z/OS Management Facility (z/OSMF) 1.12 Overview

Anuja Deedwaniya
anujad@us.ibm.com
STSM, z/OS Systems Management and Simplification IBM Corp.

August 4, 2010
Session 7548
Agenda

- z/OSMF Overview
- z/OSMF Functions
  - Incident Log
  - Configuration Assistant for the z/OS Communications Server
  - WLM Policy Editor (z/OSMF V1.12)
  - Resource Monitoring (z/OSMF V1.12)
  - Administration

- Summary
IT Organizational Domains

- Need for simplification of tasks
- Modernization and integration of tools

Within each domain to enhance productivity
- Across domains to enhance collaboration

IT Organizational Domains:
- Operator
- System Programmer
- Database Administrator
- Database Developer
- Data Architect
- Application Developer

IT Business Management
- Business-IT Alignment

IT Governance

IT Operations

IT Development
Focus Areas for Simplification

**Problem Determination and Analysis**
- Monitoring health; identifying real and potential problems
- Analyzing and resolving problems

**Configuration**
- Adding or changing system components; enabling new features; defining and updating policies that affect system behavior

**Simplify and Modernize the System Programmer User Experience**
- Deliver solutions in a task-oriented browser-based user interface with integrated user assistance

**Installation**
- Finding the information needed to use z/OS

**Migration**
- Health Checks

**SMP/E Internet Service Retrieval**
- Electronic Delivery

**IBM Education Assistant**
- LookAT

**IBM Health Checker**
- CF Sizer

**CF Sizer**
- IBM Health Checker
IBM z/OS Management Facility

- The IBM z/OS Management Facility is a new product for z/OS that provides support for a modern, Web-browser based management console for z/OS.
- First release is z/OSMF 1.11, introduced with z/OS 1.11
- Helps system programmers to more easily manage and administer a mainframe system by simplifying day to day operations and administration of a z/OS system.
- More than just a graphical user interface, the z/OS Management Facility is intelligent, addressing the needs of a diversified skilled workforce and maximizing their productivity.
  - Automated tasks can help reduce the learning curve and improve productivity.
  - Embedded active user assistance (such as wizards) guides you through tasks and helps provide simplified operations.
Focus on System Programming

• Address the needs for a mixed skilled workforce.

• Make System Programmers who are new to the mainframe productive more quickly by:
  • Providing a modern browser-based user interface that is more familiar to those new to the platform
  • Automating tasks, thus reducing the learning curve
  • Embedding active user assistance in the UI (e.g., wizards that guide users through tasks, interactive troubleshooting aids).

• Make experienced System Programmers more productive by:
  • Making functions easier
  • z/OS Management Facility is optional for those who prefer traditional interfaces
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/OS MF via secure connection, anywhere, anytime
  - z/OSMF V1R11 is supported on z/OS V1R10 w/maint, z/OSV1R11, and z/OS V1R12
  - z/OSMF V1R12 is to be supported on z/OS V1R12
IBM z/OS Management Facility
Industry standards

- Java and Dojo - 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.
- Parts of z/OS Management Facility, such as Incident Log (R11) and WLM Policy Editor (R12)* use JAVA and CIM

Java apps and Java-based CIM client eligible for zAAP
z/OS CIM server eligible for zIIP (R11 and up only)
To log in you will need a z/OS userID that has been defined and enabled to for z/OSMF (and the WebSphere® runtime environment)

- Guidance is provided.
IBM z/OS Management Facility – V1R12
Welcome page

- **Configuration** category
  - **Configuration Assistant for z/OS Communication Server** application
    - Simplified configuration and setup of TCP/IP policy-based networking functions

- **Links** category
  - Links to resources - provides common launch point for accessing resources beyond z/OSMF

- **Performance** category (R12)
  - **Workload Manager Policy Editor** application
    - Facilitate the creation and editing of WLM service definitions, installation of WLM service definitions, and activation of WLM service policies
  - **Resource Monitoring: Sysplex status and Monitoring desktops**
    - The z/OSMF Resource Monitoring application provides integrated performance monitoring of z/OS sysplexes in the customer’s environment

- **Problem Determination** category
  - **Incident Log** application
    - 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.

- **z/OSMF Administration** category
  - z/OSMF authorization services for administrator: add users, define roles, dynamically add links to non-z/OSMF resources.
Focus on Problem Determination

• Pain Points
  • Need to troubleshoot a live system, recover from the failure.
  • Need to reduce risk to the business, reduce risk of re-occurrence.
  • Complexity of performing the task (number of steps, jargon).
  • Data collection very time-consuming
  • Significant skill level needed to analyze problems, interact with IBM and ISVs to obtain additional diagnostic info (setting SLIP traps, traces, etc.)

