zEnterprise Unified Resource Manager

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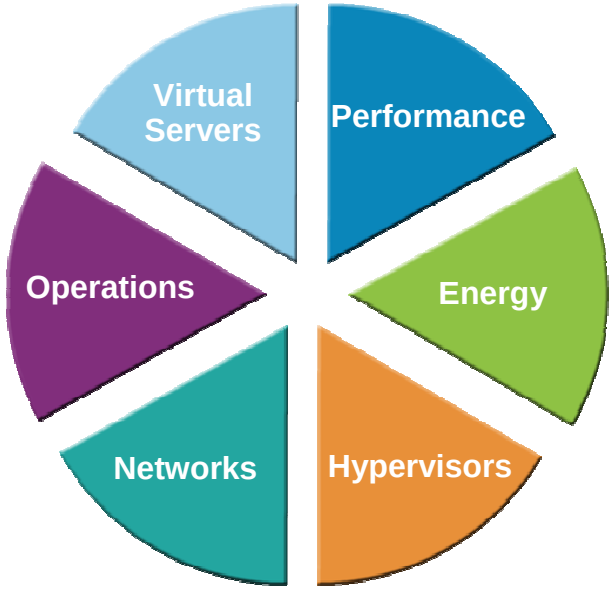
IBM Systems & Technology Group

August 3, 2010
Session Number 7540

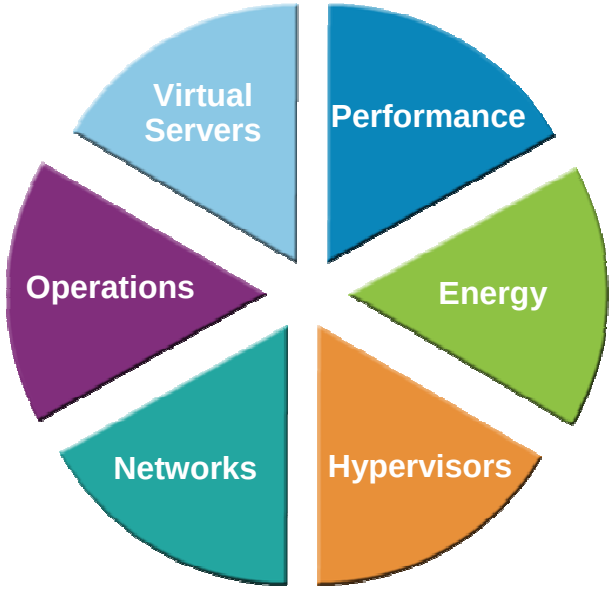
Agenda

- What is Unified Resource Manager?
- Management Enablement Levels
- Use Case Scenario
- Brief Introduction to Additional Management Components and Related Facilities



Related Deeper-Dive Sessions

- **Tuesday, August 3**
  - **Platform Performance Management Overview**
    Hiren Shah , IBM Corporation
    4:30 p.m. - 5:30 p.m.
- **Wednesday, August 4**
  - **zEnterprise Unified Resource Manager Overview (focus on z/VM)**
    Romney White
    11:00 a.m. - 12:00 p.m.
  - **zEnterprise System - Network Architecture and Virtualization Overview**
    Alfred B. Christensen, Gus Kassimis
    1:30 p.m. - 2:30 p.m.
- **Thursday, August 5**
  - **Energy Management for zEnterprise**
    Andreas Bieswanger
    8:00 a.m. - 9:00 a.m.
  - **z/OS Software Positioning for the IBM zEnterprise System**
    Gregory Daynes
    3:00 p.m. - 4:00 p.m.



zEnterprise Unified Resource Manager
Transforming the way resources are managed and deployed

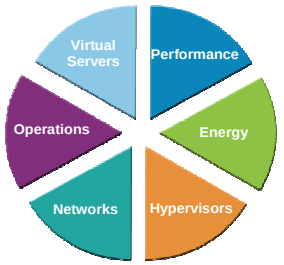
What is it?

*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.*

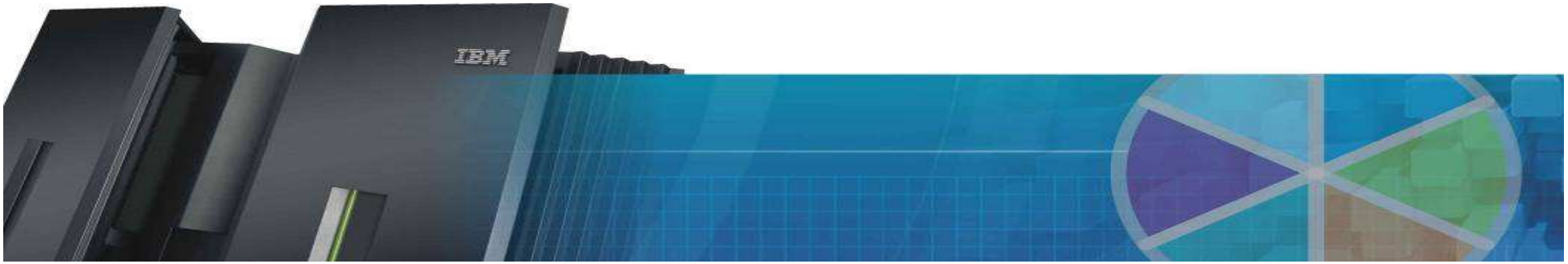
How is it different?

- **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:** Virtual machines and blades able to perform hardware problem detection, reporting and call home

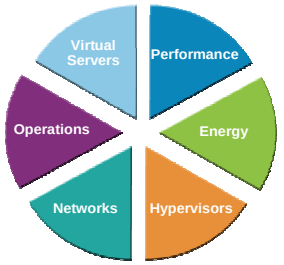
Unified Resource Manager
Two suites of tiered functionality



- ***Manage***
  - Monitor and trend reporting of CPU energy efficiency.
  - New dashboard interface enabling a broader view of system resource consumption.
  - Integrated hardware / asset management across all elements of the system.
  - Private and physically isolated connections for secure support and data sharing.
  - Administrative simplification (wizard) for virtual server provisioning and enablement of integrated storage and network across hypervisors.

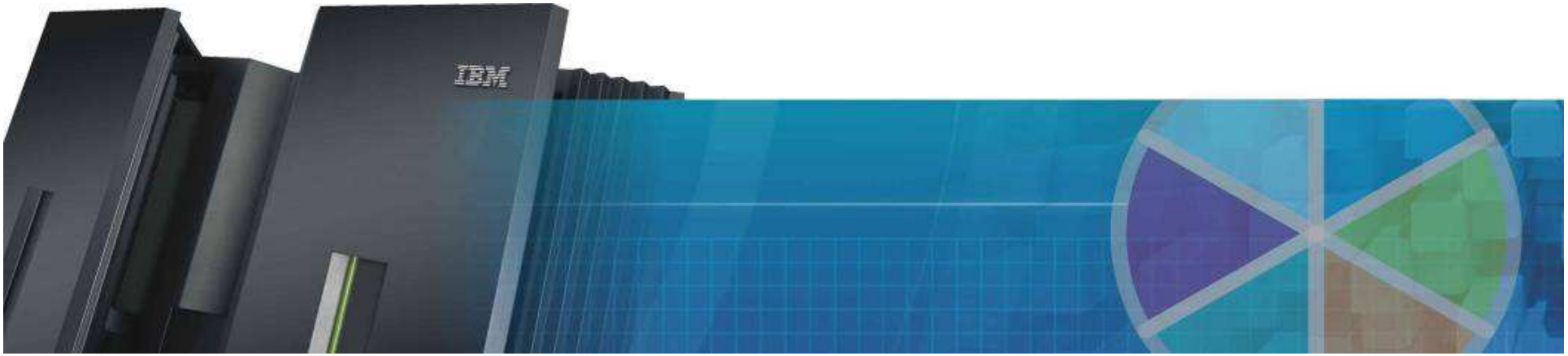


Unified Resource Manager
Two suites of tiered functionality



SHARE
Technology • Connections • Results

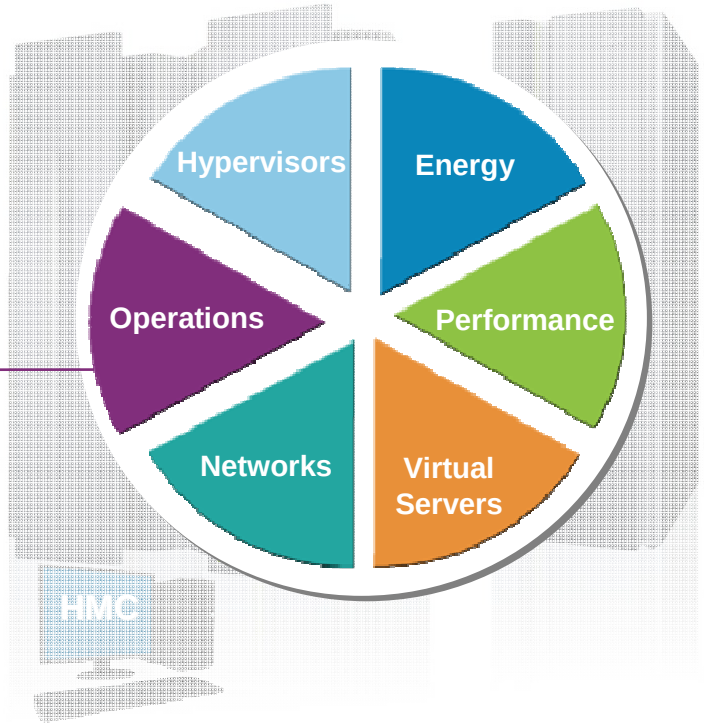
- ***Automate***
  - Additional wizard function to set up resources associated with a workload the capability to associate those resources with a named business process.
  - Ability to manage to a user defined performance service level policy and enable performance monitoring, reporting and resource optimization.
  - Static power savings and energy management capabilities.



zEnterprise Unified Resource Manager
Hardware Management

Operational Controls

- Auto-discovery and configuration support for new resources
  - Vital Product Data support for optimizers and Blades, ability to display and manage layout of zBX frame, Capacity on Demand support for permanent customer-initiated upgrades
- Cross platform hardware problem detection, reporting and call home.
  - Includes automatic error logging, FFDC data collection, manual problem reporting, and guided repair and verification
- Physical hardware configuration, backup and restore
  - Change management support for firmware in BladeCenter and Blades
  - Accelerator configuration data is backed up as part of System z Support Element backup and restored on replacement of accelerator
  - Operations Management
    - Blade power controls
    - Upstream SNMP/CIM API automation management
    - Event notification (based on logged events or state changes)
    - Scheduled operations (firmware update, activate, deactivate, etc.)
    - Time Synchronization
    - Operational Network Settings (IP addresss, group name, role)
    - Launch Full Device Console



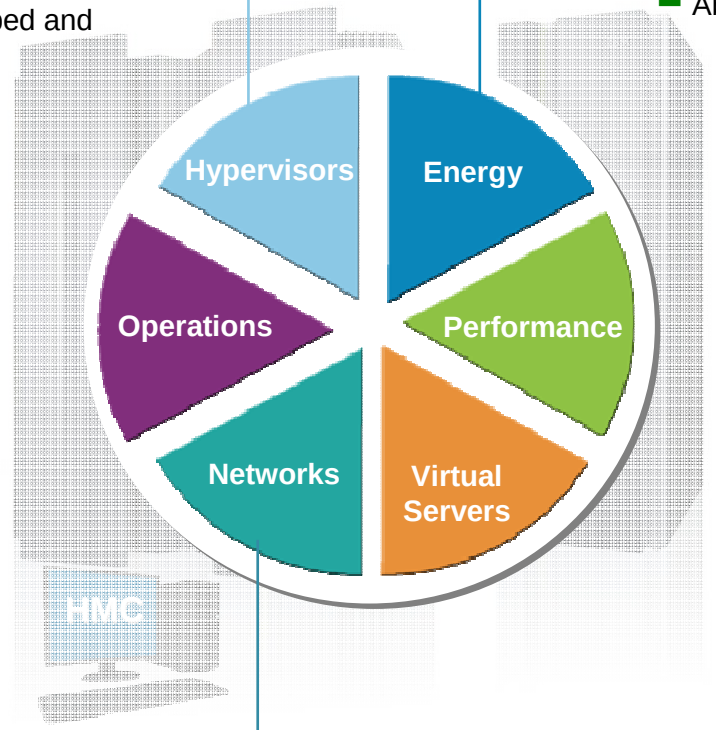
- Business management functions including user management, auditing, device status, service network configuration, and documentation, are updated to incorporate zBX components.
- Delivery of system activity using new user
- Ensemble creation

Key
- Manage suite
- Automate suite

zEnterprise Unified Resource Manager
Hardware 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.

Energy Management
- Monitoring and trend reporting of CPU energy efficiency.
- Ability to query maximum potential power.



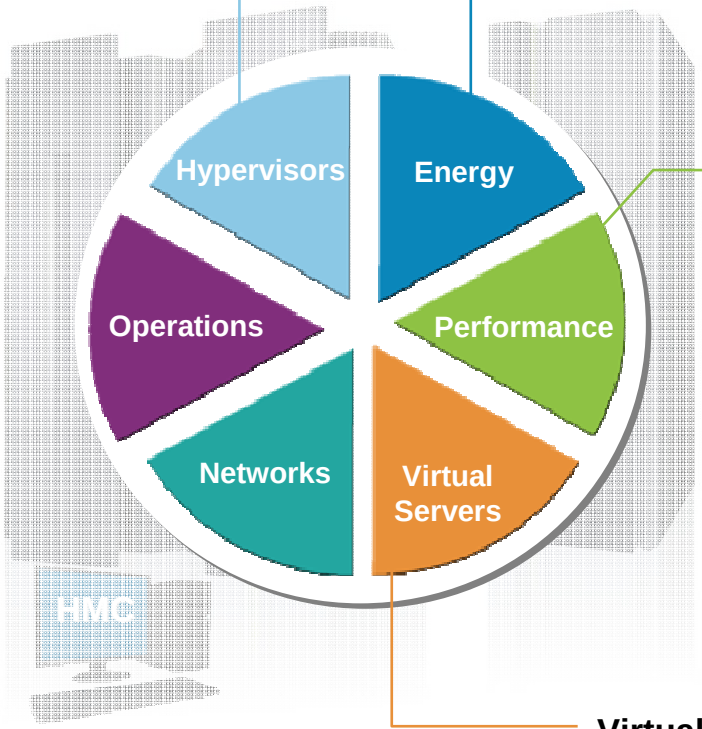
Network Management
- Management of virtual networks including access control

Key
- Manage suite
- Automate suite

zEnterprise Unified Resource Manager
Platform Management

Hypervisor Management
- Manage and control communication between virtual server operating systems and the hypervisor.

Energy Management
- Static power savings

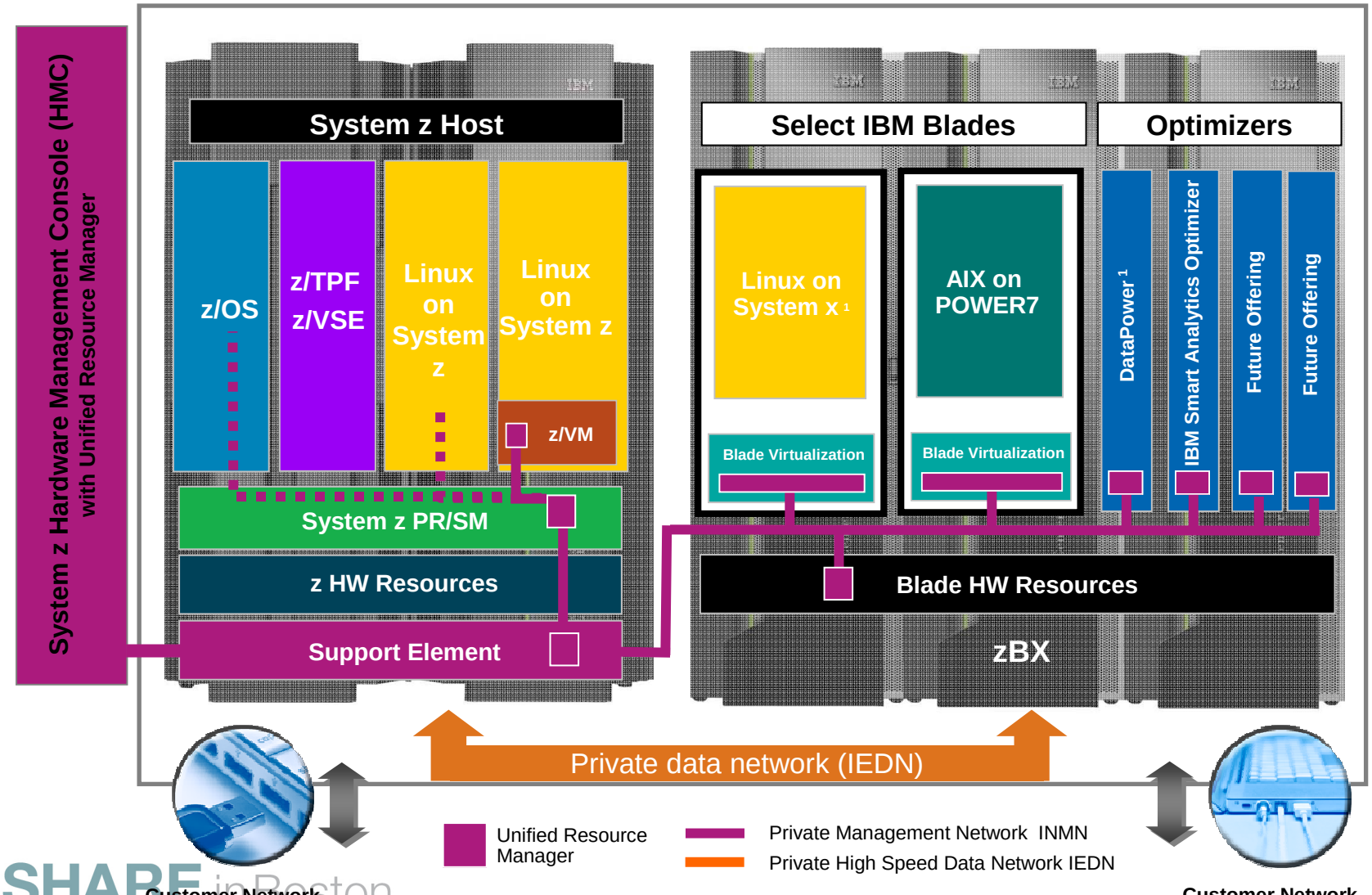


Workload Awareness and Platform Performance Management
- Wizard-driven management of resources in accordance with specified business service level objectives
- HMC provides a single consolidated and consistent view of resources
- Monitor resource use within the context of a business workload
- Define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

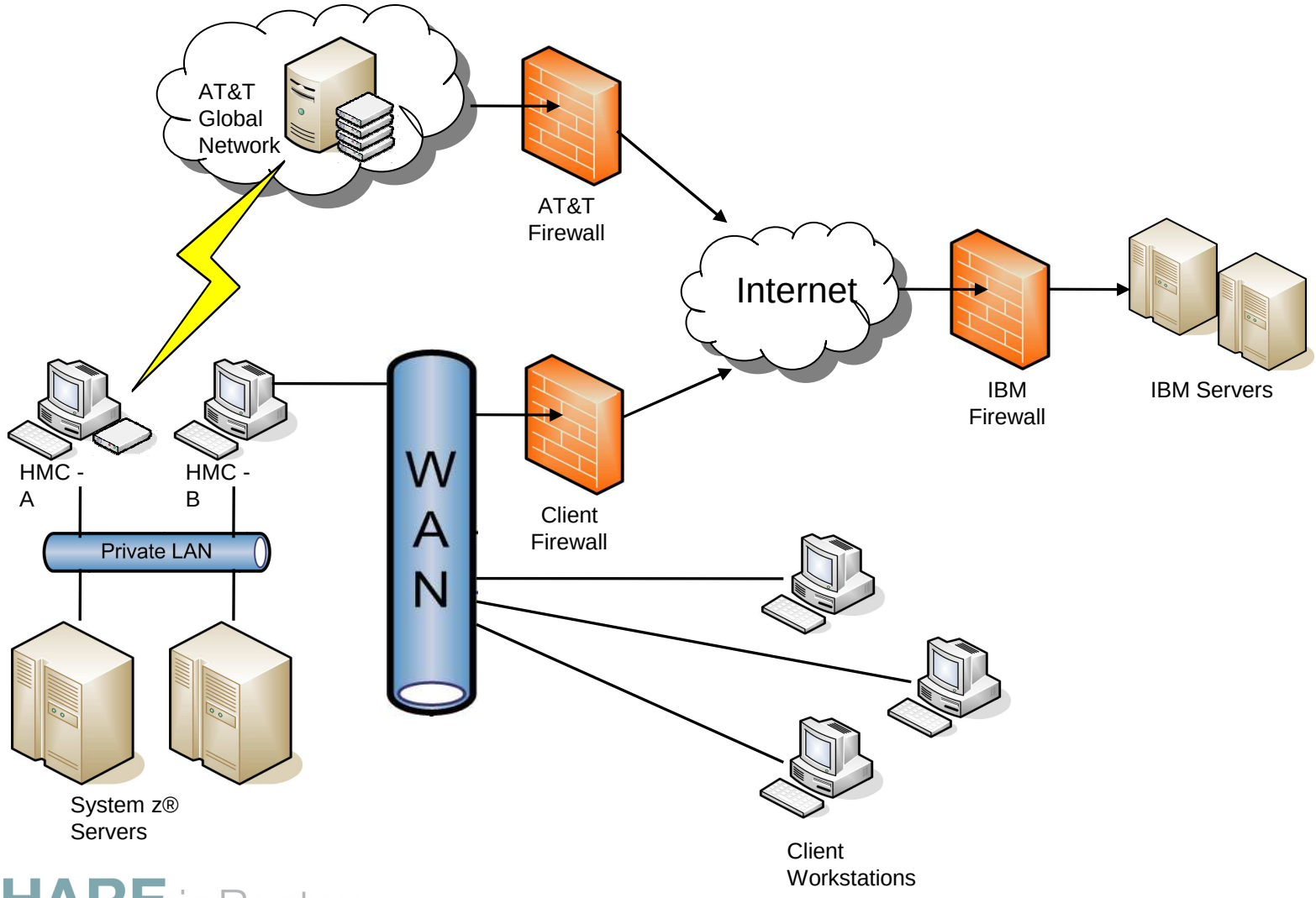
Key
- Manage suite
- Automate suite

Putting zEnterprise System to the task
Use the smarter solution to improve your application design



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

HMC Connectivity



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 Ensembles
Clustering these heterogeneous systems to create an ensemble

What is it?

