



i n v e n t

Managing in Multiple Operating System Environments

*OS administration in an hp-ux and
Linux environment*

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&
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Forces Driving Multi-OS Environments

- IPF servers
- Blade servers
- Linux “down” from Unix
- Linux “up” from Windows
- Strength of Windows in enterprise space
- Application segmentation across HW (e.g. SAP)
- Hardware consolidation and virtual partitions
- Co-mingling of HW & OS types in data center

Trends and Implications of Multi-OS

Trends

- Applications spread across various HW types
- Server consolidation
- Several different tools all with unique interfaces
- Increased focus on security and authentication
- Proliferation of HW types in single data center



Implications

- Do I divide resources by HW or application?
- How can I also creatively use less resources to manage?
- Increased training and support for administrators
- Need to limit people by role and access levels
- The line connecting HW & OS is blurred

Trends and Implications of Multi-OS (cont'd)

Trends

- The growth of Linux in the enterprise
- Better and faster deployment tools
- Server virtualization / partitioning



Implications

- Need to match the management application to the OS environment
- HW can quickly be re-functioned
- Operating system no longer tied to hard assets

***Challenge:* Mixed Multi-OS Environments**

- **Challenge**
 - Mixed HW/OS/Apps environments that quickly change due to better rapid deployment tools
- **Solution**
 - A multi-system, multi-OS management application that is easy to use and consistent across OS's
- **Benefits**
 - Lowered administration cost, and more efficient use of IT department resources

hp servicecontrol manager 3.0: summary

- **Increased productivity** through utilizing a single point of administration of HP-UX and Linux.
- **Gained efficiency** through multi-system management capabilities such as group operations and role-based management
- **Improved security** through user authentication before performing any management tasks
- **Ensured accountability** through audit logging of changes across the IT environment
- **Expanded flexibility** by easily customizing scripts and commands which can be used across multiple systems simultaneously

Challenge: Training

- **Challenge**
 - Multi-OS environments imply multiple management tools; a training nightmare
- **Solution**
 - A management tool with a single, easy to use, web-based GUI consistent across OS's
- **Benefits**
 - Cross-train staff to become more efficient and flexible; reduce over-all staff needed

Leverage training: Single GUI

Tool selection context
based on OS

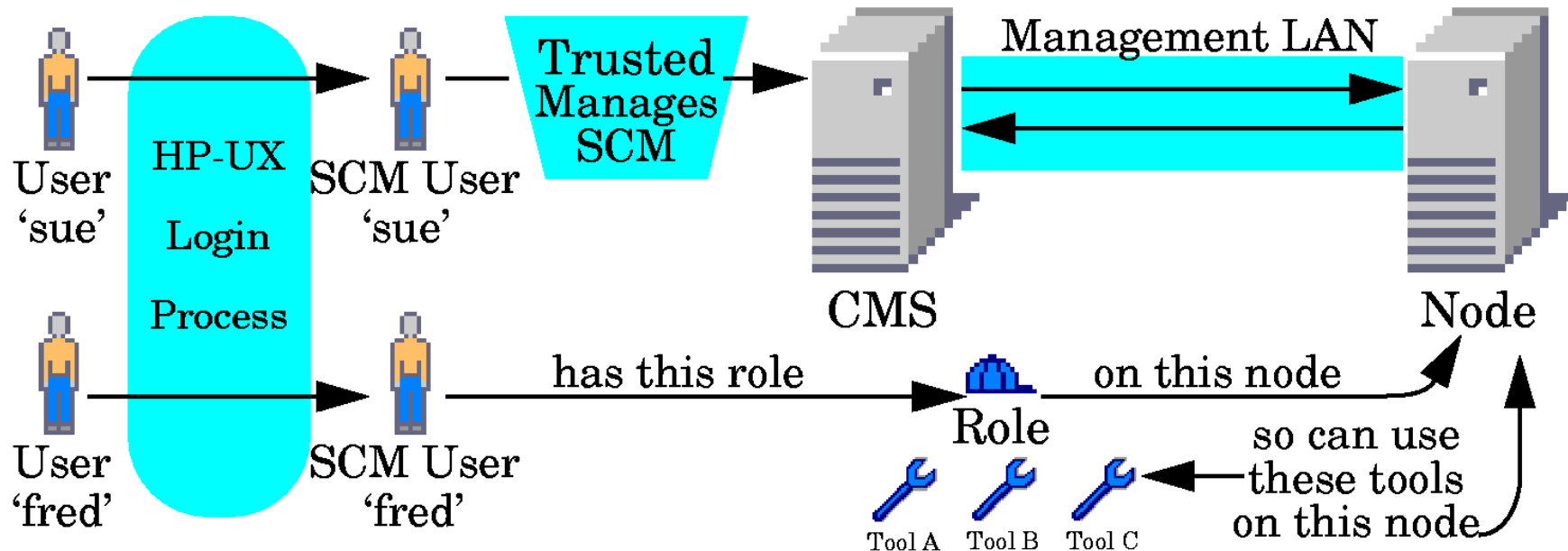
The screenshot shows the HP ServiceControl Manager interface. The main content area displays a table of nodes under the heading 'all nodes'. The table has columns for 'name', 'address', 'type', 'subtype', 'OS name', and 'OS ver'. The 'OS name' column is highlighted, and a callout box points to it with the text 'Tool selection context based on OS'. The 'OS name' column contains values such as 'WINNT', 'LINUX', and 'HPUX'. The 'OS ver' column contains values such as '.NET', '7.2', and 'B.11.11'. The interface also includes a navigation pane on the left with options like 'High Availability Management', 'Ignite and Recovery', 'Security Management', and 'Software Management'. The top of the window shows the title 'hp systems management center - Microsoft Internet Explorer' and the HP logo.

