

Manage your Workloads and Performance with z/OSMF

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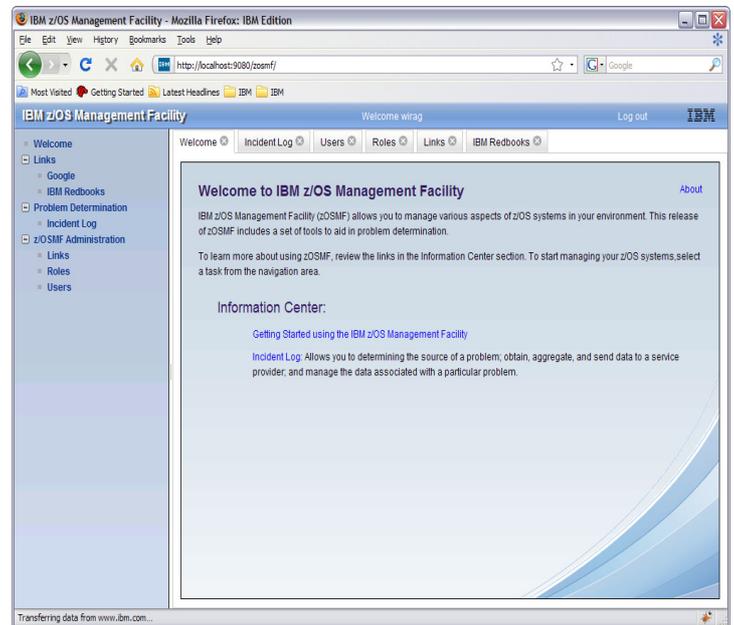
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z/OS Management Facility



- The IBM z/OS Management Facility provides a Web-browser based management console for z/OS.
- Helps system programmers to more easily manage and administer z/OS by simplifying day to day operations and administration.
- More than just a graphical user interface, the z/OS Management Facility provides real value
 - Automated tasks can help reduce the learning curve and improve productivity
 - Embedded active user assistance (such as wizards) guides you through tasks and helps provide simplified operations



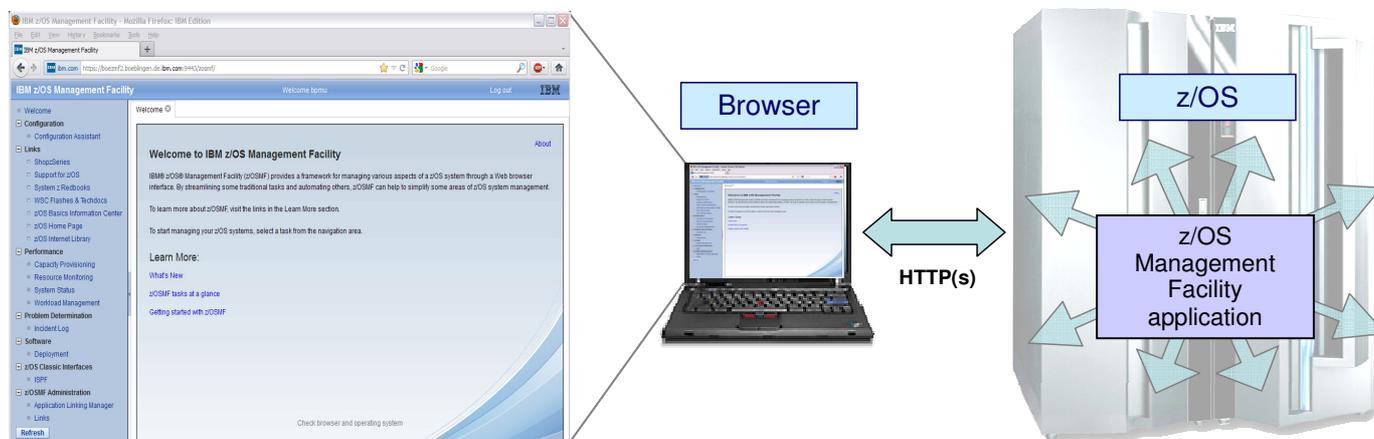
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- IBM z/OS Management Facility (z/OSMF), a new zero priced product, will simplify, optimize and modernize the z/OS system programmer experience starting in V1R11 with problem data management and TCP/IP Policy based configuration. With z/OS V1R12 the Workload Management and the Resource Monitoring Application have been added
- z/OSMF will deliver solutions in a task oriented, Web browser based user interface with integrated user assistance. And z/OSMF will make the day to day operations and administration of the mainframe z/OS systems easier to manage for both new and experienced system programmers. The focus is to help improve system programmer productivity, and make the functions easier to understand and use

IBM z/OS Management Facility ...

z/OS application, browser access



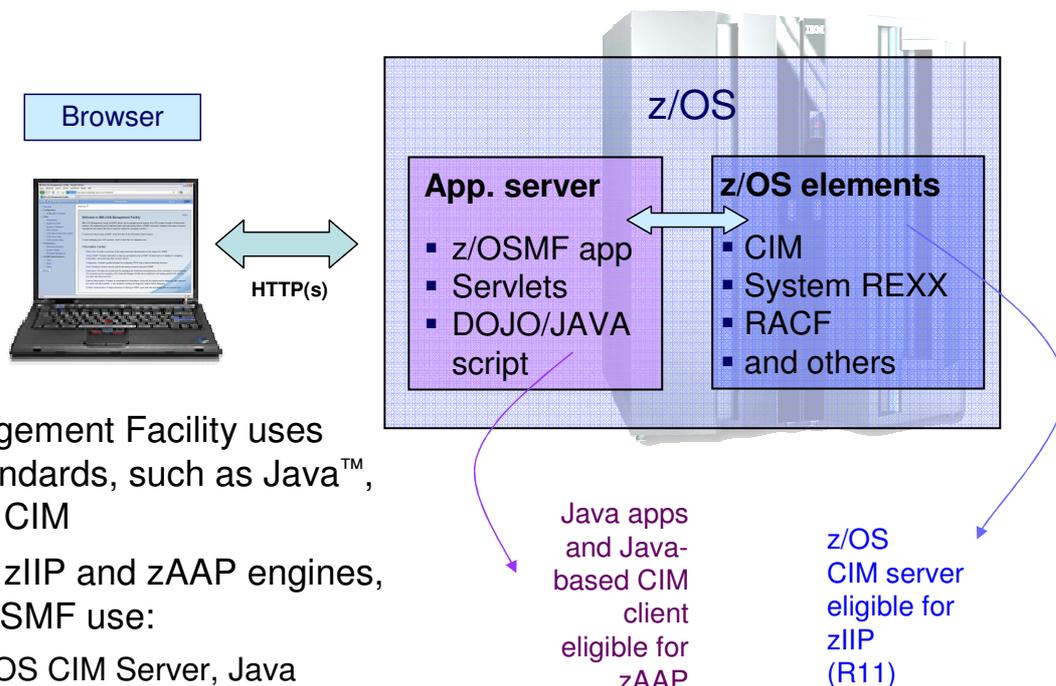
- *z/OS Management Facility is a Web 2.0 application on z/OS*
 - Manages z/OS from z/OS
 - Browser communicates with z/OSMF via secure connection, anywhere, anytime

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- This chart explains the structure for z/OSMF and how it fits into the z/OS environment.
- z/OSMF is on the right hand side and it manages z/OS from z/OS itself. It is not an external application, nor does it have an external client. z/OSMF is an application on z/OS with direct access to z/OS data and information, and it has a browser interface from the workstation. z/OSMF contains the GUIs and the application code. Everything is installed on the z/OS server and there are no client side install requirements.
- In the middle of the screen is a workstation with a browser and it communicates with z/OSMF via HTTP(s). z/OSMF is a Web 2.0 based solution. It incorporates a browser interface that communicates with the z/OS system. The browser can be anywhere... in the data center ... or around the world. You just need a secure connection.
- And on the left is a screen capture of the z/OSMF welcome page once you log into z/OSMF.

IBM z/OS Management Facility ...

Industry standards



- z/OS Management Facility uses industry standards, such as Java™, DOJO, and CIM
- Can exploit zIIP and zAAP engines, parts of z/OSMF use:
 - The z/OS CIM Server, Java
 - Workloads eligible for zAAP, or zIIP (with the zAAP on zIIP capability introduced with z/OS R11)

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- z/OS Management Facility requires an application server and a runtime environment. The app server box you see on the right is really a special version of WebSphere Application Server V7.0 which is packaged together with z/OSMF. Scripts and documentation to make it easier to set up and config this runtime on z/OS.
- Once WebSphere Application Server has been set up and installed, the z/OS Management Facility application itself is deployed into this runtime and this is where the application servlets and GUIs reside. z/OSMF uses the DOJO technology for GUIs, which uses Java script and that helps improve performance overall because the GUI can perform all the graphics rendering in the browser on the workstation. DOJO is an Open Source DHTML toolkit written in JavaScript. DOJO allows you to build dynamic capabilities into web pages and any other environment supporting JavaScript.
- This application stack communicates with z/OS components and the components can be whatever that is applicable for that particular task there are not technical limitations. For the initial release the tasks and components we have added (in alphabetical order) are the Configuration Assistant for the z/OS Communications server – which performs network configuration, Links – which is a way for you to list links to documentation, information, and product information in an easily accessible location. Incident Log is our problem determination solution, which provides a consociated view of abend-related problems on your system or sysplex with details behind it and the ability to send the data collected as a result of a problem to a destination of choice IBM or ISVs. And we also provide some z/OSMF administration functions which enable you to use the tasks in z/OSMF.
- The applications utilize the dojo framework and Javascript and run on an special version of WebSphere® Application Server. The applications exploit functions provided by z/OS system components.
- Everything is installed on the z/OS server and there are no client side install requirements.
- **z/OS V1R11** is updated so z/OS CIM server processing is eligible to run on the System (zIIP)
- zIIP eligible workloads include CIM server and CIM provider workloads.
- Other CIM-related workloads (such as CIM client and CIM-enabled resource systems processing) are not eligible for zIIP.
- Parts of **z/OSMF V1R11** (and V1R12) use the z/OS CIM Server, this workload is eligible for the zIIP.

IBM z/OS Management Facility ...



Applications / R13 plugins

IBM z/OS Management Facility - Mozilla Firefox: IBM Edition

- Configuration
 - Configuration Assistant for z/OS Communication Server (R11) – Simplified configuration and setup of TCP/IP policy-based networking functions
- Links to resources - provides common launch point for non-z/OSMF resources
- Performance
 - ★ Capacity Provisioning (R13*) - simplified monitoring of CP status for domains
 - Resource Monitoring (R12) – dynamic real time metrics for system performance
 - System Status (R12) – single view of sysplex and Linux® performance
 - Workload Management (R12) – creation, editing, and activation of WLM policies
- Problem Determination
 - Incident Log (R11) – Simplified capture, packaging, and sending of SVC dump diagnostic data. (also avail with z/OS R10)
- Software
 - ★ Deployment (R13*) - Clone z/OS images and deploy software more easily and consistently, using a new z/OSMF software deployment task.
- z/OSMF Administration Authorization services, add users, define roles, add links.

Once you've logged in, this screen shows you the full scope of what z/OSMF provides in this first release. And really the first user that logs in as a z/OSMF administrator. So when z/OSMF is first set up, always the first ID is that of an administrator – that is a requirement for setup. And the reason for this it allows the first person to get in and to add and enable others.

z/OSMF offers the following system management tasks:

Configuration category: Simplified configuration and setup of TCP/IP policy-based networking functions

Links category:

This is like 'My favorites' - Provides common launch point for accessing resources beyond the IBM z/OS Management Facility.

Some links are pre-defined in the product.

The administrators can define additional links to share commonly used resources for their installation.

With z/OSMF R12 you can add 'links' and launch points to anywhere in the left hand navbar – and not just the "Links" category. You can customize /OSMF.

Performance category

Capacity Provisioning (R13) – simplified monitoring of z/OS Capacity Provisioning status (monitoring only, not management) – as a reminder z/OS Capacity Provisioning is part of the base of z/OS and can automate System z On/Off Capacity on Demand.

The **z/OSMF Resource Monitoring** plugin allows cross-sysplex performance monitoring from a single point of control. From the z/OSMF task tree, you can select the following subtasks:

The **System Status task** provides an enterprise-wide health check of all z/OS sysplexes.

For further analysis, the **Resource Monitoring task** can graphically display RMF Monitor III metrics as well as Linux metrics by means of customizable views.

Workload Manager Policy Editor -- Facilitate the creation and editing of WLM service definitions, installation of WLM service definitions, and activation of WLM service policies

Under the **Problem Determination** category on the navigation bar, you will find the **Incident Log task**.

This will help all system programmers with problem data management tasks, providing experienced teams with procedural advantages through an incident log summary and detail views of z/OS dump incidents. 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.

Task is updated to include support for adding comments, the ability to attach user-defined data, and use of encrypted parallel FTP for sending data to IBM.

Software category

Deployment (R13) - Clone z/OS images and deploy software more easily and consistently, using a new z/OSMF software deployment task.

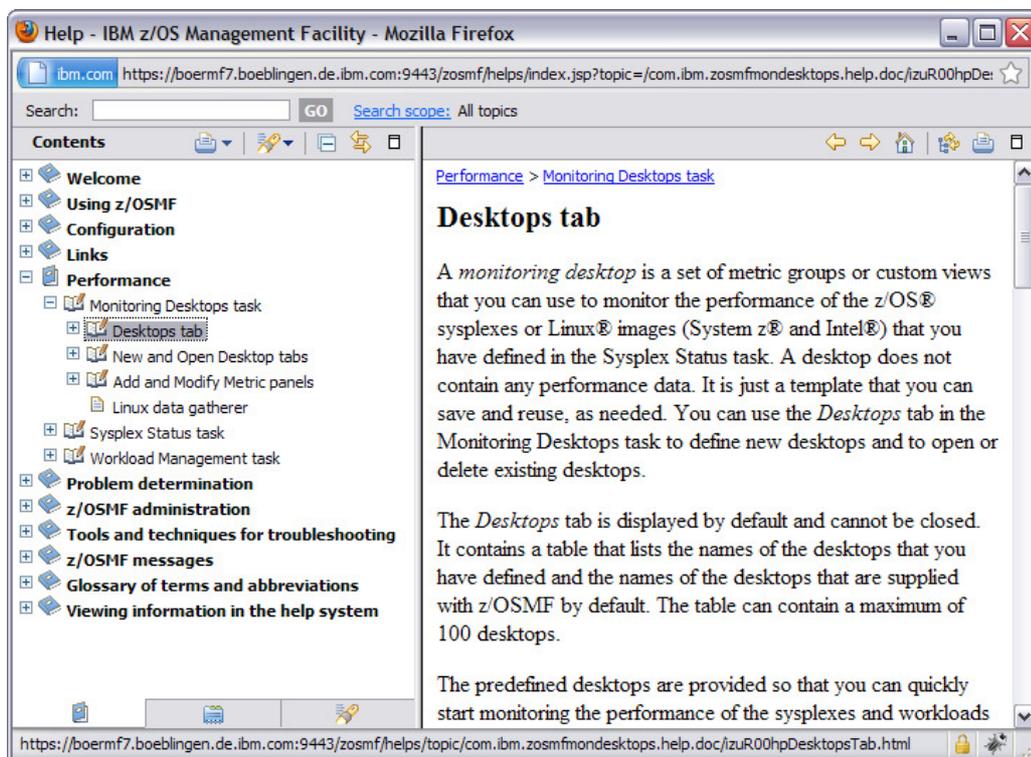
z/OSMF Administration category

Provides Authorization services for the administrator

Allows Dynamic addition of links to non-z/OSMF resources

IBM z/OS Management Facility ...

Integrated Help Facility



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- Altogether, the main objectives of all z/OSMF applications are simplification and ease of use.
- Comprehensive online helps are provided for each dialog.
- Tool tips, descriptive texts as well as error, warning and information indications are provided for further guidance.
- Try it and stay tuned! There is more to follow in the future!

