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IBM Corporation

What's New in z/OSMF V2.1

9.0

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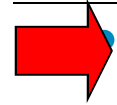
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Agenda

- **Overview of z/OS Simplification Efforts**
  - **The z/OS Management Facility (z/OSMF)**
- **What's New in z/OSMF V2.1**
  - **Use of the WebSphere Application Server Liberty profile**
  - **Workflows**
  - **Support for External Applications**
- **z/OSMF Management Tasks**
  - **Configuration**
  - **Performance**
  - **Problem Determination**
  - **Software**
  - **z/OS Classic Interface: ISPF**
- **Other z/OSMF Capabilities**
  - **Security**
  - **Internet and Intranet Links**
  - **System**
  - **Programmatic Interface for z/OSMF**

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Focus Areas for Simplification

Problem Management & Analysis

...toring z/OS system health; ...g real and pote... ...alyzing and ...

- Run Time Diagnostics
- Predictive Failure Analysis
- z/OSMF
- Auto-IPL
- ...R Auto Reply
- zAware

Configuration

...ding or changing z/OS ...ents; enabling ne... ...an ...olicies ...affect ...

- Capacity Provisioning
- z/OSMF
- IBM Health Checker
- HMC complex-wide Activate
- CF Sizer
- zDAC

Simplify and modernize the user experience and programming requirements

Task-oriented br... ...d user-interface; end-to-end task simplification ; ...iminating opportunity for error

Infor...

Finding the informati... ...d to use z/OS

- LookAT
- z/OSMF
- IBM Education Assistant

Installat... ...ration, & M...

...stal... ...checks ...ay... ...sar... ...cts th... ...r ...
...ep...ying ...s... ...are ...

- ShopzSeries
- Electronic Delivery
- z/OSMF
- Programmatic Processing of Fix Categories
- Generic Tracker
- SMP/E Internet Service Retrieval
- SMP/E ISPF split screen

What is z/OSMF?

- **IBM z/OS Management Facility (z/OSMF) delivers on IBM's strategy for mainframe simplification and modernization**

  - The IBM z/OS Management Facility is a separate product for z/OS 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.

- **z/OSMF V2.1 has it's own product number 5610-A01 and must be separately ordered**

  - It can be ordered <u>with z/OS in the same ServerPac</u>

  - Can be ordered in a CBPDO (with or without other products)

    - Can also be ordered in a "Product" ServerPac

  - Service & Subscription program number is 5655-S29

    - This must be ordered for support
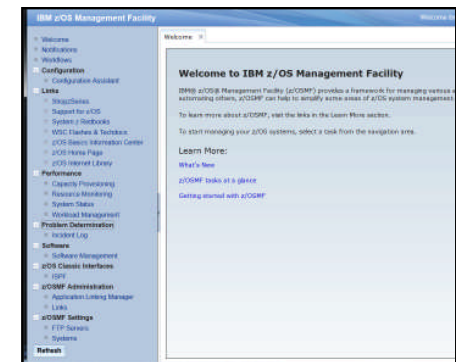
z/OS Management Facility

Problem Management & Analysis	Installation, Migration, & Maintenance	Configuration

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 the richer display capabilities 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 UI91005)**
- **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.
- The ability to add non-z/OSMF launch points and links to any category in the navigation tree allows a central tool for effective information and knowledge sharing.
- **Notifications (z/OSMF V2.1)** View and act on the z/OSMF notifications that have been assigned to you
- **Import Manager (z/OSMF V2.1 with PTF UI16044)** Import 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 UI91005)**

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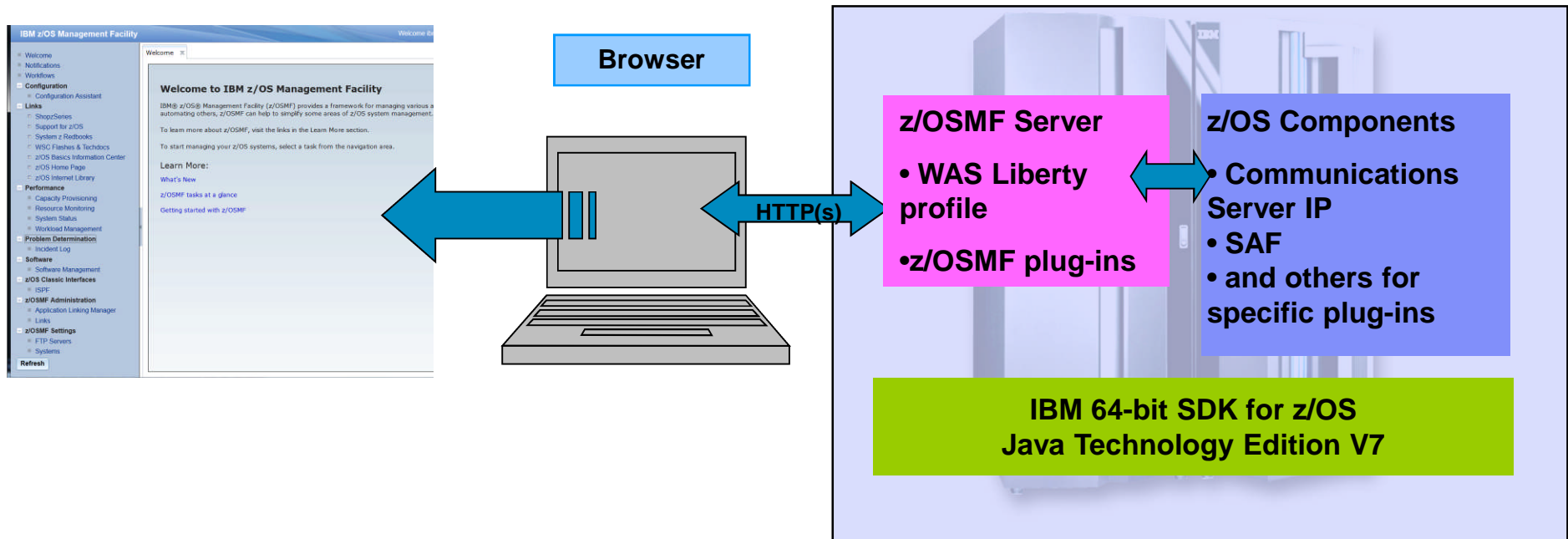
Capacity Provisioning (z/OSMF V1.13) simplify the work of a z/OS CP administrator to manage connections to CPMs, view reports for domain status, active configuration and active policy.

IBM z/OS Management Facility
The Application Stack

Browser

HTTP(s)

z/OSMF Server
- WAS Liberty profile
- z/OSMF plug-ins

z/OS Components
- Communications Server IP
- SAF
- and others for specific plug-ins

IBM 64-bit SDK for z/OS Java Technology Edition V7

- The z/OS Management Facility applications run on the z/OS enabling you to manage z/OS from z/OS
  - Information is presented on a PC using a browser
- The z/OS Management Facility requires:
  - z/OS Communications Server
  - Security definitions (SAF)
  - Other components are required for specific z/OSMF plug-ins
  - IBM 64-bit SDK for z/OS Java Technology Edition V7 (or 7.1)

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IBM z/OS Management Facility

IBM z/OS Management Facility   Welcome ibmuser

Welcome ✕

- Welcome
- Notifications
- Workflows
- Configuration
  - Configuration Assistant
- 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
- z/OSMF Administration
  - Application Linking Manager
  - Links
- z/OSMF Settings
  - FTP Servers
  - Systems

Refresh

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 brows automating others, z/OSMF can help to simplify some areas of z/OS system management.

To learn more about z/OSMF, visit the links in the Learn More section.

To start managing your z/OS systems, select a task from the navigation area.

Learn More:

What's New

z/OSMF tasks at a glance

Getting started with z/OSMF

> After logging on, you can click on What's New to see new functions

IBM z/OS Management Facility – What's New

Use of the WebSphere Application Server Liberty Profile

- **Runs on smaller configurations**
  - Requires available CPU resource equivalent to a processor with a processor capacity index (PCI) of at least 45.
- **Initializes faster**
  - z/OSMF startup time varies considerably depending upon many factors.
    - These include CPU resource, z/OSMF Server configuration, number of starting applications, type of applications, etc.
    - In the laboratory, we have observed z/OSMF startup time to be approximately 30 seconds in a zEC12 LPAR consisting of one dedicated CPU
      - For the LPAR for the conference labs, startup time is about 10 seconds
      - However, the time was approximately 8 minutes with a minimally configured system.
- **Uses less CPU**
- **Uses less memory**
  - Requires one gigabyte (1 GB) of central storage.
    - This amount is in addition to your existing storage allocation for other applications running in the same z/OS system.
- **Installation of service is easier**
  - You no longer have to run a script (izusetup –service)

Workflow Definition

- **Wikipedia**
  - A **workflow** consists of an orchestrated and repeatable pattern business activity enabled by the systematic organization of resources into processes that transform materials, provide services, or process information.
  - It can be depicted as a sequence of operations, declared as work of a person or group, an organization of staff, or one or more simple or complex mechanisms.

- **BusinessDictionary.com**
  - A **workflow** is a progression of steps (tasks, events, interactions) that comprise a work process, involve two or more persons, and create or add value to the organization's activities.
  - In a sequential workflow, each step is dependent on occurrence of the previous step; in a parallel workflow, two or more steps can occur concurrently.

z/OSMF Workflow Application

- **The z/OSMF Workflow application enables a Workflow provider (vendor or user) to define a guided flow through steps to accomplish a task.**
- **Step is the basic unit of workflow:**
  - Steps may instruct the user to perform a task via:
    - Documentation or
    - Invoke wizards that guide the user to perform the task. Wizards can:
      - Update and submit jobs,
      - Execute shell scripts, and
      - Run REXX EXECs
  - Steps may define dependencies on other steps
  - Steps may be assigned to an individual or a specific role, such as
    - "systems programmer"
    - "security administrator"
  - Steps may be performed manually or automatically

User Scenario (Product Configuration)

- **The system programmer installs a product's code that provides a z/OSMF Workflow for its configuration.**

- **The person that will configure the product logs on to z/OSMF and creates a new workflow from file provided by the product.**
  - z/OSMF prompts the user to provide the fully qualified location
    - z/OSMF reads in the metadata file(s) and creates a workflow instance

  That person becomes the workflow owner

- **The owner can then start by opening the workflow instance**
  - The owner can now view and assign tasks to either individual SAF users or a role (group of users)

- **Assignees will then get notified that tasks are assigned to them**

- **Each assignee then accepts the tasks and can perform the steps when they are ready.**

- **Everyone can track the progress of the workflow and view what steps have been completed, what steps are ready, and what steps are waiting**

Demo of a Simple Workflow

- **Purpose of this workflow:**
  - Allow a user to use z/OSMF
    1. z/OSMF Administrator identifies the user name and role
    2. Security Administrator does the actual security changes

- Process:
  - Create the workflow instance
  - Workflow owner assign steps to the appropriate person/role
  - Assignee gets notified a workflow step has been assigned to them
  - Assignee accepts steps
  - Assignee check if steps are ready for perform
  - Assignee performs the step(s)
    - Manually
    - Automated
  - Users can review the workflow History

Create the Workflow Instance

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z/OSMF Workflow Instance Display

IBM z/OS Management Facility   Welcome zosmfad   Log out   IBM.

Welcome ✕ Workflows ✕

Workflows ▸ Simple workflow for demo   Help

Simple workflow for demo

Notes, History

Notes | History

Description:
Sample workflow for d...

**Progress bar
(Support weight value)**

Owner:
zosmfad

System:
PLEX1.SY1

Percent complete:

Steps
complete:

Status:

0%

0 of 3

In Progress

Step status

Workflow Steps

Actions ▼   Search

Automatic Indication

Current assignee

State Filter	No. Filter	Title Filter	Automated Filter	Owner Filter	Skill Category Filter	Assignees Filter
Unassigned	1	▪ Plan User ID and Group Name	Yes		zOSMF Administrator	
Unassigned	2	☐ Make security changes				
Unassigned	2.1	▪ Creat user	Yes		Security Administrator	
Unassigned	2.2	▪ Connect user to a group	Yes		Security Administrator	

**All steps initially
unassigned**

**Several steps can be expanded to
show individual tasks**

Required skill category:

• System Programmer

• Security Administrator

Total: 4, Selected: 0

Workflow Owner Assigns Steps

		State Filter	No. Filter	Title Filter
☐		➡ Assigned	1	■ Plan User ID and Group Name
☑		Unassigned	2	⊟ Make security changes
☑				■ Creat user
☑				■ Connect user to a group

Properties
Accept
Perform
Skip
Status
Override Complete
Resolve Conflicts
Assignment And Ownership ▶   Add Assignees...
Expand   Remove Assignees...
Collapse   Take Ownership

Total: 4, ...

Welcome ✕ | Workflows ✕
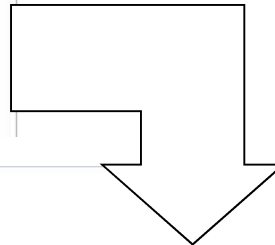
Workflows ▶ Simple workflow for demo ▶ Add Assignees   Help

Add Assignees

Select one or more SAF user IDs, SAF groups or z/OSMF roles to be assigned to the selected steps.

▶ Selected Steps

Available assignees

☑	Actions ▼	
	Name Filter	Type Filter
☑	z/OS Security Administrator	z/OSMF role
☐	z/OSMF Administrator	z/OSMF role
☐	z/OSMF User	z/OSMF role

Add >
Add All >>
< Remove
<< Remove All

✱ Assignees to be added:
z/OS Security Administrator

Additional SAF users can be added and assigned tasks

Total: 3, Selected: 1

Comments:
Workflow owner assigns these security related steps to Security Administrator

☑ Send z/OSMF notifications to assignees (comments are not included on notifications)

OK   Cancel

Assignee gets Notified

State is now Assigned

Assignee Accepts Steps

Accept step

Input comments if desired

State will be Ready or Not Ready

z/OSMF Dependency Checking

Assignee Performs Step Manually

State	No.	Title
Filter	Filter	Filter
☑ Ready	1	Plan User ID and Group Name
In Pro...		Make security changes
Not...		Creat user
Not...		Connect user to a group

Properties menu:
- Properties
- Accept
- **Perform**
- Skip
- Status
- Override Complete
- Resolve Conflicts
- Assignment And Ownership ▶
- Expand
- Collapse

Welcome ✕ | Workflows ✕

Workflows ▶ Simple workflow for demo ▶ 1. Plan User ID and Group Name

Properties for Workflow Step 1. Plan User ID and Group Name

| General | Details | Notes | Perform | Status |

- ✓ Input Variables
  - ⇨ User information
  - Group information
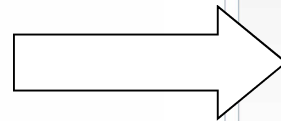 - Review Instructions

Input Variables - Use...
Enter the variable values for this... ategory.

✦User name - *The user name to be created:* ⓘ
CJOEY

✦UID - *z/OS UNIX System Services UID:* ⓘ
5008

User's input

[< Back] [Next >] [Save] [Finish] [Cancel]

Welcome ✕ | Workflows ✕

Workflows ▶ Simple workflow for demo ▶ 1. Plan User ID and Group Name

Properties for Workflow Step 1. Plan User ID and Group Name

| General | Details | Notes | Perform | Status | Input Variables |

- ✓ Input Variables
  - ✓ User information
  - ✓ Group information
  - ⇨ Review Instructions

Review Instructions
Review and confirm the instructions provided below have been performed on **PLEX1.SY1**, then click **Finish** to mark the step complete.

Documentation is changed accordingly

Instructions:
The following user will be added by lat... ...ep:
user name: CJOEY
user id: 5008
And CJOEY will be connected to existing group IZUUSER.

