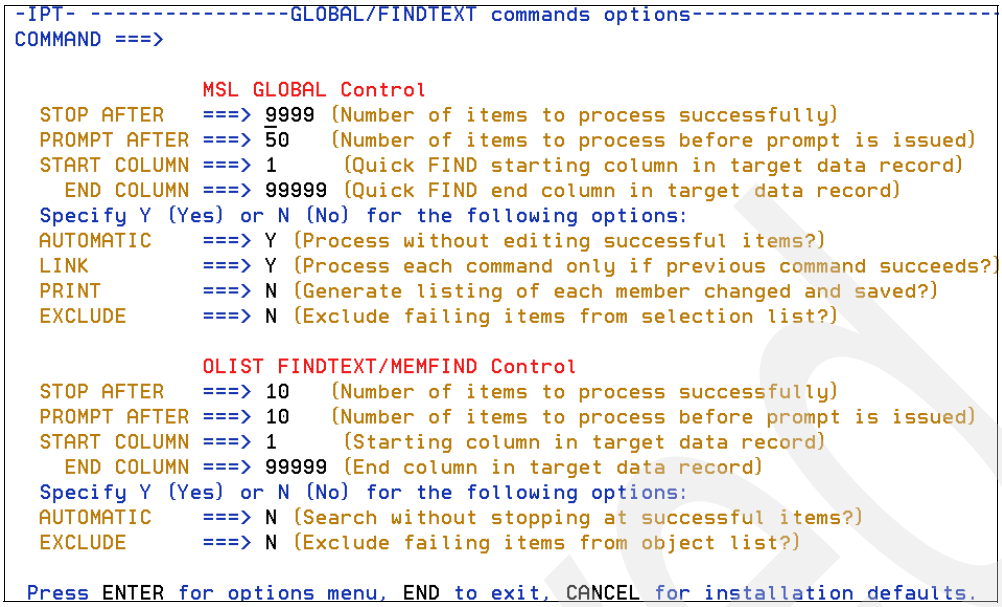

Figure 12-6 Global options for MSL and OLIST

Table 12-3 describes the options for the MSL GLOBAL commands.

Table 12-3 MSL GLOBAL settings and descriptions

MSL GLOBAL command	Description
STOP AFTER	You can specify the limit or maximum number of items that must be processed successfully.
PROMPT AFTER	This number is the number of items that must be processed successfully before a prompt is issued.
START COLUMN	The column number specified will be used by QUICK FIND as the starting position in the data record.
END COLUMN	The column number specified will be used by QUICK FIND as the ending position in the data record.
AUTOMATIC	Set this option to Y for global processing to continue without editing for successful items.
LINK	Set this option to Y for global processing to continue provided the previous command is successful.
PRINT	Set this option to Y to generate the list of each member changed and saved.
EXCLUDE	Set this option to Y to exclude the failing items from the final Member Selection List.

Table 12-4 on page 319 describes the options for OLIST FINDTEXT/MEMFIND commands.

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Table 12-4 OLIST GLOBAL settings and descriptions

OLIST GLOBAL setting	Description
STOP AFTER	You can specify the limit or maximum number of items that must be processed successfully.
PROMPT AFTER	This number is the number of items that must be processed successfully before a prompt is issued.
START COLUMN	The column number specified will be used for processing as the starting position in the data record.
END COLUMN	The column number specified will be used for processing as the ending position in the data record.
AUTOMATIC	Set this option to `Y` for global processing to continue without editing the successful items.
EXCLUDE	Set this option to `Y` to exclude the failing items from the final Member Selection List.

12.6 Settings for PRINT

IPT provides you with the flexibility to set certain options globally, thus, eliminating the repetition of selecting the options for each print action. The Print options menu is invoked by typing `P` on the IPT SET menu. Figure 12-7 shows the various settings for PRINT functions.

```
-IPT- -------------------------Print options-----------------------------------
COMMAND ===>

  Suppress page formatting    ===> N (N=No, Y=Yes - file is already formatted)
  Print changed lines in bold ===> N (N=No, Y=Yes)
  Highlight program elements  ===> Y (N=No, Y=Yes - emphasize recognized items)
  Process mode                ===> G (I=print immediately)
                                     (G=Group requests for later printing)
                                     (L=print direct to the ISPF LIST data set)
  For process modes I and G:

    DESTINATION ID     ===>                 (Node-id<.User-id>)
    CLASS              ===> A               (or Sysout class)
    WRITER name        ===>                 (Output WRITER)
    Number of copies   ===> 1               (How many?)
    Lines per page     ===> 60              (page size)
    Keep in HOLD queue ===> N               (Y=Yes, N=No)
    FORM number        ===>
    FCB name           ===>

  NOTE: Under process modes I and G, your USERID will be on the separator page.

 Press ENTER for options menu, END to exit, CANCEL for installation defaults.
```

Figure 12-7 PRINT options

Table 12-5 on page 320 shows the settings that are available for the Print options and their descriptions.

Archived

Table 12-5 PRINT settings and descriptions

Print setting	Description
Suppress page formatting	Specify Y or N depending on whether the file is formatted.
Print changed lines in bold	Specify Y to depict changed lines in bold.
Highlight program elements	Specify Y to highlight program elements (or reserved words).
Process mode	There are three processing modes available: I=Print immediately. G=Group requests for later printing. L=Print directly to the ISPF LIST dataset.

Table 12-6 describes the settings specific to process modes I and G.

Table 12-6 PRINT process mode setting descriptions

PRINT process mode setting	Description
DESTINATION ID	Specify the Node ID and user ID of the destination.
CLASS	Specify the SYSOUT class.
WRITER name	This name is an optional parameter.
Number of copies	Specify the number of required copies.
Lines per page	Specify the number of lines to be printed on a page.
Keep in HOLD queue	Specify if you want to place the print job in the HOLD queue.
FORM number	This number is an optional parameter.
FCB name	This name is an optional parameter.

12.7 Settings for DSLIST

You invoke the DSLIST options menu by typing D in the IPT SET menu. Figure 12-8 shows that various settings for the DSLIST functions.

```
-IPT- ------------------------DSLIST options----------------------------------
COMMAND ===>

Specify the action to take when you leave the Command line blank and
press the Enter key:

  Default action ===> TP  DS=DSLIST
                          TP=Temporary Object List
                          PL=Permanent Object List

  Default LEVEL  ===> IBMGRP.*
  VOLUME         ===>
  DSLIST  view   ===> TOTAL    (VOLUME,SPACE,ATTRIB,TOTAL)

  VOLUME list threshold ===>   100 To suppress summary data for speed

 Press ENTER for options menu, END to exit, CANCEL for installation defaults.
```

Figure 12-8 DSLIST options

DSLIST is more commonly known as option 3.4 from the main IPT menu. As an IPT user, you can specify the default action to be taken when the command line is left blank.

Prior to describing the default action, we will explain the default values that are used in DSLIST when these values are not specified. Table 12-7 shows the DSLIST default settings and descriptions.

Table 12-7 DSLIST default settings and descriptions

DLIST default settings	Descriptions
LEVEL	The dataset specified in this entry will appear as the default dataset name in DSLIST.
VOLUME	You can specify the VOLUME to appear as the default on DSLIST. We suggest you leave this setting blank unless it is necessary to specify it.
VIEW	This setting is the option to specify the initial view of DSLIST.
THRESHOLD	This option allows you to restrict the number of volumes to be searched and display the summary information per volume. Search will cease after the count of volumes reaches the limit specified. In other words, it controls the summary data display in the initial display of all selected volumes. You can optimize the number of volumes searched, and the results are available in less time. We suggest that you set this value depending on the count of volumes available on your system and the CPU speed of your system.

The entries on the DSLIST menu will appear based on the options that you set for the DSLIST settings. In the case of a scenario where the default level and the default action to be taken are left blank, IPT provides the choice of one of following actions as shown in Table 12-8.

Table 12-8 DSLIST setting and description when the default level and default action are left blank

DSLIST setting	Description
DS for DSLIST	The command DS will appear as the default command.
TP for Temporary Object List	The menu to create the Temporary Object List will appear.
PL for Permanent Object List	The command PL will appear as the default command.

12.8 Setting for the Time Sharing Option Command Shell

There are certain options that you can set for the Time Sharing Option (TSO) Command Shell. Refer to Chapter 4, “TSO Command Shell” on page 135 for details. You invoke the TSO shell options menu by typing T in IPT SET menu. Figure 12-9 on page 322 shows the various settings that are available for TSO Shell functions.

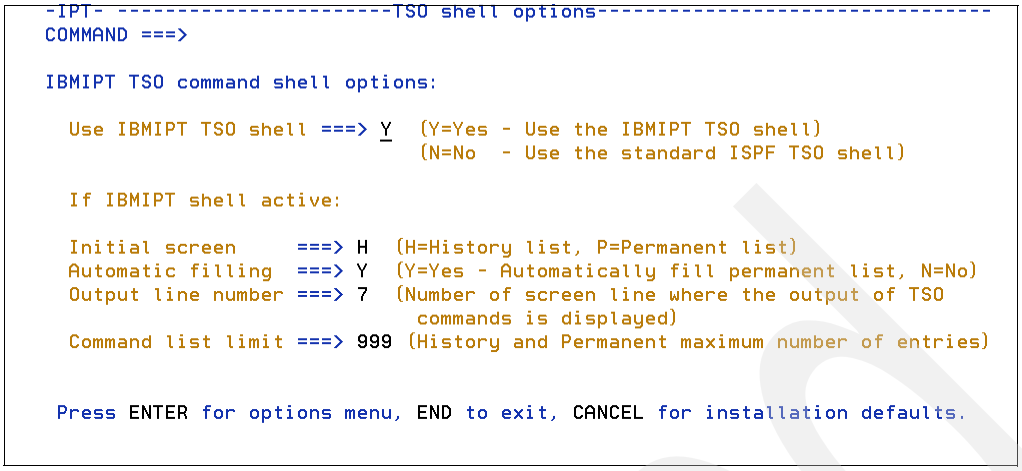

Figure 12-9 TSO shell options

Use the IPT TSO shell options menu to choose whether to use the new IBMIPT TSO shell or to use the standard ISPF TSO shell. If you choose to use the IBMIPT TSO shell (type `Y` for “Use IBMIPT TSO shell”), you can use the additional settings that are shown in Table 12-9.

Table 12-9 TSO Command shell setting description

TSO command shell settings	Description
Initial panel	Depending on your choice, the history list or permanent list of TSO commands will be displayed. Type `H` to view the history list, or type `P` for the permanent list.
Automatic filling	If this option is set to `Y`, the TSO commands that you execute will be stored in the permanent list.
Output line number	The line number on the 3270 panel where the TSO command output will be displayed is specified in this option. Figure 12-9 shows the value is set to `7`. Therefore, output will be displayed starting at line 7 onward.
Command list limit	This option can be used to cap the number of TSO commands that can be stored in the history list and in the permanent list. The maximum number of entries is 999. This option is extremely useful to optimize the space usage in your system. Setting this parameter to a lower value saves space that is allocated to store the history list and the permanent list.

12.9 Settings for EDIT/VIEW/BROWSE

EDIT/VIEW/BROWSE commands are widely used by ISPF or IPT users. You invoke the EDIT/VIEW/BROWSE options menu by typing `E` on the IPT SET menu.

Figure 12-10 on page 323 shows the various settings for the EDIT/VIEW/BROWSE functions. Table 12-10 on page 323 shows the descriptions of the available settings.

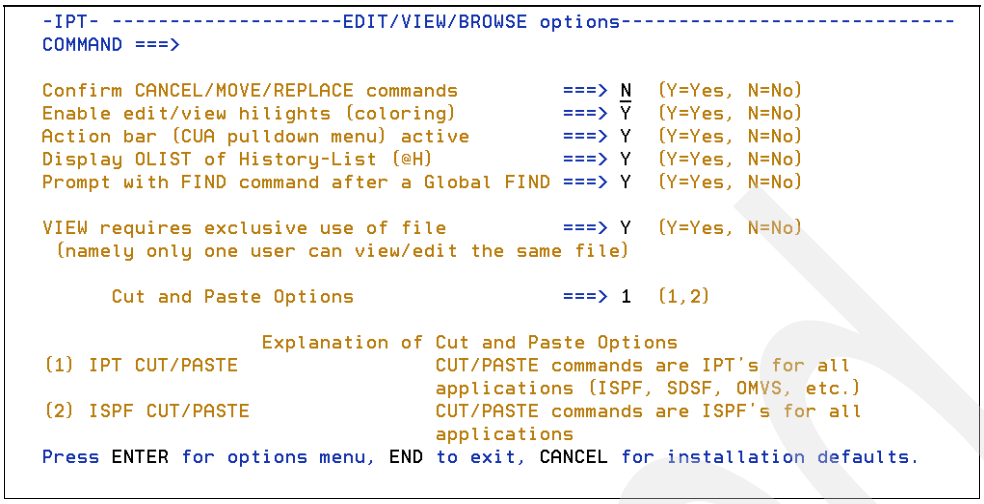

Figure 12-10 EDIT/VIEW/BROWSE options

Table 12-10 EDIT/VIEW/BROWSE settings and descriptions

EDIT/VIEW/BROWSE settings	Description
Confirm CANCEL/MOVE/REPLACE commands	Setting this option to Y enables you to view a confirmation panel while performing CANCEL/MOVE/REPLACE.
Enable edit/view highlights (coloring)	This option enable you to use the HILITE command on the EDIT/VIEW panels.
Action bar (Common User Access (CUA) drop-down menu) active	You can activate the Common User Access menu to add or change attributes associated with color, highlighting, and the intensity of the elements on the ISPF panels.
Display OLIST of History-List (@H)	This option displays the OLIST when you opt for the History List.
Prompt with FIND command after a Global FIND	Type Y to set this option to Yes in order to view the FIND panel after viewing the results of Global FIND.
VIEW requires exclusive use of file	Unlike ISPF, IPT provides you an additional facility to view files in exclusive mode.
Cut and Paste options	Type 1 or 2 to choose between the powerful IPT Cut and Paste and the traditional ISPF Cut and Paste.

12.10 Settings for the User Interface

The User Interface is associated with action bars and HOTBARS that are available on specific ISPF panels. You can choose the availability of action bars and HOTBARS on certain panels by setting the appropriate option. You invoke the User Interface Options menu by typing I on the IPT SET menu.

Figure 12-11 on page 324 shows the various settings for the User Interface functions.

```
-IPT- ---------------------User Interface Options-----------------------------
COMMAND ===>

    +---------------------------------------------------------------------+
    | Note: Changes specified on this screen may not affect all of the    |
    |       panels that are currently displayed in nested applications.   |
    +---------------------------------------------------------------------+

Verify or specify the following options: (Enter Y for Yes, N for No):

  Activate HOTBARS                      ===> Y

  Activate Action Bars                  ===> Y
    If Action Bars are active:
      Display Action Bars in Browse, Edit, View    ===> Y
      Display Action Bars in Member Selection List ===> Y
      Display Action Bars in the object list       ===> Y
      Display Action Bars in DSLIST                ===> Y

Press ENTER for options menu, END to exit, CANCEL for installation defaults.
```

Figure 12-11 User Interface options

Table 12-11 describes the various options for the User Interface.

Table 12-11 User Interface settings and descriptions

User Interface setting	Description
Activate HOTBARS	This option must be set to `Y` to activate HOTBARS and make them available on ISPF panels.
Activate Action bars	This option must be set to `Y` to activate Action bars and make them available on ISPF panels.

There are four sub-options within the Action bars that provide you with more flexibility by having the Action bars display on the BROWSE/EDIT/VIEW, MSL, Object List, and DSLIST panels.

12.11 Settings for diagnostics

As an IPT user, you can set the options to diagnose any errors that are encountered during the use of IPT. This option will provide assistance only when errors arise due to issues that are related to ISPF and IPT panels. Figure 12-12 on page 325 shows the various settings for diagnostic functions. You invoke the Diagnostics Options panel by typing `N` on the IPT SET menu.

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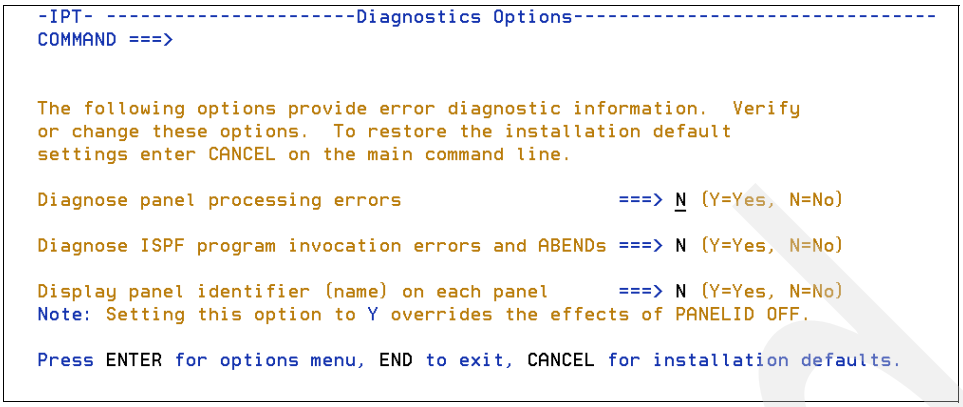

Figure 12-12 Diagnostics Options

The options on Figure 12-12 determine these functions:

- Diagnose panel processing errors: Setting this option to Y allows you to view and use the diagnostic help that is provided by IPT to analyze ISPF panel processing errors.
- Diagnose ISPF program invocation errors and ABENDs: Setting this option to Y allows you to view and use the diagnostic help that is provided by IPT to analyze ISPF program invocation errors and ABENDs that are associated with ISPF during the processing.
- Display panel identifier (name) on each panel: Setting this option to Y displays the ISPF panel identifier (name) on the top of the panel. The command PANELID (OFF/ON) is usually used to display the panel identifier for each ISPF panel. However, setting this IPT option to Y overrides the function set by PANELID OFF.

12.12 Settings for the persistent table library

Persistent tables are significant for an IPT user, because a persistent table stores the OLIST, MSL, and IPT settings after you log off from IPT. You invoke the Persistent Table Library Options panel by typing L on the IPT SET menu. Here, we describe the various choices that you can make while allocating persistent tables.

Figure 12-13 on page 326 shows the various settings for persistent table library functions.

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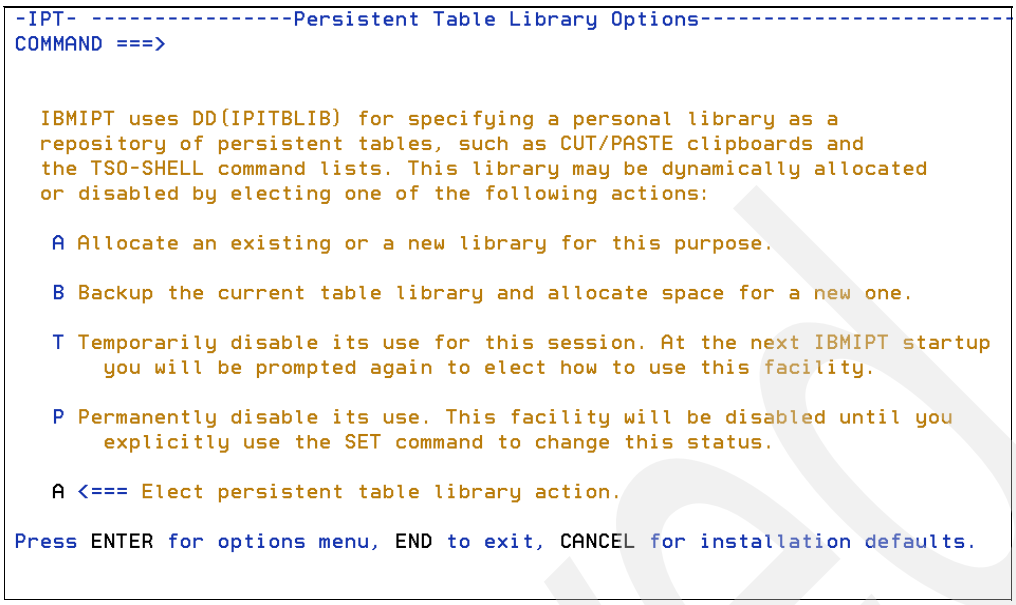

Figure 12-13 Persistent Table Library Options

IPT provides you with four choices to use persistent tables, as shown in Table 12-12.

Table 12-12 Persistent tables setting description

Option	Action taken by IPT
A	IPT allocates an existing or new library to store persistent tables. A panel will prompt you to specify the name of an existing or new library.
B	IPT backs up the current table library and allocates space for a new library.
T	The use of persistent tables is temporarily disabled only for the current session.
P	The use of persistent tables is disabled permanently. You have to explicitly use the ISET command to enable it for future sessions.

12.13 Setting for the BookManager interface

BookManager is an IBM product that is widely used by System z users. You invoke the BookManager Interface Options panel by typing `B` on the IPT SET menu. Figure 12-14 on page 327 shows the various settings for BookManager Interface functions. IPT can identify the BookManager objects by the dataset name and other attributes. You can use the BookManager Interface options within IPT to set basic options.

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```
-IPT- -----------------BookManager Interface Options--------------------------
COMMAND ===>


  IBMIPT recognizes IBM BookManager objects by examining their dataset
  names and optionally verifying some pertinent attributes.

BookManager interface status  ===> D  ( A ctivate  D eactivate)

Set BOOKSHELF defaults:
  Data set name suffix   ===> BKSHELF (blank to ignore)
  Data set record format ===> VB      (blank to ignore)
  Data set record length ===> 0       (zero to ignore)

Set BOOK defaults:
  Data set name suffix   ===> BOOK    (blank to ignore)
  Data set record format ===> FB      (blank to ignore)
  Data set record length ===> 0       (zero to ignore)

Press ENTER for options menu, END to exit, CANCEL for installation defaults.
```

Figure 12-14 BookManager Interface Options

On Figure 12-14, the BookManager interface status prompt is the most important option. It either activates (using A) or deactivates (using D) the BookManager options. IPT has specific options for Bookshelves and Books within these options. You can set the suffix for the dataset name, its record format, and its record length for Bookshelves and Books. It is not mandatory to provide values for these fields. You can ignore a field by providing blanks or zeroes as appropriate.

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SCLM integration with IPT

The Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS interfaces with the IBM Software Configuration and Library Manager (SCLM) to provide you with all of the functionality of IPT with frequently used SCLM functions.

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13.1 Customization to support SCLM

SCLM requires more information when creating members, such as lock information, change codes, and alternate project libraries. To minimize the collection of SCLM information for non-SCLM users, the IPT customization wizard provides the following SCLM customization options:

- All users are SCLM users.
- There are no SCLM users.
- Users are identified by an IQISCLM DD DUMMY statement in their LOGON procedure.

Figure 13-1 is the beginning of the IPT customization wizard SCLM panels.