name	address	type	subtype	OS name	OS ver
brian03.cup.hp.com	15.27.245.44	pc	hp kayak	WINNT	.NET
brian08.cup.hp.com	15.27.245.170	hub	AdvanceStack		
clj-4500.cup.hp.com	15.27.245.207	printer	hp color laserjet		
eq.fc.hp.com	15.1.51.223	server	x86	LINUX	7.2
koko	15.1.55.30				
muxp103.fc.hp.com	15.1.53.220	server	pa-risc	HPUX	B.11.11
namor	15.1.54.164	pc	vectra	WINNT	2000
owwpc195.cup.hp.com	15.27.245.15	server	Dell PowerEdge	WINNT	2000
owwpc206.cup.hp.com	15.27.245.106	pc	hp vectra	WINNT	2000
owwpc425.cup.hp.com	15.244.34.137	server	IBM X-series	WINNT	2000

Challenge: Security

- **Challenge**
 - All administrators have “root” access to the entire network instead of access only to the group they manage
- **Solution**
 - “Roles-based” security and authentication
- **Benefits**
 - Secure environment, ability to track who made what changes

Reduce operator errors: servicecontrol manager (SCM) role-based security

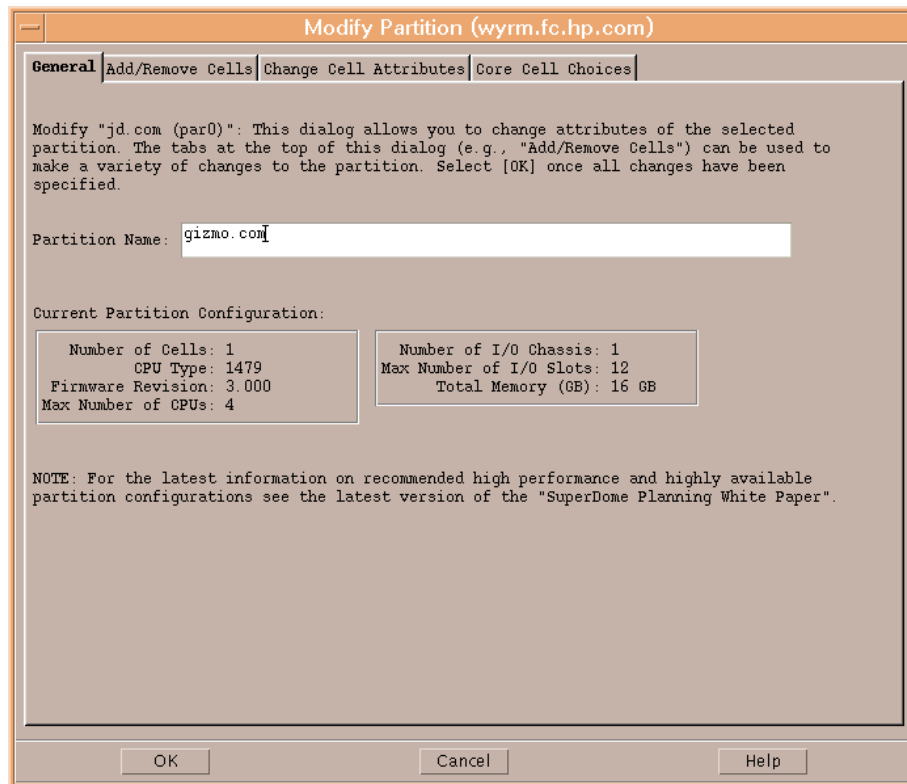


- no separate login/password
- trusted user manages central management server (CMS)
- normal sys admin user are delegated tools based on roles

Challenge: Virtual Partitioning

- **Challenge**
 - Virtual partitions, especially multi-OS, blur the line for traditional dedicated HW-based management
- **Solution**
 - A management tool that can display server summary information or partition drill-down information depending on the situation
- **Benefits**
 - Increased simplicity, better use of HW resources

Reduce complexity: View multiple partitions at a glance



- Create & modify partitions
- Display a complete hardware inventory
- Display status of key complex components
- Check for problem or unusual complex conditions
- Manage power to cells & I/O chassis
- Turn on/off attention indicators for cells, I/O chassis, I/O cards & cabinets

Note: GUI for nPartition and GUI for virtual partitions

Challenge: Pure Linux Environment

- **Challenge**
 - Administrator should not be made to “force-fit” an HP-UX management server into an otherwise pure Linux environment
- **Solution**
 - A management console that can run entirely on Linux
- **Benefits**
 - Consistency of OS environment

Console Management Server: Multi-OS

Hardware platform		PA RISC	IA 32	IPF
HP-UX	HP-UX 11.23 (11i-2)	YES		YES
	HP-UX 11.11 (11i)	YES		
	HP-UX 11.0	YES		
Linux	Linux Redhat 7.3		YES	
	Linux SuSE 7.3		YES	

Note: Support for the agents cover even more operating system versions

***Challenge:* Multiple Tools**

- **Challenge**
 - There are several disparate single and multi-system management tools spanning all OS's
- **Solution**
 - A management application that can house and launch tools from a single point of contact using the administrator's preferred user interface
- **Benefits**
 - All management tools visible, launchable, and trackable from one central location

SCM: Tools

Tools viewable,
launchable from single
location

hp systems management center - Microsoft Internet Explorer

hp systems management center support | forums | help

logged on: root → log off

organizer

nodes tools settings

no nodes selected

- + High Availability Management
- + Ignite and Recovery
- + Security Management
- + Software Management
- + view

