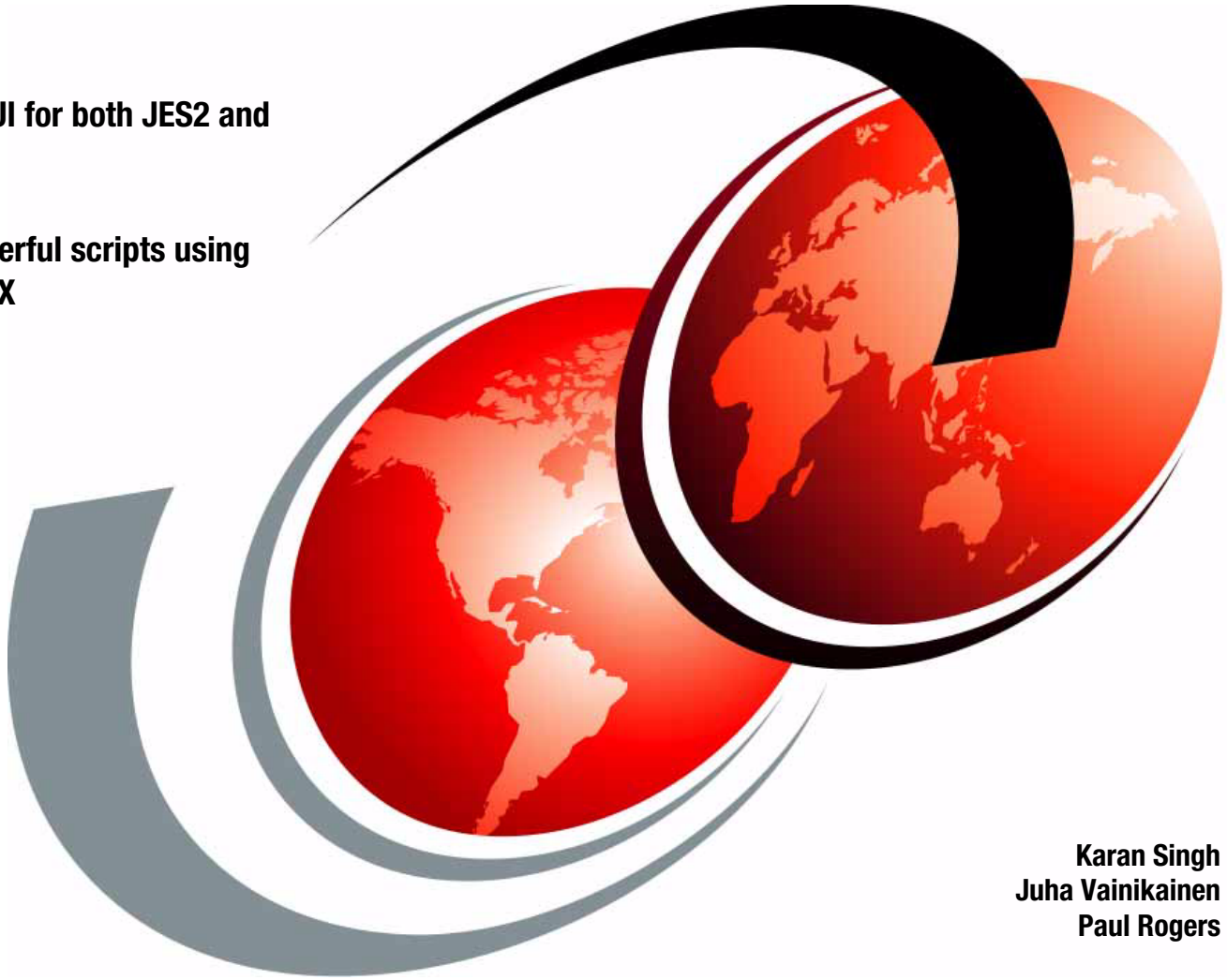
Draft Document for Review April 11, 2012 11:37 am

REDP-4531-01

Using SDSF in a JES3 Environment

- Simplify management of JES3 systems
- Common UI for both JES2 and JES3
- Write powerful scripts using SDSF/REXX



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Redpaper

International Technical Support Organization

Using SDSF in a JES3 Environment

April 2012

Note: Before using this information and the product it supports, read the information in “Notices” on page ix.

First Edition (April 2012)

This edition applies to Version 1, Release 13, Modification 0 of z/OS (product number 5694-A01).

This document was created or updated on April 11, 2012.

Contents

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Preface

This IBM® Redpaper™ publication offers a broad overview of features of the IBM z/OS® System Display and Search Facility (SDSF) for JES3. z/OS R10 delivered the (long-requested) ability to use SDSF in a JES3 environment, while subsequent releases have delivered additional functionality. This publication details SDSF for JES3 features and functions from z/OS R10 to z/OS R13.

This Redpaper describes the features, panels, and functions of SDSF for JES3 and provides details on usage.

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Thanks to the following people for their contributions to this project:

Rich Conway, Bob Haimowitz
International Technical Support Organization, Poughkeepsie Center

Scott Greer, Ken Jonas, Joseph Perillo
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1

System Display and Search Facility (SDSF) in the JES3 environment

This chapter provides an introduction to the System Display and Search Facility (SDSF) in the JES3 environment.

1.1 System Display and Search Facility (SDSF)

The System Display and Search Facility (SDSF, Program Number 5694-A01), a feature of IBM mainframes running z/OS, enables users and administrators to view and control various aspects of mainframes' operation. These include jobs in execution, job output, status of Unix System Services processes, system information, workload scheduling, and log files.

SDSF displays data on panels. Commands and actions that you enter on the panels let you monitor and control jobs and system resources. The SDSF Primary Option Menu lists the panels that you are authorized to use.

The objects, displayed on the SDSF panels, are initiators, printers and punches, jobs, SYSIN/SYSOUT data sets, and so on. Information for the objects is extracted using formal JES3 or IBM MVS™ programming interfaces, for example subsystem interface (SSI) calls. Actions against objects are also invoked through formal programming interfaces or operator commands. Most actions generate MVS or JES commands. In a JES3 environment, the MVS system authorization facility (SAF) is required for SDSF security. When a request is made to access a resource, and the profile that protects the resource is not defined, or the associated class is not active, SDSF fails the request. All SAF profiles must be defined and activated in all of the classes that are used for SDSF security.

Most SDSF panels display information in a tabular format. You can scroll the information up, down, right, and left.

1.1.1 History

SDSF was originally known as SPOOL Display and Search Facility when it was a field-developed program offering. The word SPOOL was changed to System when it became a program product in the late 1980s. Starting with z/OS Release 9 SDSF also supports a REXX interface, allowing batch program facilities to use SDSF. The REXX support implementation presents data through stem variables containing SDSF-originated information.

Prior to z/OS Version 1 Release 10 SDSF supported only JES2 environments. z/OS Version 1 Release 10 SDSF included support for the JES3 environment. The JES3 job-related Display Active Users (DA), Input Queue (I) and Status (ST) panels were available for JES3 displays. Other SDSF panels that do not depend on JES were also available in the JES3 environment.

z/OS Version 1 Release 11 expanded function in the JES3 environment to include the SYSLOG, Job Class (JC), Spool Volumes (SP) and JESPLEX (JP) displays. Support was also added to display and modify output descriptors for JES3 jobs through the Output Descriptor (OD) panel and the Job Data Set (JDS) panel. JES3 browse of a job that is running on a system other than the one you are logged on to, shows data from buffers not yet written to the spool.

z/OS Version 1 Release 13 expands SDSF function in the JES3 environment to include Initiator (INIT), Job 0 (J0), Line (LI), Node (NO), Punch (PUN), Reader (RDR), Held Output Queue (H) and Output Queue (O) panels for JES3 objects. Network Connect (NC) and Network Server (NS) panels show information about JES job networking.

1.1.2 Additional sources of SDSF information

Information about SDSF and z/OS is available on the Internet at the following URLs.

- SDSF home page: usage tips, presentations, as well as a wizard to help you enable the sysplex support can be found at:

  `http://www.ibm.com/servers/eserver/zseries/zos/sdsf`

- The latest edition of *z/OS SDSF Operation and Customization*, SA22-7670 is available at:

  `http://publibz.boulder.ibm.com/epubs/pdf/isf4cs90.pdf`
  `or`
  `http://www.ibm.com/servers/eserver/zseries/zos/bkserv/`

1.2 SDSF Functions

SDSF is a program that runs under z/OS TSO/E and uses Interactive System Productivity Facility (ISPF) panels to display JES and MVS data. Some of the functions described in this book are specific to JES3. With SDSF, you can do the following:

- Display immediate, up-to-date information about the jobs submitted to JES3 for processing, including:
  - Jobs on the JES3 queues - Status (all queues), Input Queue, Output Queue, Held Output and J0 (JES3 job zero)
  - Job status of a specific job, including the job's priority and input class, the time and date the job was entered in the system, and the time and date the system began processing the job
  - System information about active jobs
  - Spool data sets for a specific job
  - Output from a job
- Monitor and control jobs, output, and resources in a JES3 complex without using JES3-specific command syntax.
- Display and control z/OS UNIX System Services processes.
- Manage system resources, such as main processors in the JES3 complex, job classes, and WLM enclaves.
- Control JES3 managed printers, punches and readers.
- Enter MVS and JES3 system commands from any TSO/E terminal.
- View the system log (SYSLOG), operations log (OPERLOG), or user log (ULOG) online and search for specific information, which can reduce problem management time and eliminate the need for a printed copy of the log.
- View input data sets of jobs that are being processed or waiting to be processed.
- View output data sets online and purge them, which can reduce the system print load.
- View and control BSC NJE lines.
- View and control server-type networking devices.
- View and control Network Job Entry (NJE) connections to an adjacent node.
- Monitor and control the IBM Health Checker for z/OS checks.
- Get online information: help for panels, commands, and messages; an interactive tutorial for ISPF users; and online documentation through IBM BookManager®.

SDSF may be invoked on either a local or global processor running JES3. When SDSF is invoked on a local processor, the global processor must also be at the z/OS V1R10 JES3 or later level.

1.3 Security in JES3 environment

When processing under JES3, only SAF-based security is used. This is optional in the JES2 environment but required in the JES3 environment. There is no ISFPARMS processing for security purposes. In cases where SAF cannot make a decision (SAF return code 4), the user is denied access to the resource. This is consistent with the general z/OS policy that access to a resource should be denied unless explicitly granted.

1.4 Using SDSF in batch

Using batch job processing, you can issue often-repeated SDSF commands by creating a list of the commands as control statements. In the list, you specify the SDSF panel you wish to use and the operation you wish to perform on it.

SDSF in batch is invoked with one of two program names on a JCL EXEC statement:

SDSF	Supports commands and action characters.
ISFAFD	Supports commands, action characters, and overtyping of fields on tabular and other panels, such as the print panels.

1.5 SDSF server

The SDSF server is an address space that SDSF uses to:

- Process ISFPARMS statements. ISFPARMS defines global and group options and the format of the panels. The options include things like the name of the JES subsystem to process, what generic and wildcard characters to allow in SDSF commands, and whether to display the action bar on SDSF panels. The format of the panels includes the order and titles of the columns.
- Provide sysplex support. This consists of sysplex-wide data for JES2 devices and for system resources (CK, ENC, INIT, LI, NO, PR, PS, PUN, RDR, RM and SO panels) as well as the most recent SYSLOG data for remote systems (SYSLOG panel).

The SDSF server is not required for sysplex-wide device panels (INIT, LI, NO, PR, PUN, RDR and SO):

- In a JES3 environment. For JES3, all configuration parameters default if there is no server. That is because the assembler ISFPARMS is not supported in JES3 and the server is required to process the ISFPRMxx parmlib member.
- In a JES2 environment when all systems are at the z/OS V1R13 level.

To process ISFPARMS, the server must be active on each system that contains SDSF users. To provide sysplex data, the server must be active on each system that is to be included on SDSF panels. Use the WHO command or pop-up to verify that the server is in use.

Multiple SDSF servers may be run on the same system; however, you must assign them unique names. Only one server with a particular name can be active on the system. The level of the server must match the level of the SDSF application.

You control the server through the MVS operator START, STOP, and MODIFY commands. (The START command names the server; the MODIFY command refreshes the ISFPARMS statements, changes server options, and displays and controls server communications.)

Note: The document *z/OS SDSF Operation and Customization,* SA22-7670 describes the most up-to-date security considerations and customization of SDSF.

1.6 Using SDSF with the REXX programming language

Using REXX with SDSF provides a simpler and more powerful alternative to using SDSF in batch. You invoke SDSF function with the host command environment SDSF. Data and SDSF messages are returned in REXX variables. An authorized user can access SDSF functions in a REXX program using the following:

ISFCALLS() command	Add and delete the SDSF host command environment
ISFEXEC command	Issue SDSF commands to access tabular panels and other information
ISFACT command	Issue action characters and overtype columns
ISFGET command	Get all of the values for a single row
ISFLOG command	Work with the SYSLOG and OPERLOG
ISFSLASH command	Issue system commands
Special REXX variables	Issue SDSF commands for filtering and options, and check messages
ISFACT and special variables	Browsing output
ISFACT and special variables	Printing output
ISFRESET() command	Drop specified special variables

Many of the things you work with in a REXX exec, such as the list of columns on an SDSF panel, the contents of the title line of a panel, and the contents of responses to SDSF commands such as WHO, may change over time. You should design your REXX execs to minimize the impact of those changes.

For an up-to-date description of the REXX SDSF functions and special variables, see *z/OS SDSF Operation and Customization,* SA22-7670.

1.6.1 REXXHELP command

Information about using REXX with SDSF is also available in SDSF's online help. The help includes links to descriptions of commands, action characters and overtypable columns, which are not included here.

To display the online help about using REXX with SDSF:

- Type REXXHELP on any command line in SDSF when using SDSF under ISPF.
- Type COLSHELP, which shows information about columns on various display panels.
- To search SDSF's help, including the help for REXX, use the SEARCH command. You can type SEARCH followed by up to four words on the SDSF command line when using SDSF under ISPF.

- If you are not already familiar with SDSF, you should begin with the SDSF help. To display a brief, interactive tutorial, use the TUTOR command.

1.6.2 Security and REXX

Using SDSF function from a REXX exec is protected just as using SDSF interactively is protected, with the same SAF resources in the JES3 environment. Where special REXX variables correspond to SDSF commands, the authorization for those special variables is the same as for the associated command. In some cases, using a special variable when you are not authorized to the associated command will cause the exec to fail and the invocation of SDSF to end.

1.7 Using SDSF with the Java programming language

You can access SDSF function with the Java programming language. This provides a simpler and more powerful alternative to using SDSF in batch, and complements SDSF's support for the REXX programming language.

The principal source of information for using Java with SDSF is the Javadoc supplied with SDSF. To use the Javadoc:

1. Download the `isfjcallDoc.jar` file, in binary, to an empty directory on your workstation. By default, this file is installed into `/usr/include/java_classes/isfjcallDoc.jar`.
2. If you have the Java SDK installed, use this command:
   `jar -xf isfjcallDoc.jar`

   Otherwise, use another utility to unzip the file.
3. Navigate to the `index.html` file and open it with a web browser. Once the `index.html` file is displayed, links allow you to navigate to specific classes or topics, such as:

Overview	Display an overview to using SDSF with Java
Package	Display a list of classes
Tree	Display a hierarchical view of classes
Index	Display an index to the Javadoc

1.7.1 Simplify systems management with SDSF Java

With the z/OS V1R12 SDSF Java API, you can access SDSF panel data and function through a Java program.

Accessing panels and panel data: Each of the panels that you work with when using SDSF interactively (DA, O, PR and so on) has an associated Java interface that describes the returned data and the available methods. Panel data is represented by lists, with each element in a list corresponding to a row on the panel. You access column data within a list element by referencing column values by column name.

Processing system log and issuing commands: You can retrieve records from the system log (SYSLOG) and search for specific messages or events. You can also issue free-form system commands and receive their responses in a manner similar to the SDSF slash (/) command.

Retrieving job output: You can allocate the spool data sets for a job and read them using standard utilities.

Taking action: You use methods to perform functions similar to action characters and overtypable fields, for example, to cancel a job or change the print destination for job output.

Filtering data: For best performance, limit the data that a request returns to the minimum that is required. You do this with request settings, which allow you to specify things such as:

- Filters of various kinds. The same filters that are available when you use SDSF interactively are available with request settings. They include filters by job name, owner and destination, like the PREFIX, OWNER and DEST commands, or any column, like the FILTER command.
- The list of columns to process. Columns are specified by column name.
- Whether to include columns with delayed access. Because gathering the data for "delayed" columns can take significant time, they are not included unless you request them explicitly

View results: You can access messages and return codes that describe the completion of a request through a results object. SDSF messages and system messages, if any, issued in response to commands are contained in lists, with each element corresponding to a message. Return codes from SDSF functions are available both in the results object and as return codes on most methods.

Control access: Standard SDSF authorization checking occurs for all requests and for attempts to modify the row represented by a returned object. SDSF security is described in *z/OS SDSF Operation and Customization*, SA22-7670.

1.8 JES3 monitoring

The JES3 MONITOR DSP monitors a resource or queue based on information you specify. JES3 starts the MONITOR DSP and monitors various queues and resources automatically.

The monitor DSP makes it possible to monitor how long a job or FCT has been waiting for a specific JES3 function or resource. For example, if you want to know when a job has been waiting for a CI DSP for more than five minutes, you can set the monitor DSP to issue a message when five minutes have elapsed.

2

Working with SDSF

This chapter provides an details on accessing SDSF, describes the typical SDSF tabular panel layout, introduces the SDSF tutorial, HELP and SEARCH features and discusses the SDSF server.

2.1 Accessing SDSF

When SDSF is running under TSO ISPF, ISPF provides an SDSF invocation under Option 13.14.

To add SDSF to your own customized ISPF selection menu, insert the following text:

```
S SDSF System Display and Search Facility
```

The ZSEL statement in the PROC section should be updated to invoke SDSF with the ISFISP entry point:

```
&ZSEL = TRANS(TRUNC (&ZCMD,'.')
 . . . .
 S,'PANEL(ISFSDOP2) NEWAPPL(ISF) SCRNAME(SDSF)'
 ' ',' '
   ','
 *,'?' )
IF (&ZCMD = 'S')
  &ZSEL = 'PGM(ISFISP) NOCHECK NEWAPPL(ISF) SCRNAME(SDSF)'
IF (&ZCMD = 'S.')
  &ZSEL = 'PGM(ISFISP) NOCHECK NEWAPPL(ISF) SCRNAME(SDSF)'
```

When you invoke SDSF as an ISPF dialog using the ISFISP entry point, you can specify parameters to specify an initial panel and other values. SDSF may be interactively invoked with TSO commands `SDSF` or `ISF` outside ISPF.

2.1.1 SDSF panel structure in the JES3 environment

Figure 2-1 is a view of the full SDSF panel structure of the JES3 environment.

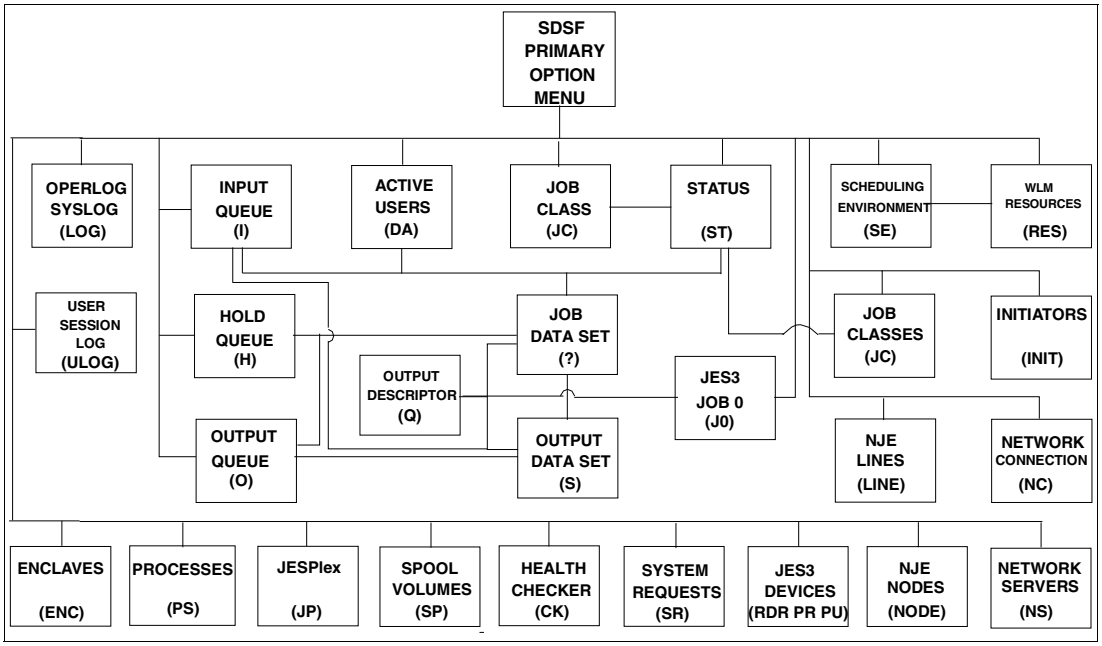

Figure 2-1 SDSF panel structure in the JES3 environment

2.1.2 JES3 SDSF primary menu options

Figure 2-2 shows the SDSF functions available on the authorized primary option menu panel in a JES3 environment. This is the first panel displayed when invoking SDSF from ISPF.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
HQX7780 -----------------  SDSF PRIMARY OPTION MENU  -------------------------
COMMAND INPUT ===>                                          SCROLL ===> HALF

DA    Active users                      INIT  Initiators
I     Input queue                       PR    Printers
O     Output queue                      PUN   Punches
H     Held output queue                 RDR   Readers
ST    Status of jobs                    LINE  Lines
JO    Job zero                          NODE  Nodes
                                        SP    Spool volumes
LOG   System log                        NS    Network servers
SR    System requests                   NC    Network connections
JP    Members in the JESPlex
JC    Job classes                       CK    Health checker
SE    Scheduling environments
RES   WLM resources                     ULOG  User session log
ENC   Enclaves
PS    Processes

END   Exit SDSF
```

Figure 2-2 SDSF primary option menu - JES3

From the primary option menu, the SDSF commands to access additional panels and a brief description of the functions associated with the panels are as follows:

DA The **Display Active Users (DA)** selection allows authorized users to display information about jobs, users, and started tasks that are active in the sysplex. It also shows system data, such as CPU usage and paging information. In a JES3 environment, the DA selection also requires IBM RMF™.

I The **Input Queue (I)** selection allows authorized users to display information about jobs that are on the JES input queue or that are executing.

O The **Output Queue (O)** selection displays information about SYSOUT data sets for jobs, started tasks, and TSO users on any *nonheld* JES output queue.

H The **Held Output (H)** selection shows the user information about SYSOUT data sets for jobs, started tasks, and TSO users on any *held* JES output queues.

ST The **Status (ST)** selection allows authorized users to display information about jobs, started tasks, and TSO users on the JES queues.

J0 The **Job zero (J0)** selection displays information about SYSOUT data sets for a JES3 job 0.

LOG O The **OPERLOG (LOG [O])** selection allows authorized users to display a sysplex-wide system message log, which contains console messages, operator commands, and responses for the sysplex.

LOG S The **SYSLOG (LOG S)** selection allows authorized users to display the system log. The SYSLOG is a data set residing in the primary job entry subsystem's spool space. If JES3 DLOG is active on the global, system log entries are for the whole JES3 complex. The DLOG message prefix (IATYCNS TYPE=DLOG) is different

from the MVS hardcopy log prefix (IHAHCLOG). The JES3 **`*F 0`** command enables or disables the DLOG.

SR The **System Requests (SR)** selection allows authorized users to display outstanding operator replies (WTORs) and messages retained by the Action Message Retention Facility (AMRF).

JP The **JESPLEX (JP)** selection allows authorized users to display and control the main processors in a JES3 JESPLEX.

JC The **Job Class (JC)** selection allows authorized users to display and control the job classes defined to JES. Both JES and WLM managed classes are shown.

SE The **Scheduling Environment (SE)** selection allows authorized users to display the sysplex wide scheduling environments. A scheduling environment. is a list of resource names along with their required states. If an MVS image satisfies all of the requirements in the scheduling environment associated with a given unit of work, then that unit of work can be assigned to that MVS image. If any of the requirements are not satisfied, then that unit of work cannot be assigned to that MVS image.

RES The **Resource (RES)** selection allows authorized users to display WLM resources. To display resources in the sysplex, access the panel with the RES command. To display resources for a scheduling environment, access the panel with the **`R`** action character from the SE panel. When a resource is used as part of a scheduling environment, the resource is an abstract element that can represent an actual physical entity (such as a peripheral device), or an intangible quality (such as a certain time of day). A resource is listed in a scheduling environment along with a required state of ON or OFF. If the corresponding resource state on a given system matches the required state, then the requirement is satisfied for that resource.

ENC The **Enclaves (ENC)** selection allows authorized users to display information about WLM enclaves. An enclave is an anchor for a transaction that can be spread across multiple dispatchable units in multiple address spaces. These multiple address spaces can even span across multiple systems in a parallel sysplex. The value of using an enclave to represent a transaction is that the resources used to process the transaction can be accounted to the transaction itself, rather than to the address space or spaces that the transaction runs in. In addition, you can assign a performance goal to the enclave, which means that as a transaction consumes system resources, it can switch periods to run with a new goal. Any number of tasks and SRBs can be grouped in an enclave.

PS The **Processes (PS)** selection allows authorized users to display information about z/OS UNIX System Services processes. A process is a program or command that is actually running the computer. It consists of a loaded version of the executable file, its data, its stack, and its kernel data structures that represent the process's state within a multitasking environment. The executable file contains the machine instructions (and any calls to shared objects) that will be executed by the hardware. A process can contain multiple threads of execution. A process is created via a fork() system call and ends using an exit() system call. Between fork and exit, the process is known to the system by a unique process identifier (pid).

INIT The **Initiators (INIT)** selection displays information about JES initiators that are defined for the JES3 job class groups. The display shows both mode JES and WLM initiators.

PR The **Printers (PR)** selection displays information about JES printers.

PU The **Punches (PU)** selection displays information about JES punches.

RDR The **Readers (RDR)** selection displays information about JES readers.

LINE The **Lines (LINE)** selection displays information about JES lines and their associated transmitters and receivers.

NODE The **Nodes (NODE)** selection displays information about JES NJE nodes.

SP The **Spool volumes (SP)** selection allows authorized users to display information about JES spool volumes.

NS The **Network servers (NS)** selection displays information about JES server-type networking devices.

NC The **Network connections (NC)** selection displays information about JES server-type networking devices.

CK The **Health Checker (CK)** selection displays information from IBM Health Checker for z/OS.

ULOG The **User Session Log (ULOG)** selection allows authorized users to display the MVS and JES commands and responses issued during the user's session, including commands generated by SDSF and SAF. SDSF deletes the user session log when an SDSF session is ended or when the ULOG CLOSE command is issued. SDSF uses MVS console services to acquire an extended console that is used to issue commands and receive responses.

/ The slash **(/)** system command allows system commands to be issued on the `COMMAND INPUT` line.

Only those SDSF panel commands (such as DA, I, and O) for which the user is authorized are displayed on the SDSF Primary Option Menu.

2.1.3 Comparison to JES2 SDSF primary panel

Figure 2-3 on page 13 shows the ISPF display of the primary option menu in a JES2 environment for a user with full authority.

```
 Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
HQX7780 -----------------  SDSF PRIMARY OPTION MENU  -------------------------
COMMAND INPUT ===>                                          SCROLL ===> PAGE

DA    Active users                    INIT  Initiators
I     Input queue                     PR    Printers
O     Output queue                    PUN   Punches
H     Held output queue               RDR   Readers
ST    Status of jobs                  LINE  Lines
                                      NODE  Nodes
LOG   System log                      SO    Spool offload
SR    System requests                 SP    Spool volumes
MAS   Members in the MAS              NS    Network servers
JC    Job classes                     NC    Network connections
SE    Scheduling environments
RES   WLM resources                   RM    Resource monitor
ENC   Enclaves                        CK    Health checker
PS    Processes
                                      ULOG  User session log
END   Exit SDSF
```

Figure 2-3 SDSF primary option menu - JES2

The SDSF support in the JES2 environment includes some functions that are not available in the JES3 environment. These are:

- The **Multi-Access Spool (MAS)** selection allows authorized users to display and control the members of a JES2 MAS.

  Many installations take advantage of JES2's ability to link processors together to form a multiple-processor complex, which is generally referred to as a multi-access spool (MAS) configuration. A multi-access spool configuration consists of two or more JES2 (MAS) processors at the same physical location, all sharing the same spool and checkpoint data sets.

  The analogous JES3 JESPlex panel simplifies the display and control of members in a JES3 JESPlex. The JES2 MAS panels and JES3 JP panels share a single field list.

- The **Spool Offload (SO) selection** displays information about JES2 spool offloaders and their associated transmitters and receivers.

  (The JES3 dump job utility program transfers the contents of the JES3 job queue to tape. This program also returns the JES3 job queue to storage, so that JES3 can resume processing jobs where processing stopped when the job queue was dumped. A JES3 command causes dumping or restoration of the JES3 job queue.)

The **ResourceMonitor (RM)** selection displays information about critical JES2 resources such as JOEs (Job Output Element), JQEs (JES2 Job Queue Element) and BERTs (HASP Block Extension Reuse Table).

2.1.4 SDSF panels

When you use SDSF interactively, SDSF displays data on panels. There are panels for active jobs, output groups, printers, initiators and so on. Most SDSF panels are tabular, that is, they display data in rows and columns.

```
Display  Filter  View  Print  Options  Search  Help  1
------------------------------------------------------------------------------
 SDSF SAMPLE  SYS1     2                                    3  LINE 1-22 (31)
 COMMAND INPUT ===> _   4                                     SCROLL ===> PAGE
 PREFIX=*  DEST=(ALL)  OWNER=IBMUSER  FILTERS=2   5
 NP    JOBNAME  6       ProcStep JobID    Owner    C Pos DP PGN Real Paging
 7     CATALOG  CATALOG  IEFPROC                     NS  FF     3228   0.00
       TAPEPOL  PROC01   MO2XF83L TSU19596 TAPEPOL   OT  FF  69    0   0.00
       TANDA    E52TOOL1 MO2SA06L TSU18751 TANDA     OT  FF  63 1488   0.00
       KSHEL    PROC01   MO2PV317 TSU07739 KSHEL     OT  FF  60    0   0.00
```

Figure 2-4 A sample SDSF tabular panel

The numbered entities on the sample SDSF tabular panel in Figure 2-4 are as follows:

1. **Action bar** - The action bar permits you to select a pull-down menu to SDSF tasks.
2. **Title line** - The title line shows the panel name as well as status information.
3. **Message area** - Short error and confirmation messages appear here.
4. **Command line** - The command line lets you enter SDSF, MVS, or JES commands.
5. **Message and information lines** - Longer messages appear below the command line.
6. **Data area** - The column titles and tabular data columns and rows.
7. **NP column** - Action characters for rows.

Global options and the format of the panels are defined in ISFPARMS. The options include things like the names of SDSF data sets, what generic and wildcard characters to allow in

SDSF commands, and whether to display the action bar on SDSF panels. The format of the panels includes the order and titles of the columns.

The ISFPARMS can be defined only in the ISFPRMxx member of PARMLIB in the JES3 environment. The statements in the ISFPRMxx member are processed by an SDSF server. If the SDSF server is not started, defaults for all values are used.

An FLD statement, along with FLDENT statements in the ISFPRMxx member, defines the fields, including column names and titles, for an SDSF panel. FLD statement is associated with the field list for a particular panel by GROUP statement. The group function parameters are used to determine which functions the members of a group can perform. The SAF profiles GROUP.group-name.server-name, in the SDSF class, define the user-to-group associations. SDSF checks for READ access for a users-to-group association.

The source of the panel column data is either readily available from in-storage control blocks (Immed column) or the data comes from the JES spool and requires an I/O operation (Delay column). SDSF maintains an alternate column list for columns requiring I/O operations for data. I/O operations are only done when the columns are visible on the window or are being sorted.

You can define a primary and alternate variable field list for each SDSF panel. The primary field list contains those fields that are shown upon entry into a panel. The alternate field list contains fields that can be displayed with the ? command.

The COLSHELP (COLSH for short) command shows the columns on the SDSF panels. All possible columns are included. The actual columns that are available to you, as well as their titles, may have been customized with field lists in ISFPARMS. In the columns' help display, an X in the Delayed? column indicates that access for the column is delayed.

To switch between primary and alternate field lists display of a panel, use the **?** command or the panel's action bar View pop-up choice 4 (Change field list to ALTERNATE / PRIMARY). To select the View option, press Enter with the cursor on View.

You can overtype columns on any tabular panels. The syntax for overtyping columns on tabular panels is the column title followed by = and the changed value, all within <>. Enclose the column title and value in single quotation marks.

2.2 SDSF tutorial

The SDSF tutorial introduces SDSF and lets you try some of SDSF's most useful functions. The interactive tutorial panel, Figure 2-5, is invoked with the TUTOR command.

```
                  TUTOR - System Display and Search Facility
COMMAND INPUT ===>

        The SDSF tutorial introduces SDSF and lets you
        try some of SDSF's most useful functions.  For detailed
        information such as command syntax, use the help facility.

        The whole tutorial takes about 25 minutes.  Press Enter to
        begin viewing it, or begin with a particular topic by
        typing one of the numbers below:

         1 - Using the tutorial      5 - Purging output
         2 - SDSF panels             6 - Controlling jobs
         3 - Monitoring jobs         7 - Printing data
         4 - Displaying output       8 - Filtering and sorting

                          9 - Quick summary

  F1=Help               F10=Previous           Enter=Forward
  F3=Exit                F7=Up                 TOC=Table of contents
```

Figure 2-5 Primary tutorial panel

Some parts of the tutorial ask you to enter information on simulated SDSF panels. These simulated panels respond to your input. Interacting with them will help you learn how SDSF works. However, if you prefer, the system provides the input on interactive panels if you simply press Enter twice.

Except on the interactive tutorial panels, SDSF commands are not valid on tutorial or help panels.

For detailed information such as command syntax, use the help facility.

2.3 SDSF help panels

Information for users of SDSF, such as commands, action characters, and messages, is mainly provided in the online help for SDSF.

Help panels appear in pop-up windows in response to user requests for assistance during SDSF application sessions. Figure 2-6 shows the table of contents (TOC) for SDSF online help. This panel can be accessed by typing HELP at the Command Input line, by pressing the PF1 key at the SDSF Primary Option Menu, or choosing Option 1. Extended help from the SDSF HELP action bar menu.

```
HELP: SDSF -- Table of Contents
COMMAND INPUT ===>

  Select a topic by number, or press Enter to view topics in sequence.

   1 - What's new                          13 - Action bar
   2 - Job and workload panels             14 - PF keys and keylists
   3 - Device and resource panels          15 - Action characters
   4 - Search and scroll commands          16 - Overtypeable fields
   5 - Filter commands                     17 - JES and MVS commands
   6 - View commands                       18 - Online library
   7 - Print command and actions
   8 - Options commands                    19 - SDSF messages
   9 - Other commands
  10 - Server commands                REXXHelp - SDSF REXX (ISPF only)
  11 - SDSF command
  12 - Help commands

  SEARCH - Search the help (ISPF only)

F1 = Help             F10 = Previous          Enter = Forward
F3 = Exit              F7 = Up                TOC = Menu
```

Figure 2-6 SDSF HELP Table of Contents pop-up

SDSF provides HELP for the HELP too. Figure 2-7 on page 17 and Figure 2-8 on page 18 are the window pop-ups for the HELP command. These panels can be accessed by typing HELP at the command input line from any HELP pop-up window.

```
HELP: HELP Command                  Panel 1 of 2
COMMAND INPUT ===>

    Purpose:  Displays online help for SDSF.

    Where used:  Any SDSF panel, including help and tutorial panels.

    Format: HELP

    Press Enter to see the next help panel in a sequence.
    You can also use:

    SEARCH      - Search the help (ISPF only). Enter outside of help.
    I or F11    - Display an index to help (ISPF only).
    TOC         - Display the table of contents for help.
    TUTOR or F4 - Display an interactive tutorial (ISPF only).

F1 = Help             F10 = Previous          Enter = Forward
F3 = Exit              F7 = Up                TOC = Menu
```

Figure 2-7 HELP: HELP Command (1 of 2) pop-up

```
HELP: HELP Command                    Panel 2 of 2
COMMAND INPUT ===>

    Some PF keys have special uses in help:

    F4 (Tutor)         - Display an interactive tutorial (ISPF only)
    F5 (Extended help) - Display the general help for the topic
                         (ISPF only)
    F7 (Up)            - Display the start of the current topic or,
                         if you're already at the start, display the
                         previous menu
    F10 (Previous)     - Back up one help panel
    F11 (Index)        - Display the help index (ISPF only)

    Under ISPF, you can get more information on a highlighted phrase
    by placing the cursor on the phrase and pressing Enter.

F1 = Help              F10 = Previous          Enter = Forward
F3 = Exit               F7 = Up                TOC = Menu
```

Figure 2-8 HELP: HELP Command (2 of 2) pop-up

Figure 2-9 on page 18 and Figure 2-10 on page 19 are the HELP Index pop-ups. The HELP index can be accessed by entering **I** command in the command input line from any HELP dialog window. To view an index selection, just type that character on the HELP index pop-up `COMMAND INPUT ===>` line.

```
HELP: Index - Special Characters and 'A'        Page 1 of 2
COMMAND INPUT ===>

    Enter the number of a topic, or a letter to view another panel.

    1  / command, issue system commands
    2  A action character, release a job
    3  A action character, release output
    4  abend codes
    5  abend, requesting with ABEND command
    6  ABEND command
    7  action bar
    8  action characters
    9  action characters, confirming
    10 action characters, displaying
    11 action characters, repeating
    12 ACTION command

  F1=Help              F10=Previous          Enter=Forward
  F3=Exit                                    TOC=Table of contents
```

Figure 2-9 HELP index pop-up 1 of 2

```
HELP: Index - Special Characters and 'A'        Page 2 of 2
 COMMAND INPUT ===>

     Enter the number of a topic, or a letter to view another panel.

     12 active jobs, displaying
     13 active users, displaying
     14 address printed on separator pages, changing
     15 alternate form of an SDSF panel
     16 ARRANGE command
     17 arranging columns
     18 attributes of SYSOUT, displaying
     19 authorization group, displaying
     20 automatic update (&)

   F1=Help              F10=Previous          Enter=Forward
   F3=Exit                                    TOC=Table of contents
```

Figure 2-10 HELP Index pop-up 2 of 2

2.3.1 Online HELP example for the DA tabular panel

The following gives an example of the extensive help available for the SDSF tabular panels. The figures in this example introduce the help panels for the active users (DA) display.

Note: The HELP pop-ups for the other SDSF panels have the same basic format and flow.

The *z/OS SDSF Operation and Customization*, SA22-7670 document is intended primarily for system programmers and operators. It contains information about customization, security, operation, maintenance and problem determination and explanations of SDSF messages. The Online HELP offers the *SDSF User's Guide*.

```
                     HELP: Display Active Users Panel
 COMMAND INPUT ===>

         Select a topic by number, or press Enter to view them in sequence.

          1 - Introduction to the DA panel
          2 - Syntax of the DA command
          3 - Action characters: display output, cancel jobs, etc.
          4 - Fields on the DA panel
          5 - Overtyping fields to change their values
          6 - Commands: limit jobs displayed, search, etc.

         These topics are displayed only if selected:

         97 - What's new
         98 - Search and navigate the help
         99 - Messages

 F1 = Help             F10 = Previous          Enter = Forward
 F3 = Exit              F7 = Up                TOC = Menu
```

Figure 2-11 Help panel for Display Active Users Panel

Figure 2-11 shows the general layout of the first pop-up window for an SDSF display panel. Examples of the help text in the DA display pop-up windows follow.

Note: The PF key settings are the same on all the following pop-ups and are shown.

The HELP pop-up for the selection “1- Introduction to the DA panel” is shown in Figure 2-12.

```
                    HELP: Display Active Users Panel         Panel 1 of 1
COMMAND INPUT ===>

        The Display Active Users (DA) panel allows authorized
        users to display information about jobs, users,
        started tasks, and initiators that are active
        in the sysplex.  It also shows system data, such
        as CPU usage and paging information.

        In a JES3 environment, the DA panel requires RMF.
        In a JES2 environment, RMF is required for sysplex-wide
        data and some columns and actions.

        Note: Some of the values on the DA panel, such as CPU% and SIO,
        are approximate.  For detailed and precise performance
        monitoring, use RMF.
```

Figure 2-12 Selection 1 - Introduction to the DA panel

The HELP pop-ups for the selection “2- Syntax of the DA command” are shown in Figure 2-13 on page 21.

Note: The PF key settings are the same for all three pop-ups and are shown only for the 1 of 3 pop-up.

```
                HELP: Display Active Users Panel -- DA Command Panel 1 of 3
COMMAND INPUT ===>

    Purpose:  Displays the Display Active Users panel.  You
         must be authorized to use this command.

    Where used:  Any SDSF panel.

    Format:  DA (parameters)
        Parameters allow you to limit the display by:
         - Types of address spaces: jobs, TSO users, started tasks,
           or initiators
         - Positions of address spaces: swapped in, swapped out,
           in transition, or ready.

        The parameters are explained on the next panel.

   Example:  DA OIN NOTSU
       Displays only address spaces that are swapped in, not including
       TSO users.
_____________________________________________________________________________
                HELP: Display Active Users Panel -- DA Command  Panel 2 of 3
COMMAND INPUT ===>

                     Position: Type:   Only:     No:        All:

   Format:        DA (IN   )   (JOB )  (OJOB  )  (NOJOB  )  (ALL )
                     (OUT  )   (TSU )  (OTSU  )  (NOTSU  )  (ALLT)
                     (TRANS)   (STC )  (OSTC  )  (NOSTC  )  (ALLP)
                     (READY)   (INIT)  (OINIT )  (NOINIT )
                                       (OIN   )  (NOIN   )
                                       (OOUT  )  (NOOUT  )
                                       (OTRANS)  (NOTRANS)
                                       (OREADY)  (NOREADY)
_____________________________________________________________________________
                HELP: Display Active Users Panel -- DA Command  Panel 3 of 3
COMMAND INPUT ===>

       "Position" and "Type" parameters include those address spaces.
       "Only" parameters limit the display to those types or positions.
            Use only one parameter from this column.
       "No" parameters exclude those types or positions.
       "All" parameters show all address spaces, or all types or positions.
            They cannot be used with other parameters.

        The maximum number of parameters is four.

        The information displayed may also be limited by your
        authorization, and by settings for filters such as FILTER,
        PREFIX, and SYSNAME.

        When parameters conflict, the last one is used.
```

Figure 2-13 Selection 2 - Syntax of the DA command pop-ups

The HELP pop-ups for the selection “3 - Action characters ” for the DA panel are shown in Figure 2-14 on page 22 and Figure 2-15 on page 23.

