



IBM Software Group

# IBM Developer for z Systems – for ISPF Developers

## Module 6 – Remote Systems - ISPF 3.x and Batch Job Management



**DevOps**

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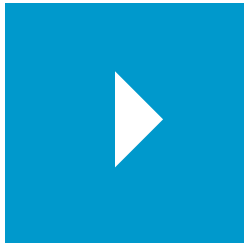
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## UNIT

# The IDz Workbench



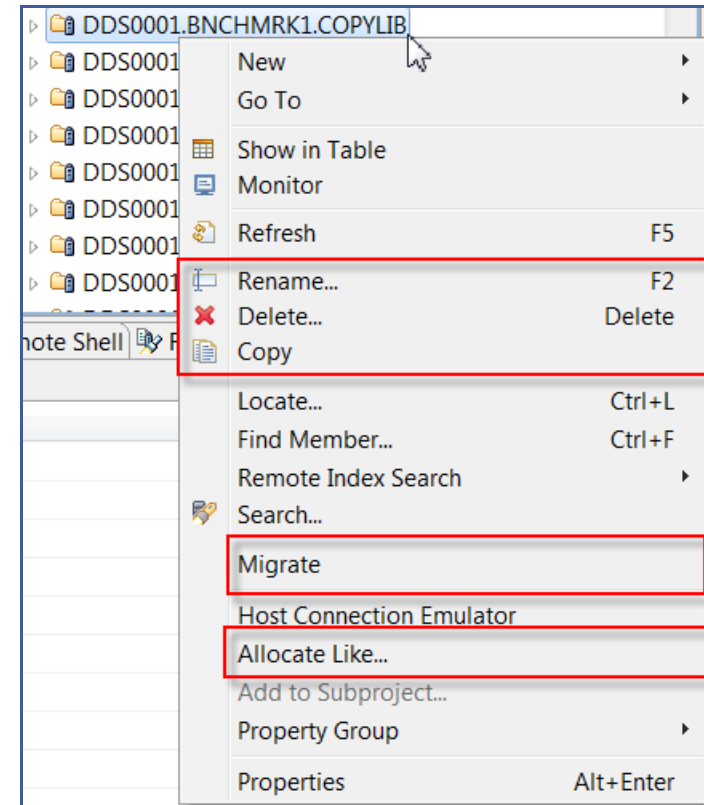
### Topics:

- **z/OS Dataset Management**
- Submit and Manage z/OS Jobs
- Issue TSO Commands From Host Emulation

# What Dataset Management Functions can you do Using IDz?

Using the Remote Systems Context Menu you can:

- Allocate:
  - Sequential dataset
  - PDS
  - Allocate Like (an existing dataset)
- Define Generation Data Group
  - And create Datasets within a GDG
- Migrate and Recall Datasets
- Create VSAM Datasets
  - KSDS
  - ESDS
  - RRDS
- Delete/Copy/Rename:
  - Datasets
  - PDS Members
- For PDS datasets:
  - Copy an entire PDS to your PC
  - Compress a PDS
  - Create new PDS Members

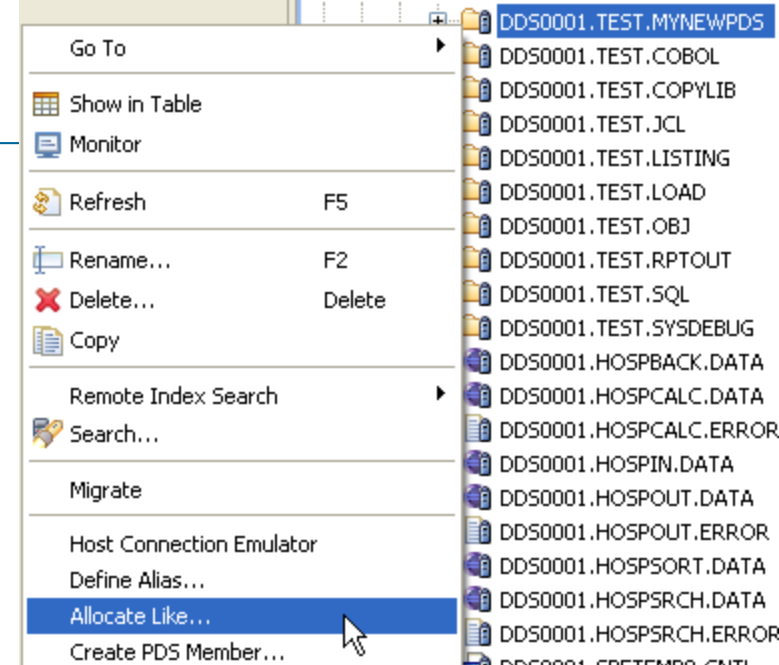


**Note** – when you copy a file between LPARs (systems) the data bits travel down to your client – and then across.

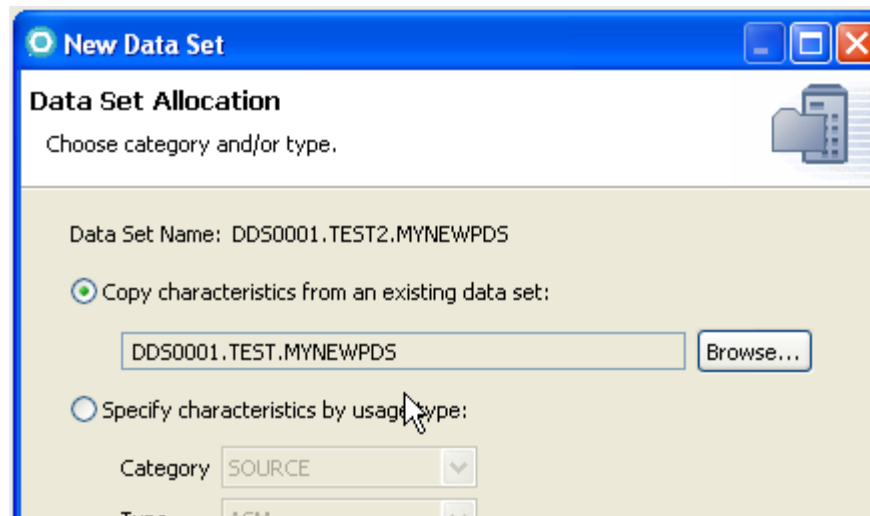
When you copy a file **within an LPAR everything happens on the mainframe** (IEBCOPY or a proprietary IBM mainframe copy utility written in C is used)

# Allocate Like...

- Copies dataset characteristics to be used as a model for new file
  - ▶ DCB (LRECL/DSORG,BLKSIZE)
  - ▶ Space allocation
- From within your LPAR Connection:
  - ▶ Right-click over the MVS dataset you wish to use as the model for Allocate Like
  - ▶ Select **Allocate Like...**
  - ▶ Name the dataset
    - Note that you must have write or allocate authority against the high-level qualifier you choose for the DSN



