WSC Wildfire z/OS Primer

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IBM WSC Wildfire Team
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Overview

These instructions are provided to provide a very basic introduction to using z/OS interfaces, commands, tools, etc. There are instructions for logging on to TSO and CICS, for accessing MVS data sets using ISPF and for using System Display and Search Facility (SDSF) to review job output. Also covered, are instructions for accessing z/OS UNIX System Services (USS) directories and files using the ISPF provided tools and for accessing the same USS directories and files using a more traditional shell. You may be very familiar with using z/OS tools and interfaces but still review these instructions since there may be one or two which may be new to you.

Please note that Tech Tips (yellow or shaded boxes) are included throughout the exercise to provide suggestions regarding TSO commands, ISPF options or other information which may be useful.

Part 1: Logging on to TSO and Navigating ISPF Menus

In this section you will see how to access TSO and use the ISPF interface to access ISPF editor options and functions.

Part 2: Using the ISPF editor

In this section you will learn how to use the ISPF editor.

Part 3: Using the Syslog Display and Search Facility (SDSF) Tool

In this section you will learn how to access SDSF in order to review job output and how to invoke MVS and JES commands from TSO.

Part 4: Entering TSO commands

In this section you will learn how to enter TSO commands

Part 5: Entering MVS commands

In this section you will learn how to enter MVS commands

Part 6: Opening the z/OS USS Shell and entering commands

In this section you will learn how to enter commands in the z/OS OMVS shell.

Part 7: Using the OEDIT and OBROWSE Commands in an z/OS USS Shell

In this section will learn how to use the ISPF edit and browse commands within the z/OS USS shell.

Part 8: ISPF Panel Access to USS Directories and Files

In this section you will use the ISPF panels to access USS directories and files.

Part 9: Using the ISHELL

In this section you will use the ISHELL interface to access USS directories and files.

Part 10 Logging on to CICS

In this section you will access CICS and enter a few basic transactions.

Part 11: Working with z/OS Explorer

This section provides an introduction to using the z/OS Explorer for accessing z/OS resources like data sets, jobs, etc.

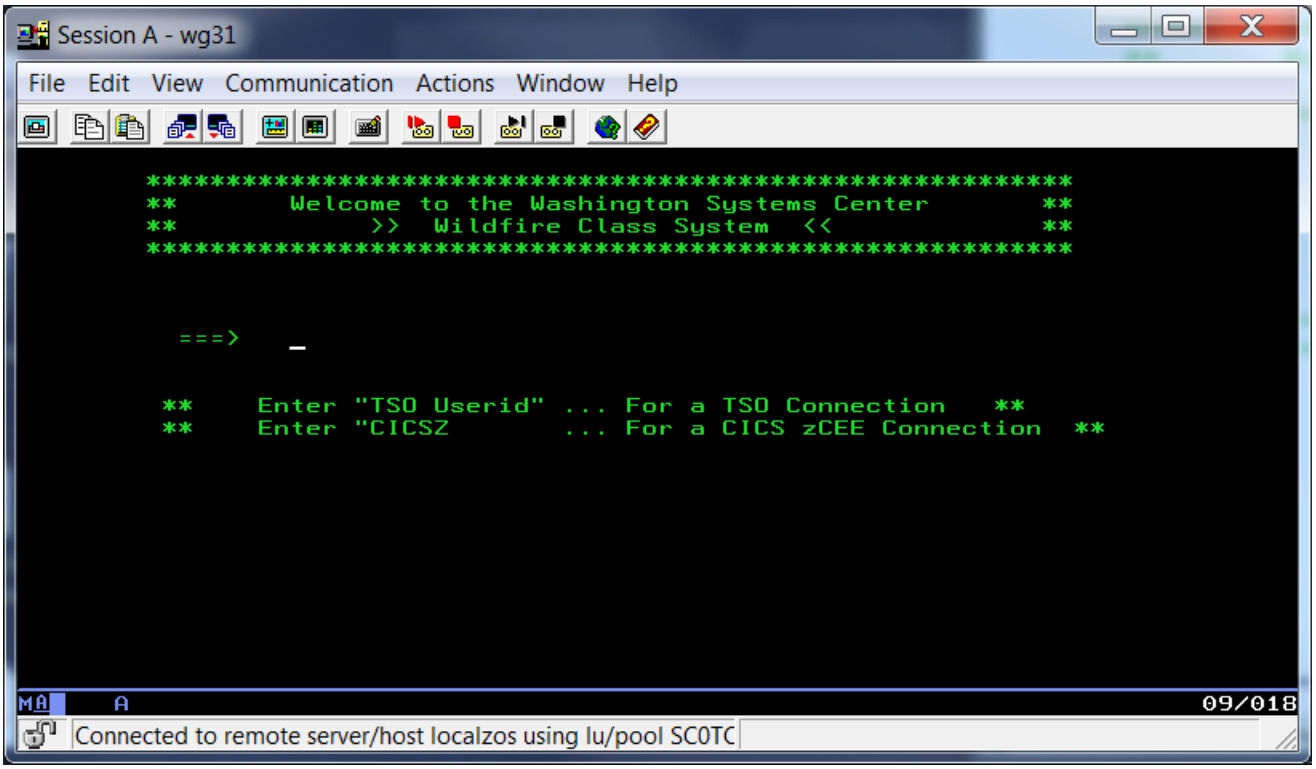
Part 12: Summary and References

This section provides references where additional information can be obtained.

Part 1: Logging on to TSO and Navigating ISPF Menus

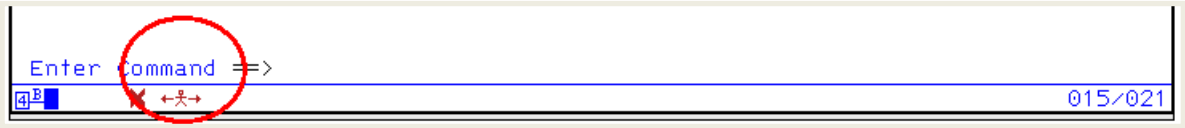
In this section you will access native TSO and use the ISPF interface to learn ISPF editor options and functions.

___1. On the workshop's Desktop click the **wg31** icon to start a 3270 terminal session. The initial screen displayed (see an example below) is called the *Communication Server (aka VTAM) Unformatted system services table (USSTAB).* The USSTAB screen is used to access TSO (Time Sharing Option) and CICS (Customer Information Control System). To access CICS simply enter command ***CICSZ*** and press the enter key and to access TSO enter command ***TSO*** followed by your assigned TSO user identity (userid) and press enter. First we want to access TSO so enter ***TSO USER1*** and press the enter key.



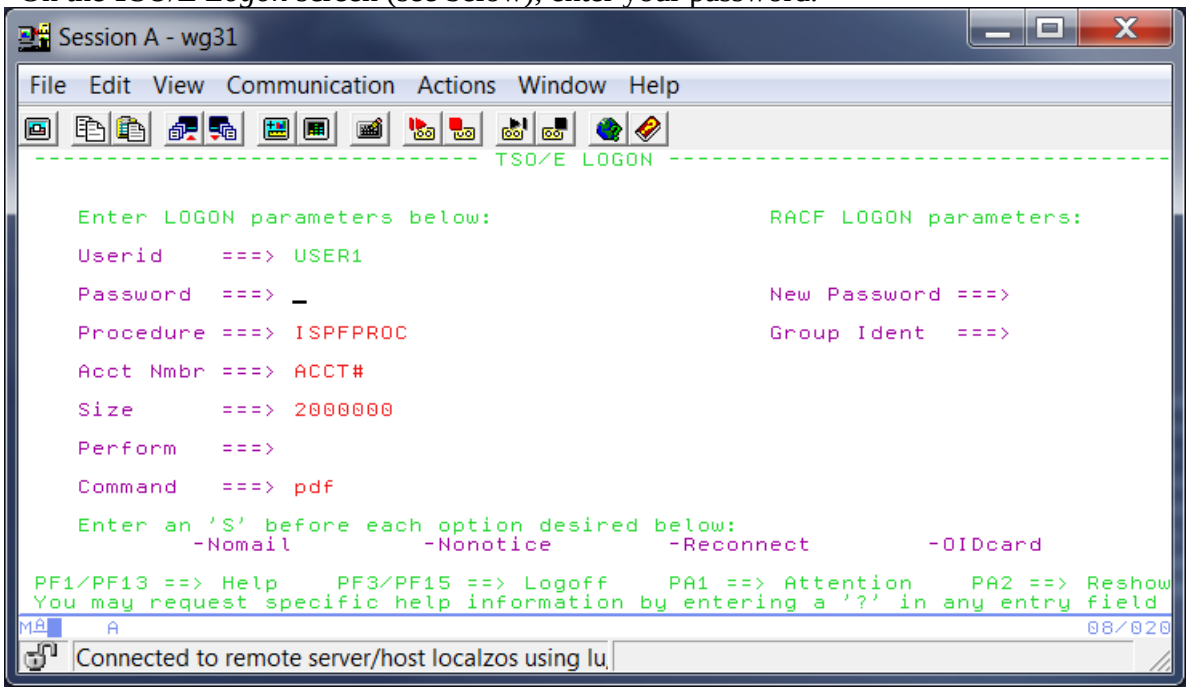
Note that in this and subsequent sections the instructions refer to the IBM 3270 Keyboard names or labels. So if the instructions say press the enter key this means that the IBM 3270 Keyboard Enter key should be pressed. The 3270 emulator used in this workshop is IBM Personal Communications and for this emulator the Enter key is the right **Ctrl** key.

Tech-Tip: Different 3270 emulators will display an icon similar to the icon below at the bottom of the screen when the keyboard is locked. If this occurs use left **Ctrl** key to reset or free the keyboard. The key sequence ***Fn-P*** key sequence or the ***Pause*** key (if present) can be used to clear the screen.



N.B. Screen shots in the remainder of this section are shown in reverse video simply for printing purposes

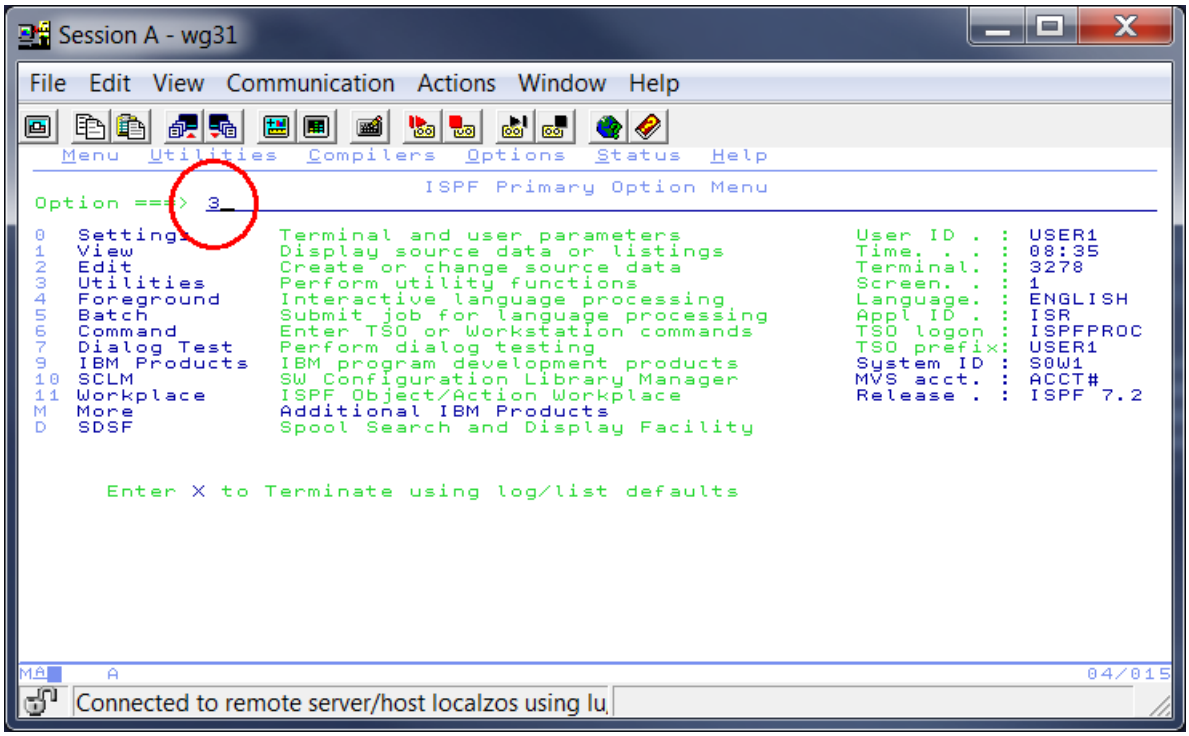
___2. On the *TSO/E Logon* screen (see below), enter your password.



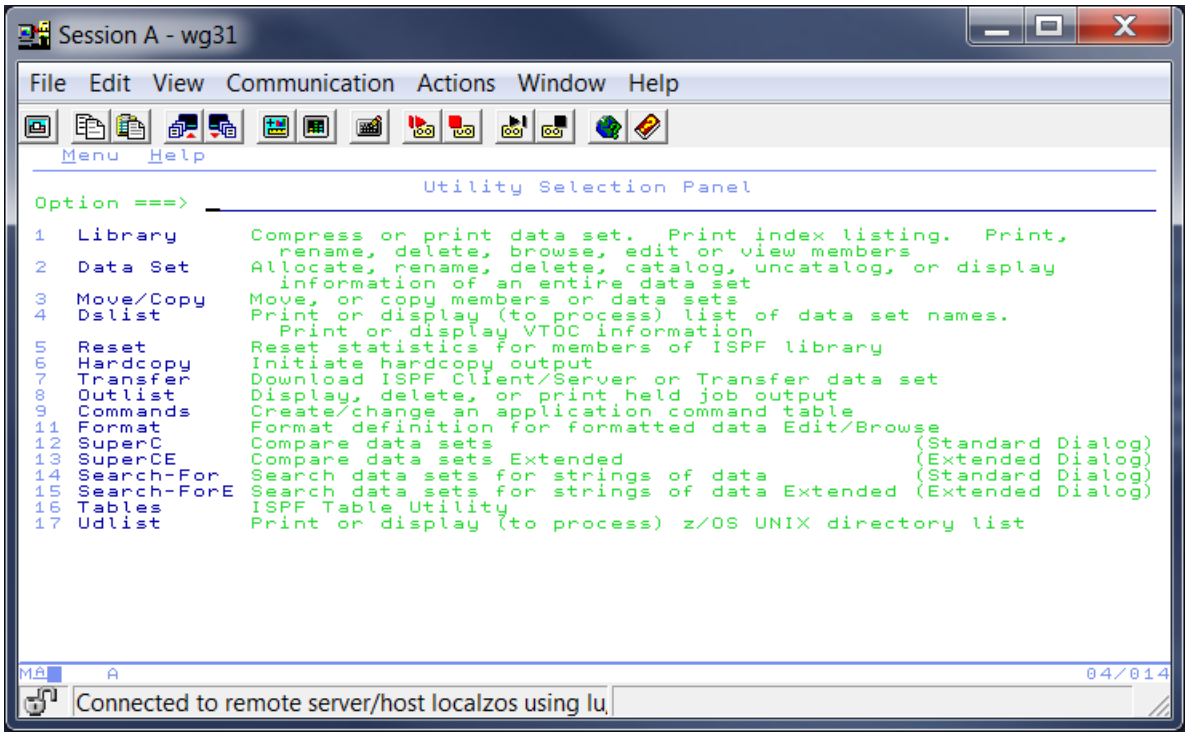
Tech-Tip: The **PDF** command on this screen automatically starts ISPF. The copyright information can be bypassed by entering PDF NOLOGO after the command prompt.

___3. When you see the string ******* appear as the last line there is more output is waiting to be displayed on the terminal. Press the enter key when you are ready to see the additional output.

