IBM Education Assistant (IEA) for z/OS V2R3

USS: Create /global directory to Sysplex Root

Agenda

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Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.

- **Additional Trademarks:**

  - None

Session Objectives

- Learn about the new **/global** directory provided in the sysplex root (and also in the version root)

- Understand the steps that need to be taken to create the /global directory

- Understand how to use the **/global** directory

Overview

- **Problem Statement / Need Addressed**

  - In a sysplex environment:

    1. There is a need to maintain multiple copies of the same file on each system of the sysplex

       - **Example:** Need to maintain a consistent automount policy for use by the automount daemon on every member of the sysplex

    2. As a matter of convenience, provide a view of program products (not shipped as part of z/OS), at multiple levels, even though the product may be installed on only one member of the sysplex.

       - **Example:** Want to provide a simple and consistent way to access multiple levels of Java (Java 6, Java 7, Java 8) or COBOL.

Overview *(cont.)*

- **Solution**

  - In z/OS 2.3, we will be introducing a new directory in the Sysplex Root to address these issues.

    - New directory known as **/global**

  - Provided in Sysplex Root and Version Root for consistency/symmetry

  - Will not change where products are SMP/E installed

    - Products will still be installed under **/usr/lpp/……**

    - **/global** will <u>not</u> be part of any DDDEF

- Elements and program products will document how this directory will be used for their purpose
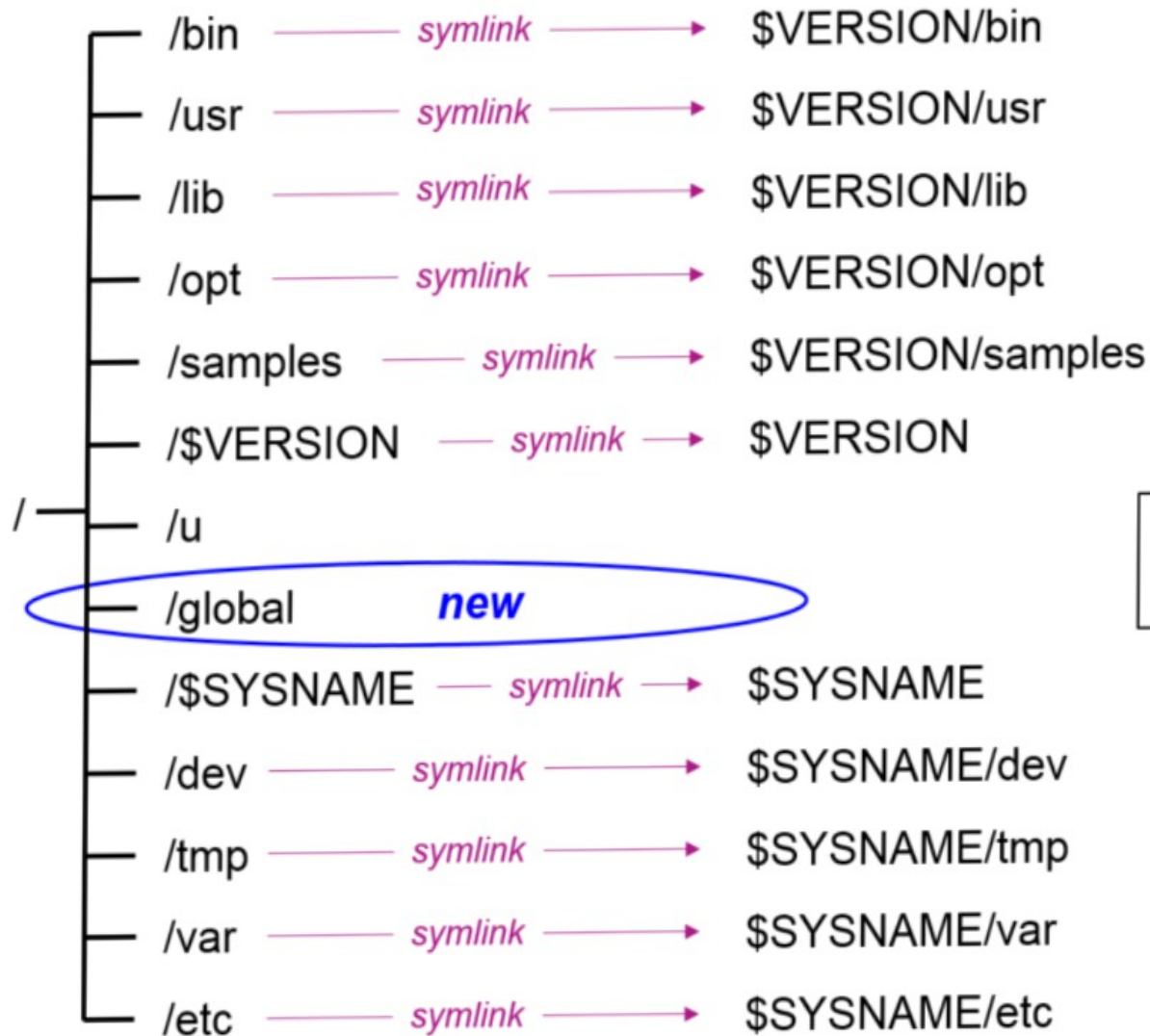
Overview *(cont.)*

- **Benefit / Value**

  - Provides a common repository where configurations files <u>with sysplex scope</u> can reside.

