GSE GUIDE SHARE EUROPE UK REGION

GSE UK Conference 2020
Virtually Unstoppable

Take more advantage of your z/OS system now!
z/OS small enhancements in older release you might have missed

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z/OS Installation and Upgrade
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Session 2BF

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z/OS Small Enhancements

- **z/OS V2.2:**
  - **DFSMS: *Revisit with update!* GDG Extended (GDGE)**
  - **z/OS UNIX: ucat on automount's allocany and allocuser**
  - **DFSMS: PENDINGDELETE for PDSE members**
  - **z/OSMF: Viewing or printing your Workflow**
  - **BCP: HZSPRMxx SYS Filter (OA49807)**
  - **BCP: HZSPRMxx Syntax Check (OA49807)**
  - **z/OSMF: Swagger support (PI96461)**

- **z/OS V2.1:**
  - **z/OS UNIX: Copy with alias support for PDS(E)**
  - **BCP: PDUU Support for HTTPS (OA55959)**
  - **BCP: Generic Tracker**

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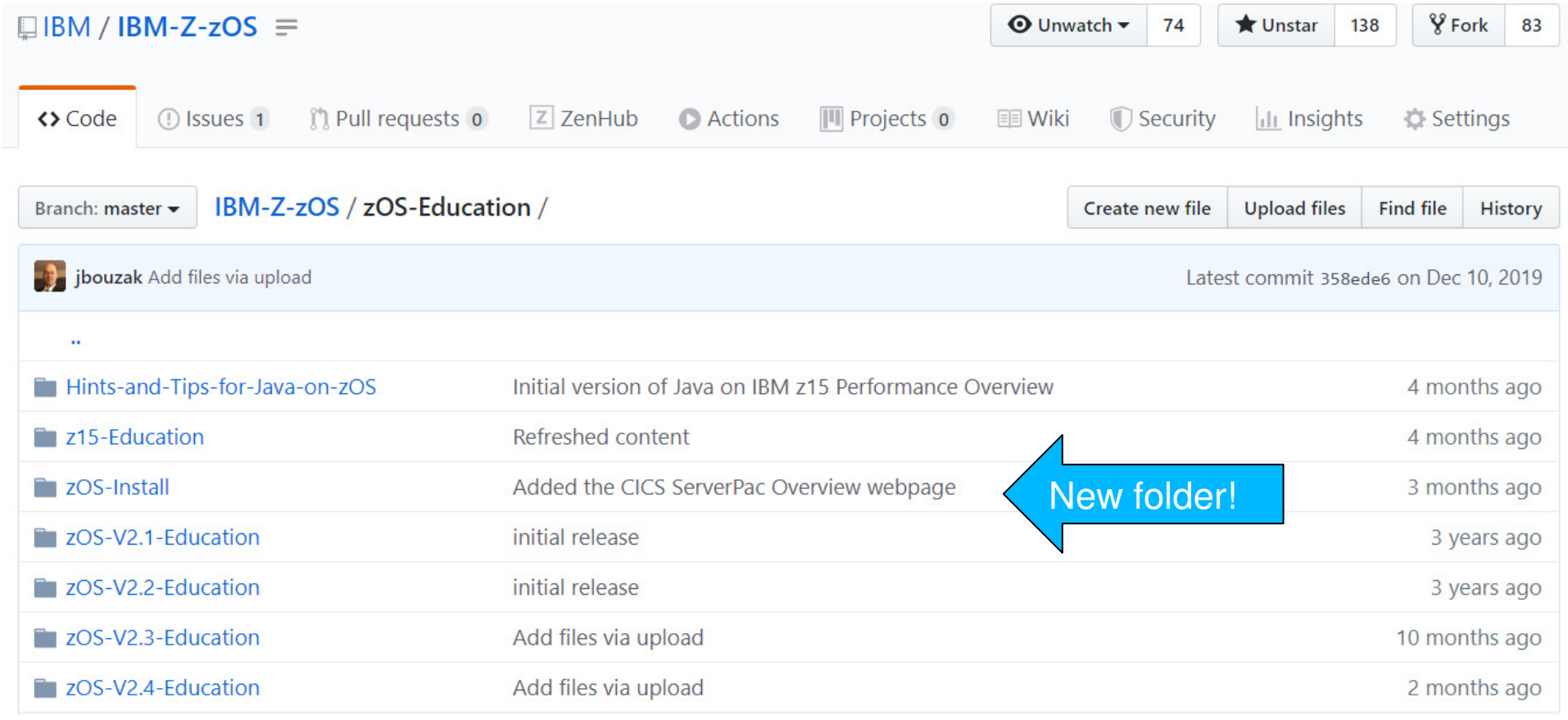
z/OS IBM Education Modules - V2R1, V2R2, and V2R3, and V2R4!

Reminder for easy function shopping: On github! Very easy to find and download!
zOS Education PDFs



V2R4 Education is here!..

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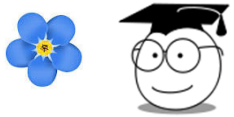
Small Enhancements

- **DFSMS: *Revisit with update!* GDG Extended (GDGE)**

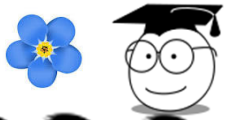
- **z/OS UNIX: ucat on automount's allocany and allocuser**

- **DFSMS: PENDINGDELETE for PDSE members**

- **z/OSMF: Viewing or printing your Workflow**

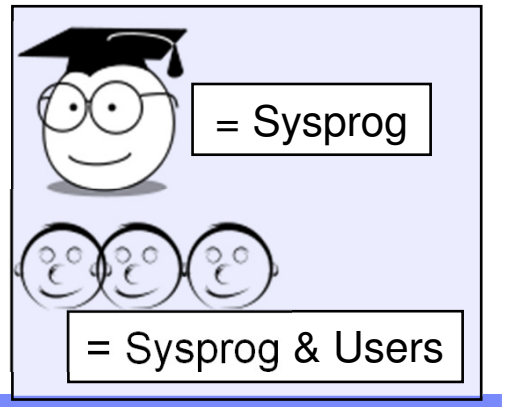


- **BCP: HZSPRMXx SYS Filter**



- **BCP: HZSPRMXx Syntax Check**

- **z/OSMF: Swagger support**



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DFSMS: *Revisit with update!* GDG Extended (GDGE)

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

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

Meaning, you could 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)

Recap

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DFSMS: *Revisit with update!* 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.*

Recap

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DFSMS: *Revisit with update!* 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*************************************************************
- 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**

Recap

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DFSMS: *Revisit with update!* 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!

Was not (and still is not) a one-step way to convert from classic GDG to GDGE.

Recap

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DFSMS: *Revisit with update!* GDG Extended (GDGE)

Was not (and still is not) a one-step way to convert from classic GDG to GDGE. But improvements have been made…

Backgound:

1. Marna's original method worked only on SMS-GDG's, migrated were ok, but were recalled, no tape data sets. Six step process using IDCAMS ALTERs with temporary GDGs.
2. **Steve Branch's (Mr. Catalog)** improvement also handled non-SMS-GDGs by using TSO RENAMEs, but could not handle tape data set and resulted in data sets being recalled. Still six steps. A REXX program could help.

(The above methods were blog'd about by Marna in March 2017)

3. Another customer had an idea to use REPRO MERGECAT with a temporary catalog. Works with SMS-GDG and non-SMS GDGs, tape data sets, *and* does not recall the data sets. Steve has provided us a handy job for testing and using.
   - Still multi-step, but runs pretty quickly!

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DFSMS: *Revisit with update!* GDG Extended (GDGE)

Steve Branch's job (from customer suggestion):

1. Define a temporary usercat:

```
DEFINE UCAT(NAME (temp_cat) STORCLAS(STANDARD) CYL (1 1))
```

2. REPRO the classic GDG's into the temporary usercat (data sets are not recalled, and are removed from the original usercat):

```
REPRO INDATASET(original_cat) OUTDATASET(temp_cat) -
   ENTRIES(some_GDG) MERGECAT
```

3. Define the GDGEs (same name), in the original catalog:

```
DEFINE GDG (NAME(some_GDG) EXTENDED LIMIT(999) SCRATCH PURGE)
```

4. Move the selected **GDGes** from the temporary catalog into the original catalog (data sets are not recalled, and the GDG name itself remains in temp_cat!):

```
REPRO INDATASET(temp_cat) OUTDATASET(original_cat)
ENTRIES(some_GDG.*) MERGECAT
```


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z/OS UNIX: ucat on automount's allocany and allocuser

What: When automount allocates a new file system, you can indicate to fail the allocation if the file system would not be cataloged in a user catalog

In other words, you can specify that you don't want to put newly allocated file systems in the master catalog, which is desirable when keeping file systems only in usercat(s).

How to use: In the MapName file, specify **ucat** on **allocany** or **allocuser.**

Examples:

```
allocany storclas(standard) cyl space(50,5) euid ucat
allocuser space(10,2) cyl vol(ZFSVOL1) pathperm(700)
    euid ucat
```

Considerations:

- Only for use with zFS file systems (no HFS)
- zFS HLQ must be an alias in the master catalog, or will fail.

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z/OS UNIX: automount's MapName file

Btw - additional item in the Mapname file…

What: Continuation on multi-lines can be done, which provides additional readability.

How to use: Continue a line by using a backslash character (\) at the end. Then leading tabs and blanks in the continuation line are ignored.
The tabs and blanks *before* the backslash are **not** ignored.

Example:

```
name    *
filesystem    OMVS.HFS.\
USER\
.<uc_name>
```

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DFSMS: PENDINGDELETE for PDSE members

What: Removed or updated PDSE members won't be immediately removed from a PDSE, when there are connections to that PDSE member.

(Think especially of PDSEs that are LLA-managed.)

This can result in the PDSE space not being reused when new members are added or members are updated.

(Might be fine for a long time, as PDSE can have more secondary extents than PDSes.)

But, how do you actually see how much space is really used in a PDSE after members are deleted or updated?

➔ Drive out those pending deleted members.

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DFSMS: PENDINGDELETE for PDSE members

How to use: Drive those PDSE members out, in one of two ways:

1. Manually, with a IEBPDSE batch job, with `PERFORMPENDINGDELETE`.

2. Automatically, via IGDSMSxx's `PDSE_PENDING_DELETE_INTERVAL(n)`.

   0 = do not perform any pending delete removals, in minutes..