Unified Resource Manager allows for the management and optimization of a zEnterprise System as a single resource pool.

An ENSEMBLE is a group of one or more zEnterprise Systems to be managed as one single logical virtualized system. Each zEnterprise is a single z196 with 0-1 zBX attached.

Now business objectives can be put in terms of a performance policy for a workload that spans across the ensemble – the multiple systems.

When multiple workloads are running across the ensemble, each can have it's own business objectives, and Unified Resource Manager can share the resources to meet all the business objectives.

How is it different?

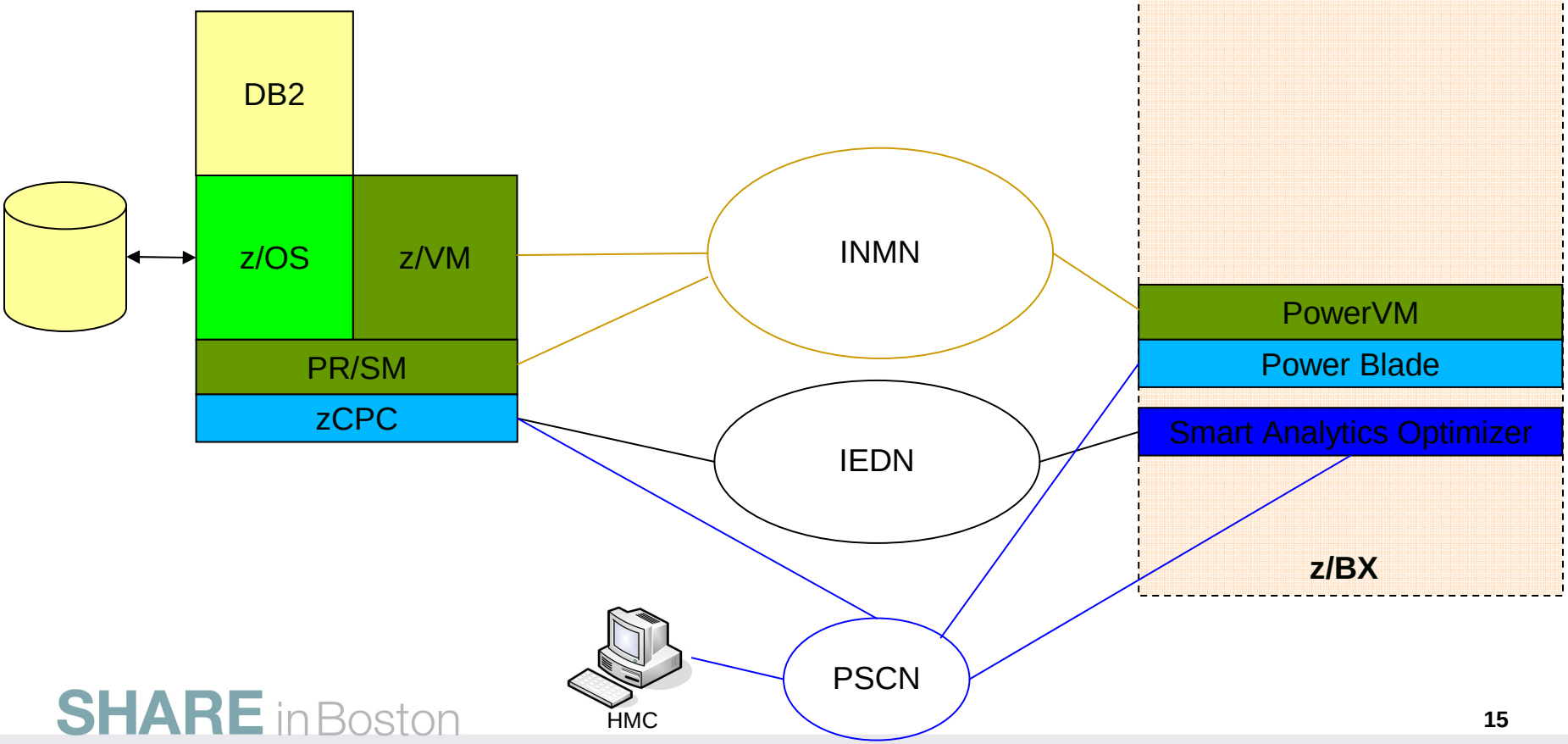
- **Workload awareness:** Unified Resource Manager is able to optimize the **total** resources in the ensemble in accordance with the policies set for different workloads.
- **Single point of control:** Management of all resources in the ensemble is centralized on one Hardware Management Console. Dashboard monitoring of CPU resources and energy can allow time to react and make adjustments if necessary.
- **Integration:** The integrated management and built in networks of the ensemble are designed to reduce errors associated with distributed configurations. Reduction of complexity in day-to-day operations.

Use Case Scenario

- Workload components
  - z/OS DB2
  - IBM Smart Analytics Optimizer
  - Linux on z with WAS on z/VM
  - AIX on Power Web server
- Existing infrastructure
  - System z CPC
  - z/OS LPAR with DB2
  - z/VM LPAR
- New infrastructure
  - INMN and IEDN
  - zBX Model 2
  - Smart Analytics Optimizer
  - Power Blade

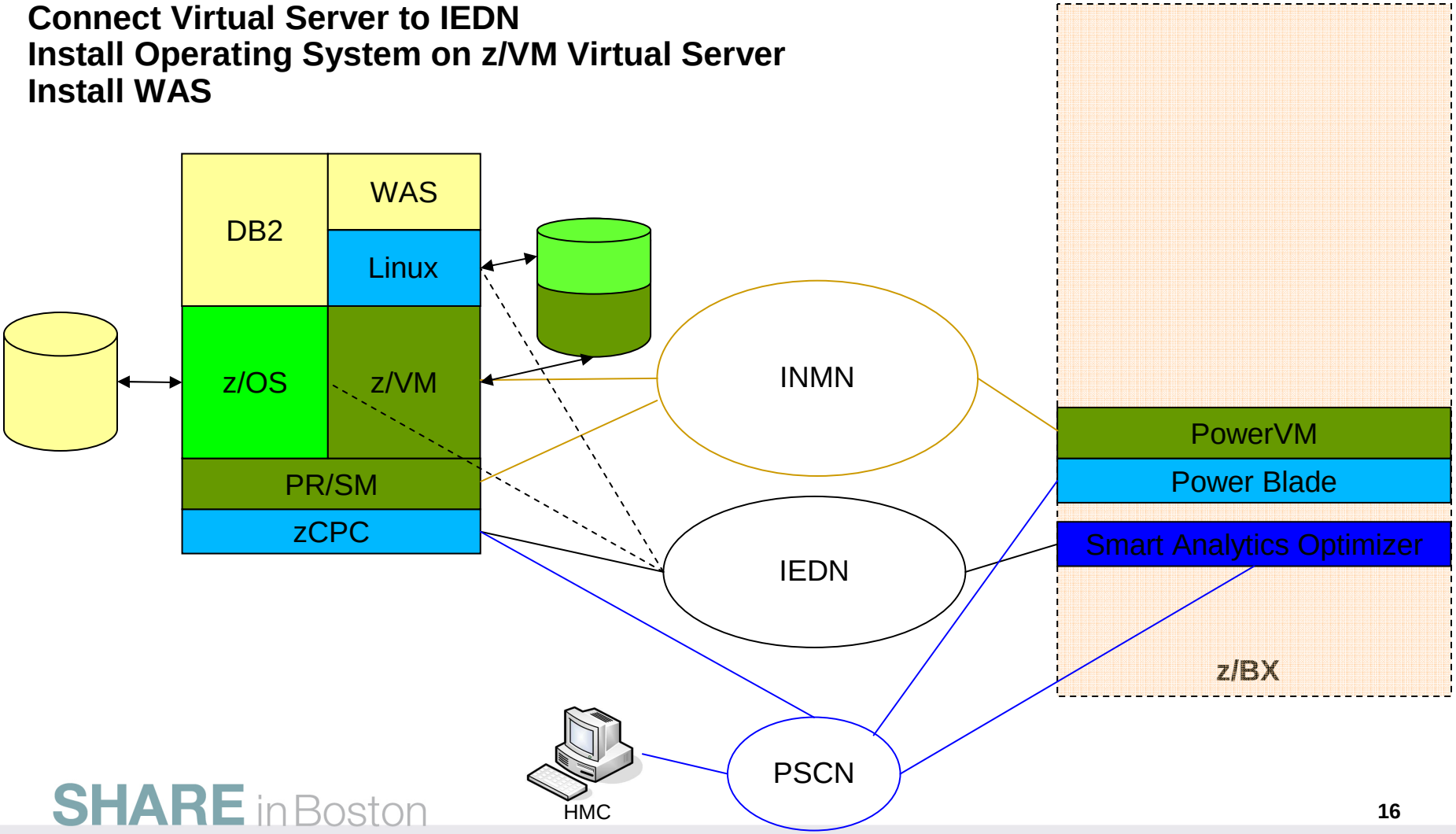
Create Ensemble:

Add zBX containing Smart Analytics Optimizer and Power blade
Extend PSCN into zBX
Use Unified Resource Manager to create an ensemble
- Hardware resources in the zBX and the associated internal networks are discovered and identified automatically.
- Entitlements are verified and appropriate firmware is loaded into components



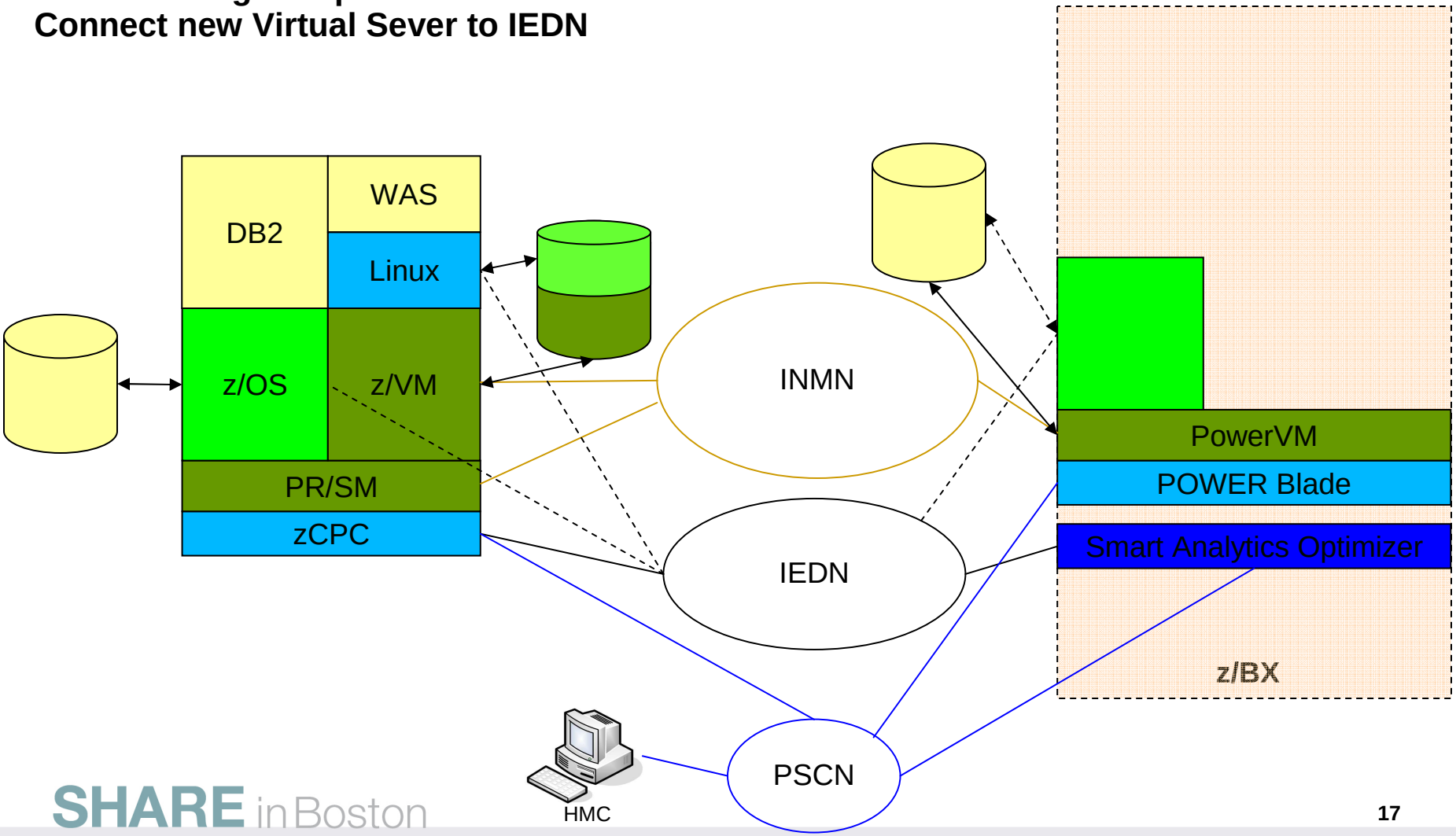
CPC:

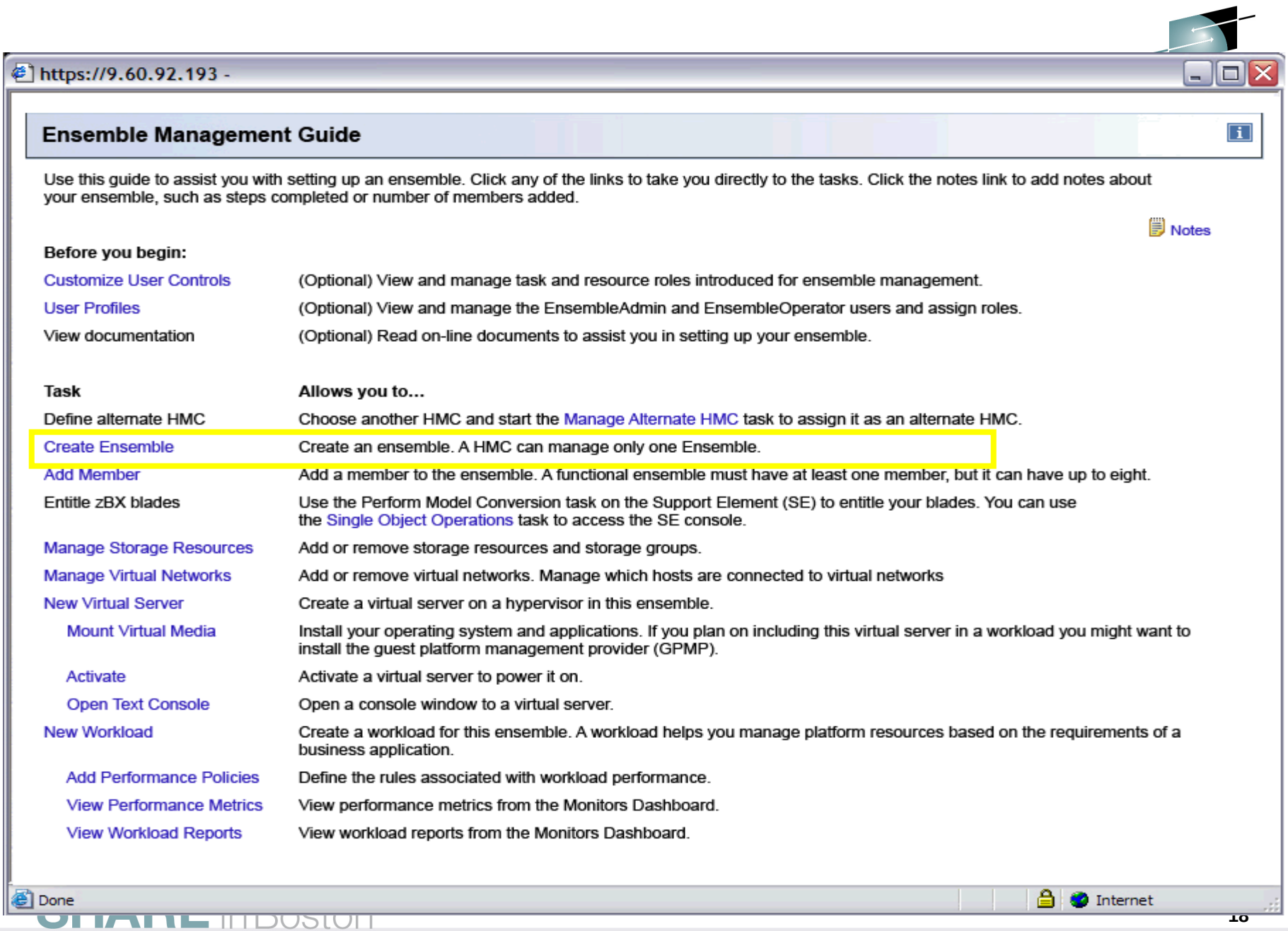
Associate Smart Analytics Optimizer with z/OS LPAR
Associate Storage Resources with z/VM LPAR
Create Virtual Server on z/VM
Define Storage Requirements for new Virtual Server
Connect Virtual Server to IEDN
Install Operating System on z/VM Virtual Server
Install WAS

