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IBM zEnterprise Unified Resource Manager Overview

The value for z/VM



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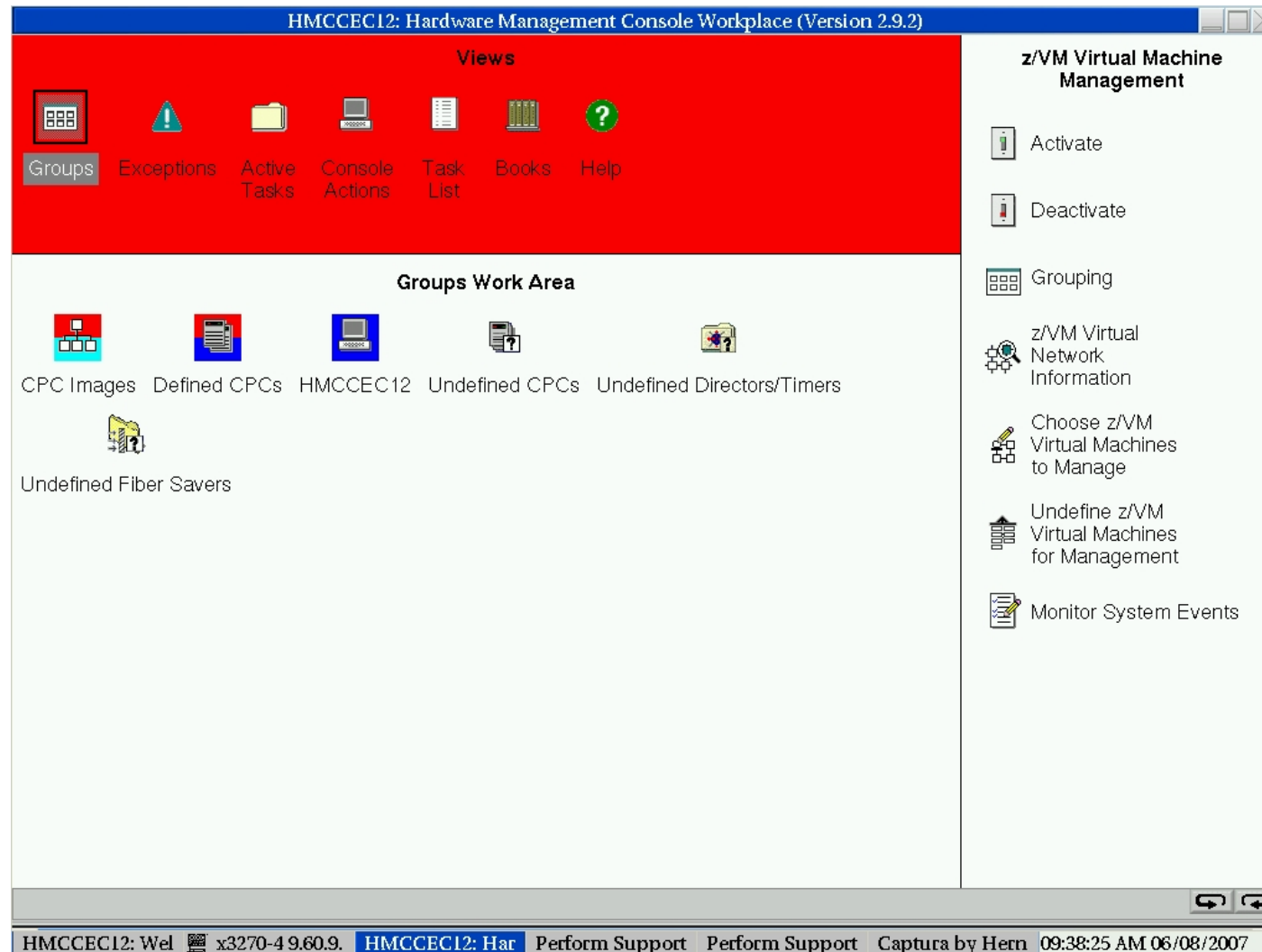
Romney White

for his input to this session

Agenda

- System z10 HMC-Based z/VM Management
- zEnterprise HMC-Based z/VM Management
- New HMC Roles
- Unified Resource Manager
- Managing z/VM on zEnterprise
- Examples
- Performance Management
- Conclusion

System z10 HMC-Based z/VM Management



IBM zEnterprise System – Best in Class Systems and Software Technologies

A system of systems that unifies IT for predictable service delivery



Unified management for a smarter system: **zEnterprise Unified Resource Manager**

- Unifies management of resources, extending IBM System z® qualities of service end-to-end across workloads
- Provides platform, hardware and workload management

Scale out to a trillion instructions per second:
IBM zEnterprise BladeCenter® Extension (zBX)

- Selected IBM POWER7® blades and IBM System x® Blades¹ for tens of thousands of AIX® and Linux applications
- High performance optimizers and appliances to accelerate time to insight and reduce cost
- Dedicated high performance private network

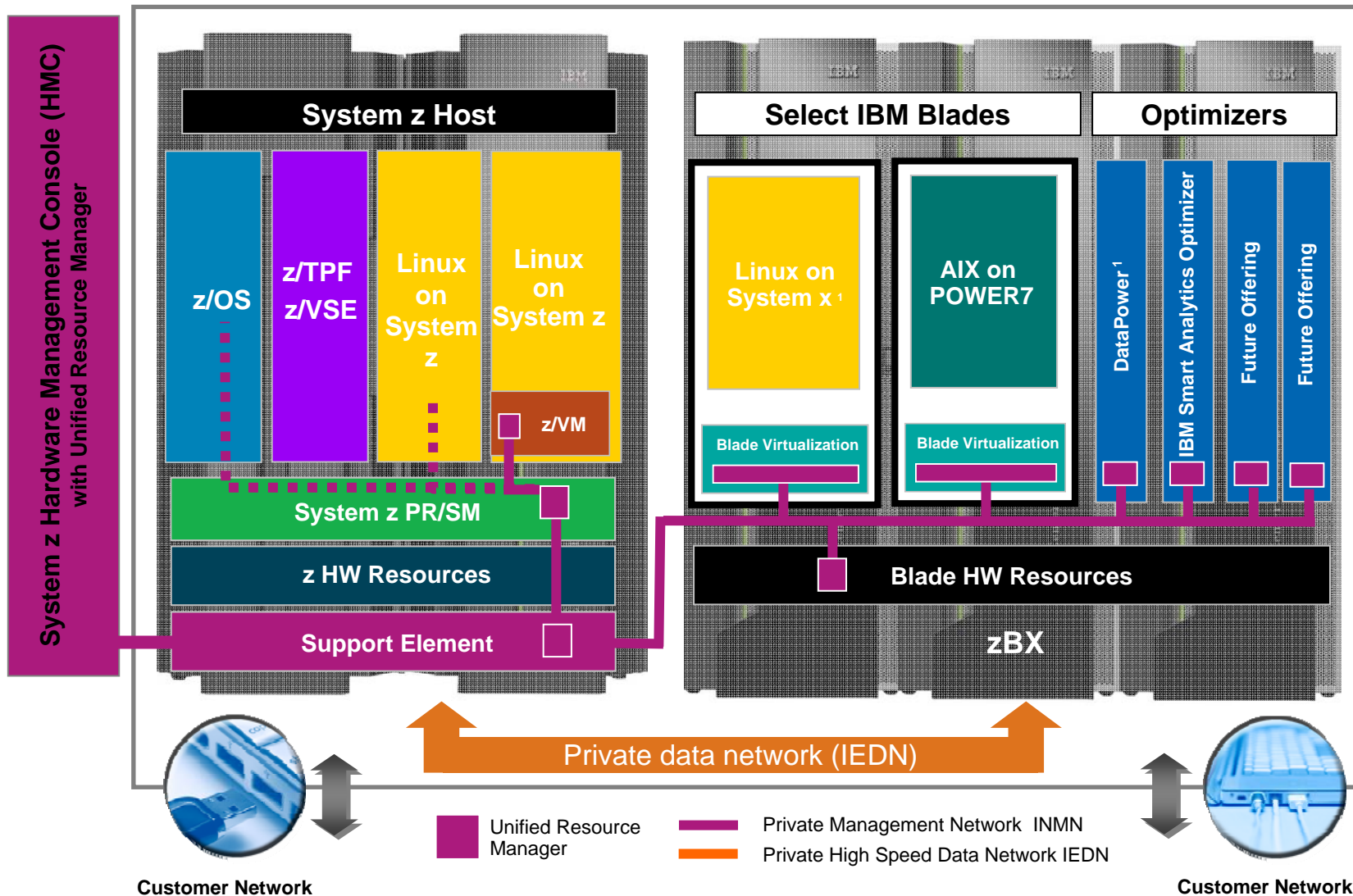
The world's fastest and most scalable system:
IBM zEnterprise™ 196 (z196)

- Ideal for large scale data and transaction serving and mission critical applications
- Most efficient platform for Large-scale Linux® consolidation
- Leveraging a large portfolio of z/OS® and Linux on System z applications
- Capable of massive scale up, over 50 Billion Instructions per Second (BIPS)



