



z/OSMF V2.2 Implementation and Configuration

Session 17236

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Agenda

- **Overview of z/OS Management Facility V2.2**
- **Background**
 - z/OSMF V1 (R11-R13) Configuration
 - z/OSMF V2.1 Configuration
- **Configuration Changes for z/OSMF V2.2**
 - New user setup to configure z/OSMF “base”
 - Existing user migrating to z/OSMF V2.1
- **Accessing the z/OSMF Welcome Page**
- **Adding additional “plug-ins”**
 - Configuring the z/OS requisites
 - Configuring z/OSMF to include the “plug-ins”
 - Adding External Plug-ins (e.g., SDSF)
- **Secure Communication Between z/OSMF Instances**
- **Authorizing users to z/OSMF**

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Agenda

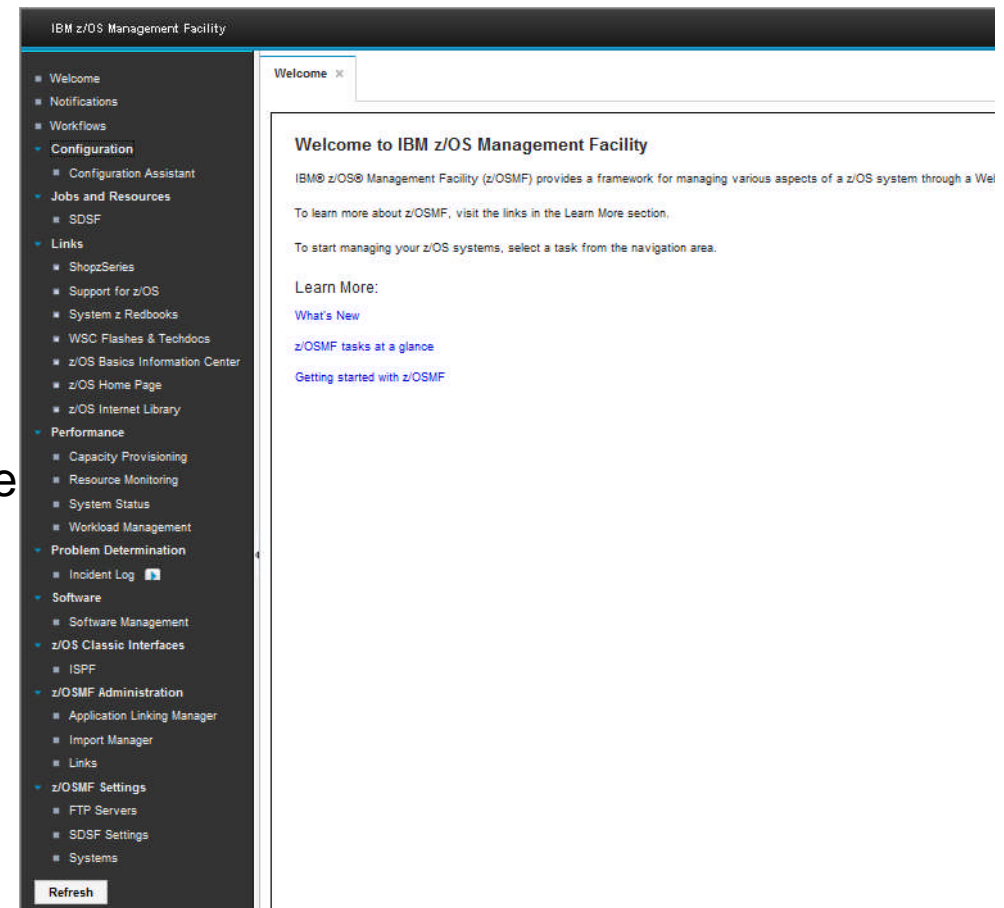
➔ Overview of z/OS Management Facility V2.2

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IBM z/OS Management Facility

- The IBM z/OS Management Facility is a now a part of z/OS V2.2 that provides support for a modern, Web-browser based management console for z/OS.
- It helps system programmers more easily manage and administer a mainframe system by simplifying day to day operations and administration of a z/OS system.
- More than just a graphical user interface the z/OS Management Facility is intelligent, addressing the needs of a diversified skilled workforce and maximizing their productivity.
 - Automated tasks can help reduce the learning curve and improve productivity.
 - Embedded active user assistance (such as wizards) guide you through tasks and helps provide simplified operations.



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z/OS Management Facility



Problem Management & Analysis

Installation, Migration, & Maintenance

Configuration and Performance

Simplify and modernize the user experience and programming requirements

Incident Log (z/OSMF V1.11)

provides a consolidated list of SVC Dump related problems, along with details and diagnostic data captured with each incident. It also facilitates sending the data for further diagnostics.

SDSF (z/OSMF V2.1 with PTF

UI15294) provides a browser-based SDSF application designed to run in a z/OSMF environment that takes advantage of a graphical user interface.

z/OSMF Base Services:

- **Security integration with SAF (z/OSMF V1.13)**
- **ISPF Web UI (z/OSMF V1.13)**
- **REST API for Jobs (z/OSMF V1.13)**
- **REST API for Data Sets and Files (z/OSMF V2.1 with PTF UI16044)**
- **REST API for z/OSMF Information Retrieval (z/OSMF V2.1 with PTF UI90005)**
- **REST API for z/OSMF Systems (z/OSMF V2.1 with PTF for APAR PI32148)**
- **REST API for Software Management (z/OSMF V2.1 with PTF for APAR PI32158)**
- **REST API for z/OSMF Workflow (z/OSMF V2.1 with PTF for APAR PI32163)**
- **Notifications (z/OSMF V2.1)** View and act on the z/OSMF notifications that have been assigned to you
- **Use of WebSphere Liberty Profile (z/OSMF V2.1)** faster startup, uses less resources
- **Workflow (z/OSMF V2.1)** Perform a guided set of steps, for example, to configure components or products in your installation. **With PTF UI90005**, A workflow step can use output from another workflow step; also a workflow step can be performed conditionally.
- **Import Manager (z/OSMF V2.1 with PTF UI16044)** Import plug-ins, event types, event handlers, and links into z/OSMF.
- **System Setting** - Discover the system definition that hosts the z/OSMF instance (z/OSMF V2.1 with PTF UI90005)

Software Management (z/OSMF V1.13) provides a simple, structured approach to deploying SMP/E installed software. In addition, it allows for inspection of a software instance to view the product, feature, FMID content, SYSMODS, as well as the physical datasets that comprise a particular software instance. It also enables you to perform actions to analyze and report on software instances (such as identifying installed products with an announced end of service date).

Configuration Assistant for z/OS Communications Server (z/OSMF V1.11) Simplified configuration and setup of TCP/IP policy-based networking functions

WLM Policy Editor (z/OSMF V1.12)

Simplified management of WLM service definitions and policies. Facilitate the creation and editing of WLM service definitions, installation of WLM service definitions, and activation of WLM service policies

Resource Monitoring (z/OSMF

V1.12) Provides dynamic real time metrics for system performance

Capacity Provisioning (z/OSMF

V1.13) simplify the work of a z/OS CP administrator to manage connections to CPMs, view reports for domain status, active configuration and active policy.



