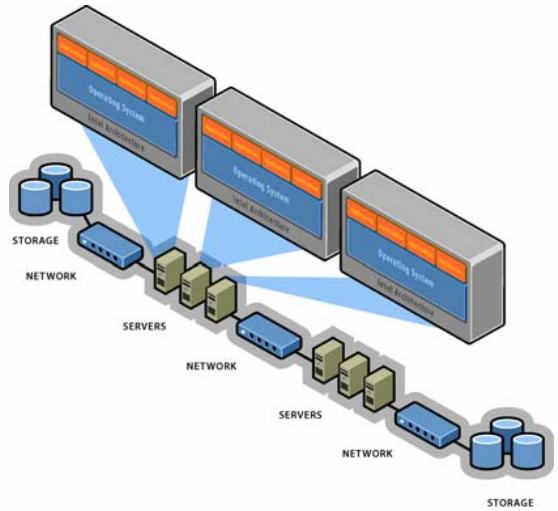
Monitoring VMware ESX Server Virtual Machines with HP OpenView and MOM2005 Management Pack

Hank Wright

Executive Vice President

VMWORLD 2006

VMware ESX Server & VirtualCenter

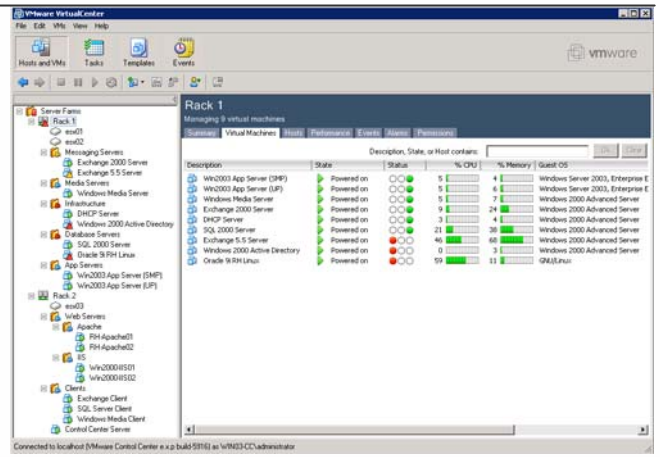


ESX Server

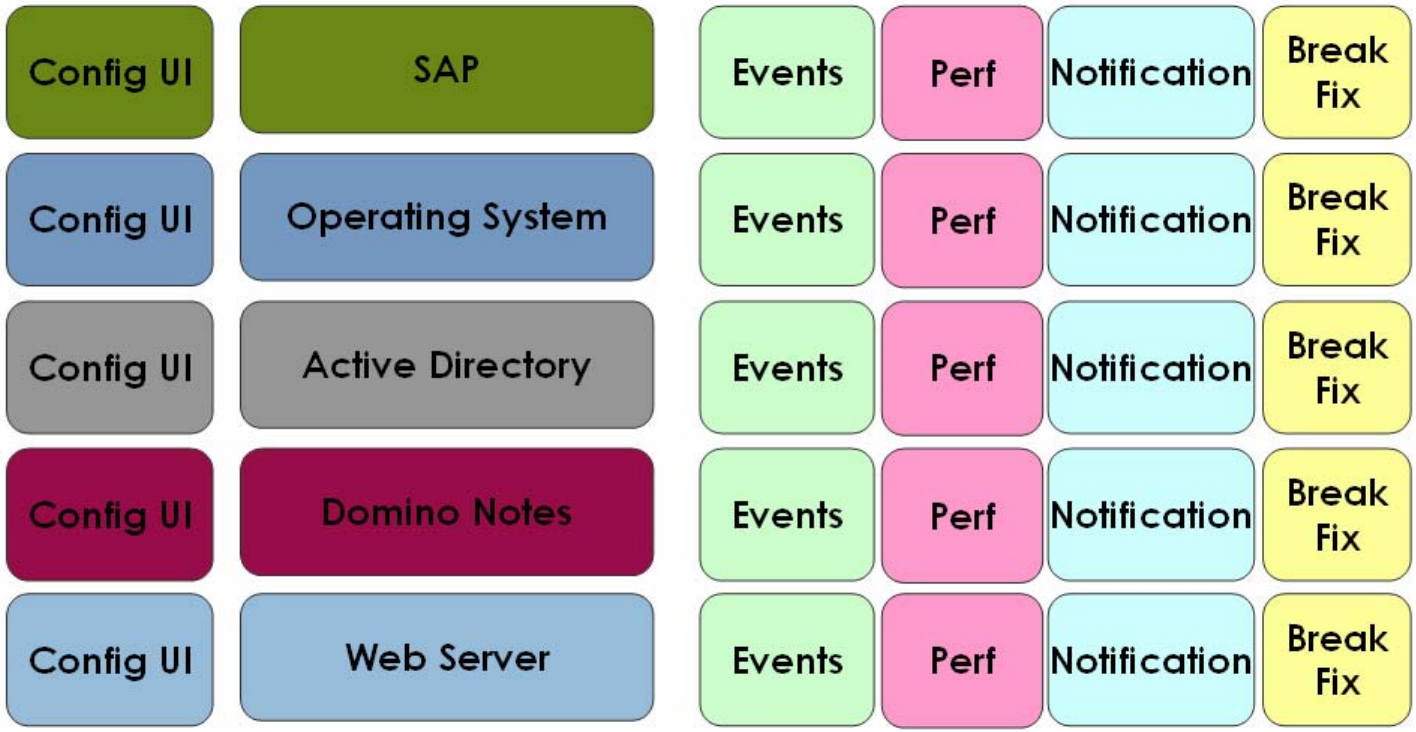
- Server Containment
- Provisioning on Demand
- Security
- Scalability
- Business Continuity

