



***ISPF productivity to WebSphere
Developer
for System Z, from the eyes of a
COBOL developer***



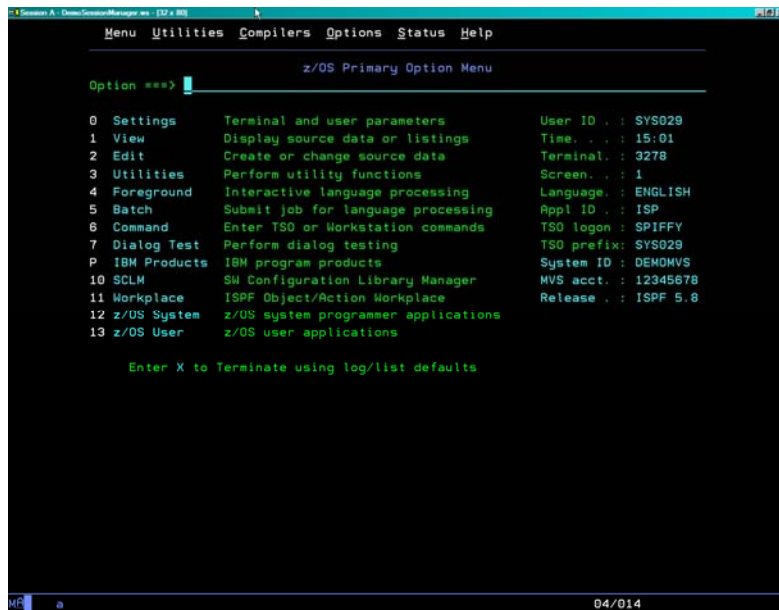
Traditional code running fortune 500 IT shops

- COBOL is still very Active:
 - ▶ An Estimated 5 billion new lines added per year. (TSG Inc.)
 - ▶ 75% of business data is processed in COBOL (Gartner).
 - ▶ There are 180 billion to 200 billion lines of COBOL in use worldwide (Gartner).
 - ▶ 15% of new applications are written in COBOL (Gartner).
 - ▶ "Replacement costs for COBOL systems, estimated at \$25 per line, are in the hundreds of billions of dollars" (Tactical Strategy Group).
 - ▶ COBOL applications process over 80% of all daily business transactions and mainframe platforms store 70% of the all the data

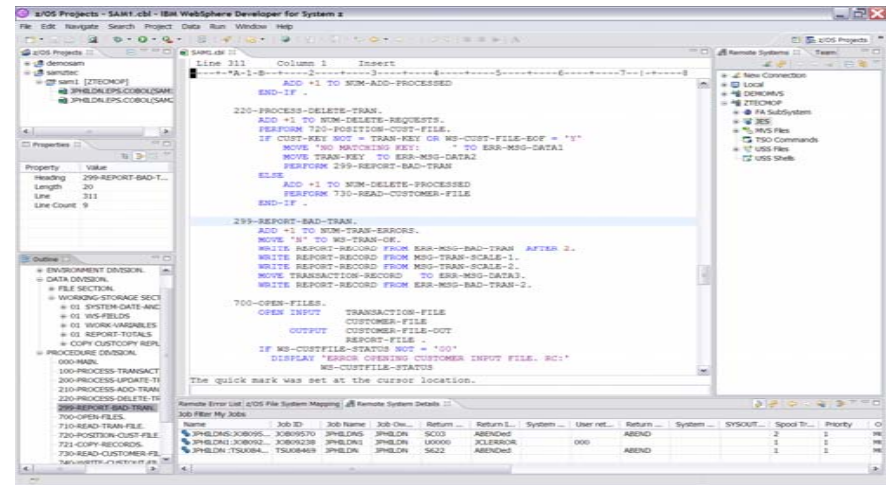
- PL/I is similar but around 25% of the COBOL values above



GREEN TO GUI



A terminal window titled "z/OS Primary Option Menu" showing a list of options for a user. The user ID is SYS029, time is 15:01, terminal is 3278, screen is 1, language is ENGLISH, and application is ISP. The menu includes options like Settings, View, Edit, Utilities, Foreground, Batch, Command, Dialog Test, IBM Products, SCLM, Workplace, z/OS System, and z/OS User. The prompt "Option ==>" is visible at the top left.



A screenshot of the IBM WebSphere Developer for System z IDE. The main editor shows COBOL code with syntax highlighting. The code includes sections for processing transactions, such as "220-PROCESS-DELETE-TRAN" and "299-REPORT-BAD-TRAN". The interface includes a project browser on the left, a properties window, and a job filter table at the bottom.

ISPF TO ECLIPSE

■ ISPF

- ▶ 20 – 30 Years experience
 - Less staff more workload – how to get faster
 - New staff – how to get 20 yrs experience in 2 months
 - **Solution ISPF Productivity Tool**

■ Eclipse

- ▶ Cross platform developers
 - New COBOL staff quickly productive
 - Java staff can program COBOL
 - Cross develop Java, COBOL, PL1 with continuous format
 - **Solution Wdz**



IBM ISPF Productivity Tool



IBM ISPF Productivity Tool Functional Overview

- Enhances ISPF Productivity
 - ▶ Consolidates commands within a single panel
 - ▶ Presents a comprehensive, object-oriented project- related list of data sets
 - ▶ Reduces Keystrokes and EXCP counts
 - ▶ Provides Extensive Point & Shoot capabilities
 - ▶ Extended TSO command execution
 - ▶ Automatic PDS compression and Directory Expansion
 - ▶ Enhanced Print and Clipboard Capabilities
 - ▶ Improves ISPF navigation
 - ▶ SCLM, Librarian, Panvalet Library support
 - ▶ Enhanced patterns for finding data
 - ▶ Powerful Command Shortcuts **NEW V5.9 !!**



DSLISIT ISPF 3.4

Menu Utilities Compilers Options Status Help

z/OS Primary Option Menu

Option ==> 3.4

| | | | | |
|----|--------------|-------------------------------------|---------------|----------|
| 0 | Settings | Terminal and user parameters | User ID . . : | DNET187 |
| 1 | View | Display source data or listings | Time. . . : | 13:53 |
| 2 | Edit | Create or change source data | Terminal. : | 3278 |
| 3 | Utilities | Perform utility functions | Screen. . : | 1 |
| 4 | Foreground | Interactive language processing | Language. : | ENGLISH |
| 5 | Batch | Submit job for language processing | Appl ID . : | ISP |
| 6 | Command | Enter TSO or Workstation commands | TSO logon : | SPIFFY |
| 7 | Dialog Test | Perform dialog testing | TSO prefix: | DNET187 |
| P | IBM Products | IBM program products | System ID : | DEMOMVS |
| 10 | SCLM | SW Configuration Library Manager | MVS acct. : | 12345678 |
| 11 | Workplace | ISPF Object/Action Workplace | Release . : | ISPF 5.8 |
| 12 | z/OS System | z/OS system programmer applications | | |
| 13 | z/OS User | z/OS user applications | | |

Enter X to Terminate using log/list defaults

IPT fits seamlessly into ISPF

Customization of functions can be controlled
at the Global or User level.



IPT - DS List Panel

IPT Adds New Options
And Functions in V5.9

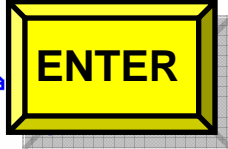
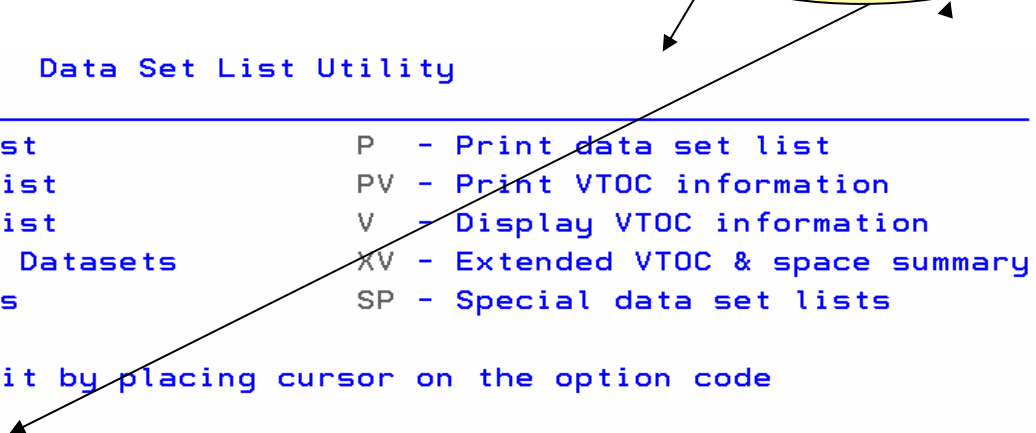
```

-IPT-                               Data Set List Utility
Command ==> █
  DS - Display dataset list          P - Print data set list
blank - Temporary Object List       PV - Print VTOC information
  PL - Permanent Object List        V - Display VTOC information
  GDG - Display Generation Datasets XV - Extended VTOC & space summary
  SET - Set DSLIST defaults         SP - Special data set lists

Enter an option or select it by placing cursor on the option code
Specify parameters below:
  Object List   ==> _____ (* for selection list, = for PROJECT1)
  Dsname Level ==> DNET187.* More? ==> N
  Volume serial ==> _____ (Leave BLANK for catalog scan,
                                volser or pattern for VTOC scan)

Data set list options:
  Initial View ==> 3 : 1. Volume 2. Space 3. Attrib 4. Total

Enter "/" to select option: / Confirm Data Set Delete
                          / Additional Dataset Qualifiers
                          / Display Catalog Name
  
