

IBM Systems Director (for Power) Overview and Basics

Version 6.2.1



Agenda

- Systems Management environment
- IBM Systems Director Overview
- IBM Systems Director Features
- IBM Systems Director plug-ins
- IBM Systems Director Editions
- Power Systems Details for IBM Systems Director 6.2.1



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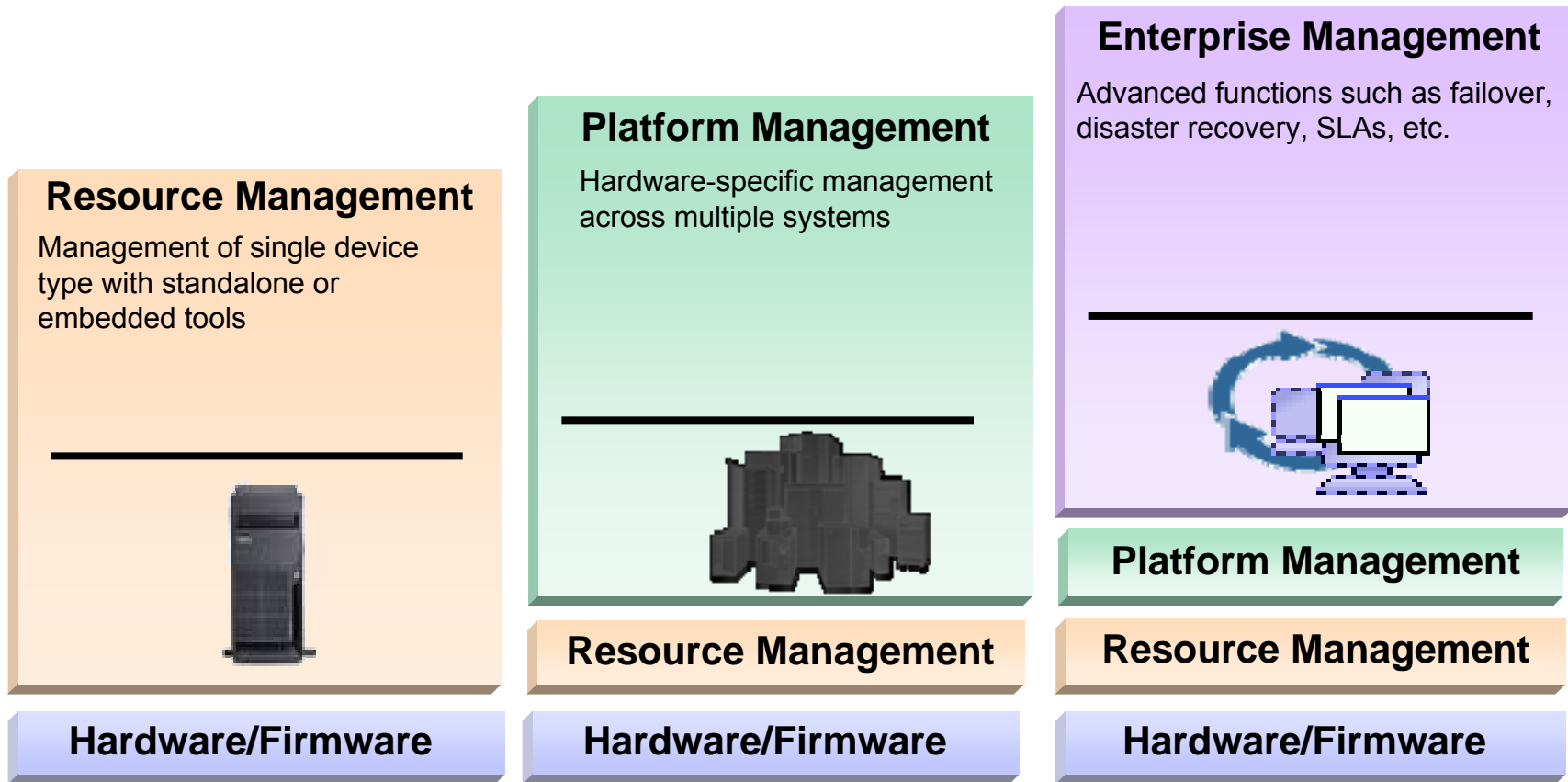


IT Organization Challenges



- Thousands of things to manage
- Capital and operational expenses
 - Space and power constraints
 - Needs for diverse administration skills
- Legacy infrastructures
 - Fragile and difficult to change
 - Many specialized skills and tools required
 - Silos: OS, hardware, technologies, facilities
- Little time for planning, optimization and improvements
- Pressures from criticality of IT to the business

Layers of Systems Management



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IBM® Systems Director



- Strategic cross-brand hardware platform manager
- Focuses on the “care and feeding” of the physical and virtual environment
- Helps reduce the costs of IT service management



Discover managed endpoints and collect detailed OS and system level information



Hardware failure and pre-failure notification, event logging, and automation



Ensure systems are operating optimally thru platform update identification and distribution

IBM® Systems Director



- Consolidation of Platform Management Tools

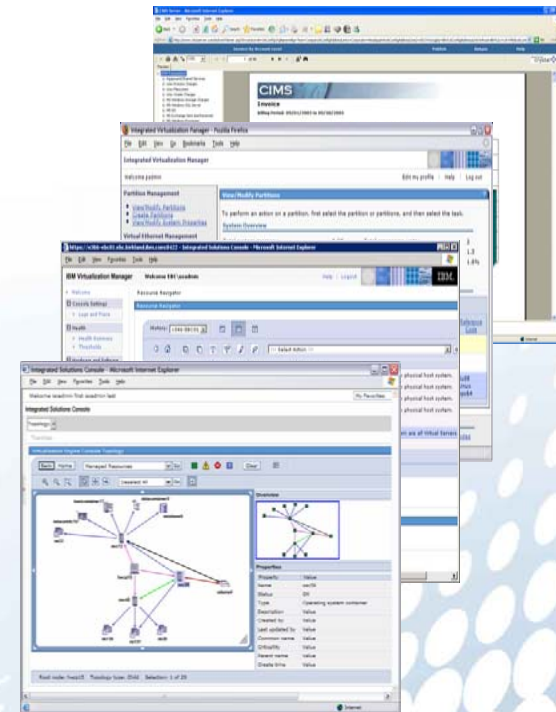
- Single consistent cross-platform management tool
- Simplified tasks via browser-based interface
- Manage many resources from one console

- Integrated Physical and Virtual Management

- Discovery and inventory of physical and virtual resources
- Configuration and provisioning of platform resources
- Status, health and monitoring of platform resources
- Visualization of server resource topologies
- Move virtual servers between systems without disruption to running workloads

- Platform Update Management

- Simplified consistent cross-platform tools to acquire, distribute and install firmware and OS updates

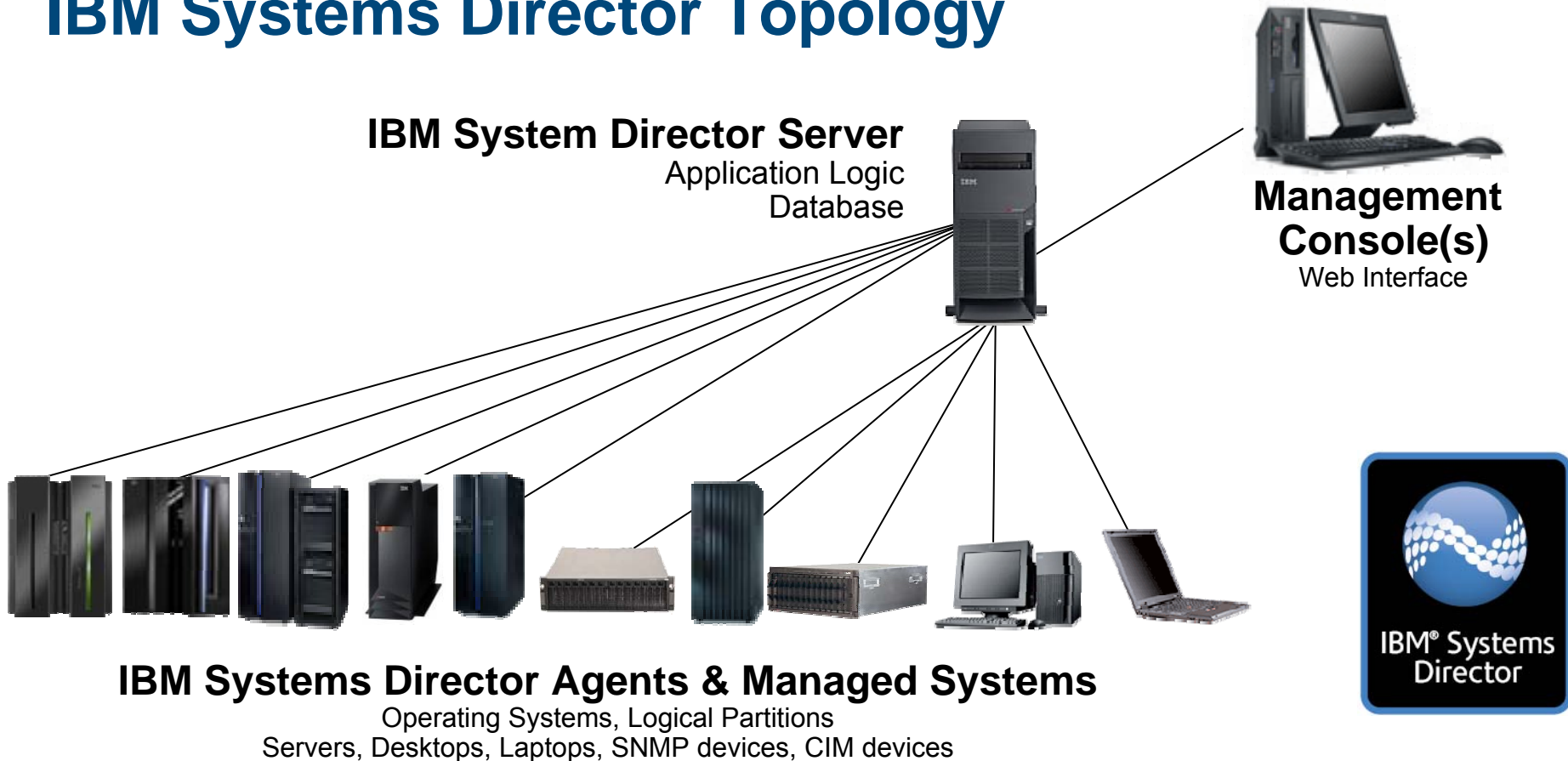


IBM Systems Director 6.2.1

- Simplified installation, deployment and update process
- Single, consistent Web-based user interface
- Learn new tasks with wizards, tutorials and integrated help
- Topology views to simplify troubleshooting
- Increased platform support through industry standards and embedded agents
- Navigation via groups, search, status and relationships
- Integrates Systems Director Navigator for i, AIX Systems Director Console and HMC Console



IBM Systems Director Topology



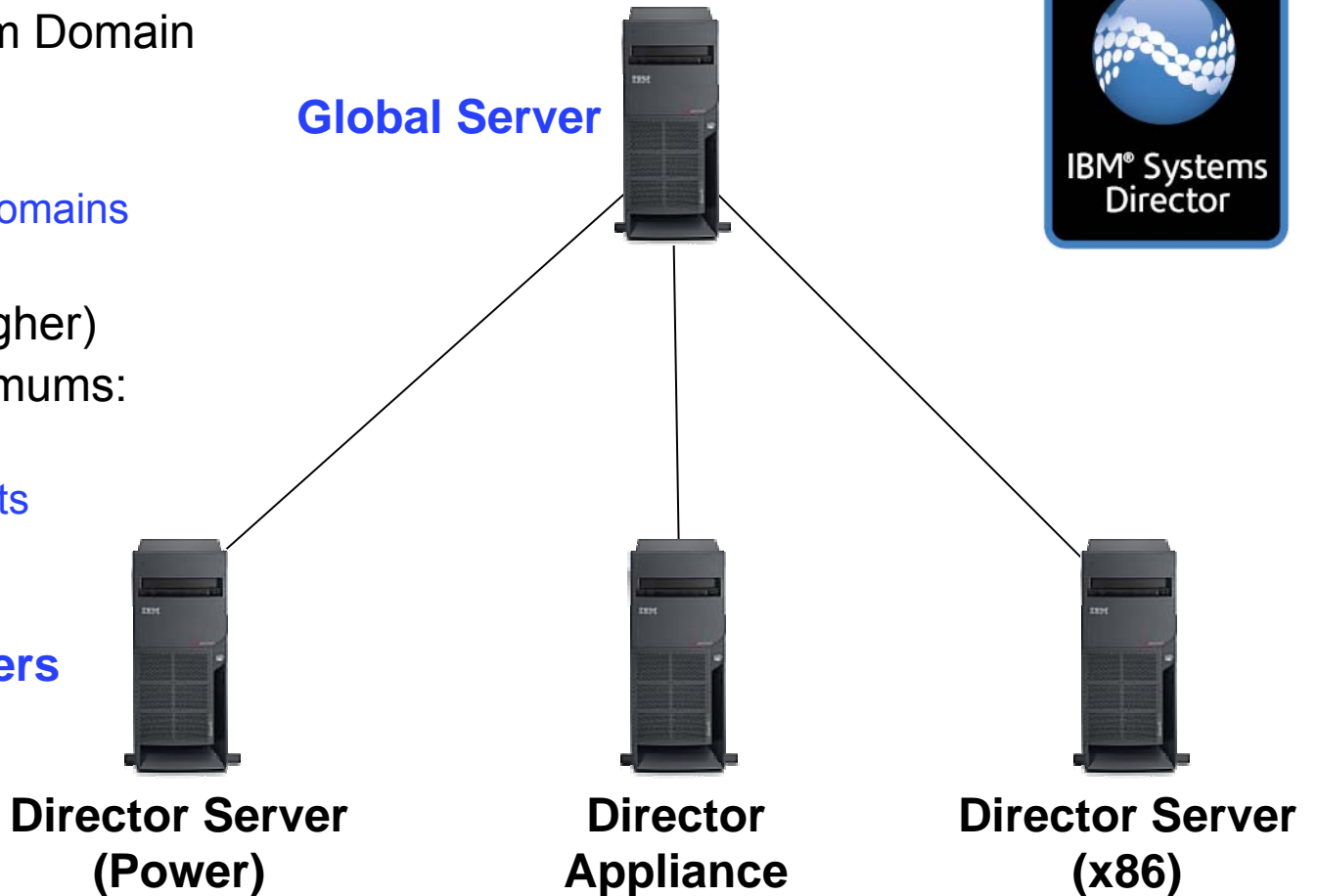
- **Three-tiered architecture**
- **Thousands of managed nodes**
- **Upward Integration modules supporting**
 - Tivoli, Computer Associates, Hewlett Packard, Microsoft

Adv. Topology - Hierarchical Management Servers

- 6.2.x Servers only
- Remove objects from Domain
- Useful for
 - multiple locations
 - separate admin domains
 - appliances
- Two tier only (not higher)
- Current tested maximums:
 - 5 Domain servers
 - 10K total endpoints

Domain Servers

Global Server



Agent Capabilities for Operating Systems

Function	Agentless	Platform Agent	Common Agent
System Discovery	Y	Y	Y
Inventory	Basic	Basic	Comprehensive
Deploy Platform Agent	Y	n/a	n/a
Remote Access	Limited	Limited	Full
Remote Restart	Limited	Limited	Full
Monitor Health & Status		Y	Y
Manage Alerts		Y	Y
Deploy Common Agent	Y	Y	n/a
Power Management			Y
Monitor Processes			Y
Manage Updates			Y

Managed Devices

- Power Systems
 - POWER5™, POWER6™ and POWER7™ servers
 - Hardware Management Consoles, IVM, Virtual I/O Server
 - AIX, pLinux, IBM i (LPARs and OS instances)
- BladeCenter® and System x®
 - BladeCenter, Blade servers, I/O modules, System x servers
 - VMware ESX Server/ESXi/vCenter, MS Hyper-V, Xen
 - Windows®, xLinux, pLinux, AIX, IBM i
- Mainframe Systems
 - Linux on zSeries®, z/VM®
- Non-IBM x86 servers*
- SNMP-based devices
 - Network, Intelligent PDUs, etc.
- Generic CIM-based devices
 - CIM = Common Information Model
- Selected Storage resources (with no additional plug-ins)
 - LSI (IRC), DS3000, DS4000, DS5000, DS6000
 - SAS Switch, Brocade FC Switch, Qlogic FC Switch
 - High-end storage requires Storage Control



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Getting Started

The image displays two screenshots of the IBM Systems Director web console interface. The left screenshot shows the 'Getting Started' page, where the 'Start' button is circled in red. The right screenshot shows the 'Next Steps' page, which lists several tasks for the user to complete.