VirtualCenter

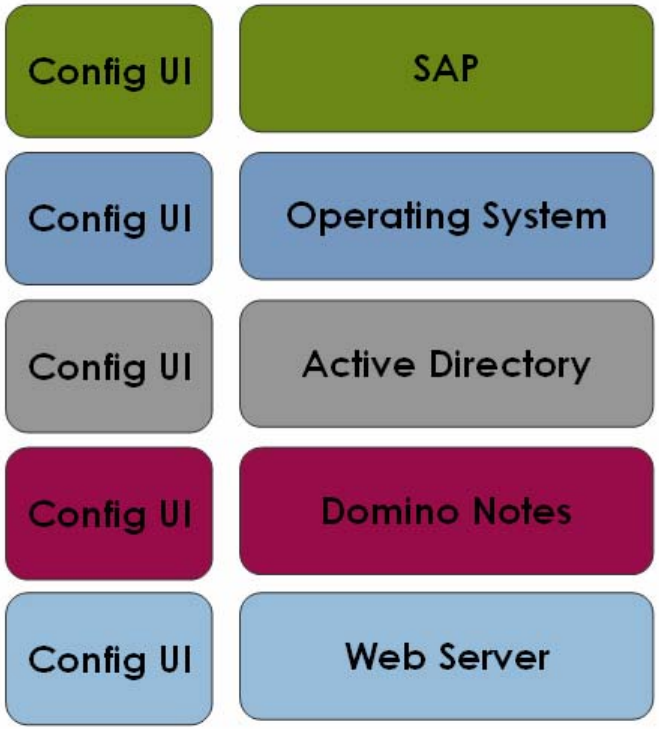
- Infrastructure Management
- Administrator's Console
- VMotion
- VMware specific

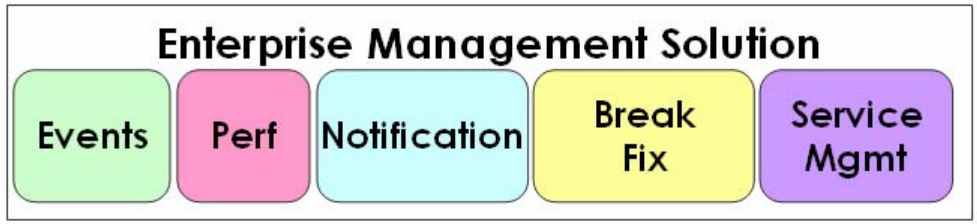


Why Enterprise Management?