The z/OSMF Workload Management Task

z/OSMF Workload Management Functions



- Policy editor
 - Simplified creation and editing of WLM service definitions
 - The elements of a service definition are displayed in tabular form
 - Service definition elements are created or edited directly in tables
 - The creation and editing of WLM service definitions is supported by best practice checks
 - Support for review and investigation of WLM service definitions
 - Direct navigation between policy elements
 - Filtering, sorting, and search functions
 - Serialization of the editing of the installed service definition
- Policy repository
 - WLM service definitions are stored in a repository integrated in the z/OSMF file system
 - Service definitions can be exported to the local workstation or a host data set as well as imported from a file or a host data set
 - Policies or best-practice recommendations can be printed for further study
 - Integrated operation history makes manual tracking superfluous
- Installation of service definitions and activation of service policies
- Monitoring of the WLM status in the sysplex
 - WLM status report is automatically updated if the WLM status on the systems changes
- Administration and operation tasks can be performed simultaneously
 - Simplified migration: Policy elements can be copied from one service definition to another
 - Simplified operation: User can start to edit a service definition, interrupt the editing to activate a service policy, and then continue with the editing without losing the context
- z/OSMF Workload Management synchronizes automatically with z/OS WLM



z/OSMF Workload Management – Some Benefits



	Without WLM Policy Editor** using WLM Administrative Application	With WLM Policy Editor** in z/OSMF
Optimization of a service definition based on best-practices	<p>Read through WLM-related manuals and identify best-practices. Print out the service definition and investigate it with respect to proposed best-practices. If required, modify the policy elements correspondingly.</p> <p>Hours (or days when done initially)</p>	<p>Check the best-practice hints the GUI displays for policy elements. If required, modify the policy elements correspondingly.</p> <p>Minutes (or hours when done initially)</p>
Review of service definitions for daily changes, migration, consolidation	<p>To get an overview of a service definition you have to print it to a data set, download the data set, and print it out or feed it into the Service Definition Formatter tool to filter and sort policy elements.</p> <p>5-10 minutes until review can start</p>	<p>Open a service definition from the service definition repository. Navigate through it using links. Filter and sort policy elements in the tables.</p> <p>Seconds until review can start</p>
Transfer policy elements from a test service definition to a production service definition	<p>Print out the test service definition and update the production service definition by typing in the changes.</p> <p>Up to several minutes per policy element</p>	<p>Open the test and production service definition simultaneously and copy over the changed policy elements via copy&paste operations.</p> <p>Seconds per policy element</p>

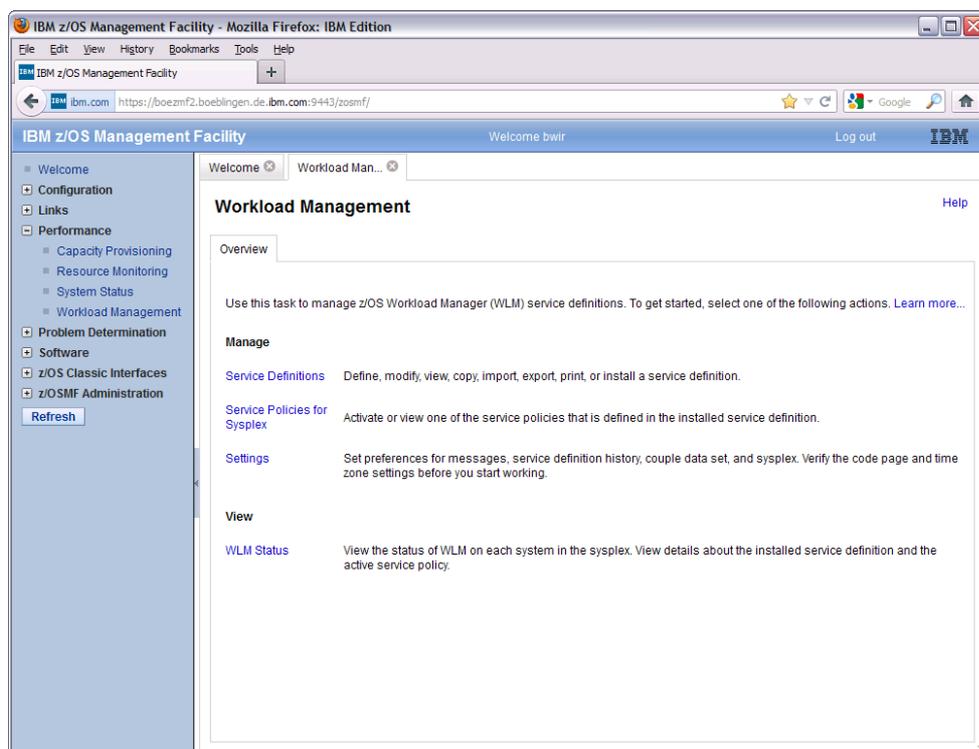
** Based on IBM laboratory results, your results may vary

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z/OSMF Workload Management Task Overview

- **Manage Service Definitions:** Create, modify, import, export, print, install service definitions
- **Manage Service Policies for Sysplex:** Activate or view the service policies in the service definition that is currently installed in the WLM couple data set
- **Manage Settings:** Specify history length, codepage, user preferences
- **View WLM Status:** Displays information about the service definition installed in the WLM couple data set and the service policy active in the sysplex

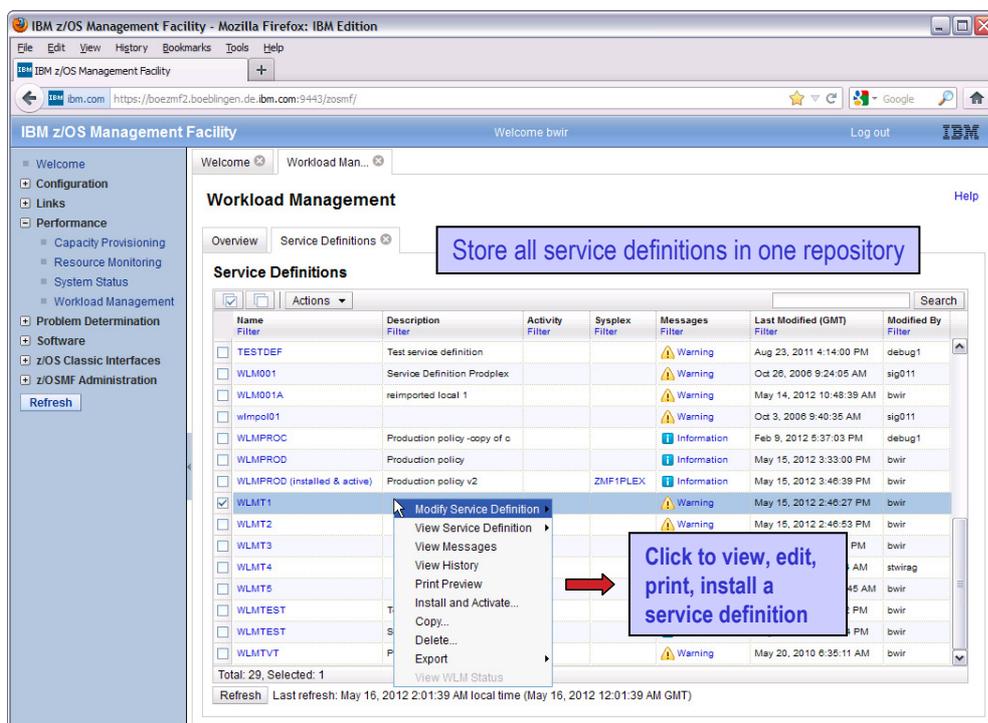


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- The z/OSMF Workload Management task provides the following subtasks:
- Manage Service Definitions: Create, modify, import, export, print, install service definitions.
- Managed Service Policies for Sysplex: Activate or view the service policies in the service definition that is currently installed in the WLM couple data set.
- Manage Settings: Specify history length, codepage, user preferences
- View Status for Sysplex: Displays information about the service definition installed in the WLM couple data set and the service policy active in the sysplex.

Service Definition Repository

- Integrated repository for service definitions
- Service definitions can be
 - Imported
 - Exported
 - Printed
 - Viewed or edited
 - Created or Copied
 - Installed on the sysplex
- Indications
 - If service definition is installed and active
 - If service definitions are being viewed or edited
 - If messages exist for a service definition



Store all service definitions in one repository

Name Filter	Description Filter	Activity Filter	Sysplex Filter	Messages Filter	Last Modified (GMT)	Modified By Filter
<input type="checkbox"/> TESTDEF	Test service definition			Warning	Aug 23, 2011 4:14:00 PM	debug1
<input type="checkbox"/> WLM001	Service Definition Prodplex			Warning	Oct 26, 2008 9:24:05 AM	sig011
<input type="checkbox"/> WLM001A	reimported local 1			Warning	May 14, 2012 10:48:39 AM	bwir
<input type="checkbox"/> wlmpl01				Warning	Oct 3, 2008 9:40:35 AM	sig011
<input type="checkbox"/> WLMPROC	Production policy -copy of c			Information	Feb 9, 2012 5:37:03 PM	debug1
<input type="checkbox"/> WLMPROD	Production policy			Information	May 15, 2012 3:33:00 PM	bwir
<input type="checkbox"/> WLMPROD (installed & active)	Production policy v2		ZMF1PLEX	Information	May 15, 2012 3:46:39 PM	bwir
<input checked="" type="checkbox"/> WLMT1				Warning	May 15, 2012 2:46:27 PM	bwir
<input type="checkbox"/> WLMT2				Warning	May 15, 2012 2:46:53 PM	bwir
<input type="checkbox"/> WLMT3						PM bwir
<input type="checkbox"/> WLMT4						AM stwirag
<input type="checkbox"/> WLMT5						45 AM bwir
<input type="checkbox"/> WLMTEST						PM bwir
<input type="checkbox"/> WLMTEST						PM bwir
<input type="checkbox"/> WLMTVT				Warning	May 20, 2010 6:35:11 AM	bwir

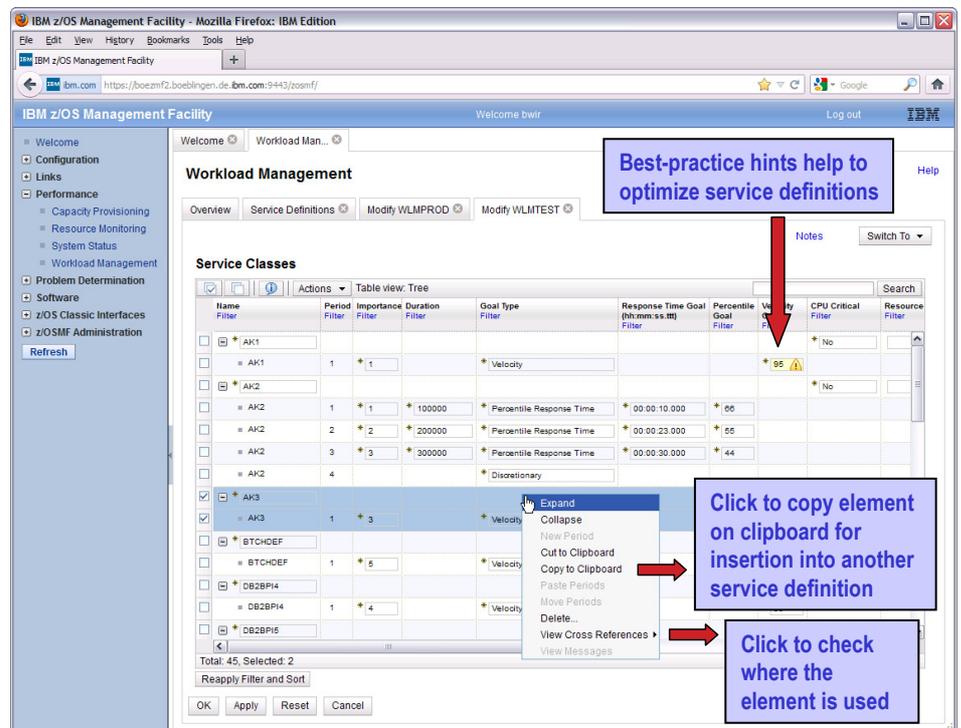
Click to view, edit, print, install a service definition

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The repository synchronizes automatically with the WLM couple data set: When the Service Definitions panel is launched or refreshed, z/OSMF checks if the service definition currently installed in the WLM couple data set is contained in the Service Definitions table. If it is not contained, z/OSMF extracts the service definition automatically, displays it in the Service Definitions table, and marks it with the label „Installed“. Furthermore, the service definition that is currently used by z/OS WLM to manage the system/sysplex is marked with the label „Active“. If the installed service definition and the service definition used to manage the system/sysplex are identical, the corresponding service definition is marked with the label „Installed & Active“.

Service Definition Editing

- Simplified creation, modification and review of service definitions
 - Policy elements are presented in tables
 - Tables can be filtered and sorted
 - Direct editing of policy elements within tables
 - Best-practice hints are displayed automatically while specifying policy elements
 - Several service definitions can be opened simultaneously
 - Cut, Copy, Paste of policy elements between service definitions



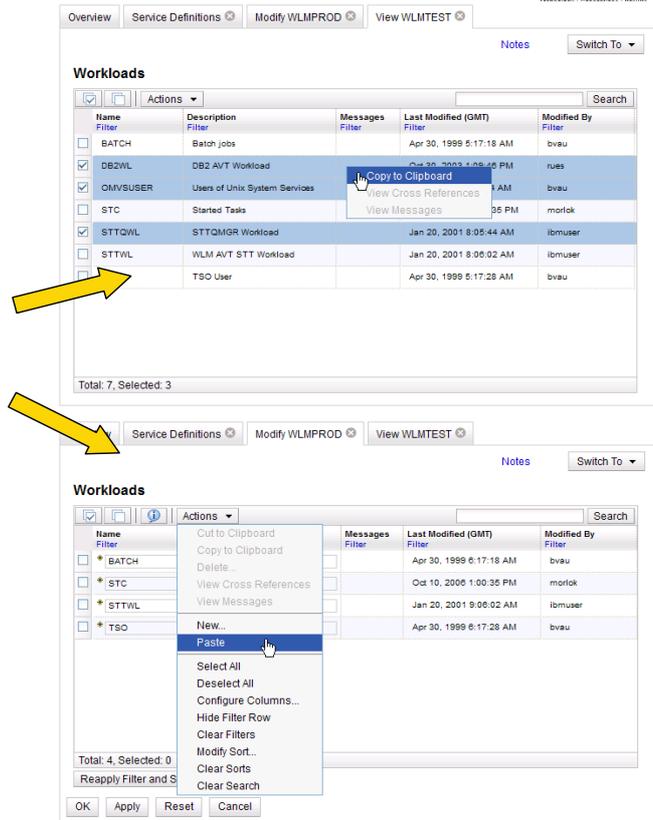
The screenshot shows the IBM z/OS Management Facility Workload Management interface. The main table displays 'Service Classes' with columns for Name, Period, Importance, Duration, Goal Type, Response Time Goal, Percentile Goal, Velocity, CPU Critical, and Resource. A context menu is open over the 'AK3' row, showing options like 'Expand', 'Collapse', 'New Period', 'Cut to Clipboard', 'Copy to Clipboard', 'Paste Periods', 'Move Periods', 'Delete...', 'View Cross References', and 'View Messages'. Annotations with red arrows point to specific features: 'Best-practice hints help to optimize service definitions' points to a yellow warning icon in the Velocity column; 'Click to copy element on clipboard for insertion into another service definition' points to the 'Copy to Clipboard' menu option; and 'Click to check where the element is used' points to the 'View Cross References' menu option.

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- The WLM Policy Editor in z/OSMF follows the same concept as the WLM Service Definition Editor tool. Service definition items/elements of the same type are displayed in one table. If service definition items contain child items the tables are tree tables where the parent items can be collapsed or expanded. For example, in the table with service classes, service class items can be expanded to make the periods visible. For tree tables the user can switch also to a flat table representation which provides additional sort capabilities.
- The user can switch to another section of the service definition using the „Switch to“ menu.