Getting Started Page:

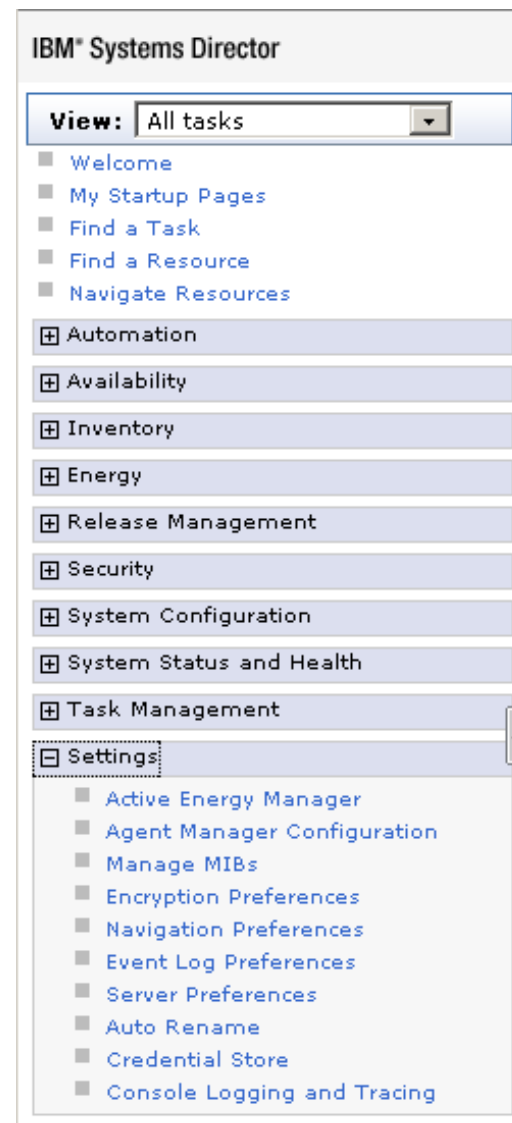
- View: All tasks
- Navigation: Welcome, My Startup Pages, Find a Task, Find a Resource, Navigate Resources
- Management Tools: Automation, Availability, Inventory, Release Management, Security, System Configuration, System Status and Health, Task Management, Settings
- Message: Before IBM® Systems Director can manage your system to set up IBM® Systems Director for the first time.
- Section: Getting Started
- Status: Discovery completed
- Chart: 21 Operating systems:
 - 14 systems with no agent
 - 0 systems with Platform Agent
 - 7 systems with Common Agent
- Warning: 14 systems have no access, 56 systems do not have inventory collected

Next Steps Page:

- Warning: 14 systems have no access, 56 systems do not have inventory collected
- Section: Next Steps
- Task 1: Register IBM® Systems Director
 - Register your product with IBM
- Task 2: Create event thresholds and automation plan
 - Use the Automation Plan wizard to create thresholds and select actions to run
- Task 3: Check for updates on discovered systems
 - Check IBM for updates your systems may need
- Task 4: Install agents on systems
 - Fully enable your systems for management by installing the common agent
- Task 5: Set up additional user security
 - Create users and assign user roles
- Task 6: Start configuring your systems
 - Use configuration templates to configure your systems

IBM Systems Director Task Sampler

- HMC, server and virtual servers discovery
- Navigation and topology
- Users and roles
- Processes
- Monitors
- Events
- Health Summary
- Scheduled tasks
- Automation plans
- Integration of the HMC and OS browser-based management tools
- Software / firmware release management



Resources and Relationships in Systems Director

- Managed Resources
 - Hardware: Servers (CECs) / Blades
 - HMC / IVM / BladeCenter
 - Virtual Servers (LPARs)
 - OS instances – IBM i / AIX / Linux / Windows
 - Software / firmware
 - Networks / storage / energy & environment
- Relationships
 - Contains
 - Runs on
 - Installed on
 - Group membership – static / dynamic
- Properties
 - Status
 - Monitored attributes
 - Inventory attributes
 - Capabilities

Discover Power Systems Virtual Resources

Discovers hardware and virtual resources via the HMC / IVM

Systems Director can manage your sy-
Director for the first time.

Getting Started

Discovery completed

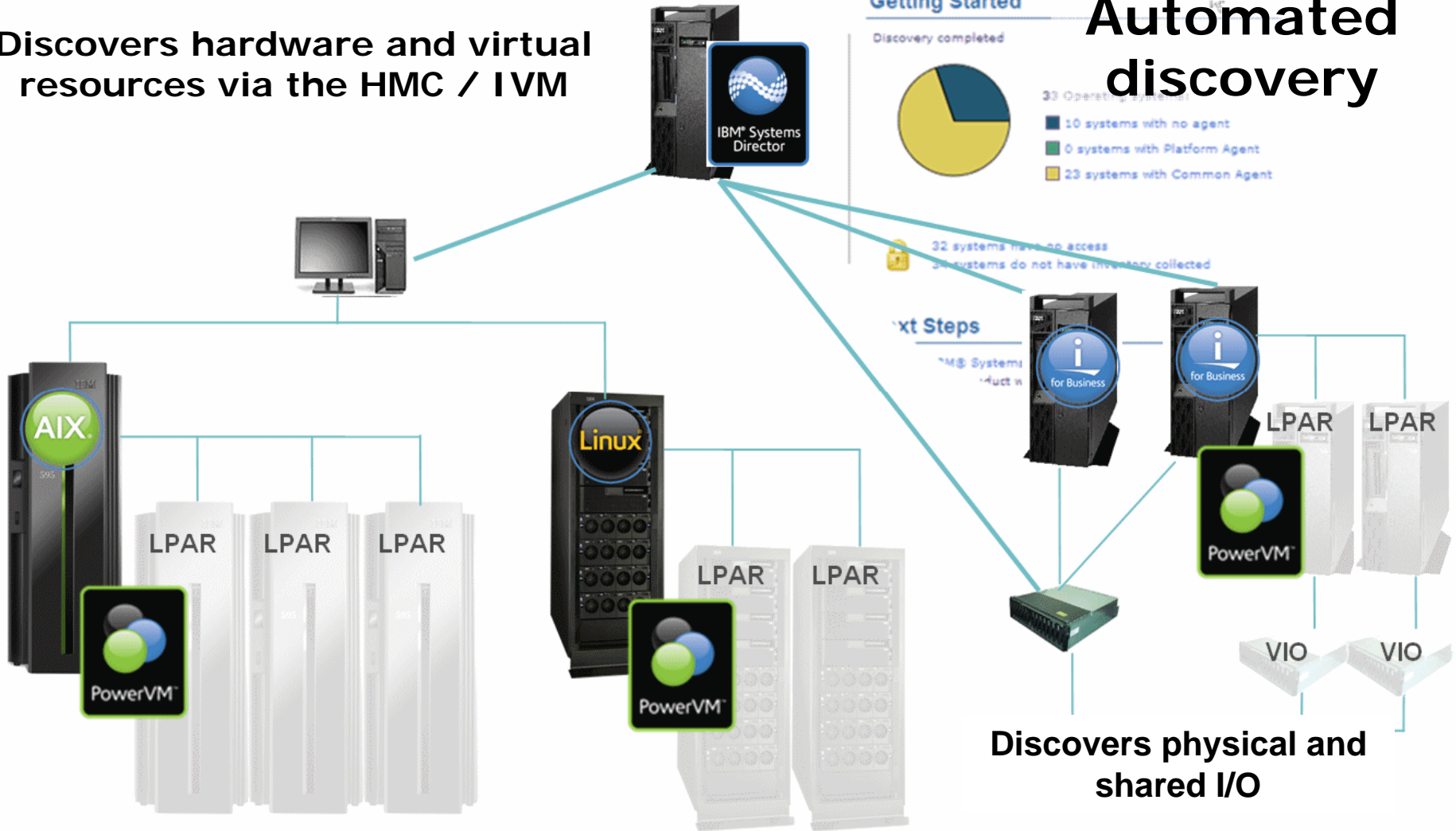
- 10 systems with no agent
- 0 systems with Platform Agent
- 23 systems with Common Agent

32 systems have no access
3 systems do not have inventory collected

Next Steps

IBM Systems Director

Automated discovery



Discovers physical and shared I/O

Power Systems Management View

Power Systems Management

Power Systems Management

The Power Systems Management summary page provides a summary of the Power Systems resources in your environment and gives details on their status. This page also provides navigational links to common management tasks.

Power Systems Resource Status

45 Power Systems resources found:

- 0 Critical
- 1 Warning
- 0 Informational
- 44 OK

Common views

- Performance Summary
- Health summary
- Event log
- Problems

Manage Resources

3 Platform Managers

- 3 Hardware Management Console (0 no access)
- 0 Integrated Virtualization Manager (0 no access)

3 Power Systems Hosts (Physical Servers)

- 3 Power Systems servers
- 0 Power Systems BladeCenter servers

31 Virtual Servers (Logical Partitions)

- 8 AIX/Linux
- 19 IBM i
- 4 Virtual I/O Server

8 Operating Systems

- 0 AIX
- 2 Linux
- 6 IBM i
- 0 Virtual I/O Server

Common tasks

- System discovery
- Monitors
- Thresholds
- Check for updates
- Create virtual server
- BladeCenter management
- System Planning Tool
- Active Energy Manager

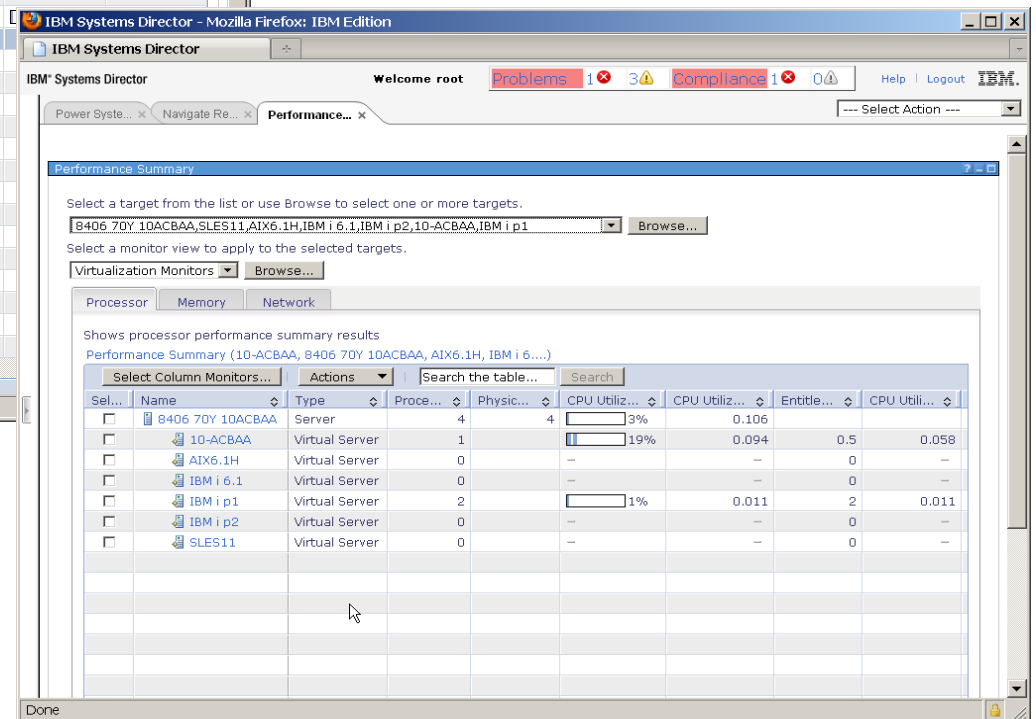
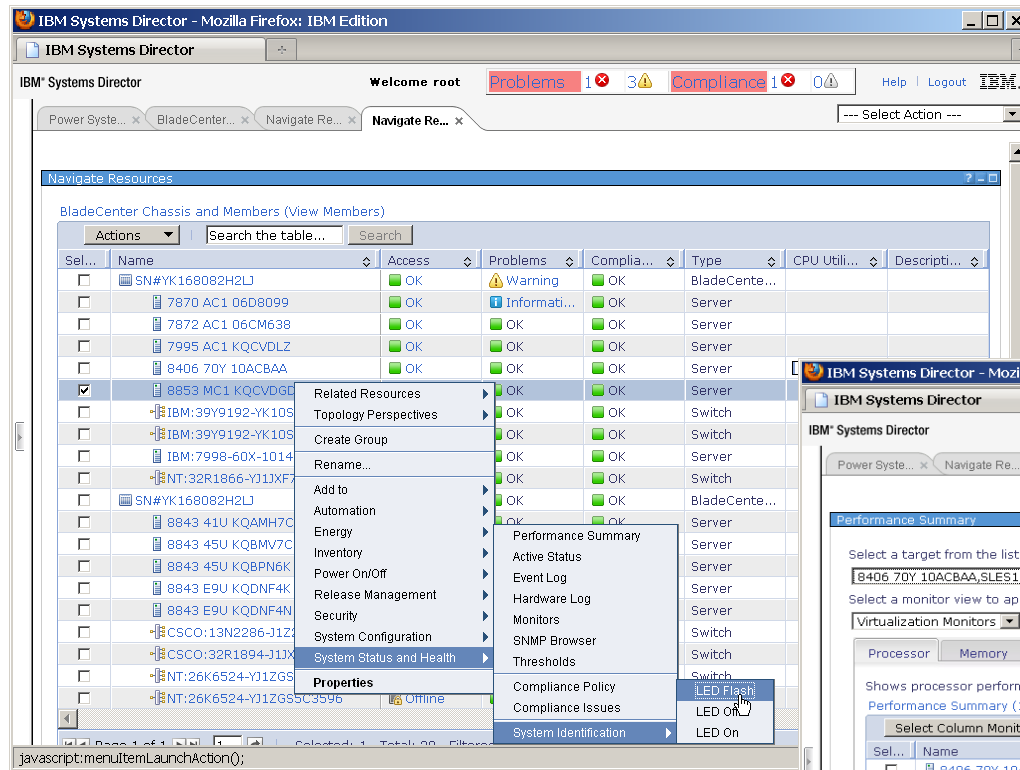
HMC Navigation View

- Nested relationships
- Customizable columns
- Roll-up CPU utilization
 - Enable in HMC
 - All shared processors
- Tasks / actions
 - Select
 - Right click
- Sort / search

The screenshot shows the IBM Systems Director interface in Mozilla Firefox. The main content area displays a table titled "HMC and Managed Power Systems Servers (View Members)". The table has several columns: Name, State, Access, Probl..., Compl..., CPU Utiliz..., Proc..., Entit..., and Memo... Each row represents a server or component, such as "asj2hmc", "Server-8204-E8A...", "10-C20A1", "AIX", "ASJ2h", "asj2sysdir", "atsaixp1", "atsaixp2", "atsip1", "atsip3", "atsslesp1", "Linux", "ATSHMC1", "ATS_780", "HATI", "loge", "PAN", "PANDORA", "YMIR", and "ATSi7_750". The CPU Utilization column shows progress bars and percentages for several rows, with a tooltip for "423%" visible over the "atsaixp2" row. The interface includes a search bar, a "Problems" indicator (1 red X, 2 yellow triangles), and a "Compliance" indicator (0 red X, 0 yellow triangles). The bottom status bar shows "Page 1 of 2", "Selected: 0", "Total: 35", and "Filtered: 35".