```



List Multiple Qualifiers
List all saved Object List
List Linklist and TSO Allocations

When the list is displayed, enter the "/" line command for a
TSO commands, CLISTS, or REXX execs are

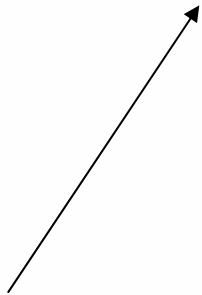
DSLIST in OLIST (Object List) Format

```
-IPT- OLIST (E) ----- LEVEL DNET187.* ----- "A" will display assist
Command      ==>                                     SCROLL ==> PAGE
                                                    *TEMPORARY LIST*
```

| Command | Member | Numbr | Data Set Names / Objects | Volume |
|---------|--------|-------|---|--------|
| | | 1 | 'DNET187.ABX.DB2UTDST' | DMPU24 |
| | | 2 | 'DNET187.ABX.DB2UTSRC' | DMPU29 |
| | | 3 | 'DNET187.ABX.ISPFILE' | DMPU11 |
| | | 4 | 'DNET187.ABX.JCL' | DMPU26 |
| | | 5 | 'DNET187.ABX.REQLIB' | DMPU26 |
| | | 6 | 'DNET187.ABX.TEMP.D070504.T152738.CMD' | DMPU26 |
| | | 7 | 'DNET187.ABX.TEMP.D070504.T152738.CORR' | DMPU24 |
| | | 8 | 'DNET187.ABX.TEMP.D070504.T152738.LOG' | DMPU18 |
| | | 9 | 'DNET187.ABX.TEMP.D070504.T152738.LOG2' | DMPU19 |
| | | 10 | 'DNET187.ABX.TEMP.D070504.T152738.ORG' | DMPU18 |
| | | 11 | 'DNET187.ABX.TEMP.D070504.T152738.XML' | DMPU26 |
| | | 12 | 'DNET187.ABX.TEMP.D070524.T123650.CMD' | DMPU04 |
| | | 13 | 'DNET187.ABX.TEMP.D070524.T123650.CORR' | DMPU18 |
| | | 14 | 'DNET187.ABX.TEMP.D070524.T123650.LOG' | DMPU01 |
| | | 15 | 'DNET187.ABX.TEMP.D070524.T123650.LOG2' | DMPU24 |
| | | 16 | 'DNET187.ABX.TEMP.D070524.T123650.ORG' | DMPU29 |
| | | 17 | 'DNET187.ABX.TEMP.D070524.T123650.XML' | DMPU08 |
| | | 18 | 'DNET187.ABX.TMPFB' | DMPU26 |

Perform Utility Functions
 Compress Datasets
 Add Directory Blocks
 Find Text
 Find Members

Numbered List
 For quick access



Select Dataset using Reference Number

```
-IPT- OLIST (E) ----- LEVEL DNET187.* ----- Row 37 to 54 of 593
Command   ==> 43
Open list ==> DNET187 (or BLANK for reference list)
SCROLL ==> PAGE
```

| Command | Member | Numbr | Data Set Names / Objects | Volume |
|---------|--------|-------|--|--------|
| | | 37 | 'DNET187.ADLAB.DTLOG' | |
| | | 38 | 'DNET187.ADLAB.DTPREF' | |
| | | 39 | 'DNET187.ADLAB.DTSF' | |
| | | 40 | 'DNET187.ADLAB.EQALANGX' | |
| | | 41 | 'DNET187.ADLAB.FILES' | |
| | | 42 | 'DNET187.ADLAB.INSTALL' | |
| | | 43 | 'DNET187.ADLAB.JCL' | |
| | | 44 | 'DNET187.ADLAB.LISTING' | |
| | | 45 | 'DNET187.ADLAB.LOAD' | |
| | | 46 | 'DNET187.ADLAB.LOAD2' | |
| | | 47 | 'DNET187.ADLAB.SOURCE' | |
| | | 48 | 'DNET187.ADLAB.SYSDEBUG' | |
| | | 49 | 'DNET187.ADLAB.TEMPLATE' | |
| | | 50 | 'DNET187.ADLAB.VIEW' | |
| | | 51 | 'DNET187.AHARE.PDS' | |
| | | 52 | 'DNET187.AM.DEMOMVS.DNET187X.D2005061.T092855' | |
| | | 53 | 'DNET187.AM.DEMOMVS.DNET187X.JF96BMVE' | |
| | | 54 | 'DNET187.APA.COBOLST' | |

Save Keystrokes
No need to Tab

Edit of PDS selected

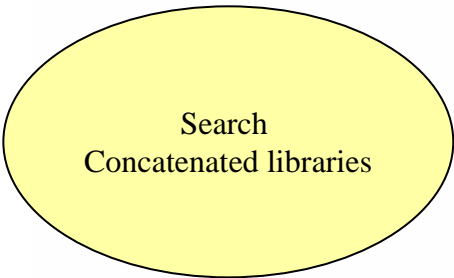
```
-IPT--EDIT L1----- DNET187.ADLAB.JCL ----- "A" will display assist
COMMAND ==>                                SCROLL ==> PAGE
```

| NAME | RENAME | LIB | VV.MM | CREATED | CHANGED | ON VOLUME | DMPU07 | SIZE | INIT | MOD | USERID |
|----------|--------|-----|-------|----------|----------------|-----------|--------|------|------|-----|---------|
| \$JOB | | 1 | | | | | | | | | |
| APAXX | | 1 | 01.01 | 07/06/27 | 07/06/27 13:08 | | | 67 | 67 | 0 | DNET187 |
| BADSTAT | | 1 | 01.00 | 07/05/24 | 07/05/24 08:52 | | | 36 | 36 | 0 | DNET187 |
| BAPAAPI | | 1 | | | | | | | | | |
| BASAM1 | | 1 | | | | | | | | | |
| BASAM1DR | | 1 | 01.00 | 07/05/31 | 07/05/31 13:34 | | | 37 | 37 | 0 | DNET187 |
| BATCDEMO | | 1 | | | | | | | | | |
| BATM01 | | 1 | | | | | | | | | |
| BCOBTIMS | | 1 | | | | | | | | | |
| BCOBVSAM | | 1 | | | | | | | | | |
| BCPROG | | 1 | | | | | | | | | |
| BC01 | | 1 | | | | | | | | | |
| BDTDEMO | | 1 | | | | | | | | | |
| BLABONE | | 1 | | | | | | | | | |
| BLABTWO | | 1 | | | | | | | | | |
| BPLILAN | | 1 | | | | | | | | | |
| BPLIMVS | | 1 | | | | | | | | | |
| BPTM01 | | 1 | | | | | | | | | |
| BSAM1 | | 1 | | | | | | | | | |
| BSAM2 | | 1 | | | | | | | | | |

FindText Command (FT)

```
-IPT- OLIST (E) ----- LEVEL DNET187.* ----- "A" will display assist
Command    ==> ft adlab.load █ SCROLL ==> PAGE
Open list  ==> DNET187 (or BLANK for reference list)
```

| Command | Member | Numbr | Data Set Names / Objects | Volume |
|---------|--------|-------|---|--------|
| | | 1 | 'DNET187.ABX.DB2UTDST' | |
| | | 2 | 'DNET187.ABX.DB2UTSRC' | |
| | | 3 | 'DNET187.ABX.ISPFILE' | |
| | | 4 | 'DNET187.ABX.JCL' | |
| | | 5 | 'DNET187.ABX.REQLIB' | |
| | | 6 | 'DNET187.ABX.TEMP.D070504.T152738.CMD' | |
| | | 7 | 'DNET187.ABX.TEMP.D070504.T152738.CORR' | |
| | | 8 | 'DNET187.ABX.TEMP.D070504.T152738.LOG' | |
| | | 9 | 'DNET187.ABX.TEMP.D070504.T152738.LOG2' | |
| | | 10 | 'DNET187.ABX.TEMP.D070504.T152738.ORG' | |
| | | 11 | 'DNET187.ABX.TEMP.D070504.T152738.XML' | |
| | | 12 | 'DNET187.ABX.TEMP.D070524.T123650.CMD' | |
| | | 13 | 'DNET187.ABX.TEMP.D070524.T123650.CORR' | |
| | | 14 | 'DNET187.ABX.TEMP.D070524.T123650.LOG' | |
| | | 15 | 'DNET187.ABX.TEMP.D070524.T123650.LOG2' | |
| | | 16 | 'DNET187.ABX.TEMP.D070524.T123650.ORG' | |
| | | 17 | 'DNET187.ABX.TEMP.D070524.T123650.XML' | |
| | | 18 | 'DNET187.ABX.TMPFB' | |



