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z/OS V1.13 Sysprog Goody Bag

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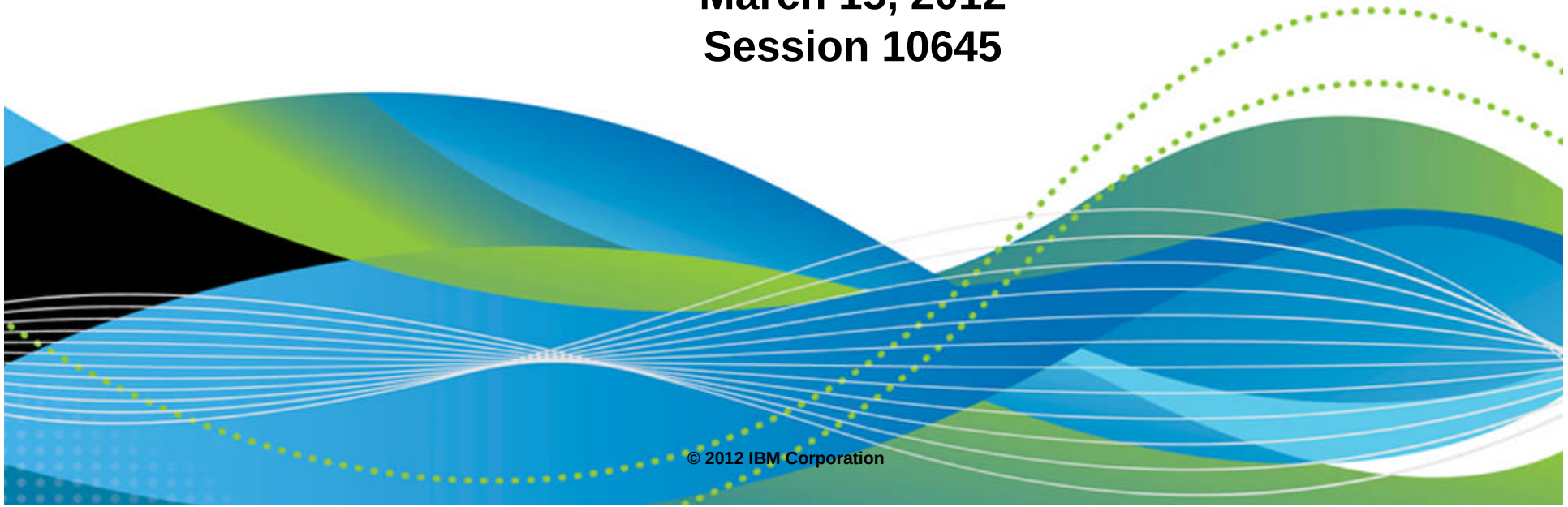
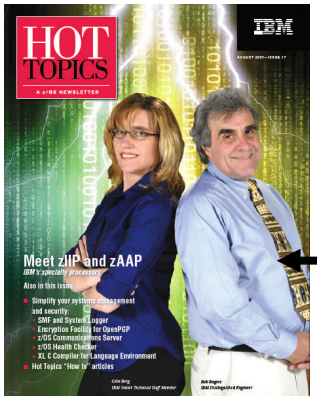


Acknowledgement

Most of the material in the presentation came from:

- **Bob Rogers - IBM Systems z Distinguished Engineer and System z Philosopher**



Bob

Me

  - Unfortunately, Bob couldn't attend SHARE this week
  - More unfortunately (for me) he asked me to present in his place
    - I don't have Bob's knowledge, anecdotes, or sense of humor
    - Therefore, I've added more content and actual experience using most of the functions

- **Roger Fowler – Consulting IT Specialist**

Acknowledgement

- **Roger and Bob blatantly "stole" their material from various z/OS development teams**
- **Minimally this list includes:**
  - ISPF – Peter Van Dyke
  - JES2 – Tom Wasik
  - JES3 – Peter Kania
  - DFSMS – Wayne Rhoten, Rohan Kurane, Tan Q Nguyen, Stephen M Branch, Patrick P. Dempsey, Jerry Dearing, Diego Medina, Jon Lynds, Jerry Codde
  - SMF – Anthony Sofia
  - HCD – Friedrich Beichter
  - IOS - Ilene Goldman

z/OS V1.13 Enhancements

- **ISPF**
  - Miscellaneous enhancements
- **JES2**
  - "Batch Modernization" enhancements
  - Spool dataset enhancements
- **JES3**
  - JES3 Dynamic Spool Addition
- **DFSMS**
  - Catalog enhancements
  - PDSE enhancements
  - Miscellaneous enhancements
- **SMF**
  - SMF logstream enhancements
- **HCD**
  - New warning messages
- **IOS**
  - Improved Channel Recovery
- **z/OSMF**

ISPF V1.13 Enhancements

- **ISPF Dataset allocate support in DSList**
- **ISPF Support for managing z/OS Unix ACLs**
- **ISPF Support for displaying PDS member extended statistics**
- **ISPF Editor Support for Line Command Macros**

ISPF Dataset allocate support in DSList

- **New AL line command in ISPF Dataset List utility (ISPF 3.4)**
  - Name of new dataset must follow – either quoted or unquoted
- **When AL entered against an existing dataset, panel displayed with options**
  - Create dataset using attributes of existing dataset
  - Specify the attributes on the Allocate New Dataset panel
- **When AL entered against an deleted dataset,**
  - No dataset name needs to be specified against a deleted dataset entry
  - Panel displayed to specify the attributes on the Allocate New Dataset panel

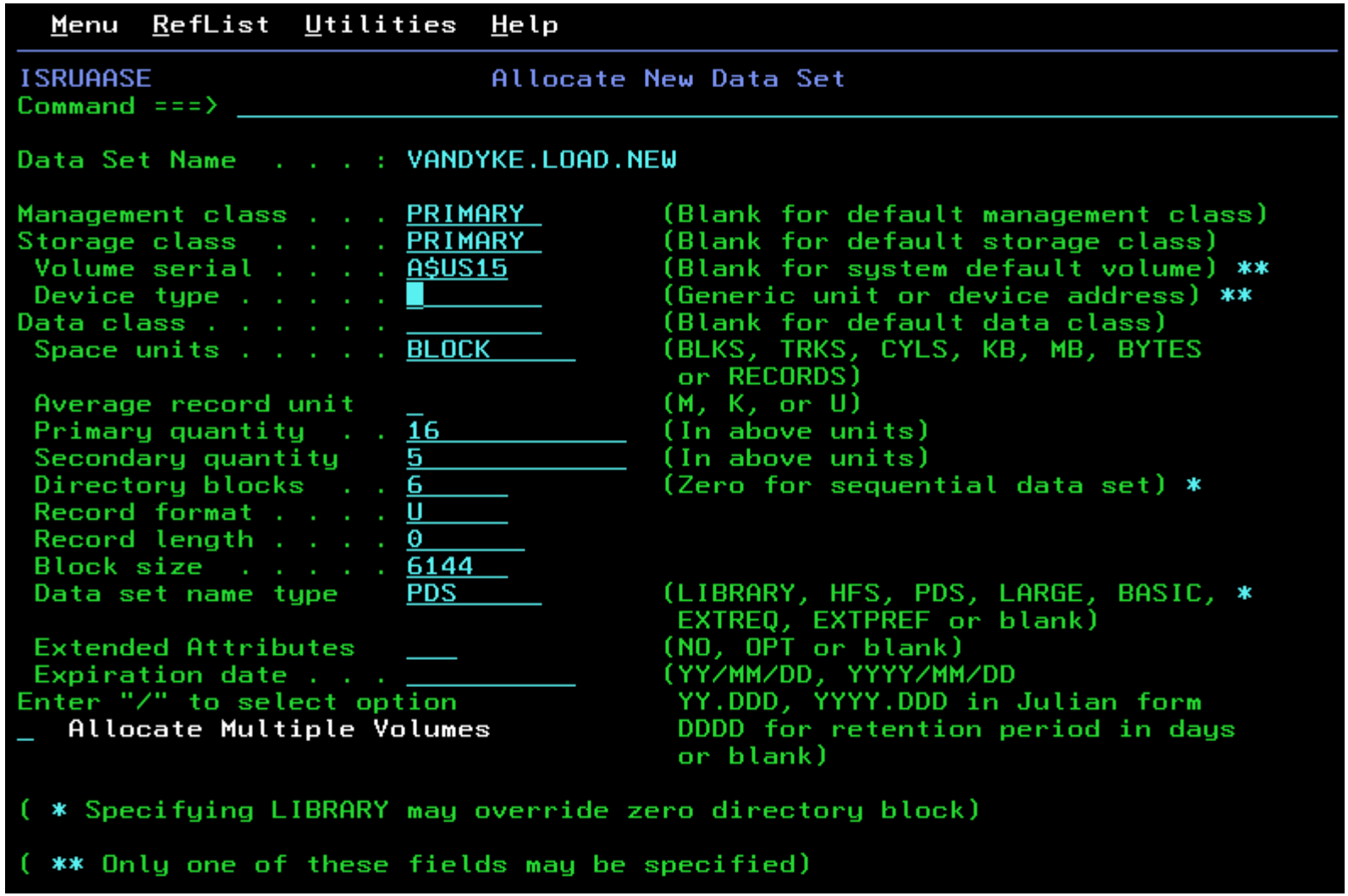
ISPF Dataset allocate support in DSList

- **Using AL against an existing dataset:**

```
 Menu  Options  View  Utilities  Compilers  Help
------------------------------------------------------------------------------
ISRUDSL0 Data Sets Matching VANDYKE.LOAD*                      Row 1 of 4
Command ===> ____________________________________________ Scroll ===> CSR

Command - Enter "/" to select action              Message          Volume
------------------------------------------------------------------------------
al load.new DYKE.LOAD                                              A$US15
        VANDYKE.LOAD.MSGTYPES                                      A$US21
        VANDYKE.LOADLIB                                            A$US13
        VANDYKE.LOADLIB.OLD                                        A$US02
****************************** End of Data Set list ******************************
```

```
ISRMCALL              Allocate Target Data Set
Command ===> ____________________________________________________________

Specified data set VANDYKE.LOAD.NEW
does not exist.
If you wish to allocate this data set, select one of the options
below.

Allocation Options:
2  1. Allocate using the attributes of:
      VANDYKE.LOAD
   2. Specify allocation attributes

_  Use existing SMS attributes for option 1

Instructions:
  Press ENTER to allocate data set.
  Enter CANCEL or END to cancel allocation.
```

ISPF Dataset allocate support in DSList

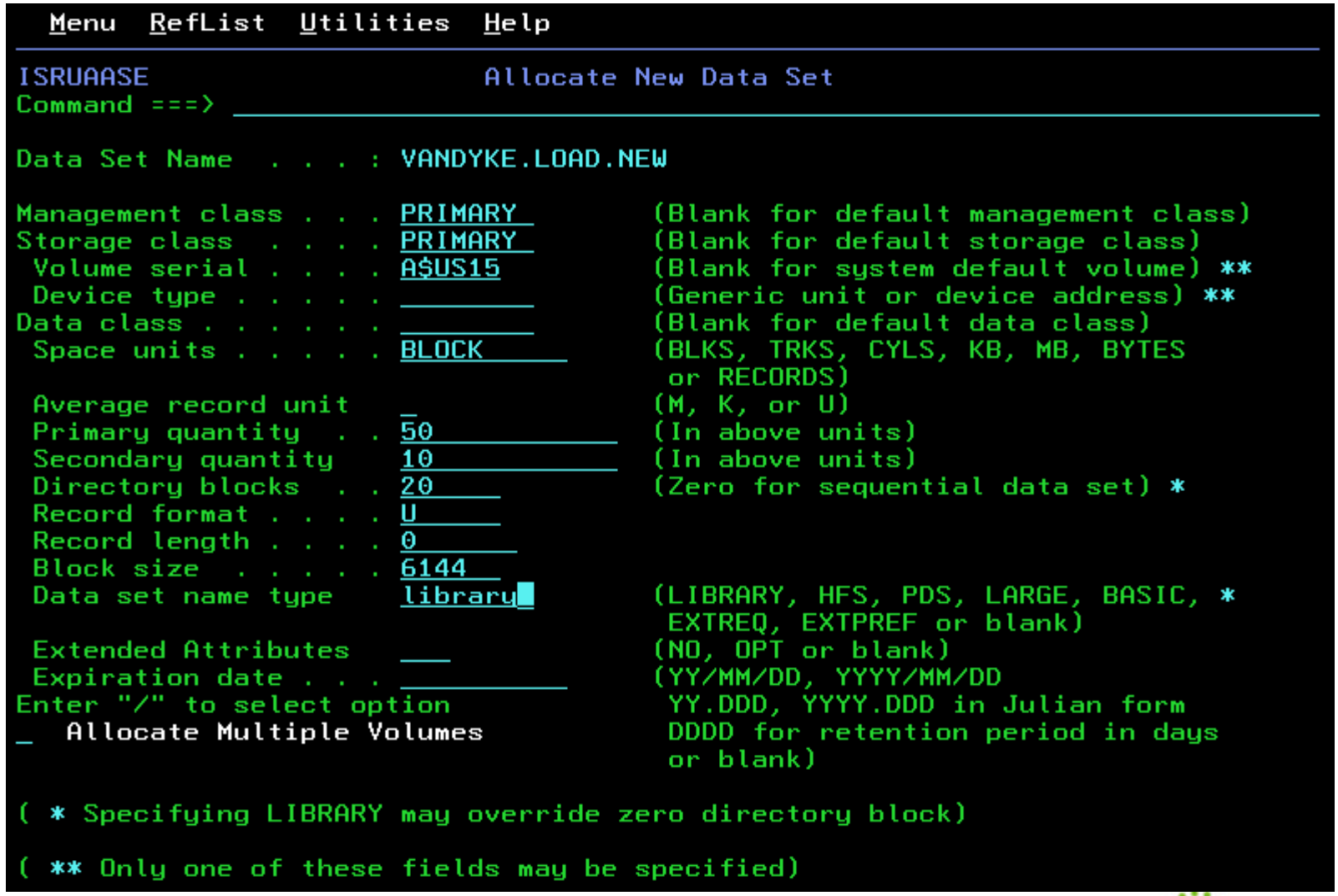


ISPF Dataset allocate support in DSList

- **Using AL against a deleted dataset:**

```
  Menu  Options  View  Utilities  Compilers  Help
──────────────────────────────────────────────────────────────────────────────
ISRUDSL0 Data Sets Matching VANDYKE.LOAD*                    Data set deleted
Command ===> _____________________________________________ Scroll ===> CSR

Command - Enter "/" to select action                Message          Volume
------------------------------------------------------------------------------
         VANDYKE.LOAD                                                A$US15
         VANDYKE.LOAD.MSGTYPES                                       A$US21
al       VANDYKE.LOAD.NEW                           Deleted
         VANDYKE.LOADLIB                                             A$US13
         VANDYKE.LOADLIB.OLD                                         A$US02
****************************** End of Data Set list ****************************
```

ISPF Dataset allocate support in DSList



ISPF Support for managing z/OS Unix ACLs

- Adding ACL support is part of the long term plan for the z/OS UNIX Directory List Utility (ISPF option 3.17) to provide most of the functions currently support by the ISHELL utility
- Reduce the need for users to switch between the z/OS UNIX Directory List Utility and ISHELL
- Introduces a new z/OS UNIX Directory List Utility line command that invokes a dialog where the ACLs for a file can be managed
- No need to leave the z/OS UNIX Directory List Utility when you need to see or update ACLs for a file

ISPF Support for managing z/OS Unix ACLs

- **The z/OS UNIX Directory List Utility (ISPF option 3.17) now supports the new MA line command for the display and update of ACLs for a file:**
  - The MA line command can be entered against any file or directory in the list
  - When the MA line command is entered the z/OS UNIX ACL List panel is displayed showing a list of any ACL entries defined for the file
  - The z/OS UNIX ACL List panel supports the following primary commands:

Command	Function
A	**Add a new ACL**
SA	**sort the ACL list alphabetically by userid**
SN	**sort the ACL list numerically on UID**
ST	**sort the ACL list alphabetically by type**

ISPF Support for managing z/OS Unix ACLs

- **Each ACL entry on the z/OS UNIX ACL List panel has the following fields:**

Field	Description
S	**Input field for entering a line command against an ACL entry**
UID	**The z/OS user or group ID value (numeric)**
Read	**Indicates whether the user or group has the authority to read the file**
Write	**Indicates whether the user or group has the authority to write to the file**
Execute	**Indicates whether the user or group has the authority to execute the file**
Name	**The name associated with the UID value**
Type	**Indicates whether the ACL entry is for a user or group**

ISPF Support for managing z/OS Unix ACLs

```
  Menu  Utilities  View  Options  Help
 ------------------------------------------------------------------------------
 ISRUUDL0                  z/OS UNIX Directory List          Row 17 to 30 of 67
 Command ===> ____________________________________________  Scroll ===> CSR

 Pathname . : /u/hanko

 Command  Filename                      Message          Type Perm Audit
 ------------------------------------------------------------------------------
 ma_____  blank                                          File 777+ fff---
 _______  blzhank                                        File 700  fff---
```

```
ISRUUULMA                  z/OS UNIX ACL List                    Row 1 from 78
Command ===> _____________________________________________  Scroll ===> CSR

S   UID       Read  Write  eXecute  Name      Type
_   108        R                   BILLSWA   USER
_   607        R                   MBOTES    USER
_   204        R                   SCLMU     GROUP
_   991        R                   TGROUP1   GROUP
_   992        R       W       X   TGROUP2   GROUP
_   993        R       W           TGROUP3   GROUP
********************************* Bottom of data ********************************
```

ISPF Support for managing z/OS Unix ACLs

- **The following line commands can be entered in the S field for an ACL entry:**

Command	Description
A	**Add a new ACL entry**
D	**Delete the ACL entry**
X	**List the members for the group defined in the ACL entry**

ISPF Support for managing z/OS Unix ACLs

- **Adding a new ACL entry**

```
ISRUULMA                    z/OS UNIX ACL List                    Row 1 from 78
Command ===> ____________________________________________ Scroll ===> CSR

S   UID       Read  Write  eXecute  Name      Type
a   108        R                   BILLSWA   USER
```

```
ISRUULMI                 z/OS UNIX ACL Attributes
Command ===> ____________________________________________________________

Supply a numeric UID value or use the name field. If both are
are entered then the NAME field will be used.
Any non-blank character will set the r , w , x privileges.

UID  . . . . . 0_______
Read . . . . . _
Write  . . . . . _
eXecute  . . . . . _
Name . . . . . ________
Type . . . . . _  Enter 1 for User or 2 for Group
```

ISPF Support for managing z/OS Unix ACLs

- **Adding a new ACL entry**

```
ISRUULMI                  z/OS UNIX ACL Attributes
Command ===> ____________________________________________________________

Supply a numeric UID value or use the name field. If both are
are entered then the NAME field will be used.
Any non-blank character will set the r , w , x privileges.

UID  . . . . . 177
Read . . . . . /
Write  . . . . . /
eXecute  . . . . . _
Name . . . . . ________
Type . . . . . 1  Enter 1 for User or 2 for Group
```

```
ISRUULMA                  z/OS UNIX ACL List                  Row 1 from 79
Command ===> _____________________________________ Scroll ===> CSR

S   UID       Read  Write  eXecute  Name      Type
_   177        R      W             PVANDYK   USER
_   108        R                    BILLSWA   USER
_   607        R                    MBOTES    USER
```

ISPF Support for managing z/OS Unix ACLs

- **Deleting a new ACL entry**

```
ISRUULMA                    z/OS UNIX ACL List                    Row 1 from 79
Command ===> ____________________________________________ Scroll ===> CSR

S   UID       Read  Write  eXecute  Name      Type
d   177        R      W             PVANDYK   USER
_   108        R                    BILLSWA   USER
```

```
ISRUULMA                    z/OS UNIX ACL List                    Row 1 from 78
Command ===> ____________________________________________ Scroll ===> CSR

S   UID       Read  Write  eXecute  Name      Type
_   108        R                    BILLSWA   USER
_   607        R                    MBOTES    USER
```

ISPF Support for managing z/OS Unix ACLs

- **Displaying the list of members in a group**

```
ISRUULMA                    z/OS UNIX ACL List                    Row 75 from 78
Command ===> ____________________________________________ Scroll ===> CSR

S   UID       Read  Write  eXecute  Name      Type
x   991        R                   TGROUP1   GROUP
_   992        R      W        X    TGROUP2   GROUP
```

```
ISRUULMX             z/OS UNIX ACL Group Member List          Row 16 from 78
Command ===> ____________________________________________ Scroll ===> CSR

                                        Userid
                                        BILLSWA
                                        HANKO
****************************** Bottom of data ********************************
```

ISPF Support for displaying PDS member extended statistics

- **In z/OS V1R11 the ISPF statistics maintained for PDS members were extended to support line count values greater than 65535**

- **ISPF services were enhanced to return these extended line count values however no function was provided to display these values**

- **The ISPF enhanced member list now supports the new I line command to display panel ISRUDSI showing the ISPF statistics for a member**
  - The enhanced member list is displayed using the M, B, E, or V line commands in the Data Set List display (ISPF option 3.4)
  - The I line command can be used against any member in a partitioned data set
    - It is not restricted to members that have extended line count statistics defined

ISPF Support for displaying PDS member extended statistics

```
 Menu  Functions  Confirm  Utilities  Help
 ISRUDSM VIEW       HANKO.INF2029.PDS                    Row 00015 of 00017
 Command ===>                                            Scroll ===> CSR
          Name     Prompt        Size   Created          Changed          ID
 _________ ATTACHT                36   1989/03/07  2001/07/31 12:54:00  FRARA02
 i________ BIGMEM              65535   2009/03/26  2009/03/26 14:56:08  FRARA02
 _________ NEWMEM                  1   2009/03/26  2009/03/26 14:47:47  FRARA02
           **End**
```

```
 Menu  Functions  Confirm  Utilities  Help
 ISRUDSI VIEW       HANKO.INF2029.PDS
 Command ===>

                                                 Directory flag byte
   Member name  . . . . . . . . : BIGMEM         Bit 0   : 0  SCLM
   Concatenation number . . . . : 1              Bit 1   : 0
   Version . Modification . . . : 01.00          Bit 2   : 1  Ext Stats
   Create Date  . . . . . . . . : 2009/03/26     Bit 3   : 0
   Modification Date  . . . . . : 2009/03/26     Bit 4   : 0
   Modification Time  . . . . . : 14:56:08       Bit 5   : 0
   Userid that Created/Modified : FRARA02        Bit 6   : 0
                                                 Bit 7   : 0

   Line counts : max values are 65536            Extended line counts
   Current   : 65535                             Current   : 66000
   Initial   : 65535                             Initial   : 66000
   Modified  : 0                                 Modified  : 0
```

ISPF Support for displaying PDS member extended statistics

- **DFSMS stores the job name and step name that created a data set in the format-9 DSCB**
  - For datasets stored in the cylinder-managed area of an EAV
  - No easy way of displaying this information
- **ISPF Dataset information panels now display this information**
- **Information also stored into new ISPF variables for easy access by dialogs**

ISPF Support for displaying PDS member extended statistics

- **Data Set Information panels show the creation job and step names when available from the format-9 DSCB**

```
ISRUAIES                        Data Set Information
Command ===>

Data Set Name . . . . . : VANDYKE.LARGE3

General Data                                Current Allocation
 Management class . . . : PRIMARY            Allocated tracks  . : 1
 Storage class  . . . . : PRIMARY            Allocated extents . : 1
  Volume serial . . . . : P$US01
  Device type . . . . . : 3390
 Data class . . . . . . : **None**
  Organization  . . . . : PS                Current Utilization
  Record format . . . . : FB                 Used tracks . . . . : 0
  Record length . . . . : 80                 Used extents  . . . : 0
  Block size  . . . . . : 32720
  1st extent tracks . . : 1
  Secondary tracks  . . : 1                 Dates
  Data set name type  . : LARGE              Creation date . . . : 2011/01/26
  SMS Compressible. . . : NO                 Referenced date . . : ***None***
  Extended Attributes . : OPT                Expiration date . . : ***None***
  Create Jobname        : ALJOB1
  Create Stepname       : STEP3
```

ISPF Support for displaying PDS member extended statistics

- **The DSINFO service returns the creation job and step names in the following variables:**

  ZDSCJOBN - creation job name
  ZDSCSTPN - creation step name

- **The LMDLIST service returns the creation job and step names in the following variables:**

  ZDLCJOBN - creation job name
  ZDLCSTPN - creation step name

ISPF Editor Support for Line Command Macros

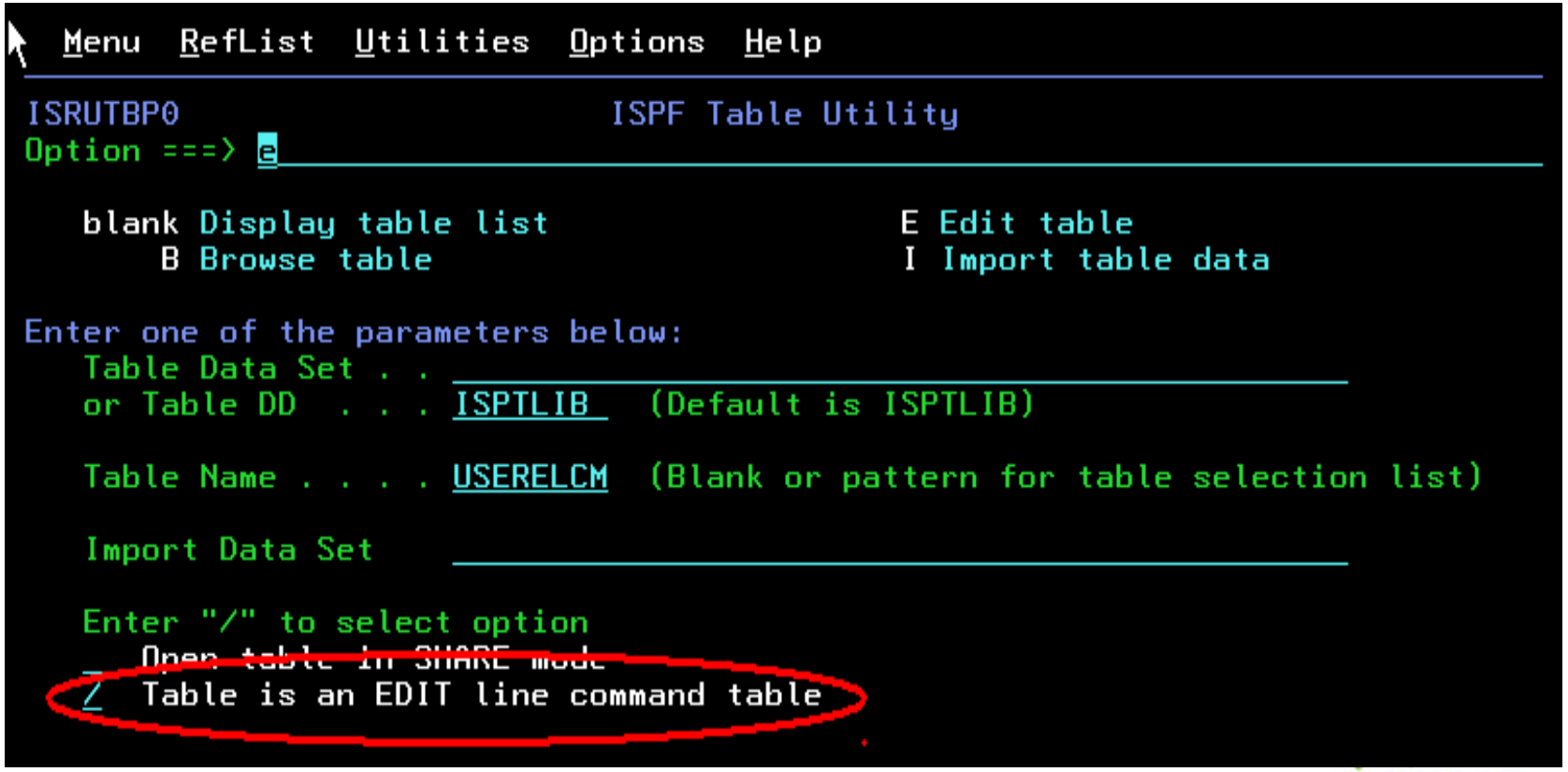
- Integrate the support added by LMAC into the editor
- Supports user-written line command macros
- No need to download and install LMAC tool

ISPF Editor Support for Line Command macros

- **User defined line commands and the edit macros they invoke are defined in an ISPF table**
- **The ISPF Table Utility (ISPF option 3.16) is modified to assist with defining the user line command table**
- **New line command table input field is added to the edit and view entry panels**
  - When the line command table is specified the line commands specified in the table are able to be used during the edit session
- **The EDIT and VIEW services also allow a line command table to be passed by the caller**

ISPF Editor Support for Line Command macros

- **Option added to the ISPF Table Utility (ISPF option 3.16) entry panel to help users create and edit line command tables:**



ISPF Editor Support for Line Command macros

- **Special format of the table edit panel displayed showing columns specific to a user edit line command table:**

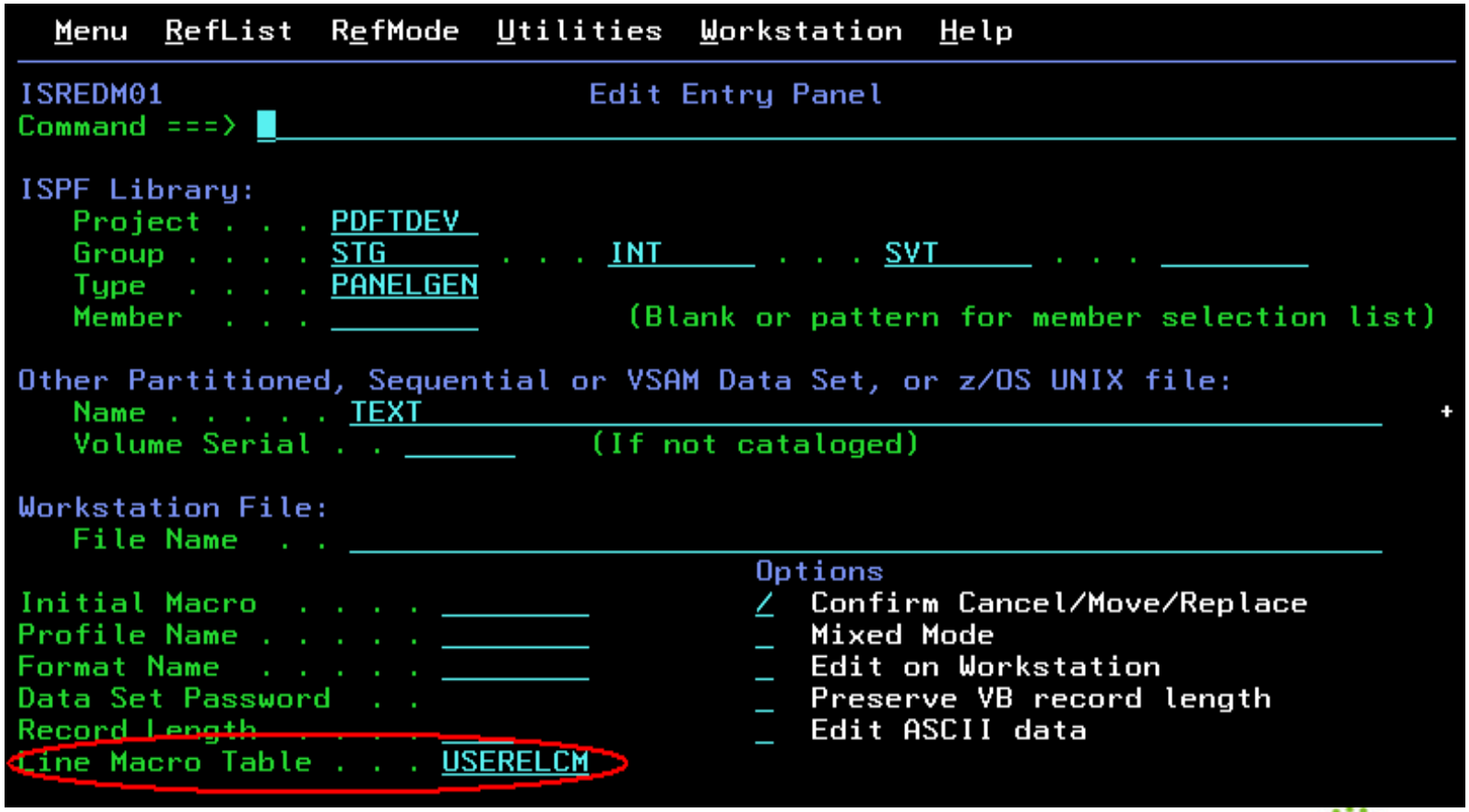
```
  Options  Help
 ------------------------------------------------------------------------------
 ISRUTBP3              ISPF EDIT Line Command Table  USERELCM    Row 1 to 4 of 4
 Command ===> _____________________________________________________ Scroll ===> CSR
                                                                    Shift ===> PAGE
     User      MACRO     Program  Block     Multi     Dest
     Command             Macro    format    line      Used
     ----+---  ----+---  ----+---  ----+---  ----+---  ----+---
 __  CE____    POSLINE_  N        Y         Y         Y
 __  RV____    POSLINE_  N        Y         Y         Y
 __  LEF___    POSLINE_  N        Y         Y         Y
 __  RIT___    POSLINE_  N        Y         Y         Y
 ****************************** Bottom of data ********************************
```