BladeCenter Chassis and Members, Blade Virtualization

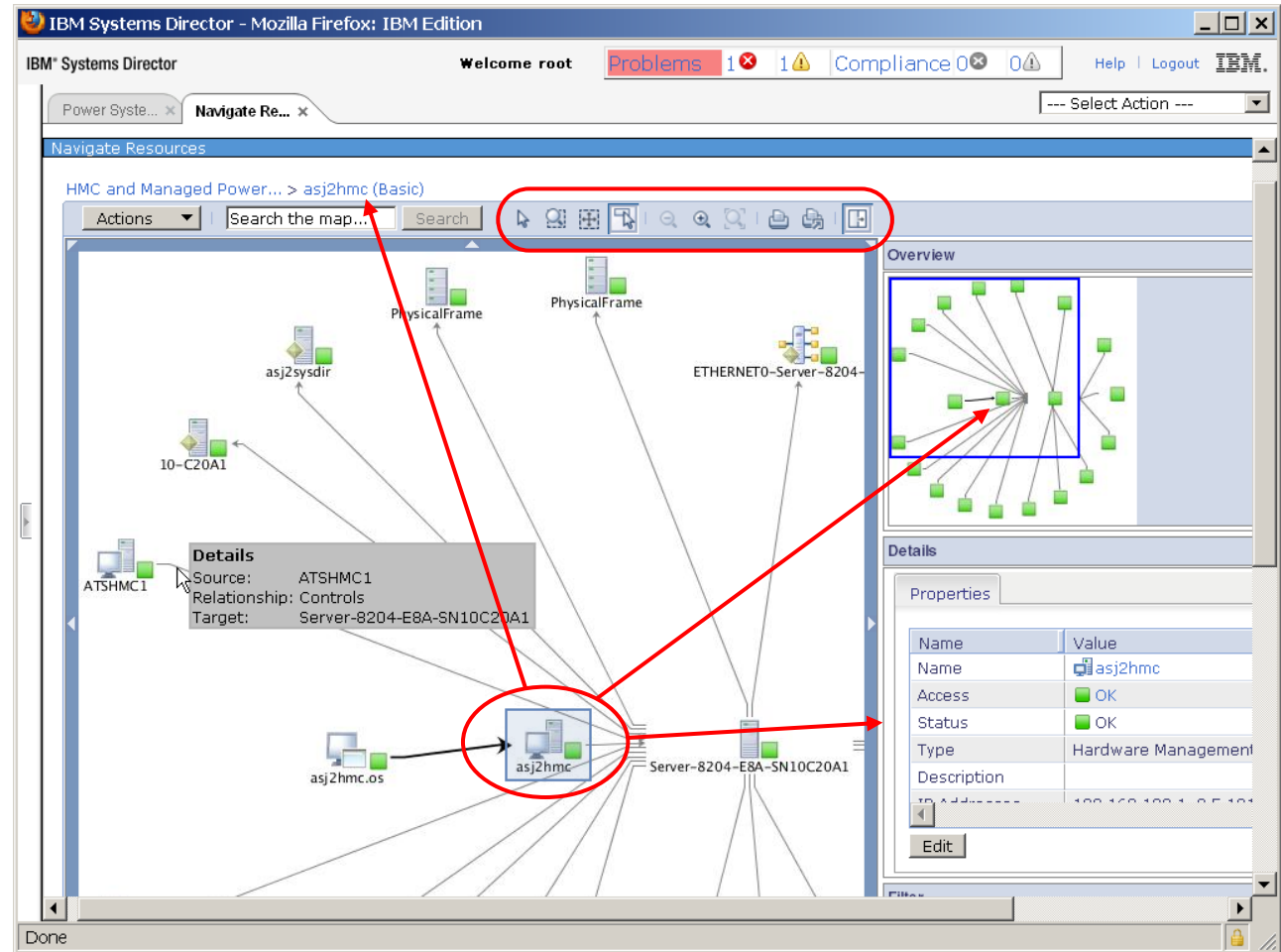
- Nested relationships
- Customizable columns
- Context actions



- VIOS virtualization
- Roll-up of CPU utilization

Topology Views

- Rooted in prior navigation
- Breadcrumb
- Options
 - Depth
 - Tree / radial
 - Zoom
- Cursor types
- Properties
- Relationships
- Select tasks
- Printable

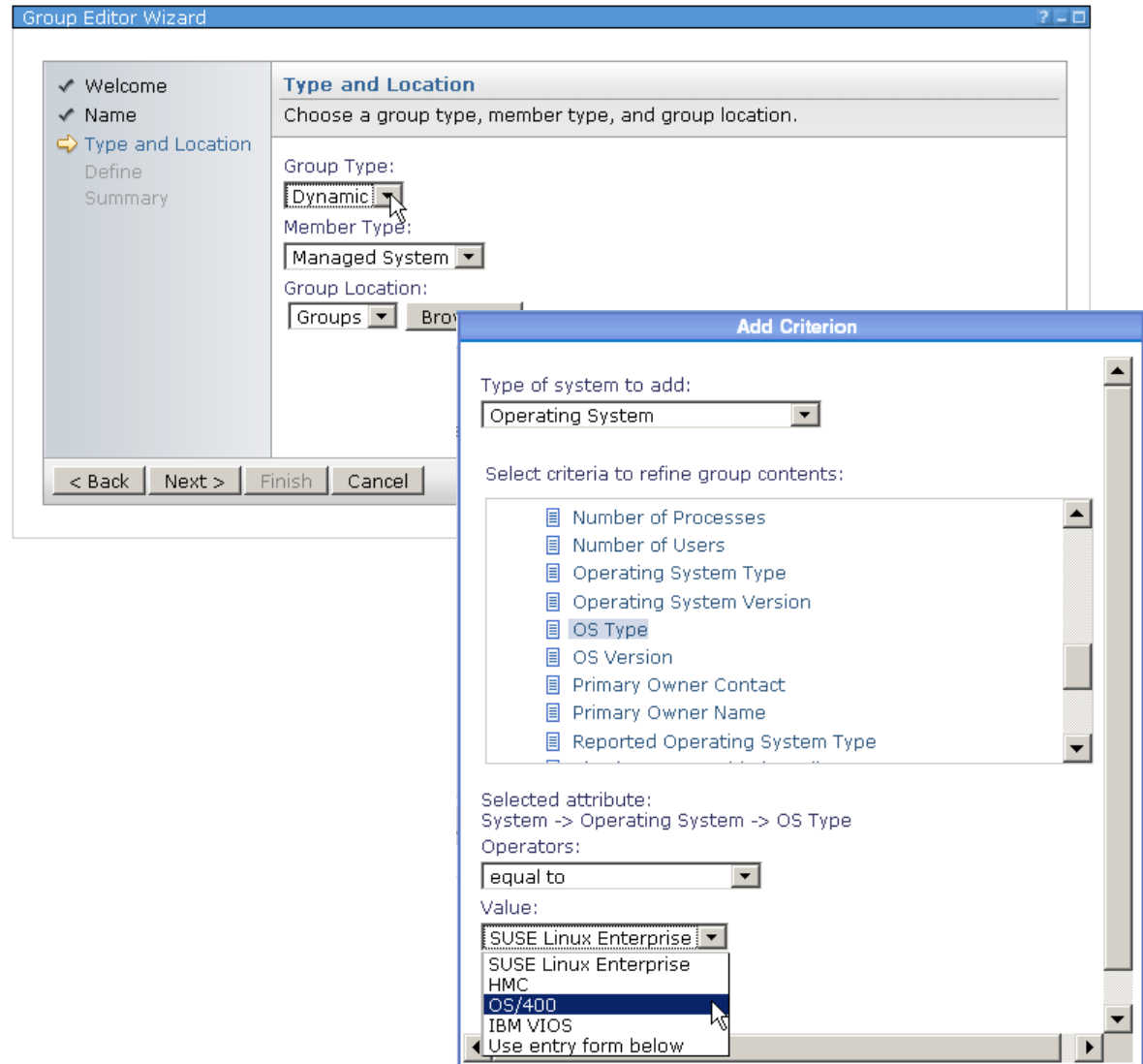


Creating Groups

- **Static**
 - Geographical
 - Functional
 - Nested node or leaf

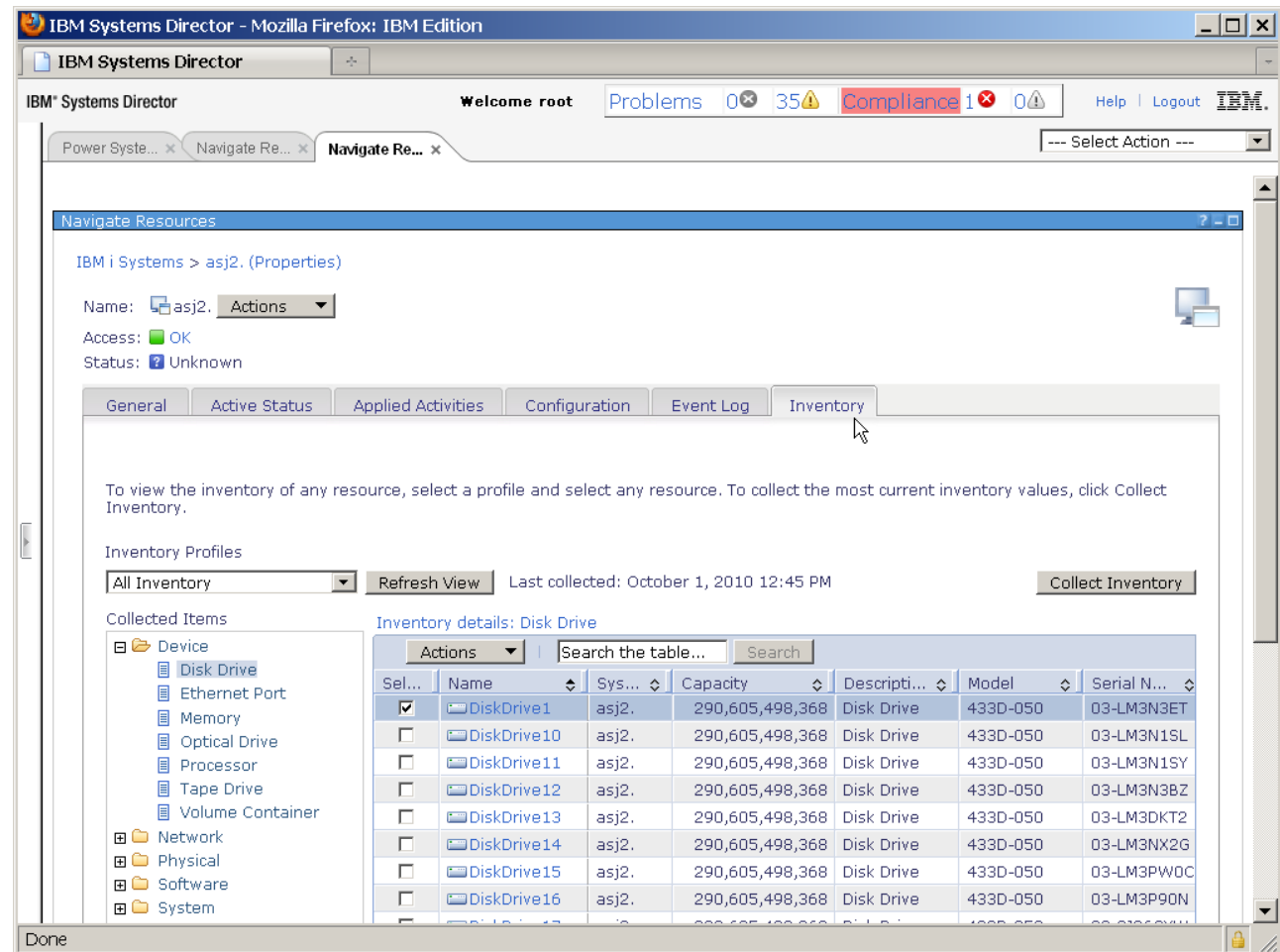
- **Dynamic**
 - Property-based
 - Nested leaf

- **Types**
 - Managed resource
 - Updates
 - Any



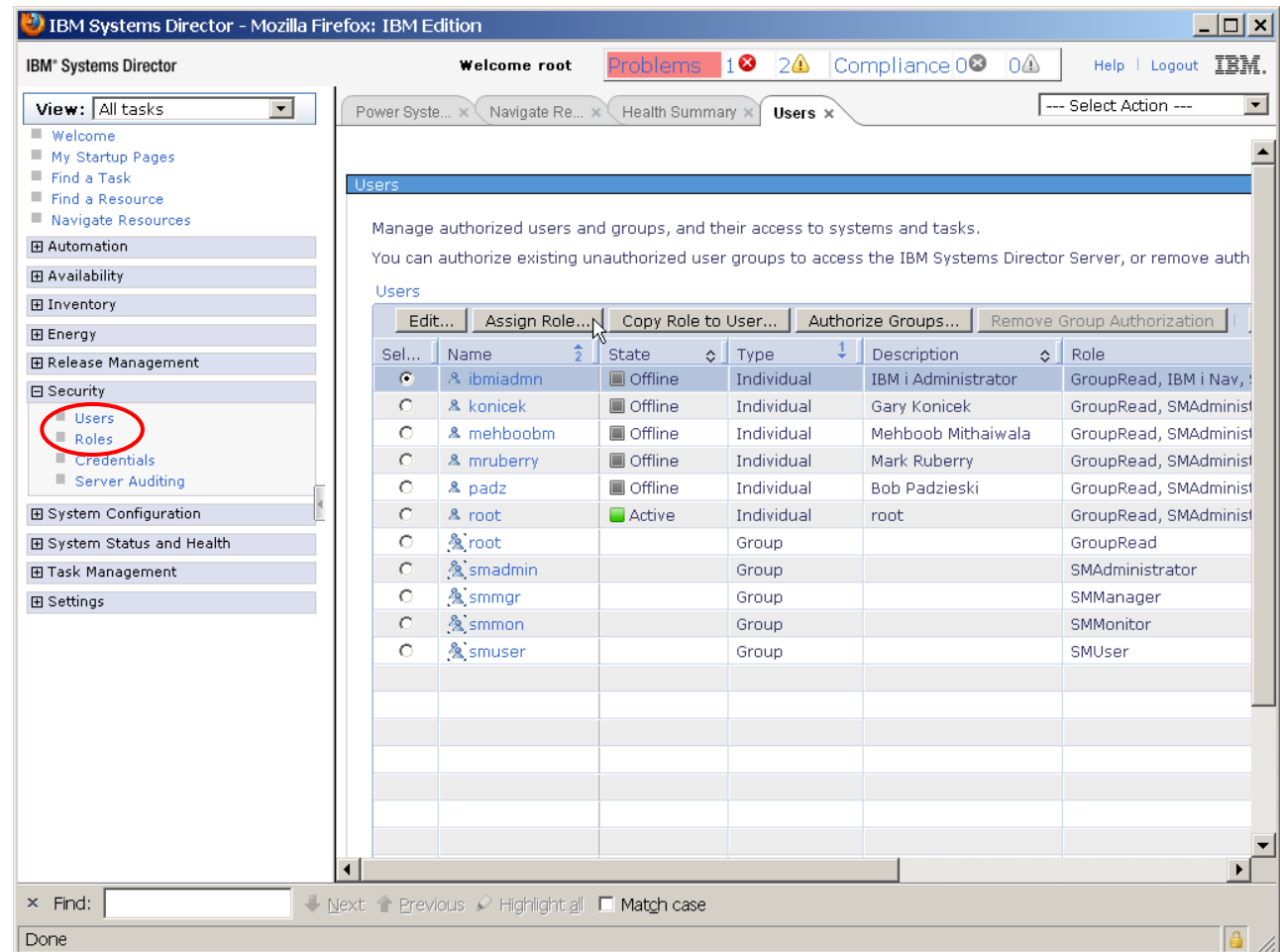
Resource Properties

- General
 - Name
 - Type
 - Model
 - IP
- Status
- Activities
 - Inventory
 - Rename
- Configuration
- Events
- Inventory
- Active Energy



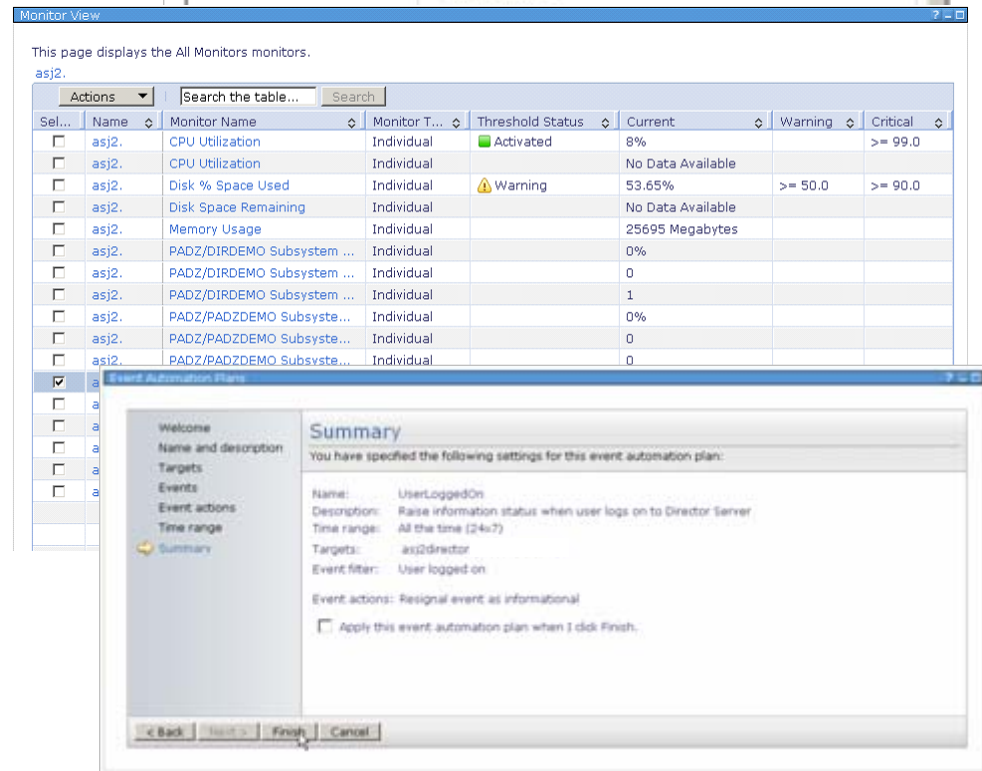
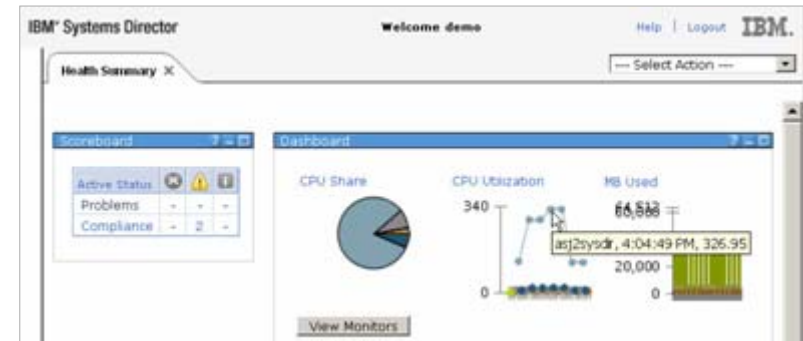
Users and Roles

- IBM Systems Director users are defined in server OS or LDAP directory
- Access granted through host groups
- Roles define a set of tasks
- Assignment of roles defines allowed tasks and resources



Monitoring / Automation

- Process management
- Monitors
- Thresholds
- Events
- Health Summary
- Command Automation
- Event Actions
- Event Automation Plans



Process Management (AIX process view)

- Types

- Applications

- Actions

- Create monitor

- Kill process

- Terminate Signal

- Customize columns

- Sort on column

Manage Processes

Select a target system, then select the type of processes to manage, then click Refresh View. After selecting a system or after you first open this page, click Refresh View to refresh the list of currently available processes. To work with a process or to create a process monitor or threshold, right-click the process, then select the appropriate action.