- ▶ Click **Finish**

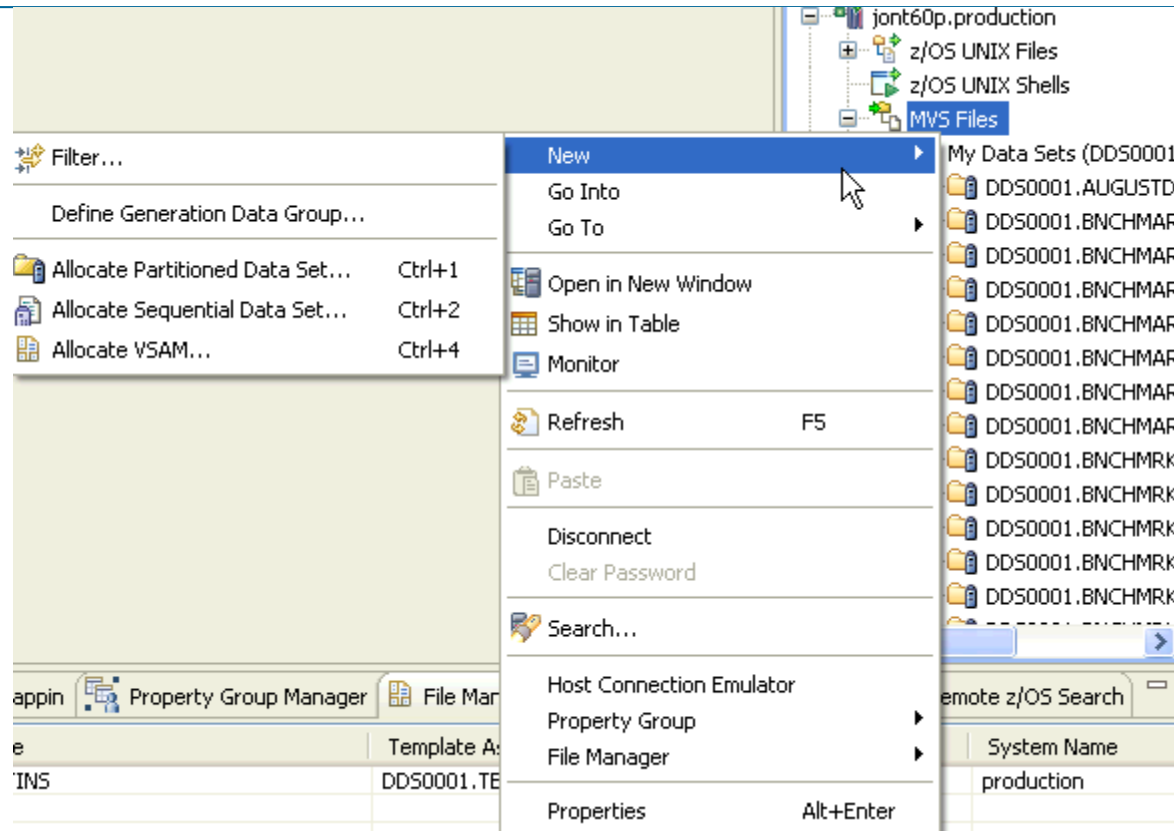


# Defining Brand New Datasets, Libraries, GDGs and VSAM Files

- To access the "new file" wizards (from your connection):

- ▶ Select: **MVS Files**
- ▶ Right-click
- ▶ Select: **New** >
- ▶ Select your option

Dataset wizards will open...specific to your selected option



# Allocate Sequential Dataset – Specify Dataset Characteristics

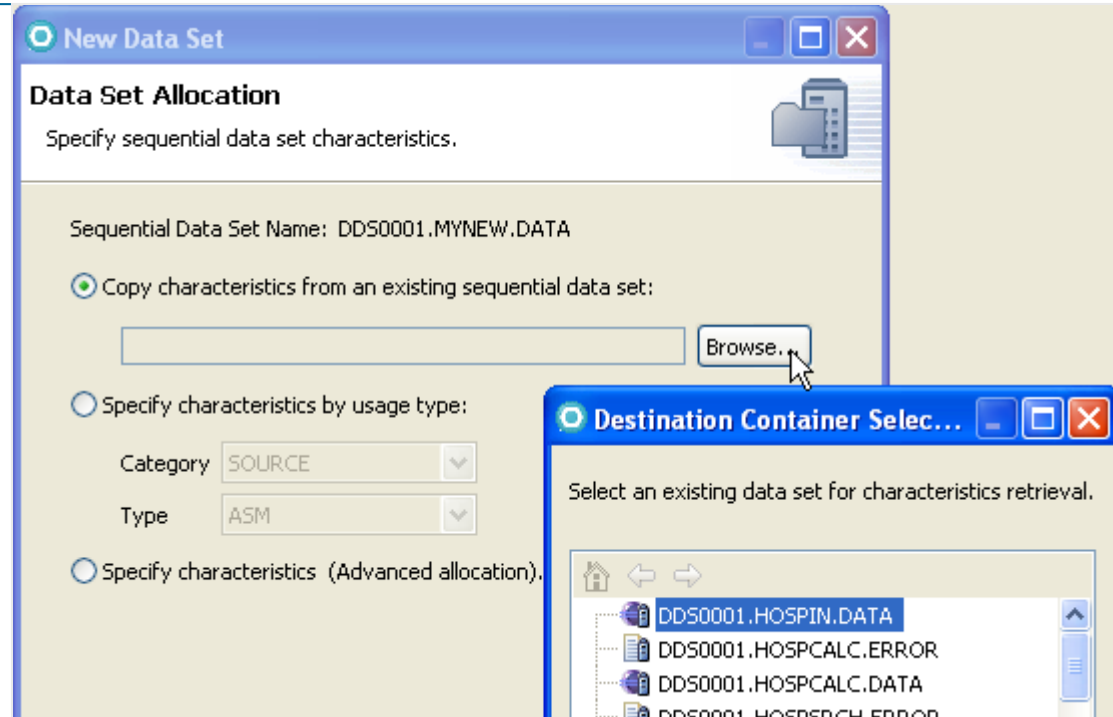
## ■ Three options:

- ▶ "Create like": Copy DCB characteristics from existing dataset

- Click: **Browse**
- Select the dataset to copy the file characteristics from

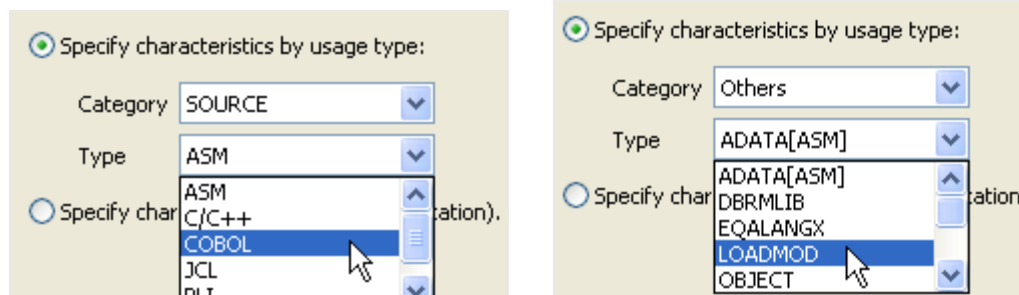
## ▶ Advanced Allocation

- Next slide



## ▶ Create by type:

- Source or a number of other common types



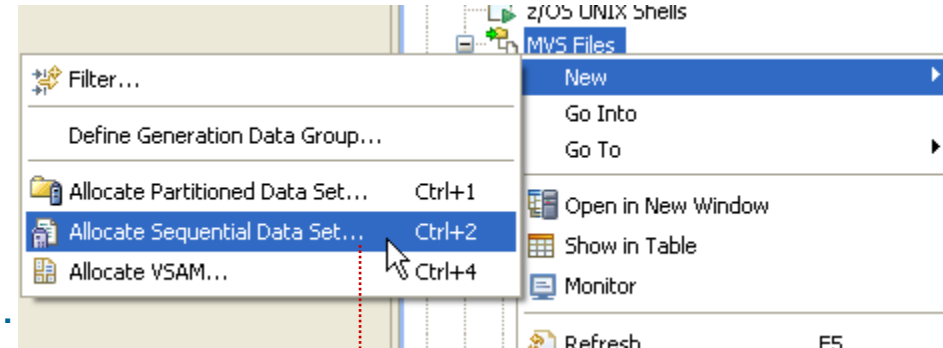
# Allocate Sequential Dataset

- IDz alternative to ISPF 3.2/Allocate function

- From within your connection:

- ▶ Right-click over MVS Files under the connection name and select **New >**
- ▶ Select **Allocate Sequential Dataset...**
- ▶ Name the dataset

- Note that you must have write or allocate authority against the high-level qualifier you choose for the DSN

A screenshot of the 'New Data Set' dialog box. The title bar says 'New Data Set'. The main heading is 'Sequential Data Set Allocation' with the instruction 'Specify the type of sequential data set.' Below this, there are two input fields. The first is 'Host Short Name:' with the value 'DEMOMVS.DEMOPKG.IBM.COM'. The second is 'Data Set Name:' with a dropdown menu showing 'DDS0001' and a text box containing 'MYNEW.DATA'. A red rectangle highlights the 'DDS0001' dropdown. A mouse cursor is pointing at the text box. A red arrow points from the 'Allocate Sequential Data Set...' option in the context menu above to the 'New Data Set' dialog box.

