IBM Developer for z Systems – for ISPF Developers

Module 4 – Remote Systems – Connect, Navigate & Search

DevOps

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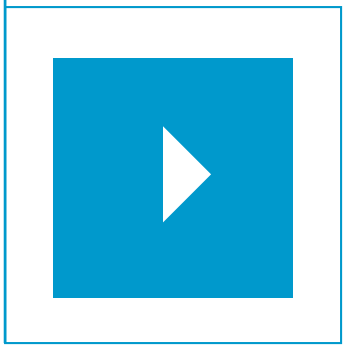
UNIT

The IDz Workbench



Topics:

- **Connect to and work on z/OS Resources**
- Remote Search
- Appendix

Topic objectives

After completing this topic, you should be able to:

- Describe the use of the Remote System Perspective, the z/OS Projects Perspective and Remote Systems View
- Define the properties necessary to connect to a z/OS machine from IDz
- Describe the different kinds of Source Control Management products that integrate with IDz
- Connect to a remote z/OS mainframe

Note: In this topic you will learn how to create a connection to a z/OS mainframe. The screen captures all describe connecting to a public z/OS machine that IBM makes available – during classes.

If you are taking this course through standard IBM services delivery you should be able to use the properties (I/P address, port#s, etc.), logon IDs and passwords that your instructor provides you with.

But you may also be taking this course standalone – and in that case, you will need to speak to your company's Systems Programming staff to learn how to connect to your mainframe through IDz.

The file names in the screen captures of mainframe libraries and datasets may be different than your workbench view. Focus on the process and steps and "how to" use the tooling. Don't get overly-concerned about exact one-for-one dataset and file mappings.

You also may be using your company's own Source Control Management system – to do things like builds, compiles, etc. In that case much of the remote functionality in IDz will be customized and tailored to your company's unique and idiosyncratic procedures and protocols.

Remote Systems

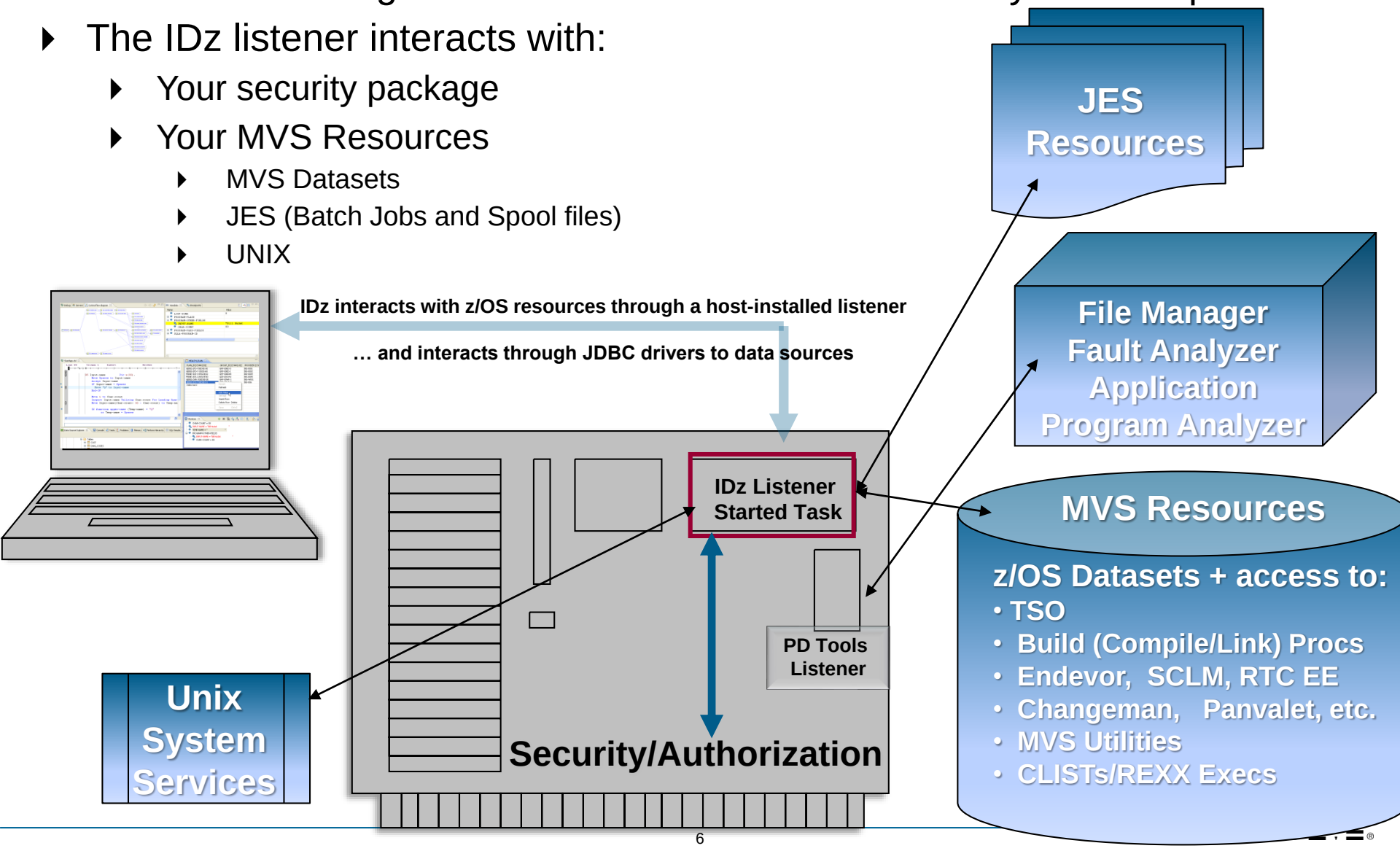
The IDz Remote Systems View allows you to work with your z/OS assets and resources (programs, data files, JCL, REXX commands, CLISTS, and Jobs)

From Remote System Explorer, you:

- **Define connections to different systems**
- **Connect to different z/OS LPARs**
- **View lists of files and partitioned datasets**
- **Allocate, delete, copy, statistics, etc. on datasets**
- **Edit & Managed GDGs**
- **Work with UNIX resources**
- **Work with PDS and PDSE datasets:**
  - Create, rename or delete
  - Compress
  - Copy and paste
- **Edit, Browse, (ISPF) View source**
- **Submit and manage batch jobs**
- **Execute REXX and CLIST commands**
- **Create custom filters for:**
  - Accessing datasets anywhere in the LPAR
  - Searching through disparate dataset types
  - Working with disparate dataset types

z/OS Access With IDz

- When you are connected to your LPAR, you interact with the IDz server-side listener using Context Menu actions in Remote Systems Explorer
- The IDz listener interacts with:
  - Your security package
  - Your MVS Resources
    - MVS Datasets
    - JES (Batch Jobs and Spool files)
    - UNIX



Creating a New Remote z/OS Connection (1 of 2)

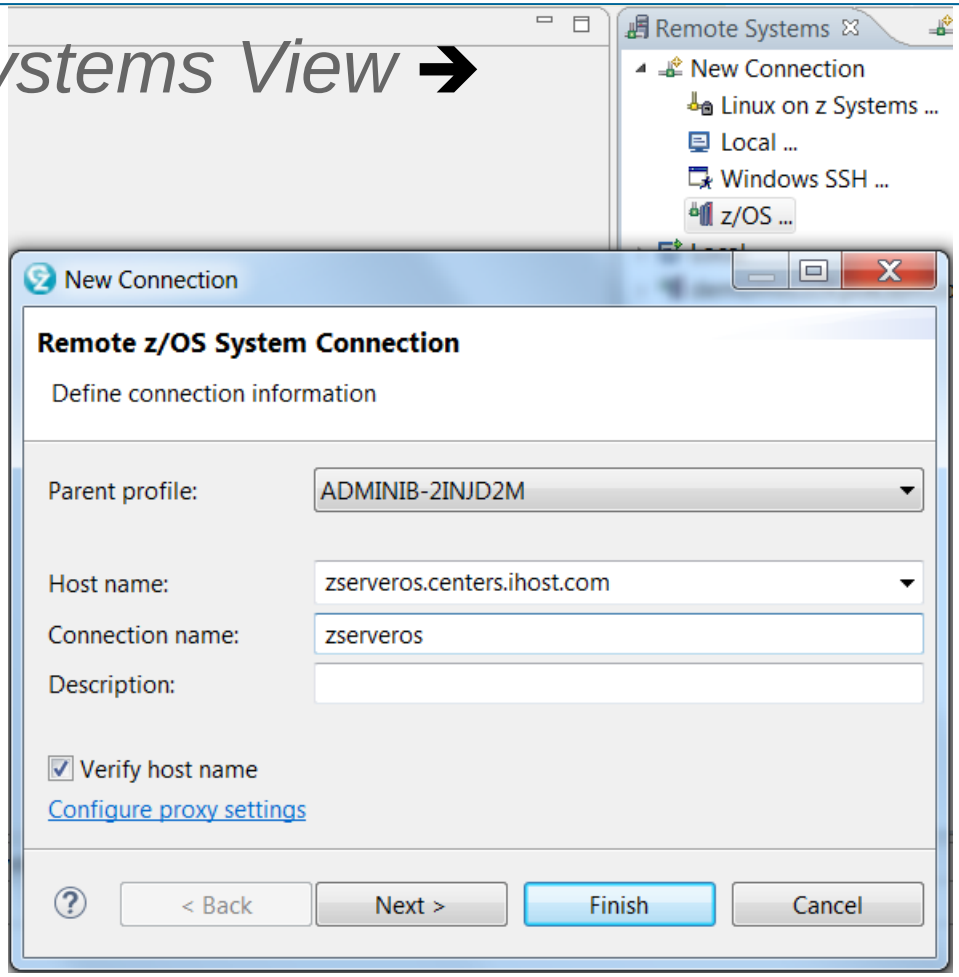
Steps – from the Remote Systems View ➔

1. **Right-click over z/OS…**
2. **Select New Connection…**

   This will begin a wizard for completing the connection specifications

3. **Fill out: New Connection**

- Parent Profile
  - Will default to your local machine name
- Host name:
  - Enter a ping-able logical name or IP address for your z/OS host machine
  - This can be case-sensitive
- Connection name:
  - A descriptive name that will show up in the Remote Systems View
  - The Connection name must be unique
- Description:
  - Mouse-over (hover) help for this connection
- ☑ Verify host name
  - Will ping the host name to verify:
    - Connectivity
    - Availability of the z/OS machine

