z/OS Little Enhancements:
Many Small Potatoes Can Make a Big Meal
Edition 2015A

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# *Many Small Potatoes Can Make a Big Meal – Edition 2015A*

- **z/OS V2.2:**

  - **DFSMS:** GDG Extended (GDGE)

- **z/OS V2.1:**

  - **DFSMS:** PDSE V2 member generations
  - **SDSF:** System symbols on Filter
  - **BCP:** Parallel batch recall
  - **Communications Server:** TCP/IP profile syntax check
  - **ISPF:** Configuration Utility new option for keyword file
  - **ISPF:** Swapbar enhancements

- **z/OS V1.13:**

  - **BCP:** COPYCNT= for printing a lot of copies
  - **z/OS UNIX:** script command
  - **DFSMSdfp:** IGGCATxx parmlib member
  - **DFSMSdss:** Standalone ICKDSF no longer needed…

- **z/OS V1.12:**

  - **BCP:** ALLOCxx for unique temp data set names

- **Older than the hills:**

  - **z/OS UNIX:** skulker

❖**DFSMS: GDG Extended (GDGE)**

= Sysprog

= Sysprog & Users
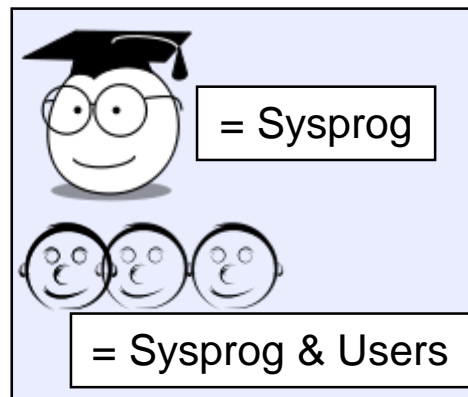
DFSMS: **GDG Extended (GDGE)**

- **What:** Today, the limit on number of GDGs is 255 (1 byte catalog field `GDGLIMIT`): "classic GDG". Now, you can indicate you want to use GDGE, which supports 999 generations.

  - A new 2 byte catalog field name `GDGLIMTE` is used to hold the new maximum, 1 to 999.

  - Can have one generation for every day of the year, for more than 2 years!

- **How to use:**

  1. Position for exploitation of GDGE.

  2. Ensure capability is enabled.

  3. Define a GDGE and use at will!

- **Considerations:**

  - Use when you are confident there will be no fall back from z/OS V2.2.

    - *GDGEs are not allowed to be accessed pre-z/OS V2.2.*

  - PDSEs can be GDGs since z/OS V2.1 (and GDGEs)

DFSMS: **GDG Extended (GDGE)**

- **How to use: 1. Position for exploitation of GDGE.**
  - For applications that may have referred to `GDGLIMIT` they now should understand to look at `GDGLIMTE` when GDGEs are in use (or even not in use).
    - Query `GDGATTR` bit (new bit, existing field)*:
      - If set, use `GDGLIMTE` as you have a GDGE. (`GDGLIMIT` will have no value).
      - If not set, use `GDGLIMIT` or `GDGLIMTE`.
  - Generic Tracker can help! Turn it on, and look for instances of using `GDGLIMIT` and not using `GDGLIMTE` on a Catalog Management call.
    - Might indicate that the program cannot understand GDGEs.
    - Instances of interest are those starting with "`GDGLIMIT"`, owner is "`IBMDFSMS"`.

* `GDGATTR` fields are documented in *z/OS DFSMS Managing Catalogs.*

DFSMS: **GDG Extended (GDGE)**

- **How to use: 2. Ensure capability is enabled.**

  - GDGE use is controlled in IGGCATxx with `GDGEXTENDED(YES|NO)`

  - `F CATALOG,REPORT`

```
   *   DEFAULT VVDS SPACE        = ( 10, 10) TRKS                *
   *   ENABLED FEATURES          = DSNCHECK DELFORCEWNG SYMREC   *
   *   ENABLED FEATURES          = UPDTFAIL GDGEXTENDED          *
   *   DISABLED FEATURES         = VVRCHECK AUTOTUNING BCSCHECK  *
   *   DISABLED FEATURES         = DELRECOVWNG EXTENDEDALIAS     *
   *   DISABLED FEATURES         = ECS AUTOADD DUMPON GDGFIFO    *
   *   DISABLED FEATURES         = GDGSCRATCH GDGPURGE           *
   *   INTERCEPTS                = (NONE)                        *
   *CAS**************************************************CAS******
 - SY1  IEC352I CATALOG ADDRESS SPACE MODIFY COMMAND COMPLETED
```

- **Considerations:**

  - If you want to dynamically enable GDGE, update your IGGCATxx with `GDGEXTENDED(YES)` then `F CATALOG,RESTART`

DFSMS: GDG Extended (GDGE)

- **How to use: 3. Define a GDGE and use at will!**

  - GDGE has to be defined as `EXTENDED`

```
********************************** TOP OF DATA ***********************************
IDCAMS   SYSTEM SERVICES                                        TIME: 19:39:09

     DEFINE GENERATIONDATAGROUP -                                     00040000
          (NAME(MWALLE.DAILY.TPS.REPORTS) -                          00050000
          EMPTY -                                                     00060000
          NOSCRATCH -                                                 00070000
          EXTENDED -
          LIMIT(365))                                                 00080000
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

IDC0002I IDCAMS PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 0
********************************** BOTTOM OF DATA ********************************
```

  - Use a GDGE as you would a classic GDG, but more of them now!

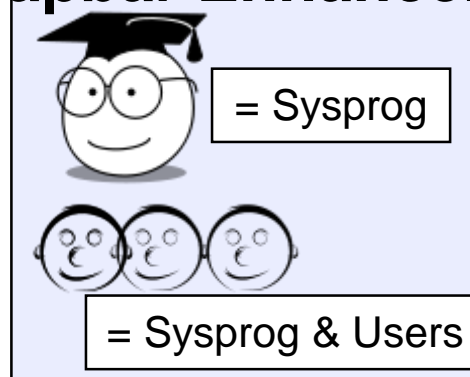# Small Enhancements

❖**DFSMS: PDSE V2 member generations**

❖**SDSF: System symbols on Filter**

❖**BCP: Parallel Batch Recall**

❖**CommServer: TCP/IP Profile Syntax Check**

❖**ISPF: Configuration Utility new option for keyword file**

❖**ISPF: Swapbar Enhancements**

= Sysprog

= Sysprog & Users

DFSMS: PDSE V2 member generations

- **What:** You can have multiple levels (generations) of a PDSE V2 member. Nice for saving archives of members, or recovering a member when needed.
- **How to use:**

  1. Ensure capability is enabled.

  2. Indicate on allocation you want to use member generations.

  3. Save, delete, recall, … the member generation you want.

- **Considerations:**

  - Current is always generation "0" = "primary generation"

Example:	Absolute	Relative
Current	0	0
One before	3	-1
Two before	2	-2
Three before	1	-3

DFSMS: PDSE V2 member generations

How to use: 1. Ensure capability is enabled.

