zEnterprise eXposed!
Experiences with zManager
Guest Platform Management Provider

Session   10003

Mary Astley

Advanced Technical Skills
IBM Corporation

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Agenda

Platform Performance Management

- ♦ Role

- ♦ Workloads

- ♦ Application Response Measurement
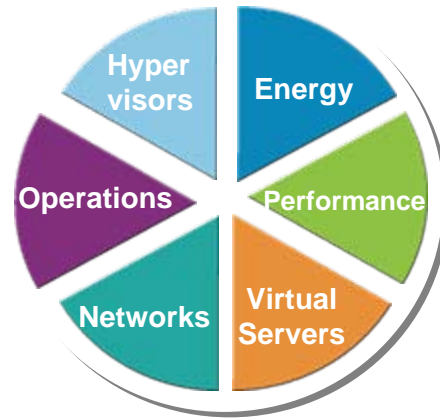
- ♦ Guest Platform Management Provider

Reports

- ♦ Workloads report

- ♦ Virtual servers report

- ♦ Hops report

- ♦ Topology report

IBM zEnterprise System

IBM zEnterprise Unified
Resource Manager
(zManager)

Hyper visors

Energy

Operations

Performance

Networks

Virtual Servers

IBM zEnterprise 196
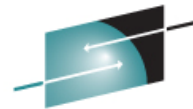(z196)

IBM zEnterprise BladeCenter
Extension (zBX)

IBM zEnterprise Unified Resource Manager is firmware that executes on the IBM zEnterprise 196 Support Element (SE) and the Hardware Management Console (HMC).

Platform Performance Management

- ► zManager component responsible for workload based, goal oriented resource management, monitoring, and reporting

- ► Scope is the ensemble

- ► User interface is the ensemble HMC

- ► Workload goals are specified in workload performance policy

- ► Workload monitoring to determine if performance goals are being met

- ► Manage processor resources across AIX virtual servers and z/VM virtual servers

- ► Optional Guest Platform Management Provider to interface with operating systems

PPM Key Pieces

zManager Workload

A workload is a customer defined collection of virtual servers

- Provides a way to group virtual servers to manage and monitor performance for a business application
- Has one or more performance policies
- Specify workload importance and goals in performance policy

Virtual servers in a workload

- Must be in the same ensemble
- Can be on different blades or nodes
- May reside in more than one workload
- Virtual servers not assigned to a custom workload are in default workload

Performance Policy

Active performance policy is used by zManager to manage platform resources used by the virtual servers

A 'Default' performance policy is provided

Additional policies may be defined, as needed

Only one policy can be active

Change active policy dynamically

Each performance policy has

- A unique name
- Business importance:
  Highest, High, Medium, Low, or Lowest
- One or more service classes

Service Classes

Performance policy has a 'default' service class

Additional service classes may be defined

Each service class has

- ♦ Unique name
- ♦ Performance goal type

  Discretionary
  Velocity – Fastest, Fast, Moderate, Slow, Slowest

- ♦ Business importance for velocity goal

  Highest, High, Medium, Low, or Lowest

- ♦ Classification rules to assign incoming work to service class

zManager will assign a PI for every service class

- ♦ PI = 1.0 – Service Class Achieving Goal
- ♦ PI > 1.0 – Service Class Missing Goal
- ♦ PI < 1.0 – Service Class Overachieving Goal

Defining a Workload

New Workload

Hardware Management Console

Ensemble Management > ATSENS1 > **Workloads**

| Workloads | Topology |

Filter

Select ^	Name ^	Virtual Servers ^	Performance Policy ^
☐	Default	106	Default

Welcome

☐ **Systems Management**

☐ **Ensemble Management**
  ☐ ATSENS1
    ☐ Members
        TSYS
      Workloads

HMC Management

Service Management

Tasks Index

Tasks: Workloads

☐ **Configuration**

New Workload

New Workload: Create a new ensemble workload. - Click to launch

New Workload Wizard

New Workload - ATSENS1

Welcome

Welcome to the New Workload wizard.

Use this wizard to create a workload. A workload provides you with a resource through which you can manage and monitor the end-to-end work being done by your virtual servers.

This wizard guides you through the following tasks:

- Naming and categorizing the workload
- Defining the virtual servers which perform work
- Creating performance policies to specify performance goals
- Creating service classes to prioritize and classify work within a policy
- Activating a performance policy

Navigation:

→ Welcome
Workload Name
Select Virtual Servers
Create Performance Policy
Create Service Class
Service Class Goal
Classification Rule
Manage Service Classes
Manage Performance Policies
Activate Policy
Summary

Workload Name

New Workload - ATSENS1

- ✓ Welcome
- → **Workload Name**
- Select Virtual Servers
- Create Performance Policy
- Create Service Class
- Service Class Goal
- Classification Rule
- Manage Service Classes
- Manage Performance Policies
- Activate Policy
- Summary

Workload Name

Enter a name, description, and category for the workload.

Name: * Trade_wkld

Description: Mary's Trade Workload

Category:

Workload Virtual Servers

Select Virtual Servers

Select virtual servers and custom groups to add into the workload. Adding a custom group into the workload adds all virtual servers in the group.

Show: | All virtual servers | ▾ |

Available Virtual Servers:

--- Select Action --- ▾ | ▾ Filter

Select ^	Name ^	Hyperviso ^	Workloads ^	
☐	psidwl_c	B.2.03		
☐	rjaihs1	B.2.14	rja_wkld	
☐	rjaihs2	B.2.14		
☐	rjawas1	B.2.14	rja_wkld	
☐	rjawas2	B.2.14	rja_wkld	
☐	robaix1	B.2.13		
☐	TOSP1	TSYS		
☐	TOSP11	TSYS	rja_wkld, ZMGRT	
☐	TOSP12	TSYS		
☐	TOSP13	TSYS		

Total: 134   Filtered: 134   Selected: 0

Add >

< Remove

Selected:

TOSP11 (TSYS)
zmgrt1h (B.2.05)
zmgrt2h (B.2.06)
zmgrt2w (B.2.06)
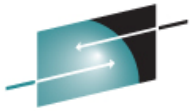
Workload Performance Policy

Create Performance Policy

You may create a performance policy for the workload now or use the default performance policy and create a performance policy later.

*Create Option
- ○ Default
- ⦿ New
- ○ New based on: [▼]

Policy Details

Workload:	Trade_wkld
Name:	* Trade_policy
Description:	Performance policy for Trade application
Business importance:	* High ▼

- Highest
- **High**
- Medium
- Low
- Lowest

Workload Service Class

Create Service Class - Trade_policy

You may create a service class for the performance policy now or use the default service and create a service class later.