ISPF Editor Support for Line Command macros

```
ISREDDE2   VANDYKE.EXEC(POSLINE) - 01.01                        Columns 00001 00080
Command ===> _                                                  Scroll ===> CSR
****** ********************************* Top of Data ***********************************
000001 /* Rexx - process the CE, RV, LEF, and RIT line commands                  */
000002 /*                                                                        */
000003 /*  CE   Center text on a line                                            */
000004 /*  RV   Reverse text on a line                                           */
000005 /*  LEF  Move text all the way left                                       */
000006 /*  RIT  Move text all the way right                                      */
000007 /*                                                                        */
000008 Address isredit                              /*  Start of macro       */
000009 "MACRO (PARM) NOPROCESS"                     /*  Get line command     */
000010 Address ispexec "CONTROL ERRORS RETURN"       /*  Return ispf errors   */
000011 If wordpos(parm,"CE RV LEF RIT") = 0 Then    /*  If not a command     */
000012     Do                                       /*    we expect          */
000013       zinfo=parm                             /*  Set up for message   */
000014       Address ispexec "SETMSG MSG(ISRE041)"  /*    Invalid command    */
000015       Exit  8                  /* let ISPF handle the error             */
000016     End                        /*                                       */
000017 "PROCESS RANGE" parm           /* Get range for command                 */
000018 If rc>0  Then                  /* If something went wrong               */
000019   Do                           /*                                       */
000020     Address ispexec  "SETMSG MSG(ISRZ002)"   /* Set ISPF's message     */
000021     Exit  8                    /* Let ISPF handle the error             */
000022   End                          /*                                       */
000023 "(START) = LINENUM .ZFRANGE" /* Get 1st line number in the range       */
000024 "(STOP)  = LINENUM .ZLRANGE" /* Get last line number in the range      */
000025 "(DW)   = DATA_WIDTH"        /* Get the width of the editable data     */
000026 Do a = start to stop         /* Loop through the range of lines        */
000027   "(LINE) = LINE "a          /* Get old line value                     */
000028   SELECT                     /* process the command for this line      */
000029     When(parm = "CE")  Then line=center(strip(line),dw) /* Center      */
000030     When(parm = "RV")  Then line=reverse(line)          /* Reverse     */
000031     When(parm = "LEF") Then line=strip(line,"L")    /* Left justify   */
000032     When(parm = "RIT") Then line=right(strip(line,"T"),dw) /* Right     */
000033                        /*                                  Justify     */
000034     Otherwise  Nop     /* Otherwise no op (shouldn't get here)*/
000035   End                  /*                                             */
000036   "LINE "a" = (LINE)"  /* Set new line value                          */
000037 End                    /* End of loop through lines                   */
000038 exit 0                 /* Return to ISPF                              */
****** ********************************* Bottom of Data ********************************
```

ISPF Editor Support for Line Command macros

Specify a user line command table on the edit or view entry panel to enable user line commands for the edit session:



ISPF Editor Support for Line Command macros

Using the CE, RV, LEF, and RIT line commands from the sample user line command macro:

```
ISREDDE2    VANDYKE.TEXT                                          Columns 00001 00080
Command ===> _____________________________________________________ Scroll ===> CSR
****** ********************************* Top of Data ***********************************
ce 001    data to the center
000002
rv 003                                  data to be reversed
000004
lef 05                                  data to the left
000006
rit 07                                  data to the right
****** ******************************** Bottom of Data *********************************
```

```
ISREDDE2    VANDYKE.TEXT                                          Columns 00001 00080
Command ===> _____________________________________________________ Scroll ===> CSR
****** ********************************* Top of Data ***********************************
000001                                data to the center
000002
000003                                  desrever eb ot atad
000004
000005 data to the left
000006
000007                                                            data to the right
****** ******************************** Bottom of Data *********************************
```

JES2 V1.13 Enhancements

- **Batch Modernization**
  - –JES2 Instream data in PROCs and INCLUDE members
  - –JES2 Job Return Code
  - –JES2 Requeue job by command on a step boundary
  - –JES2 Spin any
- **Spool Enhancements**
  - –JES2 Extend Spool dataset
  - –JES2 Spool dataset name
  - –JES2 Spool volume prefix
  - –JES2 Spool migration

JES2 Instream Data in PROCs and INCLUDE members

- **Previously, instream data was not allowed in JCL PROCs or INCLUDEs**
- **Support now added to allow instream data sets to be created when processing DD DATA or DD * JCL within PROCs or INCLUDEs**
  - Support added for both cataloged and instream procedures
  - Control data sets do not have to be separate from PROCs or INCLUDEs
  - Works like instream data in normal JCL stream
- **Support is based on where the job converts (z/OS 1.13)**
  - Can run on downlevel system
- Instream data sets in PROCs…
  - **Are included in viewing original JCL via SDSF (SJ command)**
  - **Are included in extended status DSLIST function (SDSF ?)**
  - **Are NOT included in SPOOL Data Set Browse of JCL**
  - **Are NOT transmitted to other nodes or offloaded**
- **New SYSIN data sets are included in extended status DSLIST function**
- **Works for batch jobs as well as started tasks**

JES2 Instream Data in PROCs and INCLUDE members

- **Embedding instream data in a JES2 procedure:**

```
//HELLO   PROC
//STEPA   EXEC PGM=IEBGENER
//SYSIN   DD   DUMMY
//SYSPRINT DD  SYSOUT=*
//SYSUT2  DD   SYSOUT=*
//SYSUT1  DD   *
HELLO WORLD
//           PEND
```

JES2 Instream Data in PROCs and INCLUDE members

- **SDSF - SJ**

```
000001 //GDAYNESI JOB 'D98A,B9211068','UTILILITY JOB',REGION=0K,                JOB32759
000002 //             MSGLEVEL=(1,1),CLASS=B,MSGCLASS=H,NOTIFY=GDAYNES           00020000
000003 //HELLO  PROC
000004 //STEPA  EXEC PGM=IEBGENER
000005 //SYSIN    DD   DUMMY
000006 //SYSPRINT DD   SYSOUT=*
000007 //SYSUT2   DD     SYSOUT=*
000008 //SYSUT1   DD     *
000009 HELLO WORLD
000010 //           PEND
000011 //S1 EXEC HELLO
****** ********************************************************** Bottom of Data **********
```

- **IEBGENER Output**

```
DATA SET UTILITY - GENERATE
IEB352I WARNING: ONE OR MORE OF THE OUTPUT DCB PARMS COPIED FROM INPUT

PROCESSING ENDED AT EOD
HELLO WORLD
******************************** BOTTOM OF DATA ********************************
```

JES2 Job Return Code

- **Previously, no easy way of determining success or failure of a job**
- **New job return code to report on outcome of entire job**
- **New JOBRC keyword on JOB card**
  - –Possible values for JOBRC keyword
    - MAXRC – Default, job return code is the max of any step
    - LASTRC – Job return code is the return code of the last step
    - (STEP,*stepname.procstepname*) – Job return code is indicated step if it executes, otherwise reverts to MAXRC
- **JOBCLASS JOBRC= MAXRC|LASTRC to affect processing for all jobs in the job class**
  - –JOBRC keyword on job card takes precedence

JES2 Job Return Code

- **Updated HASP165 message text**
  - –*Jobname* ENDED AT *node reason*
  - – Examples of *reason*:
    - MAXCC=*code* - JOBRC was not specified
      - Code is now always 4 digits (MAXCC=0000)
    - JOBRC=*code* - JOBRC was specified and affected the return code
    - MAXRC=*code* - JOBRC was specified but MAXRC was returned
    - ABENDED S*xxx*,U*yyy*
    - ABENDED *abend_code*, JOBRC=code
      - JOBRC=(STEP,*stepname*), step executed, but later step ABENDed

JES2 Requeue Job by Command on a Step Boundary

- **Previously, no easy way to get a job out of execution before job end**
- **Now have a new operand on the $EJ command that forces a job out of execution when the current step ends**
  - –Optional HOLD operand makes job held
  - –Job is requeued for execution
- **New JES2 command option**
  - – $EJ*xxxx*,STEP[,HOLD]
    - Full cross member support
- **Utilizes existing restart logic (continue restart) to perform function**
  - – Requires JES journal to be active
    - JOBCLASS(x) JOURNAL=YES

JES2 Spin Any

- **Previously, JESLOG spin only deals with job logs and system message data sets**
  - Other spin data sets may exist that couldn't be spun
- **JES2 now provides the ability to 'spin' any SPIN SPOOL datasets**
  - Can free SPOOL space associated with log data sets created by long running jobs
- **Update to SPIN= DD operand specification in JCL**
  - Similar in function to JESLOG= keyword on job card
    - SPIN=(UNALLOC,*option*) where *option* is one of:
      - '*hh:mm*' – Spin data set at specified time
      - +*hh:mm*' – Spin data set at interval specified
      - *nnn* [K|M] – Spin every nnn records
      - NOCMD – Cannot spin data set by command (current processing)
      - CMDONLY – Spin only when a command is issued (default)
- **Also supported in dynamic allocation and TSO ALLOC**
- **$TJn,SPIN,DDNAME=*ddname* – command can spin data set on demand**
  - If you omit DDNAME= all active SPIN data sets will be spun

JES2 Extend Spool dataset

- **Can now dynamically extend (expand) a SPOOL data set to adjacent free space on the device after the current SPOOL data set.**
- **Operator requests the extend via command**
  - Can ask for maximum available size or specific, larger size
  - DFSMS services used to extend the data set into adjacent free space
  - JES2 updates SPOOL volume size information based on new extent size
  - Extend can occur without impacting running jobs
- **Command to extend SPOOL to adjacent free space.**
  - **$TSPOOL(*xxxxxx*),SPACE=**
    - The syntax of the SPACE parameter is same as the $S SPOOL command.
      - MAX, (TRK,xxxx), (CYL,xxxx)
    - SPACE= specifies the new TOTAL size of the SPOOL data set (not an increment).
- **The extend can occur while the SPOOL volume is active and does not impact any running address spaces.**
  - JES2 will format the new space added to the volume.
- **Extend occurs without impacting running jobs**
  - New space is always formatted by JES2
- **New message $HASP740 indicates Extend is successful**

JES2 Extend Spool dataset

- **Extension of the data set is limited by:**
  - SPOOL volume must be STATUS=ACTIVE with no commands or migration active or pending against it, and using relative addressing
  - Singe JES2 SPOOL extent per volume restriction still applies
  - Available free space contiguous (after) to the JES2 SPOOL extent
  - Total size limited to architecture
    - JES2 limit is based on LARGEDS on SPOOLDEF
      - Allowed/Always – limit is 1M tracks
      - Fail – limit is 64K
    - DSCB format limits expansion into EAS storage
      - Should migrate to CYL_MANAGED=ALLOWED
      - Allocate SPOOL using DD EATTR = OPT to build format 8/9 DSCB
  - All members of the MAS must be at JES2 z/OS V1.13
    - Down level members can later join the MAS and use the extended data set
- **$DSPOOL displays the results of the extend**
  - $DSPOOL,TGNUM to display the number of track groups in the data set after the extend
  - $DSPL,UNITDATA to display the track range (TRKRANGE) of the data set after the extend

JES2 Spool Data Set Name

- **Previously, JES2 used the same spool dataset name on all spool volumes**
- **SPOOL data set name can now be specified on:**
  - Start SPOOL command for a new volume: $SSPOOL(*x*),DSN=
  - New SPOOL Initialization statement: SPOOL(*x*) DSName=
- **SPOOLDEF DSNAME= is the default name used**
- **SPOOLDEF DSNMASK= limits possible data set names**
  - DSNMASK= can contain generics
  - Supplied SPOOL data set names must match the mask
  - If not specified, DSNAME= must match SPOOLDEF DSNAME=
- **Use of a non-standard DSNAME= requires z11 $ACTIVATE mode**
  - Cannot activate to z2 mode if non-standard DSNAME used

JES2 Spool Volume Prefix

- **Previously, JES2 spool volume prefix was too restrictive**
- **The SPOOLDEF VOLUME= keyword has been enhanced to support generics.**
  - Still limited to 5 characters
  - The value for VOLUME= can be altered by a $T SPOOLDEF command
  - Only used when volume is started
- **If no generics, then prefix**
  - Acts like it does in prior releases
- **If generics in value, then starting SPOOL VOLSER must match pattern specified**
  - For example SPOOLDEF VOLUME=SPL*
- **Should not use until all members migrated to z/OS 1.13**
  - If VOLUME= contains generics, you cannot start a pre z/OS 1.13 JES2 into the MAS.
  - However, if you $T SPOOLDEF VOLUME= to non-generics down level members can again join the MAS.
    - The existing SPOOL volumes will continue to be used (even though they do not match the prefix).

JES2 Spool Migration

- **Currently no quick and easy way of removing a spool volume without impacting active systems or subsystems**
- **JES2 now supports a spool migration command**
  - –Automates the migration process.
  - –Existing active SPOOL pointers (MTTRs and MQTRs) are unaffected.
  - –SPOOL volume consolidation
  - –JES2 services will make the migration transparent
- **Warning: If you have applications that access SPOOL directly, you will break!**

JES2 Spool Migration

- **z/OS 1.13 SPOOL migration function is being enabled**
  - APAR OA36158 closed February 24, 2012
    - PTF UA64366 closed yesterday (March 14, 2012)!!!
- **URL for the new SPOOL Migration web page:**
  - http://www-03.ibm.com/systems/z/os/zos/jes2_spoolmigration.html
- **$M SPOOL command to move data off volume**
  - Faster than $P SPOOL (Minutes not days)
- **Command works with active address spaces using volume**
  - Less activity is better/faster but no need to IPL to stop active jobs
- **Goal of SPOOL migration is to stop using SPOOL data set**
  - Old data set can be deleted and SPOOL volume taken offline
  - It is NOT to eliminate the internal representation of the volume
- **After a successful SPOOL migration**
  - $DSPOOL still shows volume
  - $DJQ,SPOOL= still displays volume
  - New status is MAPPED

JES2 Spool Migration

Some new terms

- ***Migrator*** **:**
  - The member that coordinates the migration.
- ***Migration Phase*** **:**
  - The current 'step' of the migration process.
- ***Source Volume*** **:**
  - The SPOOL volume to be migrated.
- ***Target Volume*** **:**
  - The SPOOL volume to receive the migrated data.
- ***MERGE Migration*** **:**
  - Copy a *Source Volume* to free space on an existing *Target Volume*.
- ***MOVE Migration*** **:**
  - Copy an inactive *Source Volume* to a new *Target Volume*.

