

Monitoring the Virtual Infrastructure with HP OpenView

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Agenda

- The Adaptive Enterprise
- HP Open View Strategic Direction
- VirtualCenter
- ITSM
- HP OpenView Operations
- nworks SPI for VMware



Creating Value Beyond the Building Blocks

Key growth initiatives

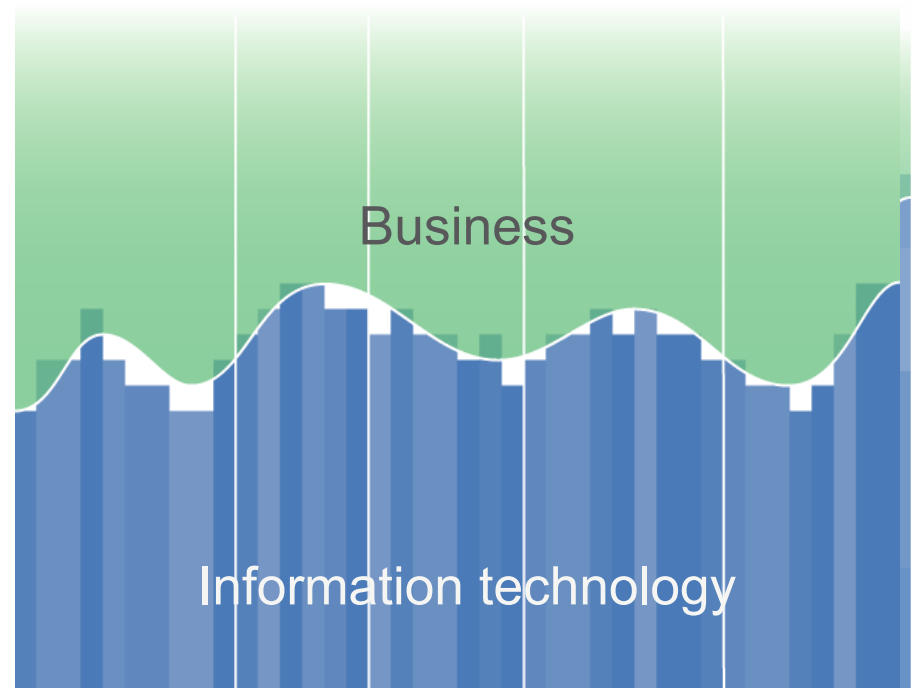
- Management software
- Mobility
- Rich digital media
- Security solutions



HP's Adaptive Enterprise

It's the ultimate state of fitness in a world where every business decision triggers an IT event.

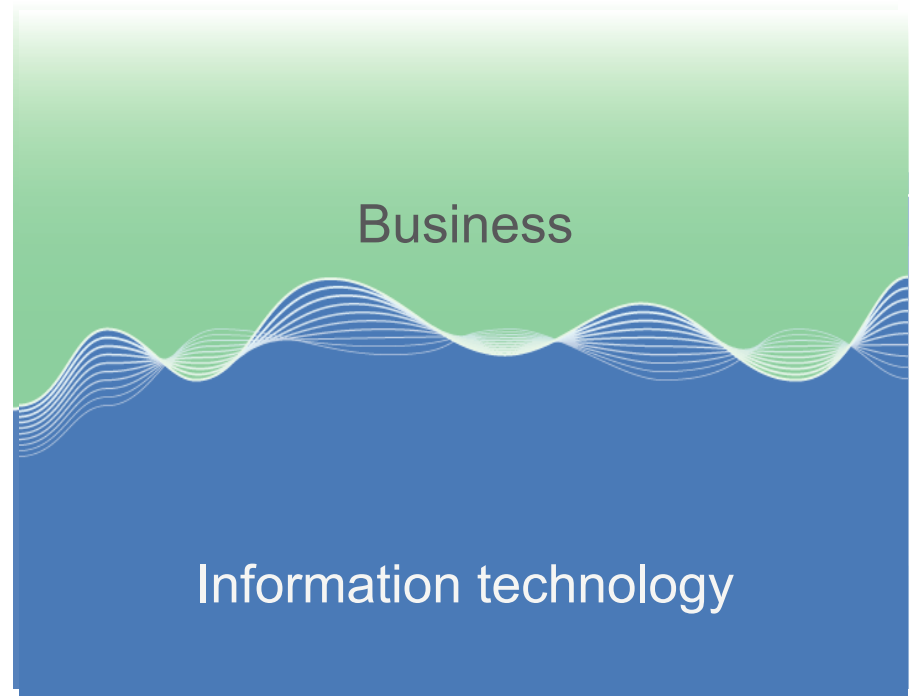
- Architect and integrate heterogeneous IT environments for stability and control
- Establish and maintain a dynamic link between business and IT for business efficiency
- Optimize resource utilization so supply flows to meet demand for maximum business agility



HP's Adaptive Enterprise

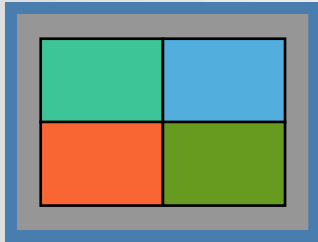
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HP's Virtualization Portfolio

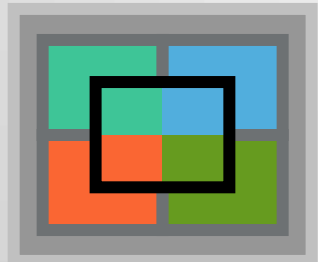
Complete IT Utility



Optimize all heterogeneous resources so supply meets business demand in real time

- Datacenter Architecture Services
- Grid computing
- HP Managed Services (Strategic outsourcing)

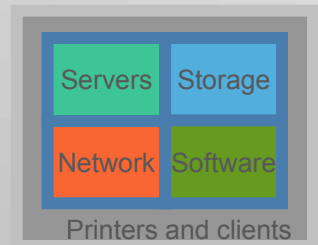
Integrated Virtualization



Optimize multiple elements to automatically meet service level agreements

- HP Virtual Server Environment (VSE)
- HP Storage Grid
- HP BladeSystem
- HP Consolidated Client Infrastructure (CCI)
- HP Disaster Tolerant Solutions (DTS)