   Needs to be used in conjunction with the `PDSE(1)_LRUCYCLES` and `PDSE(1)_LRUTIME` parameters.

   15 for `PDSE(1)_LRUCYCLES` , and 60 seconds for `PDSE(1)_LRUTIME` .

   15*60 = 900 seconds = 15 minutes. Using these defaults, `PDSE_PENDING_DELETE_INTERVAL` should be more than 15.

If the PDSE was LLA-managed, make sure you take that into consideration when using, as that is a connection.

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DFSMS: PENDINGDELETE for PDSE members

Example, if you wish to remove the unneeded PDSE members.

1. Check the connections to the PDSE:

```
-D SMS,PDSE,CONNECTIONS,DSN(mwalle.loadlib.pdse)
 IGW051I PDSE CONNECTIONS Start of Report(SMSPDSE )
 ---------data set name---------------------- -----vsgt-------
 MWALLE.LOADLIB.PDSE                          01-C90PK5-000F0C
 --asid-- --name-- --type-- -open-
   001A    LLA      Local    Input
 PDSE CONNECTIONS End of Report(SMSPDSE )
```


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DFSMS: PENDINGDELETE for PDSE members

Continuation: **2.** See if there are pending deletes in the PDSE.

```
//VALIDATE EXEC PGM=IEBPDSE
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSLIB DD DISP=SHR,DSN=MWALLE.LOADLIB.PDSE

IGW700I PDSE Directory Validation Successful
DSN:MWALLE.LOADLIB.PDSE
ADPages:3 IXRecords:105
ADPagesInCore:2 ADPagesRead:1
ADTreeLevels:2
NDPages:2 IXRecords:11
NDPagesInCore:1 NDPagesRead:1
NDTreeLevels:2
AD ND Tree Nodes:11
ADPercentFree:86 NDPercentFree:98
ADRootPercentFree:93 NDRootPercentFree:93
ADMidLevelEmptyPages:0 NDMidLevelEmptyPages:0
Version:1
PendingDeletes:7
```


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DFSMS: PENDINGDELETE for PDSE members

Continuation: 3. Check number of pages used in ISPF (after deletes, and with pending deletions).

```
Data Set Name  . . . : MWALLE.LOADLIB.PDSE

 General Data                          Current Allocation
  Management class . . : **None**       Allocated blocks  . : 1,504
  Storage class  . . . : **None**       Allocated extents . : 101
   Volume serial . . . : C90PK5         Maximum dir. blocks : NOLIMIT
   Device type . . . . : 3390
  Data class . . . . . : **None**
   Organization  . . . : PO             Current Utilization
   Record format . . . : U               Used pages  . . . . : 31
   Record length . . . : 0               % Utilized  . . . . : 1
   Block size  . . . . : 32760           Number of members . : 2
   1st extent blocks . : 4
   Secondary blocks  . : 10
   Data set name type  : LIBRARY        Dates
   Data set encryption : NO              Creation date . . . : 2020/02/19
   Data set version  . : 1               Referenced date . . : 2020/02/19
                                         Expiration date . . : ***None***
```

Fyi, before deletions:

```
Current Utilization
   Used pages  . . . . : 11,981
   % Utilized  . . . . : 99
   Number of members . : 244
```


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DFSMS: PENDINGDELETE for PDSE members

Continuation: 4. Let's say I "forget" to refresh LLA when I try to remove the pending deleted members, what would IEBPDSE say?.

```
//VALIDATE EXEC PGM=IEBPDSE,PARM='PERFORMPENDINGDELETE,NOANALYSIS'
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSLIB DD DISP=SHR,DSN=MWALLE.LOADLIB.PDSE

IGW705I Pending Delete Records Processed
00000000 Pending Delete Members deleted
Out of 00000007 possible
```

Oops, better refresh LLA:

```
MODIFY LLA,REFRESH
RESPONSE=SY1       CSV210I LIBRARY LOOKASIDE REFRESHED
```


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DFSMS: PENDINGDELETE for PDSE members

Continuation: **5.** Try to remove the pending deleted members again.

```
//VALIDATE EXEC PGM=IEBPDSE,PARM='PERFORMPENDINGDELETE,NOANALYSIS'
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSLIB DD DISP=SHR,DSN=MWALLE.LOADLIB.PDSE

IGW705I Pending Delete Records Processed
00000007 Pending Delete Members deleted
Out of 00000007 possible
```


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DFSMS: PENDINGDELETE for PDSE members

Continuation: 6. Check number of pages used in ISPF (after pending deletes were successful).

```
Data Set Name  . . . : MWALLE.LOADLIB.PDSE

 General Data                          Current Allocation
  Management class . . : **None**       Allocated blocks  . : 1,504
  Storage class  . . . : **None**       Allocated extents . : 101
   Volume serial . . . : C90PK5         Maximum dir. blocks : NOLIMIT
   Device type . . . . : 3390
  Data class . . . . . : **None**
   Organization  . . . : PO             Current Utilization
   Record format . . . : U               Used pages  . . . . : 23
   Record length . . . : 0               % Utilized  . . . . : 1
   Block size  . . . . : 32760           Number of members . : 2
   1st extent blocks . : 4
   Secondary blocks  . : 10
   Data set name type  : LIBRARY        Dates
   Data set encryption : NO              Creation date . . . : 2020/02/19
   Data set version  . : 1               Referenced date . . : 2020/02/19
                                         Expiration date . . : ***None***
```


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z/OSMF: Viewing or printing your Workflow

What: Users might want to have a "quick view or search" of an item in a z/OSMF Workflow, and don't want to logon to z/OSMF.

Users might want to print just a small portion of a Workflow to follow, rather than using a GUI interface.

How to use:

- Create your z/OSMF Workflow, and open it.
- Filter the steps in your z/OSMF Workflow as you wish. This is very powerful and can cut down significantly the size of the exported file.
- Actions → Export.
- Provide optional details, based on what you want.

Considerations:

- It is best to export after you have already run any discovery steps that you might have. This will also cut down significantly on the size of the exported file.

Written with keeping the very large z/OS V2.4 Upgrade in mind!

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z/OSMF: Viewing or printing your Workflow

Example: Printing just the BCP steps assigned to MWALLE.

Step 1: Create the Workflow.

Step 2: Run the first step: Discover z/OS features in use

Workflows ▸ Marna Sample V2.3 to V2.4 Workflow

Marna Sample V2.3 to V2.4 Workflow

Description:
zOS V2R4 Upgrade Workflow from zOS V2R3

Percent complete: 27%

Owner: mwalle

Steps complete: 54 of 198

System: SHARPLEX.S2

Status: In Progress

Is Callable: Cannot be called by another workflow

Access(Learn More): Restricted

Workflow Steps

Actions

278 of 278 items shown. Clear filter

State Filter	No. Filter	Title Filter	CalledWorkflow Filter	Automated Filter	Owner contains "mwalle"	Skill Category Filter	Assignees Filter
Complete	1	Discover z/OS features in use		Yes	mwalle		mwalle
In Progress	2	Upgrading your z/OS system: An introduction					
Ready	2.1	Typical upgrade steps		No	mwalle		mwalle
Ready	2.2	Using IBM Health Checker for z/OS for migration checking		No	mwalle		mwalle
Ready	2.3	Elements and features that do not have upgrade actions		No	mwalle		mwalle
In Progress	3	General upgrade actions for everyone migrating to z/OS V2R4					
In Progress	3.1	Upgrade actions for everyone moving to z/OS V2R4					
In Progress	3.2	Hardware upgrade actions					
In Progress	3.2.1	Upgrade to an IBM z15 server					
Skipped	3.2.2	Upgrade to an IBM z14 server					
Skipped	3.2.3	Upgrade to an IBM z13 or IBM z13s server					
Skipped	3.2.4	Upgrade to an IBM zEnterprise EC12 or IBM zEnterprise BC12 server					
Ready	3.2.5	Ensure that you are using		No	mwalle		mwalle

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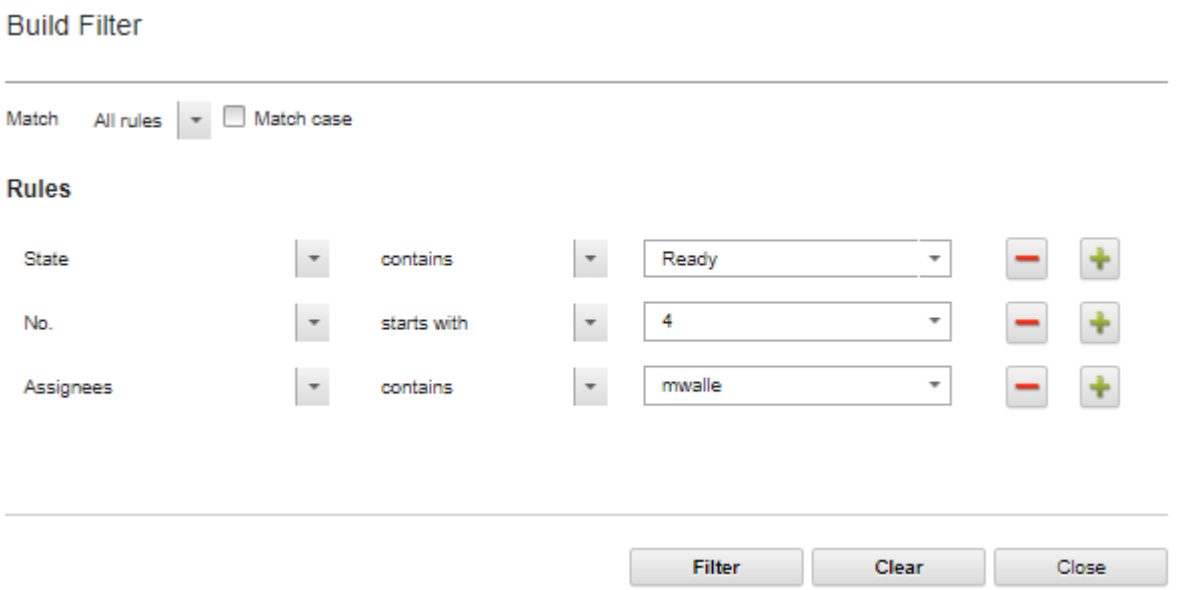
z/OSMF: Viewing or printing your Workflow

Step 3: Filter on desired steps, via Filter.



