

IBM z/OS V2R2: User Interfaces

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z Systems



International Technical Support Organization

IBM z/OS V2R2: User Interfaces

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

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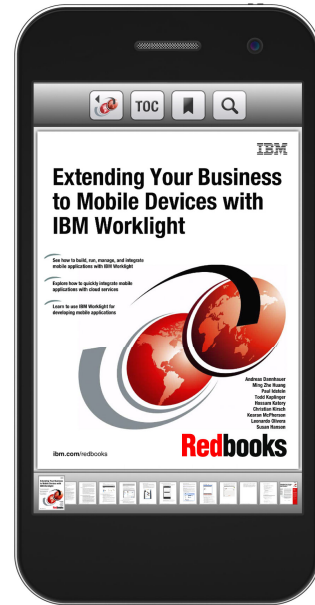
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Preface

This IBM® Redbooks® publication helps you to become familiar with the technical changes that were introduced into the User Interface areas of IBM z/OS® V2R2.

This publication is one in a series of IBM Redbooks publications that take a modular approach to providing information about the updates within z/OS V2R2. This approach has the following goals:

- ▶ Provide modular content
- ▶ Group the technical changes into a topic
- ▶ Provide a more streamlined way of finding relevant information that is based on the topic

It is our hope that this approach is useful. We value your feedback.

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TSO/E Logon

TSO/E is part of the base element of the z/OS operating system with which users interactively work with the system.

In z/OS V2R2, new support provides the ability to inhibit all user information from being presented before the successful input of valid logon information.

This chapter includes the following topics:

- ▶ 1.1, “Overview of logon changes” on page 2
- ▶ 1.2, “Use of the new logon function” on page 2

1.1 Overview of logon changes

Enhancements were made to the TSO/E logon process. Valid TSO/E user IDs can be detected by determining the message responses that are issued to incorrect logon attempts. After the user IDs are identified, more user information can be found, such as account number and logon procedure, without the logon occurring.

A new option, named **PASSWORDPREPROMPT**, is provided via APAR OA44855 in z/OS V1R13 and z/OS V2R1 and V2R2 to improve protecting information that is related to the TSO/E user ID.

When active, the user is prompted in line mode for the user ID and password, if not on the initial command. After the user is validated, the standard logon panel appears with the remaining logon fields available to be completed.

1.2 Use of the new logon function

To activate the new function, the system must be running with an IKJTSoxx parmlib member that indicates **PASSWORDPREPROMPT (ON)**. Consider the following points:

- ▶ **PASSWORDPREPROMPT** is specified in the **LOGON** statement, as shown in the following example:

```
LOGON PASSWORDPREPROMPT(ON) PASSPHRASE(ON) VERIFYAPPL(ON)
```

- ▶ The default setting is **OFF**. Continue the use of your current process, then set the value to **OFF**. It is suggested that you explicitly code this value rather than assume the default.

Note: The intention is to set the default value to **ON** in the future.

1.2.1 New function

On our test systems, we modified the parmlib member IKJTSo00 and activated it dynamically by using the following **TSO PARMLIB** command:

```
PARMLIB CHECK(00)  
PARMLIB UPDATE(00)
```

The new **LOGON** settings are shown in Figure 1-1 on page 3.

PARMLIB LIST (LOGON)

TSO/E PARMLIB SETTINGS :

SYS1.PARMLIB(IKJTS000) on volume BH5CAT
Activated by HERING on 2015-08-17 at 16:01:33 from system SC74
Applies to : SC74

CURRENT PARMLIB SETTINGS FOR LOGON:

PASSPHRASE (ON)
VERIFYAPPL (ON)
LOGONHERE (ON)
PASSWORDPREPROMPT (ON)

Figure 1-1 New LOGON settings after activating PASSWORDPREPROMPT(ON)

1.2.2 New Logon preprompting in line mode

When the function is active, the user is required to enter the user ID and password in line mode before the LOGON command can be processed and full-screen processing can occur, as shown in Figure 1-2.

```
IKJ56700A ENTER USERID -  
USER01  
IKJ56476I ENTER PASSWORD  
  
***
```