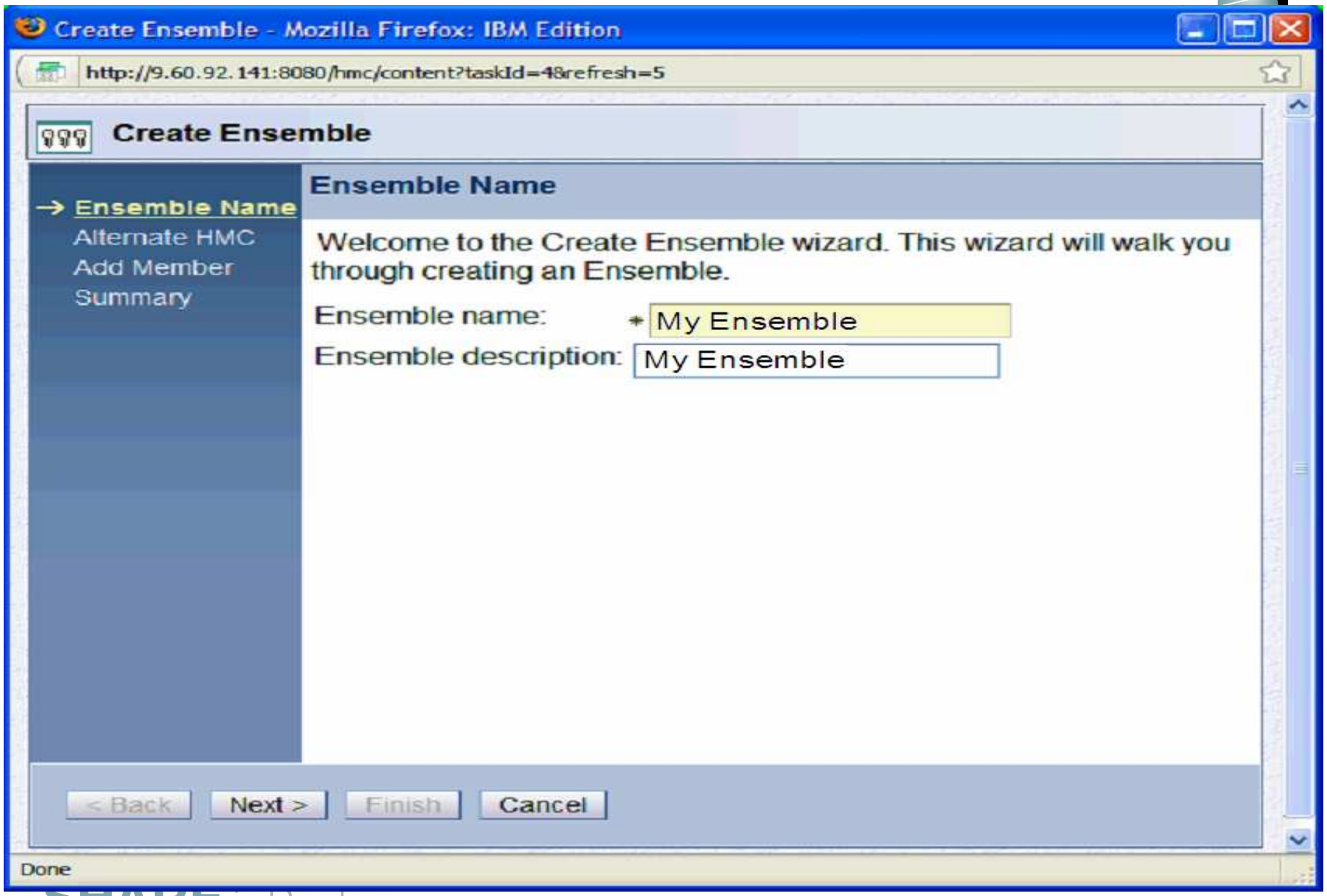


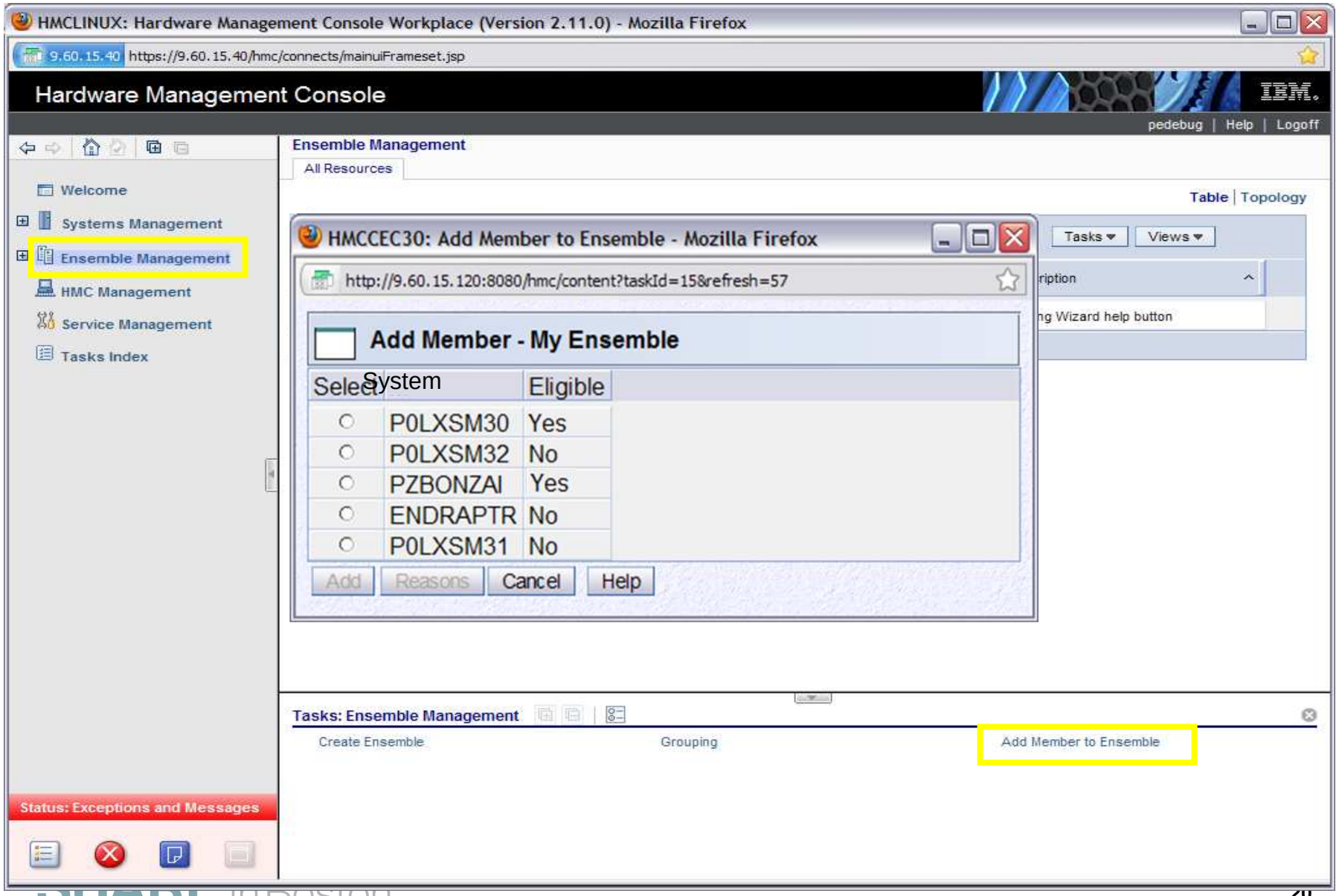
zBX:

Associate Storage Resources with p Blade
Create Virtual Server on p Blade
Define Storage Requirements of new Virtual Server
Connect new Virtual Sever to IEDN




https://9.60.92.193 -
Ensemble Management Guide
Use this guide to assist you with setting up an ensemble. Click any of the links to take you directly to the tasks. Click the notes link to add notes about your ensemble, such as steps completed or number of members added.
Notes
Before you begin:
Customize User Controls
(Optional) View and manage task and resource roles introduced for ensemble management.
User Profiles
(Optional) View and manage the EnsembleAdmin and EnsembleOperator users and assign roles.
View documentation
(Optional) Read on-line documents to assist you in setting up your ensemble.
Task
Allows you to...
Define alternate HMC
Choose another HMC and start the Manage Alternate HMC task to assign it as an alternate HMC.
Create Ensemble
Create an ensemble. A HMC can manage only one Ensemble.
Add Member
Add a member to the ensemble. A functional ensemble must have at least one member, but it can have up to eight.
Entitle zBX blades
Use the Perform Model Conversion task on the Support Element (SE) to entitle your blades. You can use the Single Object Operations task to access the SE console.
Manage Storage Resources
Add or remove storage resources and storage groups.
Manage Virtual Networks
Add or remove virtual networks. Manage which hosts are connected to virtual networks
New Virtual Server
Create a virtual server on a hypervisor in this ensemble.
Mount Virtual Media
Install your operating system and applications. If you plan on including this virtual server in a workload you might want to install the guest platform management provider (GPMP).
Activate
Activate a virtual server to power it on.
Open Text Console
Open a console window to a virtual server.
New Workload
Create a workload for this ensemble. A workload helps you manage platform resources based on the requirements of a business application.
Add Performance Policies
Define the rules associated with workload performance.
View Performance Metrics
View performance metrics from the Monitors Dashboard.
View Workload Reports
View workload reports from the Monitors Dashboard.
Done
Internet


Create Ensemble - Mozilla Firefox: IBM Edition
http://9.60.92.141:8080/hmc/content?taskId=4&refresh=5
Create Ensemble
Ensemble Name
Alternate HMC
Add Member
Summary
Ensemble Name
Welcome to the Create Ensemble wizard. This wizard will walk you through creating an Ensemble.
Ensemble name:
My Ensemble
Ensemble description:
My Ensemble
< Back
Next >
Finish
Cancel
Done


HMCLINUX: Hardware Management Console Workplace (Version 2.11.0) - Mozilla Firefox
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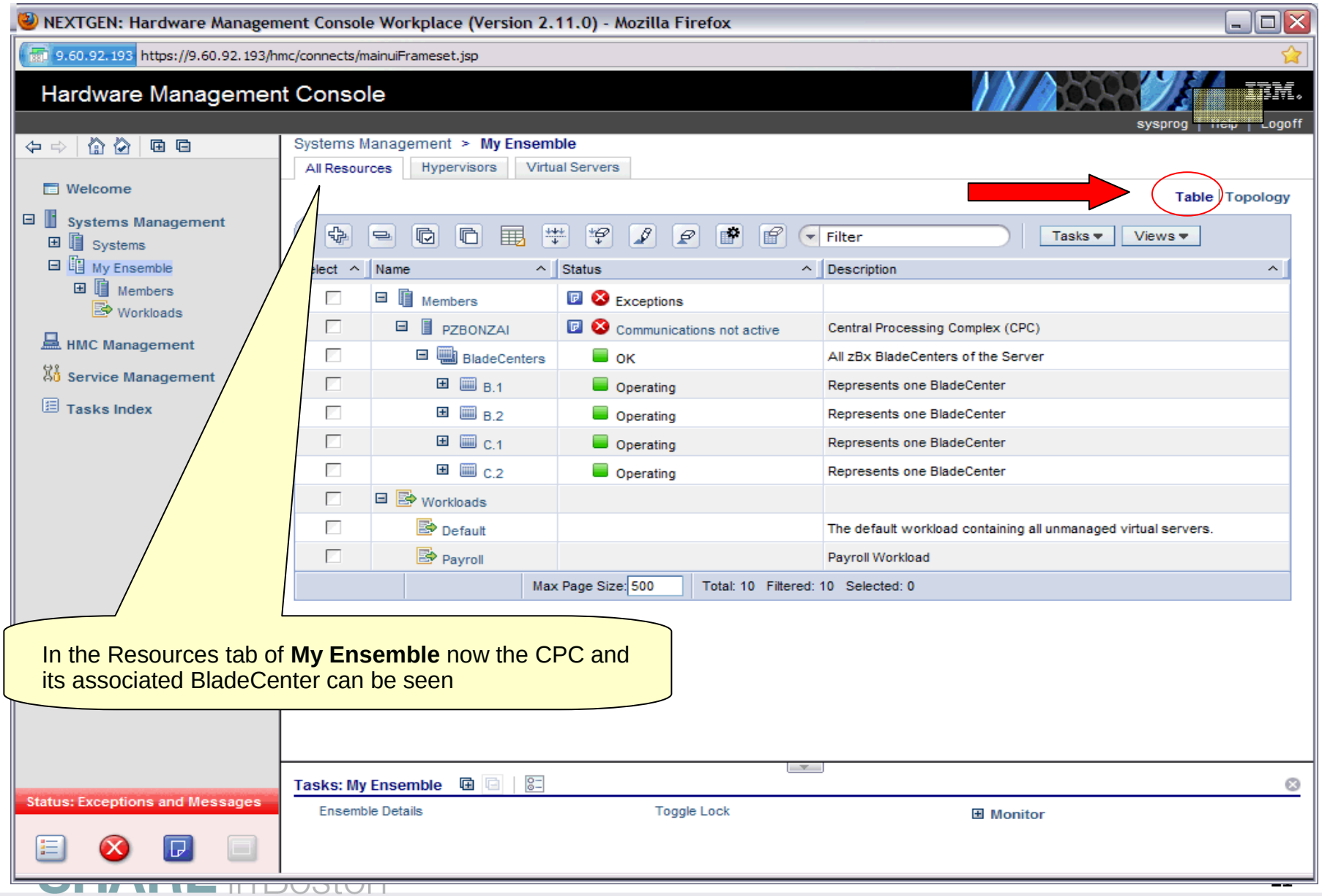
https://9.60.15.40/hmc/connects/mainuiFrameset.jsp
Hardware Management Console
IBM.
pedebug | Help | Logoff
Welcome
Systems Management
Ensemble Management
HMC Management
Service Management
Tasks Index
Ensemble Management
All Resources
Table | Topology
HMCCEC30: Add Member to Ensemble - Mozilla Firefox
http://9.60.15.120:8080/hmc/content?taskId=15&refresh=57
Tasks
Views
Add Member - My Ensemble
Select
System
Eligible
P0LXSM30 Yes
P0LXSM32 No
PZBONZAI Yes
ENDRAPTR No
P0LXSM31 No
Add
Reasons
Cancel
Help
Tasks: Ensemble Management
Create Ensemble
Grouping
Add Member to Ensemble
Status: Exceptions and Messages


NEXTGEN: Hardware Management Console Workplace (Version 2.11.0) - Mozilla Firefox
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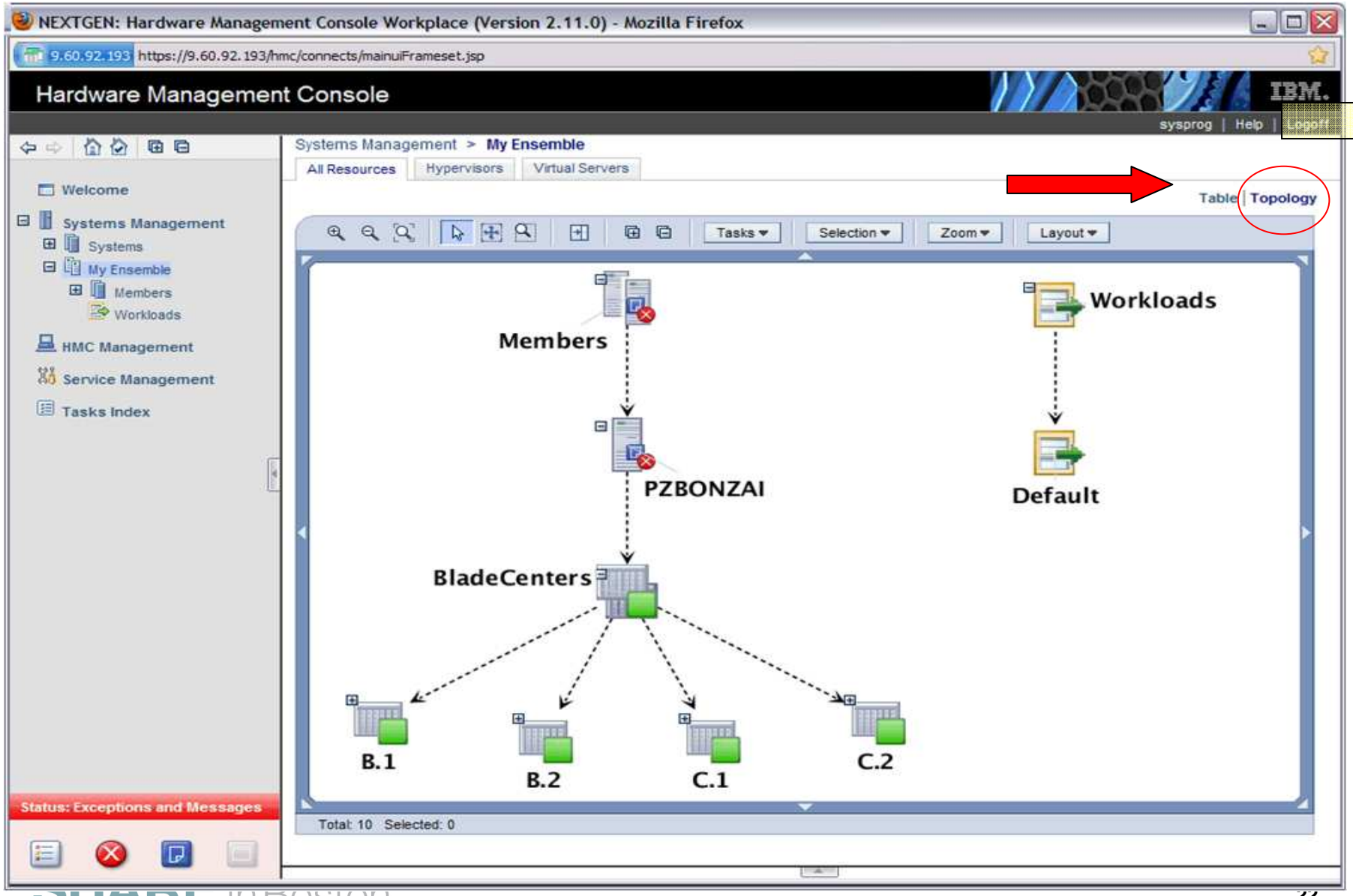
Hardware Management Console
IBM.
sysprog | Help | Logoff
Welcome
Systems Management
Systems
My Ensemble
Members
Workloads
HMC Management
Service Management
Tasks Index
Systems Management > My Ensemble
All Resources
Hypervisors
Virtual Servers
Table
Topology
Filter
Tasks
Views
Name
Status
Description
Members
Exceptions
PZBONZAI
Communications not active
Central Processing Complex (CPC)
BladeCenters
OK
All zBx BladeCenters of the Server
B.1
Operating
Represents one BladeCenter
B.2
Operating
Represents one BladeCenter
C.1
Operating
Represents one BladeCenter
C.2
Operating
Represents one BladeCenter
Workloads
Default
The default workload containing all unmanaged virtual servers.
Payroll
Payroll Workload
Max Page Size: 500
Total: 10 Filtered: 10 Selected: 0
In the Resources tab of My Ensemble now the CPC and its associated BladeCenter can be seen
Tasks: My Ensemble
Ensemble Details
Toggle Lock
Monitor
Status: Exceptions and Messages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Tasks
Selection
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Layout
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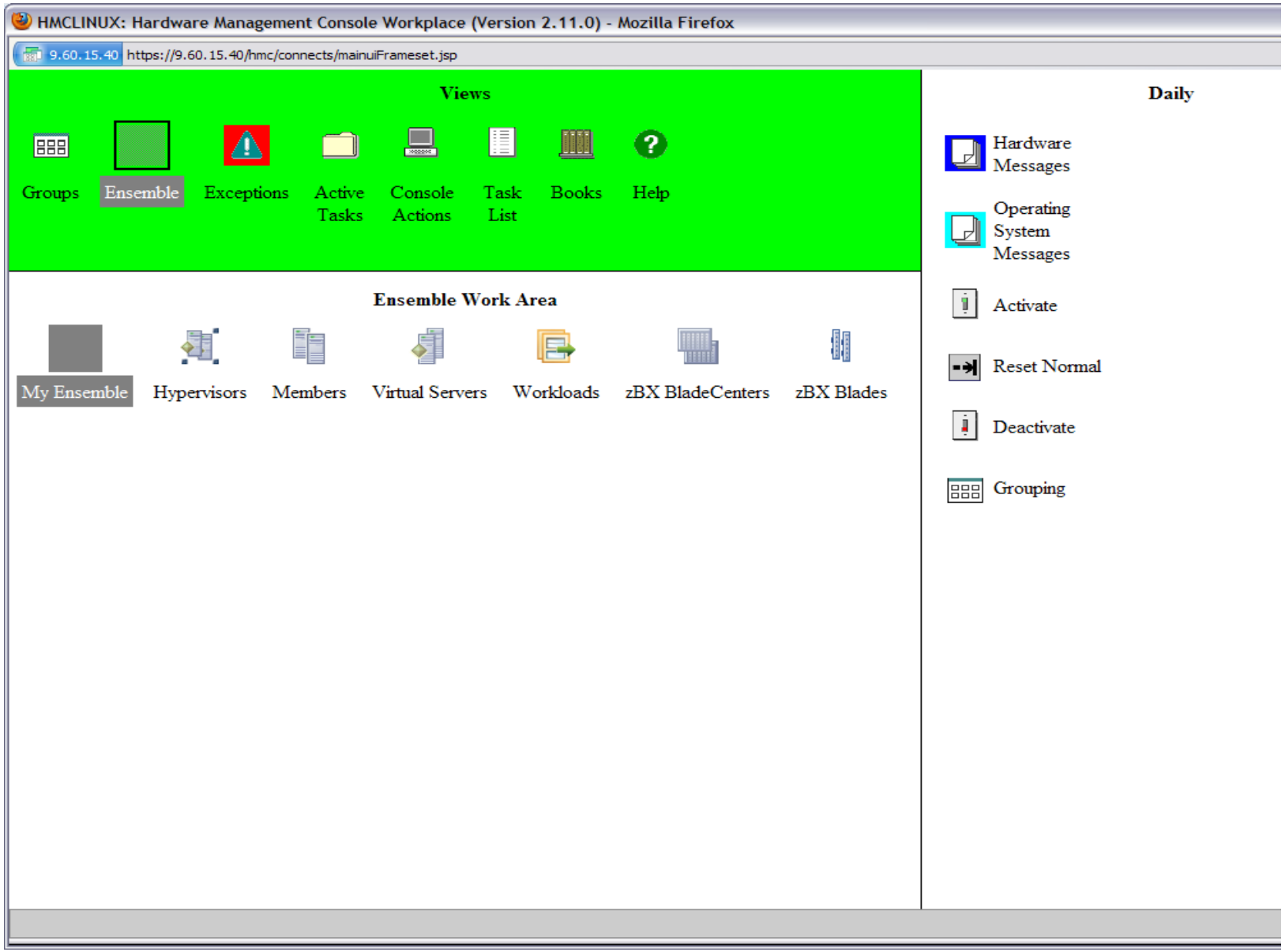
Workloads
PZBONZAI
Default
BladeCenters
B.1
B.2
C.1
C.2
Total: 10 Selected: 0