*Create Option
- ○ Default
- ◉ New
- ○ New based on: [▼]

Service Class Details

Workload:	Trade_wkld
Performance policy:	Trade_policy
Name:	* TradeSC
Description:	Service Class for Trade application

Workload SC Performance Goal
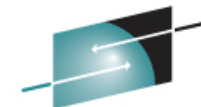
Service Class Goal - Trade_policy:TradeSC

Select the performance goal and business importance for this service class.

Performance Goal

- ⦿ Velocity: * `Fast` ▾
- ○ Discretionary

Business importance: * `High` ▾

Highest
High
Medium
Low
Lowest

Performance Goal

- ⦿ Velocity: * `Moderate` ▾
- ○ Discretiona

Business impo

Fastest
Fast
Moderate
Slow
Slowest

Workload Classification Rule

Classification Rule - Trade_policy:TradeSC

Define the service class's classification rule using the rule builder.

Classification rule:

Logical Operators

`AND` `OR`

| Virtual Server Name | == | zmgrt.h |

| Virtual Server Name | == | zmgrt2w |

`OR ▾`

| <Select Filter Type> | == | ? |

Hostname
OS Level
OS Name
OS Type
Virtual Server Name
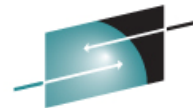
Workload Service Classes

Manage Service Classes - Trade_policy

Create, delete, edit, or re-order service classes for this policy.

--- Select Action ---

Select	Service Class	Performance Goal	Business Importance	Description
○	TradeSC	Velocity - Fast	High	Service Class for Trade application
○	Default	Velocity - Moderate	Medium	The default workload performance

Total: 2 Selected: 0

Workload Performance Policies

Manage Performance Policies

Use the table below to edit or delete a defined performance policy or create another performance policy.

--- Select Action ---

Select	Performance Policy	Business Importance	Description
○	Trade_policy	High	Performance policy for Trade application
○	Default	Medium	The default workload performance policy
		Total: 2 Selected: 0	

Workload Activate Performance Policy

Activate Policy

Select the performance policy to activate when the workload is created.

--- Select Action --- ▾

Select	Performance Policy	Business Importance	Description
⦿	Trade_policy	High	Performance policy for Trade applicatio
○	Default	Medium	The default workload performance polic
		Total: 2	

☑ Launch Customize Scheduled Operations to schedule future performance policy activations. The task will be launched after the workload has been created.

Workload Summary

New Workload - ATSENS1

- ✓ Welcome
- ✓ Workload Name
- ✓ Select Virtual Servers
- ✓ Create Performance Policy
- ✓ Create Service Class
- ✓ Service Class Goal
- ✓ Classification Rule
- ✓ Manage Service Classes
- ✓ Manage Performance Policies
- ✓ Activate Policy
- → Summary

Summary

Click Finish to create the workload, its performance policies and their service classes and activate the selected policy.

Workload

Name:	Trade_wkld
Active performance policy:	Trade_policy
Description:	Mary's Trade Workload
Category:	
Virtual servers:	TSYS.B.2.B.2.05.zmgrt1h
	TSYS.B.2.B.2.06.zmgrt2h
	TSYS.B.2.B.2.06.zmgrt2w
	TSYS.TOSP11
Custom groups:	

Performance Policies

Workload Summary – Default Policy

New Workload - ATSENS1

✓ Welcome
✓ Workload Name
✓ Select Virtual Servers
✓ Create Performance Policy
✓ Create Service Class
✓ Service Class Goal
✓ Classification Rule
✓ Manage Service Classes
✓ Manage Performance Policies
✓ Activate Policy
→ Summary

Summary

Click Finish to create the workload, its performance policies and their service classes and activate the selected policy.
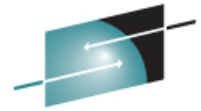
Performance Policies
Default

Description:	The default workload performance policy
Business importance:	Medium

Service Classes
Default

Description:	The default workload performance policy service class.
Performance goal:	Velocity - Moderate
Business importance:	Medium
Classification rule:	.* == ".*"

Workload Summary – Trade_Policy

New Workload - ATSENS1

Summary

Click Finish to create the workload, its performance policies and their service classes and activate the selected policy.

Trade_policy

Description:	Performance policy for Trade application
Business importance:	High

Service Classes

TradeSC

Description:	Service Class for Trade application
Performance goal:	Velocity - Fast
Business importance:	High
Classification rule:	(Virtual Server Name == "zmgrt.h"
	OR Virtual Server Name == "zmgrt2w")

Default

Description:	The default workload performance policy service class.
Performance goal:	Velocity - Moderate
Business importance:	Medium
Classification rule:	.* == ".*"

< Back   Next >   Finish   Cancel   Help

Workload Created

Workload Created - ATSENS1

Workload "Trade_wkld" has been created.
Launch *Workload Details* to view performance policy activation progress. Launch *Workloads Report* to monitor the workload.