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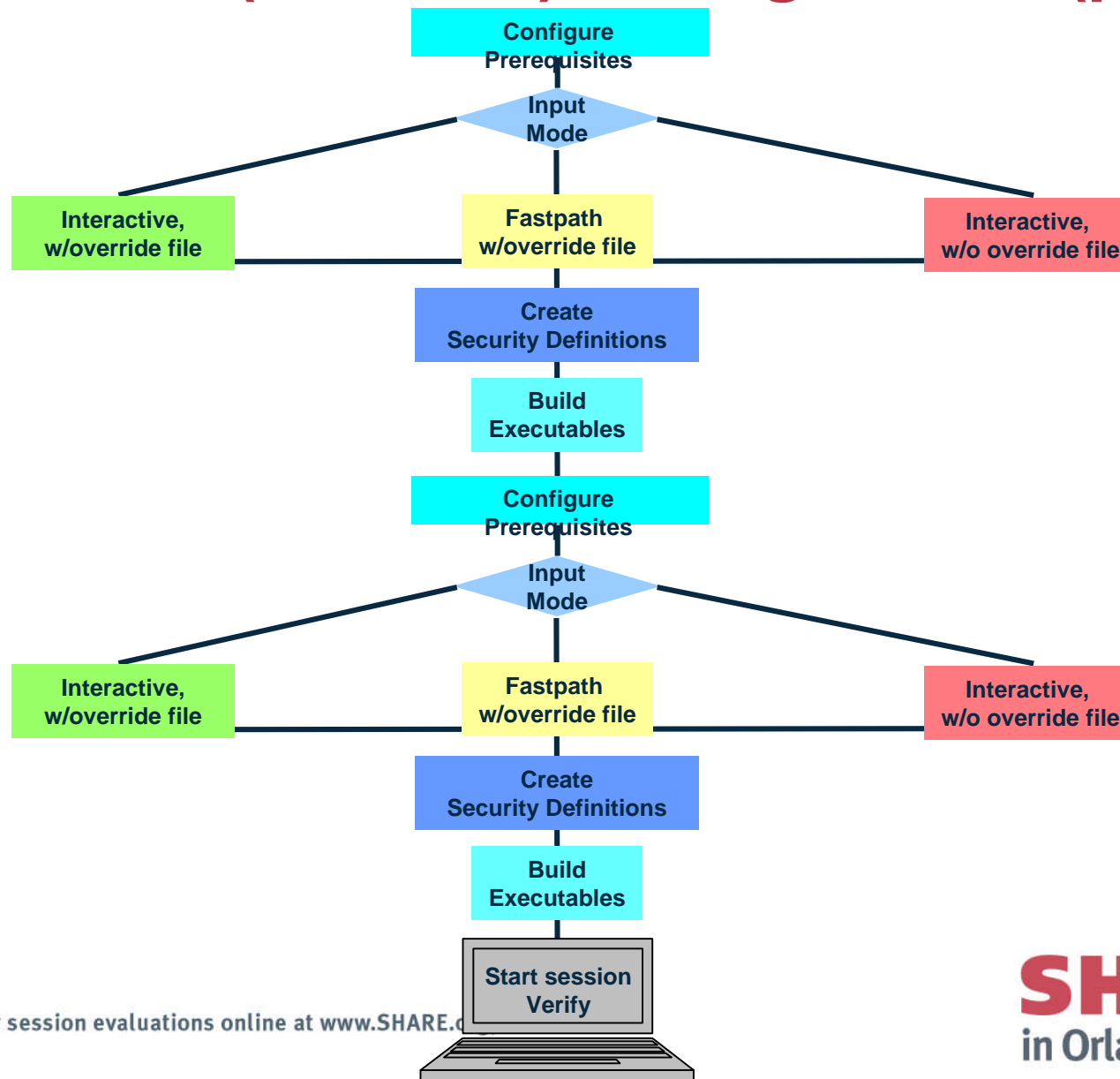
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z/OSMF V1 (R11-R13) Configuration

- z/OSMF used WAS OEM as its runtime environment
- Users had to first configure WAS OEM, and then configure z/OSMF (and its requisites)
 - Both WAS OEM and z/OSMF:
 - Used z/OS UNIX shellscripts for their configuration
 - Had three (3) paths for their configuration script
 - Had a bootstrap process to:
 1. Define configuration parameters
 2. Use those configuration parameters for security definitions
 3. Use the configuration values to build their executables
 - Because there weren't many z/OSMF plug-ins, users were encouraged to initially configure all the plug-ins that they might ever use
 - This resulted in some users delaying their rollout due to missing z/OS requisites

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z/OSMF V1 (R11-R13) Configuration (picture)



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z/OSMF V1 (R11-R13) Configuration ...



- **What we heard ...**
 - Why is IBM's "simplification" product so hard to configure?
 - Why do I need to ask my security administrator to perform so many tasks
 - How do I tell my security administrator what they have to do since we don't use RACF
 - Why do I have to use z/OS UNIX to configure z/OSMF
 - Why does Incident Log have so many requisites

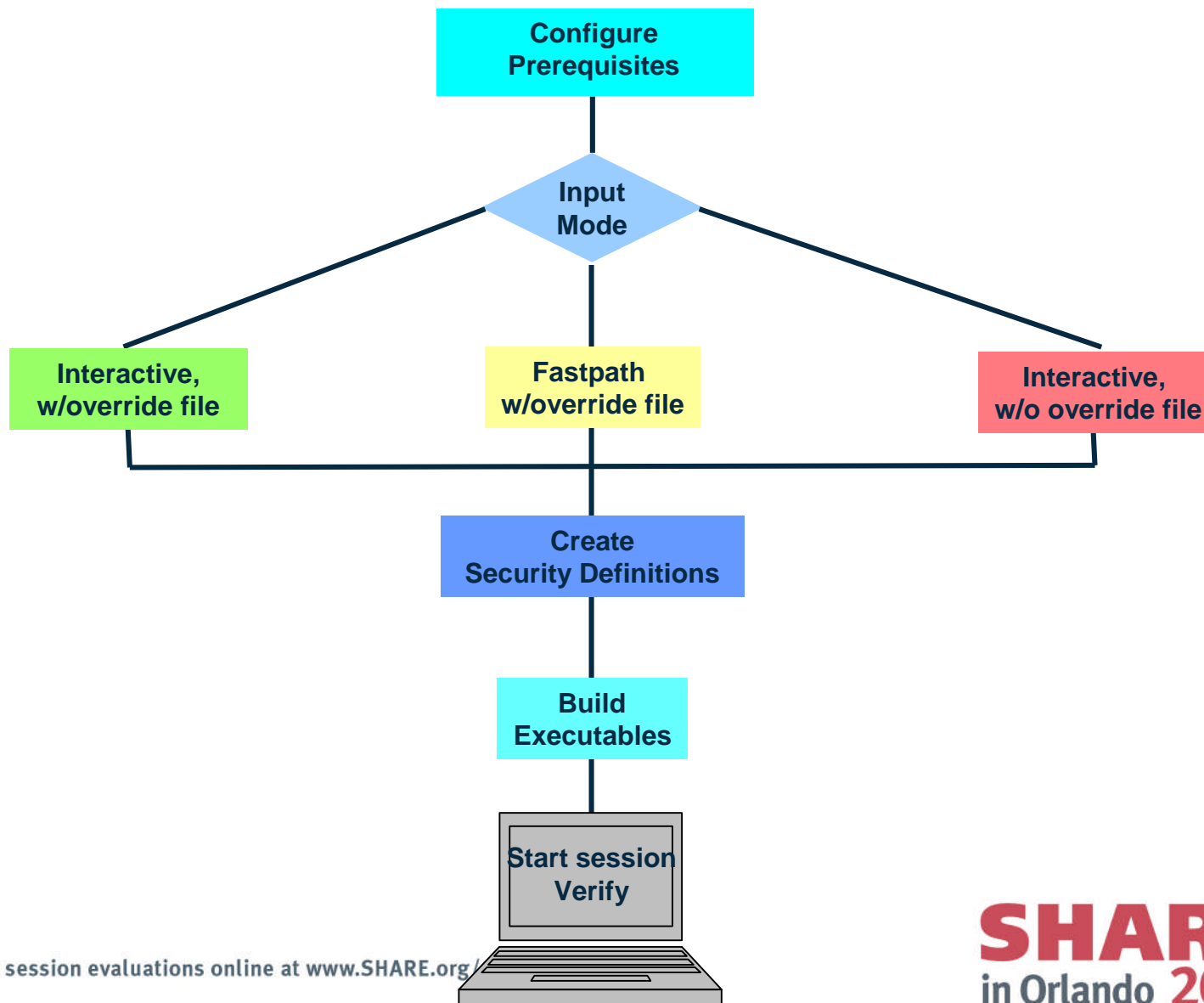
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z/OSMF V2.1 Configuration

- z/OSMF no longer used WAS OEM as its runtime environment
 - It uses WebSphere Liberty Profile
 - WebSphere Liberty Profile is configured as part of z/OSMF
- Users still had to configure z/OSMF (and its requisites)
 - Using z/OS UNIX shellscripts for their configuration
 - Choosing among three (3) paths for their configuration script
 - Follow the configuration process
 1. Define configuration parameters
 2. Use those configuration parameters for security definitions
 3. Use the configuration values to build their executables
 - Users were encouraged to initially configure just the base instance, and then all the plug-ins that they might ever use
 - This resulted in a quicker startup of z/OSMF

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z/OSMF V2.1 Configuration (picture)



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z/OSMF V2.1 Configuration ...