JES2 Spool Migration

More new terms

- ***Mapped Volume:***
  - When a *Merge Migration* completes, the *Source Volume* becomes *Mapped.*
  - *Remains Mapped* until all jobs and SYSOUT that have space on the *Source Volume* have been purged.
  - When *Mapped*, the source dataset can be removed and the physical device can be removed.
- ***Mapped Target:***
  - A volume with at least one volume *Merged* onto it.
- ***Reserved* :**
  - New SPOOL attribute.
  - Indicates if the spool volume is selectable but not allocatable.
  - Used to Reserve a new volume for future *Merge Migration(s)*.
  - Reserved volumes have no entries in the BLOB.

JES2 Spool Migration

- **Phases of a SPOOL migration**
  - **PENDING** – Command issued and queued for processing
  - **INITIALIZING** – Create data structures and subtasks.
  - **SETUP** – Prepare source and target data set
  - **COPY** – First pass copy of all data from source to target
  - **CATCHUP** – Second pass copy of tracks updated by active applications
  - **CANCEL** – Error phase that synchronizes stopping migration
  - **BACKOUT** – Error phase to undo any work done in migration
  - **CLEANUP** – Delete data structures and end active migration
- **Cancel can be requested up until start of catchup phase**
  - Internal cancel can occur later in error recovery cases
- **Phase start/end messages issued to SYSLOG**
  - DEBUG VERBOSE=YES sends messages to console
- **Some source volume state changes occur before the INITIALIZING phase and after the CLEANUP phase**

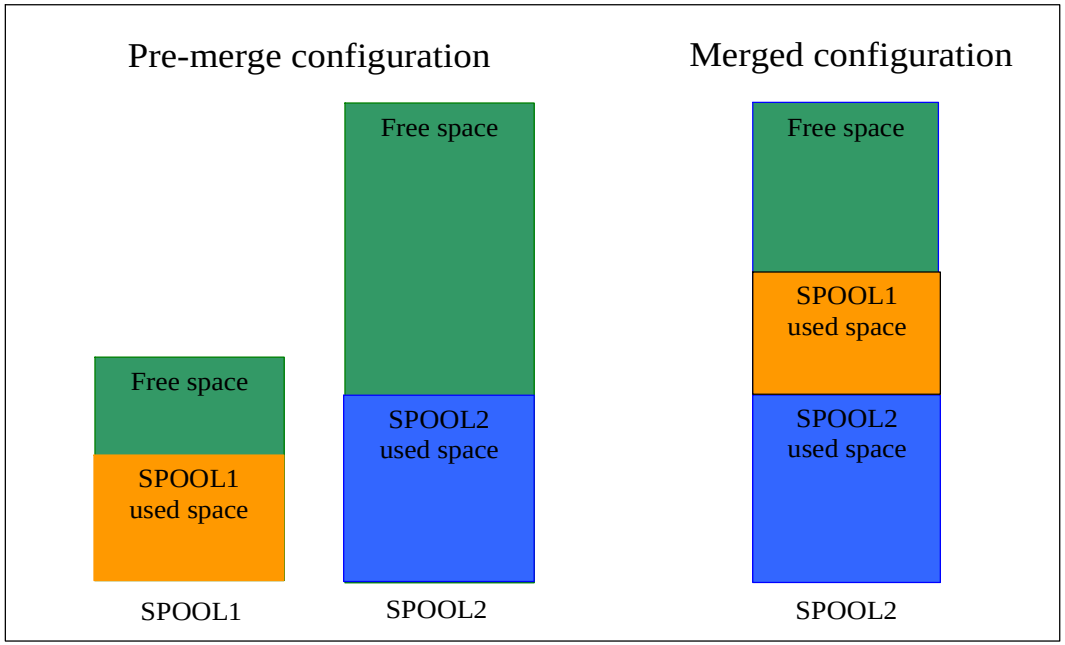
JES2 Spool Migration

- **Two forms of SPOOL migration, MOVE and MERGE**
  - **Move** takes all data on an existing volume and moves it to a new one
    - Source must be INACTIVE ($Z SPOOL done)
      - No active jobs on the volume
    - Target cannot be currently an active SPOOL volume
    - Can specify space to use to create data set on target
    - At the end of move, old (source) volume does not exist
    - Target after a move is active
  - **Merge** takes all data on one volume and merges it onto free space on another volume
    - Most flexible migration option
    - Source can be in any state with active jobs/address spaces
      - Less activity is good
    - Results is a mapped volume that goes away when all jobs using it are deleted
      - Similar to $P SPOOL but device is no longer in use

JES2 Spool Migration

Merge migration

- **Copies an existing *Source* volume to free space on a *Target* volume**
- **Upon completion, the *Source Volume* becomes a *Mapped Volume.***
  - Remains *MAPPED* until all jobs and SYSOUT that have space on the *Source Volume* are purged. It then goes away (no longer exists).



JES2 Spool Migration

- **General restriction (for move and merge migrations):**
  - The *Source Volume* cannot be a *Mapped Target*
    - Cannot merge A to B and then move or merge B to C
      - Until A no longer exists
  - The *Source Volume* cannot be actively migrating or extending.
  - The track size of the *Target Volume* cannot be less than the *Source Volume*
  - The *Source Volume* cannot be stunted
  - Must be at z11 $ACTIVATE mode
    - You can NOT go to z2 mode once a migration has been requested
  - All members must be at release z/OS JES2 V1.13
- **Each SPOOL migration requires a separate XCF group**
  - Used to manage messages for each unique migration
  - JES2 limits migration to 5 concurrent migrations per MAS
  - Group name is SYSMG*xxx*
    - *xxx* is the decimal source SPOOL extent
  - Use D XCF,COUPLE to display MAXGROUP formatted in CDS

JES2 Spool Migration

- **Move migration moves an INACTIVE volume to a new volume**
- **Upon successful completion**
  - The Source Volume no longer exists
  - The Target Volume exists and is active
    - Could be RESERVED if requested on $M SPOOL command
- **Source Volume STATUS= values:**
  - INACTIVE ->MIGRATING ->does not exist
- **Target Volume STATUS= values:**
  - Does not exist ->ACTIVE
- **Additional move migration restrictions :**
  - The Source Volume must be INACTIVE
  - Source Volume cannot be in Absolute format (instead, do a merge).
  - The Target Volume will inherit the Source Volume Tracks per Track Group value.

JES2 Spool Migration

- **Merge migration moves a Source Volume to an free space on an active Target Volume**
- **Upon successful completion**
  - The Source Volume still exists but is STATUS=MAPPED
    - Still displays in $DSPOOL and in $DJQ,SPOOL lists
  - The Target Volume is a mapped on volume
- **Source Volume STATUS= values:**
  - INACTIVE ->MIGRATING ->MAPPED
- **Additional merge migration restrictions**
  - The Target Volume must be Active (can be Reserved).
  - The Target Volume cannot be stunted.
  - The Target Volume must use relative addressing..

JES3 V1.13 Enhancements

JES3 Dynamic Spool Addition

- **Previously, adding a spool extent was disruptive**
  - Warm start required
  - Disrupted all members in the JESplex
- **Can now add spool extents with the *F CONFIG command**
  - Alternatively, add spool extents with a Hotstart with refresh
- **Avoids a complex-wide IPL when adding a spool extent**
- **Installation by setting up a new member with all JSAM definitions**
  - Starting with DYNALLOC statements
  - Ending with ENDJSAM
  - Or set up a new inish deck with an INCLUDE statement pulling in the JSAM member
  - Or perform a Hot Restart with the new inish deck
  - Or issue the *MODIFY CONFIG,ADD= with the new JSAM member

JES3 Dynamic Spool Addition

- **JES3 Actions**
  - JES3 will parse the statements and compare them to the current configuration
  - New extents are added
  - New partitions are added
  - Deletions are rejected
  - Other parameters are changed if possible – currently only the ones on the OPTIONS statement
  - Changes are committed if no errors are found
  - If *F CONFIG, new spool extents are made usable only after all locals connect (or are flushed)
  - Note: Flush will now happen automatically when XCF detects the system left the Sysplex

DFSMS V1.13 Enhancements

- **Catalog enhancements**
  - –Catalog PARMLIB member (IGGCATxx)
  - –Catalog Alias update
  - –IDCAMS LISTCAT LVL CDILVL
- **IEBCOPY enhancements**
- **PDSE enhancements**
  - –PDSE Validation Utility
  - –New PDSE Cache Refresh and User Display Commands
- **Better OPEN/CLOSE/End of Volume Messages**
- **DADSM Pre / Post Allocation – dynamic exits**

Catalog PARMLIB Member (IGGCATxx)

- **Previously, the only way the customers could customize their Catalog environment is via SYS1.NUCLEUS(SYSCATxx) and SYS1.PARMLIB(LOADxx)**
  - –Only 1 line (80 characters) is available and it has been long filled, preventing any new parameters from being added.
  - –It prevents customers from changing these parameters once the system has been IPL'ed
- **In z/OS V1.13 you can now create your own catalog PARMLIB member(s) to customize the catalog environment.**
  - –The parameters can be changed by doing an IPL or a simple restart of the catalog address space (CAS).

Catalog PARMLIB Member (IGGCATxx)

- **The following parameters are supported in this line item:**
  - VVDSSPACE(primary,secondary) – Primary and Secondary space quantities for VVDS implicit defines in tracks. Default is 10 tracks for both.
  - TASKMAX(n) – Catalog service task upper limit. Default is 180. Minimum is 24 and maximum is 360.
  - NOTIFYEXTENT(n) – Percentage threshold to warn when a catalog is getting full. Default is 80%.

Catalog PARMLIB Member (IGGCATxx)

- **The following Enable/Disable parameters supported via the MODIFY CATALOG command are also supported in this line item**
  - DELFORCEWNG(YES/NO) - Enables/Disables the ability to issue a warning message when attempting to use the DELETE VVDS RECOVERY and DELETE USERCATALOG FORCE commands. Default is YES.
  - DSNCHECK(YES/NO) - Enables/Disables syntax checking on names being added to a catalog. Default is YES.
  - SYMREC(YES/NO) - Enables/Disables the ability to create a SYMREC. Default is YES.
  - UPDTFAIL(YES/NO) – Enables/Disables the message IEC390I from been issued when a VSAM update request against a catalog abnormally terminates. Default is YES.
  - VVRCHECK(YES/NO) - Enables/Disables enhanced VVR checking on VVDS I/O. Default is NO.
  - DELRECOVWNG(YES/NO) – Enables/Disables the ability to issue a warning message when the DELETE UCAT RECOVERY command is issued. Default is NO.
  - EXTENDEDALIAS(YES/NO) –Enables/Disables the ability to create extension records for user-catalog aliases. Default is NO.

Catalog PARMLIB Member (IGGCATxx)

- Comments begin with /* and end with */. Must fit on a single line.
- Multiple declarations of any parameters are allowed. The last valid value will be used for the parameter. For example, the following are allowed:

  VVDSSPACE(10,10)

  VVDSSPACE(14,14)

  VVDSSPACE(14,14) will be used as the final value for VVDSSPACE in this case
- No blanks will be allowed between digits.
  - For example: VVDSSPACE(1 0, 14) is not valid for a VVDSSPACE(10,14) declaration
- Input ends with the end of file (EOF).
- All parameters should start and finish on the same line.
- The parameters DO NOT have to start in column one. They must fit entirely within columns 1 and 71. Any text beyond column 71 will be ignored.
- If an invalid parameter is detected on any line, processing for that line stops at the last valid parameter on that line. Processing continues at the next line.

Catalog PARMLIB Member (IGGCATxx)

- **The PARMLIB member(s) must be created in the PARMLIB concatenation.**
- **The IGGCATxx parameters are processed both at IPL and when CAS is restarted**
  - F CATALOG,RESTART
- **The IGGCATxx member(s) are optional but, if specified, the parameters specified within take precedence over the parameters specified in the LOADxx and SYSCATxx members.**
- **The suffixes should be specified in the new IEASYSxx parameter, CATALOG=(*list of suffixes separated by commas*).**
- **When multiple members are specified, the members are processed in the order specified.**
  - Examples:
    - CATALOG=AA (specifies one member. No parenthesis needed if only one member)
    - CATALOG=(AA,BB,05) (specifies multiple members. Values in IGGCAT05 will override those in IGGCATBB and IGGCATAA.)

Catalog PARMLIB Member (IGGCATxx)

- Requires one or more PARMLIB members (IGGCATxx) and populate it with the desired settings.
- The suffix (xx) is any 2 alphanumeric or national ($,#,@) characters; the default is “00” (zeros).

Sample IGGCATxx:

```
VVDSSPACE(40,50)
TASKMAX(75)
                          --> Blank line allowed
NOTIFYEXTEN(19)           --> NOTIFYEXTENT misspelled. Will be
                              ignored, and an error is issued.
VVRCHECK(   YES)
```

Catalog PARMLIB Member (IGGCATxx)

- If CATALOG= is specified, and a particular IGGCATxx member on it is not found, it is skipped. If none of the members are found, the default PARMLIB member (IGGCAT00) is searched.
- If CATALOG= is not specified, the default member (IGGCAT00) is searched.
- If IGGCAT00 does not exist, then default values are used for the parameters.
- If invalid values are detected in any of the PARMLIB member(s), the parameter is ignored and a message displaying the invalid parameter is issued in the SYSLOG and also to the console if it is a CAS restart

Catalog Alias Update

- **Most catalog entries are in “user catalogs”, not the master catalog.**
- **Number of aliases a user catalog connector can have is currently limited by the maximum record size for the master catalog.**
  - Default of the maximum record size: 32768 bytes (32 KB)
  - Catalog records are limited to 32768 byte (32 KB) record size.
  - User catalog connectors are catalog records.
- **Currently, only approximately 3,500 catalog aliases are allowed per user catalog.**
- **In z/OS V1.13 a new extension record type ‘V’ for user catalog connectors was introduced.**
  - The maximum number of user catalog connector extension records is 255.
- **This allows users to define more aliases per user catalog**
  - Theoretically, limit is over 500,000 aliases per user catalog

Catalog Alias Update

- **The function by default is disabled**
  - IBM recommends customers turn on the switch when all the systems in a sysplex are z/OS V1.13
- **The switch can be turned ON/OFF via catalog Modify Commands:**
  - F CATALOG,ENABLE(EXTENDEDALIAS)
  - F CATALOG,DISABLE(EXTENDEDALIAS)
- **The switch can also be turned ON/OFF via a catalog PARMLIB member IGGCATxx in SYS1.PARMLIB by specifying:**

  EXTENDEDALIAS(YES/NO)

IDCAMS LISTCAT LVL CTGCDI

- **LISTCAT LVL() is good for listing the components of a VSAM cluster or AIX object, but...**
  - –only shows the data and/or index components if they match the LVL pattern
- **z/OS V1.13 introduces a new CDILVL parameter - default is NOCTGLVL**
  - –e.g., LISTC LVL(XYZ.BASE1) ALL CTGLVL
    - XYZ.BASE1.CLUSTER
      - o XYZ.BASE2.DATA ← not shown without CTGLVL
      - o XYZ.BASE3.INDEX ← not shown without CTGLVL

IEBCOPY Enhancements

- **IEBCOPY elapsed time reductions of 19%-70%* when**
  - –Copying one partitioned data set (PDS) to another
  - –Unloading a PDS to a sequential data set
  - –Compressing a PDS
- **IEBCOPY should not require its caller to be APF authorized**
  - –As delivered, IEBCOPY still has APF authorization but adapts to non-APF authorized callers
    - Old level of IEBCOPY is still callable as IEBCOPYO
    - Undocumented alias of IEBDSCPY now points to IEBCOPYO
- **Most IEBCOPY storage is below the line but it is now using buffers above the line**
  - –Benefit for marginal virtual storage constraint conditions

*Note: Performance improvements are based on internal IBM laboratory tests. Your results will vary. I/O performance improvements measured for fully shared zFS ranged from very small to 900%, with the majority of workload conditions tested falling between 50% and 150%. The actual amount of improvement will depend on the environment (monoplex or Parallel Sysplex) and the type of file processing being done. IEBCOPY improvement will depend on the amount of data being copied, the record format, the record length, and the block size.