all nodes

→ customize your view

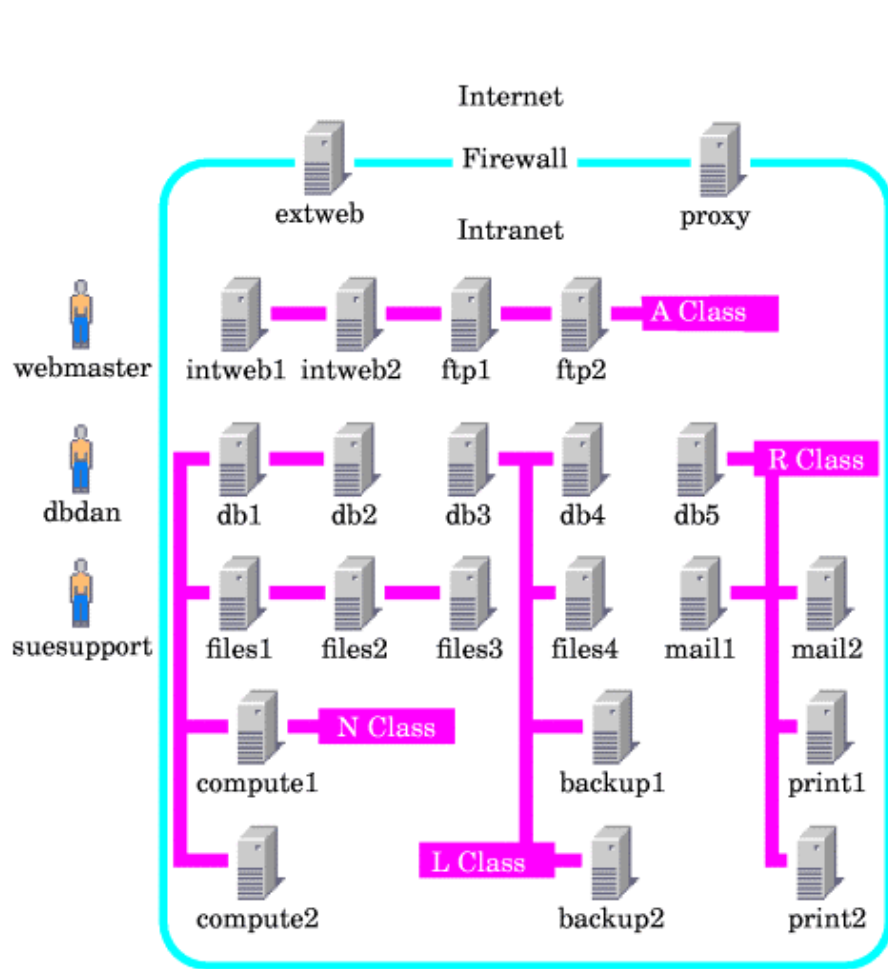
<input type="checkbox"/>	name	address	type	subtype	OS name	OS ver
<input type="checkbox"/>	brian03.cup.hp.com	15.27.245.44	pc	hp kayak	WINNT	.NET
<input type="checkbox"/>	brian08.cup.hp.com	15.27.245.170	hub	AdvanceStack		
<input type="checkbox"/>	clj-4500.cup.hp.com	15.27.245.207	printer	hp color laserjet		