• Focus on Problem Determination capability - Incident Log:
  • Troubleshoot your system easier, faster
  • The incident log and underlying z/OS diagnostic data gathering greatly improves the tasks related to:
    • Identifying system-detected problems (related to SVC dumps taken by the system)
    • Collecting diagnostic materials related to a problem and sending materials to IBM or another company's support area
    • Tell the system to take the next dump for a previously-recognized problem
z/OSMF Problem Determination – Incident Log

Details

• Auto-capture basic diagnostic materials, triggered when the dump is written to a data set, managed via PARMLIB member
  • Initial focus is on Abend and user initiated SVC dumps
  • Improved FFDC for system-detected problems
  • Diagnostic data “snapshots” for transient data: Snapshots of 30 min Operlog or Syslog, 1 hr Logrec detail, and 24-hour Logrec summary
    • Incident Log will also support the creation of diagnostic log snapshots based on the SYSLOG and LOGREC data sets, as well as the OPERLOG and LOGREC sysplex log streams
  • Allow doc to be tersed and FTP’d to IBM (or ISV) without having to keep track of where logs are archived via easy to use interface
  • Simplify informing DAE to take the next dump for the incident’s symptom string

• Functions include:
  • Display list of incidents (Filter/ sort/ configure/ delete)
  • Display properties – view list of diagnostic data, logs
  • Set properties: associate problem number and tracking id (R11), new fields and more customization capabilities (R12)
  • Send diagnostic data via FTP: Manage FTP jobs status and define FTP Profiles (firewall) (R11), support for encrypted and parallel FTP (R12)
  • Send additional user-defined diagnostic data
  • Enhance scope of diagnostic log snapshots created (R12)
  • Allow next dump
### Incident Log – Summary Information

![Incident Log screenshot](image)

- **Many fields, set tracking IDs**
- **Select incident, get popup with actions**
- **Add comments**

<table>
<thead>
<tr>
<th>Incident Type</th>
<th>Description</th>
<th>Problem Number</th>
<th>Tracking ID</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem 1</td>
<td>description 1</td>
<td>123456</td>
<td>ID1</td>
<td>Notes1</td>
</tr>
<tr>
<td>Problem 2</td>
<td>description 2</td>
<td>789012</td>
<td>ID2</td>
<td>Notes2</td>
</tr>
</tbody>
</table>

Transferring data from localhost...

Last refresh: Jan 21, 2010 5:25:52 PM local time (Jan 21, 2010 11:25:52 PM GMT)

Refresh Last refresh: Jan 21, 2010 5:25:52 PM local time (Jan 21, 2010 11:25:52 PM GMT)
Incident Log – Incident Details

Tab shows lists of data (logrec and error log)
Incident Log – Diagnostic Data

Attach user defined diagnostic data (V1.12)
Incident Log – Send Diagnostic Data

Wizard guides you through
Incident log - Destinations

Pre-loaded with IBM destinations, or add your own
Incident Log – Delete Incident
### z/OSMF Problem Determination – Incident log

#### Benefits

<table>
<thead>
<tr>
<th>Without z/OSMF Incident Log **</th>
<th>With z/OSMF Incident Log **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizing a system-detected (dumped) problem occurred</td>
<td>Requires 5 to 7 manual steps, plus skill on effective use of IPCS to extract data from each of the dumps.</td>
</tr>
<tr>
<td><strong>Up to 5-6 minutes</strong></td>
<td><strong>As little as 5 seconds</strong></td>
</tr>
<tr>
<td>Allow new dump to be taken for the same symptom</td>
<td>Requires 7 to 12 manual steps, plus skill on effective use of IPCS to locate the dump data set, obtain the symptom string, get into the IPCS DAE display, locate the matching symptom string (could be non-trivial) and indicate TakeNext on the IPCS display</td>
</tr>
<tr>
<td><strong>Up to 15 minutes</strong></td>
<td><strong>As little as 10 seconds</strong></td>
</tr>
<tr>
<td>Collecting and sending diagnostic data</td>
<td>Requires 7 to 15 manual steps, plus skill to locate the right log files, build and run jobs, rename the output datasets, and use an FTP job to send the different data sets to the target destination.</td>
</tr>
<tr>
<td><strong>Up to 20 minutes</strong></td>
<td>• Select the incident materials</td>
</tr>
<tr>
<td><strong>Up to 30 minutes for sysplex components</strong></td>
<td>• Specify the FTP destination information</td>
</tr>
<tr>
<td></td>
<td>• Send the material</td>
</tr>
<tr>
<td></td>
<td>• Check whether the information was FTP’d successfully</td>
</tr>
<tr>
<td></td>
<td><strong>As little as 30 seconds</strong></td>
</tr>
</tbody>
</table>