Viewing processes for target: ec11.dfw.ibm.com

Select a target:

Select a view:

Manage Processes (ec11.dfw.ibm.com)

| |

Select	Name	Command Line	Process ID	Parent Proc	User	Priority	Memory Usage
<input type="radio"/>	process- (pid = 0)		0	0	root	41	384
<input type="radio"/>	aioLpool	aioLpool	2883682	1	root	20	448
<input type="radio"/>	aioPpool	aioPpool	3014778	1	root	20	448
<input checked="" type="radio"/>	aixmibd	/aixmibd	4391058	3538994	root	20	1676
<input type="radio"/>	armtrac	armtrac	1835064	0	root	41	448
<input type="radio"/>	biod	/biod	10747906	10158224	root	20	196
<input type="radio"/>	biod	/usr/sbin/biod	3801214	3538994	root	20	180
<input type="radio"/>	CIM_diagd	/opt/freeware/cimom/pegasus/bin/CIM_diagd	10616926	1	root	20	296
<input type="radio"/>	cimlistener	/usr/bin/cimlistener	11075664	1	root	20	7148
<input type="radio"/>	cimserver	cimserver	6226174	1	root	20	31768
<input type="radio"/>	cimssys	/opt/freeware/cimom/pegasus/bin/cimssys platform	4587670	3538994	root	20	312
<input type="radio"/>	cimssys	/opt/freeware/cimom/pegasus/bin/cimssys cimssys	3670152	3538994	root	20	312
<input type="radio"/>	clcomd	/usr/sbin/clcomd	5636278	3538994	root	20	1940
<input type="radio"/>	clcomd	/usr/sbin/clcomd -d	8585288	10158224	root	20	1948
<input type="radio"/>	cron	/usr/sbin/cron	4980766	1	root	20	648

Page 1 of 8 | Selected: 1 Total: 108 Filtered: 108

Process Management (IBM i Subsystems view)

- Types

- Jobs
- Subsystems
- Servers

- Actions

- Start / End
- Show jobs
- Create monitor
- Customize columns
- Sort on column

Manage Processes

Select a system on which to view processes. Viewing processes for target: asj2.

Select a target:
 asj2. [Browse...]

Select a view:
 Subsystems [Refresh View]

Manage Processes (asj2.)

Run command	Actions	Search the table...	Search		
Sel...	Name	Status	Job Count	Storage Pools	Total Storage
<input checked="" type="radio"/>	PADZ/DIRDEMO	Stopped	0	*BASE (1)	OK
<input type="radio"/>	PADZ/PADZDEM	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QASE51/QASE5	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QBRM/Q1ABRMNET	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QGPL/DEMO	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QGPL/DIRDEMO	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QGPL/QDSNX	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QGPL/QFNC	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QGPL/QFPHIS	Stopped	0	*USERPOOL (1)	102400K
<input type="radio"/>	QHHTPSVR/QHHTPSVR	Running	21	*BASE (1)	OK
<input type="radio"/>	QINMEDIA/QBASE	Stopped	0	*BASE (1) *INTERACT (2)	OK
<input type="radio"/>	QINMEDIA/QBATCH	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QINMEDIA/QCMN	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QINMEDIA/QCTL	Stopped	0	*BASE (1)	OK
<input type="radio"/>	QINMEDIA/QINTER	Stopped	0	*BASE (1) *INTERACT (2)	OK

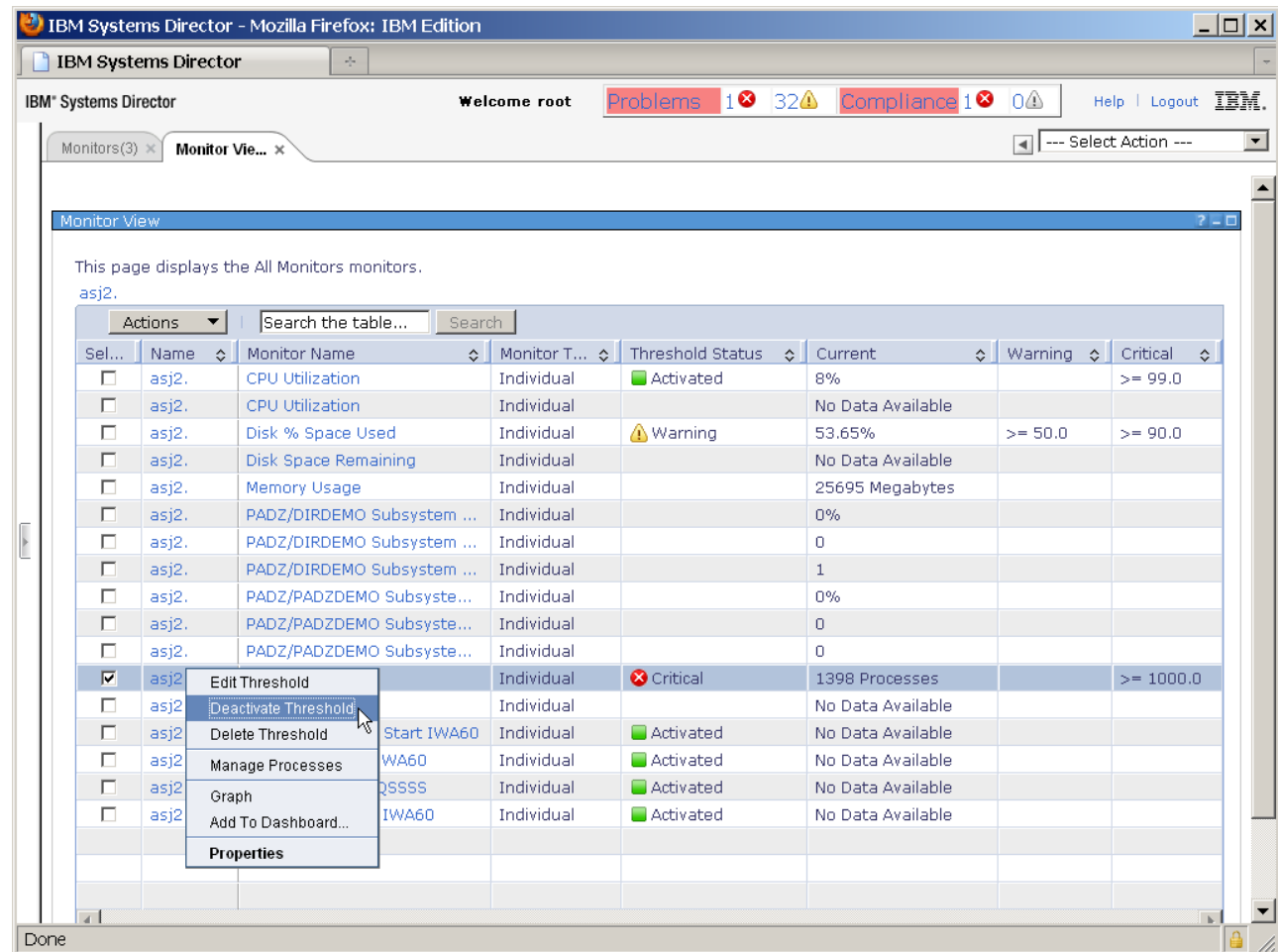
Monitors and Thresholds

- Monitor lists

- All
- Common
- Column
- Custom
- Others

- Thresholds

- Establish
- Activate / Deactivate
- Change
- Track
 - ❖ Graph
 - ❖ Dashboard



Virtualization Monitors

■ Hosts (Servers)

- CPU Utilization %
- CPU Utilization Units
- Processors
- Memory (MB)
- Physical Memory (MB)
- Available Memory (MB)
- Physical Processor
- Available Processors
- Available Processing Units

■ Virtual Servers (LPARs)

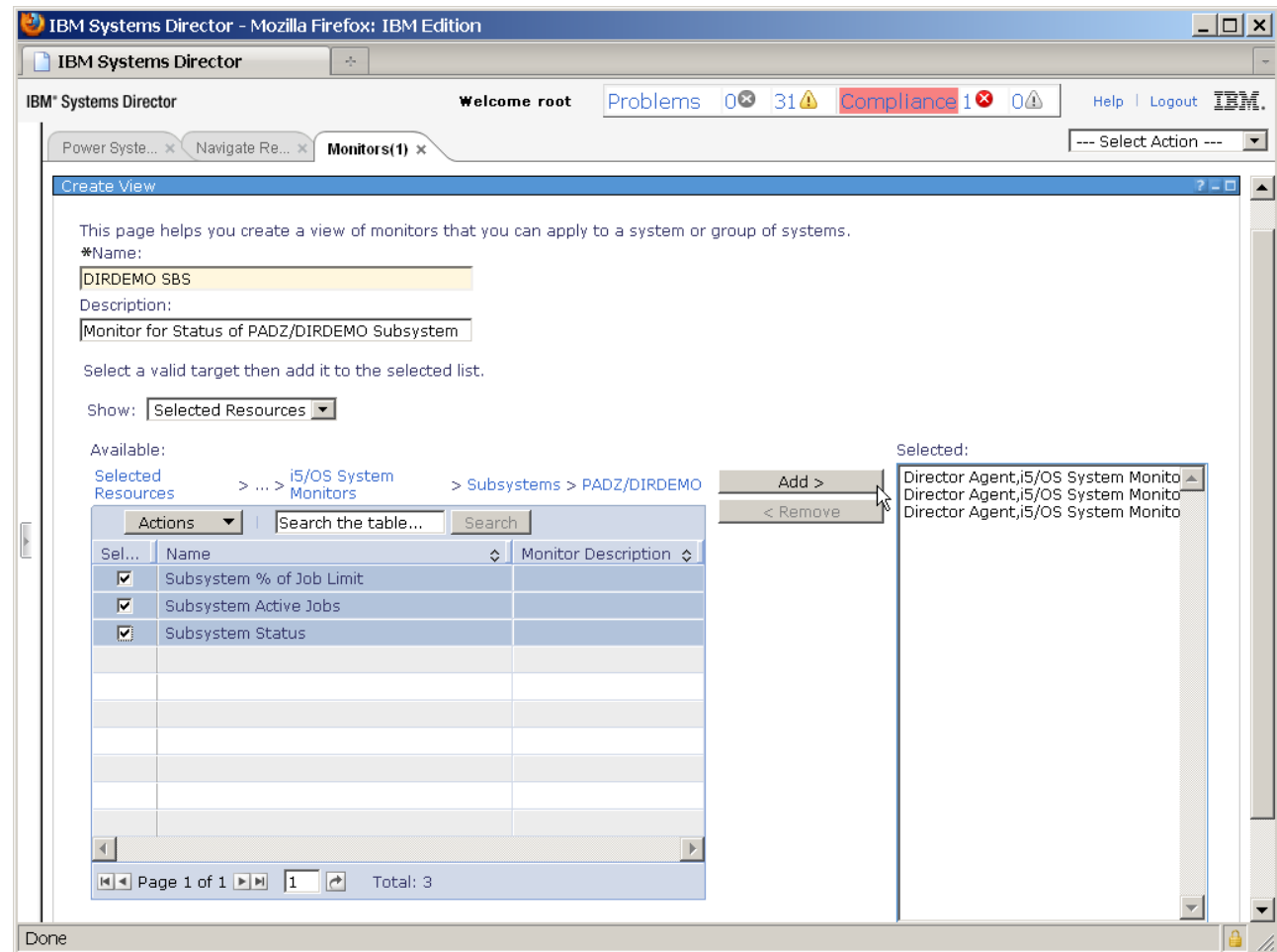
- CPU Utilization %
- CPU Utilization Units
- Processors
- Memory (MB)
- Physical Memory (MB)
- CPU Utilization Capped Units
- CPU Utilization Uncapped Units
- Entitled Processing Units

AIX Monitors (44 Metrics)

- CPU % Utilization
- CPU Computing Unit (%)
- Active Memory Sharing Enabled
- Active Virtual Memory (4K Pages)
- Memory Mode
- Memory Page Fault (Pages/sec)
- Memory Page Steal (Pages/sec)
- Memory Usage
- Paging Space Total, Used, Remaining & Reserved (MB)
- Total Space of Filesystems: /, /home, /opt, /tmp, /usr & /var (MB)
- Used Space of Filesystems: /, /home, /opt, /tmp, /usr & /var (MB)
- Available Space of Filesystems: /, /home, /opt, /tmp, /usr & /var (MB)
- Available Space and Capacity of /dev/hdisk0 (MB)
- Active Time of /dev/hdisk0 for processing request (%)
- Time for Servicing Transfers in relation to Active Time of /dev/hdisk0 (%)
- Ethernet Kilobytes Received, Transmitted and Throughout Rate (KB/sec)
- Ethernet Packets Transmitted and Received Rate of en3 & lo0 (Packets/sec)

IBM i Resource Monitors (100+ metrics)

- File
- File systems
- List of Directory Contents
- System Statistics
- User statistics
- NetServer™ Statistics
- I/O Processors
- Physical Disks
- Storage Pools
- Subsystems
- Job Queues
- Job Statistics
- Process
- Message Queues



http://publib.boulder.ibm.com/infocenter/director/v5r2/topic/dirinfo_5.20/fqm0_r_i5os_resource_monitor_attributes.html

IBM i Message Filter

The image illustrates the 'Create Event Filter Wizard' in IBM Systems Director, showing the steps to create an IBM i Message Filter. The wizard is displayed in a browser window (Mozilla Firefox: IBM Edition) within the IBM Systems Director application.

The wizard consists of several steps, shown in a sequence of screenshots:

- Event Type:** Select the types of events that you want to include in the filter. The 'Default' option is selected, and the checkbox 'Include IBM i message queue events' is checked.
- IBM i Event Type:** Specify the IBM System i event types that you want to include in the filter. The 'Add' button is used to add the event type 'IBM i.Message Queue.QSYS/QSYSOPR.CPF1103' to the list of selected event types.
- Event Text:** Specify the event text that you want to include in this filter. The 'Custom' option is selected for the event text, and the text 'DIRDEMO' is entered in the search field.
- Summary:** Review your selections for this event filter. The summary page displays the filter details, including the name, description, type, text, time range, category, event severity, sender, server zone, event types, excluded event types, frequency interval, frequency count, extended details, and variables.