– In IGDSMSxx, ensure that **MAXGENS_LIMIT** is greater than 0 (default). Can have two billion generations! If you use the default, you cannot use PDSE V2 member generations.

```
                            Allocate New Data Set              Value out of range
Command ===>
                                                                    More:     -

 Secondary quantity       15              (In above units)
 Directory blocks  . . 10                (Zero for sequential data set) *
 Record format . . . . FB
 Record length . . . . 80
 Block size  . . . . . 32720
 Data set name type       LIBRARY        (LIBRARY, HFS, P   ARGE, BASIC, *
 Data set version  . : 2                  EXTREQ, EXTPR    blank)
 Num of generations  : 15
 Extended Attributes
 Expiration date . .      Number of generations value must range from 0 to the
 Enter "/" to select      current system defined maximum of 0
     Allocate Multiple
                                          or blank)
```

– Make sure you are allocating a PDSE V2, either by default in IGDSMSxx with **PDSE_LEVEL(2)** (default is 1).

▪ Considerations:

– PDSE V2 can be only be created on z/OS V2.1. Lower systems can read and write them, they cannot allocate them though.

DFSMS: PDSE V2 member generations

How to use: 2. Indicate on allocation you want to use member generations.

- In JCL:

```
****** ************************************* Top of Data *****************
000001 //MWALLEMG JOB 'PDSE MEM GEN','ALLOC JOB',
000002 //         MSGLEVEL=(1,1),CLASS=U,MSGCLASS=H,NOTIFY=MWALLE
000003 //TPSRPT EXEC PGM=IEFBR14
000004 //ALLOC   DD DISP=(NEW,CATLG),DSN=MWALLE.TPS.REPORTS,
000005 //           LRECL=80,BLKSIZE=0,RECFM=FB,
000006 //           VOL=SER=SL360C,UNIT=SYSDA,SPACE=(CYL,(50,50,1)),
000007 //           DSNTYPE=(LIBRARY,2),MAXGENS=3
****** ************************************* Bottom of Data ***************
```

- In ISPF 3.2 allocation:

```
Block size  . . . . .
Data set name type    LIBRARY        (LIBRARY, HFS, PDS, LARGE, BASIC, *
Data set version  . : 2               EXTREQ, EXTPREF or blank)
Num of generations  : 3
Extended Attributes                  (NO, OPT or blank)
```

- With TSO:

```
Enter TSO or Workstation commands below:

===> alloc f(pdsev2) da('mwalle.tps.reports') new lrecl(80) recfm(f b) space(50
50) cyl dsorg(po) dsntype(library 2) maxgens(3)_
```

DFSMS: PDSE V2 member generations

How to use: 3. Save, delete, recall, … the member generation you want.

– When editing a primary generation, a `SAVE` will create a new generation member. Also, `SAVE  NEWMEM` will create a new generation. `SAVE NOGEN` will not create a new generation. PF1 tells you the generation:

```
EDIT        MWALLE.TPS.REPORTS(JANUARY) - 01.07          Member JANUARY saved
Command ===> _                                            Scroll ===> HALF
****** ***************************** Top of Data *****************************
000001    JANUARY 8, 2015 EIGHTH REPORT:
000010
000100 |    Release    |    Modification    |    Division    |    Division
000200 |    Number     |    Level           |    Acronym     |    Number
000300 |_____|_____|_____|_____
000400 |      9        |        0           |      DSD       |       26
000500 |               |                    |                |
000600 |               |                    |                |
000700
000800 |      Program Type            |  PPL  |    Distributed By
000900
001000 | SP | PP | PO | PRPQ | SIPO|CPO (SPC||ISMD|SPC||ISMD | SPC | Vendor*
┌─────────────────────────────────────────────────────────────────────────┐
│ Member JANUARY, generation 0, saved in MWALLE.TPS.REPORTS, NEWGEN parameter│
│ was used for SAVE.                                                         │
└─────────────────────────────────────────────────────────────────────────┘
```

– To edit a prior generation, use "/" in the PROMPT column on DSLIST, default is primary generation:

```
EDIT                MWALLE.TPS.REPORTS           Row 0000001 of 0000001
Command ===>                                      Scroll ===> HALF
         Name      Prompt      Size   Created         Changed            ID
s_____ JANUARY  /_            17   2015/01/24  2015/01/24 21:05:28  MWALLE
         **End**
```

DFSMS: PDSE V2 member generations

Continued:

- – Then say which generation you want (either absolute or relative):

```
$     Object Name:
      'MWALLE.TPS.REPORTS(JANUARY)'                              LE
      * No workstation connection
        Initial Macro  . .
        PDSE Generation. . -1_
        Line Command Table
        Profile Name . . .            (Blank defaults to Type)
        Format Name  . . .
        Panel Name . . . .            (Leave blank for default)
```

- – You'll see a warning indicating you are not in the primary generation:

```
EDIT       MWALLE.TPS.REPORTS(JANUARY) - 01.06      Columns 00001 00072
Command ===> _                                       Scroll ===> HALF
****** ************************* Top of Data ************************
==MSG> -CAUTION- Edit session has been invoked for generation 10
==MSG>           High generation number is currently 11
000001    JANUARY 7, 2015 SEVENTH REPORT:
000010
000100        Release          Modification        Division        Division
000200        Number           Level               Acronym         Number
000300
000400          9                  0                  DSD             26
```

DFSMS: PDSE V2 member generations

Usage considerations:

– Having generations mean you need more space in the PDSE.

– Deleting a member from ISPF, means deleting all its generations too.

– `tso delete 'mwalle.tps.reports(january)'` will delete the primary generation, and leave the other generations orphaned and non-retrievable with ISPF.

– IEBCOPY and IDCAMS REPO only copy primary generation (no other generations). DFSMSdss dump and restore, and copy will keep all member generations (includes DFSMShsm backups) - install OA43729.

– More can be found on TechDocs: WP102465

DFSMS: PDSE V2 member generations

Suggestion!

- IBM Data Set Commander for z/OS V8.1 and APAR OA45103 (formerly known as IBM ISPF Productivity Tool for z/OS) contains more enhancements for PDSE member generations!