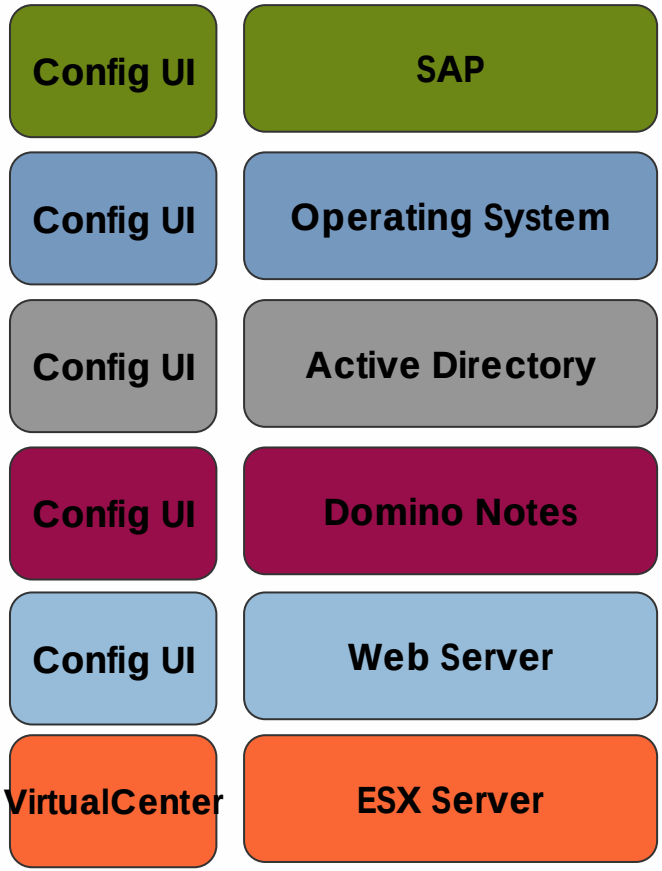


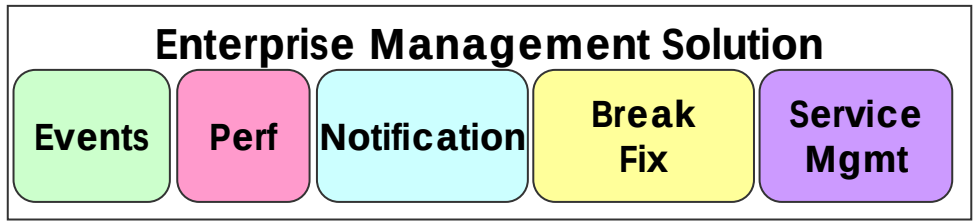
Why Enterprise Management?





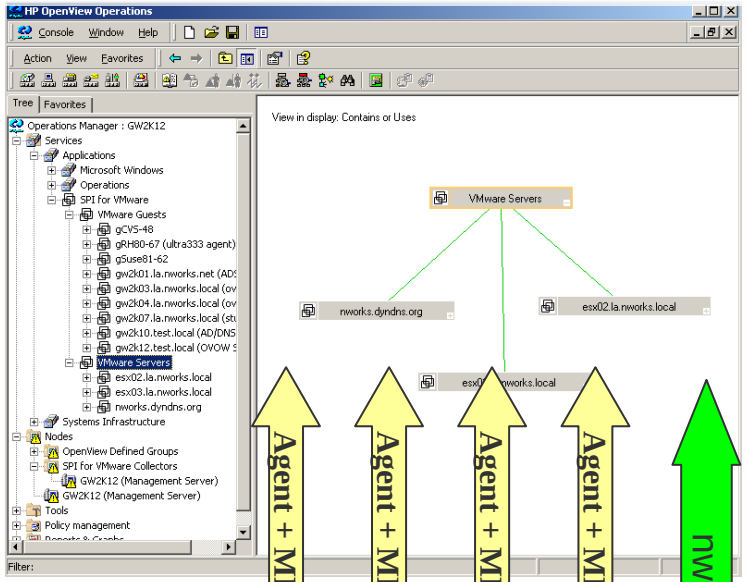
Why Enterprise Management?