The final screenshot shows the 'Summary' page with the following details:

- Name: SBS Start
- Description: Create Event Filter for SBS Start Message
- Type: Simple
- Text: DIRDEMO DEMO
- Text case: Insensitive
- Text type: Any word
- Time range: All the time (24x7)
- Category:
- Event severity:
- Sender:
- Server zone: America/Chicago - Central Standard Time - CST
- Event types: OS/400.msgq.QSYS/QSYSOPR.CPF1103
- Excluded event types:
- Frequency interval:
- Frequency count:
- Extended details:
- Variables:

The wizard concludes with a 'Finish' button to complete the filter creation.

Health Summary

- Scoreboard
- Dashboard
 - System or group monitors
 - Flyover graphs
 - Zoom / export
- Navigation lists
 - Favorites
 - Systems w/problems
 - Any group

The screenshot shows the IBM Systems Director interface in Mozilla Firefox. The main window title is "IBM Systems Director - Mozilla Firefox: IBM Edition". The breadcrumb path is "Welcome root > Problems 1 x 2 y Compliance 0 x 0 y". The "Problems" count is highlighted in red.

Scoreboard:

Active Status	1 x	2 y	0 i
Compliance	-	-	-
Problems	1	2	2

Dashboard: Shows three graphs: CPU Utilization, Disk Space, and Processes & Jobs. A tooltip for "asj2director, 10:07:17 AM, 31,985" is visible over the Processes & Jobs graph.

Health Summary:

Actions: [Dropdown]

Favorites - root (View Members)

Name	Type	Problem
Demo OS (8)	Static Syst...	Critic
ratsi00	Operating S...	OK
ratsi12	Operating S...	OK
EBC57011	Operating S...	OK
ratsips7	Operating S...	OK
asj2	Operating S...	Critic
atsip1	Operating S...	OK
asj2director	Operating S...	Warn
ratsi031	Operating S...	OK

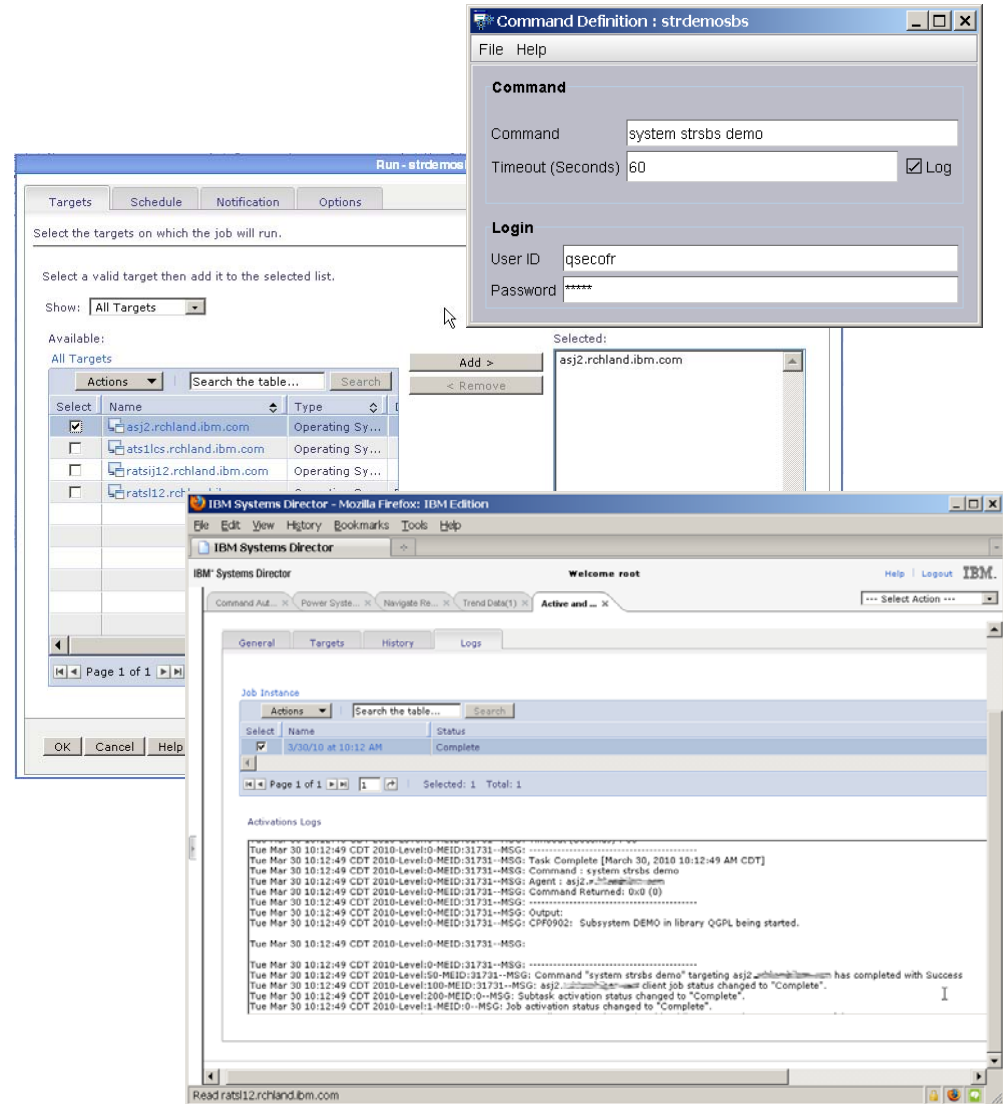
Systems with Problems (View Members)

Name	Access	Problem
asj2	OK	Critic
asj2director	OK	Warn
IBM:7872-AC1-06CM638	OK	Info
SN#YK168082H2LJ	OK	Info
VIOS_TEST	OK	Warn

Navigation bar at the bottom: Find: [input] Next Previous Highlight all Match case Done

Command Automation

- Command Definition
 - Command and parameters
 - User ID / PW
 - Name in System Director
- Run a definition
 - Remote SSH
 - Now / scheduled
 - System / group
 - Use in automation plan
- Results
 - High level success / fail
 - Details in log

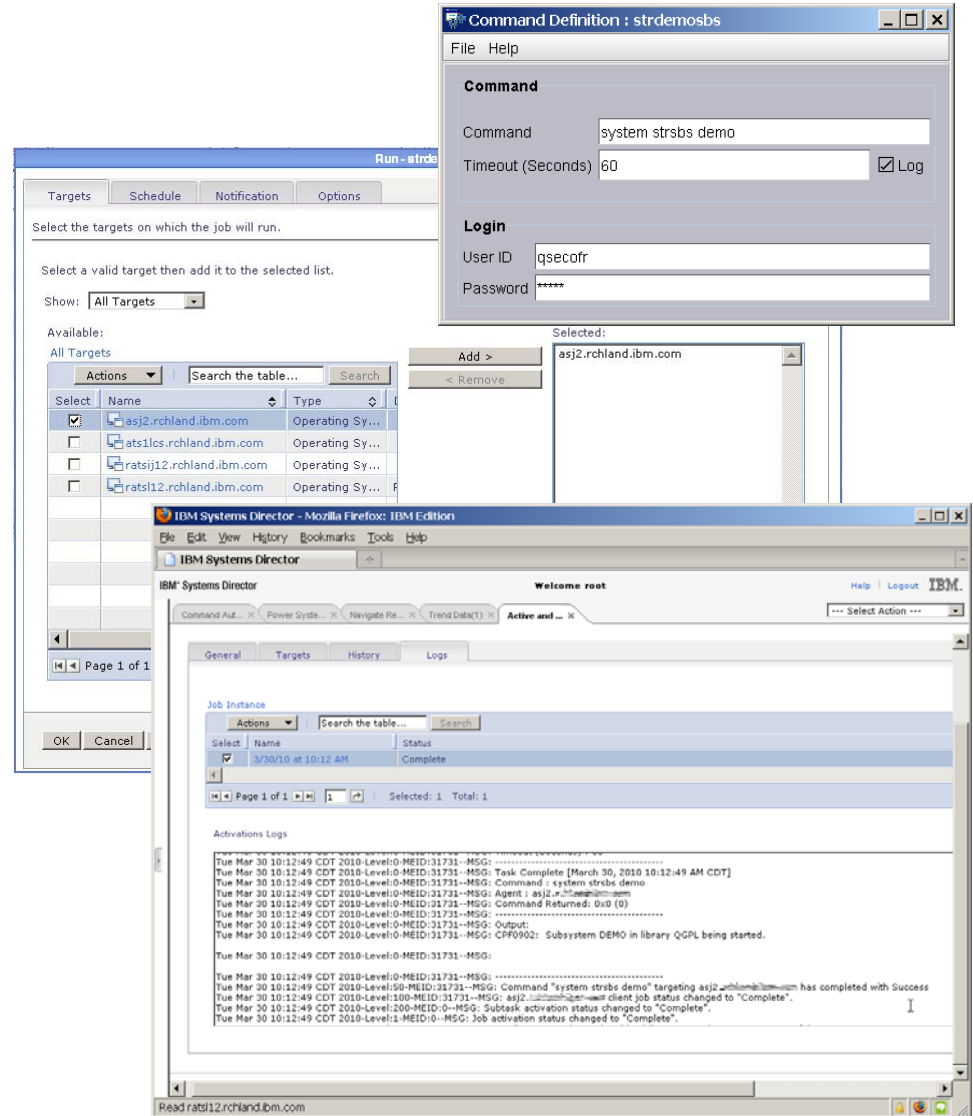


Command Automation with IBM i

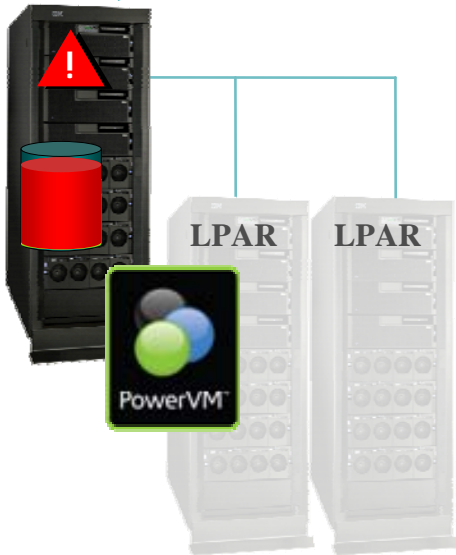
- Command Definition
 - QSHELL Command
 - User Profile / PW
 - Name in System Director

- Run a definition
 - Remote to QSHELL via SSH
 - Now / scheduled
 - System / group
 - Use in automation plan

- Results
 - High level success / fail
 - Details in log



Automate Notification / Actions Based on Events



IBM Systems Director functions:

1. Monitor disk capacity
2. If the disk is $\geq 85\%$:
 - a. Execute command to backup delete non-critical files
 - b. Log the action
 - c. Send a text message to the administrator

Automation Plan Events - Common

The screenshot shows the 'Create Event Automation Plan Wizard' in IBM Systems Director. The 'Events' step is active, showing a list of event types under the 'Common' filter. The 'Disk % Space Used' event type is selected, and its configuration is shown on the right, including a 'Warning' threshold of 85%.

Events:
Common

Common event filters are predefined filters that monitor for events of common interest in your systems-management environment. For example, the Fans event type filter is triggered by any fan events. To learn more, click each event type name in the list to display a description and any additional settings for that event type.

Select event types from the following list:

- General
 - Event severity
 - Updates
 - Common agent
 - User login security
- Thresholds
 - CPU Utilization
 - Memory Usage
 - Disk % Space Used
- Hardware
 - Processors (CPU)
 - Disks
 - Fans
 - Memory

Disk % Space Used - Monitor values that are too high:

- Critical >= 95 %
- Warning >= 85 %

Customizable Event Actions

- Program and tasks
 - Start a program on a system
 - Start a program on the management server
 - Start a program on the system that generated the event
 - Start a task on a specified system
 - Start a task on a system that generated the event
 - Timed alarm that starts a program
- Events
 - Set an event system variable
 - Modify an event and send it
 - Timed alarm that generates an event
- Logging
 - Log to a log file on the server
- Mail and newsgroups
 - Send an e-mail (Internet SMTP)
 - Send an e-mail to a mobile phone
 - Post to a newsgroup (NNTP)
- SNMP and TEC
 - Send an SNMP inform request to an IP host
 - Send an SNMP trap to an IP host
 - Send an SNMP trap reliably to a NetView host
 - Send a Tivoli Enterprise Console event
- Group membership
 - Static group: add or remove the event-generating system
 - Static group: add or remove group members

Customized Text Message Event Action

The screenshot shows the IBM Systems Director interface in Mozilla Firefox. The main window is titled 'IBM Systems Director - Mozilla Firefox: IBM Edition'. The breadcrumb path is 'Welcome root'. There are status indicators for 'Problems' (1 error, 2 warnings) and 'Compliance' (0 errors, 0 warnings). The current page is 'Event Autom...'.

The 'Create Event Automation Plan Wizard' is open, showing the 'Event Actions' step. A table lists available actions:

Sel...	Name	Type
<input type="checkbox"/>	Add to the event log	Add to the event log
<input type="checkbox"/>	ChgPADZidPW	Start a task on a spe
<input type="checkbox"/>	Demo mail	Send an e-mail (Inte
<input checked="" type="checkbox"/>	Text to Bob	Send an e-mail to a

The 'Edit Action' dialog for 'Text to Bob' is open. It contains the following fields:

- *Action name: Text to Bob
- Description: Send text message to Bob's Cell
- *Send-to e-mail address: 5074219539@vtext.com
- *Reply-to e-mail address: padz@us.ibm.com
- *E-mail (SMTP) server (for example, smtp.mycompany.com): relay.us.ibm.com
- *E-mail (SMTP) port: 25
- Subject of message: &date &system
- Body of message: &text

Below the fields, there is a section for event variables:

Select an event variable and text field to insert the variable in the target text field. You can also specify the appropriate language and time zone.
[Learn more about using event variables](#)

Event variable: Date the event occurred (&date)

Target text field: Subject of message: [dropdown]

Language: English

Time zone: America/Chicago - Central Standard Time - CST

Buttons: Test, OK, Cancel, Help

Event Automation Plan Wizard

- Name / description
- Targets
 - Resources
 - Groups
- Events
 - Common
 - Existing Filter
- Event Actions
- Time range
- Summary and activation

Edit Event Automation Plan Wizard

<ul style="list-style-type: none"> ✓ Welcome ✓ Name and Description ✓ Targets ✓ Events ✓ Event Actions ✓ Time Range ➤ Summary 	<div style="background-color: #e0e0e0; padding: 2px;">Summary</div> <p>You have specified the following settings for this event automation plan:</p> <p>Name: Demo Plan</p> <p>Description: Demo Automation Plan to send a text message when a CPF1103 occurs</p> <p>Time range: Sunday, 0:00 - 24:00 Saturday, 0:00 - 24:00 Monday, 0:00 - 7:00 Tuesday, 19:00 - 24:00 Wednesday, 0:00 - 7:00 Wednesday, 19:00 - 24:00 Thursday, 0:00 - 7:00 Thursday, 19:00 - 24:00 Friday, 0:00 - 7:00</p> <p>Targets: IBM i Systems</p> <p>Event filter: Demo Plan-Filter Disk % Space Used</p> <p>Event actions: Text to Bob Add to the event log</p> <p><input checked="" type="checkbox"/> Apply this event automation plan when I click Finish.</p>
--	--