Marna Sample V2.3 to V2.4 Workflow

Description:
zOS V2R4 Upgrade Workflow from zOS V2R3
Percent complete:
27%

Workflow Steps

Actions

142 of 278 items shown. Clear filter

State contains "Ready"	No. starts with "4"	Title Filter	CalledWorkflow Filter	Automated Filter	Owner Filter	Skill Category Filter	Assignees contains "mwalle"
In Progress	4.1	BCP upgrade actions					
In Progress	4.1.1	BCP actions to perform before installing z/OS V2R4					
Ready	4.1.1.1	BCP: Recompile programs with the new IRARMCTZ macro in APAR OA55218		No	mwalle		mwalle
Ready	4.1.1.2	Stop using z/OS Batch Runtime		No	mwalle		mwalle

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z/OSMF: Viewing or printing your Workflow

Step 4: Select all these steps, in one click!

Marna Sample V2.3 to V2.4 Workflow

Description:
zOS V2R4 Upgrade Workflow from zOS V2R3
Percent complete:
27%

Workflow Steps

Actions

142 of 278 items shown. Clear filter

State contains "Ready"	No. starts with "4"	Title Filter	CalledWorkflow Filter
In Progress	4.1	BCP upgrade actions	
In Progress	4.1.1	BCP actions to perform before installing z/OS V2R4	
Ready	4.1.1.1	BCP: Recompile programs with the new IRARMCTZ macro in APAR OA55218	
Ready	4.1.1.2	Stop using z/OS Batch Runtime	

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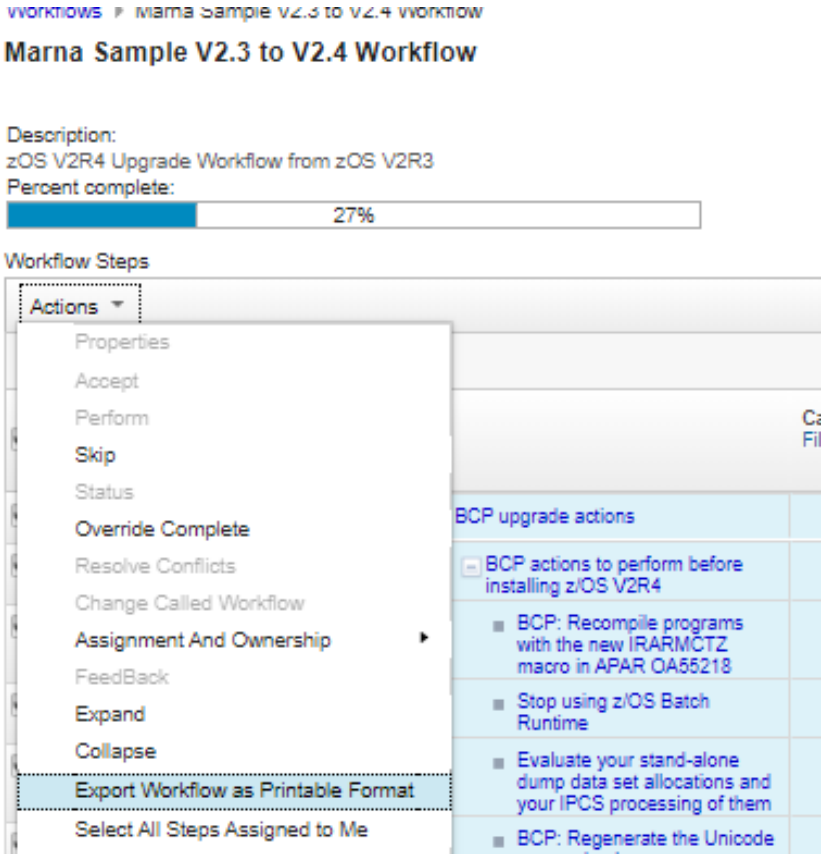
z/OSMF: Viewing or printing your Workflow

Step 5: Export what I've filtered.



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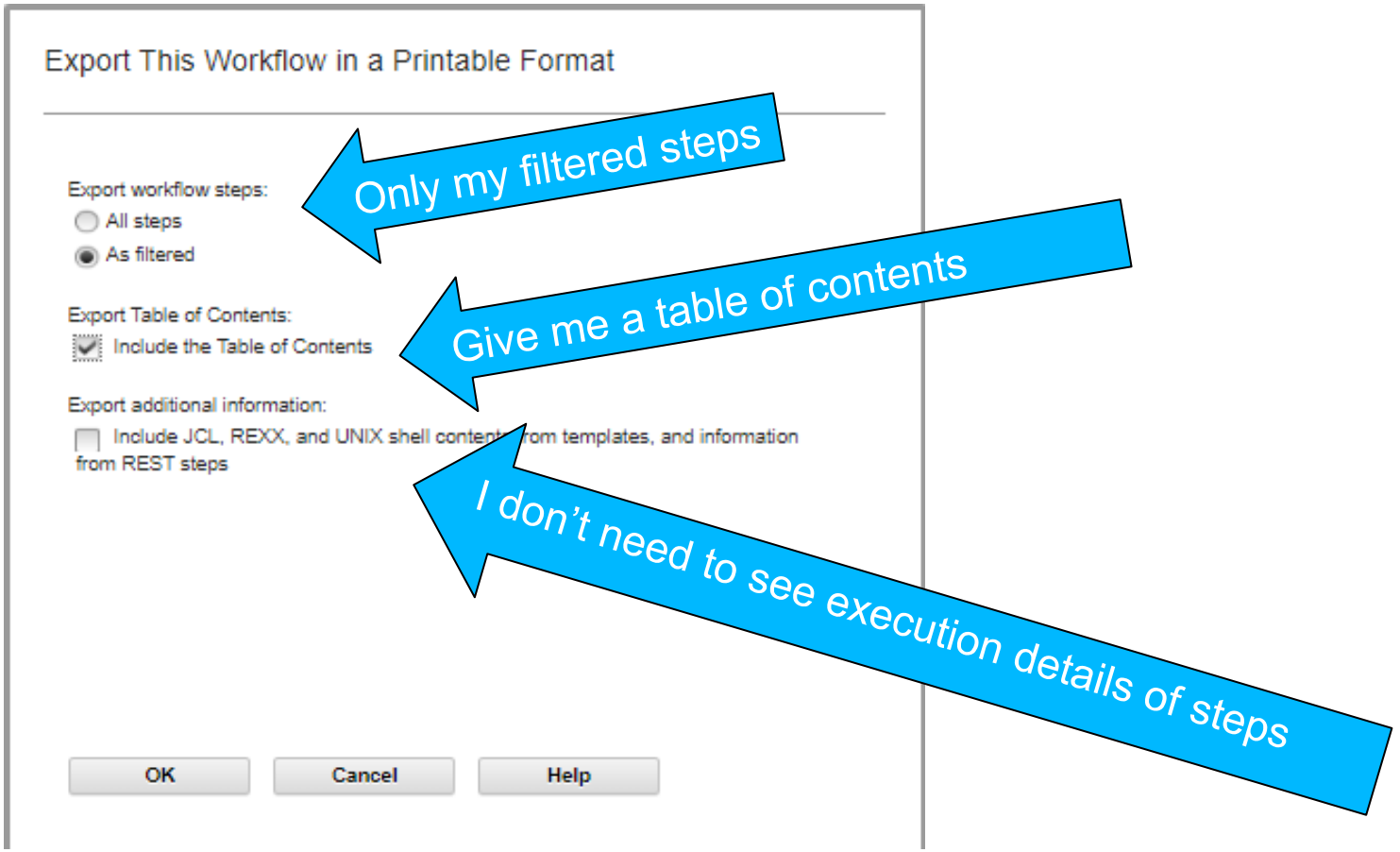
z/OSMF: Viewing or printing your Workflow

Step 6: Tailor the exported file to have what you want.



Written with keeping the very large z/OS V2.4 Upgrade in mind!

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z/OSMF: Viewing or printing your Workflow

Step 7: Created in a new browser tab, my generated file (HTML). Browse or search as desired.

Marna Sample V2.3 to V2.4 Workflow
Description :zOS V2R4 Upgrade Workflow from zOS V2R3
Status: In Progress
Steps complete: 54 of 198
Owner: mwalle
Export time: 2020-02-20 23:05:55
System: SHARPLEX.S2
Version: HSMA247;PH13729P;2019-08-05T04:12:55

Filters :
matchCase : false
[(state contain : Ready) &&
(stepNumber startWith : 4) &&
(assignees contain : mwalle)]

Contents

< Note: page numbers may not be accurate. >

Step 4.1.2 : BCP actions to perform before the first IPL of z/OS V2R4

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
In Progress			noFeedback		No

Description:

This topic describes BCP upgrade actions that you can perform after you have installed z/OS V2R4, but before the first time you IPL. These actions might require the z/OS V2R4 level of code to be installed, but do not require it to be active.

Step 4.1.2.1 : Create IPL text

Step State:	Step Owner:	Step Assignee:	Step Feedback:	Step Skills:	Has called workflow:
Ready	mwalle	mwalle	incomplete		No

Description:

Description

IPL text is boots is required for IPL, such as the location of the nucleus lib L text by running ICKDSF against the system resid

ut the upgrade action. Use this information to plan stem.

Table 49. Information about this upgrade action

or feature:	BCP.
hen change was introduced:	General upgrade action that is not tied to a specific release.
Applies to upgrade from:	z/OS V2R3 and z/OS V2R2.
Timing:	Before the first IPL of z/OS V2R4.

Click takes me right to the step!