“So easy, even a marketing professional can use it!” – Gita Grube Berg, IBM System z Marketing

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

• Pain Points
  • Configuration task is highly fragmented
    • Multiple tools, limited integration between tools
  • User interfaces not intuitive for new system programmers
  • Syntax is complicated and error-prone
  • Regression of dynamic changes not reflected in system control files
  • Difficult to assess impact of configuration changes

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

- A GUI for the z/OS Communications Server Policy Agent - simplifies the configuration and setup of TCP/IP policy-based networking functions.

- **Available as a Microsoft® Windows® Web download** (since z/OS V1.7)
  - Still available as a Windows download, but strategy is to provide it only with z/OSMF
  - All functions available with Windows are also provided with z/OSMF

- **Available with z/OSMF** (starting with z/OSMF V1R11 and z/OS V1R11)
  - Configuration files can now be saved to local disk storage that is accessible to your z/OS system where the Configuration Assistant is running so FTP (from Windows) is not required
  - Can also import configuration text files in cases where users have already defined policies and would like to begin using the Configuration Assistant

- Planned for z/OSMF R12:
  - Support the configuration of IKE version 2.
  - Support the configuration of new cryptographic algorithms for IPSec and IKE.
  - Support the configuration of FIPS 140 cryptographic mode for IKE.
  - Support the configuration of certificate trust chains and certificate revocation lists.
Configuration Assistant for z/OS Comm. Server

- Configuration Assistant for the z/OS Comm. Server is available on the z/OS Management Facility.
  - All the same function as in the Web-download tool, but now on z/OS.
  - No need to FTP network configuration files!
  - Requires z/OS V1.11 and later.

Create configuration files for any number of z/OS images with any number of TCP/IP stacks per image.

Select the TCP/IP stack that you want to configure and the technology, such as AT-TLS or IPSec.

Click on "Action" and select "Configure" to begin configuring that technology.
Configuration Assistant for z/OS Comm. Server

Support for IKEv2 (planned for V1.12)*

- Support for FIPS 140
- Support for IKEv2
- Support for certificate revocation lists.

Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.
### z/OSMF Configuration Assistant for z/OS CS

#### Benefits

<table>
<thead>
<tr>
<th>Without Configuration Assistant** With Policy Agent only</th>
<th>With Configuration Assistant** in z/OSMF GUI for Policy Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Filter unwanted network traffic from your z/OS system</strong></td>
<td><strong>Hours (or even days for initial setup)</strong></td>
</tr>
<tr>
<td>• Learn how to set up IP filters</td>
<td>• Configuration Assistant guidance</td>
</tr>
<tr>
<td>• Review the IP Configuration Guide</td>
<td>• Go to IP Security Perspective</td>
</tr>
<tr>
<td>• Configure the Policy Agent application</td>
<td>• Add a connectivity rule for an IP Filter</td>
</tr>
<tr>
<td>• Create configuration policy for IP Filter rules</td>
<td>• Use Application Setup Tasks to assist with the configuration and setup of the required applications</td>
</tr>
<tr>
<td>• Configure default filter rules in the TCP/IP profile</td>
<td>• The Configuration Assistant will generate and help you deploy the configuration files to your z/OS system</td>
</tr>
<tr>
<td>• Configure the TRMD application</td>
<td><strong>As little as 30 minutes</strong></td>
</tr>
<tr>
<td>• Configure the Syslogd application</td>
<td><strong>Get started faster! The Config. Assistant takes the rules and best practices found in various configuration publications and puts them under a single, simple user interface, saving you much time and effort.</strong></td>
</tr>
<tr>
<td><strong>Secure your TN3270 server connections with SSL</strong></td>
<td><strong>Hours (or even days for initial setup)</strong></td>
</tr>
<tr>
<td>• Manual process</td>
<td>• Configuration Assistant guidance</td>
</tr>
<tr>
<td>• Review the IP Configuration Guide</td>
<td>• Go to AT-TLS Perspective</td>
</tr>
<tr>
<td>• Configure the Policy Agent application</td>
<td>• Select the AT-TLS rule for the TN3270 server and enable</td>
</tr>
<tr>
<td>• Configure TTLS in the TCP/IP profile</td>
<td>• Use Application Setup Tasks to assist with the configuration and setup of the required applications</td>
</tr>
<tr>
<td>• Configure the Syslogd application</td>
<td>• The Configuration Assistant will generate and help you deploy the configuration files to your z/OS system</td>
</tr>
<tr>
<td>• Create configuration policy for AT-TLS for your TN3270 Server</td>
<td><strong>As little as 30 minutes</strong></td>
</tr>
</tbody>
</table>