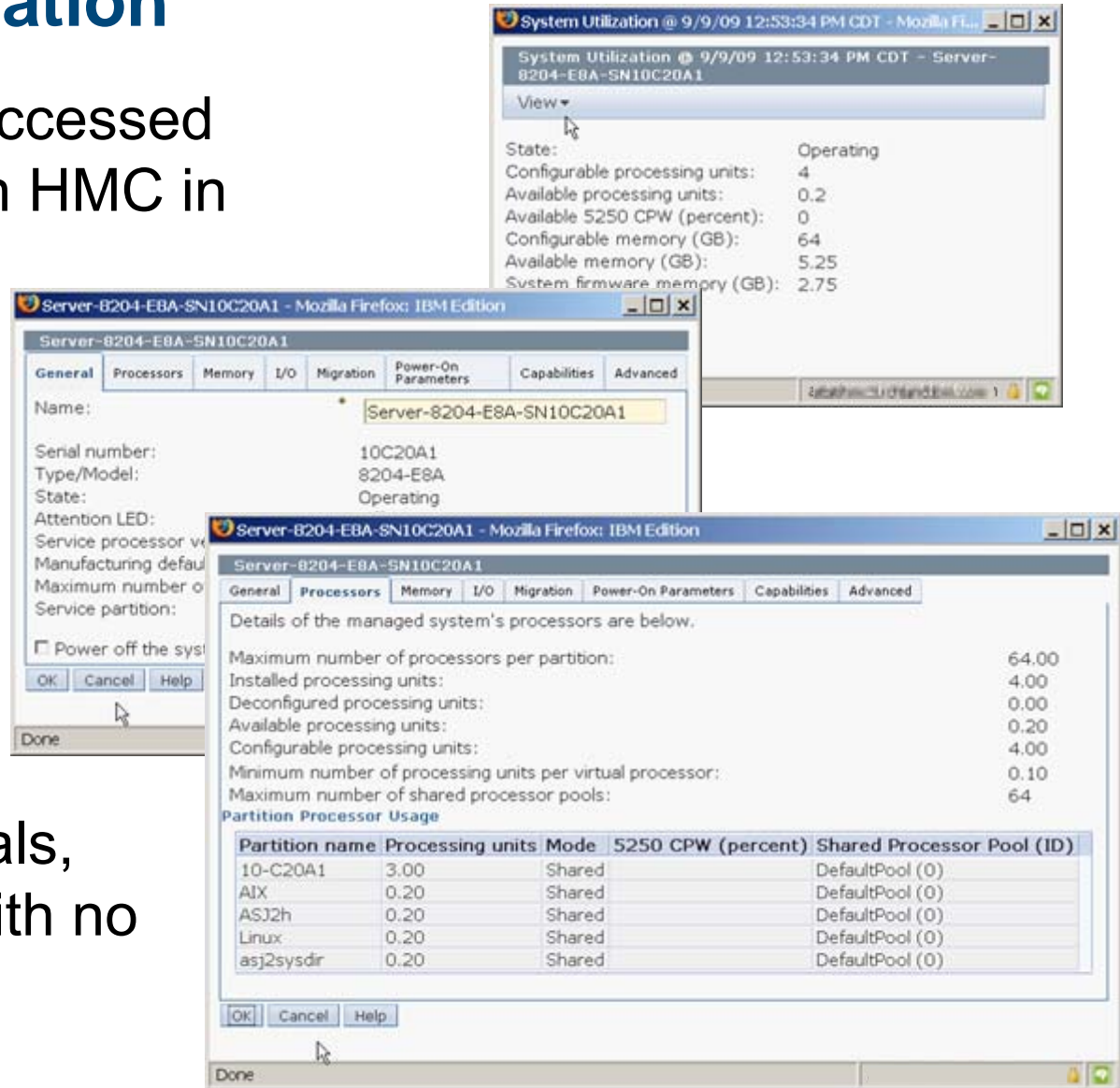
< Back
Next >
Finish
Cancel

HMC Tasks Integration

- HMC tasks can be accessed from right-click on an HMC in the GUI

- Operations
- Configuration
- Users
- Connectivity
- Serviceability
- Updates

- With saved credentials, window is opened with no prompting



AIX 6/7 Systems Director Console Integration

Groups > All Operating Systems > cler05.dfw.ibm.com (Properties)

Name: **cler05.dfw.ibm.com**
Access: ■ OK
Status: ■ OK

Actions

- Related Resources
- Topology Perspectives
- Create Group
- Remove...
- Rename...
- Add to
 - AIX Management**
 - Automation
 - Inventory
 - Power On/Off
 - Release Management
 - Security
 - System Configuration
 - System Status and Health

Additional Properties

- Location
- Security and Users
- Role Based Access Control
- System Environments
- Print Spooling
- Communications Applications and Services
- System Storage Management
- Processes and Subsystems
- Problem Determination
- Performance and Resource Scheduling
- Devices
- Advanced Accounting
- Software Installation and Maintenance
- Software License Management
- Workload Partition Administration
- Cluster Systems Management
- Health
- System Management Interface Tool (SMIT)

- At-a-glance status
- All administration commands are accessible
- Consistent management interface

IBM i Navigator Integration

The screenshot shows the IBM Systems Director web interface in Mozilla Firefox. The main content area displays a table of resources under the heading "Demo OS (View Members)". A context menu is open over the resource "ratsi00", showing various management actions. The table columns include Name, Access, Problems, Compliance, OS Type, OS Version, and Protocols.

Sel...	Name	Access	Problems	Complian...	OS Type	OS Type	OS Version	Protocols
<input type="checkbox"/>	asj2	OK	Critical	OK	IBM i		6.1	IPC
<input type="checkbox"/>	asj2director	OK	Warning	OK	Linux	SUSE Linux E...	10.3	CAS, CIM, SSH
<input type="checkbox"/>	atsip1	OK	OK	OK	IBM i	IBM i5OS	6.1	SSH
<input type="checkbox"/>	EBC570I1	OK	OK	OK	IBM i	OS/400	V6R1M0	CAS
<input checked="" type="checkbox"/>	ratsi00	OK	OK	OK	IBM i	IBM i5OS	6.1	SSH
<input type="checkbox"/>	ratsi03	OK	OK	OK	IBM i		V7R1M0	CAS, CIM
<input type="checkbox"/>	ratsips	OK	OK	OK	IBM i		7.1.0	CIM
<input type="checkbox"/>	ratsi12	OK	OK	OK	Linux	SUSE Linux E...	10.3	SSH

The context menu for "ratsi00" includes the following items:

- Related Resources
- Topology Perspectives
- Create Group
- Remove...
- Rename...
- Add to
- Automation
- IBM i Management
- Inventory
- Power On/Off
- Release Management
- Security
- System Configuration
- System Status and Health
- Properties
- Basic Operations
- Configuration and Service
- Databases
- File Systems
- Integrated Server Administration
- Internet Configurations
- Journal Management
- Network
- Performance
- Security
- System
- Users and Groups
- Work Management

Update Manager

- Check for latest Fix Central updates
 - Operating Systems
 - Firmware
 - HMC
 - Systems Director
 - Others
- Define fix compliance policies
 - Display status by systems or groups
- Download fixes
- Install fixes
- Immediate or scheduled actions

Updates
Settings
Getting started


Update Manager

Manage the firmware and software updates needed by your systems. Start by running a check for updates to ensure you have the latest update information. Then show needed updates or set up compliance policies to ensure your systems remain current.

[Learn more about Update Manager](#)

Update Compliance (monitoring 4 systems)

Update status for 4 monitored systems:



✘ 1 system

⚠ 0 systems

ℹ 0 systems

✔ 3 systems

[View All Issues](#)

System tasks

[Change compliance policies](#)

[Show installed updates](#)

Updates

<p>Check for updates</p> <p>Last check for updates: Oct 4, 2010 1:10:37 PM</p> <p>Next scheduled check for updates: Not scheduled</p> <p>Show needed updates Show the updates that are needed by a system</p> <p>Show update groups Group updates for categorization and compliance policies</p> <p>Show all known updates Show all recently acquired updates</p>	<p>Common tasks</p> <p>Update IBM® Systems Director</p> <p>Import updates</p> <p>Export updates</p>
---	--

Search

Search local updates:

Summary page for single view

Update Manager groups

- Pre-defined groups
 - All AIX Recommended Updates
 - All Critical IBM System x and BC updates
 - All HMC Recommended updates
 - All IBM i Recommended Updates
 - All IBM Systems Director 6.2 Updates
 - All Power System Firmware Recommended Updates
 - All RHEL Updates
 - All SLES Updates
 - All Updates
 - All UpdateXpress System Packs
 - Latest Virtual I/O Server Upgrades

- User-defined groups comprise of explicit levels
 - compliance policies can be assigned to groups or individual systems

Maintenance / Currency

- IBM® Systems Director 6.2
- IBM Director 6.1 and V5.20 agents
- IBM i 5.4 and later
 - Cumulative PTF package and PTF Groups
- IBM AIX® 5.3 TL6 SP5 and later
 - Technology levels and service packs
- Linux, Novell Distribution
- Red Hat Enterprise Linux
- Hardware Management Console (HMC) - V7.3.3 SP2 and later
- Power Systems firmware
- VIOS version 1.5.2.1-FP11.1 or later
 - Migration, fix packs, service packs, and interim fixes
- IBM BladeCenter
 - I/O Module Firmware
 - Management Modules, Advanced Management Modules, and Pass-through Modules
- IBM System x servers running Linux or Windows, device driver & firmware updates
- External storage firmware

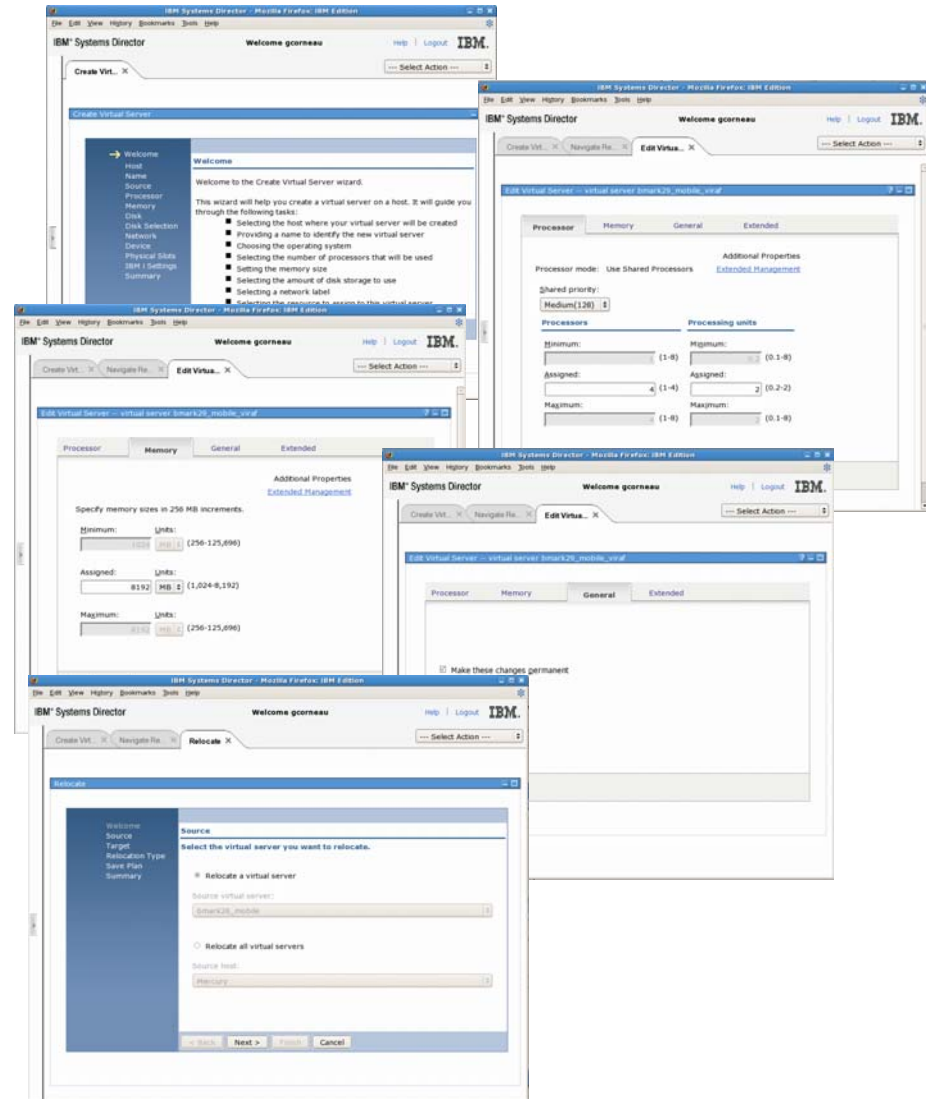
http://publib.boulder.ibm.com/infocenter/director/v6r2x/topic/com.ibm.director.updates.helps.doc/fqm0_c_um_update_types_and_applicable_resources.html

Virtualization Support

- Create virtual server
 - CPU, memory, disk (virtual or existing), slots

- Edit virtual resources
 - Dynamic: Memory, CPU
 - Static: network, disks, slots

- Relocate virtual servers
 - Live relocation:
 - ❖ HMC/IVM
 - ❖ VirtualCenter with ESX
 - ❖ Xen
 - Static Relocation:
 - ❖ Microsoft® Virtual Server
 - ❖ VMware ESX



















Scheduled Tasks and Jobs

- Create scheduled tasks
 - Single instances
 - Repetitive
 - Create from scratch or based on existing task
- View previously executed task status and results
- Re-execute tasks
- Suspend / resume running tasks
- Works with Command Automation for running commands on individual resources or groups

Active and Scheduled Jobs

Active and Scheduled Jobs

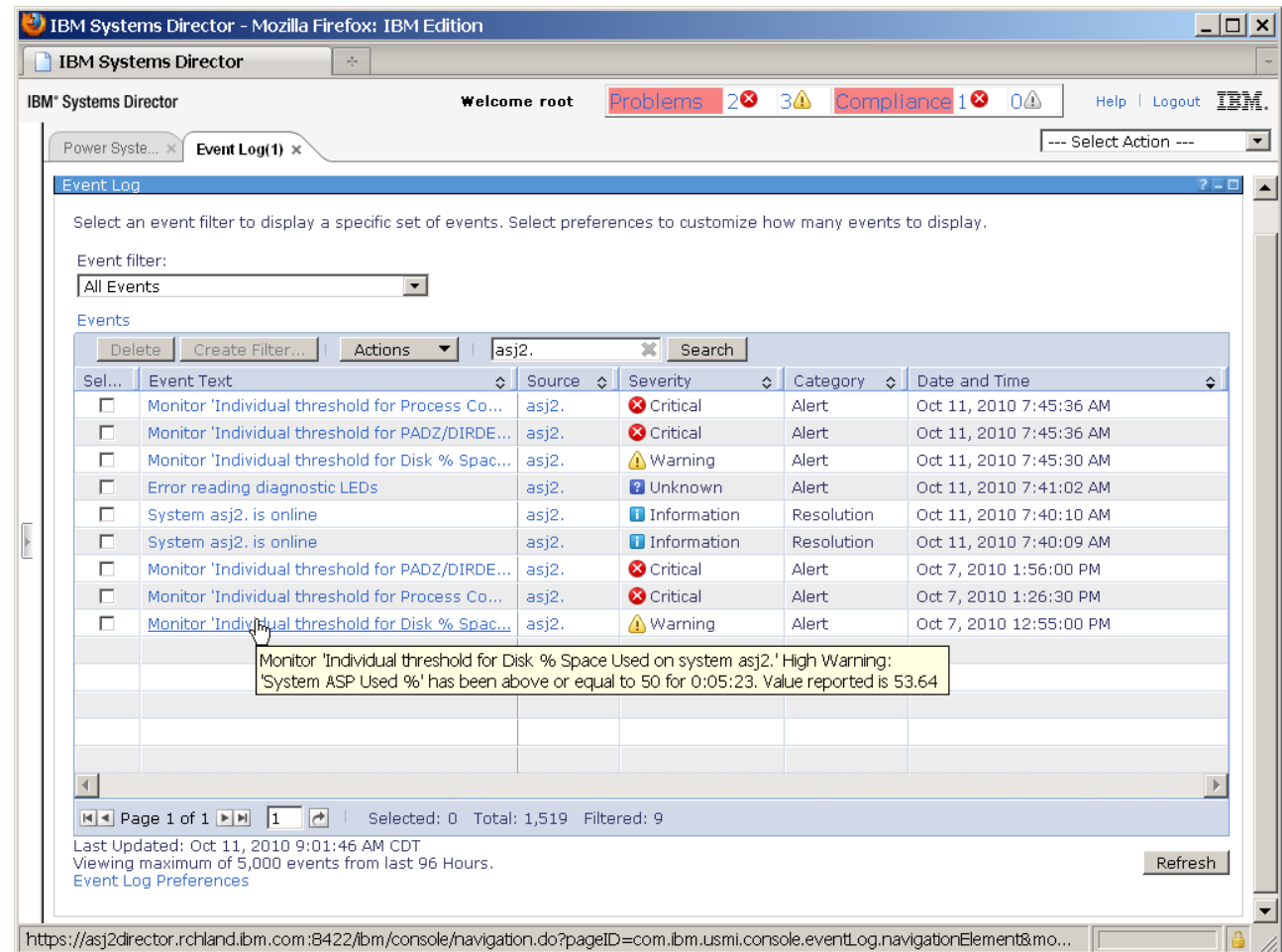
Create Like... Edit... Delete | Actions | Search the table...