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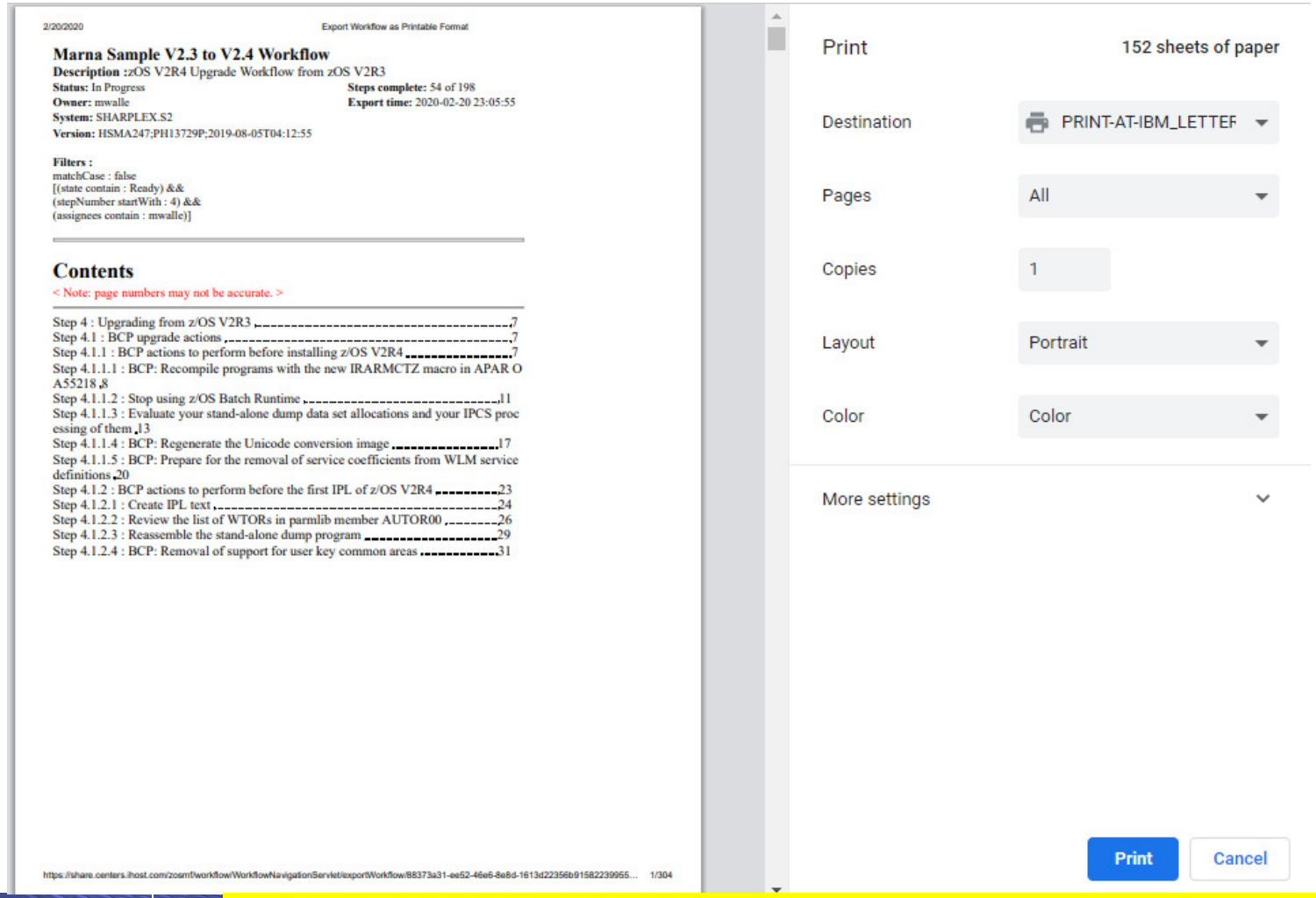
z/OSMF: Viewing or printing your Workflow

Step 8: To print into a PDF. Right click → Print. (Or, Save As…)



2/20/2020 Export Workflow as Printable Format

Marna Sample V2.3 to V2.4 Workflow

Description :zOS V2R4 Upgrade Workflow from zOS V2R3

Status: In Progress **Steps complete:** 54 of 198

Owner: mwalle **Export time:** 2020-02-20 23:05:55

System: SHARPLEX.S2

Version: HSMA247;PH13729P;2019-08-05T04:12:55

Filters :
matchCase : false
[(state contain : Ready) &&
(stepNumber startWith : 4) &&
(assignees contain : mwalle)]

Contents

< Note: page numbers may not be accurate. >

https://share.centers.ihost.com/zosmf/workflow/WorkflowNavigationServlet/exportWorkflow/88373a31-ee52-46e6-8e8d-1613d22356b91582239955... 1/304

Print 152 sheets of paper

Destination PRINT-AT-IBM_LETTEF

Pages All

Copies 1

Layout Portrait

Color Color

More settings

Print Cancel

Written with keeping the very large z/OS V2.4 Upgrade in mind!

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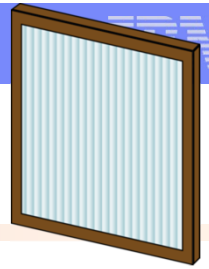
BCP: HZSPRMxx SYS Filter



What: Typically users make changes to health checks, and harden those into an HZSPRMxx. However, the differences from system to system, or sysplex to sysplex might be small. This caused separation of HZSPRMxx parmlib members for those different environments.

- As of z/OS V2.3, you can now use filters to consolidate those differences into a single HZSPRMxx parmlib member

How to use:

- **`WHEN`** (*condition*) **`DO`** (*some_change*) **`END`** to scope around the differences for an environment.
- *Condition* can use SYSTEMNAME, SYSPLEXNAME, HWNAME, LPARNAME, VMUSERID, or a *textstring (system symbol!),* and can be compounded
- Comparison operators: =, <>, >, >=, <, <=, IN, NOTIN
- Can wildcard with * or ?, with some reasonable restrictions

Considerations:

- Good programming practice would be to include DO and ENDs for clarity, although there are rules if that is not done.
- You can put any HZSPRMxx statement within the WHENs: HZSPDATA, …
- Now, you can collapse perhaps several HZPRMxx parmlib members which differ slightly into a single parmlib member to maintain.

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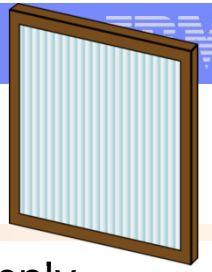
BCP: HZSPRMxx SYS Filter



Example: I want to maintain a single HZSPRMxx, and in one sysplex I want to apply some health check differences:

- On all zOS V2.4 production systems I want to have CA_RECLAIM check changed …

```
WHEN (&SYSPLEX. = UTCPLXCB)
DO /* FOR production UTCPLXCB */

   WHEN (&MWPARM. = 'PROD' &SYSOSLVL. >= Z1020400 )
   DO /* PRODuction */
      /* On z/OS V2.4 and up */
      UPDATE CHECK(IBMVSAM,VSAM_CA_RECLAIM)
             DATE(20190717)
             SEVERITY(HIGH)
             INTERVAL(00:10)
             REASON('CA Reclaim medium severity, every 10m')
   END /* PRODuction */
```

- All other systems will remain as is.
- Original settings: INTERVAL: **ONETIME** SEVERITY: **MEDIUM**

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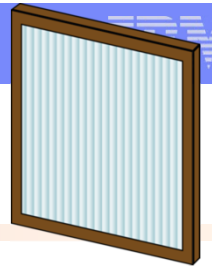
BCP: HZSPRMxx SYS Filter



Example: …and

- On Test systems, at any z/OS level, I want MAXVIRTUAL check changed

```
   WHEN (&MWPARM. = 'TEST')
   DO /* All TEST systems */
      UPDATE CHECK(IBMVLF,VLF_MAXVIRT)
             DATE(20190717)
             SEVERITY(MEDIUM)
             INTERVAL(0:10)
             REASON('VLF medium severity, every 10m')
   END /* All TEST systems */

END /* FOR production UTCPLXCB */
```

- All other systems, will remain as is.
- Original settings: INTERVAL: **1:00** SEVERITY: **LOW**
- **Note: &MWPARM. is my own system symbol to identify which systems are Production vs. Test.**

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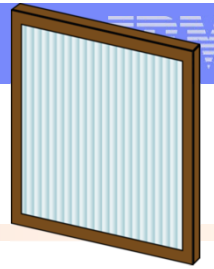
BCP: HZSPRMxx SYS Filter



Example: …then made the change across the sysplex.

```
ro *all,F HZSPROC,REPLACE,PARMLIB=(MW)
IEE421I RO *ALL,F HZSPRO  REPLA
CB8A      RESPONSES ----------------------------------------
 HZS0403I REPLACE PARML        HAS BEEN COMPLETED
CB8B      RESPONSES ----------------------------------------
 HZS0403I REPLACE PARMLIB PROCESSING HAS BEEN COMPLETED
CB8C      RESPONSES ----------------------------------------
```

Test system

- …

```
CB86      RESPONSES ----------------------------------------
 HZS0403I REPLACE PARMLIB PROCESSING HAS BEEN COMPLETED
CB88      RESPONSES ----------------------------------------
 HZS0403I REPLACE PARMLI       G HAS BEEN COMPLETED
CB89      RESPON    ----------------------------------------
 HZS0403I REPLACE PARMLIB PROCESSING HAS BEEN COMPLETED
```

V2.4 Production system

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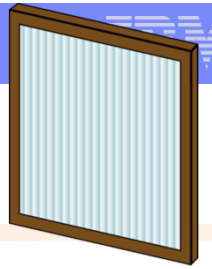
BCP: HZSPRMxx SYS Filter



Example: …then verified the changes:
zOS V2.4 production systems for CA_RECLAIM

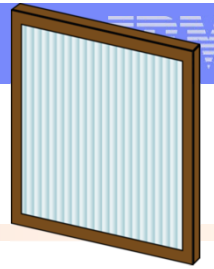
- Production V2.4 systems (changed to HIGH and :10):

```
CB89      RESPONSES ---------------------------------------
HZS0201I 18.19.10 CHECK DETAIL      499
CHECK(IBMVSAM,VSAM_CA_RECLAIM)
 STATE: ACTIVE(ENABLED)                STATUS: SUCCESSFUL
 EXITRTN: IDAHCADD
 LAST RAN: 07/19/2019 18:16     NEXT SCHEDULED: 07/19/2019 1
 INTERVAL: 0:10
 EXCEPTION INTERVAL: SYSTEM
 SYNCVAL: SYSTEM
 SEVERITY: HIGH
```

- Non-production systems (remains MEDIUM and ONETIME):

```
CB8A      RESPONSES ---------------------------------------
HZS0201I 18.19.10 CHECK DETAIL      900
CHECK(IBMVSAM,VSAM_CA_RECLAIM)
 STATE: ACTIVE(ENABLED)                STATUS: SUCCESSFUL
 EXITRTN: IDAHCADD
 LAST RAN: 07/19/2019 17:20     NEXT SCHEDULED: (NOT SCHEDULED)
 INTERVAL: ONETIME
 EXCEPTION INTERVAL: SYSTEM
 SYNCVAL: SYSTEM
 SEVERITY: MEDIUM
```