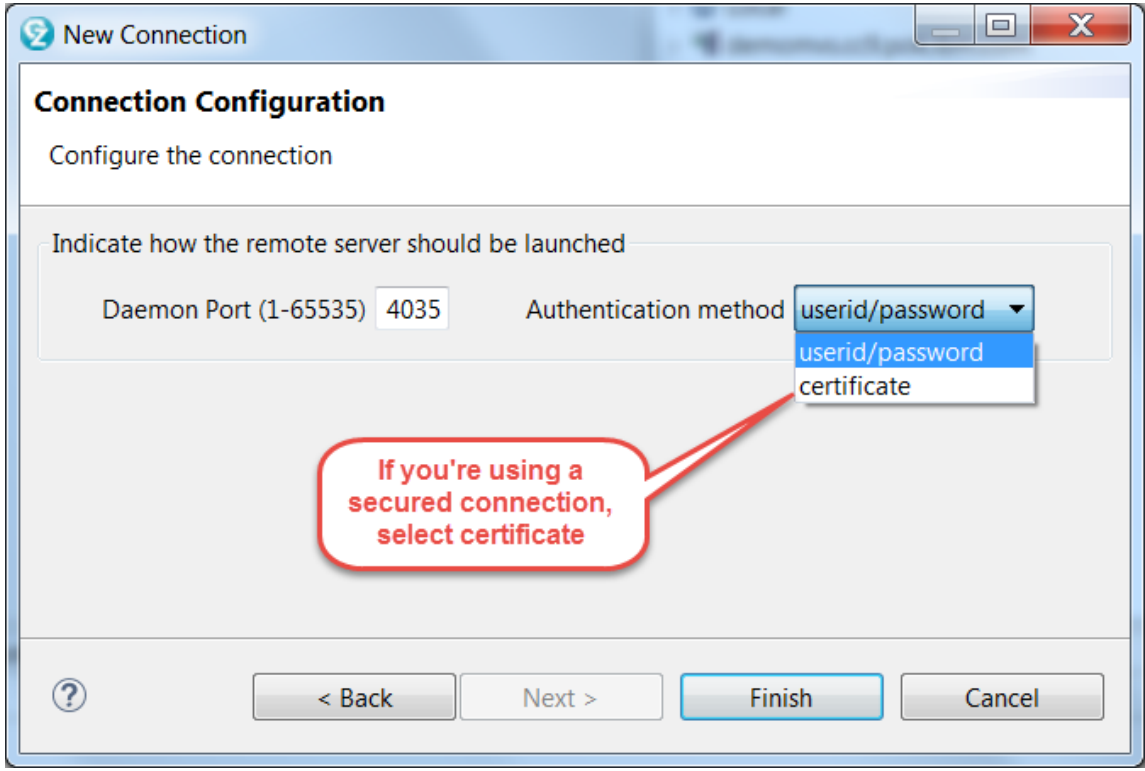


Click Next >

Creating a New Remote z/OS Connection (2 of 2)

4. Connection Configuration

- Specify how you would like IDz to launch the remote server (that listens for incoming activity requests from IDz on your workstation to access z/OS UNIX files and commands)
- In many shops you will use the default:
  - **Daemon Port (1-65535)**
- But you may have to enter a port# other than: **4035**
  - Find this out by contacting your System Programming staff



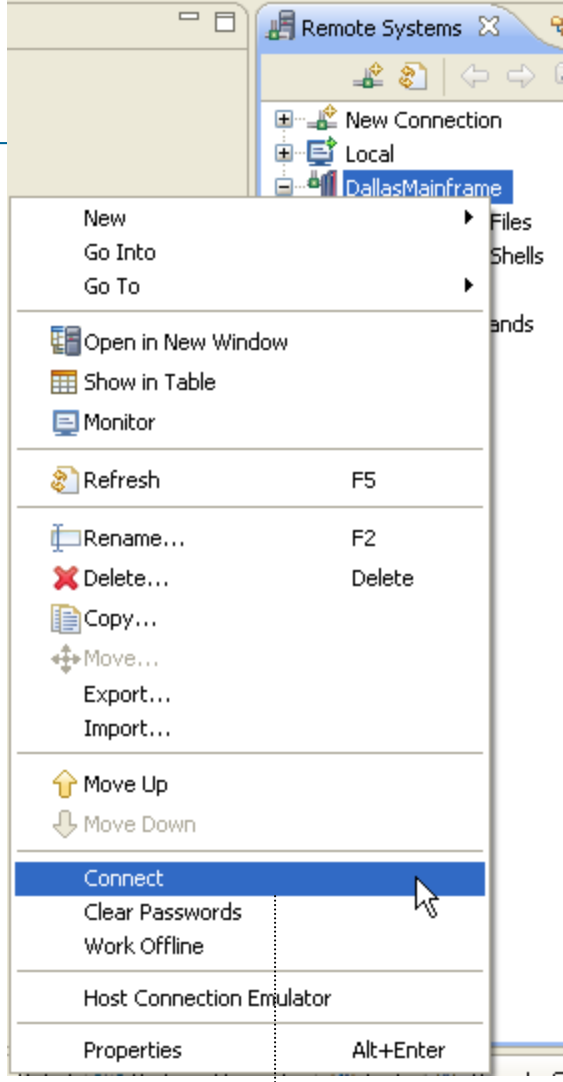
Click Finish

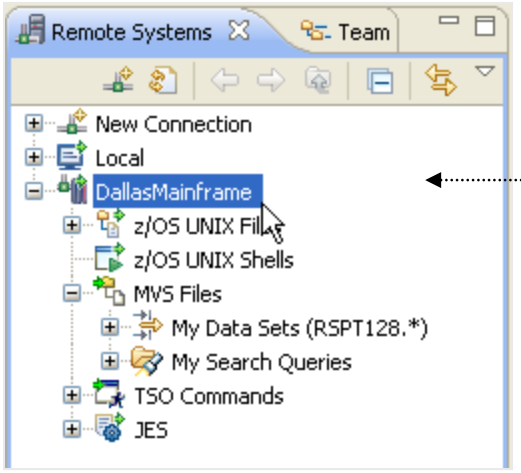
Logging on through your connection

After you have successfully created a connection, a new entry with the name of the connection appears in the Remote Systems view

To login (or connect) to TSO:

- Right-click over your new connection
- Select **Connect**
  - Enter your TSO ID and Password
    - Note that if you expand MVS Files and attempt to expand My Data Sets – or try to work with TSO Commands or access jobs (JES) a login will occur automatically
- If your connection fails you will see an error message
- And if it succeeds the various icons in the View will show small green arrows denoting connections

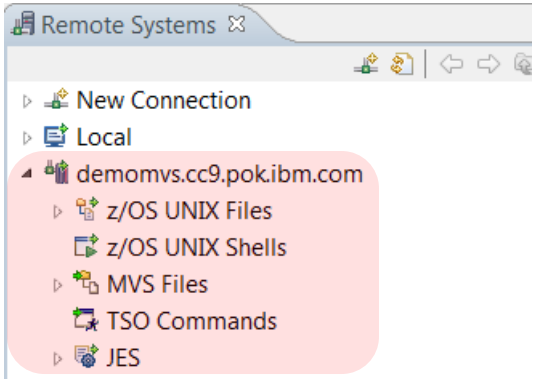




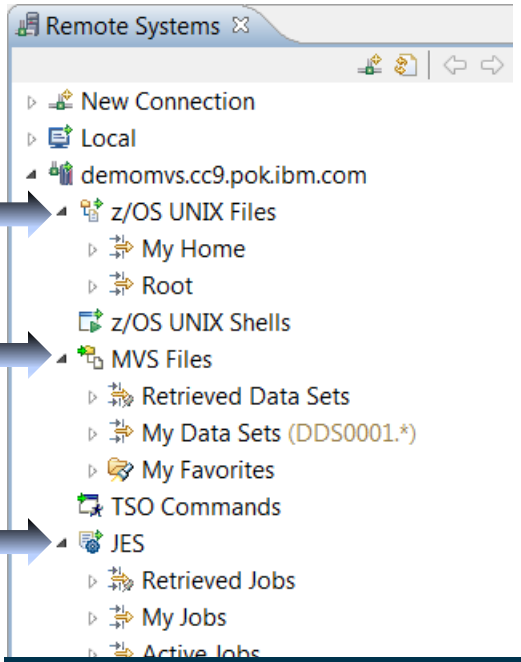
Note IDz Admins:
☑ Save password can be disabled

Remote Systems & Filters

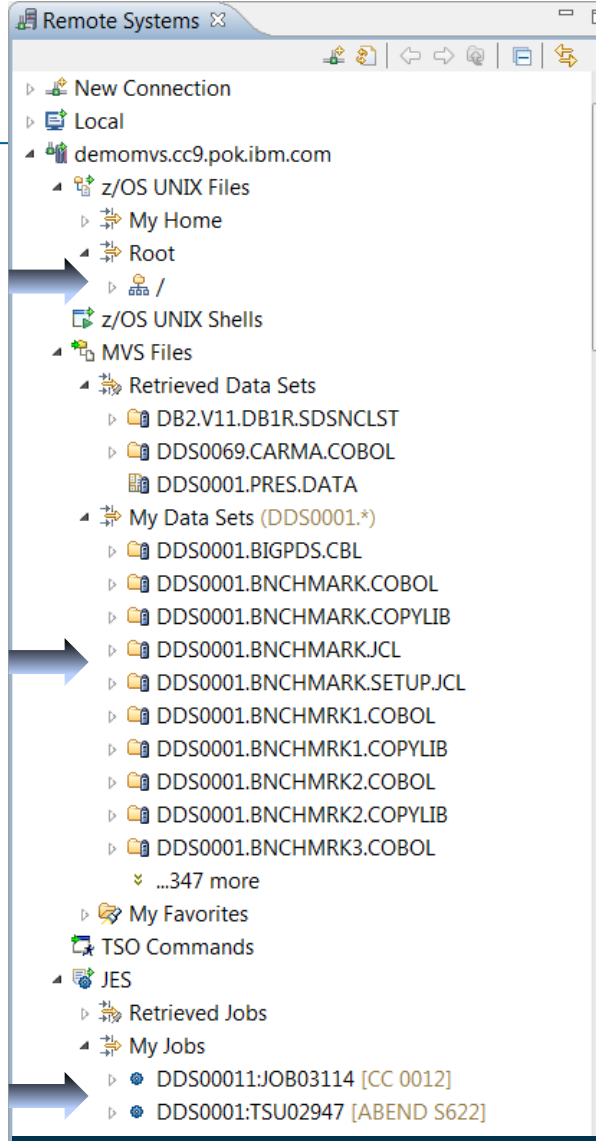
- The icons are “Filters” – Tree Controls that expand to reveal levels of detail – DSNs and additional Filters in your LPAR