- **What we heard ...**
 - Everybody likes the use of the WAS Liberty Profile
 - Not sure how much the lack of configuring WAS OEM plays into that
 - Everybody likes the faster startup, use of less resources (CPU and storage)
 - From existing customers ...
 - The configuration process improved
 - There are a lot of tasks my security administrator has to perform
 - RACF and (non-RACF) users liked the Security Appendix in the *z/OSMF Configuration Guide*
 - Why do I have to use z/OS UNIX to configure z/OSMF
 - Why can't IBM's "simplification" use a graphical interface to assist with its configuration?
 - Or, its too bad z/OSMF can't use z/OSMF to configure itself

Configuration Workflow Evolution

- z/OSMF V2.1 (GA), configuration workflow provided documentation that described instructions on how the tasks could be performed manually.
- z/OSMF V2.1 (PTF UI16044*), configuration workflow provided the a number of wizards to guide the user to implement the requisites for Incident log and configure z/OSMF to add plug-ins.
- z/OSMF V2.1 (PTF UI90005**), configuration workflow provides some discovery functions and utilizes the import function of z/OSMF configuration properties.
- z/OSMF V2.1 (PTF UI90022***), the configuration workflow now exploits conditional execution to base the steps required to setup ISPF, WLM, Capacity

Actions ▾				
	State Filter	No. Filter	Title Filter	Automated Filter
<input type="checkbox"/>	➡ Ready	1	■ Highlights and pre-reqs of Config Workflow	No
<input checked="" type="checkbox"/>	🟢 In Progress	2	▢ Discovery before configuration	
<input checked="" type="checkbox"/>	➡ Ready	2.1	■ Discover general zOS setups	Yes
<input type="checkbox"/>	➡ Ready	2.2	■ Discover zOSMF run-time properties	Yes
<input type="checkbox"/>	🚧 Not Ready	3	■ Review related z/OS and z/OSMF configuration	No
<input type="checkbox"/>	🟢 In Progress	4	+ Configuration Assistant plug-in	

* available for z/OSMF V2.1 with PTF UI16044 and its requisite PTFs

** available for z/OSMF V2.1 with PTF UI90005 and its requisite PTFs

*** available for z/OS V2.1 with PTFs UI90019 and UI90022 and their requisite PTFs

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z/OSMF V2.2 Configuration



- **Objective** **Enabled by PTF UI90027 (available August 5, 2015)**
 - Configure z/OSMF like other z/OS functions
 - Eliminate the use of z/OS UNIX shellscripts to configure z/OSMF
 - Use PARMLIB to specify configuration parameters
 - Provide sample members for
 - PARMLIB specification
 - Security definitions
 - Creation/migration of z/OS UNIX filesystem
 - Utilize z/OSMF Workflows to provide a graphical interface step the user through plug-in prerequisite configuration
 - Planned 4Q2015*
 - Documented in the IBM z/OS Management Facility Configuration Guide V2.2 (SC27-8419)
 - Additional documentation in DOC APAR PI46099
 - **The PTF will be installed in all z/OS V2.2 ServerPacs!!!**

* Planned. All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.



z/OSMF V2.2 Configuration ...



- **Eliminate use of z/OS UNIX Shellscripts and REXX EXECs**
 - izumigrate.sh will still be used to assist in migration
- **Eliminate the use of generated customized REXX EXECs for RACF security definitions**
 - Eliminate configuration parameters only needed to customize security definitions
- **Eliminate the use of z/OS UNIX Shellscripts and generated customized REXX EXECs to authorize users to use z/OSMF**

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z/OSMF V2.2 Configuration ...

- Use PARMLIB to specify configuration parameters
 - PARMLIB member IZUPRMxx contains remaining configuration parameters
 - Members can contain comments /* comment */
 - Members can use of system symbols
 - Member can be in any data set in the logical PARMLIB concatenation
 - IZUPRMxx is optional.
 - Not needed if all defaults are used
 - Sample PARMLIB member provided
 - SYS1.SAMPLIB(IZUPRM00)
 - Tip: Specify values only for those defaults that you want to override (that is, omit any statement for which the default value is acceptable).
 - Doing so will ensure that you always obtain the default values, even if they happen to change in a future release.
- New parameter added to the IZUSVR1 started procedure to identify PARMLIB member(s) to use
 - Concatenation of members is supported
 - IZUPRM='(xx,yy,zz)'
 - Default is IZUPRM=NONE

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z/OSMF V2.2 Configuration ...

- SAMPLIB(IZUPRM00)**

```

HOSTNAME('*')
HTTP_SSL_PORT(443)
INCIDENT_LOG UNIT('SYSALLDA')
JAVA_HOME('/usr/lpp/java/J7.1_64')
KEYRING_NAME('IZUKeyring.IZUDFLT')
LOGGING('*=warning:com.ibm.zosmf.*=info:com.ibm.zosmf.environment.ui=fi
ner')
RESTAPI_FILE ACCT(IZUACCT) REGION(32768) PROC(IZUFPROC)
SAF_PREFIX('IZUDFLT')
SEC_GROUPS USER(IZUUSER),ADMIN(IZUADMIN),SECADMIN(IZUSECAD)
SESSION_EXPIRE(495)
TEMP_DIR('/tmp')
UNAUTH_USER(IZUGUEST)
WLM_CLASSES DEFAULT(IZUGHTTP) LONG_WORK(IZUGWORK)
/* Uncomment the following statement and any plugins that
   are desired */
/* PLUGINS(                                     */
/*     INCIDENT_LOG,                             */
/*     COMMSERVER_CFG,                           */
/*     WORKLOAD_MGMT                             */
/*     RESOURCE_MON,                             */
/*     CAPACITY_PROV,                             */
/*     SOFTWARE_MGMT,                             */
/*     ISPF)                                     */

```

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z/OSMF V2.2 Configuration ...

- **SAMPLIB(IZUxxSEC)**
 - **IZUSEC** – defines base (“Core”) z/OSMF security definitions
 - **IZUCASEC** – defines security definitions for Configuration Assistant
 - **IZUCPSEC** – defines security definitions for Capacity Provisioning
 - **IZUDMSEC** – defines security definitions for Software Management
 - **IZUILSEC** – defines security definitions for Incident Log
 - **IZUISSEC** – defines security definitions for ISPF
 - **IZURMSEC** – defines security definitions for Resource Monitoring
 - **IZUWLSEC** – defines security definitions for Workload Management
- **SAMPLIB(IZUAUTH)** – security definitions to authorize a user to use z/OSMF

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z/OSMF V2.2 Configuration ...