Searched 41 datasets to Find Selected Text

```
-IPT- OLIST (E) ----- LEVEL DNET187.* ----- Row 41 to 58 of 593
Command      ==> █ SCROLL ==> PAGE
Open list    ==> DNET187 (or BLANK for reference list)
```

| Command | Member | Numbr | Data Set Names / Objects | Volume |
|-----------|---------|-------|--|--------|
| -TXT FND- | SYSTSIN | 41 | 'DNET187.ADLAB.FILES' | DMPU12 |
| | | 42 | 'DNET187.ADLAB.INSTALL' | |
| | | 43 | 'DNET187.ADLAB.JCL' | |
| | | 44 | 'DNET187.ADLAB.LISTING' | |
| | | 45 | 'DNET187.ADLAB.LOAD' | |
| | | 46 | 'DNET187.ADLAB.LOAD2' | |
| | | 47 | 'DNET187.ADLAB.SOURCE' | |
| | | 48 | 'DNET187.ADLAB.SYSDEBUG' | |
| | | 49 | 'DNET187.ADLAB.TEMPLATE' | |
| | | 50 | 'DNET187.ADLAB.VIEW' | |
| | | 51 | 'DNET187.AHARE.PDS' | |
| | | 52 | 'DNET187.AM.DEMOMVS.DNET187X.D2005061.T092855' | |
| | | 53 | 'DNET187.AM.DEMOMVS.DNET187X.JF96BMVE' | |
| | | 54 | 'DNET187.APA.COBOLST' | |

Positioned at Member

Found in SYSTSIN --> LIB('YOUR-TSO-ID.ADLAB.LOAD') -

Preview

58 'DNET187.APA.REPORT'

Member Find Command (MEMF)

```
-IPT- OLIST (E) ----- LEVEL DNET187.* ----- "A" will display assist
Command    ==> memf atcdem5
Open list  ==> DNET187 (or BLANK for reference list)
SCROLL ==> PAGE
```

| Command | Member | Numbr | Data Set Names / Objects | Volume |
|---------|--------|-------|---|--------|
| | | 1 | 'DNET187.ABX.DB2UTDST' | |
| | | 2 | 'DNET187.ABX.DB2UTSRC' | |
| | | 3 | 'DNET187.ABX.ISPFILE' | |
| | | 4 | 'DNET187.ABX.JCL' | |
| | | 5 | 'DNET187.ABX.REQLIB' | |
| | | 6 | 'DNET187.ABX.TEMP.D070504.T152738.CMD' | |
| | | 7 | 'DNET187.ABX.TEMP.D070504.T152738.CORR' | |
| | | 8 | 'DNET187.ABX.TEMP.D070504.T152738.LOG' | |
| | | 9 | 'DNET187.ABX.TEMP.D070504.T152738.LOG2' | |
| | | 10 | 'DNET187.ABX.TEMP.D070504.T152738.ORG' | |
| | | 11 | 'DNET187.ABX.TEMP.D070504.T152738.XML' | |
| | | 12 | 'DNET187.ABX.TEMP.D070524.T123650.CMD' | |
| | | 13 | 'DNET187.ABX.TEMP.D070524.T123650.CORR' | |
| | | 14 | 'DNET187.ABX.TEMP.D070524.T123650.LOG' | |
| | | 15 | 'DNET187.ABX.TEMP.D070524.T123650.LOG2' | |
| | | 16 | 'DNET187.ABX.TEMP.D070524.T123650.ORG' | |
| | | 17 | 'DNET187.ABX.TEMP.D070524.T123650.XML' | |
| | | 18 | 'DNET187.ABX.TMPFB' | |



Results of MEMF Command

44 Datasets searched !!!
Use # to reference

```
-IPT- OLIST (E) ----- LEVEL DNET187.* ----- Member 593
Command    ==> 44 █ SCROLL ==> PAGE
Open list  ==> DNET187 (or BLANK for reference list)
```

| Command | Member | Numbr | Data Set Names / Objects | Volume |
|-----------|---------|-------|--|--------|
| --FOUND-- | ATCDEM5 | 44 | 'DNET187.ADLAB.LISTING' | DMPU08 |
| | | 45 | 'DNET187.ADLAB.LOAD' | |
| | | 46 | 'DNET187.ADLAB.LOAD2' | |
| | | 47 | 'DNET187.ADLAB.SOURCE' | |
| | | 48 | 'DNET187.ADLAB.SYSDEBUG' | |
| | | 49 | 'DNET187.ADLAB.TEMPLATE' | |
| | | 50 | 'DNET187.ADLAB.VIEW' | |
| | | 51 | 'DNET187.AHARE.PDS' | |
| | | 52 | 'DNET187.AM.DEMOMVS.DNET187X.D2005061.T092855' | |
| | | 53 | 'DNET187.AM.DEMOMVS.DNET187X.JF96BMVE' | |
| | | 54 | 'DNET187.APA.COBOLST' | |
| | | 55 | 'DNET187.APA.COPY' | |
| | | 56 | 'DNET187.APA.DATA' | |
| | | 57 | 'DNET187.APA.JCL' | |

IQIP1030 Member ATCDEM5 found in 'DNET187.ADLAB.LISTING'

61 'DNET187.BOM.CHANGED.OLD'



Browse Result of Member Find

```

-IPT- EDIT DNET187.ADLAB.LISTING(ATCDEM5) - 01.00          Columns 00001 00072
Command ==>                  Scroll ==> PAGE
***** ***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
000001 1PP 5655-G53 IBM Enterprise COBOL for z/OS 3.4.1
000002 0Invocation parameters:
000003 TEST (ALL, SYM, SEPARATE), LIST, MAP, SOURCE, XREF, LIB, DYNAM, NORENT, NOOPT, NOSS
000004 0Options in effect:
000005          NOADATA
000006          ADV
000007          QUOTE
000008          ARITH (COMPAT)
000009          NOAWO
000010          BUFSIZE (4096)
000011          NOCICS
000012          CODEPAGE (1140)
000013          NOCOMPILE (S)
000014          NOCURRENCY
000015          DATA (31)
000016          NODATEPROC
000017          DBCS
000018          NODECK
000019          NODIAGTRUNC

```

Member Selection List (MSL)

- Additional commands available reducing panel navigation
- Powerful Global Find/Change and Find Text Commands
 - ▶ **Supports Concatenations**
- Dynamic PDS Compression and PDS Directory Expansion
- Supports SCLM, Librarian, Panvalet



MSL Member Select List with (A) Assist on Available in PDS or PDSE

```
-IPT--EDIT L1----- DNET187.ADLAB.JCL -----ROW 00001 OF 00078
COMMAND ==> █ SCROLL ==> PAGE
```

ON VOLUME DMPU07

| NAME | RENAME | LIB | VV.MM | CREATED | CHANGED | SIZE | INIT | MOD | USERID |
|------------|--------|-----|-------|---------|---------|------|------|-----|--------|
| \$JOB CARD | | | | | | | | | |
| APAXX | | | | | | | | | |
| BADSTAT | | | | | | | | | |
| BAPAAPI | | | | | | | | | |
| BASAM1 | | | | | | | | | |
| BASAM1DR | | | | | | | | | |
| BATCDEMO | | | | | | | | | |
| BATM01 | | | | | | | | | |
| BCOBTIMS | | | | | | | | | |
| BCOBVSAM | | | | | | | | | |
| BCPROG | | | | | | | | | |
| BC01 | | | | | | | | | |
| BDTDEMO | | | | | | | | | |
| BLABONE | | | | | | | | | |
| BLABTWO | | | | | | | | | |
| BPLILAN | | | | | | | | | |
| BPLIMVS | | | | | | | | | |
| BPTM01 | | | | | | | | | |
| BSAM1 | | | | | | | | | |
| BSAM2 | | | | | | | | | |

```
-----Assist-----
----- -IPT- MSL MAIN COMMANDS -----
Assist COMPRESS CONFIRM DEFault DSName EXCLude
EXIT EXPDIR FILTER Find FindText FLIP
Global INFO LIB LMAP Locate PROJect
QUIT REFRESH RELEase RESet RFind SAVE
SCLm SCLMPARM SET SORT SSI STATS
SUBmit TAG TAILOR TOTALS TYPE UNFilter
USAGE VLF WHERE XFER

----- -IPT- MSL LINE COMMANDS -----
B (browse) C (copy) D (Delete) E (edit) H (where)
I (ISPEXEC) J (submit) K (SCLM) L (lmap) M (move)
P (print) R (rename) S (select) T (TSO) V (view)
W (preview) X (exclude) Z (stats)
= (repeat) % (CLIST/REXX call)

control the assist window.
```

Main and Line Commands Available
Reduces Navigation

Results of MSL LMAP Command

LMAP →

| NAME | RENAME | LIB | SIZE |
|----------|--------|--------|------|
| 1 ADSTAT | | +----- | |
| ASAMDRV | | | |

Obtain Module information
With a command from Member list.

```
-IPT--Module analysis:DNET187.ADLAB.LOAD ----- LINE 00000020 COL 001 080
COMMAND ==>                                     SCROLL ==> PAGE
Commands:Down, End, Find, Up
Member   ==> ADSTAT                               Display mode ==> H (M=Map, H=History)
----- Press END to exit -----
          *****LOAD MODULE PROCESSED EITHER BY VS LINKAGE EDITOR OR BIN
          LISTIDR FOR LOAD MODULE ADSTAT

ADSTAT  MODULE ANALYSIS
          THIS LOAD MODULE CONTAINS NO INFORMATION SUPPLIED BY SP
-----
          THIS LOAD MODULE WAS PRODUCED BY LINKAGE EDITOR 5695PMB01  AT LEVEL 01.
-----

          CSECT          TRANSLATOR          VR.MD
          ADSTAT          5655G5300          34.01          2
          ADSORT          5655G5300          34.01          2
          IGZCBSO          569623400          01.05          2
          PL/X-390          02.03          2
          CEESTART          569623400          01.05          2
          CEEBETBL          569623400          01.05          2
          CEEBLLST          569623400          01.05          2
          CEEBTRM          569623400          01.05          2
          CEEBPUBT          569623400          01.05          2
          CEESG005          569623400          01.05          2
          PL/X-390          02.03          2
```

