

What's new in z/OSMF V1R13?

Session: 9804

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STSM, z/OS Systems Management and Simplification

z/OSMF R13 Functionality

- *z/OSMF new management tasks*
 - Performance: Capacity provisioning
 - Software: Deployment
 - Storage: DASD Management
 - z/OS Classic Interface: ISPF
- *z/OSMF new base capabilities*
 - REST Api for Job management
 - Application Linking
 - Authorization update
- *z/OSMF enhancements*
 - Management tasks
 - Configuration Assistant
 - Incident Log
 - Workload management
 - Resource Monitoring and System Status
 - Base enhancements
 - Currency
 - Configuration and Setup

z/OS Management Facility V1R13

Problem Management & Analysis

Monitoring z/OS system health; identifying real and potential problems; Analyzing and resolving problems

Installation, Migration, and Maintenance

Planning, installing, and upgrading z/OS systems and products that run on z/OS

Configuration

Adding or changing z/OS system components; enabling new features; defining and updating policies that affect system behavior

Simplify and modernize the user experience and programming requirements

Task-oriented browser based user-interface; end-to-end task simplification ; eliminating opportunity for error

Incident Log (R11/R12) The Incident Log 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.

New **Software Deployment (R13)** Deployment Manager will make deployment of installed software simpler and safer. It will replace manual and error prone procedures with a user friendly application, and incorporate IBM recommended best practices for software deployment.

Configuration Assistant for z/OS Comm Server (R11) Simplified configuration and setup of TCP/IP policy-based networking functions

WLM Policy Editor (R12) 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 (R12) dynamic real time metrics for system performance

New **Capacity Provisioning (R13)** simplify the work of a z/OS CP administrator to manage connections to CPMs, view reports for domain status, active configuration and active policy.

New **DASD Management(R13)** Simplify and modernize the storage administrator user experience with ability to add storage to a SMS storage group through a single UI.

z/OSMF Base Services:

- 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.
- Application linking **New**
- Security integration with SAF **New**
- ISPF Web UI **New**
- REST API for Jobs **New**

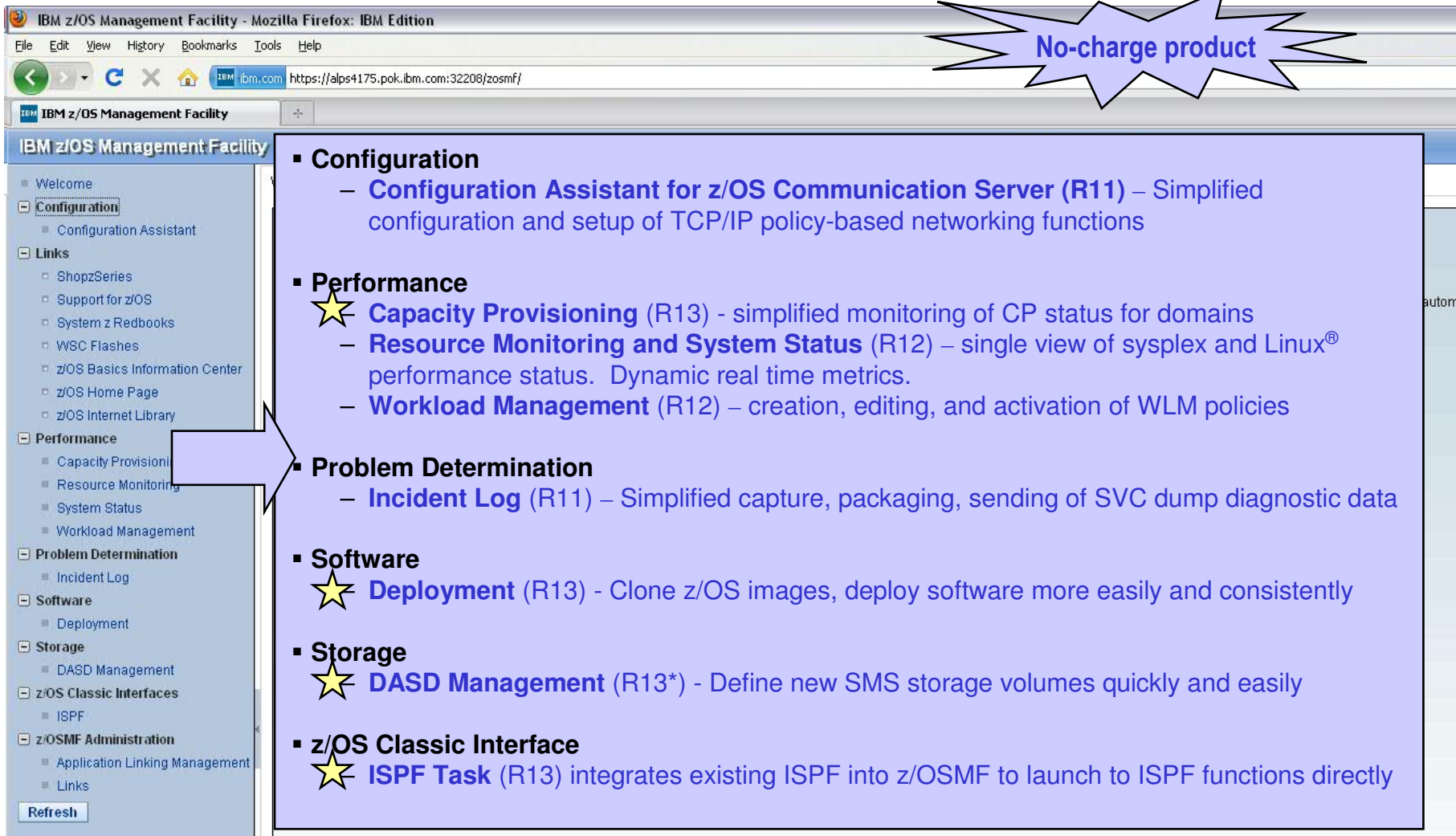
Customer requirements

- Ongoing every release

IBM z/OS Management Facility V1R13 (5655-S28)

The new face of z/OS

No-charge product



- **Configuration**
 - **Configuration Assistant for z/OS Communication Server (R11)** – Simplified configuration and setup of TCP/IP policy-based networking functions
- **Performance**
 - ★ **Capacity Provisioning (R13)** - simplified monitoring of CP status for domains
 - **Resource Monitoring and System Status (R12)** – single view of sysplex and Linux® performance status. Dynamic real time metrics.
 - **Workload Management (R12)** – creation, editing, and activation of WLM policies
- **Problem Determination**
 - **Incident Log (R11)** – Simplified capture, packaging, sending of SVC dump diagnostic data
- **Software**
 - ★ **Deployment (R13)** - Clone z/OS images, deploy software more easily and consistently
- **Storage**
 - ★ **DASD Management (R13*)** - Define new SMS storage volumes quickly and easily
- **z/OS Classic Interface**
 - ★ **ISPF Task (R13)** integrates existing ISPF into z/OSMF to launch to ISPF functions directly

* The DASD Management task is planned to be made available in 1Q 2012 with the PTF for APAR PM40869

