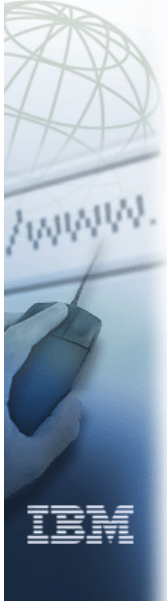


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# LFS Migration (z/OS UNIX) z/OS V1R7



# Redbooks

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## Trademarks



eNetwork	DFSMS/MVS	IMS	RACF
geoManager	DFSMSdfp	IMS/ESA	RMF
AD/Cycle	DFSMSdss	IP PrintWay	RS/6000
ADSTAR	DFSMSshsm	IPDS	S/390
AFP	DFSMSrmm	Language Environment	S/390 Parallel Enterprise Server
APL2	DFSORT	Multiprise	SecureWay
APPN	Enterprise System 3090	MQSeries	StorWatch
BookManger	Enterprise System 4381	MVS/ESA	Sysplex Timer
BookMaster	Enterprise System 9000	Network Station	System/390
C/370	ES/3090	NetSpool	SystemView
CallPath	ES/4381	OfficeVision/MVS	SOM
CICS	ES/9000	Open Class	SOMobjects
CICS/ESA	ESA/390	OpenEdition	SP
CICS/MVS	ESCON	OS/2	VisualAge
CICSPlex	First Failure Support Technology	OS/390	VisualGen
COBOL/370	FLowMark	Parallel Sysplex	VisualLift
DataPropagator	FFST	Print Services Facility	VTAM
DisplayWrite	GDDM	PrintWay	WebSphere
DB2	ImagePlus	ProductPac	3090
DB2 Universal Database	Intelligent Miner	PR/SM	3890/XP
DFSMS/MVS	IBM	QMFr	z/OS
			z/OS.e

Domino (Lotus Development Corporation)  
 DFS (Transarc Corporation)  
 Java (Sun Microsystems, Inc.)  
 Lotus (Lotus Development Corporation)

Tivoli (Tivoli Systems Inc.)  
 Tivoli Management Framework  
 (Tivoli Systems Inc.)  
 Tivoli Manger (Tivoli Systems Inc.)

UNIX (X/Open Company Limited)  
 Windows (Microsoft Corporation)  
 Windows NT (Microsoft Corporation)



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## ITSO Redbooks on z/OS V1R7

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- ❑ For z/OS UNIX and zFS migration

z/OS Version 1 Release 7 Implementation  
SG24-6755

z/OS Distributed File Service  
Zseries File System z/OS V1R7  
Implementation - SG24-6580-02

UNIX System Services z/OS Version 1  
Release 7 Implementation  
SG24-7035-01



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## z/OS UNIX Enhancements

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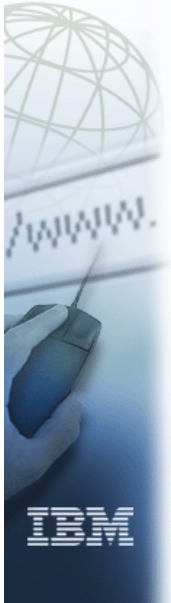


- ❑ Logical file system (LFS) enhancements
  - HFS to zFS migration tool (BPXWH2Z)
- ❑ Dynamic service activation
  - Dynamically install SMP/E services without re-IPL
- ❑ ISHELL enhancements
  - Function added to ISHELL, OEDIT, OBROWSE
- ❑ Mount command support
  - SET OMVS command for mount statement in parmlib
- ❑ AF\_UNIX display support
  - Console command to display status
- ❑ Mounts in progress
  - D OMVS,F command



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# Logical File System (LFS) Support for Migration to zFS

