

Andreas Bieswanger

STSM, System z Firmware Development & GreenIT



Session 9074

# IBM zEnterprise™ 196

## Unified Resource Manager Hands-On Lab

February 28<sup>th</sup>, 2011





# agenda



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# 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.

## Network Management

- Management of virtual networks including access control

## Energy Management

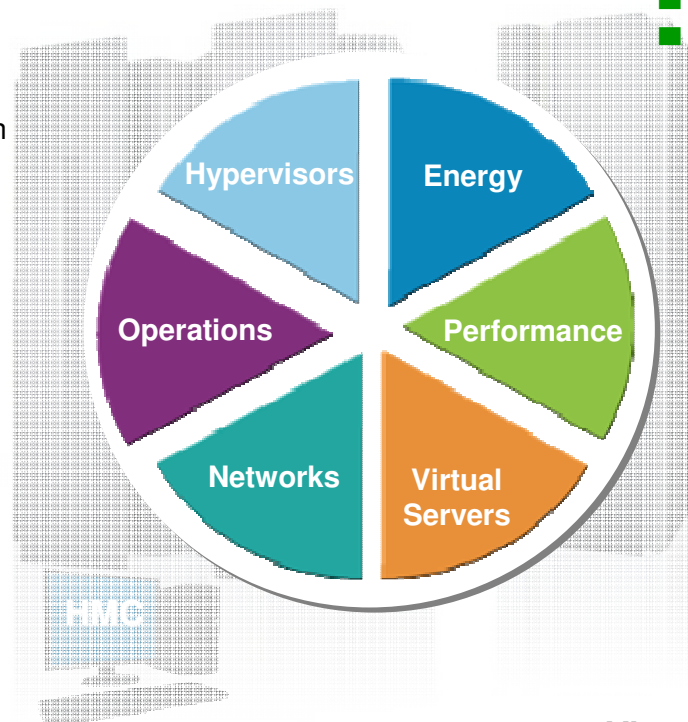
- Monitoring and trend reporting of energy consumption and environmental data.
- Ability to query maximum potential power.
- Power saving and capping controls