```
------------------------ IBMIPT - Customization Wizard ------------------------
COMMAND ===> _____________________________________________________________

    Select the optional object classes to be supported.  Internal
    object classes are already preselected.  If you are unsure, select
    all options to get more information about each one.  You will be
    able to de-select undesired option later.

Select   Object Class                          Notes
-------  ------------------------------------- --------------------
  S      Sequential data sets                  Built-in IBMIPT support
  S      PDS and PDSE libraries                Built-in IBMIPT support
  S      Open Edition files                    Requires OpenEdition MVS
  S      PC files                              Requires ISPF workstation
  =      Panvalet libraries                    Interfaces to third party product
  _      Librarian files                       Interfaces to third party product
  _      PDSMAN libraries                      Activates built-in support
  S      VSAM data sets                        Interfaces to third party product
  S      DB2 tables                            Interfaces to third party product
  S      User defined objects                  Define your own interface
  S      SCLM support                          Activates built-in support

Press ENTER to proceed or the END key to return to the initial screen.
```

Figure 13-1 IPT customization wizard: SCLM support

Enter S, and Figure 13-2 is displayed to provide SCLM support through IPT.

```
------------------------ IBMIPT - Customization Wizard ------------------------
COMMAND ===>

SCLM is ISPF's Software Configuration and Library Manager. SCLM provides
controlled edit capabilities within standard PDS libraries (with member locking,
check-in/check-out), full development life cycle of applications (including
a "MAKE"), and extensive reporting. SCLM is an integrated part of ISPF.

IBMIPT can provide significant benefits to SCLM users by integrating SCLM
support into the standard member list, DSLIST and OLIST. If your installation
uses SCLM, it is recommended that you activate the SCLM support on this screen.

Activate SCLM support ===> D Y =Yes - Support SCLM for all users
                             N =No  - Do not provide SCLM support
                             D =Conditional support.  SCLM will only be
                             supported for users who at the time IBMIPT is
                             started, have a preallocated DD "IQISCLM" .
                             This DD can be allocated in the LOGON PROC/CLIST.
                             Example: ALLOC DD(IQISCLM) DUMMY
                                 or   //IQISCLM DD DUMMY

Press ENTER to proceed or the END key to return to the initial screen.
```

Figure 13-2 IPT customization wizard: Activate SCLM support

The installation provides conditional SCLM support. Your IPT session supports the SCLM commands, provided that you have the DD name, IQISCLM, allocated to your LOGON procedure.

Hint: If your installation provided conditional SCLM support and your LOGON procedure does not have the //IQISCLM DD DUMMY statement, or CLIST does not have ALLOC DD(IQISCLM) DUMMY, you can dynamically add it. Exit from ISPF, and enter the command `ALLOC DD(IQISCLM) DUMMY`. Invoke ISPF, and your session will be SCLM-enabled.

The SCLM parameter prompt in Figure 13-3 refers to the SCLMPARM panel in Figure 13-4.

```
----------------------- IBMIPT - Customization Wizard -----------------------
COMMAND ===>
Verify SCLM options:
SCLM parameter prompt  ===> F Y =Yes - Whenever an SCLM library is accessed.
                              N =No - Users must preset the parameters with
                                 the SCLMPARM command (in the Member List).
                              F =A prompt screen is displays only on first time
                                 access to a specific library. Thereafter the
                                 previous parameters for that library are used.

 Note: the above option can be changed by individual users via the SET command.

The folowing option applies to ISPF Version 4.1 or above:
 Override SCLMCHK value ===> * (W=WARN, E=ERROR, N=NONE, *=no override)
  This setting allows you to override the value of the "SCLMCHK" field in
  ISRCONFG (ISPF's configuration table). This field defines how edit should
  react when attempting to edit an SCLM-saved file without SCLM locking.

  SCLMCHK values (See ISPF Customization for more details):
   WARN  -Display a warning message if edited project/member is SCLM controlled.
   NONE  -No checking is done. No warning messages issued.
   ERROR -Reject editing of SCLM-saved members without SCLM or IBMIPT locking.

 Press ENTER to proceed or the END key to return to the initial screen.
```

Figure 13-3 IPT customization wizard: SCLM parameter prompt and override SCLMCHK value

For the SCLM parameter prompt in Figure 13-3, the recommended setting is `F`, which will display the SCLMPARM panel that is shown in Figure 13-4 when an SCLM library is first accessed.

The Override SCLMCHK option provides a way to override the SCLM locking. We recommend that you set this value to an asterisk (*), provided that there are no SCLM lock overrides.

```
                                                                        -IPT-
 Command     ===> ____________________________________________________________
  GROUPS: 1=DEVI025  2=INT420   3=TEST420  4=RLSE420  5=
 Project: SOFTAUD  Group: DEVI025 Type: ASM
 Specify/verify SCLM parameter for this library:
 Lock        ===> YES      (Yes, No)
 Alternate   ===> ________ (Alternate project name)
 Change code ===> ________
 Language    ===> ________ (Default language)
 Auth. code  ===> ________
  F1=HELP     F2=SPLIT    F3=END      F4=VIEW     F5=RFIND    F6=RCHANGE
  F7=UP       F8=DOWN     F9=SWAP     F10=LEFT    F11=RIGHT
```

Figure 13-4 Initial SCLMPARM panel

On Figure 13-4 on page 331, you can set the following values:

- Lock: `Yes` will lock members from other SCLM users.
- Alternate: SCLM macros define the characteristics of the SCLM hierarchy. The library hlq.PROJDEFS.LOAD contains the assembled and linked SCLM macro definitions. If you want to override the default member name of the SCLM definition, you can use a different (alternate) SCLM member, which is specified here.
- Change code: You can specify the default change code.
- Language: You can specify the default language.
- Authorization (Auth.) code: You can specify the default authorization code.

The fields that are defined by the SCLMPARM command apply only to the SCLM library that is currently edited by IPT. For example, you can set SCLMPARM values for the library SOFTAUD.DEVI205.ASM to the language HLASM, and the SOFTAUD.DEVI205.JCL library can have the language TEXT.

Hint: The SCLMPARM provides the *default* values when you add new members to an SCLM library. You can override these parameters using the SPROF command.

You can override the default installation values of Lock and Display SCLM parameters for your ISPF sessions by using the ISET parameter. Select SCLM options by typing `S` next to SCLM as shown in Figure 13-5.

```
-IPT- --------------------Setting IBMIPT Defaults-------------------------------
COMMAND ===>
Select options by number, name, with cursor selection, or with line commands:
 IBMIPT is running under ISPF version 5.7

_  A - ALL       - Select all the below displayed options
_  M - MSL       - Member Selection List options
_  P - OLIST     - Object list options
_  G - GLOBAL    - Global edit and Findtext options
_  R - PRINT     - Print options
_  D - DSLIST    - DSLIST options
_  T - TSO       - TSO shell options
_  E - EDIT      - Edit, Browse and View options
_  I - INTERFACE - Specify user interface options
s  S - SCLM      - SCLM options
_  N - DIAGNOSE  - Diagnose ISPF errors
_  L - LIBRARY   - Persistent table library options

   Make your selection and press the ENTER key or press the END key to exit
```

Figure 13-5 User SCLM options

You can override the LOCK default for all SCLM libraries for your ID, as shown in Figure 13-6.

```
-IPT- -------------------------SCLM Options-----------------------------------
COMMAND ===>

Verify or specify the following options:

  Edit locks members in SCLM controlled libraries ===> Y (Y=Yes, N=No)

  Display SCLM parameters before accessing library ===> F (Y=Yes, N=No,
                                                           F=First time only)
   Note: When the F option (first time) is active, IBMIPT will try to find the
         previously specified parameters for the current combination of PROJECT
         and TYPE.  If none are found, a prompt window is displayed. As IBMIPT
         "learns" about these parameters, the prompt window will be displayed
         less frequently.

Press ENTER for options menu, END to exit, CANCEL for installation defaults.
```

Figure 13-6 SCLM Options panel

13.2 SCLM IPT interface

Figure 13-7 defines the SCLM hierarchy that we used in the examples in this section.

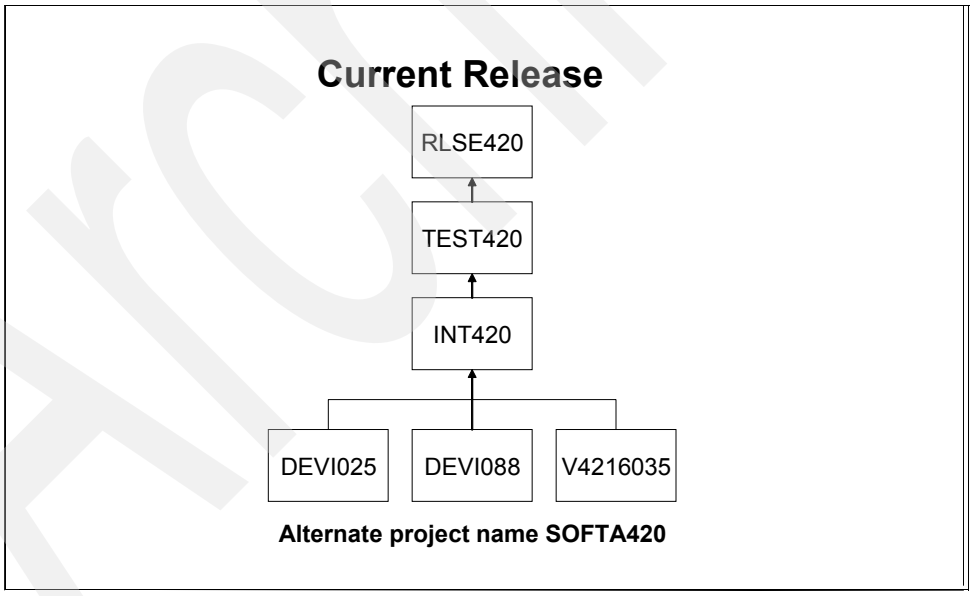

Figure 13-7 SCLM hierarchy

The Alternate project name SOFTA420 defines the SCLM hierarchy that is shown in Figure 13-7. Each level contains a number of datasets, such as SOFTAUD.DEVI025.ASM, LOAD, ARCHDEF, and so on.

The Object List '<' character, shown on line 6 of Figure 13-8, denotes an SCLM library. Enter the lowest level library in the SCLM hierarchy.

Archived

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ---------- Personal list ----------------- Row 5 to 13 of 13
Command    ===> 6 e                                       SCROLL ===> CSR
Hotbar: REFRESH  FLIP     UTIL     FILLVOL  CLRVOL   SET      CUT      UPDATE
Open list  ===> MYLIST   (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
                     5 |------------------ SOFTAUD LIBRARIES -------  -------
                     6 <SOFTAUD.DEVI025.ASM                           SCLM
                     7 =SOFTAUD DEVI025 INT420 TEST420 RLSE420 ASM    ISPF
                     8 'SOFTAUD.DEVI025*'                             LIST
                     9 'SOFTAUD.INT420*'                              LIST
                    10 'SOFTAUD.TEST420*'                             LIST
                    11 'SOFTAUD.RLSE420*'                             LIST
                    12 :LISTW SOFTAUD                                 OLIST
                    13 'SOFTAUD.PROJ*'                                LIST
                      ---------------- END OF LIST ----------------

 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-8 Object List: SCLM Libraries

In Figure 13-9, IPT found the three libraries, which are circled, from the SCLM project definition, using the alternate project definition member SOFTA420.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ SOFTAUD.DEVI025.ASM -------------- "A" will display assist
 COMMAND  ===> sclmparm                                 SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO      SET
                                  LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED       CHANGED        SIZE  INIT   MOD USERID
    =NOTE>Enter the "SCLMPARM" command to change the following defaults:
    =NOTE>Language:HLASM    Change code:V4R2M0   Auth code:
    =NOTE>Using alternate project SOFTA420
   $AUDFORM           S 4 01.10 96/02/26 06/04/24 12:50    97    89      0 INTT065
   $AUDFSTK           S 4 01.00 93/05/04 99/05/12 12:06    18    18      0 V20SHIP
   $AUDGSTK           S 4 01.07 93/05/04 02/06/11 21:20    61    29      0 INTT025
   $AUDINIT           S 4 01.05 95/03/14 03/12/04 11:45    66    38      0 INTT021
   $CALL              S 4 01.09 98/08/24 99/05/12 12:06    71    59      0 INTT046
   $CKSAVE            S 4 01.12 93/10/13 99/05/12 12:06    41    25      0 INTT022
   $CKSAVE1           S 4 01.11 06/08/16 06/08/25 15:54    59    41      0 INTT068
   $ENDMSG            S 4 01.07 93/10/13 99/12/01 00:52    69    17      0 INTT022
   $GENBRK            S 4 01.00 03/12/01 03/12/01 15:51    28   204      0 INTT021
   $GENFLD            S 4 01.00 03/12/01 03/12/01 15:56    63   204      0 INTT021
   $GENLEV            S 4 01.00 03/12/01 03/12/01 15:46    41   204      0 INTT021
   $GENPRN            S 4 01.00 03/12/01 03/12/01 15:47    32   204      0 INTT021
  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-9 SCLM Edit using a Member Selection List (MSL)

The SCLMPARM command shows the panel in Figure 13-10 on page 335.

```
                                                                      -IPT-
Command     ===> ____________________________________________________________
 GROUPS: 1=DEVI025  2=INT420   3=TEST420  4=RLSE420  5=
Project: SOFTAUD  Group: DEVI025 Type: ASM
Specify/verify SCLM parameter for this library:
Lock        ===> YES      (Yes, No)
Alternate   ===> SOFTA420 (Alternate project name)
Change code ===> V4R2M0
Language    ===> HLASM    (Default language)
Auth. code  ===> _______
 F1=HELP     F2=SPLIT    F3=END      F4=VIEW     F5=RFIND    F6=RCHANGE
 F7=UP       F8=DOWN     F9=SWAP     F10=LEFT    F11=RIGHT
```

Figure 13-10 SCLMPARM panel populated with data

The SCLMPARM panel provides the default values that SCLM uses for new members. You might need to update the alternate project name to direct SCLM to the correct libraries. The examples in this chapter use the data that is shown in Figure 13-10.

In Figure 13-11, the DEF E action sets the default action to EDIT. The 7 initiates an edit session with concatenated libraries. IPT classified the datasets on line 7 as ISPF concatenated libraries.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Personal list ----------------- Row 5 to 13 of 13
Command    ===> def e; 7                                  SCROLL ===> CSR
Hotbar: REFRESH  FLIP     UTIL     FILLVOL  CLRVOL   SET      CUT      UPDATE
Open list  ===> MYLIST   (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
                       5 !------------------ SOFTAUD LIBRARIES ------   ------
                       6 <SOFTAUD.DEVI025.ASM                          SCLM
                       7 =SOFTAUD DEVI025 INT420 TEST420 RLSE420 ASM   ISPF
                       8 'SOFTAUD.DEVI025*'                            LIST
                       9 'SOFTAUD.INT420*'                             LIST
                      10 'SOFTAUD.TEST420*'                            LIST
                      11 'SOFTAUD.RLSE420*'                            LIST
                      12 :LISTW SOFTAUD                                OLIST
                      13 'SOFTAUD.PROJ*'                               LIST
                        ---------------- END OF LIST ----------------


 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-11 ISPF concatenated library: Used as SCLM libraries

Both line 6 and line 7 in Figure 13-11 yield the same results. IPT determined that these libraries are SCLM libraries by the S in the lib field, which we circled in Figure 13-12 on page 336.

Archived

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ SOFTAUD.DEVI025.ASM ------------- "A" will display assist
 COMMAND  ===>                                            SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
                                  LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
   NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
   =NOTE>Enter the "SCLMPARM" command to change the following defaults:
   =NOTE>Language:HLASM    Change code:V4R2M0   Auth code:
   =NOTE>Using alternate project SOFTA420
  $AUDFORM          S 4 01.10 96/02/26 06/04/24 12:50    97    89      0 INTT065
  $AUDFSTK          S 4 01.00 93/05/04 99/05/12 12:06    18    18      0 V20SHIP
  $AUDGSTK          S 4 01.07 93/05/04 02/06/11 21:20    61    29      0 INTT025
  $AUDINIT          S 4 01.05 95/03/14 03/12/04 11:45    66    38      0 INTT021
  $CALL             S 4 01.09 98/08/24 99/05/12 12:06    71    59      0 INTT046
  $CKSAVE           S 4 01.12 93/10/13 99/05/12 12:06    41    25      0 INTT022
  $CKSAVE1          S 4 01.11 06/08/16 06/08/25 15:54 _  59    41      0 INTT068
  $ENDMSG           S 4 01.07 93/10/13 99/12/01 00:52    69    17      0 INTT022
  $GENBRK           S 4 01.00 03/12/01 03/12/01 15:51    28   204      0 INTT021
  $GENFLD           S 4 01.00 03/12/01 03/12/01 15:56    63   204      0 INTT021
  $GENLEV           S 4 01.00 03/12/01 03/12/01 15:46    41   204      0 INTT021
  $GENPRN           S 4 01.00 03/12/01 03/12/01 15:47    32   204      0 INTT021
 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-12 SCLM edit using an MSL

If your session is SCLM enabled and SCLM libraries are used, IPT invokes the SCLM support, which includes these functions:

- SCLMPARM command
- K command
- Notes, as shown in Figure 13-12
- SPROF command
- Many more functions

In Figure 13-13, the libraries that are specified in line 7 do not match the SCLM hierarchy. The INT420 library is missing.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (E) ---------- Personal list ----------------- Row 5 to 14 of 14
Command    ===> 7                                          SCROLL ===> CSR
Hotbar: REFRESH  FLIP     UTIL     FILLVOL  CLRVOL   SET      CUT      UPDATE
Open list  ===> MYLIST   (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                        Class
--------- -------- ----- ------------------------------------------- -------
                     5 !----------------- LCMZ SUPPORT -----------    ------
                     6 <SOFTAUD.DEVI025.ASM                           SCLM
                     7 =SOFTAUD DEVI025 TEST420 RLSE420 ASM           ISPF
                     8 'SOFTAUD.DEVI025*'                             LIST
                     9 'SOFTAUD.INT420*'                              LIST
                    10 'SOFTAUD.TEST420*'                             LIST
                    11 'SOFTAUD.RLSE420*'                             LIST
                    12 :LISTW SOFTAUD                                 OLIST
                    13 'SOFTAUD.PROJ*'                                LIST
                    14 JCL
                      ---------------- END OF LIST ----------------


 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-13 ISPF concatenated library: Used as SCLM libraries

IPT notifies you if the libraries in the ISPF concatenation do not match the SCLM hierarchy. If a library is incorrect or missing or if the alternate project definition is incorrect, you will see the panel that is shown in Figure 13-14. Choose option 1 or 2 to continue.

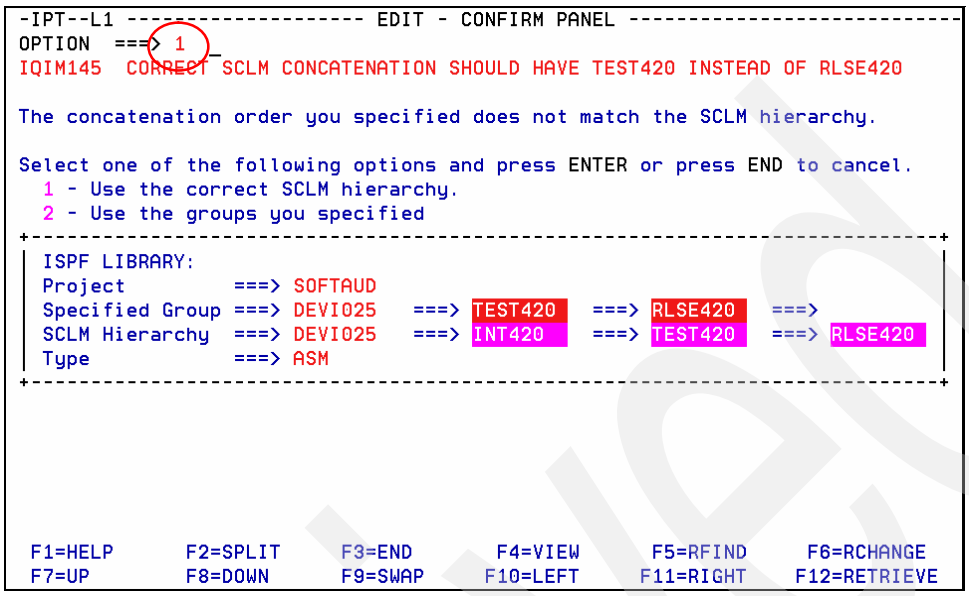

Figure 13-14 IPT SLCM confirmation panel

13.3 IPT SCLM walk-through

In this section, which includes Figure 13-15 on page 338 through Figure 13-51 on page 355, we use IPT and SCLM to show you how to perform these tasks:

- Create a new assembler program.
- Migrate members to SCLM.
- Update the project SCLM ARCHDEF members.
- Build and promote the SCLM ARCHDEF members.
- Remove an obsolete program.

13.3.1 Creating a new assembler program

In this section, we show you how to create a new assembler program and how to assemble it:

1. Edit the SCLM hierarchy that is shown Figure 13-15 on page 338.

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```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (E) ---------- Personal list ----------------- Row 1 to 14 of 14
Command    ===> 6_                                         SCROLL ===> CSR
Hotbar: REFRESH  FLIP     UTIL     FILLVOL  CLRVOL   SET      CUT      UPDATE
Open list  ===> MYLIST   (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ------------------------------------------- -------
                       1 !------------------ PERSONAL LIBRARIES ------- ------
                       2 'INTT125.CLIST'
                       3 'INTT125*'                                    LIST
                       4 JCL
                       5 !------------------ LCMZ SUPPORT -----------   ------
                       6 <SOFTAUD.DEVI025.ASM                          SCLM
                       7 =SOFTAUD DEVI025 TEST420 RLSE420 ASM          ISPF
                       8 'SOFTAUD.DEVI025*'                            LIST
                       9 'SOFTAUD.INT420*'                             LIST
                      10 'SOFTAUD.TEST420*'                            LIST
                      11 'SOFTAUD.RLSE420*'                            LIST
                      12 :LISTW SOFTAUD                                OLIST
                      13 'SOFTAUD.PROJ*'                               LIST
                      14 JCL
                         ---------------- END OF LIST ----------------
```

Figure 13-15 Edit the SCLM hierarchy

One way to locate the items in DEVI025 and INT420 is to use the SORT LIB statement, as shown in Figure 13-16.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ SOFTAUD.DEVI025.ASM -------------- "A" will display assist
 COMMAND  ===> sort lib                                  SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
                                  LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
    =NOTE>Enter the "SCLMPARM" command to change the following defaults:
    =NOTE>Language:HLASM    Change code:V4R2M0   Auth code:
    =NOTE>Using alternate project SOFTA420
   $AUDFORM          S 4 01.10 96/02/26 06/04/24 12:50    97    89      0 INTT065
   $AUDFSTK          S 4 01.00 93/05/04 99/05/12 12:06    18    18      0 V20SHIP
   $AUDGSTK          S 4 01.07 93/05/04 02/06/11 21:20    61    29      0 INTT025
   $AUDINIT          S 4 01.05 95/03/14 03/12/04 11:45    66    38      0 INTT021
   $CALL             S 4 01.09 98/08/24 99/05/12 12:06    71    59      0 INTT046
   $CKSAVE           S 4 01.12 93/10/13 99/05/12 12:06    41    25      0 INTT022
   $CKSAVE1          S 4 01.11 06/08/16 06/08/25 15:54    59    41      0 INTT068
   $ENDMSG           S 4 01.07 93/10/13 99/12/01 00:52    69    17      0 INTT022
   $GENBRK           S 4 01.00 03/12/01 03/12/01 15:51    28   204      0 INTT021
   $GENFLD           S 4 01.00 03/12/01 03/12/01 15:56    63   204      0 INTT021
   $GENLEV           S 4 01.00 03/12/01 03/12/01 15:46    41   204      0 INTT021
   $GENPRN           S 4 01.00 03/12/01 03/12/01 15:47    32   204      0 INTT021
   $GENRGN           S 4 01.00 03/12/01 03/12/03 14:24    32   204      0 INTT021
   $HASHLIB          S 4 01.02 93/05/04 99/05/12 12:06    38    25      0 INTT025
```

Figure 13-16 SORT LIB statement

2. Select the program TSTSVC26, as shown in Figure 13-17 on page 339. We are going to change the name of this module to TSTSVC30, which we demonstrate in this walk-through.