Sel...	Name	Status	Progress	Last Run...
<input checked="" type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Test SSH - August 11, 20...	Complete	 100%	Complete
<input type="checkbox"/>	System Discovery - ratsi0...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	System Discovery - 9.5.1...	Complete	 100%	Complete
<input type="checkbox"/>	System Discovery - 9.5.1...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Power On - August 4, 20...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete
<input type="checkbox"/>	Collect Inventory - August...	Complete	 100%	Complete

Page 1 of 4 | 1 | Selected: 1 Total: 59 Filtered: 59

Event Log

- Director and user defined events
- Large circular log on server
- Set preference for console
- Sort, filter and search
- Refresh view button
- Create event filters from log



Agenda

- Systems Management environment
- IBM Systems Director Overview
- IBM Systems Director Features
- **IBM Systems Director plug-ins**
- IBM Systems Director Editions
- Power Systems Details for IBM Systems Director 6.2.1



Systems Director Advanced Managers (plug-ins)

- A plug-in to IBM® Systems Director is software that is installed on top of the base
- Delivers key additional functionalities to solve specific IT challenges
- Retains a consistent user experience with the base offering by taking advantage of the common tasks and capabilities



IBM Systems Director Plug-ins (1 of 3)

★ IBM Systems Director Active Energy Manager 4.3.1

- Collects and reports energy data on systems, data center
- Controls energy use
- Reports historical energy usage

★ IBM Systems Director Network Control 1.2.1

- Discover and manage specific network devices (see InfoCenter for details)
- Monitor health and status of network devices
- Launch tasks to manage Brocade devices via IBM Storage DCFM

★ IBM Systems Director VMControl 2.3.1

- Manages System and Storage Pools of virtualized resources
- Manages and deploys virtual server images
- Clones existing server images

★ Denotes fee-based

IBM Systems Director Plug-ins (2 of 3)

★ IBM Systems Director Storage Control 4.2.1

- Discovery, configuration, monitoring of entry to high-end storage subsystems and Fibre Channel switches

■ IBM Systems Director Service and Support Manager 6.2.1

- Collects and reports serviceable hardware problems
- Communicates with IBM using secure SSL
- Email notification of problem reporting
- Does not call-home for HMC or IVM-managed Power Systems

★ IBM Workload Partitions Manager 2.2.1

- Cross-system management of WPARs
- Global load balancing with application mobility
- Monitoring and reporting of WPAR metrics

★ Denotes fee-based

IBM Systems Director Plug-ins (3 of 3)

- IBM Systems Director PowerHA SystemMirror for AIX 7.1
 - Management interface for PowerHA SystemMirror for AIX
 - Provides both setup and management of your data center HA solution
 - This no-charge plug-in also supports several new smart assists for popular applications that make it easier to set up and manage application for high availability operations
- AIX Profile Manager 1.1
 - Distributed with AIX Standard Edition and Enterprise Edition
 - Provides "dashboard" views and runtime configuration profile management over groups of systems
 - Provides "copy machine" like simplicity for distributing operating system properties to many systems
- IBM Systems Director Transition Manager for HP SIM 6.2
 - Used to smoothly transition systems being managed by HP Systems Insight Manager to managing the systems in IBM Systems Director

IBM Systems Director Plug-ins (“ala carte”)

- IBM Systems Director Active Energy Manager 4.3.1
 - Monitor functions: no charge
 - Manage functions: per managed processor charge
- IBM Systems Director Network Control 1.2.2
 - Per server and per switch charge
- IBM Systems Director VMControl 2.3.1
 - Express Edition: no charge
 - Standard & Enterprise Editions: per managed processor charge (no value for IBM i)
- IBM Systems Director Storage Control 4.2.1
 - Per IBM Systems Director server

IBM Systems Director Plug-ins (“ala carte”)

- IBM Systems Director Service and Support Manager 6.2.1
 - No charge (does not support HMC or IVM managed Power Systems)
- IBM Workload Partitions Manager 2.2.1
 - Per managed processor charge (no value for IBM i)
- IBM Systems Director PowerHA SystemMirror for AIX 7.1
 - No charge (requires PowerHA SystemMirror for AIX 7.1)
- AIX Profile Manager 1.1
 - No charge (Available with AIX Standard and Enterprise Edition)

<http://www-03.ibm.com/systems/software/director/products.html>



IBM® Systems Director Active Energy Manager™



Managing energy usage to reduce costs and maintain service availability in existing energy envelopes

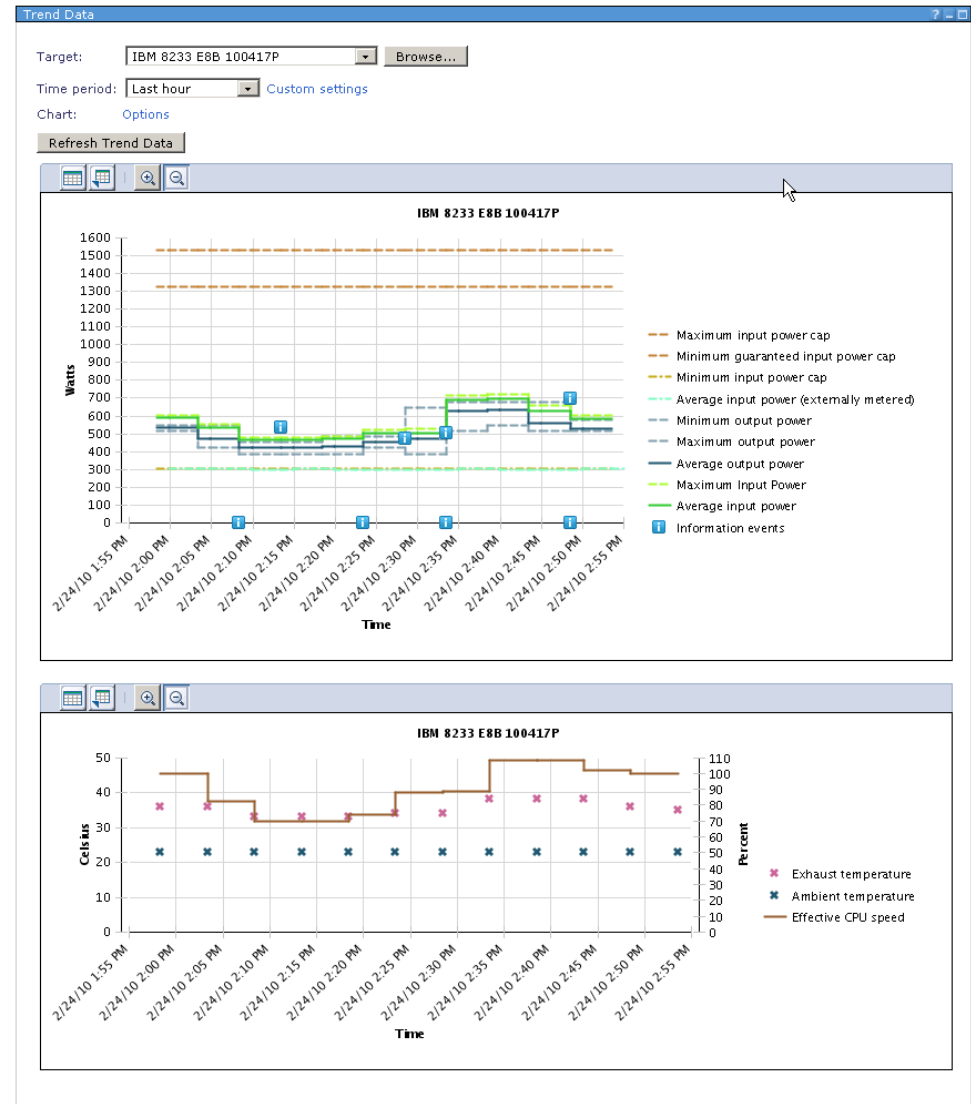
IBM Systems Director Active Energy Manager

- Monitor and manage EnergyScale™ capabilities in certain POWER 6 and all POWER7 servers
 - Power Trending
 - Thermal Trending
 - Effective CPU Trending
 - Power Savings
 - Power Capping
- Monitor and manage other resources using an intelligent Power Distribution Unit (PDU+)
 - Pre-POWER6 systems
 - Power 560 and Power 570 systems
 - I/O drawers and storage devices
- Define relationships between IT and facilities equipment
- Exploit System Director automation for energy events



Active Energy Manager Trend Data

- Energy trends in upper chart
 - Data are averages over intervals
 - Input & output power
 - Maximums, averages & minimums
 - Power caps
 - Energy events at points in time
- Temperature data in lower chart
 - Data are point-in-time values
 - Plotted against left axis
- Effective CPU speed in lower chart
 - Data are averages over intervals
 - Plotted against left axis
 - May exceed 100%





IBM® Systems Director VMControl™



**Rapidly deploy and
manage virtual servers**

IBM Systems Director VMControl

- Virtual servers
 - Create, delete, manage and relocate
 - Performance summary
 - PowerVM, z/VM ,VMware, Microsoft, Xen
- Virtual appliances
 - Partition description and software image
 - Import, capture, manage and deploy
- System pools
 - Consolidation of resources and workloads into distinct and manageable groups
 - Targets for virtual appliances
 - Monitoring the health of the resources and the status of the workloads
 - Manage by adding hosts or additional storage space
- Editions
 - Express, Standard and Enterprise



VMControl Editions

- Express Edition
 - Create and Edit virtual servers
 - Manage and relocate virtual servers
 - Monitor, thresholds, automation

- Standard Edition
 - Discover existing image repositories
 - Import OVF images into repositories as virtual appliances
 - Capture a running virtual server, including OS, applications and server
 - Deploy virtual appliances quickly to create new virtual servers

- Enterprise Edition
 - Create server and storage system pools
 - Deploy virtual appliances into system pools
 - Manage workloads with availability policies



IBM® Systems Network Control

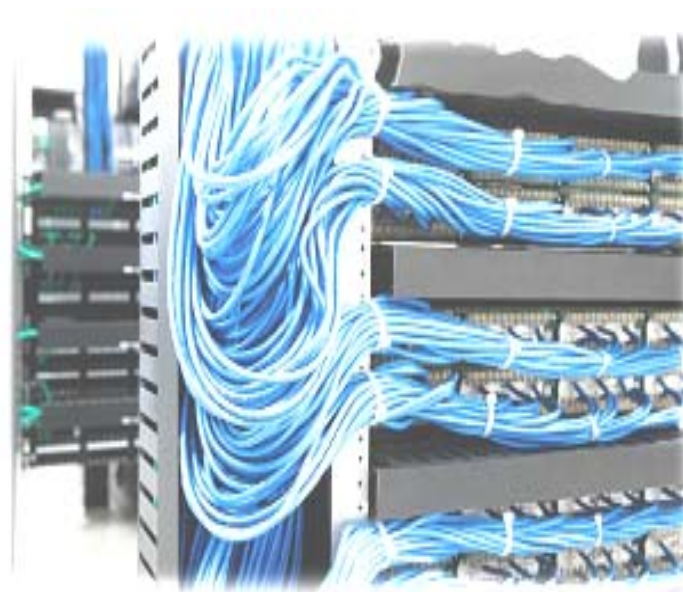


Simplifying network



IBM Systems Director Network Control

- Basic lifecycle management of network switches
 - Network system discovery and inventory
 - View network problems and events
 - Establish network monitors, thresholds and automation plans
 - Integration of vendor-based device management tools
 - Network diagnostics (ping, traceroute)
- Virtual Switch VLAN configuration
- Network device topology collection and visualization (virtual and physical)
 - View systems according to VLAN
 - View systems by subnet
- Converged Ethernet network device support (FCoCEE) via native support and vendor tools



Sample of Supported Network Devices

- IBM BladeCenter supported switches and Blade NICs
- Brocade® Converged Ethernet network switches (FCoCEE), Ethernet switches and routers
- QLogic® converged network adapters
- Cisco® FCoCEE and Ethernet switches
- Juniper® Ethernet switches, routers and appliances
- Virtual switch discovery and inventory for:
 - VMware ESXi and ESX4
 - PowerVM
 - RHEV-H

Agenda

- Systems Management environment
- IBM Systems Director Overview
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- IBM Systems Director plug-ins
- **IBM Systems Director Editions**
- Power Systems Details for IBM Systems Director 6.2.1



Editions Overview

- IBM Systems Director Editions defined:

“An integrated set of tools to help IT organizations address the challenges associated with managing both physical and virtual server infrastructures.”

- IBM Systems Director Editions **makes it easier and more cost-effective to acquire the capabilities to monitor and manage IBM server systems versus buying individual plug-in features separately**. Each Edition bundles related management features that are pretested and updated. Additionally, **software maintenance renewal for all features is aligned**, reducing the administrative burden of keeping SWMA support up to date.

IBM Systems Director Editions Content

Product	Express Edition	Standard Edition	Enterprise Edition
IBM Systems Director (Base)	✓	✓	✓
Service and Support Manager	✓	✓	✓
Transition Manager for HP® Systems Insight Manager™	✓	✓	✓
Active Energy Manager Monitoring	✓ (x86 only)	✓	✓
Active Energy Manager Management		✓	✓
VMControl Express Edition	✓	✓	✓
VMControl Standard Edition		✓	✓
VMControl Enterprise Edition			✓
Network Control		✓	✓
IBM Tivoli Monitoring			✓
IBM Tivoli Monitoring for Energy Management			✓
IBM Tivoli Application Dependency Discovery Manager			✓
IBM Tivoli Performance Analyzer			✓
IBM Tivoli Common Reporting for Asset and Performance Management			✓
DB2 Enterprise Server Edition			✓
Software Maintenance (Software Subscription and Support)	✓	✓	✓

- IBM Systems Director Standard and Enterprise Editions are for Power Systems only
- IBM Systems Director Enterprise Edition is included in AIX Enterprise Edition

Systems Director Express Edition for x86

Products	Express Edition
IBM Systems Director A platform-management tool that streamlines the way you manage physical and virtual systems across a heterogeneous environment.	✓
IBM Systems Director Transition Manager for HP® Systems Insight Manager™ Enables you to discover systems that are being managed by HP Systems Insight Manager and smoothly make the transition to managing the systems in IBM Systems Director.	✓
IBM Systems Director Service and Support Manager Automatically monitors and collects hardware problem information and sends this information to IBM support. It also can collect hardware, software, and system configuration information which may help IBM support assist in diagnosing problems.	✓
IBM Systems Director VMControl Designed to simplify the management of workloads in your IT environment, VMControl, IBM Systems Director VMControl Image Manager, and IBM Systems Director VMControl System Pools allow you to manage virtual servers, virtual appliances, workloads, and system pools across multiple hardware platforms and virtualization environments from one location.	
VMControl Express Edition	✓
IBM Systems Director Active Energy Manager Monitors and manages the power and cooling needs of IBM servers and BladeCenter® systems. Non-IBM systems can also be monitored using metering products, such as power distribution units (PDU), sensors, and integration with facility software.	
Monitoring	✓

Additional components can also be added to the Express Edition – Such as AEM Power Management , Network control & BOFM , by purchasing the Plugin licensing.

Systems Director Express Edition for Power

Products	Express Edition
<p>IBM Systems Director A platform-management tool that streamlines the way you manage physical and virtual systems across a heterogeneous environment.</p>	✓
<p>IBM Systems Director Transition Manager for HP® Systems Insight Manager™ Enables you to discover systems that are being managed by HP Systems Insight Manager and smoothly make the transition to managing the systems in IBM Systems Director.</p>	✓
<p>IBM Systems Director Service and Support Manager Automatically monitors and collects hardware problem information and sends this information to IBM support. It also can collect hardware, software, and system configuration information which may help IBM support assist in diagnosing problems.</p>	✓
<p>IBM Systems Director VMControl Designed to simplify the management of workloads in your IT environment, VMControl, IBM Systems Director VMControl Image Manager, and IBM Systems Director VMControl System Pools allow you to manage virtual servers, virtual appliances, workloads, and system pools across multiple hardware platforms and virtualization environments from one location.</p>	
<p>VMControl Express Edition</p>	✓

Additional components can also be added to the Express Edition – Such as AEM ,VMC Standard & Enterprise Edition & Network control 1.2, by purchasing the additional licensing. However IBM Systems Director Standard Edition would be more appropriate if looking to additionally purchase 2/3 out of the following AEM, VMC Standard edition or Network control. As these are all included in the Standard Edition for Power. IBM Systems Director Enterprise Edition is the only one to include VMC Enterprise Edition

Systems Director Standard Edition for Power

Products	Standard Edition
IBM Systems Director A platform-management tool that streamlines the way you manage physical and virtual systems across a heterogeneous environment.	✓
IBM Systems Director Transition Manager for HP® Systems Insight Manager™ Enables you to discover systems that are being managed by HP Systems Insight Manager and smoothly make the transition to managing the systems in IBM Systems Director.	✓
IBM Systems Director Service and Support Manager Automatically monitors and collects hardware problem information and sends this information to IBM support. It also can collect hardware, software, and system configuration information which may help IBM support assist in diagnosing problems.	✓
IBM Systems Director VMControl Designed to simplify the management of workloads in your IT environment, VMControl, IBM Systems Director VMControl Image Manager, and IBM Systems Director VMControl System Pools allow you to manage virtual servers, virtual appliances, workloads, and system pools across multiple hardware platforms and virtualization environments from one location.	
VMControl Express Edition	✓
VMControl Standard Edition (includes license for VMControl Image Manager)	✓
IBM Systems Director Active Energy Manager Monitors and manages the power and cooling needs of IBM servers and BladeCenter® systems. Non-IBM systems can also be monitored using metering products, such as power distribution units (PDU), sensors, and integration with facility software.	
Monitoring	✓
Management (includes license for power capping and power savings modes)	✓
IBM Systems Director Network Control Provides facilities to discover, inventory, and monitor network devices, and view groups of network devices.	
Standard Edition Launch Pad to enable easier installation of all components	

Additional components can also be added to the Standard Edition – Such as VMC Enterprise Edition by purchasing the additional licensing.