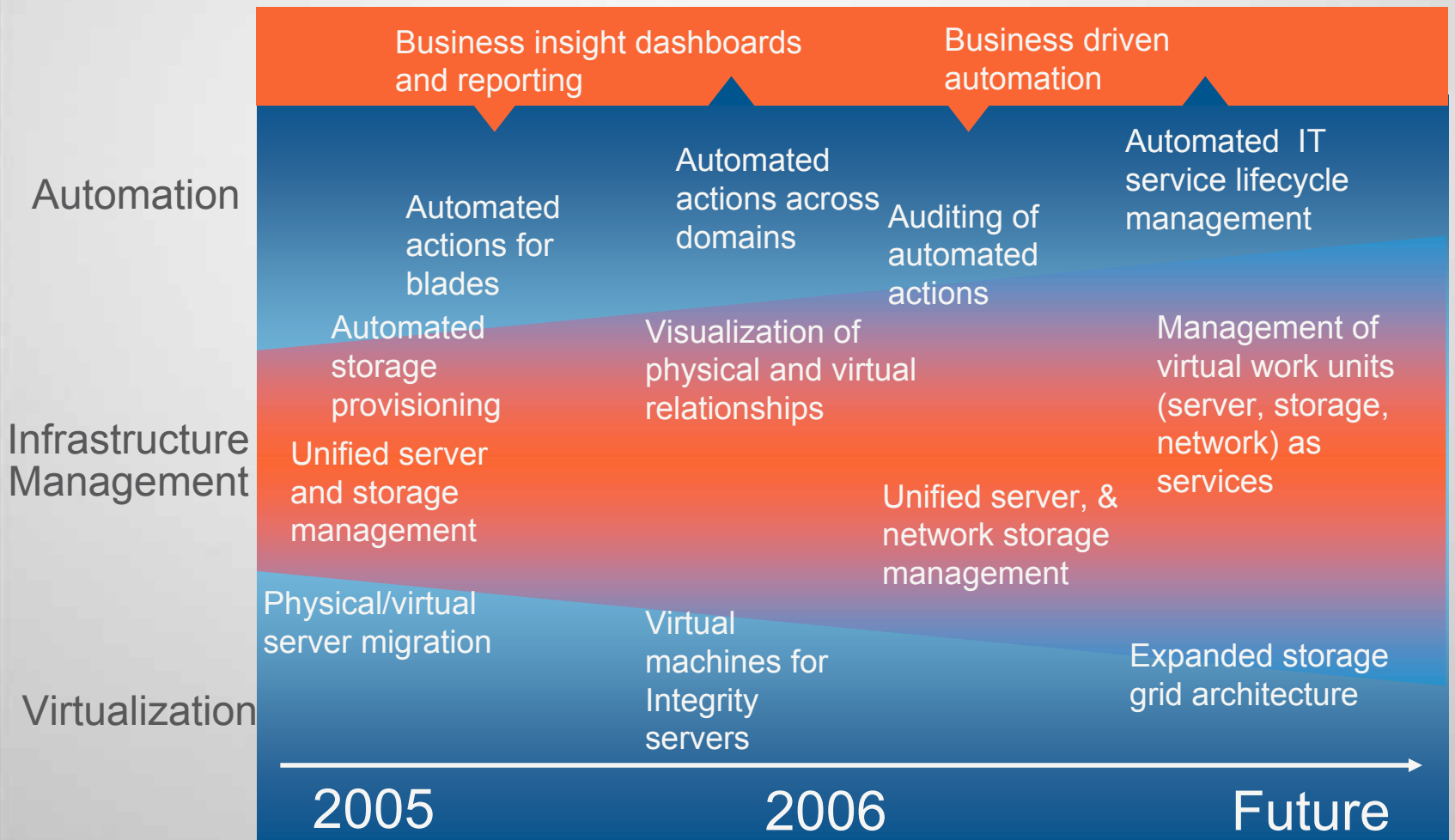
Element Virtualization



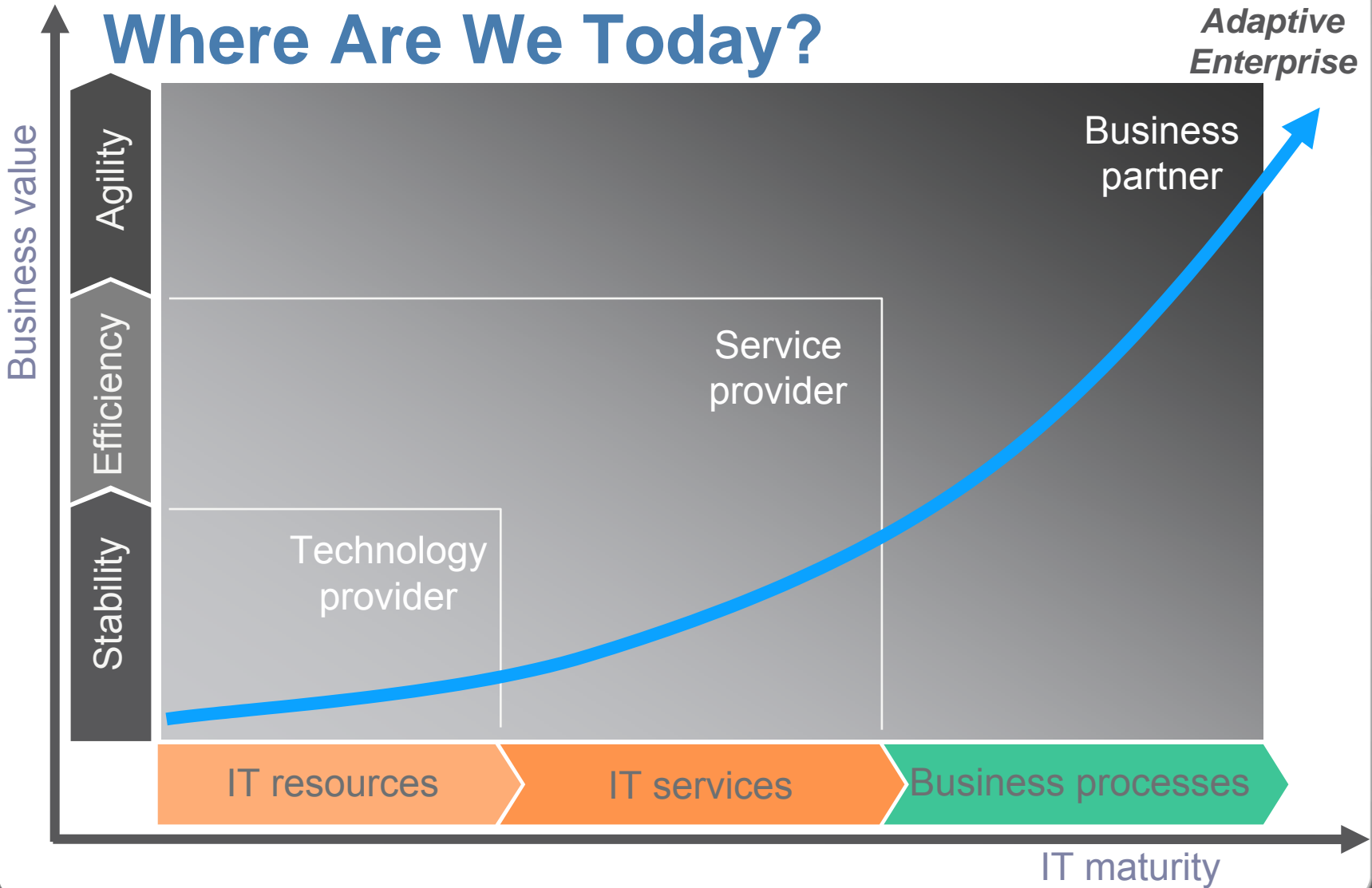
Optimize utilization of Server, storage, and networking resources