[< Back] [Next >] [Save] [Finish] [Cancel]

Next Step is Now Ready to be Performed (Wizzard to submit a Job)

Perform options
- **Notice that steps can be performed automatically or manually**

State Filter	No. Filter	Title Filter
✔ Complete	1	Plan User ID and Group Name
☐ In Progress	2	Make security changes
⇨ Ready	2.1	Creat user
No		Connect user to a group

Properties
Accept
Perform
Skip
Status
Override Complete
Resolve Conflicts
Assignment And Ownership ▶
Expand
Collapse

Perform Automated Step

The selected step can be performed automatically. How would you like to proceed?

○ Automatically perform the selected step, and all subsequent automated steps, according to their declared step dependencies, until one of the following occurs:

- all workflows steps have been completed.
- a non-automated, non-Complete step, is reached, or
- an error occurs.

○ Automatically perform the selected step only.

◉ Manually perform the selected step.

When input file variable conflicts occur:

◉ Always use input file values. Existing values will be overwritten and automation will continue.

○ Always keep existing values. Input file values will be ignored and automation will continue.

○ Allow step or workflow owner to choose whether the input file value or existing value should be used for each conflicting variable. Automation will be stopped.

[OK] [Cancel] [Help]
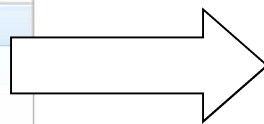
| General | Details | Notes | Perform | Status | Input Variables |

✔ Input Variables
⇨ User information
✔ Review Instructions
✔ Create JOB statement
✔ Review JCL
　 Submit and Save JCL

Input Variables - User information

Enter the variable values for this input category.

Customize embedded JCL via Input

*User name- *The user name to be created:* ⓘ
`CJOEY`

*UID- *z/OS UNIX System Services UID:* ⓘ
`5008`

t IBM Corpo

| General | Details | Notes | Perform | Status | Input Variables |

✔ Input Variables
　 ✔ User information
✔ Review Instructions
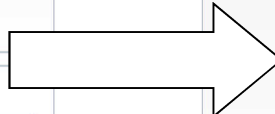✔ Create JOB statement
⇨ **Review JCL**
　 Submit and Save JCL

Review JCL

Review the generated JCL, then click **Next** to proceed. Optionally, you can edit

```
//IZUWFJB JOB (ACCTINFO),CLASS=A,MSGCLASS=0,
//          MSGLEVEL=(1,1),REGION=0M,NOTIFY=IBMUSER
/*JOBPARM  SYSAFF=SY1
//STEP1        EXEC  PGM=IKJEFT01,DYNAMNBR=20
//SYSTSPRT  DD    SYSOUT=A
//SYSTSIN   DD    *
ADDUSER     CJOEY NOPASSWORD OMVS(UID(5008))
/*
```

[Edit JCL] Maximum record length: ⓘ `1,024`

[< Back] [Next >] [Save] [Finish] [Cancel]

Assignee Performs Step Automatically

Automation indication

Step 2.2 will be automatically started

Automation Done

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Review History

Welcome ✕ | Workflows ✕

Workflows ▸ Simple workflow for demo ▸ History

History for Simple workflow for demo

Actions ▼

	Date and Time (GMT) Filter	Action Filter	Messages [More	Less] Filter	User ID Filter	Comments [More	Less] Filter
○	Jul 23, 2014, 2:37:19 PM	Workflow Created	IZUWF0020I:The workflow name is set to "Simple workflow for demo" . IZUWF0021I:The workflow owner is set to "zosmfad" . IZUWF0022I:The workflow system is set to "SY1" . [More]	zosmfad	
○	Jul 23, 2014, 2:44:21 PM	Step Assigned	IZUWF0025I:The following users have been assigned to step "Plan User ID and Group Name" : Users: "z/OSMF Administrator" IZUWF0026I:Step "Plan User ID and Group Name" has changed to state "Assigned" .	zosmfad	
○	Jul 23, 2014, 2:54:57 PM	Step Assigned	IZUWF0025I:The following users have been assigned to step "Creat user" : Users: "z/OS Security Administrator" IZUWF0026I:Step "Creat user" has changed to state "Assigned" . [More]	zosmfad	Workflow owner assigns these security related steps to Security Administrator.
○	Jul 23, 2014, 3:07:12 PM	Step Accepted	IZUWF0045I:User "ibmuser" has accepted step "Creat user" . This user is now the step owner. IZUWF0026I:Step "Creat user" has changed to state "Not Ready" . IZUWF0045I:User "ibmuser" has accepted step "Connect user to a group" . This user is now the step [More]	ibmuser	Security Administrator accepts these steps.
○	Jul 23, 2014, 3:10:42 PM	Step Accepted	IZUWF0045I:User "zosmfad" has accepted step "Plan User ID and Group Name" . This user is now the step owner. IZUWF0026I:Step "Plan User ID and Group Name" has changed to state "Ready" .	zosmfad	z/OSMF admin accepts this step to plan the user name to be created.
○	Jul 23, 2014, 3:30:55 PM	Step Completed	IZUWF0026I:Step "Plan User ID and Group Name" has changed to state "Complete" . IZUWF0026I:Step "Creat user" has changed to state "Ready" .	zosmfad	
○	Jul 23, 2014, 3:38:56 PM	Automation Started	IZUWF0160I:The automation processing for workflow "Simple workflow for demo" has been started by user "ibmuser" from step "Creat user" .	ibmuser	
○	Jul 23, 2014, 3:38:56 PM	Submitted	IZUWF0026I:Step "Creat user" has changed to state "Submitted" .	ibmuser	
○	Jul 23, 2014, 3:38:57 PM	Step Completed	IZUWF0026I:Step "Creat user" has changed to state "Complete" . IZUWF0026I:Step "Connect user to a group" has changed to state "Ready" .	ibmuser	
○	Jul 23, 2014, 3:38:59 PM	Automate Step Complete	IZUWF0164I:Automation processing for step "Creat user" is complete.	ibmuser	
○	Jul 23, 2014, 3:38:59 PM	Submitted	IZUWF0026I:Step "Connect user to a group" has changed to state "Submitted"	ibmuser	

Total: 15, Selected: 0

z/OSMF Workflow Application

- **The z/OSMF Workflow application is useful to:**
  - Assist people unfamiliar with how to perform a given task, or a task that they perform rarely
  - Ensure that all tasks are performed in the right order and only when their dependencies have been met
  - Ensure that all steps are completed
    - Even if many of the tasks have been delegated to a number of different colleagues
  - Monitor and track progress toward the completion of the task
  - Provide a history (audit trail) of the steps performed for a task
  - Perform the same tasks on multiple systems
    - Enabling a function (e.g. z/OSMF)
    - Migrating a new release of software (e.g., z/OS)

z/OSMF Workflow Exploitation

- **z/OSMF V2.1 has limited exploitation of the Workflow application**
  - z/OSMF V2.1 Configuration Assistant can create seven new workflows, and uses the Workflow engine to setup the policy agent and other daemons.
  - z/OSMF V2.1 with PTF UI90005 delivers a z/OSMF configuration workflow.
    - This PTF enhances the configuration workflow through the discovery functions of z/OS and z/OSMF configuration settings to determine the status of the current setup. **
    - It is located at /usr/lpp/zosmf/V2R1/workflow/izu.config.setup.xml
    - Intent is to enhance it over time and add more capability
    - The configuration guide is still the complete source of information, although the workflow may be used to manage the steps required to setup the system pre requisites at a high level.
  - On the z/OS Downloads web page (http://www.ibm.com/systems/z/os/zos/tools/downloads/index.html) a sample workflow is available to evolve the *z/OS Migration* book into a z/OSMF z/OS V2R1 Migration Workflow.
  - z/OSMF V2.1 includes a number of sample workflow definition files
    - They are located at /usr/lpp/zosmf/V2R1/workflow
    - The samples include a workflow that identifies the z/OS system customization steps for each of the plug-ins.

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

Configuration Workflow **

- In z/OSMF V2.1 (GA), configuration workflow provided documentation that described instructions on how the tasks could be performed manually.

- In 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.

- In z/OSMF V2.1 (PTF UI90005) **, by exploiting new feature of workflow (variable from step execution), configuration workflow provides some discovery functions and Import function of z/OSMF configuration properties.

	State Filter	No. Filter	Title Filter	Automated Filter
	➡ Ready	1	▪ Highlights and pre-reqs of Config Workflow	No
☑	▭ In Progress	2	⊟ Discovery before configuration	
☑	➡ Ready	2.1	▪ Discover general zOS setups	Yes
	➡ Ready	2.2	▪ Discover zOSMF run-time properties	Yes
	↪ Not Ready	3	▪ Review related z/OS and z/OSMF configuration	No
	▭ In Progress	4	⊞ Configuration Assistant plug-in	

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

z/OSMF Plug-in Configuration Workflow

Welcome ✕ | Workflows ✕

Workflows ▸ Workflow to configure z/OSMF plugins

Workflow to configure z/OSMF plugins

📄 Notes | History

Description:
z/OS customization for each z/OSMF plug-in.

Percent complete:

| 0% |

Owner: zosmfad

Steps complete: 0 of 70

System: PLEX1.SY1

Status: ◼ In Progress

Workflow Steps

☑ ☐ | Actions ▾ | Search

State Filter	No. Filter	Title Filter	Automated Filter	Owner Filter	Skill Category Filter	Assignees Filter
Unassigned	1	◼ Highlights and pre-reqs of Config Workflow	No		System Programmer	
Unassigned	2	⊞ Discovery before configuration				
Unassigned	3	◼ Review related z/OS and z/OSMF configuration	No		System Programmer	
Unassigned	4	⊞ Configuration Assistant plug-in				
Unassigned	5	⊞ ISPF plug-in				
Unassigned	6	⊞ Common Information Model (CIM) server				
Unassigned	7	⊞ Workload Management plug-in				
Unassigned	8	⊞ Resource Monitoring plug-in				
Unassigned	9	⊞ Capacity Provisioning plug-in				
Unassigned	10	⊞ Incident Log plug-in				
Unassigned	11	⊞ Add Plug-ins into zOSMF Server				

Total: 92, Selected: 0

[Return to Workflows] [Refresh] Last refresh: Jul 17, 2014, 4:14:31 PM local time (Jul 17, 2014, 8:14:31 AM GMT)

✦ **Steps needed for Incident Log**

z/OSMF Plug-in Configuration Workflow

Workflow Steps

	State Filter	No. Filter	Title Filter
	In Progress	9	Capacity Provisioning plug-in
	In Progress	10	Incident Log plug-in
	Complete (Override)	10.1	Ensure that the CIM server is configured
	Complete	10.2	Ensure log snapshots is configured properly
	In Progress	10.3	Set up a sysplex dump directory
	In Progress	10.4	(Optional) Configure dump analysis and elimination (DAE)
	In Progress	10.5	Configuring automatic dump data set allocation
	In Progress	10.6	Ensure that CEA is configured
	In Progress	10.7	Ensure that SYSREXX is config
	In Progress	10.8	Authorizing the data set for AM

Several areas need to be configured
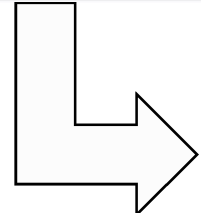
Workflow Steps

	State Filter	No. Filter	Title Filter	Automated Filter
	In Progress	10	Incident Log plug-in	
	Complete (Override)	10.1	Ensure that the CIM server is configured	
	Complete	10.2	Ensure log snapshots is configured properly	No
	In Progress	10.3	Set up a sysplex dump directory	
	Ready	10.3.1	Discover sysplex dump directory	Yes
	Not Ready	10.3.2	Review whether dump directory is already set up	No
	Not Ready	10.3.3	Create a sysplex dump directory data set	Yes
	Not Ready	10.3.4	Update BLSCUSER with the name of created sysplex dump directory	Yes
	Not Ready	10.3.5	Recycle the dump services address space	Yes
	Not Ready	10.3.6	Register the sysplex dump directory with IPCS	Yes
	In Progress	10.4	(Optional) Configure dump analysis and elimination (DAE)	

Each area follows similar structure

PTFs UI90005 and UI90014 (9/30/2014) enhance the Workflows task to enable:

- A workflow step to be designed to save its output in an *output file* which on completion of the step, the contents of the output file become available for use by subsequent steps in the workflow instance, or by other workflow instances. **

- A workflow step to be designed to be performed conditionally, based on whether a logical condition is satisfied on the z/OS system. **

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

Workflow - Variables from a JCL/REXX/Shell script execution**

- With new feature, users can generate variable value dynamically by JCL/REXX/Shell script within a workflow step.

- Typically, an output properties file is used to contain the results of a batch job, shell script, or REXX exec program.

  - On completion of the step, variable values in the output properties file become available for use by subsequent steps in the workflow instance.

    - For example, a step might submit a batch job to create some output data, which is then used as input by a subsequent step.

- The format of output properties file is same as workflow variable input file ---- a list of variable name-value pairs.

  key1 = value1
  key2 : value2
  key3 value3

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

Workflow – Specify output file in definition file **

- Workflow author needs to specify "output" element --- the default path of output file which contains the variable name-value pairs.

- The output file name/path can be derived from input variable value

- In Template file, "$_output" is the reference of output file path.

```xml
<step name="output">
    <title>A step with an output property file</title>
    <description>In this step, you execute a JCL job to generate an output property file.</description>
    <variableValue name="st_user" required="true" noPromptIfSet="true"/>
    <variableValue name="setting0" required="true" scope="global"/>
    <variableValue name="outputFileNameVariable" required="true"/>
    <instructions>
        In this example step, some variable values are generated into a pre-specified output file and after perform, t
    </instructions>
    <weight>5</weight>
    <skills>System Programmer</skills>
    <template>
        <inlineTemplate substitution="true"># shell script to generate some variables from workflow
echo st_user USER001 >> $_output
echo setting0 global001 >> $_output
        </inlineTemplate>
        <submitAs maxRc="0">shell-JCL</submitAs>
        <output substitution="true">/u/tmp/${instance-outputFileNameVariable}</output>
    </template>
</step>
```

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

Properties for Workflow Step 1. A step with an output property file

| General | Details | Notes | Perform | Status | Input Variables |

✓ Input Variables
  ✓ started
  ✓ global variable
⇨ **Output file**
Review Instructions
<u>Edit Output File Path</u>
Create JOB statement
Review JCL
Submit and Save JCL

Input Variables - Output file
Enter the variable values for this inpu[t]

*File name for output file - *Enter a na[me]
out.txt

Properties for Workflow Step 1. A step with an output property file

| General | Details | Notes | Perform | Status | Input Variables |

✓ Input Variables
  ✓ started
  ✓ global variable
  ✓ Output file
✓ Review Instructions
⇨ **Edit Output File Path**
Create JOB statement
Review JCL
Submit and Save JCL

Edit Output File Path
This is the description for the output file path.

Output File Path:

Specify output file path here:
/u/tmp/out.txt

✓ Edit Output File Path
✓ Create JOB statement
⇨ **Review JCL**
Submit and Save JCL

```
//SYSTSPRT DD SYSOUT=*
//*
//SYSIN     DD DUMMY
//*
//SYSUT2    DD PATH='/tmp/IZUWORKFLOW-14031656280180.342171'
//*
//SYSUT1    DD *,DLM=$$
# shell script to generate some variables from workflows task t
echo st_user USER001 >> /u/tmp/out.txt
echo setting0 global001 >> /u/tmp/out.txt

$$
//*
//*************************************************************
```

Edit JCL Maximum record length: ⓘ 1,024

[< Back] [Next >] [Save] [Finish] [Cancel]

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

Workflow – Variable conflict **

- If the JCL/REXX/Shell script runs successfully, workflow will try to load all defined variables from the output file. If those variables have existing values, user should resolve variable conflicts in the "Input Variables" tab:

Properties for Workflow Step 1. A step with an output property file

| General | Details | Notes | Perform | Status | ⚠ Input Variables |

▼ Messages ⊗ 0 ⚠ 1 ℹ 0   Close All

⚠ **IZUWF0176W:** One or more variable values from input file "\u\lucy\out.txt" conflict with existing variable values.   Jun 20, 2014, 4:27:03 PM X

For each conflicting variable, select the desired new value from either the existing or input file value. After all selections have been made, click the **Apply New Value Selections** button to confirm. To quickly clear all New Values or set all New Values to the existing or input file value, click on the menu button(▼)in the header.