Transfer of Service Definition Elements

- Multiple table elements can be copied from one service definition to another service definition with one copy&paste operation
 - Open the source service definition(s) in *View* tab(s) and switch to the table with the elements that you want to copy over
 - Open the target service definition in a *Modify* tab and switch to the same table
 - Select the elements in the table in the *View* tab and select action *Copy to clipboard*
 - Switch to the *Modify* tab and trigger table action *Paste*
- You can copy&paste multiple table elements within the same service definition
 - E.g. you can copy the Periods of a Service Class from the Service Classes table to a Service Class Overrides table of a Service Policy if you want to make only small goal changes in the Service Policy
 - E.g. you can duplicate Classification Rules and insert them under another parent Classification Rule



The screenshots illustrate the process of copying and pasting elements between service definitions. The top screenshot shows the 'View' tab for the 'Workloads' table with three rows selected: DB2WL, OMVSUSER, and STTQWL. A context menu is open over the selected rows, and the 'Copy to Clipboard' option is highlighted. A yellow arrow points from this option to the 'Modify' tab in the bottom screenshot. The bottom screenshot shows the 'Modify' tab for the same 'Workloads' table. A context menu is open over the table, and the 'Paste' option is highlighted. A second yellow arrow points from the 'Paste' option back to the 'View' tab.

Name	Description	Messages	Last Modified (GMT)	Modified By
BATCH	Batch jobs		Apr 30, 1999 5:17:18 AM	bvau
DB2WL	DB2 AVT Workload		Apr 30, 2003 4:08:18 PM	rues
OMVSUSER	Users of Unix System Services		Jan 20, 2001 1:00:35 AM	bvau
STC	Started Tasks		Jan 20, 2001 9:05:44 AM	morlok
STTQWL	STTQMR Workload		Jan 20, 2001 8:05:44 AM	ibmuser
STTWL	WLM AVT STT Workload		Jan 20, 2001 8:06:02 AM	ibmuser
TSO	TSO User		Apr 30, 1999 5:17:28 AM	bvau

Build-in Prevention Against Data Loss



- While you are editing a service definition in a *New/Copy/Modify* tab, the browser sends temporary copies of the service definition to the server when you
 - press the *Apply* button
 - switch to another service definition component using the *Switch To* menu
- If you accidentally close the *Workload Management* task before saving your changes, you can open the last saved temporary copy of the service definition in a *Modify* tab and continue with the editing
- In the *Service Definitions* table service definitions for which a temporary copy exist have in the Activity column the label
 - *Changes pending* if a *Modify* tab was aborted
 - *Temporary* if a *New* or *Copy* tab was aborted

Name	Description	Activity	Sysplex	Messages	Last Modified (GMT)	Modified By
Filter	Filter	Filter	Filter	Filter	Filter	Filter
WLM001A	reimported local 1			Warning	May 14, 2012 10:48:39 AM	bwir
wlmpol01				Warning	Oct 3, 2008 9:40:35 AM	sig011
WLMPROC	Production policy -copy of c	Changes pending		Information	Feb 9, 2012 5:37:03 PM	debug1
WLMFPROD	Production policy			Information	May 15, 2012 3:33:00 PM	bwir
WLMFPROD (installed & active)	Production policy v2		ZMF1PLEX	Information	May 15, 2012 3:46:39 PM	bwir
WLMFPRODE		Temporary		Error	May 15, 2012 4:13:32 PM	bwir
WLMT1				Warning	May 15, 2012 2:46:27 PM	bwir
WLMT2				Warning	May 15, 2012 2:46:53 PM	bwir
WLMT3				Warning	Apr 20, 2011 3:13:27 PM	bwir
WLMT4				Warning	Feb 3, 2011 10:19:34 AM	stwirag
WLMTEST	Test policy			Information	Nov 22, 2011 3:53:12 PM	bwir
WLMTEST	Sorting Demo			Information	Aug 15, 2011 1:31:14 PM	bwir
WLMTVT	Policy from Frank			Warning	May 20, 2010 8:35:11 AM	bwir

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Multi-User Synchronisation



- In z/OSMF Workload Management locking ensures that a service definition is only modified by one user at a time
- A service definition is locked in shared mode
 - if the service definition is opened in a *View* tab
 - if the service definition *History* tab is open
 - if the *Print Preview* tab for the service definition is open
- A service definition is locked in exclusive mode if the service definition is opened in a *Modify* tab
- A service definition that is locked cannot be deleted
- A service definition that is locked exclusively can not be modified by other users
- If a *Modify/View/History/Print Preview* tab is aborted the corresponding lock is released automatically
- In an emergency situation you would have to contact the user who has exclusively locked the service definition and ask him to release the lock such that you can modify the service definition

Workload Man... ✕

Workload Management

Overview ✕ Service Definitions ✕ Modify WLMT1 ✕ History WLMT2 ✕

Service Definitions

Name	Description	Activity Filter	Sysplex Filter
<input type="checkbox"/> WLM001	Service Definition Prodplex		
<input type="checkbox"/> WLM001A	reimported local 1		
<input type="checkbox"/> wlmpl01			
<input type="checkbox"/> WLMPROC	Production policy -copy of c		
<input type="checkbox"/> WLMPROD	Production policy		
<input type="checkbox"/> WLMPROD (installed & active)	Production policy v2		ZMF1PLEX
<input type="checkbox"/> WLMT1		Being modified	
<input type="checkbox"/> WLMT2		Being viewed	
<input type="checkbox"/> WLMT3			
<input type="checkbox"/> WLMT4			
<input type="checkbox"/> WLMTTEST	Test policy		
<input type="checkbox"/> WLMTTEST	Sorting Demo		
<input type="checkbox"/> WLMTVT			

Total: 28, Selected: 0

Refresh Last refresh: 1

Information

IZUW4221

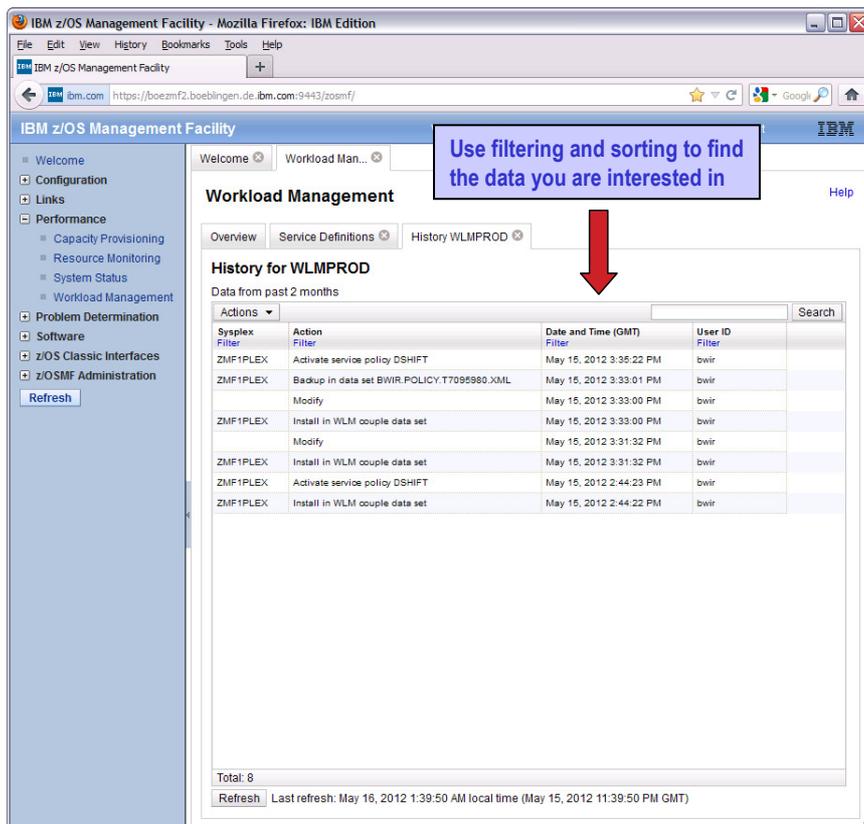
Service definition "WLMT1" with description "" is being modified by user "bwir". It has been locked since "May 15, 2012 4:27:27 PM GMT". You can view the service definition, but you cannot delete it.

Close



Service Definition History

- A history is provided for each service definition listing the activities performed on the service definition
- A service definition history contains edit, install, activate, import, export activities
- The history displays for each activity timestamp and user
- The user can customize how long the history is kept



Use filtering and sorting to find the data you are interested in

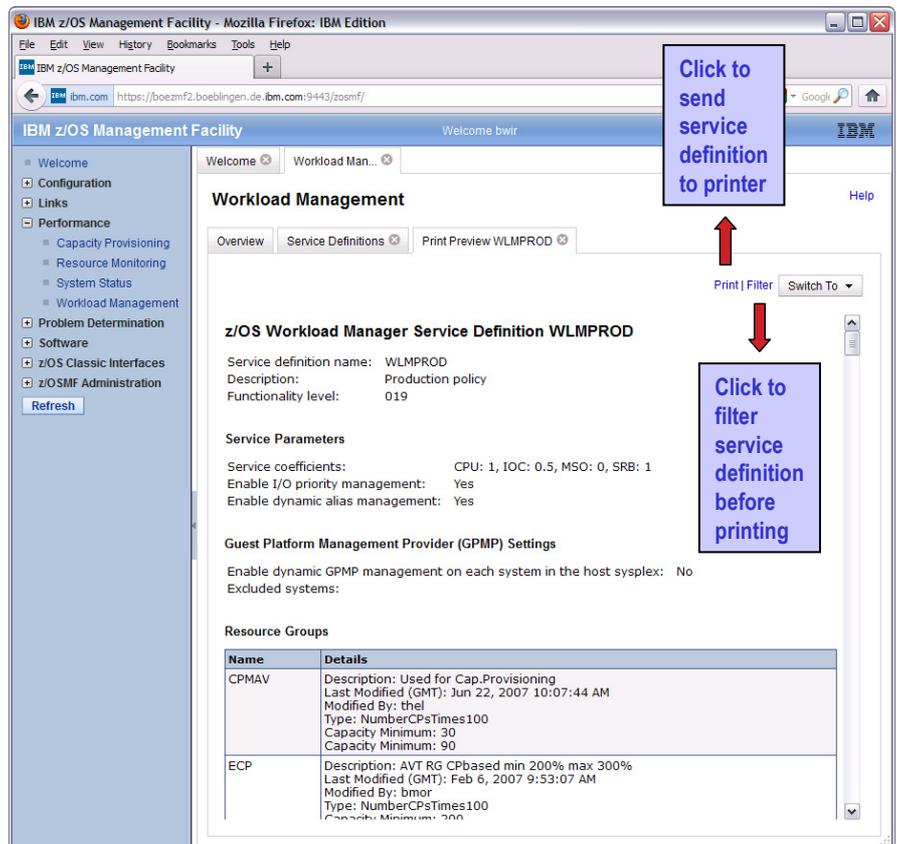
Actions	Sysplex	Action	Date and Time (GMT)	User ID
Filter	Filter			Filter
	ZMF1PLEX	Activate service policy DSHIFT	May 15, 2012 3:35:22 PM	bwir
	ZMF1PLEX	Backup in data set BWIR.POLICY.T7095980.XML	May 15, 2012 3:33:01 PM	bwir
		Modify	May 15, 2012 3:33:00 PM	bwir
	ZMF1PLEX	Install in WLM couple data set	May 15, 2012 3:33:00 PM	bwir
		Modify	May 15, 2012 3:31:32 PM	bwir
	ZMF1PLEX	Install in WLM couple data set	May 15, 2012 3:31:32 PM	bwir
	ZMF1PLEX	Activate service policy DSHIFT	May 15, 2012 2:44:23 PM	bwir
	ZMF1PLEX	Install in WLM couple data set	May 15, 2012 2:44:22 PM	bwir

Total: 8
Refresh Last refresh: May 16, 2012 1:39:50 AM local time (May 15, 2012 11:39:50 PM GMT)

Complete your sessions evaluation online at SHARE.org/AnaheimEval

Printing of Service Definitions and Service Policies

- Before printing, a Print Preview function enables to
 - filter service definition elements
 - apply service policies
- Hints, warnings can also be printed
- Besides printing, the Print Preview panel is well suited to get a general idea of a service definition



Complete your sessions evaluation online at SHARE.org/AnaheimEval

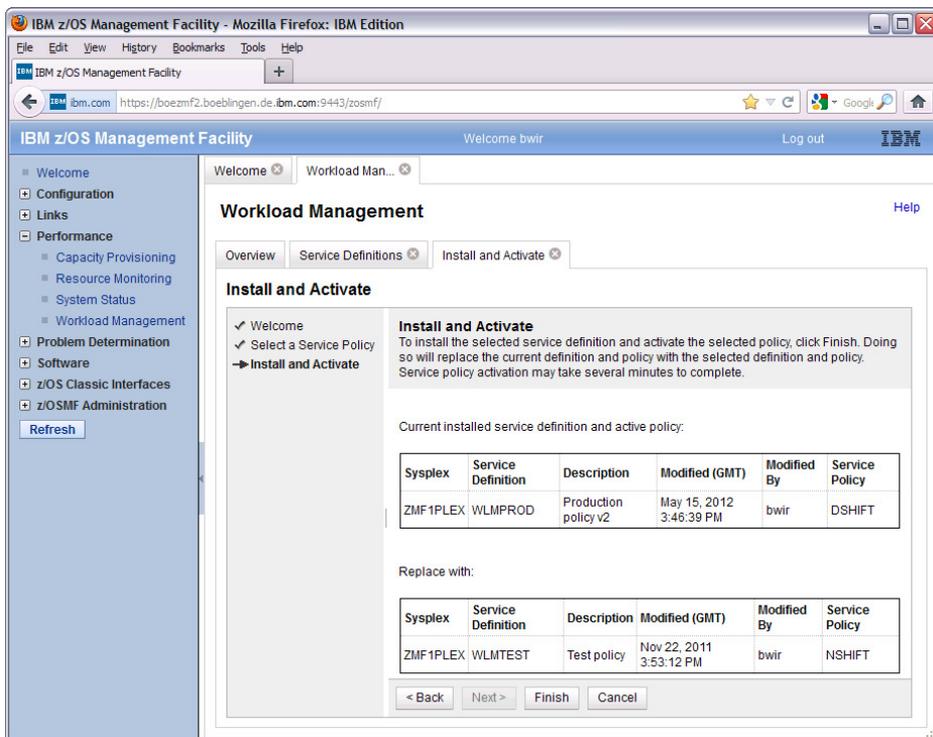
in Anaheim
2012

18

- The Print Preview panel displays a service definition as HTML document. If the user triggers the print action the content of the Print Preview panel is send to the printer. Even if a service definition should not actually be printed out, the Print Preview panel provides a clearly formatted view of a service definition well suited to get a general idea.
- The Print Preview panel allows to view a service definition with an applied service policy. The service policy to apply on the service definition can be selected with the „Switch To“ menu. If a service policy is selected, the service definition is displayed with service classes and resource groups after the overrides of the selected service policy have been applied. Therefore, the user can see how the service definition looks like if a certain service policy would be activated.

Service Definition Installation and Service Policy Activation

- A wizard enables to install and activate a service definition
 1. Review properties of currently installed service definition and the one that is going to be installed
 2. Select service policy to be activated
 3. Review summary of install and activate that will be done and trigger it
- If a backup data set has been specified in the Settings, a copy of the installed service definition is stored in that data set



The screenshot shows the IBM z/OS Management Facility interface in a Mozilla Firefox browser. The main content area is titled "Workload Management" and has tabs for "Overview", "Service Definitions", and "Install and Activate". The "Install and Activate" tab is active, showing a wizard with the following steps: "Welcome", "Select a Service Policy", and "Install and Activate".

Below the steps, there is a section titled "Install and Activate" with instructions: "To install the selected service definition and activate the selected policy, click Finish. Doing so will replace the current definition and policy with the selected definition and policy. Service policy activation may take several minutes to complete."