You can select an <HLQ> or you can type directly into the combo box

Click **Next** twice



# Allocate Sequential Dataset – Specify Dataset Characteristics

- Third option (Advanced Allocation) - completely custom characteristics:

The screenshot shows the 'New Data Set' dialog box with the 'Data Set Characteristics' tab selected. The dialog box contains the following fields and values:

Field	Value
Data set name:	DB2.FDS
Volume serial:	DMPU69
Generic unit:	
Space units:	TRACKS
Primary quantity:	6
Secondary quantity:	2
Directory blocks:	0
Record format:	FB
Record length:	1234
Block size:	0
Data set type:	SEQ
Expiration date:	
Extended attribute:	
Number of Generations:	

A callout box with the text 'Click System Managed Storage to specify space characteristics' points to the 'System Managed Storage...' button. The 'System Managed Storage' dialog box is also shown, with the following fields and values:

Field	Value
Data class:	
Storage class:	USRBASE
Management class:	USRMGMT

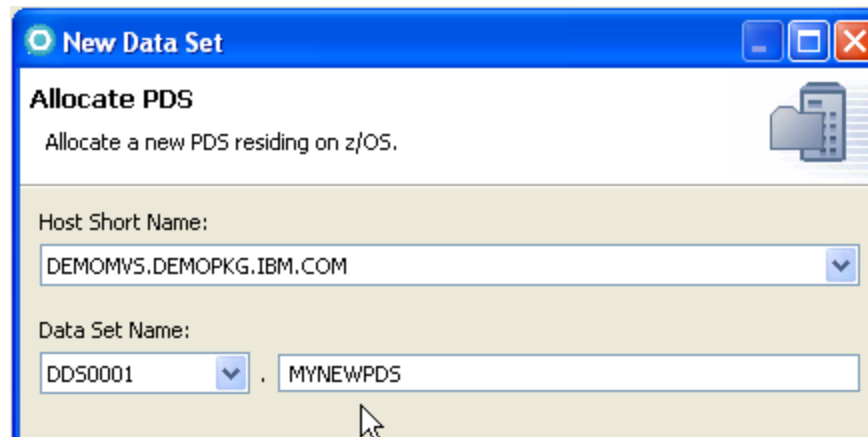
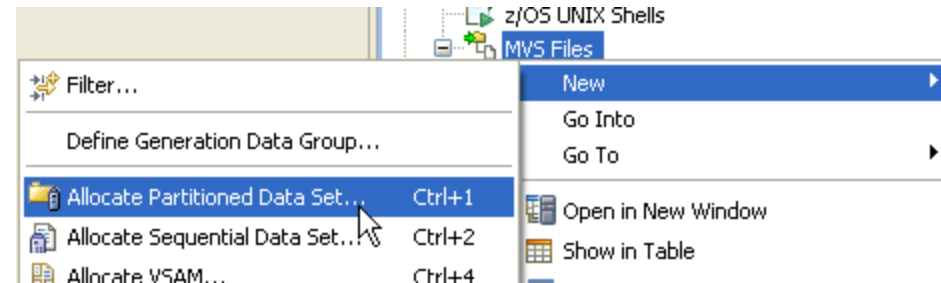
# Allocate PDS (TSO Library)

- IDz alternative to ISPF 3.2

- From within your connection:

- ▶ Right-click over MVS Files under the connection name
- ▶ Select Allocate PDS...
- ▶ Name the PDS

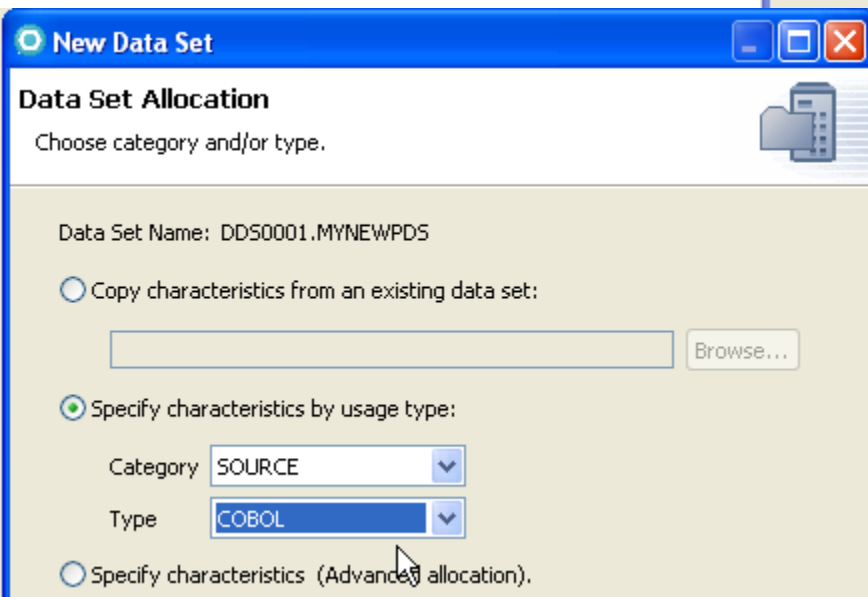
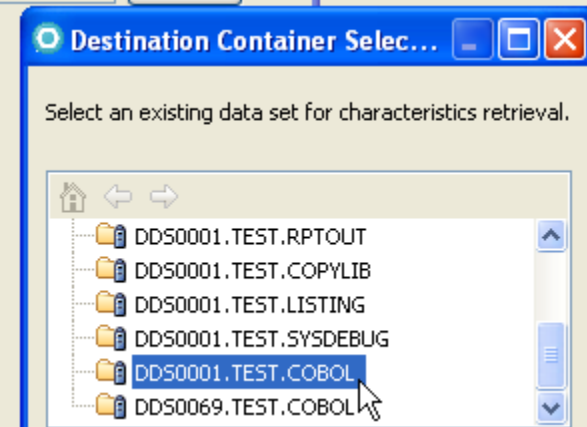
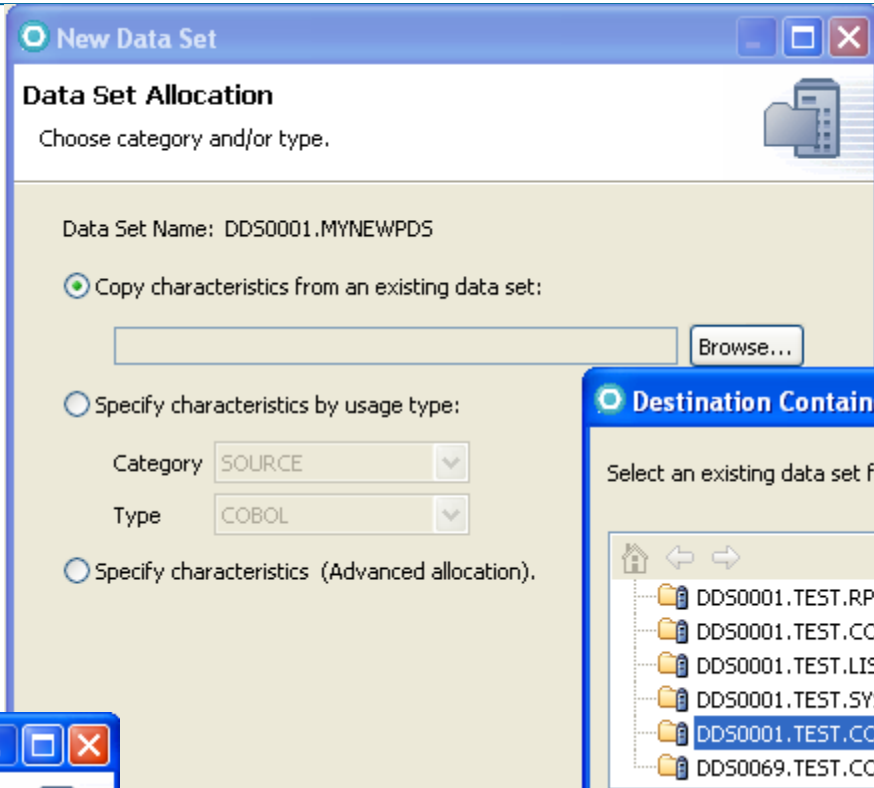
- Note that you must have write or allocate authority against the high-level qualifier you choose for the DSN