Level 1 –Filters for accessing:
- **UNIX**
- **MVS Files**
- **TSO Commands**
  - **CLISTs/REXX Execs**
- **JES**



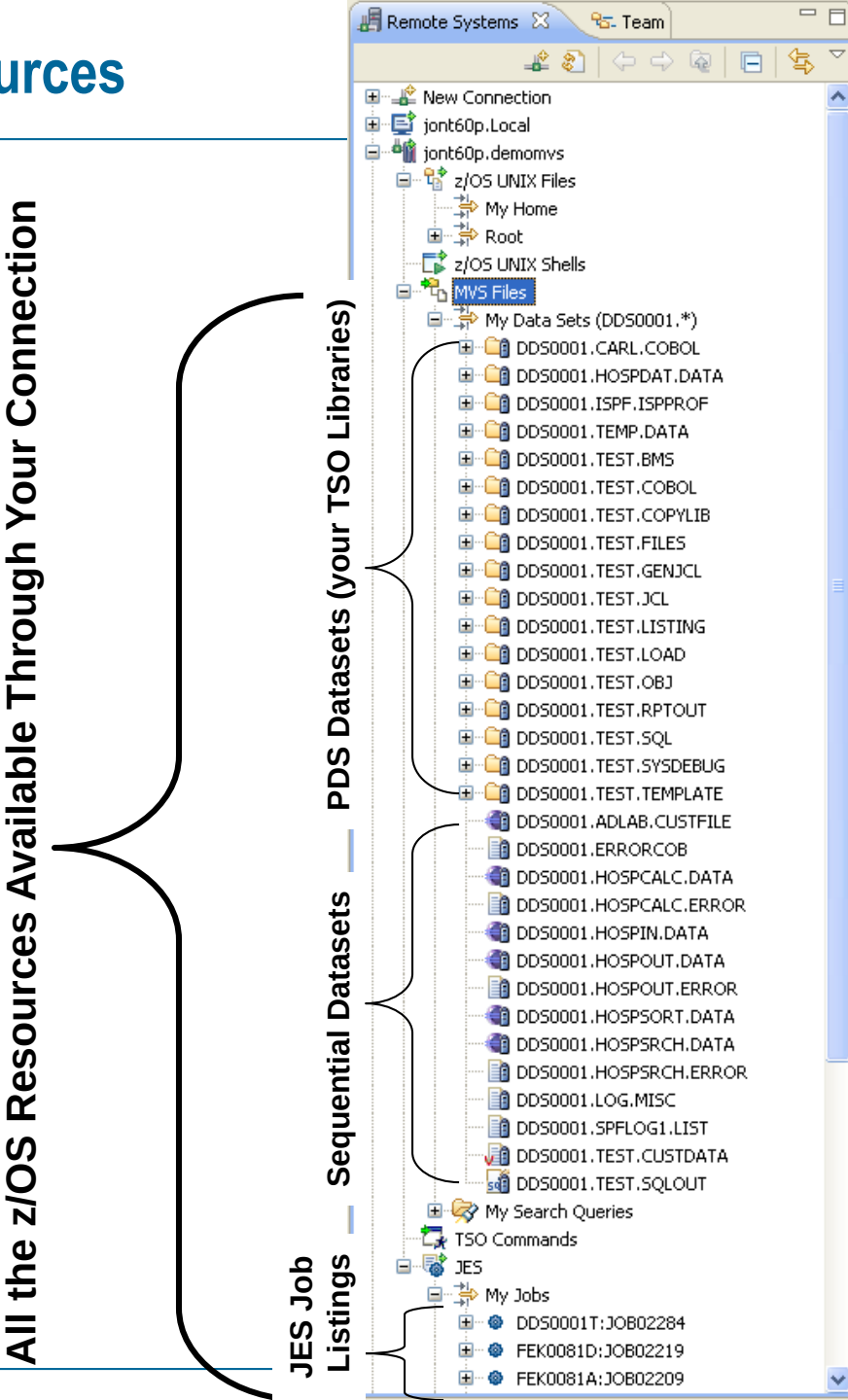
Expanded Filters:
- **UNIX**
  - /home_dir/
  - UNIX_Root
- **MVS Files**
  - Retrieved Data Sets (=3.4)
  - Your Data Sets
  - Saved Search Queries
- **JES**
  - Jobs you are saving
  - Jobs that are currently executing
  - Jobs you’ve submitted



Fully-Expanded Filters:
- **Additional UNIX Folders + Data Sets**
- **...**
- **MVS File Filters : Libraries, Data Sets**
- **...**
- **JES Job Filters – Individual Jobs/Spools**
- **...**

Remote Systems view – Your z/OS Resources

- After you successfully login, the Remote Systems view will show your connection …
  - Which you can expand to show:
    - All of the datasets "owned" by your TSO ID
      - PDS/PDSE
      - Individual
        - Sequential files
        - VSAM files
    - Stored "Search Queries"
      - More on this coming up
    - All of the jobs you have submitted to the Job Entry Subsystem (JES)
- These resources are shown through what are called "filters"
    - Filters are another topic you will learn about in the next section
- You can:
  - Open remote files on your workstation
  - Drag & Drop, copy, etc.

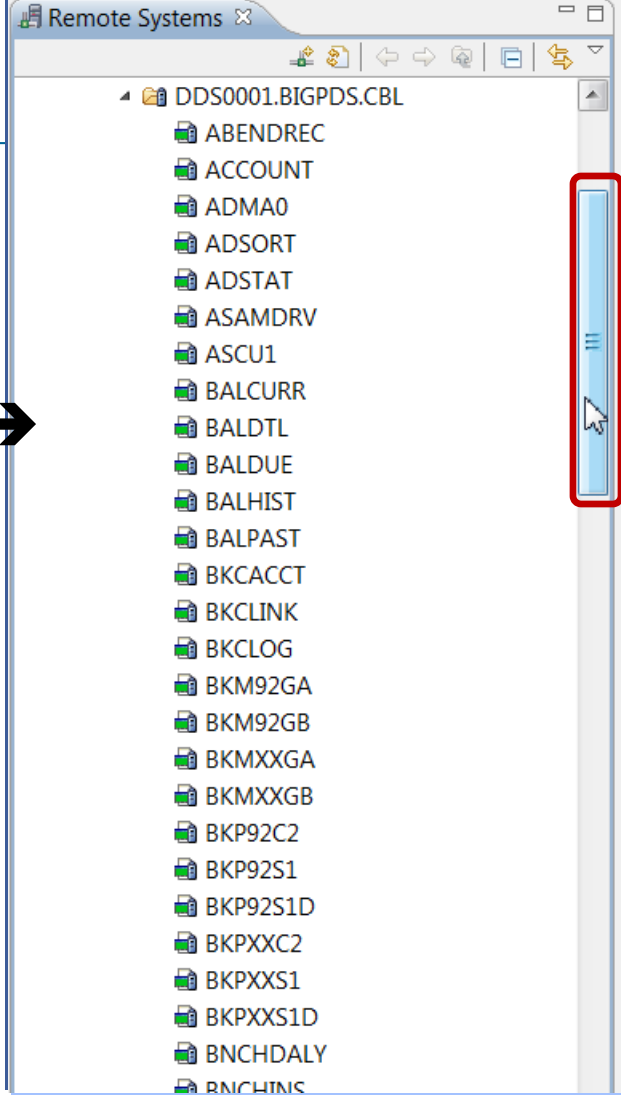


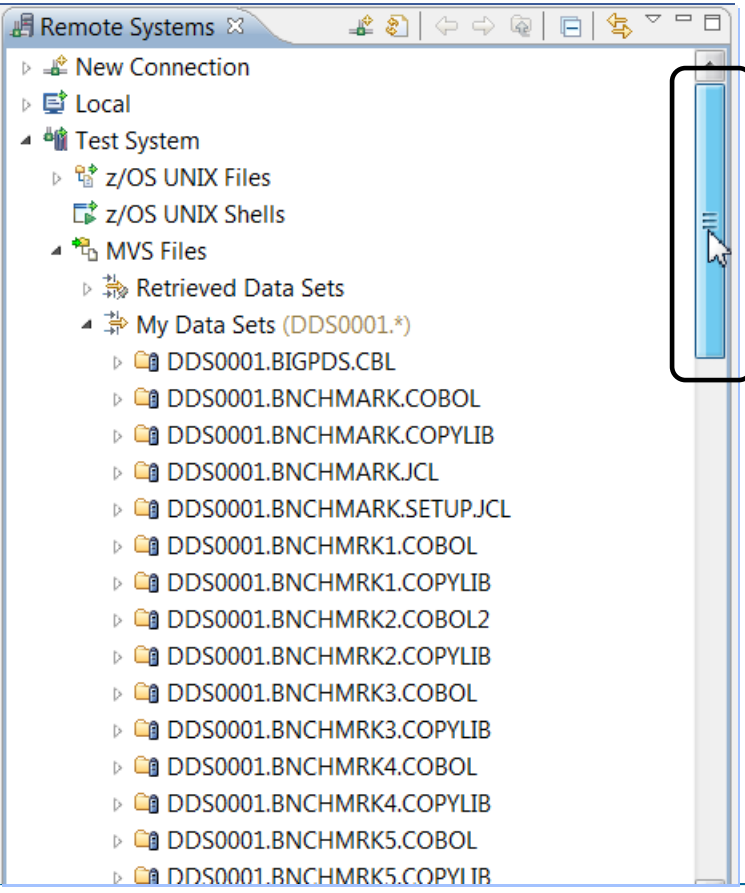
Navigate - Scrolling and paging through your DSN List – and within a large PDS