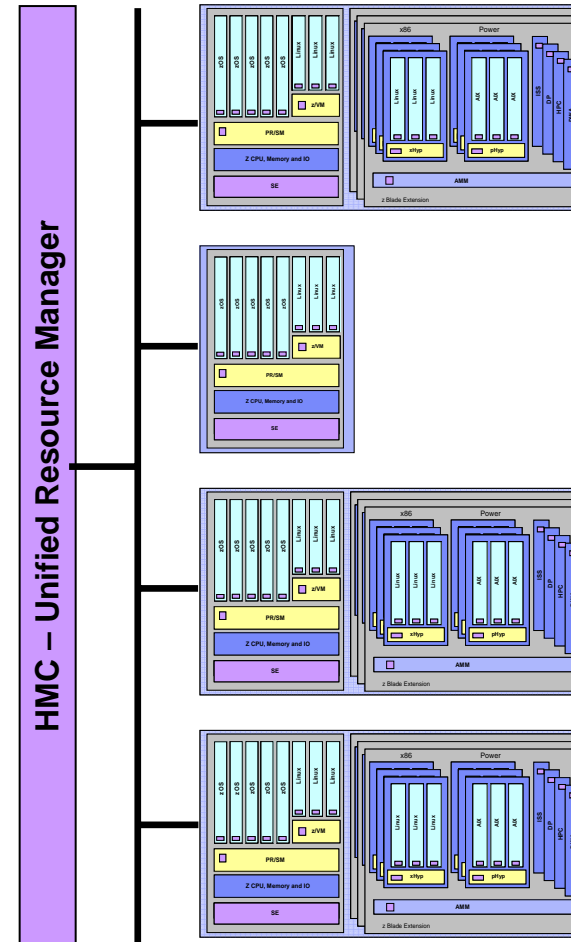
Putting zEnterprise System to the task

Use the smarter solution to improve your application design

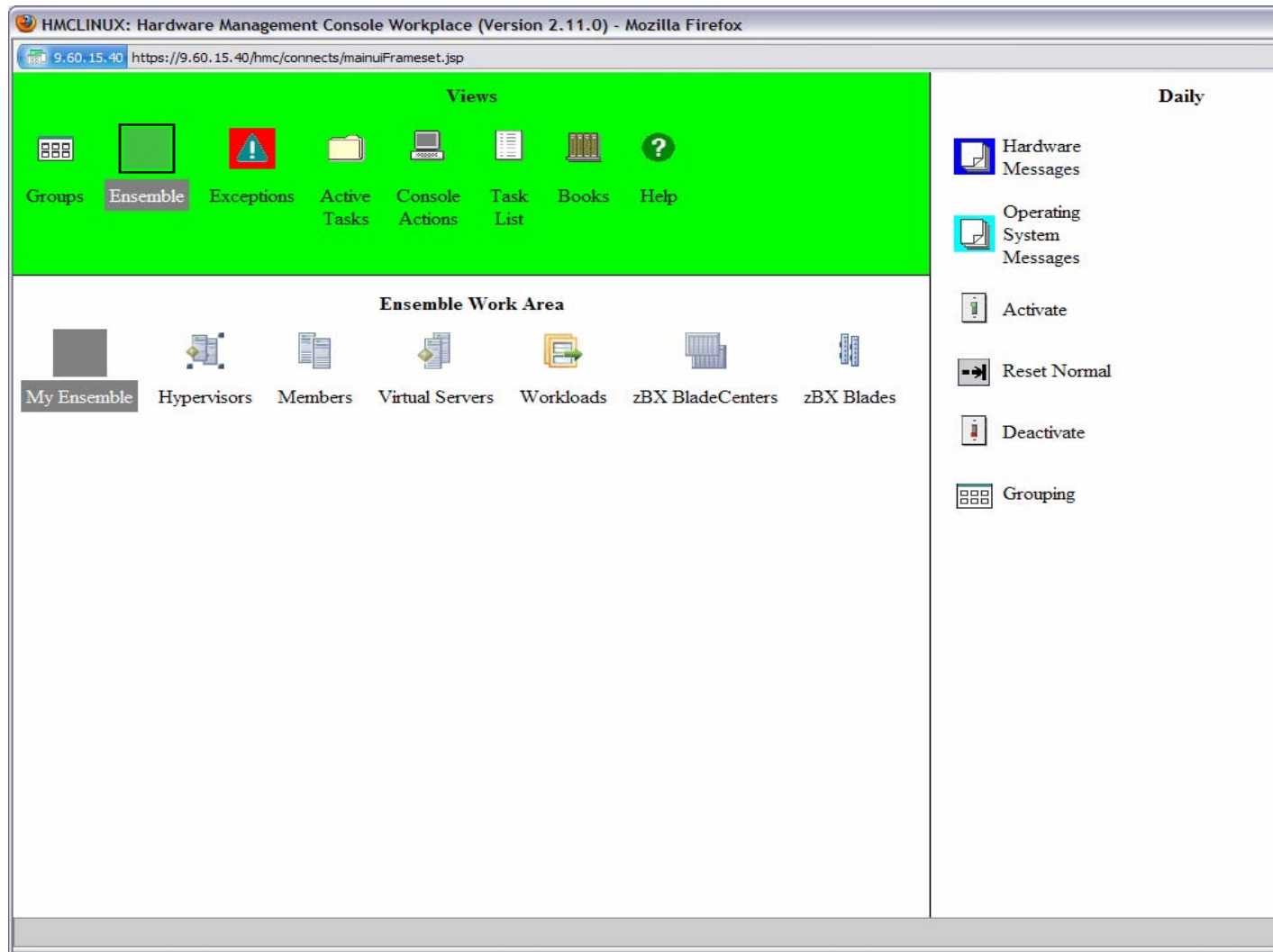


zEnterprise Ensemble

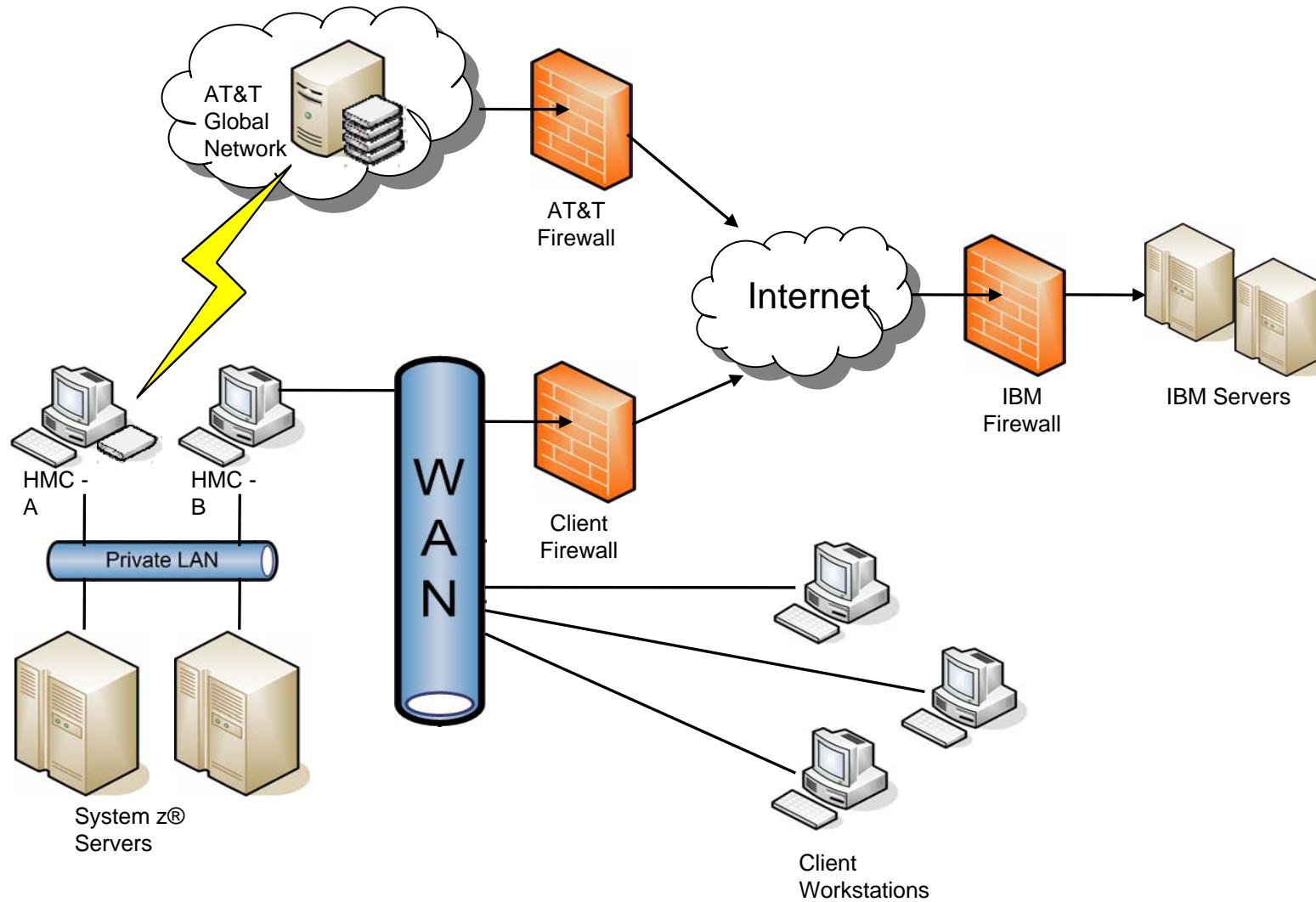
- A zEnterprise Node is a single zCEC with 0 to 4 zBX racks and up to two blade centers per rack
- A zEnterprise Ensemble is a collection of 1 to 8 zEnterprise Nodes managed as a single virtualized pool of server resources
- A zEnterprise node can be a member of a single ensemble
- An ensemble is the management scope for the Unified Resource Manager
- A primary / alternate pair of HMCs provides the management console for the ensemble
 - The alternate HMC takes over in case the primary fails



zEnterprise HMC-Based z/VM Management



HMC Connectivity



HMC Security Infrastructure

- Hardware Management Console (HMC) extended to support new management roles
 - Secure SSL based remote access (optional)
 - Full complement of certificate management capabilities
 - Complete user management suite
 - Full-function user definition
 - Highly flexible password rule definition
 - Centralized authentication using LDAP
 - Complete access controls for tasks and resources allowed for each user (i.e., User Roles)
 - Automatic replication of configuration data
 - Full-function embedded firewall

Ensemble Management Users and Roles

- New task and resource roles enable isolation across management disciplines
- New predefined users EnsOperator and EnsAdmin

Role	Description
Ensemble Administrator	Responsible for creating and managing the zGryphon ensemble Create Ensemble, Add Member...
Virtual Network Administrator	Responsible for Managing Virtual Networks, Hosts, and MAC Prefixes Manage Virtual Networks, Add Hosts to Virtual Networks, Create VLAN IDs...
Virtual Server Administrator	Responsible for managing virtual servers New /Modify Virtual Server, Add Virtual Disk, Migrate...
Virtual Server Operator	Responsible for performing and scheduling virtual server activation/deactivation, mounting virtual media Activate, Deactivate, Mount Virtual Media, Console session...
Storage Resource Administrator	Responsible for managing storage resources – Storage Access Lists, WWPNs, z/VM Storage Groups Export WWPN, Import SAL, Add Storage Resources...
Workload Administrator	Responsible for managing workloads New /Modify workload, Add / Remove Virtual Servers..
Performance Management Administrator	Responsible for managing performance policies New /Modify performance policy, Import policy
Performance Management Operator	Responsible for performing and scheduling policy activations and creating threshold notifications Activate, Export Policy, Monitor System Events
Energy Management Administrator	Responsible for managing power settings including power capping and power savings Set Power Cap, Set Power Savings Mode, Set zBX Power Policy

zEnterprise Unified Resource Manager

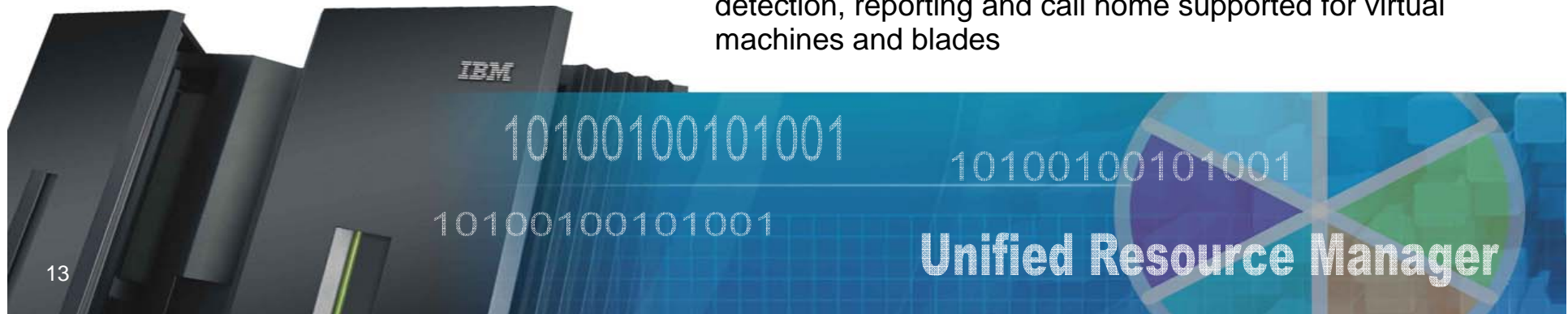
Transforming the way resources are managed and deployed