** Based on IBM laboratory results, your results may vary
Focus on Configuration/ Performance

- Pain Points
  - Work competes for resources, serialized by locks and latches
    - Low important work may hold a resource and high important work may have to wait for it
    - Incorrect WLM classification of system work can lead to serious system problems and even outages
  - WLM Administrative Application provides little support to review and optimize service definitions
    - It is difficult to see the relationship of policy elements and to compare them
    - Recommendations and best-practices for the specification and optimization of service definitions are scattered over several manuals and have to be applied without tool support
    - User has to walk through drill-down and interim panels to create/change policy elements

- Initial focus on WLM Policy Editor
  - Planned to be integrated into z/OSMF V1.12*
  - Application which enables you to manage WLM service definitions
    - Integrates repository to store service definitions
    - Import and export of service definitions in XML format
    - Printing of service definitions
    - Creation, editing, reviewing of service definitions in tabular format
    - Direct navigation between policy elements during editing/viewing of service definitions
    - Best-practice checking for service definitions
    - Supports the installation of service definitions and the activation of service policies
    - Displays WLM status of systems in sysplex
z/OSMF Workload Management (V1.12)

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

- Requires z/OSMF V1.12 and z/OS V1.12
z/OSMF Workload Management (V1.12)
Editing service definitions

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

Best-practice hints help to optimize service definitions

Copy to clipboard for insertion into another service definition

Easy to check where the element is used
A history is provided for each service definition:
- Lists the activities performed on the service definition
- Contains edit, install, activate, import, export activities
- Displays timestamp and user
- The user can customize how long the history is kept
**z/OSMF Workload Management (V1R12)**

*Printing Service Definitions*

- **Print Preview** function provides
  - An clearly formatted overview of the service definition
  - Filter service definition elements
  - Apply service policies
- **Hints, warnings** can also be printed

---

Send service definition to printer

Filter service definition before printing
z/OSMF Workload Management (V1R12)
Manage Service Policies

• The Manage Service Policies panel displays the state of the service policies in the installed service definition
  • View or print the service policies of the installed service definition
  • Activate a service policy of the installed service definition
z/OSMF Workload Management (V1R12)

View Sysplex Status

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

Check checkbox to automatically refresh data
z/OSMF Workload Management

Can send basic data to the zEnterprise server

- Integration with the new IBM zEnterprise server
  - Unified Resource Manager (Monitors Dashboard) can monitor heterogeneous workloads.
- New agent in z/OS R12 will feed data to Unified Resource Manager.
  - System resource utilization, system delays, paging delays
- Unified Resource Manager will link distributed workload with z/OS workload
  - Ex: AIX Application Serving Blade front end to DB2 z/OS backend
  - End to end monitoring

Easy to turn on the GPMP agent
Summary

- **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
  - Direct navigation between policy elements during editing/viewing of service definitions
  - Serialization of the editing of the active service definition

- **Simplified handling via integrated repository for WLM service definitions**
  - WLM service definitions are stored in a repository integrated in the z/OSMF file system
  - WLM service definitions can be exported to the local workstation or a host data set as well as imported from a file on the local workstation or a host dataset
  - WLM service definitions can be printed using the print menu of the web browser

- **Installation of WLM service definitions and activation of WLM service policies**

- **Monitoring of the WLM status of a sysplex and the systems in a sysplex**
  - WLM status report is automatically updated if the WLM status on the systems changes

- **Allow opening multiple tabs to enable users to perform tasks simultaneously**
  - Simplified migration: Policy elements can be copied from one service definition to another
  - Simplified operation: A 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
### Benefits

<table>
<thead>
<tr>
<th></th>
<th>Without WLM Policy Editor** using WLM Administrative Application</th>
<th>With WLM Policy Editor** in z/OSMF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optimization of a service definition based on best-practices</strong></td>
<td>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.</td>
<td>Check the best-practice hints the GUI displays for policy elements. If required, modify the policy elements correspondingly.</td>
</tr>
<tr>
<td><strong>Hours (or days when done initially)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Review of service definitions for daily changes, migration, consolidation</strong></td>
<td>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.</td>
<td>Open a service definition from the service definition repository. Navigate through it using links. Filter and sort policy elements in the tables.</td>
</tr>
<tr>
<td><strong>5-10 minutes until review can start</strong></td>
<td></td>
<td><strong>Seconds until review can start</strong></td>
</tr>
<tr>
<td><strong>Transfer policy elements from a test service definition to a production service definition</strong></td>
<td>Print out the test service definition and update the production service definition by typing in the changes.</td>
<td>Open the test and production service definition simultaneously and copy over the changed policy elements via copy&amp;paste operations.</td>
</tr>
<tr>
<td><strong>Up to several minutes per policy element</strong></td>
<td></td>
<td><strong>Seconds per policy element</strong></td>
</tr>
</tbody>
</table>