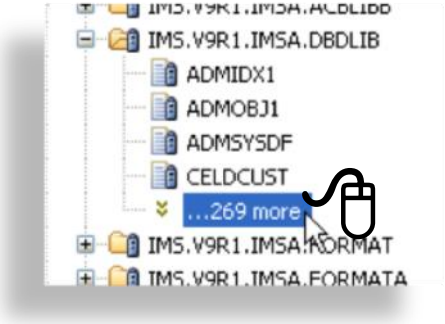
You navigate within RSE using:

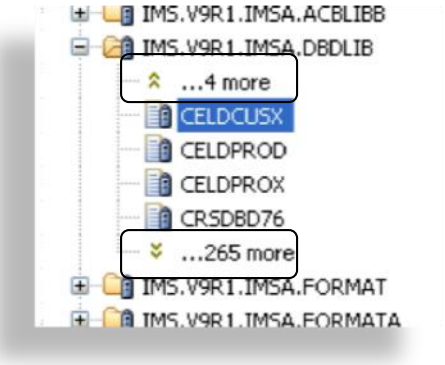
- Scrollbars
- By double-clicking the …More ellipsis

You navigate within a large PDS the same way ➔









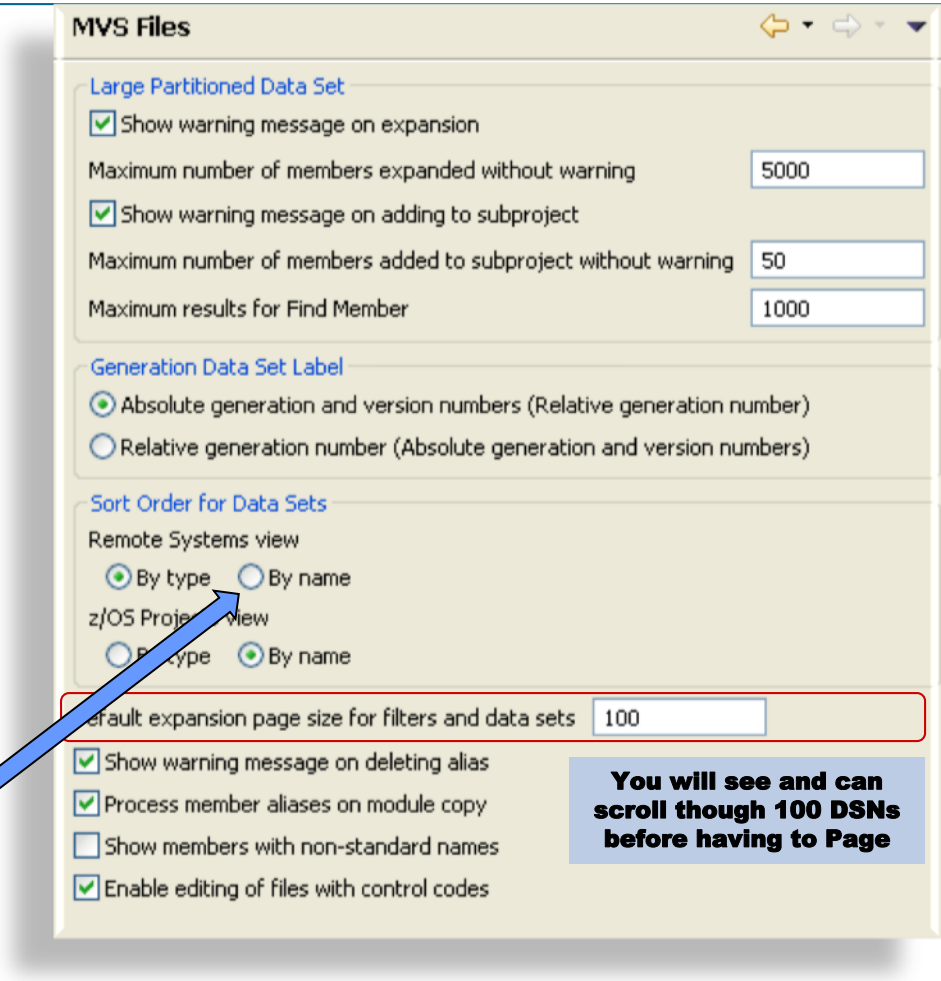
Setting Workspace-Level Scrolling Preferences

- Preferences for your scrolling specifications can be found under:

  Window
  Preferences >
  Remote Systems >
  z/OS >
  MVS Files

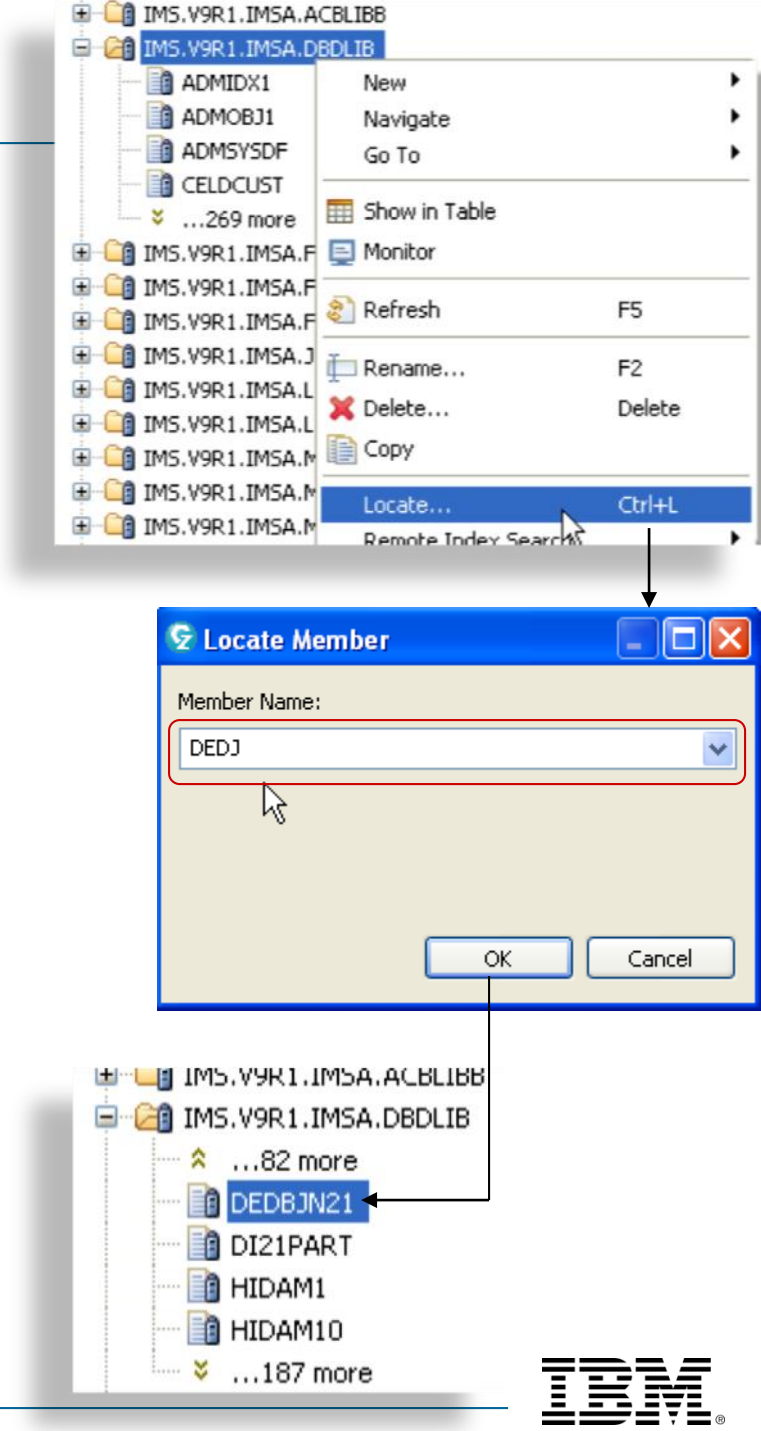
- Your new preference changes take place upon clicking OK

- Note that you can also sort the Remote Systems Datasets alphabetically: By name - as opposed to:
  - All libraries first
  - Then all other Datasets



Locate – Finding Members that *start with*

- Position anywhere within a PDS by using **Locate**
- To do this:
  - Select the PDS
  - Right-click and
    - Select **Locate…**
    - Or press: **Ctrl+L**
  - Enter the beginning Member Name text string
  - Press **OK**