HMCLINUX: Hardware Management Console Workplace (Version 2.11.0) - Mozilla Firefox
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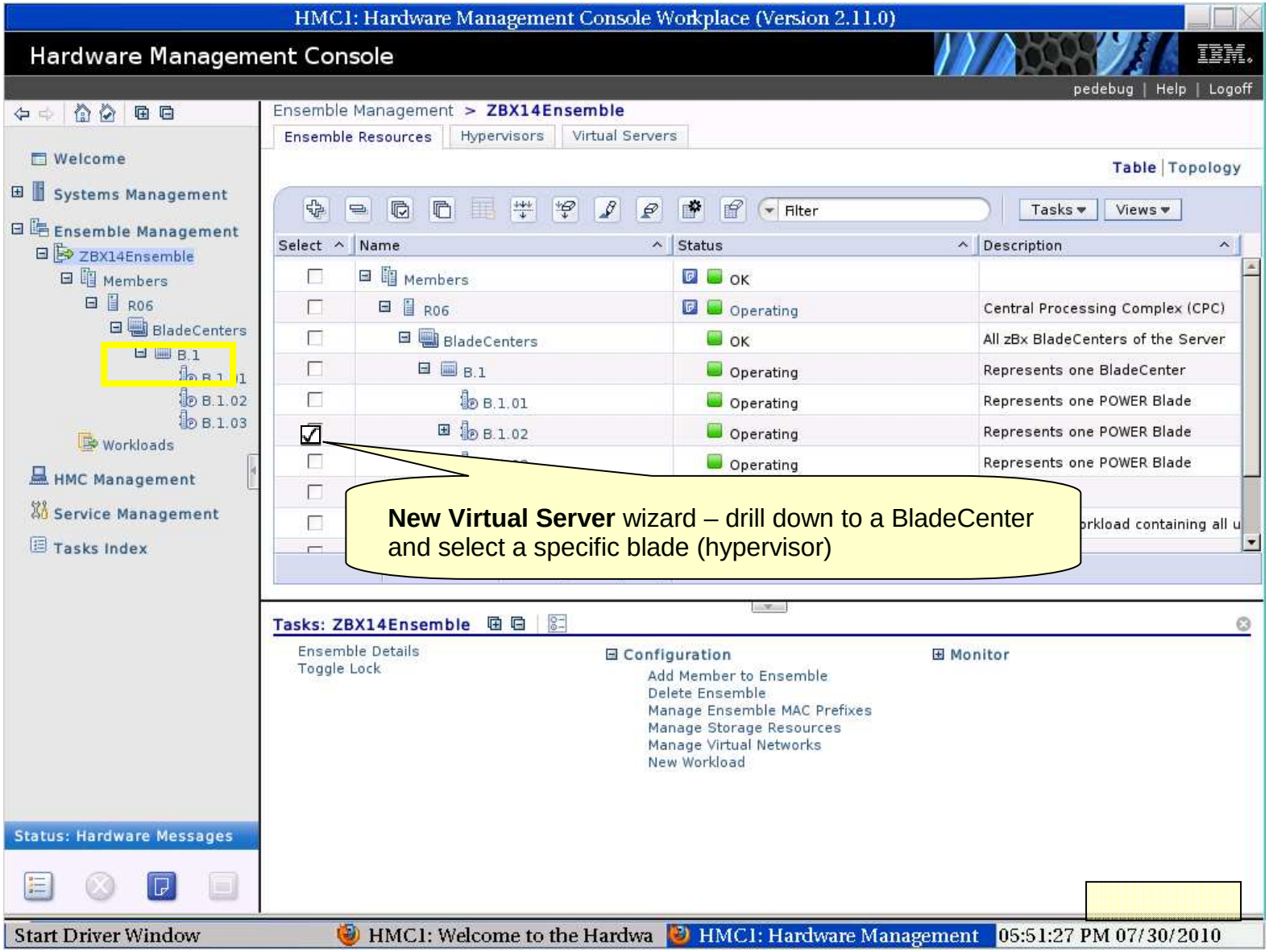
Views
Groups
Ensemble
Exceptions
Active Tasks
Console Actions
Task List
Books
Help
Ensemble Work Area
My Ensemble
Hypervisors
Members
Virtual Servers
Workloads
zBX BladeCenters
zBX Blades
Daily
Hardware Messages
Operating System Messages
Activate
Reset Normal
Deactivate
Grouping


HMC1: Hardware Management Console Workplace (Version 2.11.0)
Hardware Management Console
pedebug | Help | Logoff
Welcome
Systems Management
Ensemble Management
ZBX14Ensemble
Members
R06
BladeCenters
B.1
B.1.02
B.1.03
Workloads
HMC Management
Service Management
Tasks Index
Ensemble Management > ZBX14Ensemble
Ensemble Resources
Hypervisors
Virtual Servers
Table | Topology
Filter
Tasks
Views
Select
Name
Status
Description
Members
OK
R06
Operating
Central Processing Complex (CPC)
BladeCenters
OK
All zBx BladeCenters of the Server
B.1
Operating
Represents one BladeCenter
B.1.01
Operating
Represents one POWER Blade
B.1.02
Operating
Represents one POWER Blade
Operating
Represents one POWER Blade
New Virtual Server wizard – drill down to a BladeCenter and select a specific blade (hypervisor)
Tasks: ZBX14Ensemble
Ensemble Details
Toggle Lock
Configuration
Add Member to Ensemble
Delete Ensemble
Manage Ensemble MAC Prefixes
Manage Storage Resources
Manage Virtual Networks
New Workload
Monitor
Status: Hardware Messages
Start Driver Window
HMC1: Welcome to the Hardwa
HMC1: Hardware Management
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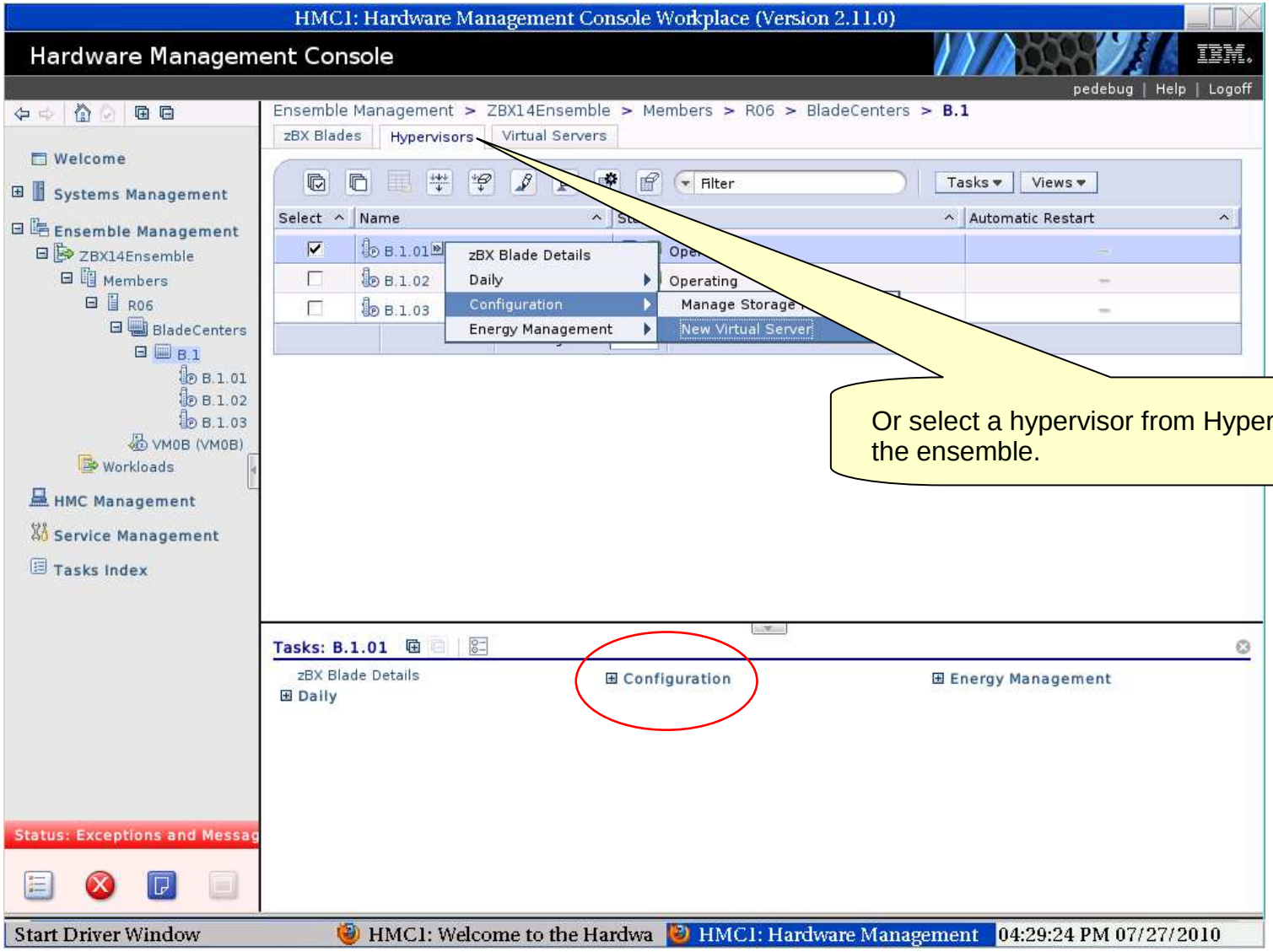
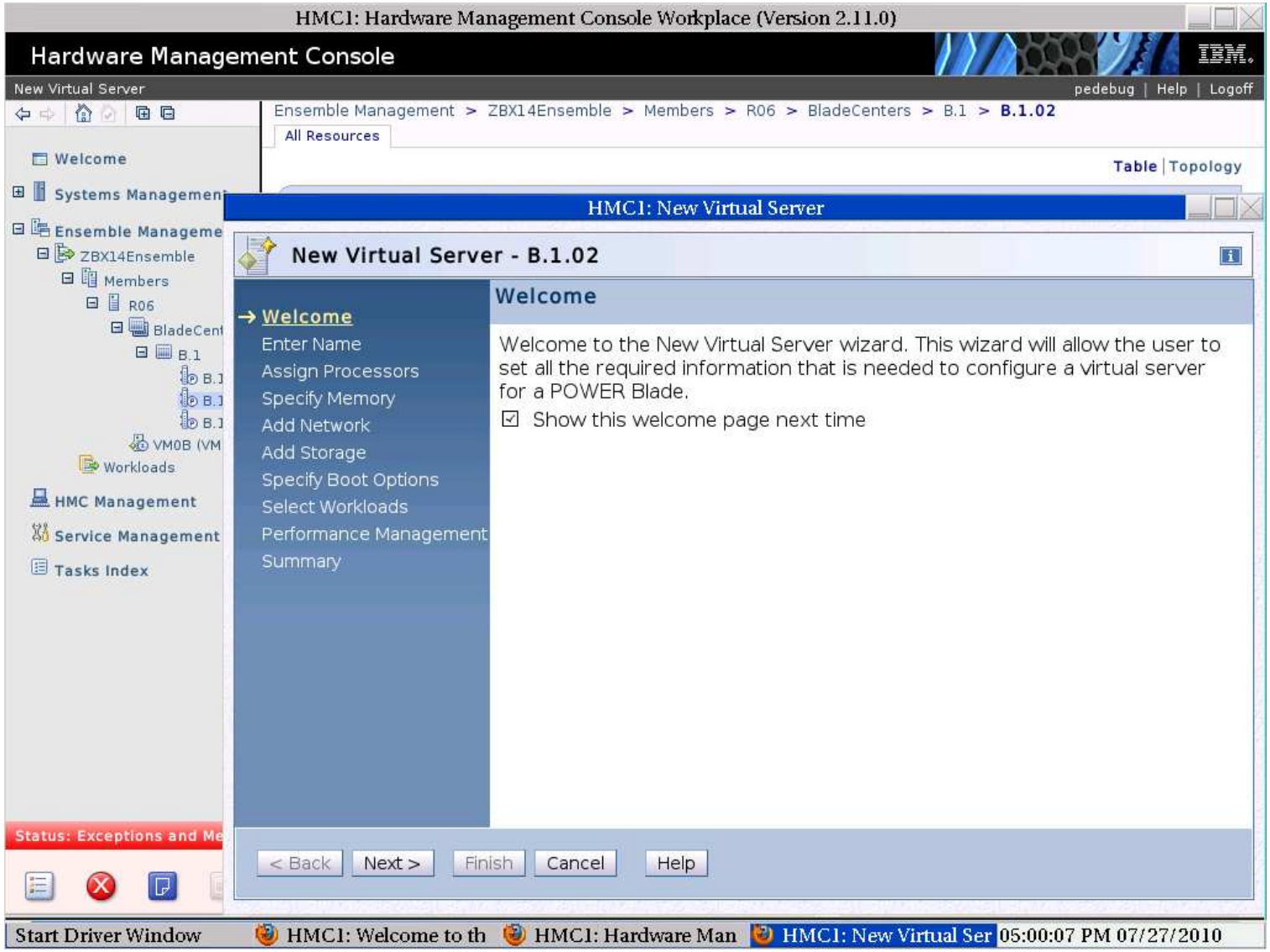
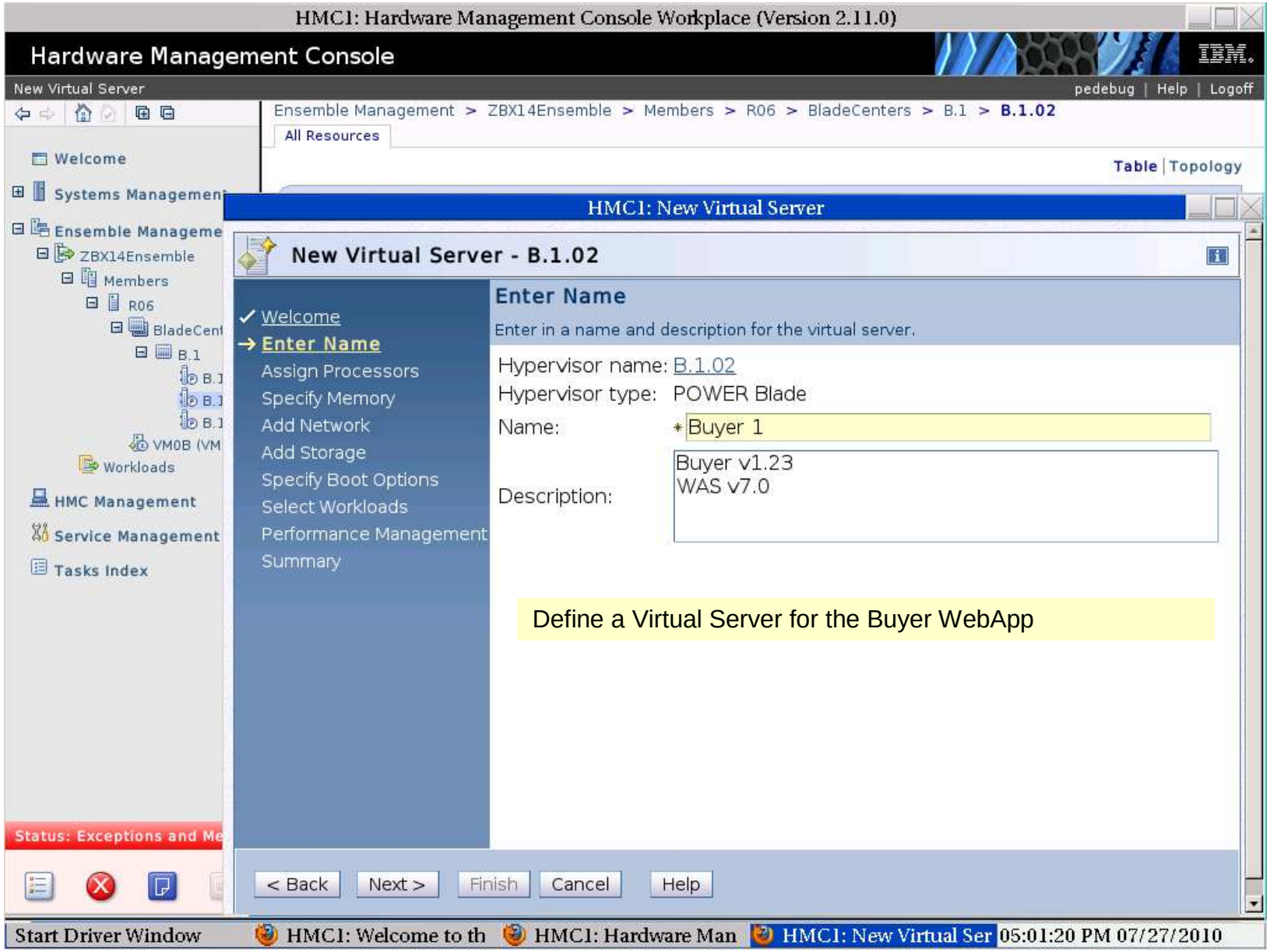
Create Virtual Server



Or select a hypervisor from Hypervisors tab of the ensemble.