▶ Click **Next** >

# Allocate PDS – Specify Dataset Characteristics

- Same three options:
  - "Create like" copy characteristics from existing dataset
  - Advanced Allocation
  - Create by type:  
Source or a number of other common PDS types

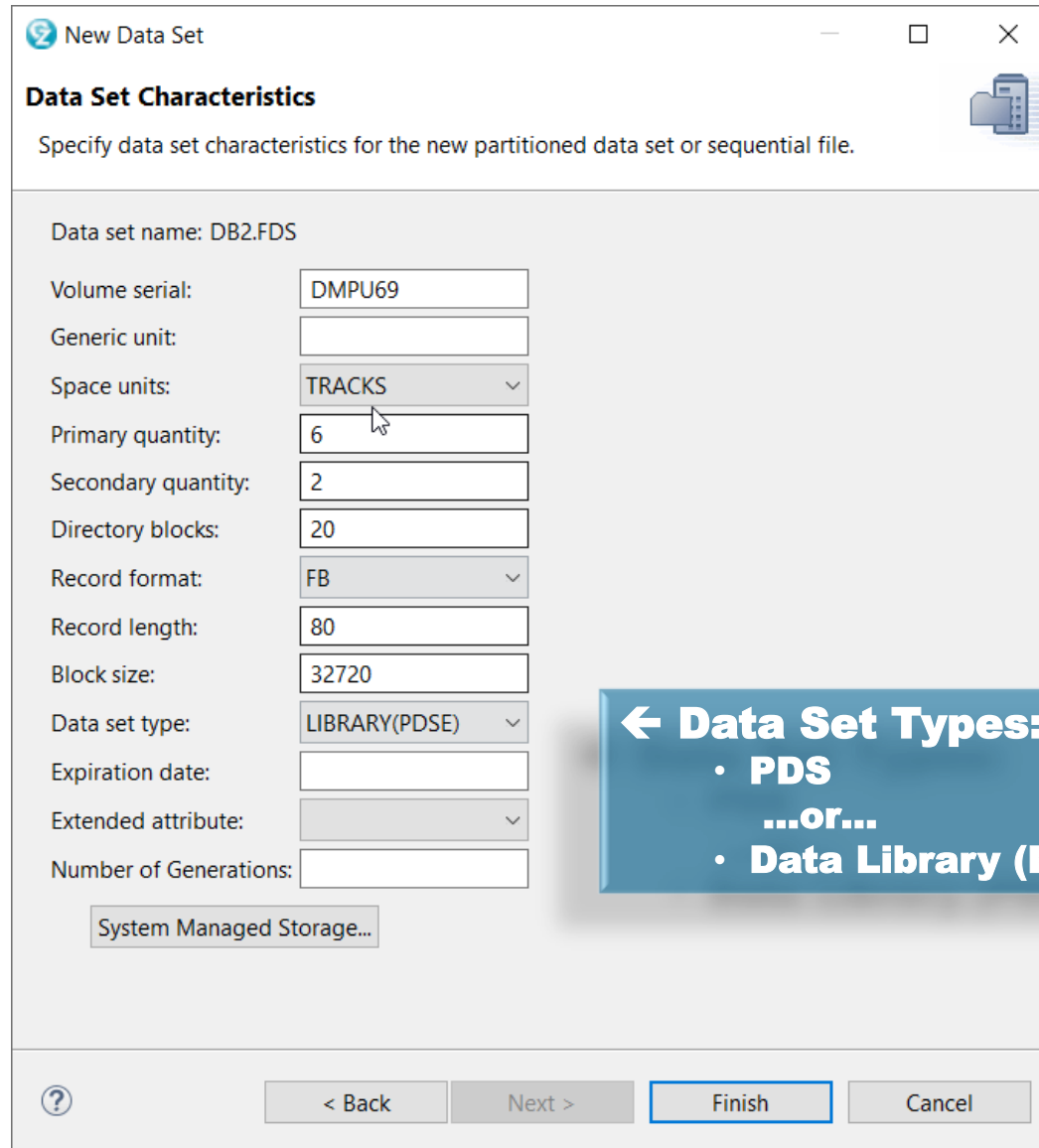


Use Advanced Allocation to customize all elements of DCB including...

- PDS
- PDSE
- PDSE(v2)

# Allocate Partitioned Dataset – Specify Dataset Characteristics

- Third option (Advanced Allocation) – completely custom characteristics:



The screenshot shows the 'New Data Set' dialog box with the 'Data Set Characteristics' tab selected. The dialog is titled 'New Data Set' and contains a sub-header 'Data Set Characteristics' with a printer icon. Below the sub-header is the instruction 'Specify data set characteristics for the new partitioned data set or sequential file.' The main area contains several fields for specifying dataset characteristics:

- Data set name: DB2.FDS
- Volume serial: DMPU69
- Generic unit: (empty)
- Space units: TRACKS (dropdown menu)
- Primary quantity: 6
- Secondary quantity: 2
- Directory blocks: 20
- Record format: FB (dropdown menu)
- Record length: 80
- Block size: 32720
- Data set type: LIBRARY(PDSE) (dropdown menu)
- Expiration date: (empty)
- Extended attribute: (empty)
- Number of Generations: (empty)