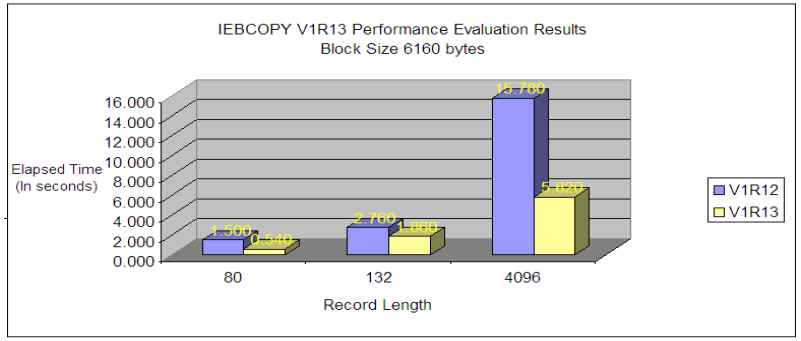
Scalability and Performance …

IEBCOPY Performance*

Compress PDS Testing results
Block size 6160 Format (VB)

Elapsed Time measurements

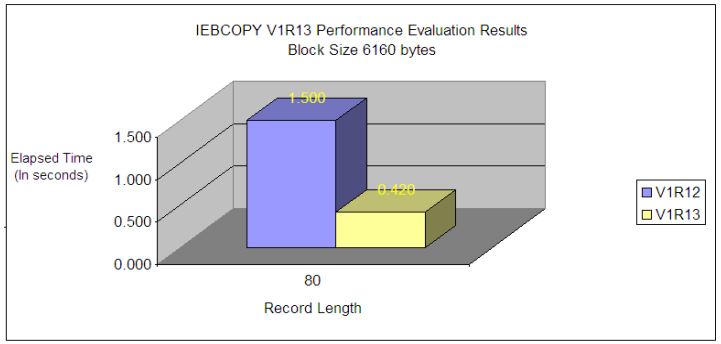
LRECL	V1R12	V1R13	Delta (%)
80	1.500	0.540	-64.00
132	2.760	1.860	-32.61
4096	15.780	5.820	-63.12



Compress PDS Testing results
Block size 6160 Format (FB)

Elapsed Time measurements

LRECL	V1R12	V1R13	Delta (%)
80	1.500	0.420	-72.00
132	*	*	---
4096	*	*	---

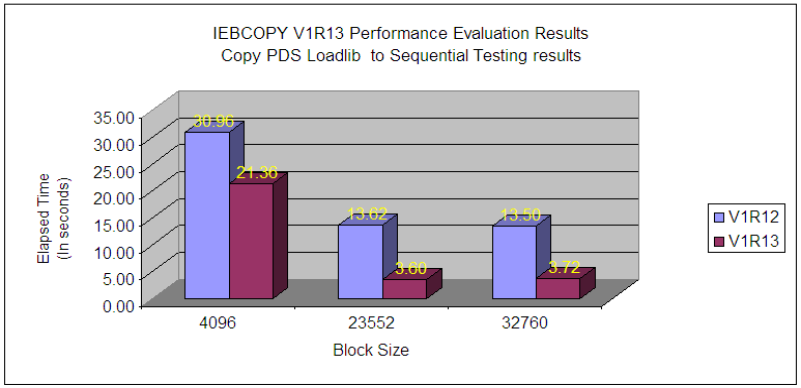


Note: * .- Record length is inconsistent with block size for this record format. Test not executed for this variation

Copy PDS Loadlib to SEQ Testing results
LRECL=0 Format (U)

Elapsed Time measurements

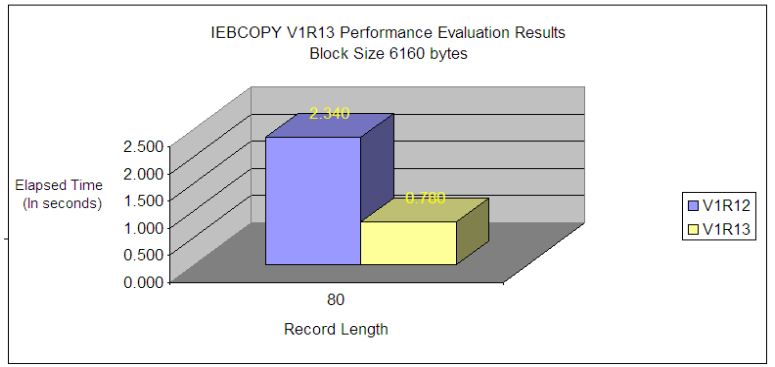
BLKSIZE	V1R12	V1R13	Delta (%)
4096	30.96	21.36	-31.01
23552	13.62	3.60	-73.57
32760	13.50	3.72	-72.44



Copy PDS to PDS Testing results
Block size 6160 Format (FB)

Elapsed Time measurements

LRECL	V1R12	V1R13	Delta (%)
80	2.340	0.780	-66.67
132	*	*	---
4096	*	*	---



Note: * .- Record length is inconsistent with block size for this record format. Test not executed for this variation

* IBM Laboratory results; your results may vary. Measured IEBCOPY performance improvements varied with the amount of data being copied, block size, record format, and record length.

PDSE Validation Utility

- **PDSE Validation tool designed to verify the structure of the PDSE directory.**
  - First phase of the validation tool was integrated into z/OS 1.12 to identify corrupt PDSE's in LNKLST and at NIP time.
- **The PDSE validation utility may be invoked using job control statements, PGM=IEBPDSE. The optional PARM keyword may be specified.**
  - PARM=[DUMP|NODUMP]
    - If the DUMP option is specified, the PDSE validation utility will issue an ABEND in the PDSE address space when an error has been found in the analysis of the PDSE.
  - **Note:** The PDSE validation utility does not validate the data in the members.
  - IEBPDSE does not require APF authorization.

PDSE Validation Utility - Examples

- **Example 1: will validate IBMUSER.SIMPLE.V2.PDSE and send the results to SYSPRINT.**

```
//STEPCHK EXEC PGM=IEBPDSE
//SYSPRINT DD SYSOUT=A
//SYSLIB   DD DSN=IBMUSER.SIMPLE.V2.PDSE,DISP=OLD
```

- **Example 2: will validate IBMUSER.SIMPLE.V2.PDSE and IBMUSER.SIMPLE.V3.PDSE and send the results to the job log.**

```
//STEPCHK2 EXEC PGM=IEBPDSE
//SYSLIB   DD DSN=IBMUSER.SIMPLE.V2.PDSE,DISP=OLD
//         DD DSN=IBMUSER.SIMPLE.V3.PDSE,DISP=OLD
//         DD DSN=SYS1.TCPIP.SEZALOAD,DISP=SHR
```

PDSE New Commands

- **When a PDSE error has occurred, the installation needs to access what is affected by the error and may need to refresh the in-storage copy of the data set.**
- **In z/OS V1.13, two new commands are provided:**
  - The CONNECTIONS command is useful in determining which jobs are affected when an error occurs associated with a PDSE. The installation can then determine if a reIPL or restart of the PDSE address space must be done immediately.
    - **D SMS,PDSE<1>,CONNECTIONS,DSN(pdsename)<,VOL(volser)>**
  - The REFRESH command is useful in discarding what may be bad data for a PDSE after an error.
    - **V SMS,PDSE<1>,REFRESH,DSN(pdsename)<,VOL(volser)>**

Better OPEN/CLOSE/End of Volume Messages

- Open, Close, End of Volume and the OPEN or CLOSE access method executors detect hundreds of error conditions that result in ABEND message that contain a numeric ABEND code and return codes with little English.
- z/OS V1.13 provides an installation option via DEVSUPxx to additionally include descriptive text appended to the associated ABEND message, eliminating the need to reference the message manuals to interpret the ABEND and return codes.
- Originally, the new DEVSUPxx PARMLIB keyword to request that the error description be appended to the determinant ABEND message:
  - OCE_ABEND_DESCRIP={YES | NO}
  - The default is NO.
- Example of the output:

```
– IEC146I 513-08,IFG0196T,CRTAAL1,CRTTSL1,SYSUT2,0920,,DATASET1  036
– ERROR DESCRIPTION:
– A LABEL VIOLATED THE PUBLISHED STANDARD FOR THAT LABEL, AND THE LABEL
– VALIDATION EXIT ISSUED A RETURN CODE REQUESTING OPEN OR EOV TO REJECT
– THE VOLUME.
– END ERROR DESCRIPTION: IEC146I
```

Better OPEN/CLOSE/End of Volume Messages APARs OA37957 and OA37505

- **New Function to allow verbose message lines contained in a multi-line message (MLWTO) to be included in the JOBLOG but removed before they are written to the SYSLOG/OPERLOG, sent to another system, or queued to a console.**
- **APAR OA37957 will allow verbose message lines of a multi-line WTO to be suppressed from SYSLOG/OPERLOG or consoles, leaving them solely in JOBLOG.**
  - New .MSGOPTION statement in an active MPFLSTxx PARMLIB member specifies whether verbose message lines of a multi-line WTO are to be suppressed.
  - MPFLSTxx (message processing facility list) Syntax for controlling the production of verbose messages
    - To control the production of verbose messages, MPFLSTxx recognizes one statement type .MSGOPTION.
    - .MSGOPTION allows you to specify whether verbose messages are to be produced by the components of your system.
      - o The syntax of the .MSGOPTION statement is:
        - » .MSGOPTION VERBOSE (Y)
          (N) - default

Better OPEN/CLOSE/End of Volume Messages APARs OA37957 and OA37505

- APAR OA37505 provides DFSMS support for .MSGOPTION VERBOSE (Y)
- With the application of APAR OA37957 and OA37505, the OCE_ABEND_DESCRIP keyword has no effect.
  - If you code any value for this keyword, the system issues message:
    - "IEA253I OCE_ABEND_DESCRIP NO LONGER HAS AFFECT. USE MPFLSTxx MEMBER".

DADSM Pre / Post Allocation – Dynamic Exits

- **IGGPRE00 and IGGPOST0 are now dynamically replaceable!**
  - No need to IPL
  - Multiple exits are supported
  - Satisfies MR1207046307, MR0328072150, SSMVSS07008, and partial implementation of MR0220035354
  - DADSM takes action according to the highest return code from any of the exits for IGGPRE00_EXIT:
    - 0. Continue
    - 4. Reject the request on the current volume but DADSM can try another volume.
    - 8. Reject the request and do not try another volume.
  - The IGGPOST0_EXIT exit has no return code.

- Examples
  - SETPROG EXIT,ADD,EXITNAME=IGGPRE00_EXIT,MODNAME=IGGPRE01
  - SETPROG EXIT,ADD,EXITNAME=IGGPOST0_EXIT,MODNAME=IGGPOST5

BCP (SMF) V1.13 Enhancements

- SMF Allow Archive or Delete of an entire SMF logstream
- SMF IFASMFDL stop reading before end of logstream
- SMF Improved Statistics Summary Report

SMF Allow Archive or Delete of an entire SMF logstream

- **Previously, it was not possible to archive and delete an entire logstream**
  - This limited configuration options for customers when setting up SMF logstream recording.
- **In z/OS V1.13, a method is provided so that the ARCHIVE and DELETE operations can operate on the entire logstream**.
- **Being able to ARCHIVE or DELETE the entire logstream provides better migration options for customers who want to use SMF logstream recording**.
  - Without this support if an ARCHIVE or DELETE of an entire logstream is attempted IFASMFDL will fail and an IFA832I message will be issued
  - With SMF data set recording it is very common to see JCL that DUMPs and CLEARs a data set.
    - The same JCL would be reused without requiring changes to the JCL.
  - Now with this support a similar concept is available.

SMF Allow Archive or Delete of an entire SMF logstream

- **Take the following SYSIN to IFASMFDL as an example:**

```
LSNAME(IFASMF.MULTSYS.STREAM1,OPTIONS(ARCHIVE))
OUTDD(DUMP01,TYPE(0:255))
RELATIVEDATE(BYDAY,0,1)
```

  The RELATIVEDATE parameter here will set the end time of selection to the date and time that the job was submitted

- **In the past this job would be at risk of failing if every thing in the logstream was selected.**
  - This would be a race between IFASMFDL and any SMF record writers.
- **Now IFASMFDL will write a marker into the logstream to allow for the deletion of all of the data selected.**
  - No new parameters or command changes
- **If the logstream can not be written to this job will still fail.**

SMF IFASMFDL stop reading before end of logstream

- **Previously, IFASMFDL would always read until the end of the logstream regardless of the specified end date and time specified.**
  - –SMF data set recording did not have this issue since each data set contained only a fixed amount of data.
- **Solution**
  - –Provide a new option to allow IFASMFDL to stop reading the logstream before the end.
    - SMARTENDPOINT and SMARTEPOVER(xxxx).
  - –The SMARTENDPOINT and SMARTEPOVER options for IFASMFDL can be used to control how much data is read from the logstream.
  - –Depending on the configuration this can greatly reduce the duration of IFASMFDL jobs.

SMF IFASMFDL stop reading before end of logstream

- **This support has two new options for the SYSIN of IFASMFDL**
  - SMARTENDPOINT and SMARTEPOVER(xxxx).
- **In z/OS V1.13 we now support SMARTENDPOINT for ARCHIVE and DELETE.**
- **SMARTENDPOINT has been available for the DUMP option in z/OS V1.12 and below with APAR OA31737 and OA34374**
  - Note that at z/OS V1.12 and earlier SMARTENDPOINT does not support ARCHIVE or DELETE processing. If it is used the keyword will be ignored.
- **The SMARTEPOVER(xxxx) option specifies a value between 0000 and 0200 (2 hrs) that controls the SMARTENDPOINT processing.**
  - The default is 0200
- **Further guidance available in the MVS System Management Facilities (SMF) SMARTENDPOINT processing uses the following rules to find the logical end point in the logstream**

SMF IFASMFDL stop reading before end of logstream

- **SMARTENDPOINT processing uses the following rules to find the logical end point in the logstream:**
  - –Take the specified end time plus the SMARTEPOVER value. That is the logical smart end point time.
  - –For each SID found in a logstream keep a table entry and mark that SID complete when all SIDs have hit the smart end point time.
  - –Once all SIDs are accounted for stop reading.
- **This process occurs on a per logstream basis.**

SMF IFASMFDL stop reading before end of logstream

- **New message IFA844I issue when SMARTENDPOINT processing is used.**
  - It lists the SIDs encountered in each logstream that was processed with SMARTENDPOINT.
  - `IFA844I THE FOLLOWING SIDS ARE PRESENT IN` *lsname*
    sid1 sid2 sid3 sid4 ....
  - In the message text:
    - *lsname* – is the name of the logstream.
    - *sidn* – is the SID value for the z/OS image.