Clipboard Enhancements

- **Cut And Paste**
 - ▶ Supports up to 200 clipboards
 - ▶ Named and Numbered clipboards for easy access
 - ▶ Clipboards can be saved between sessions



Cut to named clipboard

```

-IPT- EDIT DNET187.APA.JCL (BATCDEMO) - 01.28           Columns 00001 00072
Command ==> CUT TO JOBCARD                          Scroll ==> PAGE
***** Top of Data *****
CC //DNET187C JOB (ACCTG), 'DNET187', CLASS=A, MSGCLASS=H, MSGLEVEL=(1,1),
CC //
000003 //*****
000004 //*
000005 //* BUILD JCL FOR TEST CASE ATCDEMO
000006 //*
000007 //*****
000008 //COMP1 EXEC PGM=IGYCRCTL,
000009 // PARM=( 'OFFSET, LIB, APOST, XREF, MAP, DYNAM, TEST (ALL, SYM, SEP) ' )
000010 //STEPLIB DD DSN=COBOL.V3R3.SIGYCOMP, DISP=SHR
000011 //SYSLIB DD DSN=DNET187.APA.SOURCE, DISP=SHR
000012 //SYSPRINT DD DISP=SHR, DSN=DNET187.CODE.COBOLST (ATCDEMO)
000013 //SYSDEBUG DD DISP=SHR, DSN=DNET187.CODE.SYSDEBUG (ATCDEMO)
000014 //SYSLIN DD DSN=&&TEMOBJ1 (ATCDEMO), DISP=(, PASS), UNIT=SYSDA,
000015 // SPACE=(TRK, (20, 20, 20)), DCB=(BLKSIZE=3120, LRECL=80, DSORG=PO)
000016 //SYSTEM DD DUMMY
000017 //SYSUT1 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000018 //SYSUT2 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000019 //SYSUT3 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000020 //SYSUT4 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000021 //SYSUT5 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))

```

Cut to named or numbered Permanent Clipboards



Clipboard Status Command

```

-IPT- EDIT DNET187.APA.JCL (BATCDEMO) - 01.28                2 to JOBCARD
Command ==> cut sta                                         Scroll ==> PAGE
***** ***** Top of Data *****
000001 //DNET187C JOB (ACCTG), 'DNET187', CLASS=A, MSGCLASS=H, MSGLEVEL=(1,1),
000002 //                REGION=5000K, NOTIFY=DNET187
000003 //*****
000004 //*
000005 //* BUILD JCL FOR TEST CASE ATCDEMO
000006 //*
000007 //*****
000008 //COMP1 EXEC PGM=IGYCRCTL,
000009 // PARM=( 'OFFSET, LIB, APOST, XREF, MAP, DYNAM, TEST (ALL, SYM, SEP) ' )
000010 //STEPLIB DD DSN=COBOL.V3R3.SIGYCOMP, DISP=SHR
000011 //SYSLIB DD DSN=DNET187.APA.SOURCE, DISP=SHR
000012 //SYSPRINT DD DISP=SHR, DSN=DNET187.CODE.COBOLST (ATCDEMO)
000013 //SYSDEBUG DD DISP=SHR, DSN=DNET187.CODE.SYSDEBUG (ATCDEMO)
000014 //SYSLIN DD DSN=&&TEMOBJ1 (ATCDEMO), DISP=(, PASS), UNIT=SYSDA,
000015 // SPACE=(TRK, (20, 20, 20)), DCB=(BLKSIZE=3120, LRECL=80, DSORG=PO)
000016 //SYSTEM DD DUMMY
000017 //SYSUT1 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000018 //SYSUT2 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000019 //SYSUT3 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000020 //SYSUT4 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))
000021 //SYSUT5 DD UNIT=SYSDA, SPACE=(CYL, (1, 1))

```

View all available saved Clipboards

Clipboard Status Results

```
-IPT----- ACTIVE CLIPBOARDS -----
Command ==> █ Scroll ==> CSR
```

```
Command line clipboard selection: 0 to 99 or name
Line commands: B browse C copy E edit P print S select V view
                DEL delete REN rename RES restore SAV save
Press ENTER to process or F3 to cancel.
```

```
5 active clipboards out of 200
Persistent clipboard repository DNET187.ISPF.IPITBLIB
Persistent clipboards marked by *
```

Clip-

| Cmd | board | Records | Size | First line of text in clipboard |
|-----|---------|---------|------|--|
| *.. | DEBUG | 1 | 80 | // PARM= '/TEST(,,TCP/IP&192.168.1.1%8001:)' , |
| *.. | FM | 7 | 80 | //FILEMGR EXEC PGM=FMNMAIN |
| *.. | IEBCOPY | 13 | 80 | //IEBCOPY EXEC PGM=IEBCOPY,REGION=8M,PARM='CMWA=50 |
| ... | JOBCARD | 2 | 133 | //DNET187C JOB (ACCTG), 'DNET187', CLASS=A, MSGCLASS=H |
| *.. | SET | 2 | 80 | // SET COBOLLIB='COBOL.V3R4.SIGYCOMP' COBOL |

Save Frequently used JCL and DD statements and Source code

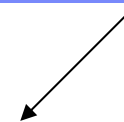
Paste From Named Clipboard

```

-IPT- EDIT DNET187.APA.JCL (NEWJOB) - 01.01                Columns 00001 00072
Command ==> paste from jobcard                          Scroll ==> PAGE
***** ***** Top of Data *****
b          //*****
000002 //*
000003 //* BUILD JCL FOR TEST CASE ATCDEMO
000004 //*
000005 //*****
000006 //COMP1 EXEC PGM=IGYCRCTL,
000007 // PARM= (' OFFSET, LIB, APOST, XREF, MAP, DYNAM, TEST (ALL, SYM, SEP) ')
000008 //STEPLIB DD DSN=COBOL.V3R3.SIGYCOMP, DISP=SHR
000009 //SYSLIB DD DSN=DNET187.APA.SOURCE, DISP=SHR
000010 //SYSPRINT DD DISP=SHR, DSN=DNET187.CODE.COBOLST (ATCDEMO)
000011 //SYSDEBUG DD DISP=SHR, DSN=DNET187.CODE.SYSDEBUG (ATCDEMO)
000012 //SYSLIN DD DSN=&&TEMOBJ1 (ATCDEMO), DISP= (, PASS), UNIT=SYSDA,
000013 // SPACE= (TRK, (20, 20, 20)), DCB= (BLKSIZE=3120, LRECL=80, DSORG=PO)
000014 //SYSTEM DD DUMMY
000015 //SYSUT1 DD UNIT=SYSDA, SPACE= (CYL, (1, 1))
000016 //SYSUT2 DD UNIT=SYSDA, SPACE= (CYL, (1, 1))
000017 //SYSUT3 DD UNIT=SYSDA, SPACE= (CYL, (1, 1))
000018 //SYSUT4 DD UNIT=SYSDA, SPACE= (CYL, (1, 1))
000019 //SYSUT5 DD UNIT=SYSDA, SPACE= (CYL, (1, 1))
000020 //SYSUT6 DD UNIT=SYSDA, SPACE= (CYL, (1, 1))
000021 //SYSUT7 DD UNIT=SYSDA, SPACE= (CYL, (1, 1))

```

Jobcard added



```

-IPT- EDIT DNET187.APA.JCL (NEWJOB) - 01.02                    2 from JOBCARD
Command ==>  Scroll ==> PAGE
***** Top of Data *****
000001 //DNET187C JOB (ACCTG), 'DNET187', CLASS=A, MSGCLASS=H, MSGLEVEL=(1,1),
000002 //                                REGION=5000K, NOTIFY=DNET187
000003 //*****
000004 //*
000005 //* BUILD JCL FOR TEST CASE ATCDEMO
000006 //*
000007 //*****
000008 //COMP1 EXEC PGM=IGYCRCTL,
000009 // PARM=( 'OFFSET, LIB, APOST, XREF, MAP, DYNAM, TEST (ALL, SYM, SEP) ' )
000010 //STEPLIB DD DSN=COBOL.V3R3.SIGYCOMP, DISP=SHR
000011 //SYSLIB DD DSN=DNET187.APA.SOURCE, DISP=SHR
000012 //SYSPRINT DD DISP=SHR, DSN=DNET187.CODE.COBOLST(ATCDEMO)
000013 //SYSDEBUG DD DISP=SHR, DSN=DNET187.CODE.SYSDEBUG(ATCDEMO)
000014 //SYSLIN DD DSN=&&TEMOBJ1(ATCDEMO), DISP=(,PASS), UNIT=SYSDA,
000015 // SPACE=(TRK,(20,20,20)), DCB=(BLKSIZE=3120, LRECL=80, DSORG=PO)
000016 //SYSTEM DD DUMMY
000017 //SYSUT1 DD UNIT=SYSDA, SPACE=(CYL,(1,1))
000018 //SYSUT2 DD UNIT=SYSDA, SPACE=(CYL,(1,1))
000019 //SYSUT3 DD UNIT=SYSDA, SPACE=(CYL,(1,1))
000020 //SYSUT4 DD UNIT=SYSDA, SPACE=(CYL,(1,1))
000021 //SYSUT5 DD UNIT=SYSDA, SPACE=(CYL,(1,1))
    
```