**Based on IBM laboratory results, your results may vary**
Resource Monitoring features

- The z/OSMF Resource Monitoring application provides integrated performance monitoring in the customer's environment
- Supports z/OS z/OS sysplexes and Linux® images (System z® and Intel®) in your installation
  - Requires the RMF z/OS Data server (DDS) on each sysplex being monitored and the Linux data gatherer (rmfpms) running on the Linux image that is being monitored.
- There are two z/OSMF tasks: Monitoring Desktops and Sysplex Status
  - Monitoring Desktops task:
    Monitor most of the metrics supported by the Resource Measurement Facility (RMF™) Monitor III, create and save custom views of the metrics, and display real-time performance data as bar charts.
  - Sysplex Status task:
    Assess the performance of the workloads running on the z/OS sysplexes in your environment. The Sysplex Status task also provides a single location where you can define the z/OS sysplexes and Linux images to be monitored in the Monitoring Desktops task.
- If you plan to use the tasks from the Resource Monitoring plug-in, it is recommended that you enable the optional priced feature, Resource Measurement Facility (RMF), on one of the systems in your enterprise. For information about enabling features, see z/OS Planning for Installation, GA22-7504.
# z/OSMF Resource Monitoring (V1.12)

## Benefits

<table>
<thead>
<tr>
<th>Without z/OSMF Resource Monitoring (using RMF ISPF Monitor III Reporter)</th>
<th>With z/OSMF Resource Monitoring</th>
</tr>
</thead>
</table>
| **Checking the performance status for several sysplexes** | **Cross-sysplex performance monitoring from a single point of control with a quick red-yellow-green health indicator for your systems on a single panel.**  
  (Linux monitoring features are fully integrated.) |
| You need a Monitor III Reporter session on each sysplex, and manually consolidate data from different reports. (Monitoring of Linux resources has to be done with other tools) | |
| **Up to 15 minutes to look up each sysplex and high degree of skill needed to interpret reports** | **Just seconds to see the health of all your sysplexes (and Linux images)** |
| **Explore & compare the processor usage of specifics jobs** | **The monitoring desktops are fully customizable. Specific metrics of selected resources can be added to a desktop and are presented as charts. Multiple desktops can be started in parallel in different tabs. Advanced filtering features allow you to conduct more sophisticated performance analysis.** |
| Tabular reports are a fixed layout and can be viewed only one at a time with limited ability to customize and filter the data presentation. You have to manually consolidate data from different reports | **About 5 minutes to set up a custom monitoring desktop, 3 key clicks to view real-time statistics** |
| **A long time, depending on data required and correlations needed. In some cases, generating reports is not possible.** | |
Resource Monitoring application - benefits

• Integrated monitoring from a single point of control
• Support for z/OS and Linux
• Quick assessment of the health (Sysplex Status task)
• Drill-down into resource attributes and metrics (Monitoring Desktop task)
• Predefined set of desktops for a quick start
• Flexibility through customizable user defined desktops
• Advanced filtering features for focused monitoring

Convenient, easy-to-use, flexible and customizable!
Resource Monitoring: Sysplex Status

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

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

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

Click to open the monitoring desktop.

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

A running monitoring desktop shows real-time performance data.
Monitoring Desktops – add a metric

Add your own metrics and filters to create custom views with more detailed information, or correlation of events.
Integrated z/OS and Linux Monitoring

Monitor z/OS and Linux for System z and Linux on Intel platforms with the help of a separate downloadable tool.