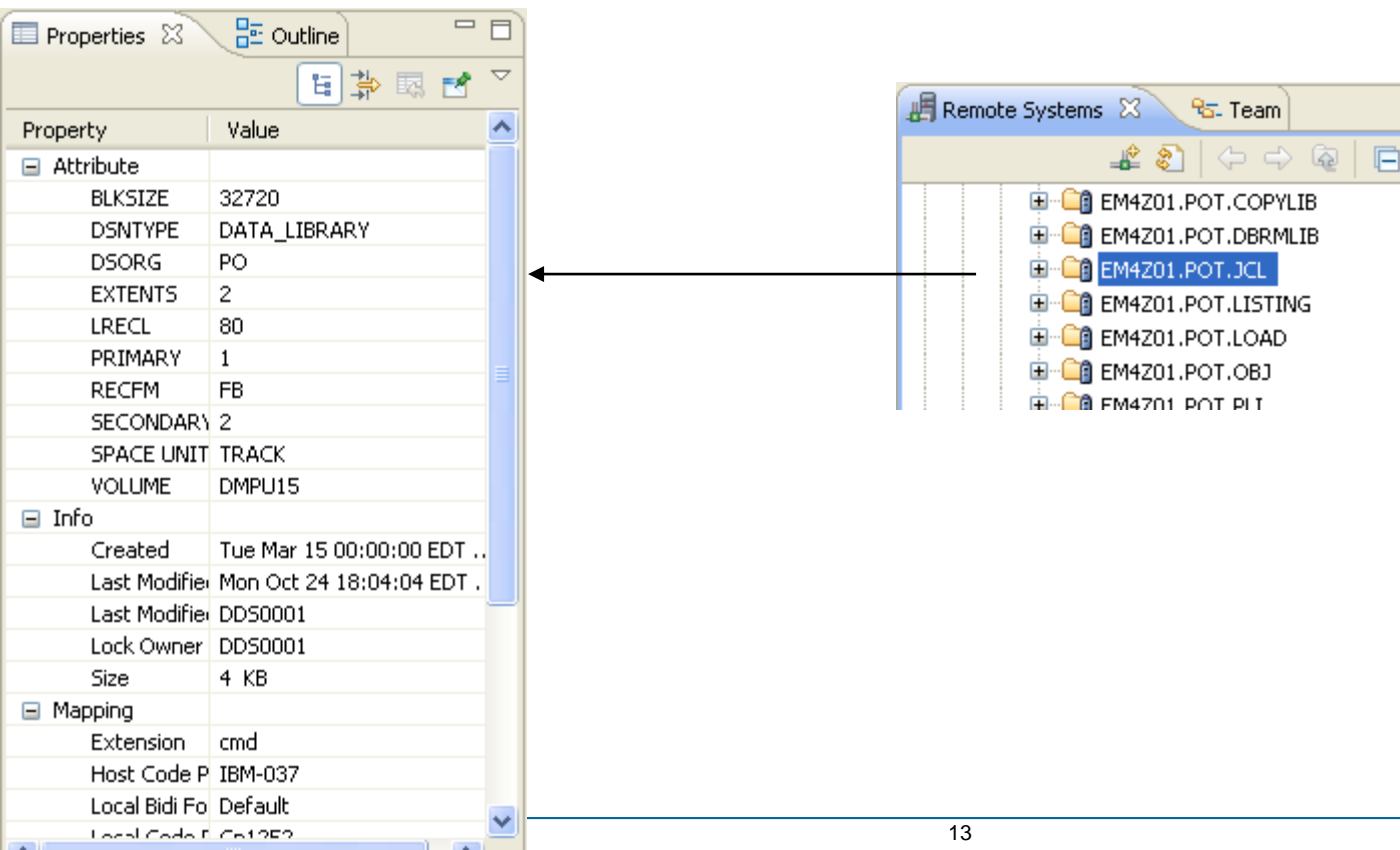
At the bottom of the dialog is a 'System Managed Storage...' button. The bottom of the dialog features a navigation bar with a help icon, '< Back', 'Next >', 'Finish', and 'Cancel' buttons.

← Data Set Types:

- PDS
- ...or...
- Data Library (PDSe)

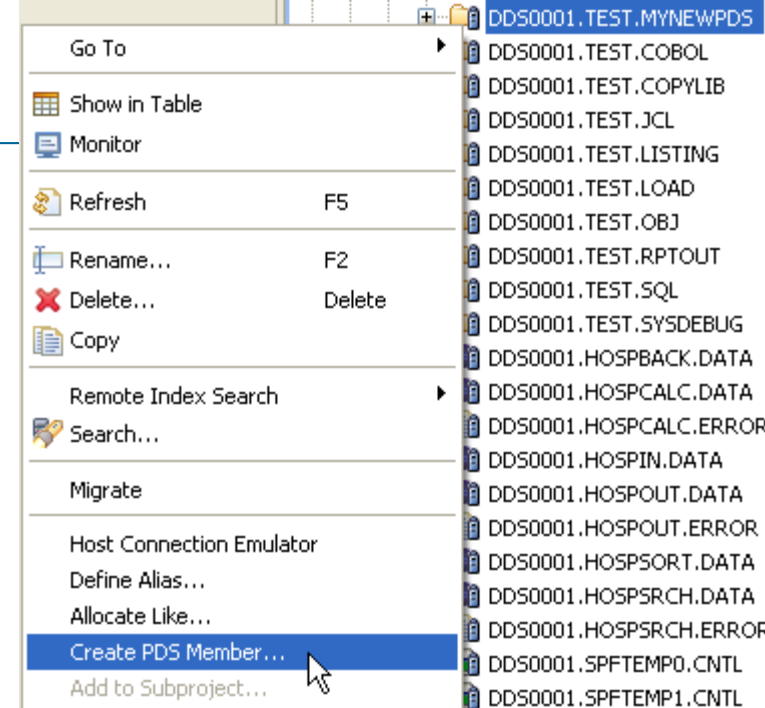
# Getting Existing Dataset Characteristics

- Using ISPF you probably gathered Dataset statistics in Option 3.2
- IDz makes this easier
  - ▶ Click a dataset name in the Remote Systems view
  - ▶ Look at the Properties view

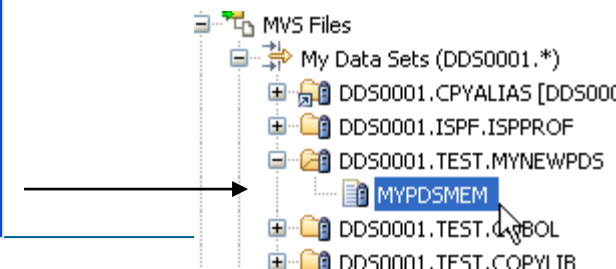
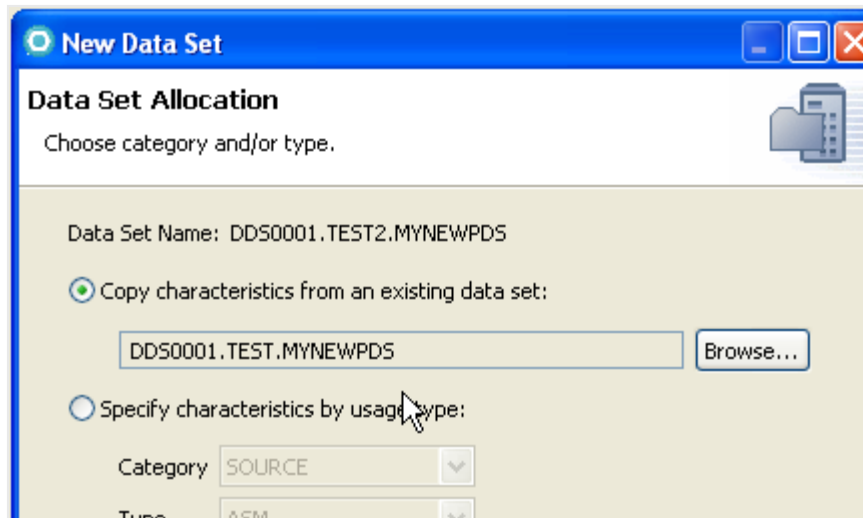


# Create PDS Member

- Creates new PDS members in a:
  - ▶ PDS
  - ▶ PDSE
  - ▶ PDSE(v2)
- From within your connection:
  - ▶ Right-click over the MVS dataset you wish to create the member in
  - ▶ Select **Create PDS Member...**
  - ▶ Name the member
    - Note that you must have enough space and directory blocks available to create new members in the PDS