```
 File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ SOFTAUD.DEVI025.ASM --------------------ROW 00001 OF 00343-
 COMMAND  ===>                                               SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
              *SORT*                LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME    RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
   TESTLONG          S 1 01.02 04/08/19 07/09/06 09:46   176   150     0 INTT125
   TESTSCSI          S 1 01.01 03/06/24 03/06/25 12:57   430   429     0 INTT025
s  TSTSVC26          S 2 01.01 07/09/06 07/09/06 10:28    84    84     0 INTT125
   AUCMBASE          S 3 01.01 07/03/15 07/03/26 08:56   861   861     0 INTT070
   AUCMSENU          S 3 01.01 07/03/15 07/03/26 08:56  2082  2082     0 INTT070
   AUDCMPID          S 3 02.45 01/05/29 07/08/30 16:54  4762  3918     0 INTT068
   AUDCMPKB          S 3 01.94 01/10/02 07/08/30 16:55  4556  3358     0 INTT068
   AUDCMPSK          S 3 01.42 01/08/28 07/08/30 16:56  3662  3620     0 INTT068
   AUDCROSS          S 3 01.99 93/05/04 07/05/10 14:35   868   847     0 INTT011
   AUDDIMON          S 3 01.99 01/12/09 07/06/22 12:00  1719  1605     0 INTT068
   AUDDIPTB          S 3 01.99 01/12/10 07/08/21 09:22  2767  1847     0 INTT068
   AUDDIST           S 3 02.99 97/10/28 07/08/30 17:00  2456   593     0 INTT068
   AUDDIUNI          S 3 01.62 06/05/03 07/03/06 10:23   262   126     0 INTT068
   AUDDIXML          S 3 01.99 06/05/30 07/08/21 11:23  2089  1306     0 INTT068
   AUDEXPRM          S 3 04.05 04/01/05 06/11/17 11:51  2934  1282     0 INTT070
   AUDFBOIL          S 3 03.64 99/10/06 07/04/25 15:00  3918  2363     0 INTT065
   AUDFILTM          S 3 02.99 97/12/18 07/08/30 17:04  5936  3858     0 INTT068
```

Figure 13-17 Changing the name of the module to TSTSVC30

Figure 13-18 demonstrates the SCLM command SPROF.

```
 File  Edit  Settings  Build  SCLM  Menu  Utilities  Compilers  Test  Help
-------------------------------------------------------------------------------
-IPT- EDIT SOFTAUD.DEVI025.ASM(TSTSVC26) - 01.01          Columns 00001 00072
Command ===> sprof                                        Scroll ===> CSR
****** ***************************** Top of Data ******************************
000001 TSTSVC26 TITLE 'Test LOCATE SVC 26'
000002 ********************************************************************
000003 *      Execution JCL
000004 *
000005 *      =============
000006 * //   EXEC PGM=IPIUTIL,PARM='<dsname>'
000007 ********************************************************************
000008 *
000009 *      ******************************
000010 *      * PROLOG                     *
000011 *      ******************************
000012 TSTSVC26 RMODE ANY
000013 TSTSVC26 AMODE 31
000014 TSTSVC26 CSECT ,
000015          SAVE  (14,12),,*
000016          LR    R12,R15
000017          USING TSTSVC26,R12
 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-18 IPT SCLM command SPROF

The SPROF command, which we show in Figure 13-19 on page 340, provides the actual language and change code for the member. The SCLMPARM panel, Figure 13-19 on page 340, provides the default values that are used for new members.

```
                                                              -IPT-
Command ===> _____________________________________________________

Specify desired values then press the ENTER key.
or press the END key to leave values unchanged.
Language    ===> HLASM
Change code ===> V4R2M0    (Use "=" to retrieve
                            last entry)
File:SOFTAUD.DEVI025.ASM(TSTSVC26)
Alternate project:SOFTA420
```

Figure 13-19 SCLMPARM panel

3. Copy the member TSTSVC26 to the member TSTSVC30, as shown in Figure 13-20.

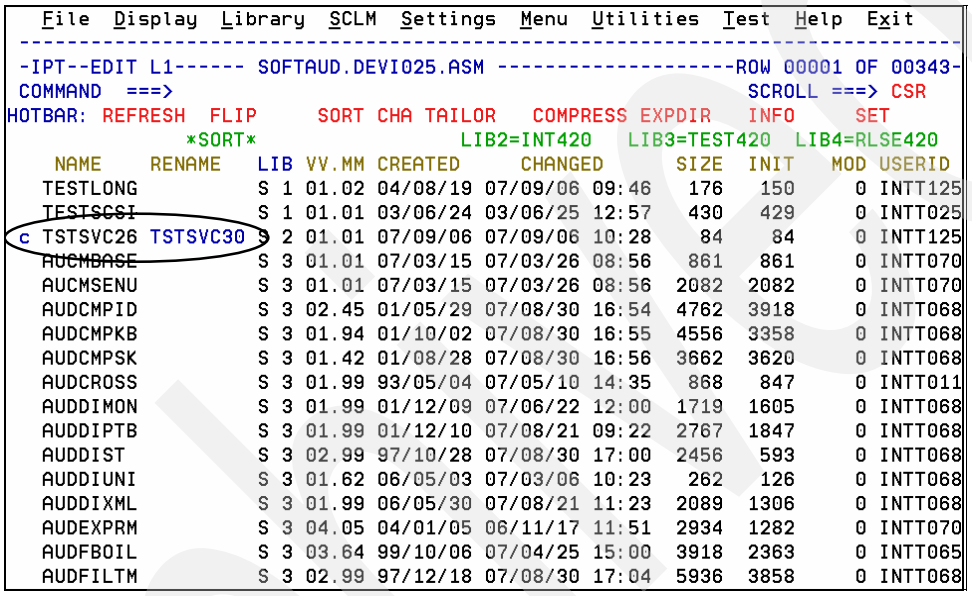

Figure 13-20 Copying the member TSTSVC26 to the member TSTSVC30

4. Select TSTSVC30, as shown in Figure 13-21.

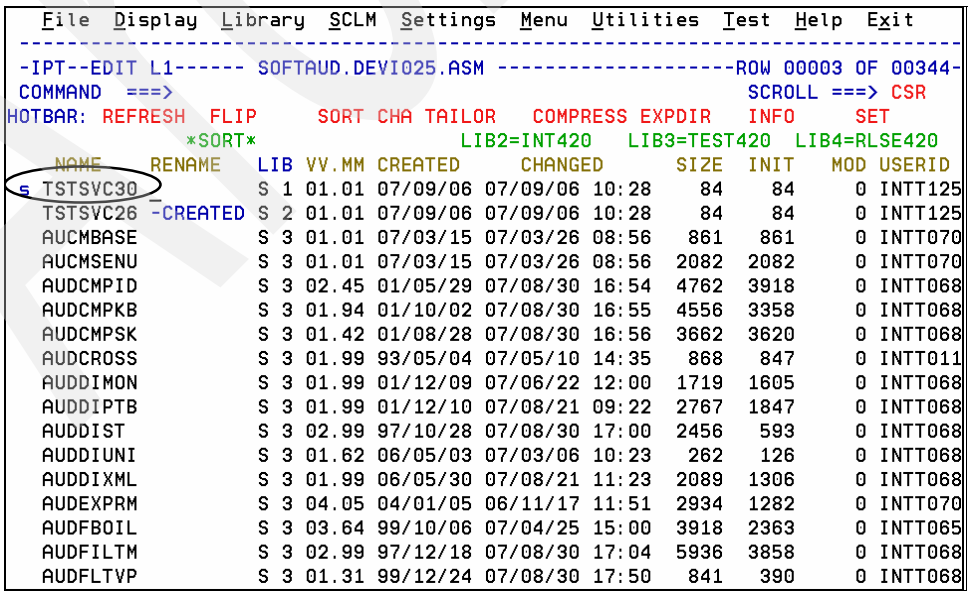

Figure 13-21 Selecting TSTSVC30

5. As shown in Figure 13-22, change all occurrences of TSTSVC26 to TSTSVC30, and save the member.

```
  File  Edit  Settings  Build  SCLM  Menu  Utilities  Compilers  Test  Help
 ------------------------------------------------------------------------------
 -IPT- EDIT SOFTAUD.DEVI025.ASM(TSTSVC26) - 01.01          Columns 00001 00072
 Command ===> c all TSTSVC26 TSTSVC30                        Scroll ===> CSR
 ****** ***************************** Top of Data ******************************
 000001 TSTSVC26 TITLE 'Test LOCATE SVC 26'
 000002 ***********************************************************************
 000003 *      Execution JCL
 000004 *
 000005 *      =============
 000006 * //   EXEC PGM=IPIUTIL,PARM='<dsname>'
 000007 ***********************************************************************
 000008 *
 000009 *      ******************************
 000010 *      * PROLOG                     *
 000011 *      ******************************
 000012 TSTSVC26 RMODE ANY
 000013 TSTSVC26 AMODE 31
 000014 TSTSVC26 CSECT ,
 000015          SAVE  (14,12),,*
 000016          LR    R12,R15
 000017          USING TSTSVC26,R12
  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-22 Changing all occurrences of TSTSVC26 to TSTSVC30

6. We can invoke the SCLM build function directly from IPT. Use the **K** command, with the parameter `build` in the RENAME field, as shown in Figure 13-23, to assemble and link the new program.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ASM -------------- TSTSVC30 saved & parsed
 COMMAND  ===>                                                SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
              *SORT*                 LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
 k TSTSVC30 build _  S 1 01.09 07/09/06 07/09/12 08:32    84    84     0 INTT125
   AUCMBASE          S 3 01.01 07/03/15 07/03/26 08:56   861   861     0 INTT070
   AUCMSENU          S 3 01.01 07/03/15 07/03/26 08:56  2082  2082     0 INTT070
   AUDCMPID          S 3 02.45 01/05/29 07/08/30 16:54  4762  3918     0 INTT068
   AUDCMPKB          S 3 01.94 01/10/02 07/08/30 16:55  4556  3358     0 INTT068
   AUDCMPSK          S 3 01.42 01/08/28 07/08/30 16:56  3662  3620     0 INTT068
   AUDCROSS          S 3 01.99 93/05/04 07/05/10 14:35   868   847     0 INTT011
   AUDDIMON          S 3 01.99 01/12/09 07/06/22 12:00  1719  1605     0 INTT068
   AUDDIPTB          S 3 01.99 01/12/10 07/08/21 09:22  2767  1847     0 INTT068
   AUDDIST           S 3 02.99 97/10/28 07/08/30 17:00  2456   593     0 INTT068
   AUDDIUNI          S 3 01.62 06/05/03 07/03/06 10:23   262   126     0 INTT068
   AUDDIXML          S 3 01.99 06/05/30 07/08/21 11:23  2089  1306     0 INTT068
   AUDEXPRM          S 3 04.05 04/01/05 06/11/17 11:51  2934  1282     0 INTT070
   AUDFBOIL          S 3 03.64 99/10/06 07/04/25 15:00  3918  2363     0 INTT065
   AUDFILTM          S 3 02.99 97/12/18 07/08/30 17:04  5936  3858     0 INTT068
  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-23 Assembling and linking the new program

7. The action from Figure 13-24 on page 342 invokes the SCLM Build – Entry panel. To assemble the program online, use the EX command, as shown in Figure 13-24 on page 342.

Archived

```
  Menu  SCLM  Utilities  Jobcard  Test  Workstation Build  Help
 ------------------------------------------------------------------------------
                          SCLM Build - Entry Panel
Command ===> ex
 ------------------------------------------------------------------------------
Build input:
  Project  . : SOFTAUD   Alternate - SOFTA420
  Group  . . . DEVI025
  Type . . . . ASM                    Enter "/" to select option
  Member . . . TSTSVC30               /  Error Listings only
                                      _  Workstation Build

  Mode  . . 1  1. Conditional         Scope . . . 4  1. Limited
               2. Unconditional                      2. Normal
               3. Forced                             3. Subunit
               4. Report                             4. Extended
Output control:
               Ex Sub                 Process . . 2  1. Execute
  Messages . . 1  2    1. Terminal                   2. Submit
  Report . . . 1  2    2. Printer
  Listings . . 1  2    3. Data set    Printer . . H
                       4. None        Volume  . . ______
 F1=HELP      F2=SPLIT     F3=END      F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-24 Using the ex command

Hint: If you want to build the project ARCHDEF, change the TYPE to `ARCHDEF`, and enter the correct member name on the panel in Figure 13-24.

13.3.2 Migrating members to SCLM

In this section, we demonstrate how to migrate members using IPT.

Figure 13-25 shows how to Edit the JCL library. This library has four members that we want to migrate to SCLM.

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
 ------------------------------------------------------------------------------
-IPT- OLIST (E) ----------- Personal list ------------------ Row 1 to 14 of 14
Command    ===> 14                                          SCROLL ===> CSR
Hotbar: REFRESH  FLIP     UTIL     FILLVOL  CLRVOL   SET      CUT      UPDATE
Open list  ===> MYLIST   (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
                      1 !------------------ PERSONAL LIBRARIES ------- ------
                      2 'INTT125.CLIST'
                      3 'INTT125*'                                     LIST
                      4 JCL
                      5 !------------------ LCMZ SUPPORT -----------   ------
-E                    6 <SOFTAUD.DEVI025.ASM                           SCLM
                      7 =SOFTAUD DEVI025 TEST420 RLSE420 ASM           ISPF
                      8 'SOFTAUD.DEVI025*'                             LIST
                      9 'SOFTAUD.INT420*'                              LIST
                     10 'SOFTAUD.TEST420*'                             LIST
                     11 'SOFTAUD.RLSE420*'                             LIST
                     12 :LISTW SOFTAUD                                 OLIST
                     13 'SOFTAUD.PROJ*'                                LIST
                     14 JCL
                       ---------------- END OF LIST ----------------
```

Figure 13-25 Editing the JCL library

Figure 13-26 demonstrates how to use the COPY command to copy all four members.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ INTT125.JCL ----------------------------ROW 00001 OF 00004
 COMMAND  ===> copy TST*  _                                  SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
                                                ON VOLUME USR033
    NAME    RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  TSTJIM30             1 01.00 07/09/07 07/09/07 12:45    10    10     0 INTT125
  TSTJIM31             1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
  TSTJIM32             1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
  TSTJIM33             1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
   --END--
```

Figure 13-26 Using the COPY command

As shown in Figure 13-27, the target library is our SCLM development JCL library.

```
-IPT--------- COPY PANEL ----------------(FROM INTT125.JCL) -------------------
COMMAND ===>
Specify "TO" data set below (4 members will be processed):

  PROJECT ===> softaud
  GROUP   ===> devi025
  TYPE    ===> JCL

Or other Partitioned, Sequential Data Set or @H (History List):
  DATA SET NAME ===> _
  VOLUME SERIAL ===>          (If not catalogued)
  PASSWORD      ===>          (If password protected)

 COPY OPTIONS:
  REPLACE like-named library members ===> O   (Y=Yes, N=No, O=Target is Older)
  Disposition for sequential target  ===> OLD (OLD or MOD)
 Note: If statistics are not available, replace option O (older) is
 treated as option Y (Yes).

                Press ENTER to copy   END key to cancel.
```

Figure 13-27 Specifying the target dataset

Figure 13-28 on page 344 displays the confirmation panel.

```
-IPT--EDIT------------- COPY PANEL -------------------------------------------
COMMAND ===> _

You have requested that 4 members be COPIED to SOFTAUD.DEVI025.JCL.

Indicate a new member name in the RENAME column, or leave it blank to
use the same member name.

           Press ENTER to process the list, or the END key to cancel.
           (Use the PF keys for scrolling to see the entire list.)

   NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
 TSTJIM30              1 01 00 07/09/07 07/09/07 12:45    10    10     0 INTT125
 TSTJIM31              1 01 00 07/09/07 07/09/07 14:13    10    10     0 INTT125
 TSTJIM32              1 01 00 07/09/07 07/09/07 14:13    10    10     0 INTT125
 TSTJIM33              1 01 00 07/09/07 07/09/07 14:13    10    10     0 INTT125
------------------------------------------------------------------------------
```

Figure 13-28 Confirmation panel

As shown in Figure 13-29, the copy process was successful for all four members.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ INTT125.JCL ---------------------------ROW 00001 OF 00004
COMMAND  ===> _                                            SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
                                                ON VOLUME USR033
   NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
  TSTJIM30 -COPIED     1 01.00 07/09/07 07/09/07 12:45    10    10     0 INTT125
  TSTJIM31 -COPIED     1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
  TSTJIM32 -COPIED     1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
  TSTJIM33 -COPIED     1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
   --END--
```

Figure 13-29 Verifying successful copy

Edit the SCLM ASM library, switch to the TYPE `JCL`, and SORT the members in `LIB` order, as shown in Figure 13-30 on page 345.

Archive

```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (E) ----------- Personal list ------------------ Row 1 to 14 of 14
Command    ===> 6;type jcl;sort lib                          SCROLL ===> CSR
Hotbar: REFRESH  FLIP     UTIL     FILLVOL  CLRVOL   SET      CUT      UPDATE
Open list  ===> MYLIST   (or BLANK for reference list)
TSO PARMS  ===>
Command   Member   Numbr Data Set Names / Objects                      Class
--------- -------- ----- ---------------------------------------------- -------
                      1 !------------------ PERSONAL LIBRARIES ------- ------
                      2 'INTT125.CLIST'
                      3 'INTT125*'                                     LIST
                      4 JCL
                      5 !------------------ LCMZ SUPPORT -----------   ------
-E                    6 <SOFTAUD.DEVI025.ASM                           SCLM
                      7 =SOFTAUD DEVI025 TEST420 RLSE420 ASM           ISPF
                      8 'SOFTAUD.DEVI025*'                             LIST
                      9 'SOFTAUD.INT420*'                              LIST
                     10 'SOFTAUD.TEST420*'                             LIST
                     11 'SOFTAUD.RLSE420*'                             LIST
                     12 :LISTW SOFTAUD                                 OLIST
                     13 'SOFTAUD.PROJ*'                                LIST
-E                   14 JCL                                           PDSE
                        ---------------- END OF LIST ----------------
```

Figure 13-30 Edit SCLM ASM library, switch to TYPE JCL, and SORT the members in LIB order

Note the LIB information for the TSTJIM* members shown in Figure 13-31. Because there is no S under the LIB column, these members do not have SCLM accounting information available. Use the SC command to migrate all four members. The SCLMPARM panel default values are applied during the MIGRATE process.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ SOFTAUD.DEVI025.JCL --------------------ROW 00001 OF 00049-
 COMMAND  ===> sc tstjim* migrate                            SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
             *SORT*                  LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
   NAME     RENAME    LIB VV.MM CREATED     CHANGED       SIZE  INIT   MOD USERID
  TSTJIM30             1 01.00 07/09/07 07/09/07 12:45     10    10     0 INTT125
  TSTJIM31             1 01.00 07/09/07 07/09/07 14:13     10    10     0 INTT125
  TSTJIM32             1 01.00 07/09/07 07/09/07 14:13     10    10     0 INTT125
  TSTJIM33             1 01.00 07/09/07 07/09/07 14:13     10    10     0 INTT125
  TSTSVC26           S 2 01.04 07/09/06 07/09/07 14:18      7     5     0 INTT125
  ALOCDATA           S 4 03.41 93/10/01 06/09/26 10:47     61    32     0 INTT065
  ANALYZER           S 4 01.10 02/04/08 06/09/26 10:48    144   130     0 INTT065
  AUDISTAT           S 4 01.01 03/12/04 04/08/06 07:50     20     7     0 INTT070
  AUDITLCM           S 4 03.37 93/10/01 06/05/02 17:48     38    22     0 INTT011
  AUDKBUTL           S 4 01.17 99/03/08 06/08/15 20:37     50    70     0 INTT065
  AUDUTIL            S 4 01.13 01/11/15 06/05/02 17:50     42     8     0 INTT011
  COLLECTR           S 4 01.03 03/12/12 06/08/18 12:30     45     1     0 INTT009
  COMPARE            S 4 01.09 01/05/29 04/08/06 07:50     81    55     0 INTT070
  COMPARKB           S 4 01.06 01/10/03 06/08/16 14:43     66    56     0 INTT065
  COMPRSKB           S 4 01.08 01/08/29 06/08/16 14:43     76    80     0 INTT065
  COPYAUTH           S 4 03.10 93/10/01 06/10/02 16:28      3     2     0 INTT015
  COPYSURV           S 4 01.03 93/11/23 99/05/12 12:35      2     2     0 INTT007
```

Figure 13-31 Note the LIB information for the TSTJIM members and use SC command*

As shown in Figure 13-32 on page 346, the SCLM Migrate function completed successfully.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.JCL --------------------ROW 00001 OF 00049-
 COMMAND  ===> type archdef;filter lib 2                      SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
              *SORT*                LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
   TSTJIM30 -MIGRATE S 1 01.00 07/09/07 07/09/07 12:45    10    10     0 INTT125
   TSTJIM31 -MIGRATE S 1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
   TSTJIM32 -MIGRATE S 1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
   TSTJIM33 -MIGRATE S 1 01.00 07/09/07 07/09/07 14:13    10    10     0 INTT125
   TSTSVC26          S 2 01.04 07/09/06 07/09/07 14:18     7     5     0 INTT125
   ALOCDATA          S 4 03.41 93/10/01 06/09/26 10:47    61    32     0 INTT065
   ANALYZER          S 4 01.10 02/04/08 06/09/26 10:48   144   130     0 INTT065
   AUDISTAT          S 4 01.01 03/12/04 04/08/06 07:50    20     7     0 INTT070
   AUDITLCM          S 4 03.37 93/10/01 06/05/02 17:48    38    22     0 INTT011
   AUDKBUTL          S 4 01.17 99/03/08 06/08/15 20:37    50    70     0 INTT065
   AUDUTIL           S 4 01.13 01/11/15 06/05/02 17:50    42     8     0 INTT011
   COLLECTR          S 4 01.03 03/12/12 06/08/18 12:30    45     1     0 INTT009
   COMPARE           S 4 01.09 01/05/29 04/08/06 07:50    81    55     0 INTT070
   COMPARKB                                                     56     0 INTT065
   COMPRSKB      IQIM259  SCLM MIGRATE issued on 4 members     80     0 INTT065
   COPYAUTH                                                      2     0 INTT015
   COPYSURV          S 4 01.03 93/11/23 99/05/12 12:35     2     2     0 INTT007
```

Figure 13-32 SCLM Migrate function completed successfully

Hint: If you copy a member into a library and you want to reset statistics, such as the created time and date, use the Z MSL command to invoke the MSL Statistics Settings Panel.

13.3.3 Updating the project SCLM ARCHDEF members

In this section, we show you how to update the SCLM ARCHDEF members:

1. Select the ARCHDEF members that are shown in Figure 13-33.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ARCHDEF ----------------ROW 00001 OF 00004-
 COMMAND  ===>                                                SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*            109 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
   $$TSTALL          S 2 01.00 07/09/06 07/09/06 10:54     5     5     0 INTT125
s  $TSTASM           S 2 01.00 07/09/06 07/09/06 10:56     4     4     0 INTT125
s  $TSTJCL           S 2 01.00 07/09/06 07/09/06 10:58     4     4     0 INTT125
   TSTSVC26          S 2 01.02 07/09/06 07/09/06 10:32    10    10     0 INTT125
    --END--
                                                                _
  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-33 Selecting the ARCHDEF members

2. Change the TSTSVC26 ARCHDEF to TSTSVC30, as shown in Figure 13-34.