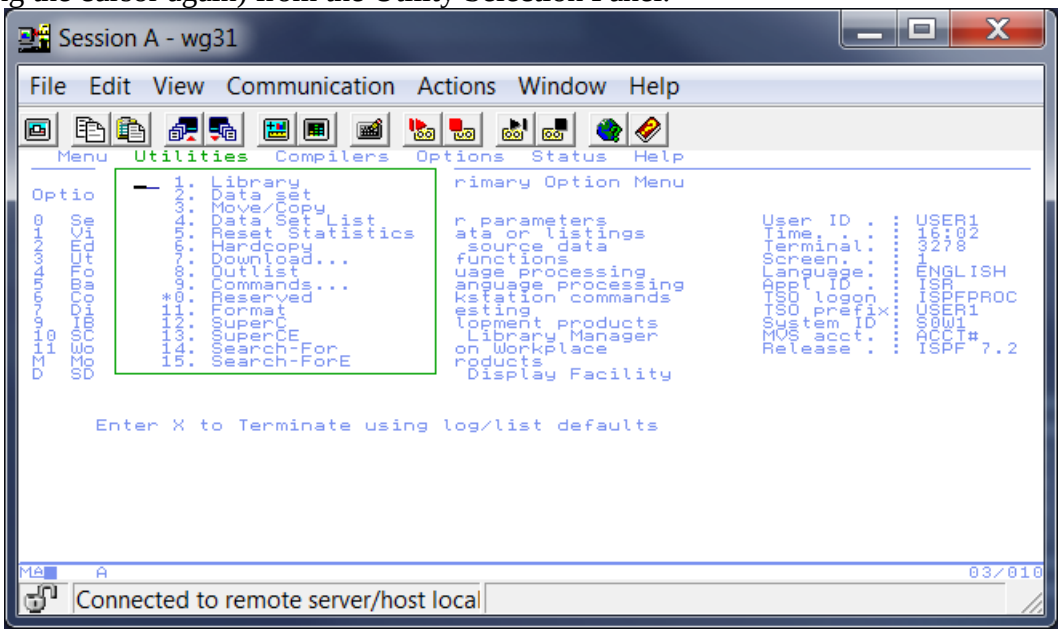
___4. The ISPF Primary Option Menu panel will then be displayed, see below for an example. The number values under *Options* are used to select which ISPF option is to be perform. For example enter ***3*** after *Option* ===> prompt (see below) and press enter to navigate to the Utility Selection Panel.



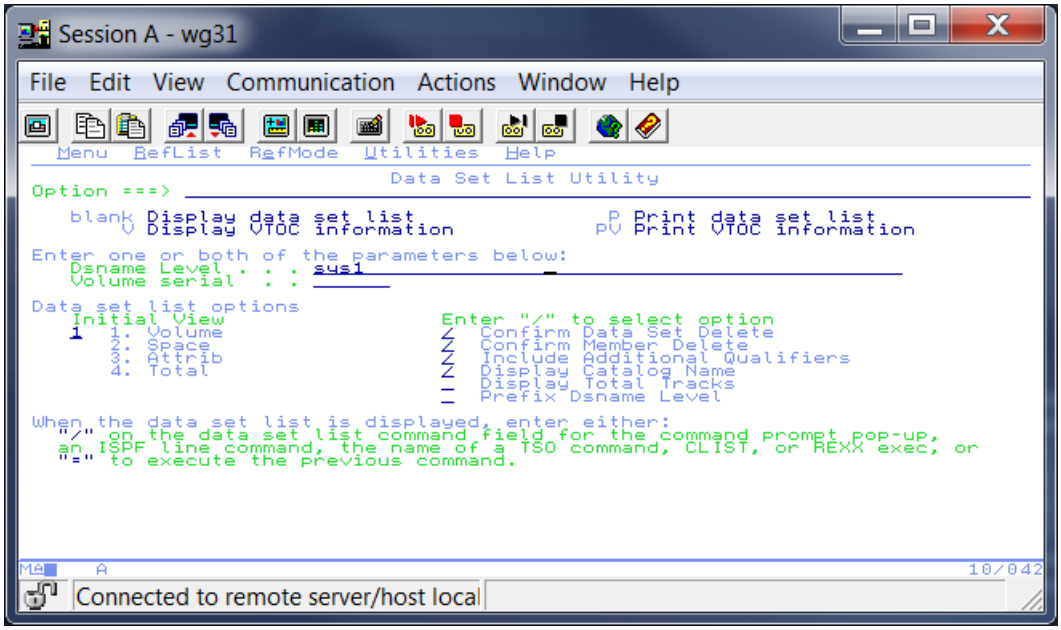
___5. This panel display a list of standard ISPF utilities. A specific utility can be selected by enter its corresponding option number on the command line (e.g. after the *Option* ===> prompt) and pressing enter.



___6. Press **F3** until the ISPF main menu is shown again. Select **Utilities** (by placing the cursor on **Utilities** at the top of the screen and pressing the enter key), and then select **Data Set List** (by using the cursor again) from the Utility Selection Panel.



___7. Enter ***SYS1*** on the **Dsname Level** input field and press the enter key to display a list of datasets whose names begin with qualifier SYS1.



> **Tech-Tip:** This panel could also be access simply by entering 3.4 after Option ===> on the ISPF Primary Option Menu panel and pressing the Enter key.

___8. Use **F8** to page down or forward, **F7** to page up or backward, **F10** to shift left and **F11** to shift right. Exit with **F3**. The **F3** function key has this role on most ISPF screens.

___9. Enter ***SYS1.PROCLIB*** on the **Dsname Level** input field and press enter. Notice that only a single data sets is displayed.

> **Tech-Tip:** An asterisk (*) can be used to as wild card for searching for data sets names as in SYS1.PROC* or SYS1.*PROC, etc. All data set renames that match the pattern will be displayed.

___10. Enter ***v*** (for View) in the command column to the left of **SYS1.PROCLIB**. This is a partitioned data set with numerous members. Place an ***s*** to the left of any member to select the member for viewing. Press **F1**. What specific help is provided? Press **F3** to dismiss the help screens.

___11. Enter ***=0*** on the ISPF command or option line. Change your settings to place the command line at the bottom of the panel and note that it is effective on exit from the *Settings* panel.

___12. Enter ***PFSHOW OFF*** and then ***PFSHOW ON*** and note the difference.

___13. Exit back to the *ISPF Primary Option Menu*. What value is used to select **Utilities**? (Hint: 3)

___14. Select **Utilities** by entering that value and pressing enter.

___15. In the *Utilities Selection Panel*, what value is used to select **Dslist**? Exit back to the *ISPF Primary Option Menu*. On the option line, enter the Utilities selection value followed by a period, and then enter the **Dslist** selection value in the form or 3.4).

> **Tech-Tip:** As you become more familiar with ISPF, you will learn the letters and numbers for some of the commonly used options. Preceding an option with the = key takes you directly to that option, bypassing the menus in between. You can also go directly to nested options with the = sign. For example, =3.4 takes you directly to a commonly used data set utility menu.

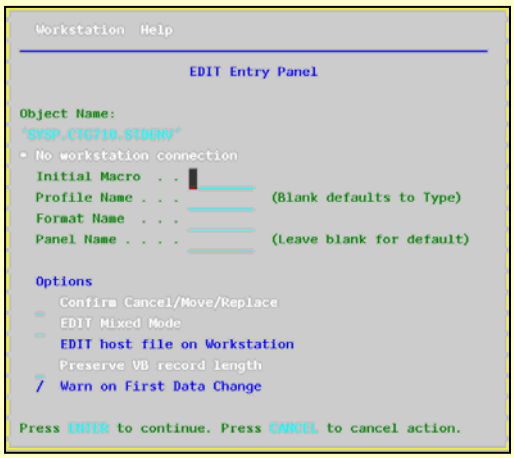
Part 2: Using the ISPF editor

In this part of the section you will learn how to use the ISPF editor. From the *ISPF Primary Option Menu*, do the following:

___1. Go to the *Data Set List Utility* panel and enter ***USER1.IP13*** in the **Dsname Level** field and press enter.

___2. Place ***e*** (edit) to the left of **USER1.IP13.JCL**. Place an ***s*** (select) to the left of member **EDITDATA**. Enter ***PROFILE*** on the edit command line; observe that profile and message lines precede the data. Read the profile settings and messages and then enter ***RESET*** on the command line. What are the results?

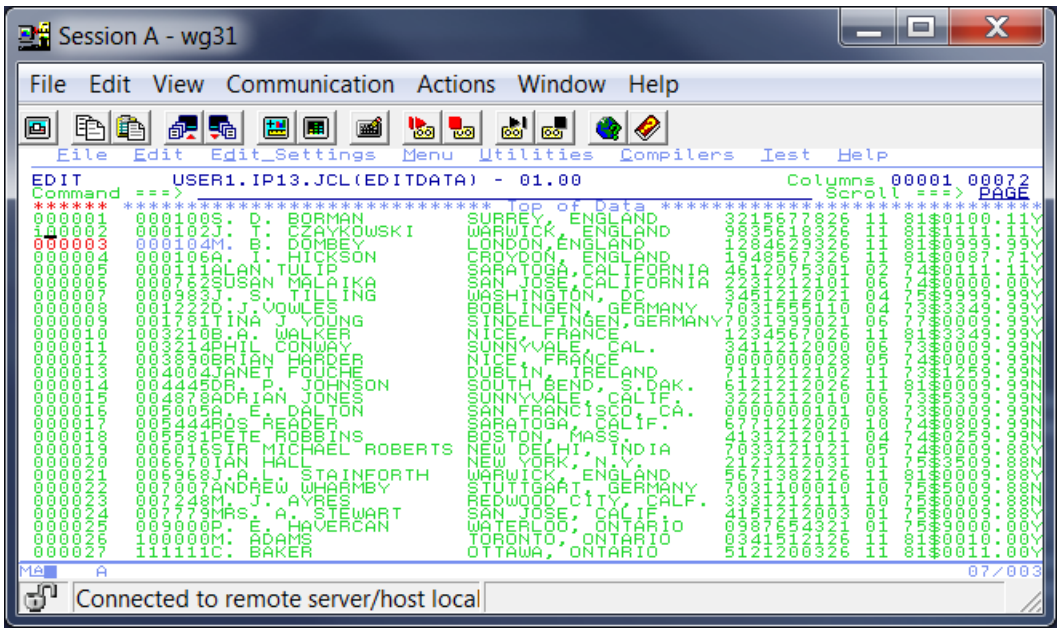
Tech-Tip: Occasionally you may see a screen like the one below. If one is displayed simply press enter to continue.



___3. Enter any string of characters at the end of the first data line and then press enter. On the command line, enter command ***CAN*** (cancel). Press enter to confirm the cancel request. Again, edit in the data set. Were your changes saved?

___4. Optionally experiment with the ISPF line commands below (Use the **F1** if you need help).

- i — Insert a line (see below)



- Enter key — Press Enter without entering anything to escape insert mode.
- i5 — Obtain 5 input lines.
- d — Delete a line.
- d5 — Delete 5 lines.
- dd/dd — Delete a block of lines (place a DD on the first line of the block and another DD on the last line of the block).
- r — Repeat (or replicate) a line.
- rr/rr — Repeat (replicate) a block of lines (where an RR marks the first line of the block and another RR marks the last line).
- c along with a or b — Copy a line after (a) or before (b) another line.
- c5 along with a or b — Copy 5 lines after (a) or before (b) another line.
- cc/cc along with a or b — Copy a block of lines after (a) or before (b) another line.
- m, m5, mm/mm — Move line(s) or a block of lines (mm/mm) to another location specified by an ‘a’ or ‘b’ line command

___5. Move the cursor to one of the top lines on your display and press **F2**. The result is a second ISPF panel. What occurs when **F9** is entered repeatedly?

___6. Using F9, switch to the *ISPF Primary Option Menu* and then press **F1** to display the ISPF Tutorial panel.

___7. From the ISPF Tutorial panel, select **Edit**, then **Edit Line Commands**, then **Basic Commands**. Press enter to scroll through the basic commands tutorial. As you do so, frequently switch (**F9**) to the edit session and exercise the commands in **EDITDATA**. Repeat this same scenario for Move/Copy commands and shifting commands.

___8. From the ISPF Tutorial panel, select **Edit**, then **Edit Primary Commands**, then **FIND/CHANGE/EXCLUDE** commands. Press enter to scroll through the FIND/CHANGE/EXCLUDE commands tutorial. As you do so, frequently switch (**F9**) to the edit session and exercise the commands in EDITTEST.

> **Tech-Tip:** Knowledge of how to use these primary commands, particularly finding or changing all occurrences of string, can greatly increase productivity when using the ISPF editor.

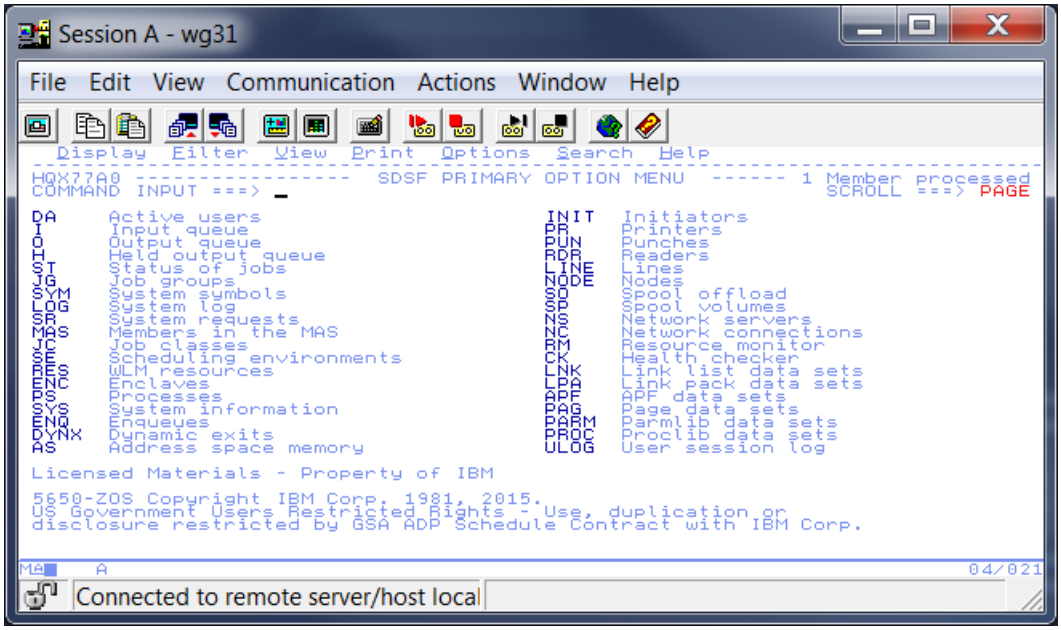
___9. Enter **=*X*** on the ISPF help panel to end the second ISPF panel session. Save and exit the *Edit Panel* (F3) to return to the *ISPF Primary Option Menu*.

Part 3: Using the Syslog Display and Search Facility (SDSF) Tool

In this part of the section you will learn how to access SDSF in order to review job output and how to invoke MVS and JES commands from TSO.

From the *ISPF Primary Option Menu*

___1. Locate and select Spool Display and Search Facility (SDSF), which is a utility that lets you look at job output. Select the **M** for **Additional IBM Products** option and then enter **5** to open the SDSF Primary Option Menu, or simply enter ***=D***. The *ISPF Primary Option Menu* typically includes more selections than those listed on the first panel, with instructions on how to display the additional selections.



___2. Enter ***LOG***, then shift left (**F10**), shift right (**F11**), page up (**F7**) and page down (**F8**). Enter ***TOP*** and then ***BOTTOM*** on the command input line. Enter ***DOWN 500*** and ***UP 500*** on the command input line. This SDSF function provides access to the system log of all messages written to the console since the system was started.

___3. Observe the **SCROLL** value to the far right on the command input line. *Scroll ===> PAGE* or *Scroll ===> CSR.*

___4. Tab to the **SCROLL** value. Change the scroll value and use the **F7** and **F8** to observe the differences. The values for SCROLL can be:

- **C** or **CSR** to **s**croll based on to where you placed the cursor
- **P** or **PAGE** for full page or full screen scrolling
- **H** or **HALF** for half page or half screen scrolling

___5. You will find the **SCROLL** value on many ISPF panels, including the editor. You can change this value by entering the first letter of the scroll mode over the first letter of the current value. Change the scroll value from ***P*** to ***H*** (or vice-a-versa) and use the **F7** and **F8** keys to scroll back and forth and notice the difference in scrolling behavior between full and half page scrolling. Change the value to ***CSR***, place the cursor on another line in the body of the system log, and press **F8**. Did it place the line with the cursor at the top?

___6. Enter ***ST*** (status) on the SDSF command input line, then SET DISPLAY ON. Observe the values for Prefix, Dest, Owner, and SYSNAME. To display all of the current values for prefix and owner each, enter * as a filter, for example enter these commands:

PREFIX *
OWNER *

> **Tech-Tip:** The ***ST*** SDSF command displays active tasks, jobs and output. The ***DA*** SDSF commands display only the active tasks and jobs.

___7. The result should be: *PREFIX=* DEST=(ALL) OWNER=* SYSNAME=*

___8. Enter ***DA***, to display all active jobs. Enter ***ST*** to retrieve the status of all jobs in the input, active and output queues. Once again, press **F7** (page up), **F8** (page down), **F10** (shift left), and **F11** (shift right). The output of an active job or a job on an output queue can be viewed by selecting it (s) and pressing enter.