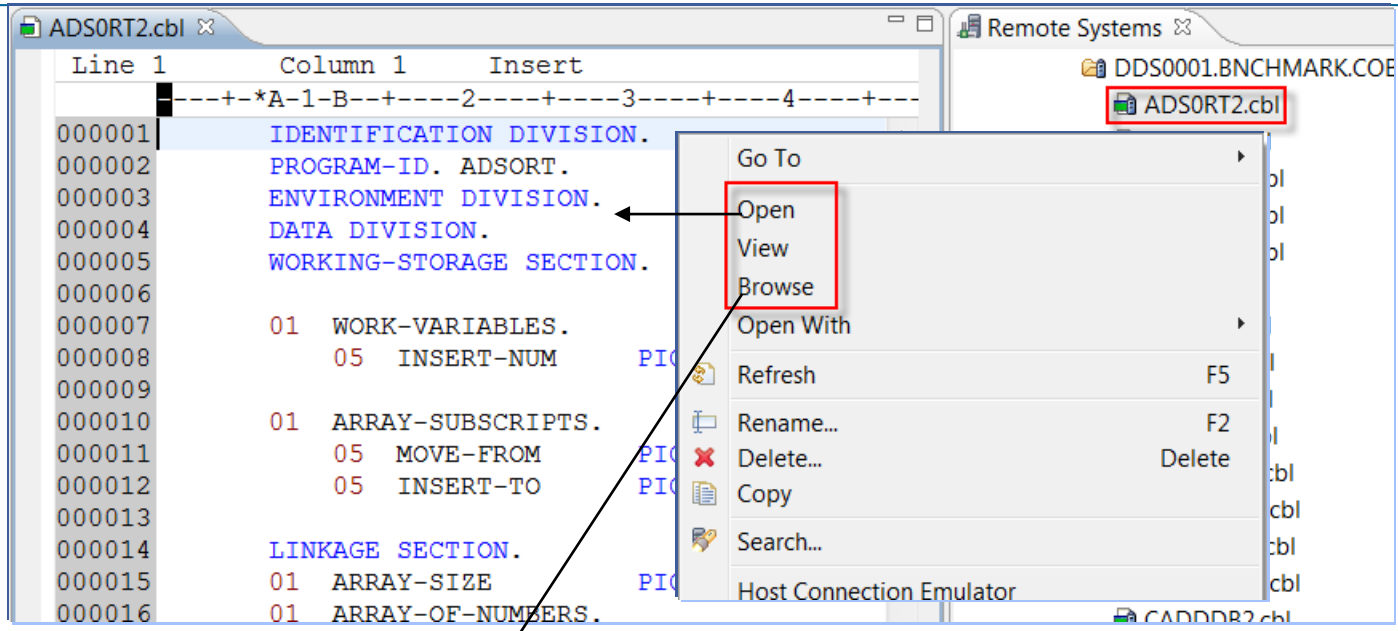
Notes

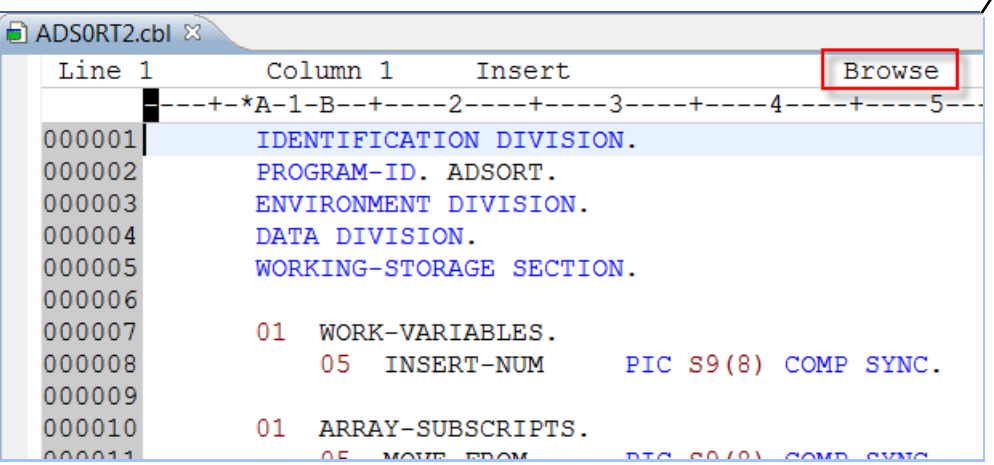
- This technique is similar to the ISPF 3.4 (DSLIST) library member list option
- Your Locate strings are:
  - Specific to a PDS
  - Saved in your workspace, and available in the future from the Drop Down selection box

Opening or Browsing Remote Files

Open files for Edit:

- **Double-click/Default**
- **Right-click**
  - Select: **Open**





Open files for Browse:

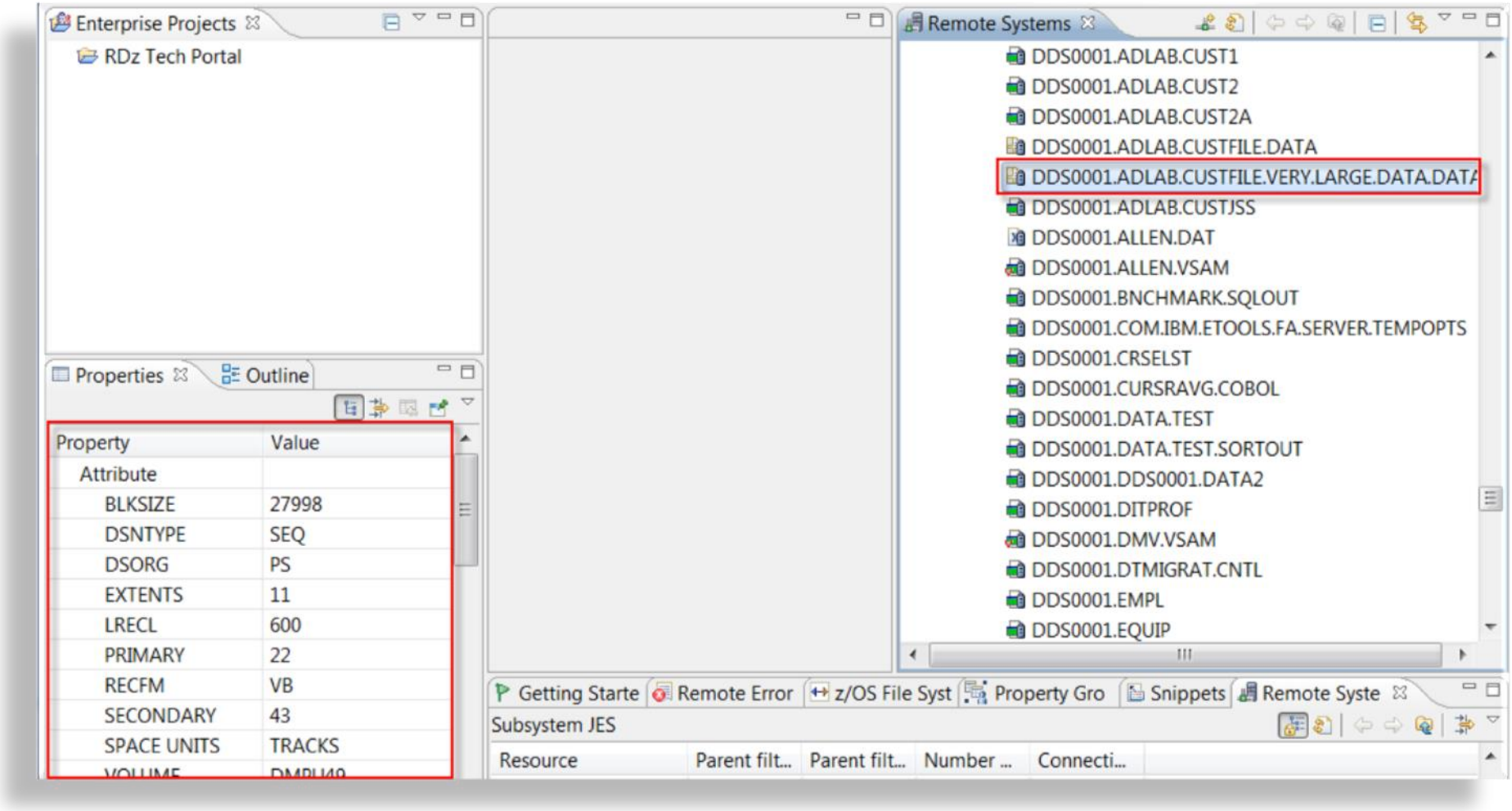
- **Right-click and select Browse**
- This opens the file but does NOT allow you to type in the file or make modifications.

Note that, while Edit/Open is the default double-click action, you can alter this default to Browse.

There's a slide in the Optional section of this slide deck that explains how.

Remote Systems DSNs and the Properties View

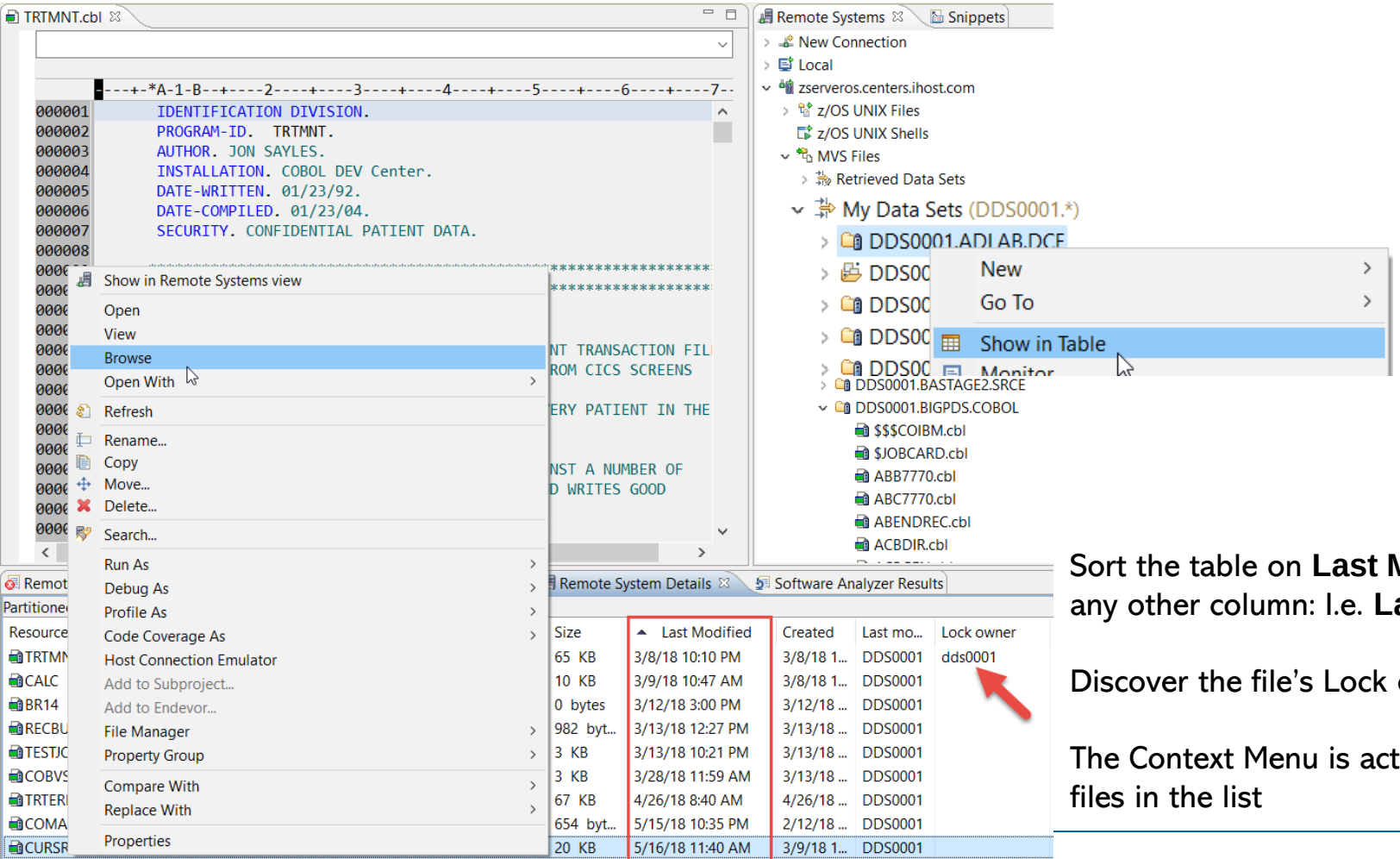
- The Properties view provides persistent access to dataset statistics (ISPF 3.2)