  - Including the very nice ability to display all member generations, which is not in ISPF.

```
-DSC--VIEW L1------ MWALLE.TPS.REPORTS ------------------ROW 00001 OF 00004
COMMAND  ===>                                          SCROLL ===> HALF
HOTBAR?
              *SORT*SHOW*                          ON VOLUME: SL1A18
   NAME       RENAME    LIB VV.MM      CHANGED      SIZE  INIT  MOD USERID   GENER
   JANUARY              1 01.07 2015/01/24 21:44     17    17    1 MWALLE        0
   JANUARY              1 01.07 2015/01/24 21:44     17    17    1 MWALLE       -1
   JANUARY              1 01.06 2015/01/24 21:34     17    17    1 MWALLE       -2
   JANUARY              1 01.08 2015/01/24 21:32     17    17    1 MWALLE       -3
   --END--
```

SDSF: **System symbols on Filter**

- **What:** You can add dynamic and static system symbols on the filtering ability. Particularly useful when you have values you want to filter on consistently, and those values change: today's date, system you are logged on, ...

- **How to use:**
  - **FILTER ?** pop-up lets you set the filters and their values.
  - Press PF4 on the value column, and you can see the system symbols and their current value. Select one that fits your fancy! (You can concatenate the symbols too.)

- **Considerations:**
  - As always, careful with the date when filtering. "EQ" may not give you want you want, but "GE" probably will.

SDSF: **System symbols on Filter**

My goal: On my held jobs, I only want to see jobs I own (MWALLE), and jobs that were created today (22 Jan 2015).

```
Session C - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

   Display   Filter   View   Print   Options   Search   Help
--------------------------------------------------------------------------
SDSF HELD OUTPUT DISPLAY ALL CLASSES LINES 168,121,167  CHARS 'MWALLE' FOUND
COMMAND INPUT ===> filter ?_                           SCROLL ===> HALF
PREFIX=*  DEST=(ALL)   OWNER=*   SYSNAME=
NP   JOBNAME  JobID    Owner    Prty C ODisp Dest            Tot-Rec   Tot-
     MWALLEC  JOB25348 MWALLE     7 H HOLD  LOCAL                 86
     MWALLEC  JOB25396 MWALLE     7 H HOLD  LOCAL                 73
     SRV1131  JOB25305 SRVLIB     7 H HOLD  LOCAL              1,975
     SRV1132  JOB25310 SRVLIB     7 H HOLD  LOCAL              1,604
     SRV113H  JOB25320 SRVLIB     7 H HOLD  LOCAL                540
     SRV113C  JOB25452 SRVLIB     7 H HOLD  LOCAL              6,335
     SRV113   JOB25454 SRVLIB     7 H HOLD  LOCAL              1,514
     SRV13FXA JOB25456 SRVLIB     7 H HOLD  LOCAL              1,220
     SRV13FXB JOB25457 SRVLIB     7 H HOLD  LOCAL                461
     SRV13FXD JOB25458 SRVLIB     7 H HOLD  LOCAL                446
     DMPHCR1  JOB25460 G788742    7 H HOLD  LOCAL                352
     DMPHCR2  JOB25462 G788742    7 H HOLD  LOCAL                475
     SRV13FXE JOB25459 SRVLIB     7 H HOLD  LOCAL             67,751
     SRV13FXH JOB25470 SRVLIB     7 H HOLD  LOCAL              6,804
     FIXPKGRP JOB25468 SRVLIB     7 H HOLD  LOCAL              9,196
     SMFDRS   STC25479 SMFDRS     7 H HOLD  LOCAL                341

  -ISFPCU4 *ISFPCU4
MA    C                                                         04/029
Connected to remote server/host plpsc.pok.ibm.com using lu/pool M05TC234 and port uspokl58-A59-01-710-Poughkeepsie on uspokl58
```

No filter on yet…

SDSF: System symbols on Filter

Pre-V2.1: I had to set today's date every day on my filter.

SDSF: **System symbols on Filter**

As of V2.1 with symbols! I just use system symbols for today's date.

SDSF: **System symbols on Filter**

Just as I like it. Set it and forget it.

SDSF: **System symbols on Filter**

How to concatenate system symbols within the pop-up. PF4 in the Value field…

SDSF: **System symbols on Filter**

All the system symbols, and their current value are shown.
I want mm/dd/yyyy format, so I first pick &MON.


```
Session C - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

    Displa
--------                              Filter          Row 1 to 8 of 25  ----
SDSF HEL    C
COMMAND                              System Symbols    Row 13 to 24 of 43   F
PREFIX=*    T    Command ===>
NP    JOB   f
      MWA   P    The values may change. Use them only as examples.
      AMB
      MWA   F    Selection: 20_
      ZFS              Symbol        Value
      ZFS   A    13.   &JOBNAME.     MWALLE
            A    14.   &LHHMMSS.     153009
                 15.   &LHR.         15
            C    16.   &LJDAY.       022
            O    17.   &LOGCLASS.    K
            C    18.   &LYYMMDD.     150122
                 19.   &MIN.         30
                 20.   &MON.         01
                 21.   &NATPK.       NATPK2
                 22.   &OVFPK.       OVFPKB
                 23.   &OV2PK.       OV2PKB
                 24.   &PAGING.      AQTS

  -ISFPCU4 *ISFASYM

M    C                                                              09/030
Connected to remote server/host plpsc.pok.ibm.com using lu/pool M05TC234 and port  uspokl58-A39-01-710-Poughkeepsie on uspokl58
```

SDSF: System symbols on Filter

I add the /, and then move onto the next system symbol, with another PF4.

SDSF: **System symbols on Filter**

Now onto the day, &DAY. …and so on. Until I've built up &MON./&DAY./&YR4.