The wizard displays two tables for comparison:

Current installed service definition and active policy:

Sysplex	Service Definition	Description	Modified (GMT)	Modified By	Service Policy
ZMF1PLEX	WLMPROD	Production policy v2	May 15, 2012 3:48:39 PM	bwir	DSHIFT

Replace with:

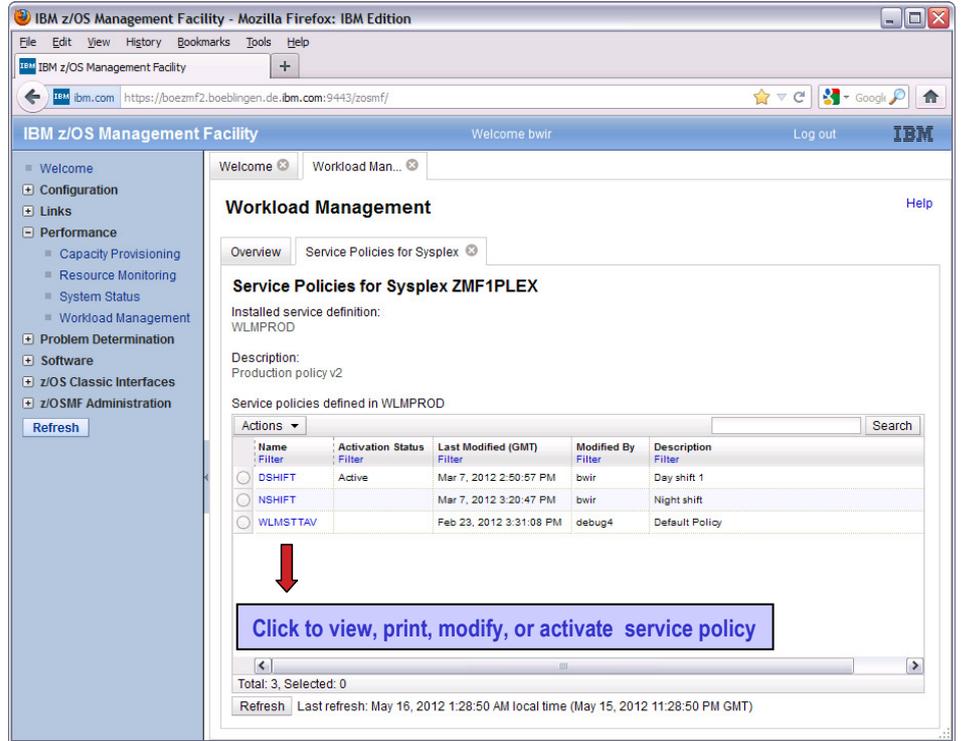
Sysplex	Service Definition	Description	Modified (GMT)	Modified By	Service Policy
ZMF1PLEX	WLMTEST	Test policy	Nov 22, 2011 3:53:12 PM	bwir	NSHIFT

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

Complete your sessions evaluation online at SHARE.org/AnaheimEval

Manage Service Policies

- The Manage Service Policies task enables to
 - View or print the service policies of the installed service definition
 - Activate a service policy of the installed service definition
- The Manage Service Policies panel displays the state of the service policies in the installed service definition



IBM z/OS Management Facility - Mozilla Firefox: IBM Edition

IBM z/OS Management Facility

Welcome bwir

Log out IBM

Workload Management

Overview Service Policies for Sysplex

Service Policies for Sysplex ZMF1PLEX

Installed service definition: WLMPROD

Description: Production policy v2

Service policies defined in WLMPROD

Name	Activation Status	Last Modified (GMT)	Modified By	Description
DSHIFT	Active	Mar 7, 2012 2:50:57 PM	bwir	Day shift 1
NSHIFT		Mar 7, 2012 3:20:47 PM	bwir	Night shift
WLMSTTAV		Feb 23, 2012 3:31:08 PM	debug4	Default Policy

Click to view, print, modify, or activate service policy

Total: 3, Selected: 0

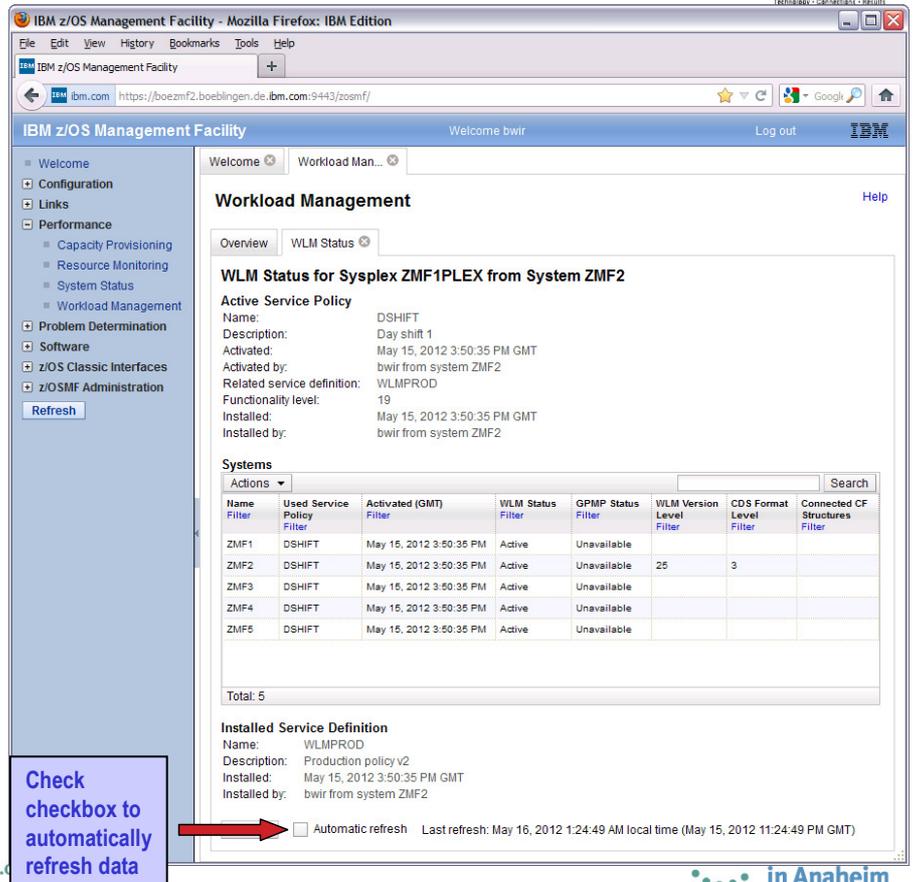
Refresh Last refresh: May 16, 2012 1:28:50 AM local time (May 15, 2012 11:28:50 PM GMT)

Complete your sessions evaluation online at SHARE.org/AnaheimEval

- The Manage Service Policies panel displays the state of the service policies contained in the service definition that is installed in the WLM couple data set. For example, it indicates the service policy which is currently active. The panel enables to activate another service policy or to view and print service policies.

View WLM Status

- The View WLM Status task displays
 - The active service policy
 - The WLM status on the systems in the sysplex
 - The installed service definition
- The WLM Status panel comprises the information provided by the MVS console command D WLM, SYSTEMS
- Information may be automatically refreshed



The screenshot shows the IBM z/OS Management Facility interface in a Mozilla Firefox browser. The main content area is titled "Workload Management" and displays the "WLM Status for Sysplex ZMF1PLEX from System ZMF2".

Active Service Policy

Name: DSHIFT
 Description: Day shift 1
 Activated: May 15, 2012 3:50:35 PM GMT
 Activated by: bwir from system ZMF2
 Related service definition: WLMPROD
 Functionality level: 19
 Installed: May 15, 2012 3:50:35 PM GMT
 Installed by: bwir from system ZMF2

Systems

Name	Used Service Policy	Activated (GMT)	WLM Status	GPMP Status	WLM Version Level	CDS Format Level	Connected CF Structures
ZMF1	DSHIFT	May 15, 2012 3:50:35 PM	Active	Unavailable			
ZMF2	DSHIFT	May 15, 2012 3:50:35 PM	Active	Unavailable	25	3	
ZMF3	DSHIFT	May 15, 2012 3:50:35 PM	Active	Unavailable			
ZMF4	DSHIFT	May 15, 2012 3:50:35 PM	Active	Unavailable			
ZMF5	DSHIFT	May 15, 2012 3:50:35 PM	Active	Unavailable			

Total: 5

Installed Service Definition

Name: WLMPROD
 Description: Production policy v2
 Installed: May 15, 2012 3:50:35 PM GMT
 Installed by: bwir from system ZMF2

Automatic refresh Last refresh: May 16, 2012 1:24:49 AM local time (May 15, 2012 11:24:49 PM GMT)

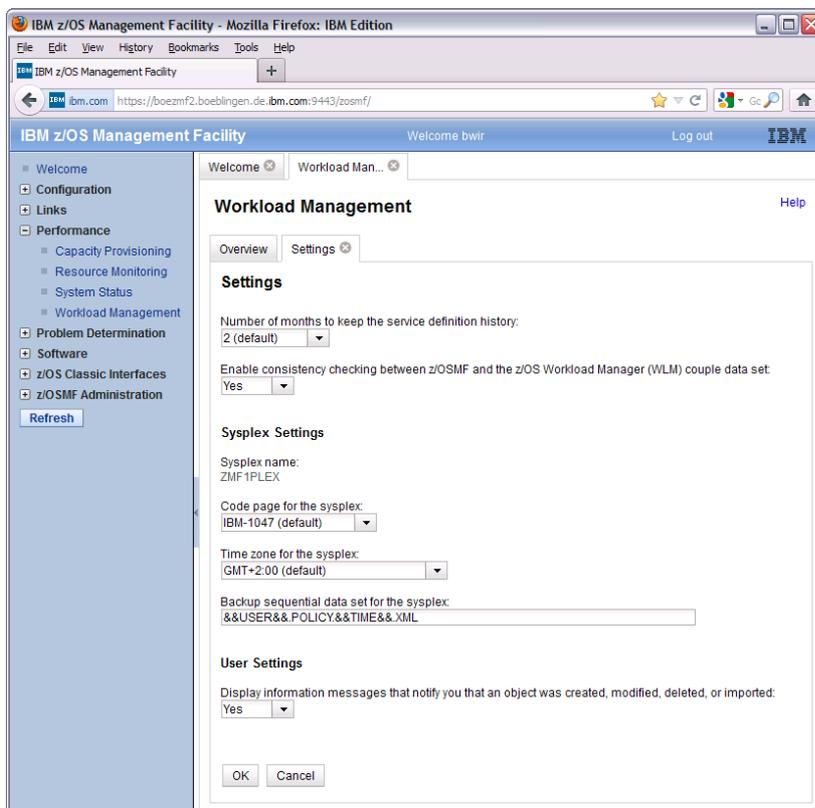
A blue callout box with a red arrow points to the "Automatic refresh" checkbox, containing the text: "Check checkbox to automatically refresh data".

Complete your sessions evaluation online at [SHARE](#).

- The Sysplex Status panel displays information that is produced by the MVS console command D WLM,SYSTEMS. In addition, the panel displays the service definition that is currently installed in the WLM couple data set and provides the option to automatically refresh the panel content.

Settings

- Specify how long to keep the service definition history
- Specify if consistency checking with the WLM couple data set should be performed
- Specify the code page and time zone for the sysplex
- Specify a backup sequential data set name for the sysplex
 - Name may contain variables `&&TIME&&`, `&&USER&&` which are replaced with the current time and logon userid
- Specify if confirmation messages should be displayed (user-specific setting)



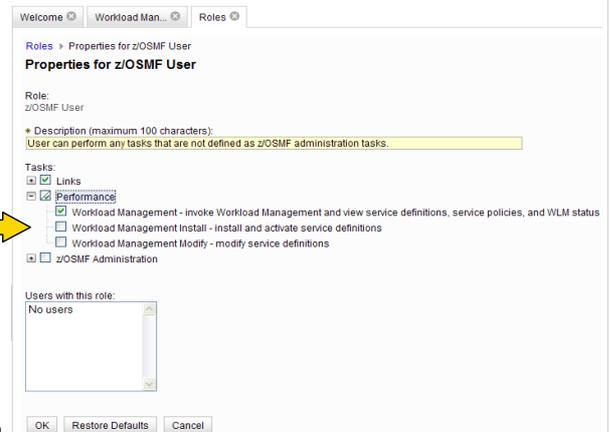
Complete your sessions evaluation online at [SHARE.org/AnaheimEval](https://www.share.org/AnaheimEval)

Fine-grained Authorization (V1.13)

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

- In repository authorization mode the WLM authorization of roles is controlled by three tasks on the Roles panel:

- Workload Management
- Workload Management Install
- Workload Management Modify



- In SAF authorization mode the WLM authorization of roles is controlled via the SAF resource names:

- ZOSMF.WORKLOAD_MANAGEMENT.WORKLOAD_MANAGEMENT.VIEW
- ZOSMF.WORKLOAD_MANAGEMENT.WORKLOAD_MANAGEMENT.INSTALL
- ZOSMF.WORKLOAD_MANAGEMENT.WORKLOAD_MANAGEMENT.MODIFY

- To enable a role to launch the Workload Management task it is not sufficient to provide authorization for 'installation' or 'modification'; in addition the role has to be authorized for 'viewing'.

Complete your sessions evaluation online at SHARE.org/AnaheimEval

Persistent Settings (V1.13)



- Settings for a user are persistent 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

The image displays three screenshots from a software application:

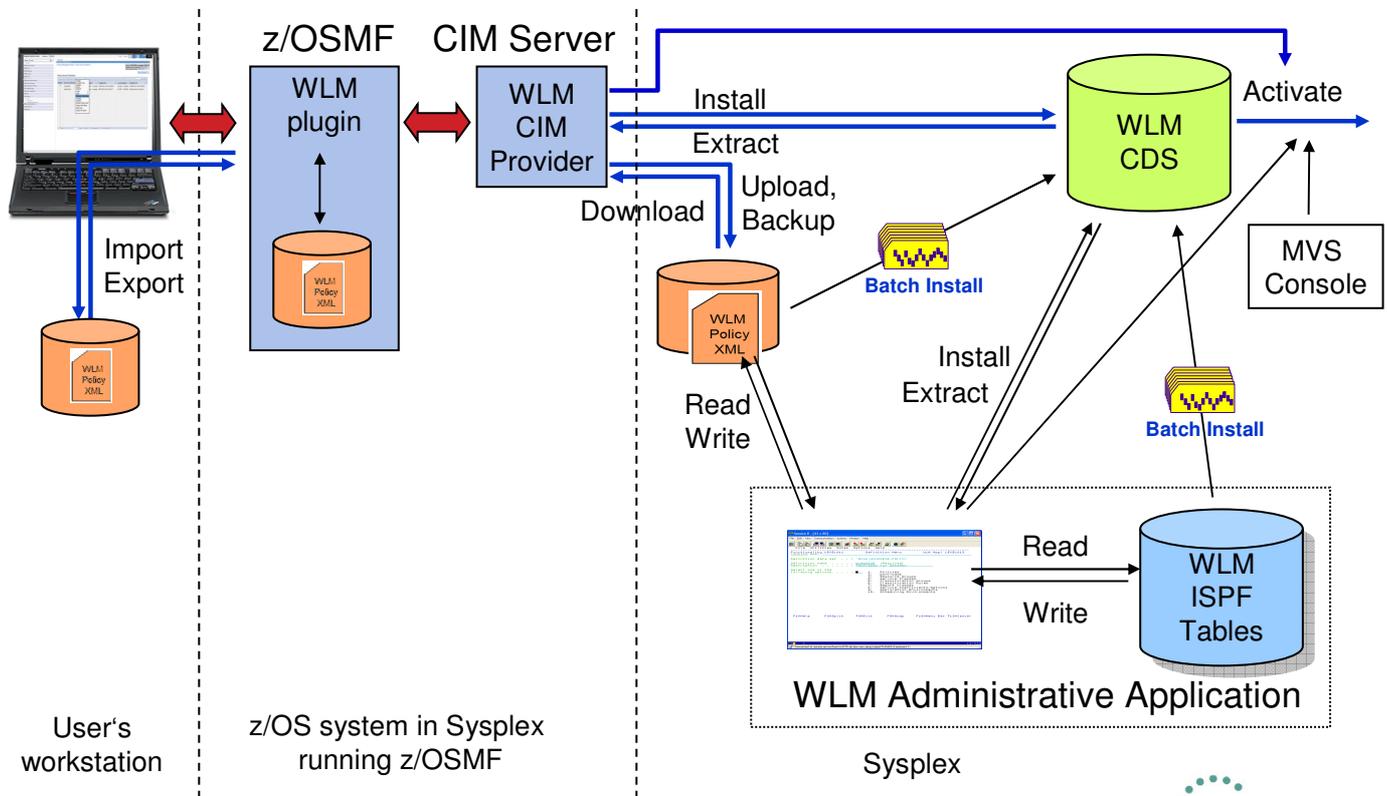
- Import Service Definition from Host Data Set:** A dialog box with a list of host data set names:
 - BWIR.WLMSVD.POLICY1.XML
 - BWIR.WLMSVD.POLICY12.XML
 - BWIR.WLMSVD.POLICY13.XML
 Below the list are fields for Name and Description, and OK, Cancel, and Help buttons.
- Export Service Definition to Local Workstation:** A dialog box with export options:
 - Entire service definition as an XML file
 - Entire service definition as separate CSV files
 - Selected service definition elements as separate CSV files (selected)
 A list of elements to export is shown with checkboxes:
 - Service definition details
 - Service policies
 - Workloads
 - Service classes
 - Resource groups
 - Report classes
 - Classifications
 - Classification groups
 - Application environments
 - Scheduling environments
 - Resources
 OK, Cancel, and Help buttons are at the bottom.
- Filter Formatted Service Definition:** A dialog box with a 'Display:' section:
 - All
 - Selection (selected)
 A list of elements to filter is shown with checkboxes:
 - Service parameters
 - Resource groups
 - Workloads
 - Service policies
 - Report classes
 - Classification groups
 - Classifications
 - Application environments
 - Resources
 - Scheduling environments
 - Notes
 - Messages
 A question 'Do you want to include the description and modification details for the service definition elements?' has 'Yes' selected. OK, Cancel, and Help buttons are at the bottom.
- Workload Management:** A main interface window showing a table of workloads:

Name	Description	Messages	Last Modified (GMT)	Modified By
ASAHIWL	wlm asahi queue test		Mar 4, 2002 10:44:22 AM	ibmuser
SODA	Temporal Affinity tests HBB7705		Mar 4, 2002 11:35:18 AM	ibmuser
STTWL	wlm ctt queue test JBB7713		Mar 4, 2002 11:35:58 AM	ibmuser

Complete your sessions evaluation online at SHARE.org/AnaheimEval



WLM Component Environment Overview



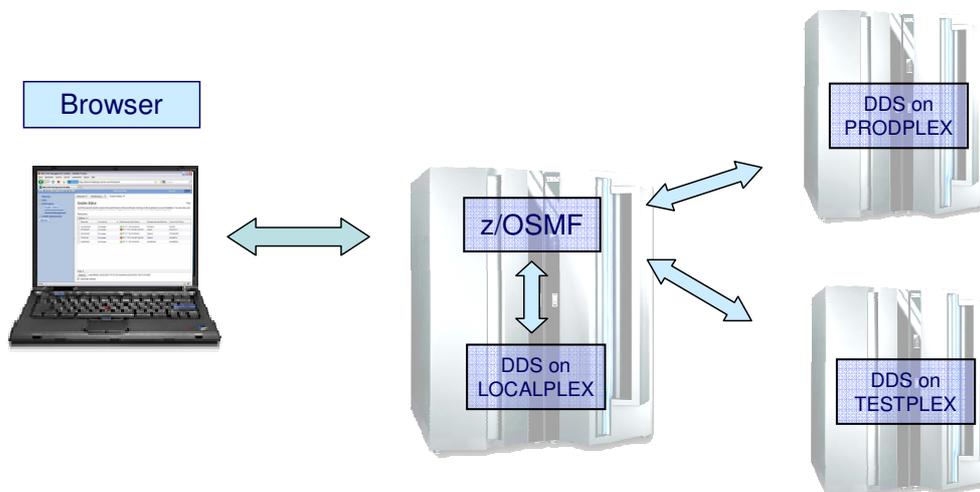
Complete your sessions evaluation online at SHARE.org/AnaheimEval

- Today, service definitions are created or edited with the ISPF-based WLM Administrative Application. The WLM Administrative Application incorporates the function of a policy editor that stores created service definitions as ISPF tables. The WLM Administrative Application can also be used to extract or install a service definition from the WLM couple dataset or to activate a service policy from the service definition in the WLM couple dataset. A service definition stored as ISPF-tables in a dataset can also be installed and activated via a batch job. Furthermore, an operator can activate a service policy of the installed service definition via a MVS console command.
- The status of a service policy activation within the sysplex can be displayed by issuing the MVS console command `D WLM,SYSTEMS`.
- As preparatory work for the z/OSMF WLM application, WLM APIs have been enhanced in z/OS 1.10 so that service definitions can be installed or extracted in XML format. Furthermore, a WLM CIM provider has been implemented that provides similar status information as the MVS console command `D WLM,SYSTEMS` and which allows to install and extract service definitions in XML format and to activate a service policy. The WLM CIM provider allows also to upload a XML service definition to a sequential dataset and to download a XML service definition from a sequential dataset. The z/OSMF WLM plugin communicates with the WLM CIM provider on the local system for all WLM-related tasks.
- The z/OSMF WLM plugin incorporates the functions provided today by the WLM Administrative Application in combination with the MVS console command `D WLM,SYSTEMS`. Furthermore, it improves those functions by utilizing techniques provided by the web environment.
- The z/OSMF WLM application works with XML service definitions. The WLM Administrative Application has been enhanced in V1R10 to open XML service definition datasets and write XML service definition datasets. Batch install has also been enhanced in V1R10 to install XML service definition datasets. Furthermore, the z/OSMF WLM plugin allows uploading and downloading XML service definitions from the local z/OS system as well as storing a copy of the installed service definition in a dataset on the z/OS system.
- The z/OSMF WLM plugin also allows to import and export service definitions to the local workstation of the user in order to enable the user to exchange service definitions with colleagues or to embed them in documents or presentations.

z/OSMF Resource Monitoring

IBM z/OSMF Resource Monitoring

Infrastructure



- Browser connects to z/OSMF
- z/OSMF Resource Monitoring can connect to all systems where the RMF Distributed Data Server (DDS) is running

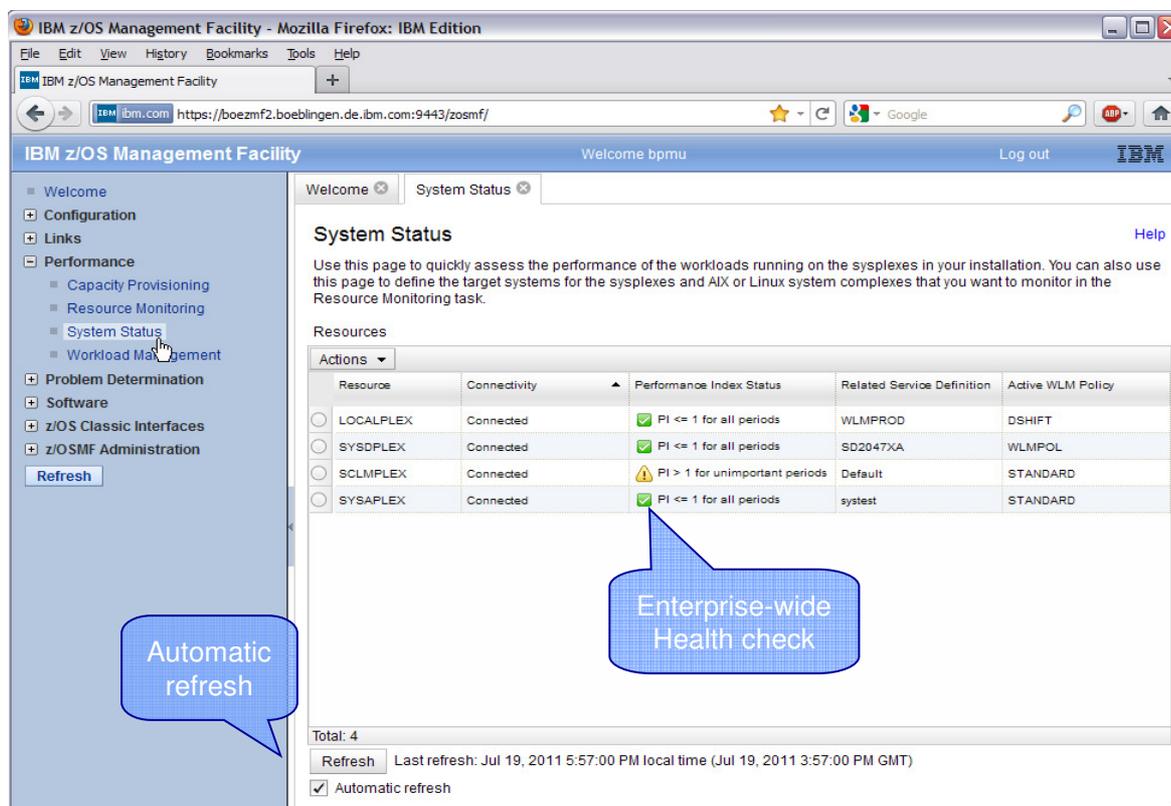
Complete your sessions evaluation online at SHARE.org/AnaheimEval



- In case you are running an instance of the RMF Distributed Data Server on the same sysplex where your z/OSMF is active, you can get started with the z/OSMF Resource Monitoring application immediately
- The application is able to detect the DDS system and connects to this DDS instance automatically
- Use the System Status task to define all other connections to your remote DDS systems
- Ensure that access to the DDS is configured properly:
 - If your installation does not require DDS authentication you can allow global access by means of the HTTP_NOAUTH(*) directive in the DDS configuration member GPMSRV00
 - Otherwise the application is able to generate passtickets for DDS access. Note that the passtickets are generated on behalf of the WAS servant userid (i.e. this userid must be enabled to create the passtickets)

IBM z/OSMF Resource Monitoring ...

System Status Task



IBM z/OS Management Facility - Mozilla Firefox: IBM Edition

IBM z/OS Management Facility

Welcome bpmu Log out

System Status

Use this page to quickly assess the performance of the workloads running on the sysplexes in your installation. You can also use this page to define the target systems for the sysplexes and AIX or Linux system complexes that you want to monitor in the Resource Monitoring task.

Resources

Resource	Connectivity	Performance Index Status	Related Service Definition	Active WLM Policy
LOCALPLEX	Connected	PI <= 1 for all periods	WLMPROD	DSHIFT
SYSDPLEX	Connected	PI <= 1 for all periods	SD2047XA	WLMPOL
SCLMPLEX	Connected	PI > 1 for unimportant periods	Default	STANDARD
SYSAPLEX	Connected	PI <= 1 for all periods	system	STANDARD

Total: 4

Refresh Last refresh: Jul 19, 2011 5:57:00 PM local time (Jul 19, 2011 3:57:00 PM GMT)

Automatic refresh

- The starting point for the monitoring is the *System Status* task. This task provides a comfortable way to assess the health status of all systems in your installation at a glance.
- The table contains the list of z/OS sysplexes and Linux images. You can add, modify and delete items in the table using the *Actions* menu.
- When you start the task for the first time, one default entry is provided as *LOCALPLEX* that points to the DDS in the sysplex in which z/OSMF is running. If you have a running DDS in this sysplex the *System Status* task detects it automatically without requiring an explicit declaration of its host name or IP address. Also, the *System Status* task can automatically detect the DDS movement within the sysplex during the z/OSMF session.
- In addition to the *LOCALPLEX* you can add all target sysplexes you want to monitor to the table. Now let's explore the column output as shown in the chart:
 - The PI-Status column gives you a red-yellow-green indicator for the sysplex health. This indicator is based on the WLM service class period goals and actuals.
 - If all service class periods on the system are meeting their goals (that is, have a *performance index* (PI) of less than or equal to 1), the PI Status is green.
 - If service classes with importance of 3, 4, and 5 with the PI greater than 1 are detected, the indicator is yellow.
 - If at least one important service class (that is, importance of 1 or 2) misses the WLM goal, the indicator is red
- In this case it becomes essential to figure out the reasons by drilling down into the details on the respective sysplex. This can be done within the *Resource Monitoring* task.

Resource Monitoring – Sysplex Definitions

Enterprise-wide Connections to RMF Distributed Data Server (DDS)



Welcome x System Status x

System Status Help

Use this page to quickly assess the performance of the workloads running on the sysplexes in your installation. You can also use this page to define the target systems for the sysplexes and AIX or Linux system complexes that you want to monitor in the Resource Monitoring.

Resources

Actions ▾

Resource	Connectivity	Performance Index Status	Related Service Definition	Active WLM Policy
<input type="radio"/> LOCALPLEX	Connected	✓ PI <= 1 for all periods	WLMPROD	DSHIFT
<input type="radio"/> SYSDPLEX	Connected	✓ PI <= 1 for all periods	SD2047XA	WLMPOL
<input type="radio"/> SCLMPLEX	Connected	✓ PI <= 1 for all periods	Default	STANDARD

LOCALPLEX is preconfigured

One DDS connection per line

Complete your sessions evaluation online at SHARE.org/AnaheimEval



- In addition to the preconfigured LOCALPLEX, we have already defined two additional sysplexes: SCLMPLEX and SYSDPLEX
- Now let's add another sysplex: click on the *Actions* menu

Resource Monitoring – Sysplex Definitions

Add a new Entry



Welcome x System Status x

System Status Help

Use this page to quickly assess the performance of the workloads running on the sysplexes in your installation. You can also use this page to define the target systems for the sysplexes and AIX or Linux system complexes that you want to monitor in the Resource Monitoring tests.

Resources

Define new DDS connection

Actions	Connectivity	Performance Index Status	Related Service Definition	Active WLM Policy
Modify Entry	Connected	✓ PI <= 1 for all periods	WLMPROD	DSHIFT
Remove Entry	Connected	✓ PI <= 1 for all periods	SD2047XA	WLMPOL
Add Entry	Connected	✓ PI <= 1 for all periods	Default	STANDARD
<input type="radio"/> SCLMPLEX	Connected	✓ PI <= 1 for all periods		

Complete your sessions evaluation online at SHARE.org/AnaheimEval



- From the *Actions* menu drop list select *Add Entry*

Resource Monitoring – Sysplex Definitions

Add a new Entry



Welcome [x] System Status [x]

System Status > Add Entry

Add Entry

* Resource name:
PRODPLEX

* Host name or IP address:
myhost1.us.ibm.com

* Target system type:
z/OS (GPMSEVERE) ▼

* Port:
8803

OK Cancel

- z/OS (GPMSEVERE)
- AIX (GPM4CIM)
- Linux on System x (GPM4CIM)
- Linux on System z (GPM4CIM)
- Linux (rmfpms)

Complete your sessions evaluation online at SHARE.org/AnaheimEval



- Type any name of your choice in the *Resource name* entry field
- Specify a hostname or IP address where the RMF DDS is running
- Adjust the port number or confirm the default port number 8803
- Select the operating system running the DDS:
 - z/OS (GPMSEVERE)
 - AIX (GPM4CIM)
 - Linux on System x (GPM4CIM)
 - Linux on System z (GPM4CIM)
 - Linux (rmfpms) ← Based on rmfpms Linux data gatherer available on RMF Homepage
- Then confirm with OK

Resource Monitoring – Sysplex Definitions

Add a new Entry



Welcome × System Status ×

System Status Help

Use this page to quickly assess the performance of the workloads running on the sysplexes in your installation. You can also use this page to define the target systems for the sysplexes and AIX or Linux system complexes that you want to monitor in the Resource Monitoring task.