Figure 1-2 Logon preprompting when PASSWORDPREPROMPT(ON) is active

Preprompt and LOGON processing

Consider the following points:

- ▶ Any incorrect input results in showing the new message IKJ56474I, which indicates only that user ID or password is incorrect or not authorized, as shown in the following example:
IKJ56474I USERID OR PASSWORD IS INCORRECT OR NOT AUTHORIZED
- ▶ Exits IKJEFLD and IKJEFLD1 are run before preprompting. All other LOGON exits run after successful preprompting.
- ▶ After successfully entering the logon information, the standard window is displayed with the user ID and password fields protected.

Note: At the time of this writing, exits IKJEFLN1 and IKJEFLN2 are run on entry and exit of the window as usual.

- ▶ The processing applies to IBM RACF® user IDs.
- ▶ UADS users can to log on only if RACF is inactive.
- ▶ Line-mode features similar results.



OPERSEWAIT

TSO/E is a base element of the z/OS operating system with which users interactively work with the system.

This chapter describes the change to the **OPERSEWAIT** default setting and includes the following topics:

- ▶ 2.1, “Overview for changed OPERSEWAIT default” on page 6
- ▶ 2.2, “Using and checking operator SEND command” on page 6

2.1 Overview for changed OPERSEWAIT default

The **OPERSEWAIT** setting on the **SEND** statement in `parmlib` member `IKJTSoxx` determines whether **WAIT** or **NOWAIT** must be used for an **OPERATOR SEND** command that is issued without explicitly setting **WAIT** or **NOWAIT**.

The old default setting of **ON** meant that **SEND** commands that did not explicitly indicate **WAIT** or **NOWAIT** waited for a user's VTAM® buffer to be available and for the message to be sent.

This configuration caused unnecessary **ABEND** commands and delays on the system; for example, when the issuer of the **SEND** held a resource, such as the **SYSIKJBC** exclusive enqueue on the broadcast data set.

Therefore, in z/OS V2R2, the default for **OPERSEWAIT** was changed. The changed default for **OPERSEWAIT** is **OFF** and a new health check was introduced.

Note: These changes reduce delays that are caused by outstanding **SEND** commands.

2.2 Using and checking operator SEND command

In this section, we describe how to modify the **OPERSEWAIT** setting and how the new health check works.

2.2.1 OPERSEWAIT default setting

The **OPERSEWAIT** setting can be explicitly defined on the **SEND** section of the `IKJTSoxx` `parmlib` member that is used; however, often this definition is not made. As shown in Figure 2-1, the value of **OPERSEWAIT** is **OFF** while it is not set in the `parmlib` member.

```
$> tsocmd "parmlib list(send)" 2> /dev/null | head -13
TSO/E PARMLIB SETTINGS :

SYS1.PARMLIB(IKJTSo00) on volume BH5CAT
$> tsocmd "parmlib list(send)" 2> /dev/null | grep OPERSEWAIT
OPERSEWAIT(OFF)
$> cat "'/sys1.parmlib(ikjtso00)'" | grep -i OPERSEWAIT
$>
```

Figure 2-1 Listing **OPERSEWAIT** setting in z/OS V2R2 by using UNIX extract functions

Note: By explicitly specifying the keyword and setting, you can override any system default setting for **OPERSEWAIT**.

2.2.2 Health check to test for the default setting

A new health check that is named **TSOE_OPERSEWAIT_SETTING** was created that indicates whether the current setting matches the preferred installation setting. Consider the following points:

- ▶ The preferred setting defaults to **OFF**; however, the installation can change the setting to **ON** by using a parameter setting on the health check.
- ▶ A successful check results in the following message:
IKJH0401I OPERSEWAIT matches the preferred state.
- ▶ An unsuccessful check results in the following message:
IKJH0402E OPERSEWAIT does not match the preferred state.