```
  File  Edit  Settings  Build  SCLM  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT SOFTAUD.DEVI025.ARCHDEF($TSTASM) - 01.00        Columns 00001 00072
Command ===> ____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ******************************
==MSG> IQIX607 SPIFFY issued an SCLM lock for this member.
==MSG>         SPIFFY will parse the member when you terminate the edit session
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
==MSG> IQIS002  SCLM is using alternate project "SOFTA420" with this file.
000001 *
000002 * HL Archetecture member - All ASM based modules of TST component
000003 *
000004 INCL TSTSVC30 ARCHDEF
****** **************************** Bottom of Data ****************************
 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-34 Changing the TSTSVC26 ARCHDEF to TSTSVC30

3. Update the $TSTJCL members with the four JCL library members, as shown in Figure 13-35.

```
  File  Edit  Settings  Build  SCLM  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT SOFTAUD.DEVI025.ARCHDEF($TSTJCL) - 01.01        Columns 00001 00072
Command ===> ____________________________________________ Scroll ===> CSR
****** ***************************** Top of Data ******************************
==MSG> IQIX607 SPIFFY issued an SCLM lock for this member.
==MSG>         SPIFFY will parse the member when you terminate the edit session
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
==MSG> IQIS002  SCLM is using alternate project "SOFTA420" with this file.
000001 *
000002 * HL Archetecture member - All JCL members of TST component
000003 *
000004 INCLD TSTSVC30 JCL
000005 INCLD TSTSVC31 JCL
000006 INCLD TSTSVC32 JCL
000007 INCLD TSTSVC33 JCL
****** **************************** Bottom of Data ****************************
 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-35 Updating the $TSTJCL members with the four JCL library members

4. Create a new TSTSVC30 ARCHDEF member, as shown in Figure 13-36.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ARCHDEF ----------- $TSTJCL saved & parsed
 COMMAND  ===> _                                          SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*             109 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
   $TSTJCL  -SAVED    S 1 01.01 07/09/06 07/09/10 15:45     7     4     0 INTT125
c TSTSVC26 TSTSVC30  S 2 01.02 07/09/06 07/09/06 10:32    10    10     0 INTT125
    --END--


  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-36 Creating a new TSTSVC30 ARCHDEF member

5. Select the new ARCHDEF member, as shown in Figure 13-37.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ARCHDEF ----------------ROW 00004 OF 00006-
 COMMAND  ===>                                            SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*       *SORT*108 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
   TSTSVC26 -COPIED   S 2 01.02 07/09/06 07/09/06 10:32    10    10     0 INTT125
s TSTSVC30           S 1 01.02 07/09/06 07/09/06 10:32    10    10     0 INTT125
   TESTLONG          S 1 01.01 04/08/19 07/08/17 10:58    11    11     0 INTT025
    --END--


                                                  -


  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-37 Selecting the new ARCHDEF member

6. Change TSTSVC26 to TSTSVC30, as shown in Figure 13-38 on page 349.

Archived

```
  File  Edit  Settings  Build  SCLM  Menu  Utilities  Compilers  Test  Help
-IPT- EDIT SOFTAUD.DEVI025.ARCHDEF(TSTSVC30) - 01.04       Columns 00001 00072
Command ===> c all TSTSVC26 TSTSVC30                        Scroll ===> CSR
****** ***************************** Top of Data ******************************
==MSG> IQIX604 This is an SCLM locked member.
==MSG>         SPIFFY will parse the member when you terminate the edit session
==MSG> -Warning- The UNDO command is not available until you change
==MSG>           your edit profile using the command RECOVERY ON.
==MSG> IQIS002  SCLM is using alternate project "SOFTA420" with this file.
000001 *
000002 * First-level architecture definition for TSTSVC26 executable
000003 *
000004 LKED  LE370
000005 LOAD  TSTSVC26 LLIB
000006 LMAP  TSTSVC26 LMAP
000007 PARM  AMODE=31,RMODE=ANY,REUS,XREF,NCAL,AC=0
000008 *
000009 INCLD TSTSVC26 ASM
000010 CMD   ENTRY   TSTSVC26
****** **************************** Bottom of Data ****************************

 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-38 Changing TSTSVC26 to TSTSVC30

13.3.4 Building and promoting the SCLM ARCHDEF members

In this section, we show you how to build and promote the SCLM ARCHDEF members using IPT:

1. The ARCHDEF updates are complete. Type the k IPT line command to invoke the SCLM panel, as shown in Figure 13-39.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ARCHDEF ---------------ROW 00001 OF 00006-
 COMMAND  ===>                                                SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*       *SORT*108 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME    RENAME   LIB VV.MM CREATED     CHANGED      SIZE  INIT   MOD USERID
k TSTSVC30 build    S 1 01.09 07/09/06 07/09/12 08:56    10    10     0 INTT125
k $TSTASM  build    S 1 01.10 07/09/06 07/09/12 08:24     4     4     0 INTT125
k $TSTJCL  build    S 1 01.07 07/09/06 07/09/12 08:24     7     4     0 INTT125
  $$TSTALL          S 2 01.00 07/09/06 07/09/06 10:54     5     5     0 INTT125
  TSTSVC26          S 2 01.02 07/09/06 07/09/06 10:32    10    10     0 INTT125
  TESTLONG          S 1 01.01 04/08/19 07/08/17 10:58    11    11     0 INTT025
   --END--

 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-39 Entering the k IPT line command to invoke the SCLM panel

As shown in Figure 13-40 on page 350, the SCLM Build - Entry Panel builds the ARCHDEF member TSTSVC30.

```
 Menu  SCLM  Utilities  Jobcard  Test  Workstation Build  Help
                          SCLM Build - Entry Panel
Command ===> ex
Build input:
  Project  . : SOFTAUD   Alternate - SOFTA420
  Group  . . . DEVI025
  Type . . . . ARCHDEF                 Enter "/" to select option
  Member . . . TSTSVC30                /  Error Listings only
                                       _  Workstation Build

  Mode  . . 1  1. Conditional          Scope . . . 4  1. Limited
               2. Unconditional                       2. Normal
               3. Forced                              3. Subunit
               4. Report                              4. Extended
Output control:
               Ex Sub                  Process . . 2  1. Execute
  Messages . . 1  2    1. Terminal                    2. Submit
  Report . . . 1  2    2. Printer
  Listings . . 1  2    3. Data set     Printer . . H
                       4. None         Volume  . .
 F1=HELP      F2=SPLIT     F3=END      F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-40 Building the ARCHDEF member TSTSVC30

As shown in Figure 13-41, the SCLM Build - Entry Panel builds the ARCHDEF member $TSTASM.

```
 Menu  SCLM  Utilities  Jobcard  Test  Workstation Build  Help
                          SCLM Build - Entry Panel
Command ===> ex
Build input:
  Project  . : SOFTAUD   Alternate - SOFTA420
  Group  . . . DEVI025
  Type . . . . ARCHDEF                 Enter "/" to select option
  Member . . . $TSTASM                 /  Error Listings only
                                       _  Workstation Build

  Mode  . . 1  1. Conditional          Scope . . . 4  1. Limited
               2. Unconditional                       2. Normal
               3. Forced                              3. Subunit
               4. Report                              4. Extended
Output control:
               Ex Sub                  Process . . 2  1. Execute
  Messages . . 1  2    1. Terminal                    2. Submit
  Report . . . 1  2    2. Printer
  Listings . . 1  2    3. Data set     Printer . . H
                       4. None         Volume  . .
 F1=HELP      F2=SPLIT     F3=END      F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-41 Building the ARCHDEF member $TSTASM

As shown in Figure 13-42 on page 351, the SCLM Build - Entry Panel builds the ARCHDEF member $TSTJCL.

Archived

```
  Menu  SCLM  Utilities  Jobcard  Test  Workstation Build  Help
 ------------------------------------------------------------------------------
                          SCLM Build - Entry Panel
Command ===> ex _
 ------------------------------------------------------------------------------
Build input:
  Project  . : SOFTAUD   Alternate - SOFTA420
  Group  . . . DEVI025
  Type . . . . ARCHDEF                 Enter "/" to select option
  Member . . . $TSTJCL                 /  Error Listings only
                                       _  Workstation Build

  Mode  . . 1  1. Conditional          Scope . . . 4  1. Limited
               2. Unconditional                       2. Normal
               3. Forced                              3. Subunit
               4. Report                              4. Extended
Output control:
               Ex Sub                  Process . . 2  1. Execute
  Messages . . 1  2    1. Terminal                    2. Submit
  Report . . . 1  2    2. Printer
  Listings . . 1  2    3. Data set     Printer . . H
                       4. None         Volume  . . ______
 F1=HELP      F2=SPLIT     F3=END      F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-42 Building the ARCHDEF member $TSTJCL

The ARCHDEFS builds completed successfully. As shown in Figure 13-43, next to the ARCHDEF $TSTASM, we entered the **k** command with the parameter `promote` in the RENAME column.

2. For the second ARCHDEF, $TSTJCL, enter the `k` command without any parameters.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ARCHDEF ----------------ROW 00001 OF 00006-
 COMMAND  ===>                                                SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*       *SORT*108 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
   TSTSVC30  -BUILD   S 1 01.11 07/09/06 07/09/12 09:12    10    10     0 INTT125
 k $TSTASM   promote  S 1 01.11 07/09/06 07/09/12 09:11     4     4     0 INTT125
 k $TSTJCL   -BUILD   S 1 01.08 07/09/06 07/09/12 09:11     7     4     0 INTT125
   $$TSTALL           S 2 01.00 07/09/06 07/09/06 10:54     5     5     0 INTT125
   TSTSVC26           S 2 01.02 07/09/06 07/09/06 10:32    10    10     0 INTT125
   TESTLONG           S 1 01.01 04/08/19 07/08/17 10:58    11    11     0 INTT025
    --END--

                                                  _

                  IQIM259  SCLM BUILD issued on 1 members
 F1=HELP      F2                                                F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-43 Entering the k command

The parameter PROMOTE invokes the SCLM Promote - Entry Panel that is depicted in Figure 13-44 on page 352. Using the EX primary command, the project $TSTASM is promoted successfully to the INT420 library.

Archived

```
  Menu  SCLM  Utilities  Jobcard  Workstation Promote  Help
 ------------------------------------------------------------------------------
                          SCLM Promote - Entry Panel
Command ===> ex
 ------------------------------------------------------------------------------

Promote input:
  Project . . . : SOFTAUD        Alternate - SOFTA420
  From group  . . DEVI025
  Type  . . . . . ARCHDEF              Enter "/" to select option
  Member  . . . . $TSTASM              _  Workstation Promote

  Mode  . . 1  1. Conditional          Scope . . . 3  1. Normal
               2. Unconditional                       2. Subunit
               3. Report                              3. Extended

Output control:
               Ex Sub                  Process . . 2  1. Execute
  Messages . . 1  2    1. Terminal                    2. Submit
  Report . . . 1  2    2. Printer
                       3. Data set     Printer . . H
                       4. None         Volume  . . ______

 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-44 SCLM Promote - Entry Panel

3. Figure 13-45 shows the Promote messages. To see the Promote report (which is not shown), enter a Y in the value that we circled in Figure 13-45.

```
 -IPT- - SCLM PROCESS MESSAGES ---------------------- LINE 00000000 COL 001 080
 COMMAND ===>                                                SCROLL ===> PAGE
 Display SCLM report (if available)   ===> N (Y=Yes, N=No)
 Library :SOFTAUD.DEVI025.ARCHDEF($TSTASM)
 Language:ARCHDEF  Change code:V4R2M0   Auth. code:         Alternate:SOFTA420
 -------------------------- Press the END key to exit -------------------------
******************************** Top of Data ********************************
FLM51000 - PROMOTE PROCESSOR INITIATED - 17:25:11 ON 2007/09/10
FLM52000 - INITIATING VERIFICATION PHASE - 17:25:11 ON 2007/09/10
FLM55000 - INITIATING COPY PHASE - 17:25:11 ON 2007/09/10
FLM57000 - INITIATING PURGE PHASE - 17:25:13 ON 2007/09/10
FLM57001 - INITIATING PURGE FROM GROUP: DEVI025
FLM58000 - PROMOTE PROCESSOR COMPLETED - 17:25:13 ON 2007/09/10
******************************** Bottom of Data *****************************



 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-45 The Promote messages

Figure 13-46 on page 353 depicts the request to promote the second ARCHDEF, $TSTJCL.

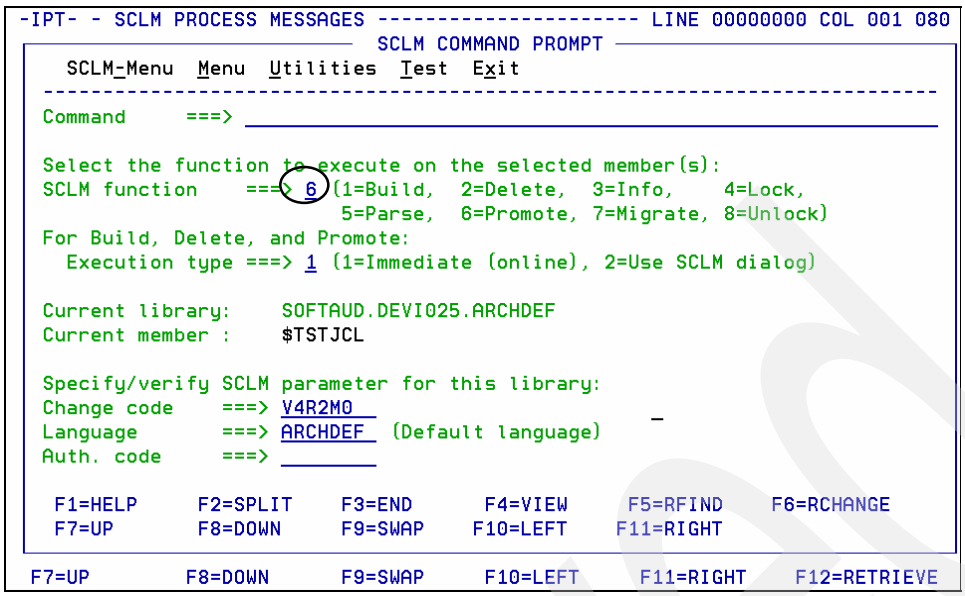

Figure 13-46 Request to promote the second ARCHDEF, $TSTJCL

Figure 13-47 shows the successful promotion of the $TSTJCL ARCHDEF.

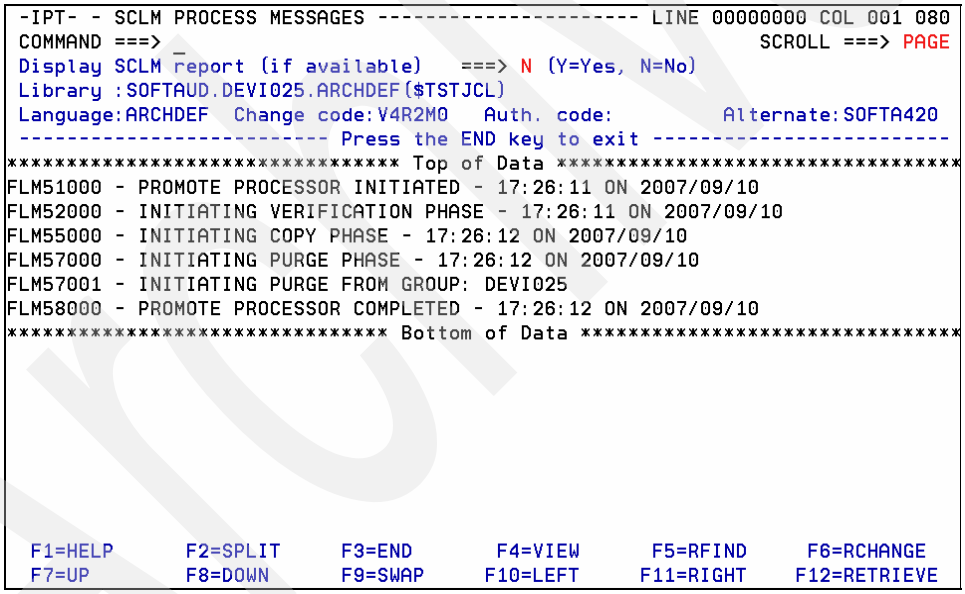

Figure 13-47 Successful promotion of the $TSTJCL ARCHDEF

13.3.5 Removing the obsolete program

In this section, we show you how to remove the obsolete program.

We completed the Migrate, Build, and Promotion changes for our project. Figure 13-48 on page 354 depicts an easy way to switch to the ASM hierarchy and view a subset of members using the TAILOR command. The TAILOR command will display only members that were changed in the last 60 days.

Archived

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ARCHDEF ----------------ROW 00001 OF 00006-
 COMMAND  ===> type asm;tailor                                 SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*       *SORT*108 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED       SIZE  INIT   MOD USERID
   $TSTASM  -PROMOTE S 2 01.09 07/09/06 07/09/10 17:17     4     4      0 INTT125
   $TSTJCL  -PROMOTE S 2 01.06 07/09/06 07/09/10 17:17     7     4      0 INTT125
   TSTSVC30 -SAVED   S 2 01.08 07/09/06 07/09/10 17:17    10    10      0 INTT125
   $$TSTALL          S 2 01.00 07/09/06 07/09/06 10:54     5     5      0 INTT125
   TSTSVC26          S 2 01.02 07/09/06 07/09/06 10:32    10    10      0 INTT125
   TESTLONG          S 1 01.01 04/08/19 07/08/17 10:58    11    11      0 INTT025
    --END--
  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-48 Switching to ASM hierarchy to view a subset of members using the TAILOR command

As shown in Figure 13-49, enter a D to delete the TSTSVC26 ASM member.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
 ------------------------------------------------------------------------------
 -IPT--EDIT L1------ SOFTAUD.DEVI025.ASM --------------------ROW 00001 OF 00019-
 COMMAND  ===>                                                 SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*       *SORT*325 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED       SIZE  INIT   MOD USERID
   TSTSVC30          S 2 01.06 07/09/06 07/09/10 16:51    84    84      0 INTT125
   AUDFLTVP          S 3 01.32 99/12/24 07/09/10 14:26   841   390      0 INTT068
 d TSTSVC26          S 2 01.01 07/09/06 07/09/06 10:28    84    84      0 INTT125
   TESTLONG          S 1 01.02 04/08/19 07/09/06 09:46   176   150      0 INTT125
   AUDPBYV           S 3 01.37 99/11/10 07/08/31 11:40   976   877      0 INTT065
   AUDIDENT          S 3 03.34 99/12/04 07/08/31 11:38  3624  2488      0 INTT065
   AUDXPORT          S 3 01.99 94/01/19 07/08/30 17:26   900   423      0 INTT068
   AUDRPORT          S 3 02.99 98/09/09 07/08/30 17:24  2573  1755      0 INTT068
   AUDRIFID          S 3 01.88 00/05/30 07/08/30 17:22  3841  2684      0 INTT068
   AUDRIFUT          S 3 02.25 00/01/17 07/08/30 17:22  3015   210      0 INTT068
   AUDRIFCO          S 3 01.69 00/02/06 07/08/30 17:20  1570  1393      0 INTT068
   AUDRIFCI          S 3 01.11 01/06/15 07/08/30 17:18  1579  1345      0 INTT068
   AUDFILTM          S 3 02.99 97/12/18 07/08/30 17:04  5936  3858      0 INTT068
   AUDDIST           S 3 02.99 97/10/28 07/08/30 17:00  2456   593      0 INTT068
   AUDCMPSK          S 3 01.42 01/08/28 07/08/30 16:56  3662  3620      0 INTT068
  F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-49 Entering a D to delete the TSTSVC26 ASM member

If your personal user settings request a delete confirmation, IPT prompts you prior to deleting the member, as shown in Figure 13-50 on page 355. The value of Y, circled in Figure 13-50 on page 355, directs IPT to delete the SCLM statistics.

