IBM z/OS Management Facility
Hands-on Lab
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Lab Agenda

- Brief overview of z/OSMF
- Start the hands on Lab – Logon to z/OSMF
  - Explore the different tasks in z/OSMF
- Lab 1 - Incident Log
- Lab 2 - Workload Management
- Lab 3 - Sysplex status
- Lab 4 - Monitoring Desktops
- Optional Labs
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.

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/OS V1R11, and z/OS V1R12
  - z/OSMF V1R12 is supported on z/OS V1R12, and z/OS 1.13
  - z/OSMF V1R13 is to be supported on z/OS V1R13
• To log in you will need a z/OS userID that has been defined and enabled for z/OSMF (and the WebSphere® runtime environment)
  – Guidance is provided.

To access z/OSMF, you point your browser to the URL for the z/OSMF instance which is the host name, the port name and the context root for z/OSMF -this is the result.

Once you log in with a valid userid, all functions that are configured and authorized for the userid are made available.
Starting the Lab – log in to z/OSMF

• Launch the Mozilla Firefox browser
  – Note: If browser asks to add exception for certificate, do so
• Point Browser to z/OSMF – enter the following url
  – Note: Ignore and close the warning message
    • IZUG809W Unsupported Web browser version or level found: "3.6.13 (.NET CLR 3.5.30729)". Some z/OSMF functions might not be available if you continue.
• View the Welcome page with the customized Logo
  – view ‘About’ panel
    • Click top right on ‘About’
      • See the details on build and service levels in the installed package.
    • Close the About panel ( X on top right)
• Login with SHARE userid/pw as provided by the lab instructor.
  – See the Full Navigation list and welcome page
• Expand each category to see the tasks available
Lab 1: Incident log Lab

This lab consists of 6 tasks.

It is recommended that you execute these tasks in the order listed above. As you get familiar with the Incident Log, you will be able to work directly with the task you need to accomplish.

As with all the labs in this session, all the teams will be working with the same z/OSMF instance. Each team will be given a unique id to work with. However, you must remember that as you work with a given incident, that incident is also available to the other teams to work with. When you are working with updating an incident please make sure you work with the user defined incident assigned to your team to avoid confusing the other teams.

1. View all the incidents across all the systems in your sysplex
2. Customize your view of these incidents
3. View the details of an abend incident
4. FTP the diagnostic data captured for an incident to your service provider
5. View the status of the FTP for that incident
Task 1: View all the incidents across all the systems in your sysplex

Step 1: Expand the Problem Determination Category in the Left Navigation Tree

Step 2: Click on Incident Log

The first panel that opens is the main panel of the Incident Log. Here you will see a summary view of all the Incidents across all the systems in the sysplex. Take some time to scroll through and look at all the columns.
Task 2: Customize your view of these incidents

You have the ability to control what data you see in terms of configuring what columns are displayed and the order of those columns. You can also control the data you see, which is you can filter on different columns. You can also sort the columns to view the data in different sort orders. You can sort on up to 3 columns at a time!

Step 1: Filter the columns

By default you will get all the incidents that have occurred in the last 3 days. You can change this.

Click on the filter displayed under a column header to change the filter. For this example, let us say we want to look at incidents from the last 180 days, not the last 3.

Click on the Date and Time column filter. In the resulting dialog, change the 3 days to 180 days and click OK.

You will now see Incidents from the last 180 days on your sysplex.
Step 2: Sort the columns

Click on the column header of the column you want to sort on. The first time you click on it, it will sort it in ascending order, the second time in descending order and the third time it will clear the sort. Try sorting in descending order on the Date and Time column. Notice the arrows that show up. Next try to sort on the Incident Description column header.
You have successfully customized your workspace! You are only viewing the columns you want, in the order you want, for a range of data that you filtered, in the sort order that you want.

**Step 3: Rearrange the order of the columns as you would like to see it**

Click on Actions->Configure Columns
Assume you do not want to see the sysplex and system columns. Select them and click on the Remove button.

Now lets say you want to see the ‘Component Name’ column next to the Date and Time column.

Select the Component Name column and then click on the Up button, until it is in the position you want it.
Click the OK button. You now have only the columns you want displayed in the order you want them.