OK

Ensemble Management > ATSENS1 > **Workloads**
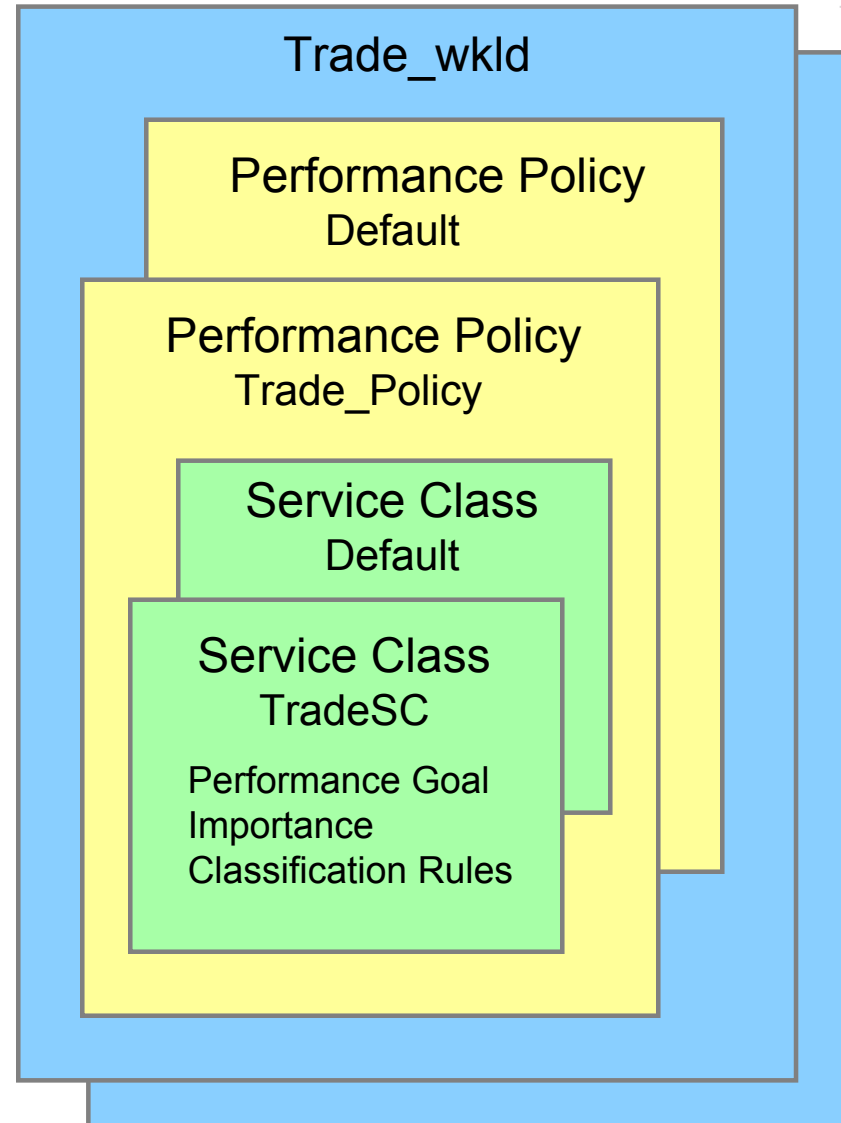
Workloads | Topology

Filter | Tasks ▾ | Views ▾

Select ^	Name ^	Virtual Servers ^	Performance Policy ^	Performance Policy Status ^	Performance Policy Business Importance ^
☐	Default	106	Default	Active	Medium
☐	rja_wkld	4	rja_wkld1	Active	Highest
☐	Test zVM Workload	0	Test zVM Policy	Active	Medium
☐	Trade_wkld	4	Trade_policy	Active	High

Trade Workload Performance Policy

Workload contains:

♦ Virtual servers

♦ Performance policies

♦ Each performance policy has service classes and classification rules

Trade_wkld

Performance Policy
Default

Performance Policy
Trade_Policy

Service Class
Default

Service Class
TradeSC

Performance Goal
Importance
Classification Rules

ARM and GPMP
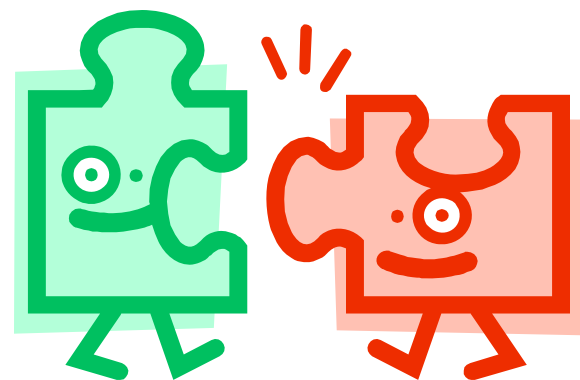
Application Response Measurement

Standards Based Application Instrumentation

ARM V4.0 is an approved standard of *The Open Group*

A method to monitor the performance and availability of applications

- ♦ Measure end-to-end transaction response time
- ♦ A correlator is passed to secondary applications and other managed servers that process the application

zManager uses information to determine

- ♦ Amount of time each application or server used to process trans.
- ♦ Name of the application or server that processed the transaction
- ♦ Transaction flow as it moves from one application or server to next

Movement of work request from one application or server to another is considered a 'HOP'

For accurate data, all applications and servers processing a work request must be ARM enabled

Workflow Example with ARM Services

http://
www.mysite.com/trade/

Web Server

arm_register_application

arm_start_transaction(...)

process request

arm_stop_transaction(...)

arm_stop_application(...)

Transaction results

correlator

TC=WL1

Hop 0

Application Server

arm_register_application

arm_start_transaction(...)

process request

arm_stop_transaction(...)

arm_stop_application(...)
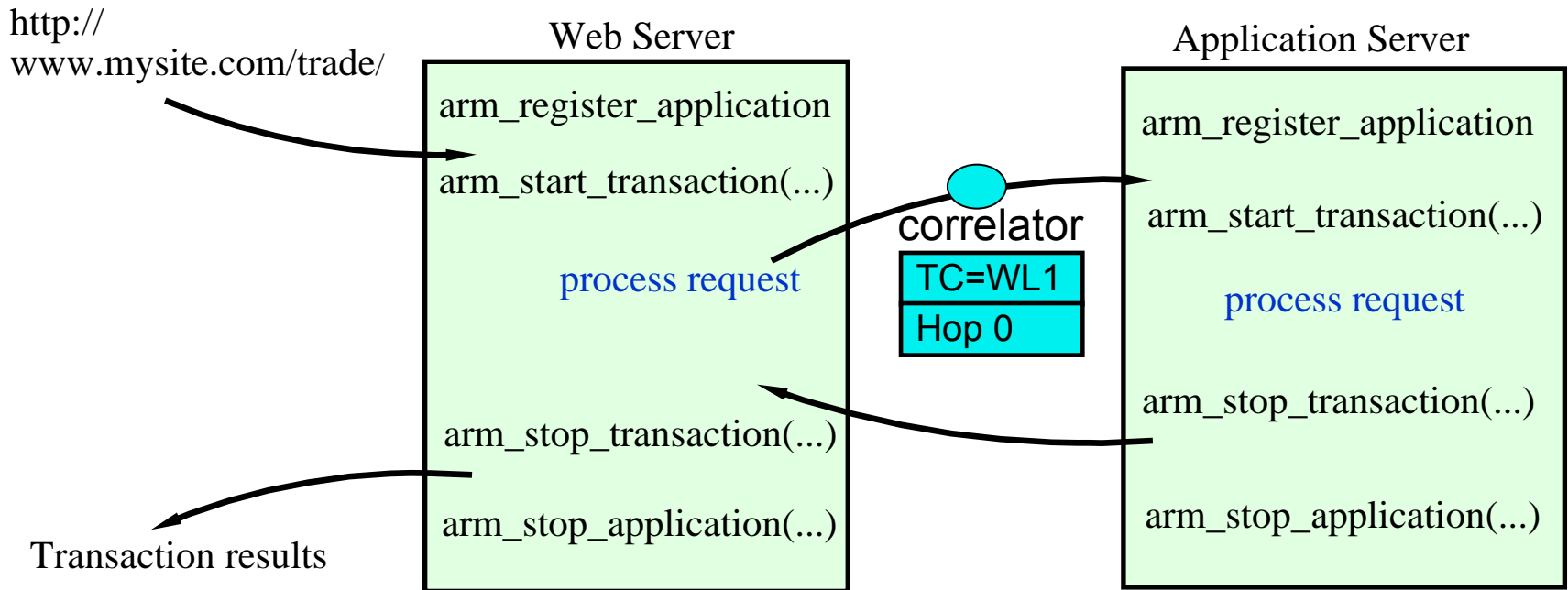
Standards Based Application Instrumentation