SAMPLIB(IZUMKFS)

- Defines, formats, and temporarily mounts the z/OSMF user file system.
- Initializes the z/OSMF user file system, which contains configuration settings and persistence information for z/OSMF.
- The job performs the following actions:
 - Allocates the z/OSMF user file system as /var/zosmf.
 - Mounts the filesystem at mount point /var/zosmf:
 - As a zFS type file system
 - With the option PARM('AGGRGROW') to allow the filesystem to grow dynamically, as needed
 - With the option UNMOUNT to ensure that it is unmounted if the z/OS system becomes unavailable
 - Changes the ownership and permissions and ownership of the directories and files in the z/OSMF user file system, as follows:
 - The file system is owned by the IZUSVR user ID and the IZUADMIN security group
 - The file system is protected with the permissions 755

Note: It is recommended that you give the z/OSMF file system sysplex-wide scope.

- To do so, update the job to ensure that it mounts the user directory at a shared mount point.

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New User Setup/Configuration

- **Configuring an instance of z/OSMF is done by:**
 - 1. Setting up security**
 - 2. Creating the z/OSMF z/OS UNIX filesystem**
 - 3. Optionally, configuring z/OSMF parameters**
 - 4. Ensure that the SMP/E installed procedures are in your JES PROCLIB concatenation**
 - 5. Starting the z/OSMF server**
 - 6. Update PARMLIB members or automation for subsequent IPLs**

New User Setup/Configuration ...

- **Setting up Security**

- Run SAMPLIB(IZUSEC)

- You may need to modify the sample job to either:

- Conform to installation standards

- Uncomment out definitions based on your existing security environment

- If your installation uses a security management product other than RACF, do not use the SAMPLIB member

- Instead, your installation must create equivalent commands for your security product.

- See Appendix A in the z/OSMF Configuration Guide for a list of resources, groups, IDs, and authorizations that need to be defined to your security product.

New User Setup/Configuration ...

- **Creating the z/OSMF z/OS UNIX Filesystem**
 - Run a modified SAMPLIB(IZUMKFS)
 - You must select a volume for this allocation.
 - By default the filesystem data set name is IZU.SIZUUSRD
 - If you want to change the data set name, it needs to be changed in three (3) steps: DEFINE, CREATE, and MOUNT
 - By default the mountpoint is /var/zosmf
 - It is recommended that you give the z/OSMF file system sysplex-wide scope.
 - To do so, update the job to ensure that it mounts the user directory at a shared mount point.
 - » For example, /sharedapps/zosmf
 - If you change the default mountpoint, you will have to change all references of /var/zosmf in the job.

New User Setup/Configuration ...

- **Optionally, Configuring z/OSMF Parameters**

- Create one or more IZUPRMxx PARMLIB members

```

HOSTNAME(*)                               /* Defaults to the current
HOSTNAME on the system                    */
HTTP_SSL_PORT(&ZOSMFPORT.)                /* Use a user defined System Symbol defined in
IEASYMxx */
JAVA_HOME('/usr/lpp/java710/java/J7.1_64') /* Location of the JAVA SDK 7.1 64-bit home directory
• Note. */

```

- We don't use the default Java Home Directory
 - The comments shown would need to be spilt over multiple lines due to the 72 column limit

- Eventually, you may want to modify that member, or create a new one to specify the Plug-ins that you want to use

```

PLUGINS(INCIDENT_LOG,
        COMMSERVER_CFG,
        WORKLOAD_MGMT,
        RESOURCE_MON,
        CAPACITY_PROV,
        SOFTWARE_MGMT,
        ISPF)

```

New User Setup/Configuration ...



Ensure that the SMP/E installed procedures are in your JES PROCLIB concatenation

- z/OSMF requires that the following cataloged procedures be installed on your system:
 - Started procedures for the z/OSMF server: **IZUANG1** and **IZUSVR1**.
 - Logon procedure for the z/OS data set and file REST interface (**IZUFPROC**)
 - You can use an alternative logon procedure, if it provides the same function as the shipped IZUFPROC procedure.
- **ServerPac and CustomPac users:**
 - Ensure that SYS1.IBM.PROCLIB (or whatever you renamed it to) resides in the JES PROCLIB concatenation.
 - Or, copy its contents to a data set in the JES PROCLIB concatenation.
- **CBPDO users:**
 - Ensure that SYS1.PROCLIB (or whatever you renamed it to) resides in the JES PROCLIB concatenation).
 - Or, copy its contents to a data set in the JES PROCLIB concatenation.
- Note that these steps are the same as you would do for any SMP/E installed cataloged procedure that is provided with z/OS.

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New User Setup/Configuration ...

- **Starting the z/OSMF Servers**

- Before users can access z/OSMF, the z/OSMF server must be active.
- To start the z/OSMF server manually, you can enter the **START** command from the operator console.
- The **START** command specifies the procedure name to start and, optionally, the job name to use. For example:
 - `START IZUANG1,JOBNAME=jobname`
 - `START IZUSVR1,JOBNAME=jobname,IZUPRM='(xx,yy)'`
 - You **ONLY** need the IZUPRM parameter if you want to point to one or more IZUPRMxx PARMLIB members for configuration values
- Start the tasks in the following sequence: IZUANG1 followed by IZUSVR1.
 - Otherwise, z/OSMF users might encounter authorization errors later when they attempt to log in to z/OSMF.

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New User Setup/Configuration ...



- **Update PARMLIB members or automation for subsequent IPLs**
 - Copy the mount commands from the sample mount job to your BPXPRMxx parmlib member
 - Add the **START** commands for the started procedures to your COMMNDxx parmlib member; or update system automation procedures.
 - Add the started procedure names to the AUTOLOG statement in your TCP/IP profile.

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Existing User Configuration Migration

- **Configuring an instance of z/OSMF is done by:**
 - 1. Run izumigrate.sh to build a customized IZUPRMxx based on your existing configuration**
 - 2. Setting up security**
 - **Minimal changes from z/OSMF V2.1**
 - 3. Migrate the z/OSMF z/OS UNIX filesystem**
 - 4. Ensure that the SMP/E installed procedures are in your JES PROCLIB concatenation**
 - **Same as for new user**
 - 5. Modify the Start parameters for the z/OSMF server**
 - **Same as for new user**
 - 6. Update PARMLIB members or automation for subsequent IPLs**
 - **Same as for new user**

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Existing User Configuration Migration ...

- **Run the izumigrate.sh script on the new system using the configuration file from your current (old) system as input.**
 - The script creates an IZUPRMxx PARMLIB member with values that match the configuration values from your old system.
 - When possible, the script retains your current settings.
 - For any values that are no longer valid for z/OSMF, the script omits the values when it creates the IZUPRMxx parmlib member.
 - For values that already match the z/OSMF defaults, the script omits the values from the IZUPRMxx parmlib member.
 - If your existing configuration file contains commented sections (it should not), the script removes this information from the IZUPRMxx parmlib member.
 - If an IZUPRMxx member already exists at the specified location, the script prompts you for a response to overwrite the existing member.
 - To avoid this prompt, you can include the option -noprompt on the script invocation.

Existing User Configuration Migration ...

- **Example of running izumigrate.sh script**
 - The **izumigrate.sh** script is used to create PARMLIB member IZUPRM01, based on your current configuration settings.
 - Parameters are:
 - -configDir – directory of the existing (old) configuration file
 - -configFilePath – file name and location of the existing configuration file
 - -izuprmSuffix – two (2) character suffix to be used for the generated PARMLIB member
 - -parmlibDsn – data set name to be updated by the script. It does not have to be an active data set in the PARMLIB concatenation

```
izumigrate.sh -configDir /etc/zosmf -configFilePath /etc/zosmf/izuconfig1.cfg  
-izuprmSuffix 01 -parmlibDsn SYS1.PARMLIB
```

- The script runs extremely fast

Existing User Configuration Migration ...



- **Setting up Security**

- You could run SAMPLIB(IZUSEC)
 - However, depending on the release and PTF level that you are coming from, most definitions could already exist.
- If your installation uses a security management product other than RACF, do not use the SAMPLIB member
 - Instead, your installation must create equivalent commands for your security product.
 - See Appendix A in the z/OSMF Configuration Guide for a list of resources, groups, IDs, and authorizations that need to be defined to your security product.

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Existing User Configuration Migration ...