```
-IPT--------- DELETE MEMBER CONFIRMATION: SOFTAUD.INT420.ASM-------------------
COMMAND ===> _

       +-------------------------------------------------------------+
       |  Delete SCLM accounting information?===> Y (Y=Yes,N=No)     |
       |  Press ENTER to delete this member or the END key to cancel. |
       +-------------------------------------------------------------+
.   NAME     RENAME   LIB VV.MM CREATED     .CHANGED.      SIZE  INIT   MOD USERID
   TSTSVC26           S 2 01.01 07/09/06 07/09/06 10:28    84    84     0 INTT125

   LANGUAGE VER. CHANGE-CODE AUTH.-CODE BUILD-MAP PROMOTE-ID STATEMENTS INCLUDES
   HLASM       1             V4R2M0               INTT125            83        0
******************************** TOP OF DATA ********************************
TSTSVC26 TITLE 'Test LOCATE SVC'
*********************************************************************
*      Execution JCL
*      =============
*
* //   EXEC PGM=IPIUTIL,PARM='<dsname>'
*********************************************************************
*
*      *******************************
 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-50 Based on your settings, IPT can prompt you prior to deleting a member

Figure 13-51 confirms the member TSTSVC26 deletion.

```
  File  Display  Library  SCLM  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--EDIT L1------ SOFTAUD.DEVI025.ASM ------------MEMBER TSTSVC26 DELETED-
COMMAND  ===> _                                              SCROLL ===> CSR
HOTBAR: REFRESH  FLIP     SORT CHA TAILOR   COMPRESS EXPDIR   INFO     SET
*FILTER*       *SORT*325 HIDDEN       LIB2=INT420   LIB3=TEST420  LIB4=RLSE420
    NAME     RENAME   LIB VV.MM CREATED     CHANGED       SIZE  INIT   MOD USERID
   AUDFLTVP           S 3 01.32 99/12/24 07/09/10 14:26   841   390     0 INTT068
   TESTLONG           S 1 01.02 04/08/19 07/09/06 09:46   176   150     0 INTT125
   AUDPBYV            S 3 01.37 99/11/10 07/08/31 11:40   976   877     0 INTT065
   AUDIDENT           S 3 03.34 99/12/04 07/08/31 11:38  3624  2488     0 INTT065
   AUDXPORT           S 3 01.99 94/01/19 07/08/30 17:26   900   423     0 INTT068
   AUDRPORT           S 3 02.99 98/09/09 07/08/30 17:24  2573  1755     0 INTT068
   AUDRIFID           S 3 01.88 00/05/30 07/08/30 17:22  3841  2684     0 INTT068
   AUDRIFUT           S 3 02.25 00/01/17 07/08/30 17:22  3015   210     0 INTT068
   AUDRIFCO           S 3 01.69 00/02/06 07/08/30 17:20  1570  1393     0 INTT068
   AUDRIFCI           S 3 01.11 01/06/15 07/08/30 17:18  1579  1345     0 INTT068
   AUDFILTM           S 3 02.99 97/12/18 07/08/30 17:04  5936  3858     0 INTT068
   AUDDIST            S 3 02.99 97/10/28 07/08/30 17:00  2456   593     0 INTT068
   AUDCMPSK           S 3 01.42 01/08/28 07/08/30 16:56  3662  3620     0 INTT068
   AUDCMPKB           S 3 01.94 01/10/02 07/08/30 16:55  4556  3358     0 INTT068
   AUDCMPID           S 3 02.45 01/05/29 07/08/30 16:54  4762  3918     0 INTT068
 F1=HELP      F2=SPLIT     F3=END       F4=VIEW      F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 13-51 Confirming the member TSTSVC26 deletion

Archived

14

IPT double-byte character set support

The double-byte character set (DBCS) is a set of characters in which each character is represented by 2 bytes. Several languages, such as Chinese, Japanese, and Korean, contain more characters than can be represented by 1 byte or 256 code points, thus requiring two bytes to uniquely represent each character.

Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS includes the following enhancements for DBCS support:

- OLIST FINDTEXT command now supports DBCS search strings.
- OLIST titles and comment lines can include DBCS character strings.
- MSL FINDTEXT and GLOBAL FIND commands now support DBCS search strings.
- IPT SET options can disable or enable double-byte-character-set (DBCS) support and DBCS case-sensitive search strings.

This chapter provides information about how you can use IPT with double-byte character strings in the Object List (OLIST) and Member Selection List (MSL).

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14.1 Using DBCS with the Object List

We discuss the OLIST-related DBCS support topics first, and then, we discuss the MSL-related DBCS support topics. To display or edit DBCS characters, first of all, we must have a DBCS-capable terminal, or a PC running a DBCS-capable OS and terminal emulation software. And then, we need perform configuration changes.

14.1.1 Configuration for DBCS support

Here, we use IBM Personal Communication as our terminal emulation software. To support DBCS characters, we must select the correct host codepage first in the PCOMM communication configuration. To do that, in the PCOM window, select **Communication**, and then, **Configuration**, as shown in Figure 14-1.

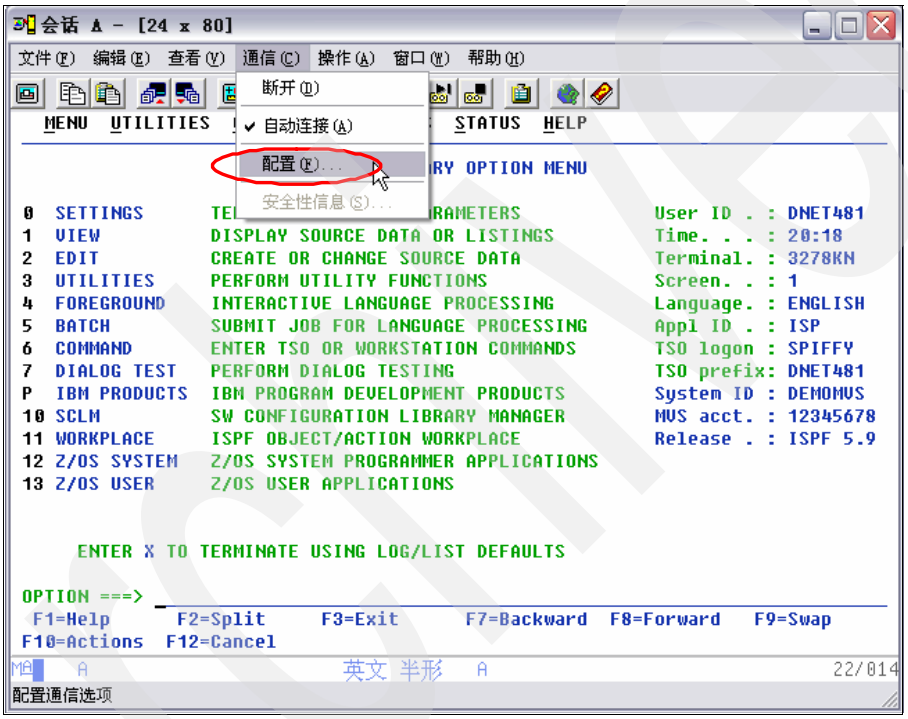

Figure 14-1 Configuring DBCS support in PCOMM, part 1

On the pop-up panel, click **Session Parameter**s, which is shown in Figure 14-2 on page 359.

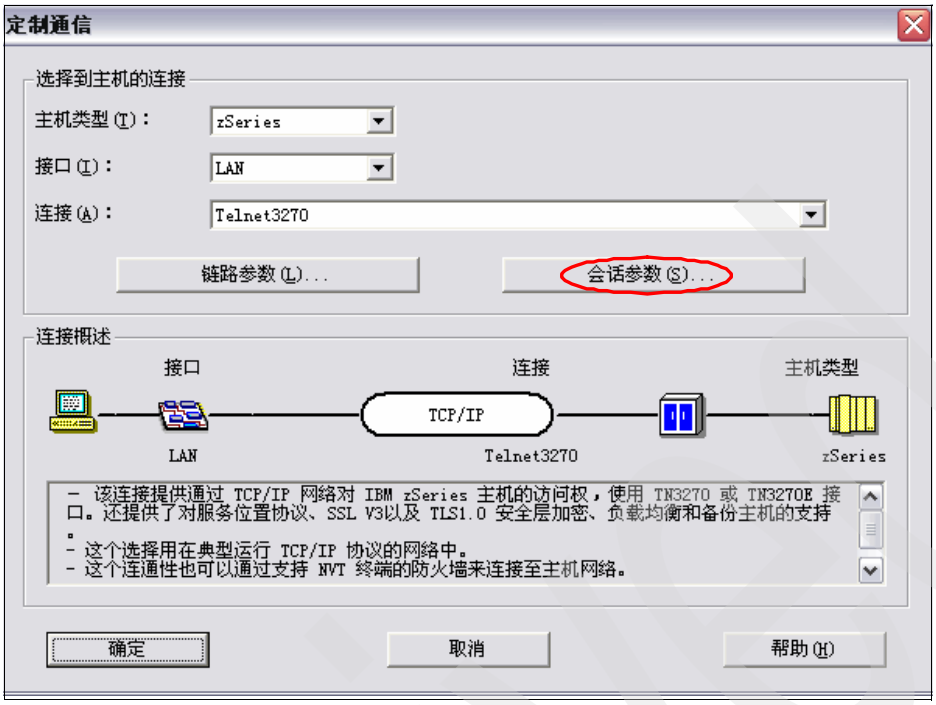

Figure 14-2 Configuring DBCS support in PCOMM, part 2

Then, on the pop-up panel, for the host codepage pull-down list box, select **1388 Chinese**, as shown in Figure 14-3.

Figure 14-3 Configuring DBCS support in PCOMM, part 3

After that, we must ensure that the HOST ISPF settings specify a terminal type that supports DBCS characters. To specify the Terminal Type in ISPF, in the ISPF Primary Option Menu

panel, select option 0 Settings by typing 0 on the option line, as shown in Figure 14-4 on page 360.

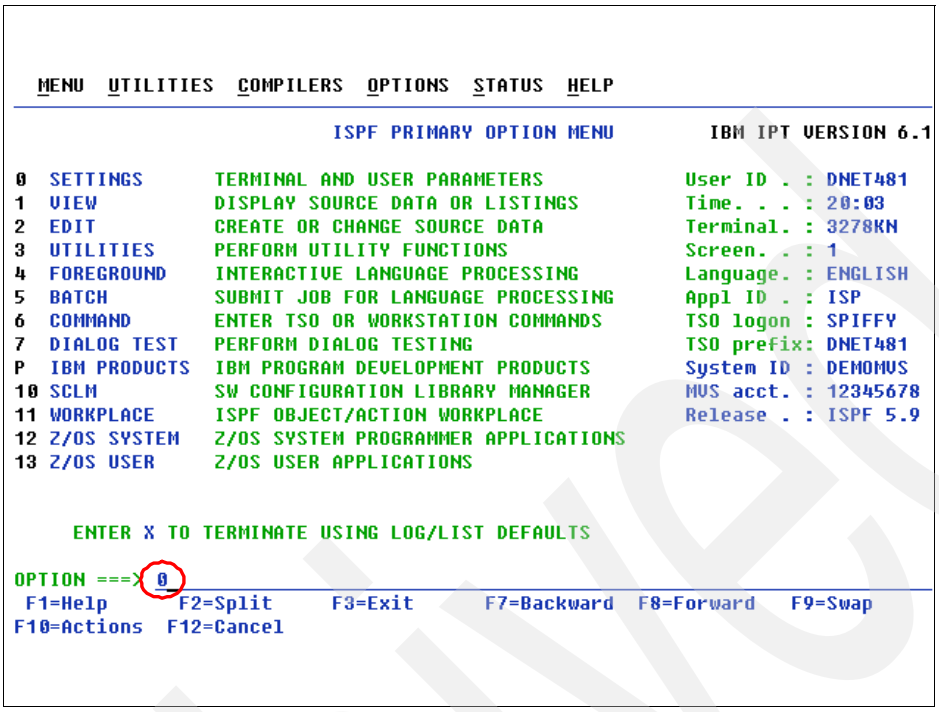

Figure 14-4 Specifying the terminal type, part 1

The ISPF Settings panel is displayed. Scroll down to find the list of terminal types, and select **3278KN** from the list, as shown in Figure 14-5.

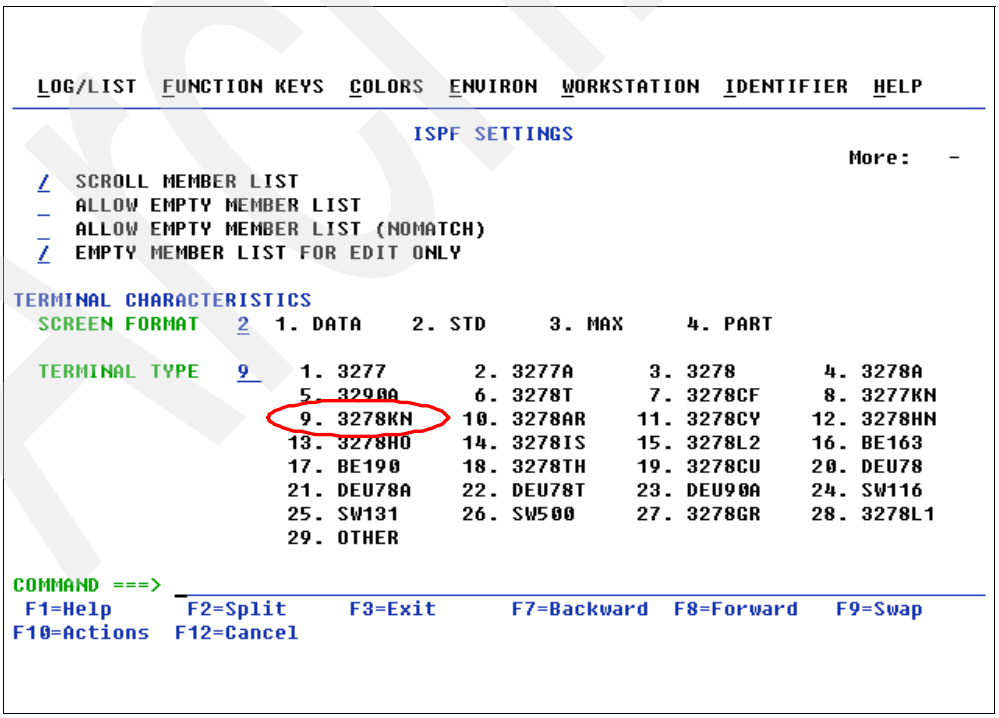

Figure 14-5 Specifying the terminal type, part 2

Next, we set the Edit mode. Press F3 to exit to save the previous selection and return to the ISPF Primary Option Menu panel. Then, select option 2 EDIT by typing 2 on the Option line, as shown in Figure 14-6 on page 361.

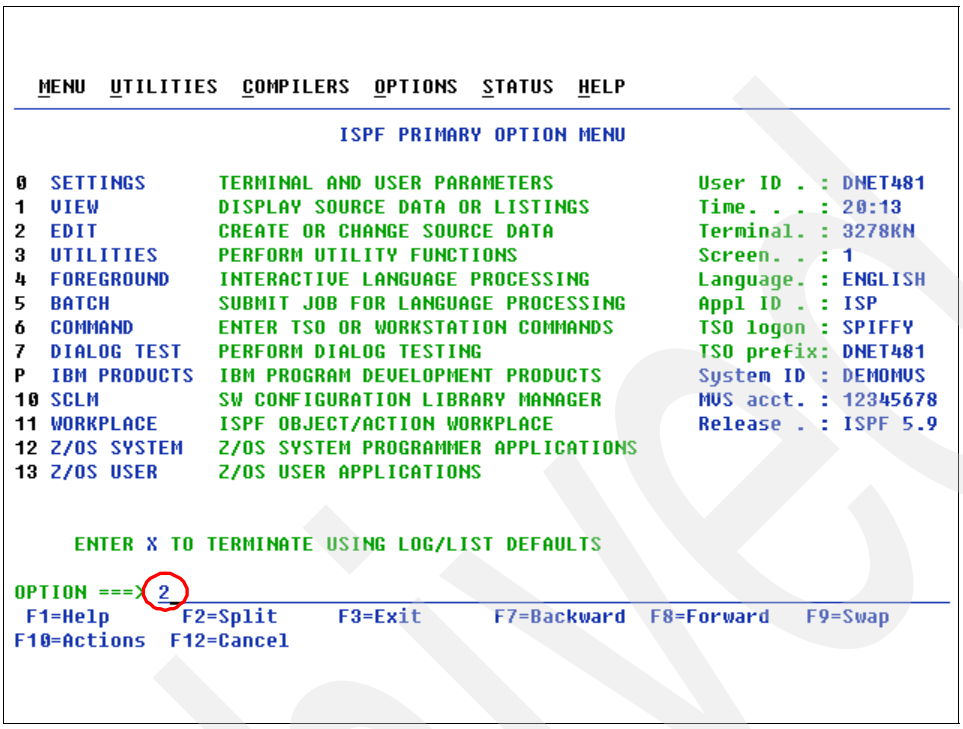

Figure 14-6 Setting the Edit mode, part 1

The EDIT – ENTRY PANEL is displayed. Scroll down to find the option MIXED MODE, and set it to Y, as shown in Figure 14-7.

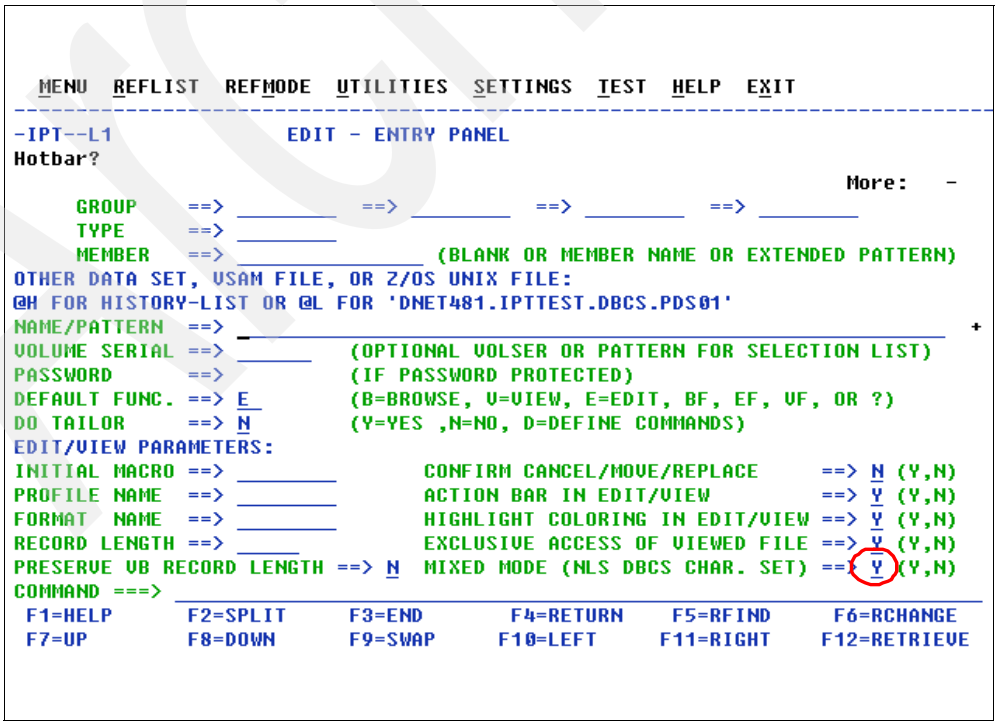

Figure 14-7 Setting the Edit mode, part 2

To set the OLIST DBCS support option in IPT, you can use the ISET command shortcut. On any panel, type the command ISET, as shown in Figure 14-8 on page 362.

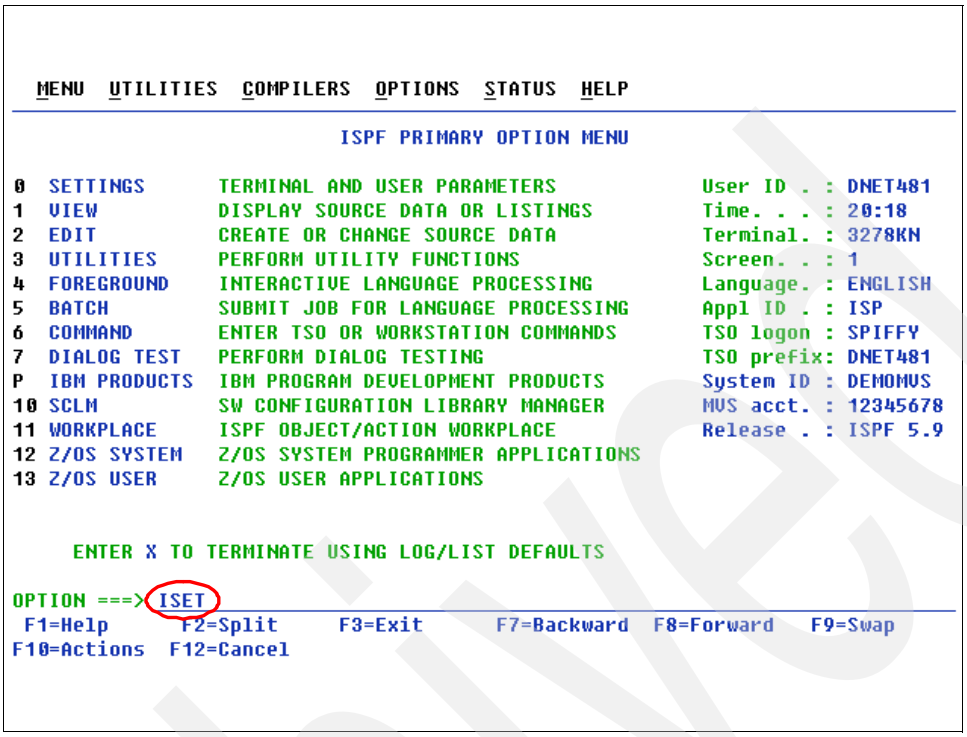

Figure 14-8 Setting OLIST DBCS support options, part 1

The SETTING IBMIPT DEFAULTS panel is displayed. For OLIST, type 0, as shown in Figure 14-9.

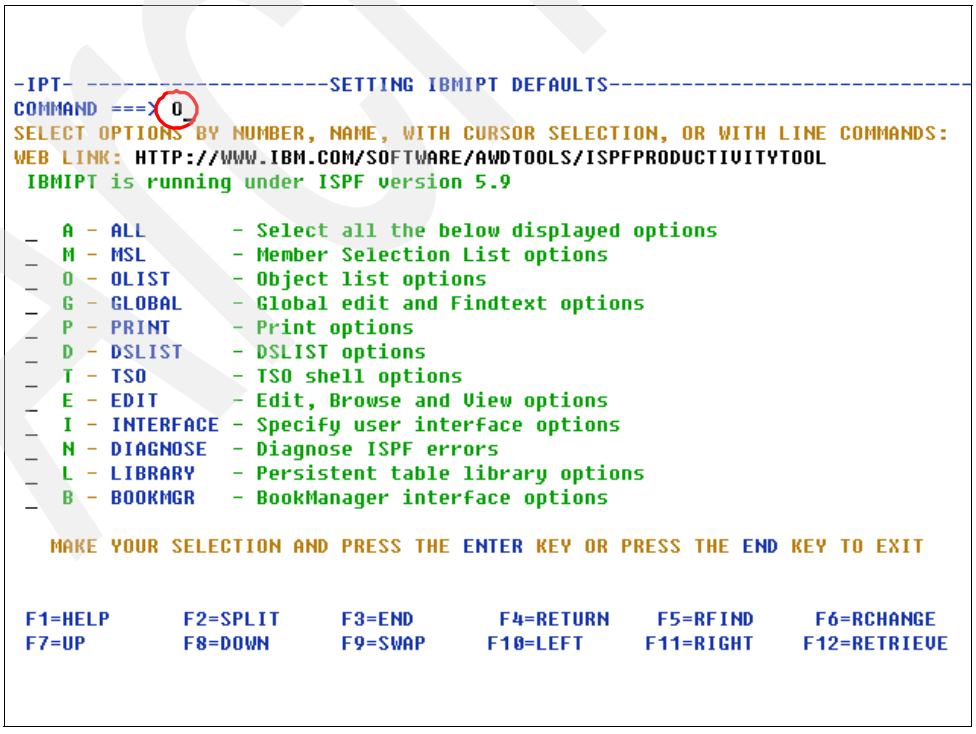

Figure 14-9 Setting OLIST DBCS support options, part 2

Then, in the OLIST – OBJECT LIST OPTIONS panel, set the option for the field DOUBLE-BYTE-CHARACTER-SET (DBCS) SUPPORT to `Y`, and set the option for the field IF DBCS SUPPORTED, USE CASE-SENSITIVE SEARCH STRINGS to `N`, as shown in Figure 14-10.

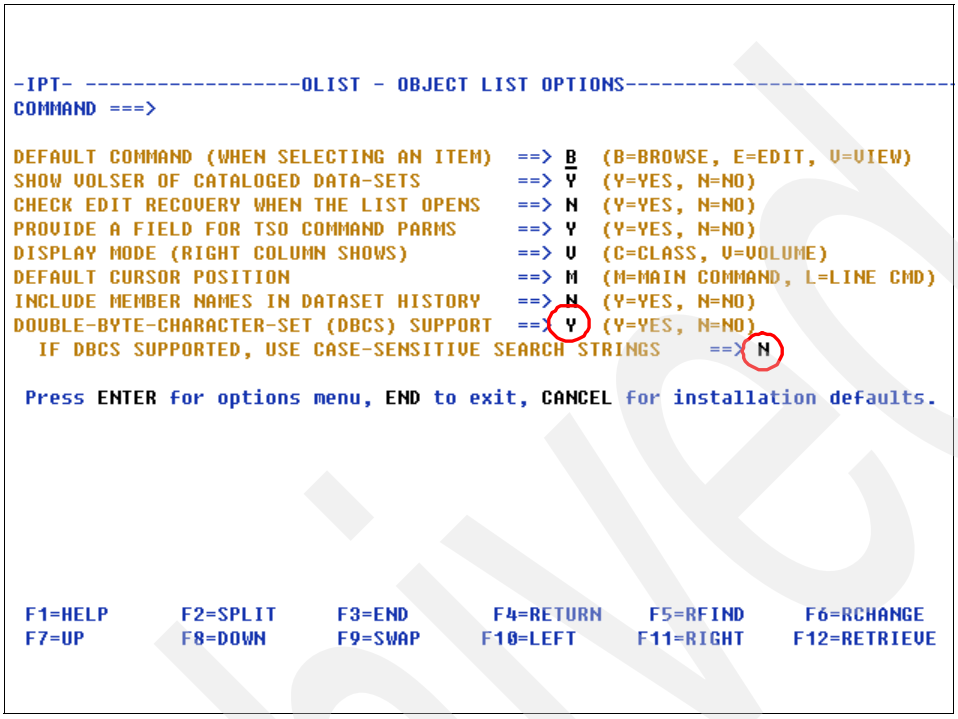

Figure 14-10 Setting OLIST DBCS support options, part 3

Now, we have finished all of the configurations for OLIST DBCS support.

14.1.2 Using DBCS with the Object List description

The dataset in Figure 14-11 on page 364 contains records with single and multiple DBCS characters, pure and mixed DBCS strings, and proper and improper DBCS strings. This dataset is comprehensive so that we can demonstrate the usage of DBCS.

Archived

