IBM zEnterprise™ 196
Unified Resource Manager Hands-On Lab

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IBM
August 11\textsuperscript{th}, 2011
9711
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<table>
<thead>
<tr>
<th></th>
<th>Agenda Item</th>
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<tbody>
<tr>
<td>1</td>
<td>Demo Setup</td>
</tr>
<tr>
<td>2</td>
<td>User &amp; Roles Management</td>
</tr>
<tr>
<td>3</td>
<td>Ensemble Details</td>
</tr>
<tr>
<td>4</td>
<td>Manage Virtual Networks: Create Virtual Network</td>
</tr>
<tr>
<td>5</td>
<td>New Virtual Server</td>
</tr>
<tr>
<td>6</td>
<td>New Workload</td>
</tr>
<tr>
<td>7</td>
<td>Energy Management – Power Cap</td>
</tr>
</tbody>
</table>
zEnterprise hardware management and platform management

**Hypervisor Management**
- Integrated deployment and configuration of hypervisors
- Hypervisors (except z/VM) shipped and serviced as firmware.
- Management of ISO images.
- Creation of virtual networks.
- Manage and control communication between virtual server operating systems and the hypervisor.

**Operational Controls**
- Auto-discovery and configuration support for new resources.
- Cross platform hardware problem detection, reporting and call home.
- Physical hardware configuration, backup and restore.

**Energy Management**
- Monitoring and trend reporting of energy consumption and environmental data.
- Ability to query maximum potential power.
- Power saving and capping controls

**Network Management**
- Management of virtual networks including access control

**Virtual Server Lifecycle Management**
- Single view of virtualization across platforms.
- Ability to deploy multiple, cross-platform virtual servers within minutes.
- Management of virtual networks including access control

**Workload Awareness and Platform Performance Management**
- Wizard-driven management of resources in accordance with specified business service level objectives.
- HMC provides a single consolidated and consistent view of resources.
- Monitor resource use within the context of a business workload.
- Define workloads and associated performance policies.
Lab Setup

Management enablement level: 'Automate'
User & Roles Management

- Login via
  - Userid: acsadmin,
  - Password: password

Roles & User management -> HMC Management

- >“User Profiles”
  - Open pre-defined user “DEMO” via “copy”
  - Adjust Userid, description
  - Set preferred password
  - Ensure that “Allow remote access via the web” is set

- Login to HMC as your own user (backup: user: DEMO, password: password)
Create Ensemble and Add Member to Ensemble

- Ensemble Management: Task “Ensemble Management Guide”
- Create your Ensemble

- Ensemble Management: Task “Add Member to Ensemble”
Ensemble Details

- View Ensemble Details
View Details

- Blade Details

![Blade Details](image-url)
Manage Virtual Networks: Create Virtual Network

VLAN – “handson”
Create Virtual Network
Create Virtual Network

• Manage Virtual Networks

Create your own virtual network with VLAN ID: 42
Create Virtual Servers

IEDN – VLAN handson

Workload – handson_workload
New Workload

- New Workload
New Workload

• New Workload

New Workload - HandsOn

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: *handson_workload*

Description:

Category: *handson*
New Workload - Summary

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: handson_workload
Active performance policy: Default
Description: HandOn Demo Workload
Category: handson
Virtual servers:
Custom groups:

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: "* == ".*"
New Virtual Servers

- Task: Create New Virtual Server “app1” on Blade B.2.10
New Virtual Servers

- Task: Create New Virtual Server “app1” on Blade B.2.10
New Virtual Servers

- Task: Add virtual network ‘handson’ to ‘app1’ virtual server
New Virtual Server

- Finalize Virtual Server

Summary
Verify the information below before completing the wizard.