SDSF: System symbols on Filter

My next goal: In OPERLOG, I only want to see today's information on the system I'm logged onto.


```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

   Display   Filter   View   Print   Options   Search   Help
---------------------------------------------------------------------------
 SDSF OPERLOG   SYSB      01/21/2015      0W              COLUMNS 02- 81
 COMMAND INPUT ===> _                             SCROLL ===> HALF
N 0000000 SYSC      15021 23:57:55.74          00000200  BPXI073I DATA SET OMVS.J
N 0000000 SYSC      15021 23:57:55.77          00000200  IEF196I IEF285I    SYS1.P
N 0000000 SYSC      15021 23:57:55.77          00000200  IEF196I IEF285I    VOL SE
N 0000000 SYSC      15021 23:57:55.77          00000200  IEF196I IEF285I    SYS1.P
N 0000000 SYSC      15021 23:57:55.77          00000200  IEF196I IEF285I    VOL SE
M 4040000 SYSC      15021 23:57:55.77 STC15952 00000000  HZS0001I CHECK(IBMUSS,US
E                                         374 00000000  BPXH046E Syntax error(s)
M 4000000 SYSC      15021 23:59:05.00 STC15993 00000000  +CSQX004I +MQS3 CSQXSPRM
E                                         375 00000000   storage, 1553 MB are fr
M 4040000 SYSA      15022 00:02:57.33 STC16007 00000000  HZS0002E CHECK(IBMCNZ,CN
D                                         322 00000000  CNZHF0010E System consol
E                                         322 00000000  mode.
M 4040000 SYSA      15022 00:02:58.01 STC16007 00000000  HZS0002E CHECK(IBMXCF,XC
D                                         323 00000000  IXCH0446E System SYSA ha
E                                         323 00000000  path to coupling facilit
M 0000000 SYSA      15022 00:02:58.49 STC16007 00000200  HZS0004I CHECK(IBMXCF,XC
E                                         324 00000200  IXCH0242E One or more co
M 4040000 SYSA      15022 00:03:03.87 STC16007 00000000  HZS0002E CHECK(IBMUSS,US

  *ISFPCU4 -ISFPCU4 CMD

MA
   B                                                              04/021
 Connected to remote server/host 9.82.24.151 using lu/pool TCP15119 and port 23
```

No filter on yet …

SDSF: **System symbols on Filter**

As of V2.1 with symbols! I just use system symbols for today's date and current system.

```
Session B - [24 x 80]                                                    _  □  X

File  Edit  View  Communication  Actions  Window  Help

   Displa
──────────                         Filter          Row 1 to 8 of 25    ────
 SDSF OPE    Command ===>                                                81
 COMMAND                                                                 ALF
M 4040000    Type filter criteria. Press F4/16 in the Column or Oper    M,VS
D            field for values, or in the Value field for system symbols. ceed
D            Press F11/23 to clear all filter criteria.                 s 88
E                                                                       s 49
M 4040000    Filtering is  ON                                           Z,CN
D                                                                       nsol
E            AND/OR between columns    AND   (AND/OR)
M 4040000    AND/OR within a column    OR    (AND/OR)                    F,XC
D                                                                       B ha
E            Column                Oper  Value (may include * and %)    ilit
M 0000000    SYSNAME               EQ    &SYSNAME.                       F,XC
E            DATETIME              GE    &MON./&DAY./&YR2.               e co
M 4040000                                                               M,VS
D                                                                       ceed
D                                                                       s 88
E                                          mm/dd/yy                     s 49
N 0000000                                                               MZ1
N 0000000                                                               VS.J

   *ISFAFIL -ISFPCU4 CMD

MA     B X
Connected to remote server/host 9.82.24.151 using lu/pool TCP15119 and port 23
```

Verify APAR PI33423 is on

SDSF: System symbols on Filter

Only my system (SYSB), and today (1/22/15, aka 15022).

SDSF: System symbols on Filter

Advice: OPERLOG and dates are interesting. Use the SET DATE format when trying to match OPERLOG date filters, not what you see in the panel. `SET DATE ?`

BCP: Parallel Batch Recall

- **What:** The ability to recall all migrated data sets in the job step in parallel.
  - Legacy behavior is to recall any migrated data sets *serially* at the job step*.*
  - By recalling the data sets in parallel, you can reduce the delay for other jobs to use that initiator. This allows better parallelism of batch execution.

- **How to use:**
  - `SETALLOC SYSTEM,BATCH_RCLMIGDS=PARALLEL`
    - `PARALLEL` or `SERIAL` are the options.
    - `SERIAL` is the legacy option, for data set-by-data set recall, the default.
  - `ALLOCxx` parmlib member`:  SYSTEM BATCH_RCLMIGDS(PARALLEL)`

  Harden used values !

- **Considerations:**
  - May dynamically change this system-wide setting.
  - Notice the syntax structure difference between the command = and the statement ().
  - Notice that you may (or may not) send many recall requests in bursts. SYSZTIOT contention is not impacted.
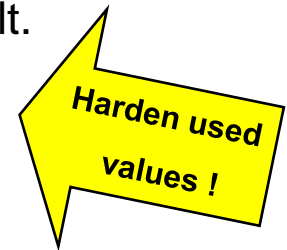
1

```
D ALLOC,OPTIONS

IEFA003I 14.09.47 ALLOC OPTIONS 068

…

SYSTEM          IEFBR14_DELMIGDS: LEGACY

                TAPELIB_PREF:     EQUAL

                REMIND_INTV:      90

                VERIFY_UNCAT:     FAIL

                TEMPDSFORMAT:     INCLUDELABEL

                MEMDSENQMGMT:     DISABLE

                BATCH_RCLMIGDS:   SERIAL

                OPTCDB_SPLIT:     EXPLICIT
```

3

```
D ALLOC,OPTIONS

IEFA003I 14.13.39 ALLOC OPTIONS 072

…

SYSTEM          IEFBR14_DELMIGDS: LEGACY

                TAPELIB_PREF:     EQUAL

                REMIND_INTV:      90

                VERIFY_UNCAT:     FAIL

                TEMPDSFORMAT:     INCLUDELABEL

                MEMDSENQMGMT:     DISABLE

                BATCH_RCLMIGDS:   PARALLEL

                OPTCDB_SPLIT:     EXPLICIT
```

2

SETALLOC SYSTEM,BATCH_RCLMIGDS=PARALLEL

IEFA010I SETALLOC COMMAND SUCCESSFUL 070

BATCH_RCLMIGDS SET TO PARALLEL.

4

```
EDIT          SYS1.PARMLIB.POK(ALLOCMW) - 01.00

Command ===>

****** ****************************** Top of Data ****

000100 SYSTEM BATCH_RCLMIGDS(PARALLEL)

****** ****************************** Bottom of Data **
```

CommServer: TCP/IP Profile Syntax Check

- **What:** Verify the syntax of profile configuration statements without affecting system.
  - You can use this command on any TCP/IP stack that is the same release as the profile statements in the profile data set for consistency, without regard to what is currently in use on that stack.
  - That stack doesn't necessarily have to be the one that will use the profile. But, if you are verifying system symbols, direct the command to the stack that you intended to use for consistent resolution.
  - Use this before activating the TCP/IP profile, or using the `VARY TCPIP,,OBEYFILE` command.
- **How to use:**

  - **`VARY TCPIP,,SYNTAXCHECK,dsname`**

  - Can direct the command to specific TCP/IP address space with:
        `VARY TCPIP,procname,SYNTAXCHECK,dsname`

  - **`dsname`**   must be a cataloged sequential data set or PDS(E) member

  - Need CONTROL access to `MVS.VARY.TCPIP.SYNTAXCHECK` in class `OPERCMDS`
- **Considerations:** Because no updates are done, the command cannot detect or report conflicts with what is currently in use.
  - Duplicate interfaces or deleting a non-existent interface cannot be detected.
  - Keep running the syntax check until it has a clean result, as it may stop after the first syntax error.