Task 3: View the details of any given incident
Now that you’ve customized your workspace, let us dive deeper into an individual Incident:

a. **Step 1**: Select any incident of type ABEND. Click on the Incident Type column value or you can Right click on the incident and from the popup context menu, select View Diagnostics Details.

Step 2: It brings up the View Diagnostic Details panel:

On this panel you can see all the pieces of diagnostic data that have automatically captured for this Incident by the backend instrumentation. Take some time to look at this.
Observe that you also have the ability to attach additional pieces of diagnostic data (for example a trace file)

Once you’ve finished with this tab, let’s move on to the other tab - General

**Step 3: Click on the General tab on top**

You can now see additional information about the Incident - for example, the CSECT, Load module and symptom string.

**Step 4: Done**, return to the main summary panel of the Incident Log

Click on the Incident Log link in the breadcrumbs at the top of the page to return, or click on the OK button
Task 4: FTP the diagnostic data captured for an incident to your service provider

Step 1: Select an Incident. In the lab, you will have a user initiated incident that has your userid in the description, that you should use. (Hint: you can also ‘filter’ the incidents for a Description with your Userid!)

Right click (or click on the Actions button) and then select ‘Send Diagnostic Data’

You will now be able to work with a wizard that will guide you through the steps to FTP the diagnostic data for that incident

Step 2: Welcome.

The first panel you see is the Welcome page. Notice that it has the steps you will be guided through on its left pane. It shows you what steps have been completed and which one is your current one
The welcome page has the details about the Incident you are working with, plus it lists the pieces of diagnostic data that is going to be sent.

It also shows you the problem number associated with the Incident. If the incident does not have one already associated, it allows you to set one here itself. Go ahead and fill in one if it does not already exist.

For this exercise, you can enter 12345,123,123 as the problem number, and select the IBM PMR option.

The problem number is required to help identify the FTP-ed files at the destination.

Click on next once you are done.

**Step 3: Select FTP Destination:**

The next page in the wizard allows you to select where you want to send these files/datasets.

For this exercise, select the first one in the list and click on Next.
Step 4: Specify Security Settings:

This is where you can enter the userid/password needed to access the FTP Destination server you selected in the previous step. In this exercise, we will use the anonymous sign on.
Click on Next to move on.

**Step 5: Select FTP Profile**

This is where you can specify your firewall or proxy information if needed. In this exercise, we do not have a firewall.

Make sure that the No firewall or proxy option is selected in the drop down.
Click on Next.

**Step 6: Define Job Settings**

At this stage you have the ability to edit/specify the job card information for the FTP Job that is being built in the background.
You can make changes if you'd like. The default entries will work for our lab session, so you can also just click on Next

Step 7: Review FTP Information

The wizard has walked you through collecting all the information needed to FTP the diagnostic data to your service provider. This page allows you to review all the data that you have provided. If you want to change any value, you can use the back button to get to that page and make your changes.

Once you are okay with the values displayed, you are ready to finish.

Before that you do have the option to view the JCL that was generated based on your input. Click on the View JCL button if you’d like to take a look at the JCL built.

When you are ready to submit the FTP jobs, click on Finish (note your instructor might ask you not to!). This will submit jobs to ftp the selected pieces of diagnostic data over to the selected FTP Destination.

Step 8: FTP Jobs submitted
Once you click on the Finish button in the above step, z/OSMF will submit the jobs. You will get a confirmation window.

Click on Close. It will bring you back to wherever you invoked the Send wizard from.

**Task 5: View the Job Status for the FTP jobs submitted**

Step 1: Right click on the Incident you had just sent. Select the FTP Job Status from the context menu

Step 2: FTP Job Status panel
This page shows you the job status for all the FTP jobs submitted for this incident.

Note you can click on the Refresh button to update the status of the jobs.
Click on Incident Log in the breadcrumb to get back to where you came from.

Note: If a log snapshot does not have any entries, the job might fail
LAB: 2 z/OSMF Workload Management Lab

The lab consists of 4 main tasks that you should execute in the listed sequence:

1. Launching the Workload Management Task
2. View list of all Service Definitions
3. Creating a copy of an existing Service Definition
4. Fixing of a best practice Warning Indication for a Service Definition

These are optional tasks that can be performed if there is time and interest.

5. Print Preview of Service Definition (optional)
6. View the History of a Service Definition (optional)
7. View the WLM Status in the Sysplex (optional)

This Lab focuses on the policy editing, review, and maintenance functions provided by the z/OSMF Workload Management task. Functions to install service definitions and activate service policies are also available, but not part of the Lab.