BCP: HZSPRMxx SYS Filter



Example: …then verified the changes:
Test systems for MAXVIRT

- Production V2.4 systems (remains at LOW and 1:00):

```
CB89      RESPONSES ---------------------------------------
HZS0201I 18.29.56 CHECK DETAIL      648
CHECK(IBMVLF,VLF_MAXVIRT)
 STATE: ACTIVE(ENABLED)                STATUS: SUCCESSFUL
 EXITRTN: COFMHCVA
 LAST RAN: 07/19/2019 18:20     NEXT SCHEDULED: 07/19/2019
 INTERVAL: 1:00
 EXCEPTION INTERVAL: SYSTEM
 SYNCVAL: SYSTEM
 SEVERITY: LOW
```

- Non-production systems (changed to MEDIUM and :10):

```
CB8A      RESPONSES ---------------------------------------
HZS0201I 18.29.56 CHECK DETAIL      043
CHECK(IBMVLF,VLF_MAXVIRT)
 STATE: ACTIVE(ENABLED)                STATUS: SUCCESSFUL
 EXITRTN: COFMHCVA
 LAST RAN: 07/19/2019 18:29     NEXT SCHEDULED: 07/19/2019
 INTERVAL: 0:10
 EXCEPTION INTERVAL: SYSTEM
 SYNCVAL: SYSTEM
 SEVERITY: MEDIUM
```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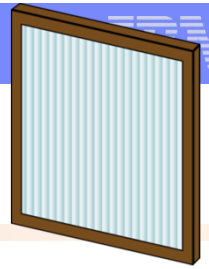
BCP: HZSPRMxx SYS Filter



Example: …Just a little nice thing to incidentally notice in SDSF:
CB89 system (Production V2.4, CA_RECLAIM changes, MAXVIRT does not):

```
SDSF HEALTH CHECKER DISPLAY  CB89                          LINE 172-189 (235)
COMMAND INPUT ===>                                           SCROLL ===>
NP    NAME                                vCode WTOType    ModifiedBy
      VLF_MAXVIRT                             4 INFO
      VSAM_CA_RECLAIM                        12 CRITICAL   PARMLIB(HZSPRMMW)
      VSAM_INDEX_TRAP                         8 EVENTUAL
```

CB8A system (Test system, CA_RECLAIM does not change, MAXVIRT does):

```
SDSF HEALTH CHECKER DISPLAY  CB8A                          LINE 166-183 (232)
COMMAND INPUT ===>                                           SCROLL ===>
NP    NAME                                vCode WTOType    ModifiedBy
      VLF_MAXVIRT                             8 EVENTUAL   PARMLIB(HZSPRMMW)
      VSAM_CA_RECLAIM                         8 EVENTUAL
      VSAM_INDEX_TRAP                         8 EVENTUAL
```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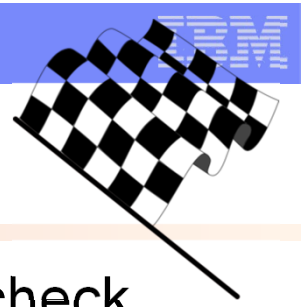
BCP: HZSPRMxx Syntax Check



What: Also introduced is the capability to perform a syntax check only on complete HZSPRMxx parmlib member(s)

- Does not apply the contained statements to any health checks or to any Health Checker global settings.

How to use:

- `MODIFY hzsproc,ADD,PARMLIB=(aa,..,CHECK|C)`

Considerations:

- `ASA021I SYNTAX CHECKING IS COMPLETE FOR PARMLIB MEMBER=HZSPRMMW. NO ERRORS WERE FOUND`
- `ASA020I SYNTAX CHECKING IS COMPLETE FOR PARMLIB MEMBER=HZSPRMMW. ERROR(S) WERE FOUND`
- `HZS0403I ADD PARMLIB PROCESSING HAS BEEN COMPLETED` ← *this message is also produced*
- New option is on the ADD (not the REPLACE)

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z/OS V2.2 with APAR OA49807 (RSU1612)

BCP: HZSPRMxx Syntax Check

Example:

```
-F HZSPROC,ADD,PARMLIB=(MW,CHECK)
 ASA009I SYNTAX ERROR IN PARMLIB MEMBER=HZSPRMMW ON LINE 22,
 POSITION 1: WHEN END IS SPECIFIED,
 THE FOLLOWING MUST ALSO BE SPECIFIED:
 (DO).
 DETECTING MODULE IS HZSIPMU1. INPUT LINE:
 END /* NOT production UTCPLXCB */
 ASA003I SYNTAX ERROR IN PARMLIB MEMBER=HZSPRMMW ON LINE 27,
 POSITION 26: QUOTED-STRING WAS SEEN, WHERE ONE OF
 (= GREATER_THAN IN LESS_THAN
 NOTIN)
 WOULD BE CORRECT.
 DETECTING MODULE IS HZSIPMX. INPUT LINE:
    WHEN (&MWPARM. = 'PROD' 'Z1020400 = 'Z1020400')
 ASA009I SYNTAX ERROR IN PARMLIB MEMBER=HZSPRMMW ON LINE 34,
 POSITION 4: WHEN END IS SPECIFIED,
 THE FOLLOWING MUST ALSO BE SPECIFIED:
 (DO).
```

```
ASA020I SYNTAX CHECKING IS COMPLETE FOR PARMLIB MEMBER=HZSPRMMW. ERROR(S) WERE
HZS0403I ADD PARMLIB PROCESSING HAS BEEN COMPLETED
```

Then when all problems were fixed:

```
ASA021I SYNTAX CHECKING IS COMPLETE FOR PARMLIB MEMBER=HZSPRMMW. NO ERRORS WE
HZS0403I ADD PARMLIB PROCESSING HAS BEEN COMPLETED
```

z/OSMF Swagger support

- **What: "Swagger"** is an open-source software framework backed by a large ecosystem of tools that helps developers design, build, document, and consume RESTful Web services. (definition from Wiki).
- z/OSMF Swagger support allows users to:
  - browse z/OSMF REST APIs by connecting to any z/OSMF instance:

    https:// <hostname>:<port>/zosmf/api/explorer/
  - Try z/OSMF REST API without having to do any coding
- Only subset of current z/OSMF REST APIs support Swagger today: jobs services, data set and file services, cloud provisioning for z/OS, …

How to use:

- Additional security resource set up is necessary.
  - `IZUDFLT.com.ibm.ws.management.security.resource.allAuthenticatedUsers` resource in the `EJBROLE` class
- Go to web location, and investigate and try.

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z/OS V2.2 with APAR OA49807 (January 2019)

z/OSMF Swagger support

Example : Go to URL and see what is there. Jobs APIs looks interesting…

IBM

all Filter

Liberty REST APIs

Discover REST APIs available within Liberty

Jobs APIs Show/Hide | List Operations | Expand Operations

GET	/zosmf/restjobs/jobs	List the jobs for an owner, prefix or job ID
PUT	/zosmf/restjobs/jobs	Submit a job
DELETE	/zosmf/restjobs/jobs/{correlator}	Cancel a job and purge its output
GET	/zosmf/restjobs/jobs/{correlator}	Obtain status of a job
PUT	/zosmf/restjobs/jobs/{correlator}	Hold, release, cancel a job, or change the job class
GET	/zosmf/restjobs/jobs/{correlator}/files	List spool files for a job
GET	/zosmf/restjobs/jobs/{correlator}/files/JCL/records	Retrieve the JCL for the specified job
GET	/zosmf/restjobs/jobs/{correlator}/files/{nnn}/records	Retrieve contents of a spool file
DELETE	/zosmf/restjobs/jobs/{jobname}/{jobid}	Cancel a job and purge its output
GET	/zosmf/restjobs/jobs/{jobname}/{jobid}	Obtain status of a job
PUT	/zosmf/restjobs/jobs/{jobname}/{jobid}	Hold, release, cancel a job, or change the job class
GET	/zosmf/restjobs/jobs/{jobname}/{jobid}/files	List spool files for a job
GET	/zosmf/restjobs/jobs/{jobname}/{jobid}/files/JCL/records	Retrieve the JCL for the specified job
GET	/zosmf/restjobs/jobs/{jobname}/{jobid}/files/{nnn}/records	Retrieve contents of a spool file

Published Software Catalog Show/Hide | List Operations | Expand Operations

Resource Management Show/Hide | List Operations | Expand Operations

Software Service Instance Names Show/Hide | List Operations | Expand Operations

Software Services Catalog Show/Hide | List Operations | Expand Operations

Software Services Registry Show/Hide | List Operations | Expand Operations

System Variables Show/Hide | List Operations | Expand Operations

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z/OS V2.2 with APAR OA49807 (January 2019)

z/OSMF Swagger support

Example : Want to see all my MWALLE jobs.

Jobs APIs

Show/Hide | List O

GET /zosmf/restjobs/jobs — List the jo

Implementation Notes

You can use this operation to list the jobs for an owner, prefix, or job ID.

Response Class (Status 200)

On completion, the z/OS jobs REST interface returns an HTTP response with an array of matching jobs, each as a JSON job document.