- Partitions
- Clustering
- Instant Capacity
- Pay per Use
- Rapid deployment
- Workload management
- HP Storage solutions
 - EVA
 - Virtual Replicator

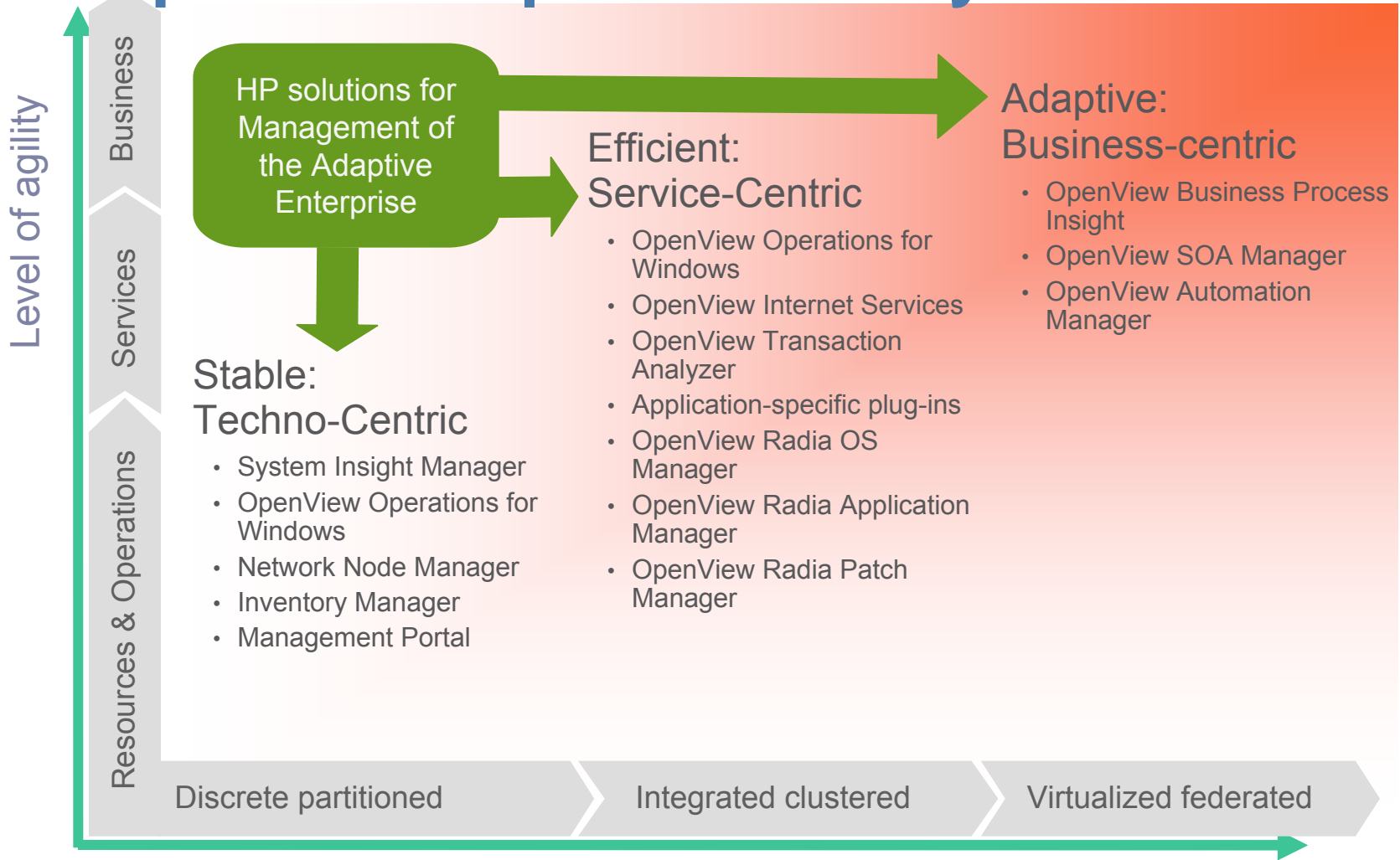
Ongoing Innovation



Where Are We Today?

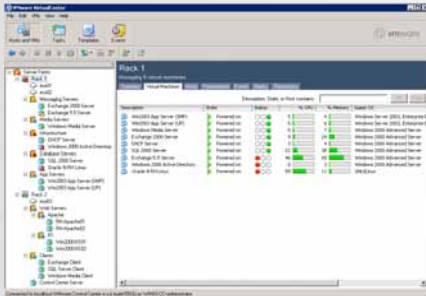


Adaptive Enterprise Journey



A Complete Solution

VirtualCenter

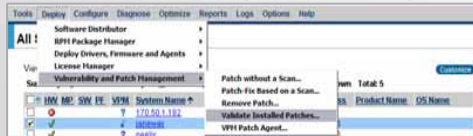


OpenView Operations



SPI for VMware

Systems Insight Manager



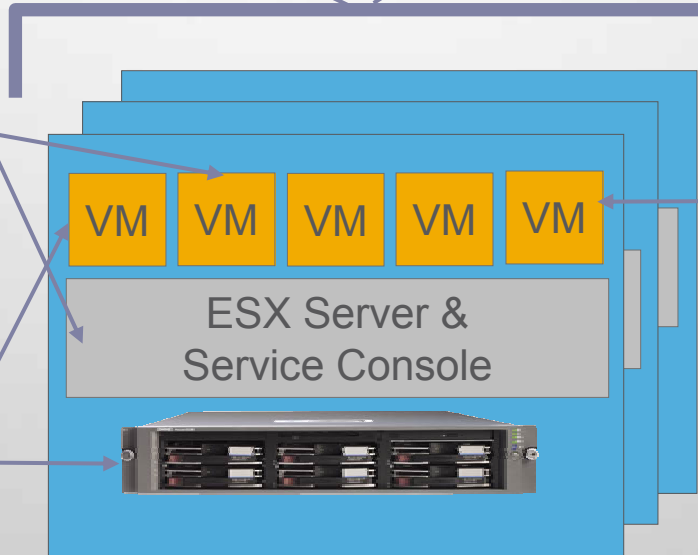
Vulnerability Scan and Patch VMs and Host*