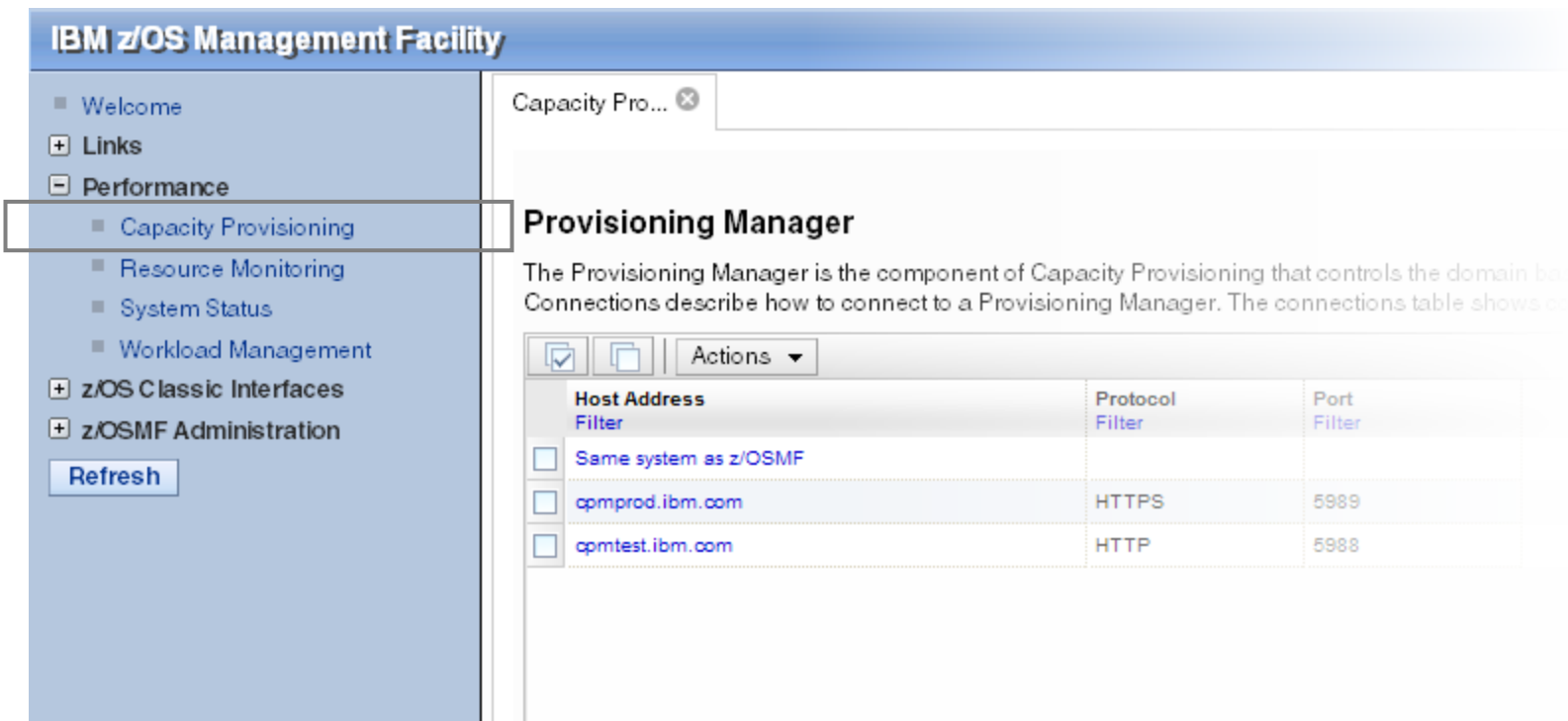
z/OSMF 1.13 new management tasks

- **Capacity provisioning**
- **Software deployment**
- **DASD Management**
- **ISPF Classic Interface**

z/OSMF Capacity Provisioning (V1.13)

Navigation

The Capacity Provisioning task can be found in the Performance category.



The screenshot shows the IBM z/OS Management Facility interface. On the left is a navigation menu with the following items:

- Welcome
- Links
- Performance
 - Capacity Provisioning
 - Resource Monitoring
 - System Status
 - Workload Management
- z/OS Classic Interfaces
- z/OSMF Administration

A "Refresh" button is located below the menu. The main content area is titled "Capacity Pro..." and contains a "Provisioning Manager" section. Below this section is a table of connections:

Host Address Filter	Protocol Filter	Port Filter
<input type="checkbox"/> Same system as z/OSMF		
<input type="checkbox"/> cpmprod.ibm.com	HTTPS	5989
<input type="checkbox"/> cpmtest.ibm.com	HTTP	5988

z/OSMF Capacity Provisioning (R13)

New! – view the status of z/OS capacity provisioning domains

- **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.

- **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.

- **New z/OSMF Capacity Provisioning task (R13)**

- Initial phase simplifies the **monitoring** of z/OS CP connections, domains, configurations, and policies
- Separate Windows-based tool required for z/OS CP **management** functions



z/OSMF Capacity Provisioning

Background

- The Capacity Provisioning Manager (CPM) is in the base of z/OS
 - The z/OS Capacity Provisioning Manager (CPM, in the base of z/OS) can automate the process of managing System z capacity, including adding and removing capacity based On/Off Capacity on Demand (On/Off CoD).
- 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.
- Part of CPCC monitoring function is integrated into z/OSMF V1.13
 - Manage connections to CPMs
 - View reports for domain status, active configuration and active policy.
- The Windows based CPCC is still required to manage policies
 - z/OSFM CP and Windows CPCC will coexist together.



z/OSMF Capacity Provisioning Function



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 policy. Connections describe how to connect to a Provisioning Manager. The connections table shows connection definitions.

Host Address Filter	Protocol Filter	Port Filter
<input type="checkbox"/> Same system as z/OSMF		
<input type="checkbox"/> cpmprod.ibm.com	HTTPS	5989
<input type="checkbox"/> 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

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

CPCs Systems

CPC name Filter	Correlation status Filter	Record ID Filter	Active MSU Filter	Active zAAPs Filter	Active zIIPs Filter	Enabled Filter	Enabled default Filter
<input type="radio"/> R35	Matched	34937149	1140	2	1	<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> Enabled
<input type="radio"/> ECL2	Matched	34937149				<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> 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
<input type="radio"/> Policy	TC057#1T	<input checked="" type="checkbox"/> Enabled	
<input type="radio"/> Logical processor scope			
<input type="radio"/> Processor limit	PLEX1.SYS1		CP limit: Max. possible; zAAP limit:
<input type="radio"/> Max. provisioning scope			
<input type="radio"/> Processor limit	CPC1		MSU limit: 0; zAAP limit: 0; zIIP li

z/OSMF Capacity Provisioning (V1.13)

Functions




- *Manage CIM connections to access a Provisioning Manager in a central shared repository*
Create, modify and delete CIM connections. Local and remote CIM servers can be used.
- *Domain status report*
View the status of a domain. The same data is displayed that is retrieved when a **REPORT DOMAIN** command on the z/OS console is issued.
- *Active configuration report*
View the active configuration of a domain. The same data is displayed that is retrieved when a **REPORT CONFIGURATION** command on the z/OS console is issued.
- *Active policy report*
View the active policy of a domain. The same data is displayed that is retrieved when a **REPORT POLICY** command on the z/OS console is issued.

z/OSMF Capacity Provisioning (R13)

Benefits



	Without Capacity Provisioning in z/OSMF**	With Capacity Provisioning in z/OSMF**
View active CP policy and compare with data provided by RMF and 	Start stand-alone Windows-based client (CPCC) for Capacity Provisioning, connect to CPM and display active configuration report. Open z/OSMF in a browser and inspect RMF and WLM data. 5 – 10 minutes until all tasks are completed	Use integrated z/OSMF GUI to work with CP, RMF and WLM and compare data provided by each exploiter. 2 – 3 minutes until all tasks are completed
Operating person needs to reuse existing connection	Connection information like hostname, protocol and port needs to be manually gathered from primary person. Available domains must be known. Up to 5 minutes	Usage of shared connection repository in z/OSMF. List of available domains is retrieved from server and shown to user. No extra time to be spent
Installation of the capacity provisioning UI application**	Install Windows client (CPCC) on workstation. Hard to install on managed clients, 20 minutes otherwise	Centrally managed z/OSMF application available to all authorized users. No extra time to be spent

The z/OSMF Capacity Provisioning task requires the base feature z/OS Capacity Provisioning