- It also supplies a summary view of batch JOB statistics for any selected JOB in the JES Filter

Show in Table – Sort on Last Modified, Find who's locked a file (and more)

- You may want to sort a PDS on “Last Modified” – or find out
  - Who's got a file or PDS member locked that I want to edit? When was a PDS created, etc.
- Steps:
  - Select and Right-click the dataset
  - Select: **Show in Table –** This opens the Remote System Details view



Sort the table on **Last Modified** – or any other column: I.e. **Last modified by**

Discover the file's Lock owner

The Context Menu is active on any of the files in the list

File/Data Set Copy – Options

1. Within the same LPAR – you can copy:

- PDS Members ➔ PDS Member
- QSAM/Sequential File ➔ QSAM/Sequential File
- Load modules
- An entire PDS (all of its members) ➔ New PDS
  - IDz does; Allocate ➔ Copy

2. From one LPAR to another LPAR – you can copy:

- PDS Members ➔ PDS Member
- QSAM/Sequential File ➔ QSAM/Sequential File

Assumes that the IDz Server is installed on both LPARs

3. From LPAR → PC or PC → LPAR – you can copy:

- PDS Members ➔ PDS Member
- QSAM/Sequential File ➔ QSAM/Sequential File
- A PDS/Library on an LPAR can be Copy/Pasted to a folder on a PC

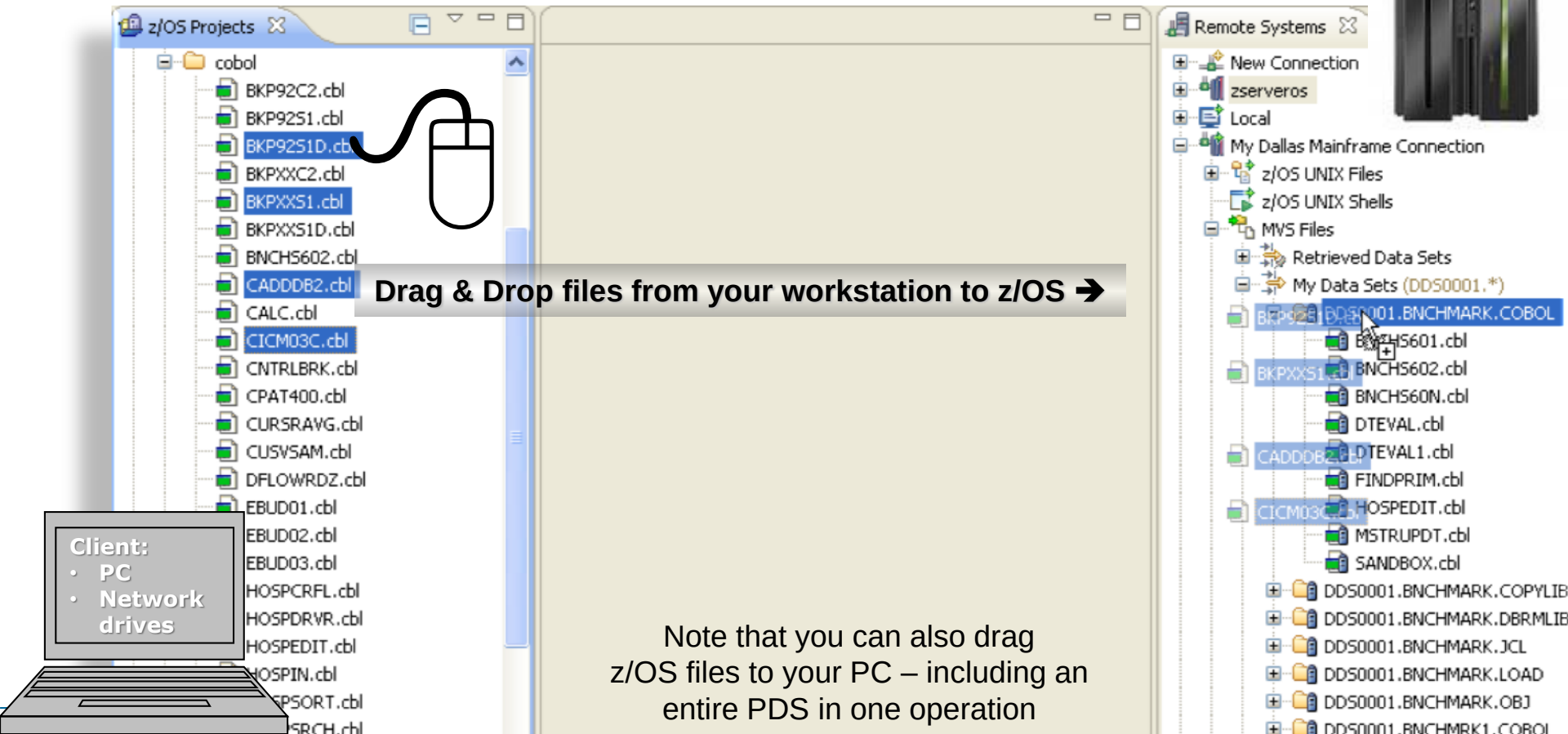
Copying Files Between LPAR and PC

Drag & Drop (or Copy & Paste) files from your workstation to a TSO library – or to z/OS - as sequential datasets

How to…

- From your PC: **Select files**
- Drag & Drop to your destination PDS within a connection in Remote Systems explorer

Note that you must have dataset-write authority to the target datasets



Note that you can also drag z/OS files to your PC – including an entire PDS in one operation

Copying Files Between LPARs

Dallas LPAR

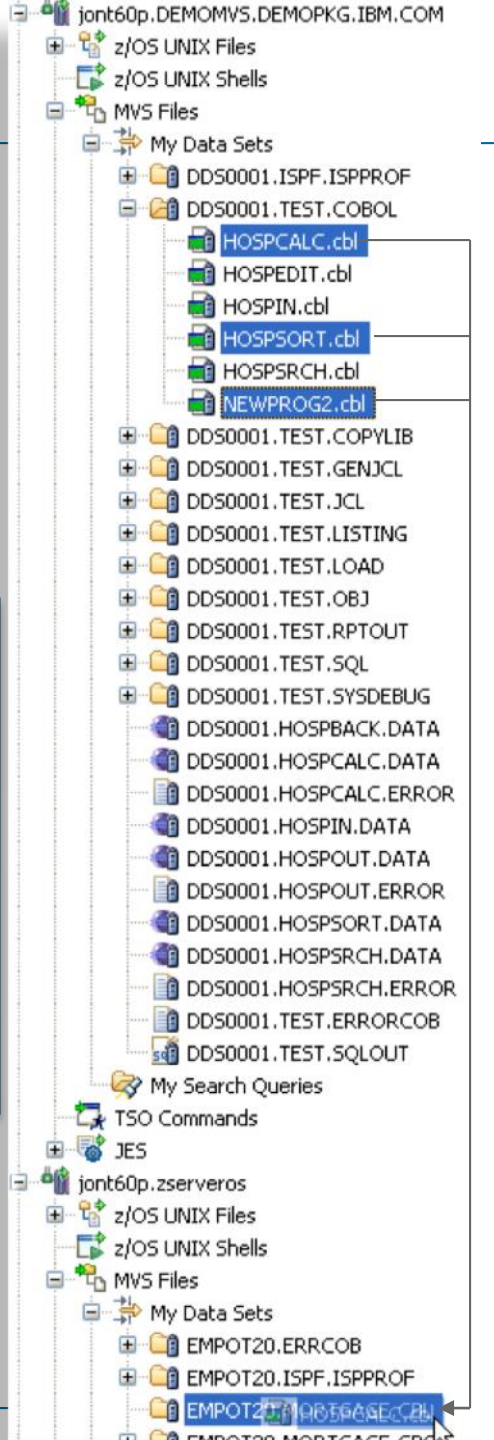
- You are not limited to one z/OS Connection.
- You can set up multiple connections to multiple TSO systems on the same or on different LPARs that allow you to easily move and manage data in

Note – when you copy a file between LPARs (systems) the data bits travel down to your client – and then across.

When you copy a file **within an LPAR everything happens on the mainframe** (IEBCOPY or a proprietary IBM mainframe copy utility written in C is used).