Input variables properties file:
\u\lucy\out.txt

All variables in output file that have been defined in the XML definition will be displayed.

☐ Check it only show the conflict variables rows.

Choose the action for all variable conflict

Variable Name	Variable Type	Default Value	Existing Value	Input File Value	New Value	Load or Confli	Step	Last Modified	Description
					▼	Set All to Existing Value			
						Set All to Input File Value			
						Clear all Selections			
setting0	global	setting0	global02	000A	Se		step with an output perty file	A global scope string variable.
st_user	instance	MYSTUSER	MYSTUSER	USERA	Select... ▼	⬌ User Modified Conflict	1.A step with an output property file	User ID for the started task.

Total:2

[Apply New Value Selections...] [Refresh]

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

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Workflow – Conflicts state **

- If user doesn't resolve the variable conflict, the step is in "Conflicts" state, the state label in Workflow Details panel will become a red arrow and most of step actions will be disabled.
- User can select the "Resolve Conflicts" action to open the "Input variables" panel in previous slide.

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

Workflow – Variable conflict action **

- Actions for user to resolve variable conflicts:
  - Select the appropriate value in dropdown list of each row one by one
  - Set All to Existing Value: Set all conflict variable values to existing value, this means all variable values from output file will be ignored
  - Set All to Input File Value: Set all conflict variable values to the values that come fro output file
  - Clear All Selections: Clear all user already selected values and set them all back to "Select..." in the drop down list
  - Apply New Value Selections...: Apply all user selected variable values as the new variable value and set to workflow variable pool
  - Refresh: Get and reload the latest variable values

- After user clicks the "Apply New Value Selections..." button, a warning dialog will popup to ensure that all selections will not able to change any more after click the "Apply" button.

- Element "output" has an optional attribute "needResolveConflicts". The default is true. If set to false, the Workflows task uses the output file variables in place of any existing values without prompting the user. This setting applies to instance variables only; global variables are not overridden by variables in the output.

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

Workflow – Conditional steps feature **

- With the support of conditional step feature, workflow author can specify under what condition a workflow step is ready to perform or skip.
  - This will improve the flexibility for workflow author to control their steps.
- The condition expression can be based on workflow variables and step attributes ("returnCode" and "stepState").

```
<step name="condWithStepAttr">
    <title>A step attribute conditional step</title>        locates between <prereqStep> and <variableValue> if exist
    <description>In this step, step attributes are used in the condition expression.</description>
    <prereqStep name="submitEmptyJCL" />
    <condition>
        <expression><![CDATA[ ${submitEmptyJCL.returnCode} == "0000" ||
        ${variableStep.stepState} == "Skipped" ]]></expression>
        <description>This step state will become "Skipped" when:<br/>
            o - The return code of step "submitEmptyJCL" equals to "0000"<br/>
            o - OR The stepState of step "variableStep" equals to "Skipped";     supports two states: Skipped, Ready (default)
        </description>
        <targetState>Skipped</targetState>
    </condition>
    <instructions>
        In this sample step, step attributes such as "returnCode" and "stepState" are used in the expression of a
        conditional step.
```

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

Workflow – Conditional steps based on variables **

```xml
<step name="condWithVariables">
    <title>A variable conditional step</title>
    <description>In this step, some variable values are used in the condition expression.</description>
    <condition>
        <expression><![CDATA[ ${instance_st_user} == "USERA" || ${global_setting0}
        == "global01" || ${instance_setting1, variableStep} == "test01" ]]>
        </expression>
        <description>This step state will become "Ready" when:<br/>
        o - The value of the instance variable st_user equals to "USERA";<br/>
        o - The value of the global variable setting0 equals to "global01";<br/>
        o - The value of setting1 in step "variableStep" is set to "test01".
        </description>
    </condition>
    <instructions>
        In this sample step, some variables are used in the expression of a workflow conditional step.
```

Whether the value is changed to test01 in specified step

targetState element is omitted. Default is "Ready"

Properties for Workflow S

General | Details | Note

State: Not Ready
Skill category: System Progra

Owner: zosmfad
Assignees: zosmfad

▼ Conditional Dependency

Satisfied: ❌ No

Description:
This step state will become "Ready" when:

o - The value of the instance variable st_user equals to "USERA";

o - The value of the global variable setting0 equals to "global01";

o - The value of setting1 in step "variableStep" is set to "test01".

Expression:
${instance_st_user} == "USERA" || ${global_setting0} == "global01" || ${instance_setting1, variableStep} == "test01"

Expression Variable Values

Variable Name	Step No.	Step Title	Scope	Desired Update Step	Current Value
st_user			instance		
setting0			global		global02
setting1	1	Variable Step	instance	variableStep	

Refresh

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

Workflow – Conditional steps operation **

- After all prerequisites have been complete, workflow will check if the condition of this step is satisfied, then put it in "Not Ready", "Ready" or "Skipped" state accordingly.
- If user try to perform an unsatisfied conditional step, the message IZUWF0181W will show up in the "Perform Override" dialog.
  - User can click on "OK" button to force perform this step with unsatisfying its condition or click "Cancel" button to close the Perform Override dialog.
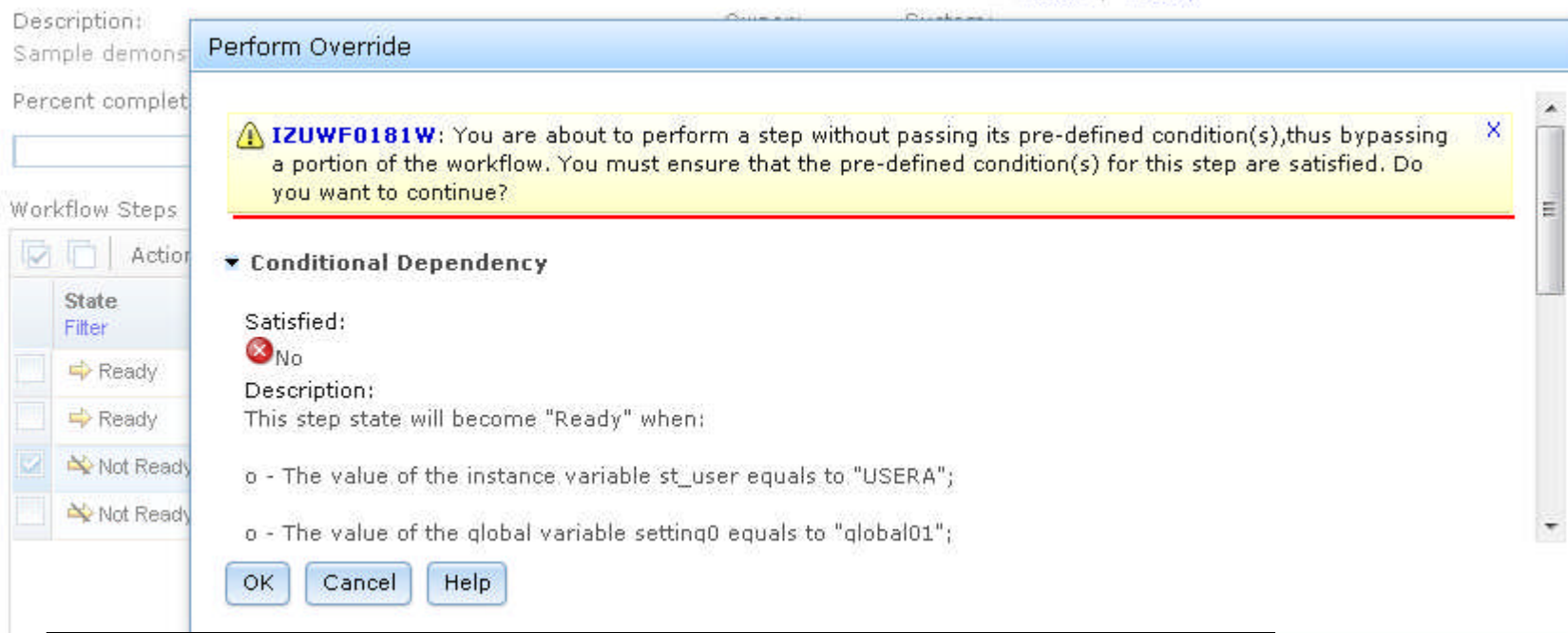
** available for z/OSMF V2.1 with PTF UI90005 and its requisite PTFs

External Application Support*

- **External application support enables non-z/OSMF web application – html and/or JavaScript applications to render their UI and run in the z/OSMF browser.**

- **The external applications can be added to z/OSMF navigation in a category selected by the user, and communicate with associated z/OS back-end components.**

- **Customers and vendors can create their own web applications and register to z/OSMF at runtime.**
  - **SDSF is the first exploiter (available with PTF UI15294).**

- **No special configuration is required to add the web application to the navigation.**

- **z/OS customization may be needed for backend z/OS component e.g. security setup, starting the z/OS function**
  - **Application specific z/OS setup should be defined by the application owner.**

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

External Application Support in z/OSMF*

- **External application support includes two major parts:**
  - **A set of Restful services which are invoked by external application to retrieve or send data to associated z/OS back-end applications. Services include:**
    - **TSO/E Services,**
    - **Persistence services and**
    - **File Serving Services**

  - **Import Manager, task and application linking registration mechanism by properties files, externalized JavaScript logger and JavaScript callbacks.**
    - **The new Import Manager task under z/OSMF Administration provides the GUI interface to import the properties file and register the web application in the navigation**

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

Process of plug-in registration*

- **Before adding a plug-in to z/OSMF, user should have one or more web applications ready, including the client side code and online help documentation in the z/OS UNIX file system.**

- **The z/OS application needs to provide a property file that describes the attributes for the web interface and defines all the required parameters for z/OSMF.**

- **The z/OSMF Administrator can register the web application by providing the path of the property file in the Import Manager.**

- **The Import Manager task will convert the parameters in property file into plug-in object and register the plug-in with tasks.**

- **With the successful registration and FileServingServlet, the navigation URLs of external plug-ins tasks could be accessed following the pattern of "/zosmf/IzuUICommon/externalfiles/relativefilepath" .**

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

External application properties file*

- **In one property file only one type of definition can be specified**
  - **External plug-ins**
  - **Application linking handlers**
  - **Application linking events**
  - **External links**
- **A properties file may contain multiple definitions of any one type**
  - **multiple links, or multiple handlers or multiple plugins**
- **z/OSMF will provide format of properties file in the programming guide**
- **z/OSMF will provide services to integrate with the z/OSMF framework**

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

Import Manager*

- **The Import Manager task provides the following functions:**
  - Add plug-in to z/OSMF
  - Add application linking event types and handlers to z/OSMF.
  - Add links to z/OSMF
  - View the property file content before import.
  - View/Delete the import history records.
  - View the historical property file content of the import records.
  - Application linking from Links and Application Linking Manager tasks to Import Manager

- **Note: Existing Links task registers external links one at a time via GUI interface**
  - User has to type in all the information on the GUI panel
- **Note: Existing Application linking manager still available for defining application linking events and handlers via a GUI**
  - one at a time
  - required for other apps that are not hosted in z/OSMF

Import Manager*

IBM z/OS Management Facility
Welcome gdaynes

- Welcome
- Notifications (1)
- 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
- z/OSMF Administration
  - Application Linking Manager
  - Import Manager
  - Links
- z/OSMF Settings
  - FTP Servers
  - SDSF Settings
  - Systems

Refresh

New navigation task for z/OSMF Administrators

Welcome

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. By strea
can help to simplify some areas of z/OS system management.

To learn more about z/OSMF, visit the links in the Learn More section.

To start managing your z/OS systems, select a task from the navigation area.

Learn More:

What's New

z/OSMF tasks at a glance

Getting started with z/OSMF

Check browser and operating system

z/OSMF Import Manager ….

Import Manager*

z/OSMF Import Manager ....

Import Manager – Import Tab*

IBM z/OS Management Facility   Welcome zmfdev1

Navigation panel:
- Welcome
- Notifications
- Workflows
- + Configuration
- − Jobs and Resources
  - SDSF
- + Links
- + Performance
- + Problem Determination
- + Software
- + z/OS Classic Interfaces
- − z/OSMF Administration
  - Application Linking Manager
  - Import Manager
  - Links
- + z/OSMF Settings
- Refresh

Tabs: Welcome | Import Manager

Import Manager

Tabs: Import | History

z/OSMF Administrators can view the registration records and the history registration file. Delete the registration records.

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

You can get instruction here

Property file:

/usr/lpp/sdsf/zosmf/sdsf.propertie ▼   View   Import

Contents of property file: /usr/lpp/sdsf/zosmf/sdsf.properties   Clear

```
importType=plugin

izu.externalapp.file.version=1.0.0
izu.externalapp.local.context.root=sdsf
izu.externalapp.code.root=ui
izu.externalapp.help.root=helps

izu.externalapp.helpdoc.1=com.ibm.zosmfsdsf.jobresources.help.doc
izu.externalapp.helpdoc.2=com.ibm.zosmfsdsf.settings.help.doc
izu.externalapp.helpdoc.3=com.ibm.zosmfsdsf.messages.help.doc

pluginId=com.ibm.zos.sdsf
pluginDefaultName=IBM SDSF
pluginDescription=Administer and operate SDSF to monitor your JES jobs and
```

Property file content view

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

SDSF Plug-in* Overview

- **The SDSF product provides a web interface through a z/OSMF SDSF Plug-in.**
  - **The Javascript UI calls RESTful web services to retrieve data and perform actions.**

- **This Plug-in can**
  - **Show graphic/textual overview about Processors, Spool, Health Checker**
  - **Display a table of Job list in different status/queue. The property column, filters, sort can be customized, and the table can be exported and printed.**
  - **Enable users to select a Job, view detailed properties, and perform actions such as Cancel, Edit, Submit, etc.**
  - **Issue system command and display output.**
  - **Display the User Session Log. Users can search and take notes.**

* available with z/OS V2.1 SDSF PTF UI15294 and z/OSMF V2.1 with PTF UI16044

SDSF Overview*

SDSF (PLEX1)

Overview

Explore the summary data, or choose a task.

▼ Common Filters   ⑦

Job name:	Owner:		
ZMFDEV1 ▼	ZMFDEV1 ▼	Apply	Reset
System:	Destinations (1-4):		
* ▼	* ▼		

Less –

> Different Common Filters can apply to different views : Active Jobs, All Jobs, Held Output Queue, Input Queue, Output Queue, Health Checks

▼ System Activity Summary: SYS00001 (Local)

System: SYS00001 (Local) ▼   View text

System Activity Percent Busy

zAAP	50%
zIIP	84%
LPAR	25%
MVS / SRM	100%
Spool	65%

z/OS Health Checks by Severity

None	28
Low	59
Medium	65
High	82

Active checks: 110   Eligible checks: 200

> **View text** can change the graphics to text view. **System** drop list or **Refresh** button can update the System Activity Summary. **Common Filters** don't apply to this view.

Refresh   Last refresh: 9 seconds ago

View icons

> This link can change to more abbreviated icon view. Clicking each view link can open new tab

▼ Jobs

⚙	Active Jobs	Work with active jobs
📋	All Jobs	Work with jobs in any phase of processing
➡	Input Queue	Work with jobs on the input queue
📄	Output Queue	Work with jobs on the output queue
📑	Held Output Queue	Work with jobs on the held output queue

▼ z/OS Health Checks

| 🗒 | z/OS Health Checks | Manage z/OS Health Checks |

▼ z/OS Commands and Logs

System command line: SYS00001 (Local)   Command reference

Type command here (Maximum 126 characters) ▼   Submit

| 🛡 | User Session Log | Display and search the User Session Log |

> This link opens help related to starting words typed by users.
> A command history of 30 commands will be saved in the combo box . Command responses are displayed in a pop-up window. The results also go to the User Session Log and can be seen there.