Virtual Server Wizard



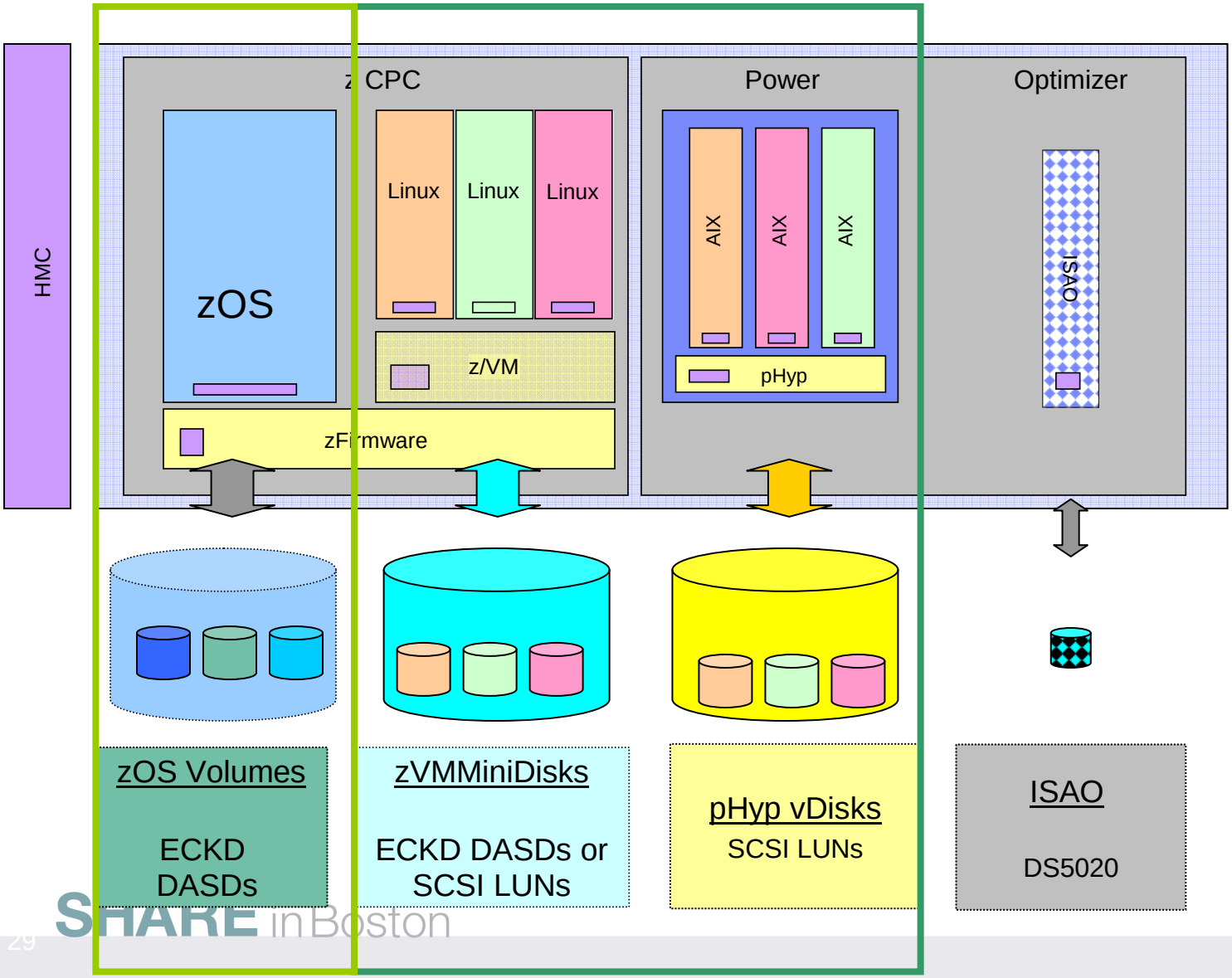


Define a Virtual Server for the Buyer WebApp

zNext Storage Management

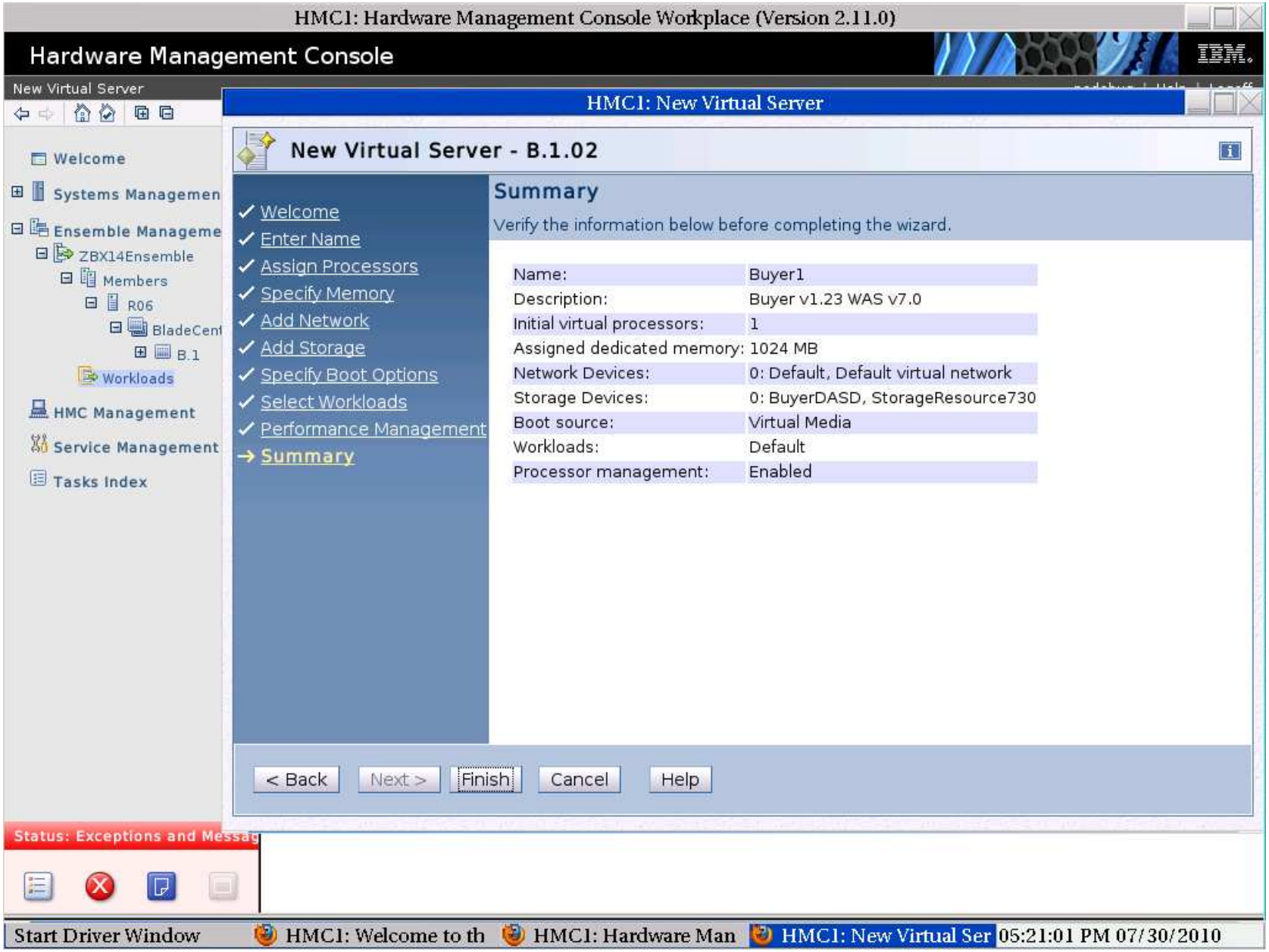
- Objective
  - Provide a single storage management interface in Unified Resource Manager
    - For ECKD and SCSI in z/VM and the IBM Blades
  - For z/VM and other hypervisors on IBM Blades
  - Supported by a new Storage Virtualization Manager (called SVM)
- What we are delivering
  - **Provide simplified and consistent storage management interface across different type of hypervisors**
  - Support existing z/VM storage management functions
  - Establish roles between server and storage admin
  - Provide interfaces to manage blade storage
  - Support for migration

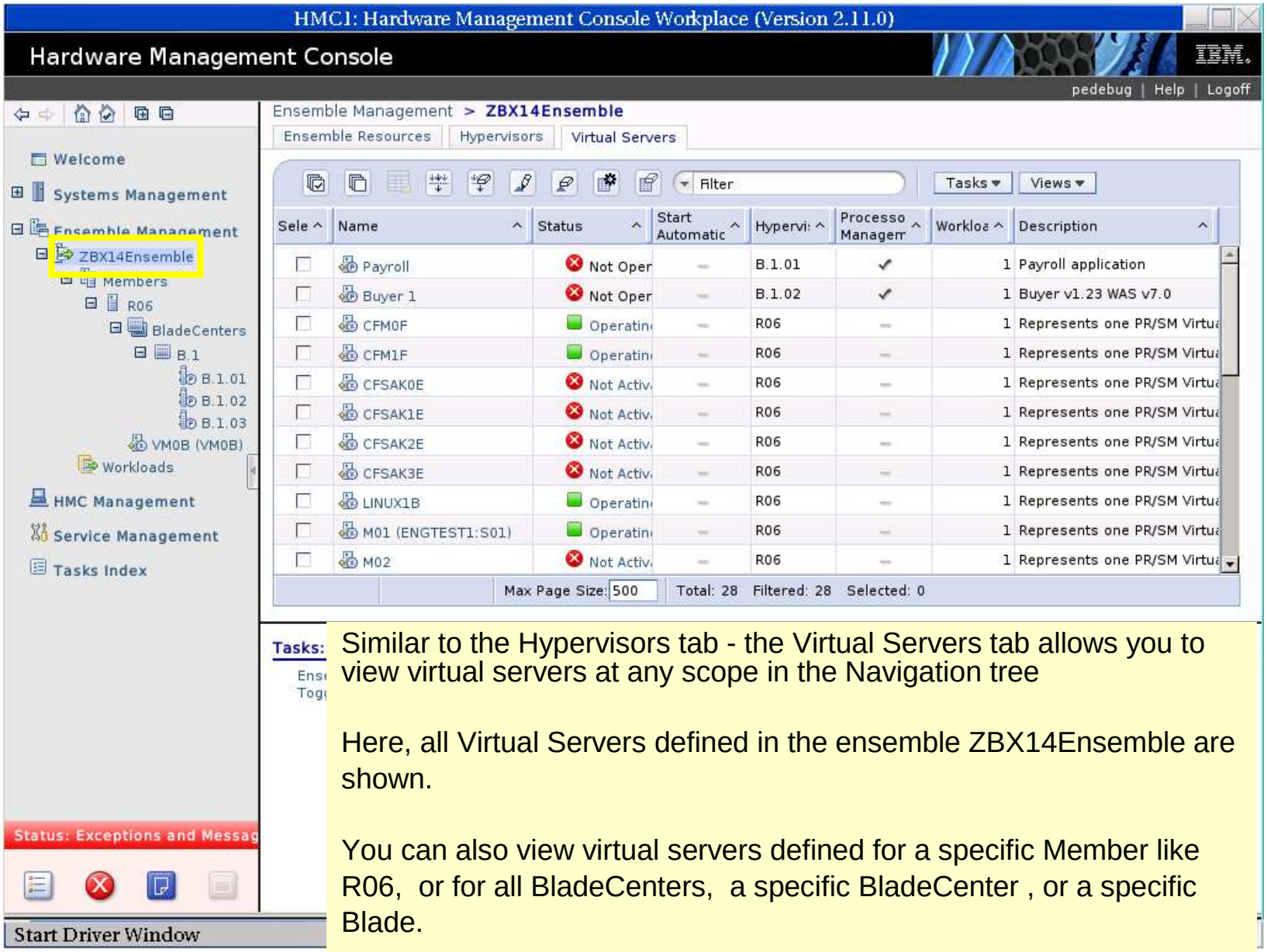
Storage in zNext



Steps to add storage to OS images running in native LPAR

- No change from current process (HCD, IOCDS, system specific files)
  - z/OS (can use new Automated Discovery and Configuration function in zCEC)
  - Linux on z
  - TPF
  - VSE
  - z/VM's system disks

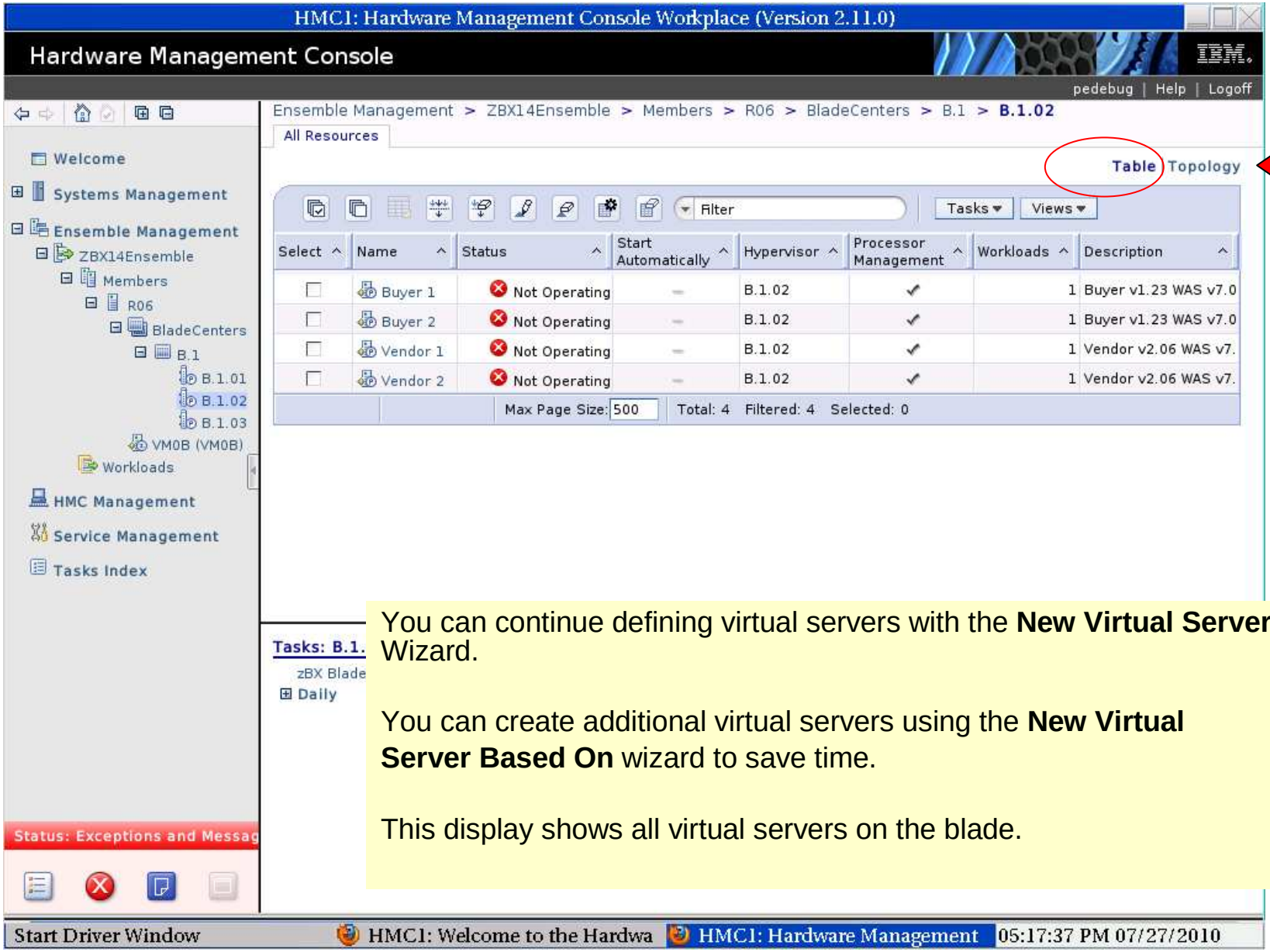

HMC1: Hardware Management Console Workplace (Version 2.11.0)
Hardware Management Console
New Virtual Server
Welcome
Systems Managemen
Ensemble Manageme
ZBX14Ensemble
Members
R06
BladeCent
B.1
Workloads
HMC Management
Service Management
Tasks Index
HMC1: New Virtual Server
New Virtual Server - B.1.02
Welcome
Enter Name
Assign Processors
Specify Memory
Add Network
Add Storage
Specify Boot Options
Select Workloads
Performance Management
Summary
Summary
Verify the information below before completing the wizard.
Name: Buyer1
Description: Buyer v1.23 WAS v7.0
Initial virtual processors: 1
Assigned dedicated memory: 1024 MB
Network Devices: 0: Default, Default virtual network
Storage Devices: 0: BuyerDASD, StorageResource730
Boot source: Virtual Media
Workloads: Default
Processor management: Enabled
< Back
Next >
Finish
Cancel
Help
Status: Exceptions and Messag
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: New Virtual Ser
05:21:01 PM 07/30/2010



Similar to the Hypervisors tab - the Virtual Servers tab allows you to view virtual servers at any scope in the Navigation tree

Here, all Virtual Servers defined in the ensemble ZBX14Ensemble are shown.

You can also view virtual servers defined for a specific Member like R06, or for all BladeCenters, a specific BladeCenter , or a specific Blade.

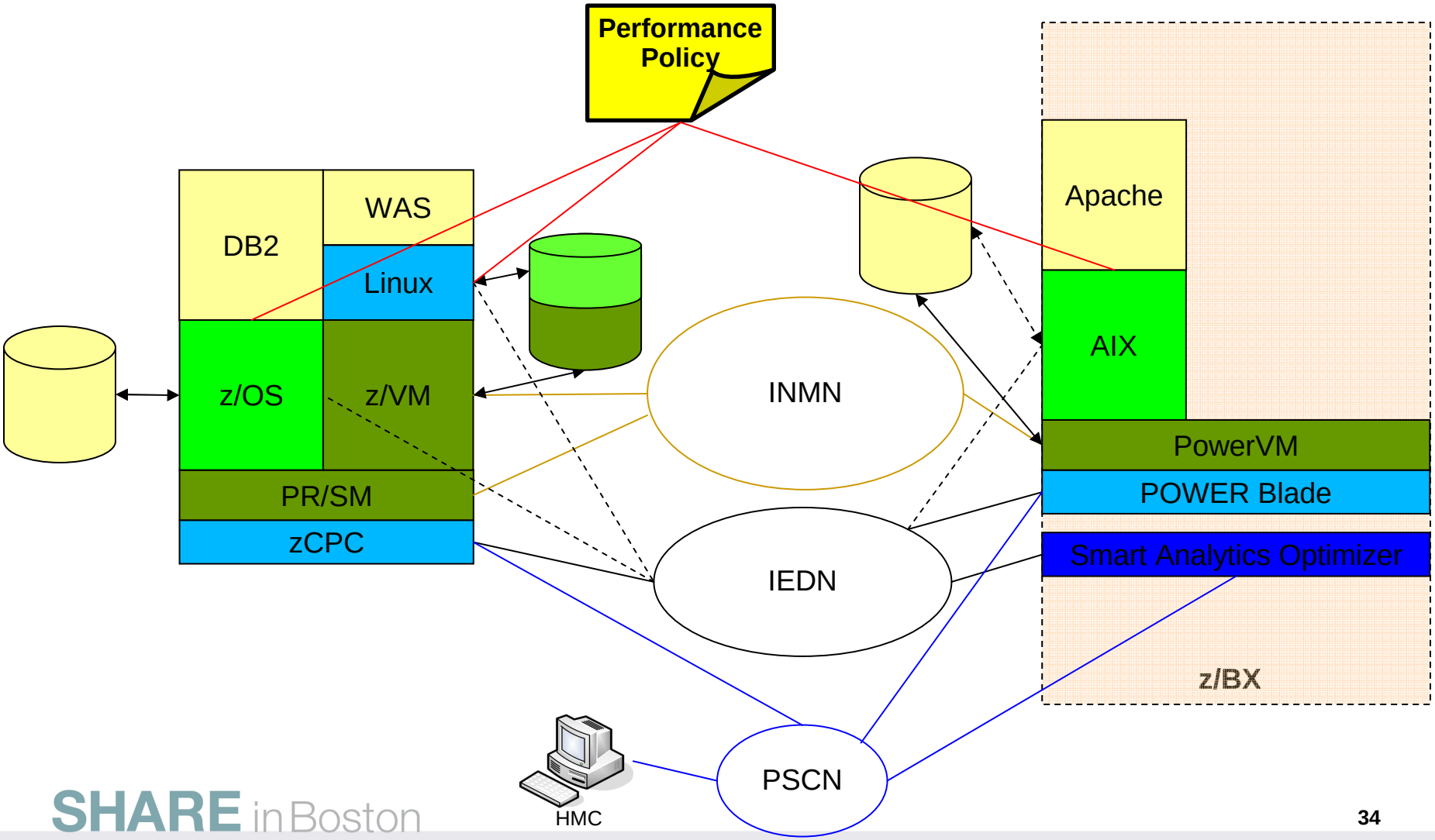


You can continue defining virtual servers with the **New Virtual Server** Wizard.

You can create additional virtual servers using the **New Virtual Server Based On** wizard to save time.