<input type="checkbox"/>	eq.fc.hp.com	15.1.51.223	server	x86	LINUX	7.2
<input type="checkbox"/>	koko	15.1.55.30				
<input type="checkbox"/>	muxp103.fc.hp.com	15.1.53.220	server	pa-risc	HPUX	B.11.11
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Done Internet

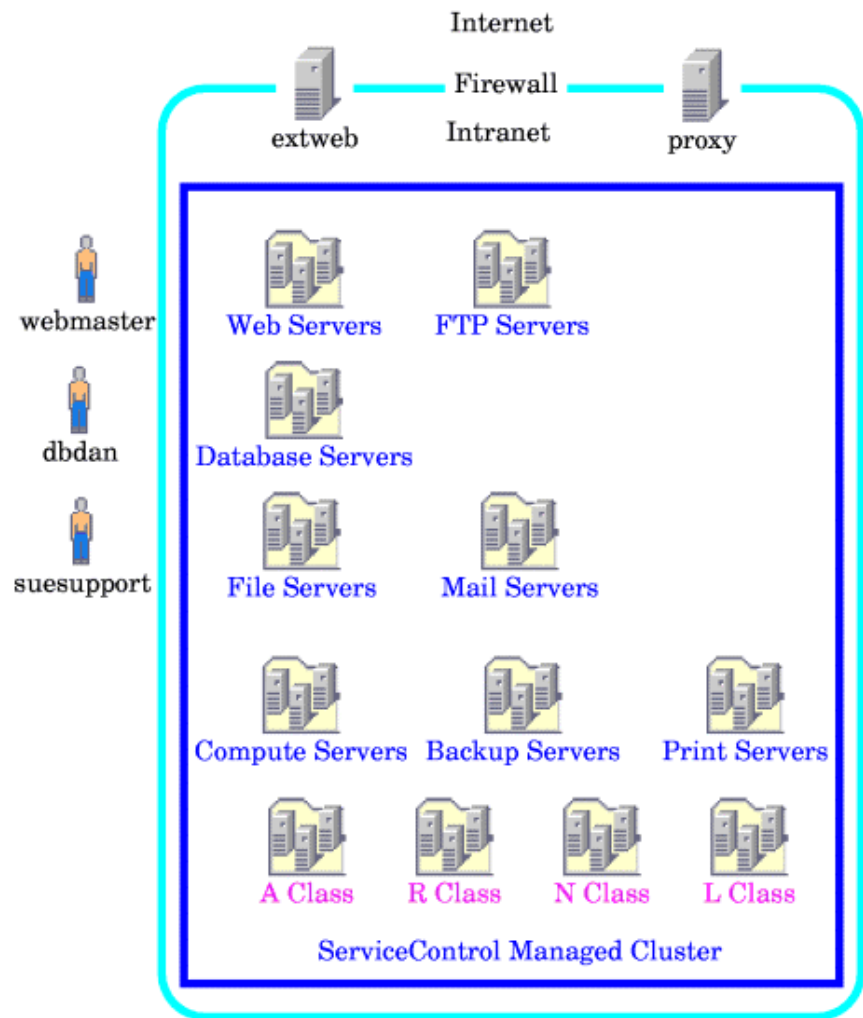
Challenge: Aligning resources around an application