> **Tech-Tip:** These function keys can be used on most ISPF panels to scroll up and down and left and right.

___9. Enter MVS command **D A,L** by entering command ***/D A,L*** after the COMMAND INPUT prompt and pressing enter. This command displays the active tasks, active TSO users and batch jobs.

> **Tech-Tip:** MVS and JES2 commands can be entered from SDSF by enter a / (slash) on the command line followed by the command itself (e.g. /D T). The command results can be found in the system log. If a command is especially long then simply enter a / (slash) to display *a SDSF – System Command Extension* panel where a command can span multiple lines. When a MVS command must be entered, the instructions in these exercises will indicate that the command is a MVS command and you may enter the command at the prompt by using the / (slash) prefix or using the *SDSF – System Command Extension* panel.

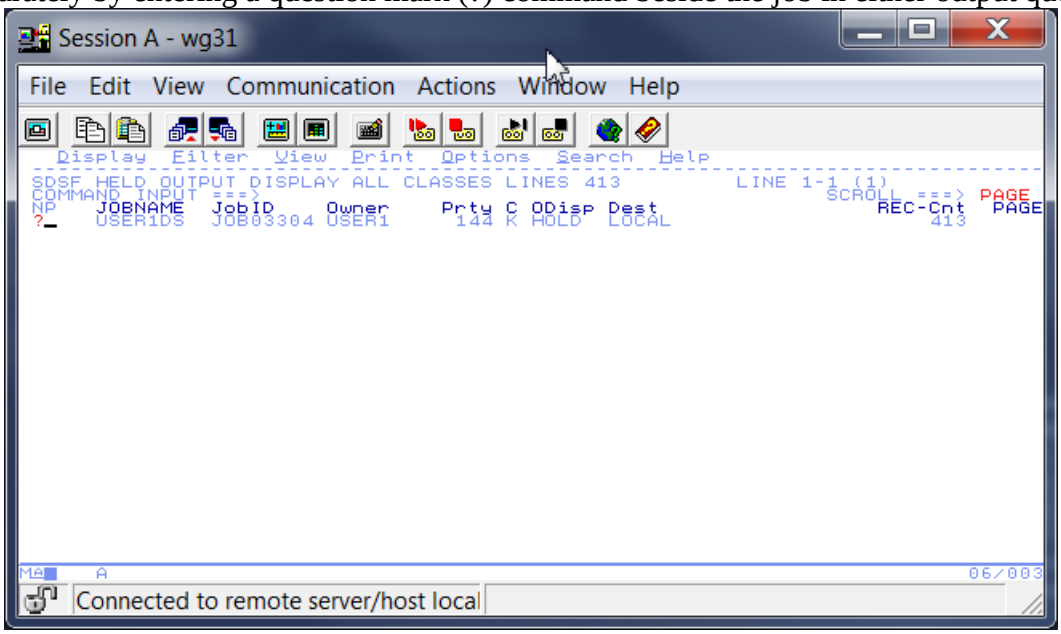
___10. SDSF can also be used to review the output of jobs after completion. To review the output of a job, enter ***H*** or ***O*** on the SDSF command input line. Entering command ***H*** will display the held output queue and entering command ***O*** will display the released output queue.

Tech-Tip: Whether the output of a job is held or released (released means job output that is released to be printed) is determined by output classes specified in the JCL. On this system the default output class will be held whereas class ***A*** output will not be held.

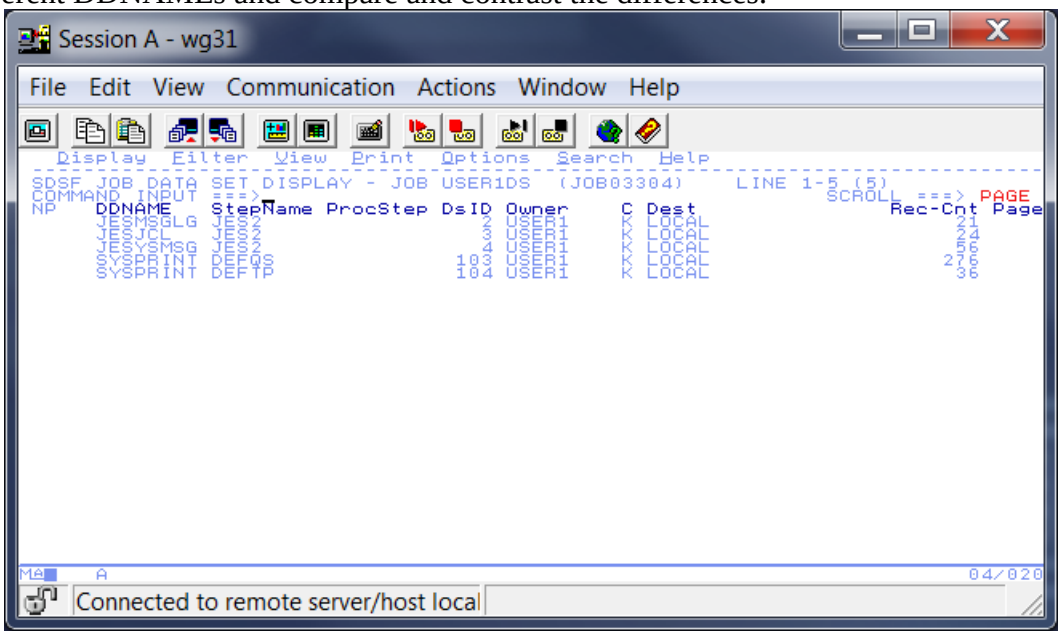
Note that multiple output classes can appear in the same job so some output may appear in one queue while other output will appear in the other queue. Also depending on the job classes used in the job, the output from a job may appear as multiple jobs in the output queues. In this case all the job numbers will be the same and selecting multiples jobs in the output queues with the same job number maybe the only way to review the entire output of a particular job.

Also note that the SDSF line command **ST** (status) can be used to display active jobs, tasks, users, etc. and any output in either held or released. This may be very useful when you are unsure a job has completed or not.

___11. Output from a job is written to Data Definition names (DDNAMES) (DDNAMES are equivalent to file names on non z/OS systems). The output for different DDNAMES can be viewed separately by entering a question mark (?) command beside the job in either output queue.



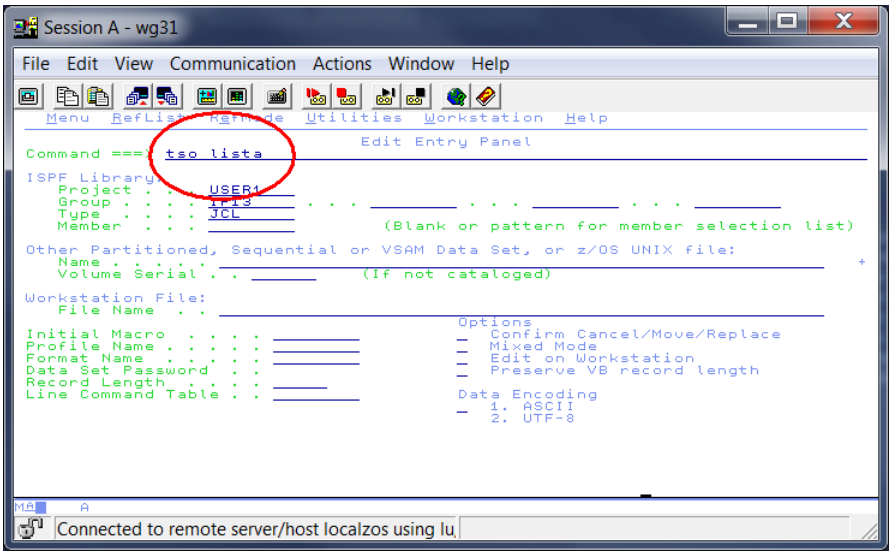
___12. The different DDNAMEs will be displayed (see below). For every job there will always be output files JESMSGLG (system console messages related to the execution of the job), JESJCL (the job's JCL after interpretation by the system) and JESYSMSG (general messages about the execution of the job). Other common DDNAMEs are SYSPRINT, SYSTSPRT, SYSOUT, STDERR and STDMSG. Check the output queues using SDSF (you may have to set the PREFIX (or filter) to asterisk) and if you are able to locate a job in the output queue, use the **?** line command to display the output by DDNAME (see an example below). Select the output for different DDNAMEs and compare and contrast the differences.



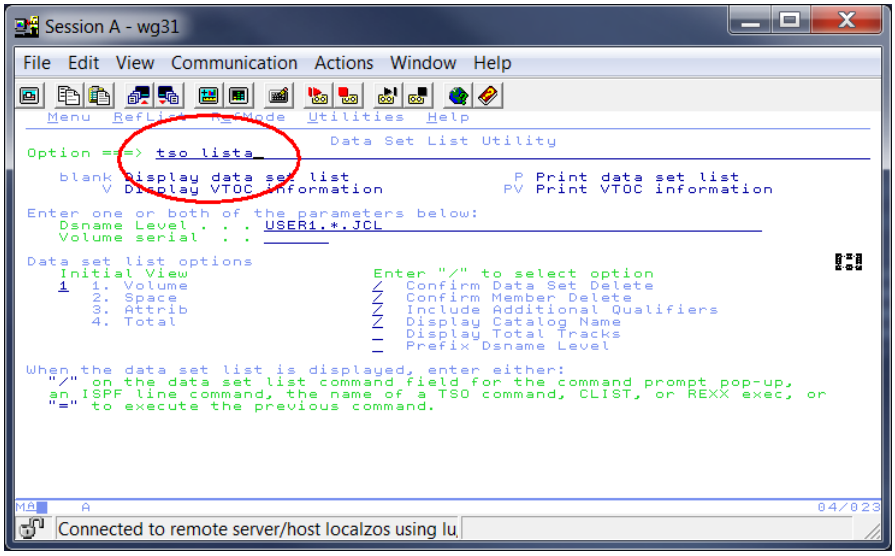
Part 4: Entering TSO commands

In this section you will learn how to enter TSO commands.

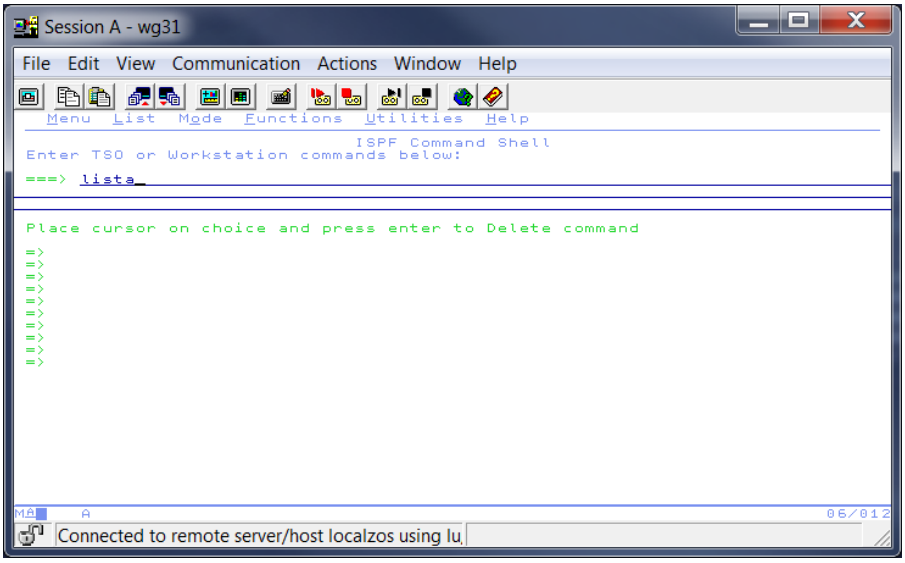
TSO commands can be entered on practically any ISPF panel. The command just needs to entered after a ISPF *TSO* command prompt. For example, to enter the TSO command ***LISTA*** then you must enter ***TSO LISTA*** on any ISPF panel at the *Command* ===> or *Option* ===> prompt. For eample:



Or



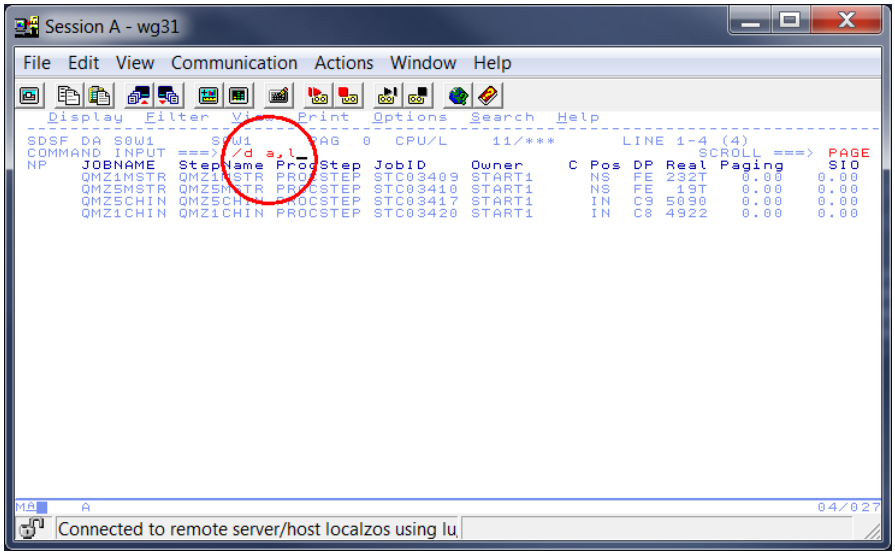
ISPF Primary Option 6 (Command) provides addional space for TSO command which may not otherwise fit in the space after a command or option prompt.



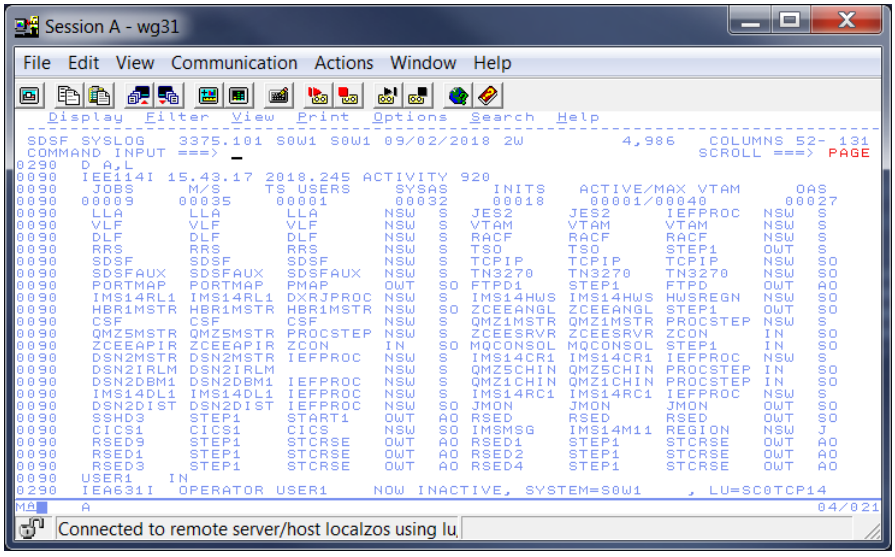
Part 5: Enter MVS commands

In this section you will learn how to enter MVS commands.

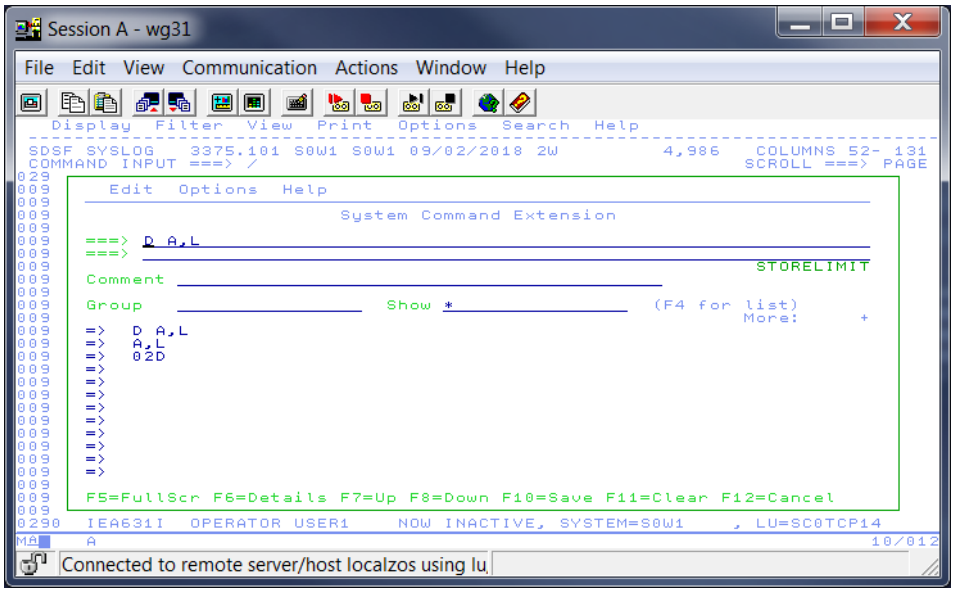
MVS commands can be only entered on Spool Search and Display Facility (SDSF) ISPF panels.The can be entered on any SDSF ISPF panel if they are prefixes with a slash.That to enter the MVS command ***d a,l*** then you must enter ***/d a,l*** on any ISPF panel at the *Command ===>* or *Option ===>* prompt. For eample:



The best way to review the results of the command is to use the SDSF *LOG* command to access the system log at the time the command was entered.