```
       HELP: Display Active Users Panel -- Action Characters  Panel 1 of 5
COMMAND INPUT ===>

      Action characters that can be entered in the NP column
      by authorized users are:

          //    Block repeat; type // on the first row and
                another // on the last row to be processed
          =     Repeat previous action character or overtype
          +     Expand the NP column.  (Use RESET to reset.)
          A     Release a held job.
          C     Cancel a job. For JES3, also print non-held data sets.
          CA    Cancel a job that is defined to Automatic
                Restart Manager (ARM).
          CD    Cancel a job and take a dump.
          CDA   Cancel a job that is defined to ARM, and take a dump.
          CP    Cancel a job and delete held data sets. (JES3 only)
```

```
       HELP: Display Active Users Panel -- Action Characters  Panel 2 of 5
COMMAND INPUT ===>

          D     Display job information in the log. You can add:
                E  - Line, page, record and card counts (JES3 only)
                L  - Long form
                SD - DDNAMES of spool data sets that contain data
                     (JES3 only)
                SH - DDNAMES of spool data sets in spool hold that
                     contain data (JES3 only)
                SP - Spool partition name (JES3 only)
                X  - Extended (JES3 only)
          E     Process a job again. You can add (JES2 only):
                C  - Cancel and hold the job prior to execution
                S  - After the current step completes
                SH - After the current step completes, restart and hold
```

```
       HELP: Display Active Users Panel -- Action Characters  Panel 3 of 5
COMMAND INPUT ===>

          H     Hold a job.
          K     Cancel a started task (system cancel).
          KD    Cancel a started task and take a dump (system cancel).
          L     List output status of a job in the log. For JES3, this
                is job output in the writer queue.  You can add:
                B - SNA/NJE output (JES3 only)
                H - Output on the hold queue (JES3 only)
                L - Long form (JES2 only)
                T - TCP/IP job output (JES3 only)
          P     Cancel a job and purge its output.
          PP    Cancel a protected job and purge its output. (JES2 only)
          R     Reset and resume a job. (RMF)
          RQ    Reset and quiesce a job. (RMF)
          Q     Display output descriptors for all of the data sets
                in an output group.
```

Figure 2-14 Selection 3 - Action characters pop-ups (1 to 3 of 5)

```
       HELP: Display Active Users Panel -- Action Characters  Panel 4 of 5
 COMMAND INPUT ===>

           S     Display the data sets for a job.  You can add:
                 B - Use ISPF Browse
                 E - Use ISPF Edit
                 J - Use ISPF Edit to edit the JCL
           W     Cause job and message logs to spin. (RMF)
           X     Print output data sets.  You can add:
                 C - Close the print file after printing (XC)
                 D - Display the Open Print Data Set panel (XD or XDC)
                 F - Display the Open Print File panel (XF or XFC)
                 S - Display the Open Print panel (XS or XSC)
           Y     Stop a started task (system stop). (RMF)
           Z     Cancel a started task (system force).
           ?     Display a list of data sets for a job.
                 (Access the Job Data Set panel.)
_____________________________________________________________________________
       HELP: Display Active Users Panel -- Action Characters  Panel 5 of 5
COMMAND INPUT ===>

          For more information, select a topic by number:

          1 - Using block repeat (///)
          2 - Using repeat (=)
          3 - Displaying valid action characters on the current panel
          4 - Browse (S and SB) in a sysplex
          5 - Using the S action character
          6 - System commands issued for the action characters
          7 - Using the X action character
          8 - Setting the default browse action character
```

Figure 2-15 Selection 3 - Action characters pop-ups (4 and 5 of 5)

The HELP pop-ups for the selection “4 - Fields on the DA pane” are shown in Figure 2-16 and Figure 2-17 on page 25.

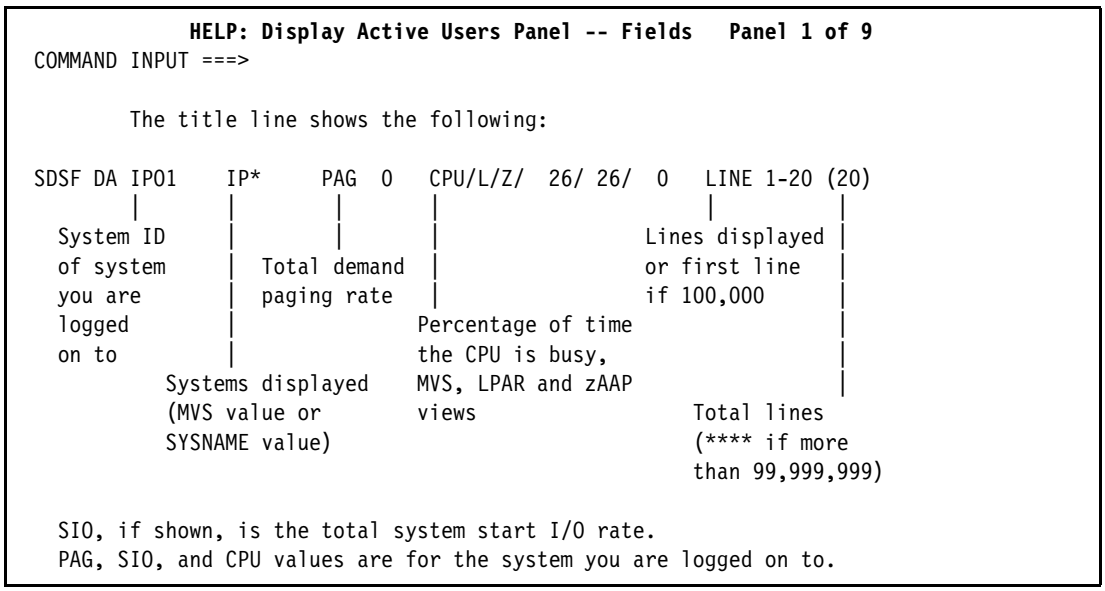

Figure 2-16 Selection 4 - Fields on DA panel (1 of 9)

```
                  HELP: Display Active Users Panel -- Fields   Panel 2 of 9
 COMMAND INPUT ===>
The Display Active Users panel includes some or all of the following
       fields.  (The order and titles may be different, depending upon
       installation and user options.)

         Title       Description
         JOBNAME     Job name of the address space
         StepName    Job step name, or TSO procedure name for TSO users
         ProcStep    Procedure step name, or terminal name for TSO users
         Type        Type of address space: job, started task,
                     TSO user, or initiator
         JNum        JES job number
         Owner       User ID of job creator
         C           JES input class at the time the job was selected for
                     execution
         Pos         Address space position, for example, swapped in,
                     swapped out, nonswappable, in transition
_____________________________________________________________________________
                  HELP: Display Active Users Panel -- Fields   Panel 9 of 9
 COMMAND INPUT ===>
Title       Description
         SLCPU%      Percentage of time the LPAR is busy for the system,
                     in the most recent interval.  The value for SLCPU%
                     is the same for all rows for a system. (RMF)

         For more information, select a topic by number:
               1 - Address space positions
               2 - Swap out reason codes
               3 - Server values
               4 - Displaying alternate fields
               5 - Changing the colors of fields
               6 - Changing the order of fields
               7 - CPU and SIO fields
               8 - Scaling and abbreviations for values
```

Figure 2-17 Selection 4 - Fields on DA panel (2 and 9 of 9)

```
   HELP: Display Active Users Panel -- Overtypeable Fields  Panel 1 of 1
 COMMAND INPUT ===>

         The following fields can be overtyped by authorized users.

             Field     Description
             SrvClass  Service class name
             Quiesce   Quiesce indicator (QUIESCE or RESUME)

         Overtyping these fields causes an MVS RESET command to be issued.
         SDSF appends an RO command if the MVS command is targeted
         for another system.

         For more information, select this topic by number:
          1 - About overtyping fields
```

Figure 2-18 Selection 5 - Overtypable fields to change their value

The HELP pop-up for the selection “5 - Overtyping fields to change their values” for the DA panel is shown in Figure 2-14 on page 22 and Figure 2-19 shows the HELP pop-up for selection “6 - Commands: limit jobs displayed, search, etc” of DA panel help.

```
                HELP: Display Active Users Panel -- Commands   Panel 1 of 1
COMMAND INPUT ===>
        A few useful commands are shown below.  Some require authorization

        FILTER column oper value - Filter jobs shown on any column
        FIND jobname - Search for a job name
        SET DISPLAY - Show settings for PREFIX, DEST, SORT, etc.
        SORT column-title or place the cursor on the title and press Enter
        SYSNAME system - Filter jobs by system name

        For complete command help, select a topic by number.

        1 - Search and scroll commands (FIND and others)
        2 - Filter commands (FILTER, OWNER, PREFIX, SYSNAME and others)
        3 - View commands (SORT and others)
        4 - Options commands (SET DISPLAY and others)
```

Figure 2-19 Selection 6 - Commands: limit jobs displayed, search, etc

2.3.2 Online HELP for SEARCH command

Figure 2-20 on page 27 show the help panel for the SEARCH command.

```
                          HELP: SEARCH Command              Panel 1 of 2
COMMAND INPUT ===>

    Purpose:  Search SDSF's help and tutorial. (ISPF and English only)

    Where used:  Any SDSF panel except help and tutorial panels.
        SEARCH lets you search and display help panels, but
        you enter the command outside of help.
    Format:  SEARCH (phrase)
        Searches the help and tutorial panels.
    Examples:  SEARCH cpu use - Searches for cpu use , cpu and use .
               SEARCH 'cpu use' - Searches for cpu use .

    For more information, select this topic by number:
        99 - Messages
_____________________________________________________________________________
                      HELP: SEARCH Command -- Format          Panel 2 of 2
COMMAND INPUT ===>
SEARCH (phrase)
-----------------------------------------------------------------------
     SEARCH with no search phrase displays the Search pop-up.
     phrase is the word or words (up to 4) you want to search for.
        When phrase is more than one word, SDSF searches
        for the complete set of words first, then for any one
        word. To search only for the whole phrase, enclose it
        in single quotation marks.
        Case is ignored, even when you enclose the phrase in
        quotation marks.
        You cannot search for single quotation marks in the data.
```

Figure 2-20 HELP popup for the SEARCH command

Figure 2-21 on page 28 is an example of the SEARCH command pop-up output.

The pop-up does not display PF settings. PF 8 and PF 7 are for scroll DOWN and UP respectively. PF 1 is HELP and PF 12 CANCEL.

Any character on a search result row will display the related help pop-up.

```
                              Search Help              Row 1 to 16 of 275
Command ===>

Search for: SEARCH                                          Show titles

_   Select a search result to display the help panel.
_   SEARCH with no search phrase displays the Search pop-up.
_   6 - SEARCH Search the help and tutorial
_   SEARCH - Search the help (ISPF only)
_   SEARCH - Search the help (ISPF only). Enter outside of help.
_   Use SEARCH to search the help (ISPF only). Type this
_   Search option on the action bar, or the SEARCH command.
_   You can add up to four search words to the SEARCH
_   command. SEARCH with no parameters displays the Search
_   SEARCH lets you search and display help panels, but
_   Examples: SEARCH cpu use - Searches for cpu use , cpu and use .
_   SEARCH 'cpu use' - Searches for cpu use .
_   invoke the Search function. With Search,
_   If you supply a search string, BookManager searches
_   The Search choice of the Search pull-down
_   The Search pop-up lets you search SDSF's online help.
_   98 - Search and navigate the help
```

Figure 2-21 SEARCH command output

2.3.3 HELP for SDSF messages

Each SDSF message has a help panel you can display to see an explanation and response to the message. Information about displaying the message helps is included on SDSF help panels. SDSF does not use the ISPF message services.

You can also search in online documents using the BOOK command (see the online help for more information). When the cursor is in the message area, BOOK uses the message text as a search string.

For example, in Figure 2-22, the INVALID COMMAND response is displayed on the right of the panel above the COMMAND INPUT line.

```
 Display  Filter  View  Print  Options  Help
 ------------------------------------------------------------------------------
 ----
  SDSF INPUT QUEUE DISPLAY ALL CLASSES                  INVALID COMMAND
  COMMAND INPUT ===>                                            SCROLL ===>
 PAGE
  NP   JOBNAME  JobID    Owner    Prty C         Pos  PrtDest           SAff
  AS
  ZZZZ BECKER1  JOB04066 BECKER      1 /             ANYLOCAL
```

Figure 2-22 SDSF message example

You can display help pop-up with the HELP key (default PF 1) or HELP command on the command line. From the pop-up select the `SDSF messages` option. When the `HELP: Messages and Codes` pop-up is displayed, enter the first letter of the message (I) on the `COMMAN LINE` and hit Enter. The `HELP: Messages - 'I'` pop-up is displayed. By pressing Enter, Scroll

forward the numbered list of short message texts until you find the subject message and use the number to display the pop-up explaining the meaning of the message.

Alternatively you can use the SEARCH command with the message text as the argument. Select the first line of the `Search Help pop-up` to display the pop-up explaining the meaning of the message.

2.4 SDSF panels

The SDSF primary option menu lists the panels that you are authorized to use, and the commands that display the panels. (A few panels, shown later in this topic, are accessed with action characters instead of commands, and do not appear on the primary option menu.)

The tabular panels have a fixed field or column, at the left, that does not move as you scroll right and left. You can scroll displayed information up, down, right, and left.

Under ISPF, most SDSF functions can be selected from the action bar at the top of the panel. To display a pull-down menu of action bar choices, place the cursor on an option and press Enter.

Note: The words “field” and “column” are used interchangeably in this document.

2.4.1 Tabular SDSF panel layout in ISPF

Figure 2-23, Display Active Users Panel, is used to describe the SDSF panel layout and features.

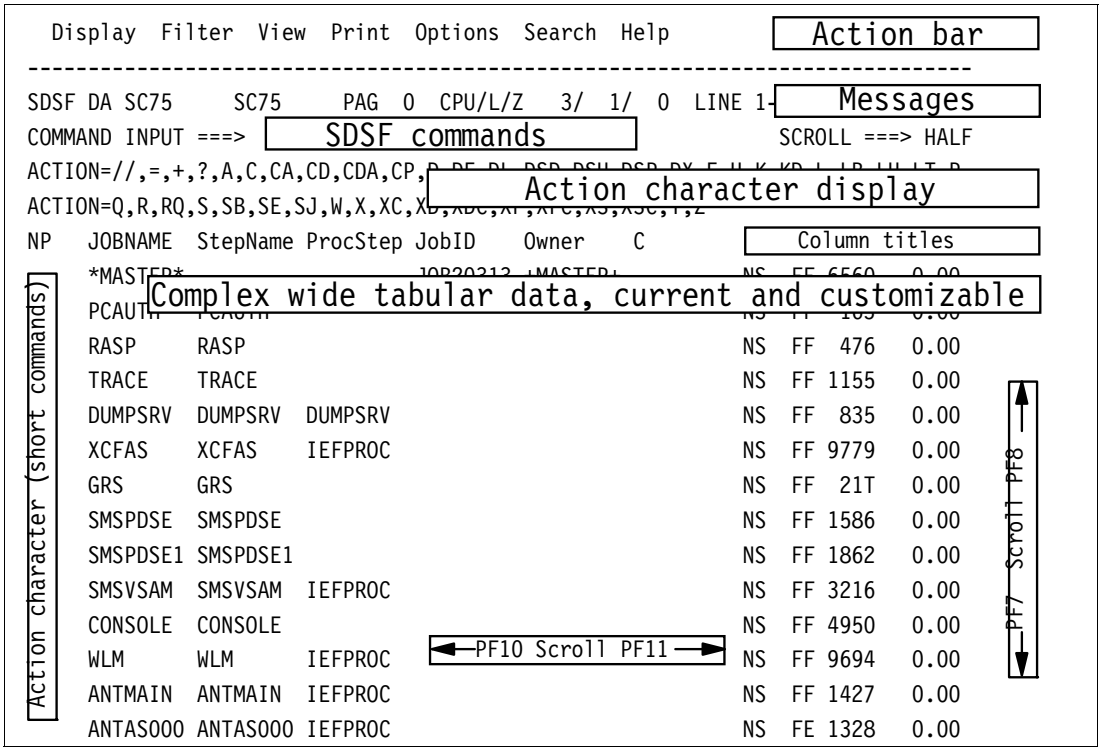

Figure 2-23 Sample SDSF panel layout - DS panel

SDSF uses colors on the tabular panels to identify active objects (such as jobs) and overtypable fields, as shown in Table 2-1 on page 30.

Table 2-1 SDSF color indicators

Color	Active/Not Active	Overtypable
Blue	Not Active	No
White	Active	No
Green	Not Active	Yes
Red	Active	Yes

NP action characters for all tabular panels

NP-Description	SDSF action
+	Expand the NP column. (Use RESET to reset.)
//	Block repeat; type // on the first row and another // on the last row to be processed. The action to be repeated should be typed once after the // characters.
=	Repeat previous action character or overtype

Figure 2-24 NP action characters on all tabular panels

2.4.2 SDSF PF keys in ISPF

Under ISPF, you can toggle the display of SDSF's PF keys with the ISPF `PFSHOW` command, and change the setting of the keys with the `KEYS` command**.** In SDSF running under TSO the PF keys cannot be displayed or changed.

In ISPF each SDSF pop-up panel has PF keys assigned with an ISPF keylist. Although ISPF allows you to change the values of the keys in keylists, and to turn off the use of keylists, you should use the IBM-supplied key definitions and leave keylists on.

The default PF key definitions for SDSF's panels running under ISPF and TSO are shown in Figure 2-25.

```
KEY          ISPF (Default)                 TSO
 1 and 13    Help                           Help
 2 and 14    Split the screen               Not used
 3 and 15    End the current panel          End the current panel
 4 and 16    End SDSF                       End SDSF
 5 and 17    Repeat the previous FIND       Repeat the previous FIND
 6 and 18    Invoke BookManager             Not used
 7 and 19    Scroll up                      Scroll up
 8 and 20    Scroll down                    Scroll down
 9 and 21    Swap split screens             Print the screen
10 and 22    Scroll left                    Scroll left
11 and 23    Scroll right                   Scroll right
12 and 24    Retrieve the previous          Return the cursor to the
             command.  (Some short          command line
             commands are not retrieved.)
```

Figure 2-25 SDSF panel default key definitions

2.4.3 Action bar

Under ISPF, SDSF functions can be selected from the action bar, a row of options at the top of the panel shown in Figure 2-26. Select an option from the action bar by placing the cursor on an item and pressing Enter. In the pull-down menu of choices that is displayed, select a choice by number or by placing the cursor on it and pressing Enter. Choices ending with an ellipsis (...) display a pop-up window.

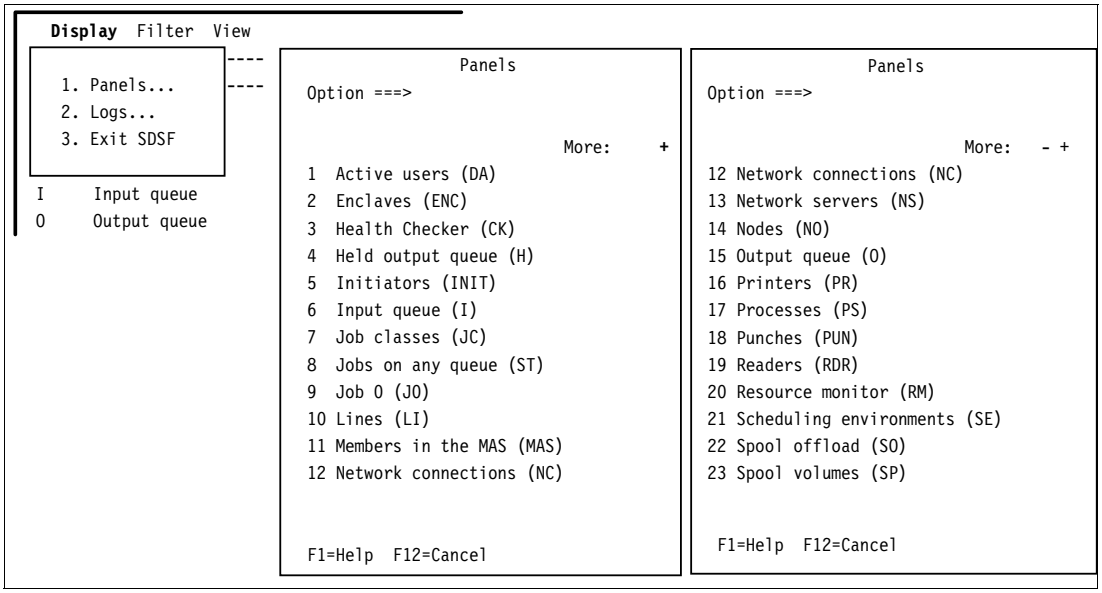

Figure 2-26 Action bar Display -> 1. Panels -> Panels list

Most of the SDSF's displays use the same ISPF ISFPCU41 panel. This panel defines the same set of action bar choices for all displays where used.

The action bar choices are, as follows:

- **Display** This action bar choice represents three related choices that appear in the pull-down:
  - **Panels** - This choice displays a menu of the SDSF panels. The SDSF panel menu lists 24 displays. Each display choice is numbered. When a display choice is available, its number is highlighted. The panels list is shown in Figure 2-26.
  - **Logs** - The Logs pop-up allows you to display one of the two SDSF Log panels. The pop-up options are: 1 `System log (LOG)` and 2 `User session log` (U):
    - The `System log` option displays the SDSF log panel, which displays MVS log data.
    - The `User session log` option displays the SDSF User Session Log (ULOG) panel, which shows MVS and JES commands and responses (including commands generated by SDSF) that you issued during your session.
  - **Exit SDSF** - This choice of the Display pull-down ends the SDSF session.
- **Filter** - This action bar choice represents three following choices that appear in the pull-down:
  - **Filter** - The Filter choice of the Filter pull-down displays the Filter pop-up, which allows you to filter the data displayed on SDSF panels that display data in tabular format.
  - **Prefix of jobname** - The Prefix choice of the Filter pull-down displays a pop-up that allows you to filter the DA, I, PS, and ST panels based on job name.

- **Owner** - The Owner choice of the Filter pull-down displays a pop-up that allows you to filter the DA, I, PS and ST panels based on owning user ID.
- **Destination** - The Destination choice of the Filter pull-down displays a pop-up that allows you to filter the I, PR, ST, and PUN panels based on destination.
- **System name** - The System Name choice of the Filter pull-down displays a pop-up that allows you to specify which systems are to be included on the DA panel.
- **Replies on the Log** - The Replies on the Log choice of the Filter pull-down displays the Replies on the Log pop-up, which lets you filter the WTORs on the Log panel.

- **View** - The View option of the action bar allows you to control the view of the data displayed on SDSF panels. To select the View option, press Enter with the cursor on View:
  - **Sort** - The Sort choice of the View pull-down displays a pop-up that allows you to sort the SDSF panels that display information in tabular format.
  - **Arrange** - The Arrange choice of the View pull-down displays the Arrange pop-up, which allows you to reorder and change the widths of the columns on panels that display data in tabular format.
  - **Set hex to ON** - The Set Hex choice of the View pull-down acts as a toggle to turn hexadecimal formatting of the log or output data sets on or off.
  - **Change field list to ALTERNATE** - The Change Field List choice of the View pull-down acts as a toggle to display the primary or alternate fields on SDSF panels that display information in tabular format.
  - **Who** - The Who choice of the View pull-down displays your user ID, TSO logon procedure name, terminal ID, the index number and name of your group in ISFPARMS, information about software levels, and information about the server. An example is shown in Figure 2-27. The field for server communications (COMM=) shows information about communications between SDSF servers.

```
USERID=VJUHA,PROC=IKJACCJV,TERMINAL=SC38TC86,GRPINDEX=1,GRPNAME=ISFSPROG,
MVS=z/OS 01.11.00,JES=z 1.11.0,SDSF=HQX7760,ISPF=6.1,RMF/DA=760,SERVER=YES,
SERVERNAME=SDSF,JESNAME=JES3,MEMBER=SC75,JESTYPE=JES3,GLOBAL=SC75,
GLOBALREL=HJS7760,SYSNAME=SC75,SYSPLEX=PLEX75,COMM=NOTAVAIL
```

Figure 2-27 Data in the WHO display and WHO pop-up

- **Print** - The Print option of the action bar allows you to select options for printing data:
  - **Print open sysout** - The Print Open Sysout choice displays a panel that allows you to specify the attributes of a SYSOUT print file.
  - **Print open data set** - The Print Open Data Set choice displays a panel that allows you to specify the attributes of a data set to be used as the print file.
  - **Print open file** - The Print Open File choice displays a panel that allows you to specify the ddname to be used as the print file.
  - **Print** - The Print choice displays a pop-up that allows you to specify the lines to print from a SYSLOG or output data set. If no print file is open, the Print choice opens a default SYSOUT file.
  - **Print close** - The Print Close choice either frees a SYSOUT print file and makes it available for printing, or closes a print data set.
  - **Print screen with ISPF** - The Print Screen with ISPF choice invokes ISPF's PRINT command to print the panel image to an ISPF list file. This choice does not use SDSF's print file.

- **Options** - The Options option of the action bar allows you to set options such as a find limit and colors:
  - **Set action character display** - The Set Action Character Display choice of the Options pull-down displays a pop-up that allows you to control the display of valid action characters on SDSF panels.

    Action characters are typed in the NP column of tabular panels. For example, to purge a job, you type `p` in the NP column next to the job on the Status panel.

    The display of the valid action characters for a panel can also be set with the SET ACTION command.
  - **Find limit** - The Find Limit choice of the Options pull-down displays a pop-up that allows you to limit the number of lines searched when the FIND command is issued on a browse panel.
  - **Change include SYSIN to ON** - The Change Include SYSIN choice of the Options pull-down lets you control whether the Output Data Set panels that you select from the DA, ST, or I panels will include SYSIN data sets.
  - **Set bookshelf** - The Set Bookshelf choice of the Options pull-down displays a pop-up that allows you to set the default bookshelf to be searched by BookManager.
  - **Set display values to ON** - The Set Display Values choice of the Options pull-down acts as a toggle to control the display of values for DEST, OWNER, PREFIX, FILTER, SORT and SYSNAME on the information line. Figure 2-28 is an example of the “Set display values to ON” display.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF DA SC75     (ALL)    PAG  0  CPU/L/Z   4/  1/  0   SET COMMAND COMPLETE
COMMAND INPUT ===>                                          SCROLL ===> HALF
PREFIX=JES3*  DEST=*  OWNER=*  SYSNAME=*
ACTION=//,=,+,?,A,C,CA,CD,CDA,CP,D,DE,DL,DSD,DSH,DSP,DX,E,H,K,KD,L,LB,LH,LT,P,
ACTION=Q,R,RQ,S,SB,SE,SJ,W,X,XC,XD,XDC,XF,XFC,XS,XSC,Y,Z
NP   JOBNAME  StepName ProcStep JobID    Owner    C        Pos DP Real Paging
     JES3     JES3     JES3                                NS  FE  11T   0.00
     JES3AUX  JES3AUX  IEFPROC                            NS  FF  176   0.00
     JES3CI   CI7      JES3CI   JOB20958 JES3             NS  FE 1176   0.00
     JES3DLOG JES3DLOG IEFPROC                            NS  FF  179   0.00
```

Figure 2-28 Snipped of a DA display with Set display values ON set

  - **Set screen characteristics** - The Set Screen Characteristics choice of the Options pull-down displays a pop-up that allows you to control the use of color and highlighting on SDSF panels, as well as turn the display of the action bar on or off.
  - **Set delay for responses** - The Set Delay choice of the Options pull-down displays a pop-up that allows you to control the default timeout value for awaiting responses to the slash (/) command.
  - **Set communications timeout** - The Set communications timeout choice of the Options pull-down displays a pop-up that lets you set the timeout value for awaiting sysplex data.
  - **Set console name** - The Set Console Name choice of the Options pull-down displays a pop-up that allows you to set the name of the extended console used by SDSF. The extended console is used by the ULOG panel.

- **Set search characters** - The Set Search Characters choice of the Options pull-down displays a pop-up to let you set the generic and placeholder characters used in pattern matching.
- **Assign PF keys** - The Assign PF Keys choice of the Options pull-down invokes ISPF's KEYS facility to let you change the PF keys for SDSF panels.
- **Change show PF keys** - The Change Show PF Keys choice of the Options pull-down invokes ISPF's PFSHOW command to let you turn the display of PF keys on or off.
- **Set language for help and tutorial** - The Set Language for Help and Tutorial choice of the Options pull-down displays a pop-up that allows you to select English or Japanese for the Help and Tutorial.
- **Set cursor option** - The Set Cursor choice of the Options pull-down acts as a toggle to control how SDSF places the cursor when you work with rows on tabular panels (except OD).

  ON causes the cursor to return to the NP column for the last row you worked with. If the row is not on the panel, either because it would require a scroll, or because your actions or system activity caused it to be removed from the display, the cursor is returned to the command line.

  OFF causes the cursor to return to the command line.
- **Set confirmation** - The Set Confirmation choice of the Options pull-down acts as a toggle to control confirmation of action characters. When confirmation is on, SDSF requests confirmation of cancel, purge, restart and system stop action characters on job-oriented tabular panels (DA, H, I, JDS, O, PS and ST), drain and halt actions on the SP panel, and quiesce on the ENC panel.
- **Operlog limit for filter** - The Operlog Limit for Filter choice of the Options pull-down displays the Operlog Limit for Filter pop-up, which lets you set the amount of Operlog data SDSF will search for records that meet filter criteria.
- **Set date format** - The Set Date Format choice of the Options pull-down displays the Set Date Format pop-up, which lets you select the format SDSF uses for dates. The available date formats are mm/dd/yyyy, dd/mm/yyyy, or yyyy/mm/dd and the separator character, either slash (/), dash (-), or period (.).
- **Set log default** - The Set Log Default choice of the Options pull-down displays a pop-up that allows you to select the default panel for LOG command. The default panel is displayed when you enter LOG with no parameters, or select the Log choice from the Display pull-down.
- **Set default browse action -** The Set Default Browse Action choice of the Options pull-down displays a pop-up that allows you to select the default browse action (S, SB or SE) that is issued when you place the cursor in the NP column and press Enter on the job and output panels. The options are S (SDSF browse), **`SB`** (ISPF browse), **`SE`** (ISPF edit), and **`None`.** The default browse action character is invoked when you select a row on a job or output panel (DA, I, JDS, OD or ST) by placing the cursor in the NP column and pressing Enter. The result is the same as if you had typed the action character in the NP column.

  If you select **`None`**, then you must type an action character in the NP column to invoke browse.
- **Help** - The Help option of the action bar allows you to select online help for: Extended help, Keys help, Help Index, Tutorial, Book, web sites, REXX help and Columns help.

2.4.4 Action characters

In most cases, action characters cause system commands to be issued for the object on the selected row. Both the ability to issue some action characters, and the command that is generated, depend on your installation options and operating system level.

The action characters are entered in the NP column of tabular panels.

The help for each SDSF panel also includes a list of the action characters that are valid for that panel.

You can display the valid action characters for a panel with the SET ACTION command:

```
SET ACTION (ON|LONG|SHORT|OFF|?)
```

– Complete information about using SDSF action characters is provided in the online help for SDSF.

2.4.5 COLSHELP command

The COLSHELP command displays a table of column information for SDSF panels. In Figure 2-29 on page 35 the table display shows some of the columns and the column titles on the SDSF DA (Display Active Users) panel. The COLSHELP command requires ISPF. The ISPF PFSHOW command displays PF key settings for Columns on SDSF Panels. A slash (/) in the *ALL panels* and *Include descriptions* input fields indicates that the options have been selected.

```
                          Columns on SDSF Panels      Row 76 to 81 of 1,244
Command ===>

Sort with F5 (panel), F6 (column), F10 (title). Use Filter to filter rows.

/  All panels             /  Include descriptions

Panel     Column      Title                 Delayed?  Overtype?
   Description
DA        JNAME       JOBNAME
   Job name, fixed field
DA        STEPN       StepName
   Job step name (TSO logon proc for TSO users)
DA        PROCS       ProcStep
   Procedure step name (terminal ID for TSO users)
DA        JTYPE       Type
   Type of address space
F1=Help        F5=SortPnl     F6=SortFld     F7=Backward    F8=Forward
 F10=SortTtle   F11=SortDesc   F12=Cancel
```

Figure 2-29 COLSHELP command output panel

An X in the *Delayed?* column indicates that access for the column is delayed. Inclusion of these columns on a panel may impact SDSF performance.

By default, the table shows the columns for the SDSF panel on which it is issued. When you use the COLSHELP command from the SDSF primary option menu, the table includes columns for all panels. You may scroll to the first row for a specific panel with the LOCATE panel command. LOCATE can be abbreviated as L, for example, L DA.

Filter the columns based on panel name or title with the FILTER command. For more information, tab to the link and press the Help PF (F1).

If you cannot find a field on a tabular panel that you are interested in, use the COLSHELP command to display all fields of the panel you are working with. If the field you are interested in is listed in the Columns on SDSF Panels (COLSHELP) display, but is marked with an X in the *Delayed?* column, you can switch the panel field list to ALTERNATE to see the contents of the delayed field. To switch to the panel field list, select the action bar `View action` and then option *4. Change field list to PRIMARY/ALTERNATE* from the View pop-up.

2.4.6 Overtyping fields

In Figure 2-30 on page 36 is a sample display of a few rows on the SDSF INPUT QUEUE panel and a display of the COLSHELP command output for the overtypable job priority and job class columns. You can change the data on these columns by typing over it. For example, you can change the class of a job by typing a new value for the class. (JES3 command **`*F,J=jobno,C=new_class`** is issued for the overtype value.) Overtype columns are highlighted (red or green, by default) on panel displays.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF INPUT QUEUE DISPLAY ALL CLASSES                  LINE 1-26 (41)
COMMAND INPUT ===>                                      SCROLL ===> HALF
NP   JOBNAME  JobID    Owner    Prty C         Pos  PrtDest            SAff  AS
     VAINISCT JOB07219 VAINI       1 A              ANYLOCAL
:::::
_______________________________________________________________________________
                            Columns on SDSF Panels          Row 211 from 1244
  Command ===>

  Sort with F5 (panel), F6 (column), F10 (title). Use Filter to filter rows.

     All panels           Descriptions

  Panel     Column      Title                Delayed?  Overtype?
  I         JPRIO       Prty                           X
  I         JCLASS      C                              X
```

Figure 2-30 Sample COLSHELP for JES3 I queue JPRIO and JCLASS columns

To be able to overtype a column you must be authorized and the entire column must be visible.You can use the tab key to move from one overtypable column to another. Blanking out a value with the space bar does not delete the value. Some fields, where the associated system command allows it, support deleting the value by typing a comma by itself in the field.

The help for each SDSF panel includes guidance on valid values for overtypable fields. In most cases, overtyping a field causes a system command to be issued.

The overtype extension function also lets you delete values when the field supports a set of related values. You can display the overtype extension pop-up by typing a + by itself in any overtypable field. Figure 2-31 on page 37 is an example of the overtype extension pop-up.

2.4.7 Overtype extension pop-up

When using the overtype extension pop-up, type a value on the pop-up, an example is shown in Figure 2-31. The input field on the pop-up may be longer than the maximum valid value for the column; use the maximum length displayed on the pop-up as a guide. To remove a value from a set of related fields, blank them out. To repeat an overtype, type = in the NP column to repeat the last action character or overtyped fields. The action character or overtype does not have to be on the immediately preceding row. You cannot enter another action character or overtype a field in the row where the **=** action character is.

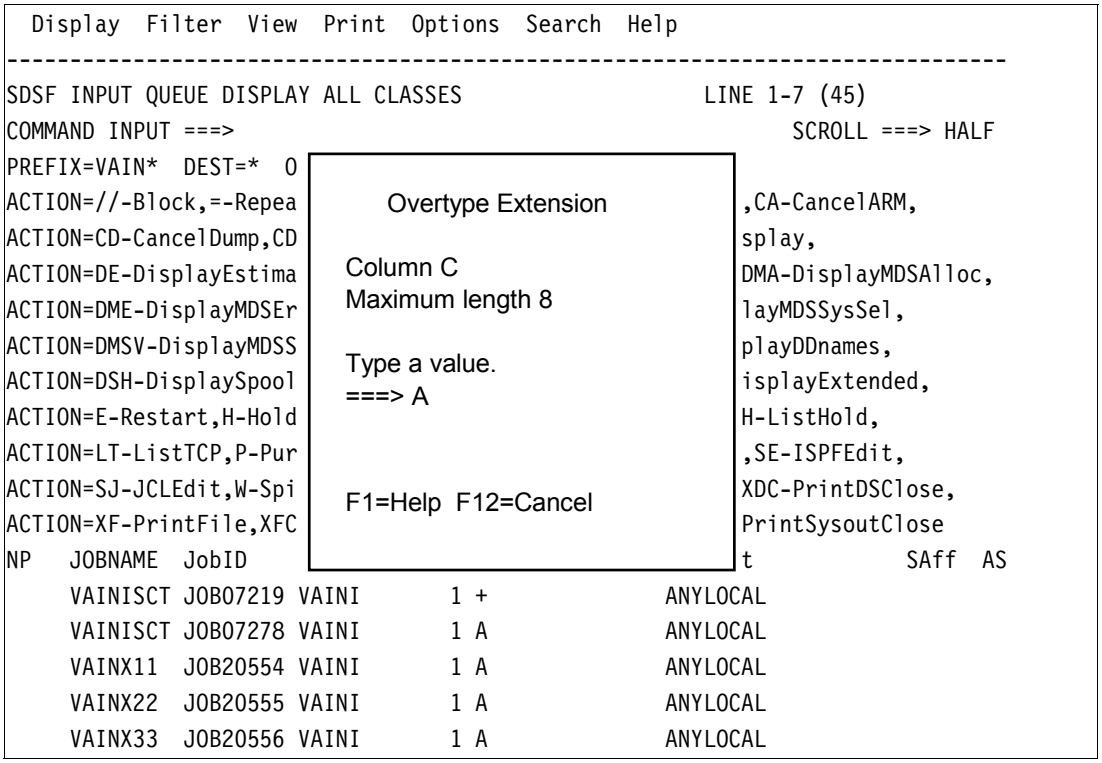

Figure 2-31 Overtype extension pop-up

2.4.8 Cursor-sensitive sort

You can sort a tabular panel by placing the cursor on a column title and pressing Enter. For example, to sort a panel by job name, place the cursor on the JOBNAME column and press Enter. This is a quick alternative to typing the SORT command.

You can disable cursor-sensitive sorting with the **SET CSORT OFF** command and enable with the **SET CSORT ON** command.

2.5 SDSF server address space

The SDSF server is an address space that SDSF uses to:

- Process ISFPARMS statements.
- Provide sysplex support for JES2. This consists of sysplex-wide data for JES2 devices and for system resources (CK, ENC, INIT, LI, NO, PR, PS, PUN, RDR, RM and SO panels) as well as the most recent SYSLOG data for remote systems (SYSLOG panel).

Not required in a JES3 environment and when in a JES2 environment when all systems are at the z/OS V1R13 level.

CK, ENC, PS and JES2 RM panels:

An SDSF server is required on each system for sysplex-wide CK, ENC, PS and RM panels, in both JES2 and JES3 environments.

- When all systems that you want to include are at the z/OS V1R13 level, SDSF uses XCF to communicate between SDSF servers, and does *not* use a server group defined in ISFPARMS.
- When one or more systems that you want to include is at the z/OS V1R12 or lower level, the server group defined in ISFPARMS is also required, along with IBM WebSphere® MQ.

A server is required in the JES3 environment to process ISFPRMxx member ISFPARMS statements. You start the server using the START command. The command takes the servername as a parameter. Optional START command parameters identify the suffix of PARMLIB member ISFPRMxx.

You can activate new parameters at any time with the MVS MODIFY operator command, which you can enter from the console, or from SDSF by users that are authorized to use the slash (/) command. Changes take effect the *next* time users access SDSF. A TEST parameter allows you to check the syntax of the statements without activating them.

The server must be active on each system that contains SDSF users to process ISFPARMS statements,. To provide sysplex data, the server must be active on each system that is to be included on SDSF panels.

An SDSF server JCL sample is shown in Figure 2-32.

```
//SDSF     PROC  M=00,          /* SUFFIX FOR ISFPRMXX */
//              P='LC(T)'       /* USE SYSOUT CLASS T FOR SDSFLOG */
//SDSF     EXEC  PGM=ISFHCTL,REGION=32M,TIME=1440,PARM='M(&M),&P'
```

Figure 2-32 SDSF server JCL sample

2.6 SDSF security and ISFPARMS overview

SDSF global options and the format of the panels are defined with the ISFPARMS statements. The options include things such as the names of SDSF data sets, what generic and wildcard characters to allow in SDSF commands, and whether to display the action bar on SDSF panels. The format of the panels includes the order and titles of the columns.

SDSF for JES3 implementation requires the SDSF server address space to be started to process ISFPARMS. The server uses dynamic ISPFPARMS, which are defined with statements rather than assembler macros that can be used in JES2 SDSF. Statements are easier to code and are more dynamic than the assembler macros: they can be updated without reassembling or link-editing.

2.6.1 An overview of SDSF SAF security

To accomplish security through SAF, you permit or deny users access to the SDSF resources by use of their classes and resource names. In addition, you can supplement SAF security with the SAF exit points and installation exit routines.

The IBM-supplied class descriptor table provides a resource group class (GSDSF) and a resource member class (SDSF) for SDSF. For a resource group class, each user or group of users permitted access to that resource group is permitted access to all members of the resource group. For each GSDSF class created, a second class representing the members must also be created.

As with generic profiles, resource group class profiles enable you to protect multiple resources with one profile. However, the resources need not have similar names.

A resource group profile is a general resource profile with the following special characteristics:

- Its name does not match the resources it protects.
- The ADDMEM operand (not the profile name itself) specifies the resources it protects.
- Its class is a resource group class or grouping class (for example GSDSF).
- The related member class (not the resource group class itself) must be RACLISTed. For example, the SDSF class must be RACLISTed, not the GSDSF class. Depending on the class, RACLISTing is accomplished using the SETROPTS command or RACROUTE REQUEST=LIST macro service.

To accomplish SDSF security through SAF with IBM RACF®, you:

1. Activate generic processing before defining profiles, using the SETROPTS command.
2. Define profiles to protect the resources in the appropriate classes, using the RDEFINE command. (Classes are already defined for RACF. You must define them for other security products.)

   Begin with generic profiles for broad access to resources and then define generic or discrete profiles that are more restrictive.
3. Permit users to access appropriate profiles in each class with the necessary access levels, using the PERMIT command.
4. Activate the classes, using the SETROPTS command.

The sample ISFPARMS definitions in the ISF.SISFJCL(ISFPRM00) data set are used in the following discussion. This sample is included in Appendix A, “SDSF ISFPARMS default definitions” on page 155 for your reference.

The sample ISFPRM00 defines security for three SDSF groups of users that are common to most installations:

- Group 1 - System programmers. Users have JCL, OPER and ACCT TSO authority.
- Group 2 - Operators. Users have JCL and OPER TSP authority.
- Group 3 - General users. Users have JCL TSO authority. `ISFO24I USER userid NOT AUTHORIZED TO SDSF, NO GROUP ASSIGNMENT` is issued if a user with none of the above TSO authorities attempts to invoke SDSF.

You have to choose SAF to protect SDSF functions in the JES3 environment. Even when SAF is used for all of SDSF security, you need ISFPARMS to control the following:

- Global values (OPTIONS statement)

- Any values for groups that are not related to security (GROUP statement)
- Code page - ITRTAB statement

The control of user membership into a group is accomplished with SAF profiles, as shown in Table 2-2.

Table 2-2 SAF profiles for controlling user membership in a group

User group	SAF profile	Access
System Programmers	GROUP.ISFSPROG.*	READ
Operators	GROUP.ISFOPER.*	READ
General users	GROUP.ISFUSER.*	READ

The access authorities to other profiles in classes SDSF, OPERCMDS, CONSOLE, WRITER, XFACILIT, and LOGSTRM control the actions allowed for members in a group. Refer to *z/OS SDSF Operation and Customization,* SA22-7670 for a complete description of the SAF profiles.

SDSF users do not need access authority to work with their own jobs and output. In general, all TSO users can access the JESSPOOL resources they own. When you provide SAF authority to the SDSF resources by group, go from broad access (for example, RACF generic profiles) to limited access (RACF discrete profiles).

System programmers need access to all profiles for each group in order to attain access to all resources. Likewise, the operators, in addition to having access to their own profiles, also need access to all profiles defined for users.

2.6.2 ISFPARMS statements in the JES3 environment

The statements for the JES3 environment that make up ISFPARMS are as follows:

OPTIONS Specifies global SDSF initialization parameters.

CONNECT Defines a server as a default server.

GROUP Defines a group of users and the SDSF functions that are available to a member of the group. It also includes initialization parameters. In the JES3 environment you must use SAF along with your group definitions to control membership and authorization.

FLD and **FLDENT** Customizes the fields shown on an SDSF primary or alternate tabular panels for members of the associated group.

NTBL and **NTBLENT** Specifies such things as user IDs, job names, and destination names to further qualify group membership and authority. Associated with a GROUP statement.

PROPLIST and **PROPERTY** Specifies a property to customize. Provides an alternative to a user exit routine. Associated with a GROUP statement.

FLD/FLDENT statements and tabular displays

An FLD statement along with FLDENT statements, defines the fields that are displayed on a tabular SDSF panel. It is associated with the field list for a particular panel by a GROUP statement.

You can define a *primary* and *alternate* variable field list for each SDSF panel. The primary field list contains those fields that are shown upon entry into a panel. The alternate field list contains fields that can be displayed with the ? command.

It is also important to locate overtypable fields on the panel so that the entire field is visible on one panel. An overtypable field can be overtyped only when the entire field is visible.

The fields that are available on the display depend on your JES level and installation options. The ARRANGE command allows users to change the order and widths of the fields in each field list.

The columns on SDSF panels that display data in a tabular format are customized with FLD statements. The NAME on an FLD statement is referenced by a group. The TYPE on FLD statements name the SDSF panel for which the list of following FLDENT statements defines columns that are included on a tabular panel, as well as their order, titles, and widths.

TITLE is the title that appears on a panel for the column defined by column. WIDTH is the width of the column on the panel.

REXX execs reference columns by their names rather than by their titles.

The syntax of FLD and FLDENT statements is shown in Figure 2-33.

```
FLD NAME(FLD-statement-name),TYPE(panel-ID)
       FLDENT COLUMN(column),TITLE(title),WIDTH(width)
```

Figure 2-33 FLD and FLDENT syntax

The source of the data for each column is extracted from either of the following:

- From in-storage control blocks. These columns are in the primary field list. SDSF performance is best when the columns with data from in-storage control blocks are at the beginning of the field list.
- From the JES spool data set, requiring an I/O operation. These columns are in the alternate field list. I/O operations are only done when the columns are visible on the panel or being sorted. SDSF performance is best when the columns with data from the spool data set are at the end of the field list.