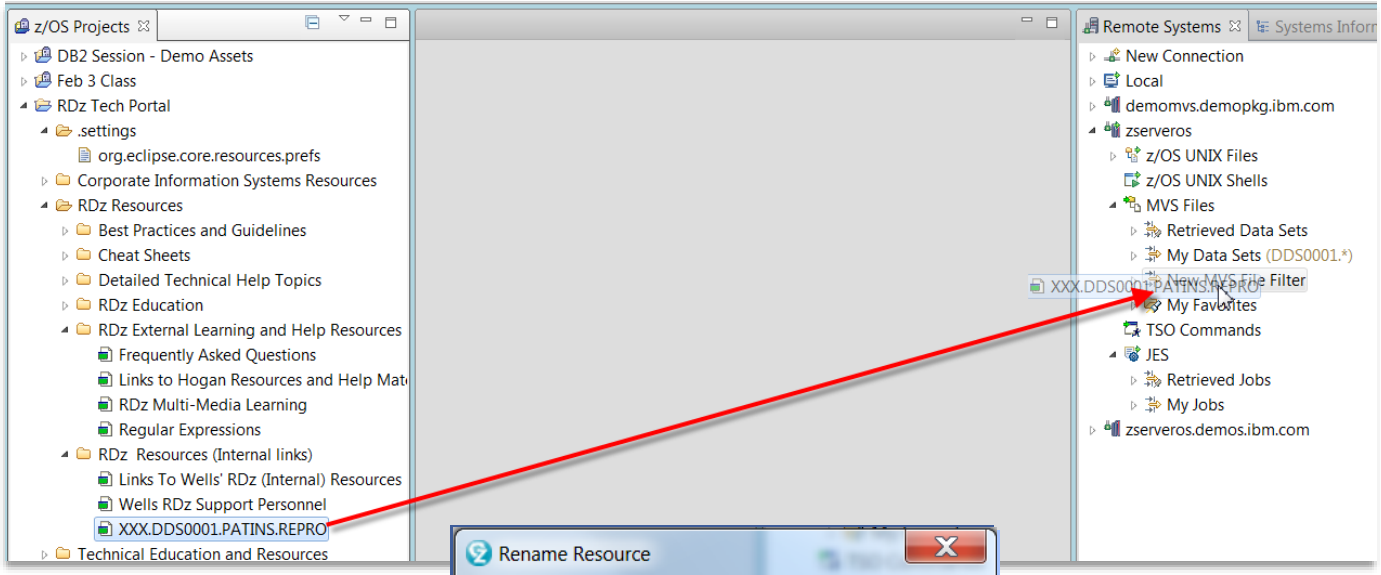
Note also that, **IDz Logging/Auditing tracks dataset movement**.

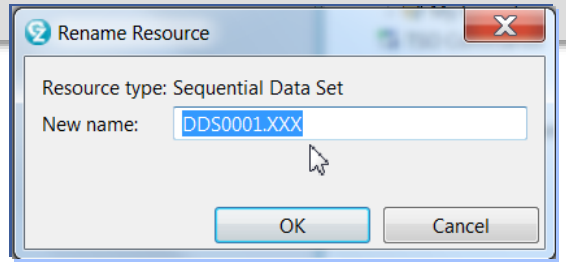
Copy three files from Dallas LPAR to Toronto LPAR



Optional Topic - Copying a Sequential Dataset to MVS from your Workstation

- Do the following:
  - Create an **MVS File Filter**
    - Note that if you do not know how to do this, the course PDF named: **IDz Workbench Module 5 – Remote Systems – Dataset Access and Organization** - contains explicit instructions
  - Drag and Drop your sequential file onto your new File Filter





- You will be prompted for the MVS DSN ➔
- And you'll follow the allocate file wizard…
  - After naming the file, Click **OK** then click **Next >**
  - Click the radio button for: ⊙ Specify characteristics (advanced allocation) and click **Next >**
    - At Advanced Allocation specify the file's DCB
    - (Space/LRECL/BLKSIZE, Dataset Type, etc.)

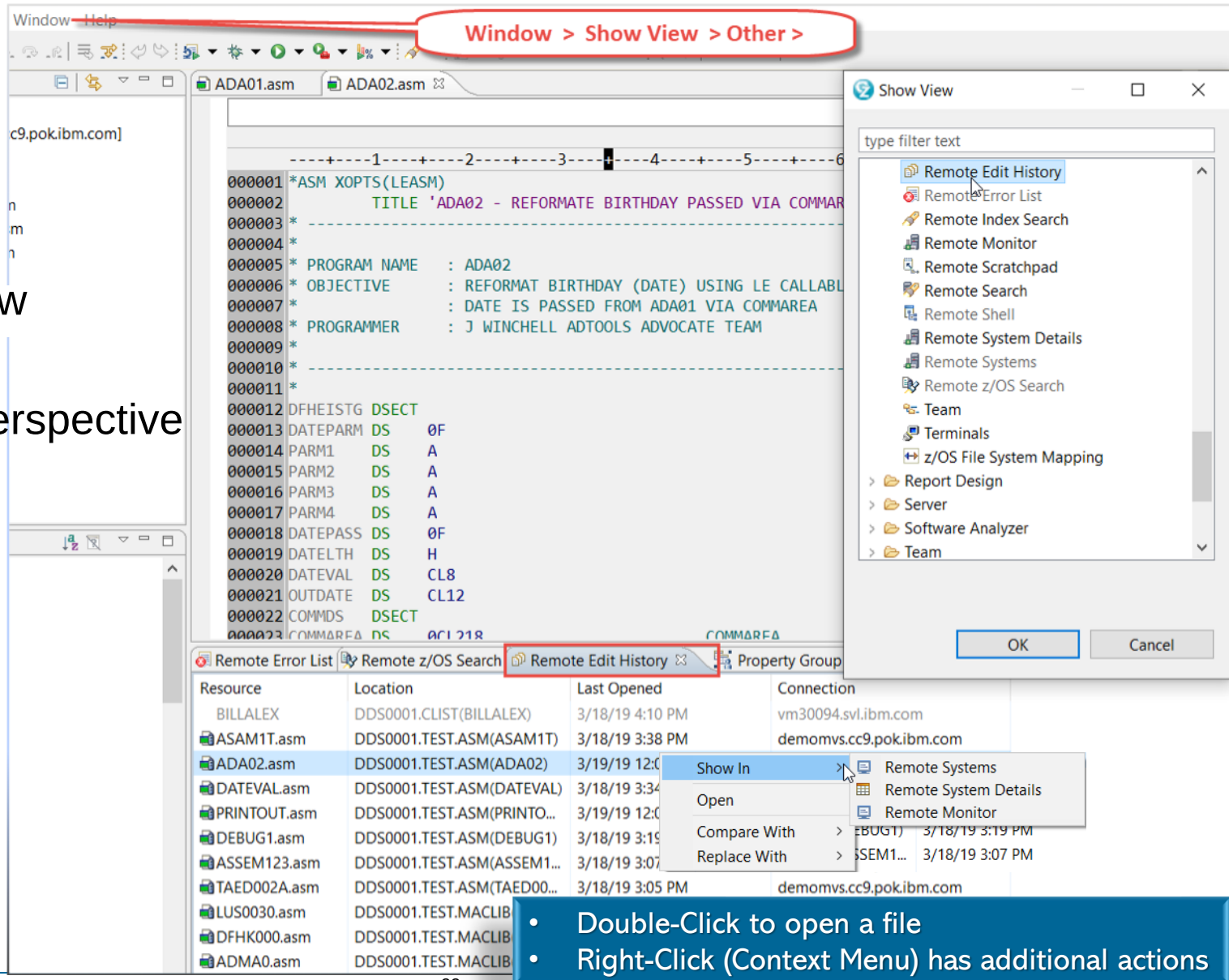
Optional Topic – **Remote Edit History**

Remote Edit History is like “most recently used files” from the Files menu.
But it includes:

- **Location**
- **Last Mod**
- **LPAR**

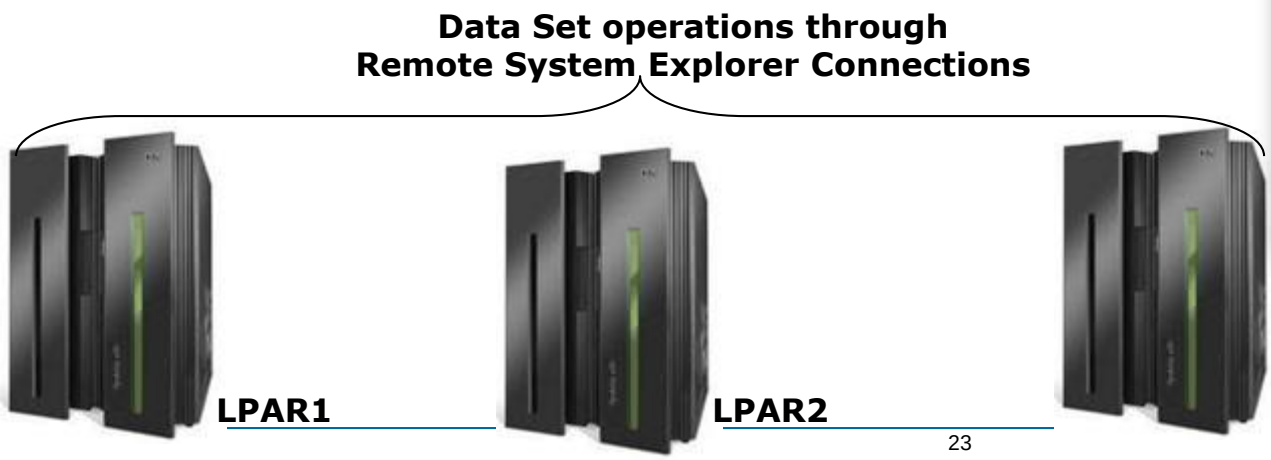
1. Open the view

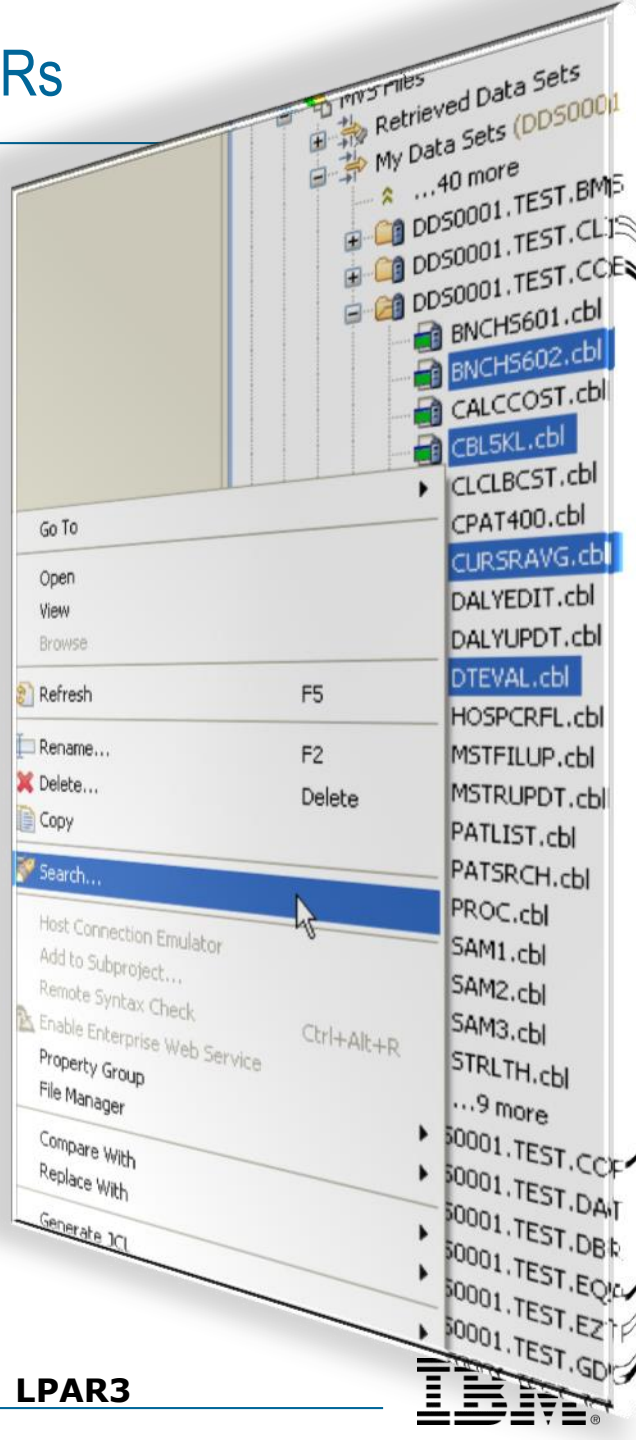
2. Save your Perspective



Optional Topic: RSE Actions on files in different LPARs

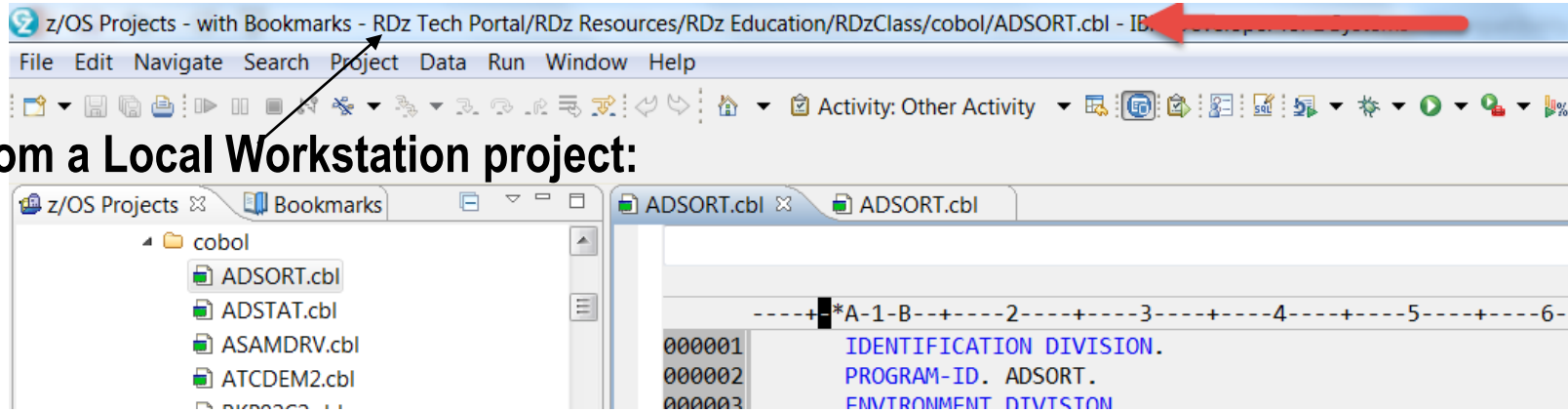
- With RSE you can perform file and member actions across multiple datasets
- Options include:
  - **Edit/Browse/View** files from either LPAR
  - **Rename**
  - **Delete**
  - **Copy/Paste** – QSAM (sequential) files and PDS members between LPARs
  - **Search/Compare** - text search or source file compare
- You can even select and work with multiple files across different mainframe systems





Optional Topic: How do I know where that file came from that I'm editing????

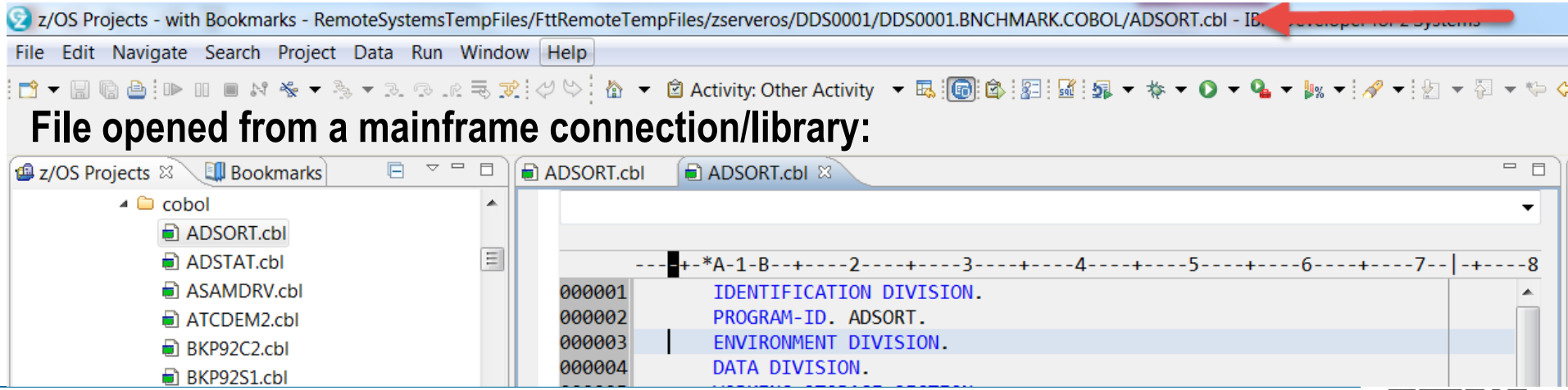
- If you have multiple files in Edit – that are the same program opened from different libraries, LPARS, etc. you can use the Eclipse window header to find original/location



File opened from a Local Workstation project:

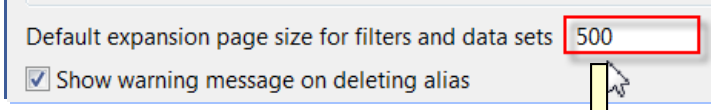
- **Workspace/**
- **IDz Tech Portal/**
- **IDz Resources/**
- **IDzClass/**
- **cobol/**
- **Filename**

Workspace/RemoteSystemsTempFiles/FttRemoteTempFiles/**Connection/TSO-ID/Library/Member-name**



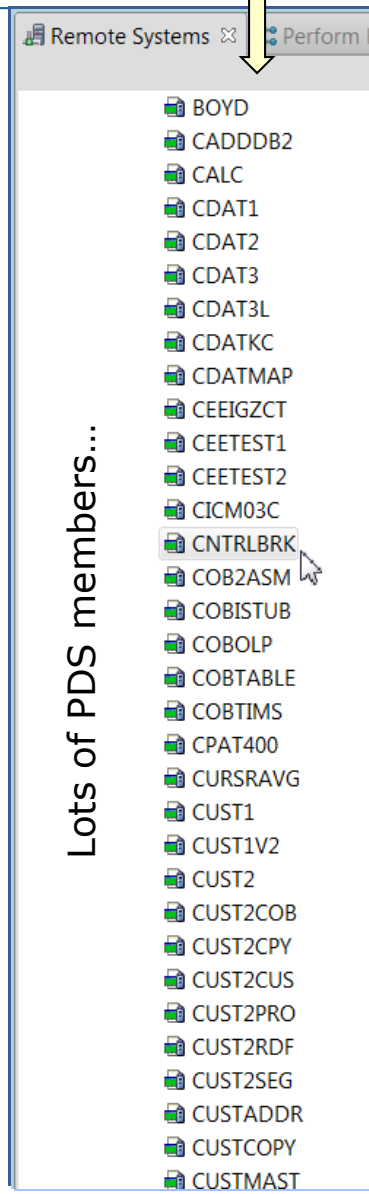
File opened from a mainframe connection/library:

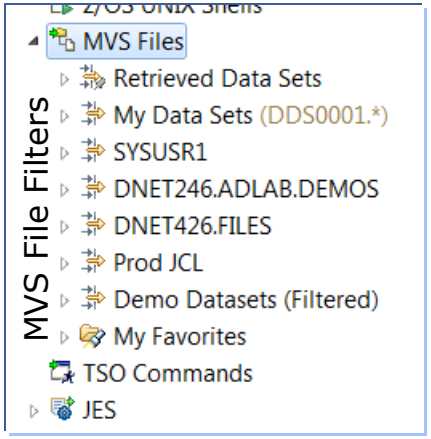
Optional Topic: Collapse long lists of PDS members



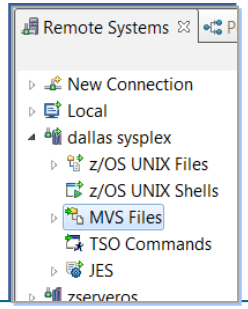
- If you've set your Default expansion page size to a large number it can take a little too long scroll back up (or down) and collapse opened lists

- There is however a simple solution to this problem:
  - Left-click in the list
  - Press the left-arrow key:
    - Twice to collapse to the level of libraries showing
    - Three times to collapse so that only MVS File Filters show
      - MVS File Filters are discussed in an upcoming module
    - Five times to collapse so that only z/OS UNIX, MVS Files, TSO Commands and JES Filters show





← **Left arrow 3X**



← **Left arrow 5X**

Optional Topic: What Happens When You Access a File?

- The first time you open a remote file:
  - The remote file content is downloaded from z/OS to your PC – through the pointer to the file
  - The source lines (records) are translated from EBCDIC to ASCII
  - A copy of the file is ***cached*** on your PC, and subsequent editing reuses the cached file copy (assuming no changes are made to the dataset contents on the host). This:
    - Eliminates redundant (unnecessary) z/OS file downloads and saves MIPS
    - Improves editing performance of opened/copied file
    - Persists across close/re-open of IDz
  - Whether or not to use cached-copy is based on files *"Last Modified"* timestamp
    - **Not available for a sequential data set, or a member with no time stamp (i.e. STATS OFF)**