► Process registration, deregistration
► Work request classification, start, and stop
► Work request correlator

ARM Instrumented Middleware

Web Server support provided by WebSphere plugin

- ♦ IHS/Apache
- ♦ IIS
- ♦ Domino
- ♦ iPlanet

WebSphere Application Server V6, V7

DB2 Universal Database – including z/OS DB2

Guest Platform Management Provider

GPMP – Link between operating system and zManager

Lightweight component of PPM that collects performance data for work running on a virtual server and passes it to zManager

With ARM instrumented middleware support, GPMP provides metrics that allows detailed transaction topology as transaction hops through virtual servers

- ◆ ARM-instrumented middleware applications required
- ◆ Middleware that calls ARM APIs while servicing work requests

Benefits of GPMP

GPMP provides additional monitoring data

Additional classification rule filters to classify a virtual server

- ♦ HostName
- ♦ SystemName
- ♦ OS Level
- ♦ OS Type

Option of mapping zManager service classes to z/OS WLM service classes

With ARM instrumented middleware support, GPMP provides

- ♦ End-to-end transaction response times
- ♦ Virtual Server Topology report and Hops Report

Enabling GPMP on z/OS
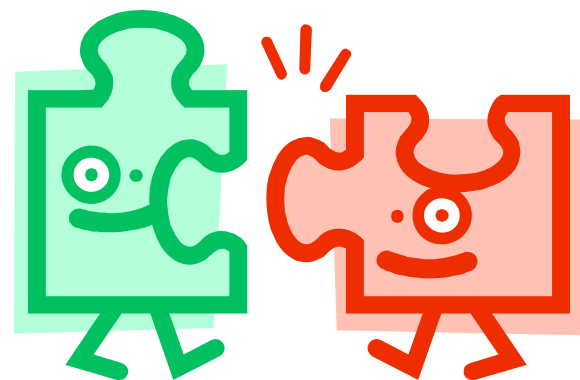
Enable GPMP on z/OS

Sample job in SYS1.SAMPLIB(HVEENV)

Procedure to implement GPMP on z/OS includes

- ♦ Defining the RACF security environment
    - Create user and group ids - group HVEMCA, user HVEMCA1
    - Authorize access to INMN
      - RDEFINE SERVAUTH EZB.OSM.sysname.tcpname
- ♦ Specifying parameters for run-time environment
    - Provide location of Java 2 1.5 or 1.6 runtime environment
    - Create UNIX file system directories
    - Specify parameters for GPMP
- ♦ Verifying HVEMCA procedure is in SYS1.PROCLIB
- ♦ Starting the GPMP address space
    - z/OS R12 – WLM can be setup to automatically start GPMP
    - z/OS R11, R10 – GPMP must be started manually

Start GPMP Address Space

Verify ARM is enabled

- D WLM,AM   if not F WLM,AM=ENABLE

Start GPMP

- F WLM,START,GPMP

```
F WLM,GPMP,START
$HASP100 HVEMCA    ON STCINRDR
IEF695I START HVEMCA WITH JOBNAME HVEMCA IS ASSIGNED TO USER
 HVEMCA1 , GROUP HVEMCA
HASP373 HVEMCA    STARTED
$HASP100 BPXAS     ON STCINRDR
$HASP373 BPXAS     STARTED
BPXP024I BPXAS INITIATOR STARTED ON BEHALF OF JOB HVEMCA RUNNING
 IN ASID 0018
$HASP100 BPXAS     ON STCINRDR
$HASP373 BPXAS     STARTED
FEW0600I GPMP started.
IWM070I GPMP POLICY HAS BEEN ACTIVATED
```

Display GPMP Status

Display Status of GPMP with D WLM,AM,ALL

```
IWM075I  17.49.20  WLM DISPLAY 433
  ARM SERVICES ARE ENABLED
  GUEST PLATFORM MANAGEMENT PROVIDER JOBNAME=HVEMCA ASID=0018
  GPMP POLICY IS ACTIVE
  NUMBER OF REGISTERED PROCESSES=1, APPLICATIONS=1
  ADDRESS SPACES CURRENTLY REGISTERED WITH ARM:
    JOBNAME=DSNADIST ASID=004D
      APPLICATION=DDF
        IDENTITY PROPERTIES=0 CONTEXT NAMES=0
        STARTED APPLICATION INSTANCES:
          DSN9
            TRAN=0 GROUP=DSN9WSC
        REGISTERED TRANSACTIONS:
          SYS_DefaultZWLMTransactionName
```

Enabling GPMP on AIX
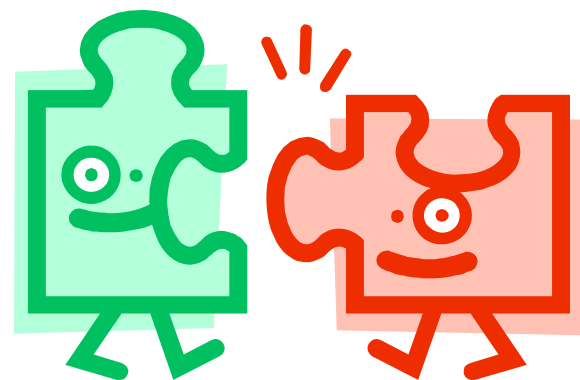
Enable GPMP on AIX Virtual Server

Enable GPMP on the virtual server

- ♦ Virtual Server Details -> Options -> Enable GPMP support

Delivered as rpm package

- ♦ Upload through Mount Virtual Media task in the HMC
- ♦ Select GPMP package to make available to virtual server