```
Display Active Users panel (DA)       Enclaves panel (ENC)
Health Check History panel (CKH)      Health Checker panel (CK)
Held Output panel (H)                 Initiator panel (INIT)
Input Queue panel (I)                 JESPLEX panel (JP)
Job Class panel (JC)                  Lines panel (LI)
Network Connections (NC)              Network Servers (NS)
Nodes panel (NO)                      Output Descriptors panel (OD)
Output Queue panel (O)                Printer panel (PR)
Processes panel (PS)                  Punch panel (PUN)
Reader panel (RDR)                    Resource panel (RES)
Resource Monitor (RM) panel           Environment panel (SE)
Spool Offload panel (SO)              Spool Volumes panel (SP)
Status panel (ST)                     System Requests panel (SR)
```

Figure 2-34 Panel columns described in the z/OS SDSF Operation and Customization document

The *z/OS SDSF Operation and Customization,* SA22-7670 document has tables for panel column and column source descriptions. The panels are listed in Figure 2-34.

3

Using SDSF to work with JES3

This chapter introduces SDSF features for working with JES3. Topics covered are:

- User authorization to SDSF panel commands
- FIltering display data
- Viewing alternate form of a tabular panel
- Input Queue (I) panel
- Status (ST) panel
- Viewing job output
- JESPLEX (JP) panel
- Job Class (JC) panel
- Spool volumes (SP) panel
- SDSF hardcopy log displays

3.1 SDSF features for working with JES3

SDSF offers many panels and features for interacting with JES3. This chapter covers the following:

- User authorization to SDSF panels and commands
- Display data filtering
- Viewing alternate forms (delayed columns) of a tabular SDSF panel
- The Input Queue (I) panel, which displays information about jobs on the JES input queue or that are executing.
- The Output Queue (O) panel, which displays information about output for jobs, started tasks, and TSO users on any nonheld output queue.
- The Held Output Queue (H) panel, which displays information about SYSOUT data sets for jobs, started tasks, and TSO users on any held JES output queue. There is one row for each held sysout class for each job.
- The Status (ST) panel, which displays information about jobs, started tasks, and TSO users on the JES queues.
- The Job zero (J0) panel, which displays information about JES3 job zero (aka JES3 or J=0). With this panel, you can work with data sets that were created by JES3.
- Viewing output job output using the S action character, or the SB, SE, or SJ action characters to invoke ISPF Browse or Edit.

  The Job Data Set (JDS) panel displays information about the SYSOUT data sets for a job, started task, or TSO user. The JDS panel is accessed with the **?** action character.

  To view output formatted for a page printer, you can use the V action character, which requires IBM GDDM® (Version 2 Release 2 or a later release).
- The Initiator (INIT) panel, which displays information about JES-managed and WLM-managed initiators.
- Printers, punches and readers (PR, PUN and RDR) panels that display JES3 printer, punch and reader support unit information and jobs on the units.
- The Nodes (NO) panel, which displays information about nodes node in an NJE network.
- The Spool Volumes (SP) panel, which allows users to display information about JES spool volumes and spool partitions.
- The Network Server (NS) panel, which displays information about server-type networking devices on the node:
  - NETSERV devices used to communicate between JES and TCP/IP
  - Bulk Data Transfer (BDT) instances used to communicate between JES3 and IBM VTAM®
- The Network Connection (NC) panel, which displays information about networking connections to an adjacent node:
  - SOCKET devices that represent a TCP/IP networking connection
  - Active Binary Synchronous Communication (BSC) NJE lines
  - Associated NJE transmitters and receivers
- The JESPlex (JP) panel, which displays and controls the main processors of a JES3 complex.

- The Job Class (JC) panel, which allows users to display and control the job classes in a JES3 complex. It shows both the JES and the WLM managed classes.
- The hardcopy log (LOG) panel, which displays a merged, sysplex-wide system message log, which contains console messages, operator commands, and operator responses for the MVS systems.

  The term "hardcopy log" refers to the system log (SYSLOG), the operations log (OPERLOG) and the JES3 DLOG. The DLOG centrally records command and message traffic for systems in a JES3 complex in JES3 format. The JES3 DLOG is written to SYSLOG on the global processor.

  - Access OPERLOG with the LOG O command. Messages are displayed in their original color.
  - Access MVS SYSLOG or JES3 DLOG with the LOG S command.
- The user session log (ULOG) panel, which displays the MVS and JES commands and responses issued during the user's session, including commands generated by SDSF and SAF. SDSF deletes the user session log when an SDSF session is ended or when the ULOG CLOSE command is issued.

SDSF uses MVS console services to acquire an extended console that is used to issue commands and receive responses.

3.2 Users' access and authorization

The target objects (for example, the job, output group, initiator, or printer) of the SDSF action characters are controlled as resources in the SAF SDSF class and in the JESSPOOL class. JES uses the JESSPOOL class to protect SYSIN/SYSOUT data sets. Printers and punches are controlled in the WRITER class. Most SDSF action characters generate MVS or JES commands that are protected in the OPERCMDS class.

SDSF uses a console when issuing MVS or JES commands that were entered with a / command. The console used varies:

- If the user session log (for display on the ULOG panel) is active, SDSF uses an extended console.
- If the user log is not active, SDSF uses a console ID of 0.

CONSOLE class controls access to MCS consoles. It may also be used for restricting access (conditional access) to other resources in WRITER and OPERCMDS for commands originating from an MCS console.

SAF security provides a dynamic means of authorizing SDSF users to issue commands and process job output. Once a user starts an SDSF session, SDSF checks user authorization for virtually every interaction with SDSF resources. SAF authorization dynamically affects the next user interaction. You must end an SDSF session and restart it when changes are made to SAF authorization for destination names and for operator authority by destination.

If you are using RACF as a security product, RACF logs access attempts to protected SDSF resources according to the audit setting in the RACF profile for the resource. Logging is performed for all access attempts except for the following resource names in the SDSF class:

- ISFOPER.DEST.**
- ISFOPER.ANYDEST.jesx
- All resource names beginning with ISFATTR.

Logging is not performed for these access attempts because the user is not specifically trying to gain access to those resources.

3.2.1 SAF protection

Protection for each type of resource can be defined separately, so that, for example, a user may be authorized to issue action characters for a job, but not be authorized to browse that job's data sets. Users can always access the JESSPOOL resources they own; they do not need additional authority to work with their own jobs and output.

SDSF checking authority requirements to JESSPOOL class resources:

- Action characters `//`, `=`, `+`, `?`, or `Q` on the Active users (DA), Input queue (I), Output queue (O), Held output queue (H), Job data set (JDS), Output descriptor (OD) and Status of jobs (ST) panels:

  No SDSF security checking is done.

- Action characters S (browse), X (print), or V (view) on the DA, I, O, H, JDS, OD, and ST panels:

  READ access to the *nodeid.userid.jobname.jobid.Ddsid.dsname* resource

- Action character SJ (JCL Edit) on the DA, I, O, H, JDS, OD, and ST panels:

  READ access to the *nodeid.userid.jobname.jobid.JCL* resource

- Action character SB (ISPFBrowse), SE (ISPF Edit) on the DA, I, O, H, JDS, OD, and ST panels:

  READ access to the *nodeid.userid.jobname.jobid.JESMSGLG* resource

  READ access to the *nodeid.userid.jobname.jobid.JESYSMSG* resource

- Action characters D (display) and L (list) on the DA, I, and ST panels:

  READ access to the *nodeid.userid.jobname.jobid* resource

- All other action characters on the DA, I, and ST panels:

  ALTER access to the *nodeid.userid.jobname.jobid* resource

- All other action characters on the JDS and OD panels:

  ALTER access to the *nodeid.userid.jobname.jobid.Ddsid.dsname* resource

Where:

nodeid Is the NJE node ID of the target JES subsystem.

userid Is the local user ID of the job owner.

jobname Is the name of the job.

- jobid Is the JES job ID of the: Job (for jobs on DA, I, and ST)
- Job with which the data set is associated (for SYSIN or SYSOUT data sets).

Ddsid Is the data set ID number that identifies the job data set prefixed by the required letter D.

dsname Is the user-specified or system-assigned data set name.

Typically, when you define SAF authority for JESSPOOL resources, you also need to define other authorities for action characters and overtypable fields. For most action characters, a user must be authorized for jobs or job output. However, the S, V, and X action characters require authorization only for SYSIN/SYSOUT data sets. No security checking is done for the object when the ? or Q action characters are used.

Some other profiles for commands generated by SDSF action characters are also required, such as:

- In the OPERCMDS class: JESx.** profiles for JES3 commands
- In the OPERCMDS class: MVS.** profiles for MVS commands

To protect resources individually in the OPERCMDS class with restrictive profiles, you would use the specific resource name for the command generated by the action character.

Authorized SDSF commands are protected by defining resource names in the SAF SDSF class profiles ISFCMD.** with READ access. These commands include:

ABEND, ACTION, CK, DA, DEST, ENC, FINDLIM, H, I, INIT, INPUT, JC, the JESNAME parameter on the SDSF command, the JES3NAME parameter om on the SDSF command, JP, J0, LI, LOG, NC, NO, NS, O, OWNER, PR, PREFIX, PS, PUN, RDR, RES, RSYS, SE, the SERVER parameter on the SDSF command, the SDSF command, SO, SP, SR, ST, SYSID, SYSNAME, TRACE, and ULOG

Notes:

- In a JES3 environment, when an SAF class for a resource is inactive, or the profile to protect the resource is not defined, requests will be failed.
- The ISPFPARM's GROUP function AUTH parameter (authorized-command-list) applies to JES2 only.

For a complete description of protecting SDSF, refer to Chapter 7 in *z/OS SDSF Operation and Customization,* SA22-7670.

3.2.2 Resource group profiles

The IBM-supplied class descriptor table provides a resource group class (GSDSF) and a resource member class (SDSF). For a resource group class, each user or group of users permitted access to that resource group is permitted access to all members of the resource group. For each GSDSF class created, a second class representing the members must also be created.

A resource group profile is a general resource profile with the following special characteristics:

- Its name does not match the resource it protects.
- The ADDMEM operand of the RDEFINE command specifies the resources it protects (not the profile name itself).

The related member class (not the resource class itself) must be RACLISTed. For example, the SDSF class must be RACLISTed, not the GSDSF class. Use the SETROPTS command with the RACLIST operand for this task.

3.3 Filtering display data

Filtering limits data on SDSF panels. SDSF data filtering can be set either using the Filter pull-down of the action bar or filter commands.

3.3.1 Filter option of the action bar

The Filter pull-down of the action bar allows you to filter the data displayed on SDSF panels. SDSF displays a list of filtering choices in the pull-down:

1. Filter...
2. Prefix of jobname...
3. Owner...
4. Destination...
5. System name...

*. Change APPC to OFF (JES2 environment only)

7. Replies on the Log...

To select the choice, type the number of the choice or place the cursor on the choice and press Enter. Under ISPF, the values you specify are saved across sessions.

1. Filter Displays Filter pop-up (Figure 3-1).

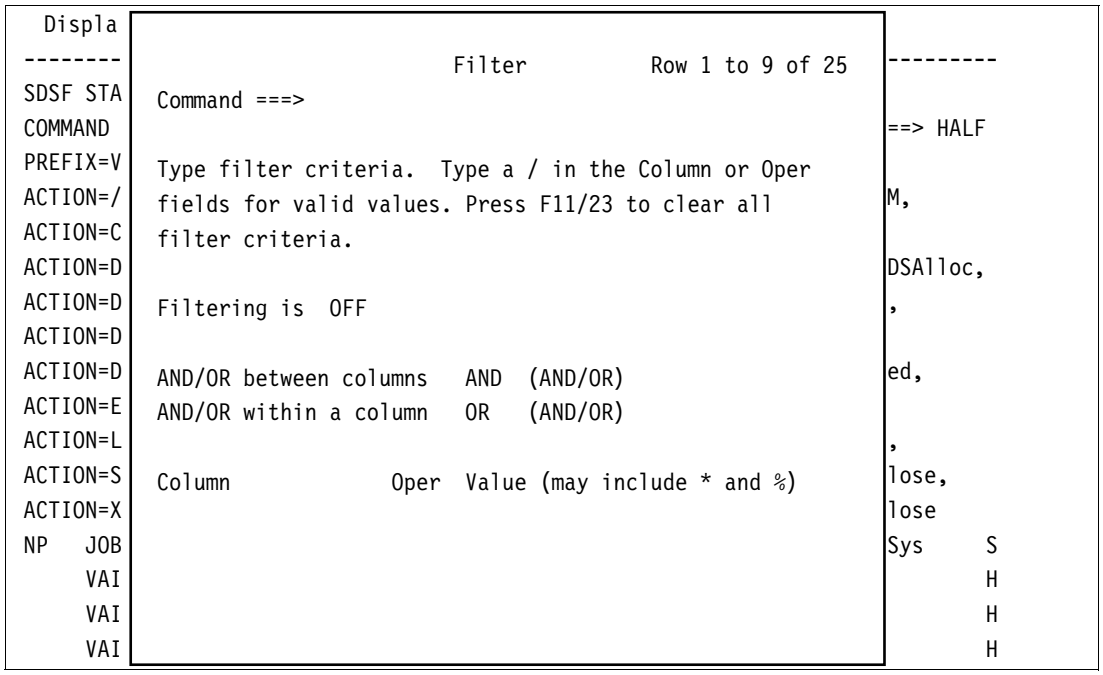

Figure 3-1 Filter pop-up on top of a STATUS DISPLAY

You can either type the column names directly or select them from a prompt pop-up.

You can abbreviate the column name to the shortest string of characters that uniquely identifies that column. The value field data may include * and % pattern matching characters.

Prefix of jobname Type a prefix to limit jobs on the DA, H, I, O, PS and ST panels. The prefix string may include * and % pattern matching characters.

Owner Type an owner to limit jobs on the DA, H, I, O, PS and ST panels. The owner string may include * and % pattern matching characters.

Destination Type up to four destinations to limit jobs on the H, I, J0, O, ST, PR and PUN panels. Only those jobs whose names match the destination are displayed.

To delete a destination, simply blank it out. Blank out all destinations on the pop-up to display jobs for all destinations, or for the destinations named filter criteria in the IDEST parameter of ISFPARMS if one is coded.

System name Type a system name or leave blank for the system you are logged on to. The system name string may include * and % pattern matching characters.

Replies on the Log Type a system name to limit WTORs on the Log panels. Leave blank for the system you are logged on to. The system name string may include * and % pattern matching characters.

3.3.2 Filter commands

Filter commands limit data on the SDSF panels. Under ISPF, filters are saved (one set for each JES type).

Figure 3-2 lists the SDSF filter commands.

```
                      HELP: Commands to Filter
 COMMAND INPUT ===>

   Select a command by number, or press Enter to view them in sequence.

             1 - ACTION     Control the display of WTORS on the Log
             2 - APPC       Control the display of APPC transactions *
             3 - DEST       Limit jobs displayed by destination
             4 - FILTER     Limit data on SDSF panels
             5 - OWNER      Limit job displays by owner ID
             6 - PREFIX     Limit jobs displayed by job name or netmail ID
             7 - RSYS       Limit WTORS on the Log panels by system
             8 - SELECT     Display selected rows
             9 - SYSID      Specify the SYSLOG data set for the LOG panel *
            10 - SYSNAME    Limit data by system

           * JES2 only

F1 = Help             F10 = Previous          Enter = Forward
 F3 = Exit              F7 = Up                 TOC = Menu
```

Figure 3-2 SDSF commands to limit data on panels (Filter)

Filter command

The FILTER command format is shown in Figure 3-3.

```
FILTER ON | OFF | OR | FIL | (+|-)column (operator) value | ?

OFF turns filtering off but retains filter criteria.
ON turns filtering on.
OR and AND specify the relationship between filters both within a column and between
columns.
(+|-)column names a column for filtering and turns filtering on. Column name can be
abbreviated to the shortest unique name.
 + adds the filter to any previous filters. There is a limit of 25 filters under ISPF,
but no limit with isffilter under REXX. When you use this with isffilter, you must
specify an operator.
 - discards all filters for the column. (ISPF only)
operator is one of the following:
EQ or =    Equal (the default)     NE or ¬=   Not equal
LT or <    Less than               GT or >    Greater than
LE or <=   Less than or equal      GE or >=   Greater than or equal
Operators with less than or greater than are valid only when the value does not contain
pattern matching characters (* and % by default).
value is the value to be used for comparison.  value can contain pattern matching
characters.  If it includes embedded blanks, enclose it in quotation marks.
? displays filters and their current state. Under ISPF, it
displays the Filter pop-up.
```

Figure 3-3 FILTER command format

Use pattern matching characters (* and % by default) for an inexact or partial match. For example:

```
FILTER JOBNAME EQ %A* matches jobs with a name that has A in the second
position.
```

You can change the pattern matching characters with the SET SCHARS command.

3.3.3 ACTION command

The ACTION command controls the display of Write-To-Operator-with-Reply (WTOR) messages on the log by specifying which WTOR messages are displayed at the bottom of the Log panel. You must be authorized to use this command. ACTION may be used on any SDSF panel. The ACTION command format is shown in Figure 3-4.

```
ACTION routing-code-list | ?
routing-code-list is up to four routing codes separated by blanks (1-28)
MVS is all routing codes reserved for MVS (1-12).
USER is all routing codes reserved for customer use (13-28).
ALL requests the display of WTORs for all routing codes.
OFF requests the display of no WTORs.  This is the default.
? displays the current setting for ACTION on the message line.
Use up to 4 parameters. The routing-code-list, MVS, and USER parameters may be combined.
ACTION commands are cumulative.
```

Figure 3-4 ACTION command format

3.3.4 DEST command

The DEST command limits jobs to be selected for display by destination. You must be authorized for the command and for the destination. The DEST command may be used on any panel. It affects only the ST panel. The DEST command format is shown in Figure 3-5.

```
DEST (+ or -) (destination-names) | ?
+ add-destination-names
- delete-destination-names
destination-names are destination names of up to 18 characters.  Enter up to 4
destination names.
? displays the current setting on the command line or pop-up.
```

Figure 3-5 DEST command format

3.3.5 OWNER command

The OWNER command limits jobs selected for display by owner ID. You must be authorized to use this command. OWNER may be used on any SDSF panel but affects only the DA, I, PS, and ST panels. The OWNER command format is shown in Figure 3-6.

```
OWNER ownerid|?
ownerid is the owning user ID of the job, or the netmail ID.  It can be up to 8
characters including * (any string of characters) or % (any single character).
?  displays the current setting on the command line or pop-up.
OWNER with no parameters displays all jobs.
```

Figure 3-6 OWNER command format

3.3.6 PREFIX command

The PREFIX command limits jobs selected for display by job name or netmail ID. This command may be used on any SDSF panel, but affects only the DA, I, PS, and ST panels. The PREFIX command format is shown in Figure 3-7.

```
PREFIX string | ?
string is the name of the job, up to 8 characters, including * (any string of
characters) or % (any single character).
? displays the current setting on the command line or pop-up.
PREFIX with no parameters displays all jobs, except on the Held Output Queue panel,
where it displays all jobs with names that begin with your user ID.
```

Figure 3-7 PREFIX command format

3.3.7 RSYS command

The RSYS command limits WTORs displayed at the bottom of the Log panels. You must be authorized for this command. This command may be used on any SDSF panel, but affects only the syslog and operlog panels. The RSYS command format is shown in Figure 3-8 on page 52.

```
RSYS system-name|?
 system-name is the MVS system name, up to 8 characters, including * (any string of
 characters) or % (any single character).
 ? displays the current setting on the command line or pop-up.
 RSYS with no parameters displays only WTORS from the system you are logged on to.
```

Figure 3-8 RSYS command format

3.3.8 SYSNAME command

The SYSNAME command specifies the systems in the sysplex that are included on the CK, DA, ENC, and PS panels. You must be authorized to use this command. The SYSNAME command may be used on any SDSF panel. This command format is shown in Figure 3-9.

```
SYSNAME system-name|?
   system-name is the MVS system name, up to 8 characters, including * (any string of
   characters) or % (any single character).
   ? displays the current setting on the command line or pop-up.
   SYSNAME with no parameters displays only data for the system you are logged on to.
```

Figure 3-9 SYSNAME command format

3.3.9 SELECT command

The SELECT command temporarily limits the jobs (rows) displayed on tabular panels. This command only lasts until you exit the panel or issue another SELECT with no parameters. The SELECT command may be used on any tabular panel. Its format is shown in Figure 3-10.

```
SELECT | S (selection-criteria)
   SELECT with no parameters removes any filtering done with SELECT.
   selection-criteria specifies the rows to be selected. The selection criteria varies
   depending on the current panel.
Queue panels (DA and ST):
   jobname {jobid}. The jobid is the job number. You do not need leading zeros.
   job number. You do not need to type leading zeros.
On these panels, SELECT overrides other filters (parameters on panel commands, FILTER,
and, if you are authorized, PREFIX, OWNER and DEST. For DEST, you must also be
authorized to the destination).

JDS panel:
   ddname {stepname}
   dsid
CK panel:
   checkname {checkowner}
You may use special characters (* and %) except with jobid.
```

Figure 3-10 SELECT command format

3.3.10 SET TIMEOUT command

The SET TIMEOUT command sets the timeout value for awaiting sysplex data on browse panels. Its format is shown in Figure 3-11 on page 53.

```
SET TIMEOUT timeout-value| ?
   timeout-value specifies the default timeout value (in seconds). The timeout
   value must be in the range of 0 to 9999, where 0 indicates that SDSF does not wait,
   that is, the sysplex support for device panels is disabled. When the sysplex support
   is disabled, the device panels show only the devices for the system you are logged on
   to.
   ? displays the current setting on the command line or pop-up.

   SET TIMEOUT with no parameters results in the timeout value specified in ISFPARMS.
```

Figure 3-11 SET TIMEOUT command format

Note: The sysplex-wide DA panel requires RMF in the JES3 environment. Some of the values on the DA panel, such as CPU% and SIO, are approximate. For detailed and precise performance monitoring, use RMF.

3.4 View alternate form of a tabular SDSF panel fields

The ? command (not NP field action) displays the alternate form of a tabular panel. You may need to scroll right to see the alternate fields.

The action bar `View` pull-down choice *4. Change field list to ALTERNATE* also toggles the display of the primary or alternate fields on SDSF tabular panels.

3.5 Locate command

The LOCATE command can be used to scroll a panel to a specific line or column. Its syntax is shown in Figure 3-12 on page 53.

```
    {LOCATE|LOC|L} [line-number | time | time-date | column]

      line-number is up to 8 digits (Log and Output Data Set panels) time is a
      time of day in the form hh:mm:ss or hh.mm.ss (Log panels)
      time-date is the time and date in the current format (Log panels)
      column-heading is the heading of the column to be located (tabular
      panels). The panel is scrolled horizontally so that the column is the
      first column after the fixed field.
```

Figure 3-12 LOCATE command syntax

Note: If LOCATE column returns with message `COLUMN NOT FOUND`, switch the panel view (? command) and retry the LOCATE command. If the `COLUMN NOT FOUND` message is repeated, use the COLSHELP command to check the spelling of the column title you are trying to locate.

3.6 Input queue (I) panel

The SDSF input queue panel displays information about jobs that are on the JES input queue or that are executing. The input display is accessed with the I command from any SDSF panel. Figure 3-13 shows the syntax of the I command.

```
I[class] [H|NH]

I with no parameters displays all jobs in all classes (but not TSO users or started
tasks). The jobs displayed may be limited by your authorization and by filter settings
such as PREFIX or FILTER.

class - displays information for a specific input class. Enter a single class, up to 7
characters. You can also use special characters for class:
   @ - jobs waiting to be transmitted to another node.
   $ - TSO users
   # - started tasks
   ! - hardcopy queue
The hardcopy queue contains all jobs that have any type of output in the system.
Accessing the hardcopy queue by using the I command allows you to find output for a job,
whether it is on a held or nonheld JES output queue.
   H - displays only held jobs.
   NH - displays only jobs that are not held.
Examples:
   IA H         Displays jobs in classes A that are held.
   IA NH         Displays jobs in class A that are not held.
   I$            Displays the input queue for all TSO users.
```

Figure 3-13 I command syntax

3.6.1 Input queue panel fields

The input queue panel in the JES3 environment may include the following columns, shown in Figure 3-14 on page 55. (The order and titles may be different, depending on installation and user options.)

Title	Description
JOBNAME	Job name of the address space
JobID	JES job ID, or work ID
Type	Type of address space: job, started task, TSO user, or initiator
JNum	JES job number
Owner	User ID of job creator
Prty	JES input queue priority
C	JES input class
Pos	Position in the JES input queue
PrtDest	JES print destination name or default print routing
SAff	JES execution system affinity (if any)
ASys	JES execution system ID
Status	Status of job
SecLabel	Security label of job
OrigNode	Origin node name
ExecNode	Execution node name
Device	Device or JES processor name
PhaseName	Name of the job phase
Phase	Number of the job phase
SrvClass	Service class
Dly	Indicator that job processing is being delayed. Use the I action character for details.
Mode	Subsystem managing the job (WLM or JES)

Figure 3-14 Input queue panel columns

Figure 3-15 lists the delayed access fields on the Input queue panel (except Spin).

WPos	Position in the WLM queue
Scheduling-Env	Scheduling environment for the job
RNum	Room number on job card
Programmer-Name	Programmer name
Acct	Account number
Notify	TSO user ID from the NOTIFY parameter
ISys	JES input system ID
Rd-Time	Time the job was read in
Rd-Date	Date the job was read in
ESys	JES execution system ID
St-Time	Time execution began
St-Date	Date execution began
Cards	Number of cards read for the job
MC	MSGCLASS of the job
Tot-Lines	Total number of spool records for job
Spin	Indicator that jobs in the class can be spun
SubGroup	Submittor group
SubUser	Submittor user
JobAcct1-5	Account fields from the job card

Figure 3-15 Input queue columns with delayed access

Figure 3-16 on page 56 shows a snippet of an SDSF input queue PRIMARY field list display.

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
SDSF INPUT QUEUE DISPLAY ALL CLASSES                    LINE 1-13 (50)
COMMAND INPUT ===>                                        SCROLL ===> HALF
PREFIX=*  DEST=(ALL)  OWNER=*  SYSNAME=SC75
ACTION=//-Block,=-Repeat,+-Extend,?-JDS,A-Release,C-Cancel,CA-CancelARM,
ACTION=CD-CancelDump,CDA-CancelARMDump,CP-CancelPrint,D-Display,
ACTION=DE-DisplayEstimates,DL-DisplayLong,DM-DisplayMains,DMA-DisplayMDSAlloc,
ACTION=DME-DisplayMDSError,DMR-DisplayMDSRestart,DMSS-DisplayMDSSysSel,
ACTION=DMSV-DisplayMDSSysVer,DMU-DisplayUnavailVol,DSD-DisplayDDnames,
ACTION=DSH-DisplaySpoolHold,DSP-DisplaySpoolPartition,DX-DisplayExtended,
ACTION=E-Restart,H-Hold,I-Info,J-Start,L-List,LB-ListBDT,LH-ListHold,
ACTION=LT-ListTCP,P-Purge,Q-OutDesc,S-Browse,SB-ISPFBrowse,SE-ISPFEdit,
ACTION=SJ-JCLEdit,W-Spin,X-Print,XC-PrintClose,XD-PrintDS,XDC-PrintDSClose,
ACTION=XF-PrintFile,XFC-PrintFileClose,XS-PrintSysout,XSC-PrintSysoutClose
NP   JOBNAME  JobID    Owner    Status            Prty C         Pos  PrtDest
     BECKER1  JOB04066 BECKER                      1 A              ANYLOCAL
     MDSWAIT  JOB14437 VAINI                       1 A              ANYLOCAL
     MDSWAIT0 JOB14440 VAINI                       1 A              ANYLOCAL
     MDSWAIT2 JOB14442 VAINI                       1 A              ANYLOCAL
     NOVOLS   JOB14503 VAINI                       1 A              ANYLOCAL
```

Figure 3-16 Input queue panel with SET ACTION LONG data

Tip: You can define a primary and alternate variable field list for each SDSF panel. The primary field list contains those fields that are shown upon entry into a panel. The alternate/primary field list contains fields that can be displayed with of the ? command. In alternate field display the ? command toggles to the primary fields display.

Action bar View option choice 4. `Change field list to PRIMARY/ALTERNATE` allows you to select between the primary and alternate variable field list display.

Figure 3-17 displays some fields on the SDSF input queue ALTERNATE field list for the Input queue panel.

```
 Display  Filter  View  Print  Options  Search  Help
 -------------------------------------------------------------------------------
 SDSF INPUT QUEUE DISPLAY ALL CLASSES                    LINE 1-13 (50)
 COMMAND INPUT ===>                                        SCROLL ===> HALF
 PREFIX=*  DEST=(ALL)  OWNER=*  SYSNAME=SC75
NP   JOBNAME   ISys     Rd-Time  Rd-Date  ESys     St-Time  St-Date  Cards MC
      BECKER1   SC75     11:29:11 2006.130          0:00:00 0000.000     8 H
      MDSWAIT   SC75     11:22:00 2009.117          0:00:00 0000.000     3 A
      MDSWAIT0  SC75     11:52:08 2009.117          0:00:00 0000.000     3 A
      MDSWAIT1  SC75     11:52:14 2009.117          0:00:00 0000.000     3 A
      MDSWAIT2  SC75     11:52:22 2009.117          0:00:00 0000.000     3 A
      NOVOLS    SC75     13:06:42 2009.120          0:00:00 0000.000     4 T
```

Figure 3-17 Input queue panel with some ALTERNATE fields and with SET ACTION OFF

Tip: The SET SCREEN command displays a panel that allows you to set the colors, highlighting, and intensities used on SDSF panels, and control display of the action bar. It is valid only if SDSF was accessed through ISPF. The values are saved across SDSF sessions.

The ARRANGE (parameters) command allows you to reorder and change the widths of columns on the current panel:

```
ARRANGE from-column A|B to-column
ARR     from-column FIRST|LAST|width
        DEFAULT
        ?
```

from-column, to-column each name a column on an SDSF panel.

The column can be abbreviated to the shortest name that is unique for that panel.

A moves from-column after to-column.

B moves from-column before to-column.

FIRST or **F** makes from-column the first column after the fixed field (the first column). The fixed field cannot be moved.

LAST or **L** makes from-column the last column (furthest to the right).

width sets the width of from-column; it is a number (1-127).

DEFAULT resets the column arrangement to the default

? under ISPF, displays the Arrange pop-up.

Under ISPF the ARRANGE criteria are saved (one set for each JES type).

When a value is too large to fit in a column, SDSF scales the value using these abbreviations:

K Kilo (hexadecimal scaling)
T Thousands (decimal scaling) or Tera (hexadecimal scaling)
M Millions (decimal scaling) or Mega (hexadecimal scaling)
B Billions (decimal scaling)
G Giga (hexadecimal scaling)
P Peta (hexadecimal scaling)
KB Kilobytes
MB Megabytes
GB Gigabytes
TB Terabytes
PB Petabytes

The SORT command sorts the rows on the current tabular panel, including its alternate form (displayed with the ? command). It is available on any panel that displays tabular data.

```
SORT (major-column) (A or D) (minor-column) (A or D)
     (OFF) or (?)
```

with no parameters sorts a panel in ascending order using the fixed output field for that panel.

3.6.2 Input queue panel NP field actions

Figure 3-18 on page 58 lists actions available on the SDSF input queue display and the JES3 command that it uses to get the response information.

The list is in ascending sort order by NP field. The JES3 commands and command responses resulting from actions are recorded in the hardcopy log.

NP-Description	JES3 command / SDSF action
?-JDS	SDSF job data set display
A-Release	*F J=jobno,R - Release a held job
C-Cancel	*F J=jobno,CO - Cancel a job and process output data sets
CA-CancelARM	*F J=jobno,C,ARMR - Cancel a job that is defined to Automatic Restart Manager (ARM)
CD-CancelDump	*F J=jobno,C,D - Cancel a job and take a dump
CDA-CancelARMDump	*F J=jobno,C,D,ARMR - Cancel a ARM defined job and take a dump
CP-CancelPrint	*F J=jobno,CP - Cancel a job and print data sets
D-Display	*I J=jobno - Display job information in the log
DE-DisplayEstimates	*I J=jobno,E - Display line, page, record, and card counts
DM-DisplayMains	*I J=jobno,M - Display eligible mains
DMA-DisplayMDSAlloc	*I S,A,J=jobno - Display MDS allocate queue information
DME-DisplayMDSError	*I S,E,J=jobno - Display MDS error queue information
DMR-DisplayMDSRestart	*I S,R,J=jobno - Display MDS restart queue information
DMSS-DisplayMDSSysSel	*I S,SS,J=jobno - Display MDS system select allocate queue
DMSV-DisplayMDSSysVer	*I S,SV,J=jobno - Display MDS verify queue information
DMU-DisplayUnavailVol	*I S,U,J=jobno - Display MDS unavailable volume queue
DSD-DisplayDDnames	*I J=jobno,SD - Display spool DD-names for a job
DSH-DisplaySpoolHold	*I J=jobno,SH - Display held spool DD-names for a job
DSP-DisplaySpoolPartition	*I J=jobno,SP - Display spool partitions for a job
DX-DisplayExtended	*I J=jobno,X - Display extended information for a job
E-Restart	*R main,jobno - Restart a job
H-Hold	*F J=jobno,H - Hold a job
I-Info	SDSF job information pop-up (See Figure 3-20 on page 59)
J-Start	*F J=jobno,RUN - Start a WLM-managed job immediately
L-List	*I U,Q=WTR,J=jobno - List Q=WTR output status of a job
LB-ListBDT	*I U,Q=BDT,J=jobno - List Q=BDT output status of a job
LH-ListHold	*I U,Q=HOLD,J=jobno - List Q=HOLD output status of a job
LT-ListTCP	*I U,Q=TCP,J=jobno - List Q=TCP output status of a job
P-Purge	*F J=jobno,C - Cancel a job and purge its output
Q-OutDesc	SDSF output descriptor display
S-Browse	SDSF browse of a job's spool data set data
SB-ISPFBrowse	ISPF browse of a job's spool data set data
SE-ISPFEdit	ISPF edit of a job's spool data set data
SJ-JCLEdit	ISPF edit of a job's JCL
W-Spin	*F J=jobno,SPIN - Cause job and message logs to spin
X-Print	Print a job's spool data
XC-PrintClose	Print a selected spool data and close SDSF print
XD-PrintDS	SDSF open SDSF print and print selected spool data
XDC-PrintDSClose	Open SDSF print, print spool data and close SDSF print
XF-PrintFile	Print the selected spool data using DD-name
XFC-PrintFileClose	Print the selected spool data using DD-name and close
XS-PrintSysout	SDSF open SYSOUT data set and print selected data
XSC-PrintSysoutClose	Open SDSF SYSOUT, print selected data and close SYSOUT

Figure 3-18 Input queue NP field actions

3.6.3 Input queue overtypable fields - JES3 commands

You can change the columns listed in Figure 3-19 on page 59 on the SDSF JES3 input queue panel by typing over them.

```
Title                JES3 command - Action
C                    *F J=,C= - Change job's JES3 class
Prty                 *F J=,P= - Change job's JES3 priority
```

Figure 3-19 Input queue panel overtypable fields

3.6.4 Job information pop-up for NP action I

Figure 3-20 displays the Job Information panel when action character I (Info) is entered for a row on the panel.

```
   Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF INPUT QUEUE DISPLAY ALL CLASSES                  LINE 49-57 (57)
COMMAND INPUT ===>                                      SCROLL ===> HALF
AC
AC                          Job Information
I

    Job name         VAINIAR    Job class limit exceeded? NO
    Job ID           JOB20830   Duplicate job name wait?  YES
    Job schedulable? NO         Time in queue             N/A
    Job class mode   JES        Average time in queue     N/A
    Job class held?  NO         Position in queue         N/A    of N/A
                                Active jobs in queue      N/A

    Scheduling environment JES3             available on these systems:

    F1=Help  F12=Cancel
```

Figure 3-20 Job Information pop-up

The Job Information pop-up displays:

- Job name and ID.
- Job class mode. Manager of the job class: WLM or JES.
- Job schedulable. If this is NO, look to the fields that follow for the reason. Other reasons are possible, including:
  - The job is held (shown in the STATUS column on the panel)
  - The job has affinity for a system that is in independent mode, or is stopped, or for which job scheduling is stopped.

  If this is YES and the job is not running, there may be no available initiators. For WLM-managed job classes, the systems must be in goal mode before jobs can be initiated.
- Job class held. YES if the job is in a held job class.
- Job class limit exceeded. YES if the limit for the number of jobs executing in the job class has been reached.
- Duplicate job name. YES if another job executing in the MAS has the same name as this one and the system cannot accept duplicate names.

- Time in queue. The amount of time the job has been in the job queue, waiting to be initiated. WLM-managed job classes only.
- Average time in queue. The average time that a job in the service class waits to be initiated. WLM-managed job classes only.
- Position in queue. The position of the job compared to the total number of jobs in the service class waiting to be initiated. WLM-managed job classes only.
- Active in queue. The number of jobs in the service class that are executing. WLM-managed job classes only.
- Scheduling environment. The scheduling environment required for the job, and the systems in the MAS, if any, on which the scheduling environment is available.

3.6.5 Input queue NP action D-display example

SDSF Input queue panel displays status HOLD for jobs VAINZLL to VAINZMM. The response for action **D-Display** for job VAINZLL is shown in Figure 3-21. The response indicates that the job is in a JES3 DJC net. Job VAINZ11 is in operator hold and can be released with an **A-Release** NP action character.

```
 Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF INPUT QUEUE DISPLAY ALL CLASSES                    COMMAND ISSUED
COMMAND INPUT ===>                                           SCROLL ===> HALF
RESPONSE=SC75      IAT8674 JOB VAINZLL  (JOB20600) P=01 CL=A        NET=NT2
RESPONSE=    HOLD=(N) CI(RESCHEDULED)
RESPONSE=SC75      IAT8699 INQUIRY ON JOB STATUS COMPLETE,       1 JOB
RESPONSE=DISPLAYED
     VAINZLL        ANYLOCAL                          HOLD
     VAINZ11        ANYLOCAL                          HOLD
```

Figure 3-21 Action D-Display response

Note: Note: SDSF may not display responses for the NP actions if the SDSF Extended MCS (EMCS) console actvation fails. However, the action commands will be executed successfully. The ULOG displays:

```
ISF032I CONSOLE nnnnnnnn ACTIVATE FAILED, RETURN CODE 0004, REASON CODE 0000
```

The hardcopy log shows the result of all action commands.

3.7 Output queue (O) panel

The Output Queue panel allows the user to display information about SYSOUT data sets for jobs, started tasks, and TSO users on the JES3 output service writer queue.

There is one row on the panel for SYSOUT data sets of a job on the JES3 output service writer queue that share the same characteristics, such as class and destination.

The output display is accessed with the O command from any SDSF panel. Figure 3-22 on page 61 shows the syntax of the O command.

```
O(classes) (form-number)

O with no parameters displays information for all output data sets. The information
displayed may be limited by your authorization and by settings for filters such as
FILTER, PREFIX, and so on.

O can be issued on any SDSF panel.
class - displays information about job output in specific output class. Enter up to 7
classes, without blanks, including:
   @ - output waiting to be transmitted to another node. If other classes are
   specified, the output must be in one of those classes.
form-number - displays only data sets with this form number. The form number can be up
to 8 characters long, including * (any string of characters) or % (any single
character).

Examples:
   OJAB       Displays output in classes J, A, and B.
   OBK STD    Displays output in classes B and K, with a form number of STD.
```

Figure 3-22 O command syntax

Output queue panel fields

The output queue panel in the JES3 environment may include the following columns, shown in Figure 3-23. (The order and titles may be different, depending on installation and user options.)

Title	Description
JOBNAME	Job name. This is the fixed field.
JNum	JES job number (not included in the default field list)
JobID	JES job ID or work ID X
Owner	User ID of SYSIN/SYSOUT owner, or default values of ++++++++ or ???????? if user ID not defined to RACF
Prty	JES output group priority
C	JES output class
Forms	Output form number
Dest	JES print destination name
Tot-Rec	Output total record count (lines). Blank for page-mode data.
Tot-Page	Output page count. Blank if not for page-mode data.
Device	Output device name (only if it is printing)
Status	JES job status
SecLabel	Security label of output group
JP	JES job priority
FCB	Output FCB ID
UCS	Output UCS ID (print train required)
Wtr	Output external writer name
Flash	Output flash ID
Burst	3800 burst indicator
PrMode	Printer process mode
OHR	Output hold reason code
Output-Hold-Text	Output hold reason text
Max-RC	Return code information for the job
Type	Type of address space

Figure 3-23 Output queue panel columns

Figure 3-24 on page 62 lists the delayed access fields on the output queue panel.

```
Title                Description
Programmer-Name      JES programmer name field
Acct                 JES account number
Notify               TSO user ID from NOTIFY parameter on job card
ISys                 JES input system ID
Rd-Time              Time that the job was read in
Rd-Date              Date that the job was read in
ESys JES             execution system ID
St-Time              Time that execution began
St-Date              Date that execution began
End-Time             Time that execution ended
End-Date             Date that execution ended
Cards                Number of cards read for job
JC                   JES input job class
MC                   Message class of job
SubGroup             Submittor RACF group
JobAcct1             Job accounting field 1 (not included in the default field list)
JobAcct2             Job accounting field 2 (not included in the default field list)
JobAcct3             Job accounting field 3 (not included in the default field list)
JobAcct4             Job accounting field 4 (not included in the default field list)
JobAcct5             Job accounting field 5 (not included in the default field list)
```

Figure 3-24 Output queue panel columns with delayed access

REXX execs and Java programs reference columns by name rather than by title. The COLSHELP command displays both column (field) names and titles.

Figure 3-25 is an SDSF output queue display on a 24x80 TSO panel.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
---
SDSF OUTPUT ALL CLASSES ALL FORMS    LINES 10,073     LINE 1-21 (21)
COMMAND INPUT ===>                                        SCROLL ===>
HALF
PREFIX=%%%N*  DEST=ANYLOCAL  OWNER=*  SYSNAME=SC75
ACTION=//-Block,=-Repeat,+-Extend,?-JDS,Q-OutDesc,S-Browse,SB-ISPFBrowse,
ACTION=SE-ISPFEdit,SJ-JCLEdit,X-Print,XC-PrintClose,XD-PrintDS,
ACTION=XDC-PrintDSClose,XF-PrintFile,XFC-PrintFileClose,XS-PrintSysout,
ACTION=XSC-PrintSysoutClose
NP   JOBNAME  JobID    Owner    Prty C Forms    Dest                Tot-Rec
T
     PCPNTJV  JOB20847 VAINI       1 A BLUE     ANYLOCAL                 63
     PCPNTJV  JOB20847 VAINI       1 B RED      SECRET                   14
     PCPNTJV  JOB20847 VAINI       1 C YELLOW   TELLIT                   32
     PCPNTJV  JOB20847 VAINI       1 E PINK     ANYLOCAL                  4
     PCPNTJV  JOB20847 VAINI       1 E WHITE    REMOTE                    8
     PCPNTJV  JOB20847 VAINI       1 H PINK     ANYLOCAL                 10
     PRINTWAY JOB20357 IBMUSER    15 A STD      ANYLOCAL                 72
     VAINIAR  JOB20828 VAINI       1 A STD      ANYLOCAL                  51
```

Figure 3-25 Output queue panel

In Figure 3-25 there are several rows for job PCPNTJV 20847. A row is created for a group of output data sets (one or more) that share the same characteristics, such as class and destination.

The title line of the Output Queue panel is described in Figure 3-26 on page 63. The characteristics of the print data represented by each row differ.

```
SDSF OUTPUT ALL CLASSES   ALL FORMS  LINES    94372    LINE  1-20 (20)
           |              |                   |              |      |
   JES output classes     |                   |              |      |
   on displayed     SYSOUT forms              |              | Totallines
                    being displayed           |              | (**** if
                                              |              | more than
                Total number of print lines for              | 99,999,999)
                output being displayed. Scaled      Lines displayed
                if needed, for example, 1G          or first line
                rather than 1,000,000,000.          if 100,000 or more
```

Figure 3-26 Output queue panel title line

Output queue panel NP field actions

Figure 3-27 describes the NP column action characters for the JES3 Output queue panel. Only actions for a job's data sets are available. DS NP-action lists the spool data sets for a job.

NP Description	JES3 command / SDSF action
?-JDS	Display a list of the data sets for an output group.
Q-OutDesc	Display output descriptors for all of the data sets with similar characteristics.
S-Browse	Display the data sets for an output group. **SB** - Use ISPF Browse. **SE** - Use ISPF Edit. **SJ** - Use ISPF Edit to edit the JCL.
X-Print	Print output data sets. You can add: **C** - Close the print file after printing (XC) **D** - Display the Open Print Data Set panel (XD or XDC) **F** - Display the Open Print File panel (XF or XFC) **S** - Display the Open Print panel (XS or XSC)

Figure 3-27 Output queue panel NP field actions

Output queue panel overtypable fields

The output queue panel does not have any overtypable fields.

3.8 Held output queue (H) panel

The Held output queue panel allows the user to display information about SYSOUT data sets for jobs, started tasks, and TSO users on the JES3 output service hold queue, both external writer and TSO held queues.

There is one row on the panel for SYSOUT data sets of a job on the JES3 output service held queue that share the same characteristics, such as class and destination.

Operator hold JES3 writer queue SYSOUT is not displayed on the SDSF held output queue panel.

The held output panel is accessed with the H command from any SDSF panel. Figure 3-28 on page 64 shows the syntax of the H command

```
H(classes) (string|ALL)

H with no parameters displays information for all output data sets. The information dis-
played may be limited by your authorization and by settings for filters such as FILTER,
PREFIX, and so on.

class - is a list of up to 7 output classes. Do not use blanks between H and the classes
or between classes.

string - is a character string that limits the panel to jobs with names that match the
character string.
   string may be up to 8 characters, including * (any string of characters) and (any sin-
   gle character).

ALL displays all jobs.

Examples:
   HDE ALL - Displays information for all jobs in output classes D and E.
   H ABC -   Displays information for jobs with the name abc.
   H ABC* -  Displays information for jobs with names that begin with abc.
```

Figure 3-28 H command syntax

3.8.1 Held output queue panel fields

The Held output queue panel in the JES3 environment may include the following columns, shown in Figure 3-29. (The order and titles may be different, depending on installation and user options.)

Title	Description
JOBNAME	Job name. This is the fixed field.
JNum	JES job number. Not included in the default field list.
JobID	JES job ID X
Owner	User ID of SYSIN/SYSOUT owner, or default values of ++++++++ or ????????, if user ID not defined to RACF
Prty	JES output group priority
C	JES output class
Dest	JES print destination name
Tot-Rec	Output total record count (lines). Blank for page-mode data.
Tot-Page	Output page count (lines). Blank if not for page-mode data.
Forms	Output form number
FCB	Output FCB ID
Status	JES job status
UCS	Output UCS ID (print train required)
Wtr	Output external writer name
Flash	Output flash ID
Burst	3800 burst indicator
PrMode	Printer process mode
SecLabel	Security label of data sets
JP	Job priority
OHR	Output hold reason code
Output-Hold-Text	Output device name
Max-RC	Return code information for the job
Type	Type of address space

Figure 3-29 Held output queue panel columns

Figure 3-30 lists the delayed access fields on the held output queue panel.