** Based on IBM laboratory results, your results may vary

** NOTE: Monitoring only, complete set of CPCC management functionality is not provided in V1.13,



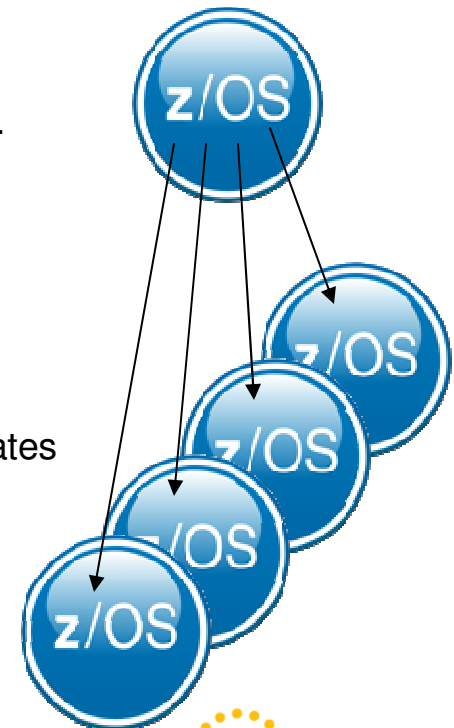
z/OSMF Software Deployment

New! - simplified deployment of installed software



- 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 Deployment



- An intuitive checklist helps guide you through the z/OS and related software deployment process
 - Select the software to deploy (a software instance)
 - Report missing requisites and possible regressions
 - Select the deployment objective
 - 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

The screenshot shows the z/OSMF web interface for the Deployment Checklist. At the top, there are tabs for "Welcome" and "Deployment". Below the tabs, the breadcrumb navigation reads "Deployment > Deploy Software > Deployment Checklist". The main heading is "Deployment Checklist", followed by the instruction "To deploy a software instance, complete the checklist." Below this is a table with two columns: "Progress" and "Step".

Progress	Step
✓	1. Specify the properties for this deployment.
✓	2. Select software instance to deploy.
✓	3. Select the objective for this deployment.
✓	4. Configure this deployment.
✓	5. Define the job settings. z/OSMF creates the deployment summary and jobs. <ul style="list-style-type: none">• View the deployment summary.• View the deployment jobs.
⇒	6. Specify the properties for the target software instance.

z/OSMF Software Deployment (R13)

Benefits

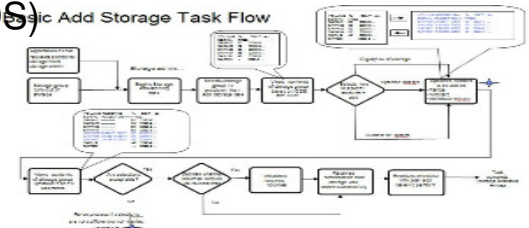
	Without z/OSMF Software Deployment **	With z/OSMF Software Deployment **
Software deployment according to IBM recommendations	<p>Only choice is to develop and maintain in-house z/OS software deployment tools and processes.</p> <ul style="list-style-type: none"> • Limited capability to add best practices for deploying software. • Possibly missing documentation 	<p>A new choice, a supported tool from IBM. Reduce or reallocate resources normally used to develop and maintain in-house deployment tools. IBM recommended path for cloning/deployment is built in, complete with documentation and support.</p>
Error checking	<p>Manual processes. Errors possible from:</p> <ul style="list-style-type: none"> • Missed steps in deployment process due to limited or no internal documentation of in-house tools. • Incorrect or incomplete requisite checking resulting in potential software compatibility issues prior to deploying software. 	<p>Reduced errors and missed steps in the cloning process. A deployment checklist provides a guide to avoid missed steps required to deploy software, which includes requisite and regression checks that help reduce errors made prior to deploying software.</p>
Skills and risks	<p>High SMP/E skill level needed</p>	<p>Can help reduce SMP/E skill level required by providing a task flow to complete a deployment.</p> <p>According to IBM measurements, SMP/E skill level reduced by approximately 30%** when deploying software using IBM-provided task flow and instructions.</p>

** Based on IBM laboratory survey results, your results may vary

DASD Management



- The first phase in simplifying SMS storage management focuses on the task of adding storage capacity to an SMS Pool storage group through a single user interface.
- Today, the storage administrator must determine when a storage group is near its capacity, identify how much storage to add, and what volumes to add. Once determined, multiple steps across various user interfaces are required to make the added capacity available to SMS:
 - ISMF to add volume entries to the storage group definition (update SCDS)
 - ICKDSF to initialize volumes
 - Operator command to vary volumes online
 - ISMF to activate the updated SCDS
- The z/OSMF DASD Management task is designed to provide the storage administrator the ability to perform the above actions with a single simplified browser based user interface, which is also designed to incorporate policy that can be defined at the storage group level.
- *Planned to be made available in first quarter 2012 with the PTF for APAR PM40869



DASD Management

- The DASD Management task supports the new z/OSMF pre-defined role of Storage Administrator

The DASD Management task provides the following functionality:

- Manage containers of pre-defined available volumes with the introduction of the reserve storage pool resource
- Use the new pool storage group SMA attributes to be used as policy with this task
- View storage group and volume information associated with the active configuration
- Easily Add storage to an SMS pool storage group via a new wizard

DASD Management – Reserve Storage Pool

Manage containers of pre-defined available volumes with the introduction of the reserve storage pool resource.

A reserve storage pool refers to a group of volumes which are available for future use, whether they will eventually be used for SMS storage groups or for other reasons. The reserve storage pool resource is designed to replace the need for a storage administrator to manually maintain a list of defined but unused volumes.

- A volume is added to the Reserved storage pool via a new parameter on ICKDSF

With the DASD Management task, users can:

- Discover reserve storage pools which exist in the current system
 - List volumes in a reserve storage pool
-
- Note: A volume in the ‘reserved’ state cannot come online to any system. An attempt to bring it online will result in error message IEF008I.

Creating a Reserve Storage Pool volume

Following is a minimum set of ICKDSF keywords needed to initialize a reserve storage pool volume.

- INIT - initialize volume
- UNIT(dddd) - target device address
- VOLID(vvvvvv) - volume serial (Required with RESERVED keyword)
- OWNERID(ownerid) - new ownerid
 - Note: Specify OWNERID="IBMRSPxxxxxxx" where xxxxxxxx refers to a 1-8 character reserve storage pool name.
- NODSEXIST - ensure no datasets exist on the volume, since a reserve storage pool volume must be empty
- RESERVED - *new* initialize as a reserved volume

Note: A volume in the 'reserved' state cannot come online to any system. An attempt to bring it online will result in error message IEF008I.

'RESERVED' is a new keyword available with ICKDSF Version 17 APAR PM16856

DASD Management – New Storage Group Attributes



Exploit new pool storage group SMA attributes associated with the DASD Management task

- Storage Utilization Notification Threshold: Amount at which the storage group has exceeded an acceptable storage utilization
- Storage Utilization Goal: Ideal storage utilization for the storage group
- Maximum Storage Increment: Maximum amount of storage to be added at one time to a storage group
- Default Volume Size: Preferred size of any new volumes to be added to the storage group
- Default VTOC Size: Size of VTOC for any new volumes to be added to the storage group
- Volume Serial Naming Convention: Naming convention for any new volumes to be added to the storage group
- Default Reserve Storage Pool: Identifies the reserve storage pool to be used for the storage group

- Users can
 - Display these attributes via the z/OSMF DASD Management task
 - Define, display and update these attributes via ISMF and Navquest
 - View these attributes through DCOLLECT record type 'SG'

DASD Management – Storage Group and Volume info

- *View storage group and volume information*
 - With the DASD Management task, users can:
 - View the list of pool storage groups associated with the active configuration
 - View an alert when the Storage Utilization Notification Threshold is exceeded
 - Display storage group level attributes
 - View volumes associated with a storage group
 - Display volume level attributes