*VMWare GSX and Microsoft Virtual Server

Systems Insight Manager



Deploy ESX, Linux or Windows



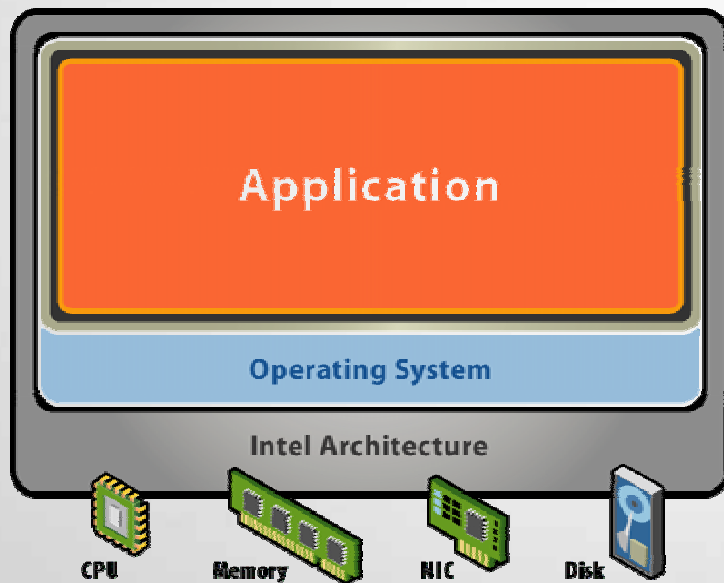
Systems Insight Manager



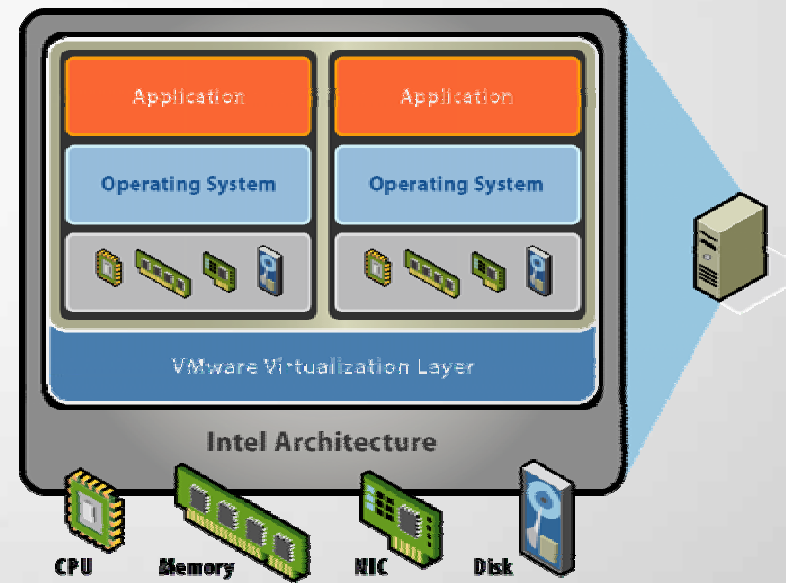
Associate, monitor, control measure, & move

ESX Server

x86 System



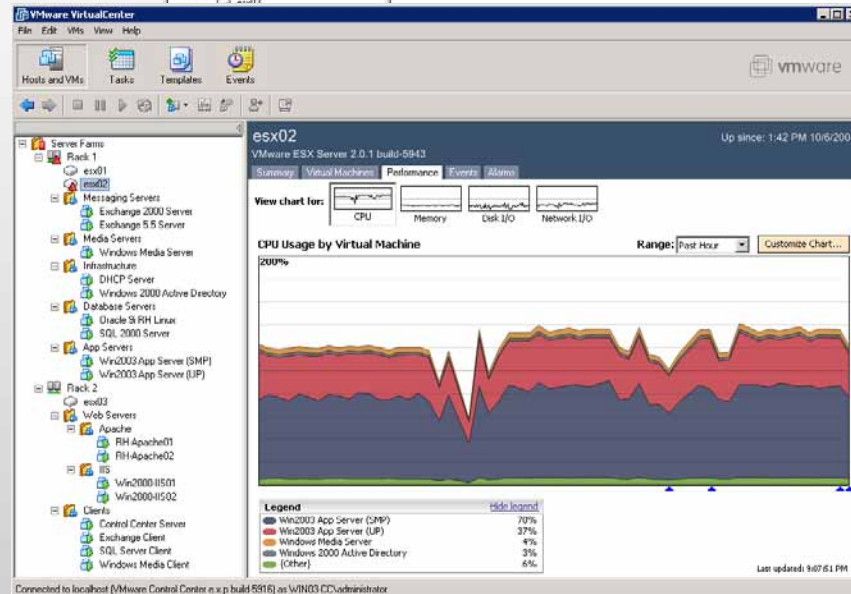
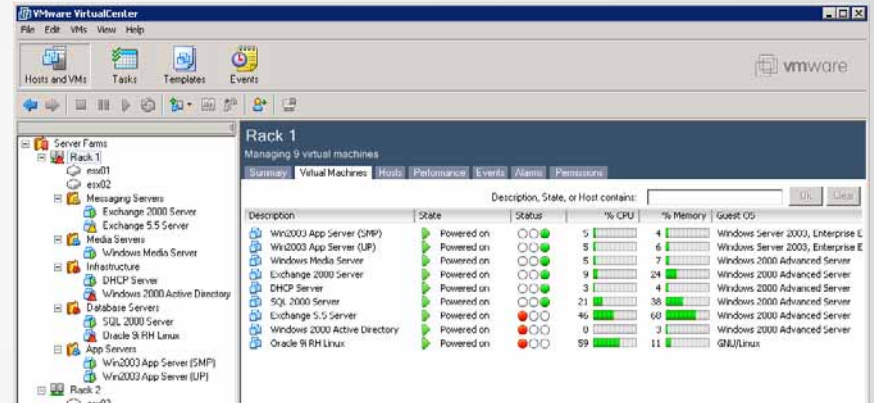
ESX Server