An alternative to use the space after a command or option prompt is to simply enter the SDSF / (slash) command in order to display the *System Command Extension* panel (see below).



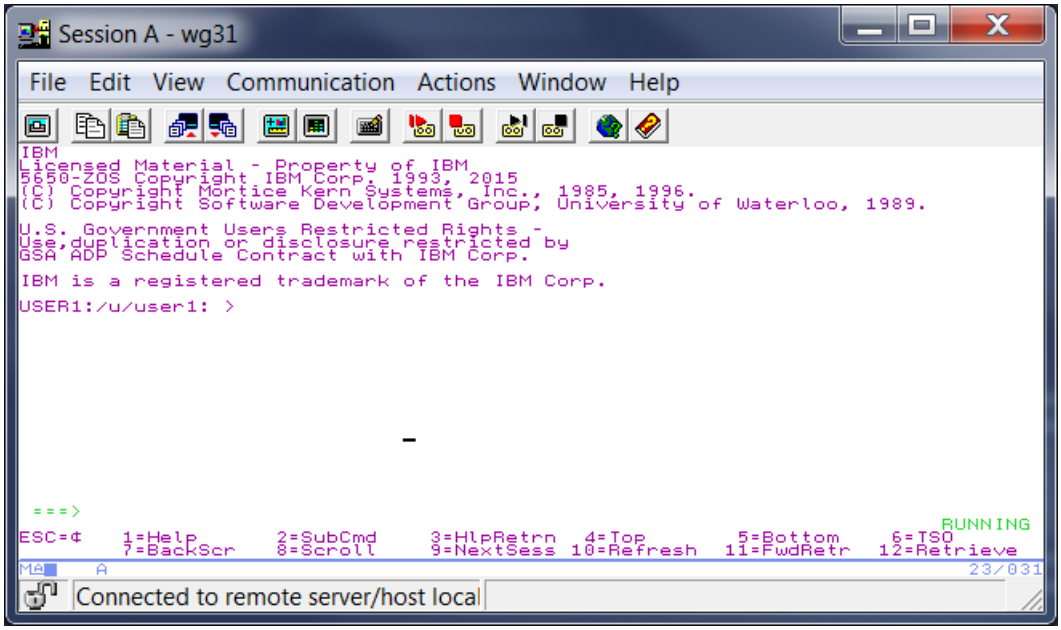
This panel provides more space for enter command parameter and also provide a means to retriveve and execute previous command. Simply place the cusros on the command in the command history and press enter. This will retrieve the command and place in the active area where a subsequent pressing of the enter key will cause the command to be executed.

Part 6: Opening the z/OS USS Shell and entering commands

In this section you will learn how to enter commands in the z/OS USS shell.

From the *ISPF Primary Option Menu*, select Option ***6***, and then enter the ***TSO OMVS*** command.

Tech-Tip: The command OMVS refers to *OpenEdition MVS*, the predecessor of z/OS UNIX System Services. For our purposes in this document and in other documentation, OMVS is used interchangeably for z/OS UNIX System Services (USS) and in this case OMVS is the command to invoke the z/OS USS shell.



In your home directory, enter the following shell commands after the ===> prompt:

- **id** Shows your current id.
- **date** Shows time and date.
- **ls** List the current directory.
- **history** Display a history of commands entered.
- **r #** Invoke command # (e.g. 2) from the command history.
- **cp /u/update.sh $HOME** Copy the update.sh file to the home directory.
- **./update.sh** Invoke a shell script.

- **exit** End the OMVS session.

Tech-Tip: The following is from *UNIX System Services User's Guide, SA22-7801-09*

If you come from a UNIX or AIX background, you will encounter some differences when you begin to use the OMVS interface to the shell. The 3270-type terminal interface may surprise you! For example:

The 3270 interface operates in line mode (also known as canonical mode). You type data on a command line and no data is transmitted until you press the <Enter> key.

The 3270 interface has function keys for various tasks such as scrolling through output, running TSO/E commands, and so on.

The OMVS interface does not have a control key. Instead of using a <Ctrl> key to type control sequences (for example, <Ctrl-D>), you use the Control function key or a multicharacter escape-key sequence.

With the OMVS interface, you can edit HFS files using the ISPF editor or the ed editor. Because this interface runs in line mode, you cannot use the vi editor.

Delayed display of output: If a command you are running does not produce output for more than a few seconds, you will need to repeatedly press the Refresh key to display the output as it is produced.

The last item about the delay display of output is the most common issue. When executing long running command whenever the prompt in the lower right hand corner changes from *RUNNING* to *INPUT* press the enter key to refresh the output**.**

Part 7: Using the OEDIT and OBROWSE commands in an z/OS USS Shell

In this section you will learn how to use the ISPF editor within the UNIX shell. If not already in the z/OS USS shell enter the TSO command ***OMVS***.

Enter the following commands:

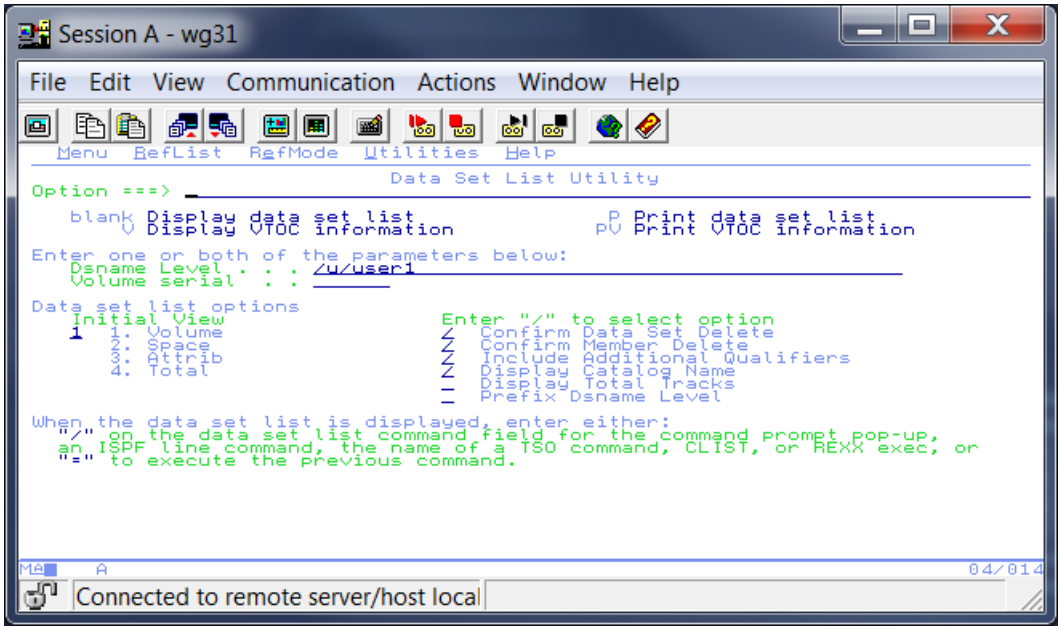
___1.	**oedit myfile**	This opens the ISPF edit panel and creates a new text file in the current path. *myfile* can be any file you choose to create. Write some text into the editor. Save and exit (F3). All of the ISPF editor commands used in the earlier section can be used in the **oedit** edit session.
___2.	**obrowse myfile**	Browse the file you just created.
___3.	**exit**	End the OMVS session.

Part 8: ISPF Panel Access to USS Directories and Files

ISPF provides a method to access USS directories and files using standard or native ISPF panels without using either the TSO or telnet shell environments. This method is similar to the Data Set Utility panel explored in Part 1 of this exercise.

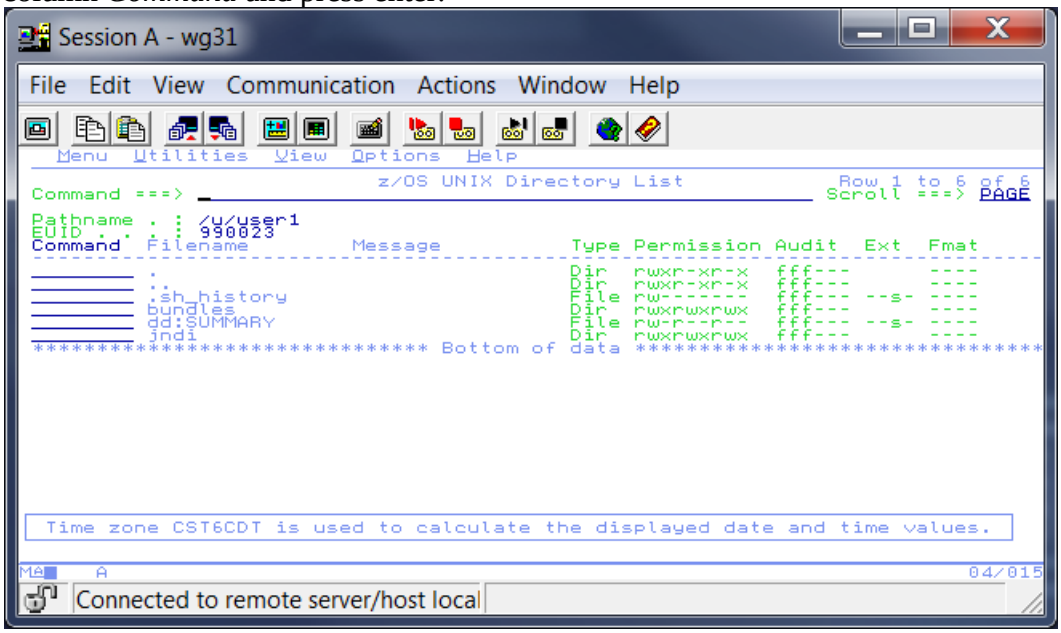
The ISPF panels in this part are accessed using either the Browse or Edit Entry panels from the main menu.

___1. From the ISPF main menu go to the Edit Entry Panel (option 2) and under *Other Partitioned, Sequential or VSAM Data Set , or z/OS Unix file* enter ***/u/johnson*** beside the *Name* field and press enter.

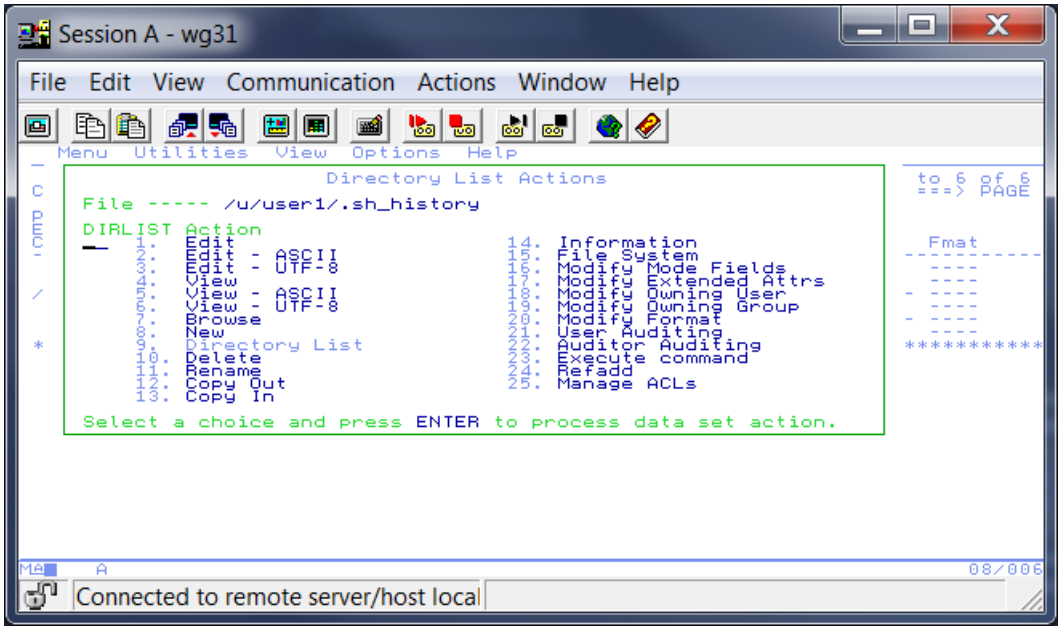


Tech-Tip: Option *Udlist* (option 17) on the *Utility Selection Panel* (ISPF option 3.17) provides a another means for accessing directories and files for browsing and editing.

___2. This will display the *z/OS Unix Directory List* panel (see an example below). This is a list of the contents in the */u/johnson* directory. Note that the column *Type* indicates whether the *Filename* entry is a subdirectory (DIR) or a file (File). Enter a slash (/) beside file *.profile* in the area under the column *Command* and press enter.



___3. This will display the *Directory List Actions* panel (see below) with the actions appropriate for the selection enabled (Note that action *Directory List* is not enabled for a file). Note that this interface is very useful since there are options to edit or browse files in either EBCDIC or ASCII

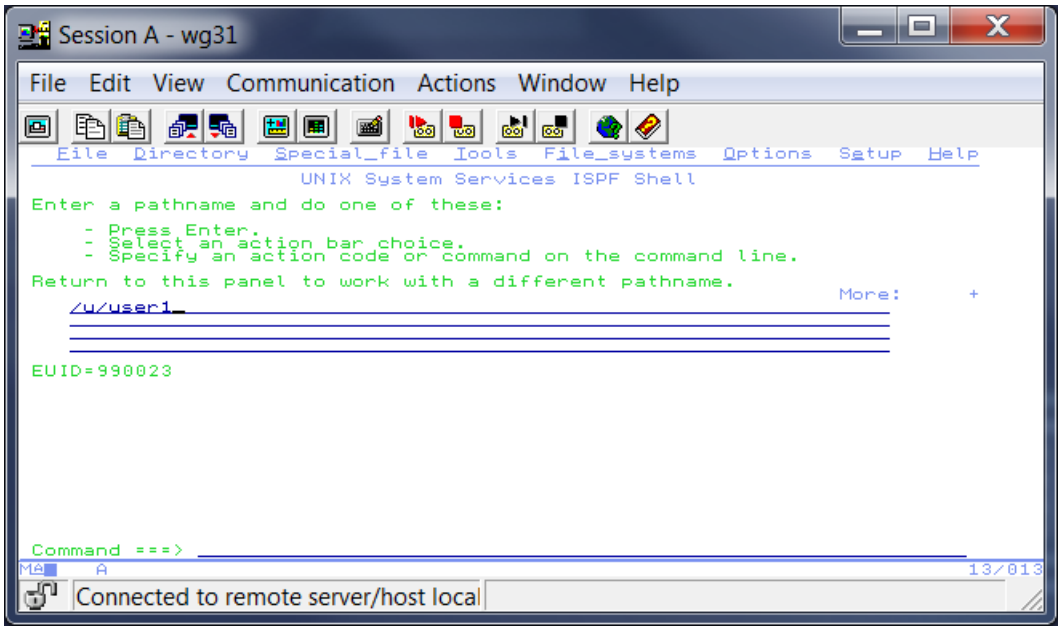


mode.

Part 9: Using the ISHELL

In this section you will use ISHELL command to access USS directories and files.

___1. Enter TSO command ***ISHELL*** either at ISPF option **6** or at the ISPF panel command prompt line.



___2. On the *UNIX System Services ISPF Shell* panel position the cursor at **File_systems** and press enter. This should display a list of actions one of which should be **1 Mount Table**. Enter ***1*** and press the **Enter** key to display a list of the currently mounted file systems. Place an '***A***' beside any of the file system names and press enter. Review the information.

> **Tech-Tip:** The More + and More – at the right indicates that additional information is available by scrolling forward (+) or backwards (-).