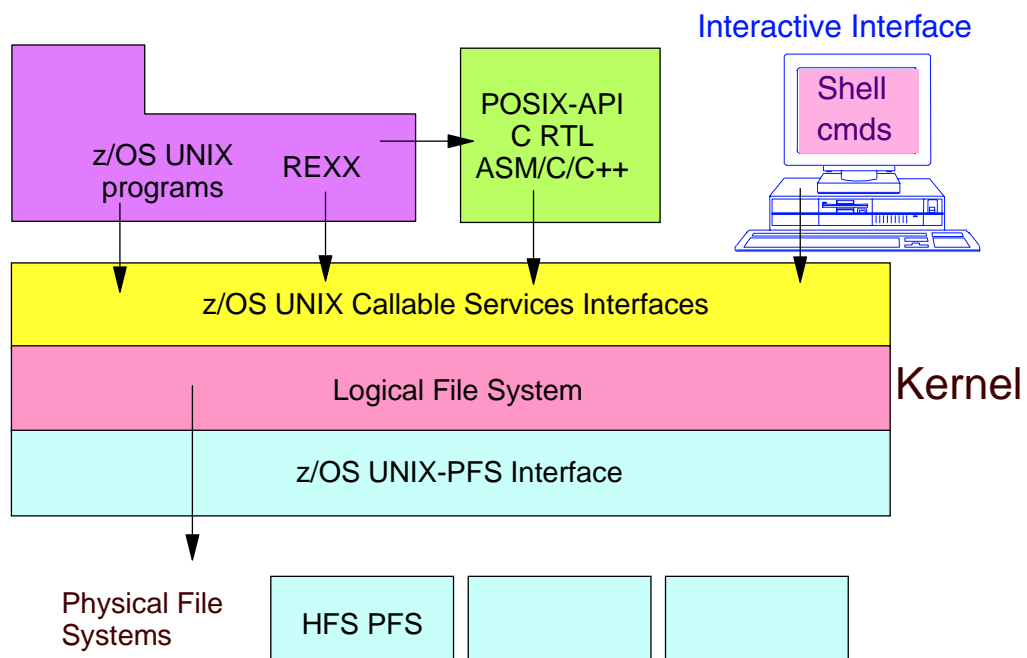


## Redbooks

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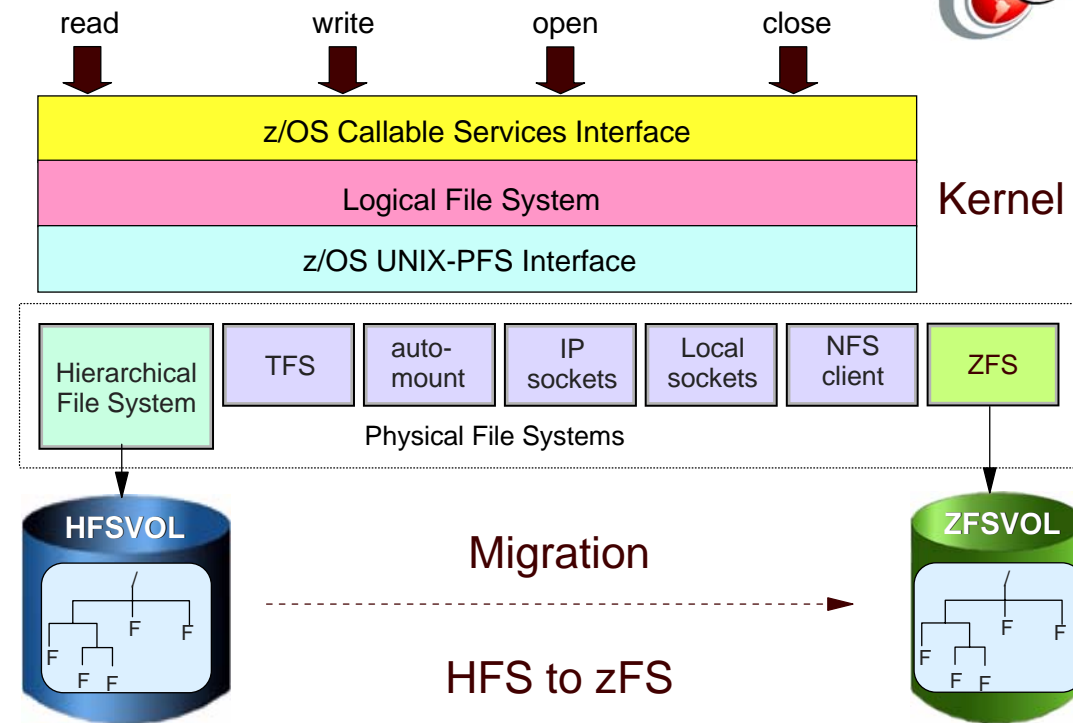
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## UNIX System Services



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## Requests to LFS to PFS to Files



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## z/OS UNIX Migration Considerations

- ❑ Migrate from HFS file systems to zFS file systems (Recommended) - because zFS is planned to become a requirement in a future release
- ❑ zFS is the strategic file system
  - HFS may no longer be supported in future releases and you will have to migrate the remaining HFS file systems to zFS
- ❑ HFS and zFS file system types in mount statements and command operands are now generic file system types that can mean either HFS or zFS
  - Based on the data set type, the system will determine which is appropriate