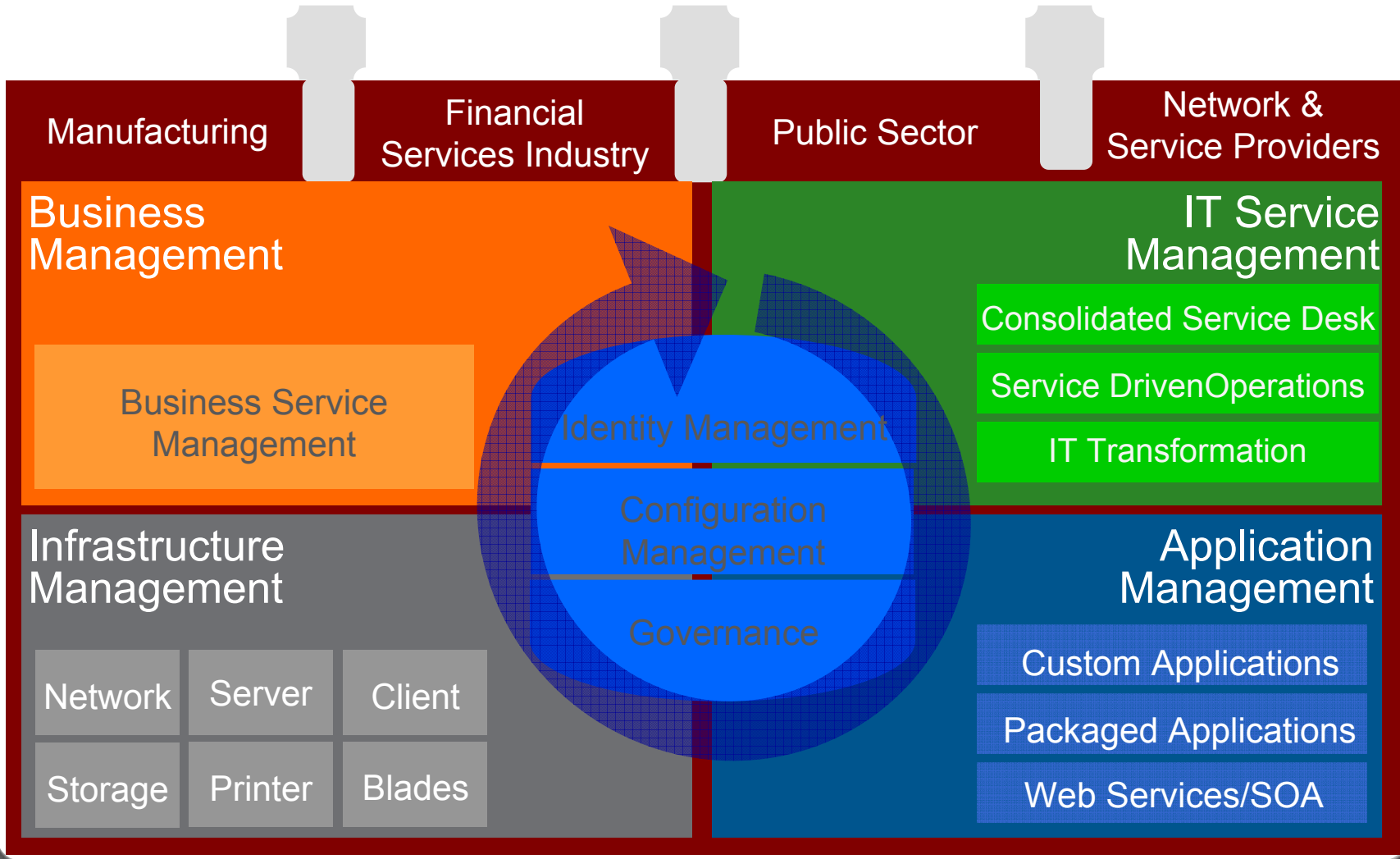
ESX Server insulates the BIOS / Operating System / Applications from the physical hardware, so many systems can share hardware, or be moved to different hardware with no service interruption

VMware VirtualCenter

- Infrastructure Management
- Administrator's Console
- VMotion
- VMware Specific

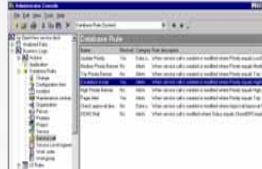


Management Solutions For the Adaptive Enterprise



HP OpenView ITSM

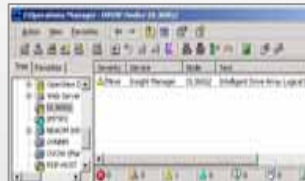
Business & Service
Management



HP OpenView Service Desk

Service & Operations
Management

For Windows



For Unix



*HP OpenView Operations
SPI for VMware*

Operations &
Hardware
Management

*SAP
Exchange
Active Directory
Siebel
Citrix*

*Windows/Netware/Linux
HPUX/AIX/Solaris*

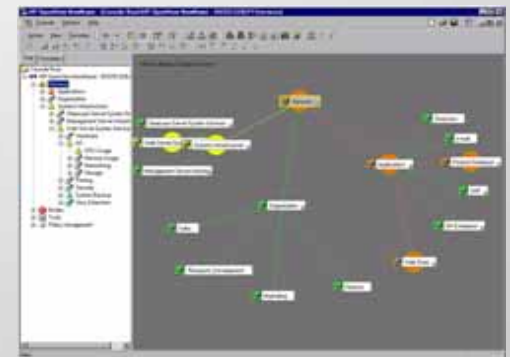
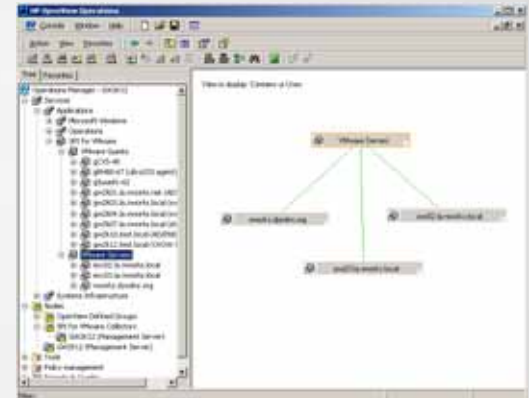


*HP Systems Insight Manager
Virtual Management Module
VMware VirtualCenter*

IBM Director

HP OpenView Operations

- Central admin – distributed mgmt
- Service oriented
- Manage more per person
- Integrated event and perf. mgmt.
- Ops efficiency and effectiveness
- Heterogeneous management
 - Hardware – X86, HP-PA, IBM Power, SPARC
 - Software – Operating systems/Applications
 - Vendor – HP, Dell, IBM, Sun, etc
- Standard responses = higher service levels