  - Some customers were already doing something similar and so this scheme formalizes and documents its use to all
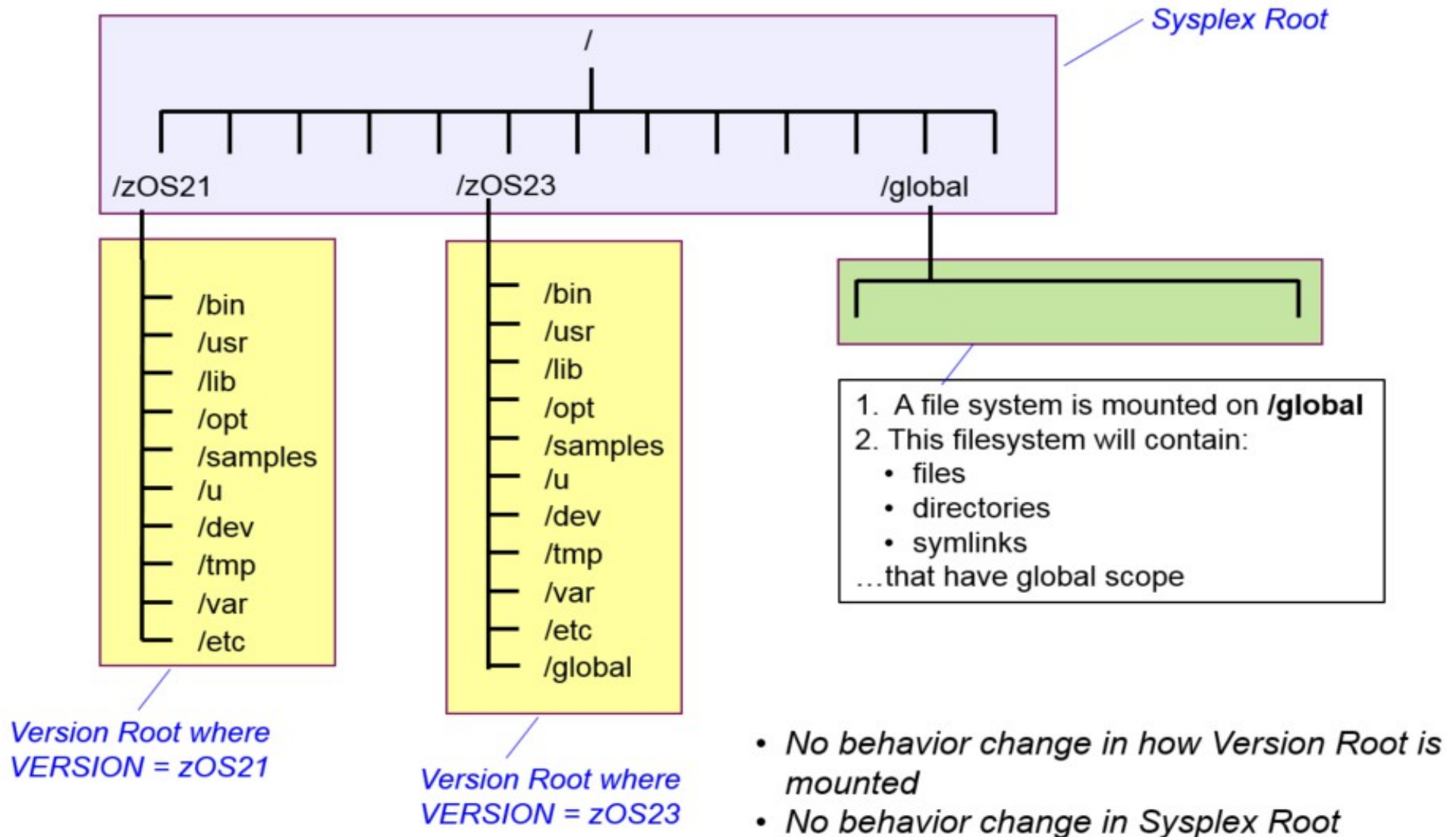
Usage & Invocation