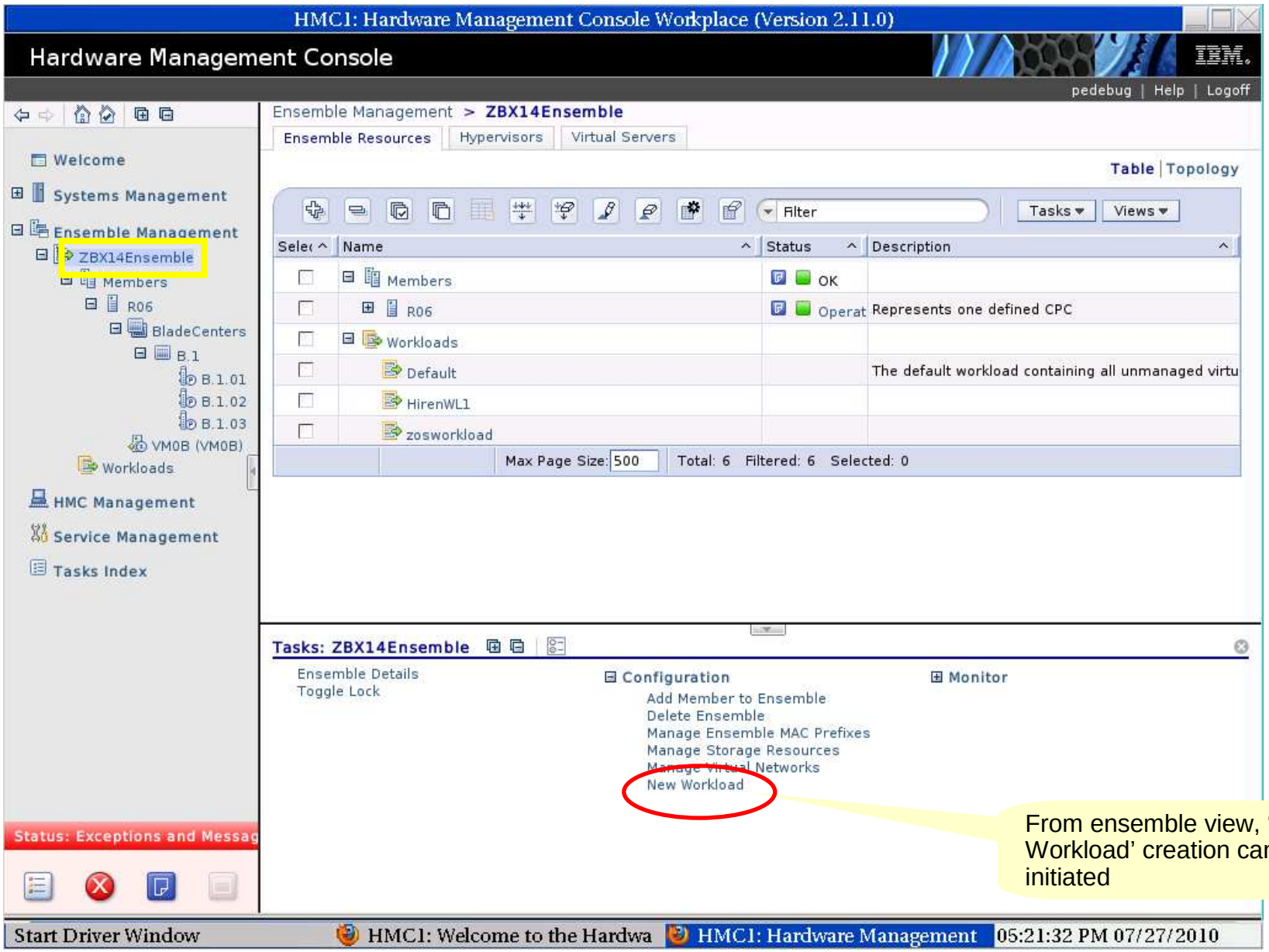
This display shows all virtual servers on the blade.

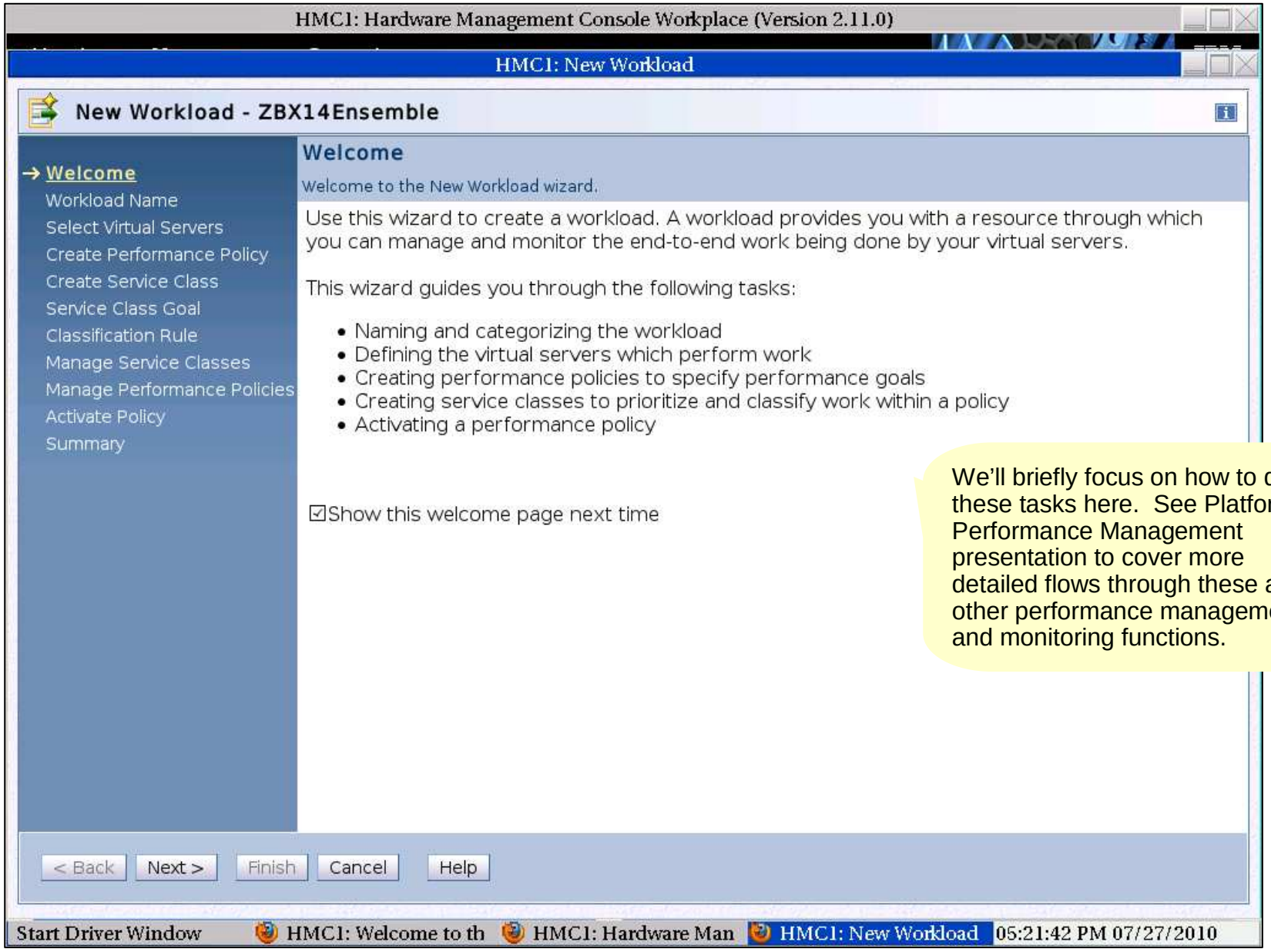
Install Operating System
Install Apache
Define Workload and Performance Policy



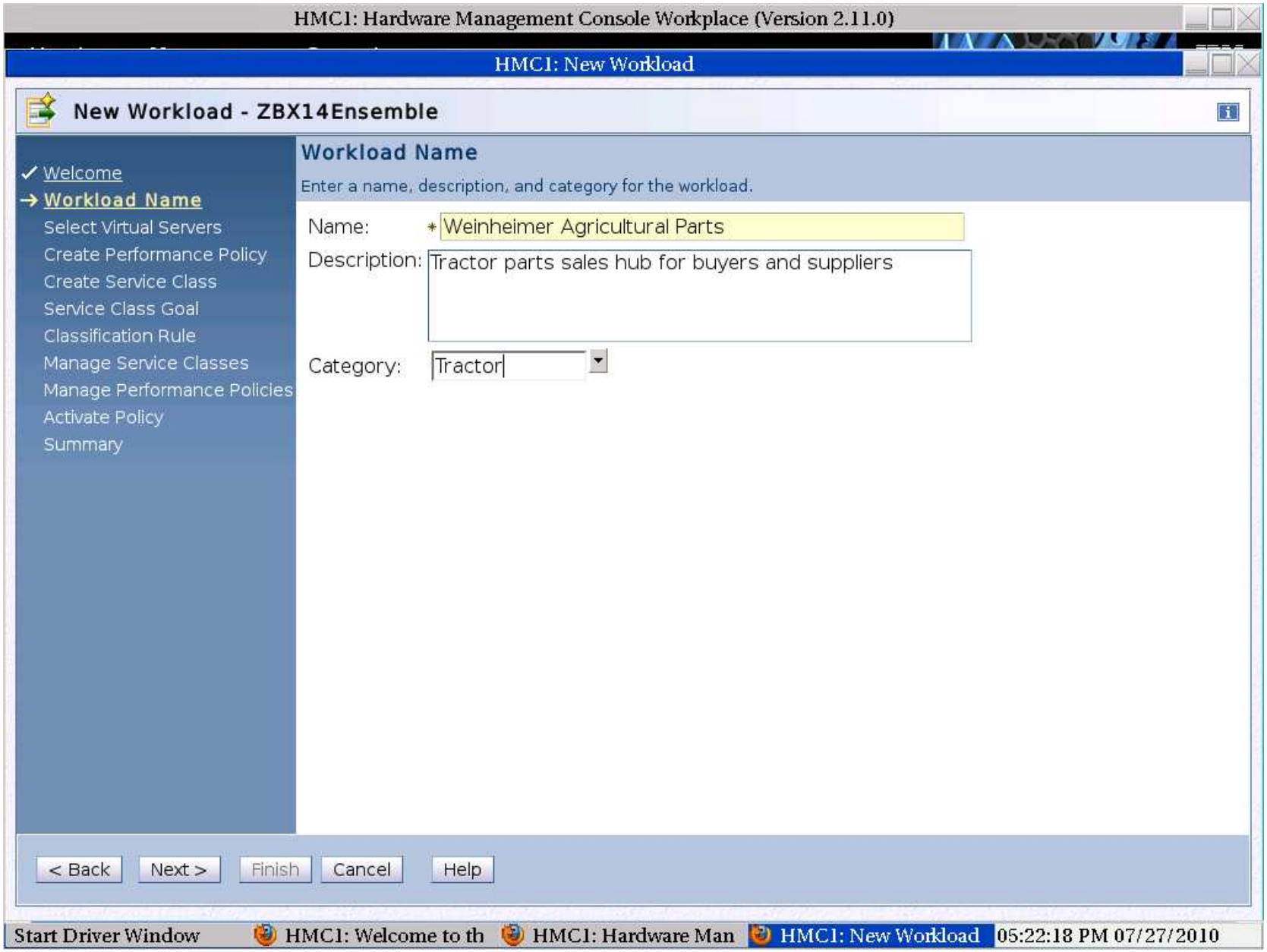
Platform Performance Management (Automate Suite for all but default workload)

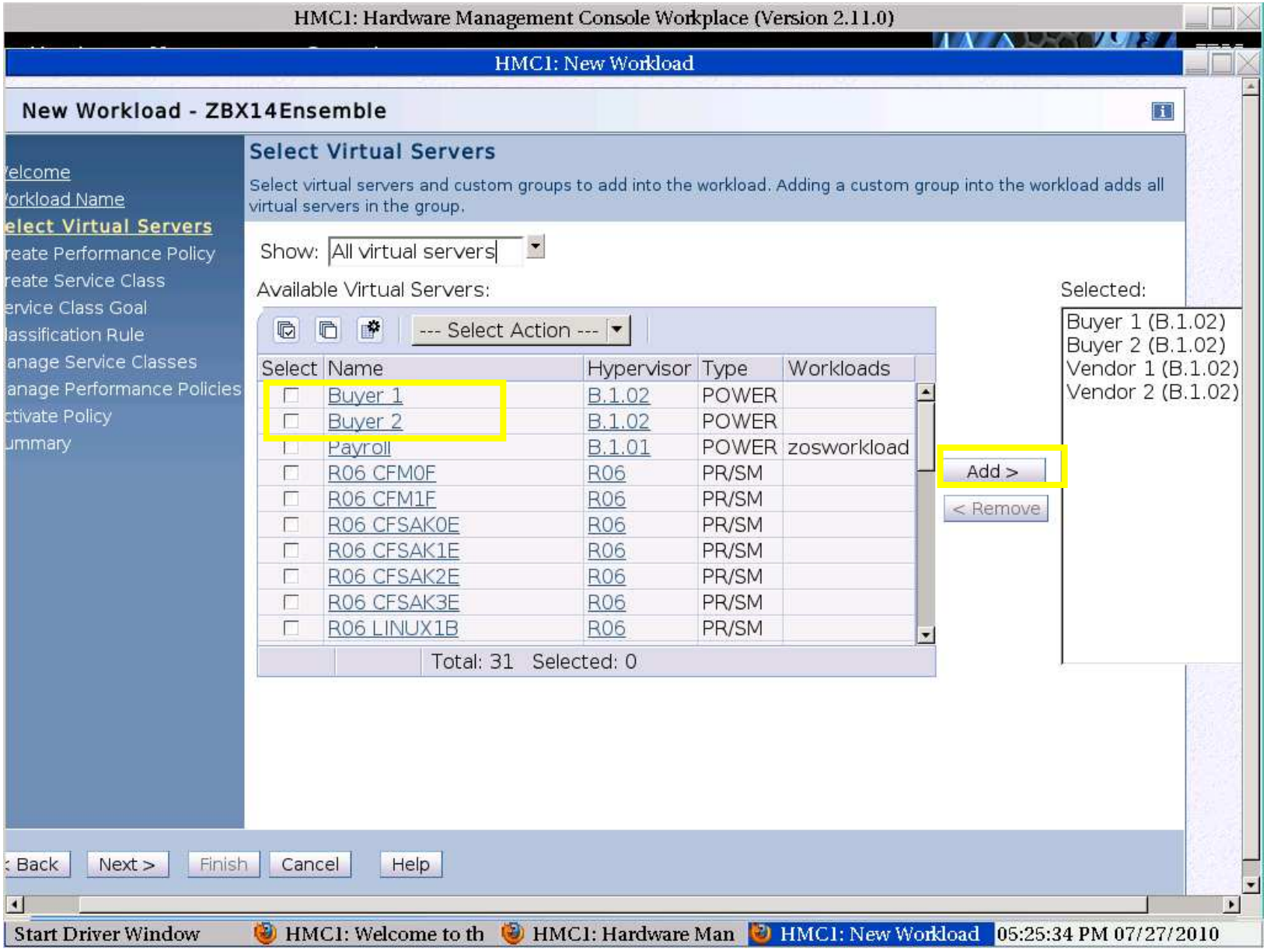
- Creation of workloads
- Platform resource monitoring based on performance policy
  - Ensemble
  - Workload
  - Virtual Server
- Dynamic, goal-oriented resource management
  - Manage CPU across virtual servers within a hypervisor instance

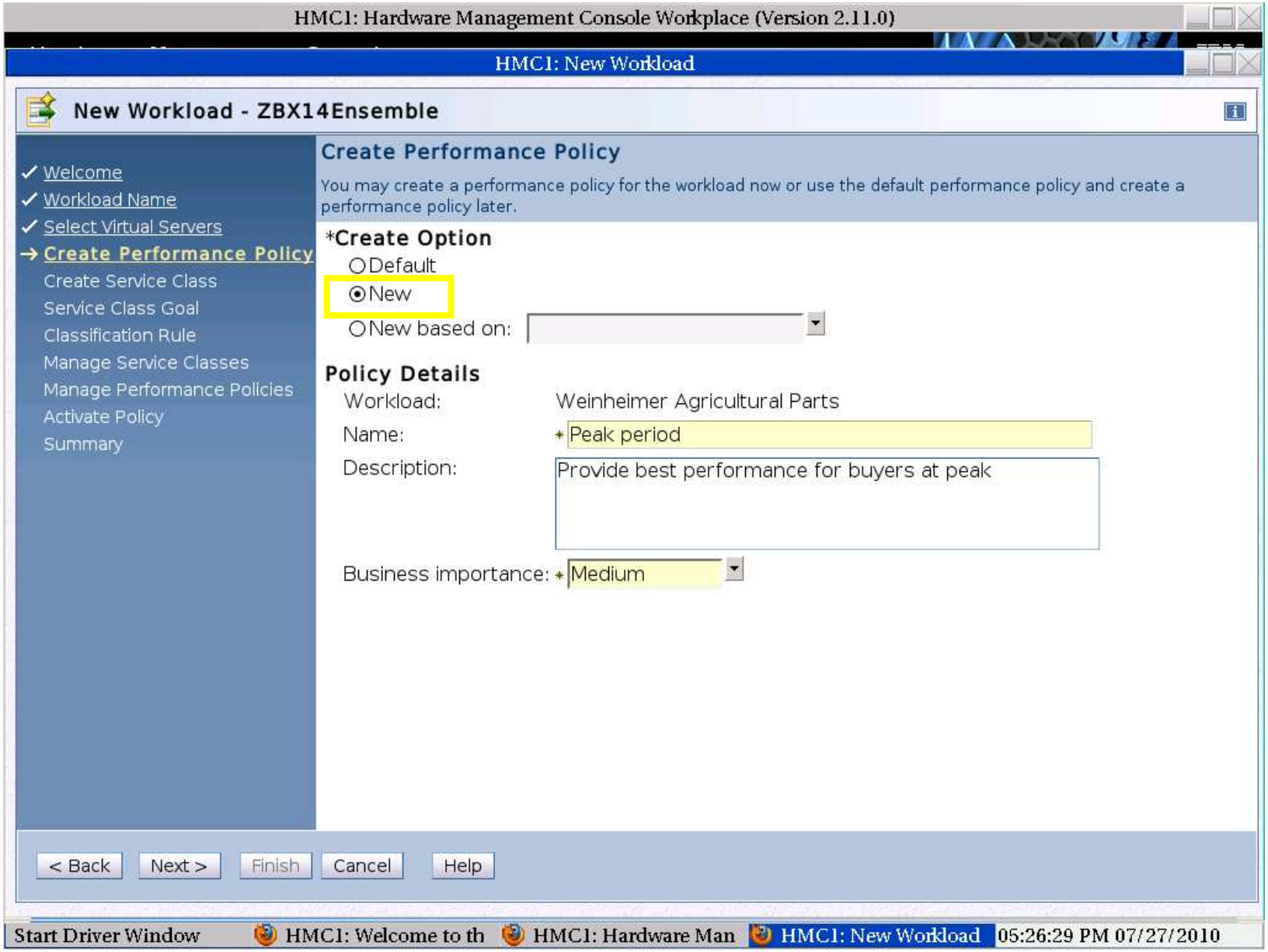

HMC1: Hardware Management Console Workplace (Version 2.11.0)
Hardware Management Console
IBM.
pedebug | Help | Logoff
Welcome
Systems Management
Ensemble Management
ZBX14Ensemble
Members
R06
BladeCenters
B.1
B.1.01
B.1.02
B.1.03
VM0B (VM0B)
Workloads
HMC Management
Service Management
Tasks Index
Status: Exceptions and Messag
Ensemble Management > ZBX14Ensemble
Ensemble Resources
Hypervisors
Virtual Servers
Table | Topology
Filter
Tasks
Views
Sele
Name
Status
Description
Members
OK
R06
Operat
Represents one defined CPC
Workloads
Default
The default workload containing all unmanaged virtu
HirenWL1
zosworkload
Max Page Size: 500
Total: 6 Filtered: 6 Selected: 0
Tasks: ZBX14Ensemble
Ensemble Details
Toggle Lock
Configuration
Add Member to Ensemble
Delete Ensemble
Manage Ensemble MAC Prefixes
Manage Storage Resources
Manage Virtual Networks
New Workload
Monitor
From ensemble view, 'New Workload' creation can be initiated
Start Driver Window
HMC1: Welcome to the Hardwa
HMC1: Hardware Management
05:21:32 PM 07/27/2010

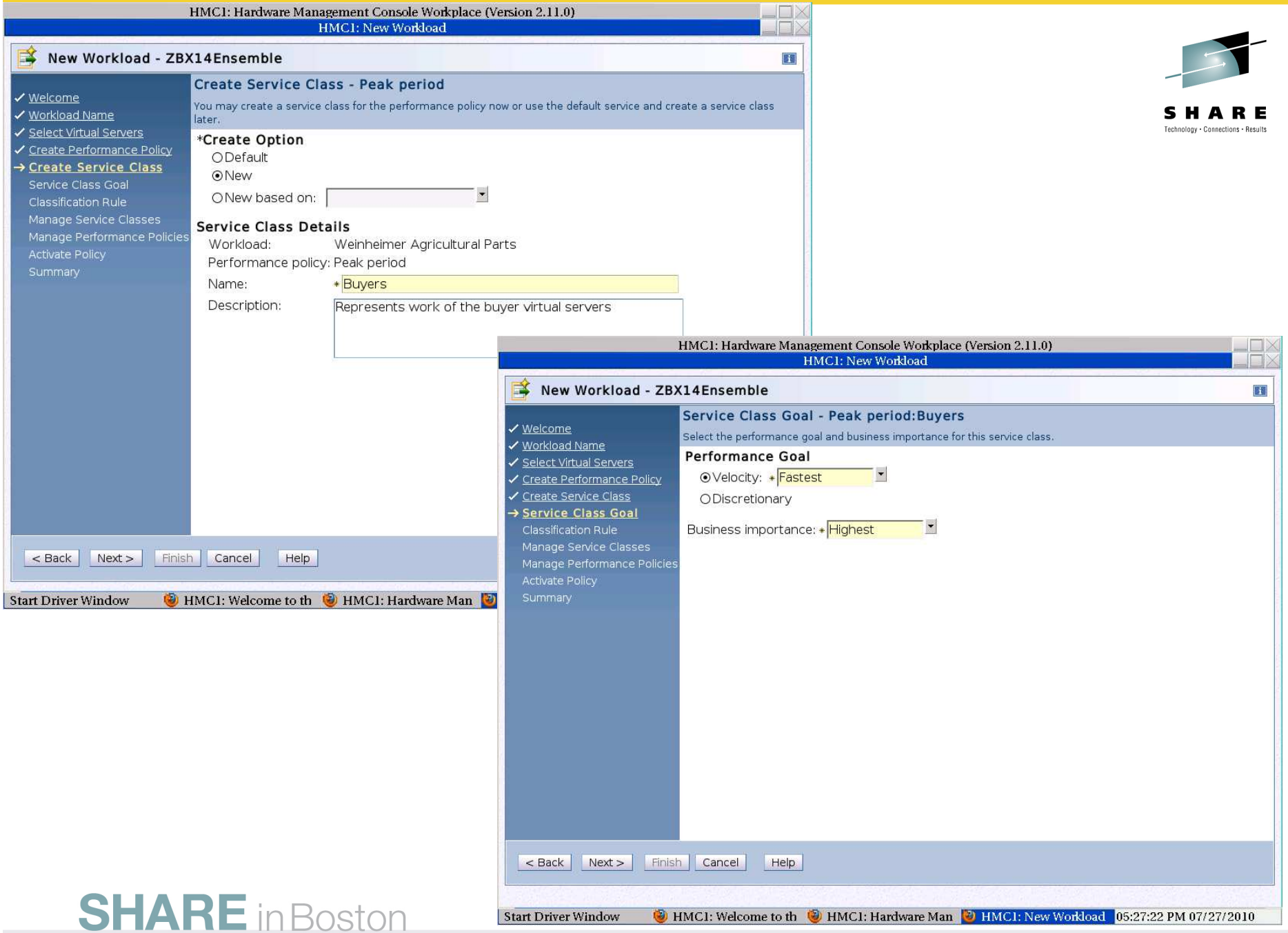


We'll briefly focus on how to do these tasks here. See Platform Performance Management presentation to cover more detailed flows through these and other performance management and monitoring functions.