DASD Management – AddStorage Wizard

- Select the AddStorage action against a storage group which invokes a Wizard that guides the user through steps that will simplify the task of adding storage to a storage group
 - Identify amount of storage to add (specified manually or through policy)
 - Selects volumes from a reserved storage pool (based on policy and volumes found in reserve storage pool)
 - Updates the SCDS with the selected volumes
 - Initializes the selected volumes to match the storage group naming convention
 - Optionally, varies the volumes online
 - Optionally, activates the changes to the SCDS to make the added capacity available for SMS use

DASD Management (planned for z/OSMF V1.13)



The screenshot displays the IBM z/OS Management Facility web interface. The browser title is "IBM z/OS Management F...". The page header includes "IBM z/OS Management Facility", "Welcome zosmtad", and "Log out". A left-hand navigation menu contains "Welcome", "Links", "Storage" (expanded to show "DASD Management"), and "z/OSMF Administration", with a "Refresh" button below. The main content area shows a breadcrumb trail: "DASD Management > Storage Groups > Add Volumes". The "Add Volumes" wizard is active, with a "Welcome" step selected in the left sidebar. The main content area contains the following text:

Add Volumes
Complete this wizard to add one or more volumes to a storage group.

Welcome
Use this wizard to add volumes to a storage group. Adding volumes consists of the following steps:

- Select volumes to add to the storage group. You can use the volumes that the wizard suggests for you or specify volumes.
- Generates volume names using rules that you define.
- Define initialization attributes for the volumes (volume serial, SMS status and VTOC settings).
- Update and optionally activate the control data sets (ACDS and SCDS).
- Review a summary of the volumes you are adding.

Do not show the Welcome step in the future

At the bottom of the wizard are buttons for "< Back", "Next >", "Finish", and "Cancel".

z/OSMF DASD Management* (R13)

Benefits



	Without z/OSMF Software Deployment **	With z/OSMF Software Deployment **
Identifying that a storage group needs additional capacity	No single method. Identification could be part of normal capacity planning or upgrade process, detected through monitoring tools (if installed), or discovered as part of an application failure. Minutes or even hours	Intuitive visual view of storage utilization across all storage groups. Alert surfaces whenever storage threshold reached (set in policy). Up to a couple of minutes
Identifying how much capacity to add	Manual process. Must determine available capacity (based on spreadsheet, lists, using ISMF to find unused volumes, etc), then determine amount to add (based on requested amount, service level agreement, utilization goal guideline, past experience, usage history, etc). Finally, select the volumes to add. Up to an hour, depending on configuration	“Add Storage” wizard determines amount of capacity to add based on storage utilization goal (set in policy) and available capacity found in assigned reserve storage pool (set in policy). Wizard then selects the volumes to add from the reserve storage pool. Up to a couple of minutes
Making new capacity available for use	Many steps through ISMF, ISPF, ICKDSF, SDSF (or equivalent), such as: <ul style="list-style-type: none"> •ensure selected volumes are offline across data center •ensure volumes are empty •initialization attributes / initialize volumes •Update/ activate SMS configuration •vary volumes online Up to an hour	Single UI – Add Storage Wizard includes ability to: <ul style="list-style-type: none"> •ensure selected volumes are empty and offline •pre-define initialization attributes for volumes (set in policy) •initialize volumes •update/activate SMS configuration •vary volumes online Up to a couple of minutes

Adding storage volumes easier and timelier can help avoid application failures

* Planned to be made available in first quarter 2012 with the PTF for APAR PM40869

** Based on IBM laboratory survey results, your results may vary

Assumes customer does not already use automation.

Preplanning required to set up storage group SMA policy and populate reserve storage pools. However,

note that Add Storage wizard supports manual specification of fields if policy is not set.



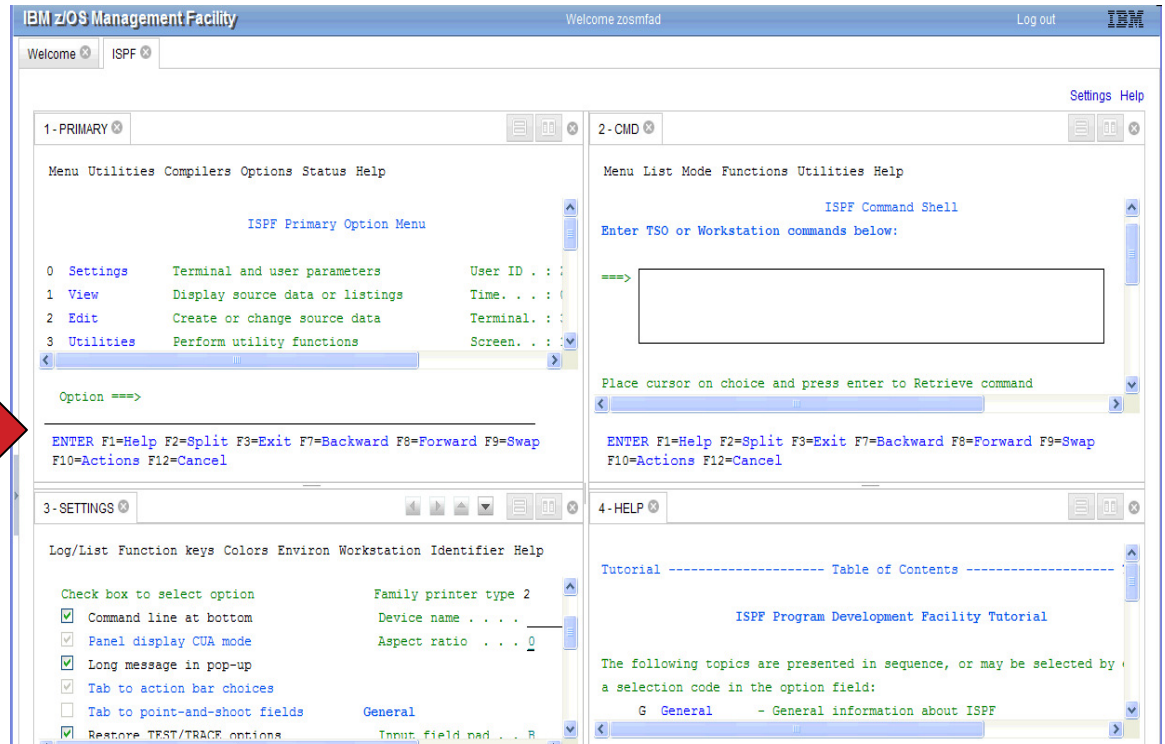
z/OSMF and ISPF (R13)

Work with existing interfaces

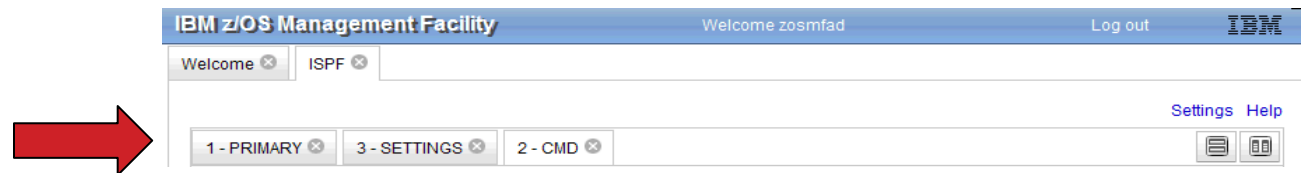


- Enables system programmer to perform tasks from one interface.
 - Also makes ISPF applications URL Web-accessible for linking and launching from other applications

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



- Also available in tabbed format



z/OSMF and ISPF (R13)

Additional screens

z/OSMF ISPF User Settings

When defining the user settings, color selections will take effect with the next z/OSMF ISPF page refresh. All other settings require you to log out and log in again.