Point and Shoot

- **Active from Member Selection List, Object List**
 - ▶ Sort on column headings (MSL)
 - ▶ Sort Titles in Object List

- **Edit, Browse or View Datasets from SDSF, File Manager, Fault Analyzer (Any ISPF application)**
 - ▶ Point and Shoot Dataset in JCL or Output Listings
 - ▶ Point and Shoot Member names in source or JCL



Enhanced TSO Commands

- Supports 999 entries
- Maintains a History and Permanent Command List
- Save permanent list of most frequently used commands for repeat operations
 - ▶ Execute TSO commands from any panel by a reference number

Add Directory Blocks to PDS

```
-IPT--EDIT L1----- DNET187.ADLAB.JCL -----
```

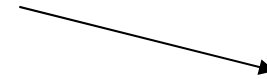
```
COMMAND ==> expdir █
```

```
SCROLL ==> PAGE
```

| NAME | RENAME | LIB | VV.MM | CREATED | CHANGED | ON VOLUME | SIZE | DMPU07 | INIT | MOD | USERID |
|------------|--------|-----|-------|----------|----------------|-----------|------|--------|------|-----|---------|
| \$JOB CARD | | 1 | | | | | | | | | |
| APAXX | | 1 | 01.01 | 07/06/27 | 07/06/27 13:08 | | 67 | | 67 | 0 | DNET187 |
| BADSTAT | | 1 | 01.00 | 07/05/24 | 07/05/24 08:52 | | 36 | | 36 | 0 | DNET187 |
| BAPAAPI | | 1 | | | | | | | | | |
| BASAM1 | | 1 | | | | | | | | | |
| BASAM1DR | | 1 | 01.00 | 07/05/31 | 07/05/31 13:34 | | 37 | | 37 | 0 | DNET187 |
| BATCDEMO | | 1 | | | | | | | | | |
| BATM01 | | 1 | | | | | | | | | |
| BCOBTIMS | | 1 | | | | | | | | | |
| BCOBVSAM | | 1 | | | | | | | | | |
| BCPROG | | 1 | | | | | | | | | |
| BC01 | | 1 | | | | | | | | | |
| BDTDEMO | | 1 | | | | | | | | | |
| BLABONE | | 1 | | | | | | | | | |
| BLABTWO | | 1 | | | | | | | | | |
| BPLILAN | | 1 | | | | | | | | | |
| BPLIMVS | | 1 | | | | | | | | | |
| BPTM01 | | 1 | | | | | | | | | |
| BSAM1 | | 1 | | | | | | | | | |
| BSAM2 | | 1 | | | | | | | | | |

EXPDIR Command will add Directory Blocks when PDS Directory is full

Library Expanded



```
-IPT--EDIT L1----- DNET187.ADLAB.JCL ----- Library expanded
COMMAND ==> █ SCROLL ==> PAGE
```

| NAME | RENAME | LIB | VV.MM | CREATED | CHANGED | ON VOLUME | SIZE | DMPU07 | INIT | MOD | USERID |
|------------|--------|-----|-------|----------|----------------|-----------|------|--------|------|-----|---------|
| \$JOB CARD | | 1 | | | | | | | | | |
| APAXX | | 1 | 01.01 | 07/06/27 | 07/06/27 13:08 | | 67 | | 67 | 0 | DNET187 |
| BADSTAT | | 1 | 01.00 | 07/05/24 | 07/05/24 08:52 | | 36 | | 36 | 0 | DNET187 |
| BAPAAPI | | 1 | | | | | | | | | |
| BASAM1 | | 1 | | | | | | | | | |
| BASAM1DR | | 1 | 01.00 | 07/05/31 | 07/05/31 13:34 | | 37 | | 37 | 0 | DNET187 |
| BATCDEMO | | 1 | | | | | | | | | |
| BATM01 | | 1 | | | | | | | | | |
| BCOBTIMS | | 1 | | | | | | | | | |
| BCOBVSAM | | 1 | | | | | | | | | |
| BCPROG | | 1 | | | | | | | | | |
| BC01 | | 1 | | | | | | | | | |
| BDTDEMO | | 1 | | | | | | | | | |
| BLABONE | | 1 | | | | | | | | | |
| BLABTWO | | 1 | | | | | | | | | |
| BPLILAN | | 1 | | | | | | | | | |
| BPLIMVS | | 1 | | | | | | | | | |
| BPTM01 | | 1 | | | | | | | | | |
| BSAM1 | | 1 | | | | | | | | | |
| BSAM2 | | 1 | | | | | | | | | |

Added 1 block as default
Additional parms available



Library Compression

```
IEC031I D37-04, IFG0554P, DNET187, SPIFFY, ISP04284, 072D, DMPU13, DNET187. JCL. CNTL1  
*** █
```

We have all seen this message when editing a PDS. You would have to cancel your Edit session and go to a utility panel to compress your PDS !!

IPT will position the Compress command on Command and Compress the dataset from your EDIT session

Compress Command added by IPT

```

-IPT- EDIT DNET187.JCL.CNTL1(TEST) - 01.01                Columns 00001 00072
Command ==> COMPRESS                                     Scroll ==> PAGE
***** ***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG>                your edit profile using the command RECOVERY ON.
C99999 //DNET187X JOB  (ZACK,81038), 'JOB INFORMATION',
000002 //                CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),
000003 //                NOTIFY=&SYSUID
000004 //*****
000005 //STEP1 EXEC PGM=TRADERB,PARM='/TEST(, INSPIN,)'
000006 //SYSPRINT DD  DISP=OLD,
000007 //STEPLIB  DD  DISP=SHR,
000008 //                DSNAME=DNET047.DEMOS.PDPAK.LOAD
000009 //SYSPRINT DD SYSOUT=*
000010 //SYSPRINT DD SYSOUT=*
000011 //COMPFILE DD DISP=SHR,DSN=DNET047.DEMOS.PDPAK.COMPFILE
000012 //CUSTFILE DD DISP=SHR,DSN=DNET047.DEMOS.PDPAK.COMPFILE
000013 //TRANSACT DD DISP=SHR,DSN=DNET047.DEMOS.PDPAK.COMPFILE
000014 //*****
000015 //REPOUT DD SYSOUT=*
00001
00001 ABEND 0D37: Press ENTER to compress (Jump function disabled).
00001
000019 //TRANREP DD SYSOUT=*

```


Library Compress

```

-IPT- EDIT DNET187.JCL.CNTL1(TEST) - 01.01
Command ==> Library compressed Scroll ==> PAGE
***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG> your edit profile using the command RECOVERY ON.
000001 //DNET187X JOB (ZACK,81038),'JOB INFORMATION',
000002 // CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),
000003 // NOTIFY=&SYSUID
000004 //*****
000005 //STEP1 EXEC PGM=TRADERB,PARM='/TEST(,INSPIN,)'
000006 //SYSPRINT DD DISP=OLD,
000007 //STEPLIB DD DISP=SHR,
000008 // DSNAME=DNET047.DEMOS.PDPAK.L
000009 //SYSPRINT DD SYSOUT=*
000010 //SYSPRINT DD SYSOUT=*
000011 //COMPFILE DD DISP=SHR,DSN=DNET047.DEMOS.PDPAK.COMPFILE
000012 //CUSTFILE DD DISP=SHR,DSN=DNET047.DEMOS.PDPAK.COMPFILE
000013 //TRANSACTION DD DISP=SHR,DSN=DNET047.DEMOS.PDPAK.COMPFILE
000014 //*****
000015 //REPOUT DD SYSOUT=*
000016 //TRANREP DD SYSOUT=*
000017 //TRANREP DD SYSOUT=*
000018 //TRANREP DD SYSOUT=*
000019 //TRANREP DD SYSOUT=*

```

**Library Compressed
Continue your Edit Session !!!**

Shortcuts for IPT Commands

Menu Utilities Compilers Options Status Help

z/OS Primary Option Menu

Option ==> ipt?

| | | | | |
|----|--------------|-------------------------------------|---------------|----------|
| 0 | Settings | Terminal and user parameters | User ID . . : | DNET187 |
| 1 | View | Display source data or listings | Time. . . : | 15:09 |
| 2 | Edit | Create or change source data | Terminal. : | 3278 |
| 3 | Utilities | Perform utility functions | Screen. . : | 1 |
| 4 | Foreground | Interactive language processing | Language. : | ENGLISH |
| 5 | Batch | Submit job for language processing | Appl ID . : | ISP |
| 6 | Command | Enter TSO or Workstation commands | TSO logon : | SPIFFY |
| 7 | Dialog Test | Perform dialog testing | TSO prefix: | DNET187 |
| P | IBM Products | IBM program products | System ID : | DEMOMVS |
| 10 | SCLM | SW Configuration Library Manager | MVS acct. : | 12345678 |
| 11 | Workplace | ISPF Object/Action Workplace | Release . : | ISPF 5.8 |
| 12 | z/OS System | z/OS system programmer applications | | |
| 13 | z/OS User | z/OS user applications | | |