- **Migrating the z/OSMF z/OS UNIX Filesystem**
 - Run a modified SAMPLIB(IZUMKFS)
 - You must select a volume for this allocation.
 - By default the filesystem data set name is IZU.SIZUUSRD
 - If you want to change the data set name, it needs to be changed in three (3) steps: DEFINE, CREATE, and MOUNT
 - By default the mountpoint is /var/zosmf
 - It is recommended that you give the z/OSMF file system sysplex-wide scope.
 - To do so, update the job to ensure that it mounts the user directory at a shared mount point.
 - » **For example, /sharedapps/zosmf**
 - If you change the default mountpoint, you will have to change all references of /var/zosmf in the job.
 - You will need to uncomment out the MIGRATE step (next slide)

Existing User Configuration Migration ...

- **Migrating the z/OSMF z/OS UNIX Filesystem ...**

- Locate the job step MIGRATE, which is commented out.
 - This step contains JCL that you can use to copy the data file system from your old system to the user file system on the new system.
 - Uncomment the step (JCL and input) and update it so that it references the data file system to be copied.
 - In previous releases, you specified this directory on the <IZU_DATA_DIR> configuration variable, which, by default, was /var/zosmf/data.
 - Ensure that the old filesystem is remounted at a different mount point; you cannot use /var/zosmf/data because that mount point will be used for the new file system.
 - Specify the mount point of old file system in place of the value /OldDataFileSystemMountPoint.

```
//MIGRATE EXEC PGM=IKJEFT01,  
// COND=((4,LT,DEFINE),(4,LT,CREATE),(4,LT,MOUNT))  
//SYSTSPRT DD SYSOUT=*  
//SYSTSIN DD *  
BPXBATCH PGM /bin/cp -Rpv /var/oldzosmf21/data +  
          /sharedapps/zosmf/data  
BPXBATCH PGM /bin/chown -hR IZUSVR:IZUADMIN /sharedapps/zosmf/  
BPXBATCH PGM /bin/chmod -hR 755 /sharedapps/zosmf/
```

Replaced
/OldDataFileSystemMountPoint
with **/var/oldzosmf21/data** to reflect
location of old file system

Existing user migrating to z/OSMF V2.2

- **Migrating to a new release of z/OSMF involves the following steps:**
 1. **Perform actions you can perform before installing z/OSMF V2.2**
 - These are migration actions that you perform on your current (old) system before you install or configure z/OSMF V2.2.
 2. **Perform actions you perform before configuring z/OSMF V2.2**
 - These are migration actions that you perform after you have SMP/E installed z/OS V2.2, but before you have configured or activated the product.
 3. **Perform actions you perform after activating z/OSMF V2.2**
 - These are migration actions that you can perform only after you have started the z/OSMF server.
 4. **When you are certain that you will not need to fallback to your current (old) release, you can perform the post-migration actions to:**
 - Clean-up actions to perform when satisfied with the new release
 - Exploit new capabilities

z/OSMF V1.13 to z/OSMF V2.2 Migration

Step	Description
M1: Actions you can perform before installing z/OSMF V2.2	a. Convert to SAF Authorization Mode
M2: Actions you perform before configuring z/OSMF V2.2	a. Remove the most-generic profile for z/OSMF authorizations* b. Authorize the z/OSMF server to create PassTickets c. Setting up the z/OSMF started procedures
M3: Actions you perform after activating z/OSMF V2.2	a. Notify users of the correct URL to use for z/OSMF V2.2 (if you change port numbers) b. Recreate all table filters in the z/OSMF user interface*

* Also applicable to z/OSMF 2.1 to z/OSMF 2.2 migrations

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z/OSMF V1.13 to z/OSMF V2.2 Migration

M4: Clean-up actions to perform when satisfied with the new release

- **C1 - Cleanup old SAF profile prefix definitions**
- **C2 - Cleanup old port definitions**
- **C3 - Cleanup ZOSMFAD owned objects and authorizations from previous releases**
- **C4 - Cleanup WebSphere constructs from previous releases**
- **C5 - Cleanup APF Authorization for SYS1.MIGLIB**
- **C6: Cleanup SURROGAT Class profiles**

Agenda

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- Background
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 - z/OSMF V2.1 Configuration
- Configuration Changes for z/OSMF V2.2
 - New user setup to configure z/OSMF “base”
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Accessing the z/OSMF Welcome Page

- Adding additional “plug-ins”
 - Configuring the z/OS requisites
 - Configuring z/OSMF to include the “plug-ins”
 - Adding External Plug-ins (e.g., SDSF)
- Secure Communication Between z/OSMF Instances
- Authorizing users to z/OSMF

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Accessing the z/OSMF Welcome page

- At the end of the z/OSMF configuration process, you can verify the results of your work by opening a web browser to the Welcome page.
- The URL for the Welcome page has the following format:
 - **https://hostname:port/zosmf/**where:
 - **hostname** is the hostname or IP address of the system in which z/OSMF is installed
 - **port** is the secure application port for the z/OSMF configuration. *port* is optional. If you specified a secure port for SSL encrypted traffic during the configuration process (through variable IZU_HTTP_SSL_PORT), that value is required to log in. Otherwise, it is assumed that you are using port 443, the default.
- To find the URL, see message IZUG349I, which was written to the job log file when IZUSVR1 was started.

IZUG210I: The z/OSMF Configuration Utility has completed successfully at Tue Jul

IZUG349I: The z/OSMF Server home page can be accessed at

: **https://ALPS4142.POK.IBM.COM/zosmf**

: after the z/OSMF server is started on your system.

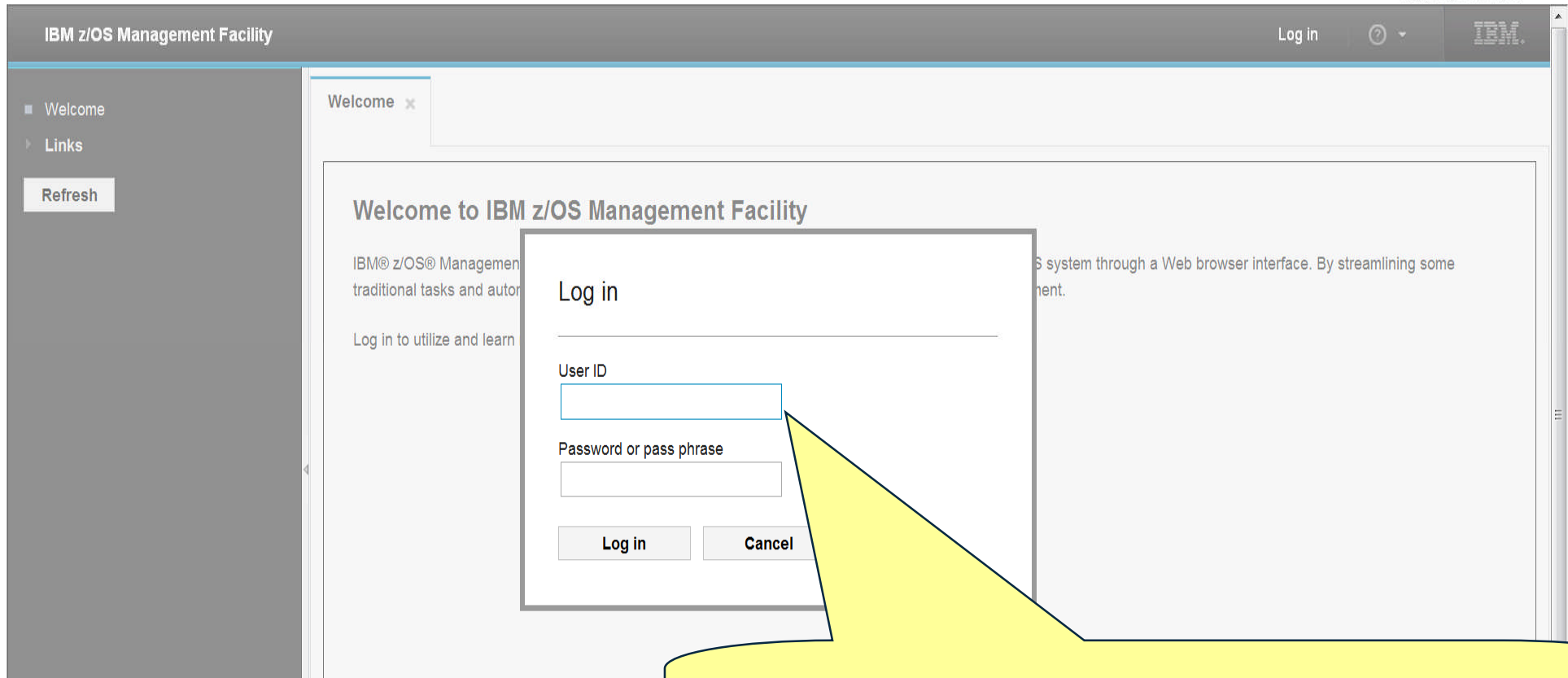
Launching zosmfServer (WebSphere Application Server/wlp-1.0.9.cl50620150610-1749