VARY TCPIP,,SYNTAXCHECK,SYS1.TCPPARMS(PROFSYSB)

EZZ0060I PROCESSING COMMAND: VARY
TCPIP,,SYNTAXCHECK,SYS1.TCPPARMS(PROFSYSB)

EZZ0061I VARY SYNTAXCHECK COMMAND BEGINNING

EZZ0300I OPENED INCLUDE FILE 'SYS1.TCPPARMS(IPSECPRB)'

EZZ0300I OPENED SYNTAXCHECK FILE 'SYS1.TCPPARMS(PROFSYSB)'

EZZ0309I PROFILE PROCESSING BEGINNING FOR 'SYS1.TCPPARMS(PROFSYSB)'

EZZ0401I SYNTAX ERROR IN FILE: 'SYS1.TCPPARMS(PROFSYSB)' ON LINE: 38

AT: 'TCPCONFIG6'

EZZ0324I UNRECOGNIZED STATEMENT TCPCONFIG6 FOUND ON LINE 38

EZZ0309I PROFILE PROCESSING BEGINNING FOR SYS1.TCPPARMS(IPSECPRB)

EZZ0316I PROFILE PROCESSING COMPLETE FOR FILE 'SYS1.TCPPARMS(IPSECPRB)'

EZZ0304I RESUMING PROCESSING OF FILE 'SYS1.TCPPARMS(PROFSYSB)'

EZZ0318I TCP WAS FOUND ON LINE 131 AND NUMBER OF PORTS WAS EXPECTED

EZZ0316I PROFILE PROCESSING COMPLETE FOR FILE 'SYS1.TCPPARMS(PROFSYSB)'

EZZ0064I VARY SYNTAXCHECK FOUND ERRORS: SEE PREVIOUS MESSAGES

EZZ0065I VARY SYNTAXCHECK COMMAND COMPLETE

ISPF: Configuration Utility new option for keyword file

- **What:** A new ISPF Configuration Utility option to create a new keyword file from a configuration table module.
- This provides an easy way to recover a missing keyword source file from your active in-storage copy!

- **How to use:** `TSO ISPCCONF` new option 7:

```
                         ISPF Configuration Utility
Option ===> 7_
                                                            More:        +

1   Create/Modify Settings and Regenerate Keyword File
2   Edit Keyword File Configuration Table
3   Verify Keyword Table Contents
4   Build Configuration Table Load Module
5   Convert Assembler Configuration Table to Keyword File
6   Build SMP/E USERMOD
7   Convert Configuration Table Loadmod to Keyword File

Keyword File Data Set
    Data Set . . . . 'MY.ISPCONF.RECOVERY.FILE'
    Member . . . . . INUSE
```

Where to store the output file

ISPF: Configuration Utility new option for keyword file
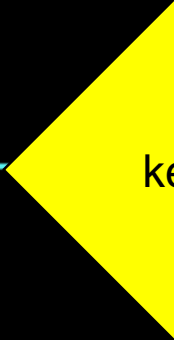
Specify Input

Command ===>

Input Data Set Name

_____

Input Member

_____

Leave empty to create a keyword file from the module that is currently in use.

Instructions:
Press Enter to perform conversion against the in-storage
configuration module.
Alternatively enter a fully qualified data set name and member name.
The member name defaults to ISPCFIGU if not entered.

ISPF: Configuration Utility new option for keyword file

```
EDIT        MY.ISPCONF.RECOVERY.FILE(INUSE) - 01.00      Columns 00001 00072
Command ===> _____      Scroll ===> PAGE
****** ***************************** Top of Data *****    ***********************
=NOTE=     THIS IS AN EDIT SESSION.
=NOTE=     PRESS PF3 TO SAVE THE FILE.
000001 /*                                                                     */
000002 /* SOURCE DETAILS :                                                    */
000003 /*    KEYWORD FILE :                                                   */
000004 /*    MY.ISPCONF.FILE(STANDARD)                                        */
000005 /*    IDENTIFIER . : ISPCFIGU                LEVEL  . . . :     01      */
000006 /*    COMPILE DATE : 2015/01/28              COMPILE TIM               */
000007 /*                                                                     */
000008 /*                                                                     */
000009 /* CONVERSION DATE/TIME : 2015/01/28                                   */
000010 /* OUTPUT FILE            :                                            */
000011 /*    'MY.ISPCONF.RECOVERY.FILE(INUS                                   */
000012 /*                                                                     */
000013 /*                                                                     */
000014 ACTION_BAR_SELECTED_CHOICE                       = 600
000015 ACTION_BAR_SEPARATOR_LINE                        = 100
000016 ACTION_BAR_UNSELECTED_CHOICE                     = 720
```

Voila!

Options are alphabetized; can't see what are defaults. Not like my original source keyword file. However…
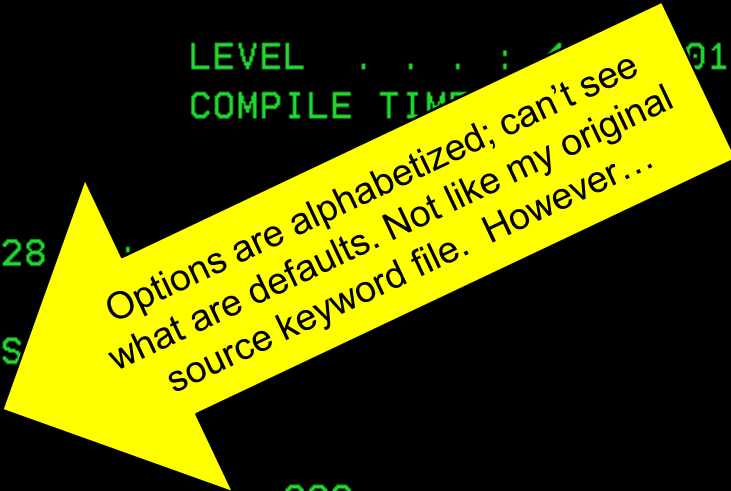
ISPF: Configuration Utility new option for keyword file

```
VIEW          MY.ISPCONF.RECOVERY.FILE(INUSE) - 01.00          Columns 00001 00072
Command ===> _____          Scroll ===> PAGE
****** *************************** Top of Data ****************************
000001 /* ISPF Configuration table definition.  Generated by REXX ISP MOD   */
000002 /*     Created 20:47:37 on 28 Jan 2015                                 */
000003 /*     by user IBMUSER.                                                */
000004 /*     Defaults were included as comments.                            */
000005 /*                                                                     */
000006 LOG_DATA_SET_DISPOSITION                          = D
000007 LIST_DATA_SET_DISPOSITION                         = D
000008 DISPLAY_EMPTY_MEMBER_LIST                         = YES
000009 DISPLAY_EMPTY_MEMBER_LIST_PATTERN                 = YES
000010 LOG_DATA_SET_BLOCK_SIZE                           = 0
000011 ISPCTL0_BLOCK_SIZE
000012 /*--------------------------------------------------------------------*/
000013 /*            The following values                                     */
000014 /*-------------------------------------                             ---*/
000015 /*----------------------------------                              ----*/
000016 /*                                    PDF EXITS                        */
000017 /*-----------------------------------                              ---*/
000018 /*DATA_SET_ALLOCATION_PROGRAM_EXIT             = NONE                  */
```

Voila again!