```
Title               Description
RNum                JES job room number X
Programmer-Name     JES programmer name X
Acct                JES account number X
Notify              TSO user ID from NOTIFY parameter on job card X
ISys                JES input system ID X
Rd-Time             Time that the job was read in X
Rd-Date             Date that the job was read in X
ESys                JES execution system ID X
St-Time             Time that execution began X
St-Date             Date that execution began X
End-Time            Time that execution ended X
End-Date            Date that execution ended X
Cards               Number of cards read for job X
JC                  JES input job class
MC                  Message class of job X
SubGroup            Submittor group X
JobAcct1            Job accounting field 1. Not included in the default field list.
JobAcct2            Job accounting field 2. Not included in the default field list.
JobAcct3            Job accounting field 3. Not included in the default field list.
JobAcct4            Job accounting field 4. Not included in the default field list.
JobAcct5            Job accounting field 5. Not included in the default field list.
```

Figure 3-30 Held output queue panel columns with delayed access

REXX execs and Java programs reference columns by name rather than by title. The COLSHELP command displays both column (field) names and titles.

3.8.2 Output queue panel overtypable fields

The SDSF output queue panel for the JES3 environment does not have any overtypable fields. Figure 3-31 on page 65 is an SDSF held output queue display on a 24x80 TSO panel.

In Figure 3-31 there are several rows for job PCPNHJV 20850. A row is created for a group of output data sets (one or more) that share the same characteristics, such as class and destination.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF HELD OUTPUT DISPLAY ALL CLASSES LINES 2,864       LINE 1-14 (16)
COMMAND INPUT ===>                                       SCROLL ===> HALF
PREFIX=%%%N*  DEST=*  OWNER=*  SYSNAME=SC75
ACTION=//-Block,=-Repeat,+-Extend,?-JDS,Q-OutDesc,S-Browse,SB-ISPFBrowse,
ACTION=SE-ISPFEdit,SJ-JCLEdit,X-Print,XC-PrintClose,XD-PrintDS,
ACTION=XDC-PrintDSClose,XF-PrintFile,XFC-PrintFileClose,XS-PrintSysout,
ACTION=XSC-PrintSysoutClose
NP   JOBNAME  JobID    Owner    Prty C Dest                 Tot-Rec  Tot-Page F
     PCPNHJV  JOB20850 VAINI       1 U ANYLOCAL                  9           P
     PCPNHJV  JOB20850 VAINI       1 W ANYLOCAL                  5           P
     PCPNHJV  JOB20850 VAINI       1 V REMOTE                    8           W
     PCPNHJV  JOB20850 VAINI       1 G TELLIT                   32           Y
     PCPNHJV  JOB20850 VAINI       1 T ANYLOCAL                 63           B
     PCPNHJV  JOB20850 VAINI       1 X SECRET                   14           R
```

Figure 3-31 Held output panel display

3.8.3 Held output panel NP column actions

Figure 3-32 describes the NP column action characters for the JES3 Output queue panel. Only actions for a job's data sets are available.**-JDS** NP-action lists the spool data sets for a job.

```
NP Description    JES3 command / SDSF action
?-JDS             Display a list of the data sets for an output group.
Q-OutDesc         Display output descriptors for all of the data sets with similar
                  characteristics.
S-Browse          Display the data sets for an output group.
                  SB - Use ISPF Browse.
                  SE - Use ISPF Edit.
                  SJ - Use ISPF Edit to edit the JCL.
X-Print           Print output data sets. You can add:
                  C - Close the print file after printing (XC)
                  D - Display the Open Print Data Set panel (XD or XDC)
                  F - Display the Open Print File panel (XF or XFC)
                  S - Display the Open Print panel (XS or XSC)
```

Figure 3-32 Held output queue panel NP field actions

3.9 Status (ST) panel

The status panel displays information about jobs, started tasks, and TSO users on all the JES3 queues.

The syntax of the ST command is described in Figure 3-33.

```
ST[classes] [string]

classes displays information for a specific class. Enter a single class, up to 6
characters. To filter the panel using more than one class, use the FILTER command.

You can use these special characters for class
   * - converter queue              $ - TSO users in execution
   # - started tasks in execution   ! - hard-copy queue
   + - output queue                - - input queue
   ? - purge queue                 ) - receiver queue
   = - spin queue                  / - setup queue
   @ - jobs waiting to be transmitted to another queue

string is a character string that limits the panel to jobs whose names match the
character string. The string can be up to 8 characters, including:
   *  - to represent any character or string of characters
   %  - to represent any single character.
   Note: SET SCHARS command may be used to change the characters for pattern
   matching.

ST with no parameters displays all jobs. The information displayed may be limited by
your authorization and by settings for SDSF filters such as FILTER and PREFIX.
```

Figure 3-33 ST command syntax

Figure 3-34 on page 67 shows an example of some columns on an SDSF status display for a JES3 job.

A select command with no parameters returns the display to the original display.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF STATUS DISPLAY ALL CLASSES                      LINE 1-1 (1)
COMMAND INPUT ===>                                     SCROLL ===> HALF
PREFIX=*  DEST=(ALL)  OWNER=*  SYSNAME=SC75
ACTION=//-Block,=-Repeat,+-Extend,?-JDS,A-Release,C-Cancel,CA-CancelARM,
ACTION=CD-CancelDump,CDA-CancelARMDump,CP-CancelPrint,D-Display,
ACTION=DE-DisplayEstimates,DL-DisplayLong,DM-DisplayMains,DMA-DisplayMDSAlloc,
ACTION=DME-DisplayMDSError,DMR-DisplayMDSRestart,DMSS-DisplayMDSSysSel,
ACTION=DMSV-DisplayMDSSysVer,DMU-DisplayUnavailVol,DSD-DisplayDDnames,
ACTION=DSH-DisplaySpoolHold,DSP-DisplaySpoolPartition,DX-DisplayExtended,
ACTION=E-Restart,H-Hold,I-Info,J-Start,L-List,LB-ListBDT,LH-ListHold,
ACTION=LT-ListTCP,P-Purge,Q-OutDesc,S-Browse,SB-ISPFBrowse,SE-ISPFEdit,
ACTION=SJ-JCLEdit,W-Spin,X-Print,XC-PrintClose,XD-PrintDS,XDC-PrintDSClose,
ACTION=XF-PrintFile,XFC-PrintFileClose,XS-PrintSysout,XSC-PrintSysoutClose
NP   JOBNAME  JobID    Owner    Prty Queue      C         Pos  SAff  ASys     S
     VAINISCT JOB07219 VAINI       1 EXECUTION  A           49                H
```

Figure 3-34 Status panel (ST) display

3.9.1 Status panel fields

The status panel in the JES3 environment may include the following columns, shown in Figure 3-35 on page 68. (The order and titles may be different, depending on installation and user options.)

Title	Description
JOBNAME	Job name. This is the fixed field.
Type	Type of address space
JNum	JES job number. Not included in the default field list.
JobID	JES job ID
Owner	User ID of job owner, or default values of ++++++++ or ????????, if user not defined to RACF
Prty	JES job queue priority
Queue	JES queue name for job
C	(JES2) 8 (JES3) JES input class
Pos	Position in JES queue
SAff	JES execution system affinity (if any)
ASys	JES active system ID (if job active)
Status	Status of job
PrtDest	JES print destination name
SecLabel	Security label of job
OrigNode	Origin node name
ExecNode	Execution node name
Device	JES device name
Max-RC	Return code information for the job
SrvClass	Service class
WPos	Position on the WLM queue
Scheduling-Env	Scheduling environment for the job
Dly	Indicator that job processing is delayed
Mode	Subsystem managing the job (JES or WLM)

Figure 3-35 Status panel columns

Figure 3-36 lists the delayed access fields on the status panel.

Title	Description
RNum	JES job room number
Programmer-Name	JES programmer name
Acct	JES account number
Notify	TSO user ID from NOTIFY parameter on job card
ISys	JES input system ID
Rd-Time	Time that the job was read in
Rd-Date	Date that the job was read in
ESys	JES execution system ID
St-Time	Time that execution began
St-Date	Date that execution began
End-Time	Time that execution ended
End-Date	Date that execution ended
Cards	Number of cards read for job
MC	MSGCLASS of job
Tot-Lines	Total number of spool records for job
Spin	Indicator of whether the job is eligible to be spun
SubGroup	Submittor group
PhaseName	Name of the phase the job is in
Phase	Number of the phase the job is in
JobAcct1	Job accounting field 1. Not included in the default field list.
JobAcct2	Job accounting field 2. Not included in the default field list.
JobAcct3	Job accounting field 3. Not included in the default field list.
JobAcct4	Job accounting field 4. Not included in the default field list.
JobAcct5	Job accounting field 5. Not included in the default field list.
SubUser	Submitting user ID

Figure 3-36 Status panel columns with delayed access

REXX execs and Java programs reference columns by name rather than by title. COLSHELP command displays both column names and titles.

3.9.2 Status panel NP field actions

The status panel actions are the same as the input queue actions. See “Input queue panel NP field actions” on page 57 and Figure 3-18 on page 58.

3.10 Job zero (J0) panel

The Job zero panel displays information about JES3 job zero spool data sets. With this panel, you can work with JES3’s spin-off data under JES3 job zero. Figure 3-37 shows the syntax.

```
J0
J0 can be issued on any SDSF panel.
```

Figure 3-37 J0 command syntax

3.10.1 J0 panel fields

Figure 3-38 lists the fields on the J0 panel.

Title	Description
DSPNAME	Name or job number of the DSP that created the data set
DSID	Data set ID
Owner	User ID that created the data set
C	Output class
CC	Data set copy count
PrMode	Process mode
Burst	Burst indicator
Forms	Creation form number
FCB	FCB name
UCS	UCS name
Wtr	External writer name
Flash	Flash name
FlashC	Flash count
SegID	Segment number
Chars	Character arrangement tables
CpyMod	Copy-modification module for the 3800 printer
Queue	Queue the SYSOUT is on
Dest	Print destination name
SecLabel	Security label for the data set
CrDate-CrTime	Creation date and time
Spin	Spin data set indicator
Sel	Selectable indicator
Rec-Cnt	SYSOUT record count
Page-Cnt	SYSOUT page count (for page-mode data)
Byte-Cnt	SYSOUT byte count
RecFM	Record format
DDName	DD name of the data set
DSName	Full data set name
StepName	Name of the job step that created the data set
ProcStep	Name of the procedure step that created the

Figure 3-38 J0 panel columns with delayed access

Figure 3-39 is an SDSF J0 panel display. The rows on the panel are for a spin-off spool data set created by JES3 DSPs. The rows with the DSP name JOBnnnnn are created by the *CALL DSIPDJC command.

```
  Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
---
SDSF JOB O DISPLAY                  LINES 187,048      DATA SET DISPLAYED
COMMAND INPUT ===>                                          SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,?-JDS,C-Cancel,D-Display,H-Hold,O-Release,
ACTION=P-Purge,Q-OutDesc,S-Browse,SB-ISPFBrowse,SE-ISPFEdit,X-Print,
ACTION=XC-PrintClose,XD-PrintDS,XDC-PrintDSClose,XF-PrintFile,
ACTION=XFC-PrintFileClose,XS-PrintSysout,XSC-PrintSysoutClose
NP   DSPNAME  DSID Owner    C CC PrMode   Burst Forms    FCB  UCS  Wtr
Fla
     DC         18 JES3     A  1 LINE     C     STD      STD3 ANY
NON
     JOB17005   20 JES3     A  1 LINE     C     STD      STD3 ANY
NON
     DISPLAY    21 JES3     A  1 LINE     C     STD      STD3 ANY
NON
     DC         23 JES3     A  1 LINE     C     STD      STD3 ANY
NON
     JOB20658   81 JES3     A  1 LINE     C     STD      STD3 ANY
NON
     DISPLAY   157 JES3     A  1 LINE     C     STD      STD3 ANY
NON
  *SDSF    -OL
```

Figure 3-39 J0 panel display

Tip: The bottom line in Figure 3-39 is the ISPF list of logical sessions activated by entering the SWAPBAR command. The panel name SDSF is set by SDSF. It may be changed with the ISPF command SCRNAME name. The **'*'** in front of a panel name is set for an active panel. The **'-'** is for the inactive split panel.

3.10.2 J0 panel NP field actions

Figure 3-40 on page 72 describes the NP column action characters for the J0 panel. Only actions for data sets are available. The J0 panel displays only spool data sets.

```
NP-Description    JES3 command / SDSF action
C-Cancel          *F U,J=0,Q=WTR,DSN= - Purge a data set.
D-Display         *I U,J=0,Q=WTR,DSN= - Display information
H-Hold            *F U,J=0,Q=WTR,DSN= - Hold a data set.
O-Release         *F U,J=0,Q=WTR,DSN= - Release a data set.
P-Purge           *F U,J=0,Q=WTR,DSN= - Purge a data set.
Q-OutDesc         Display output descriptors for the data set.
S-Browse          Display a data set. Other forms:
                      SB (ISPF Browse)
                      SE (ISPF Edit)
X-Print           Print a data set. You can add the following:
                      C - Close the print file after printing (XC)
                      D - Display the Open Print Data Set panel (XD or XDC)
                      F - Display the Open Print File panel (XF or XFC)
                      S - Display the Open Print panel (XS or XSC)
```

Figure 3-40 J0 panel NP-column actions

3.10.3 J0 panel overtypable fields

You can change the columns listed in Figure 3-41 on the SDSF JES3 J0 panel by typing over them.

Field	Description
Burst	Data set burst indicator
C	JES output class: A-Z, 0-9
CC	Data set copy count
Chars	Character arrangement table names
CpyMod	Copy modification table name
Dest	Print destination name
FCB	Output FCB name
Flash	Output flash ID
Forms	Data set creation form number
PrMode	Process Mode
UCS	UCS ID
Wtr	Output special writer ID or data set ID

The JES3 **`*F U J=0,Q=WTR,DSN=`** command is used to set the overtype value for a field

Figure 3-41 J0 panel overtypable fields

3.11 Viewing jobs' spool data

On `I`, `O`, `H`, `ST`, and `DA` panels the NP field `S-Browse` action invokes SDSF browse for all spool data sets of a job. The SDSF output display panel is used to view data for action code `S`. Instead SDSF browse, ISPF Browse or Edit can be invoked with the `SB` or `SE` action characters. `SJ` action displays just the JCL for a job. The displayed JCL can be changed and resubmitted; changes are not saved.

If action bar *Options selection 3. Change include SYSIN to ON/OFF* or the INPUT ON|OFF command is ON, the SYSIN data sets for the job are included in the display entered from DA, I and ST panels. If the data to be viewed contains nondisplay characters, the SET HEX ON|OFF command may be used to display the data in hexadecimal format.

The NP action ? displays a list of data sets for a job on the Job Data Set (JDS) panel. The NP actions S, SB, SE and SJ can be used to work with the individual spool data sets. Note that the SJ action always invokes a job's JCL edit independent of the job information panel from where it is used.

3.11.1 NP field action S-Browse

When used to view a job's spool data, the displayed data includes the JES job log, JCL for the job, any job-related messages and SYSIN data sets if requested in addition to the job's SYSOUT data available so far.

The INPUT {ON|OFF} command specifies whether jobs' input data sets are to be included into the display when you view jobs from the DA, ST, or I panels. You must be authorized to use this command. The action bar *Options pull-down choice 3* can be used to toggle between input ON or OFF.

The SET HEX {ON|OFF} command controls the display in hexadecimal for this session. The action bar *View pull-down choice 3 "Set hex to ON|OFF"* may be used instead of the SET HEX command to control the display in hexadecimal.

The SDSF browse does not support the ISPF type labels for data lines and the ISPF picture string find commands.

3.11.2 NP field action V-View GDDM browse

To view output formatted for a page printer on the job data set panel, you can use the V-View action character, which requires GDDM. If GDDM is not available or if the data to be viewed is not formatted for a page printer, the spool data set display is formatted for a line-mode printer.

On the Job Data Set panel page-mode output is indicated by the PrMode column value PAGE, a value other than blanks in the Page-Cnt columns and RecFm value VM.

3.11.3 NP field action SB-ISPF Browse

Spool data viewing for a job using the ISPF browse is invoked with the SB action character. ISPF browse ignores the SDSF SET HEX setting. To display data in hexadecimal, use the ISPF HEX primary command. The ISPF label assignment and picture string find commands are available.

When the ISPF browse is active, SDSF commands are not available. To use SDSF commands (such as / or PRINT) you must access SDSF's browse with the S action character.

3.11.4 NP field actions SE-ISPF Edit

To display the job's output with ISPF Edit, use SE. To display just the JCL for the job, use SJ. You can change and resubmit the JCL from the display; changes you make to the data are not saved.

The SET BROWSE command controls the default browse action character (S, SB, or SE) that is issued when you place the cursor in the NP column and press Enter. Figure 3-42 on page 74 shows an example of the SDSF job output browse display on the SDSF output display panel.

```
  Display  Filter  View  Print  Options  Search  Help
 -------------------------------------------------------------------------------
 SDSF OUTPUT DISPLAY PELEGDSF JOB17189  DSID     2 LINE 0       COLUMNS 02- 81
 COMMAND INPUT ===>                                            SCROLL ===> HALF
******************************** TOP OF DATA ********************************
 IAT6140 JOB ORIGIN FROM GROUP=ANYLOCAL, DSP=IR , DEVICE=INTRDR  , 0000
 15:18:17 ---- IAT6853 THE CURRENT DATE IS MONDAY,    10 MAY 2010 ----
IRR010I  USERID PELEG    IS ASSIGNED TO THIS JOB.
 15:18:17  IAT2000 JOB PELEGDSF (JOB17189) SELECTED SC75     GRP=A
 15:18:17  ICH70001I PELEG    LAST ACCESS AT 15:02:03 ON MONDAY, MAY 10, 2010
 15:18:17  ICK091I   DD65 NED=002107.900.IBM.75.0000000BALB1
 15:18:17 *020 ICK003D REPLY U TO ALTER VOLUME DD65 CONTENTS, ELSE T
 15:18:26  IEE600I REPLY TO 020 IS;U
 15:18:26  -                                        ---------TIMINGS (MINS.)---
 15:18:26  -JOBNAME  STEPNAME PROCSTEP    RC   EXCP    CPU    SRB   VECT   VAFF
 15:18:26  -PELEGDSF REFORMAT             12    100    .00    .00    .00    .00
 15:18:26  -PELEGDSF ENDED.  NAME-                     TOTAL CPU TIME=   .00  TO
//PELEGDSF JOB ACCNT#,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//REFORMAT EXEC PGM=ICKDSF
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
/*
        1 //PELEGDSF JOB ACCNT#,MSGLEVEL=(1,1),NOTIFY=&SYSUID
```

Figure 3-42 Output display for an S-Browse action

3.11.5 NP field actions SJ - JCL Edit for JCL

To display just the JCL for a job, use SJ NP-column action. You can change and resubmit the JCL from the display; changes you make to the data are not saved. The job must have executed on your node or not yet executed to be eligible for SJ action.

Figure 3-43 shows an example of a re-edit request for a job's JCL. The SJ action can be entered on any line on the job data set display panel or on a row of any queue display panel.

```
SDSF EDIT    VAINISCT (JOB07219) JCLEDIT                  Columns 00001 00072
Command ===>                                                Scroll ===> HALF
****** ***************************** Top of Data ******************************
000001 //VAINISCT JOB 1,EXPERT,MSGLEVEL=1,MSGCLASS=T,NOTIFY=&SYSUID,CLASS=A
000003 //*MAIN SYSTEM=SC75
000004 //TMP    EXEC PGM=IKJEFT01,DYNAMNBR=99
000005 //SYSPROC  DD DSN=VAINI.U.CLIST,DISP=SHR
000006 //STEPLIB  DD DSN=VAINI.U.LOAD,DISP=SHR
000007 //SYSTSPRT DD SYSOUT=*
000010 //SYSTSIN  DD *
000011   BPXCAN
****** **************************** Bottom of Data ****************************
```

Figure 3-43 Output display for a SJ-JCLEdit action

3.11.6 NP field action ?-JDS on I, O, H, ST, and DA panels - Job Data Set panel

The Job Data Set panel allows users to list and display information about the SYSOUT data sets for a job, started task, or TSO user. The Job Data Set panel is accessed with the NP column **?** action character.

Figure 3-44 shows an example of the SDSF job data set panel. INPUT ON is set. SDSF displays the type of the spool data sets.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF JOB DATA SET DISPLAY - JOB VAINISCT (JOB07219)    LINE 1-9 (9)
COMMAND INPUT ===>                                        SCROLL ===> HALF
PREFIX=*  DEST=(ALL)  OWNER=*  SYSNAME=SC75
ACTION=//-Block,=-Repeat,+-Extend,C-Cancel,D-Display,H-Hold,O-Release,P-Purge,
ACTION=Q-OutDesc,S-Browse,SB-ISPFBrowse,SE-ISPFEdit,SJ-JCLEdit,V-View,X-Print,
ACTION=XC-PrintClose,XD-PrintDS,XDC-PrintDSClose,XF-PrintFile,
ACTION=XFC-PrintFileClose,XS-PrintSysout,XSC-PrintSysoutClose
NP   DDNAME   StepName ProcStep DSID Owner    C Dest               Rec-Cnt Page
     JESJCLIN                     1 VAINI                              0
     JESMSGLG                     2 VAINI    T                         0
     JESJCL                       3 VAINI    T                        29
     JESYSMSG                     4 VAINI    T                         2
     J3SCINFO                     5 VAINI                              0
     J3JBINFO                     6 VAINI                              1
     JCBLOCK                      7 VAINI                              0
     JOURNAL                      8 VAINI                              0
```

Figure 3-44 Job data set (JDS) panel

3.11.7 Job data set (JDS) panel fields

The job data set (JDS) panel allows users to list and display information about the SYSOUT data sets for a job, started task, or TSO user.

JDS panel fields in the JES3 environment are shown in Figure 3-45 and Figure 3-46 on page 76 (default titles and order).

```
     SDSF JOB DATA SET DISPLAY - JOB  VAINISCT (JOB07219)  LINE 1-9  (9)
                                      |         |                |
     |
                                      Job name  |                |    Total
     lines
                                                Job or work ID   Lines
     displayed
```

Figure 3-45 Job data set panel title

Note: When JDS is accessed from H or O panels, access for fields marked with * is immediate. Otherwise, access for all fields is delayed.

Title	Description
DDNAME	Ddname of the data set
StepName	Output creation step name
ProcStep	Output creation procedure step name
DSID	Data set ID
Owner*	User ID of SYSIN/SYSOUT owner
C *	Original or released output class
Dest*	Print destination name
Rec-Cnt	Output record count
Page-Cnt	Output page count (for page-mode data only)
Byte-Cnt	Byte count for the data set
CC	Data set copy count
SecLabel	Security label for data set
PrMode	Data set process mode
Burst	Data set burst indicator
CrDate-CrTime	Data set creation date and time
Forms	Data set creation form number
FCB	Output FCB name
UCS	Output UCS name
Wtr	Output special writer ID or data set ID
Flash	Output flash name
FlashC	Output flash count
SegID	Data set segment number
DSName	Output data set name
Chars	Character arrangement tables (1-4)
CpyMod	Copy-modification module for the 3800 printer
PageDef	Library member used by PSF to specify print characteristics
FormDef	Library member used by PSF to specify print characteristics
Title	Output title
Name	Output name
Building	Output building
Department	Output department
Room	Output room
Address-Line1 - Address-Line4	Output address lines 1 to 4
OutBn	Output bin
ComSetup	Printer setup options
FormLen	Form length
ColorMap	AFP resource for the data set containing color translation
ITy	Paper source (in-tray)
OverlayB	Overlay for the back of each sheet
OverlayF	Overlay for the front of each sheet
OffsetXB	Offset in x direction from the page origin for the back of each page
OffsetXF	Offset in x direction from the page origin for the front of each page
OffsetYB	Offset in y direction from the page origin for the back of each page
OffsetYF	Offset in y direction from the page origin for the front of each page
Port	Number of the TCP/IP port where the FSS connects to the printer
Notify	Print complete notification message
UserLib	Libraries containing AFP resources
UserData1	User data
AFPParms	Data set containing parameters used by the AFP Print Distributor
Queue	JES3 queue the dataset is on

Figure 3-46 JDS panel fields (1 of 2)

Title	Description
Spin	Indicates if it is a spin data set
Sel	Indicates if it is selectable
TP	Indicates if it was created by a transaction program
TPJName	Job name of the transaction program that created it
TPJobID	Job ID of the transaction program that created it
TRd-Time	Start time and date for entry of the transaction
TRd-Date	program
TSt-Time	Start time and date for execution of the
TSt-Date	transaction program
TPAcct	Account number of the transaction program
RecFm	Record format

Figure 3-47 JDS panel fields (2 of 2)

3.11.8 NP field action characters on JDS panels

JDS panel action characters that can be entered in the NP column by users are shown in Figure 3-48.

NP-Description	JES3 command / SDSF action
C-Cancel	*F U,J=,DD=,C - Purge an output data set.
H-Hold	*F U,Q=WTR,DD=,NQ=HOLD - Hold an output data set.
O-Release	*F U,Q=HOLD,DD=,NQ=WTR - Release an output data set.
P-Purge	*F U,Q=,J=,DD=,C - Purge an output data set.
Q-OutDesc	Display output descriptors for the data set.
S-Browse	Display data set or data sets. Other forms: SB (ISPF Browse), SE (ISPF Edit), SJ (Edit JCL)
V-View	View a job's page-mode data sets using GDDM.
X-Print	Print output data sets. You can add the following: **C** - Close the print file after printing (XC) **D** - Display the Open Print Data Set panel (XD or XDC) **F** - Display the Open Print File panel (XF or XFC) **S** - Display the Open Print panel (XS or XSC)

Figure 3-48 JDS panel action characters

3.11.9 Job data set (JDS) panel overtypable fields

JDS panel overtypable fields are shown in Figure 3-49 and Figure 3-50 on page 78.

Title	Description
Address	Output address (lines 1-4). Type + alone to modify ADDRESS2-4
AFPParms	Data set containing parameters to be used by the AFPPrint Distributor
Building	Output building
Burst	Data set burst indicator
C	JES output class: A-Z, 0-9
CC	Data set copy count
Chars	Character arrangement table names
ColorMap	AFP resource for the data set containing color translation

Figure 3-49 JDS panel overtypable fields 1 of 2

Title	Description
Address	Output address (lines 1-4). Type + alone to modify ADDRESS2-4
ComSetup	Output microfiche printer options
CpyMod	Copy modification table name (JES3 only)
Department	Output department
Dest	Print destination name
FCB	Output FCB name (JES3 only)
Flash	Output flash ID (JES3 only)
FormDef	Output form definition
FormLen	Form length
Forms	Data set creation form number
ITy	Paper source (1-255)
Name	Output name
Notify	Output print complete notification. Type + alone to modify NOTIFY2-4.
OffsetXB	Offset in x direction from the page origin for the back of each page
OffsetXF	Offset in x direction from the page origin for the front of each page
OffsetYB	Offset in y direction from the page origin for the back of each page
OffsetYF	Offset in y direction from the page origin for the front of each page
OverlayB	Overlay for the back of each sheet
OverlayF	Overlay for the front of each sheet
OutBn	Output bin
PageDef	Output page definition
Port	Number of the TCP/IP port at which the FSS connects to the printer
PrMode	Process Mode
Room	Output room
Title	Output title
UCS	UCS ID
UserLib	Output libraries with AFP resources to be used by PSF when processing SYSOUT. Type + alone to modify USERLIB2-4.
UserData1	Output user data. Type + alone to modify UserData2-16.
Wtr	Output special writer ID or data set ID

The JES3 ***F U J=O,Q=WTR,DSN=*** command is used to set the overtype value for fields managed by JES3. If the overtype value is associated with an output descriptor, then the output characteristics are modified with the scheduler facilities call.

Figure 3-50 JDS panel overtypable fields 2 of 2

3.11.10 JES3 spool security and SYSIN/SYSOUT data access

Note: JES uses the JESSPOOL class to protect SYSIN/SYSOUT data sets. SDSF extends the use of the JESSPOOL class to protect SDSF job and output group resources as well. SDSF checks a user's SAF authorization to:

- Job resources on the DA, I, and ST panels.
- Output groups on the H, JDS, O, and OD panels.
- SYSIN/SYSOUT data sets on the JDS, J0 and any other panel used for browsing with the S or V action characters and printing with the X action character.

3.11.11 NP field action Q-OutDesc on I, O, H, JDS, ST, and DA panels

The output descriptors panel (OD) displays JES output descriptors. Output descriptors provide information about a SYSOUT data set, for example, an address or a building. The

output descriptors display, shown in Figure 3-51 on page 79, is accessed with the Q-OutDesc action character.

```
 Display  Filter  View  Print  Options  Search  Help
 ------------------------------------------------------------------------------
 SDSF OUTPUT DESCRIPTORS - JOB VAINIJV  (JOB20671)      LINE 1-21 (107)
 COMMAND INPUT ===>                                          SCROLL ===> HALF
 PREFIX=V*  DEST=(ALL)  OWNER=*  SYSNAME=SC75
 ACTION=//,=,+,?,E,S,SB,SE,SJ,V,X,XC,XD,XDC,XF,XFC,XS,XSC
NP  DDNAME   Output Descriptors
     SYSUT2   PageDef

     SYSUT2   FormDef

     SYSUT2   Title
              SDSF OD TEST
     SYSUT2   Name
              JUHA VAINIKAINEN
     SYSUT2   Building
              BLDG8
     SYSUT2   Department
              ITSO
```

Figure 3-51 Output Descriptors panel

The output descriptor fields, shown in Figure 3-52, can be overtyped if the output descriptors panel was accessed from the DA, I, O, H or ST panels. The data set must be closed.

The Output Descriptors panel in Figure 3-52 and Figure 3-53 on page 80 have the following fields.

Title	Description
DDNAME	Ddname of the data set
PageDef	Library member used by PSF to specify print characteristics
FormDef	Library member used by PSF to specify print characteristics
Title	Title of output
Name	Output name
Building	Output building
Department	Output department
Room	Output room
Address	Output address lines 1 through 4
OutBin	Output bin
ComSetup	Printer setup options
FormLen	Form length
ColorMap	AFP resource for the data set containing color translation information
InTray	Paper source
OverlayB	Overlay for the back of each sheet
OverlayF	Overlay for the front of each sheet
OffsetXB	Offset in x direction from the page origin for the back of each page
OffsetXF	Offset in x direction from the page origin for the front of each page
OffsetYB	Offset in y direction from the page origin for the back of each page
OffsetYF	Offset in y direction from the page origin for the front of each page

Figure 3-52 Output descriptor panel fields 1 of 2

Title	Description
PortNo	Number of the TCP/IP port where the FSS connects to the printer
Notify	Print completion notification for 1 to 4 IDs
UserLib	User resource (AFP) libraries to be used by PSF
RetainS	Retain time for successful transmissions (hh:mm:ss)
RetainF	Retain time for unsuccessful attempts (hh:mm:ss)
RetryL	Maximum number of retries
RetryT	Time between retries (hh:mm:ss)
PrtOptns	Entry in the PrintWay™ options data set
PrtQueue	Print queue name
IP Destination	IP address or TCP/IP name (for example, node.IP:1.2.333.444.5)
UserData	User data
AFPParms	Data set containing parameters used by the AFP Print Distributor

Figure 3-53 Output descriptor panel fields 2 of 2

3.11.12 Output descriptors panel NP field action characters

The output descriptors panel action characters that can be entered in the NP column by users are listed in Figure 3-54. The action characters are entered on lines with DDNAME.

All output descriptor fields can be overtyped when the output descriptors panel is accessed from the DA, I or ST panels.

NP-Description	SDSF action
E-Erase	Erase an output descriptor. E is valid only when the Output Descriptors panel was accessed from the: - Output Queue panel - Held Output Queue panel - Job Data Set panel if it was accessed from the Output Queue panel or the Held Output Queue panel.
S-Browse	Display data sets - access the output data set panel. Also SB - Use ISPF Browse and SE - Use ISPF Edit action are available.
V-View	View page-mode data sets using GDDM.
X-Print	Print output data sets. You can add the following: **C** - Close the print file after printing (XC) **D** - Display the Open Print Data Set panel (XD or XDC) **F** - Display the Open Print File panel (XF or XFC) **S** - Display the Open Print panel (XS or XSC)
?-JDS	Display a list of data sets - access the JDS panel).

Figure 3-54 Output descriptors panel action characters

3.12 JESPlex (JP) panel

The JESPlex (JP) panel displays and controls the main processors in a JES3 complex.

Figure 3-55 on page 81 shows a JESPLEX panel for a three main processor JES3 complex on an 80-byte line length panel. The Status and ConnStat columns have been transposed --

ARR Status A ConnStat; ARR ConnStat A NAME. The Version and SLevel columns are moved to be the last columns of the JESPLEX panel -- ARR Version L; ARR SLevel L. The ARRANGE command reorders and changes the widths of columns on the current panel.

The C (Command character) field has been shortened (**ARR C 1**) to one byte to fit more visible fields on the display lines.

```
  Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
--
SDSF JP DISPLAY  SC75                1% SPOOL         LINE 1-3 (3)
COMMAND INPUT ===>                                          SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,C-Connect,D-Display,DL-DisplayLong,F-Flush
,
ACTION=JS-MonitorStatus,P-Stop,S-Start,SM-MonStart,V-StartScheduling,
ACTION=VF-StopScheduling,ZM-MonStop
NP   NAME     ConnStat      SysName  Version  C JESN SLevel Global
Start-Type
     SC74     FLUSHED       SC74             *           0 NO     LOCAL
     SC70     CONNECTED     SC70     z 1.13.0 *           0 NO     LOCAL
     SC75     CONNECTED     SC75     z 1.13.0 * JES3      3 YES    HOT
```

Figure 3-55 JESPlex panel

Attention: The C column shows the JES3 SYN= specification. The JES3 SYN= parameter on CONSTD initialization statement specifies a set of prefixes (or synonyms) to be used as SYSTEM scope command prefixes. A command entered with a SYSTEM scope prefix will execute on the system on which the command is entered.

3.12.1 JESPlex panel fields

Figure 3-56 and Figure 3-57 on page 82 list columns in the JES3 environment on the JESPLEX panel. (The order and titles may be different, depending upon installation and user options.)

NAME	Member name. The names of undefined systems have a leading *.
Status	Status of the member
SysName	System name of the MVS image on which this JES system is active
Version	Version of JES the member is running
C	Command character
JESN	JES subsystem name
SLevel	JES3 service level
Global	JES3 global indicator
Start-Type	Last start type for the member
Start-Date-Time	Date and time the member was started
LastGCon-Date-Time	Last time global was contacted
PrimTG	Primary track group allocation
SecTG	Secondary track group allocation

Figure 3-56 JESPlex panel fields 1 of 2

Title	Description
WTOLim	WTO message limit
WTOInt	WTO message interval
PBufCSA	PBUF CSA limit
PBufAux	PBUF JES3AUX
PBufFixed	Fixed PBUFs
UserPages	User pages per open SYSOUT dataset
SelectModeName	Selection mode name
PartName	Spool partition name
MsgPrefix	Message prefix
MsgDest	Message Destination
ConnStat	Connect status
AttStat	Attach status

Figure 3-57 JESPlex panel fields 2 of 2

3.12.2 JESPlex panel NP field actions

Figure 3-58 displays the action characters for the JESPLEX panel NP-column.

Title	JES3 command / SDSF action
C-Connect	*S main,CONNECT - Connect the local to the global
D-Display	*I MAIN=main - Display main processor
DL-DisplayLong	*I MAIN=main,X - Display main processor extended
F-Flush	*S main,FLUSH - Flush jobs from a local after the local fails
JS-MonitorStatus	*S MONITOR,DI - Display the monitoring DSP parameters
P-Stop	RO main,*RETURN - Stop a main processors
S-Start	*S JSS - Start job scheduling on the global
SM-MonStart	*CALL MONITOR - Invoke the monitor DSP
V-StartScheduling	*MODIFY VARY,main,ON - Make a main available for JES3 scheduling
VF-StopScheduling	*MODIFY VARY,SC70,OFF - Make a main unavailable for JES3 scheduling
ZM-MonStop	*C MONITOR - Cancel the monitor DSP

Figure 3-58 Action characters on JESPlex panel NP-column

Note: ULOG should be active when the JP panel's NP actions are used or fields are overtyped. The SDSF User Session Log (ULOG) allows users to view the MVS and JES generated by SDSF and SAF. SDSF deletes the user session log when an SDSF session is ended or when the ULOG CLOSE command is issued.

3.12.3 JESPlex panel overtypable fields

Figure 3-59 shows the JESPLEX panel overtypable fields and JES3 commands issued for overtyped new values.

Field	JES3 command - Action
PartName	***F G,main,SP,partname** - Modify spool partition name
SelectModeName	***F G,main,SELECT,MODE,modename** - Change selection mode

Figure 3-59 JESPlex panel overtypable fields

3.13 Job class (JC) panel

The Job Class (JC) panel displays and controls the job classes in the JES3 JESplex. Both JES-managed and WLM-managed classes are shown.

Figure 3-60 shows the syntax of the JC command.

```
JC[one_class]

   one_class selects the job class information to be displayed. There is no
   blank between JC and the one_class. JC with no parameters displays all
   job classes.

   JC command can be issued on any SDSF panel.

Example: JCa displays job classes A.
```

Figure 3-60 JC command syntax

Figure 3-61 is an example of a job class panel for JES3-managed class A.

```
   Display  Filter  View  Print  Options  Search  Help

------------------------------------------------------------------------------
---
 SDSF JOB CLASS DISPLAY CLASS A                        LINE 1-3 (3)
 COMMAND INPUT ===>                                          SCROLL ===>
HALF
 ACTION=//-Block,=-Repeat,+-Extend,D-Display,DC-DisplayClass,DG-DisplayGroup
,
 ACTION=ST-Status
 NP   CLASS    Status   Member   Group    Mode Xeq-Cnt  TDepth Log   Jrnl
Rst Je
      A        ACTIVE   SC70     A        JES        1    NONE STD   NO   NO
NO
      A        ACTIVE   SC74     A        JES        1    NONE STD   NO   NO
NO
      A        ACTIVE   SC75     A        JES        1    NONE STD   NO   NO
NO
```

Figure 3-61 Job class (JC) panel

3.13.1 Job class panel fields

Figure 3-62 on page 84 shows the columns on the job class panel in the JES3 environment. (The order and titles may be different, depending on installation and user options.)

Title	Description
CLASS	Job class
Status	Status of the job class
Member	Member name
Group	Group name
Mode	Manager of the class (JES or WLM) is released by an operator command
Xeq-Cnt	Number of active jobs
TDepth	Job class limit for the system
Jrnl	Save job-related information in a job journal
Log	Print the job log
Rst	Restart the job from the first step. The job will be restarted on the processor on which it was active.
JESLog	Spin options for JES joblogs
SDepth	Setup depth
PartName	Spool partition name
PriTrk	Primary track group allocation
SecTrk	Secondary track group allocation
Prio	Priority

Figure 3-62 Job class panel columns

3.13.2 Job class panel NP field actions

Action characters that can be entered in the NP column are described in Figure 3-63.

NP-Description	JES3 command / SDSF action
D-Display	*I C=class - Display information about a job class
DC-DisplayClass	*I G,main,C,class - Display status for the class
DG -DisplayGroup	*I G,main,G,group_for_class - Display status for the group
ST-Status	Display the ST panel for all jobs in the class.

Figure 3-63 Job class panel NP field actions

3.13.3 Job class panel overtypable fields

Figure 3-64 lists job class panel overtypable fields and JES3 commands issued for overtyped values.

Title	JES3 command - Action
TDepth	*F C=class,TDEPTH= - Job class limit for the system
Log	*F C=class,JESMSG= - Print the job log (Yes or No)
JESLog	*F C=class,SPIN= - Spin options for JES joblogs, for example (SPIN,line-count) or (NOSPIN)
SDepth	*F C=class,SDEPTH= - Setup depth

Figure 3-64 Job class panel overtypable fields

3.14 Initiator (INIT) panel

The Initiator panel displays information about JES-managed and WLM-managed initiators. The INIT command can be issued on any SDSF panel. Figure 3-65 on page 85 presents the syntax of the INIT command.

```
INIT [JES | WLM | ALL]

   JES displays JES-managed initiators
   WLM displays WLM-managed initiators
   ALL displays all initiators. This is the default.
```

Figure 3-65 INIT command syntax

Figure 3-66 is a sample display of the SDSF initiator panel display.

There are three types of rows on the initiator display for each system in the JESPlex: ResType GROUP, CLASS, and INIT. The GROUP rows are displayed on each system for the defined JES3 the GROUP initialization statement in the JES3 initialization deck. CLASS rows, for classes defined to the JES3 job class group, follow each GROUP row. Highlighted INIT rows, with an active job, follow the CLASS rows.

Tip: The order of the columns on the default initiator panel starts with NP, ID, Status, JobName, Stepname, JobID, C, ASID, ASIDX, and Owner on an 80-byte panel row.

In Figure 3-66 on page 85 the order of columns has been arranged to NP, ID, ResType, Status SysName and the rest as they were originally. The filter for the panel requests rows with ID S or T for sysname SC74 or SC75 to be displayed.

```
  Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
--
SDSF INITIATOR DISPLAY  (ALL)                          LINE 1-7 (7)
COMMAND INPUT ===>                                        SCROLL ===>
HALF
PREFIX=VAIN*  DEST=*  OWNER=*  FILTERS=3  SYSNAME=*
ACTION=//-Block,=-Repeat,+-Extend,D-Display,DL-DisplayLong,P-Stop,S-Start
NP   ID       ResType Status       SysName  JobName  Stepname JobID    C
     S        GROUP   ON           SC74
     S        CLASS   ON           SC74                                S
     T        CLASS   ON           SC74                                 T

     S        GROUP   ON           SC75
     S        CLASS   ON           SC75                                S
     S        INIT    ACTIVE       SC75     CLASSS2  XYZZY    JOB21135 S
     S        INIT    ACTIVE       SC75     CLASSS   XYZZY    JOB20889 S
     S        INIT    ACTIVE       SC75     CLASSS3  XYZZY    JOB21136 S

     T        CLASS   ON           SC74                                 T
```

Figure 3-66 Initiator panel

3.14.1 Initiator panel fields

Figure 3-67 on page 86 presents the initiator panel columns in the JES3 environment. None of the columns are delayed access fields. Some of the fields are displayed only on the ALTERNATE view field list.

Title	Discription
ID	Initiator class name
Status	Initiator status
JobName	Job name
StepName	Job step name
Type	Type of user (job)
JobID	Job ID
C	Input class at the time the job was selected for execution
ASID	Address space identifier
ASIDX	Address space identifier in hexadecimal
Owner	Owner of the active job
SysName	System name
SysID	JES member name
JESN	JES subsystem name
JESLevel	JES version and release

Figure 3-67 Initiator panel fields 1 of 2

Title	Description
Seclabel	Security label of the job
SrvClass	Service class of the active job (JES) or the initiator is running (WLM)
Mode	Initiator mode (WLM or JES)
Barrier	Group barrier
Default	Default group indicator
DefCount	Defined initiator count (Group only)
AllocCount	Allocated initiator count
UseCount	Count of initiators in use
Alloc	Allocation indicator (manual/dynamic) (Group only)
Unalloc	Unallocation indicator (manual/dynamic) (Group only)
Group	Group name (Class only)
ResType	Resource type (GROUP, CLASS or INIT)

Figure 3-68 Initiator panel fields 2 of 2

3.14.2 Initiator panel NP field actions

Action characters that can be entered in the NP column on the initiator panel are shown in Figure 3-69.

NP-Description	JES3 Command / SDSF action
D-Display	*I G,main,C,class - Display information about an initiator.
DL-DisplayLong	*I G,ALL,C,class - Display the long form of information about an initiator.
P-Stop	*F G,main,C,class,OFF - Stop an initiator when the current job completes.
S-Start	*F G,main,C,class,ON - Start an initiator.

Figure 3-69 Initiator panel NP field actions

3.14.3 Initiator panel overtypable fields

Figure 3-70 on page 87 shows initiator panel overtypable fields and JES3 commands issued for overtyped values on ResType GROUP rows.