Logon procedure: CEANN
 Region size: 2048 pages
 Account number: ACCTNO
 User group: USRGROUP
 Profile sharing: On
 Screensize: rows: 204 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
Sample turquoise text	Sample turquoise text
Sample yellow text	Sample yellow text
Sample white text	Sample black text

Show settings dialog with every logon.

OK Apply Cancel Help

- **Customize settings**

Welcome | ISPF | TSO Messages Settings Help

1-PRIMARY | TSO Messages

```

ENTER DATA SET NAME -
IMUSER.BCD.TRACE
--RECYN-LRECL-BLRSIZE-DBORG
FB  80  6160  **
--VOLUMES--
PAGE08
TIME-10:14:12 AM. CPU-00:00:00 SERVICE-6527 SESSION-00:00:42 JANUARY 13, 2011
ENTER DATA SET NAME -
  
```

OK Attention Clear Help

ENTER F1=Help F2=Split F3=Exit F4=Backward F5=Forward F6=Swap F10=Actions F12=Cancel

- **TSO messages have priority and pop up**

Welcome | ISPF | 1-SDSF | Display Filter View Print Options Search Help

SDSF STATUS DISPLAY ALL CLASSES LINE 1-19 (81)

NP	JOBNAME	JobID	Owner	Prtz	Queue	C	Pos	S&F	ASys	Status
---	DOSMFAD	TS000077	DOSMFAD	15	EXECUTION			SY1	SY1	
---	DOSMFAD	TS000081	DOSMFAD	15	EXECUTION			SY1	SY1	
---	SYSLOG	STC00002	*MASTER*	15	EXECUTION			SY1	SY1	
---	VTAM44	STC00007	*****	15	EXECUTION			SY1	SY1	ARMBLEN
---	XCF1MON	STC00008	IMUSER	15	EXECUTION			SY1	SY1	
---	GRS1MON	STC00011	*****	15	EXECUTION			SY1	SY1	
---	ZFS	STC00015	DFS	15	EXECUTION			SY1	SY1	
---	INIT	STC00020	IMUSER	15	EXECUTION			SY1	SY1	
---	INIT	STC00021	IMUSER	15	EXECUTION			SY1	SY1	
---	INIT	STC00022	IMUSER	15	EXECUTION			SY1	SY1	
---	TCAS	STC00023	IMUSER	15	EXECUTION			SY1	SY1	
---	BPZAS	STC00026	IMUSER	15	EXECUTION			SY1	SY1	
---	BPZAS	STC00028	IMUSER	15	EXECUTION			SY1	SY1	
---	RESOLVER	STC00040	TCPIPMS	15	EXECUTION			SY1	SY1	
---	TCPIP	STC00041	TCPIP	15	EXECUTION			SY1	SY1	ARMBLEN
---	BRNS001	STC00046	WSCH01	15	EXECUTION			SY1	SY1	ARMBLEN

COMMAND INPUT ==> SCROLL ==> |

ENTER F1=HELP F2=SPLIT F3=END F4=RETURN F5=IFIND F6=BOOK F7=UP F8=DOWN F11=RIGHT F12=RETRIEVE

- **Example: SDSF status**

z/OSMF 1.13 new core functions

- **REST APIs for Job Management**
- **Application Linking**
- **SAF Authorization**

New programmatic interface for z/OS

Function delivered with z/OSMF R13

- **A RESTful web service (also called a RESTful web API, or REST API) is a simple web-based publishing service implemented using HTTP.**
- **z/OSMF R13 Introduces a new REST API (HTTP(s)) interface to z/OS for submitting and accessing batch job information.**
- **This interface is an open API which can be driven locally on a z/OS system or driven from a remote system (The remote system need only support the HTTP(s) protocol)**
- **REST API web services can be used by: web applications (javascript/AJAX, Flex(Flash), etc) and other web service clients, such as Java, PHP, Perl, etc**
- **The REST API web service will connect to both JES2 and JES3, as well as secondary subsystems for select functions**
- **There is no GUI interface for the REST API.**
 - **This item provides the customer a programmatic interface for web applications for z/OS Jobs via z/OSMF**

JOBS REST API for z/OS – use with z/OS BATCH



- Today's options:
 - Allocate and open internal reader
 - TSO/ISPF submit,
 - FTP "interface-level2"
 - Java z/OS submit interface



- Complex programming
- Security protocol limitations

- Improve access to z/OS batch
 - Increase client coverage
 - Add a non-controversial remote interface
 - Align with Web technologies
 - Make z/OS a little more approachable
- Invoke the power of z/OS batch from virtually any non-z/OS application

- New RESTful HTTPs based API
 - Secure
 - Firewall friendly
 - Text like



- Any web-based, Java, PHP, Perl application, etc. supporting HTTP



- z/OSMF R13
- z/OS JES2
- z/OS JES3

Submit JCL, get status, retrieve output files, change jobclass, cancel job, purge job

JOBS REST Interface (example)

- Example
 - A job named G1JAVA1B with job number JOB00023

```
GET /zosmf/restjobs/jobs/G1JAVA1B/JOB00023 HTTP/1.1
```

```
HTTP/1.1 200 OK
```

```
Date: Thu, 13 Jan 2011 05:39:28 +0000GMT
```

```
Content-Type: application/json
```

```
Connection: close
```

```
{  
  "jobid": "JOB00023", "jobname": "G1JAVA1B", "subsystem": null, "owner": "G1JAVA1",  
  "status": "OUTPUT", "type": "JOB", "class": "A", "retcode": "CC 0000",  
  "url": "https://host:port/zosmf/restjobs/jobs/G1JAVA1B/JOB00023",  
  "files-url": "https://host:port/zosmf/restjobs/jobs/G1JAVA1B/JOB00023/files"  
}
```

- Using the files-url you can retrieve the individual datasets, you can retrieve the data in chunks etc.

JOB REST Interface (example)

- Other interfaces:

Service	URL	HTTP method
<i>Get the status for a job</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs/ j obname/ j obid</i>	<i>GET</i>
<i>Get the status for a job for secondary JES</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs/ - JESB/ j obname/ j obid</i>	<i>GET</i>
<i>Get the list of spool files related to a job</i> <i>* supports secondary JES</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs/ j obname/ j obid/ files</i>	<i>GET</i>
<i>Get the contents of a spool file for a job</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs/ j obname/ j obid/ files/ nnn/ records</i>	<i>GET</i>
<i>Get a list of jobs, optionally based on owner, prefix, or jobid parameters</i> <i>* supports secondary JES</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs</i>	<i>GET</i>
<i>Submit a job</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs</i>	<i>PUT</i>
<i>Cancel a job</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs/ j obname/ j obid</i> <i>JSON document : { "request": "cancel" }</i>	<i>PUT</i>
<i>Change the job class for a job</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs/ j obname/ j obid</i> <i>JSON document : { "class": "<new_j ob_cl ass>" }</i>	<i>PUT</i>
<i>Purge a job</i>	<i>ht t ps:// host : port / zosnf / rest j obs/ j obs/ j obname/ j obid</i>	<i>DELET E</i>

The foundation for modern batch

Function for z/OS R13



- **About 90% of customers consider batch mission critical, the majority running on System z**.**
 - COBOL batch is almost everywhere and is capable of supporting billions of transactions a day.
 - Challenge with batch: maintaining 24x7 uptime for on-line processing systems coupled with processing ever increasing data volumes in an ever diminishing batch window
- **z/OS R13 the foundation for modern batch applications**
 - A new z/OS base component, the z/OS Batch Runtime environment, provides the framework for Java-to-COBOL interoperability, for transactional updates to DB2®, and for sharing database connections between Java and COBOL.
 - Re-use valuable COBOL assets by developing new and/or enhancing existing batch applications with Java
 - JES2 JCL enhancements are designed to make programming JCL easier, provide more control of batch applications.
 - In-stream data in catalogue procedures, more options on setting job return codes, and the ability to stop and hold a job at the end of a step (not just at the end of the job) give much more granularity and control.
 - New REST API enables you to access z/OS batch from non-z/OS servers.
 - Submit JCL, get status, retrieve output files, change jobclass, cancel job, purge job
 - Prerequisites
 - IBM 31-bit SDK for z/OS, Java Technology Edition, Version 6.0.1 (5655-R31)
 - DB2 V9.1 for z/OS (5635-DB2) or later with PTFs
 - IBM Enterprise COBOL for z/OS V4.1 (5655-S71) or later