All Lab teams use the same z/OSMF instance. The z/OSMF Workload Management Task provides a service definition repository that is shared by all z/OSMF users. To prevent conflicts with other Lab teams each Lab team has to use a different service definition for task 4 and 8. Therefore, you have to specify in task 3 a unique service definition name. The service definition name should be 'WLMPRxx'. Substitute xx with your Lab userid suffix.

If the descriptions and screen captures in this manual refer to service definition ‘WLMPROD’ your service definition ‘WLMPRxx’ is meant.
Task 1: Launching the Workload Management Task

Open the workload management task by selecting ‘Performance’ → ‘Workload Management’ in the navigation tree.

The first panel that opens is the ‘Workload Management’ task tab displaying the ‘Overview’ panel listing the major tasks:
Task 2: View list of all Service Definitions

In the ‘Overview’ tab, press the ‘Service Definitions’ link. The following tab will be opened:

The table lists all service definitions in the policy repository integrated in z/OSMF. The service definitions are shared between all z/OSMF users. Hence, you may notice changes of the panel which are caused by other users. Your table may show different service definitions than in the screen shot. Scroll right to view additional properties.
Task 3: Creating a copy of an existing Service Definition

In this task we will create your own copy of an existing service definition. That copy will then be used in the following tasks.

To create a copy of service definition ‘WLMPROD’ check the checkbox for service definition ‘WLMPROD’. Then select in the ‘Actions’ menu the action ‘Copy’.

A new tab opens with the following content:
Click with the left mouse button in the field ‘Service definition name:’ and change the name to WLMPRxx. Substitute xx with your Lab team number that you find on the first page of this manual.

Press OK to save the copy of the service definition with the new name WLMPRxx in the Service Definitions table.

**Note:** If the descriptions and screen captures in the following sections of this manual refer to service definition ‘WLMPROD’ your copy of that service definition with the name ‘WLMPRxx’ is meant.
Task 4: Fixing of a best practice Warning Indication for a Service Definition

Warning messages exist for service definition ‘WLMPRxx’. We will now check the warning message and fix the issue. In order to accomplish that, we open the service definition in a tab, navigate to the service definition item for which a warning message exists, and edit the service definition to fix the issue.

To open the service definition, click on the link in the ‘Messages’ column for the service definition with name ‘WLMPRxx’:

A new tab opens with the title ‘View WLMPRxx’:
A service definition consists of different sections. Each of the sections is displayed in one panel. You can watch one panel at a time in the opened tab and you can switch between the panels via the ‘Switch to’ menu. The panel that is currently displayed shows all best practice messages for service definition ‘WLMPRxx’: one warning message and three informational messages.

In order to navigate to the service class period referenced by the warning message click on the link ‘Velocity of Service Class “AK1”’ in the Messages table. The following panel is displayed:
The panel shows a tree table with all service classes in the service definition. The rows with the +/- icon represent service class items. The nested rows represent the periods of the service classes. The service class period with the warning message is already expanded. The warning message is displayed if you hover with the mouse cursor over the warning icon in the table cell.
To fix the issue correlated with the warning message we will change the Velocity Goal of the service class period to a value lower than 90. First, we have to switch from view mode to modify mode via the action ‘Editable Version of Service Definition’ in the ‘Switch To’ menu:

The service definition is now editable. Editable table cells have an additional border around the value in the table cell:
### Workload Management

#### Service Classes

<table>
<thead>
<tr>
<th>Name</th>
<th>Actions</th>
<th>Period</th>
<th>Importance</th>
<th>Duration</th>
<th>Goal Type</th>
<th>Response Time Goal</th>
<th>Percentage Goal</th>
<th>Velocity Goal</th>
<th>CPU Critical</th>
<th>Resource Group Filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK1</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>*Yes</td>
<td><strong>3s</strong></td>
<td><strong>Yes</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>AKZ</td>
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<td>AK3</td>
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<td>CO3PH4</td>
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<td>ECP</td>
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<td>ELMH</td>
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</tr>
</tbody>
</table>

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**Total:** 49, **Selected:** 1