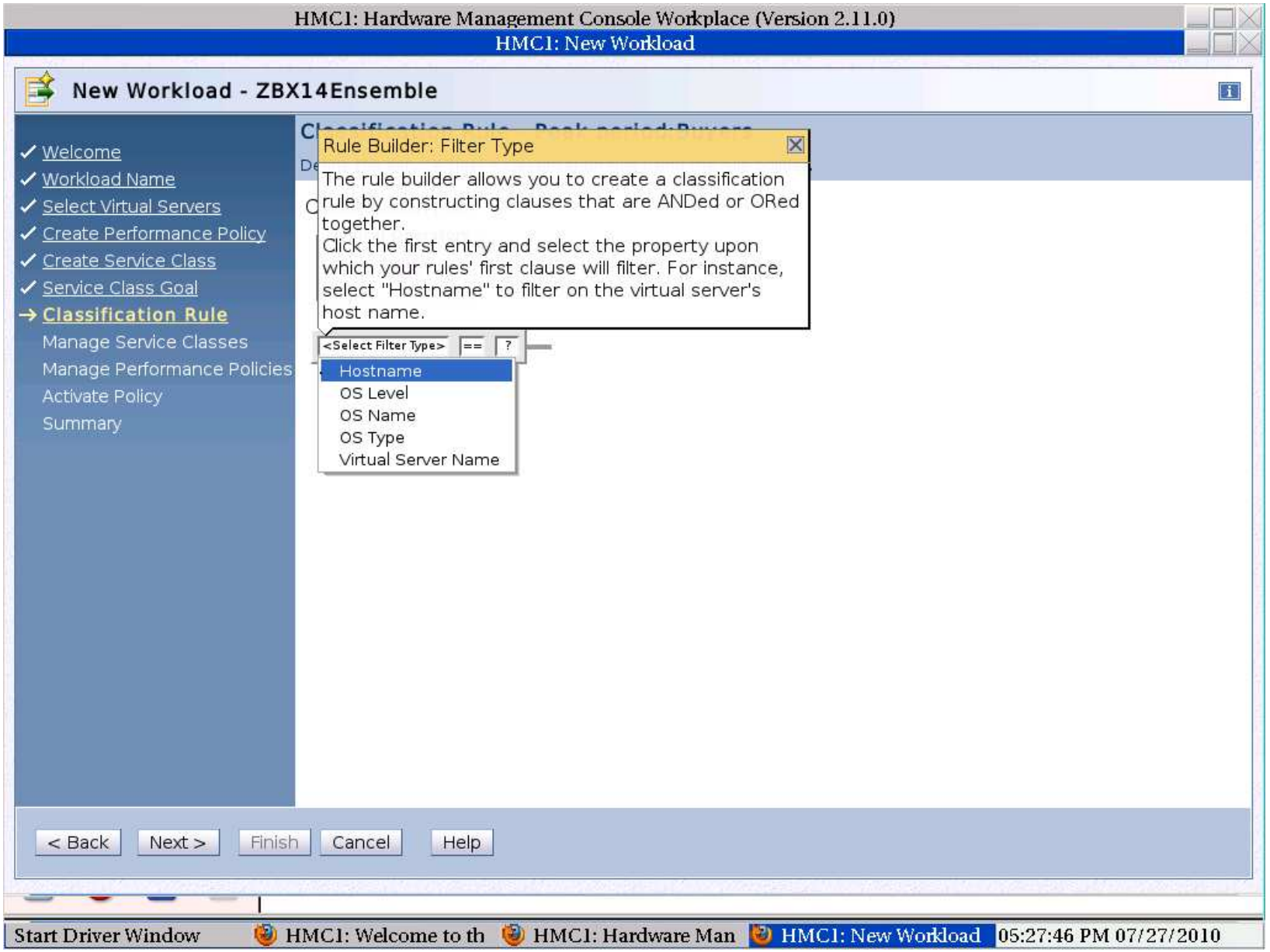

HMC1: Hardware Management Console Workplace (Version 2.11.0)
HMC1: New Workload
New Workload - ZBX14Ensemble
Welcome
Workload Name
Select Virtual Servers
Create Performance Policy
Create Service Class
Service Class Goal
Classification Rule
Manage Service Classes
Manage Performance Policies
Activate Policy
Summary
Workload Name
Enter a name, description, and category for the workload.
Name:
Weinheimer Agricultural Parts
Description:
Tractor parts sales hub for buyers and suppliers
Category:
Tractor
< Back
Next >
Finish
Cancel
Help
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: New Workload
05:22:18 PM 07/27/2010

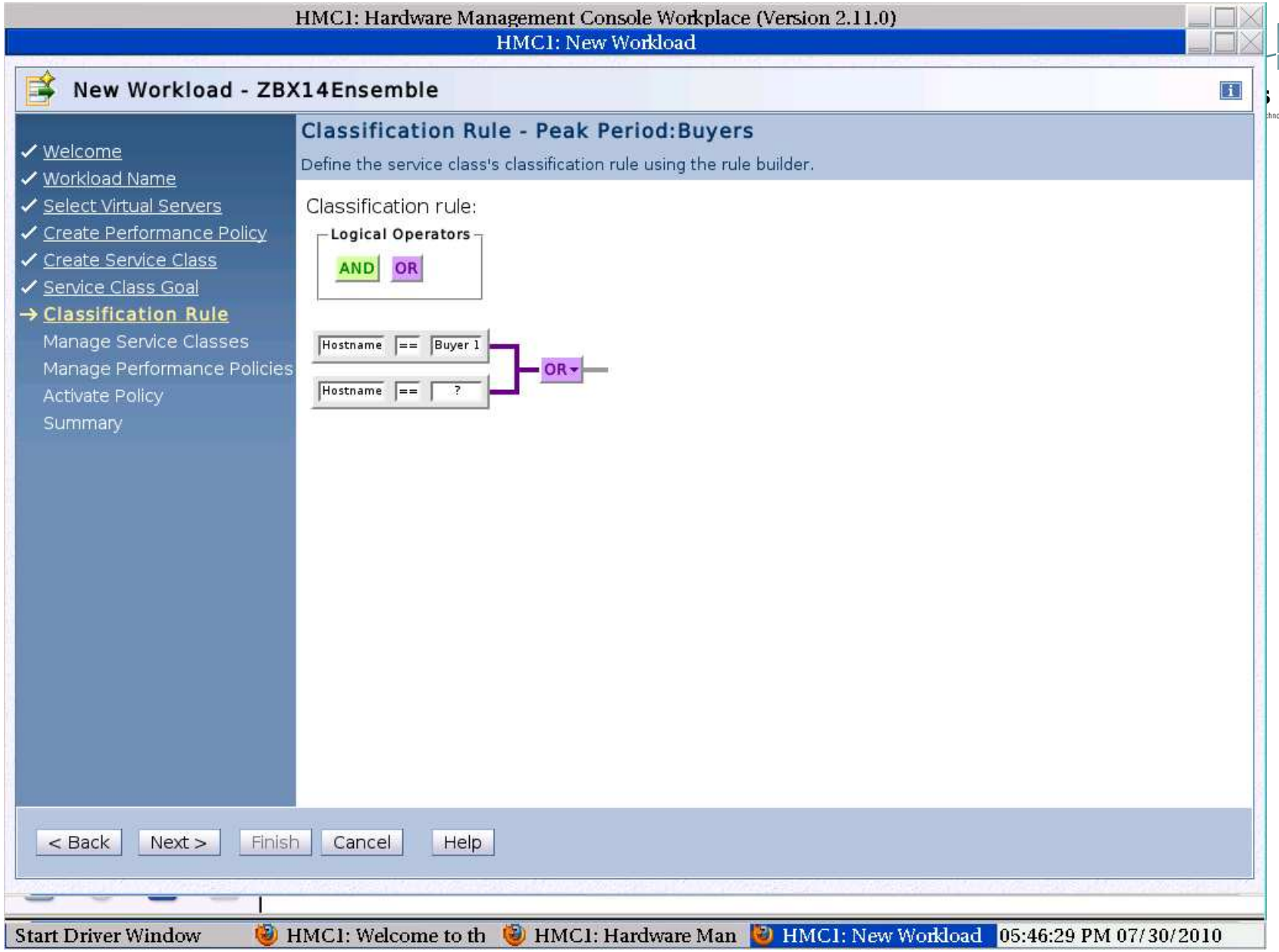

HMC1: Hardware Management Console Workplace (Version 2.11.0)
HMC1: New Workload
New Workload - ZBX14Ensemble
elcome
orkload Name
elect Virtual Servers
reate Performance Policy
reate Service Class
ervice Class Goal
lassification Rule
anage Service Classes
anage Performance Policies
ctivate Policy
ummary
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 ---
Select Name Hypervisor Type Workloads
Buyer 1 B.1.02 POWER
Buyer 2 B.1.02 POWER
Payroll B.1.01 POWER zosworkload
R06 CFM0F R06 PR/SM
R06 CFM1F R06 PR/SM
R06 CFSAK0E R06 PR/SM
R06 CFSAK1E R06 PR/SM
R06 CFSAK2E R06 PR/SM
R06 CFSAK3E R06 PR/SM
R06 LINUX1B R06 PR/SM
Total: 31 Selected: 0
Add >
< Remove
Selected:
Buyer 1 (B.1.02)
Buyer 2 (B.1.02)
Vendor 1 (B.1.02)
Vendor 2 (B.1.02)
< Back
Next >
Finish
Cancel
Help
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: New Workload
05:25:34 PM 07/27/2010

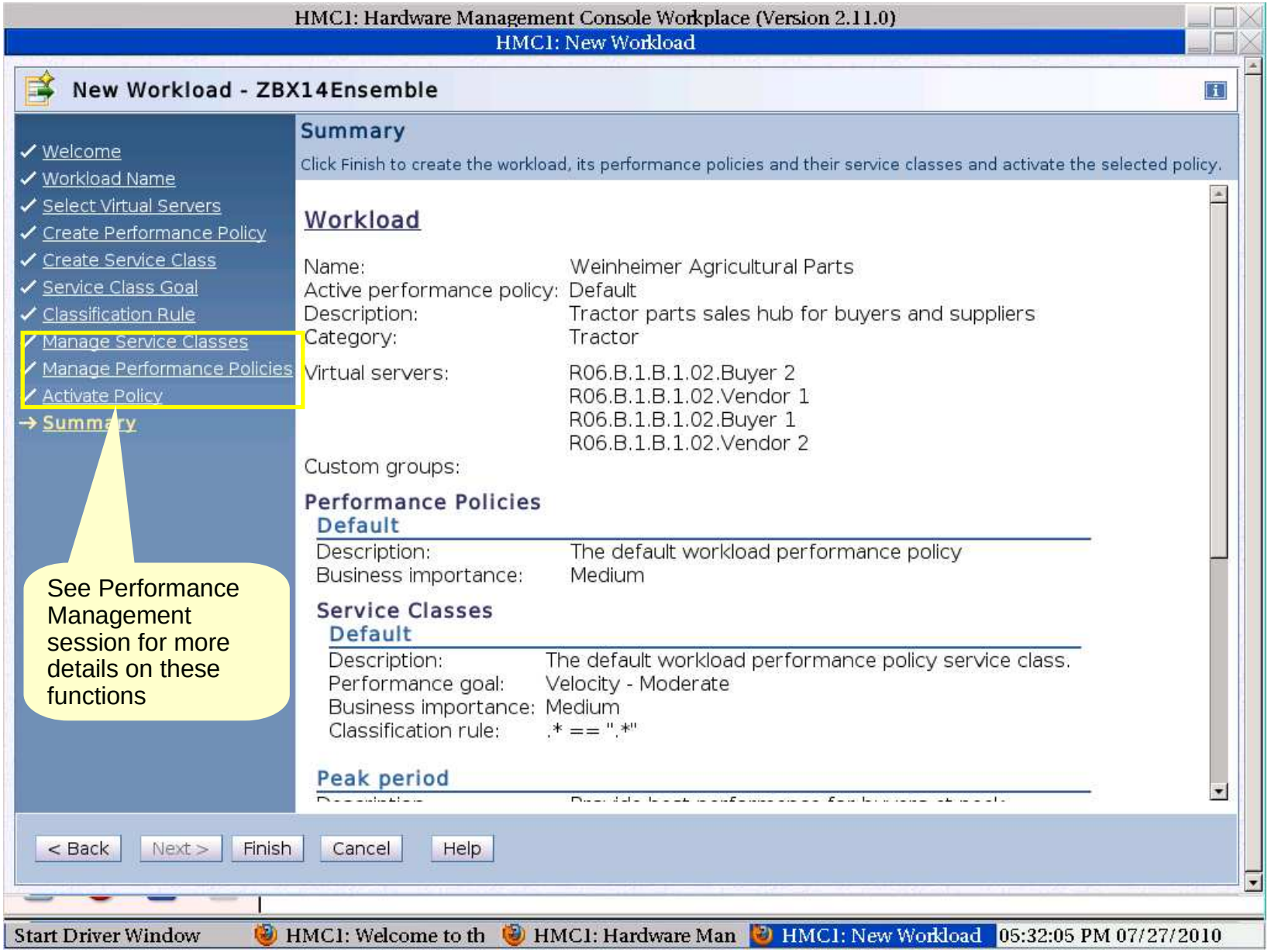

HMC1: Hardware Management Console Workplace (Version 2.11.0)
HMC1: New Workload
New Workload - ZBX14Ensemble
Welcome
Workload Name
Select Virtual Servers
Create Performance Policy
Create Service Class
Service Class Goal
Classification Rule
Manage Service Classes
Manage Performance Policies
Activate Policy
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:
Peak period
Description:
Provide best performance for buyers at peak
Business importance:
Medium
< Back
Next >
Finish
Cancel
Help
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: New Workload
05:26:29 PM 07/27/2010



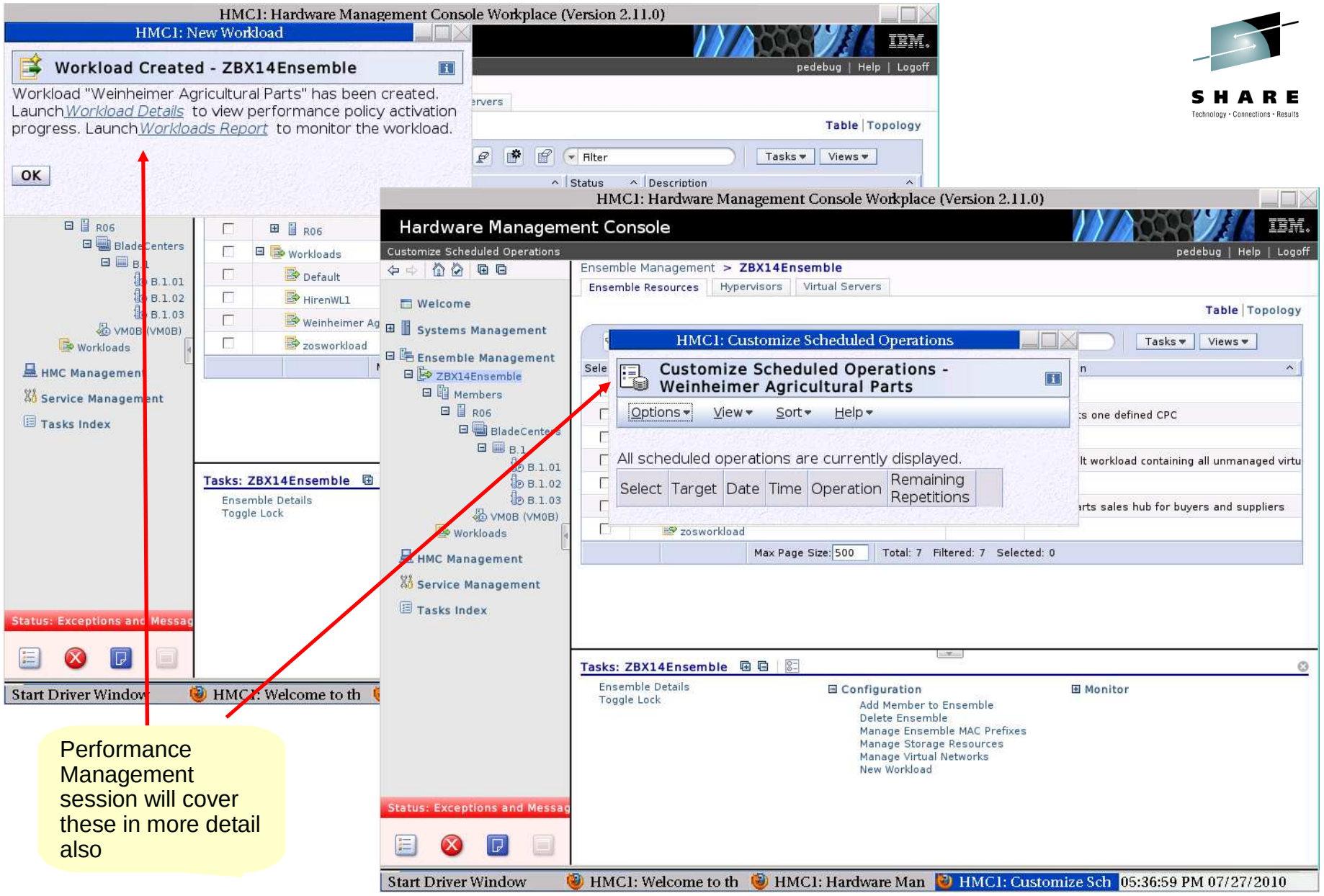
SHARE
Technology · Connections · Results