SMF Improved Statistics Summary Report

- Currently the Summary Statistics Report written by IFASMFDL provides the date range of data read in all logstream.
- There was no way to quickly tell what data was processed (written and/or deleted) from any given logstream.
- New message IFA846I will now be displayed for all operations (DUMP, ARCHIVE, DELETE) and it will detail the range of data processed for each logstream.

```
IFA846I PROCESSED DATA RANGES FOR LOGSTREAMS
LSNAME START DATE/TIME END DATE/TIME
IFASMF.MULTSYS.STREAM3 11/05/2010 12:02:00 11/05/2010 12:06:00
IFASMF.MULTSYS.STREAM2 11/05/2010 12:03:00 11/05/2010 12:06:00
```

SMF Enhancements – available for earlier z/OS releases

- **This support was rolled back to z/OS V1.11 and is available via the following PTFs for APAR OA34589:**
  - HBB7760 UA58910
  - HBB7770 UA58911

HCD V1.13 Enhancements

- HCD Warning if device subchannel set mismatch
- HCD Check for PPRC Secondary Device
- HCD Warning when changing local system name
- HCD IODF Consistency check
- HCD Partition usage reporting

HCD Warning if device subchannel set mismatch

- **When defining a device the subchannel set number in the device-to-processor and the device-to-OS definitions must match; otherwise the device can not be used.**
- **When you change a device subchannel set ID in the device-to-processor definition, and this subchannel set ID is not used in any device-to-OS definition for this device, HCD now issues the existing information message CBDG534I earlier in the process, so that you can adjust the subchannel set ID definition before building the production IODF.**
  - `CBDG534 'Device xxxx (range nnn) specifies different subchannel set numbers for its processor and operating system definitions.'`

HCD Check for PPRC Secondary Device

- **If a PPRC secondary device D/T3390D is contained in the OS configuration (in an alternate subchannel set), a corresponding base device D/T3390B must be defined in subchannel set 0.**
- **When building a production IODF, HCD checks for each OS configuration of type MVS with a connected 3390D device, that a 3390B device with the same device number is also connected to this OS configuration.**
- **If the 3390B device is missing, HCD issues the CBDA398I warning message.**
  - `CBDA398I 'PPRC secondary device xxxx in OS configuration xyz does not have a PPRC primary device defined in subchannel set 0.'`

HCD Warning when changing local system name

- The source and target CHPIDs of a CIB coupling connection are each given the local system name of the processor to which they will connect.
- A change of the local system name of a processor that has a CIB connection to another processor changes also the configuration of this other processor.
- An activation is required for both processor configurations. In case of a stand-alone CF processor, a POR would be required.
- Therefore, HCD issues the CBDG400I warning message to make users aware of the consequences whenever a user changes a processor's local system name.

```
CBDG400I 'Change of local system name of processor
proc1 causes a change of the I/O configurations for the
following processor(s): proc2 ...'.
```

HCD IODF Consistency check

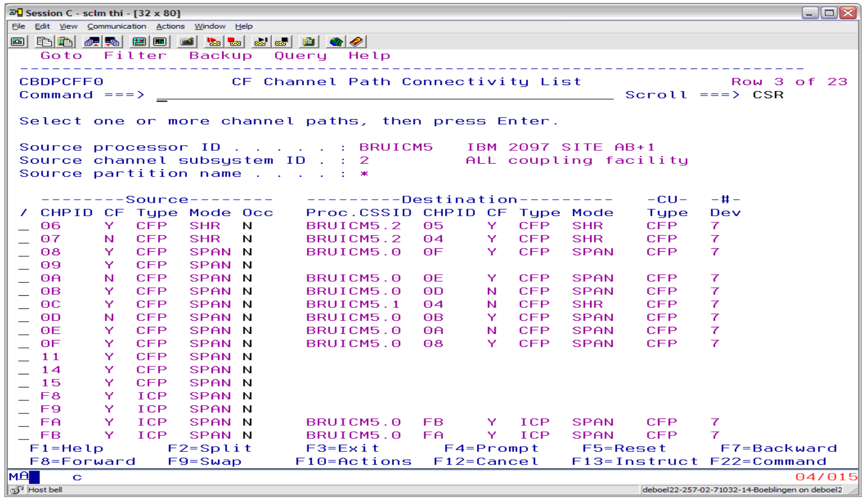
- In z/OS V1.7 There was a new profile option, *CHECK_IODF*, which you can specify to perform an automatic check for consistent IODF data when the currently allocated IODF is switched or the HCD dialog is terminated.
- In z/OS V1.13, HCD now also invokes the IODF checker whenever a general validation of completeness and consistency of the IODF is performed, for example, if you build a production IODF or a validated work IODF.
- If a defect is detected in the IODF, the following message is issued:

```
CBDA999I 'Defect(s) detected in IODF dsn'
```

HCD Partition usage reporting

- **Previously, HCD generated control unit and device definitions for a CF CHPID only if the target CHPID of the CF connection connects to a partition with usage type CF or CF/OS.**
- **However, the HCD CF Channel Path Connectivity list/report only shows the partition names but not their usage types**
- **The Channel Path List is enhanced to show the partition usage type for each partition.**
  - The usage type is displayed in the partition legend above the partition matrix, which is visible when scrolling to the right.
  - In addition, the PCHID column has been placed next to the CHPID column.

HCD Partition usage reporting



```
Session C - sclm thi - [32 x 80]
File  Edit  View  Communication  Actions  Window  Help
   Goto  Filter  Backup  Query  Help
 --------------------------------------------------------------------------
 CBDPCFF0              CF Channel Path Connectivity List           Row 3 of 23
 Command ===> ________________________________________________ Scroll ===> CSR

 Select one or more channel paths, then press Enter.

 Source processor ID . . . . . : BRUICM5    IBM 2097 SITE AB+1
 Source channel subsystem ID . : 2          ALL coupling facility
 Source partition name . . . . : *

   --------Source--------   ---------Destination---------   -CU-  -#-
 / CHPID CF Type Mode Occ   Proc.CSSID CHPID CF Type Mode   Type  Dev
 _ 06    Y  CFP  SHR  N     BRUICM5.2  05    Y  CFP  SHR    CFP   7
 _ 07    N  CFP  SHR  N     BRUICM5.2  04    Y  CFP  SHR    CFP   7
 _ 08    Y  CFP  SPAN N     BRUICM5.0  0F    Y  CFP  SPAN   CFP   7
 _ 09    Y  CFP  SPAN N
 _ 0A    N  CFP  SPAN N     BRUICM5.0  0E    Y  CFP  SPAN   CFP   7
 _ 0B    Y  CFP  SPAN N     BRUICM5.0  0D    N  CFP  SPAN   CFP   7
 _ 0C    Y  CFP  SPAN N     BRUICM5.1  04    N  CFP  SHR    CFP   7
 _ 0D    N  CFP  SPAN N     BRUICM5.0  0B    Y  CFP  SPAN   CFP   7
 _ 0E    Y  CFP  SPAN N     BRUICM5.0  0A    N  CFP  SPAN   CFP   7
 _ 0F    Y  CFP  SPAN N     BRUICM5.0  08    Y  CFP  SPAN   CFP   7
 _ 11    Y  CFP  SPAN N
 _ 14    Y  CFP  SPAN N
 _ 15    Y  CFP  SPAN N
 _ F8    Y  ICP  SPAN N
 _ F9    Y  ICP  SPAN N
 _ FA    Y  ICP  SPAN N     BRUICM5.0  FB    Y  ICP  SPAN   CFP   7
 _ FB    Y  ICP  SPAN N     BRUICM5.0  FA    Y  ICP  SPAN   CFP   7
  F1=Help      F2=Split     F3=Exit      F4=Prompt    F5=Reset     F7=Backward
  F8=Forward   F9=Swap     F10=Actions  F12=Cancel   F13=Instruct F22=Command
MA      c                                                              04/015
Host bell                              deboel22-257-02-71032-14-Boeblingen on deboel2
```

<u>CF Channel Path Connectivity List:</u>
Column CF indicates whether CHPID is connected to a partition with usage type CF or CF/OS.

<u>CF Channel Path Connectivity Report:</u>
Asterisk before partition name indicates that the partition usage type is defined as CF or CF/OS.

```
                          CF CHANNEL PATH CONNECTIVITY REPORT                 TIME: 09:07  DATE: 2010-09-10  PAGE F-    4
  PROCESSOR ID BRUICM5  TYPE 2097    MODEL E64     CONFIGURATION MODE: LPAR
-------------- SOURCE -------  ------------------- DESTINATION ------------------- --- SOURCE ---- - DESTINATION -
                ACCESS/CAND  PROCESSOR                                ACCESS/CAND  CNTRL DEVICE    CNTRL DEVICE    CNTL
CHPID TYPE MODE O LIST       ID        TYPE-MODEL    CHPID TYPE MODE LIST         UNIT  NUM,RANGE UNIT  NUM,RANGE TYPE
_____________ ___________ ______________________ ______________ ____________ _____________ ______________ ____

0.FA  ICP  SPAN N PLXCSYC1   BRUICM5   2097-E64      0.FB  ICP  SPAN PLXCSYC1     FEC8  FEC0,7    FEC8  FEC0,7    CFP
                  PLXCSYC2                                           PLXCSYC2           FEC8,7          FEC8,7
2.FA             *PLXCCF1                            2.FB           *PLXCCF1
-------------------------------------------------------------------------------------------------------------------
0.FB  ICP  SPAN N PLXCSYC1   BRUICM5   2097-E64      0.FA  ICP  SPAN PLXCSYC1     FEC8  FEC0,7    FEC8  FEC0,7    CFP
                  PLXCSYC2                                           PLXCSYC2           FEC8,7          FEC8,7
2.FB             *PLXCCF1                            2.FA           *PLXCCF1
-------------------------------------------------------------------------------------------------------------------
2.04  CFP  SHR  N *PLXCCF1   BRUICM5   2097-E64      2.07  CFP  SHR  TESTOS                   FED8  FED0,7
                  TESTOS                                                                             FED8,7
                 *PLXACF1 (C)                                                                        FFF9,7
-------------------------------------------------------------------------------------------------------------------


    LEGEND FOR ACCESS/CAND LIST:
    ----------------------------
     *  - PARTITION IS OF USAGE TYPE CF OR CF/OS
    (C) - PARTITION IS IN CHPID'S CANDIDATE LIST ONLY
```

BCP (IOS) V1.13 Enhancements

IOS Improved Channel Path Recovery

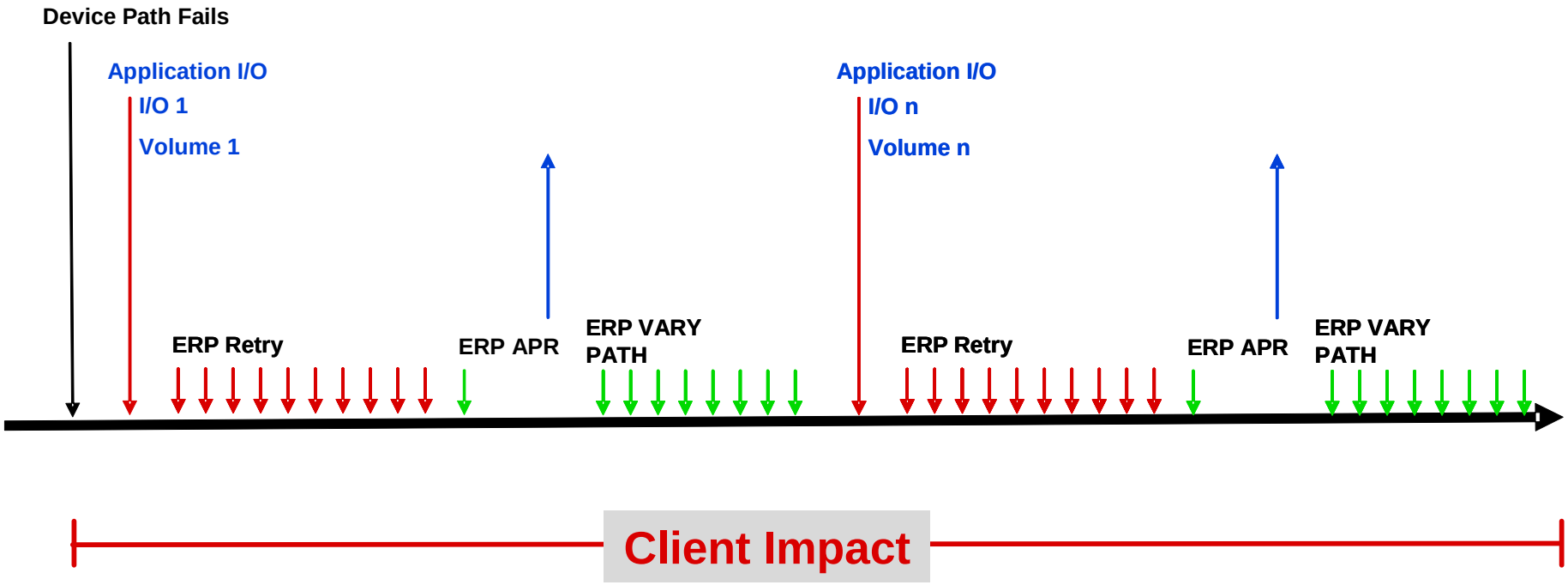
- **Currently, when various types of path-related errors occur, IOS removes the path only from the one device on which the error occurred.**
- **It would be beneficial if z/OS were more pro-active when these types of path-related errors occur.**
  - Provide improved system resilience following various types of hardware failures, including fabric and control unit ports by reducing the elapse time for z/OS to recover from path-related errors.
  - The elapsed time is reduced by having the system threshold path-related errors that occur and recognizing the scope of devices affected.
  - Recovery is then performed for the entire scope of devices impacted by the failing resource, all at one time.

Improved Channel Recovery

- **In z/OS V1.13, IOS will:**
  - Track path-related errors at the Control Unit level and will, at a threshold point (# of failures in specific time interval), respond by removing the failing path from all devices in the Control Unit.
  - Respond to flapping links conditions and dynamic pathing errors by removing the failing path from all devices in the Control Unit.

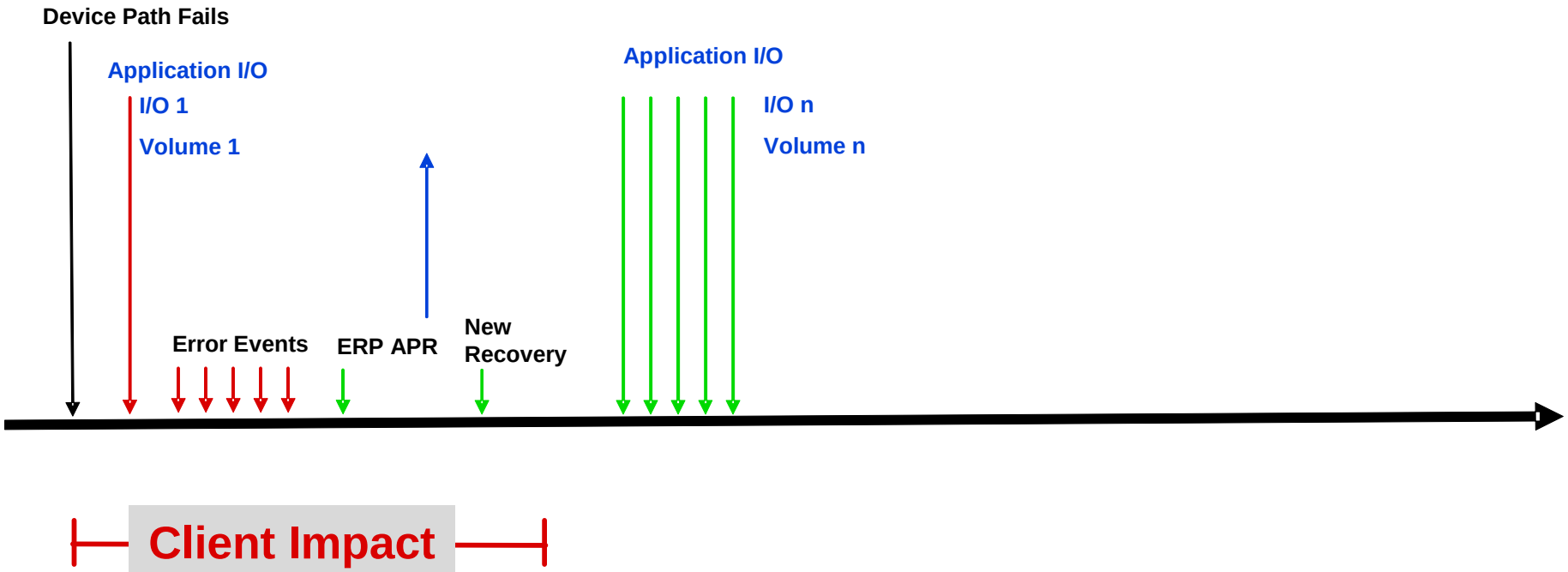
Improved Channel Recovery

I/O Recovery for Failing Path - Before



Improved Channel Recovery

I/O Recovery for Failing Path - After



Improved Channel Recovery

- **IECIOSxx PARMLIB Member**
  - Command: SET IOS=xx
  - Statement:

RECOVERY PATH_SCOPE={CU|DEVICE} *default: DEVICE*
,PATH_INTERVAL=nn *default: 10*
,PATH_THRESHOLD=nnn *default: 10*

Note: PATH_INTERVAL and PATH_THRESHOLD can only be specified with PATH_SCOPE=CU

WARNING: **Don't set both the interval and threshold to very low values (e.g., 1) as this may cause z/OS to remove paths unnecessarily.**

Improved Channel Recovery

- **PATH_SCOPE={CU|DEVICE}**
  - Specify CU to enable the path recovery function for an LSS. When a path related error occurs for a device that results in the path being taken offline, the path will also be taken offline to all devices in the LSS, unless that would remove the last path. In addition, IOS will monitor devices for path related errors and take the path offline when the number of errors exceeds a threshold. Specify DEVICE to disable the path recovery function for an LSS. This keyword is independent of the LIMITED_RECTIME and DEV keywords. Changing this value will not affect actions previously taken.
  - Default: DEVICE
- **PATH_INTERVAL=nn**
  - Specifies the length of monitoring interval in minutes. Valid values are 1 through 10, where 10 is the default. This keyword can only be used when PATH_SCOPE has been set to CU. This keyword is independent of the LIMITED_RECTIME and DEV keywords. Changing this value will not affect actions previously taken.
- **PATH_THRESHOLD=nnn**
  - Specifies the number of errors that must be seen for each each minute in the specified interval before IOS takes action. Valid values are 1 through 100, where 10 is the default. This keyword is independent of the LIMITED_RECTIME and DEV keywords. Changing this value will not affect actions previously taken.