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z/OSMF Log in Pop-up Window

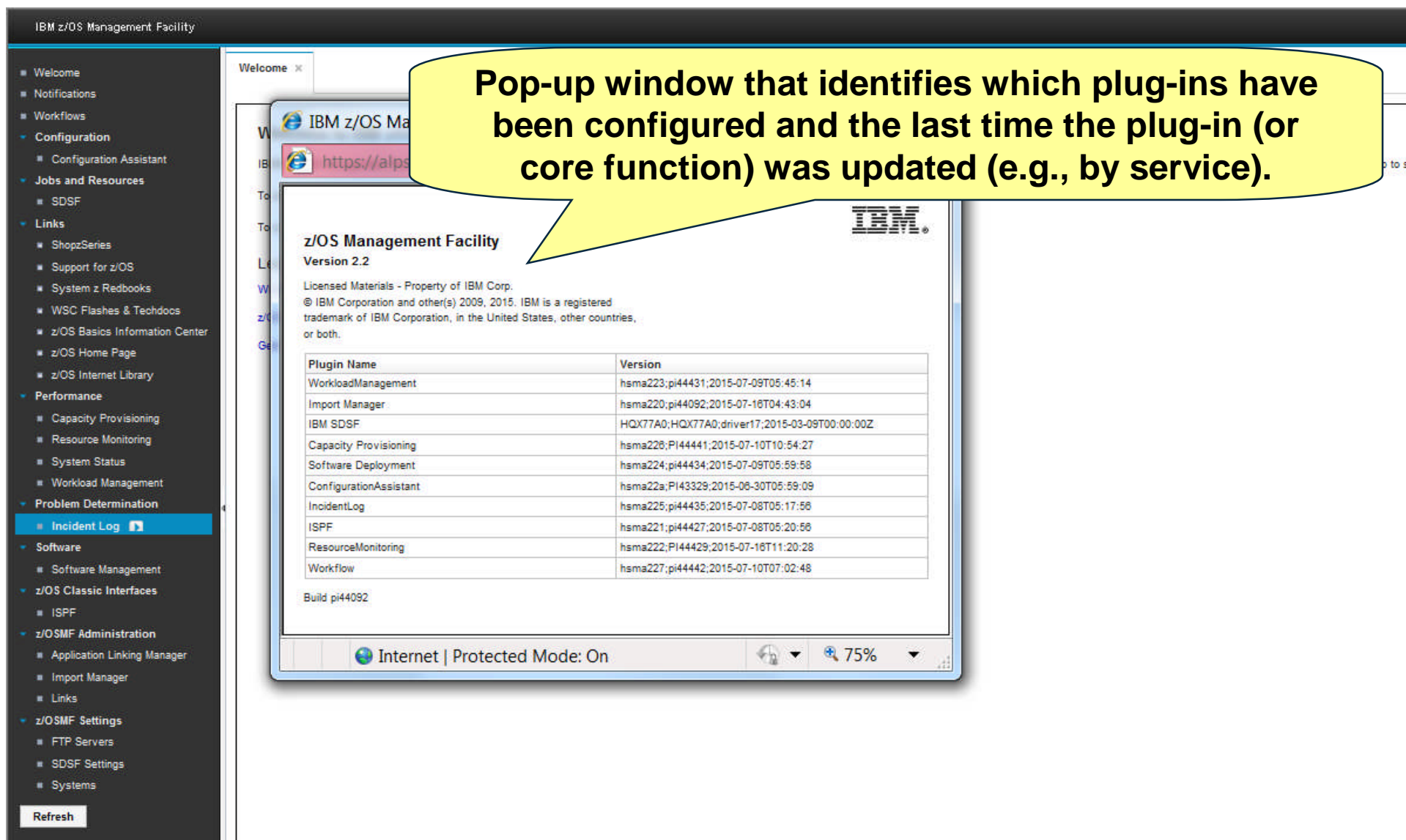


The screenshot shows the IBM z/OS Management Facility interface. A 'Log in' pop-up window is centered on the screen. The pop-up has a title bar 'Log in' and contains two input fields: 'User ID' and 'Password or pass phrase'. Below the fields are two buttons: 'Log in' and 'Cancel'. The background shows the main interface with a 'Welcome' tab and a 'Refresh' button.

Secure authentication to z/OS host using regular z/OS User ID and password.

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z/OSMF About Pop-up Window



Pop-up window that identifies which plug-ins have been configured and the last time the plug-in (or core function) was updated (e.g., by service).

Plugin Name	Version
WorkloadManagement	hsm223;pi44431;2015-07-09T05:45:14
Import Manager	hsm220;pi44092;2015-07-16T04:43:04
IBM SDSF	HQX77A0;HQX77A0;driver17;2015-03-09T00:00:00Z
Capacity Provisioning	hsm228;PI44441;2015-07-10T10:54:27
Software Deployment	hsm224;pi44434;2015-07-09T05:59:58
ConfigurationAssistant	hsm22a;PI43329;2015-06-30T05:59:09
IncidentLog	hsm225;pi44435;2015-07-08T05:17:56
ISPF	hsm221;pi44427;2015-07-08T05:20:56
ResourceMonitoring	hsm222;PI44429;2015-07-16T11:20:28
Workflow	hsm227;pi44442;2015-07-10T07:02:48

Build pi44092

Agenda

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Use of z/OSMF Workflow for Configuration

- Using the z/OSMF Workflow enables you to follow a step by step procedure to configure the z/OS functions needed for one or more z/OSMF plug-ins.
- Specifically, it allows you to:
 - Assign individual steps to different z/OSMF users
 - Notify z/OSMF users when steps are assigned to them
 - Allowing them to accept the task (agree to perform it)
 - Track the progress of your configuration
 - Notify z/OSMF users when steps a step assigned to them is ready to run
 - Assist you in performing some tasks, or walking you though the latest documentation for others
- The workflow is planned to be enhanced 4Q2015 to support the new z/OSMF V2.2 configuration changes*

* Planned. All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.
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Agenda

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- **Background**
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- **Authorizing users to z/OSMF**

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Adding Optional z/OSMF Plug-ins

- Your decision on which plug-ins to configure will depend on your installation's desire to use the function, and your readiness to perform the various z/OS system requisite customization associated with each plug-in.
- When planning for z/OSMF, review the system pre-requisites for each plug-in
- To add a plug-in, you must:
 1. **Define z/OS prerequisites for the Plug-in**
 - Workflow planned for 4Q2015*
 2. **Define security definitions for the Plug-in**
 - Use SAMPLIB(IZUxxSEC) or Configuration Guide
 3. **Create/update an IZUPRMxx PARMLIB member adding the Plug-in to the list of plug-ins to be used.**
 - See slide 26