```
 FILE  EDIT  EDIT_SETTINGS  MENU  UTILITIES  COMPILERS  TEST  HELP
-IPT- VIEW DNET481.IPTTEST.DBCS.PS06                      COLUMNS 00001 00072
=COLS> ----+----1----+----2----+----3----+----4----+----5----+----6----+----7--
****** ***************************** Top of Data ******************************
==MSG> -WARNING- THE UNDO COMMAND IS NOT AVAILABLE UNTIL YOU CHANGE
==MSG>           YOUR EDIT PROFILE USING THE COMMAND RECOVERY ON.
000100  中文    2-character DBCS only
000200 1-character DBCS only                                              字
000300 1234567 英 xyz 语的不同点   mixed DBCS strings
000400  ￥ C.   improper DBCS
000500 1234567 !   £  2* < £   improper DBCS strings
****** **************************** Bottom of Data ****************************

COMMAND ===> _____________________________________________ SCROLL ===> PAGE
 F1=Help      F2=Split     F3=Exit      F5=Rfind     F6=Rchange   F7=Up
 F8=Down      F9=Swap      F10=Left     F11=Right    F12=Cancel
```

Figure 14-11 Five test data records

We have several files that are based on these five records, including the file that is shown in Figure 14-11, that will be included in our Object List. Type `OL DNET481.IPTTEST.*` to create a temporary Object List of these files, as shown in Figure 14-12.

```
 MENU  UTILITIES  COMPILERS  OPTIONS  STATUS  HELP
                        ISPF PRIMARY OPTION MENU

0  SETTINGS      TERMINAL AND USER PARAMETERS          User ID . : DNET481
1  VIEW          DISPLAY SOURCE DATA OR LISTINGS       Time. . . : 20:21
2  EDIT          CREATE OR CHANGE SOURCE DATA          Terminal. : 3278KN
3  UTILITIES     PERFORM UTILITY FUNCTIONS             Screen. . : 1
4  FOREGROUND    INTERACTIVE LANGUAGE PROCESSING       Language. : ENGLISH
5  BATCH         SUBMIT JOB FOR LANGUAGE PROCESSING    Appl ID . : ISP
6  COMMAND       ENTER TSO OR WORKSTATION COMMANDS     TSO logon : SPIFFY
7  DIALOG TEST   PERFORM DIALOG TESTING                TSO prefix: DNET481
P  IBM PRODUCTS  IBM PROGRAM DEVELOPMENT PRODUCTS      System ID : DEMOMVS
10 SCLM          SW CONFIGURATION LIBRARY MANAGER      MVS acct. : 12345678
11 WORKPLACE     ISPF OBJECT/ACTION WORKPLACE          Release . : ISPF 5.9
12 Z/OS SYSTEM   Z/OS SYSTEM PROGRAMMER APPLICATIONS
13 Z/OS USER     Z/OS USER APPLICATIONS

    ENTER X TO TERMINATE USING LOG/LIST DEFAULTS

OPTION ===> OL DNET481.IPTTEST.*
 F1=Help      F2=Split     F3=Exit      F7=Backward  F8=Forward   F9=Swap
F10=Actions  F12=Cancel
```

Figure 14-12 Creating a permanent OLIST, part 1

A temporary Object List has been created, which lists all of the datasets that match this pattern. Enter the Main command `SAVE DBCS` to save this list as a permanent OLIST named DBCS, as shown in Figure 14-13.

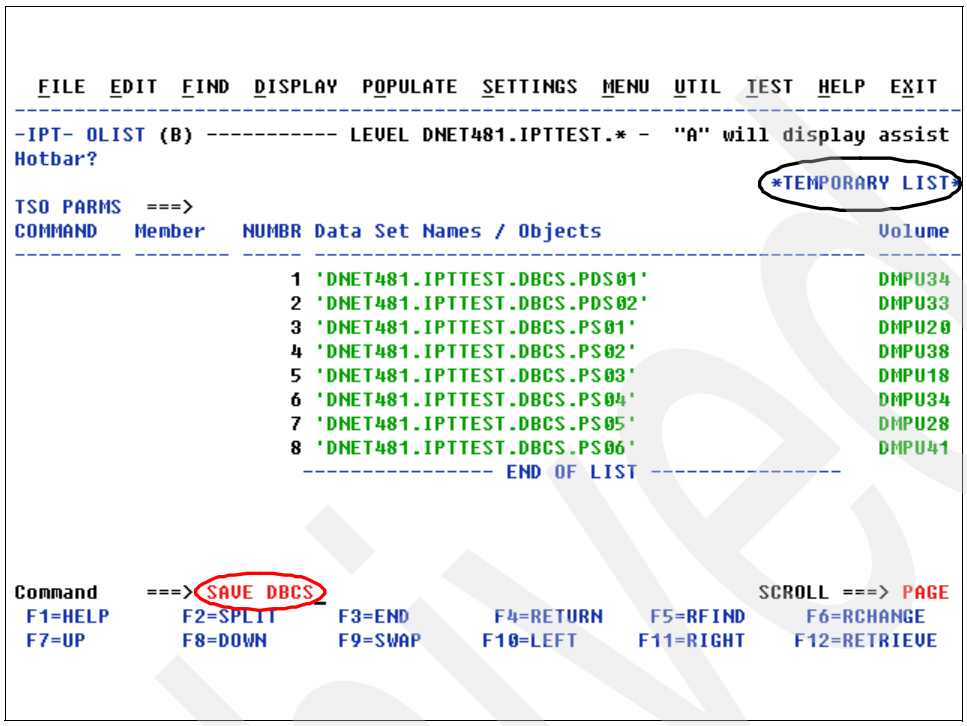

Figure 14-13 Creating permanent OLIST, part 2

Then, the confirmation panel that is shown in Figure 14-14, is displayed. DBCS was saved as a permanent OLIST for later use.

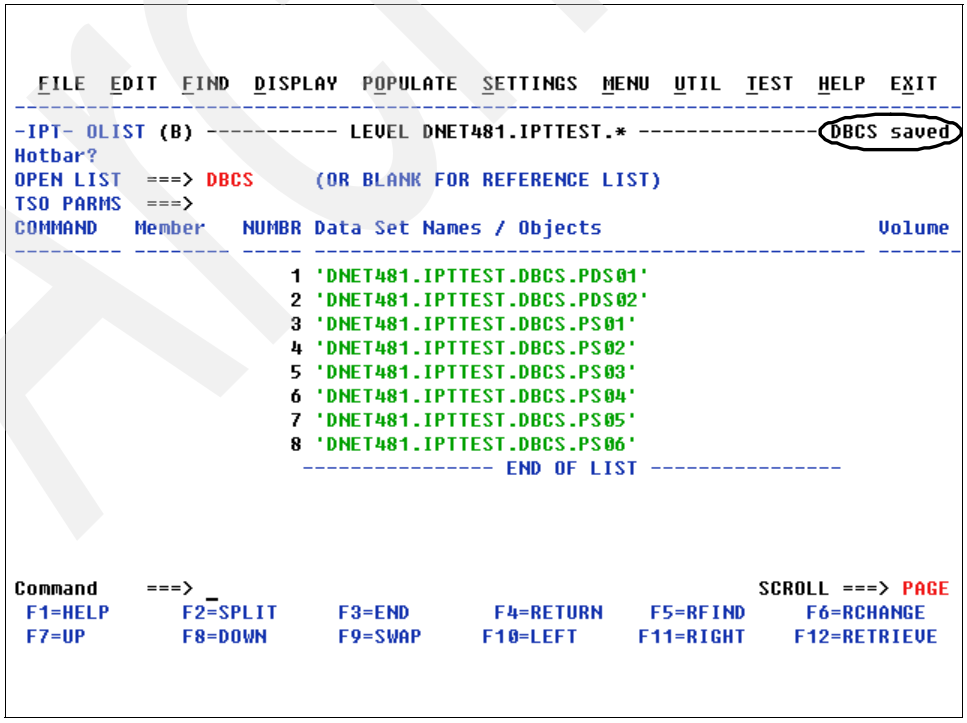

Figure 14-14 Creating permanent OLIST, part 3

In IPT Version 6.1, OLIST titles and comment lines can include DBCS character strings. This capability gives the OLIST and its objects a more meaningful description. Next, we add DBCS titles and comment lines in OLIST DBCS.

Place the cursor in the description area, and press Enter. Currently, the description is `LEVEL DNET481.IPTTEST.*`, as shown in Figure 14-15.

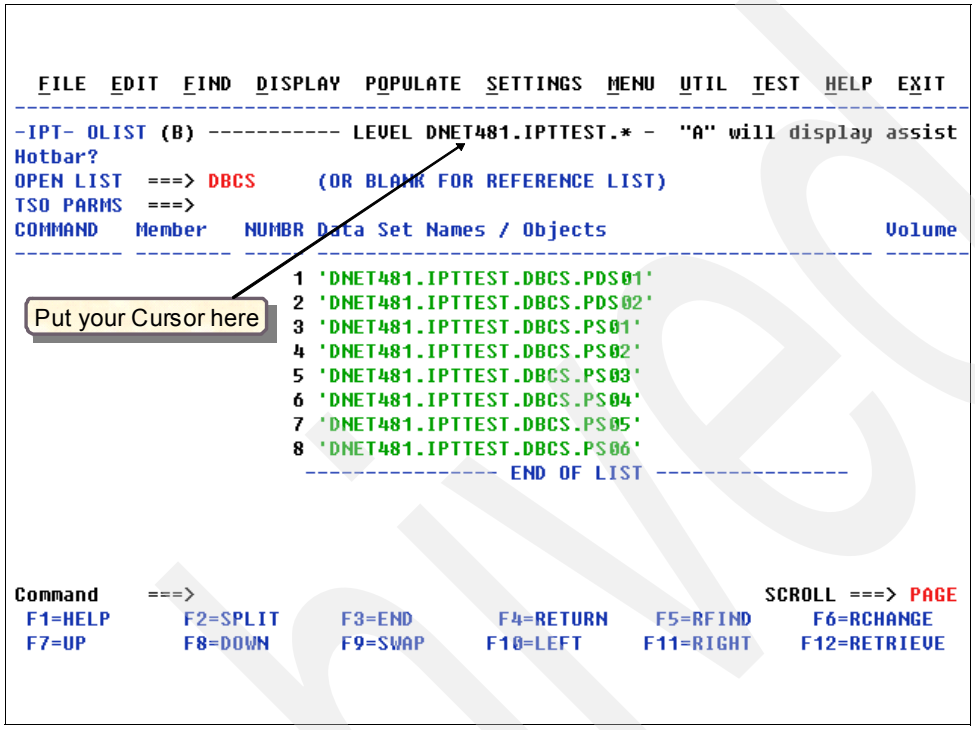

Figure 14-15 DBCS titles, part 1

A pop-up panel is displayed. Type the description that you want, and press Enter, as shown in Figure 14-16 on page 367.

Archived

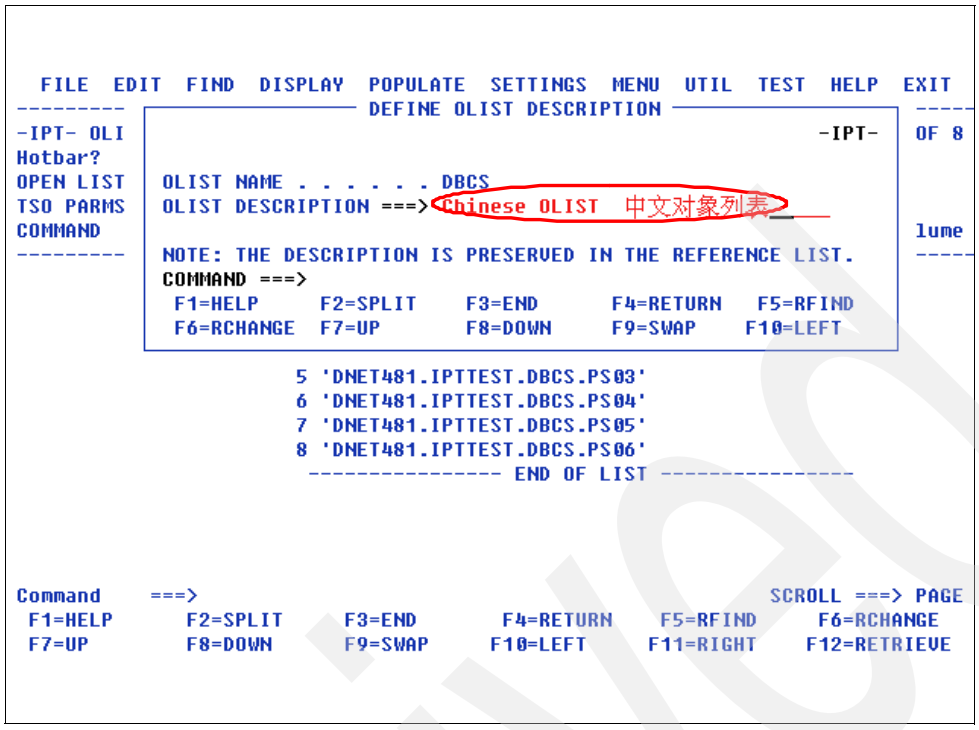

Figure 14-16 BCS titles, part 2

Figure 14-17 is displayed. The description of our OLIST was changed to mixed DBCS, as shown in Figure 14-17.

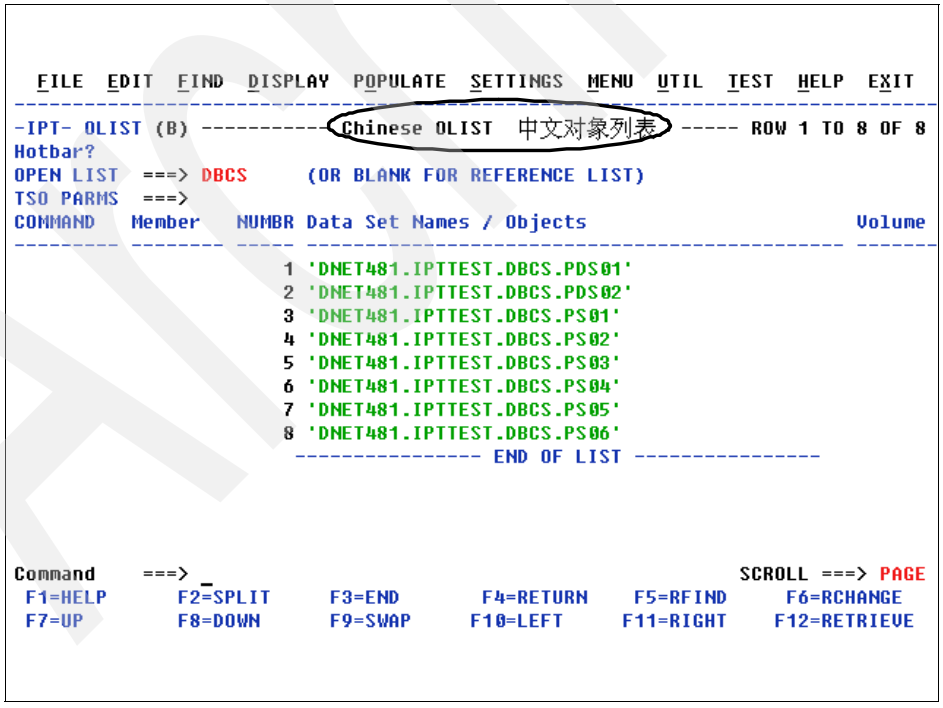

Figure 14-17 DBCS titles, part 3

To add one comment line, use the UPDATE command, as shown in Figure 14-18 on page 368.