* available with z/OS V2.1 SDSF PTF UI15294 and z/OSMF V2.1 with PTF UI16044

All Jobs View *

Return Code Counts (28) — Common and table filters applied

Abends (9)

Legend:
- Abends
- System Failure
- JCL Error
- CC12 / CC16
- CC4 / CC8
- CC0
- Other
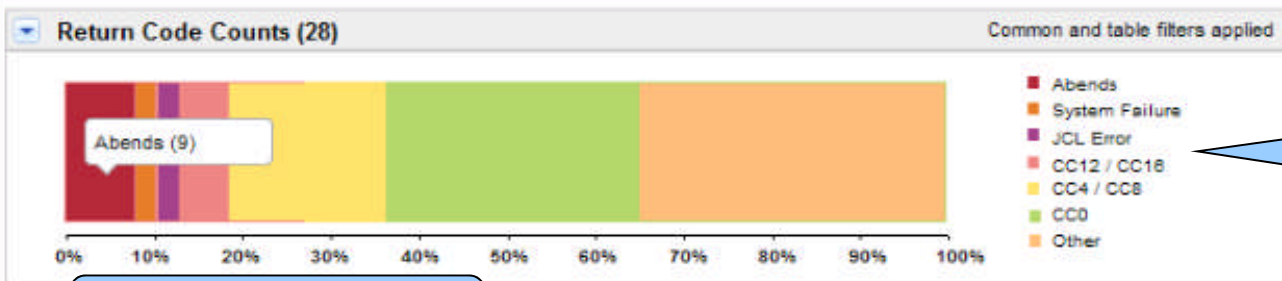
The Job result distribution based on return code. Hover text is provided

This link brings out **Common Filters** combo box too. The common filter is applied first, and then the table filter is applied.

Users can specify table filters in the input box

All Jobs — Common filters — Properties of

Actions — View — Match: All filters

Find

Job Name		Job ID	Owner
ZFS	🟢	STC00005	DFS
VTAM44	🟢	STC00007	++++++++
GRSSTMON	🟢	STC00008	++++++++
ZCFTLMON		STC00012	IBMUSER
HWWORKL	🟢	STC00062	IBMUSER
INIT		STC00019	IBMUSER
HZSPROC	🟢	STC00060	IBMUSER
ZFSCLONE		STC00012	DFS
VTAM48	🟢	STC00014	++++++++
GRSSTMO2	🟢	STC00016	++++++++
ZCFTLMO2		STC00024	IBMUSER
PAYROLL9		STC00124	IBMUSER
BACKUPLB		STC00038	IBMUSER
OFFPEAK2		STC00089	IBMUSER
ZOSMFAD		TSU00160	ZOSMFAD
ZOSMFAD		TSU00161	ZOSMFAD
ZOSMFAD		TSU00162	ZOSMFAD

Properties panel — Edit properties

- General
  - Job ID:
  - Job name:
  - Type:
- Accounting
  - Account number:
  - End date:
  - End time:
  - Notify ID:
  - Programmer name:
  - Read date:
  - Read time:
  - Room number:
  - Start date:
  - Start time:
- Advanced
- Printing
- Runtime
- Scheduling
  - Class:

Job properties are displayed in a collapsible section. When no Jobs are selected, nothing is displayed.

* available with z/OS V2.1 SDSF PTF UI15294 and z/OSMF V2.1 with PTF UI16044

z/OS Health Checks View*
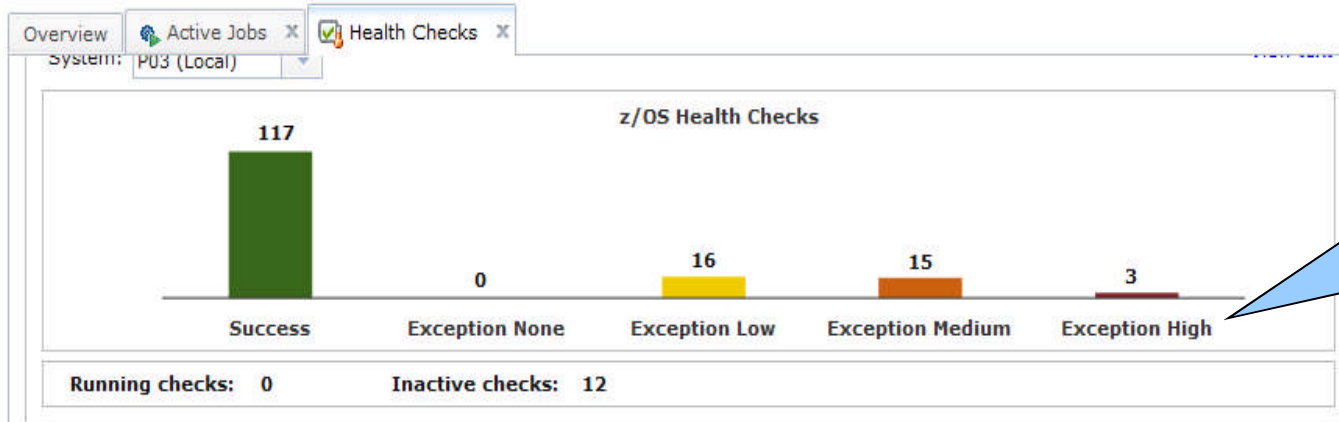
Shows counts for checks by status, with exceptions grouped by severity, followed by counts of running checks and inactive checks.

To browse a check and see its history, click the check name, or use the **Browse** and **Display History** action. A new tab will popup. Users can perform other operations under **Actions** menu.

* available with z/OS V2.1 SDSF PTF UI15294 and z/OSMF V2.1 with PTF UI16044

SDSF – View Restructure **

- Remove the Spool utilization bar and add the value of the bar to the graph footer in text.

- Regardless of table selection, the More actions item under Actions pull-down will be always enabled so that the user can view SDSF actions without selecting any rows.

- Restructure the table View menu.

  - Filter and sort related actions are separated by groups.

  - The Filter Match selection is moved to table header. Default value is All Filters. Selection from this menu results in immediate change to the match value and table data.

  - Export Table Data actions are move to a new table pull-down named File.

** available for z/OSMF V2.1 with PTF UI90005 and z/OS SDSF PTF UI90004

SDSF - Property Sheet Usability **

- Persist the real-time property sheet width as part of user customization cross sessions so that the property sheet will always be rendered in user-demanded width.
  - The width percentage is persisted by command, so different views have their own width percentage separately.
- If the property sheet is collapsed (hidden), the UI will suppress the properties loading, which improves the efficiency.
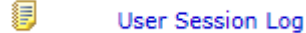
** available for z/OSMF V2.1 with PTF   UI90005 and z/OS SDSF PTF UI90004

SDSF – Security **

- New SDSF Settings panel layout. Add security tracing support:
  - Send trace messages to message dialog
  - Send trace messages to user session log.
- Give user control to show or hide UI elements including those the user is not authorized to use.
- The UI elements to be shown/hidden are graphic sections in both Overview panel and table views.
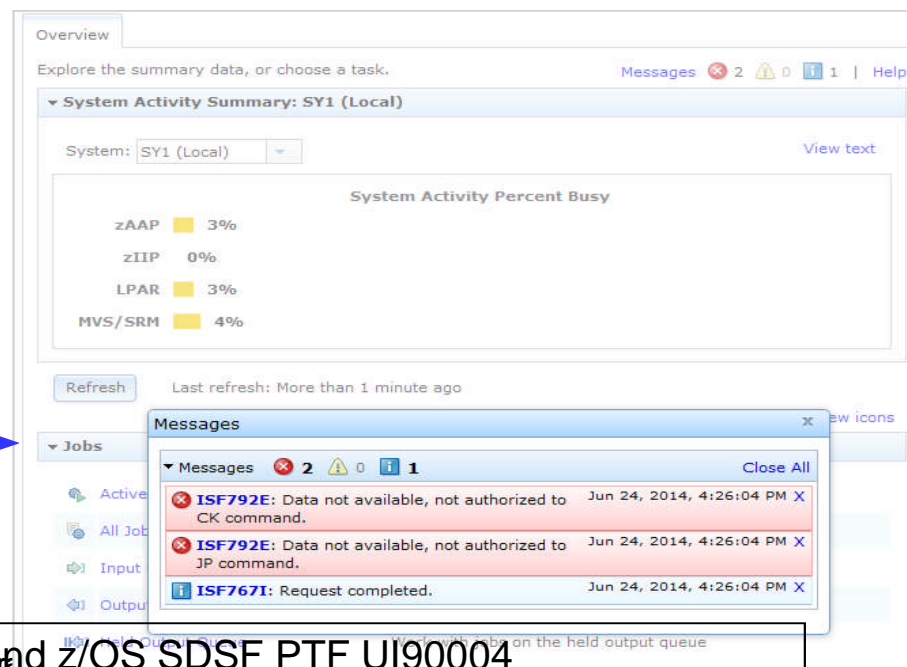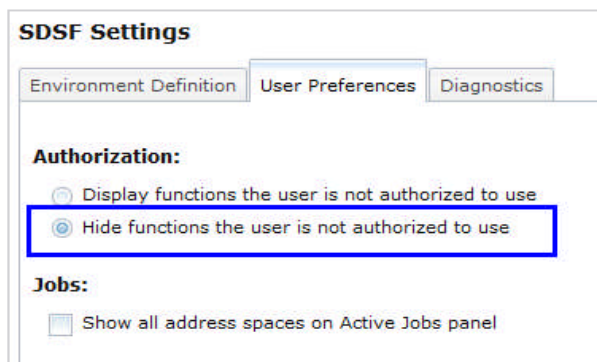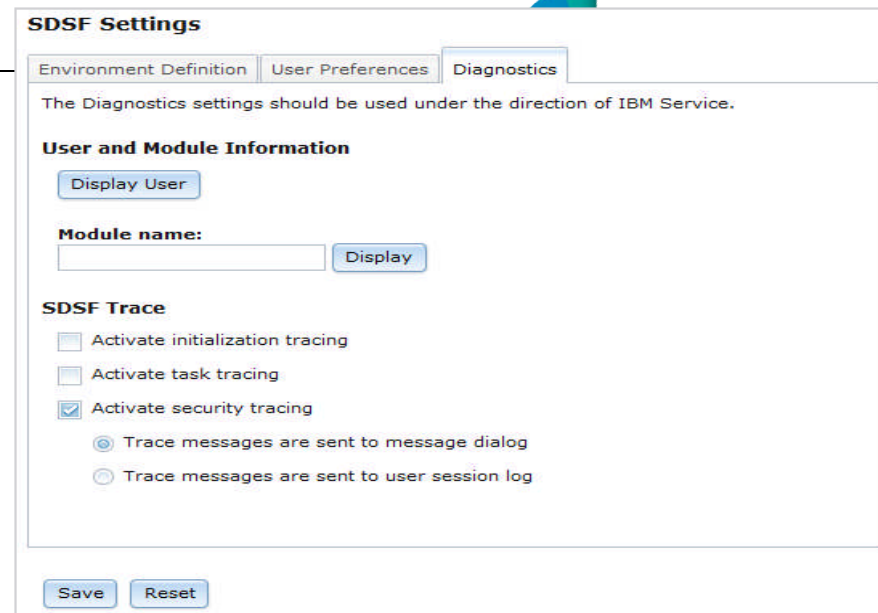
** available for z/OSMF V2.1 with PTF UI90005 and z/OS SDSF PTF UI90004

Agenda
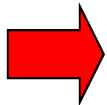
- Overview of z/OS Simplification Efforts
- The z/OS Management Facility (z/OSMF)
- What's New in z/OSMF V2.1
  - Use of the WebSphere Application Server Liberty profile
  - Workflows
  - Support for External Applications
- **z/OSMF Management Tasks**
  - **Configuration**
  - **Performance**
  - **Problem Determination**
  - **Software**
  - **z/OS Classic Interface: ISPF**
- Other z/OSMF Capabilities
  - Security
  - Internet and Intranet Links
  - System
  - Programmatic Interface for z/OSMF

z/OSMF Management Tasks

- **Configuration**
  - **Configuration Assistant for z/OS Communications Server**
- **Performance**
  - **Capacity Provisioning**
  - **Resource Monitoring and System Status**
  - **Workload Management**
- **Problem Determination**
  - **Incident Log**
- **Software**
  - **Management (originally called Deployment)**
- **z/OS Classic Interface**
  - **ISPF**

z/OSMF Management Tasks

- **Configuration**
  ➡ – **Configuration Assistant for z/OS Communications Server**
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  - ISPF

Configuration Assistant for z/OS Communications Server

- **A GUI for the z/OS Communications Server Policy Agent – it simplifies the configuration and setup of TCP/IP policy-based networking functions.**
  - **Supports the following technologies:**
    - **Application Transparent TLS (AT-TLS)**
    - **IP Security (IPSec) including filters and VPNs**
    - **Network Security Server(NSS)**
    - **Intrusion Detection Services (IDS)**
    - **Policy-based Routing (PBR)**
    - **Quality of Service (QoS)**

- Initially available as a Microsoft Windows Web download (since z/OS V1.7)
  - Was provided with z/OSMF (starting with z/OSMF V1.11)
  - z/OS V1.13 was the last release supported by the web download tool.
  - **With z/OS V2.1, users must migrate to z/OSMF**

Configuration Assistant for z/OS Communications Server

- **Available with z/OSMF V1.11**

  - Configuration files can now be saved to local disk storage that is accessible to your z/OS system where the Configuration Assistant is running so FTP (from Windows) is not required

  - Can also import configuration text files in cases where users have already defined policies and would like to begin using the Configuration Assistant

- **Enhancements in z/OSMF V1.12**

  - Support for Internet Key Exchange (IKE) version 2

  - Support for FIPS-140 cryptographic mode for IPSec and IKE

  - Simpler AT-TLS rules

  - Support the configuration of certificate trust chains and certificate revocation lists.

- **Enhancements in z/OSMF V1.13**

  - Define policies once and use for multiple stacks,

  - Configure networks for both z/OS R12 and R13 mixed environments

  - Import existing stack settings

  - Improved Intrusion Detection function

- **Enhancements in z/OSMF V2.1**
  - Provides a modern, intuitive interface that is consistent with other z/OSMF tasks.
    - Exploits the z/OSMF Workflow function for setting up Policy agent and other daemons.
  - Requires less z/OS CPU usage.
  - Allows you to configure z/OS V1.12, V1.13, and V2.1 Communications Server policy based definitions.
  - Adds AT-TLS support for the following RFCs:
    - Renegotiation options (RFC 5746)
    - Elliptic Curve Cryptography (RFC 4492 and RFC 5480)
    - TLSv1.2 (RFC 5246)
    - AES GCM Cipher Suites (RFC 5288)
    - Suite B Profile (RFC 5430)
    - ECC and AES GCM with SHA-256/384 (RFC 5289)
  - Adds Policy Based Routing (PBR) support for IPv6.

Configuration Assistant z/OSMF V2.1 Welcome Panel

IBM z/OS Management Facility   Welcome user1   Log out

- Welcome
- Notifications
- Workflows
- ☐ Configuration
  - ☐ Configuration Assistant
- ☐ Links
- ☐ z/OSMF Administration
- ☐ z/OSMF Settings

Refresh

Welcome ✕	Configuratio... ✕

Help

Welcome to V2R1 Configuration Assistant for z/OS Communications Server

Use this task to create and manage configuration for z/OS Communications Server policy-based networking functions.

Select a backing store for configuration:

[DianeBS_ATTLS_FF ▼] [Open]

Learn more about Configuration Assistant:

What's New	See what is new in this release.
Getting Started	First time users can learn about Configuration Assistant.
Migrating to z/OSMF	Migrate backing stores from Windows to z/OSMF.
Application Setup Tasks	Workflows to guide the setup of required applications.
Tutorials	Link to tutorials.
FAQs	Link to Frequently Asked Questions.