Enable EWLM services on AIX virtual server

- ♦ With smitty ewlm or command ewlmcfg –c
- ♦ Confirm EWLM services enabled with command: ewlmcfg –q

Install GPMP rpm package

- ♦ Mount GPMP package on a directory mount point
- ♦ Change to directory and install - rpm -ivh <gpmp package>
- ♦ Default group is ibmgpmp
- ♦ Default user is ibmgpmp user may not be uid 0

Start GPMP on AIX Virtual Server

GPMP command

- ♦ Used to start and stop GPMP
- ♦ Turn autostart option on or off
- ♦ Query status of GPMP
- ♦ Cannot issue GPMP command from ROOT

Start GPMP

- ♦ gpmp start
- ♦ From ROOT: su ibmgpmp -c "/opt/ibm/gpmp/gpmp start"

> su ibmgpmp -c "/opt/ibm/gpmp/gpmp start"
>
> FEW6101I The guest platform management provider is starting.

GPMP Status

```
su ibmgpmp -c "/opt/ibm/gpmp/gpmp"
FEW6030I Persistent storage settings for the guest platform management provider:
FEW6034I      Autostart flag is on
FEW6036I      Shared memory ID is 4
FEW6037I      The guest platform management provider is not running
```

```
su ibmgpmp -c "/opt/ibm/gpmp/gpmp"
FEW6030I Persistent storage settings for the guest platform management provider:
FEW6034I      Autostart flag is on
FEW6036I      Shared memory ID is 4
FEW6038I      Main process ID is 7995420
```

Performance Monitoring and Reporting

Workload Monitoring and Reporting

Report virtual server resource usage in a Workload

User interface for reports is the ensemble HMC

Reports current data and fairly recent history

- ♦ Interval of data displayed is user selectable
- ♦ Granularity of data kept changes over time

    1 minute granularity kept for most recent hour

    15 minute interval data kept after first hour

- ♦ History of 36 hours

Report data can be downloaded to local workstation

- ♦ Uses CSV format
- ♦ Can only download data currently represented on screen

Navigating the Reports

Workloads report lists all workloads

These reports are for a specific workload

♦ Service Classes Report

♦ Virtual Servers Report

♦ Resource Adjustment Report

♦ Virtual Server Topology Report

♦ Hops Report

Workloads Report

List of workloads

High level view of "performance health" of each workload

♦ Indication if workload service class is missing goals

♦ Locate worst performing service class / performance index (PI)

♦ Details for a specific workload

Bar graph of virtual server utilization distribution

Graph of service class PI

Workloads Report Example

Workloads Report - ATSENS1

Report Interval: Starting 8/4/11 5:54:05 PM for 15 minutes (8/4/11 6:09:05 PM) Modify   << < >

--- Select Action ---   Filter

Select ∧	Workload ∧	Service Class With Largest PI (PI) ∧	Performance Policy ∧
○	Arbitrage	GROUP1 (1.00)	Standard
○	CLAIMS		STANDARD
○	Default	Default (0.46)	Default
◉	rja_wkld	SrvClsForFastestHighest (1.61)	rja_wkld1
○	Test zVM Workload		Test zVM Policy
○	Trade_wkld	TradeSC (0.60)	Trade_policy
○	zBX_Sizing	Default (0.40)	zBX_Sizing_Policy
○	ZMGRT1	ZMGRT1SC (1.00)	ZMGRT1A

Total: 11   Filtered: 11   Selected: 1

Workload Charts

Close   Help

Service class with largest PI is rja_wkld with 1.61
View workload information for rja_wkld

Workloads Report – CPU Utilization

Charts: CPU Utilization | Performance Index

CPU Utilization Distribution for Workload rja_wkld

CPU utilization
for virtual servers in rja_wkld
X-axis CPU utilization ranges
Y-axis number of servers

Number of Servers

0.0-10.0 10.0-20.0 20.0-30.0 30.0-40.0 40.0-50.0 50.0-60.0 60.0-70.0 70.0-80.0 80.0-90.0 90.0-100.0
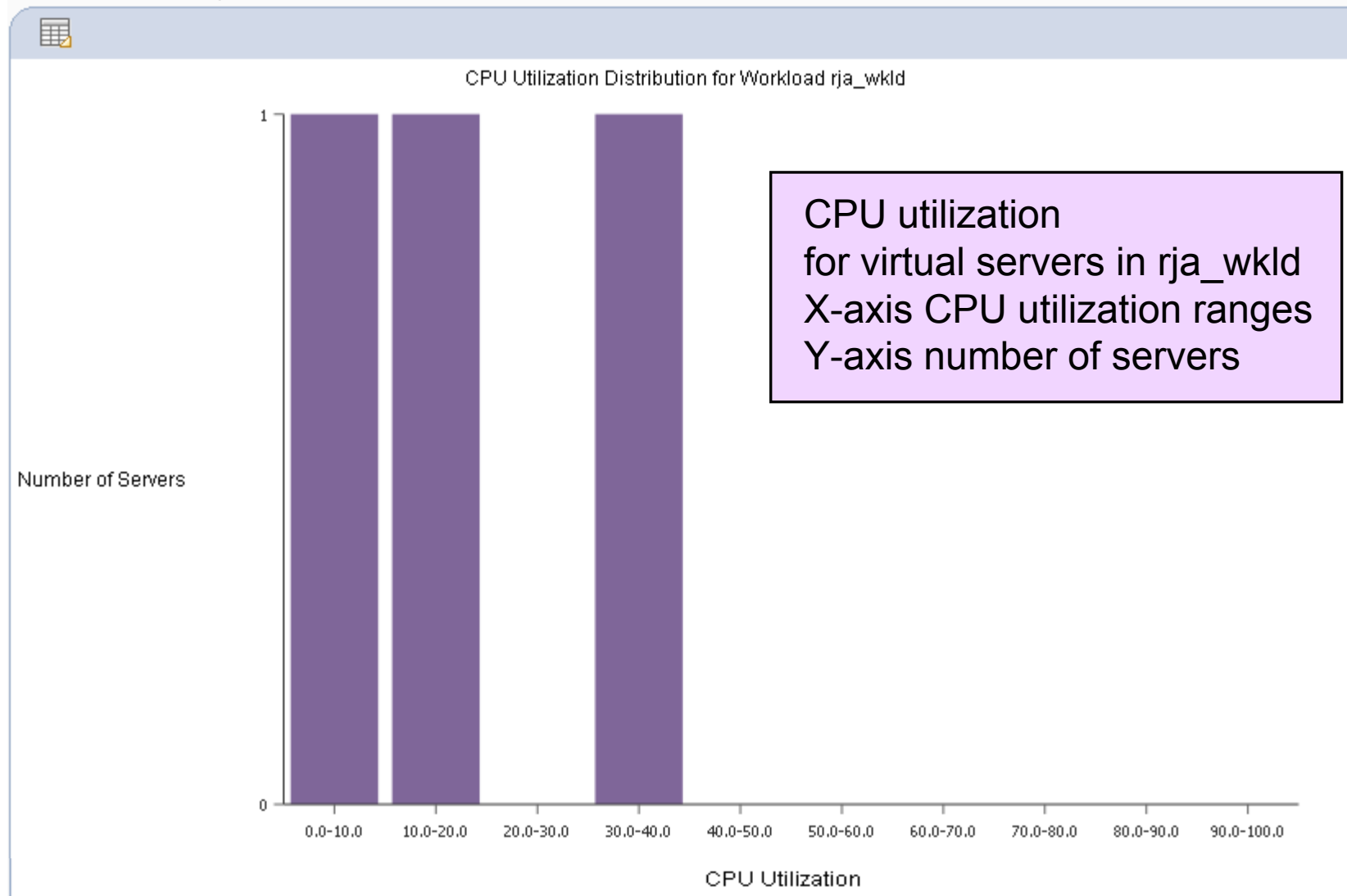
CPU Utilization