___3. Back on the On the *UNIX System Services ISPF Shell* enter a ***/u*** (slash) as the pathname and press enter.

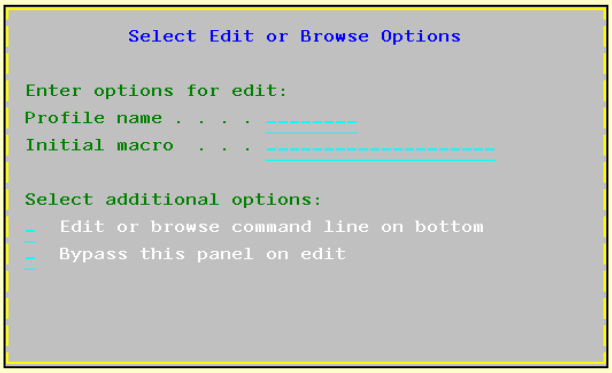
___4. Enter either an uppercase or lowercase "***L***" beside directory **johnson** and press enter.

___5. Enter an uppercase or lowercase "***B***" in area beside file .**profile** and press enter. This opens an ISPF browse session for the USS file that is executed when you start a z/OS USS session. Note the standard UNIX commands to export of environment variables and the setting of the session prompt.

___6. Exit out of ISHELL by pressing the **F3** key repeatedly.

___7. Enter ISPF shortcut **=*x*** and enter to exit ISPF. You may be presented with a panel asking what to do with a log and list dataset created during this ISPF session. You can select option **2** to have them deleted. A default option can be set using the **Log/List** option under the ISPF **Settings** option (Option ***0***).

Tech-Tip: If you are asked to select edit and browse options (see below) simply place a slash beside Bypass this on panel on edit and press the enter key.

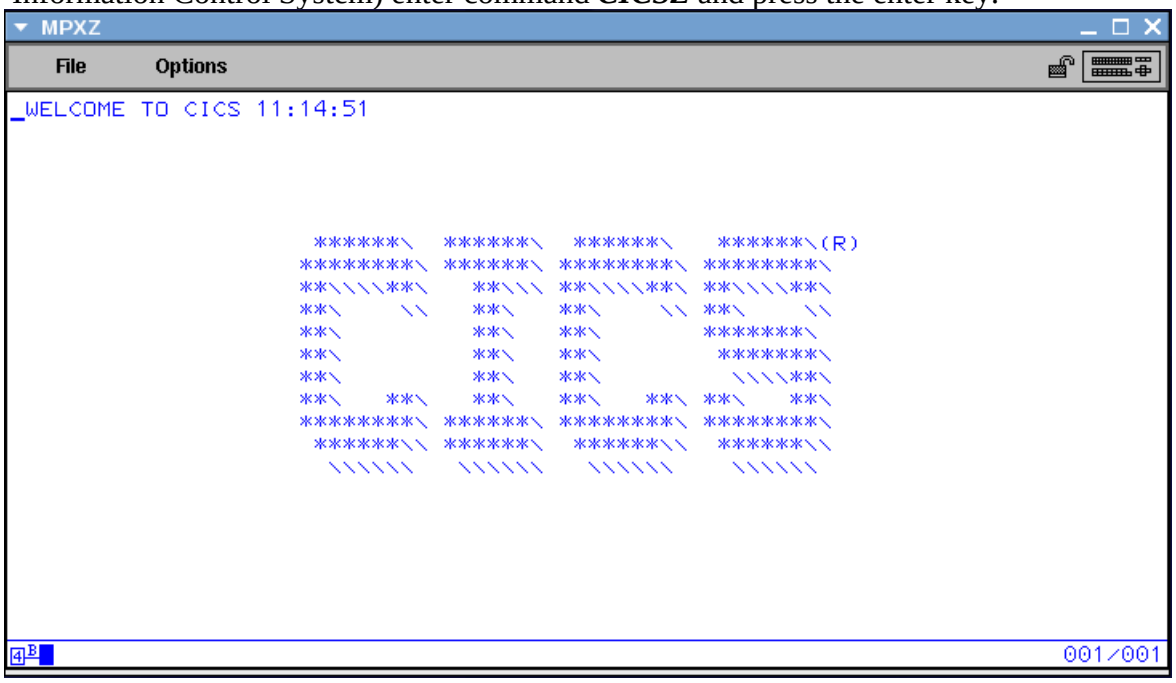


___8. Logoff of TSO by entering the TSO ***LOGOFF*** command.

Part 10: Accessing CICS

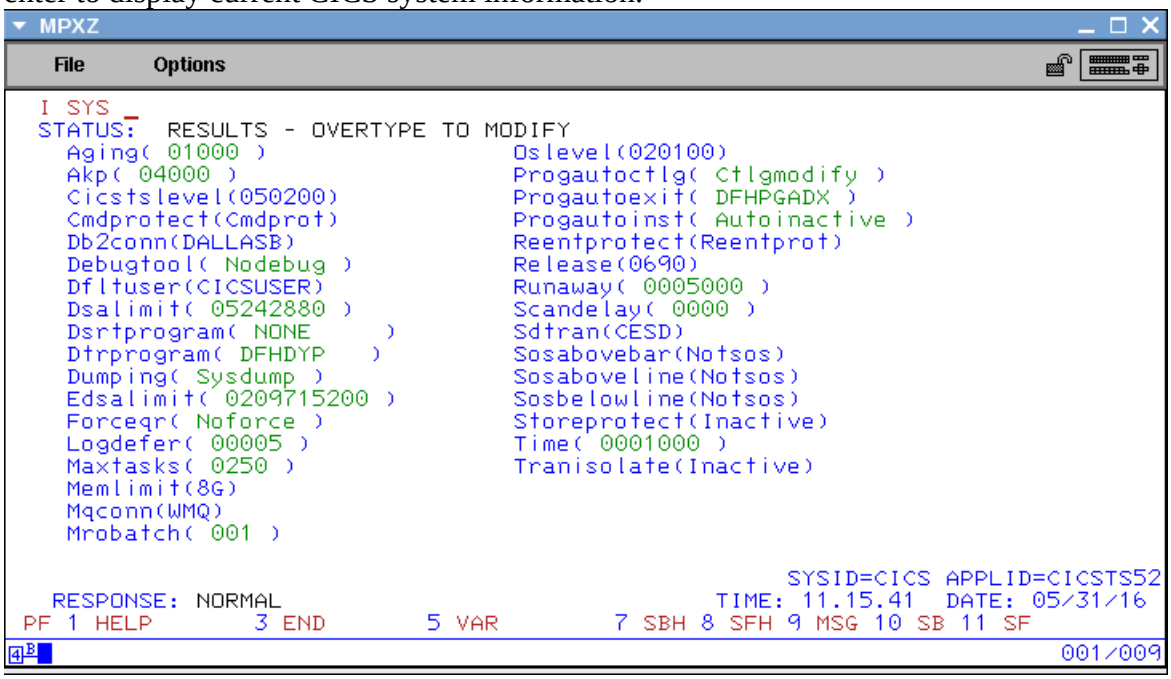
In this section you will access CICS and enter CICS transactions

___1. On the Desktop click the **WG31** icon to start a 3270 terminal session. To access CICS (Customer Information Control System) enter command ***CICSZ*** and press the enter key.



___2. CICS transactions must be entered from a blank screen. In this emulator the Pause key is mapped to the Clear function. Press the key sequence **Alt-C** to clear the screen.

___3. CICS master terminal transaction is CEMT. Enter ***CEMT I SYS*** on the cleared screen and press enter to display current CICS system information.



> **Tech-Tip:** CICS transactions are limited to a maximum of 4 characters in length.

___4. Press the **F3** key to terminate the *CEMT* transaction and clear the screen again to enter the next transaction.

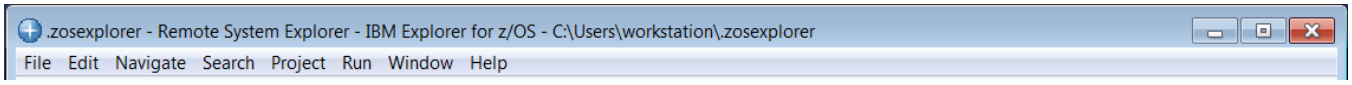
___5. To log out of CICS enter transaction ***CESF LOGOFF*** and the session with CICS will be terminated and you should return to the VTAM USS screen.

Part 11: Working with z/OS Explorer

In this section you will work with the z/OS Explorer. The subsequent lab exercises do not require working with z/OS Explorer but you might find it interesting to learn more about this product and how it can be used for accessing z/OS resources.

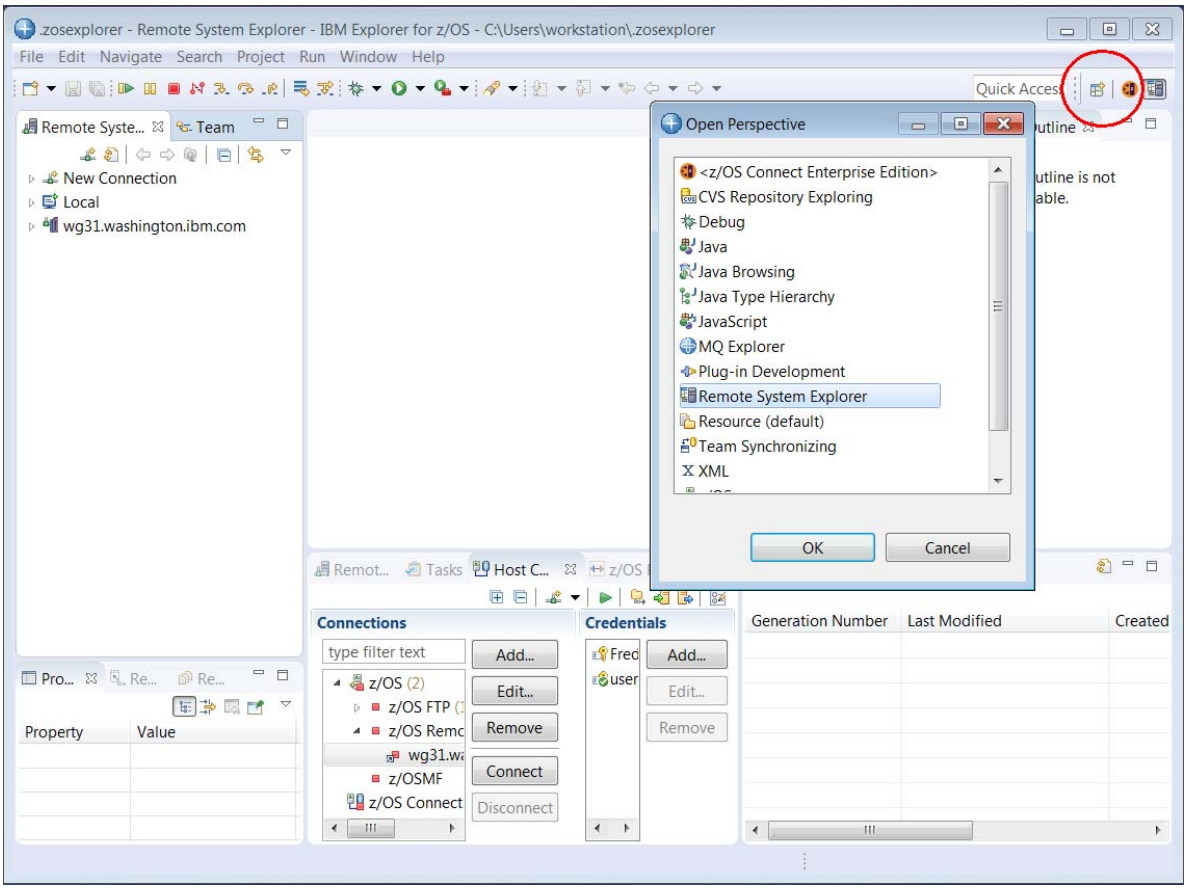
___1. Start the *z/OS Explorer* by first clicking on the *IBM Explorer for z/OS* icon on the desktop.

___2. The Explorer should open in the *Remote System Explorer* perspective. Verify this by looking in the upper left corner. You should see:

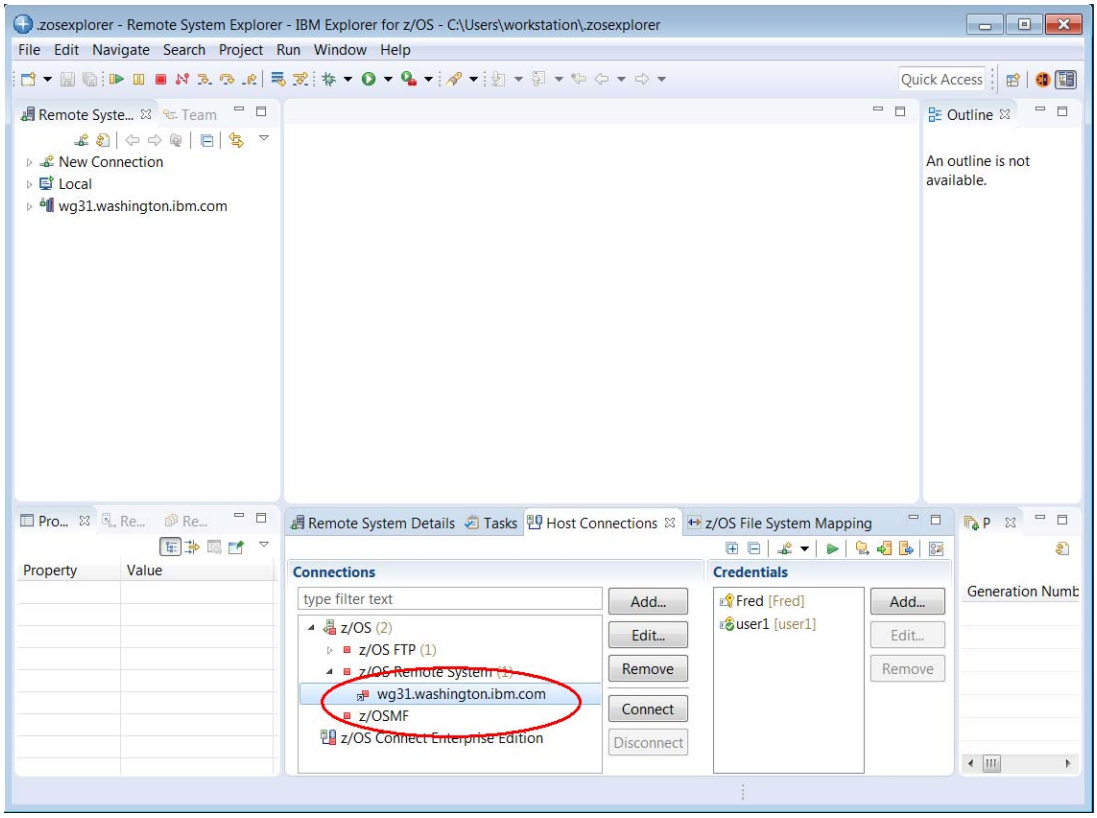


N.B. If a *Welcome* screen is displayed then click the white X beside *Welcome* to close this view.

___3. If the current perspective is not *Remote System Explorer*, select the *Open Perspective* icon on the top right side to display the list of available perspectives, see below. Select **Remote System Explorer** and click the **OK** button to switch to this perspective.



___4. A connection to the z/OS Connect systems has already been added. Expand *z/OS* connection in the *Host connection*s tab in the lower view and then expand *z/OS Remote System* to display this connection.