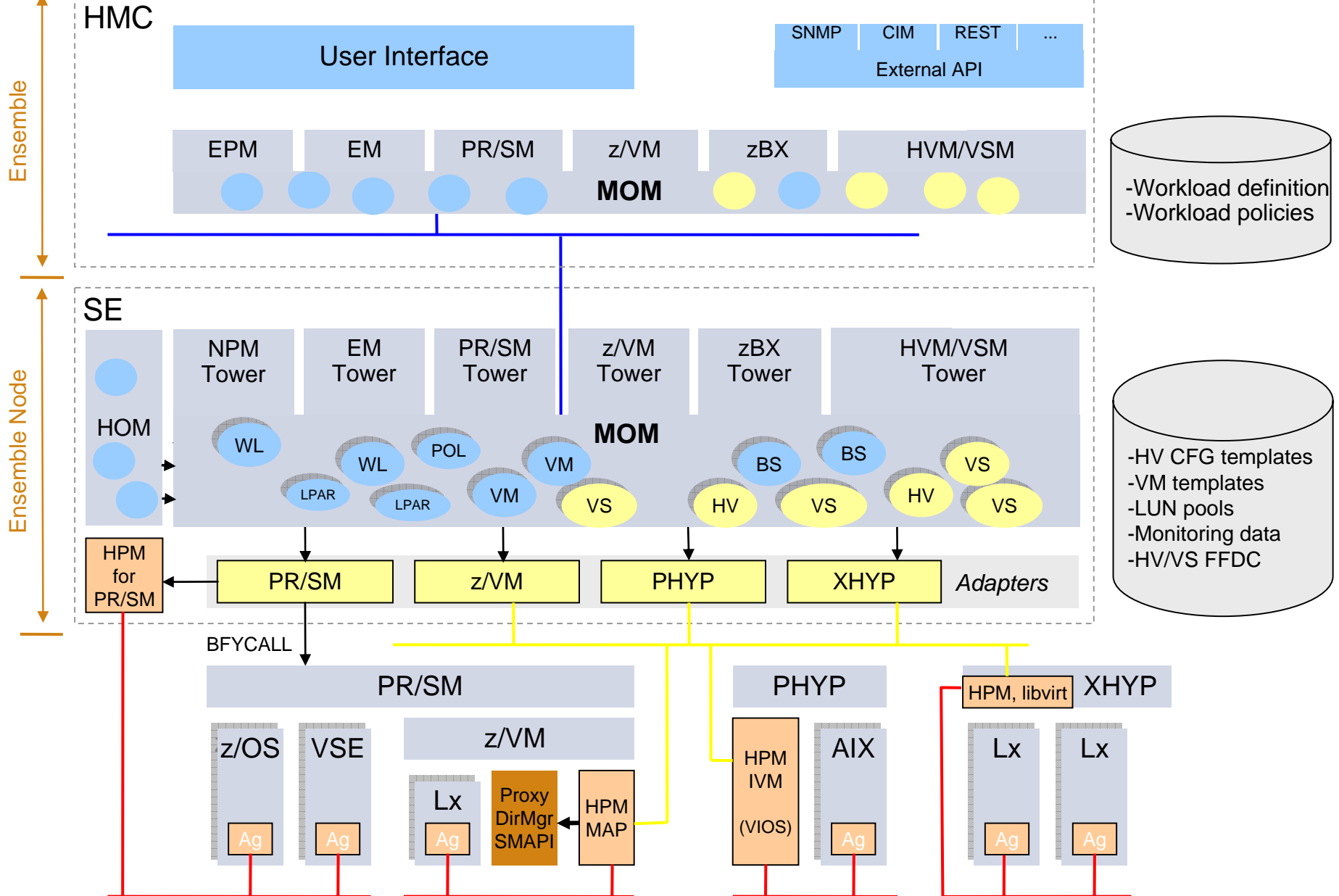
What is it?

*Unified Resource Manager provides **workload awareness** to optimize the system resources in accordance with understanding the policies assigned to that particular workload. Functions are grouped into two suites of tiered functionality that enable different levels of capability - Manage suite and Automate suite.*

How is it different?

- **Heterogeneous management:** Total systems management across heterogeneous resources
- **Integration:** Single point of control, common skills for resources, reduced complexity of day to day operations
- **Monitoring.** New dashboard for CPU resources and energy management
- **Simplified installation:** Auto discovery and configuration of resources and workloads with single interface
- **Secure:** Improved network security with lower latency, less hops and less complexity. Improved control of access due to management of hypervisors as firmware
- **Service and support management:** Hardware problem detection, reporting and call home supported for virtual machines and blades





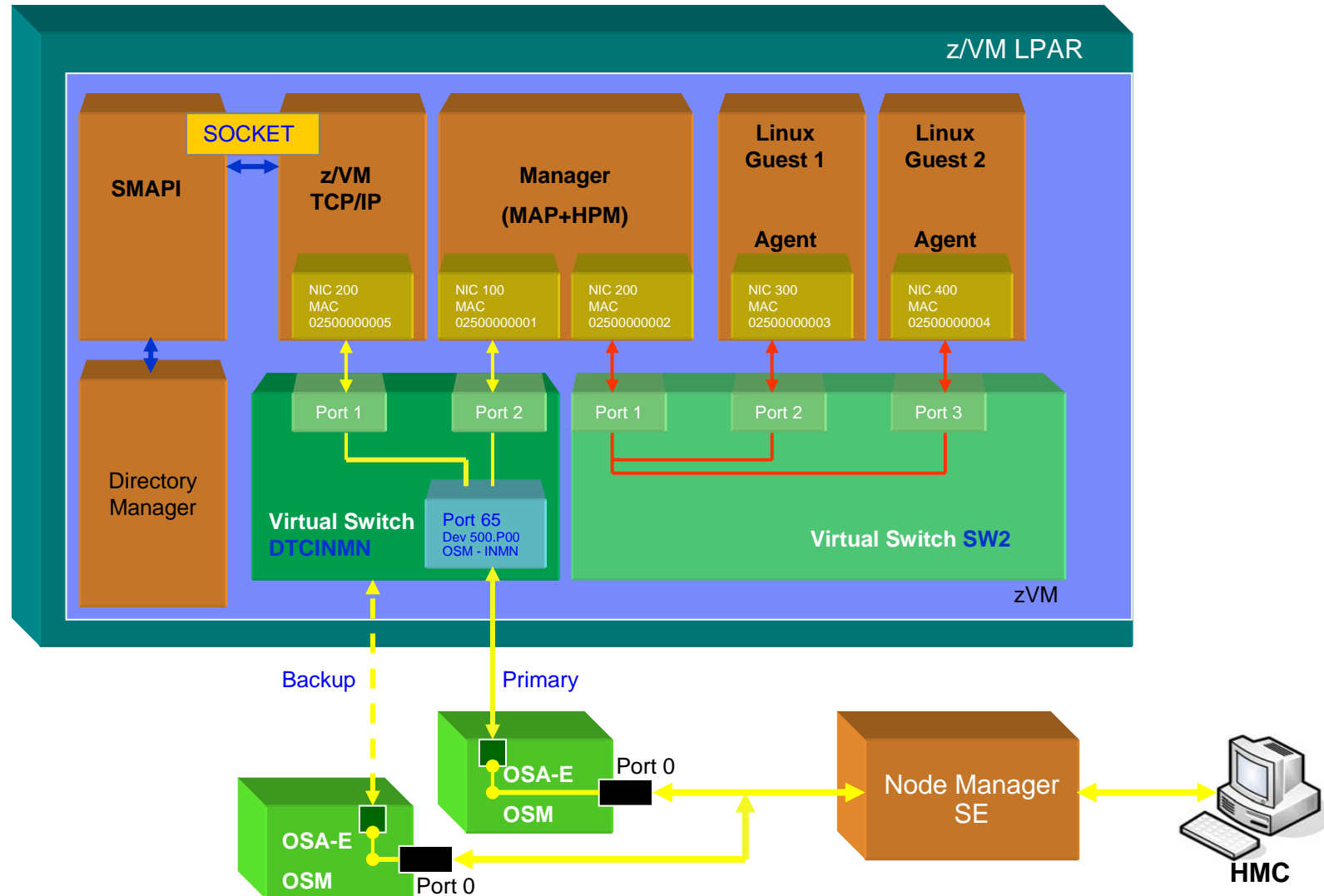
Synergy with z/VM

- Server and application consolidation on System z using Linux and z/VM is the industry leader in large-scale, cost-efficient virtual server hosting
- zEnterprise introduces virtual server provisioning and management for Linux guests running on z/VM
 - Use the Unified Resource Manager to create z/VM virtual machines
 - Simplify the skill level needed to manage a Linux on z/VM environment
- Faster cores and a bigger system cache on the z196 let you do even more with less when running Linux on z/VM
- Integrated blades on zBX offer a new dimension for workload optimization

z/VM Enhancements for zEnterprise Unified Resource Manager Complete virtual machine management from the HMC

- **Software**
 - z/VM 6.1 with applicable PTFs
 - z/VM Management Guest – HPM and MAP
 - z/VM SMAPI server
 - z/VM Directory Maintenance server (or equivalent)
 - INMN and IEDN virtual switch controllers
 - Control point for MAC assignment and VLAN access
 - Supported Linux SLES and RHEL distributions
 - Optional Guest Platform Management Provider
 - Legacy NIC can connect to IEDN or INMN via virtual switch
- **INMN and IEDN access provided via new z/VM virtual switch types**
 - Up-link can be virtual machine NIC (for Management Guest purposes)
 - Ensemble membership conveys Ensemble UUID and MAC prefix
 - Automatic connection to INMN
- **SMAPI manages SYSTEM CONFIG**
- **z/VM is authoritative source of virtual machine state**
 - State changes automatically reflected to Unified Resource Manager

z/VM Management Infrastructure



Use Cases

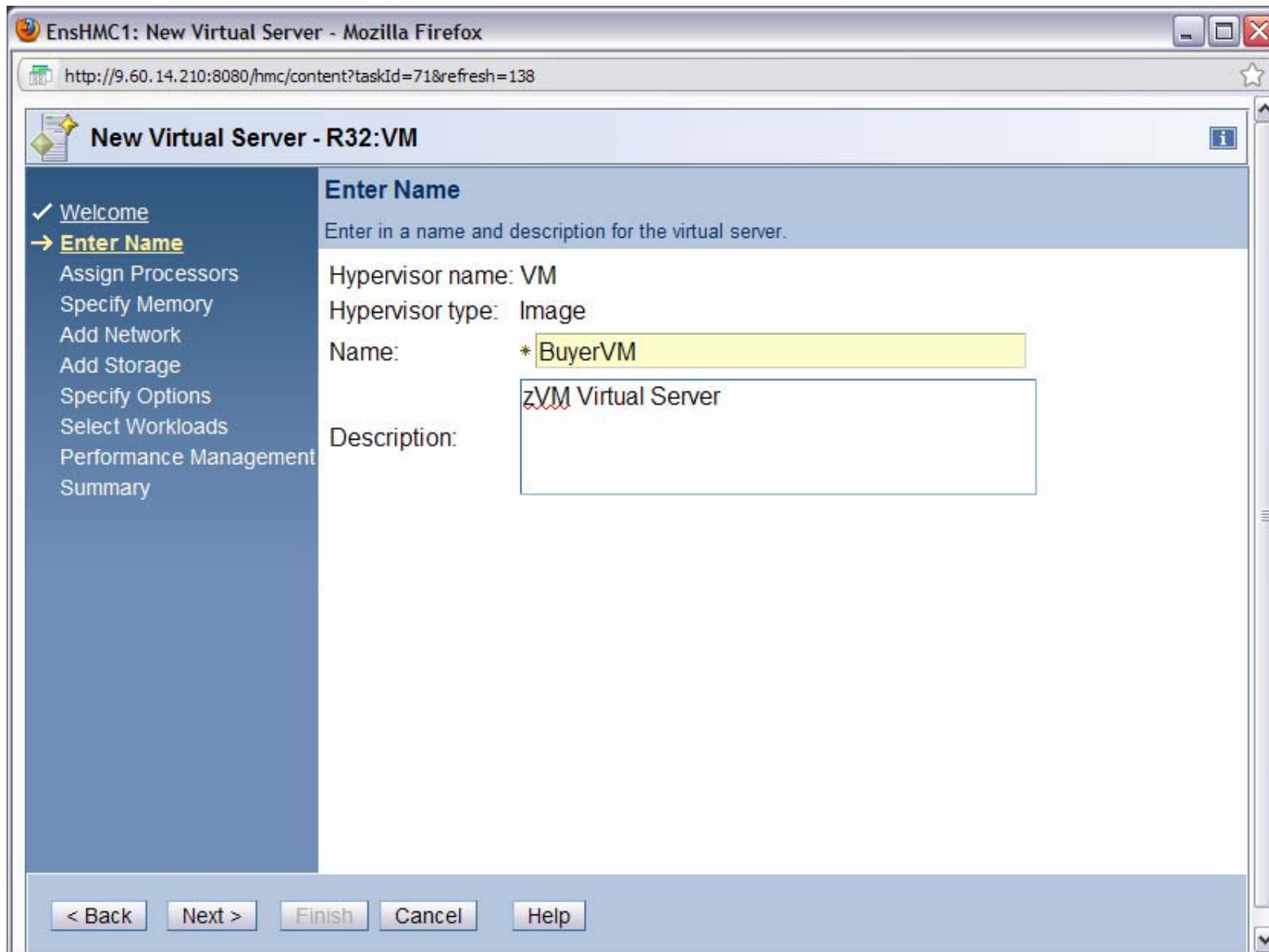
- New virtual server
- Virtual server details
- Create virtual network
- Associate virtual server with virtual network