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## Changes for Migration



- ❑ Use the file system type HFS as a generic file system type that can mean either HFS or zFS
  - Mount processing directs the mount to the correct PFS
- ❑ Use a migration tool to handle many details needed for the migration of HFS file systems to zFS, including the actual copy operation
  - Migration tool - BPXWH2Z
  - An ISPF based tool for migration from an HFS file system to zFS
- ❑ Specify a file system name with substitution place holders



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## Migration Checking Filesystem Type



- ❑ For migration scenario, mount processing first checks for ZFS, if that data set exists, migration has been done
  - To revert back to using HFS, that data set must be renamed or removed
- ❑ A new place holder, ///, is created to represent the string HFS or ZFS
  - If type is HFS, as shown in the following mount statement or mount command
  - Mount processing first substitutes ZFS to see if data set exists - If no, HFS is used to see if the data set exists
  - Mount is directed to zFS or HFS

```
MOUNT      FILESYSTEM( 'ZOSR17.MAN.///' )
           TYPE(HFS)
           MODE(READ)
           MOUNTPOINT( '/usr/man' )
```



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## HFS to zFS Migration Considerations

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- ❑ No capability exists to convert a file system in-place to a zFS or to use an HFS data set with zFS
- ❑ If file systems are used in R/W mode, they have to be made unavailable while being migrated to zFS
- ❑ Using HFS file system type as a generic type and place holders are not compatible in a mixed level sysplex
  - Pre-z/OS V1R7 systems will fail the mounts



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## Migration Assistance

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- ❑ Often the file system type is used in a portion of the file system name
  - With the change to a file type of zFS, parmlib members, mount scripts and policies are affected as well as the file system name
    - You may prefer to keep the current file system name and then no changes to mount scripts
    - Migration tool will help with handling these changes



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## Planning Migration Considerations



- ❑ Two data sets will exist during the migration
  - Plan for the availability of space for two file systems about the same size
- ❑ During migration, the data will not be available for R/W
  - To prevent loss of updates during this time
    - Change the mount mode to read only or do the migration when updates are not being done



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## Migration/Coexistence Considerations



- ❑ Mounts performed from BPXPRMxx should not specify data sets that are eligible for HSM migration
  - HFS parmlib mounts for migrated file systems will fail
  - zFS suspends parmlib mounts for HSM migrated data sets
- ❑ Consider moving noncritical mounts for HSM migrate-able data sets to a script such as /etc/rc
- ❑ Multi-file system aggregates must not contain file systems whose name is the same as a cataloged HFS data set



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## z/OS UNIX Migration Actions

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- Before beginning a migration:
  - Follow established backup procedures
  - Use the BPXWH2Z migration tool to migrate HFS file systems to zFS file systems
    - It has a panel interface that enables you to alter the space allocation, placement, SMS classes, and data set names
    - A HELP panel is provided



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## LFS Tool for Migration to zFS Overview

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- New LFS support enhancements for zFS
- Additions to the pax command
- Migration issues and considerations
- Using the zFS migration support
- Reference materials



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## LFS Migration Tool - z/OS V1R7

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- ❑ With z/OS V1R7, zFS is the preferred file system
  - Continued use of HFS is discouraged
- ❑ Significant effort is needed to migrate data from HFS file systems to zFS file systems
- ❑ The complexity of migrating from HFS to zFS has been simplified with a migration tool
- ❑ The need to change mount policies and scripts is simplified or eliminated



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## Use BPXWH2Z as Follows

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- ❑ Migrate HFS file systems (both mounted and unmounted) to zFS file systems
  - If the HFS being migrated is mounted, tool automatically unmounts it and then mounts the new zFS file system on its current mount point
- ❑ Define zFS aggregates by default to be approximately the same size as the HFS
  - New allocation size can also be increased or decreased
- ❑ Migration runs in TSO foreground or UNIX background
- ❑ Restriction: The BPXWH2Z tool cannot be used in a multilevel security environment



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## HFS/zFS now a Generic Filesystem Type



- ❑ They can be used for either HFS or ZFS
- ❑ Mount processing first searches for a data set matching the file system name
  - If the data set is not an HFS data set and zFS has been started, the filesystem type is changed to ZFS and the mount proceeds to zFS
  - If the data set was not found, the mount proceeds to zFS (assuming zFS is started)
    - If zFS is not started, the type is not changed and the mount proceeds to HFS