- Click **Finish**

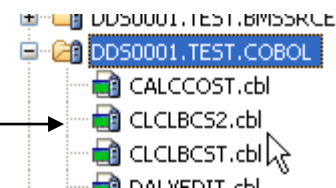
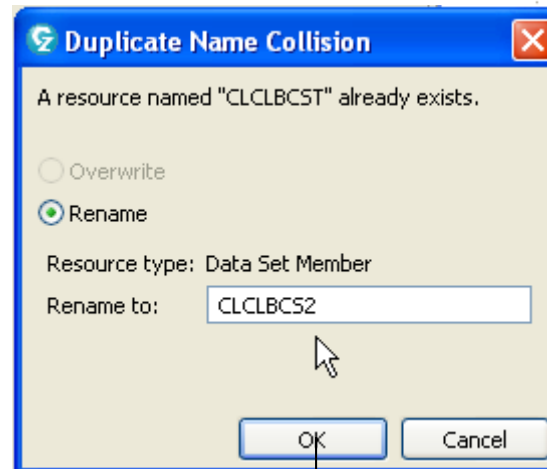
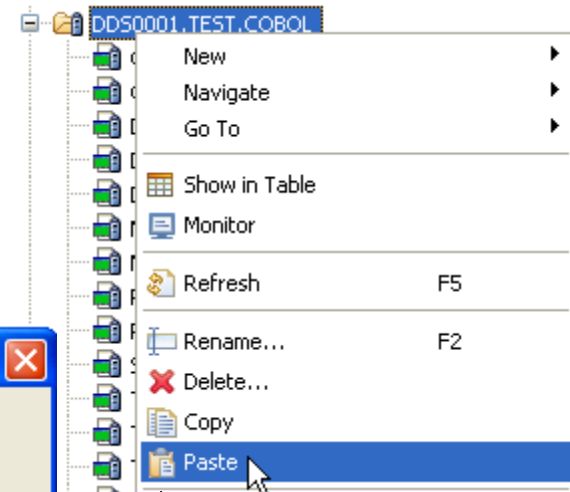
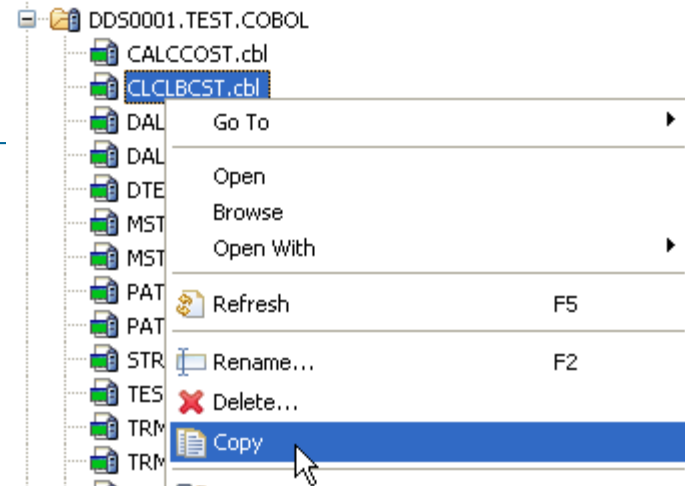


# Copy PDS Members

- Creates new PDS members – copied from an existing library into a:
  - ▶ PDS
  - ▶ PDSE
- From within your connection and from Remote Systems:
  - ▶ Open the "copy-from" library
  - ▶ Select any number of PDS members (press the Ctrl or Shift key to select more than one at a time)
  - ▶ Left-click, hold and drag the members to their destination library ...or...
    1. Press the Right-mouse, and from the Context Menu select **Copy**
    2. Select the destination "copy-to" library
    3. Press the Right-mouse, and from the Context Menu select **Paste**
- **Notes**
  - ▶ You must have enough space and directory blocks available to create new members in the destination PDS
  - ▶ You can copy Load Modules **within a single LPAR**
  - ▶ 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)

# Create New PDS Member by Copy/Paste

- Sometimes you may wish to "clone" a new program based on an existing one
- From within your LPAR Connection and Remote Systems explorer:
  1. Open the "copy-from" library
  2. Select any number of PDS members (press the Ctrl or Shift key to select more than one) – note that in this example we select one member
  3. Right-click, select Copy
  4. Right-click over the PDS name and select Paste
  5. A pop-up will prompt you to rename each member
    - Note that you will need to specify a valid z/OS member name



You can also Copy/Paste an entire PDS - including all (\*) PDS members

From Remote Systems:

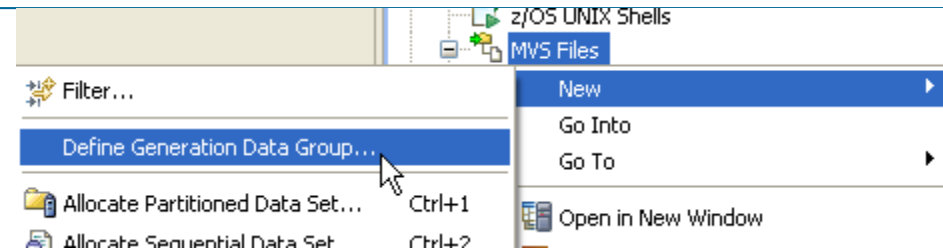
- Right-Click on a PDS and select Copy
- Right-Click on My Data Sets and select Paste



# Define Generation Data Group

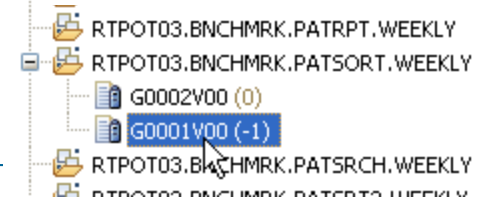
## IDz alternative to IDCAMS

- From within your connection:
  - ▶ Right-click over MVS Files under the connection name
  - ▶ Select Define Generation Data Group ...
  - ▶ Name the dataset
  - ▶ Specify:
    - Limit
      - How many generations to retain
    - Owner ID
      - Defaults to your connection if left blank
    - How long to retain the file
  - ▶ Click **OK**

A screenshot of the 'Define Generation Data Group' dialog box. The dialog has a title bar with a question mark icon, the text 'Define Generation Data Group', and a close button. Inside, there are several fields and options:

- 'Host Short Name:' with a dropdown menu showing 'DEMOMVS.DEMOPKG.IBM.COM'.
- 'Generation Data Group Name:' with a dropdown menu showing 'DDS0001' and a text field containing 'MYGDG.DATASET'.
- A 'Parameters' section containing:
  - 'Limit:' with a text field containing '10'.
  - 'Empty' checkbox (checked).
  - 'Scratch' checkbox (unchecked).
  - 'Owner:' with a text field containing 'DDS0001'.
  - 'Days:' with a radio button selected for 'for' and a text field containing '20', and another radio button for 'to' followed by an empty text field.
- At the bottom, there are 'OK' and 'Cancel' buttons, and a help icon (question mark) on the left.

**GDG file versions displayed as relative numbered members of a dataset**

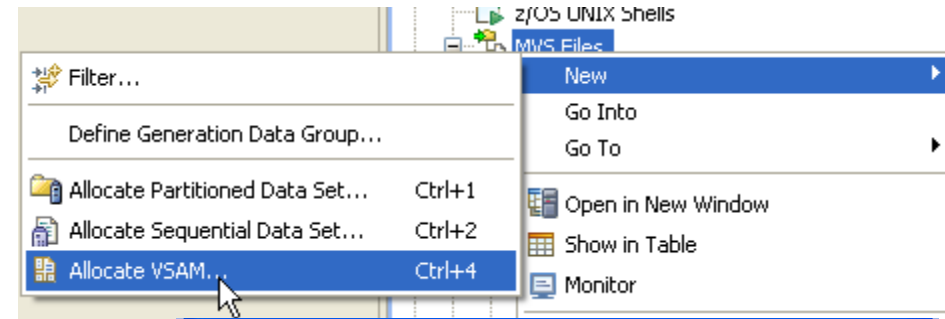


# Allocate VSAM File

- IDz alternative to IDCAMS
- From within your connection:
  - ▶ Right-click over MVS Files under the connection name
  - ▶ Select **Allocate VSAM...**
  - ▶ Name the dataset
  - ▶ Select either Allocate like or Custom
  - ▶ Specify other VSAM properties
    - Note that you will need to understand IDCAMS VSAM specifications
  - ▶ Click **OK**

## IDz v8 Note:

- ▶ Starting at version 8 you can define VSAM files with IDz whether or not your z/OS system has IBM's File Manager product installed
- ▶ Prior to version 8 your z/OS system required File Manager to be installed, in order to define VSAM files using this wizard-driven approach



**New VSAM**

**Allocate Target**  
Allocation Information

Target data set: DD50001.MYVSAM

VSAM type: KSDS Catalog ID:

**VSAM Associations**

Data: DD50001.MYVSAM.DAT

Index: DD50001.MYVSAM.IDX

**VSAM Cluster Attributes**

Key Length: 6 Key Offset:

CI size: Buffer Space:

Share cross region: 1 Share cross system: 3 Reuse: Recovery:

Spanned: Erase: Writecheck:

**VSAM Data Allocation**

Space unit:

Primary units: Secondary units:

Average recsize: Maximum recsize:

Freespace percent CI: Freespace percent CA:

Volume serial or serials:

**VSAM Index Allocation**

CI Size: Space unit:

Primary units: Secondary units:

Volume serial or serials:

**SMS Definitions**

Data class: Storage class:

Management class:

# Allocate Generation Data Set...

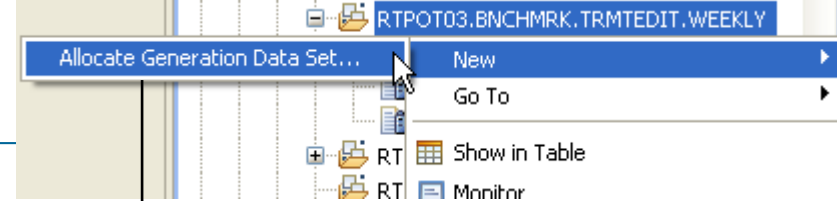
- Copies dataset characteristics to be used for a new sequential file within a GDG model

## Steps to create (from RSE):

- ▶ Right-click over the GDG Model you wish to use as the basis for allocating new sequential files
- ▶ Select: **New > Allocate Generation Data Set...**
- ▶ Specify:
  - Relative generation sequence numbering
  - Absolute dataset name (GnnnnVnn)
- ▶ Click Next – to override the DCB (not typical)
- ▶ Click Finish – to add new sequential file

## Additional considerations for GDGs

- **Properties view shows GDG model characteristics**
- **Show in Table** is useful to display all generations
- Access GDG dataset as any other file under RSE
  - ▶ May require File Manager Interface for EBCDIC data display



Host Name: zserveros.demos.ibm.com

Generation Data Group: RTPOT03.BNCHMRK.TRMTEdit.WEEKLY

Generation Data Set

☒ Relative (+ 1 )

☐ Absolute G V

Properties view shows GDG model characteristics

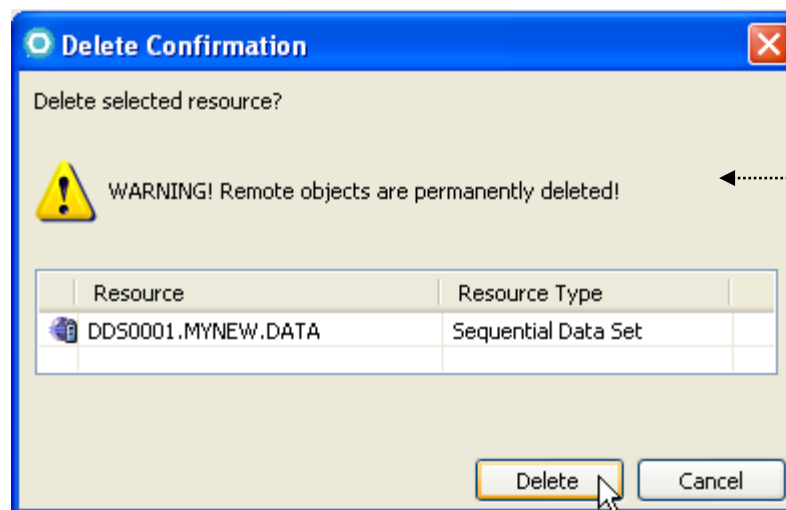
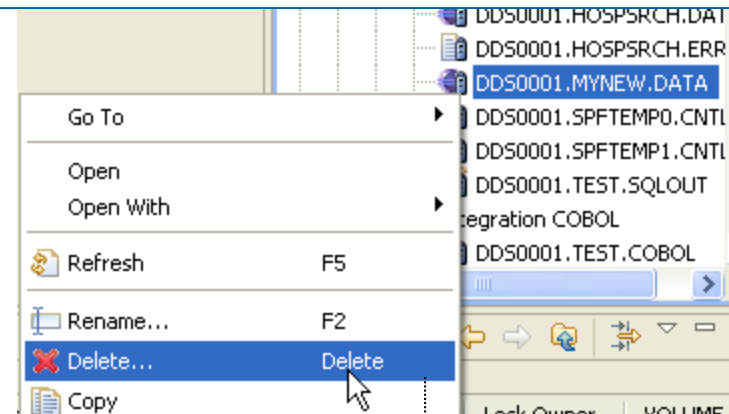
z/OS File System Mapping

Generation Data Group RTPOT03.BNCHMRK.TRMTEdit.WEEKLY

Resource	Extension	Transfer	Host Code ...	Local Code...	Local Bidi F...	Size	Last Modified	Created	Last Modifi...
G0004V00 (0)		text	IBM-037	Cp1252	Default	0 bytes		4/8/11 12:00 AM	
G0003V00 (-1)		text	IBM-037	Cp1252	Default	0 bytes		4/8/11 12:00 AM	
G0002V00 (-2)		text	IBM-037	Cp1252	Default	0 bytes		5/23/10 12:00 AM	
G0001V00 (-3)		text	IBM-037	Cp1252	Default	0 bytes			

# Delete Dataset

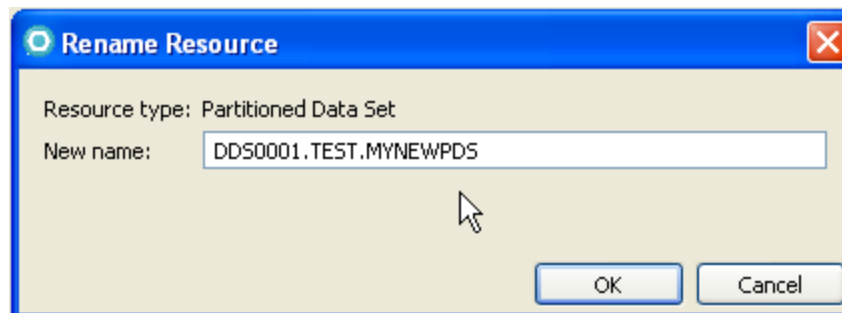
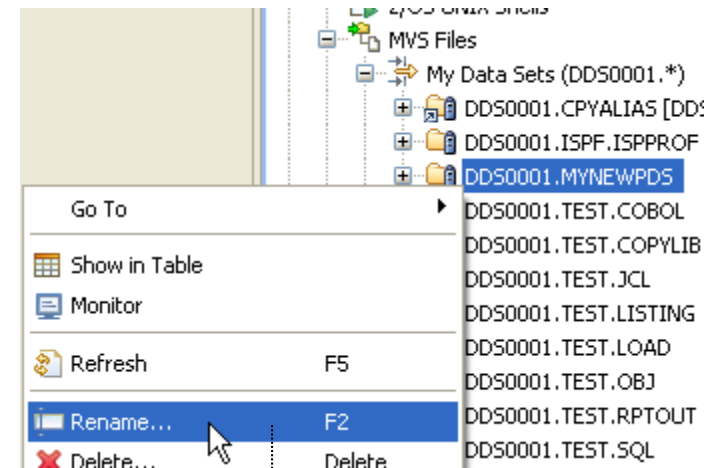
- IDz alternative to ISPF 3.2 delete option
- From within your connection:
  - ▶ Right-click over the file resource you wish to delete:
    - Sequential (QSAM) dataset
    - PDS
    - GDG model and datasets
    - VSAM files
  - ▶ Select **Delete...**
  - ▶ At the Confirm, click:
    - **Delete** ...or...
    - **Cancel**




No need to run IDCAMS JCL to delete VSAM files.