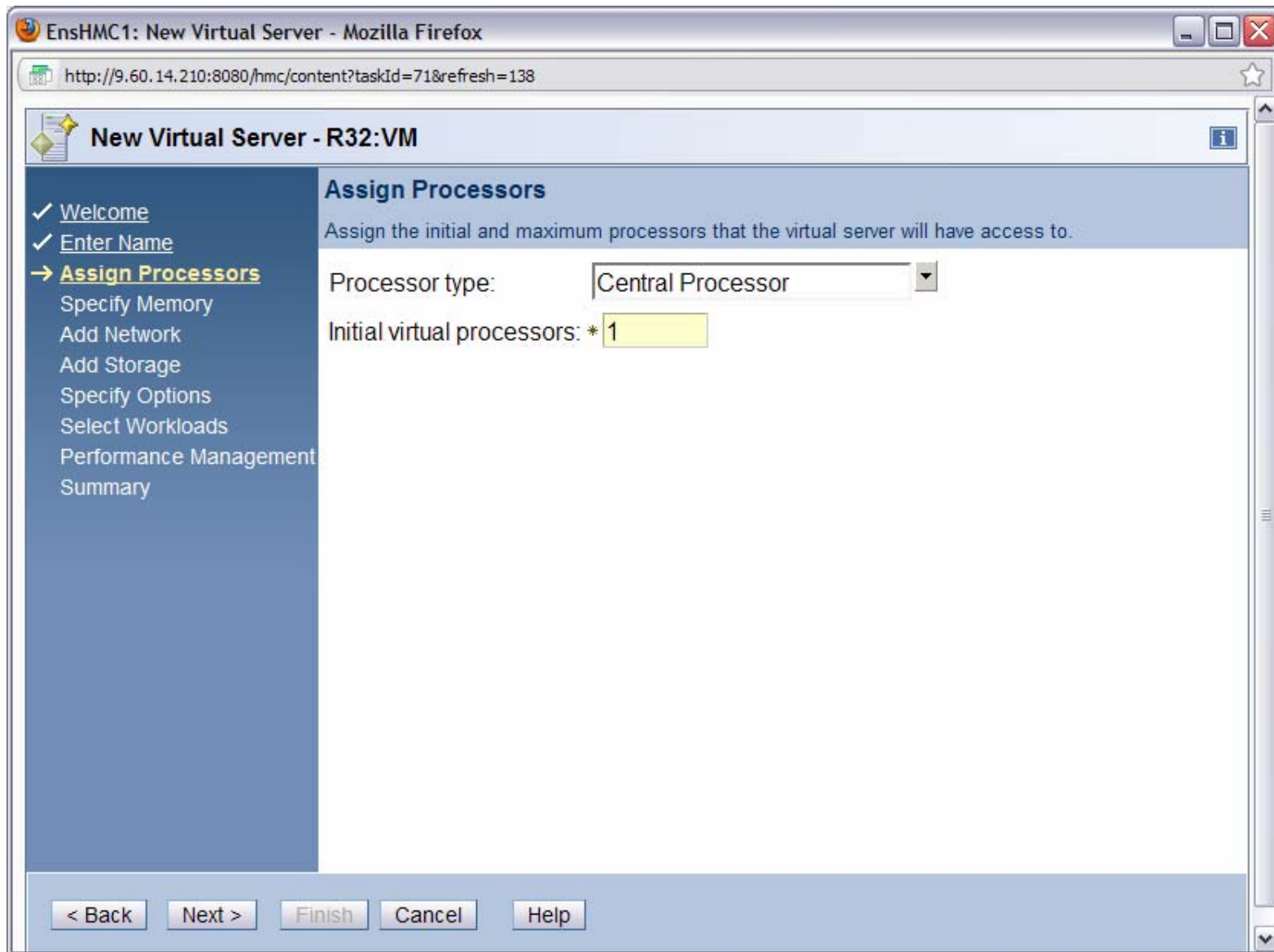
The screenshot shows the 'Hardware Management Console' interface in a Mozilla Firefox browser window. The title bar reads 'EnsHMC1: Hardware Management Console Workplace (Version 2.11.0) - Mozilla Firefox'. The address bar shows the URL 'http://9.60.14.210:8080/hmc/connects/mainuiFrameset.jsp'. The main header displays 'Hardware Management Console' with an IBM logo and navigation links for 'pedebug', 'Help', and 'Logoff'.

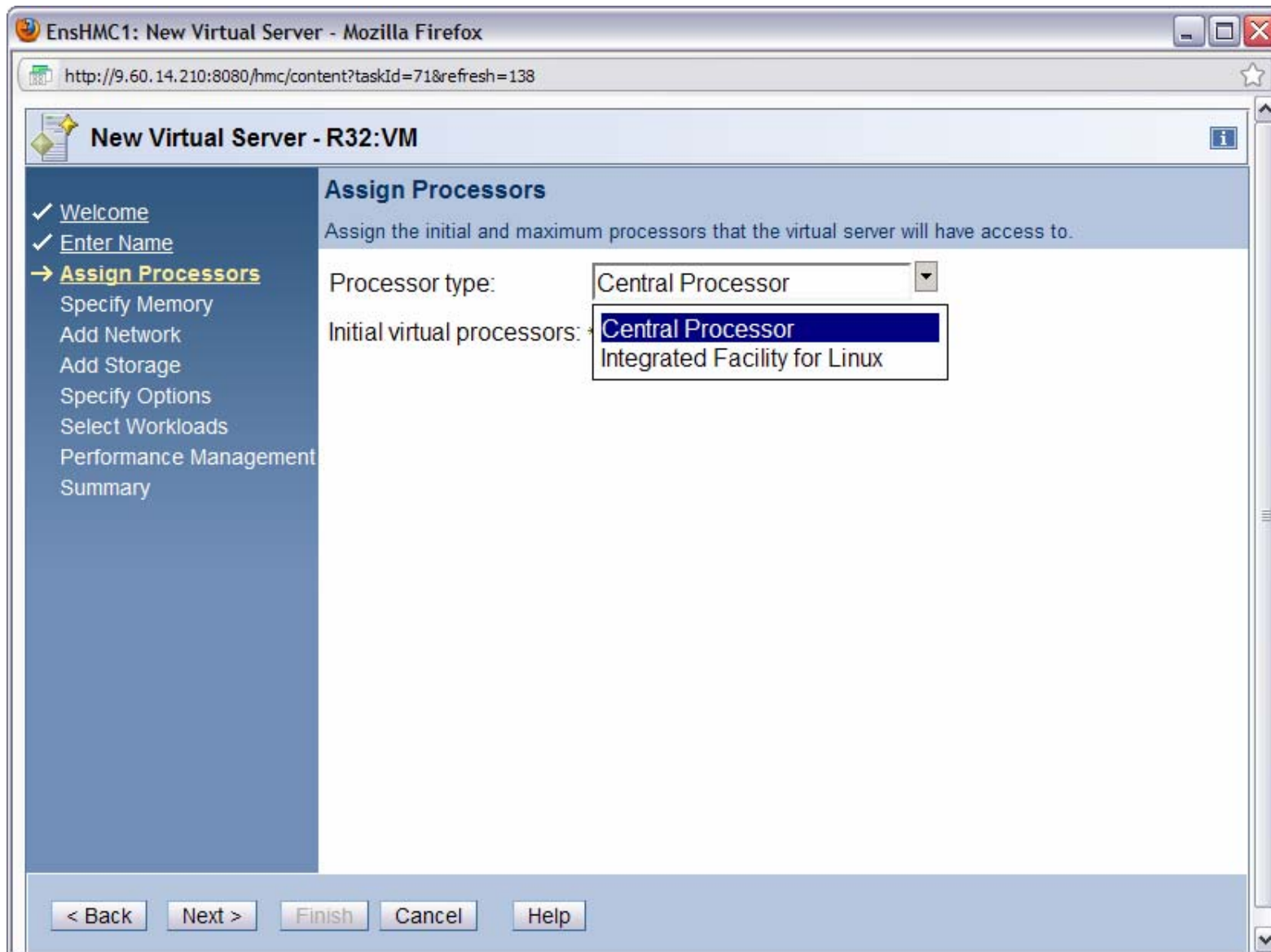
The breadcrumb navigation path is 'Ensemble Management > R32Ensemble > Members > R32'. Below this, there are tabs for 'System Resources', 'Hypervisors' (highlighted in yellow), and 'Virtual Servers'. A toolbar contains various icons and a 'Filter' input field. Below the toolbar is a table with columns for 'Select', 'Name', 'Status', and 'Automatic Restart'. The table contains one entry: a checked checkbox, a VM icon, 'VM', and 'Operating'. Below the table, it shows 'Max Page Size: 500', 'Total: 1', 'Filtered: 1', and 'Selected: 1'.

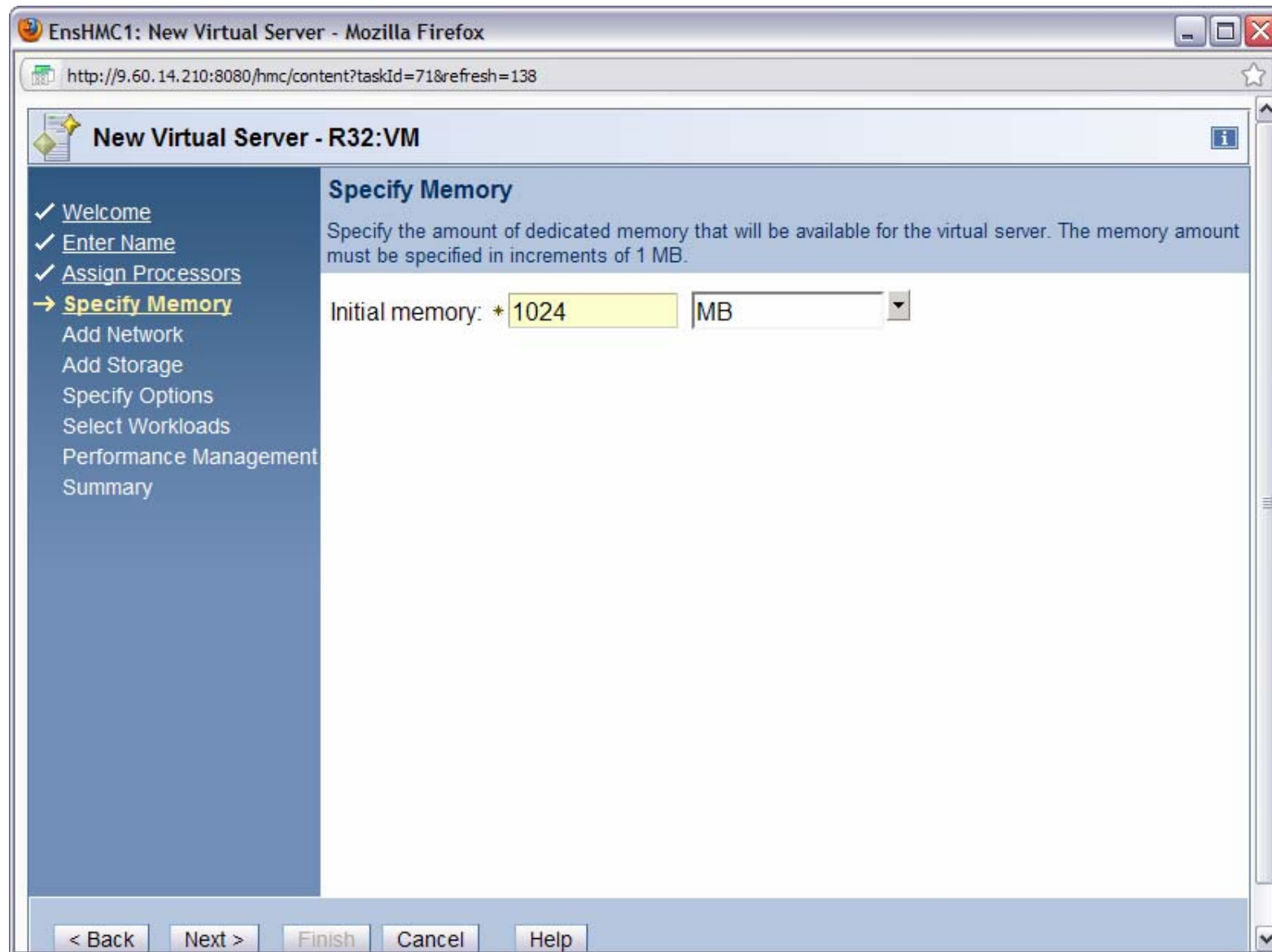
The left sidebar contains a navigation menu with categories: 'Welcome', 'Systems Management', 'Ensemble Management' (with sub-items 'R32Ensemble', 'Members', 'R32', and 'Workloads'), 'HMC Management', 'Service Management', and 'Tasks Index'. At the bottom of the sidebar is a red bar labeled 'Status: Exceptions and Messages' and several icons.