Put the file back through option 1 (Create/Modify Settings and Regenerate Keyword File) and it's how I like it!

ISPF: Swapbar enhancements

- **What:** Swapbar (since z/OS R10) is nice for point-and-shoot session navigation, however it can get "lost" on a busy panel. z/OS V2.1 allows you to customize the swapbar so you can make it easier to notice, with:
  - a divider line

  - session coloring and hilighting, for current and other sessions

- **How to use:**

  - **swapbar /**   gives you the tailoring displays

- **Considerations:** current session can be customized differently from the other sessions. Settings are saved in the user's profile.
  - Remember: * means current, and – means alternate.

  Before z/OS V2.1:

```
Specify the name of the CSI that contains the global zone:
   SMPCSI DATA SET    ===> 'MVSBUILD.ZOS21.CSI'
(Leave blank for a list of SMPCSI data set names.)


   ISR@PRIM UDLIST    *GIM@PRI -DSLIST

MA     B                                                        02/007
```

Connected to remote server/host plpsc.pok.ibm.com using lu/pool M05TC1 uspokl58-A39-01-710-Poughkeepsie on uspokl58

With z/OS V2.1: `swapbar /`

```
┌──────────────────────── ISPF Settings ────────────────────────┐
│                    Tailor SWAPBAR Display                      │
│                                                                │
│  _    Show SWAPBAR divider line ( enter "/" to select)         │
│                                                                │
│  _    S to update SWAPBAR, C for current session,              │
│       D to clear current session                               │
│                                                                │
│       Enter first letter of color and hilite to set            │
│  _    color (Blue,Red,Pink,Green,Turquoise,Yellow,White)       │
│  _    hilite (None,Blink,Reverse,Underscore)                   │
│                                                                │
│                                                                │
└────────────────────────────────────────────────────────────────┘
```

S: the whole swapbar to use the settings

C: only the current screen to use the settings

D: delete the settings for the entire swapbar

Then, color and hilighting are what to use for the S or C selection.

I want to:

1. use a dividing line
2. make non-current sessions yellow, no highlighting
3. make current session pink, with underline.

```
 ─────────────── ISPF Settings ───────────────
        Tailor SWAPBAR Display

1   /   Show SWAPBAR divider line ( enter "/" to select)

    S   S to update SWAPBAR, C for current session,
        D to clear current session

2       Enter first letter of color and hilite to set
    Y   color (Blue,Red,Pink,Green,Turquoise,Yellow,White)
    N   hilite (None,Blink,Reverse,Underscore)
```

Then exit to save after 2

```
              ─────────────── ISPF Settings ───────────────
                     Tailor SWAPBAR Display

         /   Show SWAPBAR divider line ( enter "/" to select)

         C   S to update SWAPBAR, C for current session,
             D to clear current session

3            Enter first letter of color and hilite to set
         P   color (Blue,Red,Pink,Green,Turquoise,Yellow,White)
         U   hilite (None,Blink,Reverse,Underscore)
```

Then exit to save after 3

```
    W   WHAT IS NEW        - W

Specify the name of the CSI that contains the global zone:
   SMPCSI DATA SET   ===> 'MVSBUILD.ZOS21.CSI'
(Leave blank for a list of SMPCSI data set names.)

   ISR@PRIM UDLIST    *GIM@PRI -DSLIST
MA    B                                                    02/007
```

Small Enhancements

❖ **BCP:** **COPYCNT= for printing lots of copies**

❖**z/OS UNIX:** **script command**

❖**DFSMSdfp: IGGCATxx parmlib member**

❖**DFSMSdss: Standalone ICKDSF no longer needed for initialization on RESTOREs**

BCP: COPYCNT= for printing a lot of copies

- **What:**

  - If you wanted a lot of sysout data set copies printed, the **COPIES=** parm on the **OUTPUT** JCL statement was limited to 255.

    - For 5,100 copies, you might create 20 **OUTPUT** statements!

  - Use the new parameter, **COPYCNT=.** You can specify 0-2,147,483,647 copies of output to be produced.

- **Considerations:**

  - **COPYCNT=** takes precedence over **COPIES=** if both are specified.

  - **COPIES=(nn,(xx,yy,…))** has the option for group numbers that **COPYCNT=** doesn't have. This allows you print some pages multiple times. **COPYCNT=** is best for "simple" copies.

BCP: COPYCNT= for printing a lot of copies

- **How to use:** Replace `COPYCNT=` instead of `COPIES=` . Clean out any extraneous `OUTPUT`s.

```
000009 //OUT1   OUTPUT   COPYCNT=5100
000010 //SYSUT2  DD SYSOUT=C,OUTPUT=(*.OUT1)
```

- See it in SDSF:

```
-------------------------------------------------------------------------
SDSF JOB DATA SET DISPLAY - JOB BIGPRINT (JOB00034)    LINE 1-5 (5)
COMMAND INPUT ===> _                                      SCROLL ===> HALF
NP    DDNAME    -Time TRd-Date TSt-Time TSt-Date RecFM W   OCopyCnt LRecL StepNum
      JESMSGLG 00:00 1900.000  0:00:00 1900.000 UA     NO           133
      JESJCL   00:00 1900.000  0:00:00 1900.000 V      NO           132
      JESYSMSG 00:00 1900.000  0:00:00 1900.000 VA     NO           133
      SYSPRINT 00:00 1900.000  0:00:00 1900.000 FBA    NO           121      1
      SYSUT2   00:00 1900.000  0:00:00 1900.000 FB     NO     5100   80      1
```

z/OS UNIX: script for command

- **What:** A shell command for keeping track in a file of what has been displayed on a terminal.
- Excellent for logging what has occurred during an interactive configuration (like z/OSMF's izusetup) for later review!