VMware Service Management

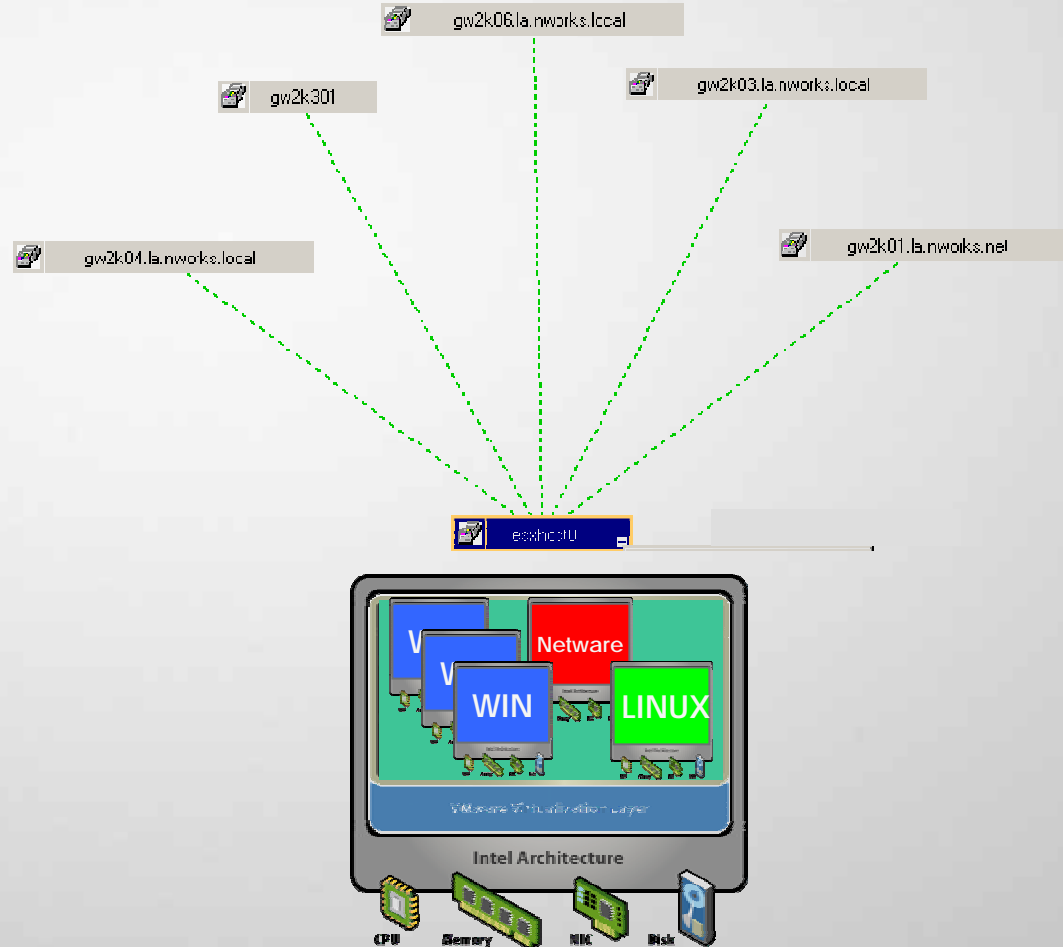
- Integrate into Enterprise Management solution
- Integrate into Service Management processes
- Maximize ESX Server Project ROI
- Visualization of virtual environment
- Hardware performance reporting
 - Long-term
 - Short-term
 - Operationally
- Performance Management
- Event Management

SPI for VMware

- Full HP OpenView Operations integration
 - Events/Performance/Configuration/State
 - Service view of VMware ESX Servers
 - Reporting and Graphing
- Completes the VMware/HP solution
 - VMware VirtualCenter
 - HP SIM: Virtual Management Pack (VMM)
 - SPI for VMware for OpenView Operations

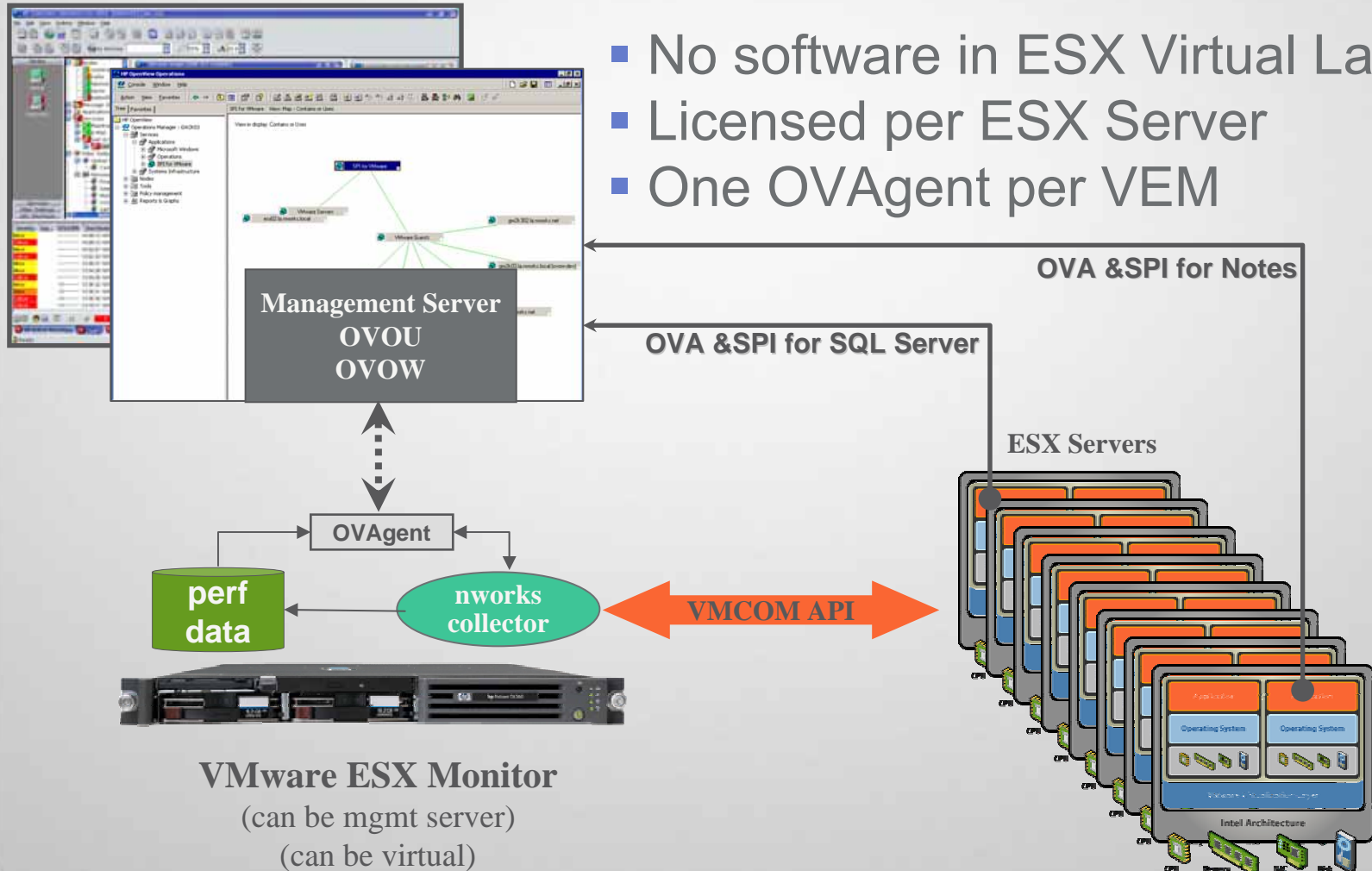
SPI for VMware

- HP OpenView operations
- HP OpenView certified
- ESX Server as a service
- OVO
 - Performance
 - Configuration
 - Events
 - Monitors
 - State
- Reporting and graphing



Architecture

- No software in ESX Virtual Layer
- Licensed per ESX Server
- One OVAgent per VEM



Event Management

HP OpenView Operations

Console Window Help

Tree: HP OpenView > Operations Manager : NWORKS2 > Services > OpenView Defined Groups > SPI for Notes