Workloads Report – PI

Charts: CPU Utilization | Performance Index

Service Class Performance Index (PI) for Workload rja_wkld

Service class PI for rja_wkld

- SrvClsForFastestHighest
- PI=1
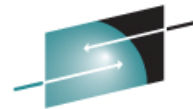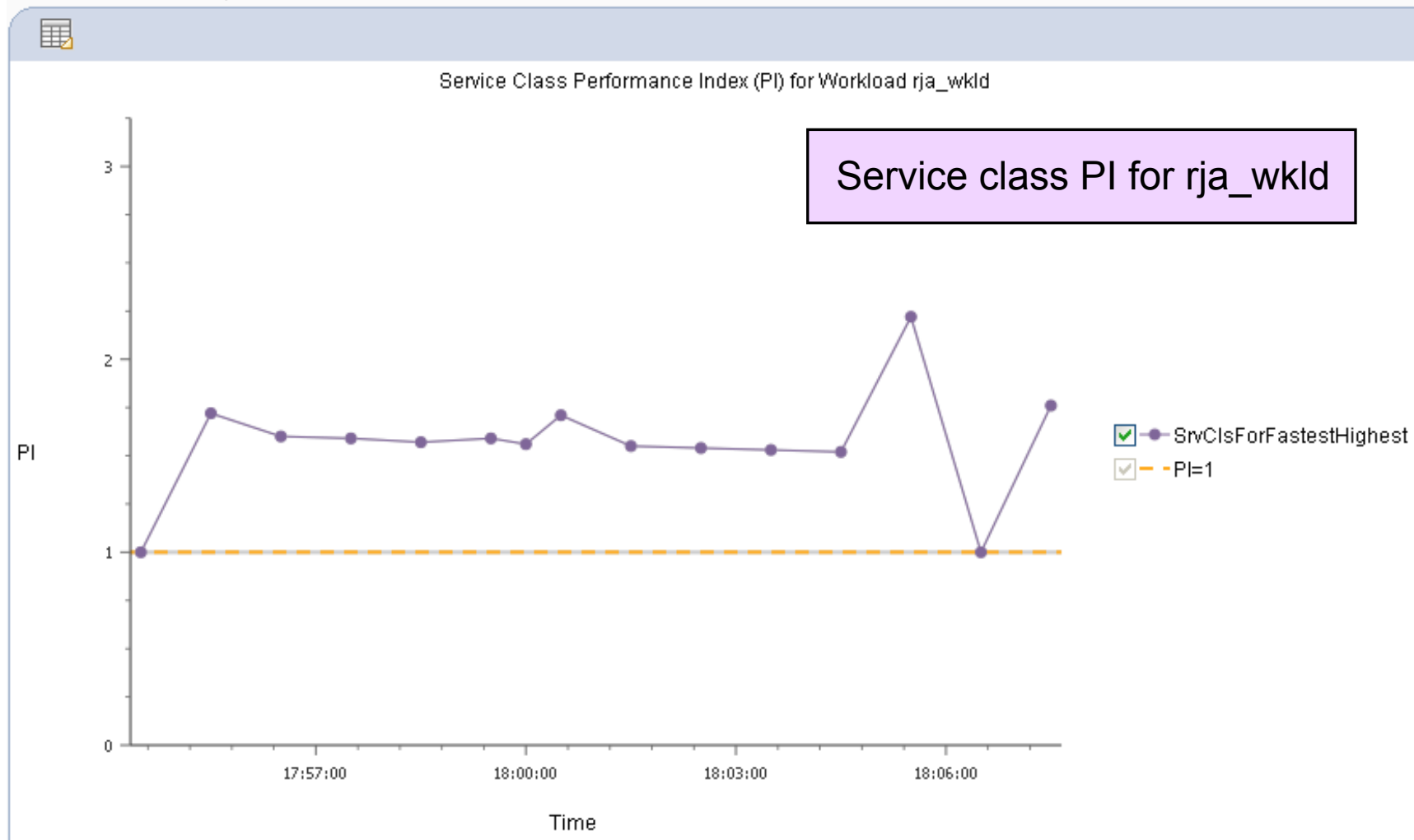
Virtual Servers

Virtual Servers report

- ♦ List of virtual servers
- ♦ Resource information for each virtual server
  - Virtual processors
  - Service class and PI
  - Allocated memory
  - Physical CPU utilization
  - OS view of CPU utilization

Resource adjustment report

- ♦ Resource adjustment actions taken over report interval
- ♦ Donor and receiver virtual servers

Virtual Servers Report

Virtual Servers Report - rja_wkld

Report Interval: Starting 8/4/11 2:54:07 PM for 15 minutes (8/4/11 3:09:07 PM) Modify