Main Panel

...t Facility   Welcome user1   Log out

Welcome ✕	Configuratio... ✕

Configuration Assistant (Home) ▸ IPSec   Help

V2R1 Current Backing Store = DianeBS_ATTLS_FF

Select a perspective: [IPSec ▼]   [Tools ▼]

Systems	Traffic Descriptors	Security Levels	Address Groups	Requirement Maps	Reusable Rules

Actions ▼

	Name	Type	Status	Release	Description
○	☐ $AA	Image	Complete	V2R1	
○	A	Stack	Complete	V2R1	
○	AAA	Stack	Incomplete	V2R1	
○	ATTLS	Stack	Incomplete	V2R1	Imported from Policy Data
○	TCPCS	Stack	Complete	V2R1	
○	☐ A12	Image	Complete	V1R12	
○	A12	Stack	Incomplete	V1R12	
○	☐ A13	Image	Complete	V1R13	
○	A13	Stack	Incomplete	V1R13	
○	☐ IMAGE1	Image	Complete	V2R1	

Total: 19, Selected: 0

[Home] [Save]

Workflows ✕   Configuratio... ✕

Welcome to V2R1 Configuration Assistant for z/OS Communications Server

Use this task to create and manage configuration for z/OS Communications Server policy-based networking functions.

Select a backing store for configuration:

saveData   ▼   Open

Learn more about Configuration Assistant:

What's New	See what is new in this release.
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Migrating to z/OSMF	Migrate backing stores from Windows to z/OSMF.
Application Setup Tasks	Workflows to guide the setup of required applications.
Tutorials	Link to tutorials.
FAQs	Link to Frequently Asked Questions.

Create Workflow

Type or select a workflow definition file to use for creating a new workflow.
For a z/OS data set, specify a fully qualified name, with no quotes.

♦ Workflow definition file:

/usr/lpp/zosmf/V2R1/workflow/plugins/izuca/ezb_pagent_setup_wizard.xml   ▼

All Configuration Assistant Workflows are in this directory.

< Back   Next >   Finish   Cancel   Help

Configuration Assistant z/OSMF V2.1 Workflows

IBM z/OS Management Facility   Welcome user1

Workflows ✕

Workflows

1. Use the "Create Workflow" in the Actions menu

Simplifies tasks through guided step-based workflows, and provides administrative functions for assigning workflow responsibilities and tracking progress.

Actions ▼

Workflow Name Filter	Description Filter	Version Filter	Vendor Filter	Owner Filter	System Filter	Percent Complete
z/OS Communications Server: Setup to run Traffic Regulation Management Daemon (TRMD) - Workflow_0	z/OS Communications Server: Setup to run Traffic Regulation Management Daemon (TRMD)	1.0	IBM	user1	XESDEV MVS160 (MVS160_001)	0%
z/OS Communications Server: Setup for Syslogd - Workflow_0	z/OS Communications Syslogd				_001)	0%
Setting up to run IP Defensive Filters with Defense Manager Daemon (DMD) - Workflow_0	Setting up to run IP De Defense Manager Dae				_001)	0%
Set up to run Network Security Services (NSS) - Workflow_0	Set up to run Network (NSS)				_001)	0%
z/OS Communications Server: IP Security with IKE - Workflow_0	z/OS Communications with IKE					11%
z/OS Communications Server: Install Sample Profiles for TCP/IP Components - Workflow_0	z/OS Communications Server: Install Sample Profiles for TCP/IP Components	1.0	IBM	user1	XESDEV MVS160 (MVS160)	0%
z/OS Communications Server: Setup to run Policy Agent - Workflow_0	z/OS Communications Server: Setup to run Policy Agent	1.0	IBM	user1	XESDEV MVS160 (MVS160)	0%

Create Workflow

Type or select a workflow definition file to use for creating a new workflow. For a z/OS data set, specify a fully qualified name, with no quotes.

❋ Workflow definition file:

`/usr/lpp/zosmf/V2R1/workflow/plugins/izuca/ezb_pagent_setup_wizard.xml`
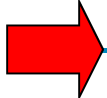
[< Back] [Next >] [Finish] [Cancel] [Help]

Total: 7, Selected: 0

Refresh   Last refresh: Aug 9, 2013 9:56:38 AM local time (Aug 9, 2013 1:56:38 PM GMT)

z/OSMF Management Tasks

- **Configuration**
  - **Configuration Assistant for z/OS Communications Server**
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z/OSMF Capacity Provisioning

Background

- **System z On/Off Capacity on Demand**

  Ideal if your business has few periodic workload peaks over the year. Potentially:
  - Save on hardware - No need to purchase hardware, 'you rent it' for the days you need it.
  - Save on monthly software charges – only pay for software charges for On/Off CoD peak capacity in the month it is incurred**

  Also ideal if you own extra hardware capacity (banked capacity). Potentially:
  - Save on monthly software charges – budget for peak 'banked' capacity and turn off the resources when not needed to possibly gain software savings.

- **The Capacity Provisioning Manager (CPM) is in the base of z/OS**
  - z/OS Capacity Provisioning Manager can automate On/Off CoD for z/OS
    - Can manage processing capacity more reliably, more easily, and faster.
    - What had taken minutes or hours to discover, identify, decide, and resolve, now can be specified to happen automatically in as little as two minutes.

- **The Capacity Provisioning Control Center (CPCC) is the user GUI to CPM used for administering the Capacity Provisioning policies**
  - Available as a separate Windows-based stand-alone client.

z/OSMF Capacity Provisioning

- **z/OSMF Capacity Provisioning task**
  - Simplifies the **monitoring** of z/OS CP connections, domains, configurations, and policies
  - Initially a separate Windows-based tool required for z/OS CP **management** functions.
    - With z/OMSF APAR PM74519 the z/OSMF Capacity Provisioning application is enhanced to allow you to create, edit, and activate domain configurations and capacity provisioning policies.
      - With these new functions z/OSMF Capacity Provisioning supports all the functions available in the Microsoft Windows-based Capacity Provisioning Control Center (CPCC).
    - **z/OS V1.13 was the last release supported by Microsoft Windows-based CPCC.**
      - **With z/OS V2.1, users must migrate to z/OSMF**

- **z/OSMF Capacity Provisioning task (z/OSMF V2.1)**
  - Support is provided for Defined Capacity and Group Capacity.

z/OSMF Capacity Provisioning

Manage CIM connections to access a Provisioning Managers

Provisioning Manager

The Provisioning Manager is the component of Capacity Provisioning that controls the domain based on the active poli
Connections describe how to connect to a Provisioning Manager. The connections table shows connection definitions.

Actions ▾

Host Address Filter	Protocol Filter	Port Filter
☐ Same system as z/OSMF		
☐ cpmprod.ibm.com	HTTPS	5989
☐ cpmtest.ibm.com	HTTP	5988

View detailed status about a domain
Quick switch between reports for same domain

Provisioning Manager ▸ Domain Status
Domain Status for Domain GUI2

This page shows information about the current state of the Provisioning Manager and the domain that it manages.
All timestamps below are shown in GMT.

Domain name: GUI2
Start time: Feb 1, 2011 8:42:53 AM
Processing mode: Autonomic
Processing mode activation time: Nov 15, 2010 9:23:12 AM
Configuration name: TC067#1
Configuration activation time: Jan 25, 2011 10:45:11 AM
Policy name: TC057#1T
Policy activation time: Jan 21, 2011 4:14:49 PM

View information about the active configuration for a domain
•Drill down to CPC or system

Provisioning Manager ▸ Active Configuration   Settings
Active Configuration for Domain GUI2

This page shows information about the active domain configuration and the status of its CPCs and z/OS systems.

Active configuration: TC067#1   Status: ☑ Enabled   Repor

[CPCs] [Systems]

Actions ▾

CPC name Filter	Correlation status Filter	Record ID Filter	Active MSU Filter	Active zAAPs Filter	Active zIIPs Filter	Enabled Filter	Enabled default Filter
○ R35	Matched	34937149	1140	2	1	☑ Enabled	☑ Enabled
○ ECL2	Matched	34937149				☑ Enabled	☑ Enabled

View information about the active policy for a domain
Drill down to policy element

Provisioning Manager ▸ Active Policy
Active Policy for Domain GUI2

This page shows information about the active policy.
All timestamps below are shown in GMT.
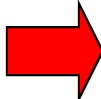
Active policy: TC057#1T   Status: ☑ Enabled

Actions ▾   Table view: Tree

Type Filter	Name Filter	Current status Filter	Details Filter
○ ⊟ Policy	TC057#1T	☑ Enabled	
○ ⊟ Logical processor scope			
○ ▪ Processor limit	PLEX1.SYS1		CP limit: Max. possible; zAAP limi
○ ⊟ Max. provisioning scope			
○ ▪ Processor limit	CPC1		MSU limit: 0; zAAP limit: 0; zIIP li

z/OSMF Management Tasks

- **Configuration**
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z/OSMF Resource Monitoring

- The z/OSMF Resource Monitoring application provides integrated performance monitoring in the customer's environment
- Supports z/OS sysplexes and Linux images (System z and Intel) in your installation
  - Requires the RMF z/OS Data server (DDS) on each sysplex being monitored and the Linux data gatherer (rmfpms) running on the Linux image that is being monitored.
- There are two z/OSMF tasks: *Resource Monitoring and System Status*
  - Resource Monitoring task:
    - Monitor most of the metrics supported by the Resource Measurement Facility (RMF) Monitor III
    - Create and save custom views of the metrics easily, and
    - Display real-time performance data as bar charts.
      - Predefined views provided for a quick start.
      - Advanced filtering features for focused monitoring
  - System Status task:
    - Quickly Assess the performance of the workloads running on the z/OS sysplexes in your environment.
    - The System Status task also provides a single location where you can define the z/OS sysplexes and Linux images to be monitored in the Monitoring Desktops task.

z/OSMF Resource Monitoring

- **Enhancements in z/OSMF V1.13**
- With z/OS V1.13, RMF has new CIM-based performance data gatherers for Linux on System z, Linux on System x, and AIX systems to provide a consistent monitoring solution for zEnterprise ensembles.
  - Application Linking between Resource Monitoring and WLM
- **Enhancements in z/OSMF 2.1**
  - The data gatherers for Windows system complexes (System x) are also integrated into z/OSMF to give you the ability to monitor those resources.
  - System Status expands the scope of monitoring to include Windows system complexes in your enterprise
  - Retrieve Historical Data*
    - New feature can retrieve historical performance data from Resource Monitoring DDS before a RM dashboard was started.
  - Export data collected in monitoring dashboards*

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

Resource Monitoring : System Status

A snapshot of the performance of workloads running on your sysplexes. The System Status task also provides a single location where you can define sysplexes and Linux images to be monitored.

Why is this status red? Drill down into the details with the Resource Monitoring task.

Resource Monitoring: Monitoring Dashboards

Monitor most of the metrics supported by the Resource Measurement Facility (RMF™) Monitor III, create and save custom views of the metrics, and display real-time performance data as bar charts.

Click to open the dashboard

Pre-loaded with standard metrics. Can be customized, can add your own.

Application Linking: Resource Monitoring to WLM

Resource Monitoring: Monitoring Dashboards

Retrieve Historical Data*

Resource Monitoring – Spreadsheet Export (1)*

- In Resource Monitoring task, Open a dashboard, click "Actions -> Export" can bring up Export Wizard.

- User can choose a metric group or the entire dashboard, and select a range of intervals to export. Specific metrics and resources can also be sorted out.

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

Resource Monitoring – Spreadsheet Export (2)*

- One CSV file is created for each metric group in the dashboard. Multiple metric groups data will generate a compressed zip file.

- If the CSV file covers multiple metrics and resources (list value), the resulting table sorts the table columns: 1) by metric and 2) by resource.

- The user can view the performance data in table/chart and analyze

z/OSMF Resource Monitoring					
Exported:	2013/10/24	11:02:38			
Dashboard:	Coupling Facility Overview				
Metric grou	Requests-POKDDS				
Metric:		,[?],SYSPLEX total request		,[?],SYSPLEX % total physical utilization (AAP) by partition	
Resource:		CF02	CF01	4255.VMC	4255.VMA
Date	Time				
2013/10/24	4:43:00	53.8	33.3	0.2	0.1
2013/10/24	4:44:00	56.8	32.3	0.2	0
2013/10/24	4:45:00	53.3	32.6	0.2	0.1
2013/10/24	4:46:00	53.3	32.6	0.2	0.2
2013/10/24	4:47:00	52.9	33	0.2	0.1
2013/10/24	4:48:00	53.2	32.6	0.2	0.1
2013/10/24	4:49:00	52.9	32	0.2	0.1
2013/10/24	4:50:00	53.2	32.6	0.2	0.1
2013/10/24	4:51:00	54	32.8	0.2	0.1
2013/10/24	4:52:00	54.1	33.2	0.2	0.1
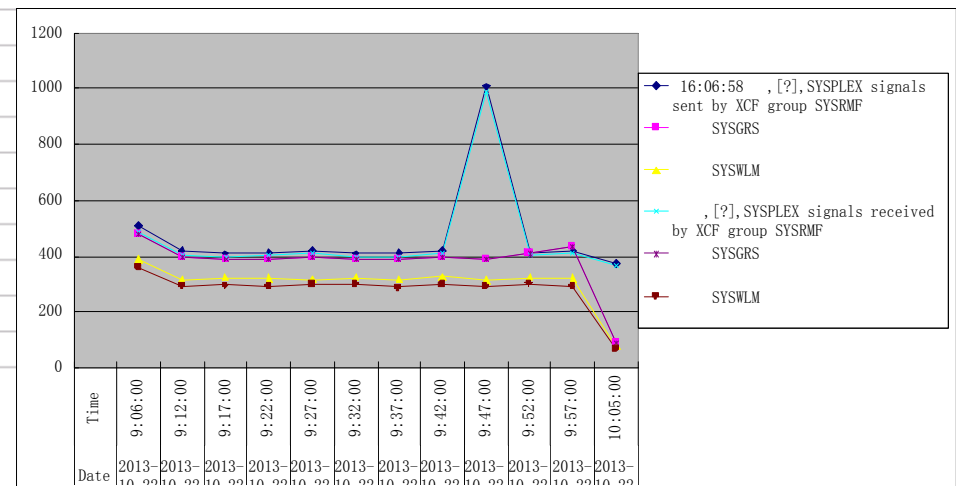
* available for z/OSMF V2.1 with PTF UI16044 and its requisite PTFs

z/OSMF Management Tasks

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z/OSMF Workload Management

- WLM Policy Editor available on the z/OS Management Facility provides
  - All the same functions as in the 'as is' Web-download tool and many new features
  - Direct access to the WLM Couple Data Set to install/extract service definitions. No need to FTP WLM policy files!
  - Activation of service policies and monitoring of the WLM status in the sysplex
  - Enables you to manage WLM service definitions

IBM z/OS Management Facility — Welcome zosmfad — Log out

- Welcome
- Configuration
- Links
- Performance
  - Capacity Provisioning
  - Resource Monitoring
  - System Status
  - Workload Management
- Problem Determination
- Software
- z/OS Classic Interfaces
- z/OSMF Administration
- Refresh

Welcome | Workload Man...