At the bottom of the main content area, there is a 'Tasks: VM' section with a list of tasks: 'Image Details', 'Toggle Lock', 'Daily', 'Recovery', 'Service', 'Operational Customization', 'Configuration', 'Manage Storage Resources', 'New Virtual Server' (highlighted in yellow), and 'z/VM virtual machine management'.









The screenshot shows a web browser window titled 'EnsHMC1: New Virtual Server - Mozilla Firefox' with the URL 'http://9.60.14.210:8080/hmc/content?taskId=73&refresh=139'. The main content area is titled 'New Virtual Server - R32:VM' and features a left-hand navigation menu with the following items: Welcome, Enter Name, Assign Processors, Specify Memory, Add Network (highlighted with a yellow arrow), Add Storage, Specify Options, Select Workloads, Performance Management, and Summary. The main panel is titled 'Add Network' and contains the instruction: 'Add the network adapters that the virtual server will use to access the networks.' Below this is a table with columns 'Select', 'ID', 'Network Name', and 'Network Description'. The table is currently empty, with a 'Total: 0' summary row. Below the table are 'Add', 'Edit', and 'Remove' buttons. At the bottom of the main panel is a 'Manage Virtual Networks' button. At the very bottom of the window is a navigation bar with buttons for '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

EnSHMC1: New Virtual Server - Mozilla Firefox

http://9.60.14.210:8080/hmc/content?taskId=73&refresh=139

New Virtual Server - R32:VM

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

Add Storage

Add the storage drives that the virtual server will use to access the storage resources.

Select	Device	Name	Description	Resource Name	Mode	Size
Total: 0						

Add Edit Remove

Manage Storage Resources

< Back Next > Finish Cancel Help

EnSHMC1: New Virtual Server - Mozilla Firefox

http://9.60.14.210:8080/hmc/content?taskId=73&refresh=139

New Virtual Server - R32:VM

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

Specify Options

Choose the boot source for your virtual server.

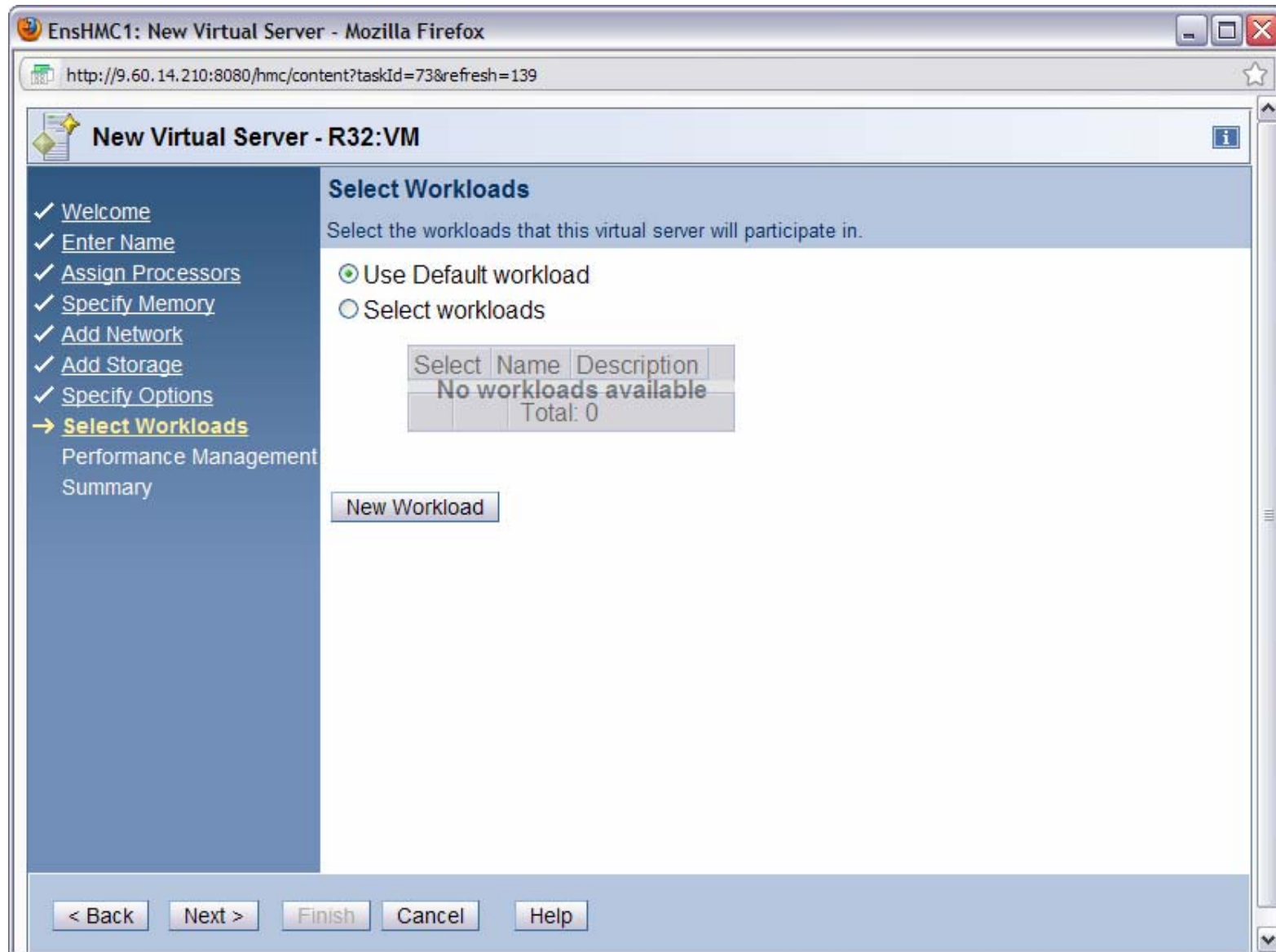
Privilege classes: * G

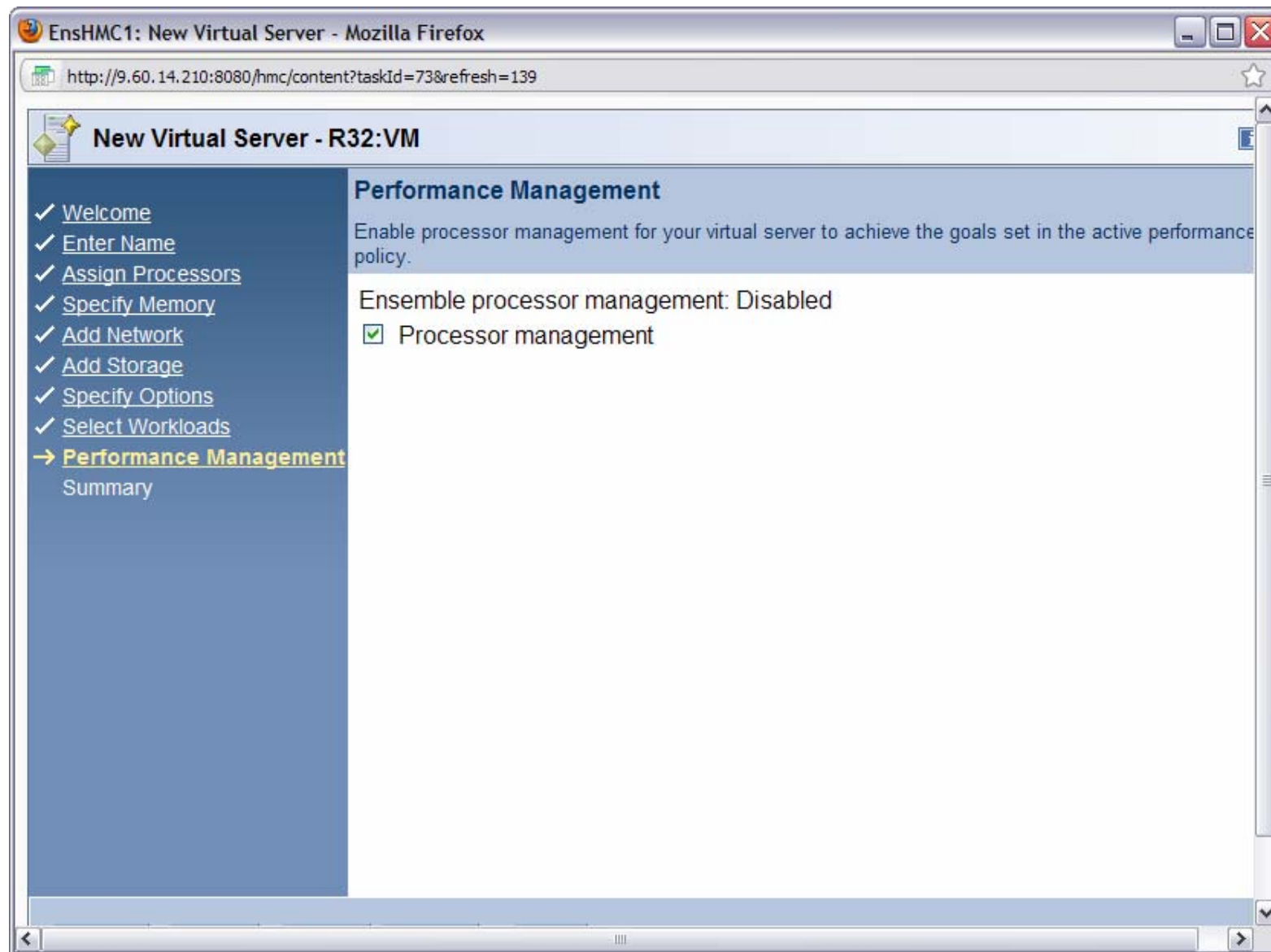
IPL boot device:

IPL parameters:

IPL load parameters:

< Back Next > Finish Cancel Help





The screenshot shows a web browser window titled 'EnsHMC1: New Virtual Server - Mozilla Firefox'. The address bar shows the URL: `http://9.60.14.210:8080/hmc/content?taskId=73&refresh=139`. The main content area is titled 'New Virtual Server - R32:VM' and contains a 'Summary' section. On the left, a navigation pane lists the wizard steps: Welcome, Enter Name, Assign Processors, Specify Memory, Add Network, Add Storage, Specify Options, Select Workloads, Performance Management, and Summary (highlighted with a yellow arrow). The 'Summary' section contains the following configuration details:

Name:	BuyerVM
Description:	z/VM Virtual Server
Initial virtual processors:	1
Assigned dedicated memory:	1024 MB
Network Devices:	
Storage Devices:	
IPL parameters:	
IPL load parameters:	
Privilege classes:	G
Workloads:	Default
Processor management:	Enabled

At the bottom of the wizard, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

EnsHMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/content?taskId=74&refresh=143

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

Hypervisor name: VM
Hypervisor type: Image
UUID: 4c3352da-9f37-11df-8cdb-001f163803de
Name: *BuyerVM
Description:

OK Apply Cancel Help

EnshMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

Status: Not Activated
Guest Platform Management Provider Status: Not Operating

Acceptable Status:

<input checked="" type="checkbox"/> Operating	<input type="checkbox"/> Not Operating
<input type="checkbox"/> Communications not active	<input type="checkbox"/> Exceptions
<input type="checkbox"/> Status Check	<input type="checkbox"/> Migrating
<input type="checkbox"/> Starting	<input type="checkbox"/> Stopping

OK Apply Cancel Help

EnshMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wcd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

Processor type: Central Processor

Initial virtual processors: * 1

Maximum virtual processors: * 1

Share mode: Relative

Share limit: None

Initial relative shares: * 0

OK Apply Cancel Help

EnshMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

Initial memory: * 1 MB

Maximum memory: * 1 MB

OK Apply Cancel Help

EnHMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wcd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