```
  FILE  EDIT  FIND  DISPLAY  POPULATE  SETTINGS  MENU  UTIL  TEST  HELP  EXIT
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Chinese OLIST  中文对象列表  ----- ROW 1 TO 8 OF 8
Hotbar?
OPEN LIST  ===> DBCS     (OR BLANK FOR REFERENCE LIST)
TSO PARMS  ===>
COMMAND   Member   NUMBR Data Set Names / Objects                      Volume
--------- -------- ----- ---------------------------------------------- -------
                      1 'DNET481.IPTTEST.DBCS.PDS01'
                      2 'DNET481.IPTTEST.DBCS.PDS02'
                      3 'DNET481.IPTTEST.DBCS.PS01'
                      4 'DNET481.IPTTEST.DBCS.PS02'
                      5 'DNET481.IPTTEST.DBCS.PS03'
                      6 'DNET481.IPTTEST.DBCS.PS04'
                      7 'DNET481.IPTTEST.DBCS.PS05'
                      8 'DNET481.IPTTEST.DBCS.PS06'
                       ---------------- END OF LIST ----------------



Command    ===> UPD                                          SCROLL ===> PAGE
 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-18 Adding a comment line, part 1

In an EDIT panel, insert a line. Use the I line command, as shown in Figure 14-19.

```
-IPT- ------------------------ UPDATING OLIST DBCS ----------------------------
USE THE STANDARD EDIT COMMANDS TO EDIT THE OLIST ENTRIES.
PRESS THE END KEY TO CHANGE THE OLIST OR ENTER CANCEL TO CANCEL.

ENTRY  MEMBER   DATA SET NAME                                  VOLUME
I***** ***************************** Top of Data ******************************
000001          'DNET481.IPTTEST.DBCS.PDS01'
000002          'DNET481.IPTTEST.DBCS.PDS02'
000003          'DNET481.IPTTEST.DBCS.PS01'
000004          'DNET481.IPTTEST.DBCS.PS02'
000005          'DNET481.IPTTEST.DBCS.PS03'
000006          'DNET481.IPTTEST.DBCS.PS04'
000007          'DNET481.IPTTEST.DBCS.PS05'
000008          'DNET481.IPTTEST.DBCS.PS06'
****** **************************** Bottom of Data ****************************




COMMAND ===>                                                  SCROLL ===> PAGE
 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-19 Adding a comment line, part 2

Type a meaningful comment, as shown in Figure 14-20 on page 369.

Archived

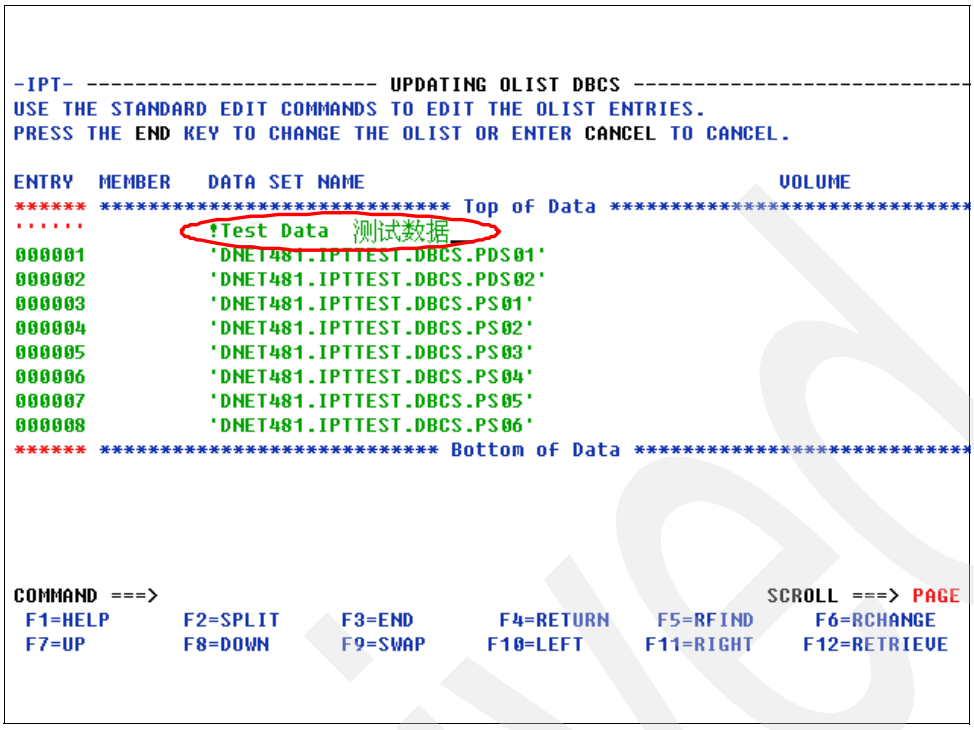

Figure 14-20 Adding a comment line, part 3

Finally, the OLIST looks like the panel that is shown in Figure 14-21.

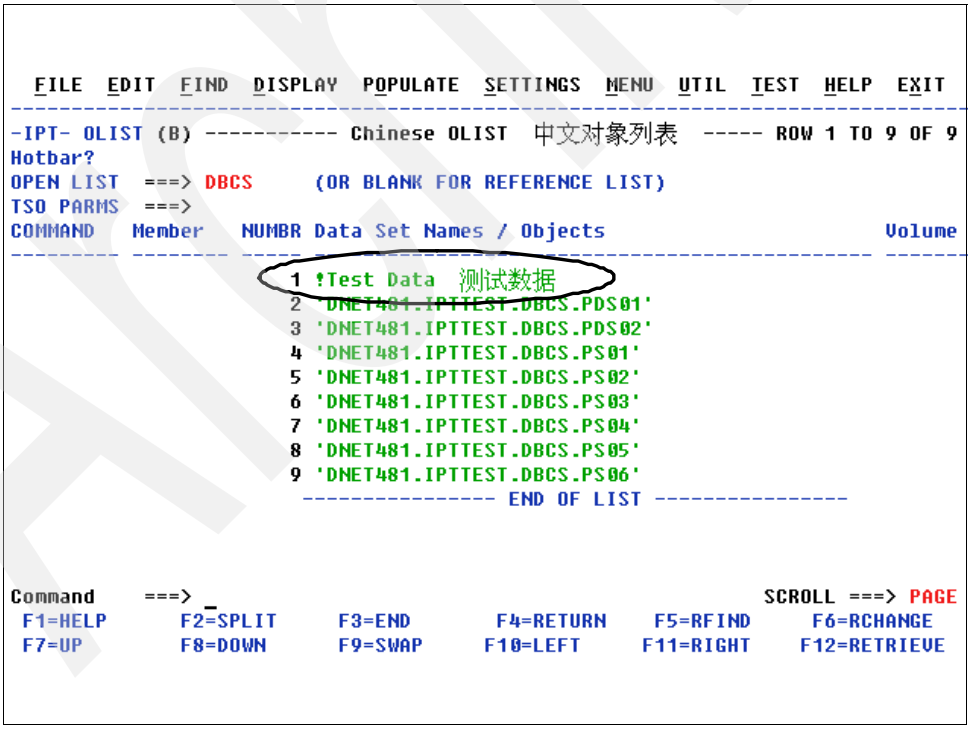

Figure 14-21 Final OLIST displayed

As you can see, mixed DBCS titles and comments are an extremely useful feature that can give OLIST and its objects more meaningful descriptions and make an OLIST more like a private desktop.

14.1.3 Using the FINDTEXT command with DBCS

Here, we show how DBCS is used with the FINDTEXT command. Use the permanent OLIST that we just created. Type the command `OL DBCS` and press Enter, as shown in Figure 14-22.

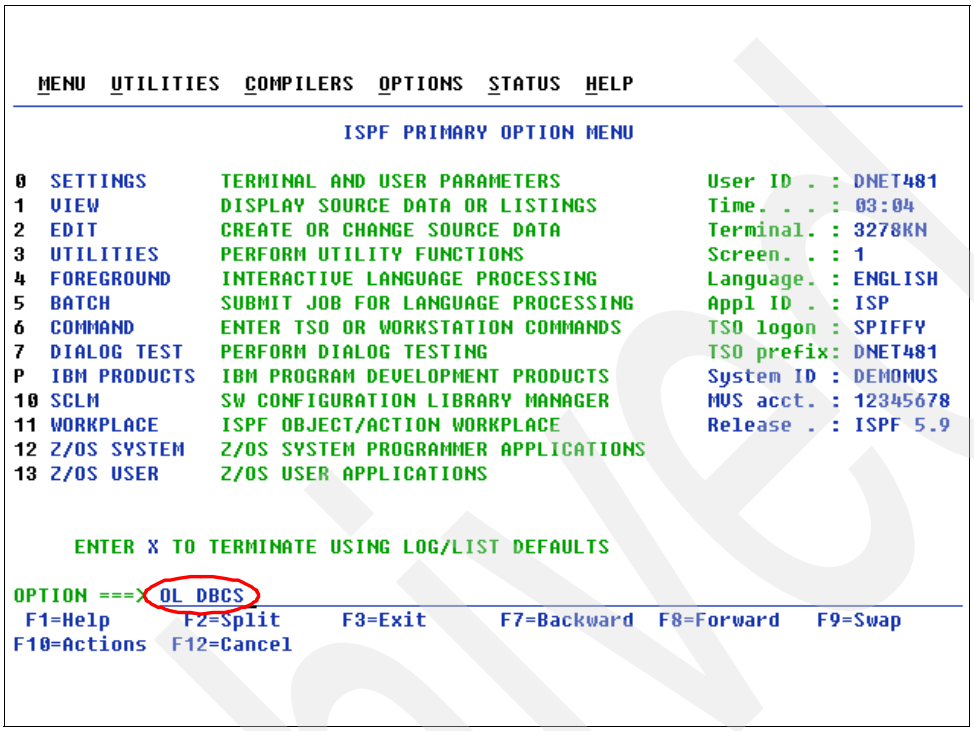

Figure 14-22 Use the permanent OLIST DBCS

We get Figure 14-23 on page 371, which lists all of the datasets included in object list DBCS that we just created. Here, we try to find a DBCS only string, and enter a Find Text command, as shown in Figure 14-23 on page 371.

Archive

```
 FILE  EDIT  FIND  DISPLAY  POPULATE  SETTINGS  MENU  UTIL  TEST  HELP  EXIT
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List --------------------- ROW 1 TO 8 OF 8
Hotbar?
OPEN LIST  ===> DBCS     (OR BLANK FOR REFERENCE LIST)
TSO PARMS  ===>
COMMAND   Member   NUMBR Data Set Names / Objects                    Volume
--------- -------- ----- ------------------------------------------ -------
                       1 'DNET481.IPTTEST.DBCS.PDS01'               DMPU34
                       2 'DNET481.IPTTEST.DBCS.PDS02'               DMPU33
                       3 'DNET481.IPTTEST.DBCS.PS01'                DMPU20
                       4 'DNET481.IPTTEST.DBCS.PS02'                DMPU38
                       5 'DNET481.IPTTEST.DBCS.PS03'                DMPU18
                       6 'DNET481.IPTTEST.DBCS.PS04'                DMPU34
                       7 'DNET481.IPTTEST.DBCS.PS05'                DMPU28
                       8 'DNET481.IPTTEST.DBCS.PS06'                DMPU41
                        ---------------- END OF LIST ----------------



Command    ===> FT 中文_                                SCROLL ===> PAGE
 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-23 Find a DBCS only string, part 1

The first match is found in DNET481.IPTTEST.DBCS.PDS01, member MEM01, as shown in Figure 14-24.

```
 FILE  EDIT  FIND  DISPLAY  POPULATE  SETTINGS  MENU  UTIL  TEST  HELP  EXIT
-------------------------------------------------------------------------------
-IPT- OLIST (B) ----------- Objects List -------------------- Search completed
Hotbar?
OPEN LIST  ===> DBCS     (OR BLANK FOR REFERENCE LIST)
TSO PARMS  ===>
COMMAND   Member   NUMBR Data Set Names / Objects                    Volume
--------- -------- ----- ------------------------------------------ -------
-TXT FND- MEM01        1 'DNET481.IPTTEST.DBCS.PDS01'               DMPU34
                       2 'DNET481.IPTTEST.DBCS.PDS02'               DMPU33
                       3 'DNET481.IPTTEST.DBCS.PS01'                DMPU20
                       4 'DNET481.IPTTEST.DBCS.PS02'                DMPU38
                       5 'DNET481.IPTTEST.DBCS.PS03'                DMPU18
                       6 'DNET481.IPTTEST.DBCS.PS04'                DMPU34
                       7 'DNET481.IPTTEST.DBCS.PS05'                DMPU28
                       8 'DNET481.IPTTEST.DBCS.PS06'                DMPU41
                        ---------------- END OF LIST ----------------



Command    ===> _                                       SCROLL ===> PAGE
 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-24 Find a DBCS only string, part 2

We can use F5 several times to find all of the matches, as shown in Figure 14-25 on page 372.

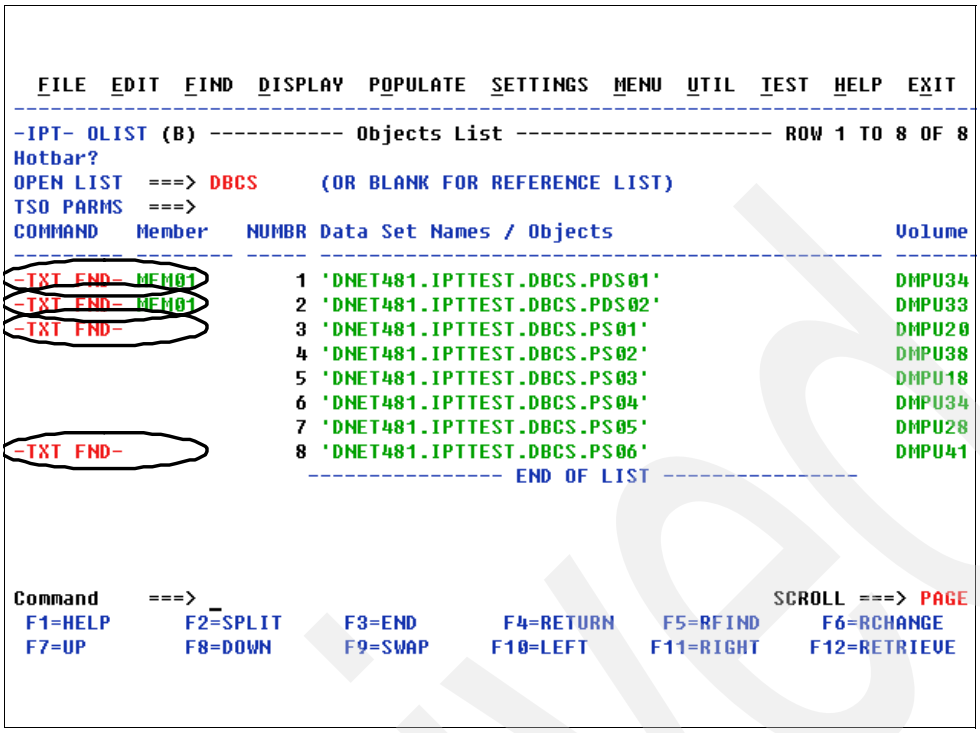

Figure 14-25 Find a DBCS only string, part 3

We tried many scenarios against the permanent OLIST DBCS. Table 14-1 shows the results.

Table 14-1 Other test scenarios

Scenario	Result	Comment
FT	Success	Find 1-chracter only DBCS string.
FT	Success	Find DBCS only substring in DBCS only string.
FT	Success	Find DBCS only substring in mixed DBCS string.
FT	Success	
FT	Success	
FT [improper string]	Success or failure, it depends	Find improper substring in improper DBCS string. Improper DBCS is treated as SBCS.
FT 7	Success	Find mixed DBCS substring in mixed DBCS string, case insensitive.
FT x	Success	
FT XYZ	Success	
FT 567 xYZ	Success	
FT XYZ	Failure	Find that mixed DBCS substring does not exist in mixed DBCS string.
FT 567 xyz	Failure	

Archive

14.2 Using DBCS with the Member Selection List

As we discussed in the beginning of this chapter, the MSL FINDTEXT and GLOBAL FIND commands support DBCS search strings.

14.2.1 Enable MSL DBCS support

To enable MSL DBCS support, we must set the DBCS support option in IPT first. We can use the command shortcut ISET in any panel, as shown in Figure 14-26.

```
 MENU  UTILITIES  COMPILERS  OPTIONS  STATUS  HELP
------------------------------------------------------------------------------
                         ISPF PRIMARY OPTION MENU

0  SETTINGS      TERMINAL AND USER PARAMETERS          User ID . : DNET481
1  VIEW          DISPLAY SOURCE DATA OR LISTINGS       Time. . . : 20:18
2  EDIT          CREATE OR CHANGE SOURCE DATA          Terminal. : 3278KN
3  UTILITIES     PERFORM UTILITY FUNCTIONS             Screen. . : 1
4  FOREGROUND    INTERACTIVE LANGUAGE PROCESSING       Language. : ENGLISH
5  BATCH         SUBMIT JOB FOR LANGUAGE PROCESSING    Appl ID . : ISP
6  COMMAND       ENTER TSO OR WORKSTATION COMMANDS     TSO logon : SPIFFY
7  DIALOG TEST   PERFORM DIALOG TESTING                TSO prefix: DNET481
P  IBM PRODUCTS  IBM PROGRAM DEVELOPMENT PRODUCTS      System ID : DEMOMVS
10 SCLM          SW CONFIGURATION LIBRARY MANAGER      MVS acct. : 12345678
11 WORKPLACE     ISPF OBJECT/ACTION WORKPLACE          Release . : ISPF 5.9
12 Z/OS SYSTEM   Z/OS SYSTEM PROGRAMMER APPLICATIONS
13 Z/OS USER     Z/OS USER APPLICATIONS

     ENTER X TO TERMINATE USING LOG/LIST DEFAULTS

OPTION ===> ISET
------------------------------------------------------------------------------
 F1=Help      F2=Split     F3=Exit      F7=Backward  F8=Forward   F9=Swap
F10=Actions  F12=Cancel
```

Figure 14-26 Set MSL DBCS support options, part 1

We get the SETTING IBMIPT DEFAULTS panel. Choose option **M**, as shown in Figure 14-27 on page 374.

Archive

```
-IPT- --------------------SETTING IBMIPT DEFAULTS-------------------------------
COMMAND ===> M_
SELECT OPTIONS BY NUMBER, NAME, WITH CURSOR SELECTION, OR WITH LINE COMMANDS:
WEB LINK: HTTP://WWW.IBM.COM/SOFTWARE/AWDTOOLS/ISPFPRODUCTIVITYTOOL
 IBMIPT is running under ISPF version 5.9

_   A - ALL       - Select all the below displayed options
_   M - MSL       - Member Selection List options
_   O - OLIST     - Object list options
_   G - GLOBAL    - Global edit and Findtext options
_   P - PRINT     - Print options
_   D - DSLIST    - DSLIST options
_   T - TSO       - TSO shell options
_   E - EDIT      - Edit, Browse and View options
_   I - INTERFACE - Specify user interface options
_   N - DIAGNOSE  - Diagnose ISPF errors
_   L - LIBRARY   - Persistent table library options
_   B - BOOKMGR   - BookManager interface options

   MAKE YOUR SELECTION AND PRESS THE ENTER KEY OR PRESS THE END KEY TO EXIT


 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-27 Set MSL DBCS support options, part 2

Then, we see Figure 14-28. Set DOUBLE-BYTE-CHARACTER-SET(DBCS) SUPPORT to `Y`, and set IF DBCS SUPPORTED, USE CASE-SENSITIVE SEARCH STRINGS to `N`, as shown in Figure 14-28.

```
-IPT- -----------------MEMBER SELECTION LIST OPTIONS---------------------------
COMMAND ===>

AUTOMATIC PREVIEW (WITH LOCATE/FIND)          ==> Y (Y=YES, N=NO)
REPLACE EXISTING MEMBERS (COPY/MOVE)          ==> O (Y=YES, N=NO, O=OLDER)
MEMBER LIST LINE COMMAND PAD CHARACTER        ==>   (BLANK,DOT,QUOTE,UNDERSCORE)
MAIN MENU OPTION 1 DEFAULT PROCESS            ==> B (B=BROWSE, V=VIEW)
MAIN MENU OPTION 1,2 @H DISPLAY               ==> Y (Y=OLIST, N=NO)
DEFAULT CURSOR POSITION                       ==> M (M=MAIN, L=LINE CMD)
INCLUDE MEMBER NAMES IN DATASET HISTORY       ==> N (Y=YES, N=NO)
PROMPT WITH FIND COMMAND AFTER A GLOBAL FIND  ==> Y (Y=YES, N=NO)
DOUBLE-BYTE-CHARACTER-SET (DBCS) SUPPORT      ==> Y (Y=YES, N=NO)
  IF DBCS SUPPORTED, USE CASE-SENSITIVE SEARCH STRINGS    ==> N

COMMANDS EXECUTED BY TAILOR COMMAND:
  ==>


 Press ENTER for options menu, END to exit, CANCEL for installation defaults.


 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-28 Set MSL DBCS support options, part 3

For more details about other DBCS support-related configuration, reference the 14.1.1, “Configuration for DBCS support” on page 358.

14.2.2 MSL DBCS search string support

We use DBCS search commands. First, display an MSL of PDS01, as shown in Figure 14-29.

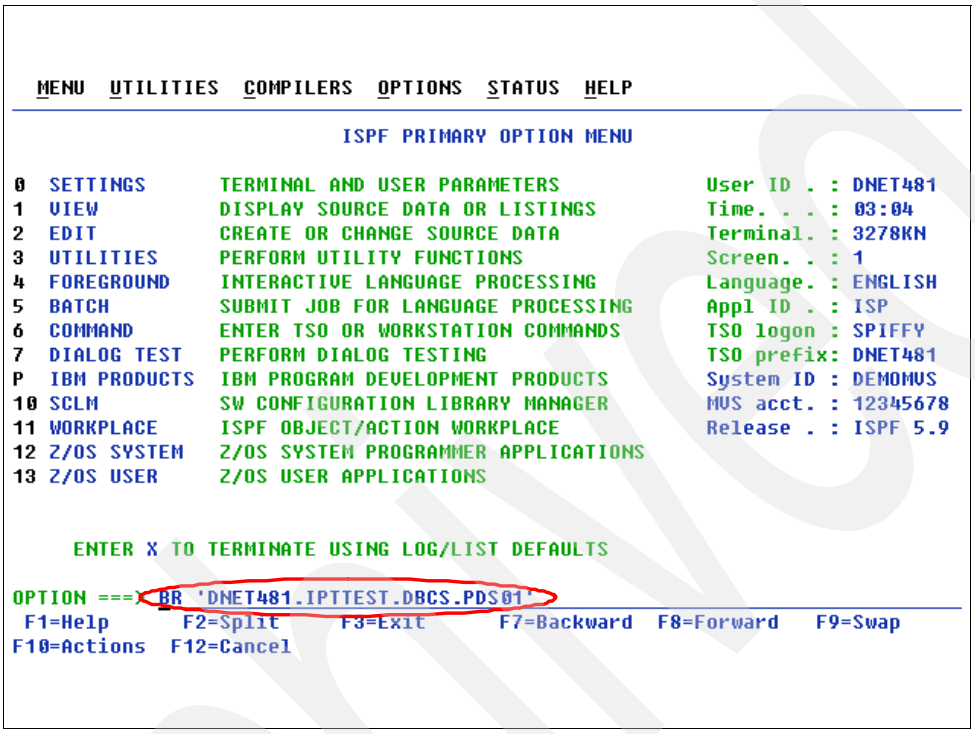

Figure 14-29 Display an MSL of PDS01

We see Figure 14-30 on page 376. Issue the Find Text command and include the DBCS search string against the MSL, as shown in Figure 14-30 on page 376.

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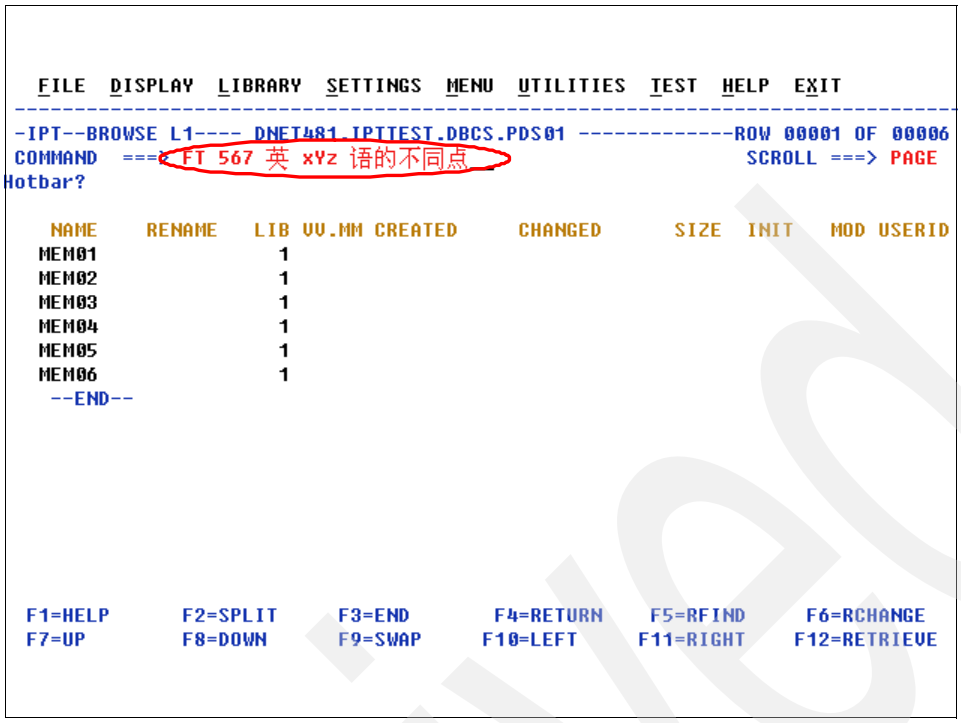

Figure 14-30 Find Text command including DBCS search string, part 1

The first match that is found in member MEM05 is displayed, as shown in Figure 14-31.

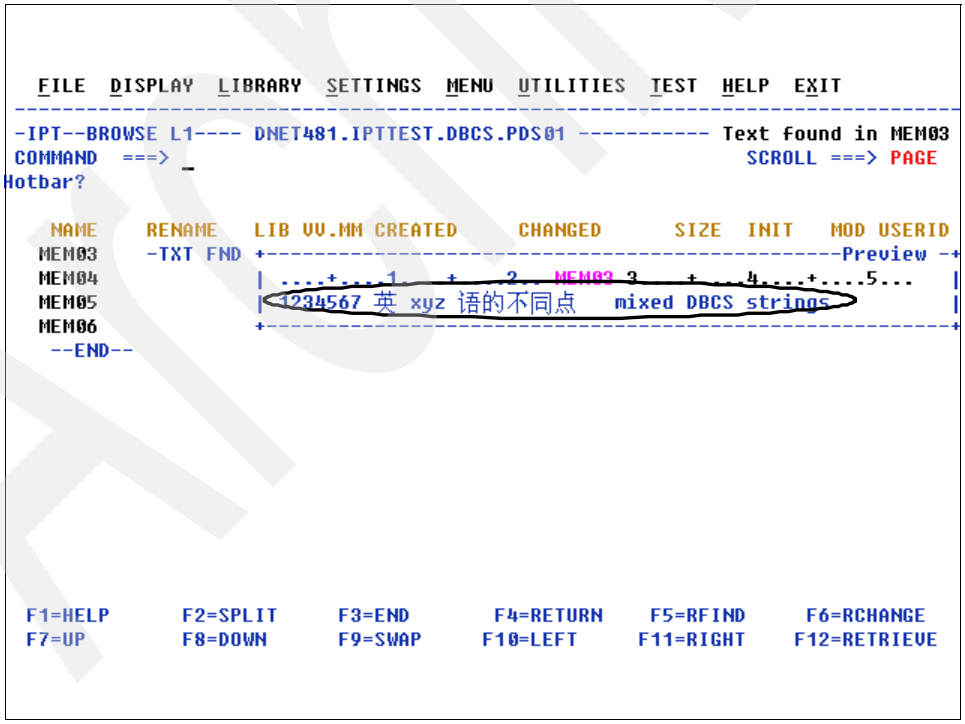

Figure 14-31 Find Text command include DBCS search string, part 2

Next, try to use another MSL command, Global Find for DBCS, as shown in Figure 14-32 on page 377.