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## HFS to zFS Automount - z/OS V1R6



- ❑ Change automount to set the file system type to either HFS or zFS when either of those is specified based on the type of data set that is being mounted
  - Specify and manage both HFS and zFS file systems in one automount policy
  - Facilitates migration from HFS to zFS over time rather than all file systems at once
- ❑ Determine whether the data set is a HFS type or not:
  - If it is, then set the file system type to HFS
  - If it is not, then set the file system type to zFS

Available for z/OS V1R5 with APAR OA06364 and PTF UA10075



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## HFS to ZFS Automount



- ❑ New support is used when HFS or zFS is specified as the file system type in the automount policy
  - If "allocany" or "allocuser" is specified, a new file system is allocated using the file system type specified in the automount policy
- ❑ If the data set already exists, a check is done to see whether it is an HFS file system or a zFS aggregate and then the mount is directed to the appropriate PFS

```
/u
```

```
name                *
filesystem           OMVS.<uc_name>.HFS
type                 HFS
mode                 rdwr
duration             600
delay                360
```



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## HFS to zFS Migration Tool



- ❑ Included with tools provided for z/OS V1R7
  - Can only be executed only on V1R7 release systems
- ❑ ISPF panel based - dynamically builds its own panels
  - Uses ISPF to set up the file system migration
- ❑ The actual migration work can be run in z/OS UNIX background as well as TSO foreground
- ❑ Migrates HFS file systems (both mounted and unmounted) to zFS file systems
- ❑ Uses pax to perform the actual copy operation
- ❑ Defines zFS aggregates by default to be approximately the same size as the HFS - new allocation size can be changed



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## REXX EXEC - BPXWH2Z

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- ❑ The REXX is located in library SYS1.SBPXEXEC which is concatenated to SYSPROC
- ❑ ISPF Option 6 command line, Enter
  - bpxwh2z
- ❑ Command line flag options:
  - -v Additional messages are issued at various points in processing
  - -c Summary information goes to a file when background (bg) is selected once you are in the application. If this is not specified, summary information goes to the console
    - bpxwh2z -c - bpxwh2z -v



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## BPXWH2Z Panels

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- ❑ Panels will allow for customization of space allocation, placement SMS class and data set name
- ❑ It grows the zFS a little larger if it sees that the HFS is near capacity
  - 10% if it is over 75% full and under 90% and 20 % if over
  - This is a precaution since zFS is a logging filesystem and includes the log in the aggregate
- ❑ If unmounted it creates a mountpoint in /tmp and mounts it read only for the migration then deletes the mountpoint
- ❑ If there are filesystems mounted below the migrating filesystem they are unmounted the migration takes place, the mount points are created in the new filesystem and when complete the filesystems are re-mounted



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## BPXWH2Z Panels



- ❑ By default, the panels are primed such that your HFS data set is renamed with a .SAV suffix and the zFS data set is renamed to the original HFS name
- ❑ You can preallocate the zFS file system or specify a character substitution string such that the data sets are not renamed - The substitution string is specified as the first argument on the command line as follows:
  - `/fromstring /tostring/ datasetname`
- ❑ For example, if your data set is OMVS.DB2.HFS and you want your zFS data set to be named OMVS.DB2.ZFS, you can specify the following:
  - `/hfs/zfs/ omvs.db2.hfs`



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## Migration Steps



- ❑ If the HFS file system is mounted, either unmount it or switch it to read-only mode
  - The migration tool switches it to R/O
- ❑ If the file system is not mounted make a directory for it and mount it in R/O mode
  - The migration tool creates a temporary directory in /tmp for the mountpoint and deletes it when the migration is complete
- ❑ Create a temporary directory for the zFS file system
  - The migration tool creates a temporary directory in /tmp for the mountpoint and deletes it when the migration is complete
- ❑ Check the allocation attributes for of the HFS file system



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## Migration Steps

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- Define a new zFS file system with the appropriate allocation attributes
- Mount the zFS file system on its temporary mountpoint (a pre-existing zFS cannot already be mounted)
- Use the pax utility to copy the HFS contents to the zFS by entering the shell, change directory to the HFS mountpoint, and run the pax utility - The pax command you can use follows:
  - `pax -rw -X -E . /tmp/zfsmountpoint`
- If the HFS contains active mountpoints do a mkdir for each of these in the zFS file system and set directory attributes as required