2.2.3 Coexistence considerations

Consider the following points regarding the OPERSEWAIT default setting:

- ▶ To maintain the equivalent function with previous releases of z/OS, add **OPERSEWAIT (ON)** to the IKJTSOxx parm1ib member.
- ▶ With the new default, **SEND** commands might fail more frequently and show the following message:
IKJ008I USER(S) *user-list* AT BUSY TERMINAL(S), MESSAGE CANCELLED

It is suggested you monitor the frequency of this message that is issued and determine the best option for your system.



Non UNIX related ISPF functions

The Interactive System Productivity Facility (ISPF) product uses the characteristics of IBM display terminals and increases users' productivity in an interactive environment.

This chapter describes the new non UNIX related ISPF support in ISPF that is introduced with IBM z/OS V2R2 and includes the following topics:

- ▶ 3.1, “Interactive ISPF Gateway” on page 10
- ▶ 3.2, “ISPF enhancements” on page 11

3.1 Interactive ISPF Gateway

The ISPF Gateway API is enhanced to support conversational mode interaction.

3.1.1 New enhancements

The following enhancements were introduced with z/OS V2R2 for the ISPF Gateway API:

- ▶ The ISPF Gateway uses z/OS Time Sharing Option (TSO) Common Event Adapter CEA Address Space Services to create TSO address spaces and provide communication between the remote client and the address space.

This functionality supports the reuse of TSO/E address spaces and improves performance.

- ▶ The ISPF Gateway can be used to run programs that are interactive by issuing TSO/ISPF conversational mode commands. For example, a REXX program that prompts the user for information that is needed to complete a task.
- ▶ The TSO/E address spaces that are started by the Interactive ISPF Gateway are started by using a TSO logon procedure.
- ▶ An attention interrupt can be sent to a TSO/E address space that was started by the Interactive ISPF Gateway to end a command that is in process in the address space.
- ▶ The Interactive ISPF Gateway provides a native API and an XML API.

Notes: No updates are necessary to programs that use the ISPF Gateway API unless you want to use the new conversational mode interaction capability.

To use the new capability, the environment variable **CGI_CEATSO** must be set to **TRUE**, and the new API capabilities must be used, as described in *z/OS V2R2 ISPF Planning and Customizing*, SC19-3623-01.

3.1.2 API request types

The types of requests that can be made by using the API that is provided by the ISPF Gateway are listed in Table 3-1.

Table 3-1 API request types

API	Description
NEWTSO	Start a new TSO/E address space. Do not start ISPF.
NEWTSOISPF	Start a new TSO/E address space and ISPF.
RECONNTSO	Reconnect to a dormant TSO/E address space. No ISPF is supported.
RECONNTSOISPF	Reconnect to a dormant TSO/E address space. ISPF is started.
REUSE	Reuse a TSO/E address space for a new command.
RESPOND	Respond to a prompt from a TSO/E address space.
PING	Ping a TSO/E address space. Required every 15 minutes to keep the address space alive.
ATTN	Send an attention interrupt to a TSO/E address space.

API	Description
DORMANT	Put a TSO/E address space in a dormant state. Activating a dormant address space is faster than starting a new address space.
LOGOFF	Logoff a TSO/E address space.
CANCEL	Cancel a TSO/E address space.

3.1.3 ISPF Gateway with IBM HTTP Server

Consider the following points regarding the use of the ISPF Gateway with IBM HTTP Server powered by Apache:

- ▶ Samples and Documentation are removed that are specific to the IBM HTTP Server Powered by Domino® because this configuration is no longer supported.
- ▶ For more information about how the TSO/ISPF Client Gateway APIs (which support remote access to TSO/ISPF) can be used with the IBM HTTP Server Powered by Apache, see *z/OS V2R2 ISPF Planning and Customizing*, SC19-3623-01.

3.2 ISPF enhancements

z/OS V2R2 introduced several enhancements to ISPF.

3.2.1 ISPF Browse enhancements

The ISPF Browse function features the following enhancements:

- ▶ Increased Browse record number limit
- ▶ Included Browse enhancement to display the length of variable records

Browse record number limit

Consider the following points regarding the increased Browse record limit:

- ▶ The number of records that Browse can process is increased to 2,147,483,646.
- ▶ The Browse **LOCATE** command is enhanced to increase the maximum line number value that is allowed.
- ▶ The BRIF service uses the new limit when the caller passes a new parameter (**EXTEND**) and the **READ** routine is altered to accept record numbers up to the new maximum value.