Model | Example Value


```
{
  "application/json": [
    {
      "jobid": "JOB00023",
      "jobname": "TESTJOB2",
      "subsystem": null,
      "owner": "IBMUSER",
      "status": "OUTPUT",
      "type": "JOB",
      "class": "A",
      "retcode": "CC 0000"
```


Response Content Type application/json

Parameters

Parameter	Value	Description	Parameter Type	Data Type
owner	mwalle	User ID of the job owner whose jobs are being queried; the default is the z/OS user ID. Folded to uppercase; cannot exceed eight characters. Wildcard characters are permitted in the owner and prefix query parameter values. Use an asterisk (*) for multiple characters, and a question mark (?) for a single character.	query	string

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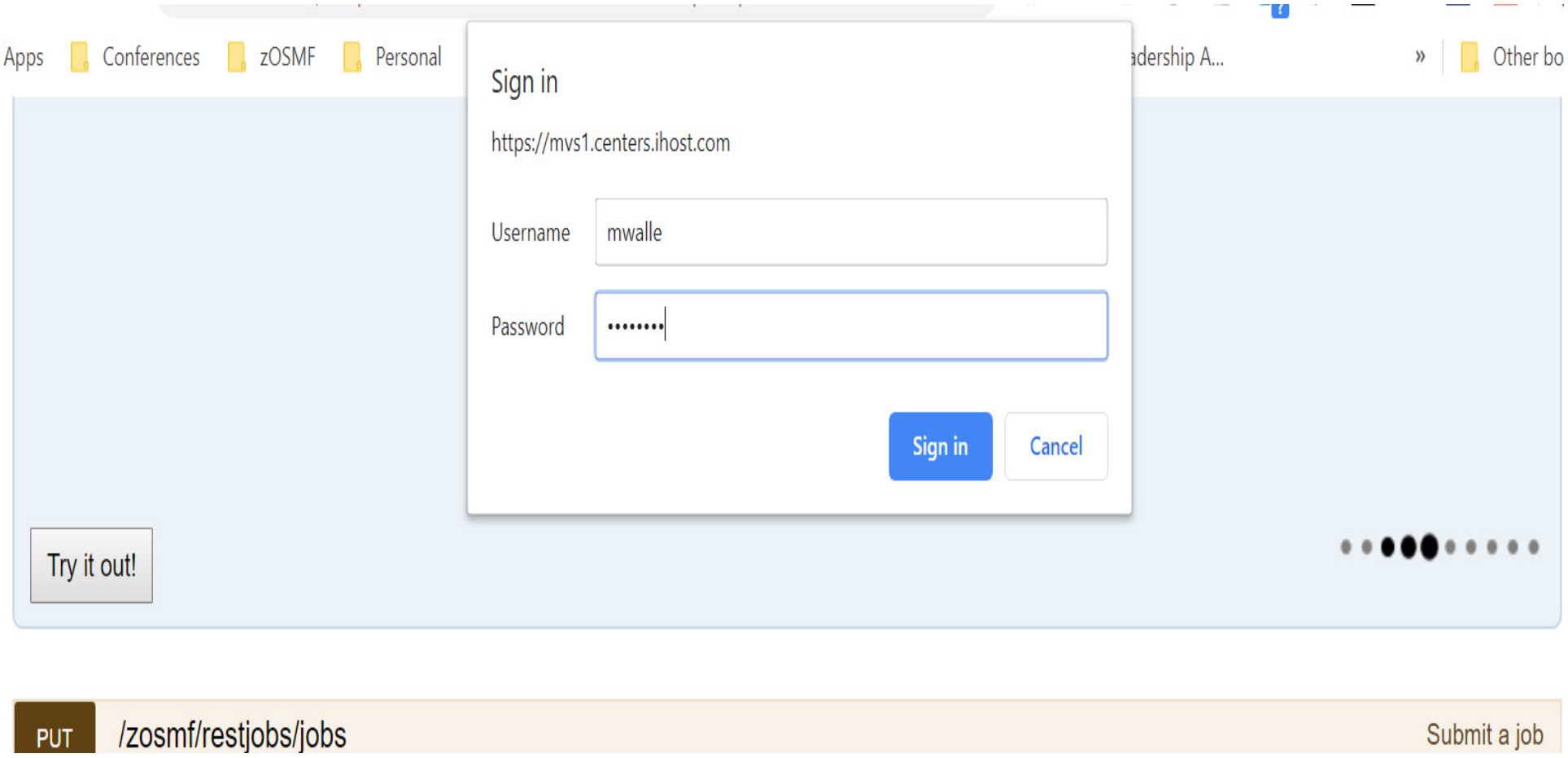
z/OS V2.2 with APAR OA49807 (January 2019)

z/OSMF Swagger support

Example : "Try it out!" needs me to identify myself to the server, if I'm going request a service.



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z/OS V2.2 with APAR OA49807 (January 2019)

z/OSMF Swagger support

Example : Results are shown: correctly coded Request URL and the Response body returned. Already tested for my program!

Try it out! Hide Response

Curl

```
curl -X GET --header 'Accept: application/json' 'https://mvs1.centers.ihost.com:443/zosmf/restjobs/jobs?owner=mwalle&max-jobs=1000'
```

Request URL

```
https://mvs1.centers.ihost.com:443/zosmf/restjobs/jobs?owner=mwalle&max-jobs=1000
```

Response Body


```
[
  {
    "owner": "MWALLE",
    "phase": 20,
    "subsystem": "JES2",
    "phase-name": "Job is on the hard copy queue",
    "job-correlator": "T0023791N1......D606AB1E.......:",
    "type": "TSU",
    "url": "https://mvs1.centers.ihost.com:443/zosmf/restjobs/jobs/T0023791N1......D606AB1E.......%3A",
    "jobid": "TSU23791",
    "class": "TSU",
    "files-url": "https://mvs1.centers.ihost.com:443/zosmf/restjobs/jobs/T0023791N1......D606AB1E.......%3A/files",
    "jobname": "MWALLE",
    "status": "OUTPUT",
    "retcode": "ABEND S622"
  },
  {
    "owner": "MWALLE",
    "phase": 20,
    "subsystem": "JES2",
```


Response Code

```
200
```


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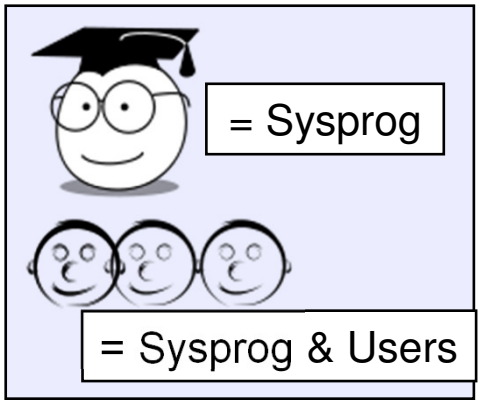
Small Enhancements

❖**z/OS UNIX: Copy with alias support for PDS(E)**

❖**BCP: PDUU support for HTTPS (OA55959)**

❖**BCP: Generic Tracker**



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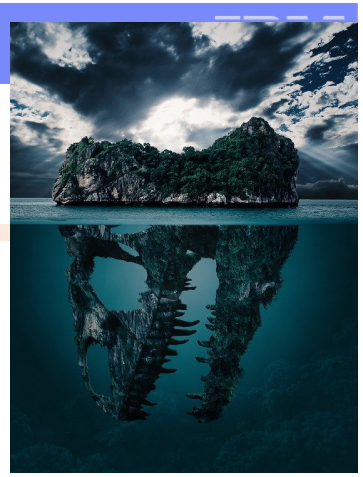
z/OS V2.1 with OA57659 (November 2019) and higher:
z/OS UNIX: Copy with alias support for PDS(E)



What: cp shell command with the -I option is enhanced to support copy from both PDS(E) to files, and also from files to data sets to accommodate aliases.

- Prior to this APAR, only PDSE support was provided.
- This allows files (which contain data set members with aliases) to be processed with shell commands or scripts, then upon being copied back to a data set those aliases will be preserved.

How to use:

- `cp -I -X  from_ds  to_file_or_dir`

  `-I` (UNIX to MVS only): When the specified file has an alias and the file is copied from UNIX to MVS, the alias information is also copied

  `-X` Specifies that the data to be copied is an executable.

Considerations:

- The aliases copied do not show up under z/OS UNIX.
- Cannot copy if the PDS(E) is open by another user or job.
- . If the -I option is specified when the data set has no aliases, and is being copied to a file, then –I is ignored.
- Restriction: The -I option can only be used with the -X option.

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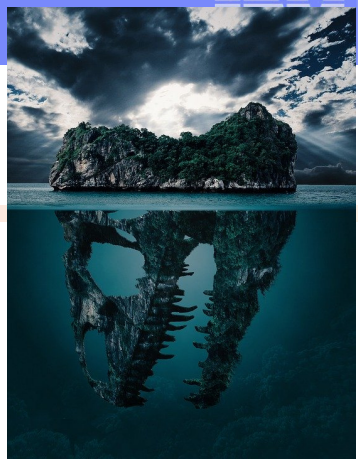
z/OS V2.1 with OA57659 (November 2019) and higher:
z/OS UNIX: Copy with alias support for PDS(E)



Example: Copy a PDS(E) to a file system.

Original PDS(E) data set:

```
BROWSE          MWALLE.PRODUCT.LOADLIB                  Row 0000001 of 0000010
Command ===> _                                            Scroll ===> HALF
        Name     Prompt         Alias-of     Size       TTR     AC   AM   RM
_______ GLDADD                  GLDMDFY    000111E4   000004   00    31   ANY
_______ GLDMDFY                            000111E4   000004   00    31   ANY
_______ GSKSRBRD                           00001200   000005   00    31   ANY
_______ GSKSRBWT                GSKSRBRD   00001200   000005   00    31   ANY
_______ GXLCXML1                           00000F80   000006   00    31   ANY
_______ GXLCXML4                           00000EB8   000007   00    64   ANY
_______ GXLIMODV                           00429368   000008   00    31   ANY
_______ GXLIMOD2                GXLIMODV   00429368   000008   00    31   ANY
_______ GXLINPLT                           00000038   000009   00    31   ANY
_______ GXLINPL2                GXLINPLT   00000038   000009   00    31   ANY
        **End**
```

Note: there are 6 base members, and 4 aliases = 10.

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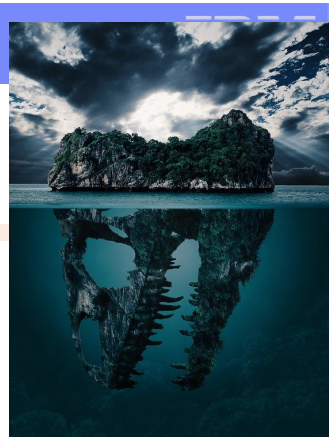
z/OS V2.1 with OA57659 (November 2019) and higher:
z/OS UNIX: Copy with alias support for PDS(E)



Example:

```
cp -XI "//'mwalle.product.loadlib'" /u/mwalle/Product
```

```
[/u/mwalle/Product] cp -XI "//'mwalle.product.loadlib'" /u/mwalle/Product
[/u/mwalle/Product] ls -l
total 12144
-rwx------   1 MWALLE   DEPTD60   225280 Feb 21 18:07 gldmdfy
-rwx------   1 MWALLE   DEPTD60     8192 Feb 21 18:07 gsksrbrd
-rwx------   1 MWALLE   DEPTD60   110592 Feb 21 18:07 gxlcxml1
-rwx------   1 MWALLE   DEPTD60    90112 Feb 21 18:07 gxlcxml4
-rwx------   1 MWALLE   DEPTD60  5734400 Feb 21 18:07 gxlimodv
-rwx------   1 MWALLE   DEPTD60     4096 Feb 21 18:07 gxlinplt
[/u/mwalle/Product]
 ===> _
```

By giving the PDS(E) without any members, and a directory destination, all base members are copied into the directories as files.