Workload Management

Help

Overview | Service Definitions

Store all service definitions in one repository

Service Definitions

Actions ▼ | Search

Name Filter	Description Filter	Activity Filter	Sysplex Filter	Messages Filter	Last Modified (GMT) Filter	Modified By Filter
SHARPLE1	WLM Policy for SHARE System old			⚠ Warning	May 9, 2012 8:47:00 AM	zosmfad
SHARPLEO	WLM Policy for SHARE System old			⚠ Warning	Jan 30, 2012 7:21:15 PM	zosmfad
SHARPLEX	WLM Policy for SHARE System			⚠ Warning	May 3, 2006 1:33:28 PM	hackett
WLMPRO01 (installed & active)	Production policy-01		SHARPLEX	ℹ Information	May 24, 2012 1:25:12 PM	mfusr01
WLMPROD	Production policy			⚠ Warning	Oct 4, 2011 7:56:00 PM	mfusr19
WLMTEST	Test policy			ℹ Information	Feb 3, 2011 12:17:57 PM	stwirag

Click to view, edit, print, install a service definition

Messages based on built in best practice checks

Total: 6, Selected: 0

Refresh | Last refresh: Jun 2, 2012 11:37:29 AM local time (Jun 2, 2012 3:37:29 PM GMT)

z/OSMF Workload Management
functions

- ➤ **Integrates repository to store service definitions**

- ➤ **Import and export of service definitions in XML format**

- ➤ **Printing of service definitions**

- ➤ **Creation, editing, reviewing of service definitions in tabular format**

- ➤ **Direct navigation between policy elements during editing/viewing of service definitions**

- ➤ **Best-practice checking for service definitions**

- ➤ **Supports the installation of service definitions and the activation of service policies**

- ➤ **Displays WLM status of systems in sysplex**

- ➤ **Different authorization levels for viewing, modifying and installing service definition**

z/OSMF Workload Management

- **Enhancements in z/OSMF V1.13**
  - Persists user settings.
  - Supports different authorization levels.
  - Allows you to view details about the performance of your active service policy, service classes, workloads, and so on.
  - Allows you to activate a service policy when viewing or modifying a service definition.
  - Application Linking between WLM and Resource Monitoring

- **Enhancements in z/OSMF V2.1**
  - Supports service definition functionality level LEVEL029
  - Support the addition of comments to the service definition history*

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

Application Linking: WLM to Resource Monitoring

Workload Management – Add Comments*

- When users create, modify, import, export, install and activate service policy, they can add comments to describe the intention of each action.

- Comments are saved along with each action in history data, and the user can also add comments to specific history record later.

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

z/OSMF Management Tasks

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z/OSMF Problem Determination – Incident Log

- **Auto-capture basic diagnostic materials, triggered when the dump is written to a data set**

  – Diagnostic data "snapshots" for transient data: Snapshots of 30 min OPERLOG or SYSLOG, 1 hr LOGREC detail, and 4-hour LOGREC summary

  - Incident Log will also support the creation of diagnostic log snapshots based on the SYSLOG and LOGREC data sets, as well as the OPERLOG and LOGREC sysplex log streams

  – View, sort, and act on abend related incidents (identified by subsystem)

  – Package dump and log data for transmission in minutes

z/OSMF Problem Determination – Incident Log

- ## Enhancements in z/OSMF V1.12
  - Add additional comments and diagnostic data
  - Encrypted parallel FTP of the incident files, to IBM .
    - Download from http://www14.software.ibm.com/webapp/set2/sas/f/zaids/pduf.html
  - Sending additional user-defined data with an incident

- ## Enhancements in z/OSMF V1.13
  - APAR search terms displayed
  - View error log (LOGREC) or operations log (SYSLOG) via ISPF application link
  - Utilizes new Problem Documentation Upload utility in base of z/OS V1.13
  - Handle migrated datasets (PTFs for APARs PM46302 and OA37149)
  - Manage the deletion of incidents using a batch job (CEATOOL) (PTFs for APARs OA38812 and UA65835

- ## Enhancements in z/OSMF V2.1
  - Increased the allowable length of the high-level qualifier for log snapshot data sets from four- to eight-characters*
  - Support a total of 256 characters for the FTP server host, FTP server port, and FTP.DATA file name when using the z/OS Problem Documentation Upload Utility (PDUU) transfer method.*
  - Enhance Incident Log to provide support for the use of SSH File Transfer Protocol (SFTP) for sending dumps and logs to IBM or another vendor.**

> * 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

Incident Log – Manage Incidents

Incident Log – Incident Details

Tab shows lists of data
(logrec and error log)

Attach user defined diagnostic data

- View logs directly
- 8 char HLQ support for log snapshots
- Delete incidents via GUI or batch CEATOOL

Incident Log – Send Diagnostic Data

Incident Log – SFTP Support **

- Incident Log provides new functionality to support openSSH based SFTP tool. It includes both the SFTP client and server of the IBM USS Ported Tools and other openSSH based 3rd party tools.
- New IBM default SFTP server
  - Americas: *IBM-testcase-mvs-sftp* and *IBM-testcase-tivoli-sftp*.
  - Asia Pacific/Europe: *IBM-ecurep-mvs-sftp* and *IBM-ecurep-tivoli-sftp*.
- Incident Log allows customers to do SFTP authentication with server by public key or by user/password.
  - The user name is required when SFTP is used, but the password is optional.
    - If the password is specified, the user/password authentication will be used, otherwise, the public key authentication is used.
- z/OSMF omits the password when authenticating with the IBM-ecurep SFTP servers because these servers do not support password authentication.
  - For other SFTP servers that do not support password authentication, you must select the Specify a user ID and password option and leave the Password field blank. Otherwise, an error will occur.

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

Incident Log – Add Server and Profile for SFTP **

FTP Servers ▸ Add

Add FTP Server

* FTP server name:

* Host:

* Path name:

/

Port number (must be between: 1-65535):

22 → *Default port number*

FTP profile:

◉ Use the default profile. Currently, the default SFTP profile is No SSH Proxy Command.

◯ Use the selected profile.

Select or type ▾ | Select...

☑ Use anonymous user ID and password.

Description:

OK Cancel

Transfer method:

◯ FTP

◉ SFTP (openSSH based secure FTP)

* Client utility path:

/bin/sftp → *Default path*

◯ z/OS Problem Documentation Upload

Welcome ✕ | Systems ✕ | FTP Servers ✕

FTP Servers ▸ FTP Profiles ▸ Add

Add FTP Profile

* Profile name:

sftpProfile

Profile type:

◯ FTP ◉ SFTP

☐ Make this profile the default SFTP profile.

* SSH proxy command:

ssh systemAB.xyz.1234.56789.abcdefg.pok.ibm.com exe

OK Cancel

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

z/OSMF Management Tasks

- **Configuration**
  - Configuration Assistant for z/OS Communications Server
- **Performance**
  - Capacity Provisioning
  - Resource Monitoring and System Status
  - Workload Management
- **Problem Determination**
  - Incident Log
- **Software**
  - **Management (originally called Deployment)**
- **z/OS Classic Interface**
  - ISPF
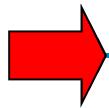
z/OSMF Software Management (Deployment)

- z/OSMF Software Deployment will provide rigor in the deployment of SMP/E installed software.

- New task designed to make deployment of installed software simpler and safer.

  – Replaces manual and error prone procedures with a user friendly application

  – Incorporates IBM recommended best practices for software deployment.

- Software Deployment can clone software

  – Locally, either on a single system or system-to-system within a sysplex

  – Remotely, system-to-system across a network, even multiple sysplexes.

- Software Deployment can also:

  – Identify, modify, delete software instances

  – Generate jobs to copy a software instance

  – Verify cross-system and cross-product requisites, verify fixes

  – Copy ALL parts of the software (including SMP/E CSI inventory)

  – Helps identify actions including catalog, configuration, and security updates

- Software scope includes all SMP/E installed software:

  – IBM and ISV

  – z/OS, stack or individual products,

  – Service upgrades for all of the above (via complete replacement)
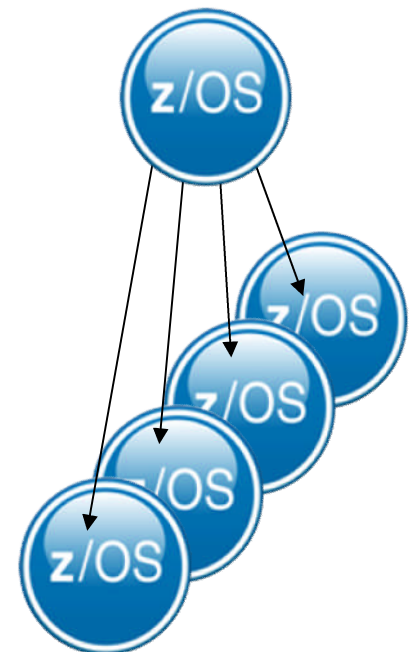
z/OSMF Software Management (Deployment)

- **An intuitive checklist helps guide you though the z/OS and related software deployment process**
  - Select the software to deploy (a software instance)
  - Select the deployment objective
  - Report missing requisites and possible regressions
  - Configure the target software instance
  - Validate the configuration against the target system, Summarize the deployment actions, and Generate the deployment jobs
  - Execute the deployment jobs

IBM z/OS Management Facility

Welcome ✕   Software Man... ✕

Software Management ▸ Deployments ▸ Deployment Checklist

Deployment Checklist

To deploy a software instance, complete the checklist.

Checklist

Progress	Step
⇨	1. Specify the properties for this deployment.
	2. Select the software instance to deploy.
	3. Select the objective for this deployment.
	4. Check for missing SYSMODs. • View missing SYSMOD reports.
	5. Configure this deployment.
	6. Define the job settings. z/OSMF creates the deployment summary and jobs • View the deployment summary. • View the deployment jobs.
	7. Specify the properties for the target software instance.

Close

z/OSMF Software Management

- In addition to deploying a software instance, the Software Management task allows you to:
  - Inspect a software instance to view the product, feature, and FMID content;
  - View the physical data sets that compose a software instance; and
  - Perform actions to analyze and report on software instances and installed products.
    - Identify software products that are approaching, or have reached, end of service support.
    - Validate the SMP/E structure and content of a software instance is correct.
    - Identify missing HIPER and PE fixes, and fixes associated with one or more fix categories
    - Determine if individual fixes are installed and in which software instances.
    - Compare the service and functional content of two software instances to aid in debugging or migration planning.

Software Management

- **Enhancements in z/OSMF V2.1**
  - New in z/OSMF V2.1 you can print and export reports about your software and installed products.
  - Make it easier to add non-SMP/E-managed data sets to a software instance.*
  - Offer a more convenient way to edit mount points for the z/OS UNIX System Services file system.*
    - Simplifies management of multiple mount points for z/OS UNIX file system data sets during a deployment operation.
  - Add new tab to view SMP/E managed UNIX file system data sets and related UNIX directories can be viewed easily.*
  - Provide support for the use of SFTP for remote software deployments.**
  - Provide integrated management of the generated deployment jobs.**

  > * 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

Software Management – "Submit deployment jobs" step **

- A new step 'Submit deployment jobs' is added in Deployment Checklist, in which jobs can be submitted & managed by users

Software Management ▶ Deployments ▶ Deployment Checklist

Deployment Checklist

To deploy a software instance, complete the checklist.

Checklist

Progress	Step
✔	1. Specify the properties for this deployment.
✔	2. Select the software instance to deploy.
✔	3. Select the objective for this deployment.
✔	4. Check for missing SYSMODs. • View missing SYSMOD reports.
✔	5. Configure this deployment.
✔	6. Define the job settings. z/OSMF creates the deployment summary and jobs. • View the deployment summary.
⇨	7. Submit deployment jobs.
	8. Specify the properties for the target software instance.

Close

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

Software Management - Submit and manage jobs **

- Job management actions provided to allow user to browse, submit, view status and results of jobs. These actions include:

  - Submit Job : Jobs must be run in sequence

  - View JCL, Job Output : Single selection action

  - Cancel : Single selection action

  - Purge : Multiple selection action

  - Override Complete : Multiple selection action, mark the complete status

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Submit Deployment Jobs

Submit Deployment Jobs

Review the jobs created for this deployment, and submit the jobs in sequential order. When all the jobs are complete, click **Close** to proceed to the r

JCL data set name: ZOSMFAD.DM.D140625.T162244.CNTL
Target system: PEV171

Jobs

Sequence Filter	JCL Data Set Member Name Filter	Description [More	Less] Filter	System Filter	Status Filter
1	IZUD01CP	Copy Data Sets: Copy the source software instance data sets to [More]	PEV171	✓ Complete
2	IZUD02RN	get software instance data sets [More]	PEV171	
3	IZUD03UC	ets: Update the entries within the SMP/E CSI data [More]	PEV171	

Actions ▾

View ▸ JCL
Submit Job   Job Output
Purge...
Cancel...
Override Complete

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

Software Management – SFTP support **

- In Deployment Checklist for a remote deployment, the pane of 'Define Job Settings' has a new tab called 'Transfer Settings'. User needs to select a FTP or SFTP server from the FTP server selector

- If user chooses an OpenSSH SFTP server, source software instance data sets must be copied into UNIX file. Generated deployment jobs add related processing automatically according to FTP choice.

Define Job Settings

To specify the job settings, provide the information requested on the Source System, Target System, system in the specified JCL data set. z/OSMF does not run the jobs.

Source system: PEV171
Target system: PEV173

| Source System | Target System | Transfer Settings |

* FTP server on the source system:

| Select or type | | Select... |

IBM-ap-mvs
IBM-ap-tivoli
IBM-ecurep-mvs
IBM-ecurep-mvs-sftp

* FTP server on the source system:

IBM-ecurep-mvs-sftp | | Select...

Transfer method: * Client program path:

SFTP

Authentication credentials to log into the SFTP server on the source system:
* SFTP server user ID: SFTP server password:

ZOSMFAD

Select the SFTP profile required by the target system to connect to the SFTP s
* SFTP profile:

Select or type | | Select...

* Source system work directory:

* Target system work directory:

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

Software Management – Improved EOS report **

Select Product Information File

A product information file contains information about one or more products, such as the product announce date, general availability date, and end of service date. To retrieve information fro and click **Retrieve**.

Product information files:

◉ Select files that reside on or can be accessed by primary system

Product Information Files

☑ ☐ | Actions ▼

File Filter	Description Filter	Version Filter	Activity Filter	HTTP Proxy Filter	Last Retrieved (Local) Filter	Retrieved By Filter
☑ http://public.dhe.ibm.com/services /zosmf/JSONs/IBMProductEOS.txt	This product information file contains details about IBM System z® software.	Aug 7, 2014			Aug 8, 2014, 4:48:51 PM	DEBUG26
☑ USER.VENDOR.PRODUCT.EOSINFO	The VENDOR Product End Of Service information					

User can choose multiple product information files to retrieve End of Service information

Change options in Action menu to radio buttons

Total: 2, Selected: 2

[Refresh] Last refresh: Aug 15, 2014, 3:51:24 PM local time (Aug 15, 2014, 7:51:24 AM GMT)

○ Select a file that resides on your local workstation

Select the product information file to retrieve from your local workstation.

✱File name:

[_____] [Browse...]