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## Migration Steps

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- Unmount the zFS file system
- Unmount the HFS file system
- Remove any temporary directories used as mountpoints
- Rename the data sets as appropriate and ensure all mount scripts and policies have been updated as needed
- The migration tool does not modify or search for any type of mount scripts or policies
- If the HFS file system was originally mounted, mount the zFS file system in that same location along with any hierarchy that also had to be unmounted to unmount the HFS



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# Using the Migration Tool



## ❑ ISPF Option 6

- bpxwh2z
- Enter HSF data set name

----- DATA SET SPECIFICATION ----- Enter required field  
Command ==>

Use the HELP command for usage information on this tool.  
Enter the name of the HFS file system to migrate to a zFS file system.  
Note that a data set pattern can be used.  
If the file system is not currently mounted it will be mounted on a  
temporary directory during the migration.

File system name: OMVS.ROGERS.TEST\_



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# Using SMS - Change Allocation



----- CLASS AND VOLUME DEFAULTS -----  
Command ==>

The volume or SMS classes for zFS allocations will default to the  
same names as the current HFS allocation. You can change these  
individually for each new allocation. If you want the default for  
each new allocation to be set to specific values other than that of  
the current HFS allocation, enter those values here and Press Enter.

Default volume . . . . . : \_\_\_\_\_  
Default data class . . . . : \_\_\_\_\_  
Default storage class . . . : \_\_\_\_\_  
Default management class : \_\_\_\_\_



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# Migrate in Foreground



A - Alter allocation

----- DATA SET LIST ----- Row 1 to 1 of 1  
Command ==> fg\_

Use the HELP command for full usage information on this tool  
Select items with D to delete items from this migration list  
Select items with A to alter allocation parameters for the items  
Enter command FG or BG to begin migration in foreground or UNIX background

-----  
HFS data set ... OMVS.ROGERS.TEST Utilized: 62%  
Save HFS as ... OMVS.ROGERS.TEST.SAV  
Initial zFS ... OMVS.ROGERS.TEST.TMP Allocated: N  
HFS space Primary : 25 Secondary: 5 Units ...: CYL  
zFS space Primary : 25 Secondary: 5 Units ...: CYL  
Dataclas : HFS Mgmtclas : HFS Storclas: OPENMVS  
MOUNTED Volume : SBOX1F Vol count: 1  
\*\*\*\*\* Bottom of data \*\*\*\*\*

```
Migrating OMVS.ROGERS.TEST
creating zFS OMVS.ROGERS.TEST.TMP
copying OMVS.ROGERS.TEST to OMVS.ROGERS.TEST.TMP Blocks to copy: 2832
IGD01009I MC ACS GETS CONTROL &ACSENVIR=RENAME
IGD01009I MC ACS GETS CONTROL &ACSENVIR=RENAME
IDC0531I ENTRY OMVS.ROGERS.TEST.TMP ALTERED
IDC0531I ENTRY OMVS.ROGERS.TEST.TMP.DATA ALTERED
mount /u/rogers/tmp OMVS.ROGERS.TEST ZFS 1
***
```



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# Migration Filesystem not Mounted



- ❑ Migration without the filesystem mounted
  - Using the A (alter) and changing cylinders to 35
  - zFS migration filesystem is left unmounted

```
Migrating OMVS.ROGERS.TEST
creating zFS OMVS.ROGERS.TEST.TMP
copying OMVS.ROGERS.TEST to OMVS.ROGERS.TEST.TMP Blocks to copy: 2832
IGD01009I MC ACS GETS CONTROL &ACSENVIR=RENAME
IGD01009I MC ACS GETS CONTROL &ACSENVIR=RENAME
IDC0531I ENTRY OMVS.ROGERS.TEST.TMP ALTERED
IDC0531I ENTRY OMVS.ROGERS.TEST.TMP.DATA ALTERED
***
OMVS.ROGERS.TEST
OMVS.ROGERS.TEST.DATA          525   ?   1  3390
OMVS.ROGERS.TEST.SAV           375  62   1  3390
```



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# Alter Allocation Parameters



----- CHANGE ALLOCATION ATTRIBUTES -----  
Command ==> \_

Use the HELP command for usage information on this tool.  
Change the allocation attributes for this new zFS file system.  
If the file system is already allocated enter Y for preallocated and the name of the data set as the temp name. The attributes will not be used.

```
File system name . . . OMVS.ROGERS.HFS
Save HFS as . . . . . OMVS.ROGERS.HFS.SAV
Temp name for zFS. . . OMVS.ROGERS.HFS.TMP
Preallocated zFS . . . N

Primary allocation . . 10
Secondary allocation . 5
Allocation units . . . CYL (CYL or TRK)
Data class . . . . . HFS
Management class . . . HFS
Storage class . . . . . OPENMVS
Volume . . . . . SB0X39
```