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- **Authorizing users to z/OSMF**

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Adding External Plug-ins (e.g., SDSF)

- Besides the optional plug-ins that are supplied with z/OSMF, your installation can choose to add plug-ins from other sources (IBM or other vendors) to your configuration.
 - For example, the z/OS System Display and Search Facility (SDSF) product supplies a plug-in for use with z/OSMF.
 - For the installation and customization requirements for a particular plug-in, see the documentation that is provided with the plug-in.
- To add the SDSF task to z/OSMF, you import a properties file through the Import Manager task of z/OSMF, which is in the z/OSMF Administration category.
 - The properties file for SDSF is /usr/lpp/sdsf/zosmf/sdsf.properties
- The function provided by the SDSF task in z/OSMF is protected just as z/OS SDSF is protected, with the same SAF resources and ISFPARMS parameters.

z/OSMF Import Manager

- Use the Import Manager to import or view property files and to manage the import history.
- Use the Import tab in the Import Manager task to import property files into z/OSMF.
 - You can use property files to add new links, event types, or event handlers to z/OSMF, or to add, modify, or remove plug-ins.
- Use the History tab in the Import Manager task to view a list of the import requests and the results of each request, to display the contents of a property file, and to view the messages returned for an import request so you can determine the root cause of a problem.
- Use the View Property File tab to view the contents of a property file.
 - The contents (properties) are specified as name and value pairs, and the supported properties depend on whether you are defining a property file for links, event types, event handlers, or plug-ins.

Import Manager



Import Manager

Support for z/OS

- System z Redbooks
- WSC Flashes & Techdocs
- z/OS Basics Information Center
- z/OS Home Page
- z/OS Internet Library

Performance

- Capacity Provisioning
- Resource Monitoring
- System Status
- Workload Management

Problem Determination

- Incident Log

Software

- Software Management

z/OS Classic Interfaces

- ISPF

z/OSMF Administration

- Application Linking Manager
- Import Manager**
- Links

z/OSMF Settings

Refresh

Welcome x

Welcome to IBM z/OS Management Facility

IBM® z/OS® Management Facility (z/OSMF) provides a framework for managing various aspects of a z/OS system. traditional tasks and automating others, z/OSMF can help to simplify some areas of z/OS system management.

Log in to utilize and learn more about z/OSMF.

Check browser and operating system

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z/OSMF Import Manager



IBM z/OS Management Facility

- Support for z/OS
 - System z Redbooks
 - WSC Flashes & Techdocs
 - z/OS Basics Information Center
 - z/OS Home Page
 - z/OS Internet Library
- Performance
 - Capacity Provisioning
 - Resource Monitoring
 - System Status
 - Workload Management
- Problem Determination
 - Incident Log
- Software
 - Software Management
- z/OS Classic Interfaces
 - ISPF
- z/OSMF Administration
 - Application Linking Manager
 - Import Manager**
 - Links
- z/OSMF Settings

Refresh

Welcome x Import Manager x

Import Manager

Import History Imported Plug-ins

To add plug-ins, event types, handlers, and links in z/OSMF, specify the property file to import. [Learn more...](#)

Property file:

Select or type the path and r View Import

Contents of property Clear

Click View to display the contents of the specified property file.

This is where you specify the properties file for SDSF:
/usr/lpp/sdsf/zosmf/sdsf.properties

Import Manager



IBM z/OS Management Facility

- Welcome
- Notifications
- Workflows
- ▼ Configuration
 - Configuration Assistant
- ▼ **Jobs and Resources**
 - SDSF
- ▼ Links
 - ShopzSeries
 - Support for z/OS
 - System z Redbooks
 - WSC Flashes & Techdocs
 - z/OS Basics Information Center
 - z/OS Home Page
 - z/OS Internet Library
- ▼ Performance
 - Capacity Provisioning
 - Resource Monitoring
 - System Status
 - Workload Management
- ▼ Problem Determination
 - Incident Log
- ▼ Software
 - Software Management
- ▼ z/OS Classic Interfaces
 - ISPF

Welcome x

Welcome to IBM z/OS Management Facility

IBM® z/OS® Management Facility (z/OSMF) provides a framework for managing various aspects of a z/OS system through a Web browser interface. E simplify some areas of z/OS system management.

[Log in to utilize and learn more about z/OSMF.](#)

Check browser and operating system

After you import the SDSF properties file, and define the security definitions, authorized users will see the “Jobs and Resources” category and the SDSF Plug-in

Agenda

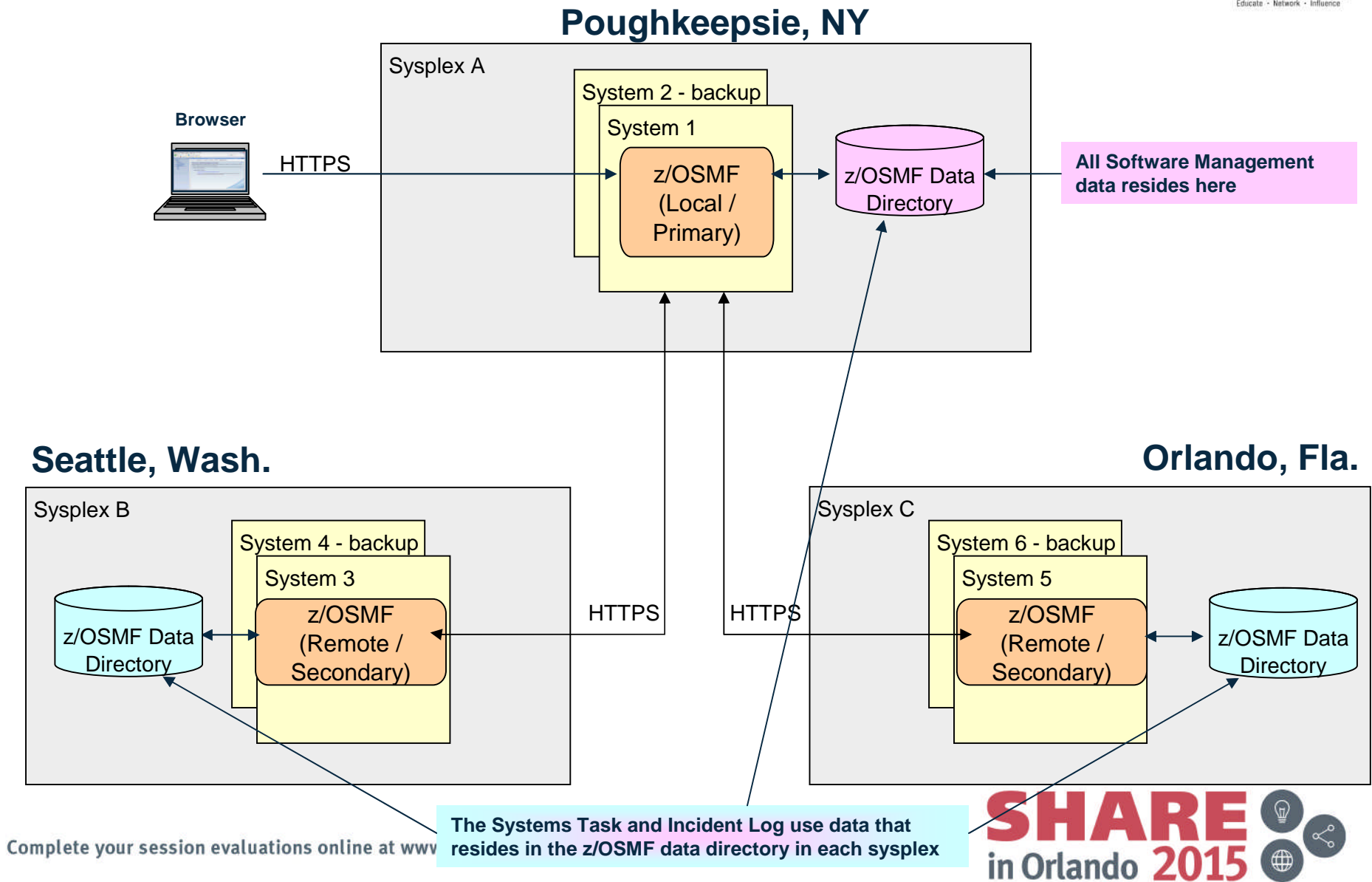
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Secure Communication Between z/OSMF Instances