[Retrieve] [Cancel]

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

z/OSMF Management Tasks

- **Configuration**
  - Configuration Assistant for z/OS Communications Server
- **Performance**
  - Capacity Provisioning
  - Resource Monitoring and System Status
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- **Software**
  - Management (originally called Deployment)
- **z/OS Classic Interface**
  - **ISPF**

z/OSMF and ISPF
Work with existing interfaces

- **Enables system programmer to perform tasks from one interface.**
  - Also makes ISPF applications URL Web-accessible for linking and launching from other applications

- **Up to 4 panes**
  - Panes can be sized. Each pane can have multiple ISPF sessions tabs can be moved between panes for a total of 8 tabs
  - Shows ISPF Menu bar, Command line, Function keys

- **Also available in tabbed format**
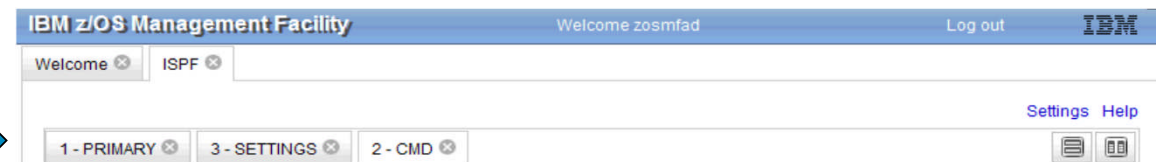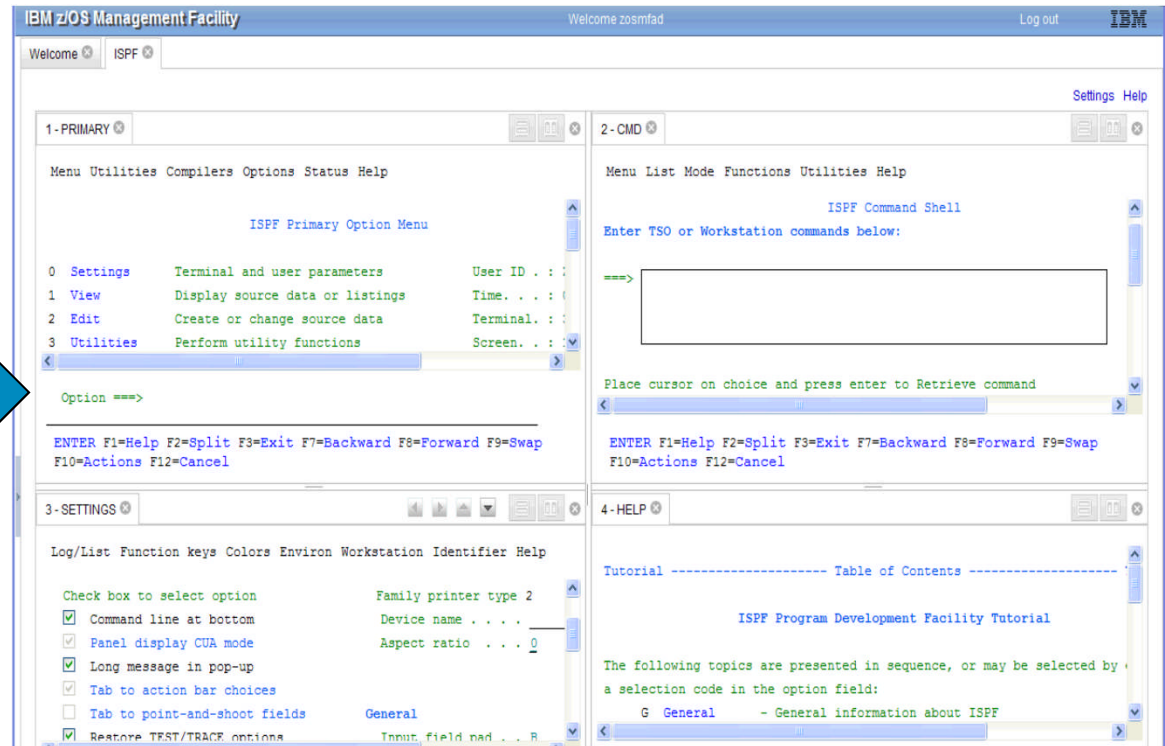
z/OSMF and ISPF
Additional screens

- Customize settings
- TSO messages have priority and pop up
- Example: SDSF status

z/OSMF ISPF - Enable Ctrl key*

- User can use z/OSMF WebISPF Ctrl key as Enter key; This allows the user to submit requests in a way similar to 3270 z/OS ISPF

z/OSMF ISPF User Settings

Ctrl key as Enter key takes effect immediately after pressing the OK or Apply buttons. Other settings take effect when you start (or restart) ISPF. Color selections also take effect at the next z/OSMF ISPF page refresh.

☑ Show settings dialog with every logon.
☑ Enable Ctrl key as Enter key.

The default is unchecked

Logon procedure:	CEANN
Region size (kilobytes):	0
Account number:	123789
User group:	ZOSMFGRP
Profile sharing:	On
Screen size rows:	204
Screen size columns:	160
Code page:	United States (1047, 697)
Language:	English

Map colors from z/OS ISPF to z/OSMF ISPF.

z/OS ISPF colors: z/OSMF ISPF colors:

Sample blue text   Sample blue text
Sample red text   Sample red text
Sample pink text   Sample pink text
Sample green text   Sample green text

[OK] [Apply] [Cancel] [Help]

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

Agenda

- Overview of z/OS Simplification Efforts
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- What's New in z/OSMF V2.1
  - Use of the WebSphere Application Server Liberty profile
  - Workflows
  - Support for External Applications
- z/OSMF Management Tasks
  - Configuration
  - Performance
  - Problem Determination
  - Software
  - z/OS Classic Interface: ISPF
- **Other z/OSMF Capabilities**
  - **Security**
  - Internet and Intranet Links
  - System
  - Programmatic Interface for z/OSMF
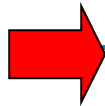
z/OSMF Administration:
SAF-Based Security

- **z/OSMF enhanced its authorization model to provide tighter integration with Enterprise Security Management products.**
  - New (z/OSMF V1.13) resource class pair for z/OSMF
    - ZMFAPLA resource class
    - GZMFAPLA grouping class
  - Use of SAF groups to represent z/OSMF roles
    - connection of z/OSMF users to these new Groups
  - Resource names associated with all z/OSMF tasks and links.
  - Resource class profiles control authorization to z/OSMF managed resources.
- **Support for custom roles via creation of additional SAF groups at system programmer's discretion.**
- **Granularity of access determined by z/OSMF resource profile permissions for a given group.**
- **Exploitation of Resource Classes, profiles, and groups**
  - Plug-ins register resource names associated with each of their tasks
  - All task resource names associated with the ZMFAPLA resource class.
  - IBM reserved resources: ZOSMF.<plugin-name>.<task-name>.<action-control-qualifier>
    - The plug-in profile will be defined at deployment time.
    - For delayed deployment and activation of plug ins create profiles when plug-in is deployed
  - Definition of SAF Groups and connection of z/OSMF users to these new Groups
  - Groups permitted to z/OSMF resource profiles (in ZMFAPLA) to facilitate z/OSMF Role support

z/OSMF Administration: SAF-Based Security …

- **Enhancements in z/OSMF V2.1**
  - Repository mode removed
    - SAF-based security, previously referred to as SAF Authorization Mode, is now the only supported means of creating and managing user authorizations in z/OSMF.
    - Related to this change, the Users task and Roles task in the z/OSMF Administration category are no longer needed, and are thus removed from the navigation area.
    - You have the ability to convert to SAF mode while on z/OSMF V1.13 or during the migration to z/OSMF V2.1
  - New Appendix A, "Security configuration requirements for z/OSMF"
    - This appendix describes the security configuration requirements for z/OSMF.

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  - System
  - Programmatic Interface for z/OSMF

z/OSMF Internet and Intranet Links
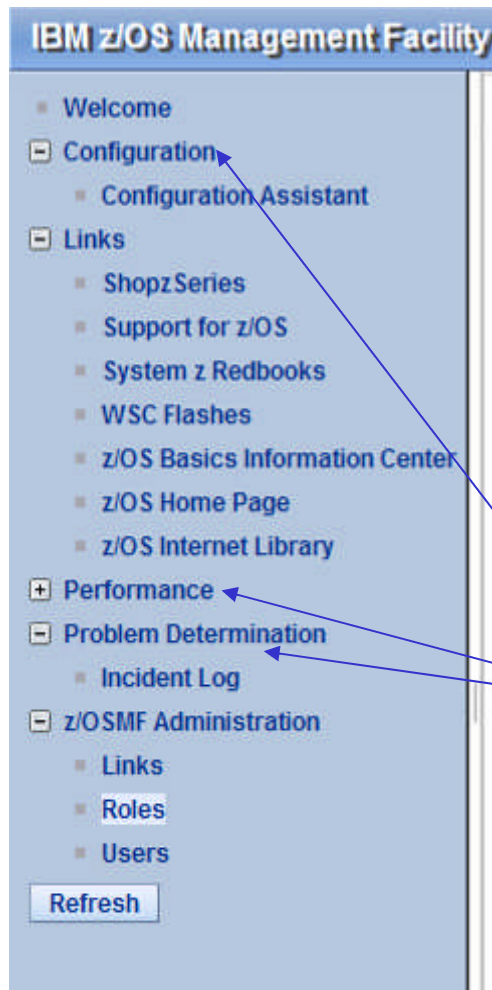
- The Links category contains the pre-defined links provided by IBM as well as any new links added by the z/OSMF administrator
- Administrator can define which roles have access to each of the defined links.
  - The Links task in Administration category allows the administrator to dynamically add links to non-z/OSMF resources, e.g. ISV products, commonly used installation Web sites

- The IBM pre-defined links are accessible to all users, including guests, by default.
- Also, a new interface enables you to add non-z/OSMF launch points and links to any category on the left hand side navigation tree.

z/OSMF Administration: Adding a link

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  - z/OS Classic Interface: ISPF
- **Other z/OSMF Capabilities**
  - Security
  - Internet and Intranet Links
  - **System**
  - Programmatic Interface for z/OSMF

System setting – Discover **

- Discover the system definition that hosts the z/OSMF instance automatically.
- When a conflict occurs (same sysplex and system name but other attributes differs) the user can add a new entry with another nickname or update the old one.

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

System setting – Group **

- The group definition is introduced.
  - A group represents a logical list of system entries (which can be exploited by other plug-ins in the future)

- User can link systems to groups in "Add Group", "Modify Group", "Add System", "Modify System" panels.

- System table is changed to tree view. Default view is by sysplex, can be changed to view by group
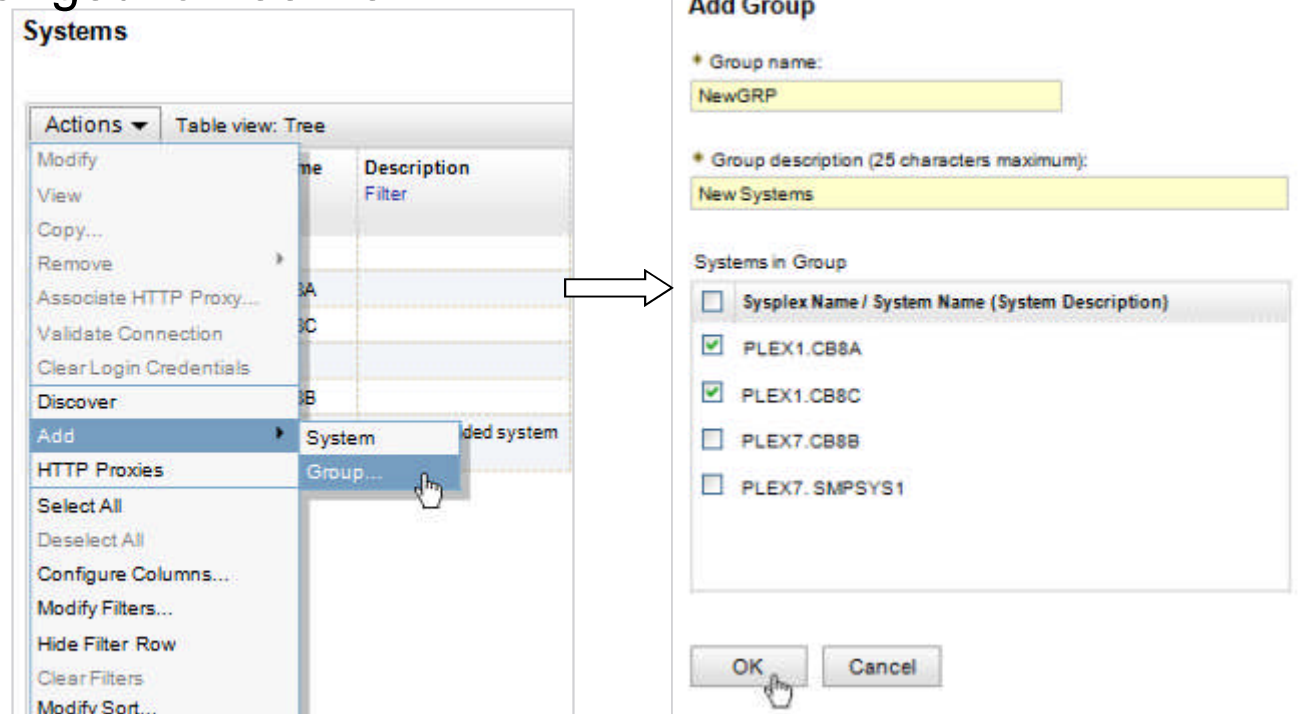
** available for z/OSMF V2.1 with PTF UI90005 and its requisite PTFs

UI and Currency **

- The header and footer of the Welcome page are now 256 characters wide
- Dojo version is upgraded from Dojo 1.7.2 to Dojo 1.9.1.
- KC CI 1.5 replaces KC Local 1.0 (Knowledge Center Help system)
- z/OSMF is enhanced to provide support for Firefox ESR 24 and IE 10

	Windows 7 32 bit	Windows 7 64 bit	Windows 8 Pro, Desktop
Internet Explorer 8.x	Yes	Yes	No
Internet Explorer 8.x (64)	No	Yes	No
Internet Explorer 9.x	Yes	Yes	No
Internet Explorer 9.x (64)	No	Yes	No
Internet Explorer 10.x	Yes	Yes	Yes
Internet Explorer 10.x (64)	No	Yes	Yes
Firefox ESR 24	Yes	Yes	Yes

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

Agenda
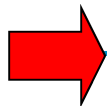
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  - System
  - **Programmatic Interface for z/OSMF**

Programmatic Interface for z/OSMF

- **REST API for Jobs (z/OSMF V1.13) for submitting and accessing batch job**
  - Enhancements in z/OSMF V2.1:
    - Support for JCL symbolics, use correlator instead of jobname/jobid, asynchronous notification on job completion
    - Support for submit job to secondary JES subsystem *
    - Support for hold & release a job *
    - Some REST services can be run synchronously, if coded to use the latest version of the service. **

- **REST API for Data Sets and Files to list the data sets or UNIX files and directories on a z/OS system. ***
  - Enhancements in z/OSMF V2.1 with PTF UI91005 **
    - List the members of a z/OS partitioned data set (PDS or PDSE)
    - Retrieve the contents of a sequential data set, or a member of a PDS or PDSE
    - Retrieve the contents of a z/OS UNIX file
    - Write data to a sequential data set or a member of a PDS or PDSE
    - Write data to a z/OS UNIX file.

- **REST API for z/OSMF Information Retrieval (z/OSMF V2.1 with PTF UI91005) ** to obtain information about z/OSMF on the z/OS host system**
  - You can retrieve version, release, and service level. With this information, a program can determine which z/OSMF plug-ins and core functions are available for use on a given system.

```
  * 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
```

Jobs REST APIs enhancements

- **z/OSMF R13 introduces RESTful API interface to z/OS for submitting and accessing batch job**
- **Enhancement in V2.1:**
  - **Support for JCL symbolics, use correlator instead of jobname/jobid, asynchronous notification on job completion**
  - **Support for submit job to secondary JES subsystem ***
    - **The Jobs API already supports submitting a job to secondary JES2. The request format is updated to allow the user to specify the JES2 subsystem name on which the job is going to be processed.**
  - **Support for hold & release a job ***
    - **Jobs being processed, or waiting to be processed, are kept on a job queue in priority sequence.**
    - **You can issue** hold job **http request via the Jobs API which will issue JES2 commands to hold specified jobs or all jobs currently in a system.**
    - **You can also keep jobs in specified job queues or all job queues from being executed until you issue** release **request via the Jobs API to release them.**
  - **Some REST services can be run synchronously, if coded to use the latest version of the service. ****
    - **Previously, these services were limited to running asynchronously only.**
      - **The synchronous processing is supported for JES2 subsystems only.**
    - **Related to this change, the enhanced services, if run synchronously, no longer require that your user ID be authorized to the Common Information Model (CIM) server and permitted to the JES2/JES3 jobs.**

> * 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

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RESTful File API*

- The RESTful File API allows a client application to list the data sets or UNIX files and directories on a z/OS system.