** IBM Market Research



Application linking (R13)

- Provide a more seamless experience for system programmers as they work with different tools and tasks on the z/OS system.
- This is accomplished by enabling Cross application linkage and context sensitive launching between z/OSMF applications and also between z/OSMF applications and external applications
- Link z/OSMF apps to z/OSMF apps ... or Link non-z/OSMF web-based apps to z/OSMF apps

Application linking (R13)

Example, link from z/OSMF to LookAt

- Define an 'event' (such as "LookAt")
- Then define the 'event handler' action and parameters (such as 'go to LookAt' with text search)

Application Linking Manager

Manage the event types that allow you to link or connect z/OSMF tasks and external applications. [Learn more...](#)

Event Types

ID	Display Name	Description	Registered By	Default Handler
Filter	Filter	Filter	Filter	Filter
<input checked="" type="checkbox"/> IBM.ZOSMF.LOOK_AT_SEARCH	Search IBM LookAt	Search IBM LookAt for a keyword	IBM	
<input type="checkbox"/> IBM.ZOSMF.SEARCH_WEB	Web Search	Search the web for a keyword	IBM	
<input type="checkbox"/> IBM.ZOSMF.VIEW_JOB_STATUS	View Job Status	Event for viewing the status of a job	ISPF	

Event Types > New Event Type

New Event Type

* Event type ID:

* Display name:

Description:

* Registered by:

Parameters (Enter each parameter on a separate line, and use a comma to separate the name and description):

Event Types > Event Type Properties

Properties for Event Type IBM.ZOSMF.LOOK_AT_SEARCH

ID	Name	Type	Enabled	Default	URL
Filter	Filter	Filter	Filter	Filter	Filter
<input type="checkbox"/> LOOK_AT_SEARCH	LookAt Search	External application	Yes	No	http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/SHELVES/EZ2LKZ70?SEARCH=Search&Type=FUZZY&searchTopic=TOPIC&searchText=TEXT&searchIndex=INDEX&rank=RANK

Application Linking

Example, link Incident Log to SDSF in context



The screenshot illustrates the process of linking an application in context. On the left, the 'Incident Log' window shows a table of FTP Job Status entries. A blue arrow points from the 'View Job Details' menu option in the table to the '2-SDSF' tab in the right-hand window. A text box highlights the action: 'Action from the Incident Log: Launch to view job status - SDSF'.

Data Type	Filter	Cancel Job	Delete FTP Status	JAA8413C	Send in progress	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log			JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log	Select All		JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log	Deselect All		JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log	Configure Columns...		JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log	Hide Filter Row		JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log	Clear Filters		JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log	Modify Sort...		JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE
<input type="checkbox"/>	Error log	Clear Sorts		JAA8413C	Completed	zosmf07.rchland.ibm.com	ISE

Total: 6, Selected: 1
Refresh Last refresh: Feb 3, 2011 10:28:17 AM local time (Feb 3, 2011 4:28:17 PM GMT)

The right-hand window shows the SDSF output for job JES2 JOB LOG -- SYSTEM EIMG -- NODE, dated 11.27.28. The output includes job details and command input.

```
***** TOP OF DATA *****  
JES2 JOB LOG -- SYSTEM EIMG -- NODE  
  
11.27.28 JOB00058 ---- THURSDAY, 03 FEB 2011 ----  
11.27.28 JOB00058 IRR010I USERID ZOSMFAD IS ASSIGNED TO THIS JOB.  
11.27.28 JOB00058 ICH70001I ZOSMFAD LAST ACCESS AT 10:37:38 ON THURSDAY, FEBRU  
11.27.28 JOB00058 SHASP373 PDWFTP STARTED - INIT 1 - CLASS A - SYS EIMG  
11.27.28 JOB00058 IEF403I PDWFTP - STARTED - TIME=11.27.28  
  
1 //PDWFTP JOB MSGLEVEL=(1,1)  
/*JOBPARM SYSAFP=*  
/*  
/* COPY CLIST TO TEMP PDS  
/*  
2 //STEP0010 EXEC PGM=IEBGENER,REGION=50M  
  
ENTER F1=HELP F2=SPLIT F3=END F4=RETURN F5=IFIND F6=BOOK F7=UP F8=DOWN F9=SNAP F10=LEFT F11=RIGHT F12=RETRIEVE
```

Application Linking - APIs

<i>Method</i>	<i>•Servlet API Method</i>		
	<i>•URL</i>	<i>•HTTP Method</i>	<i>•Request Parameters</i>
<i>registerEventType</i>	<i>/zosmf/izual/rest/eventtype/<id></i>	<i>POST/</i>	<pre>{ id: "IBM.ZOSMF.EVENT_TYPE_ID", displayName: "Default English name", desc: "Default English description", bundleFile: "optionalBundleFileName.js", bunleUrl: "optional/bundle/url/path", owner: "ow nerId", params: {"key1": "English description of the param"} }</pre>
<i>registerExternalHandler</i>	<i>/zosmf/izual/rest/handler/<id></i>	<i>POST</i>	<pre>{ type: "EXTERNAL", id: "RM.SYSTEM_STATUS", displayName: "Default English name", bundleFile: "optionalBundleFileName.js", bunleUrl: "optional/bundle/url/path", options: { "CONTEXT_SUPPORT": "OPT_CONTEXT_SUPPORT_NONE" } }</pre> <p>Valid values for the type are:- EXTERNAL or – INTERNAL</p> <p>Various values for the "CONTEXT_SUPPORT" option</p>
<i>getHandlersForEventType</i>	<i>/zosmf/izual/rest/handler</i>	<i>GET</i>	
<i>unregisterHandler</i>	<i>/zosmf/izual/rest/handler/<id></i>	<i>DELETE</i>	
<i>unregisterEventType</i>	<i>/zosmf/izual/rest/eventtype/<id></i>	<i>DELETE</i>	

Application Linking – GUI interface

Application Linking Manager

Manage the event types that allow you to link or connect z/OSMF tasks and external applications. [Learn more...](#)

Event Types

<input checked="" type="checkbox"/> <input type="checkbox"/> Actions ▾					
ID	Display Name	Description	Registered By	Default Handler	
Filter	Filter	Filter	Filter	Filter	
<input checked="" type="checkbox"/> IBM.ZOSMF.LOOK_AT_SEARCH	Search IBM LookAt	Search IBM LookAt for a keyword	IBM		
<input type="checkbox"/> IBM.ZOSMF.SEARCH_WEB	Web Search	Search the web for a keyword	IBM		
<input type="checkbox"/> IBM.ZOSMF.VIEW_JOB_STATUS	View Job Status	Event for viewing the status of a job	ISPF		

Total: 29, Selected: 1

Refresh Last refresh: 07.02.2011 12:34:30 local time (07.02.2011 11:34:30 GMT)

z/OSMF Administration: SAF-based authorization (R13)



- z/OSMF is enhancing its authorization model to provide tighter integration with Enterprise Security Management products.
 - New 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.



z/OSMF Administration: SAF-based authorization (R13)

- **Option to stay with repository mode or convert to SAF mode**
 - Can switch to SAF mode at a later time
 - Configuration support for conversion to SAF mode via scripts.
 - Requires activation of ZMFAPLA resource class
 - ***Enable for generic profiles if needed.***
 - Ability to switch back to repository mode if needed. Not recommended to switch back and forth repeatedly. SAF mode is the strategic destination.
- **Users, Roles (groups) and Task authorization management**
 - SAF Mode: via ESM and customer security change control processes.
 - Repository Mode: via z/OSMF Users and Roles tasks

z/OSMF Administration: SAF-based authorization (R13)