## 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

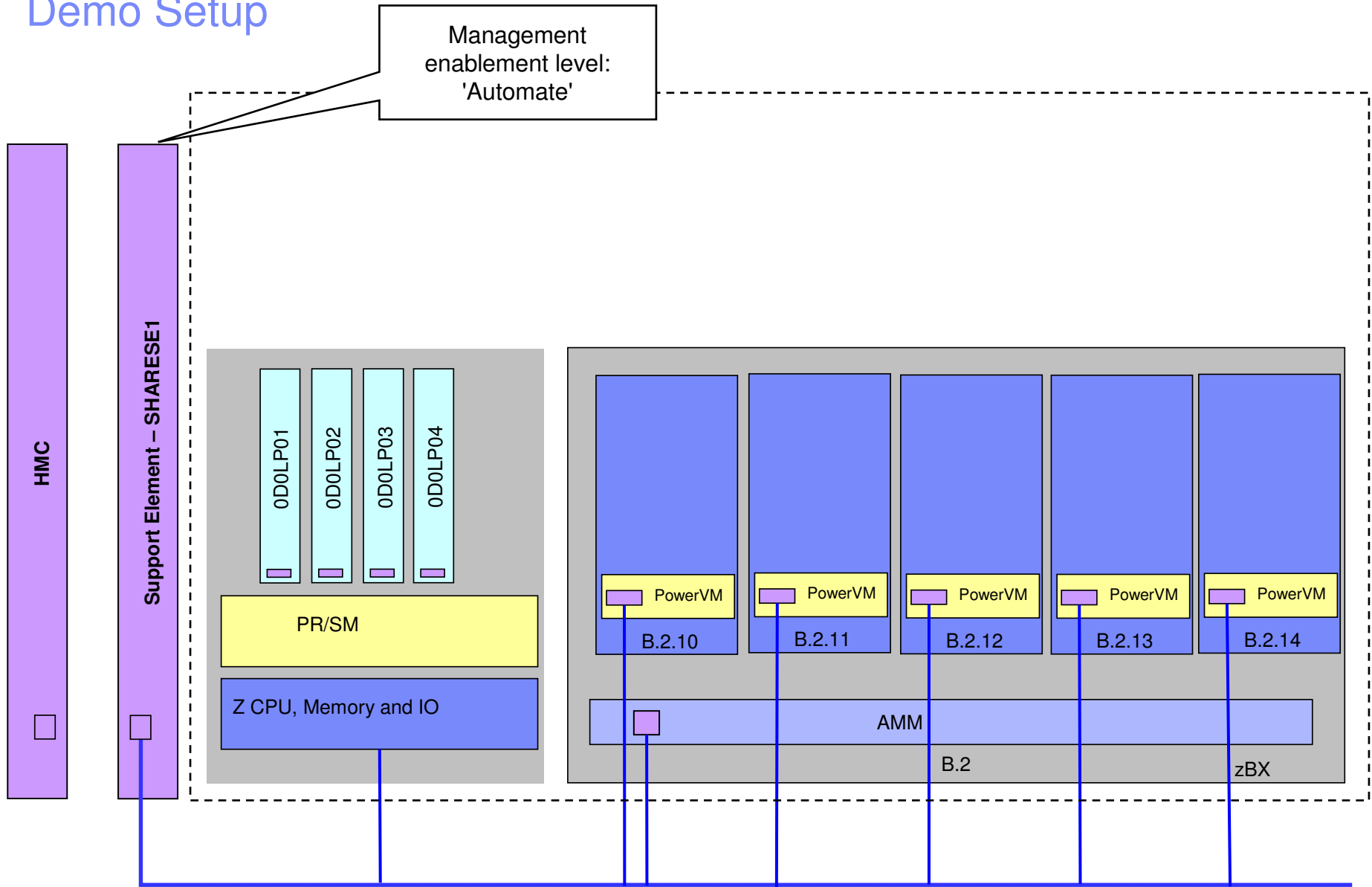
## Virtual Server Lifecycle Management

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





# Demo Setup





## User & Roles Management

- Login via
  - Userid: acsadmin, Password: password
- Roles & User management
  - >HMC Management
    - >“User Profiles”
      - Open pre-defined user “SHARE” via “modify”
      - Adjust description
      - Set preferred password
      - Ensure that “Allow remote access via the web” is set
- Login to HMC as your own users (backup: user: share, password: password)

The screenshot shows two windows from the HMC interface. The top window is titled "User Profiles" and contains a table of user profiles. The bottom window is titled "Modify User" and shows the configuration for the "SHARE" user, including authentication settings and role assignments.

**User Profiles**

Select an item to manage, then click "Edit" from the menu bar.

Select	User ID	Description	Last Logon Date	Last Logon Time
<input type="radio"/>	ACADMIN	Access administrator level user	02/28/2011	17:13:58
<input type="radio"/>	ADVANCED	Advanced operator level user		
<input type="radio"/>	OPERATOR	Operator level user		
<input type="radio"/>	SERVICE	Service representative level user		
<input checked="" type="radio"/>	SHARE	SHARE USER	02/28/2011	17:07:43
<input type="radio"/>	SYSPROG	System programmer level user		

**Modify User**

*User Information*

User ID:   
Description:   
 Disable user

*Authentication*

Local Authentication  
 LDAP Server

*Details*

Password Rule:    
Password:   
Confirm password:   
 Force user to change the password at next login

**Managed Resource Roles**

Select	Managed Resource Roles
<input type="checkbox"/>	All Directors/Timers Managed Objects
<input type="checkbox"/>	All Fiber Saver Managed Objects
<input checked="" type="checkbox"/>	All zCPC Managed Objects
<input checked="" type="checkbox"/>	BladeCenter Objects
<input type="checkbox"/>	Defined Directors/Timers Managed Objects

**Task Roles**

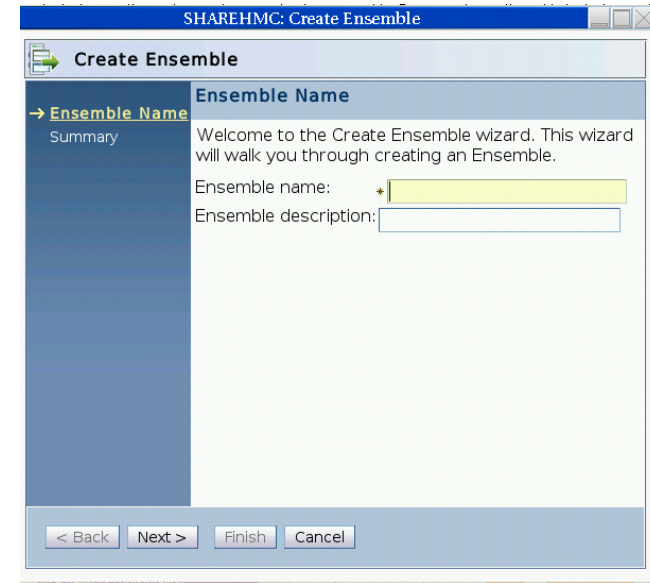
Select	Task Roles
<input type="checkbox"/>	Access Administrator Director/Timer Tasks
<input type="checkbox"/>	Access Administrator Fiber Saver Tasks
<input type="checkbox"/>	Access Administrator Tasks
<input checked="" type="checkbox"/>	Advanced Operator Tasks
<input type="checkbox"/>	CIM Actions