View: Message Browser - Active Messages

Severity	S	U	I	A	O	N	Received	Node	Application	Object	Text
Normal	-	X	-	-	-	-	4/28/2004 9:47:34 AM	NWORKS2 (Ma...	SPI for VMWare	Collector	SPI for VMWare Collector Servi
Warning	-	X	-	-	-	-	4/28/2004 9:47:34 AM	NWORKS2 (Ma...	SPI for VMWare	Runtim...	SPI for VMWare Collector Tracir
Major	-	X	-	-	-	-	4/28/2004 9:47:34 AM	NWORKS2 (Ma...	SPI for VMWare	Collector	Cannot connect to host 206.17
Major	-	X	-	-	-	-	4/28/2004 2:40:04 PM	NWORKS2 (Ma...	SPI for VMWare	Collector	Cannot connect to host 206.17
Normal	-	X	-	-	-	-	4/28/2004 2:40:04 PM	NWORKS2 (Ma...	SPI for VMWare	Collector	SPI for VMWare Collector Servi

Message Properties (Left)

Message: SPI for VMWare Collector Service Started

Original Event:

- Node:
- Message group: VM_SPI
- Application: SPI for VMWare
- Object: Collector
- Severity: Normal
- Text: SPI for VMWare Collector Service Started

Message Properties (Right)

Message: VMWare guest /root/vmware/winNetStandard/winNetStandard01.vmx on host 206.171.162.20 is configured, but not running.

Original Event:

- Node:
- Message group: VM_SPI
- Application: SPI for VMWare
- Object: Status
- Severity: Minor
- Text: VMWare guest /root/vmware/winNetStandard/winNetStandard01.vmx on host 206.171.162.20 is configured, but not running.

Operational Tools

Tool Status

Launched Tools:

Status	Action	Node	Command
Succeeded	OVOW Patches ...	ManagementSe...	"%OVInstallDir%\bin\vpstat" -p

Tool Output:

```

===== Patches Information =====
----- PATCH DETAILS SECTION -----
Patch Name : OVOW_00006
Superseded by : OVOW_00059, 7-7-2005, 15:10:26

Patch Name : OVOW_00012
Superseded by : OVOW_00059, 7-7-2005, 15:10:26
    
```

esx02.la.nworks.local VMware ESX Stats 2005-07-21 18:50:01 (Recent) - Microsoft Internet Explorer

File Edit View Favorites Tools Help

VMware ESX Server esx02.la.nworks.local @ 2005-07-21 18:50:01 vmkusage-v2.5.0v2
[Usage Home][ESX MU] Time Horizon: [Recent] [Daily] [Weekly]

Recent

CPU System Memory Net Pkts Net Mb Dist

148 gSus-009.test.local (13) /root/vmware/linux/gSus-009.vmx

149 gSus-010.test.local (17) /home/vmware/gSus-010.test.local

VMware SPI Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

SPI for VMware Collector Configuration

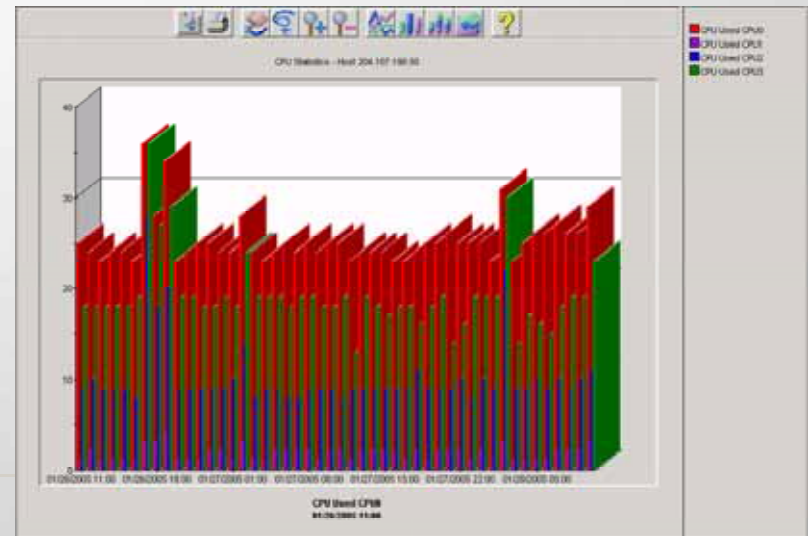
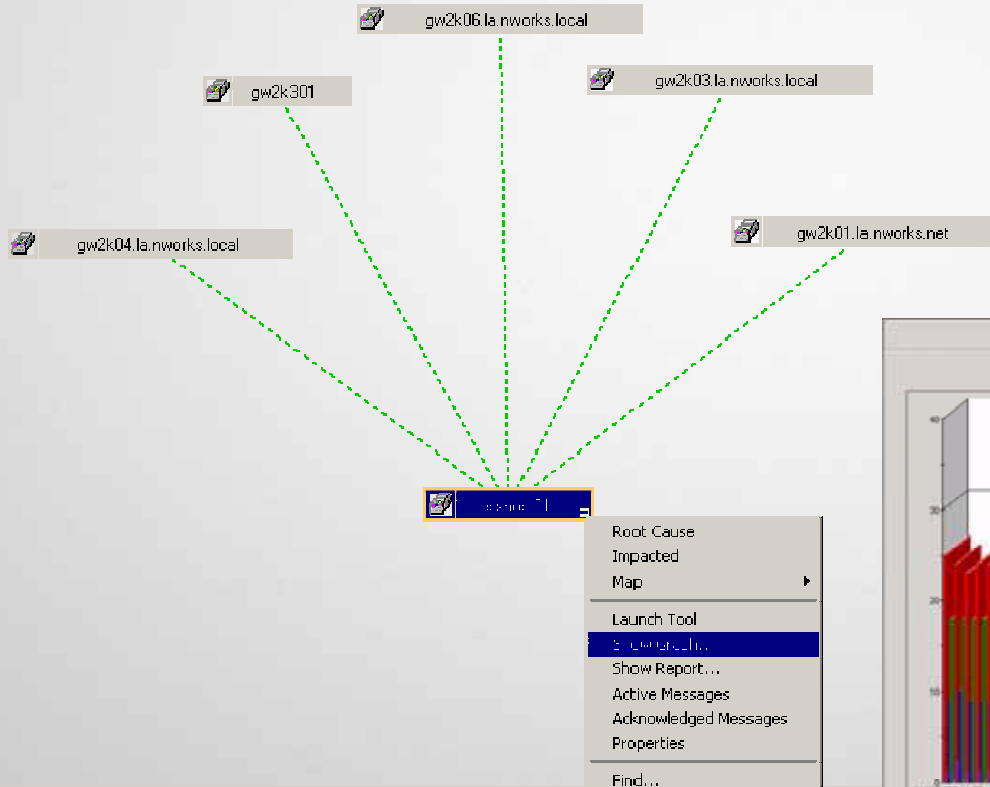
Hosts (ESX Server) to be Monitored