Improved Channel Recovery

DISPLAY IOS,RECOVERY now displays the following new information:

IOS103I hh.mm.ss RECOVERY OPTIONS

PATH RECOVERY SCOPE IS BY CU

PATH RECOVERY INTERVAL IS nn MINUTES

PATH RECOVERY THRESHOLD is nnn ERRORS

- or -

PATH RECOVERY SCOPE IS BY DEVICE

Improved Channel Recovery

- **When a path-related error occurs, it can be difficult to determine where the problem resides. Is it in the switch card attached to the channel, the link between the channel and switch or what?**
- **In z/OS V1.13, IOS issues a new message with the IOS050I and IOS051I messages issued for path-related errors to identify the component that detected the error.**

IOS050I CHANNEL DETECTED ERROR ON ddddd,yy,op,stat,
PCHID=pppp

IOS054I ddddd,pp ERRORS DETECTED BY comp, comp,…

Where *comp* is one or more of the following:

CHANNEL, CHAN SWITCH PORT, CU SWITCH PORT, CONTROL UNIT

Improved Channel Recovery

- This new message is displayed when a path-related error occurs and the installation has specified PATH_RECOVERY=CU option in the IECIOSxx member of SYS1.PARMLIB or via the SETIOS command. The system will attempt to vary the path offline for all devices in the control unit.
- **IOS210I PATH RECOVERY INITIATED FOR PATH pp ON CU cccc, REASON=rsntxt**
  - Rsntxt :
    - LINK RECOVERY THRESHOLD REACHED
    - PATH ERROR THRESHOLD REACHED
    - DYNAMIC PATHING ERROR
    - REQUESTED BY DEVICE ERP ROUTINE

Improved Channel Recovery

Proactively Removing Paths – Path Error Thresholding:

```
IOS050I CHANNEL DETECTED ERROR ON dddd,yy,op,stat,
        PCHID=pppp

IOS210I PATH RECOVERY INITIATED FOR PATH pp ON CU cccc,
        REASON=PATH ERROR THRESHOLD REACHED
```

Proactively Removing Paths - Flapping Links:

```
IOS001E dddd,INOPERATIVE PATHS pp pp pp

IOS2001I dddd,INOPERATIVE PATHS
        STATUS FOR PATH(S) pp,pp,pp....
        LOGICAL PATH IS REMOVED OR NOT ESTABLISHED (A0)
        LINK RECOVERY THRESHOLD EXCEEDED FOR LOGICAL PATH (06)

IOS210I PATH RECOVERY INITIATED FOR PATH pp ON CU cccc,
        REASON=LINK THRESHOLD EXCEEDED
```

Improved Channel Recovery

DISPLAY M=DEV(dddd,(chp)) now displays the reasons why the path is offline.

DISPLAY M=DEV(dddd,(chp))

```
 IEE174I hh.mm.ss DISPLAY M idr
 DEVICE nnnn   STATUS=status
 CHP                  nn
 ENTRY LINK ADDRESS   la
 DEST LINK ADDRESS    la
 PATH ONLINE          Y|N
 CHP PHYSICALLY ONLINE Y|N
 PATH OPERATIONAL     Y|N
 MANAGED              Y|N
 CU NUMBER            CCCC
 DESTINATION CU LOGICAL ADDRESS=da
 SCP CU ND         =ttttt.mmm.nnn.pp.sssssssssss.uuuu|NOT AVAILABLE
 ACTUAL CU ND      =ttttt.mmm.nnn.pp.sssssssssss.uuuu|NOT AVAILABLE
 SCP TOKEN NED     =ttttt.mmm.nnn.pp.sssssssssss.uuuu|NOT AVAILABLE
 ACTUAL TOKEN NED  =ttttt.mmm.nnn.pp.sssssssssss.uuuu|NOT AVAILABLE
 SCP DEVICE NED    =ttttt.mmm.nnn.pp.sssssssssss.uuuu|NOT AVAILABLE
 ACTUAL DEVICE NED =ttttt.mmm.nnn.pp.sssssssssss.uuuu|NOT AVAILABLE
 RNID              =ttttt.mmm.nnn.pp.sssssssssss.uuuu|NOT AVAILABLE
 NOT OPERATIONAL REASON TEXT
 PAV BASE AND ALIASES   PP
[PATHS NOT VALIDATED]
[PATH OFFLINE DUE TO THE FOLLOWING REASON(S)]
    [PATH RECOVERY ERROR]
    [BY OPERATOR]
    [CONTROL UNIT INITIATED RECOVERY]
    [CONFIGURATION MANAGER]
```

Improved Channel Recovery

- **When the path-related error has been corrected, the path taken offline to the devices on the control unit can be restored by the following commands:**
  - VARY CU
    - **Recommendation:** first issue a VARY DEVICE or VARY PATH for 1 device or path to check whether success is achieved before issuing VARY CU for all devices or paths
  - VARY PATH
  - VARY DEVICE
  - CONFIG CHP

z/OSMF V1.13 Enhancements

- ***z/OSMF new management tasks***
  - –Performance: Capacity Provisioning
  - –Software: Deployment
  - –z/OS Classic Interface: ISPF
- ***z/OSMF new base capabilities***
  - –Application Linking
  - –Authorization update
- ***z/OSMF enhancements***
  - –Existing Management tasks
    - • Configuration Assistant
    - • Incident Log
    - • Workload management
    - • Resource Monitoring and System Status
  - –Base enhancements
    - • Configuration and Setup

Attend z/OSMF Software Deployment – Hands On Lab
Fri – 8AM
Pine (Omni Hotel CNN Center)

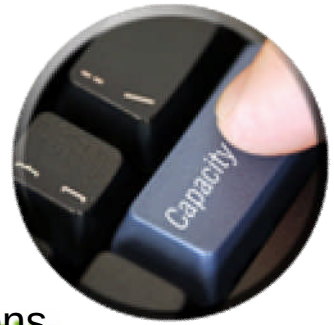
Performance: Capacity Provisioning

New

New! – view the status of z/OS capacity provisioning domains

- **System z On/Off Capacity on Demand**
  - **Ideal if your business has few periodic workload peaks over the year.**
  - Save on hardware - No need to purchase hardware, 'you rent it' for the days you need it.
  - Save on monthly software charges – only pay for software charges for On/Off CoD peak capacity in the month it is incurred**
  - **Also ideal if you own extra hardware capacity (banked capacity).**
  - Save on monthly software charges – budget for peak 'banked' capacity and turn off the resources when not needed to possibly gain software savings.

- **z/OS Capacity Provisioning Manager can automate On/Off CoD for z/OS**
  - Can manage processing capacity more reliably, more easily, and faster.
  - What had taken minutes or hours to discover, identify, decide, and resolve, now can be specified to happen automatically in as little as two minutes.



- **New z/OSMF Capacity Provisioning task**
  - Initial phase simplifies the **monitoring** of z/OS CP connections, domains, configurations, and policies
  - Separate Windows-based tool required for z/OS CP **management** functions.

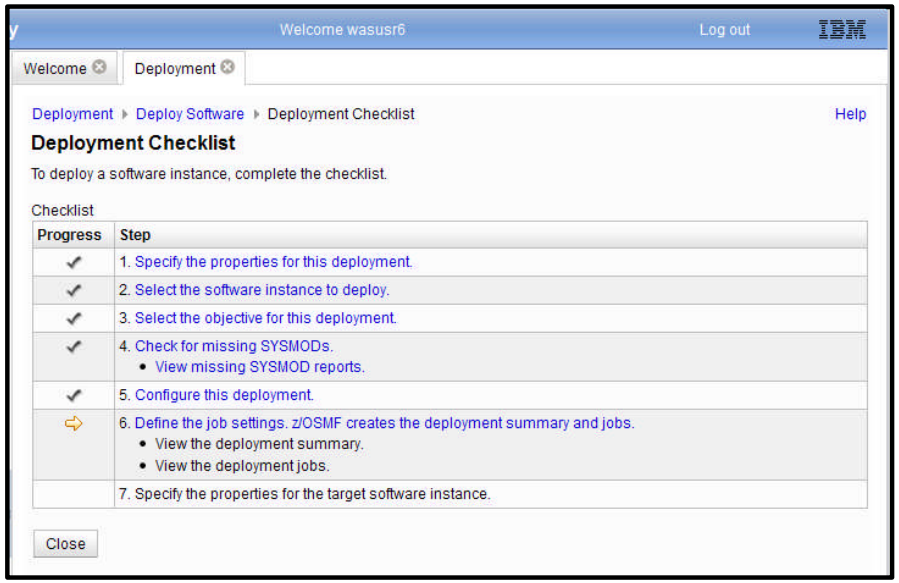
z/OSMF Software Deployment

New

New! - simplified deployment of installed software

- **New task designed to make deployment of installed software simpler and safer**
  - Easy to follow checklist replaces manual and error prone procedures with a user friendly application
  - Incorporates IBM recommended best practices for software deployment.

- **Software Deployment can clone software**
  - Locally, single system or within a sysplex
  - Remotely, across a network, and multiple sysplexes

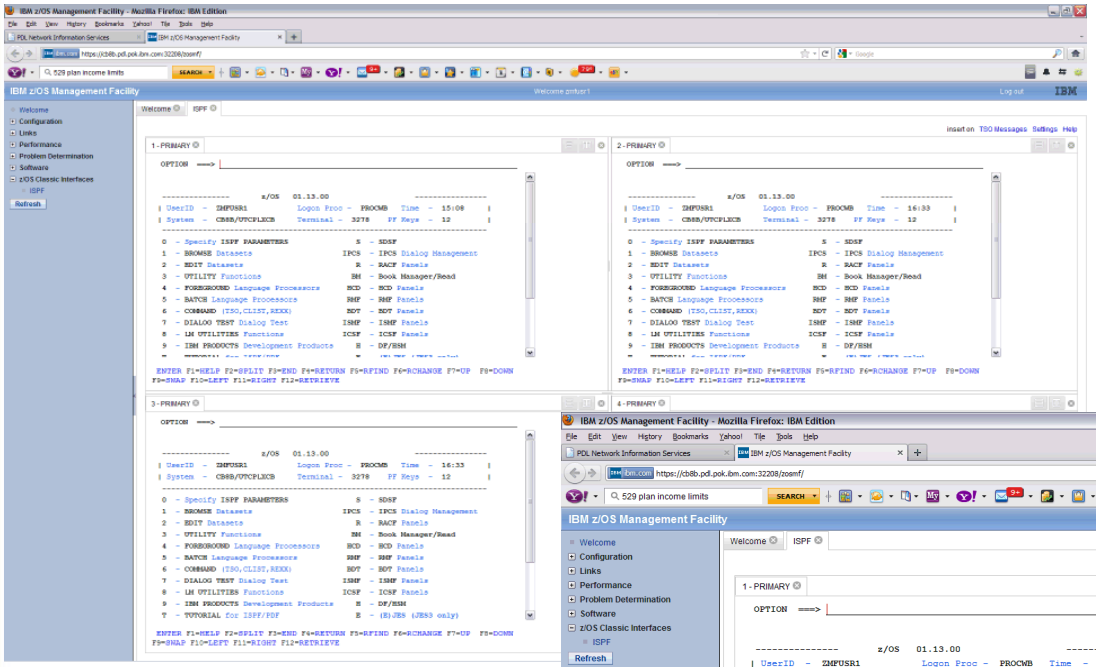


- **Software Deployment can also:**
  - Identify, modify, delete software instances
  - Generate jobs to copy a software instance
  - Verify cross-system and cross-product requisites, verify fixes
  - Copy ALL parts of the software (copy the SMP/E CSI inventory too)

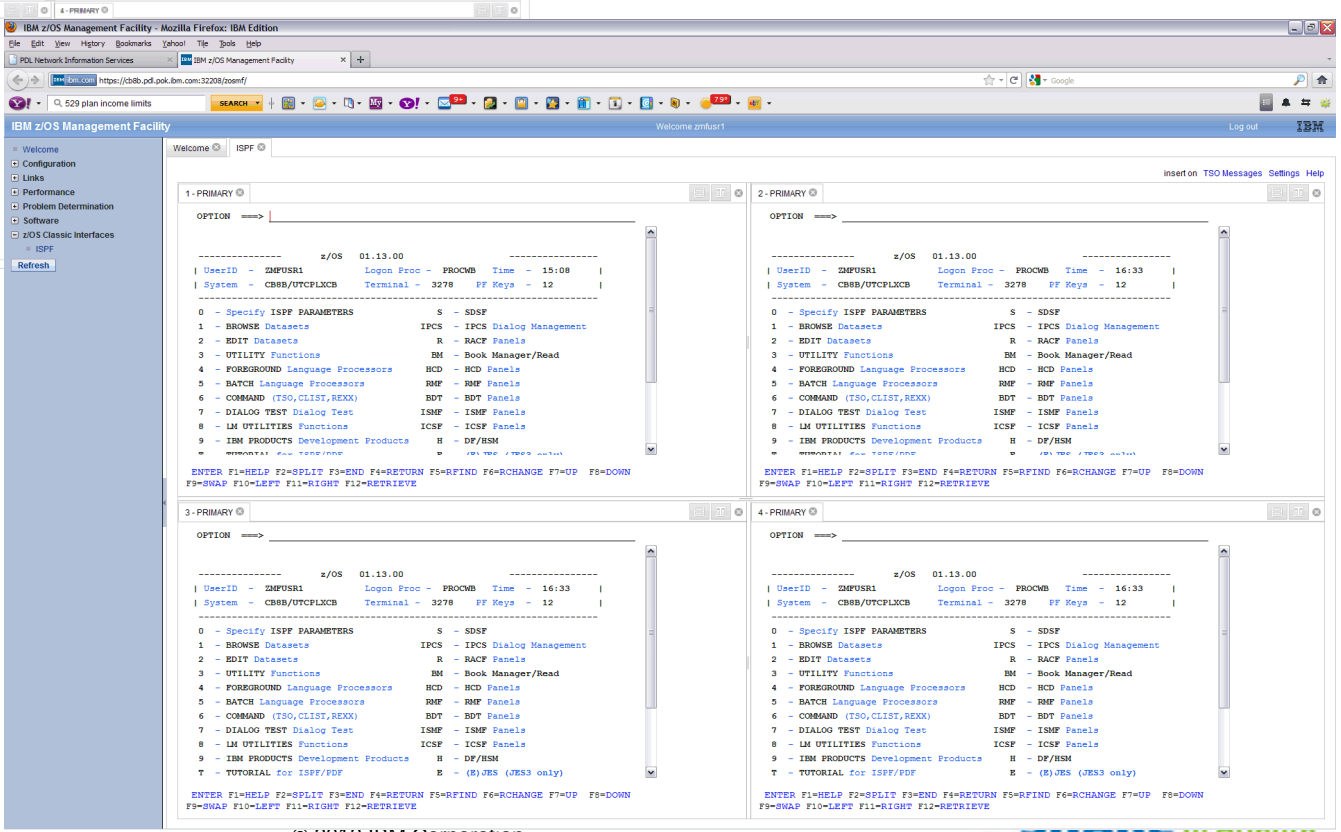
- **Clones all SMP/E installed software!**
  - IBM, ISV, z/OS stack, or individual products
  - Service upgrades for all of the above (via complete replacement)