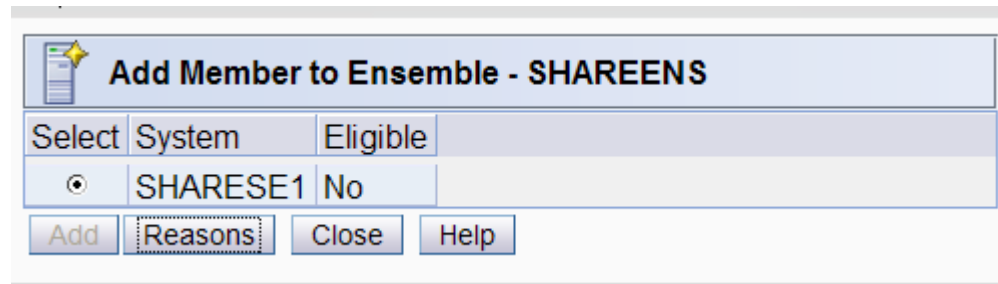
## Create Ensemble and Add Member to Ensemble

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



- Ensemble Management: Task “Add Member to Ensemble”

- Configuration
  - Add Member to Ensemble
  - Delete Ensemble
  - Manage Alternate HMC
  - Manage Storage Resources
  - Manage Virtual Networks
  - New Virtual Server





## Ensemble Details

- View Ensemble Details

**Ensemble Details - SHAREENS**

**Instance Information** | Status | Performance Management | Energy Management | Network Information | Alternate

*Instance Information*

Ensemble name:

Ensemble description:

Management enablement level: 'Automate'

*Task Information*

Task name: New Workload

Task status:

*Lock Information*

Lock out disruptive tasks:  Yes  No

OK Apply Cancel Help





## View Details

- Blade Details

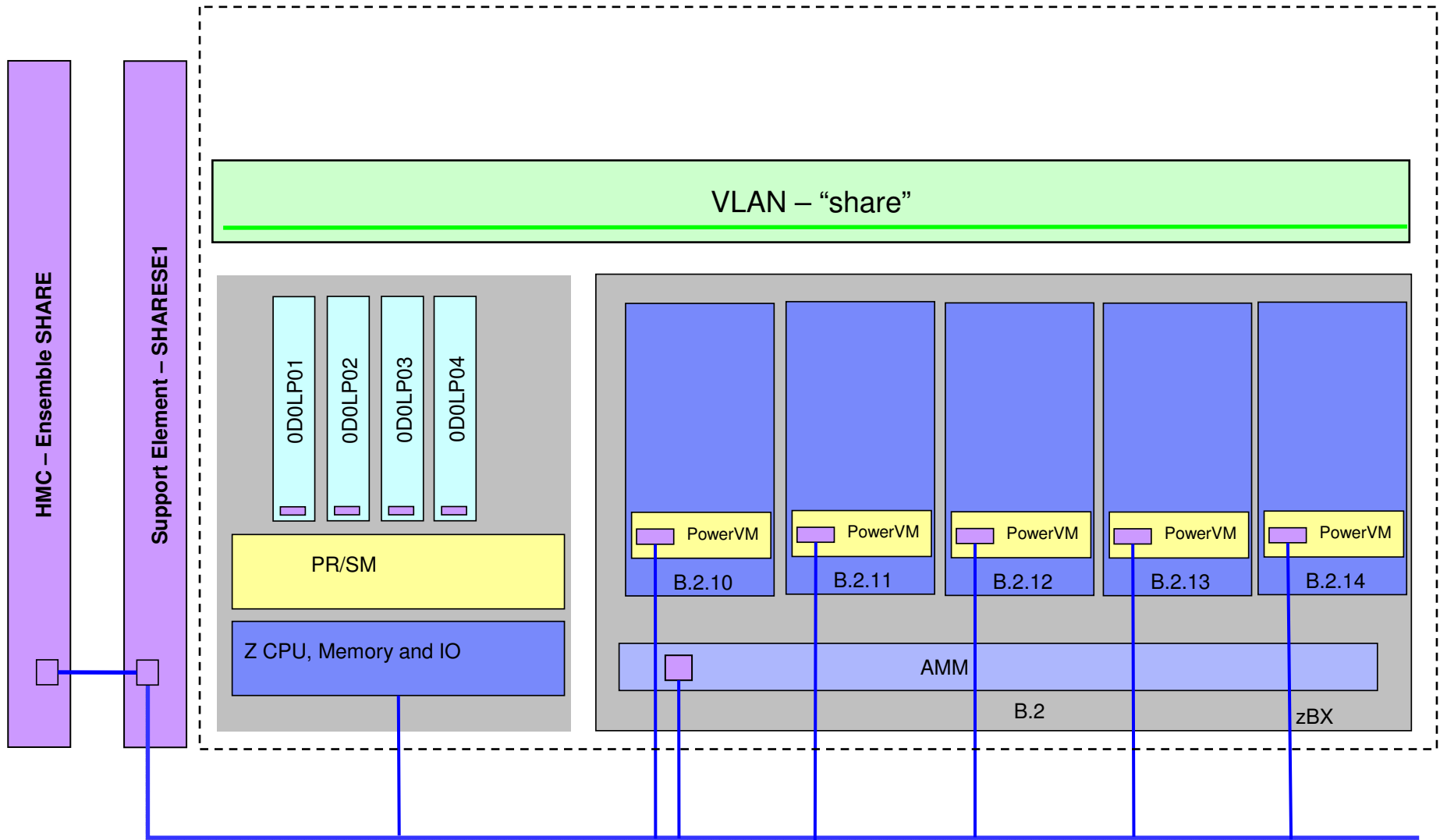
**B.2.10 Details - B.2.10** ⓘ

Instance Information	Acceptable Status	Product Information	Energy Management Information	Hypervisor Information
Status: Operating				
Number of processors: 4				
Memory size: 16384 MB				

Apply Cancel Help



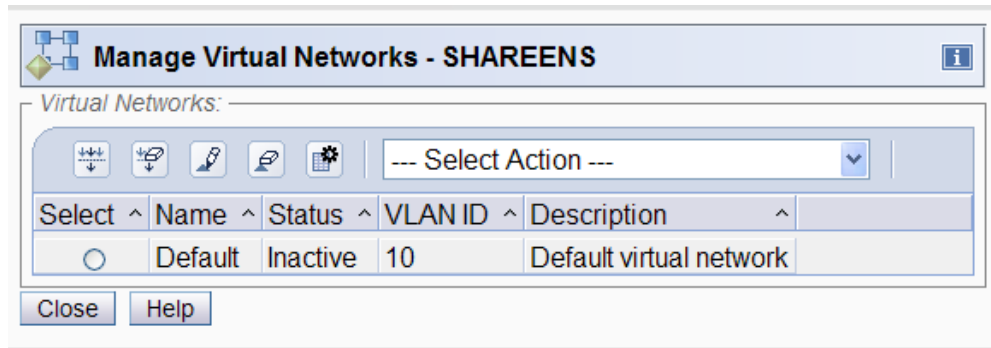
# Manage Virtual Networks: Create Virtual Network



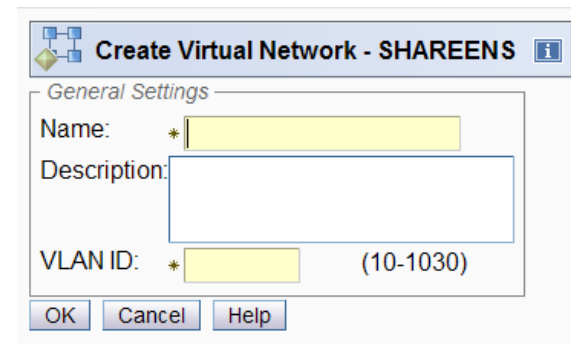
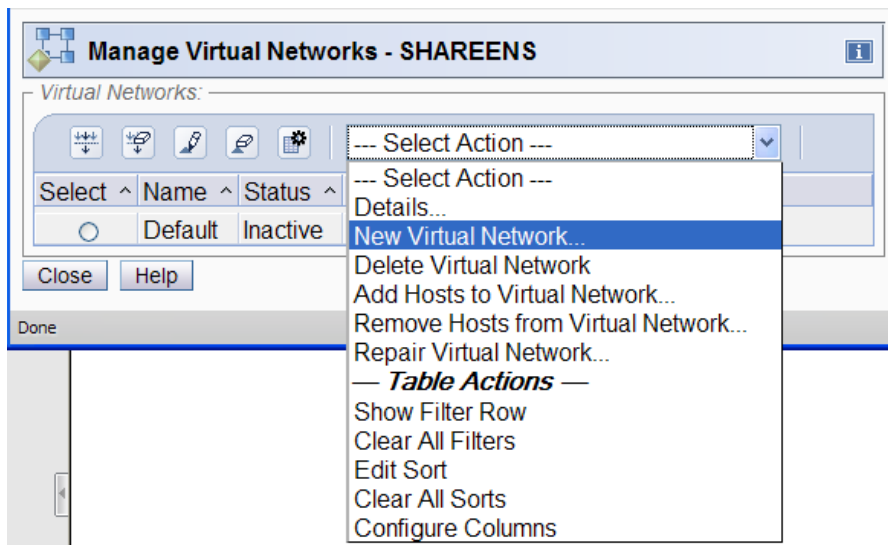