Resources

Actions ▾

Resource	Connectivity	Performance Index Status	Related Service Definition	Active WLM Policy
<input type="radio"/> LOCALPLEX	Connected	✓ PI <= 1 for all periods	WLMPROD	DSHIFT
<input type="radio"/> SYSDPLEX	Connected	✓ PI <= 1 for all periods	SD2047XA	WLMPOL
<input type="radio"/> SCLMPLEX	Connected	✓ PI <= 1 for all periods	Default	STANDARD
<input checked="" type="radio"/> PRODPLEX	Connected	✓ PI <= 1 for all periods	SD2047XA	WLMPOL

New Sysplex is displayed instantly

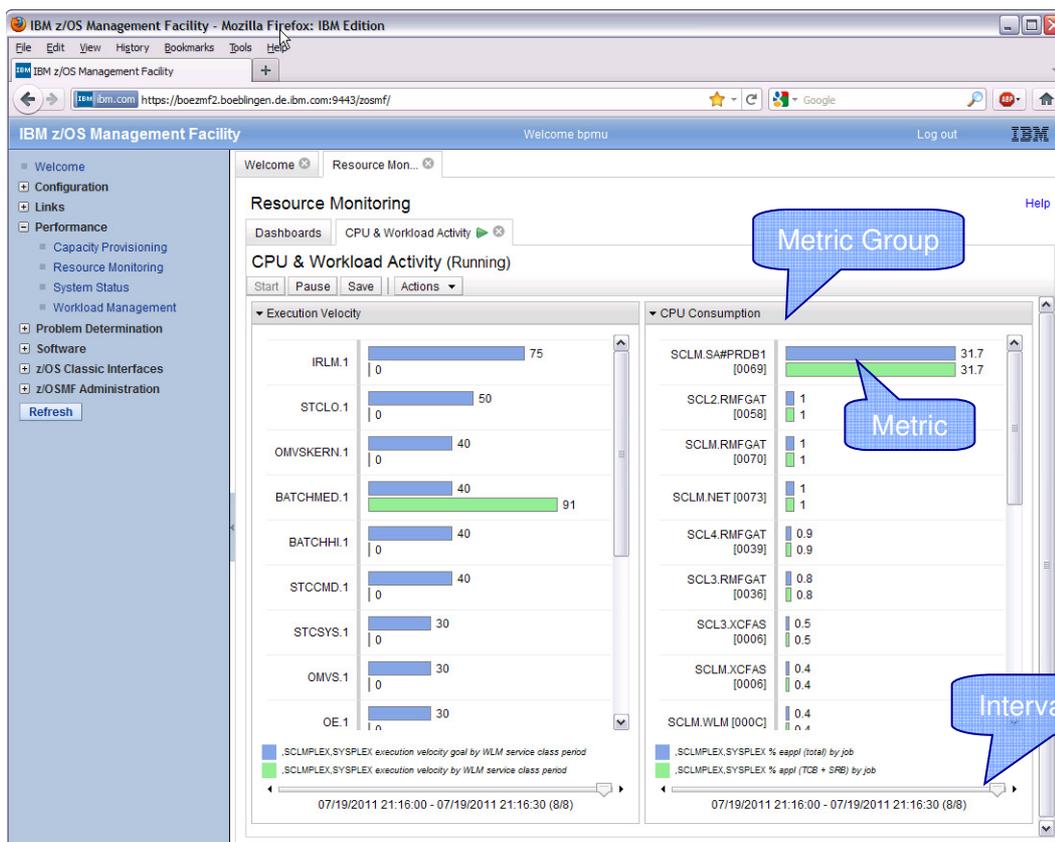
Complete your sessions evaluation online at SHARE.org/AnaheimEval



- The new connection will be activated dynamically and an additional row for the new sysplex is displayed instantly

IBM z/OSMF Resource Monitoring ...

Resource Monitoring Task: Monitoring Dashboards



- The **Resource Monitoring** task allows you to monitor the performance of the z/OS sysplexes, AIX system complexes (System p), Linux system complexes (System z and System x) in your environment. The performance data is displayed in so called **Monitoring Dashboards**.
- A **Monitoring Dashboard** is a customizable view containing different performance metrics that you can group and arrange flexibly.
- You can create and save your own dashboards or open and modify the predefined dashboards that are with the task in z/OSMF.
- When you start a Monitoring Dashboard it begins retrieving the online data from the DDS periodically.
- By default, the most current snapshot is displayed
- It's possible to browse through the data collected since the start of the current session.
- A dashboard contains multiple metric groups; their size and column count are adjustable. You add one or multiple metrics to each group.

Resource Monitoring – Monitoring Dashboards

Predefined Dashboards



IBM z/OS Management Facility

Welcome bpmu

Log out

IBM

Welcome

Welcome to IBM z/OS Management Facility [About](#)

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 streamlining some traditional tasks and 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](#)

Refresh

Complete your sessions evaluation online at SHARE.org/AnaheimEval



- To open the Resource Monitoring task, select Resource Monitoring from the z/OSMF navigation tree

Resource Monitoring – Monitoring Dashboards

Predefined Dashboards



Complete your sessions evaluation online at SHARE.org/AnaheimEval



- The z/OSMF resource monitoring application provides a set of preconfigured *Monitoring Dashboards* for all performance relevant areas.
- All preconfigured *Monitoring Dashboards* are applicable for all of your defined sysplexes. In other words, the internal format of these definitions does not contain any references to specific resource names (e.g. system or job names).
- Hence, the preconfigured *Monitoring Dashboards* are **generic** Dashboards (in contrast to **non-generic** Dashboards). Generic Dashboards can only contain metrics which are associated with the sysplex resource as the top-level resource.

Resource Monitoring – Monitoring Dashboards

Predefined Dashboards



Complete your sessions evaluation online at SHARE.org/AnaheimEval



- As an example for a preconfigured *Monitoring Dashboard*, now let's open the *Common Storage Activity Dashboard*:
- Either double click *Common Storage Activity* or click the corresponding radio button and open the Dashboards *Actions* menu.

Resource Monitoring – Monitoring Dashboards

Predefined Dashboards



IBM z/OS Management Facility Welcome bpmu Log out IBM

Welcome Resource Mon...

Resource Monitoring

Dashboards

Dashboards

Actions

- Open
- Open in New Tab or Window
- Delete...
- New...

- General Activity
- Overall Image Activity
- Performance Index
- Response Time
- Using & Delays
- XCF Activity

Total: 9

Refresh Last refresh: Jul 19, 2011 10:42:10 PM local time (Jul 19, 2011 8:42:10 PM GMT)

Complete your sessions evaluation online at SHARE.org/AnaheimEval

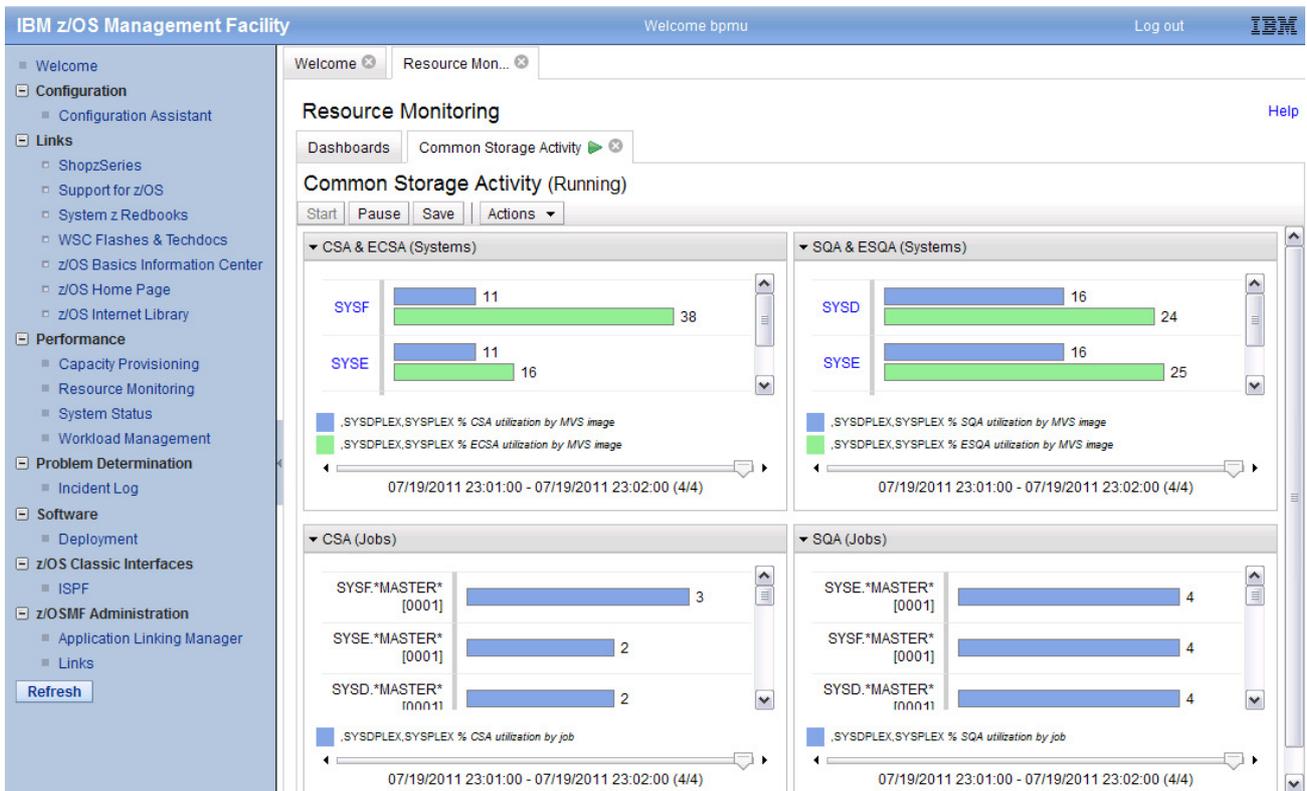


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- From the Dashboards *Actions* menu, now select *Open*. This action creates a new internal tab.
- As an alternative, you can select *Open in New Tab or Window*. In this case a new browser window or browser tab is created, depending on your browser settings. This method can have two advantages:
 - The complete space of a browser window can be exploited for the display.
 - The complete URL string is visible in the address bar of your browser. This string contains the complete definition of the *Monitoring Dashboard*. You might exchange this string with other users or store the URL to your browsers favourites.

Resource Monitoring – Monitoring Dashboards

Predefined Dashboards



Complete your sessions evaluation online at SHARE.org/AnaheimEval



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- When you open a generic *Monitoring Dashboard* or a *Monitoring Dashboard* which contains at least one generic metric definition, you will be prompted for the sysplex where the *Dashboard* should be applied to. From a drop-down box, you can then select one of the sysplexes you have defined in the *System Status* task.
- Once you have chosen your sysplex, the metric values are retrieved from the DDS instantly and displayed in terms of graphical bar charts.
- Accordingly to the Monitor III gatherer interval (mintime) the display is refreshed periodically.
- For each *Metric Group* you can control the currently displayed interval by means of a slider. The interval start and end times are displayed below the slider.
- With the *Pause* and *Start* push buttons you can stop and resume the data collection.
- As a matter of course, you can run multiple *Monitoring Dashboards* in parallel. One new tab is created for each *Monitoring Dashboard*.
- The *Common Storage Activity* dashboard consists of four *Metric Groups*. You can expand or collapse individual *Metric Groups* in order to make room for others.
- The first and second *Metric Group* displays a list of system names which are equal to the members of the sysplex. In case the instances of a list are formatted as hyperlink, additional information can be obtained:

Resource Monitoring – Monitoring Dashboards

Predefined Dashboards



The screenshot displays the IBM z/OS Management Facility interface. The main content area is titled 'Resource Monitoring' and shows a 'Common Storage Activity (Running)' dashboard. The dashboard is divided into two main sections: 'CSA & ECSA (Systems)' and 'SQA & ESQA (Systems)'. Each section contains bar charts showing utilization for different systems (SYSF, SYSE, SYSD). A pop-up window titled 'Resource Attributes: ,SYSE,MVS_IMAGE' is overlaid on the dashboard, displaying the following information:

Name of logical partition:	SYSE
WLM Vary CPU management enabled:	YES
WLM LPAR Weight management enabled:	NO
AAP honor priority:	YES
IIP honor priority:	YES
MVS System Name:	SYSE
SMF ID:	SYSE
OS Type:	z/OS 1.13.0
OS Version:	SP7.1.3

Complete your sessions evaluation online at SHARE.org/AnaheimEval



- Once you click on the SYSE hyperlink, the attributes for the System SYSE are displayed in a pop-up window.

Resource Monitoring – Monitoring Dashboards

New Dashboard



IBM z/OS Management Facility Welcome bpmu Log out IBM

Welcome Resource Mon...

Resource Monitoring

Dashboards

Dashboards

Actions

- Open
- Open in New Tab or Window
- Delete...
- New...**

- General Activity
- Overall Image Activity
- Performance Index
- Response Time
- Using & Delays
- XCF Activity

Total: 9

Refresh Last refresh: Jul 19, 2011 11:24:41 PM local time (Jul 19, 2011 9:24:41 PM GMT)

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- Beyond the preconfigured *Monitoring Dashboards* you want to define your own *Monitoring Dashboards* which contain your favourite metrics for your preferred systems and resources.
- From the Dashboards *Actions* drop-down menu, select *New*. This action creates a new tab with an empty *Monitoring Dashboard*.

Resource Monitoring – Monitoring Dashboards

New Dashboard



IBM z/OS Management Facility Welcome bpmu Log out IBM

Welcome Resource Mon...

Resource Monitoring [Help](#)

Dashboards New Dashboard

New Dashboard (Paused)

To start monitoring the resources in your installation, add a metric to the dashboard. To do so, select **Add Metric** from the *Actions* menu.

Start Pause Save Actions

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- The next step is now to populate the empty *Monitoring Dashboard* with *Metrics* (resp. *Metric Groups*).
- Click on the *Actions* drop-down menu.

Resource Monitoring – Monitoring Dashboards

New Dashboard



IBM z/OS Management Facility Welcome bpmu Log out

Resource Monitoring Help

Dashboards New Dashboard

New Dashboard (Paused)

To start monitoring the resources in your installation, add a metric to the dashboard. To do so, select **Add Metric** from the *Actions* menu.

Start Pause Save Actions

- Start Dashboard
- Pause Dashboard
- Save Dashboard
- Rename Dashboard...
- Modify Settings...
- Add Metric...**
- Modify Metric...
- Delete Metric or Group...
- Arrange Metrics or Groups...
- Rename Metric Group...

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- From the *Actions* drop-down menu, select *Add Metric*. This action opens a new dialog where you can specify the details for your new *Metric*.

Resource Monitoring – Monitoring Dashboards

New Dashboard



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- The definition of a new metric is performed in two mandatory and two optional steps:
 - Select a target resource
 - Select the associated metric
 - Specify a filter (optional)
 - Specify a workscope (optional)
- All sysplexes you have defined in the *System Status* task are displayed on the *Resource* tab
- In order to select your target resource, navigate to the sysplex of your choice.
- Otherwise, if you want to create a generic definition, select the (?) sysplex. Note that this generic sysplex has no children and cannot be expanded.

Resource Monitoring – Monitoring Dashboards

New Dashboard



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- Once you have selected the sysplex of your choice, this top level resource can be expanded and shows all contained resources (accordingly to the RMF Monitor III resource model).
- Now you are able to navigate to the resource where you want to select then the appropriate Metrics.

Resource Monitoring – Monitoring Dashboards

New Dashboard



IBM z/OS Management Facility Welcome bpmu Log out

Resource Monitoring

Dashboard New Dashboard

New Dashboard Add Metric

Add Metric

Select or type the name of the metric group, the container for the metric. Then, select the resource and metric to be monitored.

* Add to metric group: Select or type a metric group.

* Selected resource: SYSE*,STORAGE

* Selected metric: # frames active by job

Resource Metric Filter Work Scope

Quick filter:

Available metrics:

- single valued
- by enclave
- by job
 - % delay by job
 - % delay for COMM by job
 - % delay for LOCL by job
 - % delay for OTHR by job
 - % delay for OUTR by job
 - % delay for SWAP by job
 - # frames active by job
 - # frames fixed by job
 - # frames idle by job
 - # frames total by job
 - # frames DIV by job

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- On the *Metrics* tab, all metrics are displayed which are applicable for the currently selected resource.
- Use the *Quick filter* capability to find a certain metric instantly.
- For a comprehensive overview, you can expand and collapse the individual metric categories.
- Don't forget to specify a name for your *Metric Group* before you save your metric definition.