# Migrate a List of Data Sets



## List of data sets to migrate:

```
OMVS.ROGERS.TEST1
OMVS.ROGERS.TEST2
OMVS.ROGERS.TEST3
OMVS.ROGERS.TEST4
OMVS.ROGERS.TEST5
OMVS.ROGERS.TEST6
OMVS.ROGERS.TEST7
```

----- DATA SET SPECIFICATION -----  
Command ==>

Use the HELP command for usage information on this tool.  
Enter the name of the HFS file system to migrate to a zFS file system.  
Note that a data set pattern can be used.  
If the file system is not currently mounted it will be mounted on a temporary directory during the migration.

```
File system name: omvs.rogers.test*_
```

## Data Set List Displayed



----- DATA SET LIST ----- Row 1 to 3 of 8  
Command ==> fg

Use the HELP command for full usage information on this tool

Select items with D to delete items from this migration list

Select items with A to alter allocation parameters for the items

Enter command FG or BG to begin migration in foreground or UNIX background

```
-----  
_ HFS data set ..: OMVS.ROGERS.TEST                               Utilized: 62%  
Save HFS as   ..: OMVS.ROGERS.TEST.SAV  
Initial zFS   ..: OMVS.ROGERS.TEST.TMP                           Allocated: N  
HFS space Primary : 25           Secondary: 5           Units ..: CYL  
zFS space Primary : 25           Secondary: 5           Units ..: CYL  
                Dataclas : HFS           Mgmtclas : HFS           Storclas: OPENMVS  
MOUNTED      Volume  : SBOX1F           Vol count: 1  
-----  
_ HFS data set ..: OMVS.ROGERS.TEST1                             Utilized: 62%  
Save HFS as   ..: OMVS.ROGERS.TEST1.SAV  
Initial zFS   ..: OMVS.ROGERS.TEST1.TMP                           Allocated: N  
HFS space Primary : 25           Secondary: 5           Units ..: CYL  
zFS space Primary : 25           Secondary: 5           Units ..: CYL  
                Dataclas : HFS           Mgmtclas : HFS           Storclas: OPENMVS  
                Volume  : SBOX1E           Vol count: 1  
-----
```



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## Space Allocations - HFS vs zFS



- ❑ It is difficult to determine the exact size necessary for a zFS file system to contain all of the data within an HFS file system
  - Depending on number of files, directories, ACLs, symlinks, and file sizes, zFS can consume either more or less space than HFS. zFS also has a log in the aggregate
  - For general purpose file systems, it appears that they consume about the same amount of space



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# Additional messages are Issued at Various Points in Processing



## ❑ Using - BPXWH2Z -v

```
-getting ds info for OMVS.ROGERS.HFS.SAV
-getting ds info for OMVS.ROGERS.HFS.TMP
- nohup sh -c ' /tmp/bpxwh2z.ROGERS.17:20:32.rx -M </dev/null
>/tmp/bpxwh2z.ROG
ERS.17:20:32.log 2>/tmp/bpxwh2z.ROGERS.17:20:32.err & '
Background status can be found in files
  /tmp/bpxwh2z.ROGERS.17:20:32.*
Remove these files when you no longer need them
```



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# Data Set List Panel in ISPF



Data Set = OMVS.ROGERS.\*

Menu Options View Utilities Compilers Help

DSL1ST - Data Sets Matching OMVS.ROGERS.\* Row 1 of 3  
Command ==> \_\_\_\_\_ Scroll ==> PAGE

Command - Enter "/" to select action	Message	Volume
OMVS.ROGERS.HFS		SB0X39
OMVS.ROGERS.HFS.TMP		*VSAM*
OMVS.ROGERS.HFS.TMP.DATA		SB0X1D
***** End of Data Set list *****		

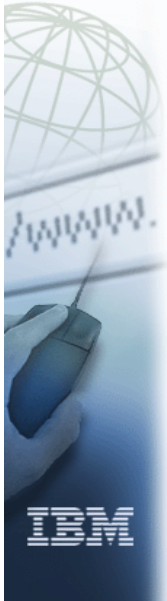


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# LFS Support for zFS pax Migration z/OS V1R7