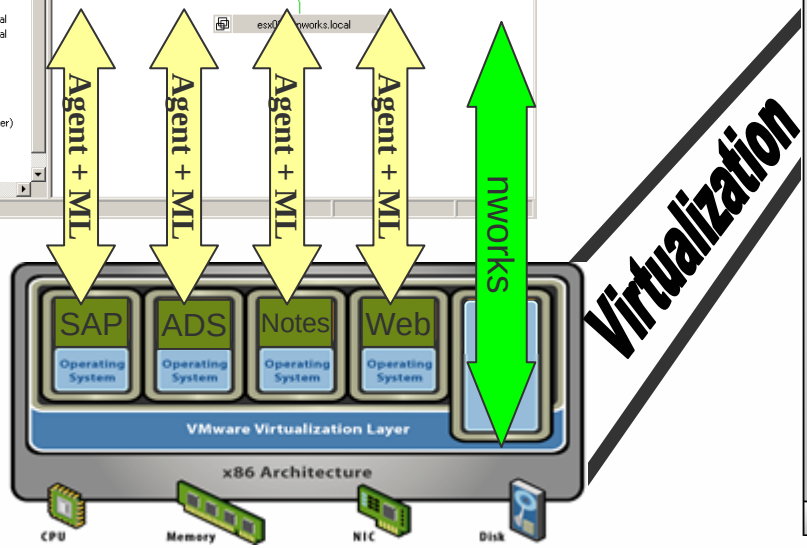




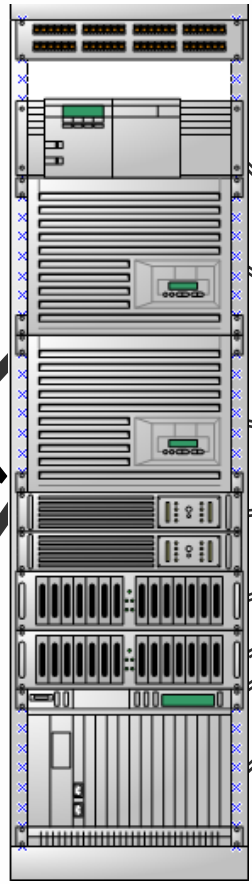
EMS & Element Manager

Enterprise Manager
(Application & Service Management)