## Create Virtual Network

- Manage Virtual Networks

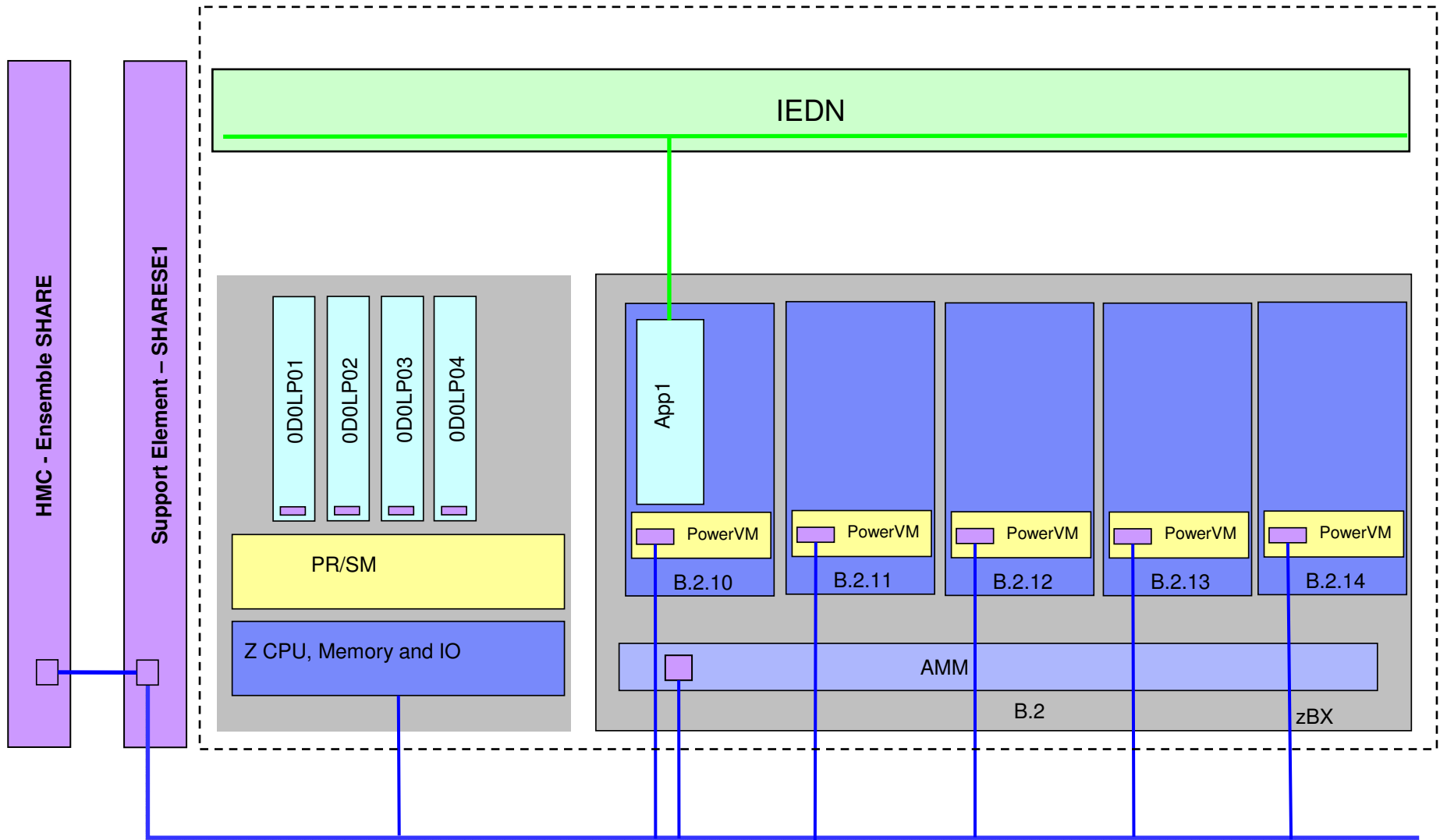


- Create your own virtual network with VLAN ID:42





# Create Virtual Servers





## New Virtual Servers

- Task: Create 2 New Virtual Server on Blade B.2.10, 1 New Virtual Server on B.2.12