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## New pax Functions



- All function and options from previous levels of pax are still valid at this level
- All automated scripts which use pax at the previous level still work without errors
- Any archives created with previous levels of pax can be extracted by the new version without problems
- The new default behavior of pax is to copy files as sparse files
- New option flags for pax
  - New options on an older level of pax will fail with a usage message

## pax Migration

---



- ❑ pax changes support the HFS to zFS migration tool:
  - Create mountpoint directories
  - Copy all attributes from the source root to the target of the copy after the copy is complete
- ❑ Solution:
  - pax selected as the utility for migration tool since it is a well established utility - the changes listed above were made to pax in copy mode for V1R7
- ❑ Benefit:
  - A supported utility for migration tool data movement and some enhanced pax functionality



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## pax Enhancements

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- ❑ Sparse files are those which do not use real disk storage for pages of file data that contain only zeros
  - Copying files as sparse saves disk space
- ❑ The ability to skip read errors may allow installations to salvage some files from corrupted file systems
- ❑ Preserving all files attributes of copied file saves installations from having to manually set desired attributes that may not have been preserved previously



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## pax Migration

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- ❑ Using V1R7 pax enhancements, the user can:
  - Keep sparse files sparse during a copy
  - Cause pax to continue after encountering a read error on the source file system - pax will print an error message and return a non-zero value after the command ends
- ❑ Create empty directories within the target directory tree for each active mountpoint encountered within the source directory tree
- ❑ Preserve all file attributes from the source to the target of the copy including user-requested audit attributes and auditor-requested audit attributes



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## Migration Considerations

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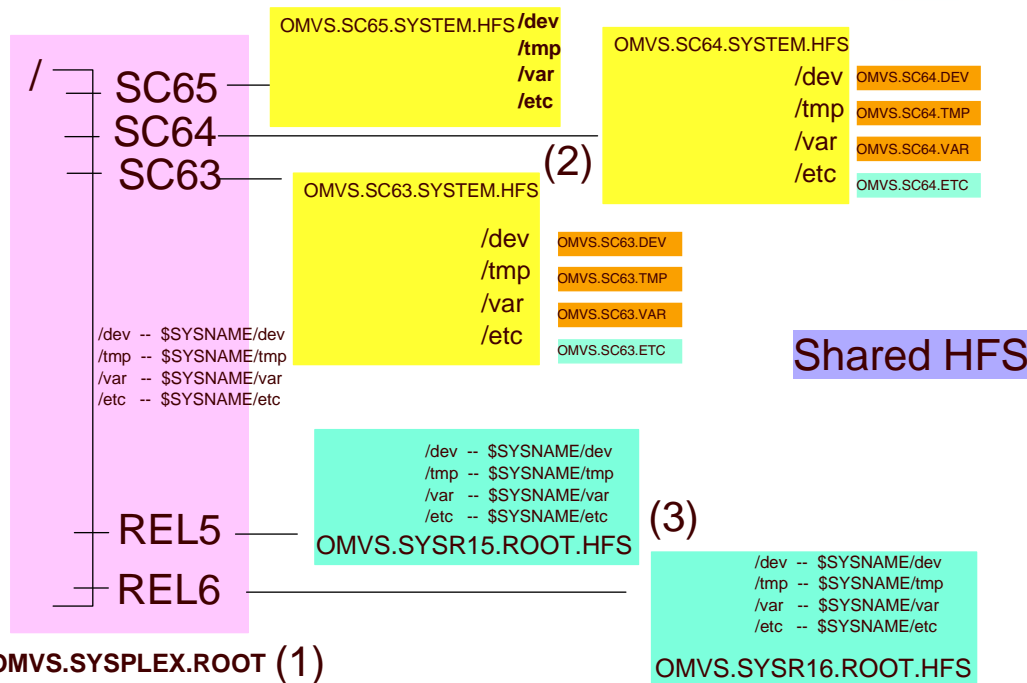


- ❑ If you are using any mount parameters, the correct file type must be specified, otherwise the parms are nulled
- ❑ zFS file systems that span volumes must be preallocated prior to invoking the tool
- ❑ zFS file systems that are greater than 4 GB (about 4825 cylinders of a 3390) must be defined with a data class that includes extended addressability
  - zFS file systems cannot be striped



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## Multiple Systems - Different Versions