Processor Utilization of z/OS Jobs

Processor Utilization of Linux Processes
Linux Monitoring

- To monitor your Linux images, download and install a free tool (rmfpms) from the RMF web site
  - The tool is provided on „as is“ basis and is not an officially supported product

- rmfpms is available for
  - Linux for System z
    - Kernel 2.4 – 64 bit
    - Kernel 2.6 – 64 bit
  - Intel Linux
    - Kernel 2.4
    - Kernel 2.6

- z/OSMF connects to the Linux systems where rmfpms is running and collects the performance data
Focus on z/OSMF Administration

• z/OSMF Authorization – defining users and roles
  • The z/OSMF administrator must authorize the user to z/OSMF and assign a role in order for the user to start working with z/OSMF tasks
    • The user must have a valid userid on the z/OS system
    • The security administrator must authorize the user to the required z/OS stack for the z/OSMF tasks
      • *Scripts are provided to perform the end-end authorization*

• Adding Links
  • Allows the administrator to dynamically add links to non-z/OSMF resources, e.g. ISV products, commonly used installation Web sites
z/OSMF Administration: Authorizing a user

View all users

Click on "Action" and select "New" to authorize a user to z/OSMF. Scripts are provided for authorizing additional users end to end. For example, use the sample scripts to generate and submit the RACF commands needed to authorize a user to Configuration Assistant and/or Incident Log.
z/OSMF Administration: Defining a role

Select individual tasks and subtasks for each role.
Focus on Links

• This category contains the pre-defined links provided by IBM as well as any new links added by the z/OSMF administrator.
• The links are available to all users of z/OSMF.
• Administrator can define which roles have access to each of the defined links.
• The IBM pre-defined links are accessible to all users, including guests, by default.
• Also, a new interface enables you to add non-z/OSMF launch points and links to the left hand side navigation tree. (planned for V1.12)
z/OSMF Administration: Adding a link

Need to share information with the team? Need to go to another application? Add a link!

Define the link
Where it goes (on the nav bar) planned for V1.12
Select who can see it
Additional details on usage

- z/OSMF V1R11 and R12 operating environment
  - One instance of z/OSMF can manage only one local system or sysplex
  - Multiple users may log into the same instance of z/OSMF from different workstations/browsers
    - Expectation is to support up to 15 concurrent users
  - From one client system, user can manage additional sysplexes by opening new browser windows (or tabs) and logging into the z/OSMF instance installed on those sysplexes (one browser per system/sysplex).
  - Only one active instance of z/OSMF is supported within a sysplex at any point in time.
    - Additional instance may be created e.g. for test or service update or backup, but it should not be actively managing the systems at the same time (e.g. working on the same incident concurrently from 2 separate instances of z/OSMF) or using the same data repository.
Migration & Coexistence Considerations

- For z/OSMF V1.11 customers - In a mixed sysplex with some systems below z/OS V1R10:
  - z/OSMF V1R11 must be installed and run on z/OS V1R10 or above
  - Incident Log: z/OS V1R9 system’s SVC dumps will be reflected, but with some property values missing

- Configuration Assistant is only supported on z/OSMF V1R11 and above, running on a z/OS V1R11 or later system.

- z/OSMF can coexist with other ISV products
  - For example, all setup instructions are provided for RACF, but z/OSMF will operate with other security products with equivalent instructions
Migration & Coexistence Considerations

• **z/OSMF 1.12 requires z/OS 1.12**

• **Migration:**
  - If you have a z/OSMF 1.11 system and want to migrate to z/OSMF 1.12 on a z/OS 1.12 system, there is script support for doing that.
    - Requires that z/OSMF 1.11 be at the PTF UK52956/APAR PK97274 level prior to migration
    - Use `izumigrate.sh` to migrate the R11 configuration file to the R12 format, see the z/OSMF Configuration Guide
    - Run the setup steps via `izusetup.sh` to enable the R12 level of applications
    - After that you can use the –add option to add the new applications added in z/OSMF 1.12

• **Coexistence applies to lower-level systems which coexist (share resources) with latest z/OS systems.**
  - If you require the capability to fall back from z/OS Management Facility V1.12.0 to a lower level system (z/OS Management Facility V1.11.0 on a z/OS 1.10 or later system), and retain the use of the data repository from z/OS Management Facility V1.12.0, you require **APAR PM09519** on the system with z/OS Management Facility V1.11.0
  - Also require CEA APAR on the lower level z/OS systems V1R10 and V1R11) **OA32285**
    - If this is *not* installed, under certain circumstances, some datasets will not be deleted when the rest of the incident is deleted.
Prerequisites

- **z/OSMF V1R11**
  - Requires z/OS z/OS V1R10 w/maint., or z/OS V1.11
    - z/OSMF V1.11 also supported on z/OS V1R12 (but upgrade to z/OSMF V1R12 recommended)
    - The Configuration Assistant for z/OS Communications Server portion of z/OS Management Facility requires z/OS V1.11 or later.
  - **Browser**
    - Windows XP® operating system
    - Mozilla Firefox 3.0.6 (recommended)
    - Mozilla Firefox 2
    - Internet Explorer® 7
    - Internet Explorer 6

- **z/OSMF V1R12**
  - Requires z/OS R12
  - **Browser**
    - Windows XP, Windows Vista, and Windows 7
    - Mozilla Firefox 3.0
    - Mozilla Firefox 3.5 (recommended)
    - Internet Explorer® 7
    - Internet Explorer 8
Summary

• The IBM z/OS Management Facility is a new product for z/OS customers that provides support for a modern, Web-browser based management console for z/OS.