Resource Monitoring – Monitoring Dashboards

New Dashboard



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- On the Filter tab, you can specify a rich set of filter criteria for list-valued metrics:
 - Filter Pattern: Only those instances are returned in the list which match to a certain name pattern.
 - Sorting: Determine whether the sort order is descending or ascending (by value or by name).
 - Filters: Only those instances are returned in the list which match to a lower or upper threshold value.
 - Number of resources (=list elements) to display: either highest or lowest values.

Resource Monitoring – Monitoring Dashboards

New Dashboard



IBM z/OS Management Facility Welcome bpmu Log out IBM

Welcome Resource Mon...

Resource Monitoring

Dashboards New Dashboard

* Selected metric: # frames active by job

Resource Metric Filter Work Scope

Filter scope:
WLM service class

* Filter for:
SYSSTC

OK Cancel

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- Use the Work Scope tab to qualify a request for performance data in more detail with regard to address spaces and WLM entities.
- Workscopes can be applied to single valued metrics as well as to list valued metrics. For example:
 - for the metric *performance index*, the workscope parameter denotes the associated service class period.
 - for the metric *% # frames active by job*, you can use this parameter to focus on jobs that belong to a certain service class.
- Once you have finished all steps of your metric definition click OK

Resource Monitoring – Monitoring Dashboards

New Dashboard



Job Name	Frame Count
RMFGAT [0040]	48874
RMF [001F]	26349
GPM4CIMZ [00A8]	14189
DFSZFS [0028]	12336
ESCM [0097]	10119
GPMSRVLU [0096]	9005
GPMSEERVE [00AA]	8953
GPM4CIMA [00A6]	7897

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- The *Metric Definition* dialog disappears and the new *Metric Group* with the corresponding metric is displayed instantly on the tab. Accordingly to the Monitor III gatherer interval (mintime) the data is refreshed periodically.
- Please note, that you can adjust the display settings to fit your needs. From the *Actions* drop-down menu, choose *Modify Settings*. You can determine:
 - How many *Metric Groups* are displayed in one row (maximum column count)
 - The height of the *Metric Groups* (row height)
 - The color contrast (color)
- In addition, from the *Actions* drop-down menu, you can also rearrange the order of *Metric Groups* within a *Monitoring Dashboard* as well as the order of *Metrics* within a *Metric Group*.

Resource Monitoring – Monitoring Dashboards

New Dashboard



Job Name	Frame Count
RMFGAT [0040]	48876
RMF [001F]	26366
GPM4CIMZ [00A8]	14189
DFSZFS [0028]	12336
ESCM [0097]	10119
GPMSRVLU [0096]	9005
GPMSERVE [00AA]	8922
GPM4CIMA [00A6]	7897

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- Finally, you should not forget to save your new *Monitoring Dashboard*, otherwise all your definitions will be lost.
- Click on the Save push button and specify any name for your *Monitoring Dashboard*, then confirm with OK.

Resource Monitoring – Monitoring Dashboards

New Dashboard



IBM z/OS Management Facility Welcome bpmu Log out IBM

Welcome Resource Mon...

Resource Monitoring

Help

Dashboards

Dashboards

Actions

Name
<input type="radio"/> Common Storage Activity
<input type="radio"/> Coupling Facility Overview
<input type="radio"/> Execution Velocity
<input type="radio"/> General Activity
<input type="radio"/> Overall Image Activity
<input type="radio"/> Performance Index
<input type="radio"/> Response Time
<input checked="" type="radio"/> Storage Soaker
<input type="radio"/> Using & Delays
<input type="radio"/> XCF Activity

Total: 10

Refresh Last refresh: Jul 20, 2011 12:28:50 AM local time (Jul 19, 2011 10:28:50 PM GMT)

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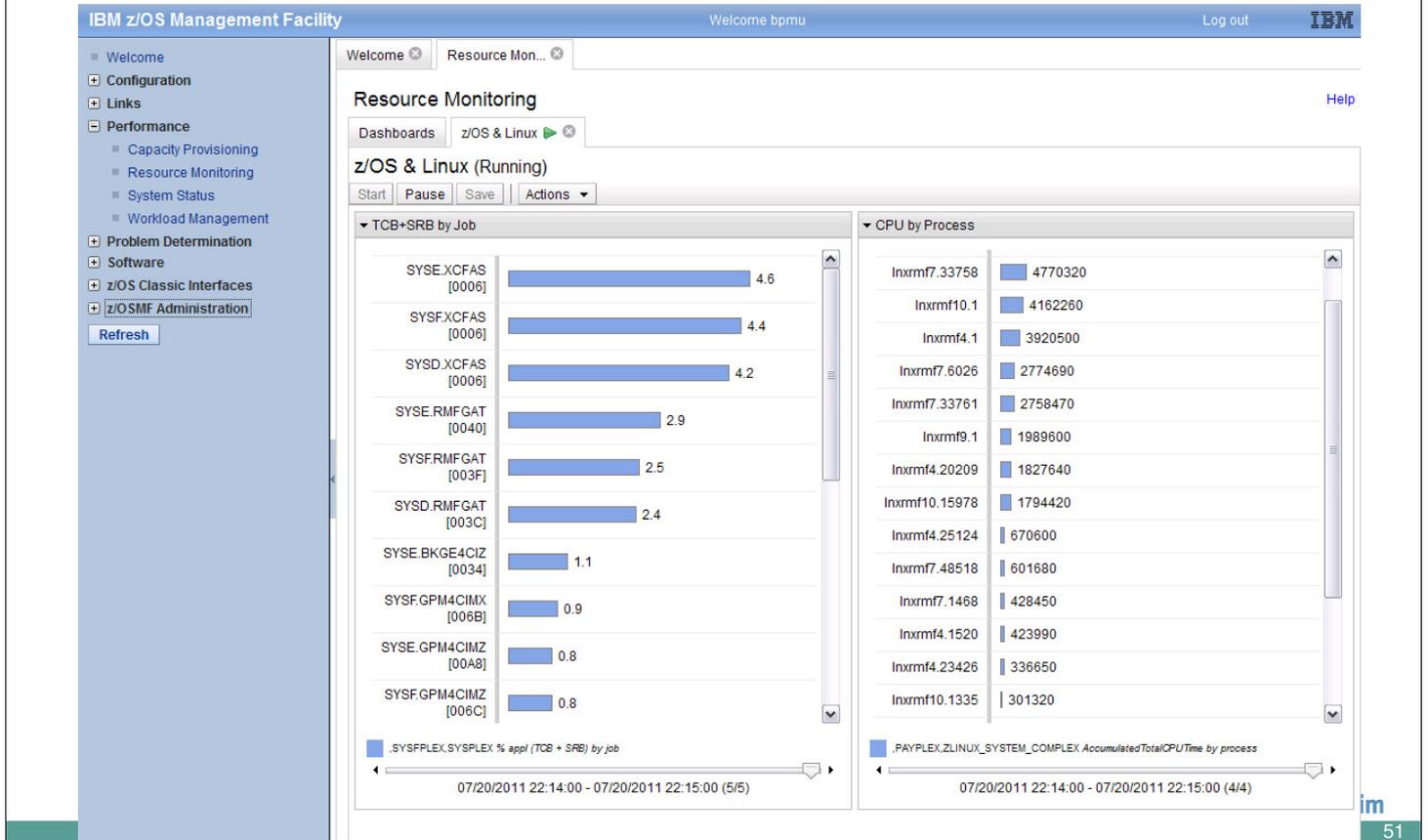


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- Once you have saved your new *Monitoring Dashboard* an additional row in the *Monitoring Dashboards* list is displayed instantly.
- Please note that *Monitoring Dashboards* are stored on user level. In other words there is no sharing concept for *Monitoring Dashboards* (the same applies for Sysplex Definitions).
- However, you can transfer definitions for *Monitoring Dashboards* to other users by exchanging the complete browser URL strings.

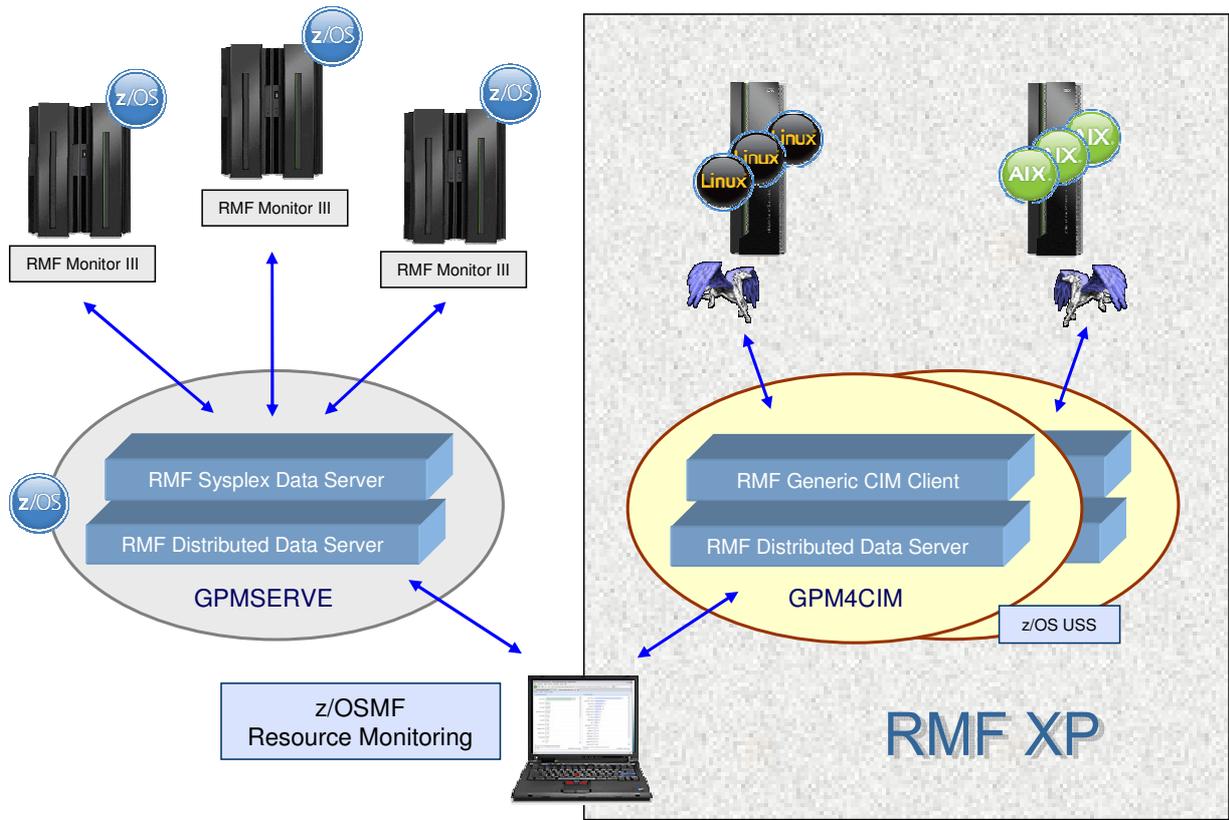
Resource Monitoring – Monitoring Dashboards

z/OS and Linux



- The concept of the z/OSMF *Resource Monitoring* allows to combine metrics from multiple sysplexes in one *Monitoring Dashboard*.
- Moreover, it is even possible to display metrics from a z/OS sysplex together with metrics from a Linux image in a common *Monitoring Dashboard*.

RMF XP – Component Overview



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- What are the components of the new RMF XP function?
- The RMF Distributed Data Server (aka DDS) consists of two main functional entities:
 - The communication layer to the client
 - The interface layer to the data collection backend
- For RMF XP, the existing DDS communication layer remains unchanged
- In contrast to the z/OS data collection which exploits the RMF Sysplex Data Server API's, RMF XP uses the standard CIM API's to collect the performance data from the remote Linux and AIX systems

RMF XP - Invocation



- Started Task: SYS1.PROCLIB(GPM4CIM)
- Runs in USS Environment via BPXBATCH
- Multiple instances can run in parallel: one STC per platform
 - S GPM4CIM.GPM4A,OS=A
 - S GPM4CIM.GPM4X,OS=X
 - S GPM4CIM.GPM4Z,OS=Z

```
//GPM4CIM PROC OS=X
//STEP1 EXEC PGM=BPXBATCH,TIME=NOLIMIT,REGION=0M,
// PARM='PGM /usr/lpp/gpm/bin/gpm4cim cfg=/etc/gpm/gpm4&OS..cfg'
//STDENV DD PATH='/etc/gpm/gpm4cim.env'
//STDOUT DD PATH='/var/gpm/logs/gpm4cim&OS..out',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=(SIRUSR,SIWUSR,SIRGRP)
//STDERR DD PATH='/var/gpm/logs/gpm4cim&OS..trc',
// PATHOPTS=(OWRONLY,OCREAT,OTRUNC),
// PATHMODE=(SIRUSR,SIWUSR,SIRGRP)
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
// PEND
```

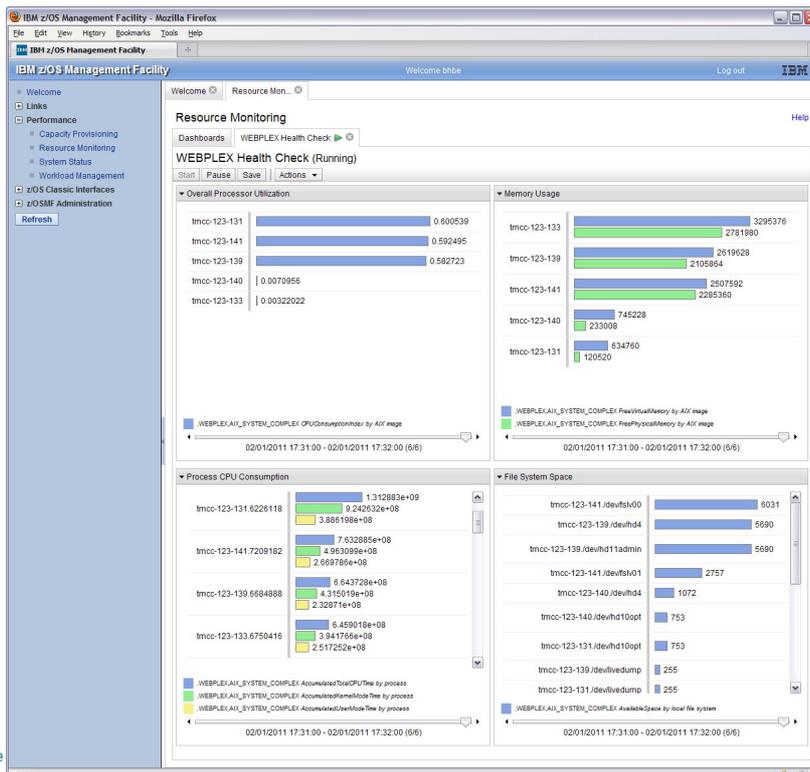
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- To start RMF XP, use the new proclib member GPM4CIM
- The gpm4cim executable runs in the Unix System Services environment and receives control from the BPXBATCH utility
- One GPM4CIM instance is needed per platform type

RMF XP - z/OSMF Integration



Health Check:
 ✓ Processor
 ✓ Memory
 ✓ Filesystem

Complete



The z/OSMF Capacity Provisioning Task

Functions

- Create, modify and delete CIM connections to your Provisioning Manager. Local and remote connections can be used.
- View the status of a Capacity Provisioning domain.
 - Domain Status Report (**REPORT DOMAIN**)
 - Active Configuration Report (**REPORT CONFIGURATION**)
 - Active Policy Report (**REPORT POLICY**)



The screenshot shows the IBM z/OS Management Facility Provisioning Manager interface. On the left is a navigation menu with options like Welcome, Links, Performance (Capacity Provisioning, Resource Monitoring, System Status, Workload Management), z/OS Classic Interfaces, and z/OSMF Administration. The main area is titled 'Provisioning Manager' and contains a table of connections. The table has columns for Host Address, Protocol, and Port. It lists three entries: 'Same system as z/OSMF', 'cpmprod.ibm.com' (HTTPS, 5989), and 'cpmtest.ibm.com' (HTTP, 5988).