--- Select Action ---   Filter

Select ^	Virtual Server ^	Virtual Processors ^	Allocated Memory (MB) ^	Physical CPU Utilization (%) ^	Hypervisor CPU Delay (%) ^	Idle Time (%) ^	Other Time (%) ^	Service Class (PI) ^
◉	rjaihs1	2	8,192	23.4	10.8			SrvClsForFastestHighest (1.00)
○	rjawas1	4	8,192	71.1	3.1			SrvClsForFastestHighest (1.00)
○	rjawas2	5	8,192	45.5	46.4			Default (0.53)
○	TOSP11	2	4,096	6.0				SrvClsForFastestHighest (1.00)

Page 1 of 1   Total: 4   Filtered: 4   Displayed: 4   Selected: 1

Four virtual servers in rja_wkld
rjawas2 server in default service class

Resource Adjustment Report

Workload Resource Adjustments Report - rja_wkld

Report Interval: Last 5 minutes (8/4/11 3:32:13 PM - 8/4/11 3:37:13 PM) Modify

Successful Adjustments:

--- Select Action --- ▼ Filter

Receiver Virtual Servers	Receiver Workload	Receiver Service Class	Receiver Processing Units After (Before)	Donor Virtual Servers	Donor Workload	Donor Processing Units After (Before)	Time
rjawas1	rja_wkld	SrvClsForFastestHighest	3.04 (2.92)	rjawas2	Default	0.53 (0.65)	Aug 4, 2011 3:34:22 PM EDT

Page 1 of 1   Total: 1 Filtered: 1 Displayed: 1

Failed Adjustments:

--- Select Action --- ▼ Filter

Receiver Virtual Servers	Receiver Workload	Receiver Service Class	Failure Reason	Time

Total: 0 Filtered: 0 Displayed: 0

Receiver rjawas1   before 2.92 after 3.04 processing units
Donor was rjawas2 before 0.65 after 0.53 processing units

Hops and Topology Reports
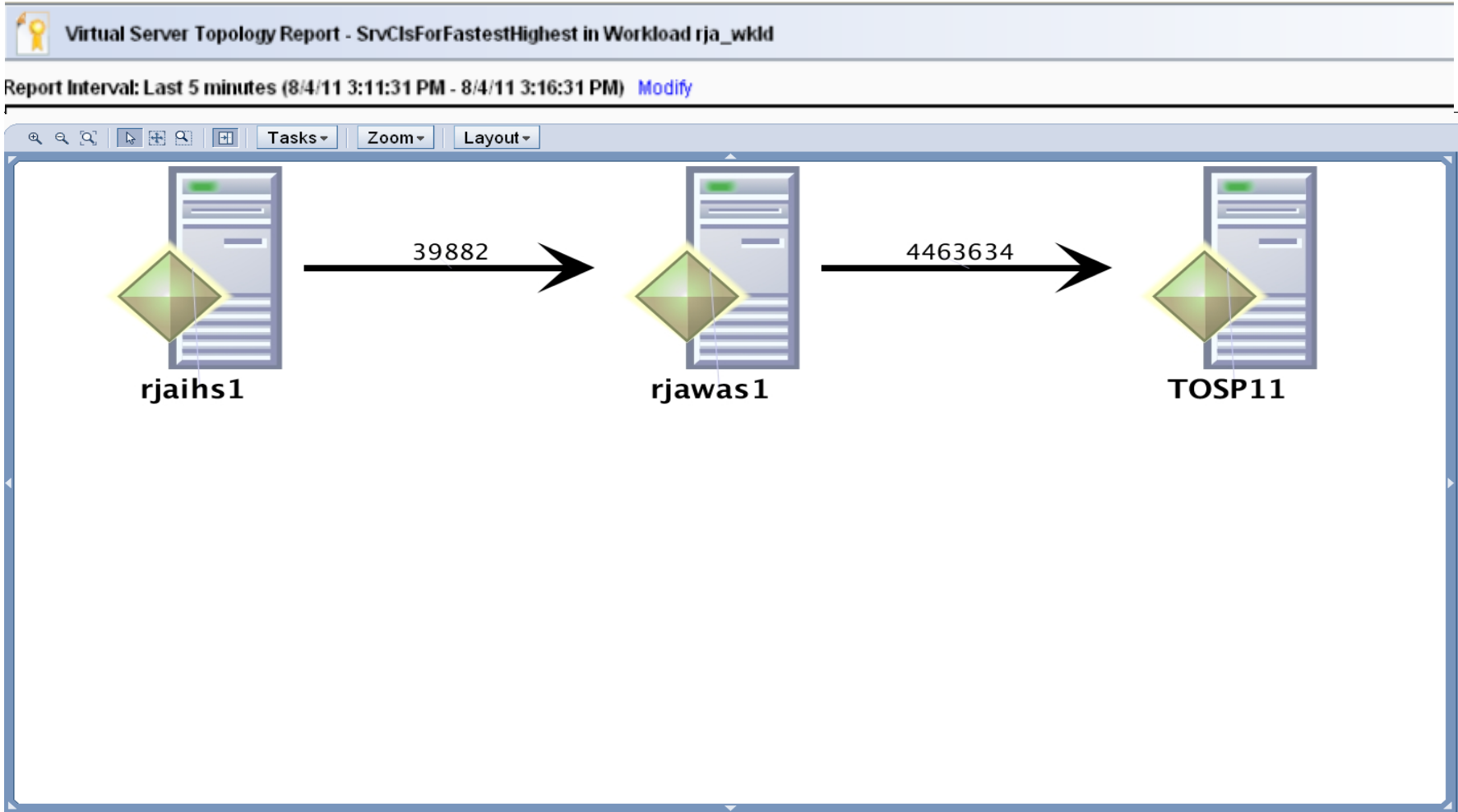
Information from ARM and GPMP used to create reports

Hops report

- ♦ Shows each hop for application in a specific service class
- ♦ For each hop provides

    Name, hop number

    Transaction information

    Average response times

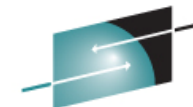Virtual Server Topology Report

- ♦ Relationship of virtual servers running a workload
- ♦ Graphical representation of virtual servers

Virtual Server Topology Report

Virtual Server Topology Report - SrvClsForFastestHighest in Workload rja_wkld

Report Interval: Last 5 minutes (8/4/11 3:11:31 PM - 8/4/11 3:16:31 PM) Modify

Tasks ▾   Zoom ▾   Layout ▾

rjaihs1 →39882→ rjawas1 →4463634→ TOSP11

Hops Report

Hops Report - SrvClsForFastestHighest in Workload rja_wkld

Report Interval: Last 5 minutes (8/4/11 3:08:36 PM - 8/4/11 3:13:36 PM) Modify

Details for SrvClsForFastestHighest:

Workload:	rja_wkld	Performance goal: Velocity - Fastest	PI: 1.00
Performance policy:	rja_wkld1	Business importance: Highest	Performance: Fastest

--- Select Action --- ▼   ▼ Filter

Name	Hop Num	Group Name	Successful Transactions	Failed Transactions	Stopped Transactions	Inflight Transactions	Queue Time (s)	Execution Time (s)	Successful Average Response Time (s)	Inflight Average Response Time (s)
⊟ Hop 0	0		22,281	0	0	202	0.000000	0.000273	0.165120	0.094535
⊟ IBM Webserving Plugin	0	IBM_HTTP_Server	22,281	0	0	202	0.000000	0.000273	0.165120	0.094535
rjaihs1	0		22,281	0	0	202	0.000000	0.000273	0.165120	0.094535
⊟ Hop 1	1		37,486	0	0	90	0.000000	0.001384	0.019575	0.015683
⊟ WebSphere:APPLICATION	1	server1	37,486	0	0	90	0.000000	0.001384	0.019575	0.015683
rjawas1	1		37,486	0	0	90	0.000000	0.001384	0.019575	0.015683
⊟ Hop 2	2		4,363,388	0	0	3	0.000000	0.000265	0.000265	0.000673
⊟ DDF	2	DSN9WSC	4,363,388	0	0	3	0.000000	0.000265	0.000265	0.000673
TOSP11	2		4,363,388	0	0	3	0.000000	0.000265	0.000265	0.000673

GPMP Stopped

Test with GPMP stopped on AIX virtual servers and z/OS

Reports affected

- ♦ Hops report
- ♦ Virtual server topology report
- ♦ Virtual server report

Topology Report – GPMP Stopped

Virtual Server Topology Report - SrvClsForFastestHighest in Workload rja_wkld

Report Interval: Last 5 minutes (8/4/11 6:41:26 PM - 8/4/11 6:46:26 PM) Modify

Tasks▾   Zoom▾   Layout▾

Hops Report – GPMP Stopped

Hops Report - SrvClsForFastestHighest in Workload rja_wkld

Report Interval: Last 5 minutes (8/4/11 6:39:39 PM - 8/4/11 6:44:39 PM) Modify

Details for SrvClsForFastestHighest:

Workload:	rja_wkld	Performance goal:	Velocity - Fastest	PI:	1.00
Performance policy:	rja_wkld1	Business importance:	Highest	Performance:	Fastest

--- Select Action --- ▾ | Filter

Name	Hop Number	Group Name	Successful Transactions	Failed Transactions	Stopped Transactions	Inflight Transactions	Queue Time (s)	Execution Time (s)	Successful Average Response Time (s)	Inflight Average Response Time (s)
⊟ Hop 0	0		0	0	0	4	0.000000	0.000000	0.000000	374.435577
⊟ IBM Webserving Plugin	0	IBM_HTTP_Server	0	0	0	0	0.000000	0.000000	0.000000	0.000000
rjaihs1	0		0	0	0	0	0.000000	0.000000	0.000000	0.000000
⊟ WebSphere:APPLICATION_SERVER	0	server1	0	0	0	4	0.000000	0.000000	0.000000	374.435577
rjawas1	0		0	0	0	4	0.000000	0.000000	0.000000	374.435577
⊟ Hop 1	1		0	0	0	0	0.000000	0.000000	0.000000	0.000000
⊟ WebSphere:APPLICATION_SERVER	1	server1	0	0	0	0	0.000000	0.000000	0.000000	0.000000
rjawas1	1		0	0	0	0	0.000000	0.000000	0.000000	0.000000
⊟ Hop 2	2		0	0	0	0	0.000000	0.000000	0.000000	0.000000
⊟ DDF	2	DSN9WSC	0	0	0	0	0.000000	0.000000	0.000000	0.000000
TOSP11	2		0	0	0	0	0.000000	0.000000	0.000000	0.000000

Virtual Server Report – GPMP Started

Virtual Servers Report - rja_wkld

Report Interval: Starting 8/4/11 2:54:07 PM for 15 minutes (8/4/11 3:09:07 PM) Modify

--- Select Action ---

Select ^	Virtual Server ^	Virtual Processors ^	Allocated Memory (MB) ^	Physical CPU Utilization (%) ^	Hypervisor CPU Delay (%) ^	Service Class (PI) ^	OS Processes Total CPU Using Samples (%) ^	OS Processes Total CPU Delay Samples (%) ^	OS Processes Total I/O Delay Samples (%) ^	OS Processes Total Page Delay Samples (%) ^
⦿	rjaihs1	2	8,192	23.4	10.8	SrvClsForFastestHighest (1.00)	13.5	20.9	0.0	65.6
○	rjawas1	4	8,192	71.1	3.1	SrvClsForFastestHighest (1.00)	3.4	1.8	0.0	94.8
○	rjawas2	5	8,192	45.5	46.4	Default (0.53)	2.9	0.3	0.0	96.7
○	TOSP11	2	4,096	6.0		SrvClsForFastestHighest (1.00)	1.0	40.3	0.4	0.0

Virtual server report for rja_wkld
OS Processes columns contain data provided by GPMP

Virtual Server Report – GPMP Stopped

Virtual Servers Report - rja_wkld

Report Interval: Last 5 minutes (8/4/11 6:34:34 PM - 8/4/11 6:39:34 PM) Modify

--- Select Action ---

Select ^	Virtual Server ^	Virtual Processors ^	Allocated Memory (MB) ^	Physical CPU Utilization (%) ^	Hypervisor CPU Delay (%) ^	Service Class (PI) ^	OS Processes Total CPU Using Samples (%) ^	OS Processes Total CPU Delay Samples (%) ^	OS Processes Total I/O Delay Samples (%) ^	OS Processes Total Page Delay Samples (%) ^
●	rjaihs1	2	8,192	22.7	8.3	SrvClsForFastestHighest (1.00)				
○	rjawas1	4	8,192	63.3	15.2	SrvClsForFastestHighest (1.00)				
○	TOSP11	2	4,096	5.9		SrvClsForFastestHighest (1.00)				

OS Processes columns are blank

Summary

Platform Performance Manager function of zManager provides tools to manage workloads running in the ensemble

Resources are directed to virtual servers based on the goals and importance levels of the workload

HMC is user interface to create workloads and view reports

ARM enabled middleware and GPMP allow for end-to-end monitoring of application performance

Manage workloads in multi-tier application environment