New Directory in Sysplex Root

```
    /bin      ——— symlink ———→   $VERSION/bin

    /usr      ——— symlink ———→   $VERSION/usr

    /lib      ——— symlink ———→   $VERSION/lib

    /opt      ——— symlink ———→   $VERSION/opt

    /samples  ——— symlink ——→    $VERSION/samples

    /$VERSION ——— symlink ——→    $VERSION

/   /u

    /global         new

    /$SYSNAME ——— symlink ——→    $SYSNAME

    /dev      ——— symlink ———→   $SYSNAME/dev

    /tmp      ——— symlink ———→   $SYSNAME/tmp

    /var      ——— symlink ———→   $SYSNAME/var

    /etc      ——— symlink ———→   $SYSNAME/etc
```

Legend
$VERSION - value from BPXPRMxx
$SYSNAME - system name

Usage & Invocation *(cont.)*

Usage of New Directory

- No behavior change in how Version Root is mounted
- No behavior change in Sysplex Root

Usage & Invocation *(cont.)*

Use Case Scenarios

Assumptions:

- **/global** directory exists in Sysplex Root

- a file system is mounted on **/global**

- customer has changed permission bits of **/global** to 7,5,5 (after mounting file system)

Scenario 1 - Files (e.g. Configuration files for automount daemon)

1. Create **/global/auto.master** file

2. Contents of this file are all directories that are to be configured for automount and the file names that contain their configuration specifications.

- For example:

```
/u          /global/u.map
```

➔ /u is automount-managed and the specifications for that directory is in /global/u.map

Usage & Invocation *(cont.)*

3. Create **/global/u.map** file with the automount policy

4. On every system, either create a symbolic link for **/etc/auto.master** to **/global/auto.master**

<u>or</u> specify **/global/auto.master** on start of automount daemon in **/etc/rc**:

```
/usr/sbin/automount /global/auto.master
```

Usage & Invocation *(cont.)*

Scenario 2 - Directories and symlinks (e.g. Convenient access to multiple levels of Java)

1. Create **/global/java** directory

2. Create **/global/java/java6** symbolic link to the directory where Java 6 is installed.

3. Create additional symlinks as necessary to represent additional levels of Java

*   For example:

```
    /global/java/java6  -- symlink -->  /zOS21/usr/lpp/java6

 -  /global/java/java7  -- symlink -->  /zOS22/usr/lpp/java7

 -  /global/java/java8  -- symlink -->  /zOS22/usr/lpp/java8
```

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Interactions & Dependencies

- **Software Dependencies**

  - None

- **Hardware Dependencies**

  - None

- **Exploiters**

  - In z/OS V2.3, <u>Knowledge Center</u> will be exploiting this. They will be using the **/global** directory to store configuration files.

  - <u>Note:</u> In a single system environment (non-sysplex) these configuration files will still reside in **/global**, but in the root filesystem.

Migration & Coexistence Considerations

- **Toleration/coexistence APARs/PTFs:**

  - None

- **Migration Considerations:**

  - None

- **Coexistence Considerations:**

  - None

  - The creation and use the the new **/global** directory in the sysplex root will work in a sysplex environment made up of members at any release of z/OS (ie. z/OS V2.1, z/OS V2.2, z/OS V2.3).

Installation

- To create the **/global** directory in the sysplex root you can:

  1. Create the **/global** directory manually (you may need to change the sysplex root from read-only to read-write temporarily)

  <u>or</u>

  2. Run the updated `SYS1.SAMPLIB(BPXISYS1)` job which will create a new sysplex root.

- For non-sysplex environments, the **/global** directory will be created when the `SYS1.SAMPLIB(BPXISMKD)` job that invokes the updated `SYS1.SAMPLIB(BPXMKDIR)` REXX exec is run.

  – For most customers this will be done by IBM when the z/OS system is built and delivered.

Installation *(cont.)*

- In either case, before using **/global**, remember to:

    - create a new zFS file system

    - mount it on **/global**

    - change the permisssion bits to (7,5,5)

  so that you do not begin placing the configuration files or other symbolic links in the sysplex root <u>or</u> root file system.

Session Summary

- The new **/global** directory in the Sysplex Root will address certain customer needs.

  - Allows customers to maintain a single configuration file across the sysplex, as opposed to maintaining individual copies (with same content) on each member of the sysplex

  - Allows a convenient place to place "shortcuts" for different levels of program products

- Does not change where products are SMP/E installed

  - Products will still be installed under **/usr/lpp/……**

- **/global** directory will not contain any product binaries

- Single **/global** directory (that has sysplex scope) for files normally found in **/etc** and **/var**

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Appendix

Publication references:

- z/OS UNIX System Services Planning

- z/OS Migration