- Creation of a new repository mode pre-defined role for storage administrators.
- Exploitation of new 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

Enhancements to existing tasks

Config. Assist. for z/OS Communications Server

Updates for z/OSMF R13

- Retrieving TCP/IP profile information from active TCP/IP stacks, enabling it to import lists of IP addresses that are available for policy configuration.
- Allowing a single instance of the Configuration Assistant to be used to configure both z/OS V1.12 and z/OS V1.13 Communications Server. This is intended to allow you to configure systems in a mixed-release environment from a single instance of the Configuration Assistant running under z/OSMF.
- Allowing a policy rule to be defined once for multiple stacks, to permit more efficient policy configuration for multiple systems without having to individually define every policy rule for every stack.
- z/OS Communications Server intrusion detection services (IDS) technology is enhanced to add support for IPv6 traffic and also additional attack types, including Enterprise Extender, data hiding, and out of sequence packet denial of service attacks.

Incident Log

Updates for z/OSMF 1.13

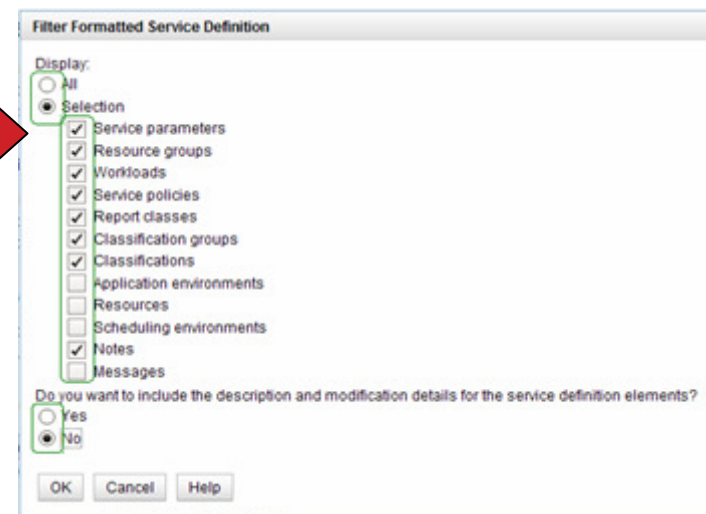
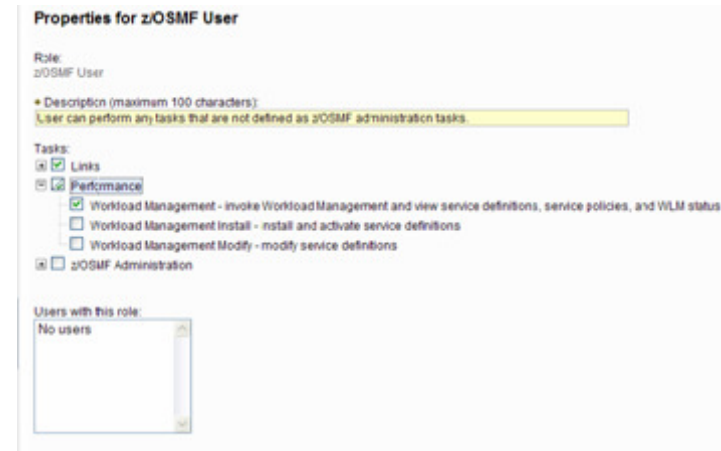
- **FTP destination and Firewall Proxy settings shared with Software deployment**
 - **Can be updated during the wizard**
 - **Can be locked for update**
- **The name of file being transmitted is also included in the message**
- **Support the PDUU included with z/OS as of R13**
- **Use of system temp dataset for working with Unix files also – compressing before sending**
- **Retain search string added in the View Diagnostic Details panel**

z/OSMF Workload Management

Updates for z/OSMF R13

- Separate authorization levels for
 - Viewing of service definitions, service policies, and WLM status
 - Installation and activation of service policies
 - Modification of service definitions

- Settings of a user are persisted between sessions
 - Sorting/filtering/configuration of (tree)-table columns
 - Recently used data set names during import/export of service definitions
 - Selections in Print Preview Filter dialog
 - Selections in Export to Local Workstation dialog



Resource Monitoring

Updates for z/OSMF V1R13

- **The following tasks have been renamed**
 - **Sysplex Status has been renamed to System Status**
 - **Monitoring Desktops has been renamed to Resource Monitoring**
 - **The Desktops have been renamed to Dashboard**
- **With z/OS V1.13 and z/OSMF V1.13, RMF is intended to provide 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.**
- **Along with the Resource Monitoring plug-in for the z/OS Management Facility, first made available with z/OSMF V1.12, this is intended to display performance metrics from those platforms and combine them with z/OS metrics in common graphic views**

Integrated z/OS and Linux resource monitoring

A monitoring solution for multi-tier workloads



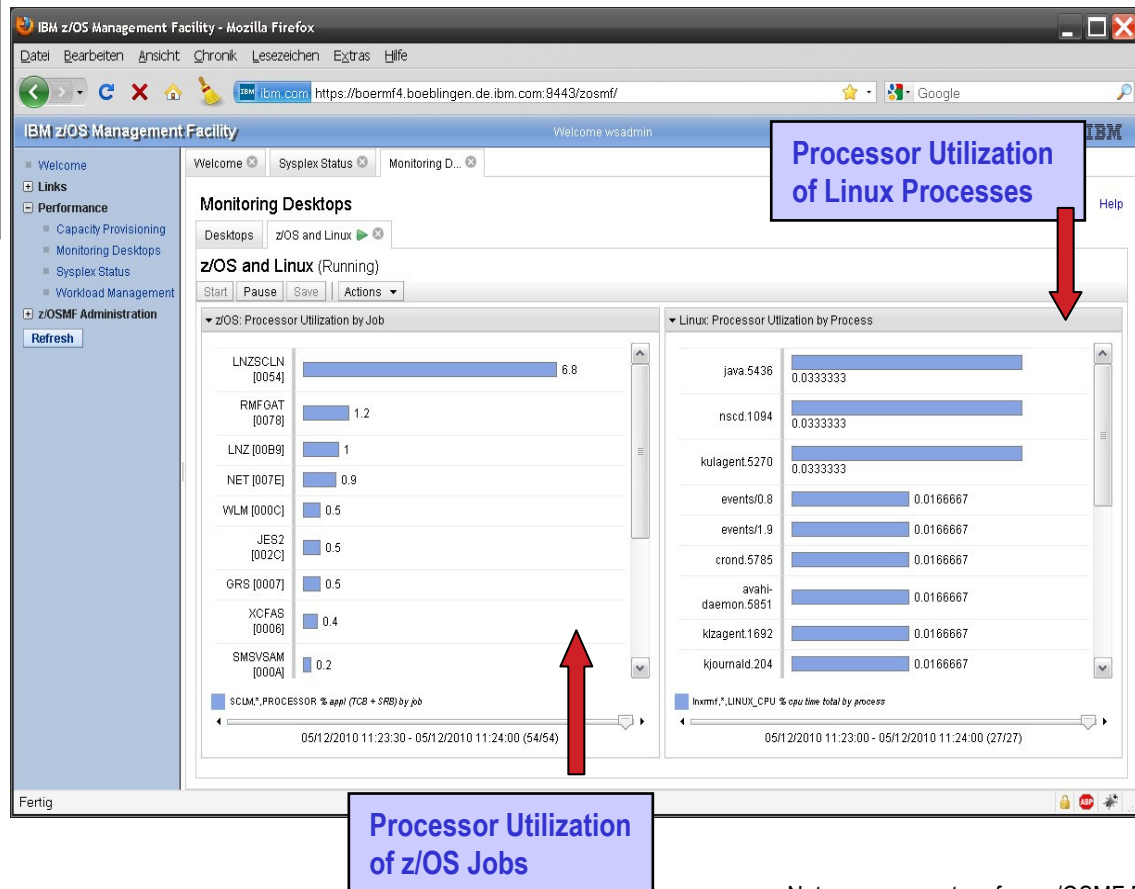
- Monitor the resources for z/OS and Linux workloads
- Ideal for use with System z Enterprise System

▪ For z/OSMF R12

- Use separate as-is, no-charge web-download tool to gather resource information for Linux for System z and Linux for x86 systems.