Systems Director Enterprise Edition for Power

Products	Enterprise Edition
IBM Systems Director A platform-management tool that streamlines the way you manage physical and virtual systems across a heterogeneous environment.	✓
IBM Systems Director Transition Manager for HP® Systems Insight Manager™ Enables you to discover systems that are being managed by HP Systems Insight Manager and smoothly make the transition to managing the systems in IBM Systems Director.	✓
IBM Systems Director Service and Support Manager Automatically monitors and collects hardware problem information and sends this information to IBM support. It also can collect hardware, software, and system configuration information which may help IBM support assist in diagnosing problems.	✓
IBM Systems Director VMControl Designed to simplify the management of workloads in your IT environment, VMControl, IBM Systems Director VMControl Image Manager, and IBM Systems Director VMControl System Pools allow you to manage virtual servers, virtual appliances, workloads, and system pools across multiple hardware platforms and virtualization environments from one location.	
VMControl Express Edition	✓
VMControl Standard Edition (includes license for VMControl Image Manager)	✓
VMControl Enterprise Edition (includes licenses for VMControl Image Manager and VMControl System Pools)	✓
IBM Systems Director Active Energy Manager Monitors and manages the power and cooling needs of IBM servers and BladeCenter® systems. Non-IBM systems can also be monitored using metering products, such as power distribution units (PDU), sensors, and integration with facility software.	
Monitoring	✓
Management (includes license for power capping and power savings modes)	✓
IBM Systems Director Network Control Provides facilities to discover, inventory, and monitor network devices, and view groups of network devices.	✓
Enterprise Edition Launch Pad to enable easier installation of all components	✓
<p><i>See next slide for IBM Tivoli products included in Enterprise Edition</i></p>	

Systems Director Enterprise Edition for Power

IBM Tivoli Components

Products	Enterprise Edition
<p>IBM Tivoli Monitoring V6.2.2 Fix Pack 1 Monitors and manages system and network applications on a variety of operating systems, tracks the availability and performance of your enterprise system, and gets reports to track trends and troubleshoot problems.</p>	✓
<p>IBM Tivoli Common Reporting V1.2.0.1 and Power System reports provides a consistent approach to viewing and administering reports.</p>	✓
<p>IBM DB2 Database Enterprise Server Edition V9.5, Fix Pack 04 Database software that you can use to handle demanding workloads.</p>	✓
<p>IBM Tivoli Application Dependency Discovery Manager V7.2 Automatically creates and maintains application infrastructure maps.</p>	✓
<p>IBM Tivoli Monitoring for Energy Management V6.2.1 Monitors and helps manage energy usage of IT and facility resources for efficient datacenter operations.</p>	✓
<p>Note: Multiple servers would be required to implement all software included with the Enterprise Edition</p>	

IBM AIX 6 / 7 Enterprise Edition

Pieces and Parts:

- AIX 6 / 7
- IBM Systems Director Enterprise Edition
- IBM PowerVM Workload Partitions Manager V2.2.1
- AIX Profile Manager (also comes with AIX Standard Edition)

Agenda

- Systems Management environment
- IBM Systems Director Overview
- IBM Systems Director Features
- IBM Systems Director plug-ins
- IBM Systems Director Editions
- **Power Systems Details for IBM Systems Director 6.2.1**



Systems Director Server Resource Requirements

Configuration	Recommended hardware requirements		
	Processor	Memory	Disk Storage
x86 (Windows/Linux) ²	4 cores, 64-bit processor and OS	12 GB	16 GB
POWER (AIX/Linux) ³	4 processors, POWER5, POWER6 or POWER7 or for partitioned systems: <ul style="list-style-type: none"> ▪ Entitlement = 4 ▪ Uncapped ▪ Virtual processors = 8 ▪ Weight = Default 	12 GB	16 GB
System z (Linux) ⁴	4 processors, IBM System z9 or above	12 GB	16 GB

1. The recommendations are based on running a 64-bit Java™ Virtual Machine (JVM).
2. The processor sizing is based on the latest generation of x86 processors, such as Nehalem. For older family of processors, require at least 3Ghz processors, and may need higher number of cores to match Java performance of newer processors. For a large Windows configuration, it is not recommended to install IBM Systems Director Server to run in a VMware partition.
3. The processor sizing is based on the IBM POWER6 processor. Older processors may need higher number of cores to match the Java performance of newer processors.
4. The processor sizing is based on the IBM System z10 processor. You might require more processors if System z9 EC processors are used. The processor usage by IBM Systems Director Server is high during certain tasks. It is recommended that, if processors are shared, the partition that is used to run IBM Systems Director Server be given a lower partition weight than production partitions.
5. Due to I/O requirements, SCSI adapters and multiple 10K-15K RPM disks are recommended where applicable.

Power Systems ISD Pre-requisites

Minimum requirements for ISD 6.2.1

- Requires a 64-bit kernel for AIX, Linux Management Servers
- HMC Version 7.3.3 SP2, MH00146 or later
 - Latest Service Packs recommended
 - Firmware requirements based on MTM and HMC Version, not Systems Director
- IVM Version 1.5.2.1+ or 2.1.0.10+
 - Latest Service Packs recommended
- VIOS
 - Version 1.5.2.1 for Agentless
 - Version 2.1.0.10 supports the Common Agent
 - Version 2.1.1 includes the Common Agent (manual first time start)

Systems Director 6.2.1 AIX Filesets

- Agent Filesets
 - DirectorPlatformAgent 6.2.1
 - DirectorCommonAgent 6.2.0
 - cas.agent 1.4.2.2
 - openssl.base 0.9.8.1100+
 - sysmgt.cim.providers.* 1.2.9
 - sysmgt.cim.smisproviders.* 1.2.2
 - sysmgt.cimserver.pegasus.rte 2.9.1
 - tivoli.tivguid 1.3.4.1
- Additional Server filesets
 - DirectorServer 6.2.0.0
 - expect 5.42.1
 - tcl/tk 8.4.7
 - xIC.[aix50].rte 10.1.0.2
 - ICU4C.rte 5.3.9.0
 - (optional)
Director.Server.ext.FSPPProxy.rte
6.2.1 prereqs
csm.hc_utils 1.7.0.13
- AIX 7.1 GA, AIX 6.1 TL3+, and AIX 5.3 TL10+ media includes (and installs) Common Agent with OS installation

Update Manager Details

- Updates stored in default directory on server
 - For AIX/Linux: `/opt/ibm/director/data/updateslib` [can be modified]
 - Default size of repository: 10GB [can be modified]
 - Subdirectories include:
 - AIX (AIX Technology Levels and Service Packs)
 - Director
 - HMC (Service Packs and fixes)
 - pSFW (Power Systems firmware)
 - VIOS (2.1 migration, Service Packs)
- AIX Updates require a NIM server for installation
 - Installation stages files to `/export/um_lpp_source` on NIM server
 - Separate JFS2 file system created if directory not found
- Agent for push
 - Stored on disk in the following directory:
`/opt/ibm/director/packaging/agent/[common|platform]/[OS]`
- Updates require a full, valid inventory collection on the object

VMControl Standard Edition Details for AIX

- AIX NIM server requirements
 - Already configured as a NIM server, ISD does not configure
 - Running the Common Agent with latest updates
 - AIX 6.1.3 or later
 - Additional filesets required: dsm.core, openssh/openssl
 - Installed VMControl NIM Subagent installed via Update Manager
- AIX Virtual Appliances (mksysb and OVF-based metadata) are stored in /export/nim/appliances file directory on repository
- Image Manager only captures/deploys from/to Virtual Servers
 - Only LPARs managed by an HMC or IVM, not standalone
- Systems Director Server must be at 6.2.0 level or later
- POWER5/6: HMC 7.3.5 or IVM 2.1.0.10
- POWER7: HMC 7.7.1 or IVM 2.1.2

VMControl Enterprise Edition Details for AIX

These requirements are above and beyond what's needed for VMControl Standard Edition

- Appropriate X11 libraries to get through graphical installer
 - If not, then modify the `installer.properties` file for a silent install
- For predictive failure analysis for automated relocation:
 - HMC 7.3.5, IVM 2.1.2 or later
- For image deployment into a System Pool, you must have IBM Systems Director-managed supported storage
 - External SAN
 - Only LPARs managed by an HMC or IVM, not standalone
- Relocation within a System Pool requires LPM-capable (and licensed) environment
- See Best Practices Wiki for details and hints/tips

Systems Director Enterprise Edition Details for AIX

- Enterprise Edition requires, at minimum, three LPARs:
 - One for the main IBM Systems Director Server (not documented, suggested)
 - One for DB2 and TEPS, optionally TDW
 - One for TADDM
- Ships on 23 separate pieces of media (CD/DVD)
- Must run the ISD Enterprise Edition Launch pad separately on each system
 - No saved state between boxes, use a notepad!
- ISD-EE Integration Monitoring Agent installed on TEMS+TEPS

Definitions:

TEPS = Tivoli Enterprise Portal Server

TEMS = Tivoli Enterprise Monitoring Server

TDW = Tivoli Data Warehouse

TADDM = Tivoli Application Dependency Discovery Manager

Storage Control V4.2.1

- Based on Tivoli Storage Productivity Center
 - Can upgrade to Tivoli Storage Productivity Center Basic Edition et al
- Requires DB2 ESE V9.7 for the Systems Director database
 - SOD: Migration documentation available in "future"
 - Download of limited-use license for DB2 available with Storage Control plug-in
- Requires Systems Director Server running V6.2.1 on the following operating systems:
 - Windows, RHEL for x86, AIX
- Licensed per Systems Director Server, no client licenses

IBM Systems Director Information Center

IBM Director v6.2.0 - Mozilla Firefox: IBM Edition

IBM Systems Director

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Contents

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IBM Systems Director 6.2.x Information Center

Welcome to the IBM® Systems Director Information Center. This information center contains all of the information you need to manage your systems and resources using IBM Systems Director and its plug-ins.

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<http://publib.boulder.ibm.com/infocenter/director/v6r2x/index.jsp>

Done

IBM Systems Director V6.2.1 Web References

- Main Systems Director Web Page:
<http://www.ibm.com/systems/software/director/>
- InfoCenter
<http://publib.boulder.ibm.com/infocenter/director/v6r2x/index.jsp>
- IBM Systems Director Forum:
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Thank you for your time

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Revised September 26, 2006

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IBM benchmark results can be found in the IBM Power Systems Performance Report at http://www.ibm.com/systems/p/hardware/system_perf.html.

All performance measurements were made with AIX or AIX 5L operating systems unless otherwise indicated to have used Linux. For new and upgraded systems, AIX Version 4.3, AIX 5L or AIX 6 were used. All other systems used previous versions of AIX. The SPEC CPU2006, SPEC2000, LINPACK, and Technical Computing benchmarks were compiled using IBM's high performance C, C++, and FORTRAN compilers for AIX 5L and Linux. For new and upgraded systems, the latest versions of these compilers were used: XL C Enterprise Edition V7.0 for AIX, XL C/C++ Enterprise Edition V7.0 for AIX, XL FORTRAN Enterprise Edition V9.1 for AIX, XL C/C++ Advanced Edition V7.0 for Linux, and XL FORTRAN Advanced Edition V9.1 for Linux. The SPEC CPU95 (retired in 2000) tests used preprocessors, KAP 3.2 for FORTRAN and KAP/C 1.4.2 from Kuck & Associates and VAST-2 v4.01X8 from Pacific-Sierra Research. The preprocessors were purchased separately from these vendors. Other software packages like IBM ESSL for AIX, MASS for AIX and Kazushige Goto's BLAS Library for Linux were also used in some benchmarks.

For a definition/explanation of each benchmark and the full list of detailed results, visit the Web site of the benchmark consortium or benchmark vendor.

TPC	http://www.tpc.org
SPEC	http://www.spec.org
LINPACK	http://www.netlib.org/benchmark/performance.pdf
Pro/E	http://www.proe.com
GPC	http://www.spec.org/gpc
VolanoMark	http://www.volano.com
STREAM	http://www.cs.virginia.edu/stream/
SAP	http://www.sap.com/benchmark/
Oracle Applications	http://www.oracle.com/apps_benchmark/
PeopleSoft - To get information on PeopleSoft benchmarks, contact PeopleSoft directly	
Siebel	http://www.siebel.com/crm/performance_benchmark/index.shtml
Baan	http://www.ssaglobal.com
Fluent	http://www.fluent.com/software/fluent/index.htm
TOP500 Supercomputers	http://www.top500.org/
Ideas International	http://www.ideasinternational.com/benchmark/bench.html
Storage Performance Council	http://www.storageperformance.org/results

Revised March 12, 2009

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For a definition/explanation of each benchmark and the full list of detailed results, visit the Web site of the benchmark consortium or benchmark vendor.

SPEC	http://www.spec.org
LINPACK	http://www.netlib.org/benchmark/performance.pdf
Pro/E	http://www.proe.com
GPC	http://www.spec.org/gpc
STREAM	http://www.cs.virginia.edu/stream/
Fluent	http://www.fluent.com/software/fluent/index.htm
TOP500 Supercomputers	http://www.top500.org/
AMBER	http://amber.scripps.edu/
FLUENT	http://www.fluent.com/software/fluent/fl5bench/index.htm
GAMESS	http://www.msg.chem.iastate.edu/gamess
GAUSSIAN	http://www.gaussian.com
ANSYS	http://www.ansys.com/services/hardware-support-db.htm

Click on the "Benchmarks" icon on the left hand side frame to expand. Click on "Benchmark Results in a Table" icon for benchmark

results.	
ABAQUS	http://www.simulia.com/support/v68/v68_performance.php
ECLIPSE	http://www.sis.slb.com/content/software/simulation/index.asp?seg=geoquest&
MM5	http://www.mmm.ucar.edu/mm5/
MSC.NASTRAN	http://www.mscsoftware.com/support/prod%5Fsupport/nastran/performance/v04_sngl.cfm
STAR-CD	www.cd-adapco.com/products/STAR-CD/performance/320/index/html
NAMD	http://www.ks.uiuc.edu/Research/namd
HMMER	http://hmmer.janelia.org/
	http://powerdev.osuosl.org/project/hmmerAltivecGen2mod

Revised March 12, 2009

Notes on performance estimates

rPerf for AIX

rPerf (Relative Performance) is an estimate of commercial processing performance relative to other IBM UNIX systems. It is derived from an IBM analytical model which uses characteristics from IBM internal workloads, TPC and SPEC benchmarks. The rPerf model is not intended to represent any specific public benchmark results and should not be reasonably used in that way. The model simulates some of the system operations such as CPU, cache and memory. However, the model does not simulate disk or network I/O operations.

- rPerf estimates are calculated based on systems with the latest levels of AIX and other pertinent software at the time of system announcement. Actual performance will vary based on application and configuration specifics. The IBM eServer pSeries 640 is the baseline reference system and has a value of 1.0. Although rPerf may be used to approximate relative IBM UNIX commercial processing performance, actual system performance may vary and is dependent upon many factors including system hardware configuration and software design and configuration. Note that the rPerf methodology used for the POWER6 systems is identical to that used for the POWER5 systems. Variations in incremental system performance may be observed in commercial workloads due to changes in the underlying system architecture.

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CPW for IBM i

Commercial Processing Workload (CPW) is a relative measure of performance of processors running the IBM i operating system. Performance in customer environments may vary. The value is based on maximum configurations. More performance information is available in the Performance Capabilities Reference at: www.ibm.com/systems/i/solutions/perfmgmt/resource.html

Revised April 2, 2007