Browse enhancement to display the length of variable records

Consider the following points regarding this enhancement:

- ▶ The Browse primary **DISPLAY** command is enhanced to show the record descriptor word (RDW) for variable length records.
- ▶ Options **RDW** and **NORDW** were added to the command; **NORDW** is the default.

Note: The RDW is a 4-byte field that describes the record. The first two bytes contain the length of the logical record.

Figure 3-1 and Figure 3-2 show an example of the use of the new option RDW.

```

BROWSE      PLEX75.SC74.REXXEXEC(SENDWTOR) - 01.01   Line 0000000001 Col 001 080
/* REXX using WTOR */
connect_id = "FIRSTLINE"; lines = Sourceline()
Do i=1 To lines; Call Axrmlwto Sourceline(i), "connect_id", "D"; End
Call AXRMLwto, "connect_id", "E"
Call AXRWtor "Reply to this message with any text."
Call AXRWto "Replied data is:" AxrReply /* Reply stored in AxrReply */
Exit
***** Bottom of Data *****

```

Figure 3-1 Normal Browse display

Figure 3-2 shows the result after the command `display rdw` is entered.

```

BROWSE      PLEX75.SC74.REXXEXEC(SENDWTOR) - 01.01   Line 0000000001 Col 001 080
.../* REXX using WTOR */
0200654DCEE4AA8984EEDD45644444444
01001C09577042957063690C100000000
-----
...connect_id = "FIRSTLINE"; lines = Sourceline()
0300899988A6884747CCDEEDCDC7549898A474E9A988989845
02003655533D940E0F699233955FE0395520E02649353955DD
-----
.ç..Do i=1 To lines; Call Axrmlwto Sourceline(i), "connect_id", "D"; End
0400C9487F4E949898A54C8994CA999AA94E9A9889898485647899988A6887647C754C98
08004609E1036039552E0313301794363602649353955D9DB0F3655533D94FB0F4FE0554
-----
...Call AXRMLwto, "connect_id", "E"
0200C8994CEDD9AA9647899988A6887647C74
05003133017943636B0F3655533D94FB0F5F0
-----
...Call AXRWtor "Reply to this message with any text."
0300C8994CEDEA9947D899A4A94A88A498AA8884A8A8489A4A8AA47
07003133017963690F95738036038920452217506938015803573BF
-----
.Ä..Call AXRWto "Replied data is:" AxrReply /* Reply stored in AxrReply */
0400C8994CEDEA947D899888488A848A774CA9D899A4654D899A4AA99884894CA9D899A456
0A00313301796360F957395404131092AF01799573801C09573802369540950179957380C1
-----
...Exit
0000CA8A
08005793

```

Figure 3-2 Browse display after entering display rdw

3.2.2 ISPSTART command enhancement

The **ISPSTART** command enhancement supports an initial command stack on the **OPT** parameter. Consider the following points:

- ▶ **OPT(ZSTART)** is now the default in cases where the **OPT** parameter can be specified but is omitted.
- ▶ The use of mixed and lowercase data is now allowed when the **OPT** parameter is used to control the use of an initial command stack.
- ▶ The **ISPSTART** command documentation was updated to describe the **OPT** parameter for controlling the use of an initial command stack.

Based on the new enhancements, the following possibilities are available:

- ▶ You can define a profile variable with an initial command stack. The variable can be named **ZSTART** or have another name.
- ▶ The **OPT** parameter controls the use of the initial command stack.

- Specify **OPT(varname)** when an initial command stack is defined in profile variable **varname**. The variable name can be **ZSTART** or any other name.
 - Specify **OPT(BASIC)** to bypass processing of a defined **ZSTART** variable.
 - Omit the **OPT** parameter so that **OPT(ZSTART)** is used by default.
- ▶ Mixed or lowercase can be used when the keyword **BASIC** or an initial command stack variable is specified on the **OPT** parameter.