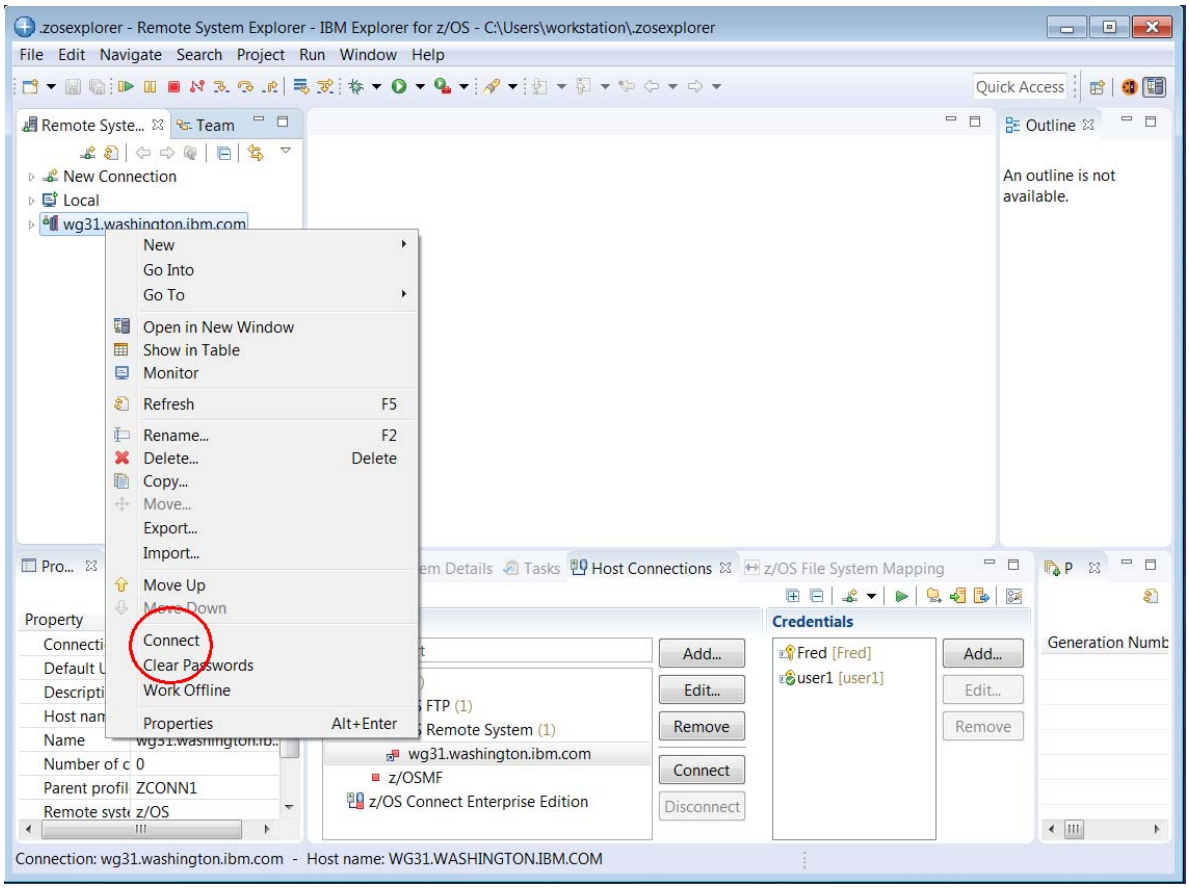
Tech-Tip: Eclipse based development tools like z/OS Explorer; provide a graphical interface consisting of multiple views within a single window.

A view is an area in the window dedicated to providing a specific tool or function. For example, in the window above, *Host Connections* and *Project Explorer* are views that use different areas of the window for displaying information. At bottom on the right there is a single area for displaying the contents of four views stacked together (commonly called a *stacked views*), *z/OS Host Connections*, *Properties*, *Progress* and *Problems*. In a stacked view, the contents of each view can be displayed by clicking on the view tab (the name of the view).

At any time, a specific view can be enlarged to fill the entire window by double clicking in the view's title bar. Double clicking in the view's title bar will be restored the original arrangement. If a z/OS Explorer view is closed or otherwise disappears, the original arrangement can be restored by selecting Windows → Reset Perspective in the window's tool bar.

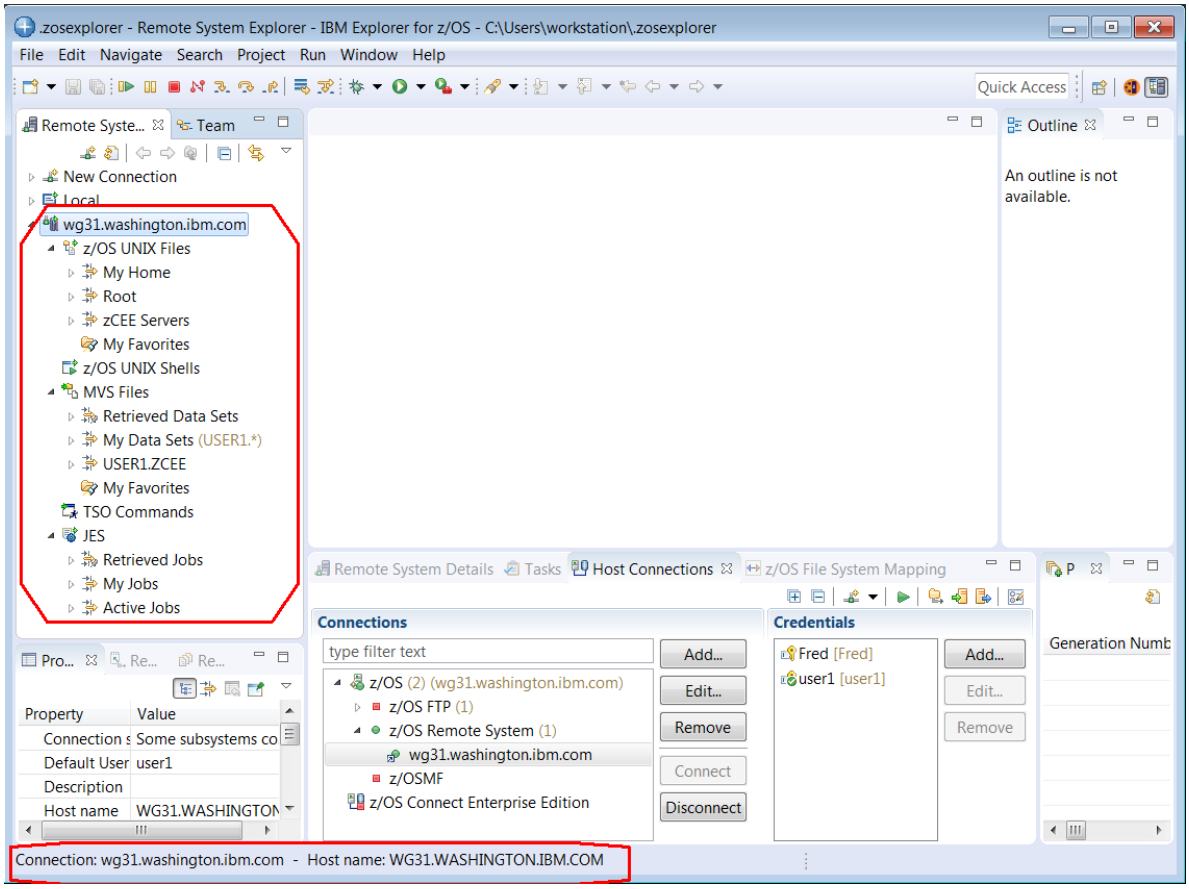
Eclipse based tools also can display multiple views based on the current role of the user. In this context, a window is known as a perspective. The contents (or views) of a perspective are based on the role the user, i.e., developer or administrator.

___5. The first step is to establish a connection to your assigned z/OS system. Select *wg31.washington.ibm.com* in the Remote Systems pane and right mouse button click to continue.

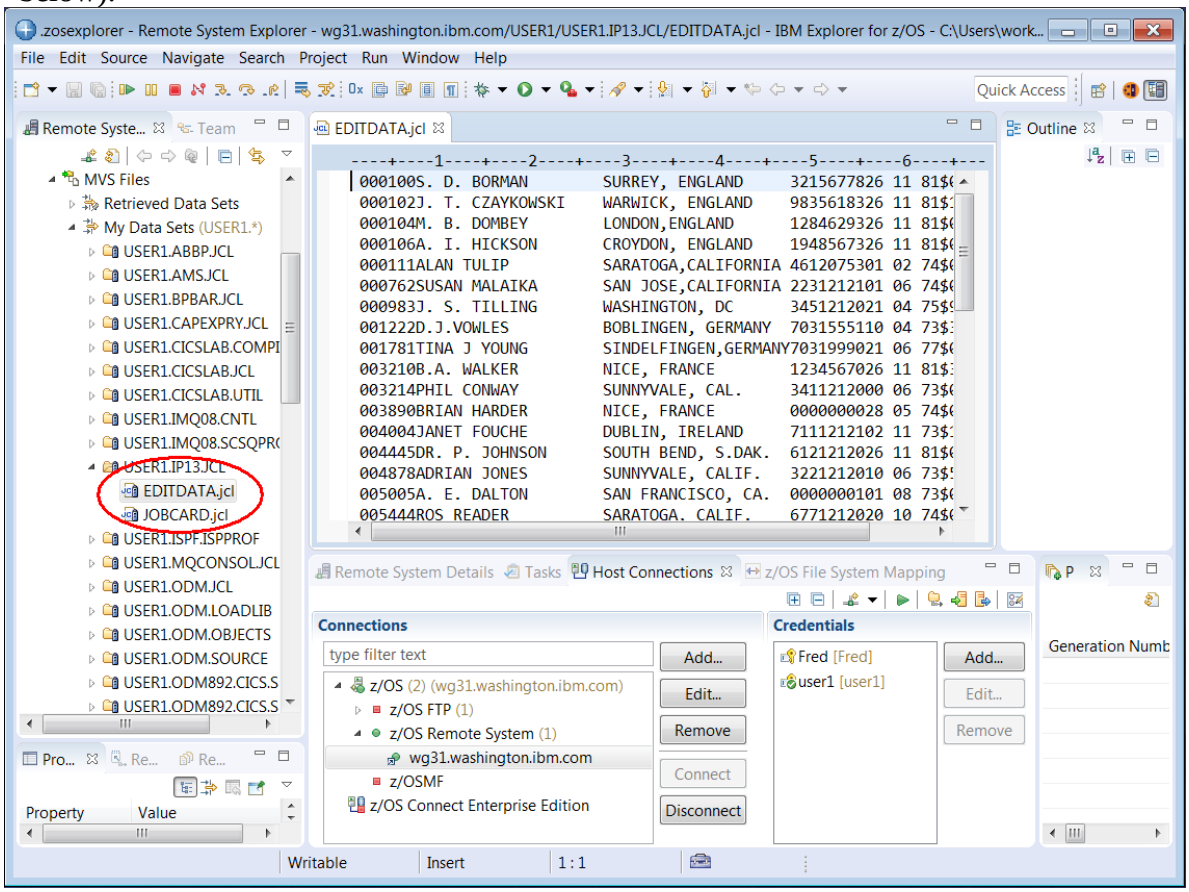


___6. The action will establish a connection between z/OS Explorer and the target z/OS system. When the connection is complete the *My Data Sets* folder view will be populated with a list of data sets whose high level qualifier match the User ID used to establish the connection (see below).

> **Tech-Tip:** The user identity and password was previously save as the Credentials for this connection.



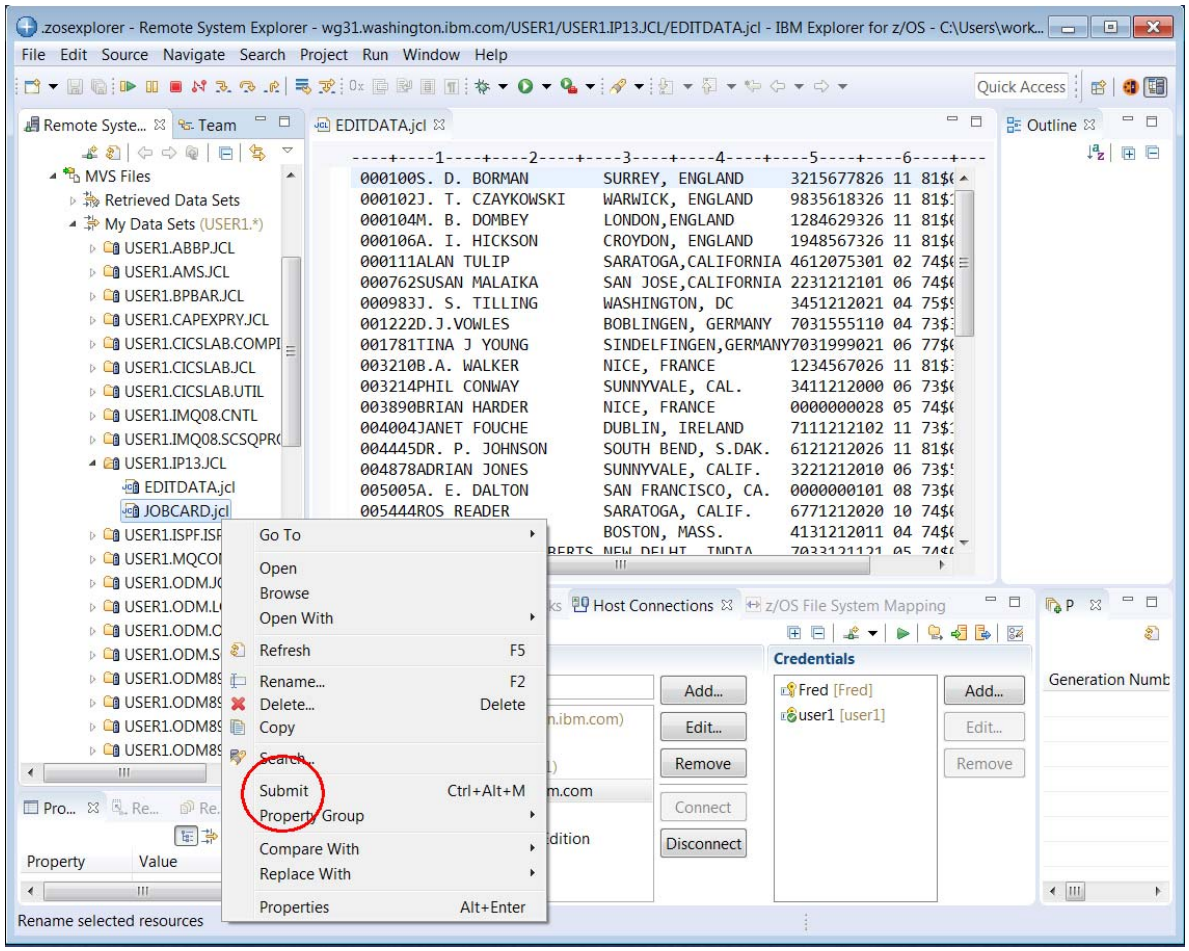
___7. Click on the triangle beside the *My Data Sets* folder to display the list of data sets that begin your user ID (e.g. USER1). Next click on the triangle beside *USER1.IP13.JCL* to display the members in this folder (e.g. MVS PDS). Double click member *EDITDATA* to open it in edit mode (see below).



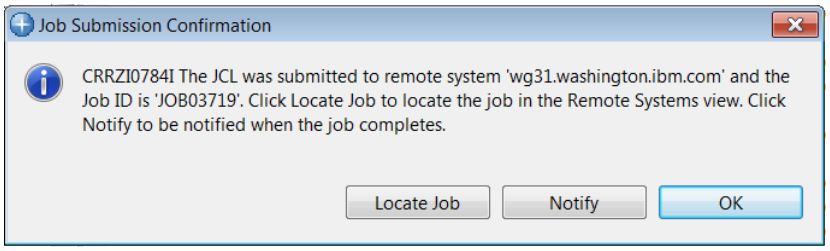
___8. Make changes to the contents of this file and add new lines (Hint, use the key labeled Enter. This key is mapped to the new line function). When finished, just close the editor by clicking on the white X on the tab label or by right mouse button clicking on the empty area beside the tab label and selecting close.

> **Tech-Tip:** Members of partitioned data set can be modified, deleted and added from this view.