Add Host Edit Host Delete Host Test Host

esx02.la.nworks.local
esx03.la.nworks.local
esx05.la.nworks.local

Collector UI Vers: 1.50
Collector Vers: 1.50
License Key: 6166479-13044-0

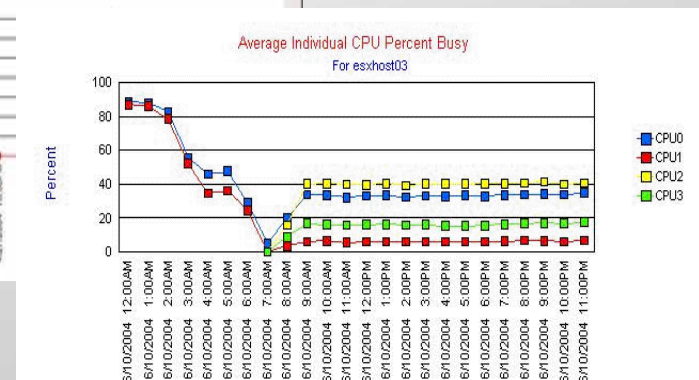
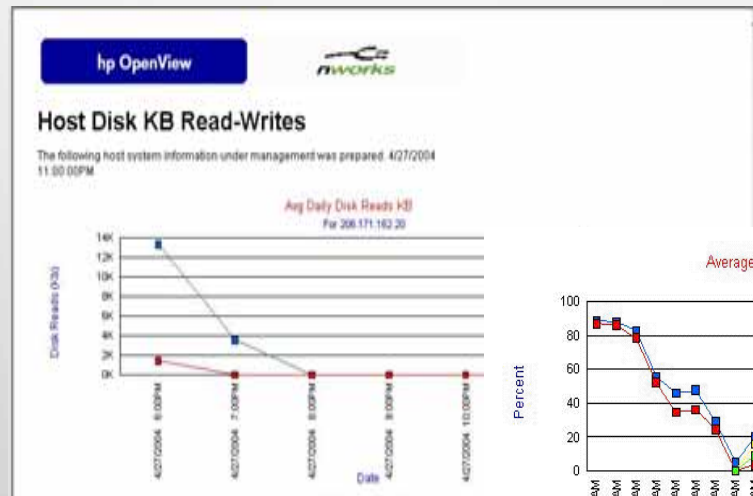
On Demand Graphing



Custom Reporting

- Configuration information
 - Version
 - Virtual machines/OS
 - ESX Servers
- Host
 - Memory
 - CPU
 - Disk
 - Network

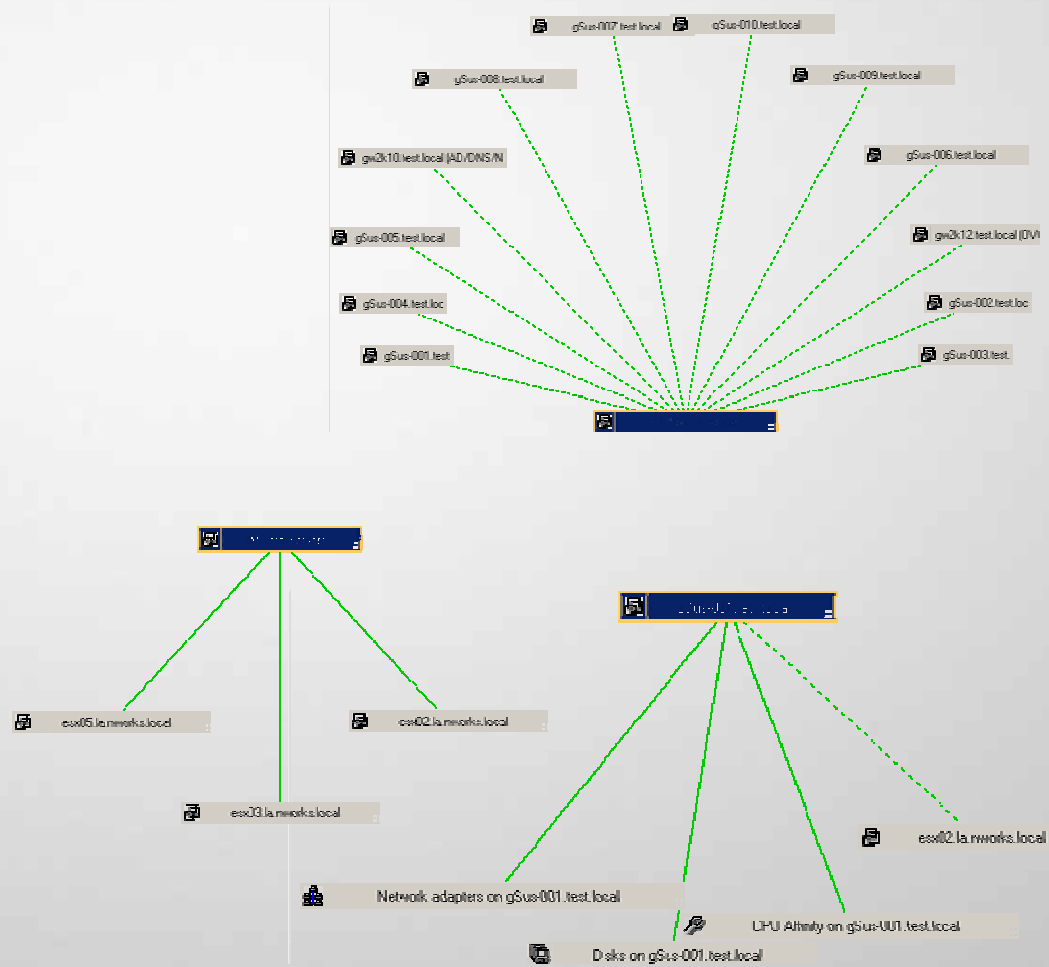
- Guest
 - Memory
 - CPU
 - CPU affinity
 - Network
 - Disk



ESX Servers: Service Map

Tree Favorites

- HP OpenView
 - Operations Manager : GW2K12
 - Services
 - Applications
 - Microsoft Windows
 - Operations
 - SPI for VMware
 - VMware Guests
 - grh8-001.la.nworks.local
 - grh8-002.la.nworks.local
 - grh8-004.la.nworks.local
 - grh8-005.la.nworks.local
 - grh8-03.la.nworks.local
 - gSus-001.test.local
 - gSus-002.test.local
 - gSus-003.test.local
 - gSus-004.test.local
 - gSus-005.test.local
 - gSus-006.test.local
 - gSus-007.test.local
 - gSus-008.test.local
 - gSus-009.test.local
 - gSus-010.test.local
 - gw2k01.la.nworks.net (ADS)
 - gw2k03.la.nworks.local (ovow-dev)
 - gw2k04.la.nworks.local (ovow-test)
 - gw2k07.la.nworks.local (studio)
 - gw2k10.test.local (AD/DNS/NAT)
 - gw2k12.test.local (OVOW Server)
 - gw2k302.la.nworks.net
 - rh8-006.la.nworks.local
 - VMware Servers
 - esx02.la.nworks.local
 - esx03.la.nworks.local
 - esx05.la.nworks.local





VMworld2005

virtualize^{now}

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