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

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Provisioning Manager Reports



Domain Status Report

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: TC057#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
 Code level: 11026

Active Configuration Report

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	Correlation status	Record ID	Active MSU	Active zAAPs	Active zIPs	Enabled	Enabled default
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
<input type="radio"/> R36	Matched	34937149	1140		2	<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

Active Policy Report

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	Name	Current status	Details
Filter	Filter	Filter	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; zIP li

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धन्यवाद
Hindi

多謝
Traditional Chinese

ขอบคุณ
Thai

Спасибо
Russian

Gracias
Spanish

شكراً
Arabic

Thank You
English

Obrigado
Brazilian Portuguese

Grazie
Italian

多谢
Simplified Chinese

Danke
German

Bedankt
Dutch

Merci
French

நன்றி
Tamil

ありがとうございました
Japanese

감사합니다
Korean

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Backup



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What Else?

Distributed Data Server High Availability



The RMF session control task is able to manage the Distributed Data Server address space across the Sysplex:

- When the RMF initialization is complete, the DDS is started automatically on the best suited system of the Sysplex
- This system is determined accordingly to the following rules:
 - ✓ Monitor III gatherer active
 - ✓ Highest z/OS release
 - ✓ SMF Buffer active
- In case the DDS system is removed from the Sysplex, a new DDS instance is started on the best suited candidate of the remaining systems
- In case Monitor III gathering is stopped on the DDS system, the DDS instance switches to the next appropriate system
- In case a new system joins the Sysplex and this system is the best suited candidate, the DDS instance switches to this system

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- The high availability of the Distributed Data Server is achieved in the following way:
- The DDS option will cause the RMF control task to manage the DDS address space across the Sysplex
- The DDS is started and stopped automatically, depending on the current systems status as well as the RMF Monitor III gatherer status
- The RMF control task communicates across the Sysplex and selects by its own the best suited system for the DDS
- The best suited system is determined accordingly to the following rules:
 - ✓ Monitor III gatherer active
 - ✓ Highest z/OS release
 - ✓ SMF Buffer active

What Else?

Distributed Data Server High Availability...

- DDS management can be controlled by the new global options DDS/NODDS
- The options can be specified as follows:

- Start command: START RMF,,,DDS
- Modify command: MODIFY RMF,DDS
- Procedure parm:

```
//RMF      PROC  
//IEFPROC  EXEC  PGM=ERBMFMFC, REGION=32M, TIME=1440,  
//          PARM= 'DDS'
```

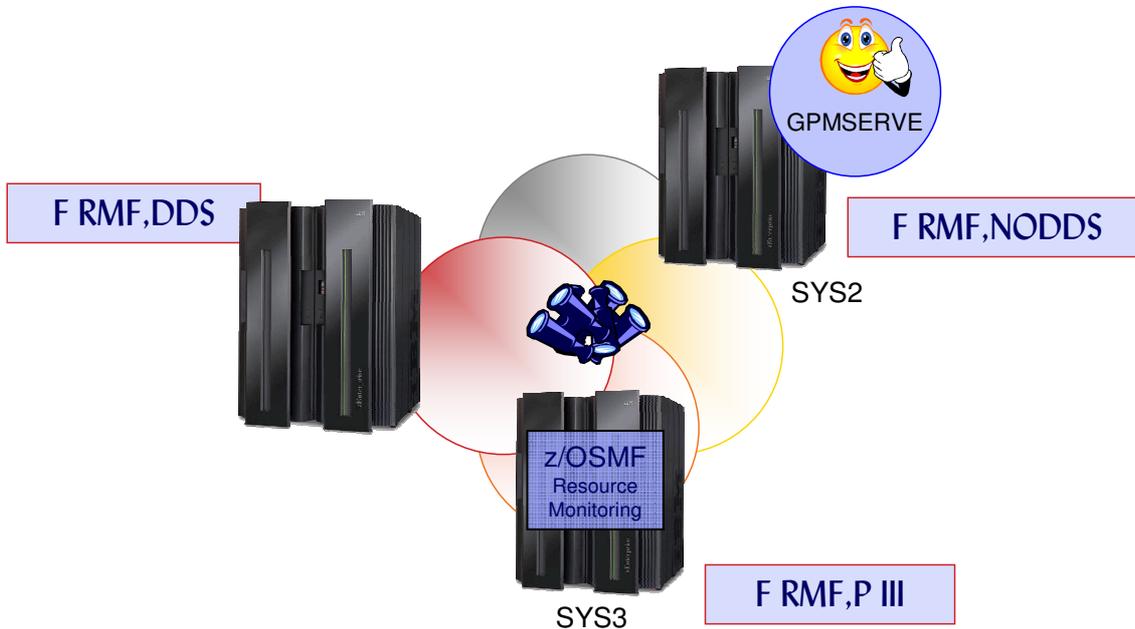
- ✓ The DDS option can be specified on any system of the Sysplex
- ✓ It is recognized on all images where RMF is active

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With the new DDS option, no more user interaction is needed to start and stop the Distributed Data Server. This is now automatically done by the RMF session control task. The DDS option can be specified either via console command or via the PARM statement of the RMF main procedure. Once the DDS option is specified on one single system, it is valid across the entire Sysplex.

What Else?

Distributed Data Server High Availability...

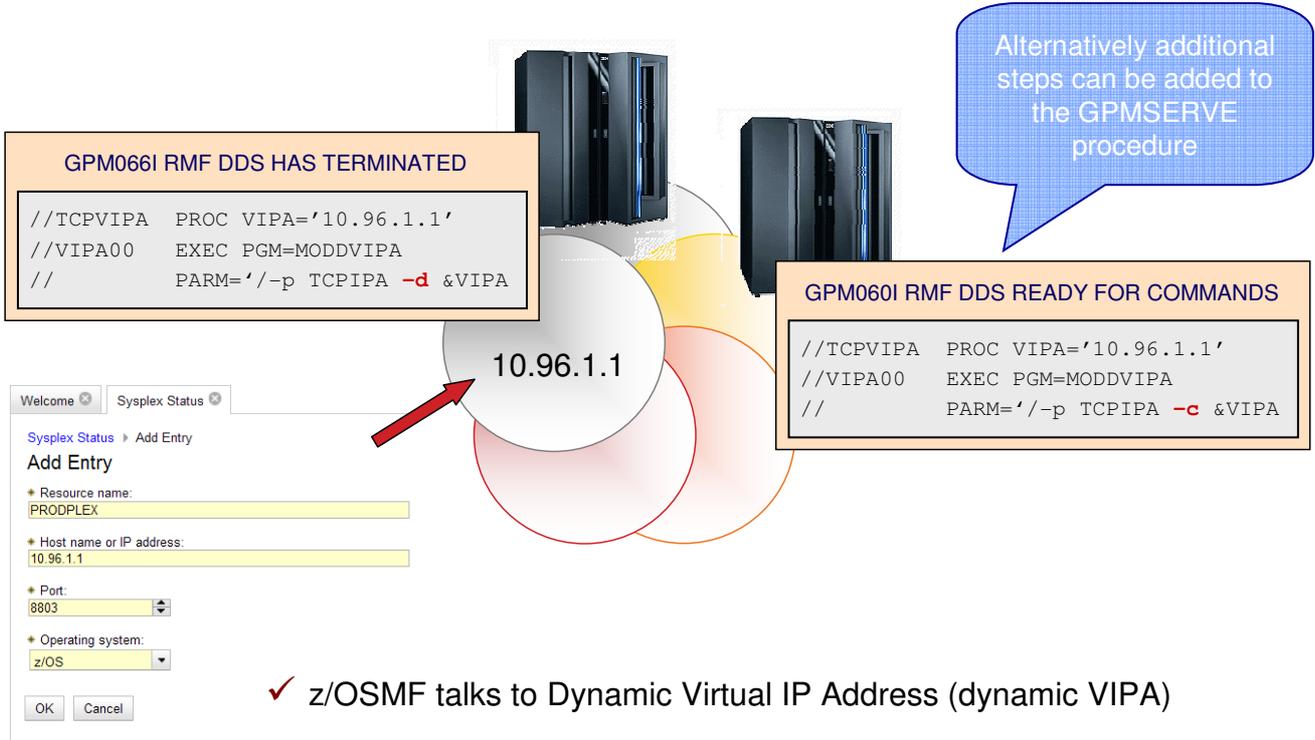


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- RMF is able to start and move the Distributed Data Server instance across the Sysplex - depending on the following conditions:
 - DDS option active?
 - RMF Monitor III status (RMFGAT active on the preferred system?)
 - XCF status of the individual systems

What Else?

Distributed Data Server High Availability...



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The instantiation of the DDS on alternate systems has the effect that the static IP-address, where a DDS client is talking to, becomes invalid

This shortcoming can be prevented by setting up a dynamic VIPA environment

Prereq: OSPF (Open Shortest Path First) with LSA (Link State Advertisement)

One VIPA can be configured per application (e.g. SAP has most likely other switching rules than RMF)

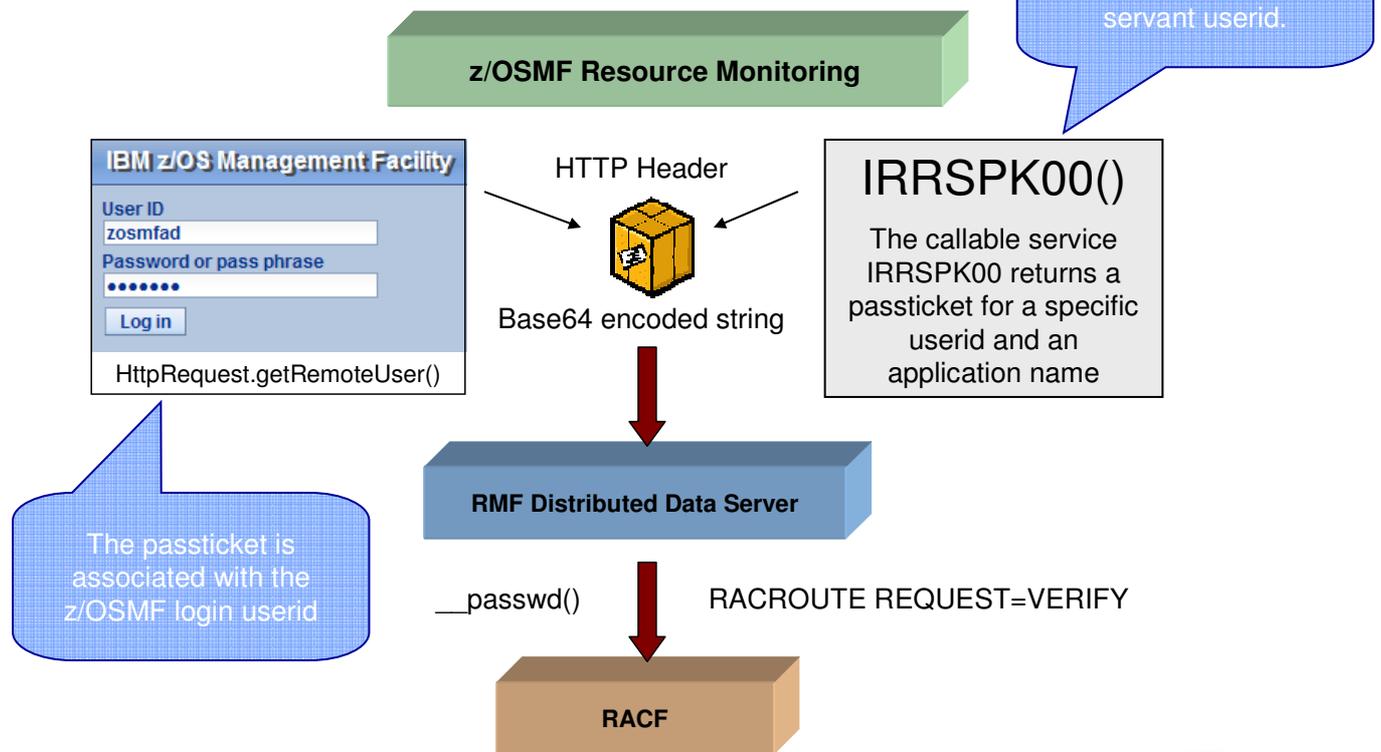
The switch can be triggered as follows:

By means of the parmlib message processing facility MPFLSTxx or by any automation product (e.g. TSA via Poststart command)

Alternatively the creation and deletion of the VIPA can be added as Step1 (creation) and Step3 (deletion) to the GPMSERVE procedure

What Else?

Security



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If your installation requires DDS authentication *z/OSMF Resource Monitoring* is able to generate passtickets for DDS access.

A passticket is requested for the userid which has been specified for z/OSMF login

Passtickets are generated on behalf of the WAS servant userid (i.e. this userid must be enabled to create the passtickets)

Userid and password are encoded to a Base64 string and stored to the *Authorization* HTTP header field

The DDS extracts the userid and the passticket from the *Authorization* HTTP header field and checks the validity of the credentials against RACF

What Else?

Passticket Setup

- (1) Activate the security class PTKTDATA
 - SETROPTS CLASSACT(PTKTDATA)
- (2) Define a profile for the DDS in the PTKTDATA class and associate a secret secured signon key with the profile
 - RDEFINE PTKTDATA GPMSEVERE SIGNON([KEYENCRYPTED|KEYMASKED](*key*))
- (3) Define a profile for GPMSEVERE PassTicket creation (either for all userIDs or for a specific user ID) and set the universal access authority to NONE
 - RDEFINE PTKTDATA IRRPTAUTH.GPMSEVERE.* UACC(NONE)
 - RDEFINE PTKTDATA IRRPTAUTH.GPMSEVERE.*specific_dds_login_userid* UACC(NONE)
- (4) Grant the z/OSMF product the permission to generate passtickets for GPMSEVERE
 - PERMIT IRRPTAUTH.GPMSEVERE.* CLASS(PTKTDATA) ID(*passticket_creator_userid*) ACCESS(UPDATE)
 - PERMIT IRRPTAUTH.GPMSEVERE.*specific_dds_login_userid* CLASS(PTKTDATA) ID(*passticket_creator_userid*) ACCESS(UPDATE)
- (5) Activate the changes (if class PTKTDATA is RACLISTED)
 - SETROPTS RACLIST(PTKTDATA) REFRESH

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- Perform the following steps to setup the passticket support for z/OSMF properly:
- Activate the security class PTKTDATA, if this action is not already done.
For example: SETROPTS CLASSACT(PTKTDATA)
- Define a profile for the DDS in the PTKTDATA class and associate a secret secured signon key with the profile. The RACF profile name for the DDS is GPMSEVERE. The key must be the same on both the system on which the PassTicket is to be generated (the z/OSMF system) and the system on which the PassTicket is to be verified (the DDS system).
For example: RDEFINE PTKTDATA GPMSEVERE SSIGNON([KEYENCRYPTED|KEYMASKED](*key*)).
The *key-value* represents a 64-bit (8-byte) key that must be represented as 16 hexadecimal characters. In case you are using KEYENCRYPTED, a cryptographic product must be installed and active on your system
- Define a profile for GPMSEVERE PassTicket creation (either for all user IDs or for a specific user ID), and set the universal access authority to NONE.
 - Example (for all user IDs):
RDEFINE PTKTDATA IRRPTAUTH.GPMSEVERE.* UACC(NONE)
 - Example (for a specific user ID):
RDEFINE PTKTDATA IRRPTAUTH.GPMSEVERE.*specific_dds_login_userid* UACC(NONE)
- Grant the z/OSMF product the permission to generate passtickets for GPMSEVERE.
 - Example (for all user IDs):
PERMIT IRRPTAUTH.GPMSEVERE.* CLASS(PTKTDATA) ID(*passticket_creator_userid*) ACCESS(UPDATE)
 - Example (for a specific user ID):
PERMIT IRRPTAUTH.GPMSEVERE.*specific_dds_login_userid* CLASS(PTKTDATA) ID(*passticket_creator_userid*) ACCESS(UPDATE)
- Activate the changes, for example: SETROPTS RACLIST(PTKTDATA) REFRESH