# Rename Dataset

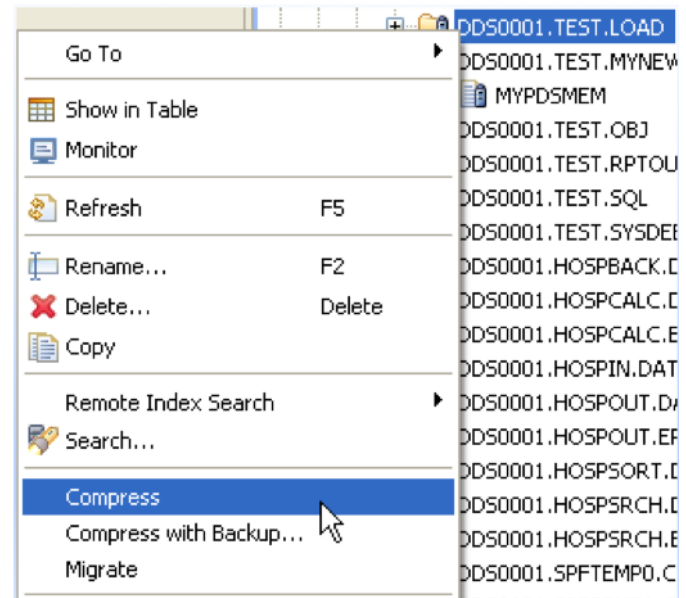
- IDz alternative to ISPF 3.2 rename option
- From within your connection:
  - ▶ Right-click over the file resource you wish to rename:
    - Sequential dataset
    - PDS
    - PDS members
    - GDG
  - ▶ Select **Rename...**
  - ▶ At the Rename Resource prompt:
    - Enter your new name, and click:
      - OK ...or...
      - Cancel



 Note that you can rename multiple datasets or multiple PDS members in a nice tabular form

# Compress a PDS

- IDz alternative to ISPF 3.1 compress option
- From within your connection:
  - ▶ Right-click over the PDS (note... not PDSE – as PDSE files do not need to be compressed) resource you wish to compress:
  - ▶ Select **Compress PDS... or...**
  - ▶ **Compress with Backup...**



By compressing a PDS, TSO cleans up (deletes) the "marked-for-deletion-but-not-deleted" PDS directory entries for the PDS members

# Migrate and Recall a Dataset

- IDz – Remote Systems explorer alternative to DFSMS commands:

- ▶ HRECALL
- ▶ HDELETE
- ▶ MIGRATE

- From within your connection:

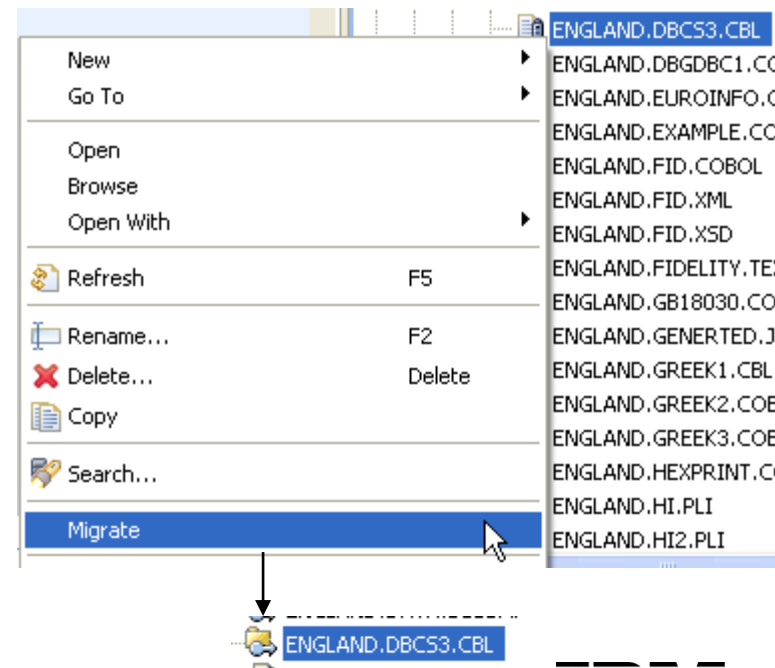
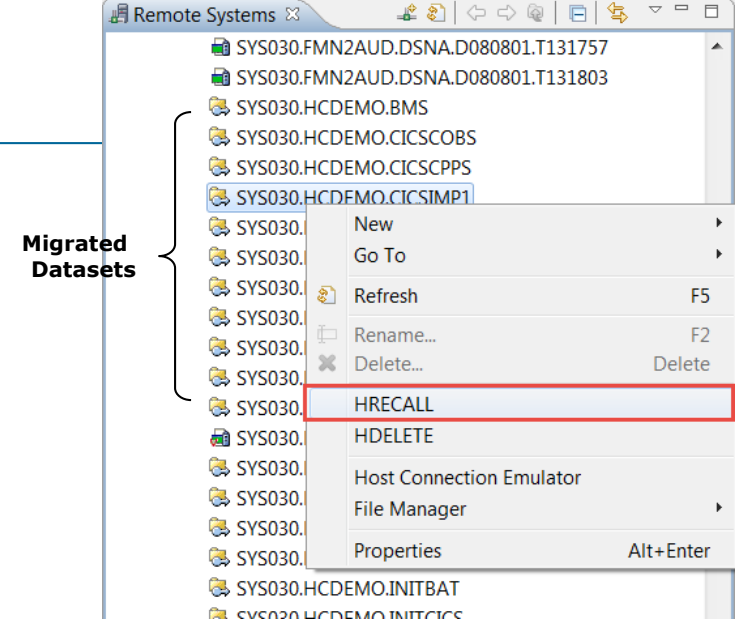
- ▶ Right-click over the migrated dataset you wish to work with:

- Select **HRECALL ... or...**
- **HDELETE**

Note the different RSE icon for migrated files 📁

- ▶ Right-click over the dataset you wish to migrate:

- Select **Migrate**



**Note** – when an HRECALL is submitted, the data is recalled and the icon changes after the RECALL is successful -- there is an **auto refresh** of the RSE entries

# ISPF and Remote Systems Dataset Management Options

ISPF Option	Remote Systems Process or Option
<b>3.1 – Library Utility</b> <ul style="list-style-type: none"> <li>‣ Member list</li> <li>‣ Compress dataset</li> <li>‣ Print entire dataset</li> <li>‣ Print dataset index</li> <li>‣ Dataset information</li> <li>‣ Edit member</li> <li>‣ Browse member</li> <li>‣ Delete member</li> <li>‣ Rename member</li> <li>‣ Print member</li> </ul>	<b>Remote Systems view</b> <ul style="list-style-type: none"> <li>‣ Expand folder</li> <li>‣ Context menu Compress or Compress with Backup</li> <li>‣ <b>N/A – use Menu Manager</b></li> <li>‣ <b>N/A – use Menu Manager</b></li> <li>‣ Properties view</li> <li>‣ Double-click – or Context menu/Open</li> <li>‣ Context menu/Browse</li> <li>‣ Context menu/Delete</li> <li>‣ Context menu/Rename</li> <li>‣ Context menu/Print</li> </ul>
<b>3.2 Dataset Utility</b> <ul style="list-style-type: none"> <li>‣ Allocate Dataset</li> <li>‣ Rename Dataset</li> <li>‣ Delete Dataset</li> <li>‣ Dataset information</li> <li>‣ Catalog</li> <li>‣ Un-catalog</li> <li>‣ VSAM Utilities</li> </ul>	<b>Remote Systems view</b> <ul style="list-style-type: none"> <li>‣ Context menu/Allocate</li> <li>‣ Context menu/Rename</li> <li>‣ Context menu/Delete</li> <li>‣ Properties view</li> <li>‣ <b>N/A – use Menu Manager</b></li> <li>‣ <b>N/A – use Menu Manager</b></li> <li>‣ File Manager (z/OS Problem Determination Tools)</li> </ul>
<b>3.3 Copy Utility</b> <ul style="list-style-type: none"> <li>‣ Copy</li> <li>‣ Move</li> <li>‣ Copy and Print</li> <li>‣ Move and Print</li> </ul>	<b>Remote Systems view</b> <ul style="list-style-type: none"> <li>‣ Drag &amp; Drop, Context menu/Copy → Context menu/Paste</li> <li>‣ Drag &amp; Drop then Delete</li> <li>‣ Drag &amp; Drop – then Print</li> <li>‣ Drag &amp; Drop – then Print, then Delete</li> </ul>