Classic Interface: ISPF

New



New web-enabled ISPF interface in z/OSMF R13



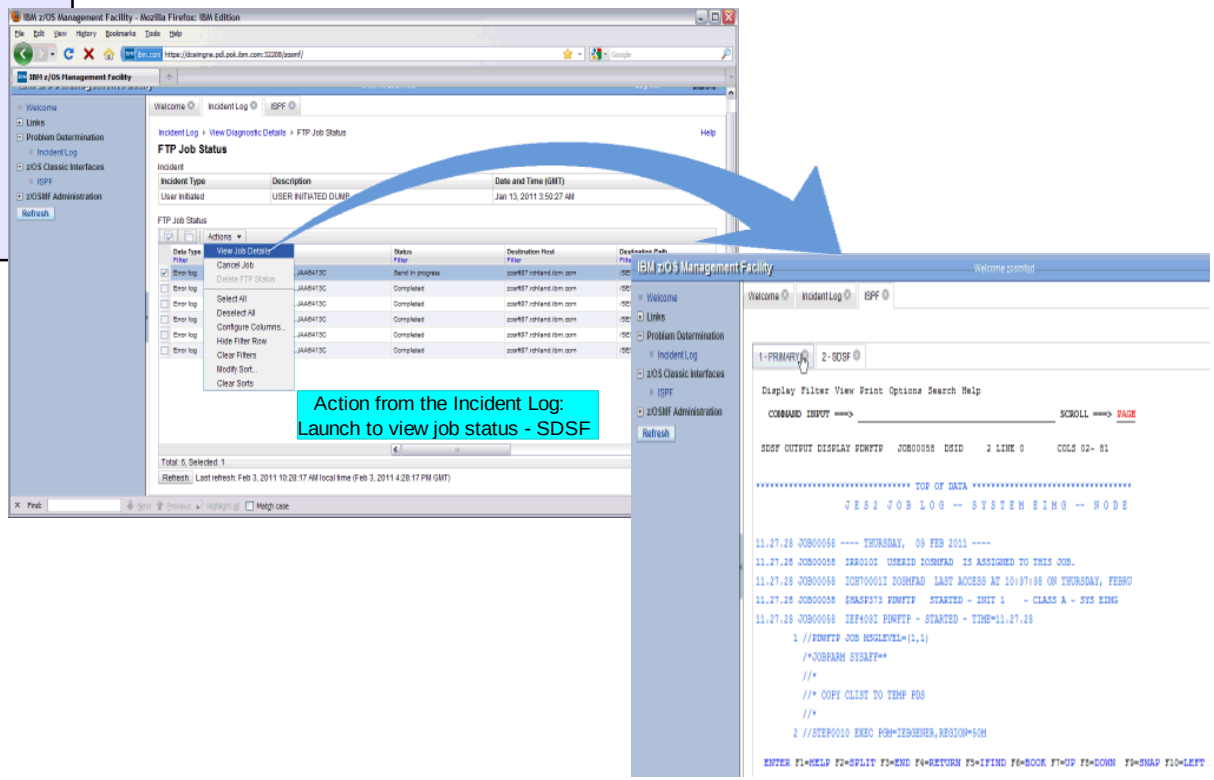
- Used by Incident Log application
- Can be linked to by other z/OSMF applications
- Can be used for other ISPF applications

Application Linking

New

Example, link Incident Log to SDSF in context

- **A more seamless experience when working with z/OS**
- **Make your own linkages between z/OSMF apps and even to any web-based apps**



- Define an ‘event’ (such as “View Job Status”)
- Then define the ‘event handler’ action and parameters (such as ‘go to ISPF’ with context of the job)

z/OSMF Administration: SAF-based Authorization

- z/OSMF is enhancing its authorization model to provide tighter integration with Enterprise Security Management products.
  - –New resource class pair for z/OSMF
    - ZMFAPLA resource class
    - GZMFAPLA grouping class
  - –Use of SAF groups to represent z/OSMF roles
    - connection of z/OSMF users to these new Groups
  - –Resource names associated with all z/OSMF tasks and links.
  - –Resource class profiles control authorization to z/OSMF managed resources.
- Support for custom roles **via creation of additional SAF groups at system programmer's discretion. Granularity of access determined by z/OSMF resource profile permissions for a given group.**

z/OSMF Administration: SAF-based Authorization

- Option to stay with repository mode or convert to SAF mode
  - –Can switch to SAF mode at a later time
    - Configuration support for conversion to SAF mode via scripts.
    - Requires activation of ZMFAPLA resource class
      - **Enable for generic profiles if needed.**
  - –Ability to switch back to repository mode if needed. Not recommended to switch back and forth repeatedly. SAF mode is the strategic destination.
- Users, Roles (groups) and Task authorization management
  - –SAF Mode: via enterprise security management and customer security change control processes.
  - –Repository Mode: via z/OSMF Users and Roles tasks

Config. Assist. for z/OS Communications Server

Updates for z/OSMF R13

- Retrieving TCP/IP profile information from active TCP/IP stacks, enabling it to import lists of IP addresses that are available for policy configuration.
- Allowing a single instance of the Configuration Assistant to be used to configure both z/OS V1.12 and z/OS V1.13 Communications Server.
  - This is intended to allow you to configure systems in a mixed-release environment from a single instance of the Configuration Assistant running under z/OSMF.
- Allowing a policy rule to be defined once for multiple stacks, to permit more efficient policy configuration for multiple systems without having to individually define every policy rule for every stack.
- z/OS Communications Server intrusion detection services (IDS) technology is enhanced to add support for IPv6 traffic and also additional attack types, including Enterprise Extender, data hiding, and out of sequence packet denial of service attacks.

Incident Log

Updates for z/OSMF 1.13

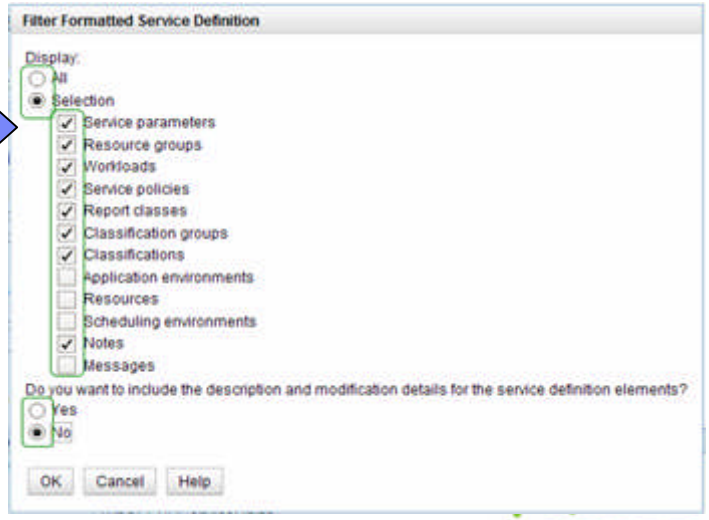
- FTP destination and Firewall Proxy settings shared with Software Deployment
  - Can be updated during the wizard
  - Can be locked for update
- The name of file being transmitted is also included in the message
- Support the Problem Documentation Upload Utility included with z/OS as of R13
- Use of system temporary dataset for working with Unix files also – compressing before sending
- APAR search string added in the View Diagnostic Details panel
- Application linking to ISPF to browse log snapshots

z/OSMF Workload Management

Updates for z/OSMF R13

- **Separate authorization levels for**
  - Viewing of service definitions,
  - service policies, and WLM status
  - Installation and activation of service policies
  - Modification of service definitions

- **Settings of a user are persisted between sessions**
  - Sorting/filtering/configuration of (tree)-table columns
  - Recently used data set names during import/export of service definitions
  - Selections in Print Preview Filter dialog
  - Selections in Export to Local Workstation dialog



Resource Monitoring
Updates for z/OSMF V1R13

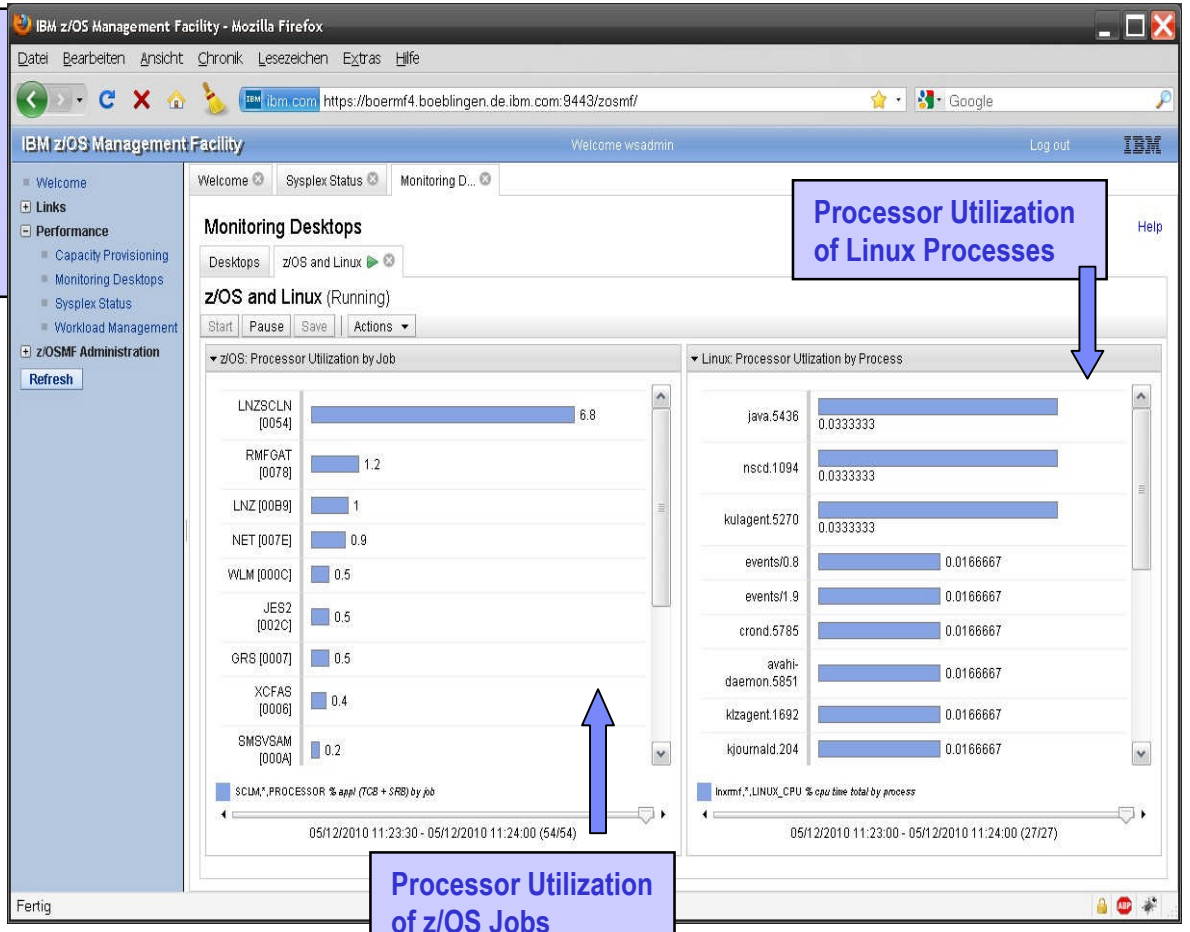
- The following tasks have been renamed
  - **Sysplex Status** has been renamed to **System Status**
  - **Monitoring Desktops** has been renamed to **Resource Monitoring**
    - **The Desktops** have been renamed to **Dashboard**
- With z/OSMF V1.13, RMF provides new CIM-based performance data gatherers for:
  - Linux on System z,
  - Linux on System x, and
  - AIX systems

  providing a consistent monitoring solution for zEnterprise ensembles.
    - This is intended to display performance metrics from those platforms and combine them with z/OS metrics in common graphic views

Integrated z/OS and Linux resource monitoring
A monitoring solution for multi-tier workloads

- **Monitor the resources for z/OS and Linux workloads**
- **Ideal for use with System z Enterprise System**

- **For z/OSMF R12**
  - Use separate as-is, no-charge web-download tool to gather resource information for Linux for System z and Linux for x86 systems.
- **For z/OSMF R13**
  - New performance data gatherers for Linux on System z, Linux on IBM System x®, and AIX® systems integrated in z/OSMF
  - Consistent monitoring solution for these systems in zEnterprise ensembles.



Note, screen capture from z/OSMF R12

z/OSMF V1.13 Configuration Enhancements (1 of 2)

- Command simplification
  - Can provide a single file to define global settings or environment variables and export the location of the file to your shell session.
  - -file and -override file parameters will pre-pend IZU_CONFIG_DIR if no path is specified.
  - Configuration and override files are kept in the configuration directory and managed by the scripts
  - Script log files and report files are written to the z/OSMF log file directory, which is identified by the IZU_LOGFILE_DIR environment setting for the UNIX shell.
    - By default, this directory is /var/zosmf/configuration/logs/.
  - Flexibility is enhanced through the addition of overrides which allow you set options globally for any UID or GID values that you choose not to specify individually.
  - z/OS configuration tasks moved to -prime step
    - Previously were in -config, -prime and –finish
    - -config is now just accumulation of configuration data

z/OSMF V1.13 Configuration Enhancements (2 of 2)

- Migration Improvements
  - Now supports both override and configuration files
    - From any prior supported release
    - Can do either, or both at the same time
  - Report file is generated
- Security Simplification
  - Group Management
    - Scripts only create groups owned by z/OSMF (Administrator, User, Storage Administrator).
    - Will prompt for and use other groups if known
  - Authorization Mode switch
    - Can specify either SAF or Repository and then switch later.
    - Will generate all necessary commands for this switch
    - Authorization of additional users is based on Mode
- RAS Items
  - Additional messages for better log file documentation and diagnosis
  - Temporary file handling is improved
  - Input validation improved

z/OS V1.13 Summary

- **ISPF**
  - Miscellaneous enhancements
- **JES2**
  - "Batch Modernization" enhancements
  - Spool dataset enhancements
- **JES3**
  - JES3 Dynamic Spool Addition
- **DFSMS**
  - Catalog enhancements
  - PDSE enhancements
  - Miscellaneous enhancements
- **SMF**
  - SMF logstream enhancements
- **HCD**
  - New warning messages
- **IOS**
  - Improved Channel Recovery
- **z/OSMF**

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