- **Challenge**
 - A single application (eg. SAP) spans multi hardware and multi-os; how do you align staff?
- **Solution**
 - Server management that assigns devices in groups by logical, user defined, definitions, independent of OS or HW.
- **Benefits**
 - Management that focuses on IT's customers instead of arbitrary OS and HW groupings

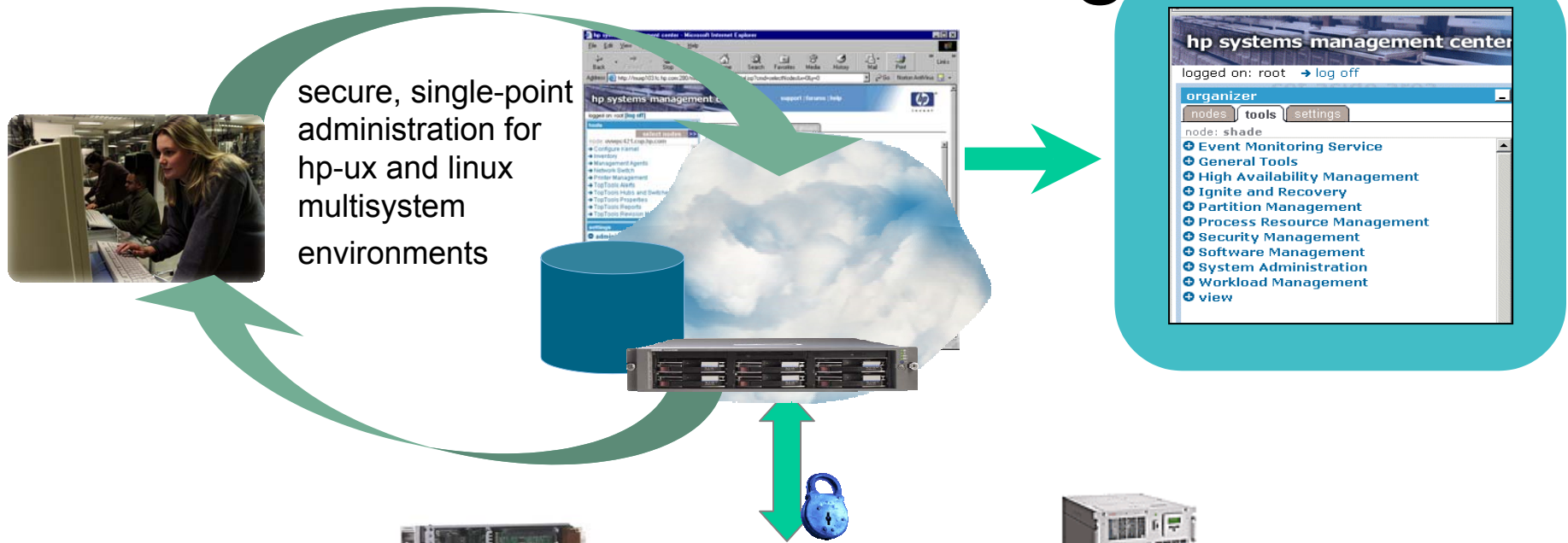
Before grouping



After Grouping



Servicecontrol Manager 3.0



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next generation multi OS management application merges the best of

the new HP

future = multi-os

•insight manager 7

•toptools

•sam/servicecontrol
manager

ONE:
multi-OS systems level
management
architecture/application
with new and
increased functionality for
HP-UX, Windows,
and Linux