- **Authorizing users to z/OSMF**

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Managing Multiple Sysplexes



Planning for Secure Communication Between z/OSMF Instances



- **The primary instance communicates with other z/OSMF instances through Secure Sockets Layer (SSL) connections.**
 - Each SSL connection requires an exchange of digital certificates, which are used to authenticate the z/OSMF server identities.
 - For the SSL connection to be successful, the primary instance must be configured to trust the server certificates from the secondary instances.
- **For signing the server certificates, each instance uses a certificate authority (CA) certificate.**
 - Establishing a trust relationship between instances will require knowing which CA certificate is used to sign each secondary instance server certificate.
 - **If you have not yet created any secondary instances of z/OSMF, you might find it easier to create one CA certificate and use it to sign all of the server certificates in the primary and secondary instances.**
- **If your installation uses separate security databases, you must ensure that the appropriate certificates are shared by the participating z/OSMF instances.**

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Single Sign On

- **Single sign-on (SSO)** enables users to log into one z/OSMF instance and to access other z/OSMF instances without getting prompted to log in again.
- z/OSMF uses the **Lightweight Third Party Authentication (LTPA)** security protocol to enable a secure single sign-on environment among z/OSMF instances.
 - The LTPA protocol uses an LTPA token to authenticate a user with the z/OSMF servers that are enabled for single sign-on.
 - The LTPA token contains information about the user and is encrypted using a cryptographic key.
 - The z/OSMF servers pass the LTPA token to other z/OSMF servers through cookies for web resources.
 - If the receiving server uses the same key as the *primary z/OSMF server* -- the server that generated the key to be used for SSO, the receiving server
 - decrypts the token to obtain the user information,
 - verifies that the token has not expired, and
 - confirms that the user ID exists in its user registry.
 - After the receiving server validates the LTPA token, the server authenticates the user with that z/OSMF instance, and allows the user to access any resource to which the user is authorized.

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Single Sign On ...

- To establish a single sign-on environment for z/OSMF, the following requirements must be satisfied:
 - The z/OSMF servers participating in the single sign-on environment must reside in the same LTPA domain as the primary z/OSMF server.
 - The LTPA domain name is the parent portion of the fully qualified hostname of the z/OSMF servers.
 - For example, if the fully-qualified hostname is *server.yourco.com*, the LTPA domain is *yourco.com*.
 - The servers must share the same LTPA key.
 - For z/OSMF, this is accomplished by invoking the **Enable Single Sign-on** action to synchronize the LTPA key on the primary and secondary z/OSMF servers.
 - For instructions, see the z/OSMF online help.
 - The user ID of the user must exist and be the same in all System Authorization Facility (SAF) user registries.
 - It is recommended that you use the same user registry settings for all z/OSMF servers so that users and groups are the same, regardless of the server.
 - The value specified for the SAF prefix during the z/OSMF configuration process must be the same for each z/OSMF server you want to enable for single sign-on.
 - By default, the z/OSMF SAF prefix is IZUDFLT.

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Agenda

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- **Background**
 - z/OSMF V1 (R11-R13) Configuration
 - z/OSMF V2.1 Configuration
- **Configuration Changes for z/OSMF V2.2**
 - New user setup to configure z/OSMF “base”
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Authorizing users to z/OSMF

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Authorizing existing z/OS users to z/OSMF



- **Setting up Security**

- You could run a modified SAMPLIB(IZUAUTH)
 - You have to edit the job to:
 - Select the z/OSMF role
 - Change “USERID” to the desired user ID
 - Determine if the user needs access to the Capacity Provisioning groups (CPOCTRL and CPOQUERY), Workload Management group (WLMGRP), and the CIM administration group (CFZADMGP)
- If your installation uses a security management product other than RACF, do not use the SAMPLIB member
 - Instead, your installation must create equivalent commands for your security product.
 - See Appendix A in the z/OSMF Configuration Guide for a list of resources, groups, IDs, and authorizations that need to be defined to your security product.

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Summary

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Summary (1 of 3)

- **Configuration Changes Enabled by PTF UI90027 (available August 5, 2015)**
 - Eliminate the use of z/OS UNIX shellscripts to configure z/OSMF
 - Use PARMLIB to specify configuration parameters
 - Provide sample members for: PARMLIB, security definitions, and creation/migration of z/OS UNIX filesystem
 - Utilize z/OSMF Workflows to provide a graphical interface step the user through plug-in prerequisite configuration
 - The workflow is planned to be enhanced 4Q2015 to support the new z/OSMF V2.2 configuration changes*
 - Documented in the IBM z/OS Management Facility Configuration Guide V2.2 (SC27-8419)
 - Additional documentation in DOC APAR PI46099
 - **The PTF will be installed in all z/OS V2.2 ServerPacs!!!**

* Planned. All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

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Summary (2 of 3)



- **New user setup to configure z/OSMF “base”**
 1. **Setting up security**
 2. **Creating the z/OSMF z/OS UNIX filesystem**
 3. **Optionally, configuring z/OSMF parameters**
 4. **Ensure that the SMP/E installed procedures are in your JES PROCLIB concatenation**
 5. **Starting the z/OSMF server**
 6. **Update PARMLIB members or automation for subsequent IPLs**
- **Existing user migrating to z/OSMF V2.1**
 1. **Run izumigrate.sh to build a customized IZUPRMxx based on your existing configuration**
 2. **Setting up security**
 3. **Migrate the z/OSMF z/OS UNIX filesystem**
 4. **Ensure that the SMP/E installed procedures are in your JES PROCLIB concatenation**
 5. **Modify the Start parameters for the z/OSMF server**
 6. **Update PARMLIB members or automation for subsequent IPLs**

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Summary (3 of 3)



- **Unsolicited feedback from an ESP customer:**
 - **“PTF UI90027 (the "new" z/OSMF configuration fix) is applied, I actually waited for this before I started to implement z/OSMF... I really like this new way of configuring z/OSMF!”**

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Shameless Plug

- **You can try some of these great functions THIS WEEK!!!**
 - Without having to install or configure z/OSMF
 - **Just attend one of the z/OSMF Hands-On Lab sessions**
 - **z/OS SDSF using z/OSMF**
 - **z/OSMF Configuration Assistant**
 - **z/OSMF Incident Log**
 - **z/OSMF Software Deployment**
 - **z/OSMF Software Management**
 - **z/OSMF Workload Management**
 - **z/OSMF Workflows**
 - **One more opportunity on Thursday session 17909**
 - You can follow self guided instructions on how to use a number of z/OSMF functions
 - You can perform multiple exercises and attend more than one lab session
- **Separate Lab for:**
 - **z/OSMF Resource Monitoring**

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Thank You



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Additional information

- **z/OS Management Facility website**
 - <http://www-03.ibm.com/systems/z/os/zos/features/zosmf/index.html>
- **IBM z/OS Management Facility Browser Compatibility**
 - http://www-03.ibm.com/systems/z/os/zos/features/zosmf/browser_notes.html
- **z/OS Management Facility Publications**
 - <http://www-03.ibm.com/systems/z/os/zos/features/zosmf/moreinfo/>
 - IBM z/OS Management Facility Configuration Guide (SC27-8419)
 - IBM z/OS Management Facility Programming (SC27-8420)
- **z/OS Management Facility Resource Requirements**
 - <http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP101779>
- **z/OS Management Facility Downloads**
 - <http://www-03.ibm.com/systems/z/os/zos/features/zosmf/downloads/>

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Notes:

Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

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