- Name: appl
- Description: App Server 1
- Initial virtual processors: 8
- Assigned dedicated memory: 5 GB
- Network Devices: 0: Default, Default virtual network
  1: hands on, hands on vlan
- Storage Devices:
- Boot source: Network Adapter (ID 0)
- Workloads: Default
- Processor management: Enabled
Explore Virtual Server Details

Hypervisor name: B.2.10
Hypervisor type: POWER Blade
UUID: fb4a2c2a-bef4-11e0-94fa-020000000028
Name: app1
Description: App Server 1

☐ Lock out disruptive tasks
Add more Virtual Server to Workload

IEDN – VLAN handson

Workload – handson_workload

PowerVM B.2.10
PowerVM B.2.11
PowerVM B.2.12
PowerVM B.2.13
PowerVM B.2.14

AMM

zBX

INMN

HMC - Ensemble SHAREENS
Support Element – SHAREE1

Z CPU, Memory and IO
New Virtual Servers

Using the task “New Virtual Server”

- Create Virtual Server ‘app2’ on B.2.10
- Create Virtual Server WebSvr on B.2.12
- Create Virtual Server ‘app3’ on B.2.13
## Workload Details

### Workload Details - handson_workload

#### General

- **Name**: Handson_workload
- **Description**: This is a sample workload for demonstration purposes.

#### Virtual Servers

<table>
<thead>
<tr>
<th>Select</th>
<th>Name</th>
<th>Hypervisor</th>
<th>Type</th>
<th>Performance Policy</th>
<th>Performance Policy Status</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>app1</td>
<td>B.2.10</td>
<td>POWER</td>
<td>Default</td>
<td>Activated</td>
</tr>
<tr>
<td></td>
<td>app2</td>
<td>B.2.10</td>
<td>POWER</td>
<td>Default</td>
<td>Activated</td>
</tr>
<tr>
<td></td>
<td>app3</td>
<td>B.2.10</td>
<td>POWER</td>
<td>Default</td>
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<tr>
<td></td>
<td>WebSvr</td>
<td>B.2.12</td>
<td>POWER</td>
<td>Default</td>
<td>Activated</td>
</tr>
</tbody>
</table>

- **Max Page Size**: 500
- **Total**: 4
- **Filtered**: 4
- **Displayed**: 4
- **Selected**: 0

#### Performance Policies

- **Select Action**: ---

---

### Workload Details - handson_workload

- **Operational Customization**
  - Activate Performance Policy
  - Customize Scheduled Operations

- **Configuration**
  - Delete Workload
  - New Performance Policy
  - New Workload

---

**Tasks:**

- **handson_workload**
- **Daily**

---

**Service Classes Report**

- Virtual Servers Report
- Workload Resource Adjustments Report
- Workload Report

---

**Filter**

- **Select**
- **Name**
- **Hypervisor**
- **Type**
- **Performance Policy**
- **Performance Policy Status**

---

**Page of 1**

- **Total**: 4
- **Filtered**: 4
- **Displayed**: 4
- **Selected**: 0

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**OK**  **Apply**  **Print View**  **Cancel**  **Help**
Virtual Server Details

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<th>Storage</th>
<th>Options</th>
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<th>Performance</th>
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<tr>
<td></td>
<td>Not Operating</td>
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<td><strong>GPMP Status</strong></td>
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<td></td>
<td>Not Operating</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Acceptable Status:
- [x] Operating
- [ ] Communications not active
- [ ] Status Check
- [ ] Starting
- [ ] Not Operating
- [ ] Exceptions
- [ ] Migrating
- [ ] Stopping
Migrate Virtual Server

- Migrate Virtual Server App3 to Blade B.2.10
Migrate Virtual Server

- Migrate Virtual Server App3 to Blade B.2.10

<table>
<thead>
<tr>
<th>Select</th>
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<th>Status</th>
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</thead>
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<td>SHARESE1</td>
<td>B.2.10</td>
<td>Operating</td>
<td>2</td>
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<tr>
<td>☐</td>
<td>SHARESE1</td>
<td>B.2.11</td>
<td>Operating</td>
<td>0</td>
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<tr>
<td>☐</td>
<td>SHARESE1</td>
<td>B.2.12</td>
<td>Operating</td>
<td>0</td>
</tr>
<tr>
<td>☐</td>
<td>SHARESE1</td>
<td>B.2.14</td>
<td>No Power</td>
<td>0</td>
</tr>
</tbody>
</table>

Total: 4  Filtered: 4  Selected: 0
Hypervisor view

- Virtual Server States
Enable Performance Management

- Enable Performance Management in the Ensemble Details
Energy Management – Power Cap

• Limit BladeCenter max power consumption to 4 kW.
Energy Management – Power Cap

- Limit BladeCenter max power consumption to 4 kW.
Topology View
Thank You