- **How to use:**. `script [-aq] [file]`
  - Where –a will append to the file, -q will not add diagnostic message. The default file name is `typescript` in the current directory.
  - Use `exit` to stop the recording into the file.
- **Considerations:**
  - Commands that modify the terminal (like full screen editors) might produce unexpected data.
  - Don't access the script file while recording to it.
  - If you can see the data on the terminal, you can see the data in the file. Be aware of file permissions on the script file!

z/OS UNIX: script for command

```
[/u/mwalle] script /u/mwalle/zosmf.script
Script command is started. The file is /u/mwalle/zosmf.script.
[/u/mwalle] ./izusetup.sh -file /etc/zosmf/aqhozosmf.cfg -finish
```

Contents of the script file:

```
Script command is started on Thu Jan 29 14:57:25 2015.
[/u/mwalle]./izusetup.sh -file /etc/zosmf/aqhozosmf.cfg -finish
```

IZUG090I: Environment variable "IZU_CODE_ROOT" has been set to the default value "/usr/lpp/zosmf/V
IZUG091I: Environment variable PATH is set to the value "/u/mwalle:/bin:/usr/sbin:/usr/lpp/java/J6.0/b
IZUG091I: Environment variable _BPX_SHAREAS is set to the value "YES".

IZUG090I: Environment variable "JAVA_HOME" has been set to the default value "/usr/lpp/java/J7.0_64"

…and the bottom of the file:

IZUG023W: An unexpected error has occurred while attempting to verify plug-in: "Incident Log".
IZUG223I: For more information, review log file "/var/zosmf/configuration/logs/izusetup_finish.01.29

IZUG011I: Completed z/OSMF setup procedure on Thu Jan 29 15:01:16 EST 2015.

IZUG210I: The script "./izusetup.sh" has completed.
```

```
[/u/mwalle]:>exit
Script command is complete on Thu Jan 29 15:01:29 2015.
```

DFSMSdfp: IGGCATxx parmlib member

- **What:** Specify catalog options in a parmlib member
  - Allows more catalog options to be specified than LOADxx (only have 72 columns there!)
  - Relief from having to do an F CATALOG after IPL
  - If used, then parameters have precedence over LOADxx and SYSCATxx
  - Default is IGGCAT00.

- **How to use:**
  - **IEASYSxx CATALOG=(xx,yy,…)** will indicate which IGGCATxx parmlib members to use
  - /* comments */ are allowed between parameters
  - If duplicate parameters are given, last one will be used, in the later member.

- **Considerations:**
  - Defaults are used if no catalog specifications are given.
  - Parmlib members will be used if doing a CAS restart (except for TASKMAX)
  - If IEASYSxx CATALOG= isn't specified, IGGCAT00 will be used. If IGGCAT00 cannot be found, then this message will appear at IPL:
    - **IEA301I IGGCAT00 NOT FOUND IN PARMLIB**

Avoid message by using parmlib member

LOADxx SYSCAT statement:

Column   Contents

1-6   SYSCAT

10-15 The volume serial of the device that contains the master catalog.

16   If SYS% to SYS1 conversion is active ➤ SYS%

17   Alias name level of qualification ➤ ALIASLEVEL

18-19 CAS service task lower limit ➤ TASKMIN(nnn)

20-63 The 44-byte data set name of the master catalog.

64-71 HLQ of the tape volume catalog ➤ TAPEHLQ

72   Enable AUTOADD ➤   AUTOADD

IGGCATxx has so much

more than LOADxx!

IGGCATxx parameters:

resource(*minutes,action*) **ALIASLEVEL(*n*)** **AUTOADD(ON|OFF)** CATMAX(*nnnn*) DELFORCEWNG(YES|NO) DELRECOVWNG(YES|NO)	DSNCHECK(YES|NO) DUMP(ON|OFF) DUMPON(*rc,rsn,mod*) DUMPON(*rc,rsn,mod,cnt*) EXTENDEDALIAS(YES|NO) GDGFIFOENABLE(YES|NO)	NOTIFYEXTENT(*percent*) SYMREC(YES|NO) **SYS%(ON|OFF)** **TAPEHLQ(*name*)** TASKMAX(*nn*) **TASKMIN(*nnn*)**	TASKTABLESIZE(*nnn*) UPDTFAIL(YES|NO) VVDSSPACE(*primary,secondary*) VVRCHECK(YES|NO)

DFSMSdss: Standalone ICKDSF no longer needed for initialization on RESTOREs

- **What:** Previously, for a "very first environment" (for DR, new systems,...) you might have had a tape with:
  - *File 1*: Standalone ICKDSF, to initialize the volumes to be restored.
  - *File 2*: Standalone DFSMSdss, to restore the volumes needed to IPL

  First step: IPL standalone ICKDSF and initialize the volumes to be restored.

  Second step: IPL standalone DFSMSdss

  Third step: Restore the volumes needed to IPL z/OS.

  Fourth step: IPL z/OS and run remaining RESTOREs in batch, in parallel

- As of z/OS R13, standalone DFSMSdss no longer requires a prior initialization of the volumes (the First Step)

- You can specify NOVERIFY on RESTORE to tell Standalone DFSMSdss not to read the volume label

- Therefore, ICKDSF no longer needs to be used ahead of time to initialize the volume!

DFSMSdss: Standalone ICKDSF no longer needed for initialization on RESTOREs

- **How to use:**

  - Standalone DFSMSdss (at or above the z/OS R13 level) can be File 1.

  - Don't necessarily need Standalone ICKDSF. Only need Standalone ICKDSF if you don't want to use NOVERIFY, and want have the target volume verified.

  - New sequence could then be:

    First step: IPL standalone DFSMSdss (File 1)

    Second step:

    `RESTORE  FRMDV(TAPE)  FRMADR(nnn)  TOADR(nnn)  NOVERIFY`
    Repeat as needed

    Third step: IPL your z/OS system from the restored volumes

- **Considerations:**

  - R13 Standalone DFSMSdss can be used to RESTORE dumps taken with lower levels of DFSMSdss

❖**BCP: ALLOCxx for unique temp data set name**

BCP: ALLOCxx for unique temp data set name

- **What:**   It might be possible for jobs executing at the same time with the same jobname (when JES allows it) fail allocation with a duplicate data set name error.

- To avoid this possibility, use the ALLOCxx `TEMPDSFORMAT=UNIQUE` option.

  - Ensures that jobs with the same jobname running simultaneously do not create temporary data sets with the same names.

  - The previous behavior is `INCLUDELABEL`, and is the default.

  - Can change dynamically with `SETALLOC`

- Temporary data set names will change when using the `UNIQUE` option, *only if* you had specified a dsn label (e.g. &&MWTEMP).

  - In the JCL, all references to the dsn label would correctly refer to the same data set.

BCP: ALLOCxx for unique temp data set name

- **The naming convention:**

  - As always, under any option, all temporary data set names start with: **`SYSyyddd.Thhmmss.RA000.jjobname`**

- If you do <u>not</u> specify a data set name, or **`TEMPDSFORMAT(UNIQUE)`** is in effect, the full format of the temporary data set name is: **`SYSyyddd.Thhmmss.RA000.jjobname`**.**`Rggnnnn`**

- If you <u>do</u> specify a data set name and **`TEMPDSFORMAT(INCLUDELABEL)`** is in effect, the full format of the temporary data set name is: **`SYSyyddd.Thhmmss.RA000.jjobname.`****`dsetname.Hgg`**

BCP: ALLOCxx for unique temp data set name