**Reapply Filter and Sort:**

- OK
- Apply
- Reset
- Cancel
In order to change the Velocity Goal of the service class period with the warning indication double click on the table cell with the warning icon, then type in value 85 and press <Enter>. The warning icon is no longer shown:
Press the ‘OK’ button to save the modified service definition and to close the ‘Modify WLMPROD’ tab:

Notice that the ‘Service Definitions’ table shows no longer a warning indication for service definition ‘WLMPRxx’ since just informational messages exist for the service definition.
Lab 3: Sysplex Status

1. View the Performance status of the sysplex(es) being monitored
   a. From the Performance category select -> Sysplex status
   b. View fields

   i. The Performance Index Status column is a quick indicator for the sysplex health. For each sysplex, the performance index by service class period metric is evaluated. If service classes periods are found, that have the PI > 1 and the importance of 1 or 2, the indicator is red. This means, there’s some important workload which is not meeting the goals. If there are periods with PI > 1, but they have importance of 3 or bigger, the indicator is yellow. Otherwise it’s green (that is, all service class periods meet their goals and have PI <= 1).

   ii. In the last two columns, some WLM information about the sysplex is displayed.

Note: From the SHARE Lab system, only one sysplex can be monitored. Typically you can add other sysplexes or Linux systems to be monitored.
Lab 4: Monitoring Desktops

Task 1: View the performance metrics
   a. From the Performance category select -> Monitoring Desktops,
   b. See the default metrics that are pre-defined,
   c. Select Execution Velocity and from Actions drop down, select ‘Open’
   d. Take the default sysplex ‘LOCALPLEX’ when prompted
   e. View the execution velocity metrics
Task 2: add new metrics to monitor (stretch/optional)

a. From Monitoring Desktops task, Actions -> NEW
b. From New Desktop panel, from Actions pull down, select Add Metric
c. Set metric group - # frames
d. resource – in tab below – select/expand first image, select storage
e. go to Metric tab – use quick filter for ‘# frames by job’ -> select - # frames active by job
f. see the desktop – Save/ or action drop down- give name – Storage soaker
LAB 5 – Optional Labs
Workload manager: Task 5:
Print Preview of Service Definition (optional)
The Print Preview panel displays a service definition or service policy in one panel. The service definition / service policy can be printed.

In the Service Definitions tab select the row with service definition ‘WLMPRxx’. Right click to open the context menu and select ‘Print Preview’.

A tab opens with the ‘Print Preview’ panel for the service definition:
Use the scrollbar on the right side of the panel and check how the print preview is structured.

Press the ‘Filter’ link to open the ‘Filter Formatted Service Definition’ dialog:
Check ‘Selection’, then check the checkboxes ‘Service parameter’, ‘Resource groups’, ‘Workloads’, ‘Service Policies’, ‘Report Classes’, ‘Classifications’. Press ‘OK’. Use the scrollbar to review the displayed elements. Notice that only the service definition items you selected in the filter dialog are displayed.

Open the ‘Switch To’ menu and select ‘NSHIFT’:

The panel shows now the service definition with the applied service class overrides and resource group overrides of service policy ‘NSHIFT’:
Press the ‘Print’ link in the upper right corner of the panel. A new web browser tab or window opens with the same content:
You may print the service definition / service policy by pressing the ‘Send to Printer’ link. (Note: will not work for this lab. FYI only)

Close the ‘Print Service Definition’ web browser tab by clicking the X in the tab header.

Close the ‘Print Preview’ tab by clicking the X in the tab header.
Workload management: Task 6: View the History of a Service Definition (optional)

The History panel displays the operation history for a service definition.

In the ‘Service Definition’ tab select service definition ‘WLMPRxx’. Right click to open the context menu for ‘WLMPRxx’ and select ‘View History’:

The history panel displaying the operation history of the service definition is opened in a new tab:
The service definition history shows the operations you have performed so far on the service definition 'WLMPRxx'.
Task 7: View the WLM Status of the Sysplex (optional)

The WLM status of the Sysplex can be viewed.

If not already displayed, switch to the ‘Overview’ tab by clicking on the tab header. Then, click the link ‘Status for Sysplex’. The ‘Status for Sysplex’ tab opens:

The ‘Status for Sysplex’ panel shows the Active Service Policy in the Sysplex and on each system in the Sysplex as well as the service definition installed in the WLM couple data set.

Press the X in the tab header to close the ‘Status for Sysplex’ panel.