Note: The SDSF panel display issues message COMMAND ISSUED even if an invalid overtype value is entered. Enter the ULOG command to view the JES3 action for an overtyped column.

```
Field       JES3 command / SDSF description
Alloc       *F G,main,G,group,ALLOC,DYNAMIC|MANUAL - Allocation indicator
Barrier     *F G,main,G,group,BAR,barrier - Group barrier
DefCount    *F G,main,G,group,INIT,count - Defined intiator count
Mode        *F G,ALL,G,group,MODE,JES|WLM - Initiator mode: JES or WLM
Group       *F C=class,GROUP=group - Group name
Unalloc     *F G,main,G,group,UNALLOC,DYNAMIC|MANUAL- Unallocation indicator
```

Figure 3-70 Initiator panel overtypable fields

3.15 Printers (PR) panel

The Printer panel allows users to display information about JES printers and jobs being printed. The Printers panel is accessed with the PR command. The PR command syntax is shown in Figure 3-71.

```
PR [printer-list]

   printer-list is one or both of the following:
      LCL - all local printers
      RMT - all remote printers.
   PR with no parameters displays information about all printers.
```

Figure 3-71 PR command syntax

Figure 3-72 is a sample display of the SDSF printers panel display.

```
 Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF PRINTER DISPLAY  (ALL)                          LINE 1-14 (14)
COMMAND INPUT ===>                                     SCROLL ===> HALF
ACTION=//-Block,=-Repeat,+-Extend,BC-BackCkpt,BCnP-BackNumCkpt,BD-BackTop,
ACTION=BN-BackCkptN,BNnP-BackNumCkptN,C-Cancel,CG-CancelGroup,CJ-CancelJob,
ACTION=CP-CancelPosition,CT-CancelStop,D-Display,DL-DisplayLong,
ACTION=E+ADHJLMRTX-RestartOptions,E-Restart,EH-RestartHold,EJ-RestartJob,
ACTION=ER-RestartRescan,Fn-ForwardNum,FC-ForwardCkpt,FCnP-ForwardNumCkpt,
ACTION=FN-ForwardCkptN,FNnP-ForwardNumCkptN,K-ForceFSS,L-Fail,LD-FailDump,
ACTION=S+ADMTX-StartOptions,S-Start,V-VaryOn,VF-VaryOff,X+DRTX-CallWtrOptions,
ACTION=X-CallWtr,XR-CallWtrResched
NP     PRINTER    Status   Group    SForms   SClass          JobName  JobID
       IAZFSS     AC       LOCAL    STD      CD              VAINI    JOB20994
       IPDPOK     AC       IPDS     STD      I
       IPDWAY     OFF      IPDS     STD      K
       NS         OFF      TCPIP    VTAM     J
       PRTWAY     OFF      TCPIP    STD      J
       PRTWA2     OFF      TCPIP    STD      J
       RM001PR1   AV       RM001    STD
```

Figure 3-72 SDSF printers panel

3.15.1 Printers panel fields

Figure 3-73 and Figure 3-74 on page 89 list the printers panel columns in the JES3 environment. None of the columns are delayed access fields. Some of the fields are displayed only on the ALTERNATE view field list.

Title	Description
PRINTER	Name of the printer
Status	Printer status
Group	Device group
SForms	Printer selection form number
SClass	Printer output selection classes
JobName	Job name
JobID	JES job ID, or work ID
Owner	Owner ID of the active job
Rec-Cnt	Number of line-mode records
Rec-Prt	Number of line-mode records printed
Page-Cnt	Number of output pages
Page-Prt	Number of output pages printed
JP	JES job priority
DP	Output data set priority
C	JES output class
SecLabel	Security label of output group
Forms	Output form number
FCB	Output FCB ID
UCS	Output UCS ID (print train required)
Flash	Output flash ID
Burst	3800 burst indicator
SepDS	Separator page between data sets
PrMode	Printer process mode
SFCB	Printer selection FCB ID
SUCS	Printer selection USC ID
SFlh	3800 or FSS printer selection flash ID
Work-Selection	Printer work selection criteria
SBurst	3800 output selection burst mode
SPrmode1-4	Output selection process mode 1-4
M	3800 or FSS mark forms control
NPro	FSS nonprocess run-out time, in seconds
Mode	FSS control mode of printer
CkptRec	Number of logical records per checkpoint
CkptPage	Number of logical pages per checkpoint
CkptSec	3800 or FSS default checkpoint interval
CkptMode	Checkpoint interval used by FSS
CpyMod	3800 or FSS copy modification module ID
Unit	Printer unit name
DFCB	Device default forms control buffer (FCB)
Setup	Setup mode
CopyMark	Copymark mode
Pau	Pause mode (pause between data sets)
Tr	Printer tracing
FSSName	FSS defined for the printer
FSSProc	Proc used to start the FSS
SysName	System name
JESN	JES subsystem name
JESLevel	JES version and release

Figure 3-73 Printers panel fields 1 of 2

Title	Description
Type	Type of address space: job, started task, or TSO user
Trans	Data translation
Char1-4	Character arrangement table 1-4
FSASysNm	FSA system name
DSPName	Dynamic support program name
DevType	Device type name
Line-Lim-Lo	Printer line limit, minimum
Line-Lim-Hi	Printer line limit, maximum
Page-Lim-Lo	Printer page limit, minimum
Page-Lim-Hi	Printer page limit, maximum
DGrpY	Device cannot process data sets that are destined for any local device
Dyn	Device can be started dynamically
OpLog	Operator command actions are logged in the output of the FSS device
CGS	Character generation storage
B	Burst
PDefault	P default
Copies	Copy count
CB	Clear printer processing indicator
TRC	Table reference character
HFCB	Use designated FCB until status is changed
HChars	Use designated CHARS until status is changed
HUCS	Use designated UCS until status is changed
HCpyMod	Use designated Copy Mod until status is change
HFlash	Use designated Flash until status is changed
HBurst	Use designated Burst until status is changed
HForms	Use designated Forms until status is changed
CCtl	Data carriage control stream
Cmpct	Compaction for SNA remote punches
Comp	Compression
Compact	Compaction table name for SNA remote punches
FCBL	JES will load FCB
LRecL	Logical record length
Select	Device type and subaddress for output

Figure 3-74 Printers panel fields 2 of 2

3.15.2 Printers panel NP field actions

Action characters for the NP column on the printers panel are listed in Figure 3-75 and Figure 3-76 on page 90.

NP Description	JES3 command / SDSF description
B-Back	*RESTART,devname - Backspace a printer: **C** - Most recent checkpoint **Cnumber** - Before the most recent checkpoint lines **CnumberP** - Pages before the most recent checkpoint **D** - Top of the current data set **N** - Last internally-noted checkpoint **Nnumber** - Lines before the last internally-noted checkpoint **NnumberP** - Pages before the last internally-noted checkpoint

Figure 3-75 Printers panel NP column actions 1 of 2

NP Description	JES3 command / SDSF description
C-Cancel	*CANCEL,devname - Canceling output for current job on a printer: **G** - Cancel only the output destined for this device for **J** - Cancel all output of the type PRT or PUN **P** - Stop printer and determine the position of data being processed **T** - Stop the printer once the current activity is canceled
D-Display	*INQUIRY,D,D=devname - Display printer information
DL-DisplayLong	*INQUIRY,D,D=devname - Display the long form of the information
E-Restart	*RESTART,devname - Restart a printer. Use parameters: **A** - Automatic mode. Mutually exclusive with M. **D** - Turn on diagnostic mode. Mutually exclusive with X. **H** - Suspend activity on the current data set and place it in hold **J** - Requeue all data sets for the current job **L** - Reload FCB and UCS/CHARS buffer **M** - Manual mode. Mutually exclusive with A. **R** - Request that it perform a scheduling pass **T** - End it automatically once the current job is rescheduled **X** - Turn off diagnostic mode. Mutually exclusive with D.
F-Forward	*RESTART,devname - Forward space a printer. Required parameters: **number** - Number of lines **C** - Mmost recent checkpoint **Cnumber** - Lines from the most recent checkpoint **CnumberP** - Pages from the most recent checkpoint **N** - last internally-noted checkpoint **Nnumber** - Lines from the last internally-noted checkpoint **NnumberP** - Pages from the last internally-noted checkpoint
K-ForceFSS	FORCE jobname - Force termination of the FSS
L-Fail	*FAIL,devname - Fail device
LD-FailDump	*FAIL,devname,DUMP - Fail the device with a dump
S-Start	*START,devname - Start a printer. Use one or more of parameters: **A** - Automatic mode. Mutually exclusive with M. **D** - Turn on diagnostic mode. Mutually exclusive with X. **M** - Manual mode. Mutually exclusive with A. **T** - End it when this request completes **X** - Turn off diagnostic mode. Mutually exclusive with D.
V-VaryOn	*VARY,devname,ON - Vary the printer online
VF-VaryOFF	*VARY,devname,OFF - Vary the printer offline
X-CallWtr	*X,WTR,OUT=devname - Invoke a writer. Use one or more of parameters: **D** - Turn on diagnostic mode. Mutually exclusive with X. **R** - Suspend writer output until the device is available **T** - End it after the output is printed **X** - Turn off diagnostic mode. Mutually exclusive with D.

Figure 3-76 Printers panel NP column actions 1 of 2

3.15.3 Printers panel overtypable fields

Figure 3-77 is a list of overtypable fields on the SDSF printers panel.

Important: For some fields, you must also type an action character when overtyping. See the description of each field.

Field	Description
B	Burst. Action: S
CB	Clear printer processing indicator. Actions: S, X
Char1	Character arrangement table 1. JES3: Type + alone to modify Char2-4. JES3 actions: Bx, Fx, E, S, X
CkptPage	Number of logical pages per checkpoint: 1-32767. JES3 actions: Bx, Fx, E, S, X
CkptSec	3800 or FSS default checkpoint interval: 0-32767 JES3 actions: Bx, Fx, E, S, X
Copies	Copy count. JES3 actions: Bx, Fx, E, S
Copymark	Copymark mode: DATASET, JOB, CONSTANT, DEFAULT, NONE. JES3 actions: Bx, Fx, E, S, X
CpyMod	3800 or FSS CPYMOD ID. JES3 actions: S
DGrpY	Device cannot process data sets destined for a local device
Dyn	Device can be started dynamically
Line-Lim-Hi	Selection output size, maximum number of lines. JES3 actions: Bx, Fx, E, S, X
Line-Lim-Lo	Selection output size, minimum number of lines. JES3 actions: Bx, Fx, E, S, X
Mode	Mode of printer: FSS or JES
NPro	Nonprocess run-out time, in seconds. JES3 actions: Bx, Fx, E, S, X
Oplog	Operator command actions will be logged
Page-Lim-Hi	Selection output size, maximum number of pages. JES3 actions: Bx, Fx, E, S, X
Page-Lim-Lo	Selection output size, minimum number of pages. JES3 actions: Bx, Fx, E, S, X
PDefault	Print default
SBurst	3800 output selection burst mode: Yes or No. JES3 actions: S or X
SClass	Printer output selection classes: classes with no delimiters. JES3 actions: Bx, Fx, E, S, X
SepDs	Separator page between data sets: Yes or No. JES3 actions: Bx, Fx, E
Setup	Printer setup mode
SFCB	Printer selection FCB ID. JES3 actions: Bx, Fx, E, S, X
SFlh	3800 or FSS printer selection flash ID. JES3 actions: Bx, Fx, E, S
SForms	Printer selection form number. JES3 actions: Bx, Fx, E, S, X
SPrMode1	Selection process mode 1. JES3 actions: Bx, Fx, E, S, X
SUCS	Printer selection USC ID. JES3 actions: Bx, Fx, E, S, X
Trans	Data translation: Yes or No
Work-Selection	Printer work selection criteria. JES3 actions: Bx, Fx, E The list of criteria must be enclosed in parentheses. Criteria must be separated by a comma. /value specifies that the characteristic pre-fixed with a slash (/) is not to be used as work-selection criterion.

Figure 3-77 Printers panel overtypable fields

3.16 Punches (PUN) panel

The punches panel displays information about JES punches and jobs being punched. Punches panel is accessed with the PUN command. Figure 3-78 displays the PUN command syntax.

```
PUN [punch-list]

punch-list is one or both of the following:
   LCL - all local punches
   RMT - all remote punches.
   PUN with no parameters displays information about all punches.
```

Figure 3-78 PUN command syntax

Figure 3-79 is an example of the SDSF punches panel display.

```
 Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
---
SDSF PUNCH DISPLAY  SC75                              LINE 1-7 (7)
COMMAND INPUT ===>                                       SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,BC-BackCkpt,BCn-BackNumCkpt,BD-BackTop,
ACTION=BN-BackCkptN,BNn-BackNumCkptN,C-Cancel,CG-CancelGroup,CJ-CancelJob,
ACTION=CP-CancelPosition,CT-CancelStop,D-Display,DL-DisplayLong,
ACTION=E+ADHJMRTX-RestartOptions,E-Restart,EH-RestartHold,EJ-RestartJob,
ACTION=ER-RestartRescan,FC-ForwardCkpt,FCn-ForwardNumCkpt,FN-ForwardCkptN,
ACTION=FNn-ForwardNumCkptN,L-Fail,LD-FailDump,S+ADMTX-StartOptions,S-Start,
ACTION=V-VaryOn,VF-VaryOff,X+DRTX-StartOptions,X-CallWtr,XR-CallWtrResched
NP    PUNCH      Status   Group    SForms   JobName  JobID    Owner
Rec-Cnt R
     RM002PU1   AV       RM002    STANDARD
     RM003PU1   AV       RM003    STANDARD
     RM004PU1   AV       RM004    STANDARD
     RM005PU1   AV       RM005    STANDARD
```

Figure 3-79 Punches panel

3.16.1 Punches panel fields

Figure 3-80 and Figure 3-81 on page 93 show column titles on the SDSF punches panel in the JES3 environment.

Title	Description
PUNCH	Name of the punch
Status	Punch status
Group	Device group name
SForms	Punch selection form
JobName	Job name
JobID	JES job ID, or work ID
JNum	JES job number
Owner	User ID of job creator
SClass	Punch output selection classes
Rec-Cnt	Number of line-mode records in the job
Rec-Prt	Number of line-mode records punched
Page-Cnt	Output page count
Page-Prt	Output pages punched

Figure 3-80 Punches panel fields 1 of 2

Title	Description
SepDS	Separator page between data sets
CCtl	Data carriage control stream
Cmpct	Compaction for SNA remote punches
Comp	Compression for remote SNA punches
Compact	Compaction table name for SNA remote punches
Work-Selection	Punch work selection criteria
SPrMode1-4	Output selection process modes 1 through 4
Select	Device type and device subaddress (remote punches only)
CkptRec	Number of records per checkpoint
Unit	Punch unit name
LRecL	Logical record length of transmitted data (SNA only)
Pau	Pause mode
Tr	Punch tracing
SysName	System name
JESN	JES subsystem name
JESLevel	JES version and release
SecLabel	Security label of the job on the device
Line-Lim-Lo	Punch line limit, minimum
Line-Lim-Hi	Punch line limit, maximum
Forms	Output forms
PrMode	Output PRMODE
DP	Output priority
JP	Job priority
C	Output class
DevType	Device type
DSPName	Dynamic support program name
HForms	Use designated Forms until status is changed
Copies	Copy count
Dyn	Start device dynamically
DGrpY	Device cannot process data sets that are destined for any local device
B	Burst

Figure 3-81 Punches panel fields 2 of 2

3.16.2 Punches panel NP field actions

Action characters for the NP column of the punches panel are listed in Figure 3-82 and Figure 3-83 on page 95

```
NP Description  JES3 command / SDSF description
B-Back          *RESTART,devname - Backspace a punch:
                C - Most recent checkpoint
                Cnumber - Before the most recent checkpoint lines
                CnumberP - Pages before the most recent checkpoint
                D - Top of the current data set
                N - Last internally-noted checkpoint
                Nnumber - Lines before the last internally-noted checkpoint
                NnumberP - Pages before the last internally-noted checkpoint
C-Cancel        *CANCEL,devname - Canceling output for current job on a punch:
                G - Cancel only the output destined for this device for
                J - Cancel all output of the type PRT or PUN
                P - Stop punch and determine the position of data being processed
                T - Stop the punch once the current activity is canceled
```

Figure 3-82 Punches panel NP field actions 1 of 2

NP Description	JES3 command / SDSF description
D-Display	*INQUIRY,D,D=devname - Display punch information
DL-DisplayLong	*INQUIRY,D,D=devname - Display the long form of the information
E-Restart	*RESTART,devname - Restart a punch. Use parameters:
	A - Automatic mode. Mutually exclusive with M.
	D - Turn on diagnostic mode. Mutually exclusive with X.
	H - Suspend activity on the current data set and place it in hold
	J - Requeue all data sets for the current job
	M - Manual mode. Mutually exclusive with A.
	R - Request that it perform a scheduling pass
	T - End it automatically once the current job is rescheduled
	X - Turn off diagnostic mode. Mutually exclusive with D.
F-Forward	*RESTART,devname - Forward space a punch. Required parameters:
	C - Mmost recent checkpoint
	Cnumber - Lines from the most recent checkpoint
	CnumberP - Pages from the most recent checkpoint
	N - last internally-noted checkpoint
	Nnumber - Lines from the last internally-noted checkpoint
	NnumberP - Pages from the last internally-noted checkpoint
K-ForceFSS	FORCE jobname - Force termination of the FSS
L-Fail	*FAIL,devname - Fail device
LD-FailDump	*FAIL,devname,DUMP - Fail the device with a dump
S-Start	*START,devname - Start a punchrinter. Use one or more of parameters:
	A - Automatic mode. Mutually exclusive with M. **D** - Turn on diagnostic mode. Mutually exclusive with X. **M** - Manual mode. Mutually exclusive with A. **T** - End it when this request completes **X** - Turn off diagnostic mode. Mutually exclusive with D.
V-VaryOn	*VARY,devname,ON - Vary the punch online
VF-VaryOFF	*VARY,devname,OFF - Vary the punch offline
X-CallWtr	*X,WTR,OUT=devname - Invoke a writer. Use one or more of parameters:
	D - Turn on diagnostic mode. Mutually exclusive with X.
	R - Suspend punch writer output until the device is available
	T - End it after the output is punched
	X - Turn off diagnostic mode. Mutually exclusive with D.

Figure 3-83 Punches panel NP field actions 2 of 2

3.16.3 Punches panel overtypable fields

The fields listed in Figure 3-84 on page 96 can be overtyped on the punches panel.

Important: For some fields, you must also type an action character when overtyping. See the description of each field.

Title	Description
B	*R, *S or *X - Burst. Action: S
Copies	*R or *S - Copy count (JES3 only). Actions: E or S
DGrpY	Process local data sets
Dyn	Start device dynamically
Line-Lim-Hi	Selection output size, maximum number of cards. Actions: E, S or X
Line-Lim-Lo	Selection output size, minimum number of cards. JES3 actions: E, S or X
SClass	Punch output selection classes: classes with no delimiters, up to 36. JES3 actions: Actions: E, S or X
SepDs	Separator card between data sets: Yes or No. JES3 actions: E, S or X
SPrMode1	Selection process mode 1. Type + alone to work with multiple values. JES3 actions: E, S or X
Work-Selection	Punch work selection criteria. JES3 actions: E, S or X The list of criteria must be enclosed in parentheses. Criteria must be separated by a comma. /value specifies that the characteristic prefixed with a slash (/) is not to be used as work-selection criterion.

Figure 3-84 Punches panel overtypable fields

3.17 Readers (RDR) panel

The readers panel, Figure 3-85, displays information about JES readers and jobs being processed by readers.

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
SDSF READER DISPLAY  SC75                                LINE 1-8 (8)
COMMAND INPUT ===>                                         SCROLL ===> HALF
ACTION=//-Block,=-Repeat,+-Extend,C-Cancel,CH-CancelHold,CHN-CancelNoHold,
ACTION=CK-CancelAlloc,CKN-CancelPurge,D-Display,DL-DisplayLong,L-Fail,
ACTION=LD-FailDump,S-Start,SH-StartHold,SHN-StartNoHold,SK-StartAlloc,
ACTION=SKN-StartPurge,V-VaryOn,VF-VaryOff,X-Call,XC-CallCardImage,XH-CallHold,
ACTION=XHN-CallNoHold,XK-CallAlloc,XKN-CallPurge
NP   READER     Status   Group    JobName  JobID    Owner    Rec-Cnt    Rec-Pro
     RM001RD1   AV       RM001
     RM002RD1   AC       RM002     (NONE)
     RM003RD1   AV       RM003
     RM004RD1   AV       RM004
     RM005RD1   AV       RM005
     RM006RD1   AV       RM006
     RM007RD1   AV       RM007
```

Figure 3-85 Readers panel

The readers panel is accessed with the RDR command. Figure 3-86 on page 97 shows the RDR command syntax.

```
RDR [reader-list]

   reader-list is up one or both of the following, in any combination:
         LCL - all local readers
         RMT - all remote readers.
   RDR with no parameters displays information about all readers.
```

Figure 3-86 RDR command syntax

3.17.1 Readers panel fields

Figure 3-87 is the list of the readers panel columns in the JES3 environment.

Title	Description
READER	Device name. This is the fixed field.
Status	Reader status
Group	Device group name
JobName	Job name
JobID	Active job ID
Type	Type of active address space. Not in the default field list
JNum	Active job number. Not in the default field list
Owner	User ID of owner
Rec-Cnt	Number of records in the job
Rec-Proc	Number of records processed
C	Default execution class
MC	Message class
Unit	Reader unit name
SysName	System name
JESN	JES subsystem name
JESLevel	z/OS JES level
SecLabel	Security label of the job on the reader
DevType	Device type name
DSPName	DSP name
AReq	Account number required on job card
PReq	Programmer name required on job card
SWA	SWA ABOVE or BELOW
BLP	BLP label setting is respected
DP	Default job priority
ML	Default job message level
AL	Default allocation message level
Time	Default time limit
Region	Default region size

Figure 3-87 Readers pane fields

3.17.2 Readers panel NP field actions

Figure 3-88 on page 98 lists action characters that can be entered in the NP column on the readers panel.

```
NP Description  JES3 command / SDSF description
C-Cancel        *C devname. You can add one or more of these parameters:
                H - Hold the control-card processor
                HN - Process jobs that are completely entered.
                K - Leave hot readers allocated.
                KN - Do not leave hot readers allocated.

                You cannot combine H and HN or K and KN.
D-Display       *I D,D=devname,S - Display information
DL-DisplayLong  *I D,D=devname - Display the long form of information
L-Fail          *FAIL devname - Fail the reader DSP (JES3 only)
LD-FailDump     *FAIL devname,DUMP - Fail the reader DSP and take a dump
S-Start         *S devname = Start. You can add one or more of parameters:
                H - Hold the control-card processor.
                HN - Process jobs after the batch is created.
                K - Keep active once end-of-file is reached.
                KN - Purge when end-of-file is reached.

                You cannot combine H and HN or K and KN.
V-VaryOn        *MODIFY VARY,devname,ON - Vary online
VF-VaryOff      *MODIFY VARY,devname,OFF - Vary offline
X-Call          *X CR,IN=devname - Invoke card reader support. You can add one or more
                parameters:
                C - Enable card image support
                H - Place the control-card processor in hold
                HN - Allow jobs to be processed
                K - Remain active after end-of-file is reached
                KN - Purge after end-of-file is reached

                You cannot combine H and HN or K and KN.
```

Figure 3-88 Readers panel NP field actions

3.18 Lines (LI) panel

The Lines (LI) panel displays information about JES NJE and RJP lines. The lines panel is accessed with the LI command. Figure 3-89 shows a lines panel with no line data.

```
 Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
---
SDSF LINE DISPLAY  SC75                                LINE 0-0 (0)
COMMAND INPUT ===>                                          SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,C-Cancel,D-Display,DE-DisplayErrors,
ACTION=DL-DisplayLong,DS-DisplayStatus,E-Restart,I-Interrupt,L-Fail,
ACTION=LD-FailDump,S-Start,SL-StartLog,SNL-StartNoLog,SNR-StartNoRcv,
ACTION=SR-StartRcv,SRJP-StartRJP,V-VaryOn,VF-VaryOff
NP   DEVICE       Status   Unit  Node     JobName  JobID    Owner
Proc-Lines
```

Figure 3-89 An empty SDSF lines panel

3.18.1 Lines panel fields

Figure 3-90 on page 99 is a list of the lines panel columns in the JES3 environment.

Title	Description
DEVICE	Device name. This is the fixed field.
Status	Line status
Unit	Line address or type
Node	Node that the line is connected to
JobName	Job name
JobID	JES job ID
Owner	User ID of owner
Proc-Lines	Number of lines processed for the job.
Tot-Lines	Number of lines in the job.
Type	Type of line (RJP or NJE)
ADisc	Line disconnect option
Code	BSC adaptor code
Comp	BSC data compression option
Duplex	BSC line mode
Intf	BSC adapter interface
Speed	Speed of the line
Tr	Trace I/O option
Transp	BSC transparency feature
Password	Password
Discon	Disconnect status: NO, INTERRUPT, or QUIESCE (only for active lines).
SysName	System Name
JESN	JES subsystem name
JESLevel	JES version and release

Figure 3-90 Lines panel fields

3.18.2 Lines panel NP column actions

Figure 3-91 is a list of the lines panel NP column actions.

NP action	JES3 command / SDSF description
C-Cancel	*C - Cancel a or line
D-Display	*I - Display the line, transmitter or receiver in the log Optional parameters: **L** - long form, for the line **S** - status of the names of the BSC line **E** - cumulative error statistics for the line
E-Restart	*R - Restart the line.
I-Interrupt	*C - Interrupt the line.
L-Fail	*FAIL - Fail the line DSP
LD-FailDump	*FAIL - Fail the line DSP with a dump
S-Start	*S - Start a line
SL-StartLog	*S - Start the line with tracing
SNL-StartNoLog	*S - Start the line without tracing
SR-StartRcv	*S - Start and allow network jobs to be received
SNR-StartNoRcv	*S - Start but prevent network jobs from being received
SRJP-StartRJP	*S - Start RJP on the line
V-VaryOn	*F VARY - Vary online
VF-VaryOff	*F VARY - Vary offline

Figure 3-91 Lines panel NP field action

3.19 Nodes (NO) panel

The nodes panel displays information about JES NJE nodes. The nodes panel is accessed with the NODE command shown in Figure 3-92.

```
     {NODES |NODE |NO}

     NODES with no parameters displays all nodes.
```

Figure 3-92 NODE command syntax

Figure 3-93 is an example of the SDSF nodes panel display. The command ARR LineName L was issued for the panel. -- JES3 NJE TCPIP and SNA connections do not use lines.

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
---
SDSF NODE DISPLAY  SC75     WTSC75J3                  LINE 1-10 (10)
COMMAND INPUT ===>                                        SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,A-Release,D-Display,DL-DisplayLines,
ACTION=EL-ResetLines,H-Hold,SN-Start
NP   NODENAME Status               Path     PType Hold VerifyP  SendP
SysNa
     WTSCMXA  CONNECTED            WTSCNET        NONE NOTSET   NOTSET
SC75
     WTSCNET  CONNECTED            WTSCNET  TCPIP NONE NOTSET   NOTSET
SC75
     WTSCPLX1 UNCONNECTED          WTSCPLX1 TCPIP NONE NOTSET   NOTSET
SC75
     WTSCPLX2 UNCONNECTED          WTSCPLX2 SNA   NONE NOTSET   NOTSET
SC75
     WTSCPLX3 UNCONNECTED          WTSCPLX3 SNA   NONE NOTSET   NOTSET
SC75
     WTSCPLX4 CONNECTED            WTSCPLX4 TCPIP NONE NOTSET   NOTSET
SC75
     WTSCPLX7 CONNECTED            WTSCPLX7 TCPIP NONE NOTSET   NOTSET
SC75
     WTSCPLX9 CONNECTED            WTSCPLX9 TCPIP NONE NOTSET   NOTSET
SC75
     WTSCPOK  UNCONNECTED          WTSCPLX1       NONE NOTSET   NOTSET
SC75
     WTSC75J3 OWNNODE              WTSC75J3       NONE NOTSET   OWNNODE
SC75
```

Figure 3-93 Nodes panel

3.19.1 Nodes panel fields

Figure 3-94 and Figure 3-95 on page 101 are the list of columns on the nodes panel in the JES3 environment.

Title	Description
NodeName	Node name. This is the fixed field
Status	Node status for the first path.
Hold	Job hold indicator for the local node
LineName	Line dedicated to NJE for this node
Tr	Trace option
VerifyP	Password received from the node
SendP	Password sent to the node
SysName	System Name
JESN	JES subsystem name
JESLevel	JES version and release

Figure 3-94 Nodes panel fields 1 of 2

Title	Description
MaxRetries	Number of retries to attempt before ending the BSC NJE line
Path	Name of the adjacent node in the path
PType	Protocol type
BDTName	Bulk Data Transfer (BDT) ID
PartName	Spool partition name to which all incoming NJE streams are written
MaxLines	Maximum number of lines for the node.
Direct	Specifies whether the node can be directly attached only
SSignon	Specifies whether secure signon protocol is to be used
JTNum	Number of job transmitters associated with the TCP/IP node
JRNum	Number of job receivers associated with the TCP/IP node
STNum	Number of SYSOUT transmitters associated with the TCP/IP node
SRNum	Number of SYSOUT receivers associated with the TCP/IP node
Secure	Use secure (TLS) socket
PwCntl	Password encryption control
XNameReq	Specifies whether inbound SYSOUT can be held for an external writer if no external writer name is supplied
Connect	Automatically reconnect
Conn-int	Connection interval (minutes)
BufSz	Buffer size
Strm	Number of concurrent streams
PrtDef	Print class default for networking output received at the home node
PrtTSO	TSO data set default class for networking output received at the home node
PrtXwtr	External writer data set default class for networking output received at the home node
PunDef	Punch class default for networking output received at the home node
NetPr	Number of logical network printers on the home node
NetPu	Number of logical network punches on the home node
CTC	Channel to channel node

Figure 3-95 Nodes panel fields 2 of 2

3.19.2 Nodes panel NP field actions

Figure 3-96 is a list of the nodes panel NP column actions.

```
NP action        JES3 command / SDSF description
D-Display        *I NJE,N=node - Display information about a node in the log.
DL-DisplayLines  *I NJE,N=node,LINE - Display lines defined to a BSC connected node
EL-ResetLines    *F NJE,N=node,FORCE - Reset BSC lines to the node
H-Hold           *F NJE,N=node,HOLD - Hold jobs destined for this directly-attached
                 node
SN-Hold          *S,TCP,SOCKET=node - Start node communication on a line.
```

Figure 3-96 Nodes panel NP column actions

3.19.3 Nodes panel overtype fields

Figure 3-97 is a list of the nodes panel overtypable columns and the JES3 command to implement the overtyped value.

```
Title      JES3 command / SDSF description
Connect    *F,NJE - Automatically reconnect
Conn-int   *F,NJE - Connection interval in minutes
JRNum      *F,NJE - Number of job receivers for the TCP/IP node
JTNum      *F,NJE - Number of job transmitters for the TCP/IP node
MaxRetries *F,NJE - Number of retries to attempt before ending the BSC NJE line
NHold      *F,NJE - Process inbound SYSOUT in NETDATA format (Yes or No)
PartName   *F,NJE - Spool partition name for all incoming streams
Path       *F,NJE - Adjacent node in the path
PrtDef     *F,NJE - Print class default for networking output received at the home node
PrtTSO     *F,NJE - TSO data set default class for networking output received
PrtXwtr    *F,NJE - External writer data set default for networking output received
PType      *F,NJE - Protocol type: TCP, SNA, BSC
PunDef     *F,NJE - Punch class default for networking output received at the home node
PWCntl     *F,NJE - Password encryption control
Secure     *F,NJE - Use secure (TLS) socket
SRNum      *F,NJE - SYSOUT receivers for the TCP/IP node
SSignon    *F,NJE - Use secure signon protocol
STNum      *F,NJE - SYSOUT transmitters for the TCP/IP node
```

Figure 3-97 Nodes panel overtypable fields

3.20 Network servers (NS) panel

The Network Server (NS) panel allows users to display information about server-type networking devices on the node:

- NETSERV devices used to communicate between JES and TCP/IP
- BDT instances used to communicate between JES3 and VTAM

The Network Server panel is accessed with the NS command, which does not have any arguments.

Figure 3-98 on page 103 is an example of the SDSF network servers panel display.

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
---
SDSF NS DISPLAY  SC75                                  LINE 1-2 (2)
COMMAND INPUT ===>                                          SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,C-Cancel,D-Display,E-Restart,K-SysCancel,
ACTION=KD-SysCancelDump,L-Fail,LD-FailDump,S-Start,X-CallTCP,Z-SysForce
NP   DEVICE       Status   DSPName  Stack    CTr VTr JTr ASID  SrvJobNm
IPName
     JES3NS       ACTIVE   JOB20820 TCPIP    NO  NO  NO  003B  JOB20941
WTSC75.
     JES3NS9      INACTIVE          TCPIP    NO  NO  NO
WTSC75.
```

Figure 3-98 Network servers panel

3.20.1 Network servers panel fields

Figure 3-99 on page 103 lists the fields in the JES3 environment on the network servers panel.

Title	Description
DEVICE	Name of the network server. This is the fixed field.
Status	Device status
DSPName	Dynamic support program name (JES3 only)
Stack	Name of the TCP/IP stack
Restart	Restart the device automatically
Rest-Int	Restart interval (minutes)
CTr	Common tracing
VTr	Verbose tracing
JTr	JES tracing
ASID	ASID of the network server
SrvJobNm	Job name of the network server address space
IPName	Local TCP/IP host name
Port	Local TCP/IP port number
Secure	Secure (TLS) socket
SysName	System Name
JESN	JES subsystem name
JESLevel	z/OS JES level

Figure 3-99 Network servers panel fields

3.20.2 Network servers panel NP field actions

Figure 3-100 is a list of the network servers panel NP column actions.

```
NP-Description     JES3 command / SDSF action
C-Cancel           *C - Cancel a network server (JES3 only)
D-Display          *I - Display the network server in the log.
E-Restart          *R - Restart the network server
K-SysCancel        CANCEL - Cancel the network server address space
KD-SysCancelDump   C jobname,DUMP - Cancel the network server address space with a dump
L-Fail             *FAIL - Fail the device DSP (JES3 only)
LD-FailDump        *FAIL,devname,DUMP - Fail the device DSP with a dump (JES3 only)
X-CallTCP          *X - Invoke the network server DSP (JES3 only)
Z-SysForce         FORCE - Force the network server address space
```

Figure 3-100 Network servers panel NP field actions

3.20.3 Network servers panel overtypable columns

Figure 3-101 is a list of the network servers panel overtypable columns and the JES3 command to carry out the overtyping.

```
Field      JES3 command / SDSF description
CTr        *F NETSERV= - Common tracing
IPName     *F NETSERV=- Local TCP/IP host name
JTr        *F NETSERV=- JES tracing
Port       *F NETSERV=- Local TCP/IP port number
VTr        *F NETSERV=- Verbose tracing
```

Figure 3-101 Network server panel overtypable fields

3.21 Network Connection (NC) panel

The Network Connection (NC) panel allows users to display information about networking connections to an adjacent node:

- SOCKET devices that represent a TCP/IP networking connection
- Active BSC NJE lines
- Associated NJE transmitters and receivers

The Network Connection panel is accessed with the NC command. The NC syntax is shown in Figure 3-102.

```
NC [SHORT]

with no parameters displays network connections, transmitters and receivers.

SHORT or S displays information about network connections only. Transmitters and
receivers are not displayed.
```

Figure 3-102 NC command syntax

Figure 3-103 is an example of the SDSF network connections panel display, invoked with the NC command, in the JES3 environment.

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
---
SDSF NC DISPLAY  SC75                                    INVALID COMMAND
COMMAND INPUT ===>                                            SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,C-Cancel,D-Display,SN-StartNetComm
NP   DEVICE       Status   Type ANode    JobName  JobID    JType    Owner
Pr
     @0000002     ACTIVE   TCP  WTSCPLX9
     @0000002.JR1 INACTIVE
     @0000002.JT1 INACTIVE
     @0000002.OR1 INACTIVE
     @0000002.OT1 INACTIVE
     WTSCNET      ACTIVE   TCP  WTSCNET
     WTSCNET.JR1  INACTIVE
     WTSCNET.JT1  INACTIVE
     WTSCNET.OR1  INACTIVE
     WTSCNET.OT1  INACTIVE
     WTSCPLX1     INACTIVE TCP  WTSCPLX1
     WTSCPLX4     ACTIVE   TCP  WTSCPLX4
     WTSCPLX4.JR1 INACTIVE
     WTSCPLX4.JT1 INACTIVE
     WTSCPLX4.OR1 INACTIVE
     WTSCPLX4.OT1 ACTIVE                VAINI    JOB20994 JOB
     WTSCPLX7     INACTIVE TCP  WTSCPLX7
```

Figure 3-103 Network connection panel

In Figure 3-103 the TCPIP NJE connection to the local node (WTSC75J3) was started from the foreign node WTSCPLX9. JES3 on the local socket side dynamically created a SOCKET definition with a unique name of @0000002 for the connection.

Note: The concept of foreign and local sockets exists in TCP/IP. A JES3 socket defines JES3's usage of a foreign socket only. The local socket is implicitly defined by the NETSERV statement.

A socket definition, defining a foreign socket that is used to connect to TCP/IP: Each socket runs as a subtask under a Netserv address space. The socket definition consists of the following information:

- A unique name representing the view of the socket by JES3 global and used in inquiry and modify commands as well as internal JES3 processing of outbound and inbound TCP/IP data.
- A host name.
- A port number, handled the same way as the Netserv port number.
- The Netserv under which the socket task runs.

If communication is started on a foreign socket, TCP/IP creates an ephemeral socket on the foreign socket side. JES3 on the local socket side, in turn, dynamically creates a SOCKET definition with a unique name of *@nnnnnnn*, where *nnnnnnn* starts at 0000001 and is assigned to the first available number. JES3 calls this socket definition a server socket, because when a TCP/IP connection is established, the node on which the connection is initiated is known to TCP/IP as a client and the other node is known to TCP/IP as a server. The server node always creates a server socket, even if an inactive socket definition exists on the server side.

3.21.1 Network servers panel fields

Title	Description
DEVICE	Name of the connection, transmitter or receiver. This is the fixed field.
Status	Device status
Type	Connection type (SNA, BSC, TCP)
ANode	Adjacent node
Jobname	Job name
JobID	JES job ID
JType	Type of address space
Owner	User ID of job creator
Proc-Lines	Number of lines processed for the job
Tot-Lines	Number of lines in the job
Unit	Unit associated with line
JRNum	Job receiver count
JTNum	Job transmitter count
SRNum	SYSOUT receiver count
STNum	SYSOUT transmitter count
CTr	Common tracting
JTr	JES tracing
VTr	Verbose tracing
IPName	IP host name
Port	TCP/IP port number
Secure	Secure (TLS) connection
RelConn	Related connection name
SrvName	Name of the associated server device
SysName	System Name
JESN	JES subsystem name
JESLevel	z/OS JES version and release

Figure 3-104 Network connections panel fields

Figure 3-104 on page 107 lists network connection panel fields for the JES3 environment.

3.21.2 Network connection panel NP field actions

Figure 3-105 is a list of the network connections panel NP column actions.

NP-Description	JES3 command / SDSF description
C-Cancel	*C - Cancel the connection (JES3 only)
D-Display	*I - Display the network connection in the log.
SN-StartNetComm	*S - Start network communication

Figure 3-105 Network connections panel NP column actions

3.21.3 Network connection panel overtypable columns

Figure 3-106 on page 108 is a list of the network connection panel overtypable columns and the JES3 command to carry out the overtyping.

```
Field          JES3 command - SDSF description
ANode          *F - Adjacent node
CTr            *F - Common tracing
IPName         *F - IP host name
JTr            *F - JES tracing
Port           *F - TCP/IP port number
SrvName        *F - Name of the associated server device
VTr            *F - Verbose tracing
```

Figure 3-106 Network connections panel overtypable columns

3.22 Spool volumes (SP) panel

The spool volumes panel displays information about JES spool volumes.The spool volumes panel is accessed with the SP command, which does not have any arguments. Figure 3-107 is an example of data on the spool volumes panel.

```
 Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF SPOOL DISPLAY SC75       1% ACT  1772K FRE  1759K LINE 1-5 (5)
COMMAND INPUT ===>                                      SCROLL ===> HALF
ACTION=//-Block,=-Repeat,+-Extend,A-Release,D-Display,DL-DisplayLong,H-Hold,
ACTION=HC-HoldCancel,HP-HoldStop,J-Jobqueue,P-Purge,U-Use
NP   NAME     Status       TGPct TGNum TGUse Ext LoCyl    LoTrk            LoHe
     DRAINED  INACTIVE       100     0     0 00  00000000 0000000000000000 0000
     UNAVAIL  INACTIVE       100     0     0 00  00000000 0000000000000000 0000
     JES3PART ACTIVE           1 1772K 13728 00  00000000 0000000000000000 0000
     SPOOL1   ACTIVE          44 15000  6703 02  00000014 000000000000012C 0000
     SPOOL2   ACTIVE           1 1758K  7025 03  0000000F 00000000000000E1 0000
```

Figure 3-107 Spool volumes panel

3.22.1 Spool volumes panel fields

The spool volumes panel title line shows the following in Figure 3-108 on page 108.

```
   Display  Filter  View  Print  Options  Search  Help

------------------------------------------------------------------------------
---
 SDSF SPOOL DISPLAY SC75       1% ACT  1772K FRE  1759K LINE 1-5 (5)
                      |         |      |          |          |     |
                      |         |    Active    Free        Lines   |
                      |         |    tracks    tracks     displayed|
                      |    Spool utilization                      Total
                  System name the user is logged on to            lines
```

Figure 3-108 Spool volumes panel title line

The Spool Volumes panel of the JES3 environment includes some or all of the following fields listed in Figure 3-109. (The order and titles may be different, depending upon installation and user options.)

Title	Description
NAME	DDNAME, DRAINED or UNAVAIL. This is the fixed field.
Status	Spool or partition status (active, starting, halting, draining, inactive)
TGPct	Spool utilization
TGNum	Total track groups
TGUse	Track groups in use
Ext	Extent number, in hexadecimal
LoCyl	Low cylinder
LoTrk	Absolute low track number, in hexadecimal
LoHead	Low head
HiCyl	High cylinder
HiTrk	Absolute high track number, in hexadecimal
HiHead	High head
TrkPerCyl	Tracks per cylinder
RecPerTrk	Records per track
TrkPerTG	Tracks per track group
Type	Spool type (PARTITION or EXTENT)
PartName	Partition name
OverFNam	Overflow partition name
OverAllow	Indicates if overflow from this partition to another partition is allowed
OverOccur	Indicates if overflow from this partition to another partition occurred
OverInto	Indicates if overflow into this partition is allowed
PTracks	Total tracks in the partition
PTrackU	Tracks in use in the partition
DTracks	Total tracks in the data set
DTrackU	Tracks in use in the data set
Default	Default partition indicator
STT	Single track table indicator
MargPct	Marginal SLIM threshold percentage shown only on the row for the partition
MargExc	Marginal threshold exceeded
MinPct	Minimal SLIM threshold percentage
MinExc	Marginal threshold exceeded
DataSetName	Data set name

Figure 3-109 Spool volumes panel fields

3.22.2 Spool volumes panel NP field actions

Figure 3-110 on page 110 is a list of spool volumes panel NP field actions.

```
NP-Description   JES3 command / SDSF description
A-Release        *F Q,DD=(NAME),RELEASE - Release the spool data set and all jobs that
                 have data on spool for scheduling
D-Display        *I Q,DD=|SP=(NAME) - Display the status of a spool volume or spool
                 partition
DL-DisplayLong   *I Q,SP=(NAME),DD - Display the long form of spool partition status
H-Hold           *F Q,DD=(NAME),HOLD - Hold the spool data set and further scheduling
                 for jobs with data on the data set
HC-HoldCancel    *F Q,DD=(NAME),CANCEL - Hold the spool data set and cancel all jobs
                 using it
HP-HoldStop      *F Q,DD=(NAME),STOP - Hold the spool data set and hold further sched-
                 uling of jobs with data on it. Cancel jobs active on the main and
                 using the data set.
J-Jobqueue       *I Q,SP=(NAME),U - Display all jobs using the spool partition
P-Purge          *F Q,DD=(NAME),DRAIN - Drain a spool volume.
U-Use            *F Q,DD=(NAME),USE - Resume allocating space on the spool data set
```

Figure 3-110 Spool volumes panel NP field actions

3.22.3 Spool volumes panel overtypable fields

Figure 3-111 is a list of the spool volumes panel overtypable columns and the JES3 command to carry out the overtyping.

```
Field            JES3 command / SDSF description
MinPct           *F Q,SP=spart,MIN=nn - Minimal SLIM threshold percentage
OverFNam         *F Q,SP=spart,O={spart2 | YES | NO] - Overflow partition name
PartName         *F Q,DD=ddname,SP=spart - Partition name
```

Figure 3-111 Spool volumes panel overtypable fields

3.23 User Session Log (ULOG) panel

The User Session Log (ULOG) panel displays the MVS and JES commands and responses issued during the user's session, including commands generated by SDSF and SAF. SDSF deletes the user session log when an SDSF session is ended or when the ULOG CLOSE command is issued.

SDSF uses MVS console services to acquire an extended console that is used to issue commands and receive responses.

Responses can be returned to ULOG only if:

- The command processor issues the message using the console ID of the extended console.
- The command processor supports use of the CART (command and response token). To get a command response on the same panel as the / command was entered, the command processor must specify both console ID and CART. To get the response in the ULOG, only the console ID is required.
- The message response is not being suppressed through MPF (the message processing facility).
- The D R,L command filters the response based on the issuing console ID. To see all outstanding replies, issue D R,L,CN=(ALL).

The ULOG panel is accessed with the ULOG command, shown in Figure 3-112.

```
{ULOG|U} [CLOSE]

   CLOSE deletes all entries in the user session log and deactivates the
   extended console.
   ULOG with no parameters displays the ULOG panel. An extended console is
   activated if one is not already active.
```

Figure 3-112 ULOG command syntax

The SDSF ULOG extended console activation may fail with message "ISF032I CONSOLE emcs_name ACTIVATE FAILED, RETURN CODE 0004, REASON CODE 0000 ". Use the SET CONSOLE command or action bar Options choice 9 to set a new name for the extended console.