HMC1: Hardware Management Console Workplace (Version 2.11.0)
HMC1: New Workload
New Workload - ZBX14Ensemble
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
Rule Builder: Filter Type
The rule builder allows you to create a 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 "Hostname" to filter on the virtual server's host name.
<Select Filter Type>
==
?
Hostname
OS Level
OS Name
OS Type
Virtual Server Name
< Back
Next >
Finish
Cancel
Help
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: New Workload
05:27:46 PM 07/27/2010


HMC1: Hardware Management Console Workplace (Version 2.11.0)
HMC1: New Workload
New Workload - ZBX14Ensemble
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
Hostname == Buyer 1
Hostname == ?
OR
< Back
Next >
Finish
Cancel
Help
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: New Workload
05:46:29 PM 07/30/2010



See Performance Management session for more details on these functions

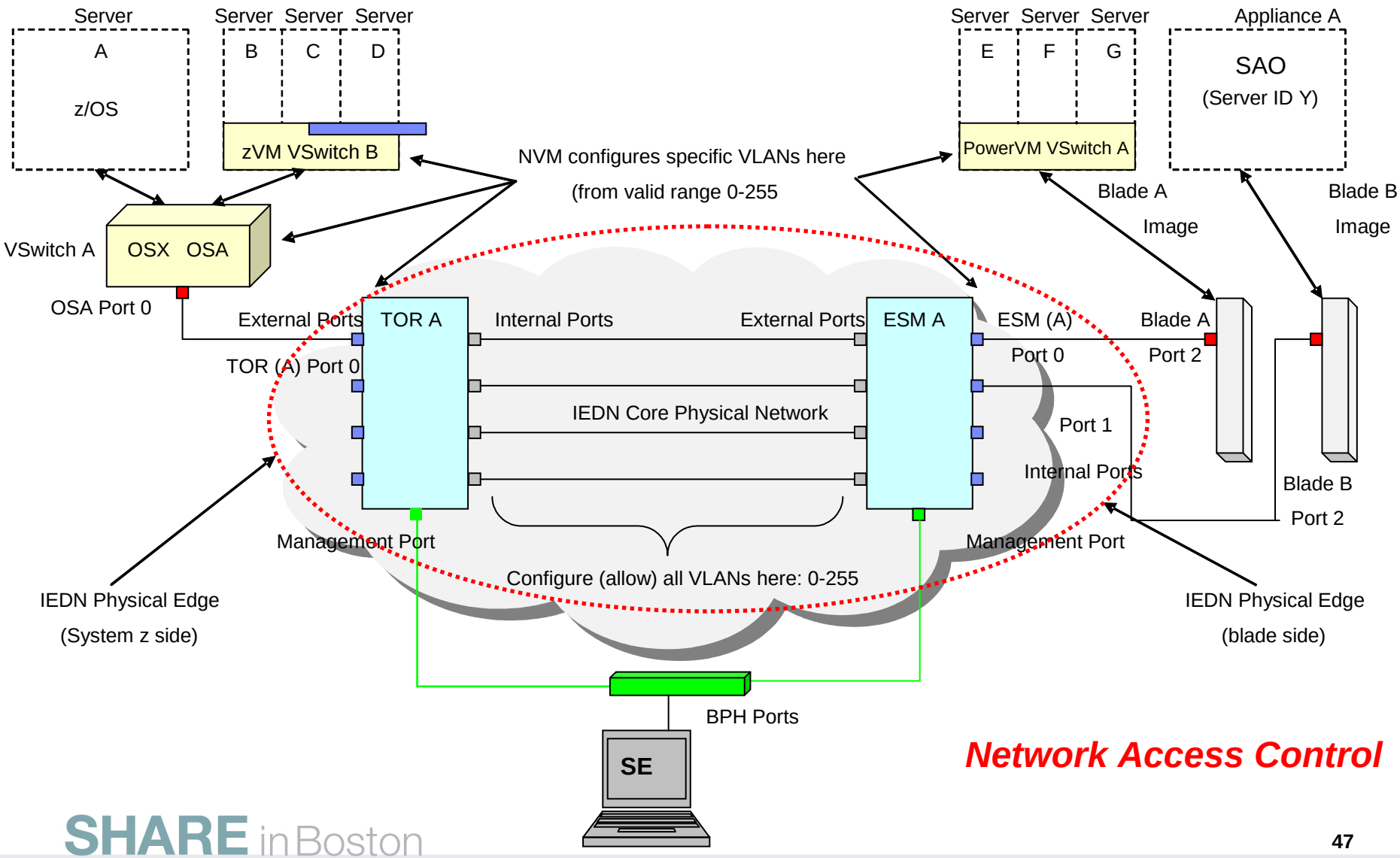


Performance Management session will cover these in more detail also

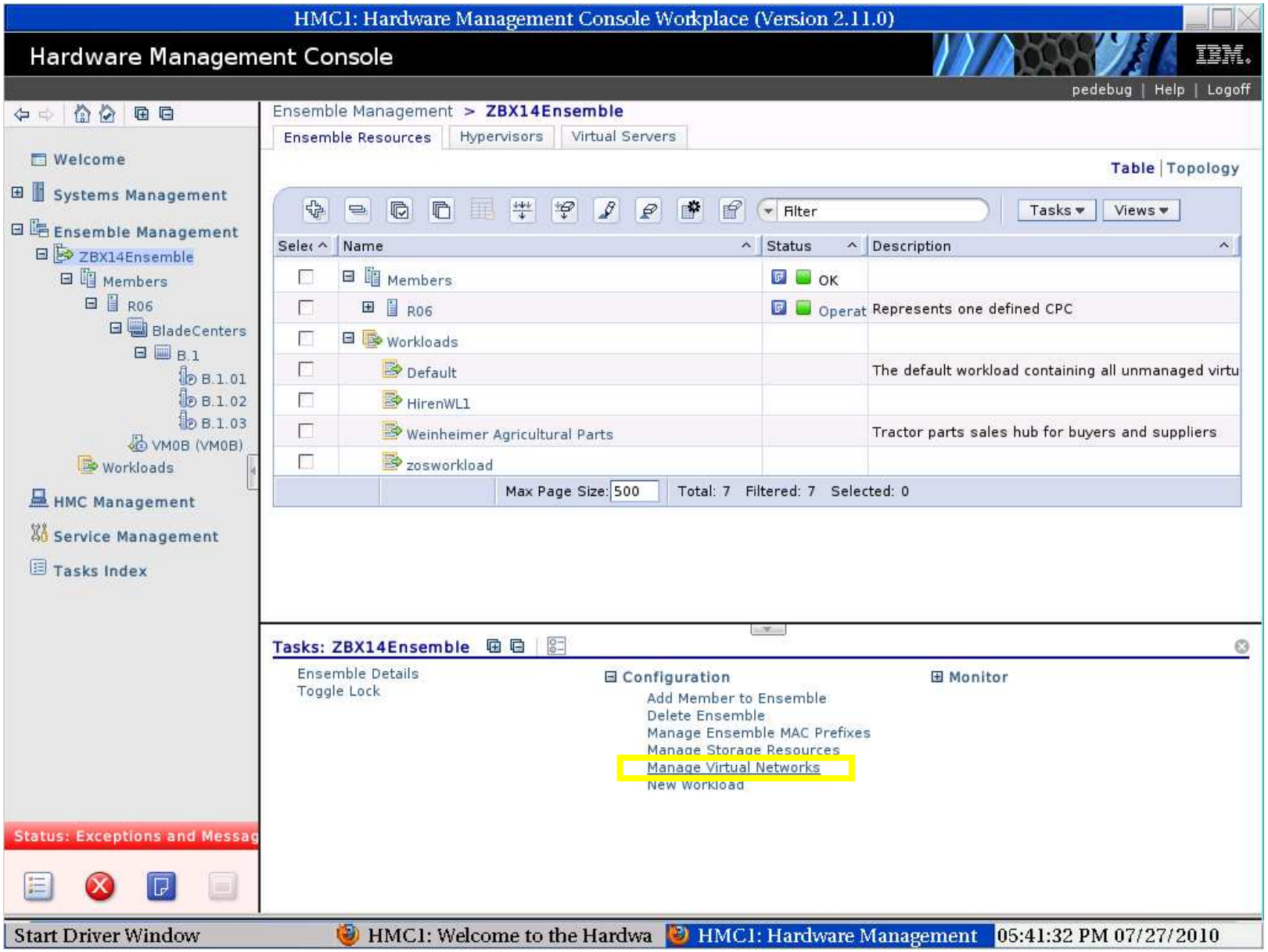
Network Management (Enhanced Manage Suite)

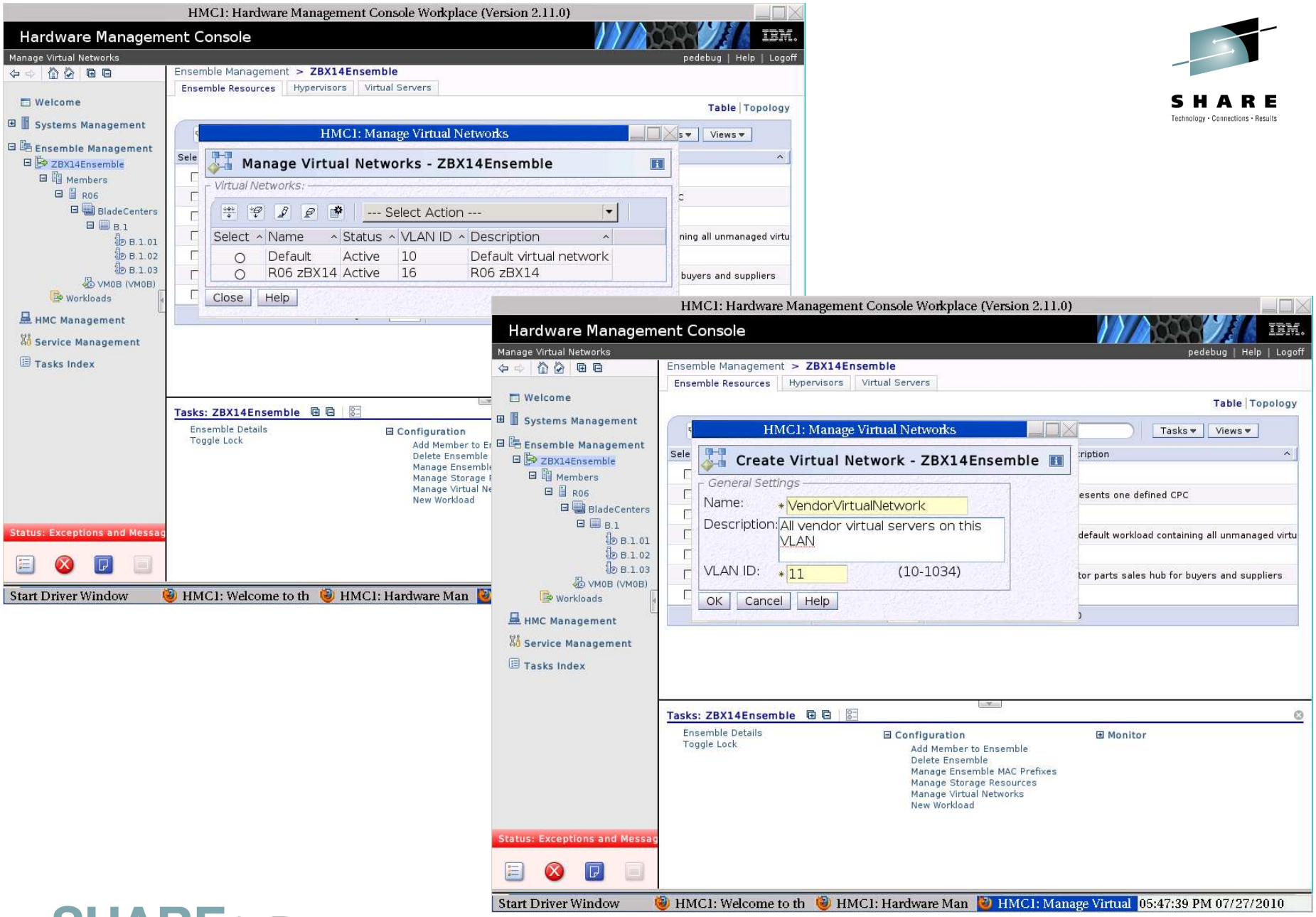
- Create Virtual Connection Object (VCO)
  - Name
  - VLAN identifier
  - List of authorized servers
- Connect virtual server to VCO via vNIC with assigned vMAC

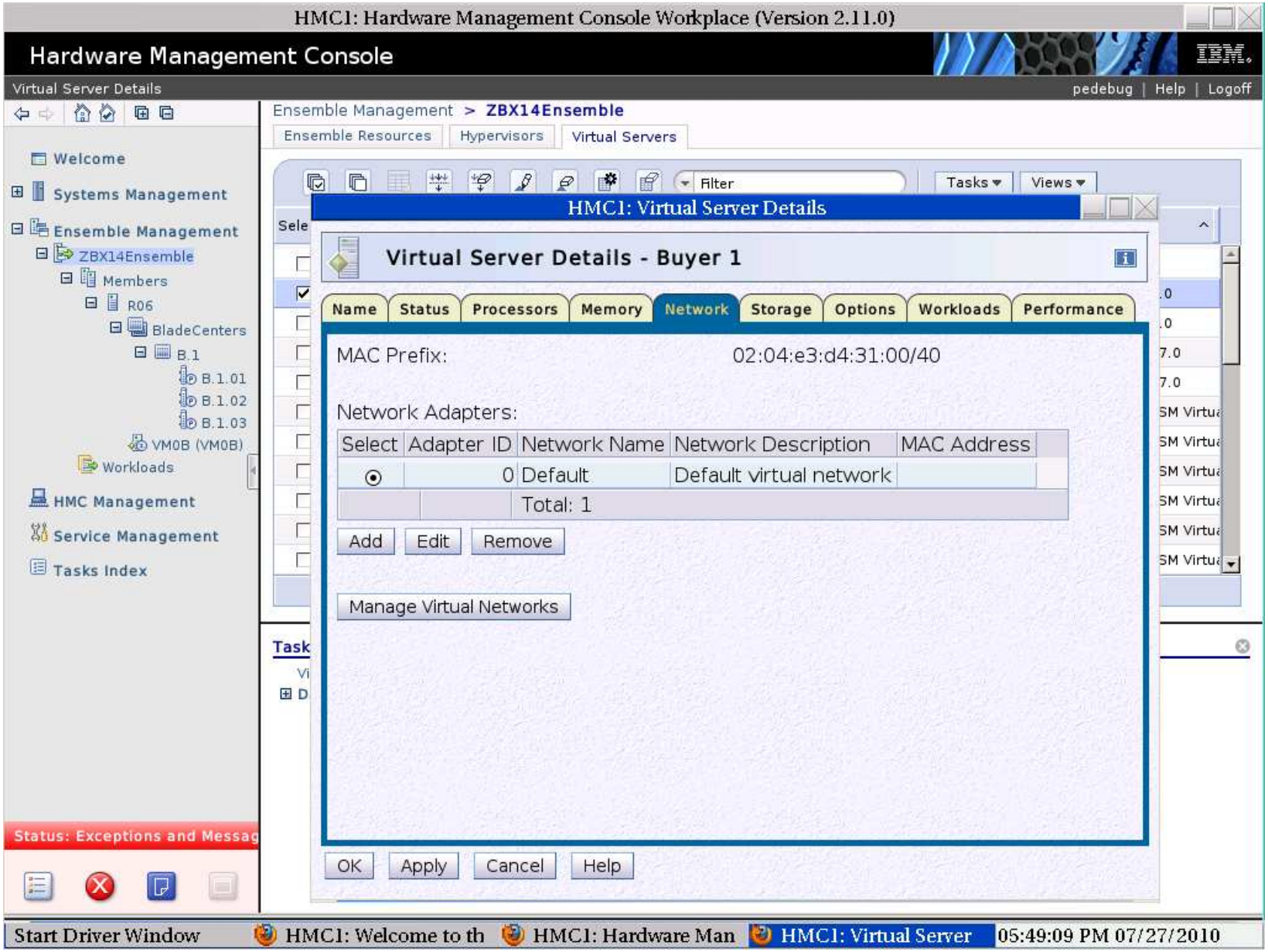
Virtual Networks and Access Controls



Network Access Control


HMC1: Hardware Management Console Workplace (Version 2.11.0)
Hardware Management Console
IBM.
pedebug | Help | Logoff
Welcome
Systems Management
Ensemble Management
ZBX14Ensemble
Members
R06
BladeCenters
B.1
B.1.01
B.1.02
B.1.03
VM0B (VM0B)
Workloads
HMC Management
Service Management
Tasks Index
Status: Exceptions and Messag
Ensemble Management > ZBX14Ensemble
Ensemble Resources
Hypervisors
Virtual Servers
Table | Topology
Filter
Tasks
Views
Name
Status
Description
Members
OK
R06
Operat
Represents one defined CPC
Workloads
Default
The default workload containing all unmanaged virtu
HirenWL1
Weinheimer Agricultural Parts
Tractor parts sales hub for buyers and suppliers
zosworkload
Max Page Size: 500
Total: 7 Filtered: 7 Selected: 0
Tasks: ZBX14Ensemble
Ensemble Details
Toggle Lock
Configuration
Add Member to Ensemble
Delete Ensemble
Manage Ensemble MAC Prefixes
Manage Storage Resources
Manage Virtual Networks
New Workload
Monitor
Start Driver Window
HMC1: Welcome to the Hardwa
HMC1: Hardware Management
05:41:32 PM 07/27/2010


HMC1: Hardware Management Console Workplace (Version 2.11.0)
Hardware Management Console
IBM.
Manage Virtual Networks
pedebug | Help | Logoff
Welcome
Systems Management
Ensemble Management
ZBX14Ensemble
Members
R06
BladeCenters
B.1
B.1.01
B.1.02
B.1.03
VM0B (VM0B)
Workloads
HMC Management
Service Management
Tasks Index
Ensemble Management > ZBX14Ensemble
Ensemble Resources
Hypervisors
Virtual Servers
Table | Topology
HMC1: Manage Virtual Networks
Views
Manage Virtual Networks - ZBX14Ensemble
Virtual Networks:
--- Select Action ---
Select
Name
Status
VLAN ID
Description
Default
Active
10
Default virtual network
R06 zBX14
Active
16
R06 zBX14
Close
Help
Tasks: ZBX14Ensemble
Ensemble Details
Toggle Lock
Configuration
Add Member to Ensemble
Delete Ensemble
Manage Ensemble MAC Prefixes
Manage Storage Resources
Manage Virtual Networks
New Workload
Monitor
Status: Exceptions and Messag
Create Virtual Network - ZBX14Ensemble
General Settings
Name:
VendorVirtualNetwork
Description:
All vendor virtual servers on this VLAN
VLAN ID:
11
(10-1034)
OK
Cancel
Help
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: Manage Virtual
05:47:39 PM 07/27/2010


HMC1: Hardware Management Console Workplace (Version 2.11.0)
Hardware Management Console
IBM.
Virtual Server Details
pedebug | Help | Logoff
Welcome
Systems Management
Ensemble Management
ZBX14Ensemble
Members
R06
BladeCenters
B.1
B.1.01
B.1.02
B.1.03
VM0B (VM0B)
Workloads
HMC Management
Service Management
Tasks Index
Status: Exceptions and Messag
Ensemble Management > ZBX14Ensemble
Ensemble Resources
Hypervisors
Virtual Servers
Filter
Tasks
Views
HMC1: Virtual Server Details
Virtual Server Details - Buyer 1
Name
Status
Processors
Memory
Network
Storage
Options
Workloads
Performance
MAC Prefix:
02:04:e3:d4:31:00/40
Network Adapters:
Select
Adapter ID
Network Name
Network Description
MAC Address
0
Default
Default virtual network
Total: 1
Add
Edit
Remove
Manage Virtual Networks
OK
Apply
Cancel
Help
Start Driver Window
HMC1: Welcome to th
HMC1: Hardware Man
HMC1: Virtual Server
05:49:09 PM 07/27/2010

Energy Management

- Power saving controls (Automate Suite)
- Maximum potential power controls (Enhanced Manage Suite)

Related Facilities

- Scheduled Operations
  - Allows functions to be performed at designated times on designated days
- Grouping
  - Allows resources (e.g. virtual servers) to be aggregated so that functions can be performed on them with a single action (e.g. activation)
- Event Monitoring
  - Allows e-mail notifications to designated users when particular circumstances arise (e.g. virtual server failure)

IBM zEnterprise System:
A revolutionary change has come to IT

- Redefining IT frameworks to bring change to operational silos and extend System z governance to UNIX and x86
- 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

Thank you