- Today z/OS supports an interface via FTP. The ability to drive remote requests similar to FTP from HTTP(s) provides a secure and functionally rich interface to retrieve or manipulate file or Data Set information

- The URLs of RESTful File API have the format:

  https://{host}:{port}/**zosmf/restfiles**/**ds**/*{resource}?{parm}*

   or

  https://{host}:{port}/**zosmf/restfiles**/**fs**/*{resource}*

  - "https://{host}:{port}" specifies the target system address and port.
  - "zosmf/restfiles" identifies the z/OS data set and file REST interface.
    - "/ds" identifies a data set request
    - "/fs" identifies a UNIX file path request
  - "{resource}?{parm}" represents the resource, such as a data set name or file path name, and optionally one or more parameters, to qualify the request.

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

RESTful File API and PTF UI90005 **

- New REST services are added to the z/OS data set and file REST interface API. The new services allow a caller to:

  – List the members of a z/OS partitioned data set (PDS or PDSE)

  – Retrieve the contents of a sequential data set, or a member of a PDS or PDSE

  – Retrieve the contents of a z/OS UNIX file

  – Write data to a sequential data set or a member of a PDS or PDSE

  – Write data to a z/OS UNIX file.

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

z/OSMF information retrieval REST interface API **

- A new REST service is added to allow a caller to obtain information about z/OSMF on the z/OS host system, such as:
  - version,
  - release, and
  - service level.

- With this information, a program can determine which z/OSMF plug-ins and core functions are available for use on a given system.

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

REST Services – Jobs interface **

- Synchronous support for the job modify operations
  - For jobs REST API, the functions of cancel, delete (cancel a job and purge its output), hold, release, and change job class are currently implemented using CIM services. Each of these functions is handled as an asynchronous request with status code 202 Accepted response returned.
  - JES2 provided a new feature that allows these functions to be performed synchronously and also provides the ability to verify the user's authority to perform the actions. The status code 200 OK will be returned to the user with an attached JSON document further qualifying the status of the request.
- In V1.13, JES2 supports greater than 10 million spin SYSOUT data sets in spool. Now z/OSMF REST jobs interface are updated to support this change.
- 2 new properties "**recfm**" and "**lrecl**" are added in the returned JSON job file document when using list the spool files function. This helps user to do some proper formatting. For example, the RECFM includes FBA which indicates that the output contains ASA control characters, a caller might want to know that so that they can handle the character in column 1 (-, 1, 0, etc).

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REST Services – Synchronous support
for the job modify **

- For PUT method functions cancel, hold, release, and change job class, Jobs API adds a "version" property to the JSON body of the request to distinguish which way should be used to modify the job. Default version is "1.0", which means CIM servers will be used.

Sample Request:

PUT https://pev099.pok.ibm.com:32208/zosmf/restjobs/jobs/IBMUSER1/JOB00021

Content-Type: application/json

{"class":"E","version":"2.0"}

Sample Response:

Status: 200 OK

{"message":"Request was successful.","jobname":"IBMUSER1","original jobid":"JOB00021","status":0,
"owner":"IBMUSER","job correlator":"J0000021SY1.....CD63DC10.......:","jobid":"JOB00021"}

- For DELETE method functions cancel a job and purge its output, Jobs API add a "X-IBM-Job-Modify-Version" custom header to distinguish which way should be used. Default of version header is "1.0", which means CIM servers will be used by default.

Sample Request:

DELETE https://pev099.pok.ibm.com:32208/zosmf/restjobs/jobs/SUBAPI/JOB00064

X-IBM-Job-Modify-Version: 2.0

Sample Response:

Status: 200 OK

{"message":"Request was successful.","member":"SY1","jobname":"SUBAPI",
"original jobid":"JOB00064", "status":0, "owner":"IBMUSER",
"job crrelator":"J0000064SY1.....CD641439.......:","jobid":"JOB00064","sysname":"SY1"}

- The URL format is not changed

  GET https://host:port/zosmf/restjobs/jobs/[subsystem-name]/jobname/jobid/files

  or   *https://host:port/zosmf/restjobs/jobs/job-correlator/files*

  – The "id" property returned could be larger than 10 million

  – 2 new properties "recfm" and "lrecl" also be returned.

Sample Request:
GET https://pev099.pok.ibm.com:32208/zosmf/restjobs/jobs/MSPINW/JOB01301/files
Sample Response:
Status: 200 OK
[{"jobname":"MSPINW","recfm":"UA","byte-count":1752,"record-count":36,"job-correlator":
"J0001301SY1.....CD63F3DA.......:","class":"A","jobid":"JOB01301","id":2,"ddname":"JESMSGLG",
"records-url":"https:\/\/pev099.pok.ibm.com:443\/zosmf\/restjobs\/jobs\/J0001301SY1.....CD63F3DA.......%
3A\/files\/2\/records","lrecl":133,"subsystem":"JES2","stepname":"JES2","procstep":null},
      … some of the contents have been omitted
{"jobname":"MSPINW","recfm":"FB","byte-count":22000,"record-count":500,"job-correlator":
"J0001301SY1.....CD63F3DA.......:","class":"T","jobid":"JOB01301","id":4294967295,"ddname":"SYS00002",
"records-urll":"https:\/\/pev099.pok.ibm.com:443\/zosmf\/restjobs\/jobs\/J0001301SY1.....CD63F3DA.......
%3A\/files\/4294967295\/records","lrecl":80,"subsystem":"JES2","stepname":"GO","procstep":null}]

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REST Services – Retrieve the contents of a job spool file **

- **The URL format is not changed**
  GET https://host:port/zosmf/restjobs/jobs/[subsystem-name]/jobname/jobid/files/id/records
    or   *https://host:port/zosmf/restjobs/jobs/job-correlator/files/id/records*

  – The id parameter in the url could be larger than 10 million.

Sample Request:

GET https://pev099.pok.ibm.com:32208/zosmf/restjobs/jobs/MSPINW/JOB01301/files**/4294967295**/records

Sample Response:

Status: 200 OK

The contents of SYS00002 ...

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REST Services – Data set and file interface **

- In z/OSMF V2R1 SPE1, z/OS data set and file REST interface was introduced with listing data set name and z/OS UNIX file and directory name function. z/OSMF V2R1 SPE2 delivers the REST Services to retrieve the contents or write data to a sequential data set, a member of a PDS/PDSE data set or a z/OS UNIX file, which is also known as Browse/Edit functions.

- The URLs of RESTful File API have the format:

  https://{host}:{port}/zosmf/restfiles/ds/*{resource}?{parm}*

  https://{host}:{port}/zosmf/restfiles/fs/*{resource}*

  - "https://{host}:{port}" specifies the target system address and port.
  - "zosmf/restfiles" identifies the z/OS data set and file REST interface.
    - "/ds" identifies a data set request
    - "/fs" identifies a UNIX file path request
  - "{resource}?{parm}" represents the resource, such as a data set name or file path name, and optionally one or more parameters, to qualify the request.

- When retrieving the content of a dataset or uss file, if the size is greater than 8M, user will get status code 206 and partial records. When writing data to a dataset or uss file, user will get an exception if the size of request body is greater than 8M.

- The request against migrated Dataset will get 500 Internal Server Error

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REST Services – Retrieve data set/uss file contents **

- Use the GET method to retrieve the contents of a sequential data set, or a member of a partitioned data set (PDS or PDSE). include one or more volume serials on the request for an un-cataloged data set
  - *https://host:port/zosmf/restfiles/ds/<dataset-name>*
  - *https://host:port/zosmf/restfiles/ds/<dataset-name>(<member-name>)*
  - *https://host:port/zosmf/restfiles/ds/-(vol1,vol2,...)/<dataset-name>*
  - *https://host:port/zosmf/restfiles/ds/-(vol1,vol2,...)/<dataset-name>(<member-name>)*
- Use the GET method to retrieve the contents of z/OS UNIX System Service file
  - *https://host:port/zosmf/restfiles/fs/<file-path-name>*

- Headers:

  - **If-None-Match**: This optional header value can specify a previously returned ETag token that will allow z/OSMF to correlate this request with previous requests. If the data on the z/OS host has not changed since the ETag was generated, an HTTP 304 Not Modified status will be returned.

  - **X-IBM-Data-Type**: This is an optional parameter with two values: text (default) and binary. The text type indicates that the data read from the file will be converted from EBCDIC to UTF-8. The binary type indicates that no conversion should occur and the data read from the file will be returned as-is without translation.

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

Sample Request:

GET zosmf/restfiles/ds/SYS1.PARMLIB(PROG00) HTTP/1.1

Sample Response:

HTTP/1.1 200 OK

Date: Wen, 06 Mar 2013 06:39:28 +0000GMT

Content-Type: text/plain

Connection: close

Response Headers:

{"ETag":"S8WNSD09SNSNE093"}

Response Body:

```
{
APF ADD DSNAME(SWRMF3.FRDL.V770.SERBLINK.CP)                         00010003
LNKLST DEFINE NAME(R2) COPYFROM(DYNLNK1)                             00021003
LNKLST ADD NAME(R2) DSNAME(SWRMF3.FRDL.V770.SERBLINK.CP) ATTOP       00022003
LNKLST ACTIVATE NAME(R2)                                             00023003
}
```

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REST Services – Write data to data set/uss File **

- Use the PUT method to write data to a sequential data set, or a member of a partitioned data set (PDS or PDSE). include one or more volume serials on the request for an uncataloged data set
  - *https://host:port/zosmf/restfiles/ds/<dataset-name>*
  - *https://host:port/zosmf/restfiles/ds/<dataset-name>(<member-name>)*
  - *https://host:port/zosmf/restfiles/ds/-(vol1,vol2,...)/<dataset-name>*
  - *https://host:port/zosmf/restfiles/ds/-(vol1,vol2,...)/<dataset-name>(<member-name>)*
- Use the PUT method to write data to a z/OS UNIX System Service file
  - *https://host:port/zosmf/restfiles/fs/<file-path-name>*

- Headers:

  - **If-Match**: This optional header value can specify a previously returned ETag token that will allow z/OSMF to correlate this request with previous requests. If the data on the z/OS host has not changed since the ETag was generated, then the data will be written. If it has been modified, it will be failed to edit, an HTTP 304 (data set) or HTTP 412 (uss file) will be returned.

  - **X-IBM-Data-Type**: This is an optional parameter with two values: text (default) and binary. The text type indicates that the data read from the file will be converted from UTF-8 to EBCDIC. The binary type indicates that no conversion should occur. The data will be written to the data set at the record level boundary.

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

REST Services – Write Data to Uss File Example **

Sample Request:

PUT zosmf/restfiles/fs/etc/inetd.conf HTTP/1.1

Request Headers:

{'If-Match':'S8WNSD09SNSNE093'}

Request Body:

{

#===

service | socket | protocol | wait/ | user | server | server program

name | type | | nowait| | program | arguments

#===

#

Following line uncommented by USSSETUP job: 2013/04/24 15:04:00

}

Sample Response:

HTTP/1.1 200 OK

Date: Wen, 06 Mar 2013 06:39:28 +0000GMT

Content-Type: text/plain

Connection: close

Response Headers:

{"ETag":"S8WNSD09SNSNE09B"}

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

REST Services – Retrieve z/OSMF information **

- User can use the GET method to retrieve information about z/OSMF on a particular z/OS system, including z/OSMF version, host name, listening port, SAF realm, the active status of plug-ins, and z/OS version

  – The URL format of API : *https://{host}:{port}*/*zosmf/info*

Sample Response:

HTTP/1.1 200 OK

Date: Wed, 06 Mar 2013 06:39:28 +0000GMT

Content-Type: text/plain

Connection: close

{"zosmf_saf_realm":"SAFRealm",

"zosmf_port":"443",

"zosmf_full_version":24.02,

"plugins":

[{"pluginVersion":"hsma210.spe2;driver05;2014-02-11T03:21:53",

"pluginStatus":"ACTIVE",

"pluginDefaultName":"Import Manager"},

{"pluginVersion":"hsma213.spe2;driver05;2014-02-11T10:17:27",

……………

"pluginDefaultName":"Workflow"}],

"api_version":1,

"zos_version":"04.24.00",

"zosmf_version":24,

"zosmf_hostname":"host.name.com"}

Summary - What's New in z/OSMF V2.1

- **z/OSMF V2.1 uses the WebSphere Application Server Liberty profile**
  - **Runs on smaller configurations**
    - Requires available CPU resource equivalent to a processor with a processor capacity index (PCI) of at least 45.
  - **Initializes faster**
  - **Uses less CPU**
  - **Uses less memory**
    - Requires one gigabyte (1 GB) of central storage.
      - This amount is in addition to your existing storage allocation for other applications running in the same z/OS system.
  - **Installation of service is easier**
    - You no longer have to run a script (izusetup –service)
- **z/OSMF V2.1 provides:**
  - **A new Workflow Application and Notifications**
  - **Enhancements to many z/OSMF applications (plug-ins)**

Summary - PTF UI16044 (and its requisite PTFs, available 3/30/2014) *

This PTF (and its requisite PTFs) introduce a new:
- **Import Manager** task in the z/OSMF Administration category.
  - Administrators can use the Import Manager task to import plug-ins, event types, event handlers, and links into z/OSMF.
    - **SDSF PTF UI15294** provides the descriptor to enable SDSF to be used as an external z/OSMF task
- **z/OS data set and file REST interface**
  - This API allows an HTTP client application to work with z/OS data sets and UNIX files on the z/OSMF host system.

Several existing z/OSMF functions are enhanced:
- The **Incident Log** task
- The **ISPF** task
- The **Resource Monitoring** task
- The **Software Management** task
- The **Workflows** task
- The **Workload Management** task
- The **z/OS jobs REST interface** services API

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

Summary - z/OSMF's Most Recent Enhancements (available 9/30/2014) **

The following new functions have been made available by PTFs UI90004, UI90005, UI90006, UI90007, UI90008, UI90009, UI90010, UI90011, UI90012, UI90013, and UI90014 (9/30/2014):

- Provide browser support for Mozilla Firefox ESR 24 and Microsoft Internet Explorer 10.
- Enhance Incident Log to provide support for the use of SSH File Transfer Protocol (SFTP) for sending dumps and logs to IBM or another vendor.
- Enhance the Software Deployment function of Software Management to:
  - Provide support for the use of SFTP for remote software deployments.
  - Provide integrated management of the generated deployment jobs.
- Enhance the Workflows task to enable:
  - A workflow step to be designed to save its output in an *output file* which on completion of the step, the contents of the output file become available for use by subsequent steps in the workflow instance, or by other workflow instances.
  - A workflow step to be designed to be performed conditionally, based on whether a logical condition is satisfied on the z/OS system.
- Enhance the configuration workflow through the discovery functions of z/OS and z/OSMF configuration settings to determine the status of the current setup.
- Provide z/OSMF REST services support for editing and browsing files and data sets
- A new REST service is added to allow a caller to obtain information about z/OSMF on the z/OS host system
- The 'Systems' task now provides support for defining groups for organizing your systems.
  - Allows users to view the system definitions in the Systems table by sysplex or group.
  - Adds a new Discover action, which allows users to discover and create system definitions for the active systems that belong to the same JES2 multi-access spool (MAS) or JES3 complex as the z/OSMF host system..

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

Thank You

Backup

Additional information

- **z/OS Management Facility website**
  - http://ibm.com/systems/z/os/zos/zosmf/
- **IBM z/OS Management Facility education modules in IBM Education Assistant**
  - http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp
  - **Scroll down to z/OS Management Facility**
- **IBM Publications Center**
  - **Program Directory for z/OS Management Facility (GI11-9847)**
  - **IBM z/OS Management Facility Configuration Guide (SA38-0657)**
  - **IBM z/OS Management Facility Programming (SA32-1066)**
  - **IBM z/OS V2R1.0 Management Facility License Information (GC52-1386)**
    - http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss
- **IBM z/OS Management Facility Information center**
  - http://pic.dhe.ibm.com/infocenter/zos/v2r1/index.jsp