3.2.3 CONTROL service enhancement for left and right scroll commands

The **CONTROL** service allows you to control the **PASSTHRU** of the **LEFT** and **RIGHT** scroll commands.

The dialog can turn the pass through of these commands on and off as needed and query the status of the pass through of these commands.

Note: A more granular control of **PASSTHRU** of the **LEFT** and **RIGHT** scroll commands is provided.

A new parameter is provided on the **CONTROL** service.

Table 3-2 lists the new **CONTROL** parameter options for **PASSTHRU LRSCROLL** options.

Table 3-2 PASSTHRU LRSCROLL options

Option	Explanation
PASON	LEFT and RIGHT scroll commands are passed to the dialog.
PASOFF	LEFT and RIGHT scroll commands are not passed to the dialog.
PASQUERY	Do a Query of the pass through status for LEFT and RIGHT scroll commands.

3.2.4 EDIF and VIIF services enhancement

The EDIF and VIIF services enhancement supports an edit line command table.

A new parameter **User Line Command Table** now can be passed. This parameter is a positional parameter that is passed as the last nine characters and padded with blanks.

Note: The Edit Interface (EDIF) and View Interface (VIIF) services now accept a user line command table as a parameter as supported for **EDIT** and **VIEW** services in z/OS V1R13.

Figure 3-3 shows a simple example of a user line command table as a parameter on the use of VIIF.

```
CALL ISPLINK ('VIIF ', 'EDIFDSN', 'EDIFPROF',
             'F', 80, RDRTN, CMDRTN, MYDATA, LINECMTAB);
```

Figure 3-3 Example for a user line command table as a parameter on the use of VIIF

3.2.5 Global configuration option to define a default line command table

Support for globally specifying a Line Command Table is provided in z/OS V2R2.

A new setting, **GLOBAL_LINE_COMMAND_TABLE**, defines a line command table that is active when not otherwise specified by the user or supplied as parameter on the edit or view service call. This setting improves the usability for specifying a line command table.

3.2.6 Global configuration option to disable the editor PACK operation

This option can globally disable the PACK option.

You can disable the PACK option for the Move and Copy utility. Also, this option disables the **Edit PACK** primary command.

A new setting, **GLOBAL_DISABLE_PACK**, disables the pack operation that is used by the editor.

Note: Any currently packed data is unpacked if saved. This option also disables **PACK** from affecting **COPY** and **MOVE** services, which helps to prevent accidentally setting the **PACK** option on edit, move, and copy operations.

3.2.7 Removing BookManager/Build from the ISPF z/OS Applications menu

IBM BookManager® Build is no longer provided by IBM as of z/OS V2R2.

Option 13.1, BookManager Build, was removed, which provides the removal of an unsupported option from menu structure.

3.2.8 Removal of extraneous commands from the ISPF TSO command table

Although the TSO Data Utilities product is no longer supported, the following commands that are related to that product are still available in ISPTCM:

- ▶ COPY
- ▶ FORM
- ▶ FORMAT
- ▶ LIST
- ▶ MERGE
- ▶ PASCALVS

These commands were removed in z/OS V2R2.

3.2.9 DTL compiler enhancement to use the system variable ZISPFRC

The final return code from the DTL compiler must be available to influence the JCL step return codes. This function is introduced in z/OS V2R2.

In z/OS V2R2, the final return code from the DTL compiler is stored into the ISPF shared pool variable ZISPFRC. This configuration allows a batch invocation of ISPD TLC to be aware of the success or failure of the DTL compilation.

3.2.10 ISPF configuration table

An ISPF configuration load module cannot be updated if the source keyword file is not available.

The ISPF Configuration Utility was enhanced to provide a new option 7 for converting the active configuration load module (or one that is in a data set) to a keyword file.

The generated keyword file can then be updated by using option 1 or 2 of the ISPF Configuration Utility.

A configuration load module can then be built from the updated keyword file by using option 4 of the ISPF Configuration Utility.