• z/OSMF delivers solutions in a task oriented user interface. The initial functions in z/OSMF 1.11 include:
  • Configuration Assistant for z/OS Communication Server
    • Simplified configuration and setup of TCP/IP policy-based networking functions
  • Incident Log
    • 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
  • Links
    • Links to resources - provides common launch point for accessing resources beyond z/OSMF
  • z/OSMF Administration
    • z/OSMF authorization services for administrator: add users, define roles, dynamically add links to non-z/OSMF resources
Summary – z/OSMF V1.12 Enhancements

- **z/OSMF Incident Log:**
  - Encrypt incident files
  - Break dumps into multiple data sets that can be sent via FTP in parallel
  - Specify additional data sets to send to a vendor
  - Add free-form comments to incidents and FTP destinations in new sortable fields
  - Create of diagnostic log snapshots based on SYSLOG and LOGREC data sets
    - In addition to OPERLOG and LOGREC log streams
  - All intended to help you manage problem data more easily

- **z/OSMF Configuration Assistant for z/OS Communications Server**
  - Planned to support configuration for
    - IKEv2
    - Certificate trust chains and certificate revocation lists
    - New cryptographic algorithms for IPSec and IKE.
    - FIPS 140 cryptographic mode for IPSec and IKE
    - ...and Enforce RFC4301 compliance for IPSec filter rules
Summary – z/OSMF V1.12 Enhancements (2 of 2)

• New z/OSMF interface:
  • Designed to allow you to add links programmatically to the z/OSMF Navigation tree

• New WLM policy editor:
  • Create, edit, and install WLM service definitions
  • Activate WLM service policies
  • Monitor of the WLM status of a sysplex and the systems in a sysplex

• New Resource Monitoring:
  • provides integrated performance monitoring in the customer's environment
  • Supports z/OS z/OS sysplexes and Linux® images (System z® and Intel®) in your installation
  • Integrated monitoring from a single point of control
  • Drill-down into resource attributes and metrics
Additional information

- z/OS Management Facility website
- IBM z/OS Management Facility education modules in IBM Education Assistant
  - [http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp](http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp)
  - Scroll down to z/OS Management Facility
- z/OS Hot Topics, Issue 21 and 23:
- Program Directory for z/OS Management Facility GI11-2886
- IBM z/OS Management Facility User’s Guide SA38-0652
- IBM z/OS Management Facility License Information GC52-1263
# SHARE sessions on z/OSMF

<table>
<thead>
<tr>
<th>Session Number</th>
<th>Day</th>
<th>Time</th>
<th>Room</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7787</td>
<td>Tues, Aug 3</td>
<td>4:30 pm</td>
<td>303</td>
<td>Managing your workload with z/OSMF</td>
</tr>
<tr>
<td>7505</td>
<td>Tues, Aug 3</td>
<td>6:00 pm</td>
<td>313</td>
<td>Roundtable Discussion: z/OS Simplification and Consumability</td>
</tr>
<tr>
<td>7548</td>
<td>Wed, Aug 4</td>
<td>9:30 am</td>
<td>207</td>
<td>z/OSMF Overview</td>
</tr>
<tr>
<td>7551</td>
<td>Wed, Aug 4</td>
<td>11:00 am</td>
<td>207</td>
<td>z/OSMF Implementation and Configuration</td>
</tr>
<tr>
<td>7554</td>
<td>Wed, Aug 4</td>
<td>12:15 pm</td>
<td>207</td>
<td>z/OSMF Roundtable</td>
</tr>
<tr>
<td>7405</td>
<td>Wed, Aug 4</td>
<td>3:00 pm</td>
<td>313</td>
<td>z/OS Problem Determination Update (includes z/OSMF Incident Log)</td>
</tr>
<tr>
<td>7506</td>
<td>Wed Aug 4</td>
<td>6:00 pm</td>
<td>311</td>
<td>Roundtable: Shaping the Future of z/OS System Programmer Tasks Discussion</td>
</tr>
</tbody>
</table>
Trademarks

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries.