Enter X to Terminate using log/list defaults



Shortcut Commands New in V5.9

-IPT-

COMMAND SHORTCUTS

Row 1 to 17 of 47

-IPT-

COMMAND SHORTCUTS

Row 18 to 34 of 47

COMMAND ===> 
 Commands: SORT

SCROLL ===> PAGE

COMMAND ===>
 Commands: SORT

SCROLL ===> PAGE

SHORTCUT COMMAND DESCRIPTION

```
-----
IPT      IPTHELP  IPT HELP
ISET                    IPT SET OPTIONS
IMAINT                   IPT MAINTENANCE REPORT
IVER      IVERSION IPT VERSION REPORT
BR      BROWSE  '<DSNpat>(<MEMpat>)' - BROWSE
ED      EDIT   '<DSNpat>(<MEMpat>)' - EDIT
VI      VIEW   '<DSNpat>(<MEMpat>)' - VIEW
BF      BFILE  '<DSNpat>(<MEMpat>)' - BROWSE VSAM
EF      EFILE  '<DSNpat>(<MEMpat>)' - EDIT VSAM
VF      VFILE  '<DSNpat>(<MEMpat>)' - VIEW VSAM
O*                    SHOW ALL OBJECT-LISTS
O/                    POPULATE NEW OBJECT-LIST
OH      OHIST  HISTORY LIST OF ACCESSED DATASETS
OLIS    OLIST  <parm1>,<parm2> - OBJECT-LIST
OL      <parm1>,<parm2> - OBJECT-LIST
OL*                    SHOW ALL OBJECT-LISTS
OL/                    POPULATE NEW OBJECT-LIST
```

SHORTCUT COMMAND DESCRIPTION

```
-----
OLDD    OLDDNAME <DDname> - LIST ALLOCATED
OLB     OLBASE  <DSNpat> - LISTCAT BASE OF GENERATION
OLC     OLCAT   <DSNpat> - LISTCAT MULTIPLE PATTERNS
OLE     <DSNpat> - LISTCAT PDSE LIBRARIES
OLPDSE  <DSNpat> - LISTCAT PDSE LIBRARIES
OLG     OLGDG  <DSNpat> - LISTCAT GDG DATASETS
OLH     OLHIST HISTORY LIST OF ACCESSED DATASETS
OLI     OLINFO <DSNpat>,<VOLpat> - LISTCAT + INFO
OLM     OLMIG  <DSNpat> - LISTCAT MIGRATED
OLP     OLPAGE <DSNpat> - LISTCAT PAGE-SPACE DATASETS
OLS     OLSYS  <SYStype> - LIST SYSTEM DATASETS
OLT     OLTAPE <DSNpat> - LISTCAT TAPE DATASETS
OLV     OLVTOC <VOLpat>,<DSNpat> - LISTVTOC DATASETS
OLVS    OLVSAM <DSNpat> - LISTCAT VSAM CLUSTERS
EX?     EX????? DISPLAY TSO PERMANENT COMMANDS
EX=     DISPLAY TSO MOST RECENT COMMAND
EX1     EXECUTE TSO PERMANENT COMMAND #1
```



Shortcut Example (OLH) History List

```

  Display  Filter  View  Print  Options  Help
-----
HGX7730  -----  SDSF PRIMARY OPTION MENU  -----
COMMAND INPUT ==> olh                                     SCROLL ==> PAGE

DA      Active users
I       Input queue
O       Output queue
H       Held output queue
ST      Status of jobs

LOG     System log
SR      System requests
MAS     Members in the MAS
JC      Job classes
SE      Scheduling environments
RES     WLM resources

INIT    Initiators
PR      Printers
PUN     Punches
RDR     Readers
LINE    Lines
NODE    Nodes
SO      Spool offload
SP      Spool volumes

RM      Resource monitor
CK      Health checker
  
```

Licensed Materials - Property of
 5694-A01 (C) Copyright IBM Co
 US Government Users Restrict
 disclosure restricted by GSA AD

From any ISPF Panel obtain a list of
 Last 100 datasets accessed.

Save Keystrokes and Time on repeat functions !!!!!

History List

```
-IPT- OLIST (E) ----- DATA SET HISTORY ----- "A" will display assist
Command    ==> █                                SCROLL ==> PAGE
                                                *TEMPORARY LIST*
```

| Command | Member | Numbr | Data Set Names / Objects | Volume |
|---------|---------|-------|--------------------------|--------|
| | | 1 | 'DNET187.ADLAB.JCL' | |
| | \$INDEX | 2 | 'DNET187.ADLAB.INSTALL' | |
| | | 3 | 'DNET603.ADLAB.SYSDEBUG' | |
| | | 4 | 'DNET187.ADLAB.SYSDEBUG' | |
| | | 5 | 'DNET187.ADLAB.LISTING' | |
| | FMCTLCD | 6 | 'DNET187.ADLAB.FILES' | |
| | | 7 | 'DNET187.ADLAB.COPYLIB' | |
| | C* | 8 | 'DNET187.ADLAB.COPYLIB' | |
| | | 9 | 'DNET187.ADLAB.COPYLIB1' | |
| | | 10 | 'DNET187.ADLAB.COPYLIB2' | |
| | EQ* | 11 | 'DNET187.ISPF.ISPPROF' | |
| | DNET* | 12 | 'DB2.V7R1M0.SDSNLOAD' | |
| | | 13 | 'DB2.V7R1M0.SDSNLOAD' | |
| | FMCOPY | 14 | 'DNET187.ADLAB.FILES' | |
| | | 15 | 'DNET187.ADLAB.DTCMD' | |
| | CUST1 | 16 | 'DNET187.ADLAB.COPYLIB' | |
| | | 17 | 'DNET047.CODE.DTSF' | |
| | | 18 | 'DNET187.OSVS.LISTING' | |

Last 100 Datasets in Olist Format
positioned
At the Referenced Member

Select # to Edit

Summary ISPF Productivity !!!!!

- Enhanced action bar, pop-up windows, new functions, and point-and-shoot.
- Integrates seamlessly with ISPF
- Shortcuts and additional commands reduce the need to navigate to utility panels and invoke them separately
- Enhances TSO/ISPF Functions
- Access frequently used datasets using OLIST to reduce panel navigation and keystrokes
- Improves overall performance of ISPF: reduces CPU usage, EXCP counts, and improves response time. Browsing, editing, copying, displaying lists, and finding Data is significantly faster

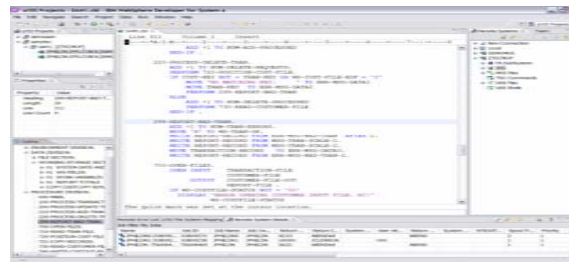


Evolution of development environment



ISPF

- A flexible and customizable development environment can make your mainframe programmers more efficient
 - ▶ Language specific colorization with dynamic syntax checking
 - ▶ Language prompting
 - ▶ All needed tools available in one screen rather than SPLIT screen and screen STACKing
 - ▶ Drag and drop copies
 - ▶ Easy to move data from one LPAR to another
- Familiar GUI User interface for those not exposed to ISPF
- Automation of JCL creation
- Integration with Traditional “PD” Tools, ie. Debug Tool Utilities and Advanced Functions, IBM Fault Analyzer and IBM File Manager



WDz

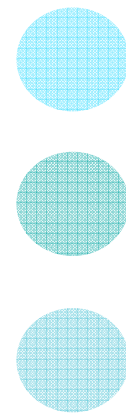




WebSphere Developer for System Z



- Productivity for current developers
- Attracting new people to the Z platform
- Continue to move the platform forward to make it the only tool needed for development
- Modernization & SOA



Developer Pains



- Productivity
 - ▶ Identify Create/Locate files needed for change
 - ▶ Making consistent changes
 - ▶ Creating deliverables under deadlines
 - ▶ Testing and verifying quality
 - ▶ Managing problems, failures and time

- Quality
 - ▶ Reliable deliverables
 - ▶ Easily verify error and informational message
 - ▶ Well structured skeletons

- Quickly adapting to change

Development Manager Pains

- Prompt and Quality deliverables (see Developers Needs)
- Reducing the need for training on multiple and/or different tools



- Ensuring groups doing different work communicate efficiently
- Ensure young recruits can be effective on the z/OS platform

Summary – What have we seen?