```
000004 //* TEMPORARY DSN WITH A LABEL
000005 //DD1        DD    DSN=&&MWTEMP,DISP=(NEW,PASS),

000010 //* TEMPORARY DSN WITHOUT A LABEL_
000011 //DD2        DD    DISP=(NEW,PASS),
```

- **Default, old way, `INCLUDELABEL`:**
  - **With dsn: `SYS15029.T210214.RA000.IBMUSERT.MWTEMP.H01`**
    - This is the case that is affected when changing this option. The dsn (`&&MWTEMP`) is not present when moving to `UNIQUE`.
  - **Without dsn: `SYS15029.T210214.RA000.IBMUSERT.R0100011`**
    - Same as with `UNIQUE.` No change here.

- **New way, `UNIQUE`:**
  - **With dsn: `SYS15029.T214532.RA000.IBMUSERT.R0100014`**
    - Note, all references to `"&&MWTEMP"` work fine. No JCL changes were done!
  - **Without dsn: `SYS15029.T214532.RA000.IBMUSERT.R0100015`**
    - Same as with `INCLUDELABEL.` No change here.

Small Enhancements

❖**z/OS UNIX: skulker**

Older than the hills:
z/OS UNIX: skulker

- **What:** Allows you to clean out old files in a directory, based on last access time and location.
  - skulker is a sample shell script provided in /samples/.
  - You may copy it to /bin, /usr/bin, /usr/sbin/ … and modify it as you see fit.
  - /tmp/ is an ideal location to use skulker on

- **How to use:**
  - **/samples/skulker -i -l /u/mwalle/myskulk.log -R /u/mwalle/tmp/ 365**

  where some of the options are:
  - **-i** interactively ask about files or directories that will be deleted.
  - **-l** log the deleted files, warning, errors
  - **-R** recursively moves through dirs and delete dirs and files, -r recursively moves through dir and deletes files

- **Considerations:** skulker with cron is a great combination!
  - Don't use **-i** from cron. If used from cron, nothing will be deleted.

Older than the hills:
z/OS UNIX: skulker example

```
EDIT          /AQTS/var/spool/cron/crontabs/MWALLE         Columns 00004 00075
Command ===> _                                             Scroll ===> HALF
****** ********************************* Top of Data *********************************
- - -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   5 Line(s) not Displayed
000006   Clean out all 3 day old stuff in /u/mwalle/tmp daily at 15:00
000007 15 * * * /samples/skulker  -l /u/mwalle/myskulk.log -R /u/mwalle/tmp/ 3
****** ********************************* Bottom of Data *********************************
```

- Clean out /u/mwalle/tmp/ every day at 3pm, with files and dirs that are at least three days old.
- Put what is deleted into the file myskulk.log:

```
BROWSE       /u/mwalle/myskulk.log                        Line 00000011 Col 001 059
Command ===> _                                            Scroll ===> HALF
'/u/mwalle/tmp/junkdir/junkdir2/run2'
'/u/mwalle/tmp/junk2'
'/u/mwalle/tmp/run'
skulker run on Sat Jul 12 15:00:01 EDT 2014
No files found older than specified date.  Nothing removed.
skulker run on Sun Jul 13 15:00:01 EDT 2014
No files found older than specified date.  Nothing removed.
skulker run on Mon Jul 14 15:00:01 EDT 2014
No files found older than specified date.  Nothing removed.
skulker run on Tue Jul 15 15:00:01 EDT 2014
Files removed on Tue Jul 15 15:00:01 EDT 2014:
'/u/mwalle/tmp/run'
'/u/mwalle/tmp/junkdir/junkdir2/run2'
skulker run on Wed Jul 16 15:00:01 EDT 2014
No files found older than specified date.  Nothing removed.
skulker run on Thu Jul 17 15:00:00 EDT 2014
No files found older than specified date.  Nothing removed.
****************************** Bottom of Data ******************************
```

Summary of What We Might Want to Share with Our User Community:

- **System Programmer & User Items:**
    - **DFSMS (V2.2):** GDG Extended (GDGE)
    - **DFSMS (V2.1):** PDSE V2 member generations
    - **SDSF (V2.1):** System symbols on Filter
    - **ISPF (V2.1):** Swapbar enhancements
    - **BCP (R13):** COPYCNT= for printing lots of copies
    - **z/OS UNIX (R13):** script command
    - **z/OS UNIX (old):** skulker

- **System Programmers' Items:**
    - **ISPF (V2.1): :** Configuration Utility new option for keyword file
    - **BCP (V2.1):** Parallel Batch Recall
    - **CommServer (V2.1):** TCP/IP Profile syntax check
    - **DFSMS (R13):** IGGCATxx parmlib member
    - **DFSMS (R13):** Standalone ICKDSF not needed for s/a restores
    - **BCP:** ALLOCxx for unique temp data set name

z/OS Little Enhancements: Many Small Potatoes Can Make a Big Meal Summary

- **z/OS V2.2:**

  - **DFSMS:** GDG Extended (GDGE) Can have 999

- **z/OS V2.1:**

  - **DFSMS: PDSE V2 member generations** Very handy.
  - **SDSF: System symbols on Filter** Use the pop-up for symbol names
  - **BCP: Parallel batch recall** Speed up those batch jobs.
  - **Communications Server: TCP/IP profile syntax check** For every update.
  - **ISPF: Configuration Utility new option for keyword file** Nice option.
  - **ISPF: Swapbar enhancements** Pretty it up.

- **z/OS V1.13:**

  - **BCP: COPYCNT= for printing a lot of copies** For >255 copies.
  - **z/OS UNIX: script command** Save it for review later.
  - **DFSMSdfp: IGGCATxx parmlib member** Very convenient and maintainable.
  - **DFSMSdss: Standalone ICKDSF no longer needed…** One less thing to do.

- **z/OS V1.12:**

  - **BCP: ALLOCxx for unique temp data set names** You might need this one day.

- **Older than the hills:**

  - **z/OS UNIX: skulker** Keep a tidy file system.