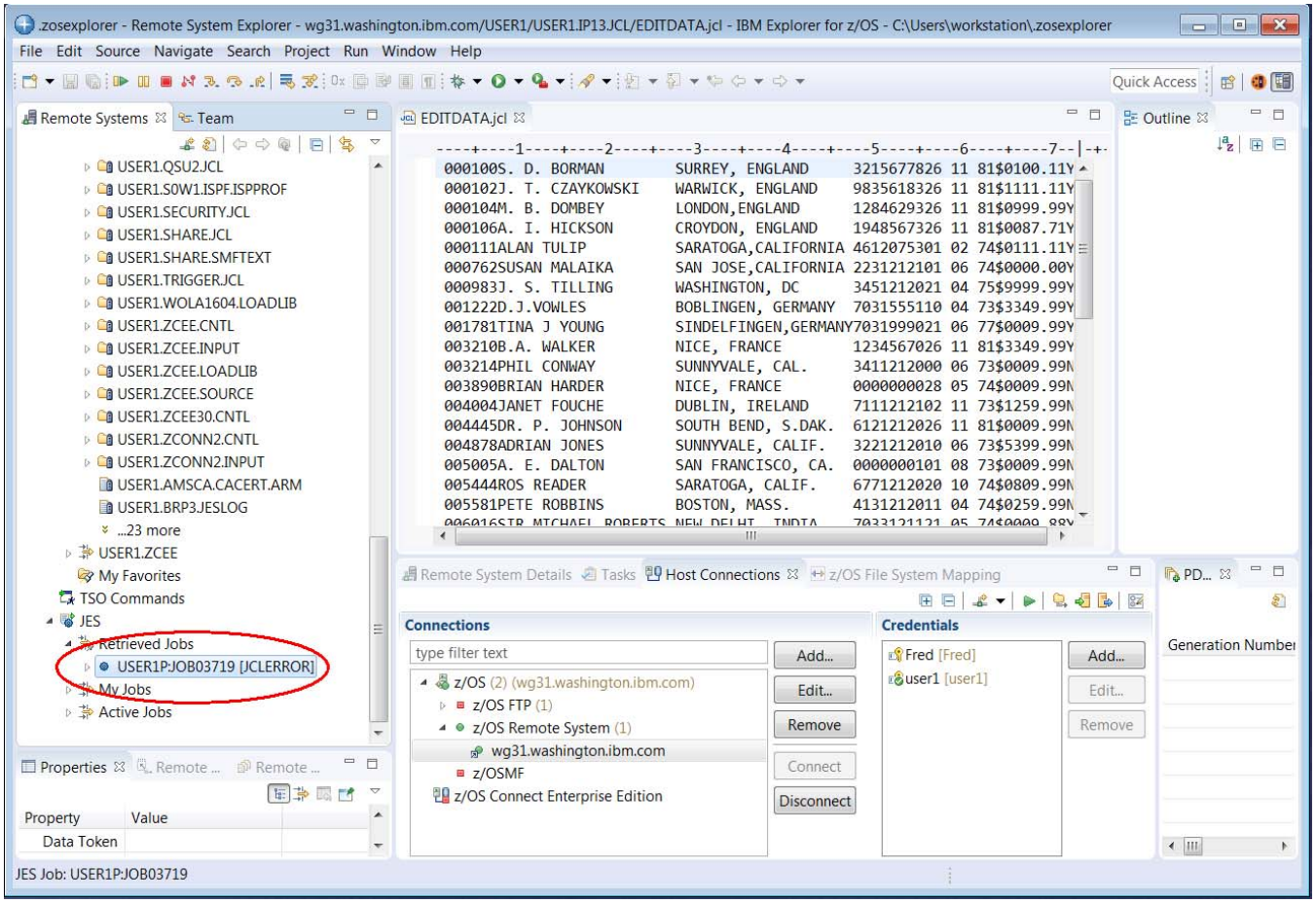
___9. z/OS Connect can also be used to submit jobs for execution and to view job output. Double click member *JOBCARD* in data set *USER1.IP13.JCL* to open it in edit mode. Change all occurrences of the XX to your team number and then right mouse button click anywhere in the edit view. This will be display a list of options (see below). Select option *Submit* by clicking on it and select *wg31.washington.ibm.com* as the target z/OS system if an option is provided.



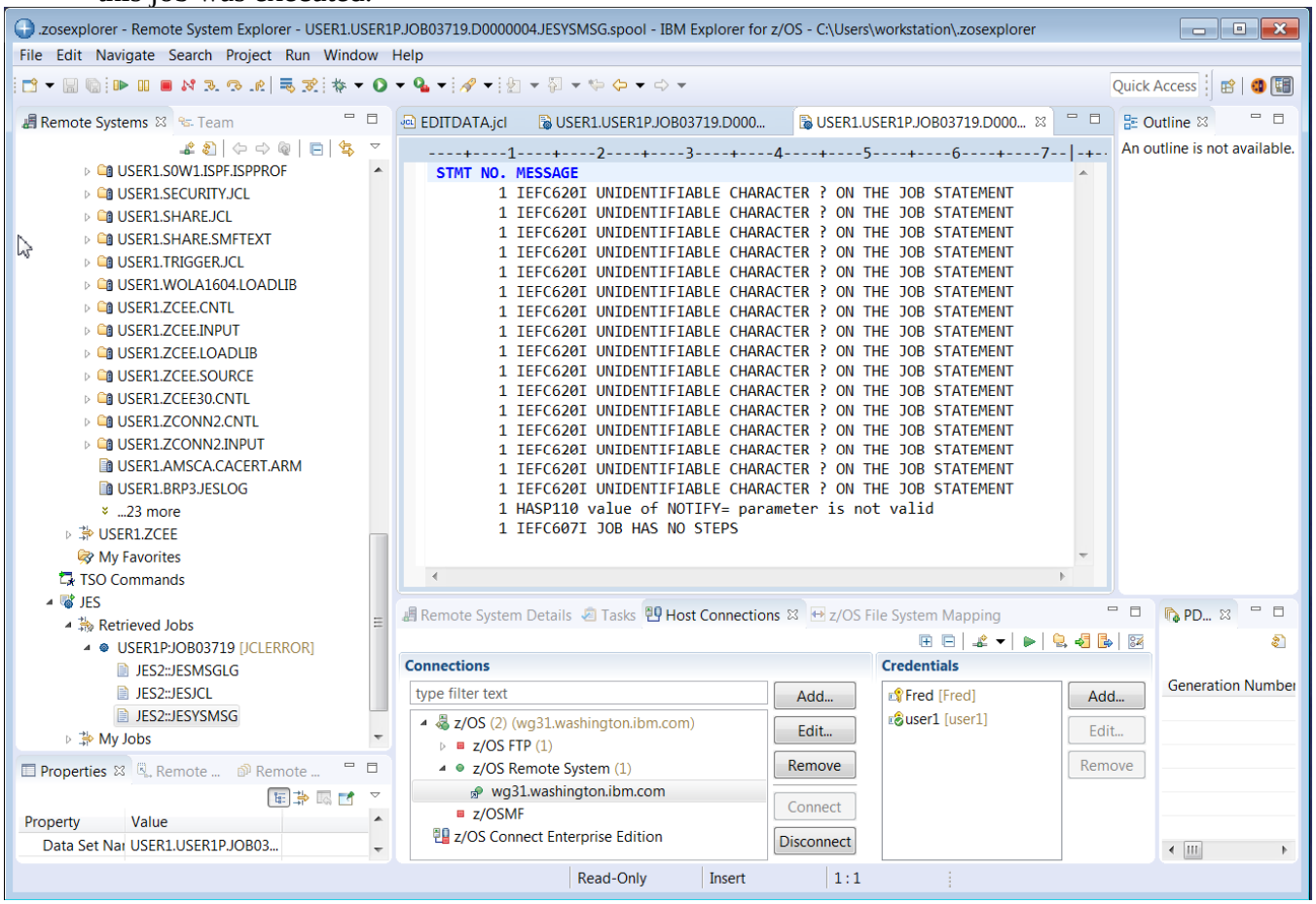
___10. On the *Job Submission Confirmation* screen click on the **Locate Job** button.



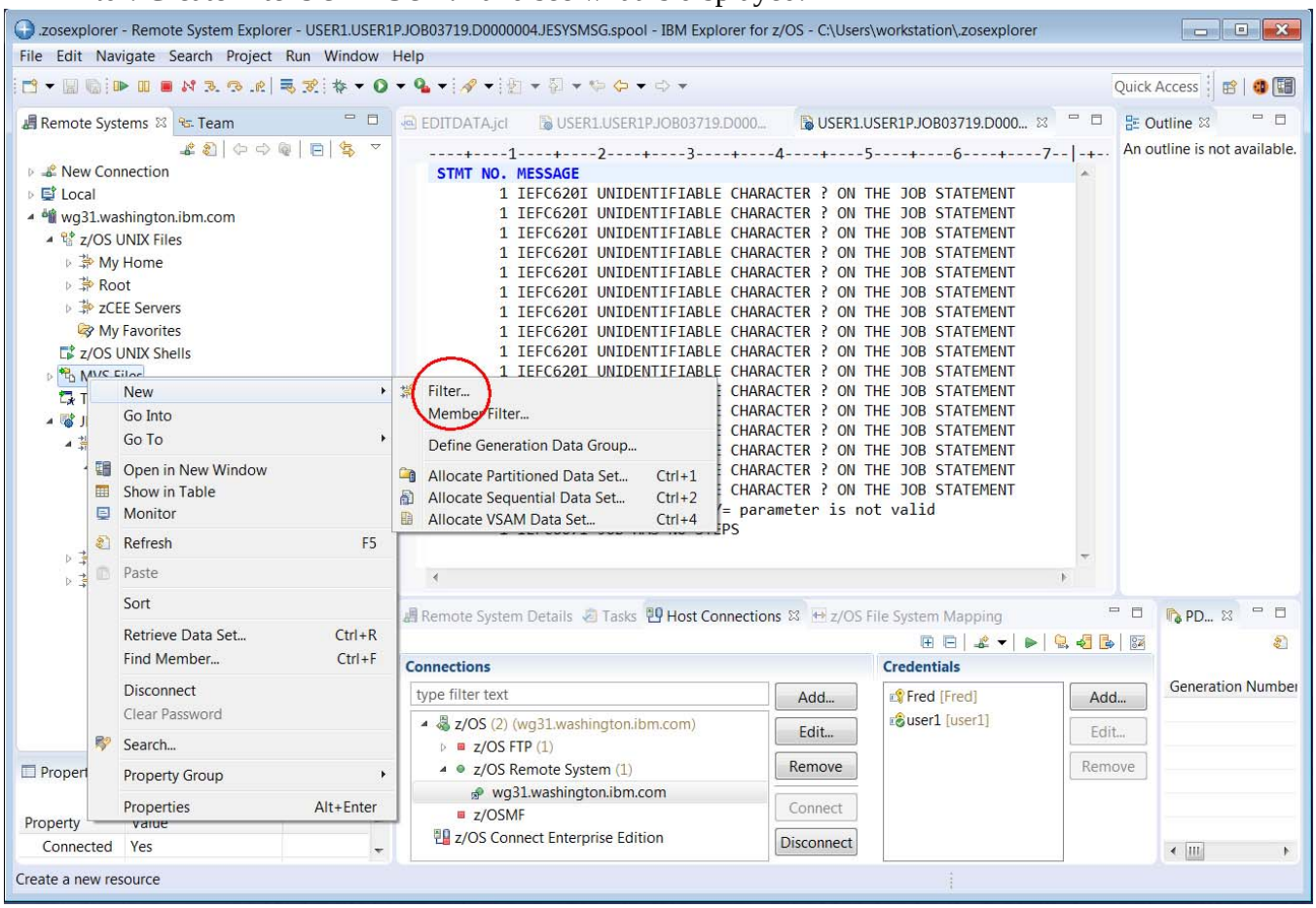
___11. This will locate the job's output in the *JES -> Retrieved Jobs* area in the *Remote Systems* view (see below). As an alternative click the refresh button to see if the job's output is now available.



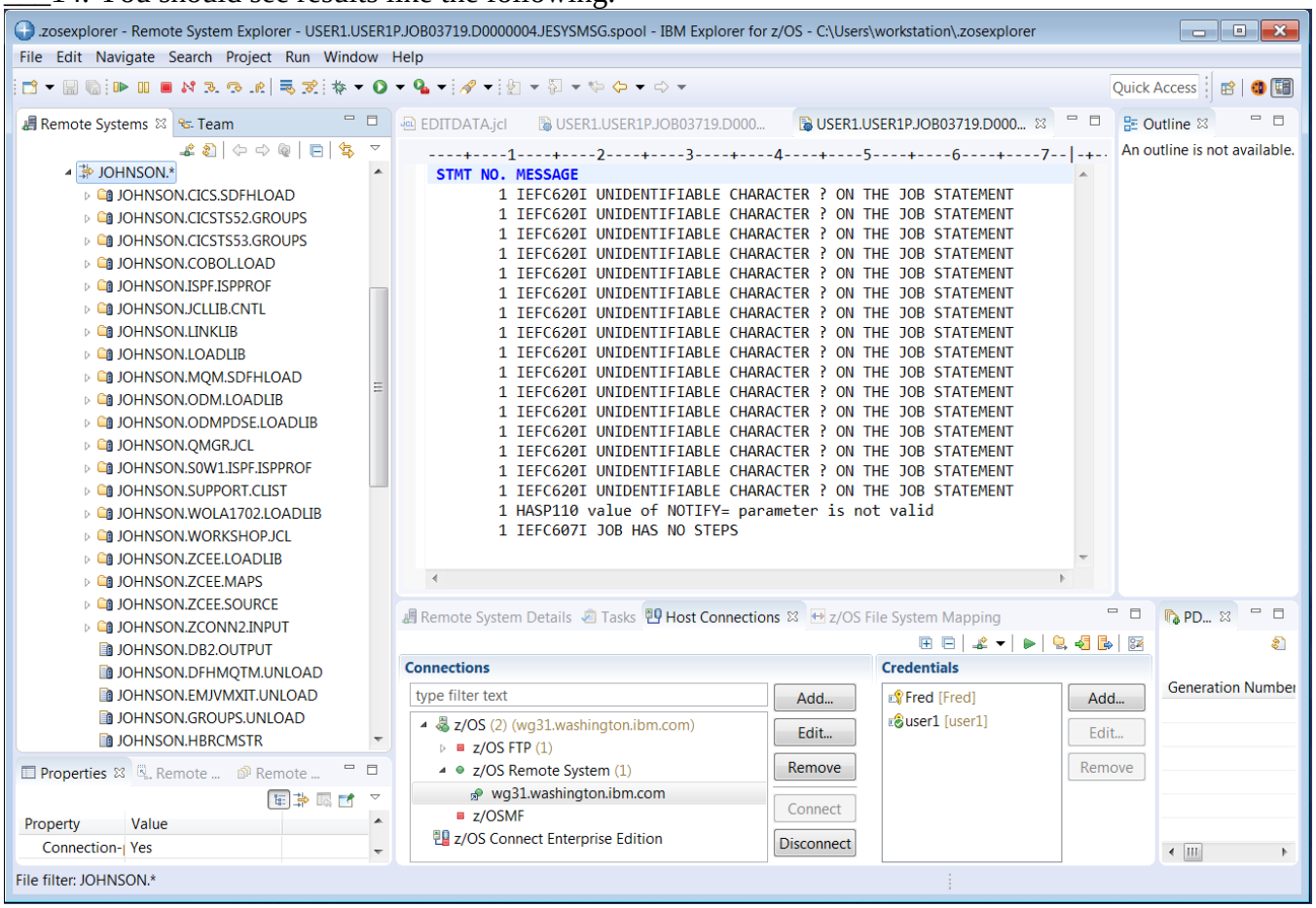
___12. Notice that there is triangle beside the job name. This triangle indicates there are multiple files in the job's output (see Step 12 on page 15 for an explanation). Click this triangle to expand the output of this job and double click JES.JESYSMSG to display the JCL error encountered when this job was executed.



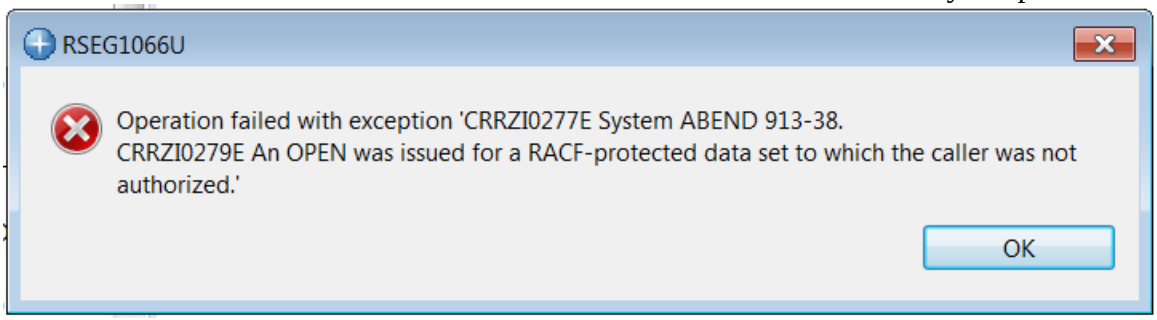
___13. Data set filters can be used to display lists of other data sets, (similar to the ISPF option 3.4 panel (see steps 6 and 7 on page 7). Select *MVS files* and right mouse button click. Se *New* and then *Filter*. Create filter ***JOHNSON.**** and see what is displayed.



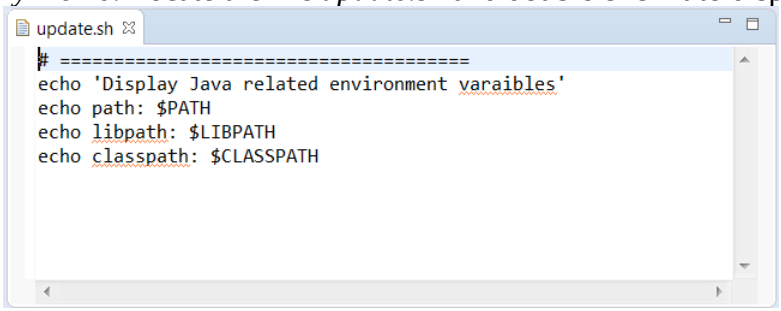
___14. You should see results like the following.