Figure 3-113 shows an example of the JES3 commands entered on the spool volumes panel and command responses on the ULOG panel. The D EMCS command was issued as a slash (/) command on a COMMAND INPUT line. The ULOG panel is scrolled to the right past the message text prefix.

All commands and command responses are always logged into the system hardcopy log.

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
SDSF ULOG  CONSOLE NEWCONS                        LINE 0       COLUMNS 42- 121
COMMAND INPUT ===>                                            SCROLL ===> HALF
******************************** TOP OF DATA *********************************
  ISF032I CONSOLE METOO ACTIVATE FAILED, RETURN CODE 0004, REASON CODE 0000
  ISF031I CONSOLE NEWCONS ACTIVATED
 -*I Q,SP=(DRAINED)
  IAT8980 DRAINED  HAS NO SPOOL DATA SETS
  IAT8607 INQUIRY ON SPOOL PARTITION STATUS COMPLETE
 -*I Q,SP=(JES3PART),DD
  IAT8513 SPOOL1   JES3PART  15,000 GRPS,  8,281 LEFT ( 55%), STT
  IAT8513 SPOOL2   JES3PART  1,800K GRPS, 1,793K LEFT (100%), STT
  IAT8607 INQUIRY ON SPOOL PARTITION STATUS COMPLETE
-D EMCS
  IEE129I  11.16.19 DISPLAY EMCS 651
  DISPLAY EMCS
  NUMBER OF CONSOLES MATCHING CRITERIA: 28
  SC74     *ROUTE74 *AXR0374 *SYSLG75 *OPLOG75 *AXR0375 SYSJ3N01
  XYZ      U2M2     *SYSLG74 *OPLOG74 *AXR0174 *DICNS75 *AXR0175
  *AXR0275 SYSJ3D01 VAINJ    *DICNS74 *AXR0474 *AXR0274 SC75
  *ROUTE75 *AXR0475 SYSJ3R01 VAINI    METOO    VJUHA    NEWCONS
```

Figure 3-113 Example of commands and responses on the ULOG panel

The message text on the ULOG message lines is prefixed with the system name, julian date, time stamp and ID of job that issued the message:

```
SC75      2011095  11:10:32.12  JES3       IAT8607 INQUIRY ON SPOOL PARTITION S
```

When a JES or MVS operator command is issued on a active SDSF panel, the responses of the commands are displayed on the active panel, as shown in Figure 3-114 on page 112.

```
  Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
SDSF ULOG  CONSOLE NEWCONS                        LINE  COMMAND ISSUED
COMMAND INPUT ===>                                      SCROLL ===> HALF
RESPONSE=SC75
 CNZ4100I 11.51.40 CONSOLE DISPLAY 680
 CONSOLES MATCHING COMMAND: D C,CN=METOO
 MSG:CURR=0    LIM=1500 RPLY:CURR=0    LIM=999   SYS=SC75     PFK=00
 METOO     TYPE=EMCS     STATUS=ACT-SC75
           DEFINED=(*ALL)
           MATCHED=(*ALL)
    ATTRIBUTES ON *DEFINED
       AUTH=(INFO)      CMDSYS=SC75         NBUF=N/A
       KEY=NONE
       MFORM=(M)
       LEVEL=(ALL)
       MONITOR=(NONE)                       INTIDS=N  UNKNIDS=N
       ROUT=(NONE)
       MSCOPE=(*ALL)
   SC74     *ROUTE74 *AXR0374 *SYSLG75 *OPLOG75 *AXR0375 SYSJ3N01
   XYZ      U2M2     *SYSLG74 *OPLOG74 *AXR0174 *DICNS75 *AXR0175
   *AXR0275 SYSJ3D01 VAINJ    *DICNS74 *AXR0474 *AXR0274 SC75
   *ROUTE75 *AXR0475 SYSJ3R01 VAINI    METOO    VJUHA    NEWCONS
```

Figure 3-114 MVS command response on an active SDSF panel

Users can request that SDSF use a console ID of 0 with the **i** parameter on the **/** command (i/ command). The i/ command responses are not displayed on the ULOG panel, but are logged into the system hardcopy log.

3.24 Hardcopy log panels

The MVS hardcopy processing allows your installation to have a permanent record of system activity and helps you audit the use of operator commands. You can record system messages and, optionally, commands, by using either the system log (SYSLOG) or the operations log (OPERLOG). Hardcopy processing is required in a sysplex.

The SDSF hardcopy log includes:

- The SDSF OPERLOG (LOG O) panel displays a merged, sysplex-wide system message log, which contains console messages, operator commands, and operator responses for the MVS systems. The SDSF OPERLOG messages are retrieved from the MVS operations log (OPERLOG).

  The MVS operations log (OPERLOG) is a log stream that uses the system logger to record and merge communications from each system in a sysplex. Only the systems in a sysplex that have specified and activated the operations log will have their records sent to the MVS OPERLOG.

- The SDSF SYSLOG (LOG S) panel displays the MVS system log messages.

  The system log (SYSLOG) is a data set residing in the primary job entry subsystem's spool space. In MVS, the system log data set includes all entries made by the WTL (write-to-log) macro as well as the hardcopy log (console messages, operator commands, and operator responses for a z/OS system). SYSLOG is maintained by JES in the JES SPOOL space.

- JES3 DLOG centrally records command and message traffic for systems in a JES3 complex in JES3 format. The JES3 DLOG is written to SYSLOG on the global processor.

  SYSLOG on the global processor must be active when DLOG is active.

IBM recommends use of OPERLOG on all systems in the sysplex as the only normally active hardcopy medium. The OPERLOG MDB records contain considerably more information than either the JES3 DLOG or SYSLOG formats. In addition, with OPERLOG each system writes its own command and message traffic to the common log, rather than all log activity taking place on the JES3 global processor, as with DLOG.

You control which messages are included in the hardcopy message set with the VARY,HARDCPY command. The HARDCPY operand on the VARY command assigns SYSLOG or OPERLOG as the hardcopy medium. You can assign both SYSLOG and OPERLOG as the hardcopy medium. To display information about the hardcopy medium, enter:

```
DISPLAY CONSOLES,HARDCOPY or D C,HC
```

Unless you specify otherwise, the system includes all operator and system commands, responses, and status displays in the hardcopy message set. To request that some commands and command responses not be included in the hardcopy message set, the system gives you the following choices on the VARY,HARDCPY command:

- NOCMDS - The system does not include operator commands or their responses in the hardcopy message set.
- INCMDS - The system includes all operator commands and their responses, excluding any status displays, in the hardcopy message set.
- STCMDS or CMDS - The system includes all operator and system commands, their responses, and status displays in the hardcopy message set. As of z/OS V1R8, STCMDS and CMDS are equivalent.

Use the JES3 *MODIFY,O command to activate or deactivate the JES3 DLOG:

```
*MODIFY,O,DLOG={ON|OFF}
```

The JES3 *INQUIRY,O,DLOG command displays the status of the DLOG.

3.24.1 Defaults for the SDSF hardcopy log panels

The default hardcopy log panel can be set with the SET LOG command on any SDSF panel. The command specifies the panel that is displayed when you enter the LOG command with no parameters. Instead of the SET LOG command, you can use SDSF panel action bar *Options* choice 18 Set Log Default for setting the log panel default. The format of the SET LOG command is shown in Figure 3-115.

```
SET LOG {OPERACT|OPERLOG|SYSLOG|?}

  SET LOG with no parameters is the same as SET LOG OPERACT.
  OPERACT or A specifies that the OPERLOG panel is displayed if the Operlog
  component is active on the system you are logged on to; otherwise, the
  SYSLOG panel is displayed.
  OPERLOG or O specifies that the OPERLOG panel is displayed.
  SYSLOG or S specifies that the SYSLOG panel is displayed.
  ? displays the current setting for SET LOG command.
```

Figure 3-115 SET LOG command syntax

3.24.2 Commands to search data on panels

Find and scroll to specified characters:

- FIND (string) (parameters) command - Searches all data on the Log, ULOG, and Output Data Set panels, and the fixed (first) field on the tabular panels.
- FINDLIM **c**ommand - Resets the maximum number of lines searched by the FIND command on the Log, ULOG, and Output Data Set panels. You must be authorized to use this command.
- {LOCATE | LOC | L} [line-number | time | time-date | column] command - Scrolls a panel to a specific line or column.

The FIND command syntax is shown in Figure 3-116.

```
FIND (string)    (start-col) (end-col) (PREV)  (CHARS)
F    (*)                               (NEXT)  (WORD)
     (X'string')                       (FIRST) (PREFIX)
                                       (LAST)  (SUFFIX)
                                       (ALL)
   string is the string of characters to be searched for.
   * uses the string entered with the previous FIND command.
   X'string' specifies a string of hexadecimal characters.
   start-col starts the search in the specified column.  If used without
   end-col, the string must begin there.
   end-col ends the search in the specified column.
   PREV searches backward.
   NEXT searches forward.
   FIRST starts at the beginning of the data.
   LAST starts at the end of the data.
   ALL starts at the beginning, scrolls to the first occurrence, and indicates
   the number of occurrences.
   CHARS (or CHAR) indicates a character string.  It is the default.
   WORD indicates the string is preceded and followed by a non-alphanumeric
   character.
   PREFIX (or PRE) indicates the string is preceded by a nonalphanumeric
   character and followed by an alphanumeric character.
   SUFFIX (or SUF) indicates the string is preceded by an alphanumeric
   character and followed by a nonalphanumeric character.

   Note: X'string', WORD, PREFIX, and SUFFIX are valid only on the Log, and
   Output Data Set panels. FIRST, LAST, and ALL are not limited by FINDLIM.
```

Figure 3-116 The FIND command syntax

The syntax of the FINDLIM command is shown in Figure 3-117.

```
   FINDLIM {number|?}

   number is any number between 1000 and 9999999.
   ? displays the current value on the command line or pop-up.

   Under ISPF, this command remains in effect across SDSF sessions.
```

Figure 3-117 The FINDLIM command syntax

Note: The SDSF panel action bar Options pull-down choice 16 “Operlog limit for filter...“ can be used to limit the amount of OPERLOG data SDSF will search for records that meet filter criteria.

Figure 3-118 shows the LOCATE command syntax.

```
LOCATE | LOC | L line-number | time | time-date | column

   line-number is up to 8 digits (Log and Output Data Set panels) time is a
   time of day in the form hh:mm:ss or hh.mm.ss (Log panels)
   time-date is the time and date in the current format (Log panels)
   column is the title of the column to be located (tabular panels). The panel
   is scrolled horizontally so that the column is the first column after the
   fixed field.
```

Figure 3-118 The LOCATE command syntax

3.24.3 OPERLOG (LOG O) panel

The SDSF OPERLOG panel displays the MVS hardcopy message set of the MVS operations log. The OPERLOG panel is accessed with the LOG O command.

The first time you access the OPERLOG panel in a session, SDSF positions the data to show the most recent OPERLOG entries. If you exit the panel and then re-access it, you must scroll to the bottom to see the most recent entries.

```
  Display  Filter  View  Print  Options  Help
 -------------------------------------------------------------------------------
 SDSF OPERLOG  DATE 04/05/2011     1 WTOR    1 FILTER           COLUMNS 02- 81
 COMMAND INPUT ===>                                           SCROLL ===> HALF
---+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8-
D                                          062 00000090  IRRH204E The RACF_SENS
E                                          062 00000090  more potential errors
N 0000000 SC75     2011095 15:11:00.02 JES3     00000090  IAT6395 00002 REQUEST(
M 0080000 SC74     2011095 15:14:56.16          00000090  IRR812I PROFILE ** (G)
E                                          063 00000090           TO START BPXAS
N 0200000 SC74     2011095 15:14:56.18 STC04095 00000090  $HASP100 BPXAS    ON S
N 4000000 SC74     2011095 15:14:56.25 STC04095 00000090  $HASP373 BPXAS    STAR
N 0000000 SC74     2011095 15:14:56.26 STC04095 00000290  BPXP024I BPXAS INITIAT
S                                                         0041
N 0000000 SC75     2011095 15:21:00.02 JES3     00000090  IAT6395 00002 REQUEST(
NC0000000 SC75     2011095 15:24:18.87 NEWNAME  00000290  *I O DLOG
NR0000000 SC75     2011095 15:24:18.88 JES3     00000090  IAT8617 DLOG STATUS -
******************************** BOTTOM OF DATA ********************************
```

Figure 3-119 OPERLOG (LOG O) panel

Figure 3-119 shows an OPERLOG panel display. The COLS command has been used to display the formatted line for identifying display columns. The RESET command resets the results of a previous COLS command. The ACTION OFF command is also in effect; no WTOR messages are displayed at the bottom of the panel.

The format of the lines on the OPERLOG panel is shown in Figure 3-120 on page 116. The MVS mapping macro for hardcopy log format is IHAHCLOG in the SYS1.MODGEN library.

```
NR00000000 SYS1   2001363 09:46:34.34 HZSPROC  00000090  HZS0002E CHECK(...
 | |       |        |     |           |        |         |
 | First   |        |     Time        |        User exit |
 | 28      |        Julian            |        flags     |
 | routing |        date              |                  |
 | codes   |                          Console name,      Message text,    |
 Record    System name                jobname, or        beginning with
 and Request type                     multi-line ID      message ID
```

Figure 3-120 OPERLOG panel format

Messages are displayed on the OPERLOG panel with the color and highlighting that were assigned to them when they were issued. You can customize the colors with the SET SCREEN command.

3.24.4 Useful commands for the OPERLOG panel

A few useful commands are shown. Some require authorization.

- (W) | (I)/[command] - Issue a system command
- ACTION routing-code-list - Specify WTORs displayed
- FILTER column oper value - Filter log records
- FIND string - Search for a character string
- LOCATE hh:mm:ss mm/dd/yyyy - Locate a time and date
- NEXT / PREV number H | D | M | S - Scroll by hours, days, minutes, seconds
- PRINT begin-time begin-date end-time end-date - Print data
- RSYS system - Limit WTORs by system
- SET SCREEN - Set colors

The / command is used to issue a system command. The syntax is shown in Figure 3-121.

```
(W)|(I)/[command] Issue a system command
   / with no command displays the system command extension pop-up, primed with
   the text of the previous slash command.
   W waits the full delay interval before displaying messages. The delay
   interval is specified with the SET DELAY command.
   I uses console ID 0 (INTERNAL) to issue the command. command is any MVS or
   JES command.
   + displays the system command extension pop-up. The system command extension
   pop-up lets you enter longer commands and select commands from a list of
   recently issued commands.
```

Figure 3-121 {W} | {I} / command syntax

The ACTION command is used to specify which WTORs to display. The syntax is shown in Figure 3-122.

```
ACTION routing-code-list Specify WTORs displayed
   ACTION {routing-code-list|MVS|USER|ALL|OFF|?}
   Specifies which Write-To-Operator-with-Reply (WTOR) messages are displayed
   at the bottom of the Log panel. You must be authorized to use this command.
```

Figure 3-122 ACTION command syntax

The FILTER command is used to filter log records. The format is shown in Figure 3-123 on page 117.

```
FILTER column oper value Filter log records
   FILTER ON | OFF | OR | AND
   FIL    (+|-)column (operator) value
   Filters data on the current SDSF panel. Under ISPF, filters are saved (one
   set for each JES type).
   OFF turns filtering off but retains filter criteria.
   ON turns filtering on.
   OR and AND specify the relationship between filters both within a column and
   between columns.
   (+|-)column names a column for filtering and turns filtering on. column can
   be abbreviated to the shortest unique name.
   + adds the filter to any previous filters. There is a limit of 25 filters
   under ISPF
   - discards all filters for the column.
```

Figure 3-123 FILTER command syntax

The FIND command is used to search for a character string. The syntax is shown in Figure 3-116 on page 114.

The LOCATE command is used to locate a time and date in the log. The syntax is shown in Figure 3-118 on page 115.

The NEXT and PREV commands control scrolling options. The syntax is shown in Figure 3-124.

```
NEXT|N (number) (D|H|M|S)
   number is the number of days, hours, minutes, or seconds (1-99) to scroll
   forward.  The default is 1 H.
   D|H|M|S indicate the unit for number is days, hours, minutes, or seconds
   respectively. Hours is the default.
```

Figure 3-124 NEXT / PREV command syntax

The RSYS command is used to limit WTORs by the system. The format is shown in Figure 3-125.

```
RSYS (system-name | ?)
RSYS with no parameters displays only WTORS from the system you are logged on to.
system-name is the MVS system name, up to 8 characters, including * (any string of
characters) or % (any single character).
? displays the current setting on the command line or pop-up.
```

Figure 3-125 RSYS command syntax

The PRINT command is used to print data. The format is shown in Figure 3-126 on page 118.

```
RINT  (first-line last-line)
PRT   (begin-time begin-date end-time end-date)
PT    (SCREEN)
   PRINT with no parameters opens a default SYSOUT data set if the print data
   set is not already open. On the output data set panel, it also prints the
   entire data set.
   first-line is the first line to be printed, in the current data set. To
   specify a quantity rather than a range of lines, use * for the first line.
   You must use * with the operlog.
   last-line is the last line to be printed. If * is used for first-line this
   is a quantity of lines.
   begin-time is the beginning time for a range of lines on the log, in the
   form hh:mm:ss or hh.mm.ss.
   begin-date is the beginning date for a range of lines on the log, in the
   current date format. The default is the date of the current top line.
   end-time is the ending time for the range of lines.
   end-date is the ending date for the range of lines. The default is the date
   of the current top line.
   SCREEN prints the screen image. (Under ISPF, use the ISPF PRINTL command.)
```

Figure 3-126 PRINT command syntax

The SET SCREEN command displays a panel that allows you to set the colors, highlighting and intensities used on SDSF panels, and control display of the action bar. It is valid only if SDSF was accessed through ISPF. The values are saved across SDSF sessions.

3.24.5 Columns for filtering on the OPERLOG panel

The OPERLOG panel columns to use with the FILTER command are shown in Figure 3-127.

```
   SYSNAME    MVS system name.
   DATE       Character format date of the message. Enter the date as it is displayed.
   TIME       Character format time of the message. Enter the time as it is displayed.
   DATETIME   Date and time the message was logged, in date/time format. This column
              accepts the date format set with SET DATE. Use operators with > or <.
   JOBNAME    Originating job name.
   JOBID      Job ID. OPERLOG in JES3 system does not show job ID.
   CONSOLE    Console name.
   MSGID      Message ID (first 8-character token of the message text).
   MSGTEXT    Message text (includes message ID). Note that because this column includes
              the message ID, you may want to include a leading generic pattern matching
              character in your filter command, for example, FIL MSGTEXT EQ *STARTED*.
```

Figure 3-127 OPERLOG panel filter fields

You can use the FILTER function to define up to 25 filters with boolean operators. The filter criteria are column, operator and value, and can include pattern matching.

When entering multiple filters, you can specify AND or OR to define the relationship between filters.

When using SDSF interactively under ISPF, type `FILTER ?` to display the Filter pop-up, then type values on the pop-up or select from lists of valid values.

The usage of the FILTER command is explained in Figure 3-123 on page 117. An SDSF panel's action bar Filter pop-up choice '1. Filter' guides you to set up a complex filter.

3.24.6 SYSLOG as hardcopy

The MVS hardcopy log records command and message traffic on the systems. The three forms of the hardcopy log are:

- OPERLOG centrally records command and message traffic for systems in a sysplex in Message Data Block (MDB) format. OPERLOG is controlled by the MVS VARY OPERLOG,HARDCPY command.
- SYSLOG individually records command and message traffic for each system in MVS format. SYSLOG is controlled by the MVS VARY SYSLOG,HARDCPY command.
- JES3 DLOG centrally records command and message traffic for systems in a JES3 complex in the JES3 format. The JES3 DLOG is written to SYSLOG on the global processor. The JES3 DLOG is controlled using the *MODIFY O,DLOG=ON|OFF command. SYSLOG on the global processor must be active when DLOG is active.

At least one hardcopy log must be active on each MVS system.

Users can access the SYSLOGs of all individual systems in the JES complex as a single entity. Instead of searching multiple SYSLOG data sets, viewing and searching is performed on a single, logical SYSLOG data set.

Note: JES3 DLOG activates an extended MCS console to receive messages from the sysplex systems that are defined to belong to the JES3 complex. The DLOG processing, on the JES3 global, extracts the messages from the data space, formats them in JES3 DLOG format, and writes them to SYSLOG using a WTL macro service.

The SYSLOG on the global may contain messages from JESPLEX systems that are IPLed, but do not have an active JES3 primary subsystem.

3.24.7 SYSLOG (LOG S) panel

The SYSLOG panel displays the system log, which is a collection of JES3 data sets that contain console messages, operator commands, and operator responses for a z/OS system. It is accessed with the LOG S command.

The first time you access the SYSLOG panel in a session, SDSF positions the data to show the most recent SYSLOG entries. If you exit the panel and then re-access it, you must scroll to the bottom to see the most recent entries.

Note: SYSLOG panel data filtering is not available. FIND and LOCATE (with some limitations) for scrolling are available.

Figure 3-128 on page 119 is an example of the MVS SYSLOG and JES3 DLOG data display formats of the messages issued for the MVS S DEALLOC command.

Figure 3-128 SYSLOG (LOG S) panel (MVS SYSLOG and JES3 DLOG data on display)

The MVS format of data description of the SYSLOG panel is shown in Figure 3-129.

```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+-
---8-
 M 0080000 SC75     2011072 11:31:57.60          00000090  IRR812I PROFILE
** (G)
  | |       |        |       |           |        |         |
  | First 28|        |       Time        |        User exit |
  | routing |        Julian date         |        flags     |
  | codes   |                            Console name,      Message text,
  Record    System name                  jobname, or        beginning
with
  and Request type                       multi-line ID      message ID
```

Figure 3-129 Description of the MVS format of a SYSLOG message

The JES3 DLOG format of data on the SYSLOG panel is shown in Figure 3-130.

```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+-
---8-
 SEC         2011072 1133225  SC75= DEALLOC  IRR812I PROFILE ** (G) IN THE
STARTE
   |    |     |       |        |     |        |       |
   |    |     Julian  Time     |     Job name |       Message
text
   |    |     date             System         Message ID
   |   Console name            name                        |
  JES3 Destination Class
```

Figure 3-130 Description of the JES3 DLOG format of a SYSLOG message

The MVS format of data on the SYSLOG panel is the same as on the OPERLOG panel.

3.24.8 Useful commands for the SYSLOG panel

A few useful commands are shown here:

- (W)|(I)/[command] - Issue a system command - Figure 3-121 on page 116
- ACTION routing-code-list - Specify WTORs displayed - Figure 3-122 on page 116
- FIND string - Search for a character string - Figure 3-116 on page 114
- LOCATE hh:mm:ss mm/dd/yyyy - Locate a time and date - Figure 3-118 on page 115
- PRINT begin-time begin-date end-time end-date - Print data - Figure 3-126 on page 118
- RSYS system - Limit WTORs by system - Figure 3-125 on page 117
- SYSID system-id - Specify the system ID - Figure 3-131 on page 121

```
SYSID (system-id)
      (*)
      (?)
   with no parameters indicates the SYSLOG panel displays the SYSLOG for the
   all systems in the JESPlex.
   system-id is a system name 1-8 characters.
   * specifies that the JES3 global system is to be used.
   ? displays the current SYSID setting on the command line, as well as a list
   of the systems defined in the JESPLEX beginning on the message line. The
   member the user is logged on to is shown in parentheses.
```

Figure 3-131 SYSID command syntax

3.25 JES3 monitoring

The JES3 MONITOR DSP monitors a resource or queue based on information you specify. JES3 starts the MONITOR DSP and monitors various queues and resources automatically.

The monitor DSP makes it possible to monitor how long a job or FCT has been waiting for a specific JES3 function or resource. For example, if you want to know when a job has been waiting for a CI DSP for more than five minutes, you can set the monitor DSP to issue a message when five minutes have elapsed.

The JES3 monitor DSP runs as an FCT under the JES3 nucleus task and monitors unavailable JES3 resources. A JES3 resource is anything that can use an FCT or a job that can become unavailable. The following JES3 resources can be monitored:

- Generalized subtasks - allow to execute code containing implicit or explicit MVS WAITs.
- AENQ resources - obtain use of a JES3 resource.
- JQEs - Job Queue Element.
- Job numbers - JES3 supports as many as 999,999 jobs in your JES3 complex at the same time. However, JES3 limits the maximum number of jobs by choosing the smallest of the following:
  - The value you specify on the job limit parameter on the JOBNO= keyword of the OPTIONS initialization statement
  - The range of job numbers that you define on the JOBNO= keyword of the OPTIONS initialization statement
  - The number of entries in the job control table (JCT)
- File directory entries - The data management FILE DIRECTORY accounts for all opened multirecord files and some single-record files.
- JSAM buffers - The primary of JSAM buffers is defined with the BUFFER initialization statement.
- Spool space.

4

Using SDSF to work with MVS

In this chapter the following topics are discussed:

- The Display Active Users (DA) panel, which allows authorized users to display information about jobs, TSO users, started tasks, and initiators that are active in the sysplex. It also shows system data, such as CPU usage and paging information.
- In a JES3 environment, the DA panel requires RMF to be active.
- The System Requests (SR) panel, which allows authorized users to display information about reply and action messages.
- The Scheduling Environment (SE) panel, which allows authorized users to display the Scheduling Environments in the sysplex.
- The Resource (RES) panel, which allows authorized users to display WLM resources.
- The Enclaves (ENC) panel, which allows authorized users to display information about WLM enclaves.
- The Processes (PS) panel, which allows authorized users to display information about z/OS UNIX System Services processes.
- The Health Checker (CK) panel, which allows authorized users to display information from IBM Health Checker for z/OS. The panel shows the active checks. Checks that are currently running are highlighted.

4.1 Working with MVS

In this section the following topics are discussed:

- The Display Active Users (DA) panel, which allows users to view and control information about active jobs, TSO users, started tasks, and initiators. It also shows system data, such as processor usage and paging information.

  In a JES3 environment, the DA panel requires IBM Resource Measurement Facility™ (RMF) to be active.
- The System Requests (SR) panel, which displays information about reply and action messages.
- The Scheduling Environment (SE) panel, which displays the Scheduling Environments in the sysplex.
- The Resource (RES) panel, which displays Workload Management (WLM) resources.
- The Enclaves (ENC) panel, which displays information about WLM enclaves.
- The Processes (PS) panel, which displays information about z/OS UNIX System Services processes.
- The Health Checker (CK) panel, which displays information from IBM Health Checker for z/OS. The panel shows the active checks. Checks that are currently running are highlighted.

4.2 Display active users (DA) panel

The Display Active Users (DA) panel displays information about active jobs, TSO users, started tasks, and initiators in the sysplex. It also shows some system data, such as processor usage and paging information.

The DA panel in a JES3 environment requires RMF Monitor I to be started. By default, Monitor I is started when RMF is started.

The DA panel is invoked with the DA command, shown in Figure 4-1 on page 125.

```
 Position:   Type:   Only:     No:        All:
DA (IN   )   (JOB )  (OJOB  )  (NOJOB  )  (ALL )
   (OUT  )   (TSU )  (OTSU  )  (NOTSU  )  (ALLT)
   (TRANS)   (STC )  (OSTC  )  (NOSTC  )  (ALLP)
   (READY)   (INIT)  (OINIT )  (NOINIT )
                     (OIN   )  (NOIN   )
                     (OOUT  )  (NOOUT  )
                     (OTRANS)  (NOTRANS)
                     (OREADY)  (NOREADY)
"Position" and "Type" parameters include address spaces.
   Only parameters limit the display to those types or positions. Use only one
   parameter from this column.
   No parameters exclude those types or positions.
   All parameters show all address spaces, or all types or positions. They
   cannot be used with other parameters.
The maximum number of parameters is four.
The information displayed may also be limited by your authorization, and by settings for
filters such as FILTER, PREFIX, and SYSNAME.
When parameters conflict, the last one is used.
```

Figure 4-1 DA command syntax

Figure 4-2 is a sample active panel display invoked with a DA JOB NOSTC command.

```
    Display  Filter  View  Print  Options  Search  Help
  -------------------------------------------------------------------------------
  ---
  SDSF DA SC75     (ALL)    PAG  0  CPU/L/Z   5/  1/  0  LINE 1-8 (13)
  COMMAND INPUT ===>                                          SCROLL ===>
  HALF
  PREFIX=%*  DEST=*  OWNER=*  SYSNAME=*
  ACTION=//-Block,=-Repeat,+-Extend,?-JDS,A-Release,C-Cancel,CA-CancelARM,
  ACTION=CD-CancelDump,CDA-CancelARMDump,CP-CancelPrint,D-Display,
  ACTION=DE-DisplayEstimates,DL-DisplayLong,DSD-DisplayDDDnames,
  ACTION=DSH-DisplaySpoolHold,DSP-DisplaySpoolPartition,DX-DisplayExtended,
  ACTION=E-Restart,H-Hold,K-SysCancel,KD-SysCancelDump,L-List,LB-ListBDT,
  ACTION=LH-ListHold,LT-ListTCP,P-Purge,Q-OutDesc,R-Reset,RQ-ResetQuiesce,
  ACTION=S-Browse,SB-ISPFBrowse,SE-ISPFEdit,SJ-JCLEdit,W-Spin,X-Print,
  ACTION=XC-PrintClose,XD-PrintDS,XDC-PrintDSClose,XF-PrintFile,
  ACTION=XFC-PrintFileClose,XS-PrintSysout,XSC-PrintSysoutClose,Y-SysStop,
  ACTION=Z-SysForce
  NP   JOBNAME     SIO   CPU% ASID ASIDX  EXCP-Cnt   CPU-Time SR Status
  SysName
       VAINI      0.00   0.00   76 004C       2947       2.51 TI        SC74
       INITS      0.00   0.00   31 001F          2       0.00 DW
       EATING     0.00   0.00   61 003D          2       0.00 DW        SC75
       JUST       0.00   0.00   62 003E          2       0.00 DW        SC75
       SOME       0.00   0.00   63 003F          2       0.00 DW        SC75
       CLASSA     0.00   0.00   64 0040          2       0.00 DW        SC75
       JOBS       0.00   0.00   66 0042          2       0.00 DW        SC75
```

Figure 4-2 Display active users panel

Note: The DA panel shows information about jobs, TSO users, started tasks, and initiators that are active in the JESPLEX even if some of the systems are not running JES3 as the primary job entry subsystem.

The title line description of the display active users panel is in Figure 4-3.

```
SDSF DA SC75    (ALL)    PAG  0  CPU/L/Z   1/  1/  0  LINE 1-25 (132)
       |        |        |       |                      |          |
  System ID     |        |       |                 Lines displayed |
  of system     |  Total demand  |                 or first line   |
  you are       |  paging rate   |                 if 100,000      |
  logged        |                Percentage of time                |
  on to         |                the CPU is busy,                  |
           Systems displayed     MVS, LPAR and zAAP                |
           (MVS value or         views                  Total lines
           SYSNAME value)
SIO, if shown, is the total system start I/O rate. PAG, SIO, and CPU values
are for the system you are logged on to.
```

Figure 4-3 Display active users panel title line

4.2.1 Display active users panel fields

The display active users panel includes some or all of the fields in Figure 4-4 on page 127 and. (The order and titles may be different, depending upon installation and user options.)

Title	Description
JOBNAME	Job name of the address space
StepName	Job step name, or TSO procedure name for TSO users
ProcStep	Procedure step name, or terminal name for TSO users
Type	Type of address space: job, started task, TSO user, or initiator
JNum	JES job number. Not included in the default field list.
Owner	User ID of job creator
C	JES input class at the time the job was selected for execution
Pos	Address space position; swapped in, swapped out, nonswappable, in transition
DP	Address space dispatching priority in hexadecimal
Real	Current utilization of real storage in frames
Paging	Demand paging rate (only present if the address space was swapped in for the entire interval)
SIO	Address space's EXCP rate in EXCPs per second
CPU%	Percent of CPU time used on behalf of this address space during the most recent interval measured
ASID	Address space identifier
ASIDX	Address space identifier in hexadecimal
EXCP-Cnt	Address space's EXCP count for the current job step. Uses hexadecimal scaling.
CPU-Time	Accumulated CPU time (TCB plus SRB) consumed on behalf of the address space, for the current job step, in seconds
SR	Swap out reason code
JobID	JES job ID or work ID
Status	PROT (job is protected)
Workload	Workload name
SrvClass	Service class name
SP	Service class period
ResGroup	Resource group name
Server	Server indicator, indicates if resource goals are being honored
Quiesce	Quiesce indicator (address space is quiesced)
SysName	System on which the address space is running
SPag	Demand paging rate for the system (see note)
SCPU%	System CPU utilization for the system that is processing the job (see note)
ECPU-Time	Accumulated CPU time consumed within the address space, for the current job step, in seconds
ECPU%	CPU usage consumed within the address space
CPUCrit	Current address space CPU protection
StorCrit	Current address space storage protection
RptClass	Report class
MemLimit	Memory limit
Tran-Act	Elapsed time the transaction has been active
Tran-Res	Elapsed time the transaction was swapped in
Spin	Indicator of whether jobs in the job class can be spun (
Seclabel	Security label
GCP-Time	Accumulated general processor service time, in seconds
zAAP-Time	Accumulated zAAP service time, in seconds
zACP-Time	Accumulated general processor service time that was eligible for a zAAP, in seconds
GCP-Use%	Percent of the total general processor time used by the address space in the most recent interval (not normalized

Figure 4-4 Display active users panel fields 1 of 2

Title	Description
zAAP-Use%	Percent of the total zAAP time used by the address space in the most recent interval (not normalized)
SzAAP%	zAAP view of CPU use for the system, in the most recent interval. The same for all rows for a system.
SzIIP%	zIIP view of CPU use for the system, in the most recent interval. The same for all rows for a system.
Promoted	Promoted due to a chronic resource contention
zAAP-NTime	Normalized zAAP service time, in seconds
zIIP-Time	Accumulated zIIP service time, in seconds
zICP-Time	Accumulated general processor service time that was eligible for a zIIP, in seconds
zIIP-NTime	Normalized zIIP service time, in seconds
zIIP-Use%	Percent of the total zIIP time used by the address space in the most recent interval (not normalized)
SLCPU%	Percentage of time the LPAR is busy for the system, in the most recent interval. The value for SLCPU% is the same for all rows for a system.

Figure 4-5 Display active users fields 2 of 2

4.2.2 Display active users panel NP field actions

Figure 4-6 and Figure 4-7 on page 129 show the action characters that can be entered in the NP column on the display active users panel.

NP action	JES3 command / SDSF description
A-Release	*F J=jobno,R - Release a held job.
C-Cancel	*F J=jobno,CO - Cancel a job, also print non-held data sets.
CA-CancelARM	*F J=jobno,C,ARMR - Cancel a job that is defined to Automatic Restart Manager (ARM).
CD-CancelDump	*F J=jobno,C,D - Cancel a job and take a dump.
CDA-CancelARMDump	*F J=jobno,C,D,ARMR - Cancel a job that is defined to ARM, and take a dump.
CP-CancelPrint	*F J=jobno,CP - Cancel a job and delete held data sets.
D-Display	*I J=jobno - Display job information in the log.
DE-DisplayEstimates	*I J=jobno,E - Display line, page, record and card counts
DL-DisplayLong	*I A,J=jobno - Display long form
DSD-DisplayDDDnames	*I J=jobno,SD - Display DDNAMES of spool data sets that contain data
DSH-DisplaySpoolHold	*I J=jobno,SH - Display DDNAMES of spool data sets in spool hold that contain data
DSP-DisplaySpoolPartition	*I J=jobno,SP - Display Spool partition name
DX-DisplayExtended	*I J=jobno,X - Display extended
E-Restart	*R main,jobno - Process a job again.
H-Hold	*F J=jobno,H - Hold a job.
K-SysCancel	C jobname.identifier,A=asidx - Cancel a started task (MVS cancel).
KD-SysCancelDump	C jobname.identifier,DUMP,A=asidx - Cancel a started task and take a dump (MVS cancel)

Figure 4-6 Display active users panel NP field actions 1 of 2

NP action	JES3 command / SDSF description
L-List	*I U,Q=WTR,J=jobno - List WTR queue output status of a job
LB-ListBDT	*I U,Q=BDT,J=jobno - ListSNA/NJE outputstatus of a job
LH-ListHold	*I U,Q=HOLD,J=jobno - List HOLD queue output status of a job
LT-ListTCP	*I U,Q=TCP,J=jobno - List TCP/IP queue output status of a job
P-Purge	*F J=jobno,C - Cancel a job and purge its output.
R-Reset	RESET jobname,A=asidx - Reset and resume a job.
RQ-ResetQuiesce	RESET jobname,Q,A=asidx - Reset and quiesce a job.
Q-OutDesc	Display output descriptors for all of the data sets.
S-Browse	Display the data sets for a job. You can add:
SB-ISPFBrowse	Use ISPF Browse
SE-ISPFEdit	Use ISPF Edit
SJ-JCLEdit	Use ISPF Edit to edit the JCL
W-Spin	*F J=jobno,SPIN - Cause job and message logs to spin.
X-Print	Print output data sets. You can add:
XC	C - Close the print file after printing (XC)
XD or XDC	D - Display the Open Print Data Set panel (XD or XDC)
XF or XFC	F - Display the Open Print File panel (XF or XFC)
XS or XSC	S - Display the Open Print panel (XS or XSC)
Y-SysStop	P jobname.identifier,A=asidx - Stop a started task (MVS stop).
Z-SysForce	FORCE jobname.identifier,A=asidx - Cancel a started task (MVS force).
?-JDS	Display a list of data sets for a job. (Access the Job Data Set panel.)

Figure 4-7 Display active users panel NP field actions 2 of 2

4.2.3 Display active users panel overtypable fields

Display active users panel overtypable fields are listed in Figure 4-8.

Field	MVS command / SDSF description
SrvClass	E jobname[,A=asid],SRVCLASS=classname - Service class name
Quiesce	E jobname[,A=asid],Q - Quiesce indicator (QUIESCE or RESUME)

Figure 4-8 Display active users panel overtypable fields

4.3 System Requests (SR) panel

The system requests panel displays information about operator reply and action messages. The system requests panel is invoked with the SR command. Figure 4-9 on page 130 shows the SR command syntax.

```
SR ALL | {ACTIONS|A} | CEM | EM | IM | {MOUNTS|M} | {REPLIES|R|RM})
   ALL displays all reply and action messages. This is the default.
   ACTIONS or A displays action messages.
   CEM displays critical eventual action messages.
   EM displays eventual action messages.
   IM displays immediate action messages.
   MOUNTS or M displays DASD and tape mount messages. SDSF considers a message
   to be a mount if it has tape or DASD pool routing codes.
   REPLIES or R or RM displays reply messages.
```

Figure 4-9 SR command syntax

If the MVS action message retention facility (AMRF) is not active, the SR panel shows only reply messages. The AMRF parameter in the CONSOLxx PARMLIB member INIT statement specifies whether AMRF is to be active.

You change the status of AMRF with the CONTROL M,AMRF={Y|N} command. To learn the status of AMRF, issue the CONTROL M,REF command.

Figure 4-10 is an example of the SDSF system requests panel.

```
  Display  Filter  View  Print  Options  Search  Help
------------------------------------------------------------------------------
SDSF SYSTEM REQUESTS  RM 1    IM 11   CEM 6    EM 11   LINE 14-29 (29)
COMMAND INPUT ===>                                      SCROLL ===> HALF
ACTION=//-Block,=-Repeat,+-Extend,AI-AutoReplyIgnore,C-Remove,D-Display,R-Reply
NP      REPLYID    SysName  JobName  Message-Text
        33019      SC74     HZSPROC   HZS0002E CHECK(IBMCS,CSTCP_CINET_PORTRNG_
        34019               DB8YMSTR  DSNY020I DSNYASCP -DB8Y MEASURED USAGE DA
        80018      SC75     SMF      *IEE986E SMF HAS USED   100% OF AVAILABLE
        64019      SC74     SMF      *IEE986E SMF HAS USED   100% OF AVAILABLE
        81018      SC75     SMF      *IEE979W SMF DATA LOST - NO BUFFER SPACE A
        65019      SC74     SMF      *IEE979W SMF DATA LOST - NO BUFFER SPACE A
        179        SC75     VAINIAR  @179 REPLY SOMETHING
        624018     SC75     HZSPROC   HZS0002E CHECK(IBMRACF,RACF_TEMPDSN_ACTIV
        626018     SC75     HZSPROC   HZS0002E CHECK(IBMDAE,DAE_SHAREDSN):
        622018     SC75     HZSPROC   HZS0002E CHECK(IBMRACF,RACF_TAPEVOL_ACTIV
        623018     SC75     HZSPROC   HZS0002E CHECK(IBMRACF,RACF_IBMUSER_REVOK
        494019     SC74     HZSPROC   HZS0002E CHECK(IBMRACF,RACF_TAPEVOL_ACTIV
        727018     SC75     HZSPROC  *HZS0003E CHECK(IBMRACF,RACF_SENSITIVE_RES
```

Figure 4-10 System requests panel

4.3.1 System requests panel fields

The title line description of the system requests panel is in Figure 4-11.

```
SDSF SYSTEM REQUESTS  RM 4    IM 3    CEM 8    EM 24   LINE 1-10 (10)
                      |                                      |     |
 Counts of reply, immediate action, critical                Lines   Total
 eventual action and eventual action messages              displayed lines
```

Figure 4-11 System requests panel title line

The system requests panel includes some or all of the following fields listed in Figure 4-12 on page 131.

Title	Description
REPLYID	Reply ID of the message
SysName	Originating system name
JobName	Name of the issuing job
Message-Text	Message ID and text
JobID	JES job ID of the issuing job (JES2) or Proc name or job name (JES3)
Date	Date when the message was logged
Time	Time when the message was logged
Console	Target console
RouteCd	First 28 routing codes, in hexadecimal
Desc	Descriptor codes, in hexadecimal
Type	Message type
Queue	Queue the message is on (CEM - critical eventual action, EM - eventual action, IM - immediate, RM - reply)
AutoReply	Automatic reply indicator
AutoRDelay	Message delay time until the automatic reply is done, in seconds
AutoReplyTime	Date and time when auto reply will be done
AutoReplyText	Automatic reply text

Figure 4-12 System request panel fields

4.3.2 System requests panel NP field actions

Figure 4-13 shows the action characters that can be entered in the NP column on the system request panel by authorized users.

NP action	MVS command / SDSF description
AI-AutoReplyIgnore	SETAUTOR IGNORE - Ignore auto reply for the message.
C-Remove	K C,A,id - Remove an action message.
D-Display	D R,CN=(ALL),MSG= - Display a message in the logs or ULOG.
R[command]	R id,reply - Reply to the message. R by itself displays a pop-up on which you can complete the command.

Figure 4-13 System requests panel NP field actions

4.4 Scheduling environment (SE) panel

The SDSF scheduling environment panel displays the scheduling environments in the sysplex.

A scheduling environment is a list of abstract resource names along with their required states. If an MVS image satisfies all of the requirements in the scheduling environment associated with a given unit of work, then that unit of work can be assigned to that MVS image. If any of the requirements are not satisfied, then that unit of work cannot be assigned to that MVS image.

For every resource name that is referenced by a scheduling environment, a corresponding resource state must be set on each system in the sysplex. The resource state can be:

- ON, which will satisfy a resource state requirement of ON.
- OFF, which will satisfy a resource state requirement of OFF.

- RESET, which will not satisfy any resource state requirement.

  Resources are put into the RESET state when:

  - A system is IPLed
  - A policy is activated that defines a resource name that did not exist in the previously active policy

A scheduling environment is dynamic. It identifies the dependency that a job has to run on particular systems without specifically naming the systems. Since a scheduling environment can change state, the systems where a job is eligible to run can change without modification to its JCL.

The JES3 //*MAIN JECL SYSTEM parameter is specific and static, since it lists system names. You can use scheduling environments and the SYSTEM parameter together.

Figure 4-14 displays a scheduling environment panel. The SE panel is invoked with the SE primary command (Figure 4-15). You must be authorized to use the command.

```
  Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
---
SDSF SCHEDULING ENVIRONMENT DISPLAY ALL SYSTEMS       LINE 1-4 (4)
COMMAND INPUT ===>                                          SCROLL ===>
HALF
ACTION=//-Block,=-Repeat,+-Extend,D-Display,R-Resource,ST-Status
NP   SCHEDULING-ENV   Description                    Systems
     JES2             MAS                          SC74
     JES3             JESPLEX                      SC75
     NAV              Not available
     PLEX75           SYSPLEX                       SC74,SC75
```

Figure 4-14 Scheduling environment panel

The SE panel displays the same data that is returned by the D WLM,SCHENV=*,SYSTEMS command IWM036I response message.

```
SE {MAS|ALL}
   ALL displays scheduling environments for all systems in the sysplex. This is
   the default for JES3. MAS under JES3 is treated as ALL.
```

Figure 4-15 SE command syntax

4.4.1 Scheduling environment panel fields

The SE panel includes the fields listed in Figure 4-16.

Title	Description
SCHEDULING-ENV	Scheduling environment name
Description	Description of the scheduling environment
Systems	Systems with the scheduling environment available

Figure 4-16 Scheduling environment panel fields

4.4.2 Scheduling environment panel NP field actions

Figure 4-17 on page 133 shows the action characters that can be entered in the NP column on the scheduling environment panel by authorized users.