## Migration Considerations

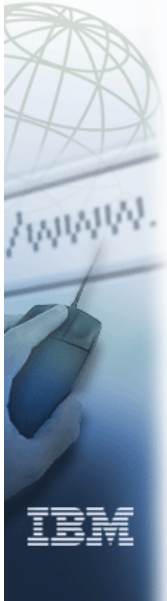


- ❑ Need to have DASD space available to accommodate both the old and new filesystem during the migration
- ❑ Need to make the source filesystem unavailable for updates during the migration
- ❑ Do not migrate the sysplex root
  - Sysplex IPL at the moment is needed

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# z/OS UNIX Dynamic Service Activation



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## z/OS UNIX: Dynamic Service Activation



- ❑ Previously, you cannot activate maintenance for z/OS UNIX without taking a system outage
- ❑ z/OS V1R7 - provide ability to activate maintenance on a running system in a non-disruptive manner
  - Minimize number of planned and unplanned outages
  - Provide higher level of system availability
- ❑ Only PTFs with ++HOLD REASON (DYNACT) data will be capable of dynamic activation
- ❑ New BPXPRMxx parmlib parameters SERV\_LPALIB and SERV\_LINKLIB need to be setup to enable the support, via SETOMVS or SET OMVS= command

```
SERV_LPALIB('dsname','volser')  
SERV_LINKLIB('dsname','volser')
```



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## z/OS UNIX: Dynamic Service Activation



- ❑ To activate service at any time
  - F OMVS, ACTIVATE=SERVICE
- ❑ To deactivate service
  - F OMVS,DEACTIVATE=SERVICE
- ❑ To retrieve dynamic service activation information
  - D OMVS,ACTIVATE=SERVICE and BPXEKDA
- ❑ Support to retrieve new parmlib settings
  - D OMVS,O
  - C/C++ API get\_system\_settings()



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## Migration Considerations



- ❑ Stay fairly current on service to best be able to exploit this feature
- ❑ Determine the selected PTFs they are interested in activating dynamically for corrective purposes
- ❑ Not intended to be used to as a complete replacement for regular preventative maintenance application

```
BPXM061I THE FOLLOWING SERVICE ITEMS WILL BE ACTIVATED:
```

```
OA09999 OA08888
```

```
ECSA STORAGE BYTES:      24576 AND OMVS PRIVATE STORAGE BYTES:      12468  
WILL BE CONSUMED FOR THIS ACTIVATION.
```

```
*06 BPXM061D REPLY "Y" TO CONTINUE. ANY OTHER REPLY ENDS THE COMMAND.
```



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## Migration Considerations



### ❑ F OMVS,DEACTIVATE=SERVICE

- Enables the backing off of the last set of service items that were activated dynamically
- Intended for removal of temporary service activated for problem determination, etc. or problematic service
- Backs off service items but modules remain in storage
- Prompts user to verify deactivation

```
BPXM063I THE FOLLOWING SERVICE ITEMS WILL BE DEACTIVATED:
OA09999  OA08888
*07 BPXM063D REPLY "Y" TO CONTINUE. ANY OTHER REPLY ENDS THE COMMAND.
.
```



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## Display Service



### ❑ D OMVS,ACTIVATE=SERVICE

- Provides the display of all sets of service items that are currently activated dynamically
- Shows the most recently activated set of service items to the oldest set activated

```
BPX0059I 08.51.42 DISPLAY OMVS 284
          OMVS      000E ACTIVE          OMVS=(6D)
          DYNAMIC SERVICE ACTIVATION REPORT
SET #2:
LINKLIB=SYS1.DYNLIB.PVT          VOL=BPXLK1
LPALIB=SYS1.DYNLIB.LPA          VOL=BPXLK1
OA02001 OA02002 OA02003 OA02004
SET #1:
LINKLIB=SYS1.LINKLIB          VOL=Z17RS1
LPALIB=SYS1.LPALIB          VOL=Z17RS1
OA01001 OA01002 OA01003
ECSA STORAGE: 68496          OMVS STORAGE: 268248 .
```



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# Display Parmlib Settings



## □ D OMVS,O

- Provides the display of all UNIX System Services Parmlib settings including new SERV\_LPALIB and SERV\_LINKLIB values

```
BPXO043I 12.34.23 DISPLAY OMVS 209
OMVS      000E ACTIVE          OMVS=(7F)
CURRENT UNIX CONFIGURATION SETTINGS:
MAXPROCSYS      =          256    MAXPROCUSER      =          16
.
.
.
SWA                      = BELOW
SERV_LINKLIB      = SYS1.DYNSERV.LINKLIB  BPXLK1
SERV_LPALIB      = SYS1.DYNSERV.LPALIB  BPXLK1
```



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