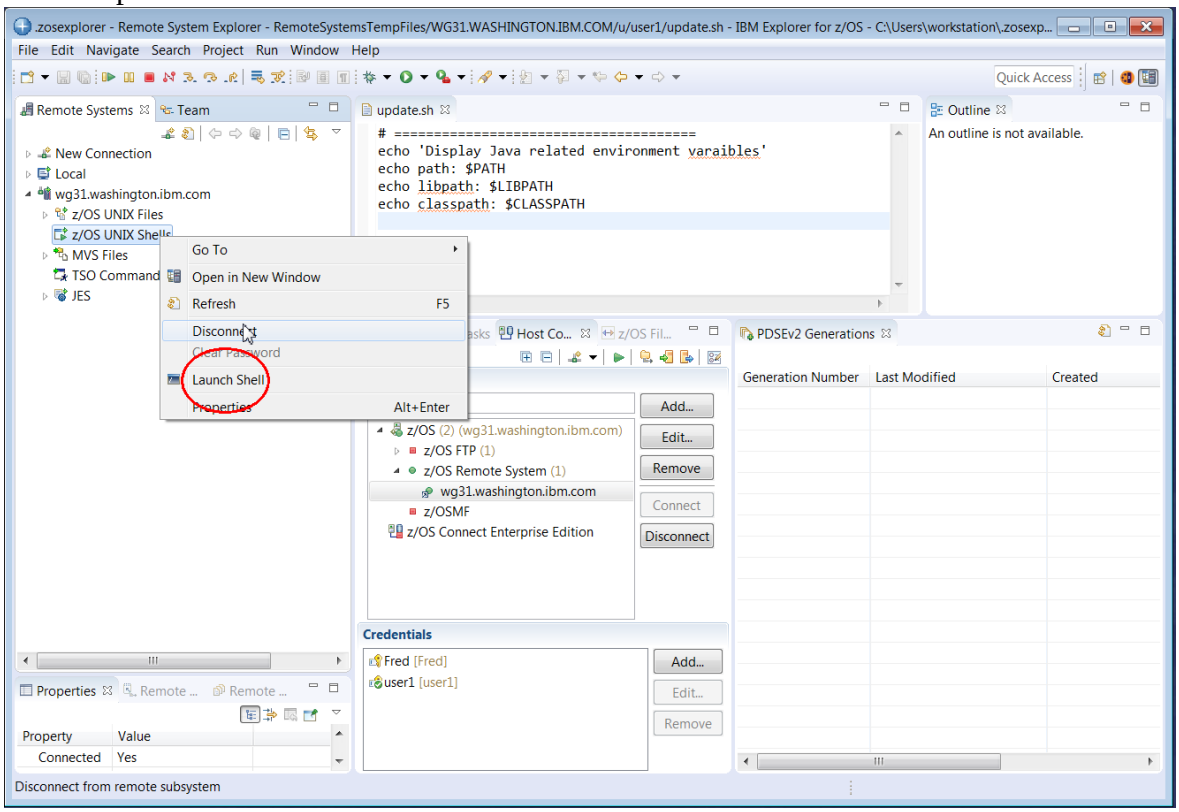
___15. You should not be able to view the contents of these data sets because they are protected.



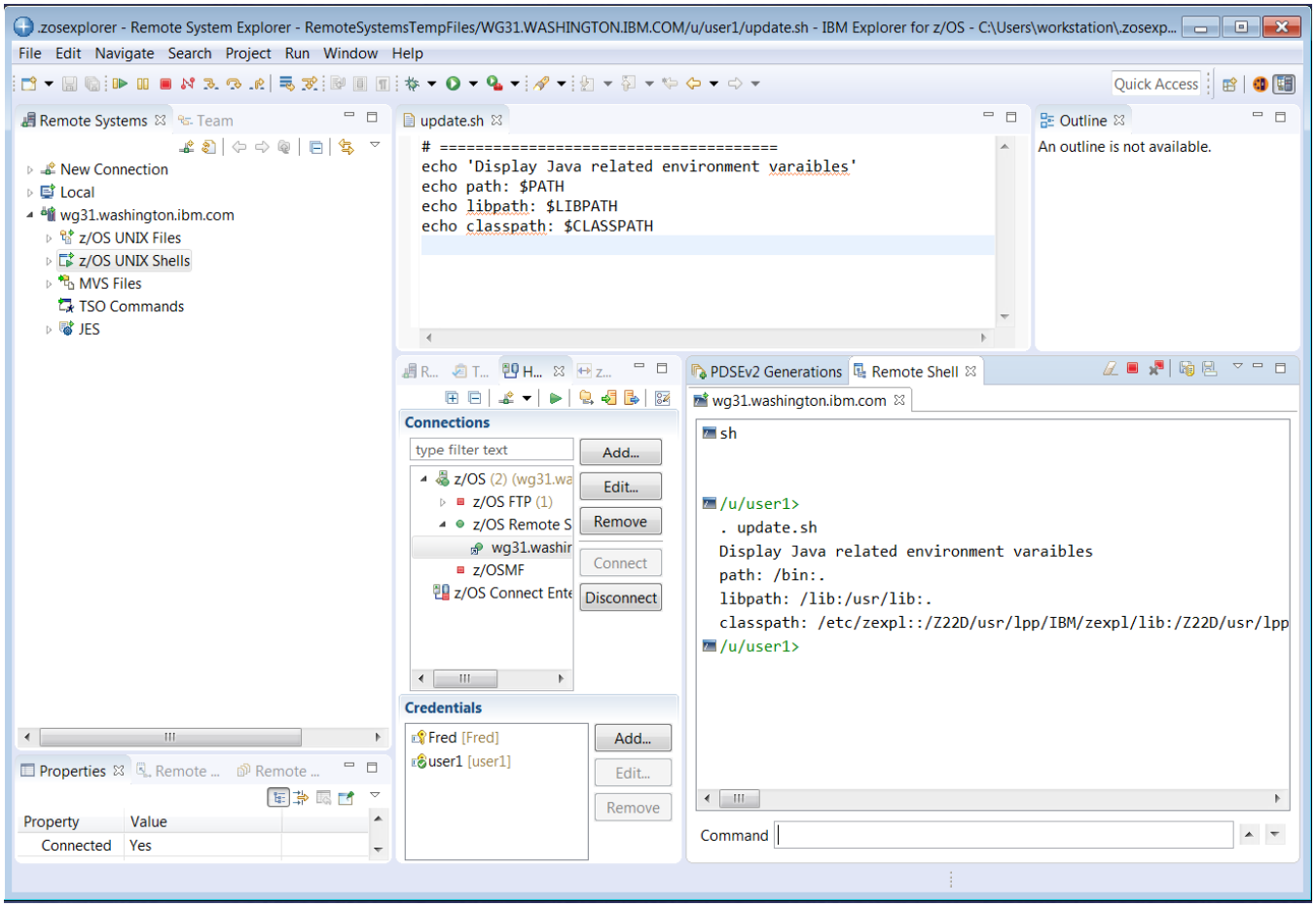
___16. The *z/OS UNIX Files* view provides a means to work with z/OS UNIX directories and files. Very similar to the functions provided by the *Data Sets* view for MVS data sets. Under *z/OS Unix Files* expand *My Home*. Locate the file *update.sh* and double click it to display its contents.



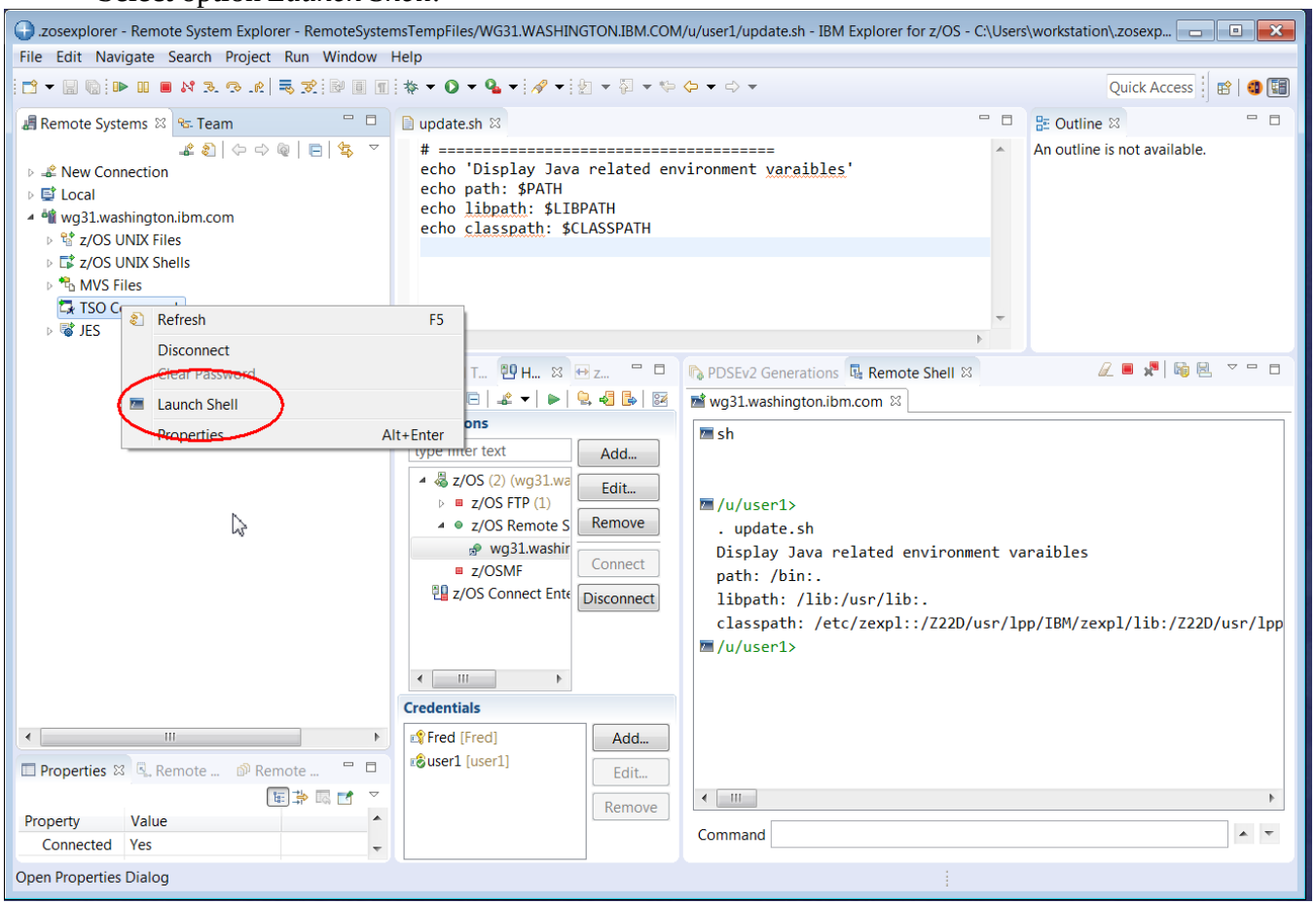
___17. Select *z/OS UNIX Shells* under *wg31.washington.ibm.command* and right mouse button click. Select option *Launch Shell*.



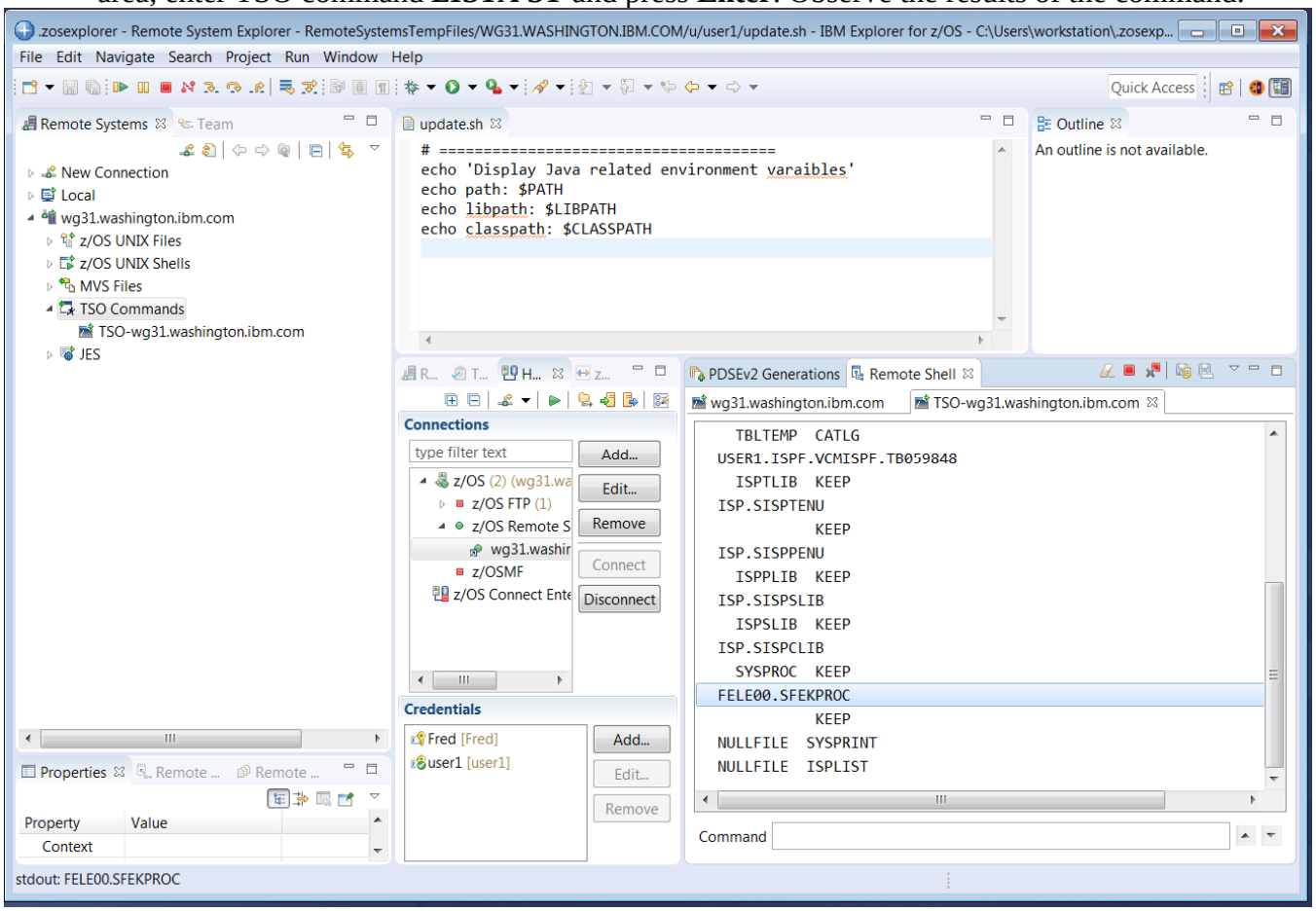
___18. This opens a new *Remote Shell* view in the lower right hand side of the screen. In the command area, enter command **. update.sh** and press **Enter**. Double click the tab Remote Shell and observe the results of the command.



___19. Select *TSO commands* under *wg31.washington.ibm.command* and right mouse button click. Select option *Launch Shell*.



___20. This opens a new *Remote Shell* view in the lower right hand side of the screen. In the command area, enter TSO command ***LISTA ST*** and press **Enter**. Observe the results of the command.



Part 12: Summary and References

In this exercise you learned to navigate the ISPF panels and started using the ISPF provide tools and utilities. You are started exploring the Unix System Services facilities of z/OS in both a native shell (e.g. the OMVS command) and via telnet as well as by using ISPF panels.

Additional information for ISPF can be obtained from the following web sites:

Non-IBM Sites:
University of Florida ISPF: Introduction to the ISPF Editor:
http://docweb.cns.ufl.edu/docs/d0089/d0089.html

IBM Publications Center http://ehone.ibm.com/publications/servlet/pbi.wss

CICS Knowledge Center : http://www-01.ibm.com/support/knowledgecenter/SSGMCP_5.2.0/com.ibm.cics.ts.home.doc/welcomePage/welcomePage.html

IBM ISPF Publications:

- *ISPF User's Guide Volume I, SC34-4822-09*
- *ISPF User's Guide Volume II, SC34-4823-09*
- *ISPF Reference Summary, SC34-4816-09*
- *ISPF Edit and Edit Macros, SC34-4820-09*

Other IBM Publications:

- *Unix System Services Command Reference, SA22-7802-11*
- *UNIX System Services User's Guide, SA22-7801-11*
- *CICS TS V4.2 Supplied Transactions, SC34-7184-01*

- *TSO/E User's Guide, SA22-7794-04*
- *TSO/E CLISTs, SA22-7781-05*
- *TSO/E Primer, SA22-7787-02*
- *TSO/E Command Reference, SA22-7782-11*
- *TSO/E Messages, SA22-7786-09*