- Advances in development environments from 20th century to 21st century
- People new to System Z expect a modern interface than what was available from the past
- By investment and adding PD Tools to the WDz platform, we show our commitment for making application development easier and more productive
- With other development perspectives included in the same tool, artificial walls for developers can be reduced and communication/cooperation can be improved

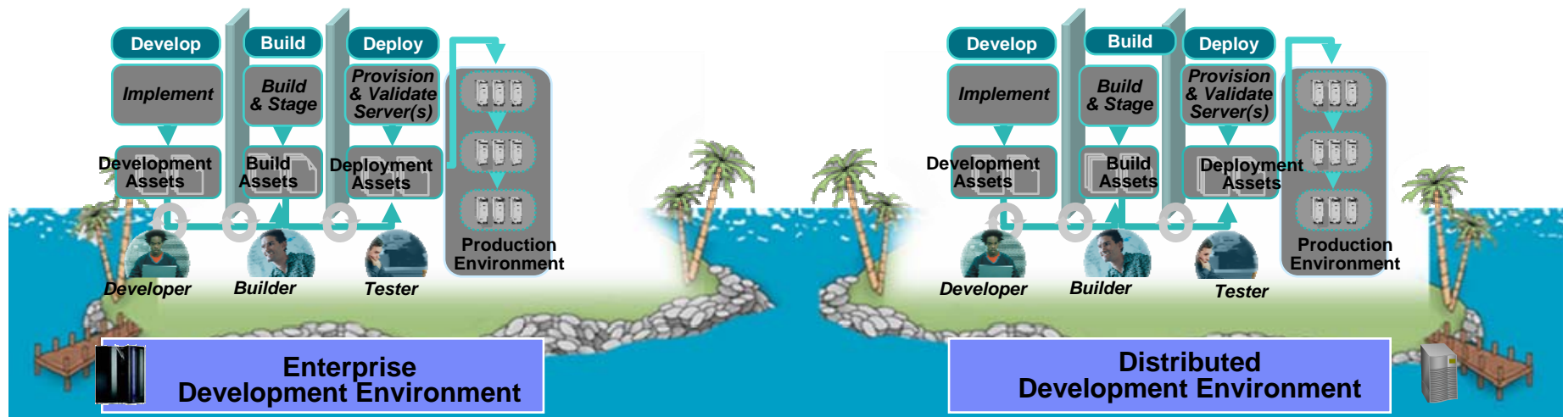


Helping customers optimize their investments in software delivery across organizationally diverse environments

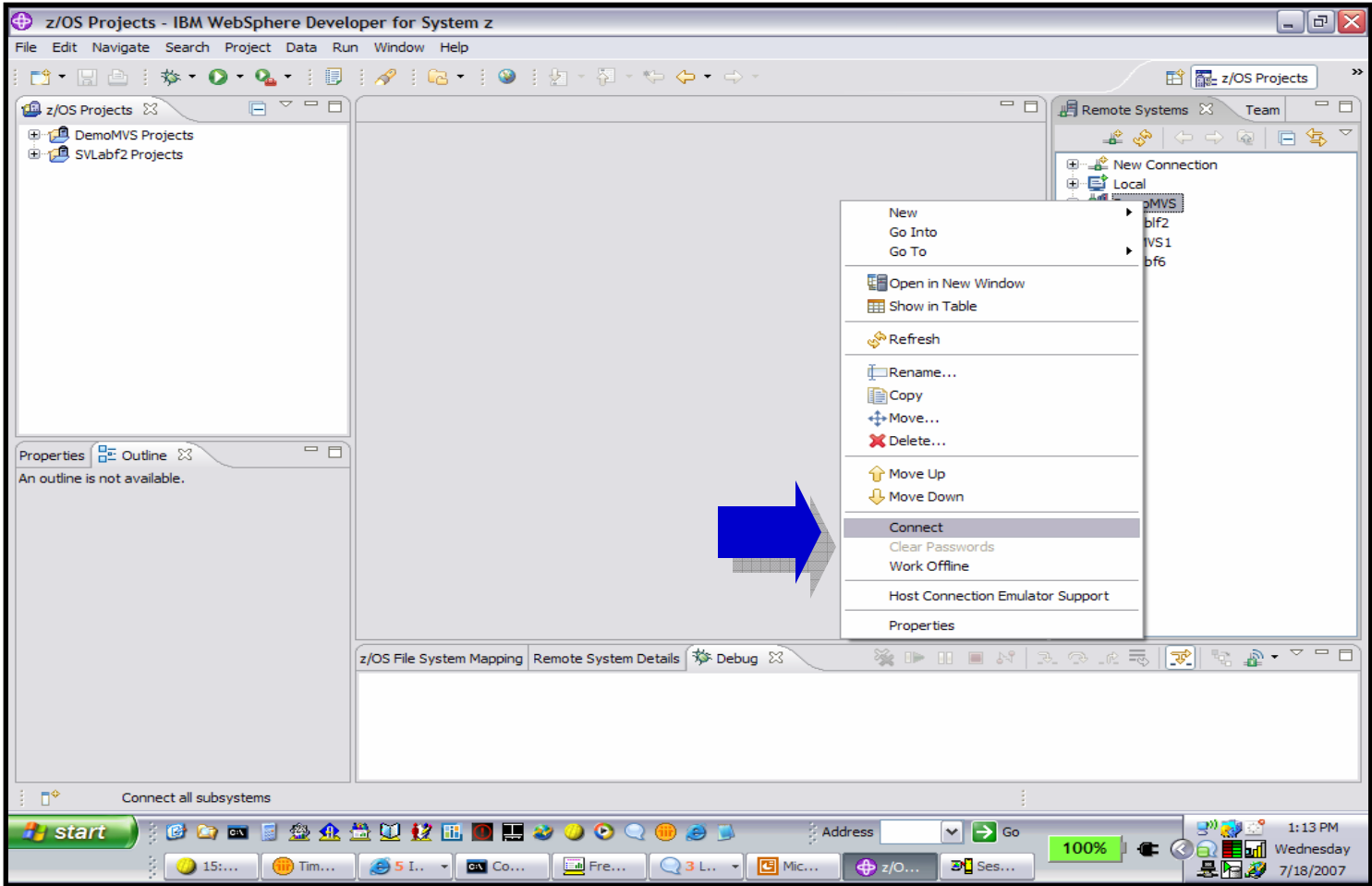


Challenges - Islands of development

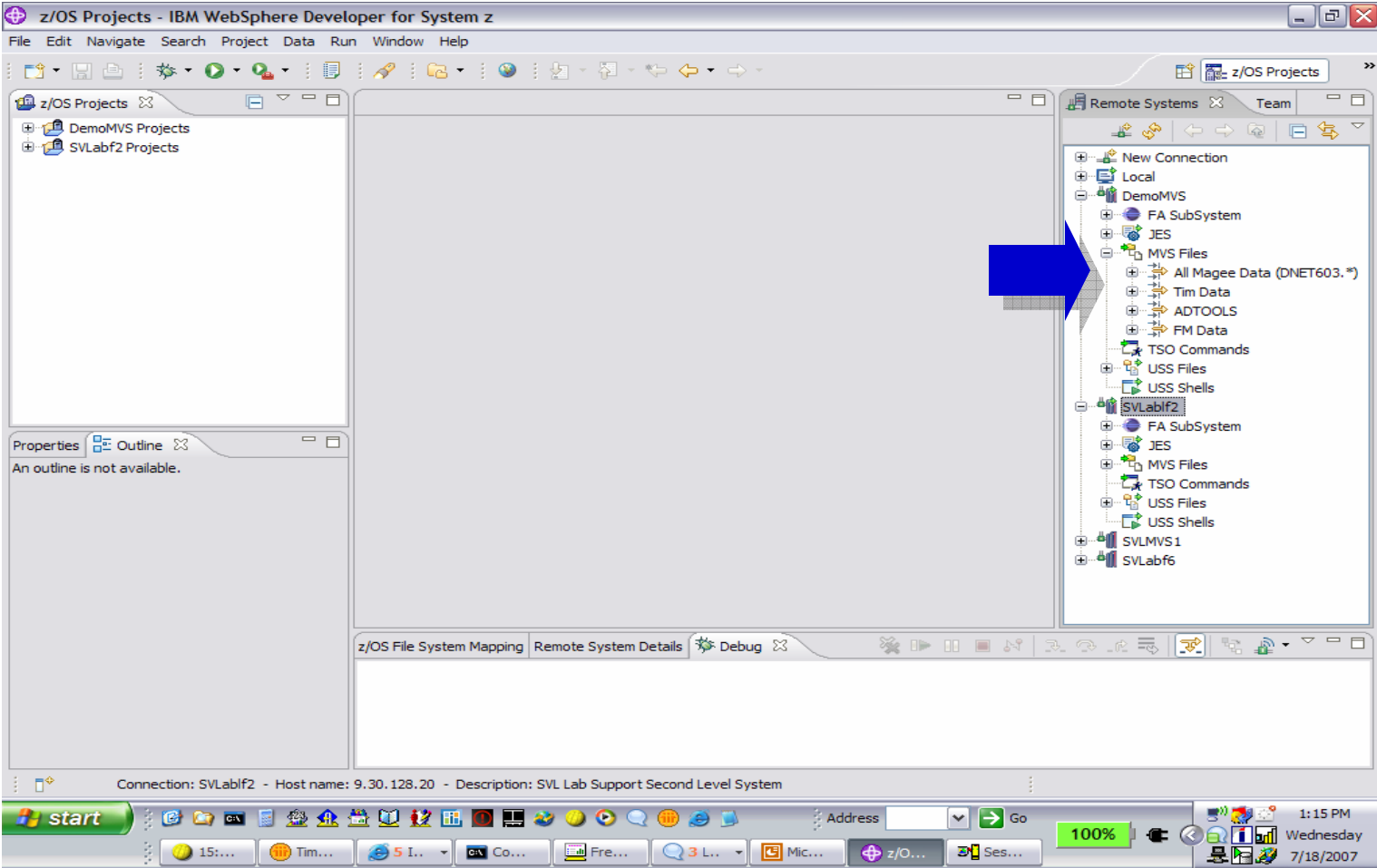
- Duplicate infrastructures limit IT and skills flexibility, introduce errors, reduce productivity
- Constrained IT flexibility due to skills islands (JAVA vs. COBOL)
- Multiple infrastructures, vendors, tools, increased costs, less \$'s available for new projects
- Lack of traceability inhibits end-to-end governance