Note: there are 6 files in the directory, as expected. Cannot see the aliases.

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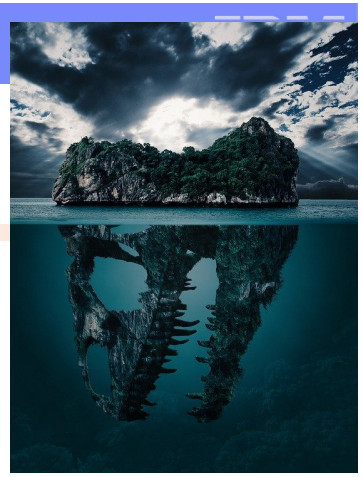
z/OS V2.1 with OA57659 (November 2019) and higher:
z/OS UNIX: Copy with alias support for PDS(E)



Example: Now, I could process all those files however I wanted in handy scripts: move them around, send them, compare, … Eventually, let's put them back into a PDS(E).

Pointing to a new data set (not allocated).

```
[/u/mwalle/Product] cp -XI /u/mwalle/Product "//'mwalle.product.loadlib.return'"
cp: FSUMF149 sequential data sets cannot be copied nor moved as executable
```

To copy from a file to a partitioned data set, you must allocate the data set before doing the cp. This is not new.

Pre-allocated the data set:

```
[/u/mwalle/Product] cp -XI /u/mwalle/Product "//'mwalle.product.loadlib.return'"
[/u/mwalle/Product]
```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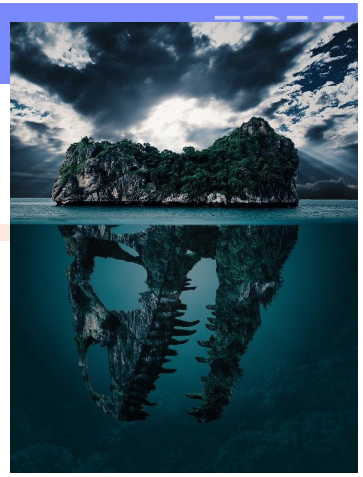
z/OS V2.1 with OA57659 (November 2019) and higher:
z/OS UNIX: Copy with alias support for PDS(E)



Example: Four aliases back? You betcha.

```
VIEW                 MWALLE.PRODUCT.LOADLIB.RETURN          Row 0000001 of 0000010
Command ===>                                                 Scroll ===> HALF
             Name     Prompt          Alias-of      Size       TTR     AC    AM   RM
_________  GLDADD                    GLDMDFY    000111E4   000009    00    31   ANY
_________  GLDMDFY                               000111E4   000009    00    31   ANY
_________  GSKSRBRD                             00001200   000008    00    31   ANY
_________  GSKSRBWT                   GSKSRBRD  00001200   000008    00    31   ANY
_________  GXLCXML1                             00000F80   000007    00    31   ANY
_________  GXLCXML4                             00000EB8   000006    00    64   ANY
_________  GXLIMODV                             00429368   000005    00    31   ANY
_________  GXLIMOD2                   GXLIMODV  00429368   000005    00    31   ANY
_________  GXLINPLT                             00000038   000004    00    31   ANY
_________  GXLINPL2                   GXLINPLT  00000038   000004    00    31   ANY
           **End**
```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z/OS V2.1 with OA55959 (June 2019) and higher:
BCP: PDUU Support for HTTPS

What: AMAPDUPL: Problem Documentation Upload Utility.

- Used to sent a dump to IBM, can be compressed, encrypted, and sectioned into smaller data sets.
- FTP (existing capability, default) was not a popular choice (firewall issues, …)
- Now with OA55959, HTTPS can be used!

How to use:

- Uses private virtual storage for buffering, so specify `WORK_SIZE` adequately.
- Use `USE_HTTPS=Y` on the SYSIN.
- Needs necessary certificates to access the IBM sites, via `HTTPS_KEYRING` or `HTTPS_KEYFILE`. Read certificate info here.

Considerations:

- Need to select a feasible `WORK_SIZE`: these are allocated in 31-bit private storage, which limits it to less than 2GB (known restriction). Failures will be rc 12 w/ AMA761E (Unable to obtain necessary storage).
- Might result in longer processing times, due to smaller work sizes, however, still may be appropriate if FTP is not an option.
- Alas, z/OSMF Incident Log *still* today uses PDUU FTPS.

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z/OS V2.1 with OA55959 (June 2019) and higher:
BCP: PDUU Support for HTTPS example

```
//SEND2IBM EXEC PGM=AMAPDUPL
//SYSUDUMP DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//DEBUG DD SYSOUT=*
//SYSUT1 DD DISP=SHR,DSN=D10SWL1.DUMP30
//HTTPDEBG DD DISP=MOD,DSN=MWALLE.HTTPDEBG
//SYSIN DD DISP=SHR,DSN=MWALLE.FTP.PDUU.OPTIONS
// DD *
TARGET_SYS=testcase.boulder.ibm.com
TARGET_DSN=TEST.DUMP00
CC_HTTPS=03
WORK_SIZE=50
DIRECTORY=/toibm/mvs/
PMR=00000.000.000
CASE=TS123456789
USE_HTTPS=Y
HTTPS_KEYRING=*AUTH*/*
```

I used:

- 3 parallel transfer sessions (max 20)
- Default of work size of 50 MB
- HTTPS mode
- (OA54086 allows for CASE)

```
** AMA732I  START 001 HTTPS SESSION
** AMA733I  SEND FILE A001
** AMA732I  START 002 HTTPS SESSION
** AMA733I  SEND FILE A002
** AMA732I  START 003 HTTPS SESSION
** AMA733I  SEND FILE A003
** AMA733I  SEND FILE B001
** AMA764I  WAITING FOR COMPLETION OF FTP THREAD: 001 REMOTE FILE: ...F00002
** AMA733I  SEND FILE B002
** AMA764I  WAITING FOR COMPLETION OF FTP THREAD: 002 REMOTE FILE: ...F00003
** AMA733I  SEND FILE B003
** AMA764I  WAITING FOR COMPLETION OF FTP THREAD: 003 REMOTE FILE: ...F00004
…..
** AMA725I  PROCESSING COMPLETED
** AMA728I  ELAPSED TIME: 162.38 SECONDS
** AMA729I  NUMBER OF RECORDS READ FROM SYSUT1: 380,310 TOTAL BYTES: 1,582,089,600
** AMA730I  TOTAL BYTES COMPRESSED DATA TRANSMITTED = 565,547,008
** AMA731I  EFFECTIVE THROUGHPUT = 9,743,100 BYTES/SECOND
```


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z/OS V2.1:

BCP: Generic Tracker

What: Generic Tracker is a facility that an help assess usage of specific requestable incidents that happen on a system. (z/OS MVS Diagnostics: Tools and Service Aids.)

- It is composed of:
  - A callable tracking service (GTZTRACK).
  - A callable query service to extract previously stored records (GTZQUERY).
  - Operator commands to display and maintain information and configuration.
  - Batch utility program (GTZPRINT)
  - Parmlib members for desired customization (GTZPRMxx).
- *Why it is helpful?* This facility can help with knowing when something is used (when it might be deleted in a future release), or to position for a new function (when changes might be required to use it).
- GTZ will be automatically started at IPL, however by default, it is not enabled for capturing data.

How to use:

1. Enable GTZ. SETGTZ TRACKING=ON
2. Check on collected information: DISPLAY GTZ or with GTZPRINT

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BCP: Generic Tracker

Considerations:

- Currently, this is a list of the Generic Track exploiters
  - DFSMS tracking – GDGLIMIT and EAV
  - JES3 control statement tracking – JES3 JECL
  - JES2 control statement tracking – JES2 and JES3 JECL
  - MVS Allocation tracking – IEF348I message control
  - SDSF tracking – NOPARM FALLBACK and MENU TABLE DISABLED
  - TSO/E tracking – MVSSERV executed to invoke Enhanced Connectivity Facility
  - VSM tracking – V=R request

- TRACKDATA can be persisted in SMF type 125, for historical review.

- Your DDDEF'd SYS1.PARMLIB contains a shipped GTZPRM00 which contains currently know exceptions that are acceptable and are "not interesting anymore".
  - These exceptions will be excluded from tracking as to not clutter up new data being collected. (Currently we have about 33 of them.)

- Change MEMLIMIT on the GTZ proc to control how much storage is used → how many events you can store. 2MB is minimum, default is 200MB.

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BCP: Generic Tracker

Very simple example: I want to know when JES3 JECL is used on my JES2 system. (I've got that V2.2/V2.3 function enabled already.)

1. Check is Generic Tracker is enabled for tracking:

```
-D GTZ,STATUS
 GTZ1001I  13.24.11 GTZ STATUS 797
  TRACKING:  DISABLED                2019-07-20 13:23:57
  TRACKED:   UNIQUE=19               TOTAL=2443
  EXCLUDE:   DEFINED=34              APPLIED=126
  DEBUG:     DEFINED=0               APPLIED=0
  GTZPRMXX:  00
  MEMORY:    99% AVAILABLE           PERSIST:   OFF
  DIRLOAD:   YES
```

2. If not, enable it:

```
-setgtz tracking=on
 GTZ1105I SETGTZ TRACKING PROCESSING IS COMPLETE
```


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BCP: Generic Tracker

Very simple example: I want to know when JES3 JECL is used on my JES2 system.

3. Now, we wait…then, check if any instance has been captured.

```
-d gtz,trackdata=(owner=ibmjes2)
GTZ1002I  14.21.42 GTZ TRACKDATA 780
FOUND 87 MATCHING TRACKED INSTANCE(S)
--------------------------------------------------------------------------
 INSTANCE:       1                        COUNT:          1
 EVENTDESC:      '|00000000 0|10000000 0| INTRDR     PFACMDS  PFASUB '+
                 '   JES2          '
 OWNER:          IBMJES2                  SOURCE:         HASCINJR
 EVENTDATA:      x0000000000000000        x0000000000000000
```

…

```
INSTANCE:       87                       COUNT:          6
EVENTDESC:      '|00100000 0|00000000 0| INTRDR     MWALLCB  MWALLE '+
                '   JES2          '
OWNER:          IBMJES2                  SOURCE:         HASCINJR
EVENTDATA:      x0000000000000000        x0000000000000000
PROGRAM:        *OMITTED                 PROGRAMOFFSET:  x0000000000000000
HOMEJOB:        MWALLE                   HOMEASID:       x0048
EVENTJOB:       MWALLE                   EVENTASID:      x0048
AUTHORIZED:     YES                      FIRST TIME:     2019-07-20 14:10:57
********************************** BOTTOM OF DATA **********************************
```


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BCP: Generic Tracker

Very simple example: I want to know when JES3 JECL is used on my JES2 system.