▪ For z/OSMF R13

- New performance data gatherers for Linux on System z, Linux on IBM System x®, and AIX® systems integrated in z/OSMF
- Consistent monitoring solution for these systems in zEnterprise ensembles.



Note, screen capture from z/OSMF R12



z/OSMF V1R13 Pre requisites

- Software Dependencies
 - z/OSMF 1.13 requires z/OS 1.13
 - WAS OEM 7.0.0.17 or later
- Hardware Dependencies
 - None
- Clients Supported
 - Windows XP, Windows Vista, Windows 7 (32 bit and 64 bit)
- Browsers Supported
 - Internet Explorer 7 and 8
 - Mozilla Firefox 3.5 and 3.6

Summary

- ***z/OSMF new management tasks***
 - Capacity provisioning
 - Software deployment
 - Storage Management
 - ISPF Classic Interface
- ***z/OSMF new base capabilities***
 - Application Linking
 - Authorization update
 - REST Api for Job management
- ***z/OSMF enhancements***
 - Management tasks
 - Configuration Assistant
 - Incident Log
 - Workload management
 - Resource Monitoring and System Status
 - Browser/platform support

Additional information

- **z/OS Management Facility website**
 - <http://ibm.com/systems/z/os/zos/zosmf/>
- **z/OS Hot Topics, Issue 25:**
 - http://ibm.com/systems/z/os/zos/bkserv/hot_topics.html
- **Program Directory for z/OS Management Facility** GI11-2886
- **IBM z/OS Management Facility Configuration Guide** SA38-0652
- **z/OS Management Facility Messages** SA38-0654
- **IBM WebSphere Application Server OEM Edition
for z/OS Configuration Guide, Version 7.0** GA32-0631
- **IBM z/OS Management Facility License Information** GC52-1263

BACKUP

Migration and coexistence

- Toleration - In order to switchover to a lower release and also switch back to z/OSMF 1.13, the following service is required
 - z/OSMF 1.11
 - PM27448 - UK65987
 - z/OSMF 1.12
 - PM27450 (z/OSMF core) - UK65997
 - PM32108 (Incident Log) – UK66066
- Migration actions
 - WLM Policy Editor
 - If you have authorized the role 'z/OSMF Users' for the Workload Management task and then migrate from R12 to R13, the role 'z/OSMF Users' would only have the authorization to view WLM service definitions and service policies, but not as in R12 the authorization to modify and install service definitions or activate service policies. You need to verify and adjust the authorization of roles for the Workload Management task when migrating from R12 to R13.
 - Later on, when switching back from R13 to R12, you also need to verify and adjust the authorization of roles for the Workload Management task. Because if role 'z/OSMF Users' has only view authorization in R13 it would have view, install, and modify authorization in R12 when the same repository files are used as in R13.

Product Package

- zOSMF V1R13 is comprised of:
 - **PID# 5655-S28**
 - **S/S PID# 5655-S29**
- **FMID#**
 - **HBBN700 (IBM WebSphere Application Server OEM Edition for z/OS v7.0)**
 - **COMPID 5655I3512 - WEBS APP SVR OEM**
 - HSMA130 - IBM z/OS Management Facility
 - COMPID 5655S28SM - zOSMF Core
 - COMPID 5655S28RJ - zOSMF RestJobs
 - HSMA131 - IBM z/OS Management Facility – ISPF
 - COMPID 5655S2801 - zOSMF ISPF
 - HSMA132 - IBM z/OS Management Facility – RM
 - COMPID 5655S2802 - zOSMF RM
 - HSMA133 - IBM z/OS Management Facility – WLM
 - COMPID 5655S2803 - zOSMF WLM
 - HSMA134 - IBM z/OS Management Facility – Deplymnt Mgr
 - COMPID 5655S2804 - zOSMF Core
 - HSMA135 - IBM z/OS Management Facility - Incident Log
 - COMPID 5655S2805 - zOSMF PD Incident Log
 - HSMA136 - IBM z/OS Management Facility – Capacity Prov
 - COMPID 5655S2806 - zOSMF Capacity Provisioning
 - HSMA13A - IBM z/OS Management Facility - Config Assist
 - COMPID 5655S28CA – Comm server Config ASST
 - HSMA13F - IBM z/OS Management Facility - DFSMS
 - COMPID 5655S28DF z/OSMF Storage manager

Ordering - ShopzSeries

MVS: z/OS Operating System					
Select	Product	Description	Version	Language	
<input type="checkbox"/>	◆ [5655-P97]	Encryption Facil Encrypt Ser [FMIDs]	1.02.00	English (US)	
<input type="checkbox"/>	◆ [5655-P97]	Encryption DFSMSdss Encrypt [FMIDs]	1.02.00	English (US)	
<input type="checkbox"/>	◆ [5655-S26]	Sys Svcs Runtm Env for z/OS [FMIDs]	1.01.00	English (US)	
<input type="checkbox"/>	◆ [5655-S28]	z/OS Management Facility [FMIDs]	1.13.00	English (US)	
<input type="checkbox"/>	◆ [5694-A01]	z/OS V1 DFSMStvs [FMIDs]	1.13.00	English (US)	
<input type="checkbox"/>	◆ [5694-A01]	z/OS V1 SDSF [FMIDs]	1.13.00	English (US)	
<input type="checkbox"/>	◆ [5694-A01]	z/OS V1 BDT FTF [FMIDs]	1.13.00	English (US)	
<input type="checkbox"/>	◆ [5694-A01]	z/OS V1 BDT SNA NJE [FMIDs]	1.13.00	English (US)	
<input type="checkbox"/>	◆ [5694-A01]	z/OS V1 Base [FMIDs]	1.13.00	English (US)	

IBM z/OS Management Facility

- **The IBM z/OS Management Facility is a zero priced separately licensed program product**
 - z/OS Management Facility V1.13 (5655-S28)
 - Same program number as z/OS Management Facility V1.11 and V1.12
 - z/OS Management Facility V1.1 Subscription and Support (5655-S29)
- **The IBM z/OS Management Facility product consists of :**
 - WebSphere Application Server OEM Edition
 - z/OSMF core infrastructure
 - z/OSMF plug-ins
- **z/OS Management Facility V1.11 runs on z/OS V1.10 through z/OS V1.13**
 - The Configuration Assistant for z/OS Communications Server requires z/OS V1.11 or higher
- **z/OSMF V1.12 requires z/OS V1.12 or higher**
- **z/OSMF V1.13 requires z/OS 1.13**

Software Installation

- **z/OSMF V1.13 ordered in a z/OS ServerPac**
 - Provides default customization via ServerPac provided customization job
 - Provided for Full System Replace installation path
 - Software Upgrade jobs and documentation provided but may need changes based on your existing environment
 - Can also use the WebSphere Application Server OEM Edition Configuration Guide and z/OSMF Configuration Guide
 - Product configuration scripts to setup, if defaults are not viable
- **z/OSMF V1.13 ordered in a CBPDO**
 - Use Program Directory to get started
 - Use the WebSphere Application Server OEM Edition Configuration Guide and z/OSMF Configuration Guide
 - Product configuration scripts to setup