MAC Prefix:

Network Adapters:

Select	ID	Network Name	Network Description	MAC Address
Total: 0				

Add Edit Remove

Manage Virtual Networks

OK Apply Cancel Help

EnshMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

Storage Drives:

Select	Device	Name	Description	Resource Name	Mode	Size
Total: 0						

Add Edit Remove

Manage Storage Resources

OK Apply Cancel Help

EnsHMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wcd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

Privilege classes: *G

IPL boot device:

IPL parameters:

IPL load parameters:

Enable Guest Platform Management Provider Support

OK Apply Cancel Help

EnSHMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

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

Use Default workload
 Select workloads

Select	Name	Description
No workloads available		
Total: 0		

New Workload

OK Apply Cancel Help

EnHMC1: Virtual Server Details - Mozilla Firefox

http://9.60.14.210:8080/hmc/wd/T14a1

Virtual Server Details - BuyerVM [R32:VM:ZFWVMTSA]

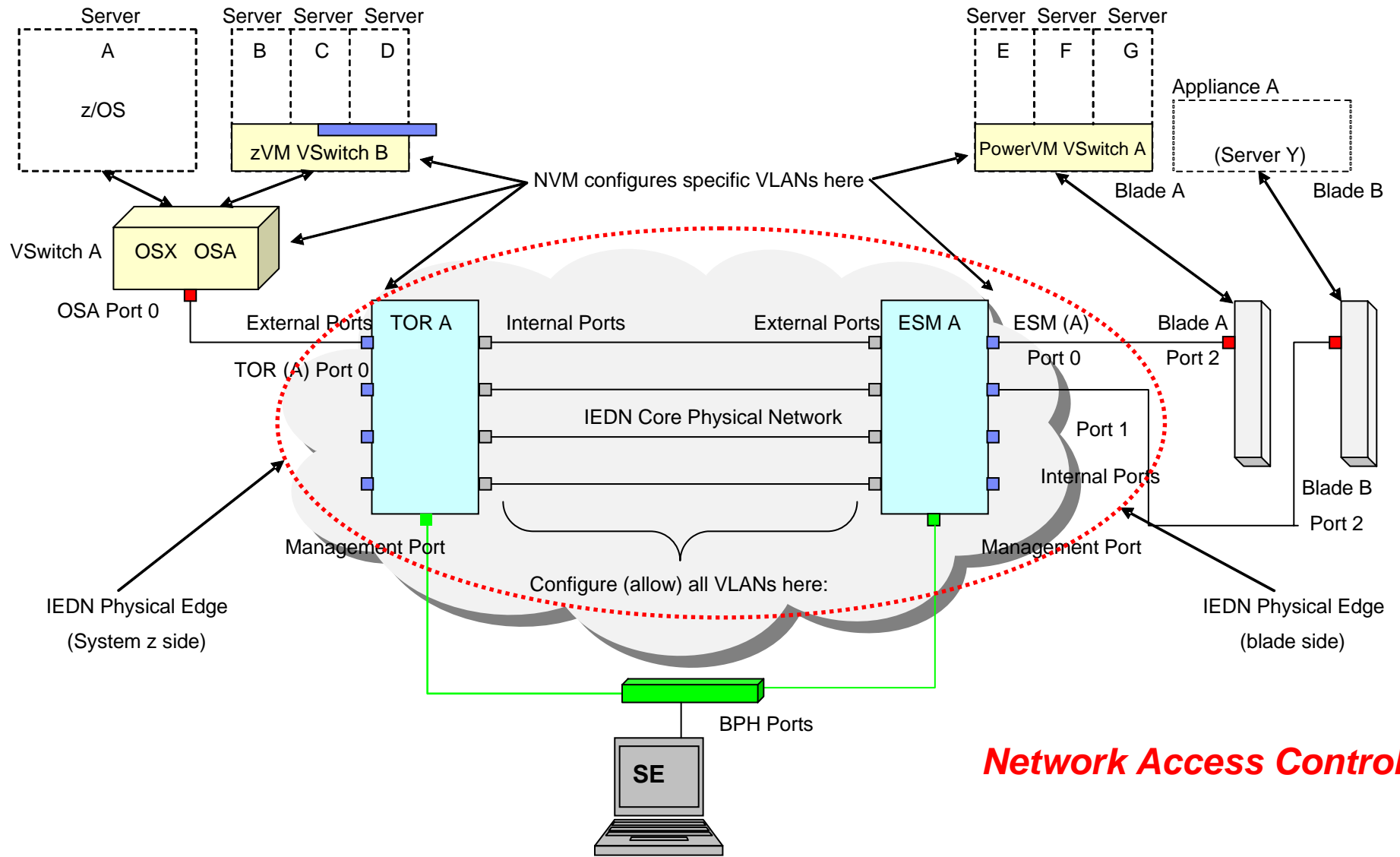
Name Status Processors Memory Network Storage Options Workloads **Performance**

Ensemble processor management: Disabled

Processor management

OK Apply Cancel Help

Virtual Networks and Access Controls



Network Access Control

Create Virtual Network

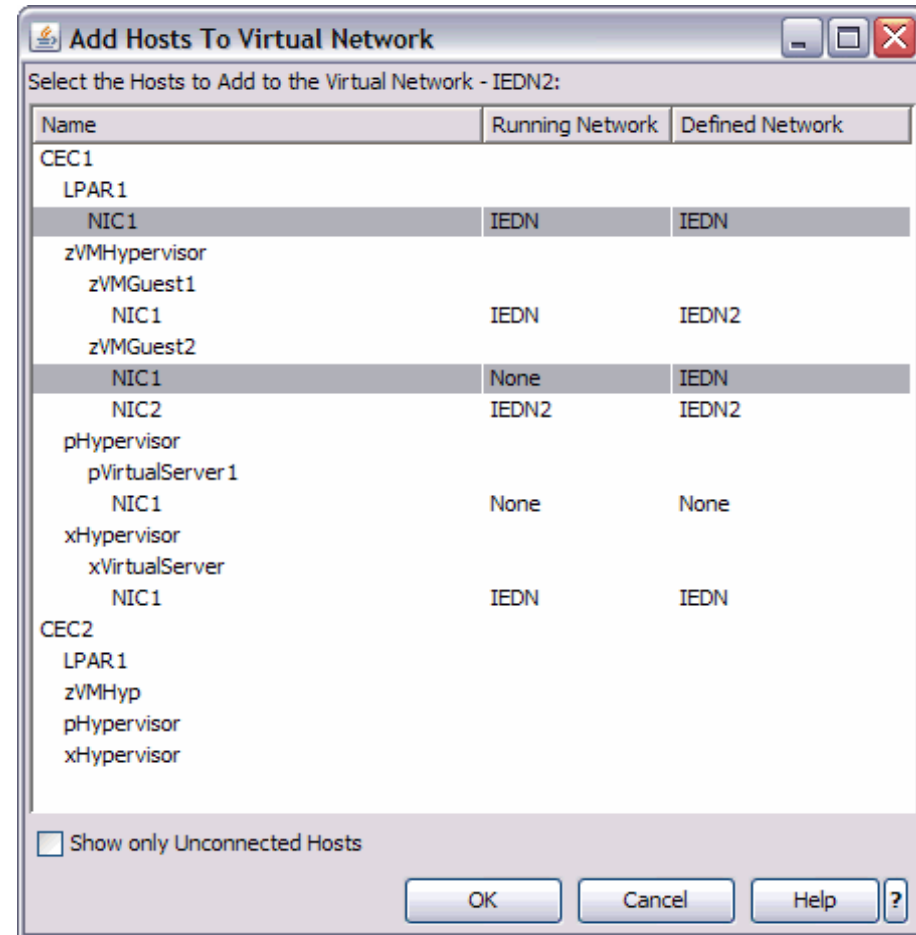
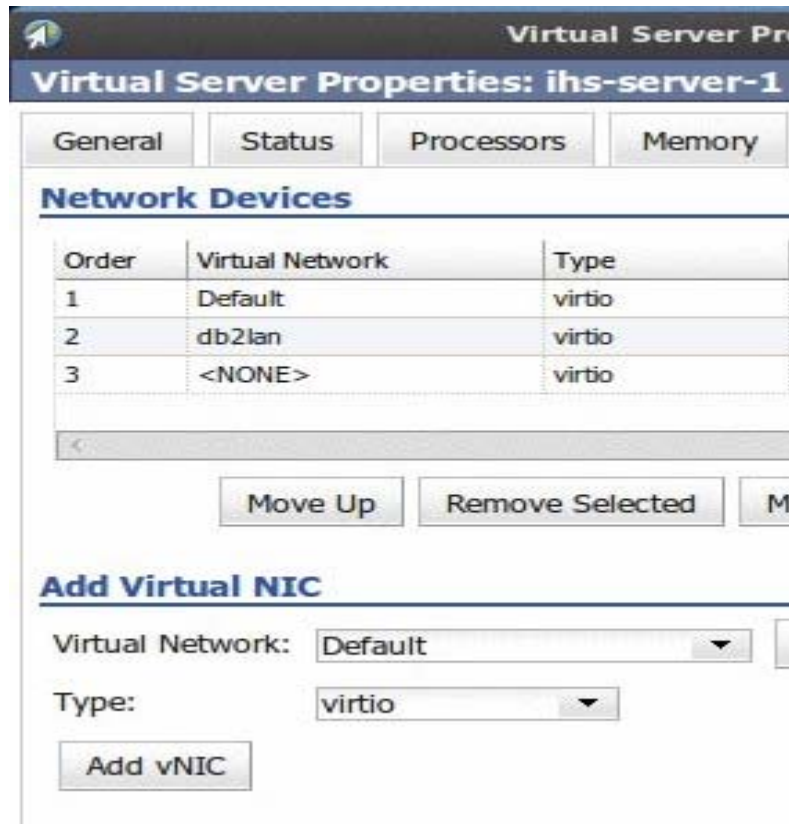
The top screenshot shows the 'Create Virtual Network - My Ensemble' dialog box. The 'General Settings' section contains the following fields:

- Name: * VendorVirtualNetwork
- Description: All vendor virtual servers on this VLAN
- VLAN ID: * 11 (10-1034)

The bottom screenshot shows the 'Manage Virtual Networks - My Ensemble' main interface. It features a table of virtual networks:

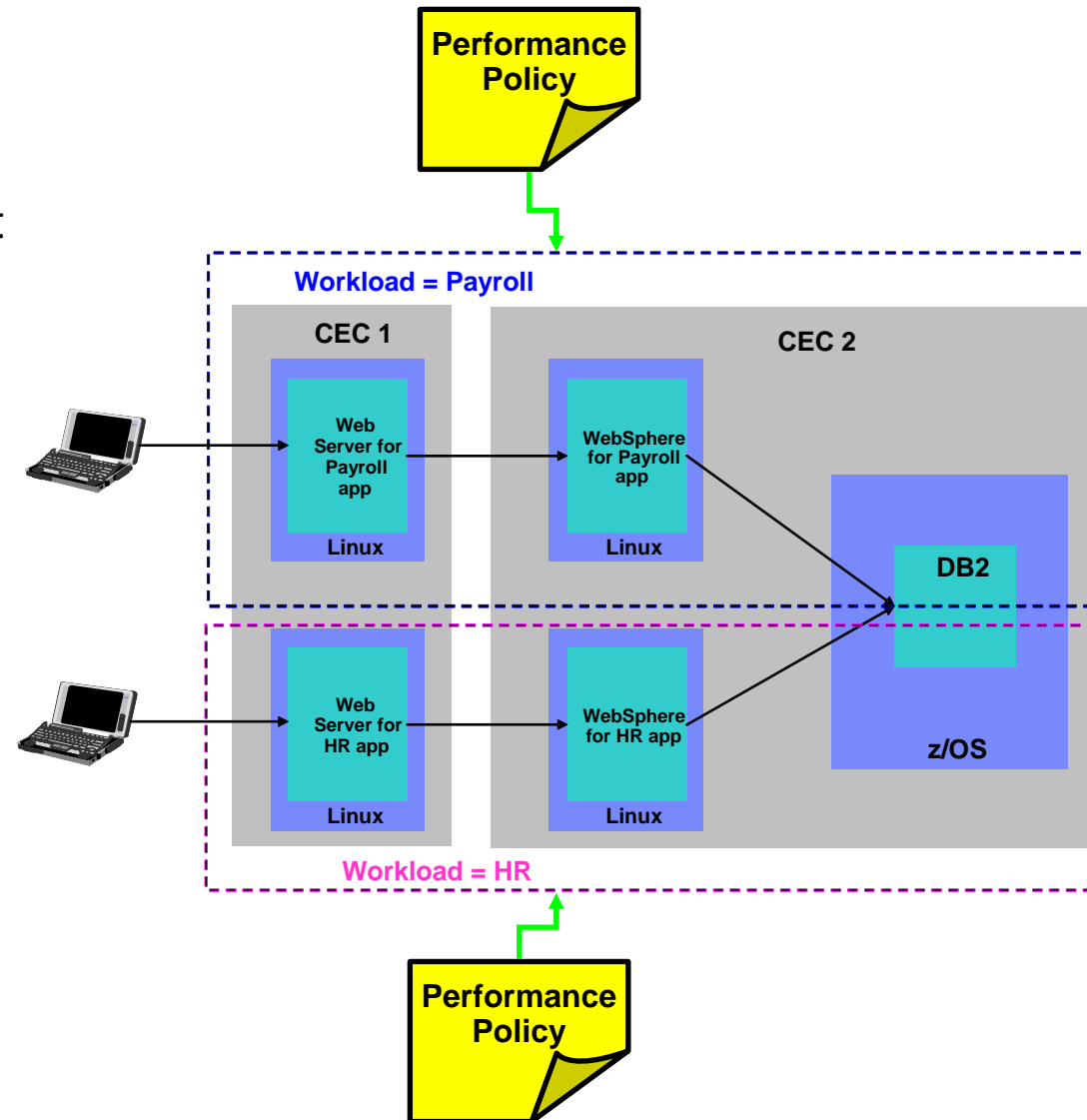
Select	Name	Status	VLAN ID	Description
<input type="radio"/>	Default	Inactive	10	Default virtual network
<input checked="" type="radio"/>	VendorVirtualNetwork	Inactive	11	All vendor virtual servers on th...

Associate Virtual Server With Virtual Network



Workload

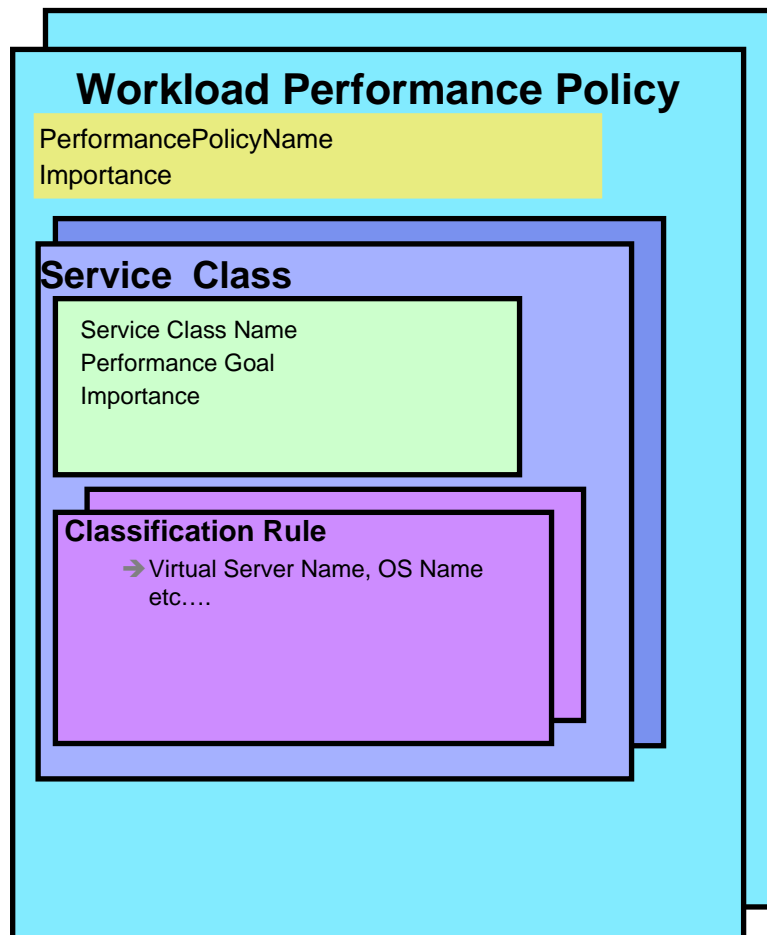
- A Workload is a grouping mechanism and “management view” of virtual servers supporting a business application
- Provides the context within which associated platform resources are presented, monitored, reported, and managed
- Performance policy is associated with Workload



Workload Performance Policy

- Defines performance goals for virtual servers in a workload
 - Conceptually similar to simplified z/OS WLM Policy
- Provides basis for monitoring and managing platform resources used by virtual servers in a Workload
- Workload relationship to performance policy
 - Multiple performance policies associated with a workload
 - A single policy is active at a given time
 - Can dynamically change the active policy
 - Through the UI
 - On a time-based schedule
 - Example: Day shift / night shift policy

Workload Performance Policy...



- Policy structure:
 - Policy contains a set of service classes
 - Classification rules map each virtual server within the workload to a service class
 - A service class assigns a performance goal and importance
- HMC is console for policy creation and editing
 - Wizard for policy creation
 - Repository for policies under development and saved policies
 - Links to workload-based performance reporting

NEXTGEN: Hardware Management Console Workplace (Version 2.11.0) - Mozilla Firefox

9.60.92.193 https://9.60.92.193/hmc/connects/mainuiFrameset.jsp

Hardware Management Console

pedebug | Help | Logoff

Systems Management > **My Ensemble**

All Resources | Hypervisors | Virtual Servers

Table | Topology

Select	Name	Status	Description
<input type="checkbox"/>	Members	Exceptions	
<input type="checkbox"/>	PZBONZAI	Not Operating	Central Processing Complex (CPC)
<input type="checkbox"/>	Workloads		
<input type="checkbox"/>	Default		The default workload containing all unmar

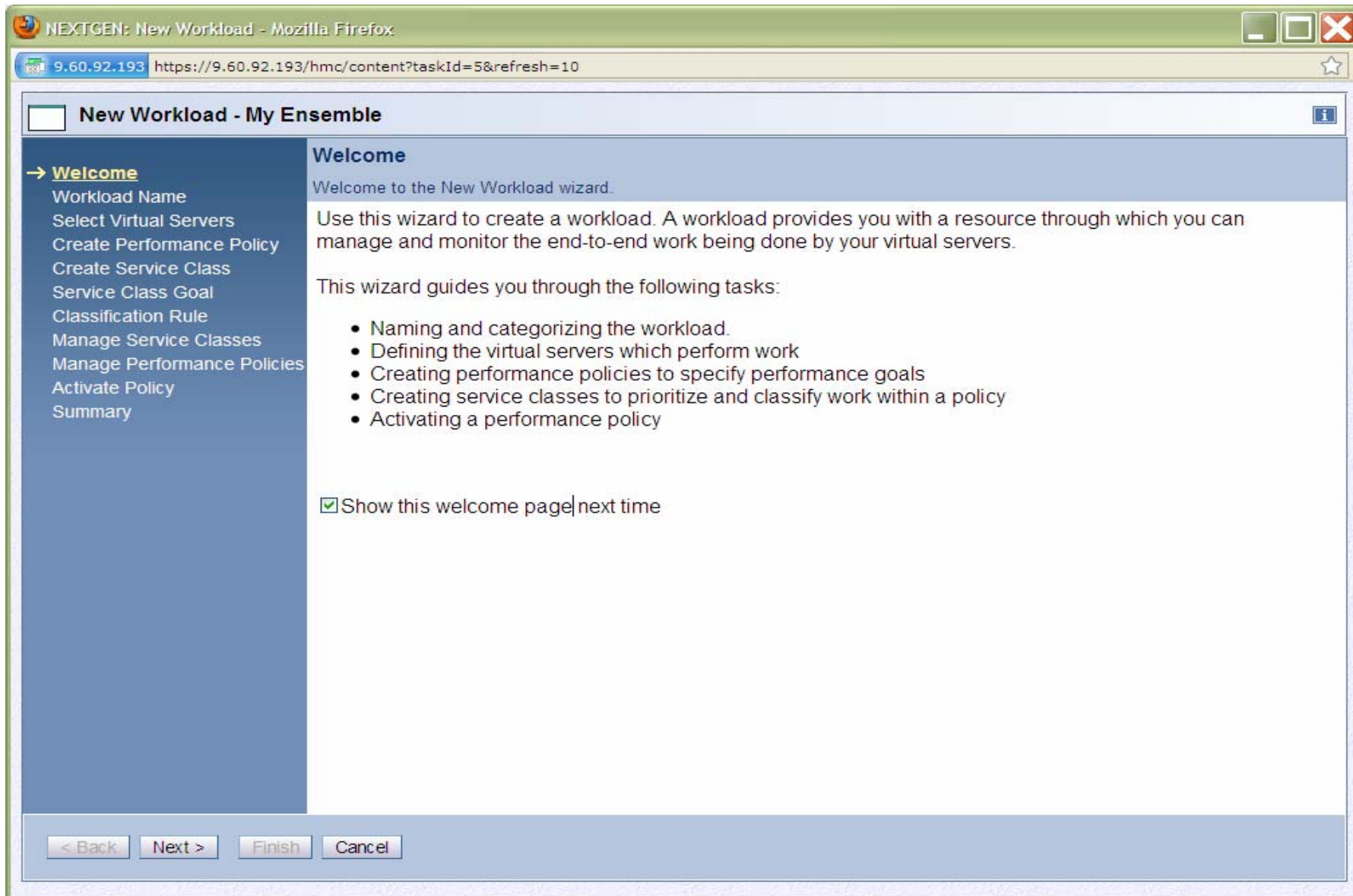
Max Page Size: 500 Total: 4 Filtered: 4 Selected: 0

Click on the Ensemble and then New Workload

Tasks: My Ensemble

- Ensemble Details
- Toggle Lock
- Configuration
 - Configure Ensemble MAC Prefix
 - Delete Ensemble
 - Manage Storage Resources
 - Manage Virtual Networks
 - New Workload**
 - Reserve MAC Address Prefixes
- Monitor

Status: Exceptions and Messages



NEXGEN: New Workload - My Ensemble

9.60.92.193 https://9.60.92.193/hmc/content?taskId=2&refresh=5

New Workload - My Ensemble

- ✓ 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: * Weinheimer Agricultural Parts

Description: Tractor parts sales hub for buyers and supplier

Category: Tractor

< Back Next > Finish Cancel Help

NEXTGEN: New Workload - Mozilla Firefox
 9.60.92.193 https://9.60.92.193/hmc/content?taskId=1&refresh=2

New Workload - My Ensemble

- ✓ 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

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	Name	Description	Hypervisor	Type	Workload(s)
<input type="checkbox"/>	Buyer 1	Buyer v1.23 WAS v7.0	PZBONZAI:B.2.01	POWER	
<input type="checkbox"/>	Buyer 2	Buyer v1.23 WAS v7.0	PZBONZAI:B.2.01	POWER	
<input type="checkbox"/>	Vendor 1	Vendor v3.2 WAS v6.1	PZBONZAI:B.2.01	POWER	
<input type="checkbox"/>	Vendor 2	Vendor v3.6 WAS v6.1	PZBONZAI:B.2.01	POWER	
Total: 4 Selected: 0					

Selected:

Buttons: Add > < Remove

Navigation: < Back Next > Finish Cancel Help

NEXTGEN: New Workload - Mozilla Firefox
 9.60.92.193 https://9.60.92.193/hmc/wcd/T104