4. Also nice to view in SDSF:

```
SDSF GENERIC TRACKER  CB8A      CB8A                          LINE 98-106 (106)
COMMAND INPUT ===>                                             SCROLL ===> HALF
NP    OWNER          EJobName  HJobName  EASIDX HASIDX Auth Count First-Date-Tim
      IBMJES2  0000 NOSAPURG  NOSAPURG  010C   010C   YES       1 07/19/2019 07:
      IBMJES2  0000 NOSAPURG  NOSAPURG  010C   010C   YES       1 07/19/2019 07:
      IBMJES2  0000 NOSAPURG  NOSAPURG  010C   010C   YES       1 07/19/2019 07:
      IBMJES2  0000 IZUSVR2   IZUSVR2   00FE   00FE   YES      20 07/19/2019 14:
      IBMJES2  0000 JRL4      JRL4      006D   006D   YES       1 07/20/2019 04:
      IBMJES2  0000 JRL5      JRL5      0100   0100   YES       1 07/20/2019 04:
      IBMJES2  0000 JRL6      JRL6      006D   006D   YES       1 07/20/2019 04:
      IBMJES2  0000 JRL3      JRL3      010C   010C   YES       1 07/20/2019 04:
      IBMJES2  0000 MWALLE    MWALLE    0048   0048   YES       6 07/20/2019 14:
```

EVENTDESC: |00100000 0|00000000 0|

4th position, 1 = //*MAIN statement (1st position is the |)

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Summary of What We Might Want to Share:

- ***System Programmer & User Items:***
  - **DFSMS (V2.2): PENDINGDELETE for PDSE members**
  - **z/OSMF (V2.2): Viewing or printing your Workflow**
  - **z/OSMF (V2.2): Swagger support**
  - **z/OS UNIX (V2.1): Copy with alias support for PDS(E)**

- ***System Programmers' Items:***
  - **DFSMS (V2.2): Revisit with update! GDG Extended (GDGE)**
  - **z/OS UNIX (V2.2): ucat on automount's allocany and allocuser**
  - **BCP (V2.2): HZSPRMxx filter**
  - **BCP (V2.2): HZSPRMxx syntax check**
  - **BCP (V2.1): PDUU support for HTTPS**
  - **BCP (V2.1): Generic Tracker**

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z/OS Summary Enhancements

- **z/OS V2.2:**
  - **DFSMS: Revisit with update! GDG Extended (GDGE)** SMS, non-SMS, tape or DASD
  - **z/OS UNIX: ucat on automount's allocany and allocuser** Put new zFS in a UCAT, and have continuation
  - **DFSMS: PENDINGDELETE for PDSE members** Cause those deleted members to be removed
  - **z/OSMF: Viewing or printing your Workflow** Use filtering to save, do not have to go into z/OSMF for a quick read.
  - **BCP: HZSPRMxx filter** Consolidate your parmlib members across your enterprise
  - **BCP: HZSPRMxx syntax check** Validate your syntax before using
  - **z/OSMF Swagger support** Incredibly useful and helpful for REST API programs
- **z/OS V2.1:**
  - **z/OS UNIX: Copy with alias support for PDS(E)** No lost aliases for PDS and PDSE
  - **BCP: PDUU HTTPS support** For those that prefer HTTPS over FTP
  - **BCP: Generic Tracker** Helpful for upgrading and exploiting new functions

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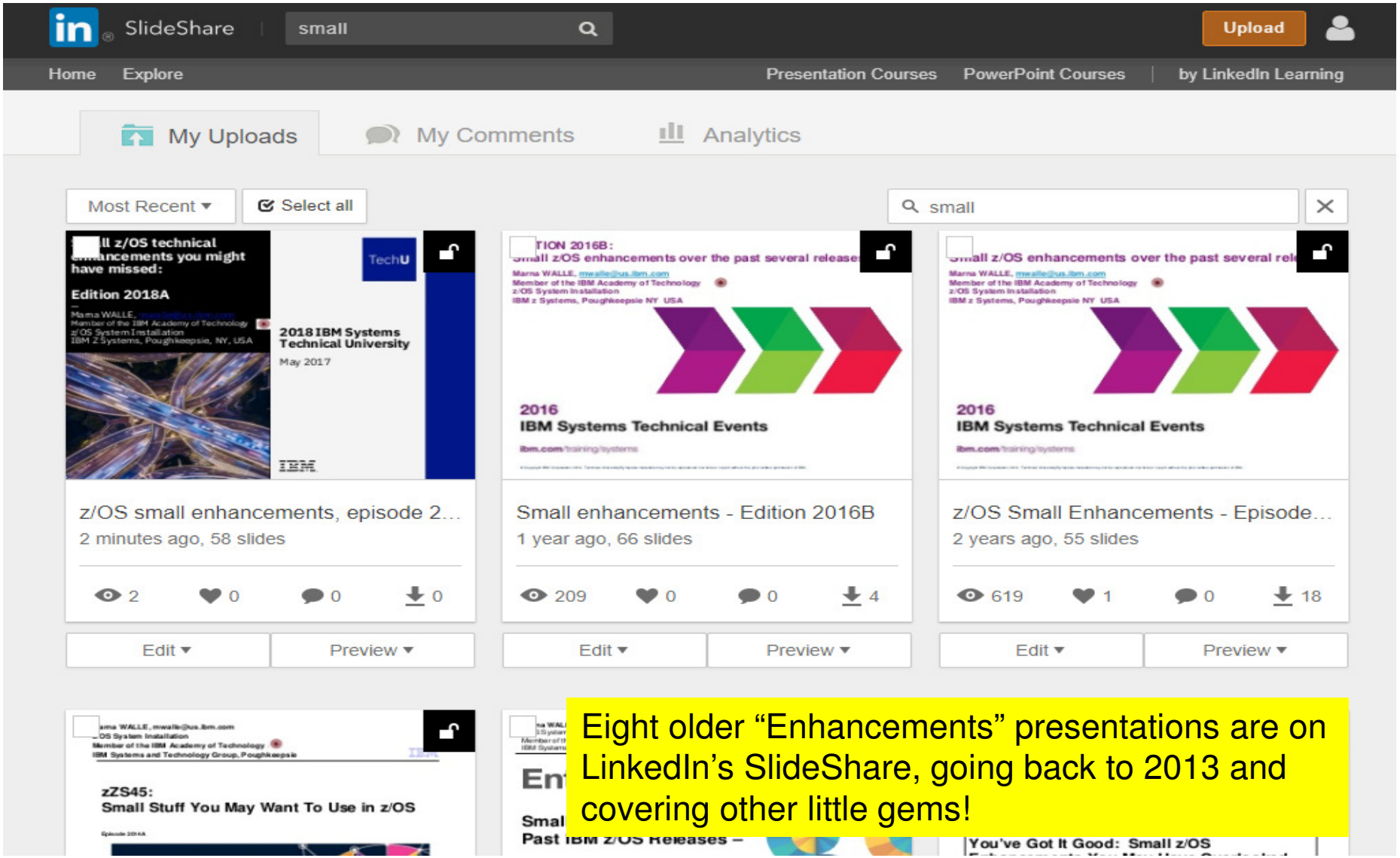
z/OS Little Enhancements - A history



Eight older "Enhancements" presentations are on LinkedIn's SlideShare, going back to 2013 and covering other little gems!

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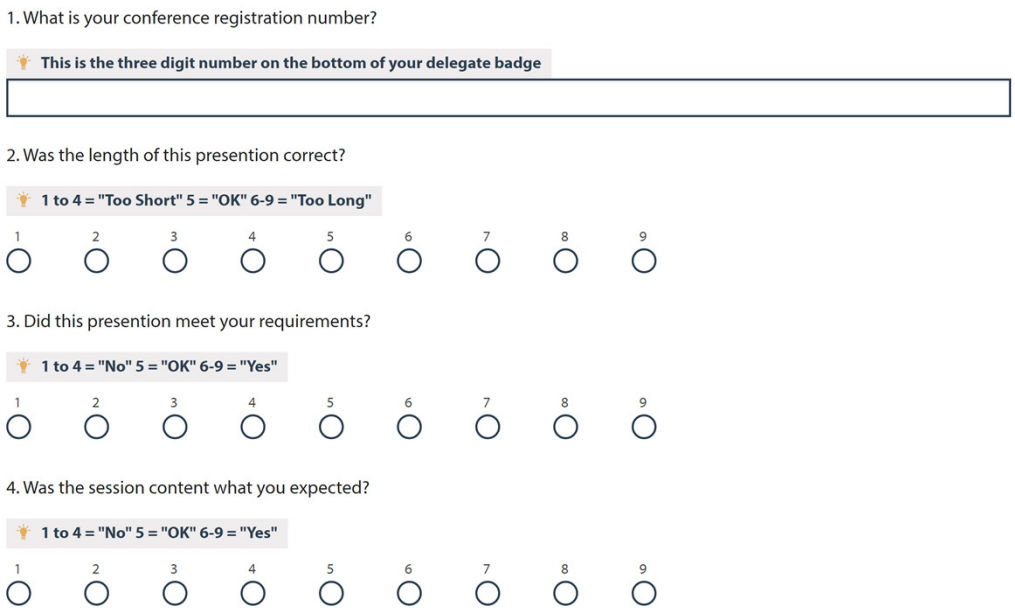
1. What is your conference registration number?

This is the three digit number on the bottom of your delegate badge

2. Was the length of this presention correct?

1 to 4 = "Too Short" 5 = "OK" 6-9 = "Too Long"

1 2 3 4 5 6 7 8 9

3. Did this presention meet your requirements?

1 to 4 = "No" 5 = "OK" 6-9 = "Yes"

1 2 3 4 5 6 7 8 9

4. Was the session content what you expected?

1 to 4 = "No" 5 = "OK" 6-9 = "Yes"

1 2 3 4 5 6 7 8 9

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NHS CHARITIES TOGETHER

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