```
   NP action    MVS command / SDSF description
   DD-Display   D WLM,SCHENV=JES2,SYSTEMS - Display scheduling environments in the log.
                This issues the MVS D command.
   R-Resource   Display resources for a scheduling environment. F WLM,RESOURCE= command
                used to change resource state.
   ST-Status    Display the ST panel for all jobs requiring the scheduling environment.
```

Figure 4-17 Scheduling environment panel NP field actions

4.5 Resources (RES) panel

The resources panel displays WLM resources used in that scheduling environment. To display sysplex resources with SDSF, access the resource panel with the RES command. To display resources for a scheduling environment, access the panel with the R action character from the SE panel.

Resource, when used as part of a scheduling environment, is an abstract element that can represent an actual physical entity (such as a peripheral device), or an intangible quality (such as a certain time of day). A resource is listed in a scheduling environment along with a required state of ON or OFF. If the corresponding resource state on a given system matches the required state, then the requirement is satisfied for that resource.

Figure 4-18 shows an SDSF WLM resources panel display. The resources panel is invoked with the RES command. You must be authorized to use the command.

```
  Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
SDSF RESOURCE DISPLAY ALL SYSTEMS                      LINE 1-4 (4)
COMMAND INPUT ===>                                        SCROLL ===> HALF
ACTION=//-Block,=-Repeat,+-Extend,D-Display
NP   RESOURCE         SC74     SC75
     PLEX75           ON       ON
     SC70             ON       OFF
     SC74             ON       OFF
     SC75             OFF      ON
```

Figure 4-18 Resources panel

Figure 4-19 shows the RES command syntax.

```
RES {MAS|ALL}
   ALL displays WLM resources for all systems in the sysplex. This is the
   default for JES3. MAS under JES3 is treated as ALL.
```

Figure 4-19 RES command syntax

4.5.1 Resources panel fields

The resources panel includes the fields explained in Figure 4-20 on page 134.

```
Title       Description
RESOURCE    WLM resource name
ReqState    Required state of the resource as defined in WLM (displayed only when the
            panel is accessed with the R action character from the SE panel)
System      System in the Sysplex, showing the state of the resource on the system
```

Figure 4-20 Resources panel fields

4.5.2 Resources panel NP field action

Figure 4-21 shows the action characters that can be entered in the NP column on the resources panel by authorized users.

```
NP action   MVS command / SDSF description
D -Display  D WLM,RESOURCE=resource,SYSTEMS - Display resources in the Log.
```

Figure 4-21 Resources panel NP field action

4.5.3 Resource panel overtypable columns

Each column showing the state of the resource for that system, highlighted in Figure 4-18 on page 133, can be overtyped to change the state of the resource for that system. This issues an MVS F WLM,RESOURCE= command. SDSF appends an RO command if the MVS command is targeted for another system.

4.6 Enclaves (ENC) panel

The enclaves panel displays information about WLM enclaves. It is accessed with the ENC command.

An enclave is a transaction that can span multiple dispatchable units (SRBs and tasks) in one or more address spaces and is reported on and managed as a unit. A multisystem enclave can run in multiple address spaces spanning multiple systems within a sysplex. With all units of work of a job running in the same enclave, WLM can manage all of the work to a single performance goal.

SDSF displays multisystem enclaves on multiple rows. When you act against any of these rows, SDSF issues the WLM service against the original enclave.

Figure 4-23 on page 135 is an SDSF enclave display. It is invoked with the ENC command (Figure 4-22). You must be authorized to use this command.

```
ENC {ACTIVE|ALL}
   ACTIVE displays only active enclaves
   ALL displays all enclaves. This is the default.
```

Figure 4-22 ENC command syntax

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
---
SDSF ENCLAVE DISPLAY  (ALL)    ALL                    LINE 1-8 (8)
COMMAND INPUT ===>                                          SCROLL ===>
HALF
PREFIX=%*  DEST=*  OWNER=*  SYSNAME=*
ACTION=//-Block,=-Repeat,+-Extend,I-Info,M-Match,R-Reset,RQ-ResetQuiesce
NP   NAME             SSType Status   SrvClass Per PGN RptClass ResGroup
CPU-
     2400000002       STC    INACTIVE SYSSTC     1
     2000000001       STC    INACTIVE SYSTEM     1
     2800000003       STC    INACTIVE SYSSTC     1
     2C00000004       TCP    INACTIVE SYSOTHER   1
     2400000002       STC    INACTIVE SYSSTC     1
     2000000001       STC    INACTIVE SYSTEM     1
     2800000003       STC    INACTIVE SYSSTC     1
     2C00000004       TCP    INACTIVE SYSOTHER   1
```

Figure 4-23 Enclave panel

The Enclave panel includes some or all of the following fields explained in Figure 4-24. (The order and titles may be different, depending upon installation and user options.)

4.6.1 Enclave panel fields

Title	Description
NAME	Enclave token
SSType	Subsystem type (for example, DB2®, MQ)
Status	Status of the enclave
SrvClass	Service class
Per	Period number
PGN	Performance group
RptClass	Report class
ResGroup	Resource group
CPU-Time	Total CPU time
OwnerSys	Enclave owner system
OwnerJob	Enclave owner jobname
OwnerAS	Enclave owner ASID
OwnerASX	Enclave owner ASID in hexadecimal
Scope	Scope of the enclave, either LOCAL (single-system) or MULTISYS (the enclave has an export token and so is multisystem-capable)
Type	Enclave type: IND (independent) or DEP (dependent)
Original	For an enclave that has been exported, YES if this is the original enclave
Quiesce	Indicates if the enclave is in a quiesce delay, which occurs if the address space has been reset with the MVS RESET,QUIESCE command
Workload	Workload name
SysName	System that reported the data
SysLevel	Version and release
Subsys	Subsystem name
zAAP-Time	Accumulated zAAP time, in seconds
zACP-Time	Accumulated zAAP on CP time, in seconds
zIIP-Time	Accumulated zIIP time, in seconds
zICP-Time	Accumulated zIIP on CP time, in seconds
Promoted	Promoted due to a chronic resource contention
zAAP-NTime	Normalized zAAP time, in seconds
zIIP-NTime	Normalized zIIP time, in seconds

Figure 4-24 Enclave panel fields

4.6.2 Enclave panel NP field actions

Figure 4-25 shows the action characters that can be entered in the NP column on the enclaves panel by authorized users.

NP action	SDSF description
I-Info	Display additional information about the enclave.
M-Match	Match the enclave by export token, to display only the instances of a multi-system enclave. Valid only for multisystem enclaves, as indicated in the Scope column. To see all enclaves again, re-access the panel.
R-Reset	Reset and resume an enclave.
RQ-ResetQuiesce	Reset and quiesce an enclave.

Note: If you reset a dependent enclave, the owner address space is reset.

Figure 4-25 Enclaves panel NP field actions

4.6.3 Pop-up display for enclave I-Info action

Figure 4-26 shows the I action additional information pop-up display.

```
Display  Filter  View  Print  Options  Help
-------------------------------------------------------------------------------
SDSF ENCLAVE DISPLAY  (ALL)    ALL                    LINE 1-8 (8)
COMMAND INPUT ===>                                      SCROLL ===> HALF
PR
AC
NP
     Subsystem type    TCP          Plan name
     Subsystem name    TCPIP        Package name
     Priority                       Connection type
     Userid                         Collection name
     Transaction name  TCPENC01     Correlation
     Transaction class              Procedure name
     Netid                          Function name
I    TCPENC01
     Logical unit name              Performance group
     Subsys collection              Scheduling env
     Process name
     Reset             NO

     F1=Help  F12=Cancel
```

Figure 4-26

I-Info action data on the additional information pop-up about an enclave is shown in Figure 4-27 on page 138. WLM uses this information to classify the enclave.

Subsystem type	Type of the subsystem
Subsystem name	Name of the subsystem
Priority	Priority associated with the subsystem
Userid	User ID associated with the request
Transaction name	Transaction program name for the request
Transaction class	Class name within the subsystem
Netid	Network identifier associated with the requester
Logical unit name	Local LU name associated with the requester
Subsys collection	Subsystem collection name
Process name	Process name associated with the request
Plan name	Access plan name for the set of associated SQL statements
Package name	Package name for the set of associated SQL statements
Connection type	Name associated with the environment that is creating the request
Collection name	Customer-defined name for the group of associated packages
Correlation	Name associated with the user/program creating the request, which may reside anywhere in the network
Procedure name	DB2-stored SQL procedure name associated with the request
Function name	Function name
Performance group	Performance group number (PGN) associated with the request
Scheduling env	Scheduling environment

Figure 4-27 I-Info pop-up enclave data

4.6.4 Enclaves panel overtypable field

The overtypable field for the enclaves panel is shown as in Figure 4-28:

Field	Description
SrvClass	Service class name

Figure 4-28 Enclaves panel overtypable field

4.7 Processes (PS) panel

The Processes (PS) panel displays information about z/OS UNIX System Services processes.

A UNIX process is defined as being an instance of a program running on a system and the resources that it uses. A process can have one or more threads; a thread is a single flow of control within a process. Application programmers create multiple threads to structure an application in independent sections that can run in parallel for more efficient use of system resources.

Figure 4-29 shows the PS command syntax.

```
PS {ALL | ACTIVE}
  ALL displays all z/OS UNIX System Services processes. This is the default.
  ACTIVE displays only active processes.
```

Figure 4-29 PS command syntax

Figure 4-30 on page 139 shows the processes panel invoked by the PS command.

```
 Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
SDSF PROCESS DISPLAY  SC75     ALL                    LINE 1-17 (28)
COMMAND INPUT ===>                                      SCROLL ===> HALF
PREFIX=%*  DEST=*  OWNER=*  SYSNAME=SC75
ACTION=//-Block,=-Repeat,+-Extend,C-Cancel,D-Display,K-Kill,T-Terminate
NP   JOBNAME  JobID    Status                          Owner    State CPU-Time
     BPXOINIT          RUNNING                         OMVSKERN MR        7.66
     RESOLVER          RUNNING                         IBMUSER  1R        0.63
     RESOLVER          RUNNING                         IBMUSER  1R        0.63
     JES3NS            RUNNING                         JES3     1R       15.65
     HZSPROC  JOB20946 RUNNING                         IBMUSER  1R       63.07
     TCPIP    JOB20969 FILE SYS KERNEL WAIT            TCPIP    1F      417.69
     TN3270   JOB20974 RUNNING                         IBMUSER  1R      189.31
     TN3270   JOB20974 RUNNING                         IBMUSER  1R      189.31
     FTPOE1   JOB20966 SWAPPED,FILE SYS KERNEL WAIT    TCPIP    1FI       0.01
     CEA               FILE SYS KERNEL WAIT            CEA      1F        0.10
     CBDQDISP JOB20972 SWAPPED,FILE SYS KERNEL WAIT    TCPIP    1FI       0.01
     PFA      JOB20978 SWAPPED,RUNNING                 PFA      1RI      25.00
     DB9YDIST JOB20982 FILE SYS KERNEL WAIT            IBMUSER  MF        0.79
```

Figure 4-30 Processes panel

In the UNIX operating environment, the innermost level of UNIX is the kernel. This is the actual UNIX operating system, a program that always resides in memory. Sections of the code in this program are executed on behalf of users to do needed tasks, like access files or terminals. The OMVS address space is not considered a process.

BPXOINIT is the started procedure that runs the z/OS UNIX initialization process. The BPXOINIT address space has two categories of functions:

1. It behaves as PID(1) of a typical UNIX system. It is the parent of /etc/rc, and it inherits orphaned children so that their processes get cleaned up using normal code in the kernel. BPXOINIT is also the parent of MVS address spaces that are dubbed and not created by fork or spawn. Therefore, TSO/E commands and batch jobs have a parent PID of 1.
2. Certain functions that the kernel performs need to be able to make normal kernel calls. The BPXOINIT address space is used for these activities.

4.7.1 Processes panel fields

The Processes panel includes some or all of the fields shown in Figure 4-31. Figure 4-32 on page 140 shows the values for the state column.

Value	Description
1	State is for a single thread process
A	Message queue receive wait
B	Message queue send wait
C	Communication system kernel wait
D	Semaphore operation wait
E	Quiesce frozen
F	File system kernel wait
G	MVS pause wait
H	Process state is for multiple threads and pthread was used to create one of the threads. Process state is obtained from the initial pthread created task (IPT).

Figure 4-31 Processes panel state column values

Title	Description
JOBNAME	Job name
JobID	JES job ID
Status	Status of the process
Owner	Userid of the owner
State	State of the process or the most recently created thread
CPU-Time	Compute time in hundredths of seconds
PID	Process ID
PPID	Parent process ID
ASID	Address space ID
ASIDX	Address space ID in hexadecimal
LatchWaitPID	PID on which this process is waiting
Command	Command that created the process
ServerName	Server name
Type	Server type
ActFiles	Number of active files
MaxFiles	Maximum number of files
St-Time	Time the process was started
St-Date	Date the process was started
SysLevel	Level of z/OS on the system
SysName	System name where the process is executing
SecLabel	Security label

Figure 4-32 Processes panel fields

4.7.2 Processes panel NP field actions

Figure 4-33 shows the action characters that can be entered in the NP column on the processes panel.

NP action	MVS command / SDSF description
C-Cancel	C jobname,[A=asidx|U=userid] - Cancel the address space that owns the process
D -Display	D OMVS,PID=processid - Display information about processes
K-Kill	F BPXOINIT,FORCE=processid - Kill the process (SIGKILL)

Figure 4-33 Process panel NP field actions

4.8 Health Checker (CK) panel

The SDSF Health Checker (CK) panel displays information from IBM Health Checker for z/OS. The panel shows the active checks. Checks that are currently running are highlighted.

IBM Health Checker for z/OS is a z/OS component that is used to gather information about their system environment and system parameters to help identify potential configuration problems before they impact availability or cause outages. Individual products, z/OS components, or ISV software can provide checks that take advantage of the IBM Health Checker for z/OS framework.

Figure 4-35 on page 141 is an example of the Health Checker panel displayed. The CK command invokes the Health Checker panel (Figure 4-34 on page 141). You must be authorized to use this command.

```
CK (category|E|EH|EM|EL|EN|D|ALL)
   with no parameters displays active checks.
   category shows only checks for that category. The value can include * (any
   string of characters) or % (any single character).
   E displays all exception checks, with these variations:
      EH - exception-high
      EM - exception-medium
      EL - exception-low
      EN - exception-none
   D displays deleted checks.
   ALL displays deleted as well as active checks.
```

Figure 4-34 CK command syntax

```
  Display  Filter  View  Print  Options  Search  Help
-------------------------------------------------------------------------------
SDSF HEALTH CHECKER DISPLAY  (ALL)                    LINE 1-11 (333)
COMMAND INPUT ===>                                       SCROLL ===> HALF
PREFIX=%*  DEST=*  OWNER=*  SYSNAME=*
ACTION=//-Block,=-Repeat,+-Extend,A-Activate,D-Display,DD-DisplayDiag,
ACTION=DL-DisplayLong,DP-DisplayPolicies,DPO-DisplayOutdatedPolicies,
ACTION=DS-DisplayStatus,E-Refresh,H-Deactivate,L-ListHistory,P-Delete,
ACTION=PF-DeleteForce,R-Run,S-Browse,SB-ISPFBrowse,SBI-ISPFBrowseIn,
ACTION=SBO-ISPFBrowseOut,SE-ISPFEdit,SEI-ISPFEditIn,SEO-ISPFEditOut,
ACTION=U-RemoveCat,X-Print,XC-PrintClose,XD-PrintDS,XDC-PrintDSClose,
ACTION=XF-PrintFile,XFC-PrintFileClose,XS-PrintSysout,XSC-PrintSysoutClose
NP   NAME                          CheckOwner      State              Status
     ALLOC_ALLC_OFFLN_POLICY       IBMALLOC        ACTIVE(ENABLED)    SUCCES
     ALLOC_SPEC_WAIT_POLICY        IBMALLOC        ACTIVE(ENABLED)    SUCCES
     ALLOC_TIOT_SIZE               IBMALLOC        ACTIVE(ENABLED)    SUCCES
     ASM_LOCAL_SLOT_USAGE          IBMASM          ACTIVE(ENABLED)    SUCCES
     ASM_NUMBER_LOCAL_DATASETS     IBMASM          ACTIVE(ENABLED)    SUCCES
     ASM_PAGE_ADD                  IBMASM          ACTIVE(ENABLED)    SUCCES
     ASM_PLPA_COMMON_SIZE          IBMASM          ACTIVE(ENABLED)    SUCCES
     ASM_PLPA_COMMON_USAGE         IBMASM          ACTIVE(ENABLED)    SUCCES
     CATALOG_IMBED_REPLICATE       IBMCATALOG      ACTIVE(ENABLED)    EXCEPT
     CEE_USING_LE_PARMLIB          IBMCEE          ACTIVE(ENABLED)    EXCEPT
```

Figure 4-35 Health Checker panel

4.8.1 Health Checker panel fields

The Health Checker panel includes some or all of the fields listed in Figure 4-36 and Figure 4-37 on page 143.

Title	Description
NAME	Check name
CheckOwner	Check owner
State	Check state
Status	Check status
Result	Result from the last invocation of the check
Diag1	Diagnostic data from the check (first word)
Diag2	Diagnostic data from the check (second word)
DiagFrom	Source for the diagnostic data: ABEND, HCHECKER or CHECKRTN

Figure 4-36 Health Checker panel fields 1 of 2

Title	Description
Global	Indicator if this is a global check
GlobalSys	System on which the global check is running
ExcCount	Number of exceptions detected in the last iteration of the check
RunCount	Number of times the check has been invoked
Fail	Number of times the check failed
Severity	Severity level of the check
SevCode	Numeric severity level of the check
WTOType	WTO type or descriptor code
ModifiedBy	How the check was modified
PolicyStatus	Policy error status
WTONum	Number of WTOs issued by the check
NumCat	Number of categories in which the check is defined
Category	Category name
Category2-16	Category names two through sixteen
ExitName	Exit module name that added the check
ModName	Check module name at which the check runs
MsgName	Message load module name
UserDate	Current date of the check (YYYYMMDD)
DefDate	Default date of the check (YYYYMMDD)
Debug	Debug mode indicator
Start-Date-Time	Date and time the check last started
Interval	Interval at which the check runs
NextSch-Date-Time	Date and time the check is next scheduled to run (YYYY.DDDD HH:MM:SS)
NextSch-Int	Time remaining until the check runs, in hhhhh:mm:ss
Log-Date-Time	Date and time of the last successful write to System Logger
Deleted-Date-Time	Date and time the check was deleted
ProcName TaskID	Procedure name and started task ID for IBM Health Checker for z/OS
Reason	Description of the reason for the check
TaskID	Health Checker started task ID
UpdateReason	Description of updates to the check
ParmLen	Length of the check parameters
Parameters	Check parameters. Unprintable characters are translated to periods (.).
SysLevel	Level of the operating system
SysName	System name
EInterval	Interval at which the check will run when it has raised an exception
ExecName	Name of the exec to run
Locale	Where the check is running
Origin	Origin of the check
Verbose	Verbose mode for the check
RexxIn	Rexx input data set name
RexxOut	Rexx output data set name
LogStream	Name of the logstream used to record this check

Figure 4-37 Health Checker panel fields 2 of 2

4.8.2 Health Checker panel NP field actions

Action characters that can be entered in the NP column by authorized users are displayed in Figure 4-38 on page 144.

NP action	MVS command / SDSF description
A-Activate	F stcid,ACTIVATE - Activate
D-Display	F stcid,DISPLAY - Display
DD-DisplayDiag	F stcid,DISPLAY,CHECKS,DETAIL,DIAG,CHECK= - Display information, diagnostic form
DL-DisplayLong	F stcid,DISPLAY - Display long
DP-DisplayPolicies	F stcid,DISPLAY,POLICY,DETAIL - Display policies
DPO-DisplayOutdatedPolicies	F stcid,DISPLAY,POLICY,OUTDATED - Display policies that are outdated and not applied
DS-DisplayStatus	F stcid,DISPLAY,STATUS - Display status
E-Refresh	F stcid,REFRESH - Refresh
H-Deactivate	F stcid,DEACTIVATE - Deactivate
L-ListHistory	List history (display the CKH panel). The check must have a history (see the Log-Date-Time column and Figure 4-40 on page 145).
P-Delete	F stcid,DELETE - Delete
PF-DeleteForce	F stcid,DELETE,FORCE=YES - Delete force: delete even if it is running
R-Run	F stcid,RUN - Run
S-Browse	Browse (access SDSF's Output Dataset Panel)
SB-ISPFBrowse	Browse using ISPF Browse
SBI-ISPFBrowseIn	Browse REXX input data set using ISPF browse
SBO-ISPFBrowseOut	Browse REXX output data set using ISPF browse
SE-ISPFEdit	Browse using ISPF Edit
SEI-ISPFEditIn	Edit REXX input data set using ISPF Edit
SEO-ISPFEditOut	Edit REXX output data set using ISPF Edit
U-RemoveCat	Remove all categories for the check
X-Print	Print the check output. You can add the following: **C** - Close the print file after printing (XC) **D** - Display the Open Print Data Set panel (XD or XDC) **F** - Display the Open Print File panel (XF or XFC) **S** - Display the Open Print panel (XS or XSC)

Note: When Log-Date-Time value is set to ****** N/A ******, the L action issues SDSF message 'NOT VALID FOR TYPE' -- Explanation: The action character is not a valid action against that object type.

Figure 4-38 Health Checker panel NP field actions

4.8.3 Health Checker panel overtypable fields

The overtypable fields for the Health Checker panel are in Figure 4-39.

Field	MVS command / SDSF description
Category	F stcid,UPDATE,CHECK - Category of the check. Type + alone to work with the full set of categories.
Debug	F stcid,UPDATE,CHECK - Debug mode indicator (OFF, ON)
EInterval	F stcid,UPDATE,CHECK - Interval at which the check runs when it finds an exception (SYSTEM, HALF, hhh:mm)
Interval	F stcid,UPDATE,CHECK - Interval at which the check runs (hhh:mm)
Parameters	F stcid,UPDATE,CHECK - Parameters for the check.
Severity	F stcid,UPDATE,CHECK - Severity level of the check (HIGH, MEDIUM, LOW, NONE)
UserDate	F stcid,UPDATE,CHECK - Date of the check
Verbose	F stcid,UPDATE,CHECK - Verbose mode for the check
WTOType	F stcid,UPDATE,CHECK - WTO type or descriptor code, in decimal

Figure 4-39 Health Checker panel overtypable fields

4.8.4 Health Check history (CHK) panel for CK panel L NP action

The CKH panel, Figure 4-40, shows information about instances of a check selected from the Health Checker panel with the L-ListHistory NP action.

```
SDSF CK HISTORY  DAE_SHAREDSN                              LINE     1 COLS   1
113
COMMAND INPUT ===>
PREFIX=*  DEST=**  OWNER=*  SYSNAME=*
ACTION=//-Block,=-Repeat,+-Extend,S-Browse,SB-ISPFBrowse,SE-ISPFEdit,X-Print
,XC-
ACTION=XF-PrintFile,XFC-PrintFileClose,XS-PrintSysout,XSC-PrintSysoutClose
NP     COUNT      CheckOwner       Status             Result Diag1    Diag2
S
       30         IBMDAE           SUCCESSFUL              0 00000000
00000000 0
       29         IBMDAE           SUCCESSFUL              0 00000000
00000000 0
       28         IBMDAE           SUCCESSFUL              0 00000000
00000000 0
       27         IBMDAE           SUCCESSFUL              0 00000000
00000000 0
       26         IBMDAE           SUCCESSFUL              0 00000000
00000000 0
       25         IBMDAE           SUCCESSFUL              0 00000000
00000000 0
```

Figure 4-40 Health Check history panel

The Health Checker history panel includes fields listed in Figure 4-41. Browse and print NP field action characters are the only ones available on the Health Checker history panel.

Title	Description
Count	Count of this instance of the check
CheckOwner	Check owner
Status	Check status
Result	Result code from the check
Diag1	Diagnostic data from check, word 1
Diag2	Diagnostic data from check, word 2
Start-Date-Time	Date and time the check started (YYYY.DDD HH:MM:SS)
End-Date-Time	Date and time the check ended (YYYY.DDD HH:MM:SS)
Sysplex	Sysplex name for the sysplex on which the check ran
SysName	System name for the system on which the check ran
Name	Check name

Figure 4-41 Health Check History panel fields

5

SDSF REXX and SDSF in Batch

This chapter briefly discusses:

- How to access SDSF data and functions with the REXX programming language. Using REXX with SDSF provides a simpler and more powerful alternative to using SDSF in batch.
- How to use batch processing to issue often-repeated SDSF commands by creating a list of the commands as control statements. In the list, you specify the SDSF panel you wish to use and the operation you wish to perform on it.

5.1 SDSF REXX and SDSF in batch

This section briefly discusses:

- How to access SDSF data and functions with the REXX programming language. Using REXX with SDSF provides a simpler and more powerful alternative to using SDSF in batch.
- How to use batch processing to issue often-repeated SDSF commands by creating a list of the commands as control statements. In the list, you specify the SDSF panel you wish to use and the operation you wish to perform on it.

The Restructured Extended Executor (REXX) language is a procedural language that allows you to write programs and algorithms in a clear and structural way. It is an interpreted and compiled language, and you do not have to compile a REXX command list before executing it.

SDSF with REXX merges the power of SDSF with the simplicity of REXX. REXX with SDSF integrates with your REXX executable by executing commands and returning the results in REXX variables. To understand the REXX with SDSF API you need to understand the commands and what they do and you need to know which variables are set and what these variables include. For a full description of REXX with SDSF, refer to the chapter *"*Using SDSF with the REXX programming language" *in z/OS SDSF Operation and Customization,* SA22-7670. You can also refer to the interactive tutorial panels that display when you press PF1when using SDSF or use the REXXHELP command from any SDSF panel.

5.2 SDSF REXX

SDSF REXX provides access to SDSF functions through the REXX programming language. The REXX support is a simpler and more powerful alternative to SDSF batch.

To access SDSF functions with REXX, you use:

- The ISFCALLS command, to add and delete the SDSF host command environment
- The ISFEXEC command, for SDSF commands, such as the commands that access SDSF panels
- The ISFACT command, for action characters and overtyping columns
- Special REXX variables, to provide function equivalent to other SDSF commands, and for messages and table data

You must be authorized to use SDSF from REXX, and to the SDSF functions that you invoke from REXX. Depending on how your SDSF security is implemented, you may be placed in a different SDSF user group when you use SDSF from REXX than when you use SDSF interactively. In some cases, invoking an SDSF function from REXX when you are not authorized to the function will cause the exec to fail and the invocation of SDSF to end.

5.2.1 REXXHELP command

To display the online help for using REXX with SDSF, type REXXHELP on any command line in SDSF when using SDSF under ISPF. Figure 5-1 on page 149 and Figure 5-2 on page 149 display the REXXHELP pop-ups.

```
ISFG90                    Using REXX with SDSF
                                                                More:     +
Tab to a topic and press Enter, or press Enter to view the topics in
order.

o   Introduction                                - Search - Index -
o   Programming practices
o   Quick start
o   Add the SDSF host command environment
o   Issue SDSF commands
    - Commands for tabular panels (ISFEXEC)
    - Log panels (ISFLOG and ISFULOG)
    - Slash (/) commands (ISFSLASH)
    - Other commands (ISFEXEC)
    - Filter commands (special variables)
    - Options commands (special variables)
o   Take actions and modify columns on SDSF panels
o   Browse output and Print output
o   Examples
o   Diagnose errors in a REXX exec
 F1=Help   F7=Up   F8=Down   F12=Cancel
```

Figure 5-1 REXXHELP pop-up index 1 of 2

```
ISFG90                    Using REXX with SDSF
                                                                More:   -
order.

o   Introduction                                - Search - Index -
o   Programming practices
o   Quick start
o   Add the SDSF host command environment
o   Issue SDSF commands
    - Commands for tabular panels (ISFEXEC)
    - Log panels (ISFLOG and ISFULOG)
    - Slash (/) commands (ISFSLASH)
    - Other commands (ISFEXEC)
    - Filter commands (special variables)
    - Options commands (special variables)
o   Take actions and modify columns on SDSF panels
o   Browse output and Print output
o   Examples
o   Diagnose errors in a REXX exec
o   Special variables
 F1=Help   F7=Up   F8=Down   F12=Cancel
```

Figure 5-2 REXXHELP pop-up index 2 of 2

Support for SDSF REXX commands:

- Using SDSF with REXX requires that you add a host command environment prior to any other SDSF host environment commands. The host command environment is what allows you to use Address SDSF on the ISFEXEC and ISFACT commands.You add the host command environment with the ISFCALLS() function.

- The ISFEXEC host command, which allows you to issue commands that access tabular panels (DA, ST, and so on), the slash (/) command, and a few others.

  You issue SDSF commands using the ISFEXEC host environment command, as:

  ```
  Address SDSF "ISFEXEC sdsf-command ( options )"
  ```

  The ISFEXEC command returns data as follows:

  Column data. The column data is returned in stem variables in this format:

  ```
  column-name.row-number
  ```

  The value for stem variable number 0 is a count of the number of variables returned.

- You invoke SDSF action characters and modify column values using the ISFACT host environment command, as follows:

  ```
  Address SDSF " ISFACT command Token PARM ( parms) ( options ) "
  ```

  `command` is the command for the panel. It must be the same SDSF command, including any parameters, that was previously entered with the ISFEXEC command.

  `Token` identifies the rows to be acted upon.

  `parms` is the list of parameters that specifies the action characters and modifications.

  `options` is an optional list of options. For example, requests the alternate field list for a panel or specifies that SDSF should wait the full delay interval before retrieving responses to a command.

- You access both the SYSLOG and the OPERLOG using the ISFLOG host environment command. When used with the SYSLOG, the ISFLOG command processes the JES logical log.

  The syntax of the ISFLOG command is as follows:

  ```
  Address SDSF " ISFLOG ALLOC TYPE ( SYSLOG ) [(VERBOSE)] “
  ```

  The allocation is done with the FREE=CLOSE option so that the file is automatically de-allocated when closed. The stem variable ISFDDNAME contains the ddname that is returned and ISFDSNAME contains the data set name.

  ```
  Address SDSF " ISFLOG READ TYPE ({OPERLOG | SYSLOG}) [(VEROSE)] “
  ```

  The records read are returned in the ISFLINE stem variable. ISFLINE.0 contains the number of variables. By default, SDSF retrieves the current day's records. You can customize the results with the special variables:

  - ISFLINELIM sets a limit on the number of variables created.
  - ISFLOGSTARTTIME, ISFLOGSTARTDATE, ISFLOGSTOPTIME and ISFLOGSTOPDATE define the date and time range for the records. Use them to ensure that your date and time range is reasonable, so that an excessive number of variables is not created.

- You issue system commands using the ISFSLASH host environment command. The syntax of the ISFSLASH command is:

  ```
  Address SDSF " ISFSLASH ({stem-name | list}) (options) “
  ```

  Options for slash (/) commands:

  - INTERNAL specifies that console ID 0 (INTERNAL) should be used to issue the command
  - WAIT specifies that SDSF should wait the full delay interval before retrieving responses. This option is strongly recommended to ensure that the responses are accessible in the ISFULOG special variable. The delay interval is specified with the ISFDELAY variable.

Special variables for slash (/) commands set options such as the delay limit and the console name.

ISFCMDLIM limits the number of commands that may be issued through ISFSLASH.

ISFCONS specifies the console name for the user session log (ULOG).

- You can request all of the column values for a specific row using the ISFGET host environment command, as follows:

```
Address SDSF " ISFGET command TOKEN ('" token "') ( options ) “
```

`command` is the command for the panel. It must be the same SDSF command, including any parameters, that was previously entered with the ISFEXEC command.

`token` identifies the row to be acted upon. The token was previously set by ISFEXEC or ISFACT for the panel accessed with command.

- To browse the output of jobs and browse check output on the CK or CKH panel, you use a combination of action characters, with ISFACT, and special REXXvariables.

  To browse job output from the DA, H, I, JDS, O and ST panels, allocate the output data sets with special REXX-only action characters, then browse the data sets using EXECIO or a similar utility. The action characters are:

  – SA - Allocate all data sets associated with the item. On the DA, I or ST panels, this will be all data sets in the job. On the O and H panels, it will be all data setsin the output group. On the JDS panel, it will be a single data set.
  – SJA - Allocate the JCL data set.

  To browse check output from the CK or CKH panel, use the S action character with the special variable ISFLINE.

- SDSF defines several REXX variables to supplement host environment commands and provide feedback for requests. These special variables all begin with the prefix ISF. Any variable starting with that prefix is considered reserved for use by SDSF. Do not name variables in your REXX execs with the prefix ISF.

  The names of special variables are not affected by the PREFIX option used with the ISFEXEC or ISFACT commands.

  Some special variables correspond to SDSF commands and result in a command being issued. The authorization for those special variables is the same as for the associated command. In some cases, using a special variable when you are not authorized to the associated command will cause the exec to fail and the invocation of SDSF to end.

  Special REXX variables provide function equivalent to many of the SDSF commands. The special variables use the format:

```
variable-name='parameters'
```

  The parameters for the variable are the same as for the associated command, with the exception that the ? parameter is not supported. The values of special variables are not saved across sessions (or invocations) in the REXX environment.

  The variables are grouped by command type:

  – SDSF command
  – Filter commands
  – Options commands
  – Trace commands

  To drop SDSF special variables (that is, unassign the variables and restore them to their original undefined state) use the ISFRESET() function. The option to use with ISFRESET corresponds to the variable type (Input, InOut, or Output).

For a full description of the SDSF REXX special variables refer to the chapter *"*Using SDSF with the REXX programming language" *in z/OS SDSF Operation and Customization,* SA22-7670. REXXHELP also provides details on the special variables for panels, entering system commands, filtering, options, other commands, browsing, printing and messages.

SDSF REXX examples

See Appendix B, "SDSF REXX and SDSF in batch examples" on page 163 for SDSF REXX examples:

- "Show jobs in the JES3 MDS queue" on page 164
- "Access SYSLOG sample" on page 164
- "Send a JES3 command to the global" on page 165
- "Display JES3 DJC nets and the DJC net status" on page 166

5.3 Using SDSF in batch

Using batch job processing, you can issue often-repeated SDSF commands by creating a list of the commands as control statements. In the list, you specify the SDSF panel you wish to use and the operation you wish to perform on it.

SDSF in batch is invoked with one of two program names on a JCL EXEC statement:

SDSF Supports commands and action characters.

ISFAFD Supports commands, action characters, and overtyping of fields on tabular and other panels, such as the print panels.

In the JCL for a batch SDSF job the ISFIN DD statement defines the input data, and the ISFOUT DD statement defines the output data set. For example, the JCL for a batch job to invoke program name ISFAFD might use the following statements:

```
//SDSF   EXEC PGM=ISFAFD
//ISFOUT DD SYSOUT=*
//ISFIN  DD *
```

To change panel width and depth of the batch output, specify `PARM='++xxxx,yyyy'` on the EXEC statement, where xxxx is the depth of the panel (number of lines) and yyyy is the width (number of characters). For example, to set the depth to 32 and the width to 1000, use:

```
//SDSF   EXEC PGM=SDSF,PARM='++32,1000'
```

If you do not specify the PARM, the width defaults to 132 and the depth to 60. The maximum for width and depth is 9999.

Note: When you invoke SDSF with either program name SDSF or ISFAFD, SDSF determines whether to process the JES2 or JES3 environment. You can request that SDSF not do that determination and process JES2. For this purpose, use the alternate program name SDSF2 or ISFAFD2.

5.3.1 Using program name SDSF

With program name SDSF to access a panel and display its contents, use the panel command and `++ALL`. For example, to select the H panel and display its contents, use:

```
H
```

```
++ALL
```

When ++ALL is specified, anything else on the card is ignored.To move around on the panel, you can use scroll commands (RIGHT, LEFT, UP, DOWN, TOP, BOTTOM).
Notes about SDSF program on commands and actions in batch processing:

- All SDSF commands, as described in the online help, may be used as long as they do not require ISPF pop-ups.
- To use an action character, code ++action-character in your batch job ISFIN input.
- To prevent a confirmation pop-up from being displayed for destructive action characters, use the SET CONFIRM OFF command.
- A successful FIND must be issued prior to issuing an action character. This protects against issuing an action character against wrong rows.

  For example, to find job JOBXYZ on the O panel, browse it with the **s** action character and issue a RESET in case the job is not found. ISFIN data would be:

  ```
  O
  FIND 'jobxyz'
  ++S
  RESET
  ```

- Attribute bytes present on the SDSF panels are translated out when you invoke SDSF with program name SDSF.

5.3.2 Using program name ISFAFD

When you invoke SDSF with program name ISFAFD, it works the same as when you invoke it with program name SDSF, with some differences:

- Action characters do not require a successful FIND.
- Overtypes and PF keys are supported.
- The contents of a panel are not updated until you explicitly refresh the panel. You do this with the AFD REFRESH command.
- Attribute bytes are present on the SDSF panels.

With program name ISFAFD, you can use the SDSF commands as you would with program name SDSF. You can also use these AFD commands:

AFD LOCATE	Scroll OPERLOG
AFD LOGSTAMP	Control OPERLOG or SYSLOG printing with SDSF's PRINT function
AFD QUERY	Display information about the current data set, the code page that is in use on the message line or columns on the current tabular panel
AFD REFRESH	Request that SDSF refresh the current display
AFD WTOR	Control the display of WTOR messages at the bottom of the Log panel
AFD NP	Controls the width of the NP column
AFD .END	Assigns a label, .END, to the current top line of the SYSLOG or OPERLOG

Notes about ISFAFD program on commands and actions in batch processing:

- Selected PF keys may be used by coding `++AFD PFxx` (where `xx=03` is a request to end the current panel and `xx=05` repeats the previous FIND).
- Columns on tabular panels and on other SDSF panels can be overtyped. The syntax for overtyping columns on tabular panels is the column title followed by = and the new value, all within <>.

  Where it is valid when using SDSF interactively, you can combine an action character and overtypes; the action character must precede the overtypes.

5.3.3 SDSF batch and security

To protect use of SDSF in batch, you control which group of users a user is assigned to. You do this in the JES3 SDSF environment through SAF. SAF is dynamic and it allows you to assign users to the same group regardless of the environment from which they invoke SDSF (interactive, batch, REXX or Java).

Action characters are not SAF-protected as separate resources. However, use of most action characters causes an interaction with two resources, both of which must be protected:

- The object of the action character, such as an initiator, printer, MAS member, or job
- The MVS or JES command that is generated in response to the action character. When these resources are protected, a user requires authority to both resources to enter most action characters.

The objects of action characters are such things as initiators in the SDSF class, printers and punches in the WRITER class, and jobs, output groups, and SYSIN/SYSOUT data sets in the JESSPOOL class. The resource name that protects the object and the access level required varies from panel to panel.

Most action characters generate MVS or JES commands that are protected in the OPERCMDS class. Users can be conditionally permitted to access OPERCMDS resources so they are authorized to use MVS and JES commands only while they are using SDSF.

SDSF in batch example

- See Appendix B, “SDSF REXX and SDSF in batch examples” on page 163 for an example of SDSF in batch.

A

SDSF ISFPARMS default definitions

This appendix provides listings of the sample ISFPARMS definitions in the ISF.SISFJCL data set ISFPRM00 member.