WDz Host Connection:



WDz File Access/Edit:



WDz File Edit:

z/OS Projects - GATCDEMO.jcl - IBM WebSphere Developer for System z

File Edit Navigate Search Project Data Run Window Help

z/OS Projects

- DemoMVS Projects
- SVLabf2 Projects

*GATCDEMO.jcl

| Line | Column | Insert | changes |
|------|--------|--------|---------|
| 63 | 1 | | 2 |

```

//SYSIN DD DUMMY
//SYSOUT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSDUMP DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//
//*****
//
//STEP3: THIS STEP EXECUTE THE DEMO PROGRAM
//*****
//STEP3 EXEC PGM=ATCDEMO,
// PARM='/TEST(,,MFI%TRMLU002:*)'
// PARM='/TEST(,,TCPIP&9.76.153.116:)'
//STEPLIB DD DSN=DNETH603.CODE.LOAD,DISP=SHR
// DSN=DEBUG.V7R1.SEQAMOD,DISP=SHR
Incorrect disposition status.
//SYSOUT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSDUMP DD SYSOUT=*

```

Properties Outline

```

//DNETH603W JOB (ACCTG),D
//STEP1 EXEC PGM=IEBGEN
//STEP2 EXEC PGM=IEBGENER
//STEP3 EXEC PGM=ATCDEMO,

```

Remote Systems Team

- CPTM01.jcl
- DFHMAPS.jcl
- DFSIVJB3.jcl
- DTSVAVSET.jcl
- EQACU1GZ.jcl
- EQACU1LZ.jcl
- EQACU1MZ.jcl
- EQACU3GA.jcl
- EQACU3LA.jcl
- EQACU3MA.jcl
- EQAWIVP2.jcl
- EQAWIVP5.jcl
- EQAZIVCC.jcl
- EQAZIVP8.jcl
- GAIGCOB.jcl
- GAPADB2.jcl
- GASM01.jcl
- GASSM01.jcl
- GATCDEMO.jcl
- GATCDEM2.jcl
- GATCDEMC.jcl
- GATCDEMF.jcl
- GATCDEMO.jcl
- GATCFA.id

z/OS File System Mapping Remote System Details Debug

z/OS LPEX Editor is active Save Needed

start 15:... Tim... 5 I... Co... Fre... 3 L... Mic... z/O... Ses... 100% 1:18 PM Wednesday 7/18/2007

WDz Remote Submit:

The screenshot shows the IBM WebSphere Developer for System z interface. The main editor displays a JCL file named *GATCDEMO.jd. The JCL code includes steps for execution, with a comment indicating that the third step executes the demo program. A context menu is open over the JCL code, and the 'Submit' option is highlighted. A blue arrow points from the 'Submit' option to the JCL code.

```

Line 47      Column 45      Replace 8 changes
//-----1-----2-----3-----4-----5-----6-----
//**
//SYSIN      DD DUMMY
//SYSOUT     DD SYSOUT=*
//SYSPRINT  DD SYSOUT=*
//SYSDUMP   DD SYSOUT=*
//SYSUDUMP  DD SYSOUT=*
//**
//*****
//** STEP3: THIS STEP EXECUTE THE DEMO PROGRAM
//*****
//STEP3     EXEC PGM=ATCDEMO,
//**        PARM='/TEST(,,MFI%TRMLU002:*)'
//**        PARM='/TEST(,,TCPIP&9.76.153.116:)'
//STEPLIB   DD DSN=DNET603.CODE.LOAD,DISP=SHR
//**        DD DSN=DEBUG.V7R1.SEQAMOD,DISP=SHR
//SYSOUT    DD SYSOUT=*
//SYSPRINT  DD SYSOUT=*
//SYSDUMP   DD SYSOUT=*
//SYSUDUMP  DD SYSOUT=*
//CMD       DD DSN=DNET603.CODE.FILES(INSPIN),
  
```

The context menu options are:

- Save
- Cut (Ctrl+X)
- Copy (Ctrl+Insert)
- Paste (Ctrl+V)
- Select
- Selected
- Deselect (Alt+U)
- Filter view
- Show all (Ctrl+W)
- Source
- View
- Run As
- Debug As
- Profile As
- Validate
- Analysis
- Team
- Compare With
- Replace With
- Link Utilities
- Add Breakpoint
- Open Member
- Submit**
- Start Flagging Changed Lines

WDz Remote Z/OS Debug:

The screenshot displays the IBM WebSphere Developer for System z debug environment. The main window shows the execution of a program named ATCDEMO. The source code is visible in the center, with the first line highlighted in cyan:

```

Line 1      Column 1      Insert      Browse
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1  IDENTIFICATION DIVISION.
2
3  *  PROGRAM NAME: ATCDEMO  Version IDM
4  *
5  *  OBJECTIVES OF TESTCASE:
6  *
7  *          DEMO INTERACTIVE DEBUG TOOL WITH A MULTIPLE *
8  *          COMPILER UNIT TEST CASE
9  *
10 *
11 *          PROGRAM-ID.          ATCDEMO.
  
```

The top-left pane shows the project structure with the following details:

- com.ibm.debug.load [Compiled Application]
- Platform: OS/390(R) Connection: 9.39.64.151:3476
- Thread: 1 (Runnable)
- ATCDEMO : 01
- Process: 533770616 Program: ATCDEMO

The top-right pane is titled "Variables" and contains the text: "no local variables are available for the selection".

The bottom section of the interface includes a "Console" area, a "Memory" area, and a "Debug Console" area. The Windows taskbar at the bottom shows the system tray with the time 2:46 PM, date Wednesday 7/18/2007, and battery level at 97%.

Sample of PD Tools in WDz

The screenshot displays the IBM WebSphere Developer for System z interface, showing a project named 'z/OS Projects - JPHILDN.ADLAB.SAMFILE'. The main window is divided into several panes:

- Source Editor:** Shows the source code for 'F01585.far'. The code includes data field definitions and an event summary.


```

      source
      Line #
      -----
      000031          05 WS-UPDATE-NUM
      +0.
      000064          05 CUST-ACCT-BALANCE

      Data field values at time of abend:

      CUST-ACCT-BALANCE = X'7C7B5B6C50' *** Cau
      WS-UPDATE-NUM      = 7.89

      Event Summary

      I B M   F A U L T   A N A L Y Z E R   E V E N T
      
```
- Table View:** Displays a table associated with the template 'JPHILDN.ADLAB.COPYLIB(CUSTOMAST)'.

| C... | F | NAME | ACCT-BA... |
|-------|---|----------------|------------|
| 11544 | A | Graf, Polly | 244.42 |
| 12689 | A | Boyd, Luke A. | 86.88 |
| 13062 | A | Turner, Paige | ***** |
| 13295 | A | Well, Alice | 731.26 |
| 13943 | A | Sawyer, Dinah | 622.16 |
| 14207 | A | Auerbach, Hans | 11.11 |
- Properties:** Shows properties for the current project, including 'Connection: No', 'Name: My Jobs', and 'Type: Job Filter'.
- Outline:** Shows the project structure with folders like 'demosam', 'samztec', and 'sam1 [ZTECMOP]'. Under 'sam1', there are sub-folders for various JPHILDN.EPS.* files.
- Code Editor (Bottom):** Shows the assembly code for 'JPHILDN.EPS.SYSDEBUG(SAM2)'.


```

      Line 196 Column 1 Insert Browse
      -----1-----2-----3-----4-----5-----6-----7-----8-----9-----
      196          COMPUTE CUST-ACCT-BALANCE =
      197          CUST-ACCT-BALANCE + WS-UPDATE-NUM
      198          COMPUTE TRAN-COUNT = TRAN-COUNT + 1
      199          END-EVALUATE
      200          WHEN 'ORDERS '
      201          EVALUATE TRAN-ACTION
      202          WHEN 'REPLACE'
      
```
- Remote Error List:** Shows a table of system faults.

| Fault_ID | Job/Tran | User_ID | Sys/Job | Abend | I_Abend | Job_ID | Jobname |
|----------|----------|----------|---------|-------|---------|----------|----------|
| F01585 | JPHILDNS | JPHILDN | ZT01 | S0C7 | S0C7 | JOB05521 | JPHILDNS |
| F01584 | TRAD | CICSUSER | ADTMONO | AED3 | AED3 | STC02947 | ADTMONO |
| F01583 | CEDF | CICSUSER | ADTMONO | ATNI | ATNI | STC02947 | ADTMONO |

DEMO Traditional Developer

- WebSphere Development for System Z (WDz V7.1)
 - ▶ Creating a project and working with COBOL
 - ▶ Showing PD Tools integrated in WDz

Demonstrate IBM's continued effort to increase the power of COBOL and PLI developers.





[→ Go to IBM](#)

© Copyright IBM Corporation 2007. All rights reserved.

The information contained in these materials is provided for informational purposes only, and is provided AS IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, these materials. Nothing contained in these materials is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software. References in these materials to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in these materials may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way.

IBM, the IBM logo, the on-demand business logo, Rational, the Rational logo, and other IBM products and services are trademarks of the International Business Machines Corporation, in the United States, other countries or both. Other company, product, or service names may be trademarks or service marks of others.