**New Virtual Server - B.2.10**

✓ Welcome  
→ **Enter Name**  
Assign Processors  
Specify Memory  
Add Network  
Add Storage  
Specify Boot Options  
Select Workloads  
Performance Management  
Summary

**Enter Name**  
Enter in a name and description for the virtual server.

Hypervisor name: B.2.10  
Hypervisor type: POWER Blade

Name: \*

Description:

< Back   Next >   Finish   Cancel   Help



## New Workload

- Create your own workload

The screenshot shows a wizard window titled "New Virtual Server - B.2.10". On the left is a navigation pane with the following items: Welcome, Enter Name, Assign Processors, Specify Memory, Add Network, Add Storage, Specify Boot Options, **Select Workloads** (highlighted with a yellow arrow), Performance Management, and Summary. The main area is titled "Select Workloads" and contains the instruction "Select the workloads that this virtual server will participate in." Below this are two radio buttons: "Use Default workload" (selected) and "Select workloads". Under "Select workloads" is a table with columns "Select", "Name", and "Description". Below the table is a "Total: 0" label. At the bottom of the main area is a "New Workload" button. The footer of the wizard contains buttons for "< Back", "Next >", "Finish", "Cancel", and "Help".



## New Workload

- New Worload

**New Workload - SHARENS**

✓ [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: \*

Description:

Category:  ▼

< Back   Next >   Finish   Cancel   Help



## New Virtual Server

- Finalize Virtual Server

Name:	SHARE_Server
Description:	
Initial virtual processors:	24
Assigned dedicated memory:	5 GB
Network Devices:	0: Default, Default virtual network
Storage Devices:	
Boot source:	Network Adapter (ID 0)
Workloads:	SHARE_WL
Processor management:	Enabled

Buttons at the bottom: < Back, Next >, Finish, Cancel, Help





## View Virtual Server Details

**Virtual Server Details - SHARE\_Server** i

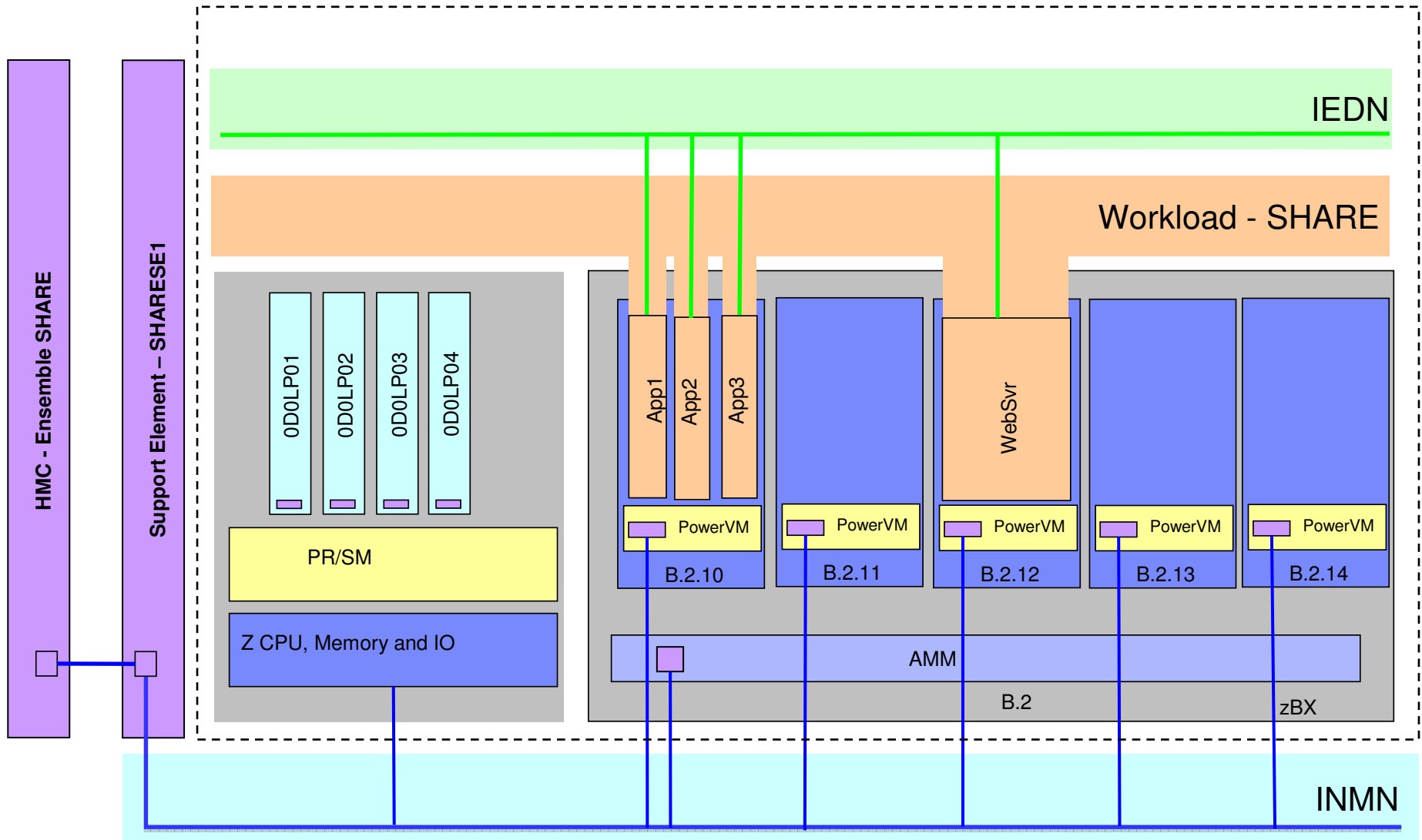
**Name** | Status | Processors | Memory | Network | Storage | Options | Workloads | Performance