IBM* ServerPac* * Registered trademarks of IBM Corporation
IBM (logo) WebSphere*
RACF* z/OS*

The following are trademarks or registered trademarks of other companies.
Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.
Firefox is a trademark of Mozilla Foundation
Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries, or both and is used under license there from.
Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.
Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.
Internet Explorer is a trademark of Microsoft Corp
InfiniBand is a trademark and service mark of the InfiniBand Trade Association.
Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
UNIX is a registered trademark of The Open Group in the United States and other countries.
Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.
ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office.
IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency, which is now part of the Office of Government Commerce.
* All other products may be trademarks or registered trademarks of their respective companies.

Notes:
Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.
IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.
All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.
This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.
All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.
Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.
Smart technologies from IBM can deliver simplification across organizational domains

- Simplification of tasks
- Modernization & integration of tools

- Tivoli Service Management Center
- Tivoli OMEGAMON
- z/OS Management Facility
- DB2 / IMS
- Rational Developer for System z
- CICS Explorer

- Improve productivity
- Enhance collaboration
### z/OS Management Facility

**Focus areas for simplification**

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Monitoring health; identifying real and potential problems</td>
<td>- Adding or changing system components; enabling new features; defining and updating policies that affect system behavior.</td>
</tr>
<tr>
<td>- Analyzing and resolving problems</td>
<td></td>
</tr>
</tbody>
</table>

**Simplify and modernize the System Programmer User Experience**

Deliver solutions in a task-oriented browser-based user interface with integrated user assistance

**Information**

Finding the information needed to use z/OS
z/OSMF packaging

z/OSMF V1R11 is comprised of:

- PID# 5655-S28
- S/S PID# 5655-S29
- FMID# HSMA110
- FMID# HBBN700 (IBM WebSphere Application Server OEM Edition for z/OS v7.0)
  - COMPID 5655I3512 - WEBS APP SVR OEM
- HSMA110 FMID Description: IBM z/OS Management Facility
  - COMPID 5655S28SM – z/OSMF Core
  - COMPID 5655S2805 – z/OSMF Incident Log
  - COMPID 5655S28CA –Config Assist
# z/OSMF V1.12 product

The IBM z/OS Management Facility is a separate licensed program product

- z/OS Management Facility (5655-S28)
- z/OS Management Facility Subscription and Support (5655-S29)

<table>
<thead>
<tr>
<th>FMID</th>
<th>COMPID</th>
<th>Component Name</th>
<th>RETAIN Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSMA120</td>
<td>5655S28SM</td>
<td>z/OSMF Core</td>
<td>120</td>
</tr>
<tr>
<td>HSMA122</td>
<td>5655S2802</td>
<td>z/OSMF RMF</td>
<td>122</td>
</tr>
<tr>
<td>HSMA123</td>
<td>5655S2803</td>
<td>z/OSMF WLM</td>
<td>123</td>
</tr>
<tr>
<td>HSMA125</td>
<td>5655S2805</td>
<td>z/OSMF Incident Log</td>
<td>125</td>
</tr>
<tr>
<td>HSMA12A</td>
<td>5655S28CA</td>
<td>CONFIG ASSIST</td>
<td>12A</td>
</tr>
<tr>
<td>HBBN700</td>
<td>5655I3512</td>
<td>WEBS APP SRV OEM</td>
<td>700</td>
</tr>
</tbody>
</table>
Configuration Assistant for z/OS Comm. Server

Simplified AT-TLS Dialog (z/OS V1.11)

- Simplified AT-TLS dialog
  - Define AT-TLS from the application level
  - Added a list of well-known applications with predefined rules
  - Simple “click” to enable
  - Rules can be modified or copied and modified

- AT-TLS supports new SSL and TLS (TLS V1.1) settings. (R11)
Configuration Assistant for the z/OS Comm. Server

New Predefined Default AT-TLS Rules (R12)

- NEW! Predefined, default AT-TLS rules for key IBM middleware and function, such as:
  - JES
  - DB2
  - IMS
  - NSS

- Helpful when TLS security is required!
- Can be modified if needed, as easy as open, cut, copy, paste!
Configuration Assistant for z/OS Comm. Server

**Simplified IPSec**

- **Simplified IPSec Requirement Map (V1R11)**
  - Simplified panel to show more clearly that a requirement map was a Traffic Descriptor and a Security Level
  - New “advanced wizard” to allow for easier panel navigation

- **Support for more cryptographic algorithms (for V1.12)**
Configuration Assistant for z/OS Comm. Server

Application setup tasks (V1.11)

- “Application Setup” task guides users in the creation of configuration files and started procedures
- Provides step-by-step for each policy perspective to deploy the applications required for that function
- There are both image-level and stack-level setup tasks.
Base locations specify a z/OS UNIX® file directory or a PDS(E) library for storing the policy-related definitions that are created by the Configuration Assistant.

There are both image-level and stack-level base locations.

This example uses a PDS library.