```
 FILE  DISPLAY  LIBRARY  SETTINGS  MENU  UTILITIES  TEST  HELP  EXIT
-------------------------------------------------------------------------------
-IPT--BROWSE L1---- DNET481.IPTTEST.DBCS.PDS01 ------------ROW 00001 OF 00006
COMMAND  ===> G F 中文_                                      SCROLL ===> PAGE
Hotbar?

   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  MEM01                 1
  MEM02                 1
  MEM03                 1
  MEM04                 1
  MEM05                 1
  MEM06                 1
   --END--

 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-32 Global Find command for DBCS, part 1

All of the matches display, as shown in Figure 14-33.

```
 FILE  DISPLAY  LIBRARY  SETTINGS  MENU  UTILITIES  TEST  HELP  EXIT
-------------------------------------------------------------------------------
-IPT--BROWSE L1---- DNET481.IPTTEST.DBCS.PDS01 ------------ROW 00001 OF 00006
COMMAND  ===> _                                              SCROLL ===> PAGE
Hotbar?

   NAME     RENAME    LIB VV.MM CREATED      CHANGED       SIZE  INIT   MOD USERID
  MEM01     -G:OK       Found:  中文    2-character DBCS only
  MEM02     -G:FAIL     1
  MEM03     -G:FAIL     1
  MEM04     -G:FAIL     1
  MEM05     -G:FAIL     1
  MEM06     -G:OK       Found:  中文    2-character DBCS only
   --END--

 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 14-33 Global Find command for DBCS, part 2

We tried many situations, single character and multi-characters, pure DBCS and mixed DBCS, full string and substring, proper and improper string, and get the following conclusion.

The MSL commands Find Text and Global Find fully support DBCS, and improper DBCS is treated as SBCS.

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A

Customizing IBM Personal Communications

Most 3270 emulators allow you to customize the keyboard or the mouse. In this chapter, we show you how to customize the IBM Personal Communications (PCOM) product to use the mouse to navigate using the Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS. If you use another 3270 emulator, consult the appropriate documentation to change your mouse settings. Using the PCOM emulator, we redefine our mouse left-click key to open files, and the mouse right-click to close files. Using this method, you can quickly navigate Object Lists and Member Selection Lists with a click of the mouse.

With PCOM, the default mouse settings are set this way:

- A left click marks the box around the text for cut and paste activities.
- A right click displays keys.

Defining the mouse for Point-and-Click for IPT disables the current mouse functions. In the following sections, we describe how to perform these two functions without a mouse.

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Marking the box for cut and paste activities without the mouse

Figure A-1shows the basic keyboard arrows.

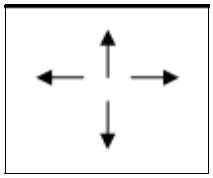

Figure A-1 Keyboard arrows

To mark a box around text for cut and paste activities without the mouse:

1. Use the keyboard arrows shown in Figure A-1 to move the cursor to a corner of the area that you want to mark.
2. While holding down the Shift key, use the cursor-movement keys to mark the area.
3. Release the Shift key.
4. You can use the mouse to click **Edit** → **Copy** to continue with the copy operation.

Displaying the pop-up keypad panel without a mouse

Figure A-2 shows the basic pop-up keypad panel.

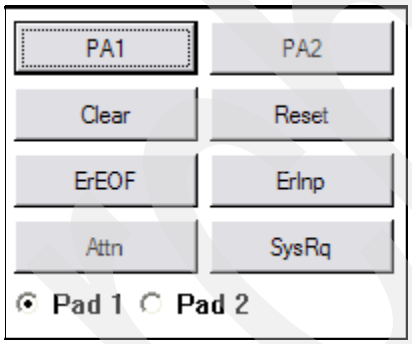

Figure A-2 Pop-up keypad panel

To display the pop-up keypad without using the mouse:

- Left-click the **Action** menu bar command.
- Left-click the display pop-up keypad.

Because you now have an alternate method to mark text and to display the pop-up keypad, you are ready to program your mouse to open and close files.

Changing PCOM to use the mouse to open and close files

Use the following steps to customize PCOM to use the mouse to open and close files:

1. Open a PCOM session.
2. Left-click **Edit** → **Preferences** → **Macro/Script.**

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3. Click **Customize**.
4. Click the pull-down list. Scroll down until you find the mouse position. Click the mouse position to highlight it, and then click **Add**.
5. Scroll up until you find Enter. Click **Enter** to highlight it, and click **Add**. You will now see both commands [mouse position] and [enter] in the Macro Statements box.
6. Click **File** → **Save**. Enter a name for the Macro, such as `mouse.mac.`, as shown in Figure A-3.

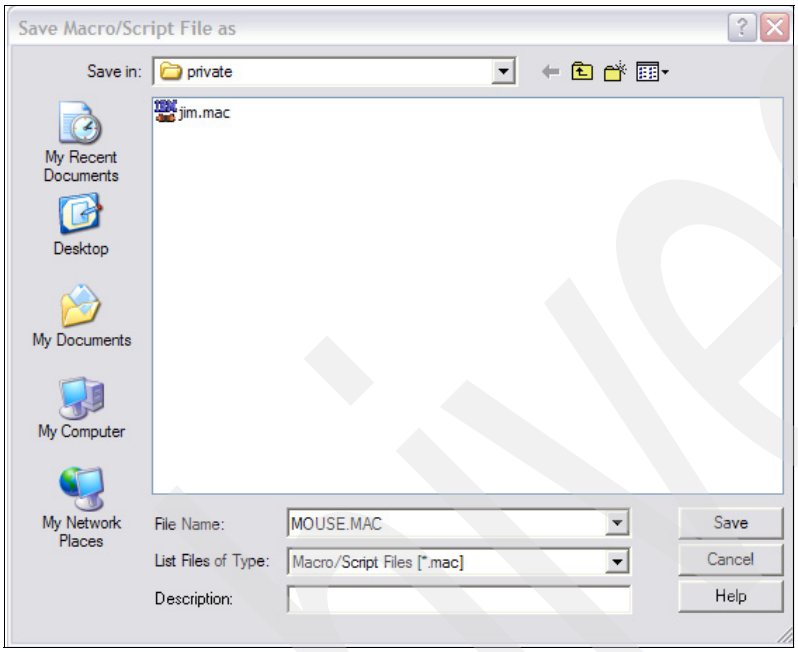

Figure A-3 Macro/Script File → Save

7. Close the Macro/Script window by clicking the **X** in the upper-right corner of the box. The previous steps defined the macro file `mouse.mac` and positioned the cursor and invoked Enter.

The next series of steps defines the mouse actions:

1. Left-click **Edit** → **Preferences** → **Mouse**.
2. Left-click **User-Defined**, and then left-click **Customize**.
3. When you see the completed Customization panel, follow these steps:
   a. Left-click in the Macro/Script box, and locate the Macro/Script file name that you saved earlier.
   b. When you find the correct file name, click the **Left** box of the Current Action of Mouse Button, which enables the Macro/Script that you created earlier by using the left-mouse click.
   c. Left-click the **Function Pull Down**, and locate Program Function Key 3. Your PF3 key is set to END, which saves and closes files. Select **Program Function Key 3**.
   d. Left-click the **Right** box of the Current Action of Mouse Button.
   e. Click the red **X** to close the Customize Mouse panel, and the Figure A-4 on page 382 is displayed, as shown in Figure A-4 on page 382.

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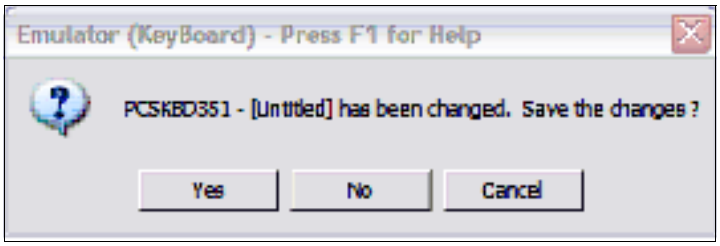

Figure A-4 Emulator (keyboard) confirmation panel

f. Click **Yes**.

g. Enter a valid file name. Save the MMP file.

Touring IPT using the mouse-enabled point-and-click function

Now, our mainframe session is starting to behave like our workstation. We can open and close files with a click of our mouse, as shown in Figure A-5 and Figure A-6 on page 383. To tour IPT:

```
 Menu  Utilities  Compilers  Options  Status  Help
──────────────────────────────────────────────────────────────────────────────
                          ISPF Primary Option Menu
Option ===> ol dnet424.adlab

0  Settings      Terminal and user parameters          User ID . : DNET424
1  View          Display source data or listings       Time. . . : 09:40
2  Edit          Create or change source data          Terminal. : 3278A
3  Utilities     Perform utility functions             Screen. . : 1
4  Foreground    Interactive language processing       Language. : ENGLISH
5  Batch         Submit job for language processing    Appl ID . : ISP
6  Command       Enter TSO or Workstation commands     TSO logon : SPIFFY
7  Dialog Test   Perform dialog testing                TSO prefix: DNET424
P  IBM Products  IBM program development products      System ID : DEMOMVS
10 SCLM          SW Configuration Library Manager      MVS acct. : 12345678
11 Workplace     ISPF Object/Action Workplace          Release . : ISPF 5.9
12 z/OS System   z/OS system programmer applications
13 z/OS User     z/OS user applications

     Enter X to Terminate using log/list defaults
```

Figure A-5 Request to display the Object List LAB

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```
  File  Edit  Find  Display  Populate  Settings  Menu  Util  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT- OLIST (V) ---------- LEVEL DNET424.ADLAB ------------ Row 1 to 15 of 79
Command    ===> _                                          SCROLL ===> CSR
Hotbar: REFRESH  CLRVOL   FILLVOL  UPDATE   CUT      FLIP     VALIDATE DOWN
                                                      *TEMPORARY LIST*

Command   Member   Numbr Data Set Names / Objects                    Volume
--------- -------- ----- ---------------------------------------- -------
                       1 'DNET424.ADLAB.ADATA'                     DMPU20
                       2 'DNET424.ADLAB.CNTL'                      DMPU04
                       3 'DNET424.ADLAB.CNTL.SAVE'                 DMPU01
                       4 'DNET424.ADLAB.COPYLIB'                   DMPU22
                       5 'DNET424.ADLAB.COPYLIB.NEW'               DMPU03
                       6 'DNET424.ADLAB.COPYLIBI'                  DMPU23
                       7 'DNET424.ADLAB.COPYLIBO'                  DMPU15
                       8 'DNET424.ADLAB.CRITERIA'                  DMPU18
                       9 'DNET424.ADLAB.CUSTFILE'                  DMPU19
                      10 'DNET424.ADLAB.CUSTFILE.KSDS'
                      11 'DNET424.ADLAB.CUSTFILE.KSDS.DATA'        DMPU24
                      12 'DNET424.ADLAB.CUSTFILE.KSDS.INDEX'       DMPU24
                      13 'DNET424.ADLAB.CUSTFILE.TEMP'             DMPU23
                      14 'DNET424.ADLAB.CUSTFILE.WORK.KSDS'
                      15 'DNET424.ADLAB.CUSTFILE.WORK.KSDS.DATA'   DMPU01
```

Figure A-6 Object List LAB

1. Left-click **DNET424.ADLAB.COPYLIB**, which is the MSL in the Member Selection List that is shown in Figure A-6.

```
  File  Display  Library  Settings  Menu  Utilities  Test  Help  Exit
-------------------------------------------------------------------------------
-IPT--BROWSE L1---- DNET424.ADLAB.COPYLIB ------------------ROW 00001 OF 00103
COMMAND  ===>                                               SCROLL ===> CSR
HOTBAR: UP       GLOBAL   INFO     COMPRESS EXPDIR   DOWN     UP
                                                   ON VOLUME DMPU22
   NAME     RENAME   LIB VV.MM CREATED     CHANGED       SIZE  INIT   MOD USERID
  ACCTFIL             1 01.06 07/10/26 07/11/20 09:11    15     9     0 DNET424
  BALCURR             1 01.01 07/10/28 07/10/28 15:40    13    32     0 DNET424
  BALDTL              1 01.03 03/04/18 05/05/01 08:43    32    32     0 DNET100
  BALDUE              1 01.02 03/04/18 05/05/01 08:43     7     7     0 DNET100
  BALHIST             1 01.07 07/10/28 07/10/28 18:51    35    33     0 DNET424
  BALPAST             1 01.01 07/10/28 07/10/28 15:40    19    32     0 DNET424
  B856TREC            1 01.00 08/05/07 08/05/07 10:26    21    21     0 DNET424
  CDATMAP             1 01.00 06/05/01 06/05/01 11:55   148   148     0 DNET328
  CEETEST1            1 01.00 07/09/13 07/09/13 10:18    10    10     0 DNET424
  CEETEST2            1
  CSTOUT              1 01.00 07/05/01 07/05/01 22:12    33    33     0 DNET100
  CUSTADDR            1 01.02 03/04/18 07/10/28 19:04     5     4     0 DNET424
  CUSTCOPY            1 01.08 07/09/12 07/09/12 16:12    44    44     0 DNET424
  CUSTIN              1 01.00 07/05/01 07/05/01 22:12    33    33     0 DNET100
  CUSTMAST            1
  CUSTPLI             1 01.15 08/10/03 08/10/03 10:36    20    37     0 DNET424
  CUSTREC             1 01.09 07/09/12 08/03/24 18:22    37    40     0 DNET424
```

Figure A-7 Member Selection List shown

2. Left-click **CUSTMAST** to browse the member. The contents of CUSTMAST are displayed in Figure A-8 on page 384.

```
 Menu  Utilities  Compilers  Help
 ------------------------------------------------------------------------
 -IPT- BROWSE    DNET424.ADLAB.COPYLIB(CUSTMAST)       Line 00000000 Col 001 080
 Command ===> _____________________________________________ Scroll ===> CSR
****************************** Top of Data ********************************
      *Example: Master Copybook
       01  CUST-REC.
           COPY CUSTREC1 SUPPRESS.
       01  CONTACT-REC.
           COPY CUSTREC2 SUPPRESS.
****************************** Bottom of Data *****************************
```

Figure A-8 Contents of CUSTMAST

3. We customized F4 using the VIEW command. Put your cursor under CUSTREC1, and press PF4 to view the CUSTREC1 member. The CUSTREC1 member view is displayed (Figure A-9).

```
 Menu  Utilities  Compilers  Help
 ------------------------------------------------------------------------
 -IPT- BROWSE    DNET424.ADLAB.COPYLIB(CUSTMAST)       Line 00000000 Col 001 080
 Command ===> _____________________________________________ Scroll ===> CSR
****************************** Top of Data ********************************
      *Example: Master Copybook
       01  CUST-REC.
           COPY CUSTREC1 SUPPRESS.
       01  CONTACT-REC.
           COPY CUSTREC2 SUPPRESS.
****************************** Bottom of Data *****************************
```

Figure A-9 CUSTREC1 member view

4. Using PF4, we can view the CUSTREC1 member. Right-click to invoke the END command, and return to the previous panel.

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Restoring the PCOM mouse settings

Use the following steps to easily restore the PCOM mouse settings:

1. Left-click **Edit** → **Preferences** → **Mouse**.
2. Select **IBM Default**, as shown in Figure A-10.

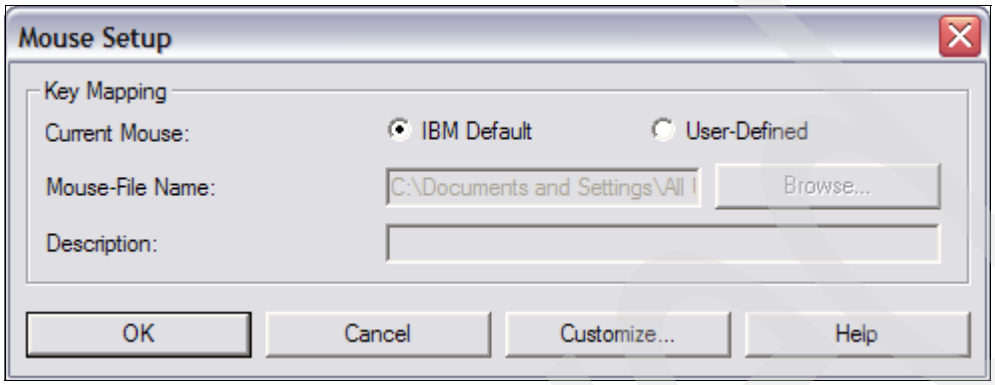

Figure A-10 Mouse Setup with IBM Default restored

3. Click **OK** to restore the defaults.

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Related publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this book.

IBM Redbooks publications

For information about ordering these publications, see “How to get IBM Redbooks publications” on page 388. Note that several of the documents referenced here might be available in softcopy only:

- *Application Lifecycle Management with SCLM on System z*, SG24-7592
- *Getting Started with SCLM: A Practical Guide to SCLM and SCLM Advanced Edition*, SG24-7392
- *IBM Application Development and Problem Determination*, SG24-7661

Other publications

These publications are also relevant as further information sources:

- *IBM ISPF Productivity Tool for z/OS User’s Guide Version 6 Release 1 Modification 0*, SC14-7221
- *IBM ISPF Productivity Tool for z/OS Installation and Customization Guide Version 6 Release 1 Modification 0*, SC14-7222
- *IBM File Manager for z/OS User’s Guide and Reference*, SC19-2495
- *IBM File Manager for z/OS User’s Guide and Reference for DB2 Data,* SC19-2496
- *ISPF SCLM Guide and Reference*, SC34-4817-09

Online resources

These Web sites are also relevant as further information sources:

- Additional information about PDSE libraries:

  `http://www.ibm.com/systems/storage/software/sms/whatis_sms/pdse.html`
- Information about the IBM ISPF tool family:

  `http://www.ibm.com/software/awdtools/ispfproductivitytool`
- File Manager library:

  `http://www.ibm.com/software/awdtools/filemanager/library/`

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Improving Productivity with ISPF Productivity Tool V6.1

Access the ISPF environment easily

Enhance your system navigation

Learn how to point and shoot objects

This IBM Redbooks publication introduces the Interactive System Productivity Facility (ISPF) Productivity Tool (IPT) Version 6, Release 1 for z/OS. IPT operates as a seamlessly integrated front end to ISPF:

- IPT functionality is available from any panel without a need to modify any ISPF Primary Options Menu. All IPT functions are totally integrated. IPT can perform almost any activity within ISPF, or internally invoke the function that can perform the task.
- IPT combines separately provided ISPF utility functions and new ISPF Productivity Tool features into the Object List (OLIST) and Member Selection List (MSL). The resulting member, dataset, and object lists become powerful platforms where you can perform many tasks without navigating to other utilities.
- IPT relates objects to applications in a similar manner to the way that a PC performs Object Linking and Embedding (OLE). By extending the dataset objects that are used by ISPF to other object classes, IPT lets you specify the object to be processed and the action that is performed (such as EDIT or BROWSE). The facility that is appropriate to the object class for the action that you have requested is invoked automatically.
- IPT provides extensive search capabilities that are both rapid and intuitive. You can easily search for volumes, datasets, members, and text within members. ISPF Productivity Tool also furnishes automatic drill-down system navigation to examine volumes, datasets, and members.
- IPT provides a menu-driven facility to display and recover all of the deleted members of a partitioned dataset (PDS) library.
- IPT extends the ISPF Action Bar with options that provide access to new functionality so that you do not have to learn new commands or syntax. In addition to the ISPF point-and-shoot capabilities, IPT provides new concepts, such as hotbars (user-defined fields that execute commands), field-sensitive areas in MSLs and OLISTs, automatic recognition of a dataset name on any ISPF panel as a parameter to BROWSE, EDIT, or VIEW, or parameters within any Time Sharing Option (TSO) command.

Practical scenarios, accompanied by detailed screen captures and coding examples, demonstrate how to take advantage of the IPT enhanced functionality in every case. This book is intended for anyone who wants to learn more about IPT.

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