Hypervisor name: B.2.10  
Hypervisor type: POWER Blade  
UUID: 20bfeede-41c0-11e0-b19c-020000000204  
Name: \*SHARE\_Server|  
Description:

OK | Apply | Cancel | Help



# Add more Virtual Server to Workload





## New Virtual Server Based On

Using the task “New Virtual Server Based On”

- Create Virtual Server App1 and App2 on B.2.10
- Create Virtual Server WebSvr on B.2.12



## Enable Performance Management

- Enable Performance Management in the Ensemble Details

**Ensemble Details - SHAREENS**

Instance Information | Status | **Performance Management** | Energy Management | Network Information | Alternate

Processor performance management for z/VM: Disabled

Processor performance management for POWER hypervisors: Disabled

OK | Apply | Cancel | Help



# Monitors Dashboard for SHARESE1

**Monitors Dashboard**

Pause Display   Open Activity   Open Activity Profiles   Open Workloads Report

**Overview**

Select	System	Processor Usage (%)	Channel Usage (%)	Power Consumption (kW) (Btu/hr)	Ambient Temperature (°C) (°F)
<input type="checkbox"/>	SHARESE1	0	0	2.596 8,857.920	26.0 78.8

Page 1 of 1   Max Page Size: 100   Total: 1   Filtered: 1   Displayed: 1   Selected: 0

**Details**

**SHARESE1**

**Power Consumption**

Select	Name	Power Consumption (kW) (Btu/hr)
<input type="checkbox"/>	SHARESE1	2.596 8,857.920
<input type="checkbox"/>	zCPC	1.000 3,412.142
<input type="checkbox"/>	BladeCenter C10B	0.882 3,009.509
<input type="checkbox"/>	BladeCenter B01B	0.714 2,436.269
<input type="checkbox"/>	zBX Blade B.2.10	

Page 1 of 1   Max Page Size: 100   Total: 9   Filtered: 9   Displayed: 9   Selected: 0

**Aggregated Processors**

Select	Type	All Processor Usage (%)	Shared Processor Usage (%)
<input type="checkbox"/>	All Types	0	0
<input type="checkbox"/>	CP	0	0

Page 1 of 1   Max Page Size: 100   Total: 2   Filtered: 2   Displayed: 2   Selected: 0

**System Assist Processors**

Select	Name	Processor Usage (%)
<input type="checkbox"/>	SAP00	0
<input type="checkbox"/>	SAP01	0
<input type="checkbox"/>	SAP02	0

Page 1 of 1   Max Page Size: 100   Total: 3   Filtered: 3   Displayed: 3   Selected: 0

**Channels**

Select	CHPID	LPARs	Total Channel Usage (%)
--------	-------	-------	-------------------------

**Environmentals**

Select	Name	Ambient Temperature (°C) (°F)	Humidity (%)	Dew Point (°C) (°F)
<input type="checkbox"/>	SHARESE1	26.0 78.8		
<input type="checkbox"/>	zCPC	26.0 78.8		26 34.5 94.1
<input type="checkbox"/>	BladeCenter C10B	23.0 73.4		
<input type="checkbox"/>	BladeCenter B01B	23.0 73.4		

Page 1 of 1   Max Page Size: 100   Total: 4   Filtered: 4   Displayed: 4   Selected: 0