Sample SDFS Initialization Statements

```
/*********************************************************************/
/*                                                                   */
/*              Sample SDSF Initialization Statements                */
/*                                                                   */
/*                                                                   */
/*  Proprietary Statement =                                          */
/*                                                                   */
/*    Licensed Materials - Property of IBM                           */
/*    5694-A01                                                       */
/*    Copyright IBM Corp. 1981, 2011.                                */
/*                                                                   */
/*    Status = HQX7780                                               */
/*                                                                   */
/*  EXTERNAL CLASSIFICATION = OTHER                                  */
/*  END OF EXTERNAL CLASSIFICATION:                                  */
/*                                                                   */
/*                                                                   */
/*  This is a sample SDSF parameter definition.  It is equivalent    */
/*  to the macros supplied in ISFPARMS.                              */
/*                                                                   */
/*  To use this member, copy it to SYS1.PARMLIB or a dataset         */
/*  concatenated to it and edit the member as appropriate.           */
/*  Alternatively, you can modify the SDSF server JCL to point       */
/*  to a data set that contains the member.                          */
/*                                                                   */
/*  Note that, even with conditional processing, if you want         */
/*  to use a common member with different levels of SDSF, you        */
/*  must ensure that the member does not include support (such       */
/*  as new keywords or values) that was introduced in a              */
/*  higher level of SDSF.                                            */
/*                                                                   */
/*  The SDSF server must be started for the member to be used.       */
/*  If the SDSF server is not active, the macros in ISFPARMS         */
/*  are used instead.                                                */
/*                                                                   */
/*  The following are general syntax rules for coding the SDSF       */
/*  initialization statements.  Refer to the SDSF Operation and      */
/*  Customization manual for more details.                           */
/*                                                                   */
/*    - Statements are free form, and can appear in any column 1-72. */
/*      An optional sequence number may be coded in columns 73-80,   */
/*      but it is not used by SDSF.                                  */
/*                                                                   */
/*    - A statement can span any number of lines.  Use a trailing    */
/*      comma to indicate that a statement is continued.             */
/*                                                                   */
/*    - Comments can be coded at any point a blank is allowed using  */
/*      the slash-asterisk notation.  Blank lines can be inserted    */
/*      at any point to improve readability.                         */
/*                                                                   */
/*    - All values are translated to upper case.  Enclose the value  */
/*      in quotes if it contains special characters or contains      */
/*      mixed case.                                                  */
```

```
/*                                                                   */
/*    - Statements may appear in any order, except that the FLDENT   */
/*      must follow an FLD, and the NTBLENT must follow an NTBL.     */
/*      SERVER statements must follow a SERVERGROUP.                 */
/*                                                                   */
/*    - A keyword value of blanks may be specified by coding one     */
/*      or more blanks enclosed in quotes for the value.             */
/*                                                                   */
/*********************************************************************/

    /*************************************************/
    /* WHEN Statement - Provide Conditional Processing */
    /*************************************************/

 WHEN                        /* Reset any prior WHEN conditions      */


/*********************************************************************/
/* Note: The following statements are commented out to show the    */
/*       syntax.  The statements are only needed when the sysplex  */
/*       support is to be used.                                    */
/*                                                                 */
/*       Refer to the Operation and Customization Guide for the    */
/*       complete set of options that may be specified.            */
/*********************************************************************/

    /*********************************************************/
    /* SERVERGROUP, SERVER, and COMM - Define Communications */
    /*********************************************************/

/* SERVERGROUP */               /* Defines a group of SDSF servers */

/*********************************************************************/
/*   Each SERVER statement defines an SDSF server in the sysplex.   */
/*   The server in turn relates to a specific JES2 member for which */
/*   data is to be gathered.  Repeat the SERVER and COMM statements */
/*   as many times as necessary to define all the JES2 members for  */
/*   which data is to be shown.                                     */
/*                                                                  */
/*   Note: All servers must be in the same sysplex and all JES2     */
/*   members must be in the same MAS.                               */
/*********************************************************************/


/*   SERVER NAME(sdsf-servername),    /* Names the SDSF server      */
/*          SYSNAME(system-name),     /* System name for server     */
/*          JESNAME(jes2-subsystem-name),  /* JES2 procedure name   */
/*          MEMBER(jes2-member-name), /* JES2 member name           */
/*          COMM(comm-statement-name) /* Related COMM statement     */

/*   COMM NAME(statement-name),    /* Defines communications parms  */
/*        QMGR(qmgr-name)             /* QMgr name for connections  */
/*        CLUSTER(clustername),       /* Cluster name for queues    */
/*        QREPLACE(YES),              /* Replace prior queue defs   */
/*        QDELETE(NO),                /* Do not delete queues       */
```

```
/*        QDEFINE(YES)               /* Define required queues     */


   /*******************************/
   /* CONNECT - Connection Options */
   /*******************************/
CONNECT DEFAULT(COND),/* Default server if not already assigned    */
                     /* DEFAULT(NO) to not assign server as default */
                     /* DEFAULT(YES) to unconditionally assign    */
                     /*   server as default                       */
        XCFSRVNM(SAME)  /* Use server name as XCF appl name       */

   /*****************************************/
   /* OPTIONS Statement - Global SDSF Options */
   /*****************************************/

OPTIONS ATHOPEN(YES),       /* Use authorized open for datasets    */
  DCHAR('?'),               /* Command query character             */
  DSI(NO),                  /* Bypass ENQ for dynamic allocation   */
  FINDLIM(5000),            /* Maximum lines to search for FIND    */
  IDBLKS(4096),             /* HASPINDX blocksize                  */
  INDEX(ISF.HASPINDX),      /* HASPINDX dataset name               */
  LINECNT(55),              /* Print lines per page                */
  LOGLIM(0),                /* OPERLOG search limit in hours       */
  MENUS(ISF.SISFPLIB),      /* Panels dataset name for TSO         */
  NIDBUF(5),                /* Number of haspindx buffers          */
  SCHARS('*%'),             /* Generic and placeholder characters  */
  SCRSIZE(1920),            /* Maximum screen size                 */
  SYSOUT(A),                /* Default print sysout class          */
TIMEOUT(5),               /* Communications timeout in seconds   */
  TRACE(C000),              /* Default trace mask                  */
  TRCLASS(A),               /* Default trace sysout class          */
  UNALLOC(NO)               /* Do not free dynalloc data sets      */



   /*************************************/
   /* GROUP ISFSPROG - System Programmers */
   /*************************************/

GROUP NAME(ISFSPROG),       /* Group name                          */
  TSOAUTH(JCL,OPER,ACCT),   /* User must have JCL, OPER, ACCT      */
  ACTION(ALL),              /* All route codes displayed           */
  ACTIONBAR(YES),           /* Display the action bar on panels    */
  APPC(ON),                 /* Include APPC sysout                 */
  AUPDT(2),                 /* Minimum auto update interval        */
  AUTH(ALL),                /* All authorized functions            */
  BROWSE(NONE),             /* Browse default action character     */
  CMDAUTH(ALL),             /* Commands allowed for all jobs       */
  CMDLEV(7),                /* Authorized command level            */
  CONFIRM(ON),              /* Enable cancel confirmation          */
  CPUFMT(LONG),             /* Long format CPU utilization on DA   */
  CTITLE(ASIS),             /* Allow mixed case column titles      */
  CURSOR(ON),               /* Leave cursor on last row processed  */
/*CUSTOM(SPRGPROP),*/       /* Uncomment for custom properties     */
```

```
  DADFLT(IN,OUT,TRANS,STC,TSU,JOB), /* Default rows shown on DA    */
  DATE(MMDDYYYY),           /* Default date format               */
  DATESEP('/'),             /* Default datesep format            */
  DFIELD2(DAFLD2),          /* Sample alternate field list for DA  */
  DISPLAY(OFF),             /* Do not display current values     */
  DSPAUTH(ALL),             /* Browse allowed for all jobs       */
  EMCSAUTH(MASTER),         /* Activate EMCS cons with master auth */
  EMCSREQ(NO),              /* EMCS console not required         */
  GPLEN(2),                 /* Group prefix length               */
  ILOGCOL(1),               /* Initial display column in log     */
  INPUT(OFF),               /* Initial value for INPUT command   */
  ISYS(LOCAL),              /* Initial system default            */
  LANG(ENGLISH),            /* Default language                  */
  LOG(OPERACT),             /* Default log option                */
  OWNER(NONE),              /* Default owner                     */
  RSYS(NONE),               /* Initial system default for wtors  */
  UPCTAB(TRTAB2),           /* Upper case translate table name   */
  VALTAB(TRTAB),            /* Valid character translate table   */
  VIO(SYSALLDA)             /* Unit name for page mode output    */

   /*****************************/
   /* GROUP ISFOPER - Operators */
   /*****************************/
GROUP NAME(ISFOPER),        /* Group name                        */
  TSOAUTH(JCL,OPER),        /* User must have JCL and OPER       */
  ACTION(ALL),              /* All route codes displayed         */
  ACTIONBAR(YES),           /* Display action bar on panels      */
  APPC(ON),                 /* Include APPC sysout               */
  AUPDT(2),                 /* Minimum auto update interval      */
  AUTH(ALLOPER),            /* All operator authorized functions */
  BROWSE(NONE),             /* Browse default action character   */
  CMDAUTH(ALL),             /* Commands allowed for all jobs     */
  CMDLEV(7),                /* Authorized command level          */
  CONFIRM(ON),              /* Enable cancel confirmation        */
  CPUFMT(LONG),             /* Long format CPU utilization on DA */
  CTITLE(ASIS),             /* Allow mixed case column titles    */
  CURSOR(ON),               /* Leave cursor on last row processed */
/*CUSTOM(OPERPROP),*/       /* Uncomment for custom properties   */
  DADFLT(IN,OUT,TRANS,STC,TSU,JOB), /* Default rows shown on DA    */
  DATE(MMDDYYYY),           /* Default date format               */
  DATESEP('/'),             /* Default datesep format            */
  DISPLAY(OFF),             /* Do not display current values     */
  DSPAUTH(USERID,NOTIFY,AMSG), /* Browse authority               */
  EMCSAUTH(MASTER),         /* Activate EMCS cons with master auth */
  EMCSREQ(NO),              /* EMCS console not required         */
  GPLEN(2),                 /* Group prefix length               */
  ILOGCOL(1),               /* Initial display column in log     */
  ISYS(LOCAL),              /* Initial system default            */
  LANG(ENGLISH),            /* Default language                  */
  LOG(OPERACT),             /* Default log option                */
  OWNER(NONE),              /* Default owner                     */
  RSYS(NONE),               /* Initial system default for wtors  */
  UPCTAB(TRTAB2),           /* Upper case translate table name   */
  VALTAB(TRTAB),            /* Valid character translate table   */
  VIO(SYSALLDA)             /* Unit name for page mode output    */
```

```
   /*********************************/
   /* GROUP ISFUSER - General Users */
   /*********************************/
GROUP NAME(ISFUSER),        /* Group name                          */
  TSOAUTH(JCL),             /* User must have JCL                  */
  ACTION(11,12,USER),       /* Default route codes in log          */
  ACTIONBAR(YES),           /* Display action bar on panels        */
  APPC(ON),                 /* Include APPC sysout                 */
AUPDT(10),                /* Default auto update interval        */
  AUTH(ALLUSER),            /* All user authorized functions       */
  BROWSE(NONE),             /* Browse default action character     */
  CMDAUTH(USERID,NOTIFY),   /* Command authority                   */
  CMDLEV(2),                /* Command level                       */
  CONFIRM(ON),              /* Enable cancel confirmation          */
  CPUFMT(LONG),             /* Long format CPU utilization on DA   */
  CTITLE(ASIS),             /* Allow mixed case column titles      */
/*CUSTOM(USERPROP),*/       /* Uncomment for custom properties     */
  CURSOR(ON),               /* Leave cursor on last row processed  */
  DADFLT(IN,OUT,TRANS,STC,TSU,JOB), /* Default rows on DA          */
  DATE(MMDDYYYY),           /* Default date format                 */
  DATESEP('/'),             /* Default datesep format              */
  DISPLAY(OFF),             /* Do not display current values       */
  DSPAUTH(USERID,NOTIFY),   /* Browse authority                    */
  EMCSAUTH(MASTER),         /* Activate EMCS cons with master auth */
  EMCSREQ(NO),              /* EMCS console not required           */
  ILOGCOL(1),               /* Initial display column in log       */
  LANG(ENGLISH),            /* Default language                    */
  LOG(OPERACT),             /* Default log option                  */
  OWNER(USERID),            /* Default owner                       */
  PREFIX(USERID),           /* Default prefix                      */
  UPCTAB(TRTAB2),           /* Upper case translate table name     */
  VALTAB(TRTAB),            /* Valid character translate table     */
  VIO(SYSALLDA)             /* Unit name for page mode output      */


   /********************/
   /* Sample NTBL list */
   /********************/
NTBL NAME(SLIST)
  NTBLENT STRING($S),OFFSET(1)
  NTBLENT STRING(P),OFFSET(7)
  NTBLENT STRING(PAY),OFFSET(3)


   /*********************************/
   /* Define default SDSF Codepage */
   /*********************************/
TRTAB CODPAG(SDSF) VALTAB(TRTAB) UPCTAB(TRTAB2)


   /*********************************************/
   /* Sample alternate field list for DA display */
   /*********************************************/
```

```
FLD NAME(DAFLD2) TYPE(DA)  /* Name is referenced by GROUP statement */

  FLDENT COLUMN(STEPN),TITLE('StepName'),WIDTH(D)
  FLDENT COLUMN(PROCS),TITLE('ProcStep'),WIDTH(D)
  FLDENT COLUMN(JOBID),TITLE('JobID'),WIDTH(D)
  FLDENT COLUMN(OWNERID),TITLE('Owner'),WIDTH(D)
  FLDENT COLUMN(JCLASS),TITLE('C'),WIDTH(D)
  FLDENT COLUMN(ASID),TITLE('ASID'),WIDTH(D)
  FLDENT COLUMN(ASIDX),TITLE('ASIDX'),WIDTH(D)
  FLDENT COLUMN(EXCP),TITLE(' EXCP-Cnt'),WIDTH(D)
  FLDENT COLUMN(CPU),TITLE('  CPU-Time'),WIDTH(D)
  FLDENT COLUMN(REAL),TITLE('Real'),WIDTH(D)
  FLDENT COLUMN(PAGING),TITLE('Paging'),WIDTH(D)
  FLDENT COLUMN(EXCPRT),TITLE('   SIO'),WIDTH(D)
  FLDENT COLUMN(CPUPR),TITLE('  CPU%'),WIDTH(D)
  FLDENT COLUMN(DP),TITLE('DP'),WIDTH(D)
  FLDENT COLUMN(POS),TITLE('Pos'),WIDTH(D)
  FLDENT COLUMN(SWAPR),TITLE('SR'),WIDTH(D)
  FLDENT COLUMN(PGN),TITLE('PGN'),WIDTH(D)
  FLDENT COLUMN(DOMAIN),TITLE('DmN'),WIDTH(D)
  FLDENT COLUMN(STATUS),TITLE('Status'),WIDTH(D)
  FLDENT COLUMN(WORKLOAD),TITLE('Workload'),WIDTH(D)
  FLDENT COLUMN(SRVCLASS),TITLE('SrvClass'),WIDTH(D)
  FLDENT COLUMN(PERIOD),TITLE('SP'),WIDTH(D)
  FLDENT COLUMN(RESGROUP),TITLE('ResGroup'),WIDTH(D)
  FLDENT COLUMN(SERVER),TITLE('Server'),WIDTH(D)
  FLDENT COLUMN(QUIESCE),TITLE('Quiesce'),WIDTH(D)
  FLDENT COLUMN(SYSNAME),TITLE('SysName'),WIDTH(D)
  FLDENT COLUMN(SPAGING),TITLE('SPag'),WIDTH(D)
  FLDENT COLUMN(SCPU),TITLE('SCPU%'),WIDTH(D)
  FLDENT COLUMN(ECPU),TITLE(' ECPU-Time'),WIDTH(D)
  FLDENT COLUMN(ECPUPR),TITLE(' ECPU%'),WIDTH(D)
  FLDENT COLUMN(CPUCRIT),TITLE('CPUCrit'),WIDTH(D)
  FLDENT COLUMN(STORCRIT),TITLE('StorCrit'),WIDTH(D)
  FLDENT COLUMN(RPTCLASS),TITLE('RptClass'),WIDTH(D)
  FLDENT COLUMN(MEMLIMIT),TITLE('MemLimit'),WIDTH(D)
  FLDENT COLUMN(TRANACT),TITLE('Tran-Act'),WIDTH(D)
  FLDENT COLUMN(TRANRES),TITLE('Tran-Res'),WIDTH(D)
  FLDENT COLUMN(SPIN),TITLE('Spin'),WIDTH(D)
  FLDENT COLUMN(SECLABEL),TITLE('SecLabel'),WIDTH(D)
  FLDENT COLUMN(GCPTIME),TITLE('GCP-Time') WIDTH(D)
  FLDENT COLUMN(ZAAPTIME),TITLE('zAAP-Time') WIDTH(D)
  FLDENT COLUMN(ZAAPCPTM),TITLE('zACP-Time') WIDTH(D)
  FLDENT COLUMN(GCPUSE),TITLE('GCP-Use%') WIDTH(D)
  FLDENT COLUMN(ZAAPUSE),TITLE('zAAP-Use%') WIDTH(D)
  FLDENT COLUMN(SZAAP),TITLE('SzAAP%') WIDTH(D)
  FLDENT COLUMN(SZIIP),TITLE('SzIIP%') WIDTH(D)
  FLDENT COLUMN(PROMOTED),TITLE('Promoted') WIDTH(D)
  FLDENT COLUMN(ZIIPTIME),TITLE('zIIP-Time') WIDTH(D)
  FLDENT COLUMN(ZIIPCPTM),TITLE('zICP-Time') WIDTH(D)
  FLDENT COLUMN(ZIIPNTIM),TITLE('zIIP-Ntime') WIDTH(D)
  FLDENT COLUMN(ZIIPUSE),TITLE('zIIP-Use%') WIDTH(D)
  FLDENT COLUMN(SLCPU),TITLE('SLCPU%') WIDTH(D)

    /*********************/
```

```
    /* Custom Properties */
    /*********************/

/* The custom properties are defined using a PROPLIST statement */
/* which is referenced by the CUSTOM keyword on the GROUP.  For */
/* each PROPLIST, define the PROPERTY statements for the custom */
/* properties that are required.  See the SDSF Operation and    */
/* Customization manual for the complete list of properties     */
/* that may be specified.                                       */

/* PROPLIST NAME(SPRGPROP)          Group ISFSPROG properties */
  /* PROPERTY NAME(property-name),VALUE(TRUE or FALSE) */

/* PROPLIST NAME(OPERPROP)          Group ISFOPER properties  */
  /* PROPERTY NAME(property-name),VALUE(TRUE or FALSE) */

/* PROPLIST NAME(USERPROP)          Group ISFUSER properties  */
  /* PROPERTY NAME(property-name),VALUE(TRUE or FALSE) */
```

B

SDSF REXX and SDSF in batch examples

This appendix contains sample SDSF REXX EXECs for JES3 SDSF. These EXECs can be downloaded from the IBM Redbooks website.

The following SDSF REXX code are examples in the appendix:

- Show jobs in the JES3 MDS queue
- Access SYSLOG
- Send a JES3 command to the global
- Display JES3 DJC nets and the DJC net status
  - A table is provided to display a panel for DJC nets
- JCL for a SDSF in batch example using the TSO terminal monitor program
  - A BATSD REXX EXEC to display the status for all JES3 jobs
- Find jobs in the MDS queues using stem variables

SDSF REXX Examples

The following are examples of using REXX with SDS.

Show jobs in the JES3 MDS queue

The highlights in the REXX exec are examples of SDSF REXX panel access commands, action character commands, and some special REXX variables that provide function equivalent to other SDSF commands.

Example B-1 SDSF REXX - Show jobs in the JES3 MDS queue

```
   /* Show some SDSF REXX basic features - List JES3 MDS alloc queue */
   /* for the user who invokes this REXX exec                        */
   mdsq = "MDS Q empty"      /* Nothing in MDS queue                 */
   zrc=isfcalls("ON")        /* Add the SDSF host command environment*/
   isfprefix="*"             /* Set filtering PREFIX                 */
   owner=SYSVAR("sysuid")    /* Get userid for filtering OWNER       */
   isfowner=owner            /* Set userid for filtering OWNER       */
   zcn="SD"owner             /* Get ULOG console name                */
   isfcons=strip(substr(zcn,1,8),"T"," ")  /* Set ULOG console name  */
   Address SDSF "ISFEXEC ST" /* Access ST panel with ISFEXEC command */
   do i=1 to JNAME.0         /* Loop for all rows returned           */
     if PhaseName.i="AWAIT RES ALLOC" then /* Job in JES3 MDS queue? */
     do                      /* Yes - Query why? - Ask JES3          */
       isfdelay="5"          /* Wait for JES3 response               */
       Address SDSF "ISFACT ST TOKEN('"TOKEN.i"') PARM(NP DMA)"
                             /* Issue DMA action with ISFACT cmd     */
       do j=2 to isfulog.0   /* JES3 response in ULOG for DMA action */
         Say substr(isfulog.j,41)          /* Copy what JES3 says    */
         mdsq = ""
       end
     end
   end
   if mdsq <> "" then say mdsq
zrc=isfcalls("OFF")       /* Delete SDSF command environment      */
```

Access SYSLOG sample

Example B-2 SDSF REXX - Access SYSLOG

```
   /* SDSF REXX - Access SYSLOG                                      */
   rc=isfcalls( ON )         /* Add the SDSF host command environment */
   /* Read the SYSLOG using the ISFLOG command                       */
   z = TIME("E")
   Address SDSF "ISFLOG READ TYPE(SYSLOG)"
   z = msgrtn()              /* Tell about the ISFLOG copletion      */
   do i=max(1,isfline.0-10) to isfline.0
     Say i "-" isfline.i     /* Write a line to the output stream    */
   end
   Say TIME(R)
   Drop isfline.
   /* ALLOCate the SYSLOG using the ISFLOG command                   */
   Address SDSF "ISFLOG ALLOC TYPE(SYSLOG) (VERBOSE)"
   z = msgrtn()              /* Tell about the ISFLOG VERBOSE        */
   say "SYSLOG DD("ISFDDNAME.1") DSN('"ISFDSNAME.1"') ISFLOG ALLOC rc" rc
   /* EXECIO READ a few SYSLOG lines                                 */
```

```
Address TSO "EXECIO * DISKR" ISFDDNAME.1 "( STEM SLINE. FINIS"
do i=max(1,sline.0-10) to sline.0
  Say i "-" sline.i       /* Write a line to the output stream     */
end
Say TIME(R)
if rc <> 0 then           /* EXECIO problem - try to free SYSLOG ds*/
  Address TSO "FREE DD("ISFDDNAME.1")"
/* FREE the SYSLOG data set                                        */
say "SYSLOG FREE rc" rc
rc=isfcalls( OFF)         /* Undo the SDSF host command environment*/
Exit 0
/*
Messages issued in response to a command or special variable are in:
  ISFMSG -  contains the SDSF short message
  ISFMSG2 - is a stem variable that contains SDSF numbered messages.
*/
msgrtn: procedure expose isfmsg isfmsg2.
/* The isfmsg variable contains a short message                    */
Say " "
if isfmsg<>"" then
  Say "isfmsg is:" isfmsg
/* The isfmsg2 stem contains additional descriptive error messages */
do ix=1 to isfmsg2.0
  Say "isfmsg2."ix "is:" isfmsg2.ix
end
Say " "
return 0
```

Send a JES3 command to the global

Example B-3 SDSF REXX - Send a JES3 command to the global

```
/* SDSF REXX - Send a JES3 command to the global                  */
trace O
zrc=isfcalls("ON")        /* Add the SDSF host command environment*/
/* Check for JES3 environment                                     */
jt = ""                                 /* JES type              */
jg = ""                                 /* JES3 global system    */
js = ""                                 /* JES3 CONSTD SYN       */
Address SDSF "ISFEXEC WHO"              /* Ask SDSF for WHO info*/
do i=1 to  ISFRESP.0                    /* Loop through ISPRESP.*/
  parse var isfresp.i keyw "=" kval     /* Parse ISPRESP.i       */
  if keyw = "JESTYPE" then jt = kval    /* If type OK - save it */
  if keyw = "JESNAME" then jn = kval    /* Save JES name         */
  if keyw = "GLOBAL"  then jg = kval    /* Save global system    */
end
if jt<>"JES3" then do; z=sayit(jt "not JES3 - Exiting..."); exit 16; end
Address "ISPEXEC" "VGET (ZSCREEN)"      /* Possible ISPS118L     */
if rc<>0 then ZSCREEN = "Z"             /* ISPF not available    */
/* If JES3 is unable to define (*) as a SYSPLEX prefix, the (*) will
be used by JES3 as a SYSTEM scoped prefix. WHO does not return JES3
PLEXSYN=. However the MVS ROUTE and * command prefix will work.   */
cmd = "I,MAIN=JGLOBAL X"                /* A JES3 command        */
jgp = "RO "jg",*"                       /* Cmd prefix: 'RO sys,'*/
z = entcmd(jgp||cmd)                    /* Issue JES3 command    */
/* Use JESPlex panel to find JES3 system scopre command prefix    */
isffilter = "Global EQ YES"             /* Filter JP global row */
Address SDSF "ISFEXEC JP"               /* 'Display' JP panel    */
```

```
    if rc<>0 then do
      call msgrtn                          /* List error messages  */
      return 16
    end
  /* REXX execs reference columns by name rather than by title.     */
  if name.0 = 1 then
    jpg = "RO " name.1","comchar.1
  else exit 16
  cmd = "I O DLOG"
  z = entcmd(jgp||cmd)                     /* Issue JES3 command   */
  zrc=isfcalls("OFF")       /* Delete SDSF command environment      */
  exit 0
  /* Subroutine to SDSF ISFSLASH a JES3 command end echo the respose*/
  entcmd:
    isfcons =    userid() || zscreen       /* Console name         */
    parse arg ca
    Address SDSF "ISFSLASH '"ca"' (WAIT)"  /* Issue a command      */
    /* Extract * command output from ULOG                          */
    if rc<>0 then do
      call msgrtn                          /* List error messages  */
      return 16
    end
    do ix=1 to isfulog.0
      Say isfulog.ix
    end
  return 0
  /* Subroutine to issue error messages                            */
  msgrtn: procedure expose isfmsg isfmsg2.
  /* The isfmsg variable contains a short message                  */
    Say " "
    if isfmsg<>"" then
      Say "isfmsg is:" isfmsg
  /* The isfmsg2 stem contains additional descriptive error messages*/
    do ix=1 to isfmsg2.0
      Say ix ":" isfmsg2.ix
    end
    Say " "
return 0
```

Display JES3 DJC nets and the DJC net status

Example B-4 SDSF REXX - Display JES3 DJC nets and the DJC net status

```
  /* Rexx exec for JES3 DJC net displays using SDSF services           */
  /* e&oe - minimal error checking - SDSF REXX sample only             */

  /* Function:                                                         */
  /*     Checks for JES3 environment - If none, EXIT                   */
  /*     Re-invoke this REXX with ISPF APPLID "USRT" (as required)     */
  /*     Check z/OS release level => "01.13.00" required - If not, EXIT */
  /*     Set up an ISPF table for JES3 *I N command response           */
  /*     Issue *I N command using SDSF ISFSLASH                        */
  /*     - Read *I N command response (IAT8578 messages) from SDSF ULOG */
  /*     - Add IAT8578 message data into ISPF table                    */
  /*     - ISPF display the IAT8578 message table (until END requested) */
  /*     For valid table selections (B, D, and S show DJC data)        */
  /*     - Issue *X DISPDJC command using SDSF ISFSLASH                */
  /*       (*X DISPDJC command spins the DJC net data to JES3 job zero) */
```

```
/*     - Read, ISFLOG, the OPERLOG, locate IAT6306 message for the    */
/*       DISPDJC job and parse out the DISPDJC's job number           */
/*     - Access using ISFEXEC JO spool data set list and find the     */
/*       entry for the DISPDJC job output                             */
/*     - Spool allocate using ISFACT JO NP SA the DISPDJC data set    */
/*     - Allocate a temporary data set and copy the DISPDJC into it   */
/*       (ISPF browse and view do nor work with spool data set)       */
/*     - ISPF VIEW the temporary data set - *X DIDPDJC,NET= output    */
/*     - Purge using the ISFACT JO NP P DISPDJC spool output          */
/*     - Re-invoke the ISPF IAT8578 message table                     */
/*                                                                    */
/* Rexx variables plib and vio, below, are installation dependent!    */

Parse upper arg arg
parse source . . src sdd sds .

plib = "VAINI.U.PANELS"  /*<===UPDATE as needed - Application panels  */
vio  = "VIO"             /*<===UPDATE as needed - UNIT name for VIO   */

/* Checks for JES3 environment                                        */
rc=isfcalls( ON )
jt = ""
jg = ""
Address SDSF "ISFEXEC WHO"
  do i=1 to  ISFRESP.0                          /* Check WHO response */
    parse var isfresp.i keyw "=" kval
    if keyw = "JESTYPE" then jt = kval
    if keyw = "JESNAME" then jn = kval
    if keyw = "GLOBAL"  then jg = kval
  end
/* If JES3 is not our JES, EXIT ....                                  */
if jt<>"JES3" then do; z=sayit(jt "not JES3 - Exiting..."); exit 16; end
/* If ISPF is not our environment - EXIT...                           */
if sysvar(SYSISPF)<>"ACTIVE" then do; say "ISPF not active - Exiting..."
  exit 16; end
rc=isfcalls( OFF )
/* Invoke this ISPF rexx with APPLID "USRT" - PF setting will change  */
address "ISPEXEC" "VGET (ZAPPLID) SHARED"
if zapplid <> "USRT" then do
  address "TSO" ,
  "ALTLIB  ACT APPL(CLIST) DD("sdd")"           /* APPL level CLISTs  */
  address "ISPEXEC" "SELECT CMD("src  arg") NEWAPPL(USRT) PASSLIB"
  address "TSO" ,
  "ALTLIB  DEACT  APPL(CLIST)"
  return
end
/* Now running under APPLID "USRT" - Start tracing if requested       */
z = wordpos("DB",arg)
if z ¬= 0 then do                               /*Rexx trace requested*/
  x = MSG("ON")
  Trace "I"                                     /* Trace...           */
  arg = delword(arg,z)
end
else Trace "O"                                  /* No tracing         */
/* Change some PF key settings - Scroll - PF 10 Left; PF 11 Right     */
ZPF10 = "ULEFT"; ZPF11 = "URIGHT"; ZEDLMSG = "" ZEDSMSG = ""
address "ISPEXEC" "VPUT (ZPF10 ZPF11) PROFILE "
/* Check z/OS release level => "01.13.00" required                    */
z = MVSVAR('SYSOPSYS')
parse var z . rel .
```

```
if rel < "01.13.00" then do
   ZEDLMSG = src "SDSF rexx is not supported in" z"!"
   Address "ISPEXEC" "SETMSG MSG(ISRZ001)"
   exit 16
end
/* Local ISPF table display panel USRHOQW title data                 */
Owner = " "; JOBNAME = " "; JobID = " "; dsd = " "; Q = "DJC"
/* Make local ISPF panels available                                  */
address "ISPEXEC"
"CONTROL ERRORS RETURN "
"LIBDEF ISPPLIB DATASET ID('"plib"') "         /* Activate APPL panels*/
ng = 0                                         /* Set GO switch to go */
/* Invoke JES3 DJC processing                                        */
z = donets()                                   /* Do JES3 DJC nets    */
address "TSO" ,
"ALTLIB  DEACT  APPL(CLIST)"
address "ISPEXEC"
"LIBDEF ISPPLIB"
"LIBDEF ISPLLIB"
return 0
/* Propcess JES3 DJC nets                                            */
donets:
Address "ISPEXEC" "VGET (ZSCREEN)"
/* Invoke subroutine to set prefix for JES3 commands & SDSF console  */
z = jescm()
if z <> 0 then return z                        /* Failure - EXIT...   */
/* Ask ISPF to tolerate goofs...                                     */
Address "ISPEXEC" "CONTROL ERRORS RETURN"
Address "TSO"                                  /*Default REXX addr env*/
/* Set ISPF initial table display values                             */
TNW = "TNW" || ZSCREEN ; SEL = 0 ; np = "" ; ps = ""
cmd = gpfx'I N'                                /*JES3 *I N command    */
again = 1
hd   = "NP   IAT8578 messages for the JES3 DJC job nets  "
cvar = "_NP  ~JOBNET                                    "
tnam = "NP JOBNET "
/* Invoke ISPF table create for the JES3 DJC nets                    */
z= tbc()
/* Show JES3 DJC NETs loop                                           */
Do while again
  ng = 0; errorm. = ""; shortm  = ""           /* Init some variables */
  z = entcmd()                                 /* Issue *I N command  */
  again = 0                                    /* Set tbl disp switch */
  sds. = ""; sds.0 = 0
  z = tbt()                                    /* Set tbl disp to top */
  z = tbd()                                    /* Display DJC table   */
end
return rc                                      /* All done here...    */
/* Subroutine to issue an ISPF message                               */
sayit:
  parse arg xyz
  if xyz ¬= "" then do
    zedlmsg = xyz
    If sysvar(SYSISPF) = "ACTIVE" then do
      zedsmsg = ""
      address "ISPEXEC" "SETMSG MSG(ISRZ000)"
    end
    else Say zedlmsg
  end
  return 0
```

```
/* Subroutine to create an ISPF table                                  */
tbc:
Address "ISPEXEC"
  "TBCREATE" TNW "NAMES("tnam") NOWRITE REPLACE"
Address "TSO"
return rc
/* Subroutine to add a row into the ISPF table                         */
tba:
Address "ISPEXEC"
  NP = ""
  "TBADD" TNW
Address "TSO"
return rc
/* Subroutine to set the ISPF table display to TOP                     */
tbt:
Address "ISPEXEC"
  "TBTOP" TNW
 Address "TSO"
return rc
/* Subroutine to display the ISPF table and process row actions        */
tbd:
TRC = 0; TOP = 0; CRW = 1; SEL = 0
Address "ISPEXEC"
Do while TRC < 8                                 /*Loop until END hit   */
  If again = 1 then  Leave
  /* ISPF display DJC NET table                                        */
  "TBTOP" TNW
  "TBSKIP" TNW "NUMBER("TOP")"
  src = RC
  "TBDISPL" TNW "PANEL(USRHOQW) POSITION(TBL) CSRROW("CRW") AUTOSEL(NO)" ,
                "ROWID(RID)"
  TRC = RC                                       /* Save tbl disp rc    */
  zedlmsg = ""
    /* Process first selected table row, if any non-blank action set  */
    If ZTDSELS <> 0 Then do                      /* Rows to process     */
      CRW = TBL                                  /* Save table position */
      if np <> "" then z = selpro()              /* Process action      */
      NP = ""                                    /* Clear old action    */
    End
    /* Process remainin pending table row selections                  */
    Do while ZTDSELS > 1
      "TBDISPL" TNW "POSITION(TBL) CSRROW("RID") ROWID(RID)"
      MRC = RC
      CRW = TBL
      if np <> "" then z = selpro()              /* Process action      */
      np = ""
    End
  if zcmd <> " " then z = selpro()
  If TRC = 8 then Leave
End
/* All done - Exiting... */
  "TBCLOSE" TNW
Address "TSO"
return rc
/* Subroutine to process one table row section                         */
selpro:
  zcmdmsg=""
  select
    when (np = "S" | np = "B"| np = "D") & ng = 0  then do
      "CONTROL DISPLAY SAVE"
```

```
      nid = word(jobnet,1)                    /*Invoke..             */
      z = vjOnet(nid)                         /* *X DISPDJC process  */
      "CONTROL DISPLAY RESTORE"
    end
    when (np = "H" | np = "R" | np = "C") & ng = 0 then do
      zedlmsg = zedlmsg "NP="np "TBD"         /* Set NP TBD message  */
    end
    when zcmd <> "" then do
      zcmdmsg = "C=>"zcmd "TBD"               /* Save zmcd message   */
      zcmd = ""
    end
    otherwise do
      if np <> "" then zedlmsg = zedlmsg "NP="np" ????"
      "TBDISPL" TNW "POSITION(TBL) MSG(ISRZ001) CSRROW("RID") ROWID(RID)"
      XRC = RC
      Z = ztdsels
      zedlmsg = ""
      if np <> "" then z = selpro()
    end
  End
  /* Issue message for command line data - TBD - to_be_defined        */
  if (zcmdmsg<>"" & ZTDSELS<=1) then do;zedlmsg=zcmdmsg;zcmdmsg="";end
  if zedlmsg <> "" then do
    "SETMSG MSG(ISRZ001)"
  end
return rc
/* Subroutine to use SDSF ISFSLASH for a JES3 command                */
entcmd:
  rc=isfcalls( ON )
  isfcons =    userid() || zscreen
  Address SDSF "ISFSLASH '"cmd"' (WAIT)"
  lrc=rc
  /* Find and extract *I N command output from the SDSF ULOG          */
  if lrc<>0 then do
    call msgrtn                               /* List error messages */
    ng = 1                                    /* Set failure         */
    return  16
  end
  /* Process ULOG for ISFSLASH response                               */
  jobnet = "No DCJ jobs or nets"
  do ix=1 to isfulog.0
    if pos("IAT8578",isfulog.ix)<>0 then do
      parse var isfulog.ix . "NET-ID=" jobnet
      np = " "
      z = tba() /* Insert IAT8578 message text into the ISPF table */
    end
  end
  if jobnet = "No DCJ jobs or nets" then do; z = tba(); ng = 1; end
  rc=isfcalls( OFF )
  return lrc
  /* Subroutine to list SDSF error messages                           */
  msgrtn:
    /* The isfmsg variable contains a short message                   */
    if isfmsg <>"" then jobnet = isfmsg
    z = tba()                                 /* TBADD message       */
    /* The isfmsg2 stem contains additional descriptive error messages*/
    do ix=1 to isfmsg2.0
      jobnet = isfmsg2.i
      z = tba()                               /* TBADD message       */
    end
```

```
return 4
/* Subroutine to *X DISPDJC NET= for argument DJC NET              */
/* *X DISPDJC NET= command output is spooled to JES3 JO           */
/* The *X DISPDJC NET= command response is read from OPERLOG      */
vjOnet:
  rc=isfcalls( ON )
  lst=time("N")
  /* SDSF ISFSLASH *X DISPDJC NET=net_id command                  */
  cmd=gpfx"X DISPDJC NET="nid
  isfcons =    userid() || zscreen
  Address SDSF "ISFSLASH '"cmd"' (WAIT)"     /* Issue JES3 command  */
  isfsysid=MVSVAR('SYSNAME')                 /* Sysname filter      */
  isflogstarttime=lst                        /* Log read start at   */
  isflinelim=1000                            /* Read record limit   */
  Address SDSF "ISFLOG READ TYPE(OPERLOG)"
  /* Find JES3 job number for *X DISPDJC job                      */
  do ix=isfline.0 to 1 by -1                 /* Scan log records    */
    if pos("IAT7450",isfline.ix)<>0 then do
      parse var isfline.ix "(" jid ")" .
      leave
    end
  end
  /* Find JES3 job 0 data sets using SDSF ISFEXEC JO data         */
  Address SDSF "ISFEXEC JO (ALTERNATE DELAYED)"
  nr = isfrows
  /* Locate *X DISPDJC output data set index in ISFEXEC JO output */
  /* using the job number found in the IAT7450 response message.  */
  do i=1  to nr
    if name.i = jid then do; leave ; end
  end
  /* Find *X DISPDJC output data set using the ISFACT JO NP SA    */
  /* SA (browse allocate) returns variables for DD- and DSNAME.   */
  Address SDSF "ISFACT JO TOKEN('"TOKEN.i"') PARM(NP SA)"
  sarc = rc
  ndd = isfddname.0
  /* Allocate a temporary data set for the copy of JO data        */
  /* ISPF browse does not work with spool data sets...            */
  do j=1 to ndd
    address ISPEXEC "VGET (ZSCREEN)"
    bdd = "NETJO"zscreen
    address TSO ,
    "alloc dd("bdd") spa(1 5) cyl new recf(v a) lrecl(255) uni("vio") reu"
    /* Copy JO spool data into the temporary data set             */
    address TSO ,
    "EXECIO * DISKR" isfddname.j "(STEM line. FINIS"
    y = line.0+1
    z = value("line."y,"")
    line.0 = y
    address TSO ,
    "EXECIO * DISKW" bdd "(STEM line. FINIS"
    /* ISPF VIEW the temporary data set                           */
    address ISPEXEC "LMINIT DATAID(DID) DDNAME("bdd")"
    lin = rc
    if  lin = 0 then do
      address  ISPEXEC "VIEW   DATAID("DID")"
      address  ISPEXEC "LMFREE DATAID("DID")"
    end
    else say "LMINIT" bdd "RC =" lin zerrlm
    "free dd("bdd")"
  end
```

```
      /* PURGE the JO *X DISPDJC output spool data sets...              */
      Address SDSF "ISFACT JO TOKEN('"TOKEN.i"') PARM(NP P)"
      rc=isfcalls( OFF )
    return rc
  /* Subroutine to set prefix for JES3 global commands & SDSF console   */
    jescm:
      isfcons = userid() || zscreen              /* Set console name   */
      gpfx = "*"
      if jg =  "" then z = sayit("JES3 sysplex scope prefix set to '*'")
      else gpfx = "RO" jg",*"                    /* Prefix = "RO gbl,*"*/
 return 0
```

Table display panel for DJC nets

Example B-5 USRHOQW - table display panel for DJC nets

```
   )ATTR
    _ TYPE(INPUT) INTENS(HIGH)  PADC(NULLS) JUST(LEFT) CAPS(ON)
    % TYPE(OUTPUT) INTENS(HIGH) PAD(' ')  JUST(ASIS) CAPS(ON)
    ~ TYPE(OUTPUT) INTENS(HIGH) PAD(' ')  JUST(ASIS) CAPS(ON) COLOR(YELLOW)
    ? TYPE(OUTPUT) INTENS(HIGH) PAD('-')  JUST(ASIS) CAPS(ON)
    ¢ TYPE(OUTPUT) INTENS(HIGH) PAD(' ')  JUST(LEFT) CAPS(ON)
    @ TYPE(OUTPUT) INTENS(HIGH) PAD(' ')  JUST(ASIS) CAPS(OFF)
    + TYPE(OUTPUT) INTENS(LOW)  PAD(' ')  JUST(ASIS) CAPS(OFF)
    \ TYPE(OUTPUT) INTENS(LOW)  PAD(' ')  JUST(LEFT) CAPS(ON)
    | TYPE(TEXT) INTENS(HIGH)   PAD(' ')  JUST(ASIS) CAPS(ON)
    ! TYPE(TEXT) INTENS(LOW)    PAD(' ')  JUST(ASIS) CAPS(ON)
   )BODY  ASIS WIDTH(&ZSCREENW) EXPAND(//)
   |----------------------  JES3|&Q  |------------------/-/----------------------
   |C =>_ZCMD                          / /                          |S =>_SCR |
   @HD                                                                          |
   ?ZX                                / /                                       |
   )MODEL
   &CVAR
   )INIT
     &ZSCRNAME = &Q
     VPUT (ZSCRNAME) SHARED
     &ZX = '----'
   )REINIT
   )PROC
   )END
   /*--+----1----+----2----+----3----+----4----+----5----+----6----+----7----+---*/
/* USRHOQW - JES3 DJC Net display sample */
```

SDSF in batch examples

The TSO terminal monitor program, in batch, is used to invoke a REXX exec (BATSD), which invokes SDSF to display the status (ST) panel for all JES3 jobs. The output of the SDSF program is directed to a DASD data set. The ISFOUT data is read into stem variables, which are filtered to find jobs in the JES3 MDS queues.

Tip: The terminal monitor program (TMP) provides an interface between the user, command processors, and the TSO/E control program. It obtains commands, gives control to command processors, and monitors their execution.

Example B-6 SDSF in batch execution JCL

```
//RXBATSD  JOB (999,POK),EXPERT,MSGLEVEL=1,MSGCLASS=A,NOTIFY=&SYSUID
//TMP    PROC
//TMP    EXEC PGM=IKJEFT01,DYNAMNBR=99
//SYSPROC  DD DSN=VAINI.U.CLIST,DISP=SHR
//SYSTSPRT DD SYSOUT=*
//       PEND
//       EXEC TMP
//SYSTSIN  DD *
  BATSD  /* REXX to execute SDSF in batch TSO TMP*/
BATSDR /* SDSF REXX to execute under batch TSO TMP*/
```

The TSO terminal monitor program, in batch, is used to invoke a REXX exec (BATSD), which invokes SDSF to display the status (ST) panel for all JES3 jobs. The output of the SDSF program is directed to a DASD data set. The ISFOUT data is read into stem variables, which are filtered to find jobs in the JES3 MDS queues.

REXX to execute SDSF in TSO batch

Example B-7 SDSF in batch - BATSD REXX

```
/* Rexx    Sample JCL from the z/OS SDSF Operation and Customization document
            //       EXEC PGM=SDSF,PARM='32,500'
            //ISFOUT DD SYSOUT=*
            //ISFIN  DD *
*/
"alloc dd(isfout) uni(sysallda) spa(1 1) cyl new reu"
"alloc dd(isfin)  uni(vio) spa(1 1) tra new reu" ,
  "recf(f) lrec(80) dsor(PS)"
isfi. = ""               /* Build ISFIN data              */
isfi.1 = "PREFIX *"      /* Set PREFIX for ST             */
isfi.2 = "OWNER *"       /* Set OWNER for ST              */
isfi.3 = "ST"            /* ST command                    */
isfi.4 = "? "            /* Request alternate fields      */
isfi.5 = "++ALL"         /* Set everything action         */
isfi.0 = 5
"EXECIO * DISKW ISFIN (FINIS STEM ISFI." /* Update ISFIN  */
"call  *(SDSF)  '++32,500'"              /* Invoke SFSF   */
"EXECIO * DISKR ISFOUT (FINIS STEM SDVAR." /*Read ISFOUT  */
sayit = 0                /* Contol switch                 */
z = substr(date(s),1,2) || date(j)
say "Present time:" substr(z,1,4) || "." || substr(z,5)  date(j) time()
do i = 1 to sdvar.0      /* Loop through SDSF output      */
   if pos('SDSF STATUS DISPLAY',sdvar.i) <> 0 & sayit = 0 then do
     j = i + 2
     tp = pos("Rd-Time",sdvar.j) /* Find an alternate fld */
    if tp > 0 then do   /* Process alternate field data   */
       sayit = 1        /* Set switch = start processing  */
       jp = pos("JOBNAME",sdvar.j) /* Find field offsets  */
       qp = pos("Queue",sdvar.j)
       pp = pos("PhaseName",sdvar.j)
       dp = pos("Rd-Date",sdvar.j)
     end
   end
   if sayit then do     /* Find JES3 jobs in MDS queues   */
     if pos('SDSF STATUS DISPLAY',sdvar.i) <> 0 then iterate
     if pos('COMMAND INPUT',sdvar.i) <> 0 then iterate
     if substr(sdvar.i,jp,15) = " " then iterate
```

```
        qinf = substr(sdvar.i,qp,10)
        pinf = substr(sdvar.i,pp,21)
        if qinf = "SETUP" | wordpos("MDS",pinf) <> 0 then do
          jinf = substr(sdvar.i,jp,25)
          pinf = substr(sdvar.i,pp,21)
          tinf = substr(sdvar.i,tp,8)
          dinf = substr(sdvar.i,dp,8)
          say left(jinf,25) left(qinf,10) left(pinf,21) dinf right(tinf,8)
        end
      end
end
```

Sample output from the BATSD REXX execution is in Example B-9 on page 174. The REXX program in Example B-7 on page 173 and the SDSF REXX program in Example B-8 create the same output.

SDSF REXX to execute under batch TSO TMP

Example B-8 SDSF REXX in batch - BATSDR

```
   /* Show some SDSF REXX basic features - List JES3 MDS alloc queue */
   /* for the user who invokes this REXX exec                        */
   trace O
   zrc=isfcalls("ON")        /* Add the SDSF host command environment*/
   isfdest   = "*"
   isfowner  = "*"
   isfprefix = "*"
   isfsysname = "*"
   isffiltermode = "or"
   isffilter = "PHASENAME EQ 'AWAIT RES ALLOC' PHASENAME EQ 'MDS ERROR'"
   isffilter = isffilter "PHASENAME  EQ UNA*"
   /*  isffilter assignments that do not work
   isffilter = "PHASENAME EQ 'AWAIT RES ALLOC' +PHASENAME EQ 'MDS ERROR'"

   isffilter = "PHASENAME EQ 'AWAIT RES ALLOC'"
   isffilter = "+PHASENAME EQ 'MDS ERROR'"
   */
   Address SDSF "ISFEXEC ST (ALTERNATE DELAYED)"
   do i=1 to JNAME.0              /* Loop for all rows returned     */
     say left(jname.i,8) left(jobid.i,8) left(ownerid.i,7) left(queue.i,10) ,
       left(phasename.i,21) right(dater.i,8) right(timer.i,8)
   end
   zrc=isfcalls("OFF")       /* Delete SDSF command environment      */
exit 0
```

BATSD REXX and BADSDR SDSF REXX sample output

Example B-9 SDSF in batch - BATSD REXX and BADSDR SDSF REXX sample output

```
MDSWAIT3 JOB14444 VAINI   EXECUTION  MDS ERROR            2009.117 12:08:49
NOUNITS  JOB14506 VAINI   EXECUTION  MDS ERROR            2009.120 13:23:19
BECKER1  JOB04066 BECKER  SETUP      AWAIT RES ALLOC      2006.130 11:29:11
MDSWAIT  JOB14437 VAINI   SETUP      AWAIT RES ALLOC      2009.117 11:22:00
MDSWAIT0 JOB14440 VAINI   SETUP      AWAIT RES ALLOC      2009.117 11:52:08
MDSWAIT1 JOB14441 VAINI   SETUP      AWAIT RES ALLOC      2009.117 11:52:14
```

```
MDSWAIT2 JOB14442 VAINI   SETUP      AWAIT RES ALLOC       2009.117 11:52:22
NOVOLS   JOB14503 VAINI   SETUP      UNAVAIL VOL           2009.120 13:06:42
```

Related publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this paper.

IBM Redbooks

The following IBM Redbooks publications provide additional information about the topic in this document. Note that some publications referenced in this list might be available in softcopy only.

- *Implementing REXX Support in SDSF, SG24-7419-00*

You can search for, view, download or order these documents and other Redbooks, Redpapers, Web Docs, draft and additional materials, at the following website:

ibm.com/redbooks

Other publications

These publications are also relevant as further information sources:

- *z/OS SDSF Operation and Customization*, SA22-7670

Online resources

These Web sites are also relevant as further information sources:

- SDSF home page: usage tips, presentations, as well as a wizard to help you enable the sysplex support at:

  http://www.ibm.com/servers/eserver/zseries/zos/sdsf

- Latest edition of the *z/OS SDSF Operation and Customization*, SA22-7670 which is available at the following URLs:

  http://publibz.boulder.ibm.com/epubs/pdf/isf4cs90.pdf

  http://www.ibm.com/servers/eserver/zseries/zos/bkserv/

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Draft Document for Review April 11, 2012 11:37 am

Using SDSF in a JES3 Environment

Simplify management of JES3 systems

Common UI for both JES2 and JES3

Write powerful scripts using SDSF/REXX

This IBM® Redpaper™ publication offers a broad overview of features of the IBM z/OS® System Display and Search Facility (SDSF) for JES3. z/OS R10 delivered the (long-requested) ability to use SDSF in a JES3 environment, while subsequent releases have delivered additional functionality. This publication details SDSF for JES3 features and functions from z/OS R10 to z/OS R13.

This Redpaper describes the features, panels, and functions of SDSF for JES3 and provides details on usage.

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