New Workload - My Ensemble

- ✓ 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

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	Name	Description	Hypervisor	Type	Workload(s)
<input checked="" type="checkbox"/>	Buyer 1	Buyer v1.23 WAS v7.0	PZBONZAI:B.2.01	POWER	
<input checked="" type="checkbox"/>	Buyer 2	Buyer v1.23 WAS v7.0	PZBONZAI:B.2.01	POWER	
<input checked="" type="checkbox"/>	Vendor 1	Vendor v3.2 WAS v6.1	PZBONZAI:B.2.01	POWER	
<input checked="" type="checkbox"/>	Vendor 2	Vendor v3.6 WAS v6.1	PZBONZAI:B.2.01	POWER	
Total: 4 Selected: 4					

Selected:

Add >
< Remove

< Back Next > Finish Cancel Help

NEXTGEN: New Workload - Mozilla Firefox
 9.60.92.193 https://9.60.92.193/hmc/wd/T104

New Workload - My Ensemble

- ✓ 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

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	Name	Description	Hypervisor	Type	Workload(s)
<input type="checkbox"/>	Buyer 1	Buyer v1.23 WAS v7.0	PZBONZAI:B.2.01	POWER	
<input type="checkbox"/>	Buyer 2	Buyer v1.23 WAS v7.0	PZBONZAI:B.2.01	POWER	
<input type="checkbox"/>	Vendor 1	Vendor v3.2 WAS v6.1	PZBONZAI:B.2.01	POWER	
<input type="checkbox"/>	Vendor 2	Vendor v3.6 WAS v6.1	PZBONZAI:B.2.01	POWER	
					Total: 4 Selected: 0

Selected:
 Buyer 1
 Buyer 2
 Vendor 1
 Vendor 2

Buttons: Add > (highlighted), < Remove

Navigation: < Back, Next >, Finish, Cancel, Help

NEW WORKLOAD - My Ensemble

- ✓ [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

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: Weinheimer Agricultural parts

Name: *

Description:

Business importance: *

< Back Next > Finish Cancel Help

NEXGEN: New Workload - My Ensemble

9.60.92.193 https://9.60.92.193/hmc/wcd/T462

New Workload - My Ensemble

- ✓ 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

Create Service Class - Peak Period

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: Weinheimer Agricultural parts

Performance policy: Peak Period

Name: *

Description:

< Back Next > Finish Cancel Help

NEXGEN: New Workload - My Ensemble

9.60.92.193 https://9.60.92.193/hmc/wd/T462

New Workload - My Ensemble

- ✓ 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

Service Class Goal - Peak Period:Buyers

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

Performance Goal

Velocity

Discretionary

Business importance

< Back Next > Finish Cancel Help

New Workload - My Ensemble

- ✓ 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

Classification Rule - Peak Period:Buyers

The rule builder allows you to construct your classification rule by constructing clauses that are ANDed or ORed together. Click the first entry and select the property upon which your rules' first clause will filter. For instance, select "PPM:Hostname" to filter on the virtual server's host name.

PPM:Hostname == ?

- PPM:Hostname
- PPM:Server Name
- PPM:OS Platform
- PPM:OS Level
- PPM:System Name

< Back Next > Finish Cancel Help

Classification Rule - Peak Period:Buyers
Define the service class's classification rule using the rule builder.

Classification rule: **PPM:Hostname == Buyer1**

Logical Operators
AND OR

Rule Builder: Filter Value
Enter the filter value for the first clause in the third entry field. For instance, enter '*' to match any host name when the filter type is "PPM:Hostname" and filter operator is equals (==)

< Back Next > Finish Cancel Help

NEXTGEN: New Workload - Mozilla Firefox

9.60.92.193 https://9.60.92.193/hmc/wd/T462

New Workload - My Ensemble

- ✓ 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

Classification Rule - Peak Period:Buyers

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

Classification rule:

Logical Operators

AND OR

PPM:Hostname == Buyer1

AND
OR

< Back Next > Finish Cancel Help

The screenshot shows a web browser window titled "NEXTGEN: New Workload - Mozilla Firefox" with the address bar showing "https://9.60.92.193/hmc/wcd/T462". The main content area is titled "New Workload - My Ensemble" and contains a navigation menu on the left with the following items: Welcome, Workload Name, Select Virtual Servers, Create Performance Policy, Create Service Class, Service Class Goal, **Classification Rule** (highlighted), Manage Service Classes, Manage Performance Policies, Activate Policy, and Summary. The main content area is titled "Classification Rule - Peak Period:Buyers" and contains the text "Define the service class's classification rule using the rule builder." Below this, there is a "Classification rule:" section with "Logical Operators" (AND, OR) and a "Rule Builder" dialog box. The dialog box contains the text "Continue adding clauses to build your classification rule." and a form with the text "<Select Filter Type> == ?" and an "OK" button. At the bottom of the page, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

NEXTGEN: New Workload - Mozilla Firefox

9.60.92.193 https://9.60.92.193/hmc/wcd/T462

New Workload - My Ensemble

- ✓ 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

Classification Rule - Peak Period:Buyers

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

Classification rule:

Logical Operators

AND OR

PPM:Hostname == Buyer1

PPM:Hostname == Buyer2

OR

< Back Next > Finish Cancel Help

NEXTGEN: New Workload - Mozilla Firefox

9.60.92.193 https://9.60.92.193/hmc/wcd/T166

New Workload - My Ensemble

- ✓ [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

Manage Service Classes - Peak Period

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

--- Select Action ---

Select	Service Class	Performance Goal	Business Importance	Description
<input type="radio"/>	Buyers	Velocity - Fastest	Highest	Represents work of the buyer virtual servers
<input type="radio"/>	Default	Velocity - Moderate	Medium	The default workload performance policy set
		Total: 2 Selected: 0		

< Back Next > Finish Cancel Help

NEXTGEN: New Workload - Mozilla Firefox

9.60.92.193 https://9.60.92.193/hmc/wd/T166

New Workload - My Ensemble

- ✓ [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](#)

Manage Performance Policies

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

Select	Performance Policy	Business Importance	Description
<input type="radio"/>	Peak Period	Medium	Provide best performance for buyers at peak
<input type="radio"/>	Default	Medium	The default workload performance policy
		Total: 2	Selected: 0

NEXTGEN: New Workload - Mozilla Firefox

9.60.92.193 https://9.60.92.193/hmc/wd/T17b

New Workload - My Ensemble

- ✓ 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

Activate Policy

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

Select	Performance Policy	Business Importance	Description
<input type="radio"/>	Peak Period	Medium	Provide best performance for buyers at peak
<input checked="" type="radio"/>	Default	Medium	The default workload performance policy
		Total: 2	

Launch Customize Scheduled Operations after the workload has been created.

NEXTGEN: New Workload - Mozilla Firefox
 9.60.92.193 https://9.60.92.193/hmc/wcd/T166

New Workload - My Ensemble

- ✓ 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: Weinheimer Agricultural Parts
 Active performance policy: Default
 Description: Tractor parts sales hub for buyers and suppliers
 Category: Tractors

Virtual servers:
 Vendor 1
 Buyer 1
 Vendor 2
 Buyer 2

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: (*) == "(*)"

Peak Period

< Back Next > Finish Cancel Help

The screenshot displays the NEXTGEN Hardware Management Console Workplace (Version 2.11.0) in Mozilla Firefox. The main window shows the 'Systems Management > My Ensemble' view with a table of resources. A modal dialog box titled 'NEXTGEN: New Workload - Mozilla Firefox' is open, displaying a success message: 'Workload Created - My Ensemble'. The message states: 'Workload "Weinheimer Agricultural Parts" has been created. Launch [Workload Details](#) to view performance policy activation progress. Launch [Workload Report](#) to monitor the workload.' The dialog has an 'OK' button.

Hardware Management Console

Systems Management > My Ensemble

All Resources | Hypervisors | Virtual Servers

Table | Topology

Select	Name	Status	Description
<input type="checkbox"/>	Members		Exceptions
<input type="checkbox"/>	PZBONZAI		Not Operating Central Processing Complex (CPC)

NEXTGEN: New Workload - Mozilla Firefox

9.60.92.193 https://9.60.92.193/hmc/wcd/T893

Workload Created - My Ensemble

Workload "Weinheimer Agricultural Parts" has been created.
 Launch [Workload Details](#) to view performance policy activation progress.
 Launch [Workload Report](#) to monitor the workload.

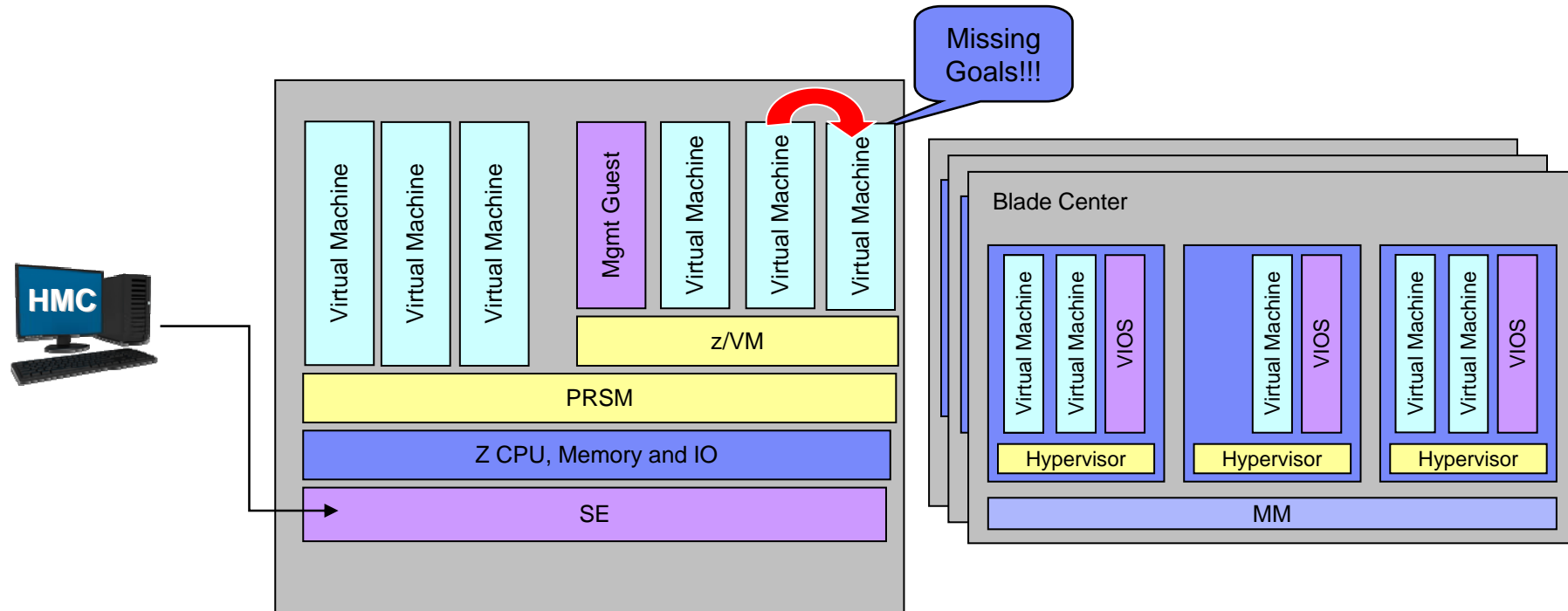
OK

Tasks: My Ensemble

- Ensemble Details
 - Toggle Lock
- Configuration
 - Configure Ensemble MAC Prefix
 - Delete Ensemble
 - Manage Storage Resources
 - Manage Virtual Networks
 - New Workload
 - Reserve MAC Address Prefixes
- Monitor
 - Load Balancing Report
 - Workload Report

Status: Exceptions and Messages

Managing Resources across z/VM Virtual Machines



- Manage CPU resources across z/VM virtual machines
 - Detect that a virtual machine is part of a workload not achieving its goals
 - Determine that virtual machine performance can be improved with additional resources
 - Project effect on all relevant Workloads of moving resources to virtual machine
 - If good trade-off based on policy, redistribute resources

IBM zEnterprise System:

A revolutionary change has come to IT bringing a new dimension in computing

- Redefining IT frameworks to bring change to operational silos and extend System z governance to z/VM virtual machines and blades
- Driving business decisions based on insight rather than hindsight
- Improving agility to compete with consolidation and simplification
- Delivering consistent business controls across applications and platforms
- Focused on integration and collaboration to fuel business growth



¹ All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

Thank you