**Processors**

Select	Name	Processor Usage (%)
<input type="checkbox"/>	CP00	0
<input type="checkbox"/>	CP01	0
<input type="checkbox"/>	CP02	0
<input type="checkbox"/>	CP03	0
<input type="checkbox"/>	CP04	0

Page 1 of 1   Max Page Size: 100   Total: 15   Filtered: 15   Displayed: 15   Selected: 0

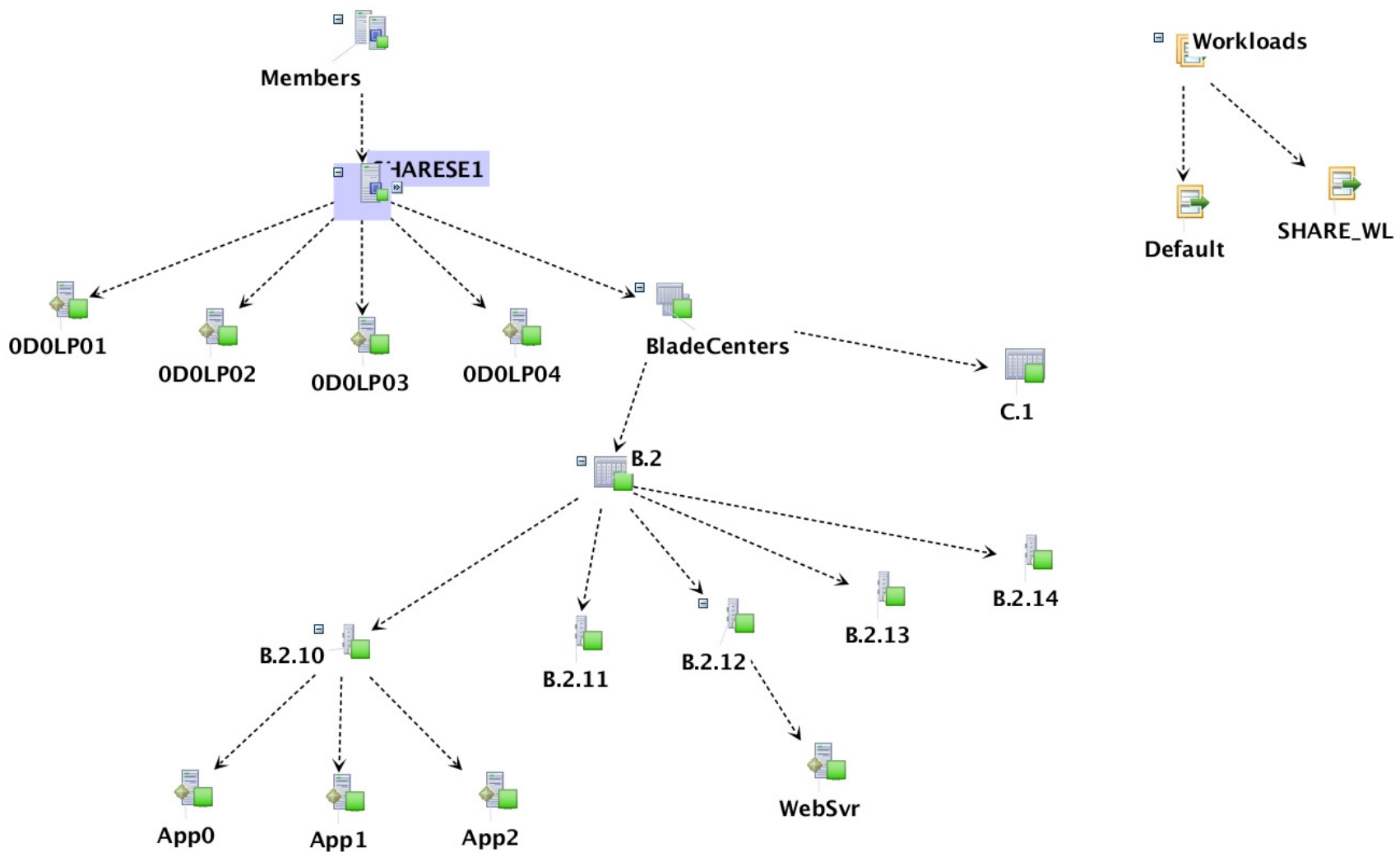
**Logical Partitions**

Select	Name	Processor Usage (%)	z/VM Paging Rate (pages/second)
None			

Page 1 of 1   Max Page Size: 100   Total: 0   Filtered: 0   Displayed: 0   Selected: 0



# Topology View





THANK YOU



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