Figure 3-4 shows for reference the ISPF Configuration Utility panel that displayed by using the TSO `ISPCCONF` command while in ISPF.

```
                                ISPF Configuration Utility
Option ==> _____

1 Create/Modify Settings and Regenerate Keyword File
2 Edit Keyword File Configuration Table
3 Verify Keyword Table Contents
4 Build Configuration Table Load Module
5 Convert Assembler Configuration Table to Keyword File
6 Build SMP/E USERMOD
7 Convert Configuration Table Loadmod to Keyword File

Keyword File Data Set
Data Set . . . 'PLEX75.ISPF.KEYWORD.DATASET'
Member . . . . ISRCONFG

Configuration Table Assembler Source Data Set
Data Set . . . _____
Member . . . . _____

Output File Content for Keyword File
 1. Include only non-default values
 2. Include defaults as comments
 3. Include all values

Current Configuration Table
Keyword File : PLEX75.ISPF.KEYWORD.DATASET(ISRCONFG)
Identifier . : ISPCFIGU                      Level . . . : 480R8001
Compile Date : 2013/08/01                    Compile Time : 11:53
```

Figure 3-4 Showing for reference the ISPF Configuration Utility panel

Note: Users can update configurations, even when the source keyword file is not available. This enhancement is also available for z/OS V2R1 via APAR OA42680.

Related publications

The publications that are listed in this section are considered particularly suitable for a more detailed discussion of the topics that are covered in this book.

IBM Redbooks

The following IBM Redbooks publications provide more information that is related to the z/OS V2R2 updates. Some publications that are referenced in this list might be available in softcopy only:

- ▶ *z/OS V2R2: JES2, JES3, and SDSF*, SG24-8287-00
- ▶ *z/OS V2R2: Security*, SG24-8287-00
- ▶ *z/OS V2R2: Storage Management and Utilities*, SG24-8289-00
- ▶ *z/OS V2R2: Availability Management*, SG24-8290-00
- ▶ *z/OS V2R2: Performance*, SG24-8292-00
- ▶ *z/OS V2R2: Operations*, SG24-8305-00
- ▶ *z/OS V2R2: Diagnostics*, SG24-8306-00
- ▶ *z/OS V2R2: Sysplex*, SG24-8307-00
- ▶ *z/OS V2R2: Unix Systems Services* SG24-8310-00
- ▶ *z/OS V2R2: User Interfaces*, SG24-8311-00
- ▶ *z/OS V2R2: IBM ServerPac*, SG24-8500

You can search for, view, download, or order these documents and other Redbooks, Redpapers, Web Docs, draft, and other materials at the following website:

ibm.com/redbooks

Other publications

The following publications are also relevant as further information sources:

- ▶ *z/OS UNIX System Services Planning*, GA32-0884-01
- ▶ *z/OS UNIX System Services File System Interface Reference*, SA23-2285-01
- ▶ *z/OS UNIX System Services Command Reference*, SA23-2280-02
- ▶ *z/OS Using REXX and z/OS UNIX System Services*, SA23-2283-01
- ▶ *z/OS MVS System Commands*, SA38-0666-03
- ▶ *z/OS MVS Initialization and Tuning Reference*, SA23-1380-05
- ▶ *z/OS V2R2 ISPF Dialog Developer's Guide and Reference*, SC19-3619-01
- ▶ *z/OS V2R2 ISPF Dialog Tag Language Guide and Reference*, SC19-3620-01
- ▶ *z/OS V2R2 ISPF Edit and Edit Macros*, SC19-3621-01
- ▶ *z/OS V2R2 ISPF Messages and Codes*, SC19-3622-01
- ▶ *z/OS V2R2 ISPF Planning and Customizing*, SC19-3623-01
- ▶ *z/OS V2R2 ISPF Reference Summary*, SC19-3624-01

- ▶ *z/OS V2R2 ISPF Software Configuration and Library Manager Guide and Reference*, SC19-3625-01
- ▶ *z/OS V2R2 ISPF Services Guide*, SC19-3626-01
- ▶ *z/OS V2R2 ISPF User's Guide, Volume I*, SC19-3627-01
- ▶ *z/OS V2R2 ISPF User's Guide, Volume II*, SC19-3628-01

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