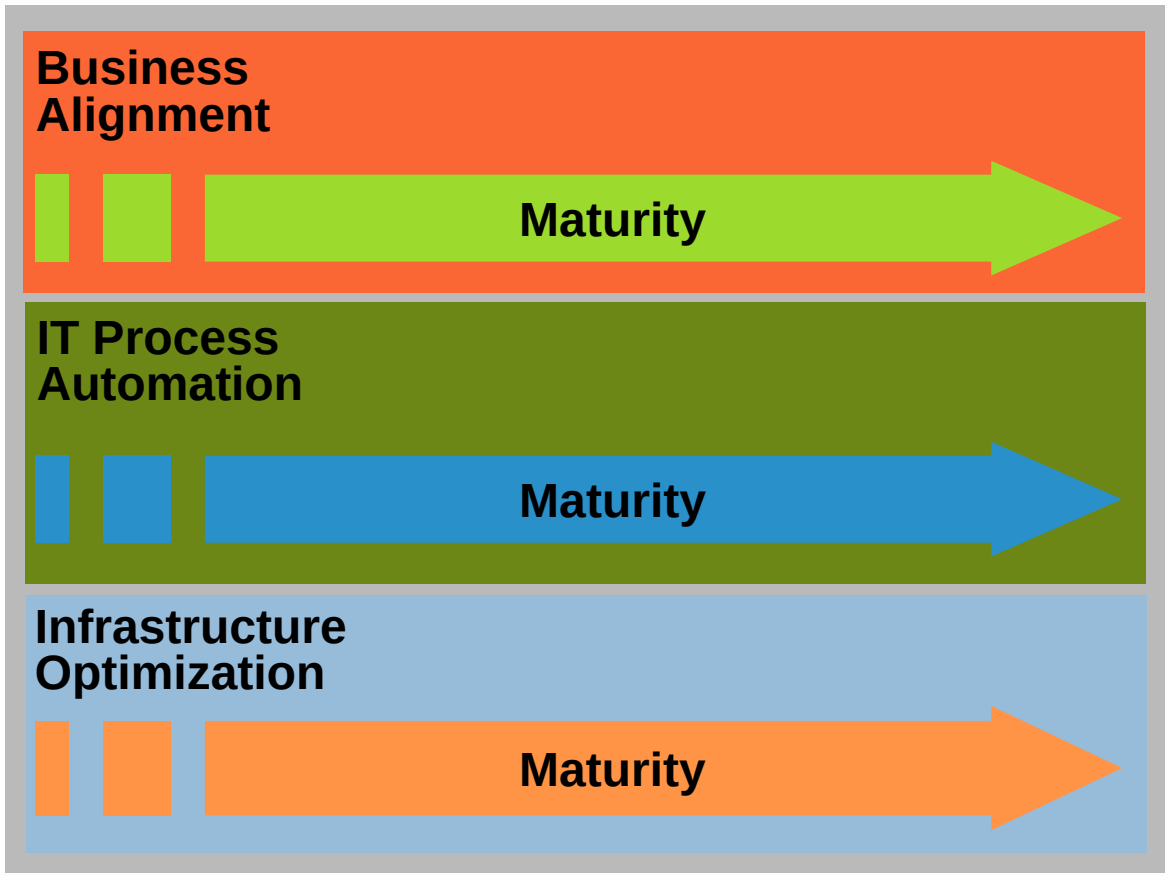


Virtualization



Element Manager
(Hardware Life-Cycle Management)

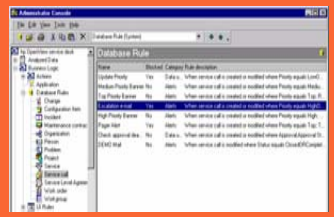
Enterprise Management



To be successful in the new IT world, an IT team must address all three of these interrelated vectors

HP OpenView

Business Alignment

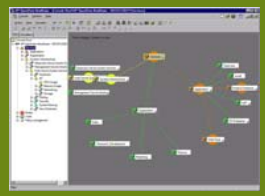


HP OpenView

* Service Desk
* Service Center
* Business Process Insight
* …

IT Process Automation

Windows



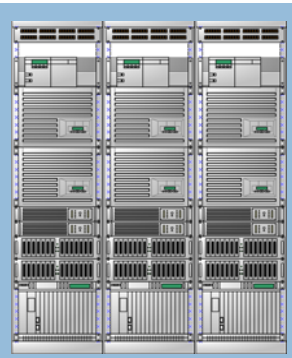
Unix

HP OpenView

* Operations
* Change & Configuration
* Asset Management
* …

Infrastructure Optimization

SQL Server
Exchange
Active Directory
Domino/Notes
Citrix
Windows/Netware/Linux
HPUX/AIX/Solaris



HP Systems Insight Manager

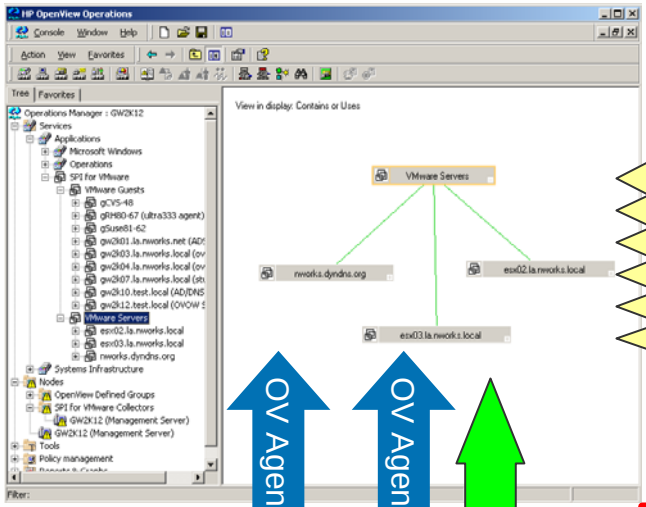
* Virtual Machine Management
* Server Migration Pack

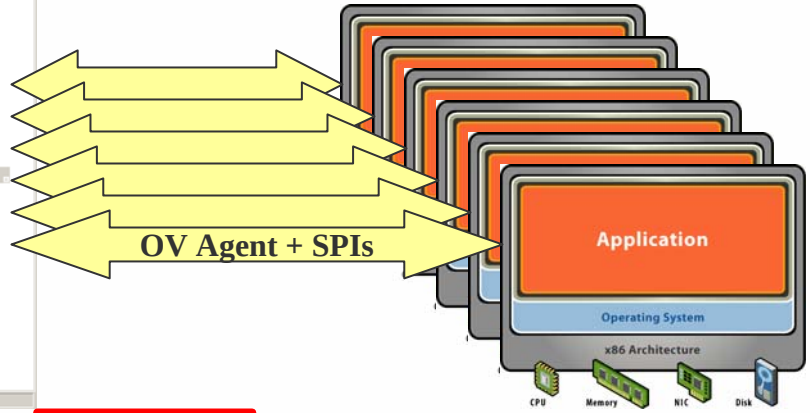
VMware

* VirtualCenter

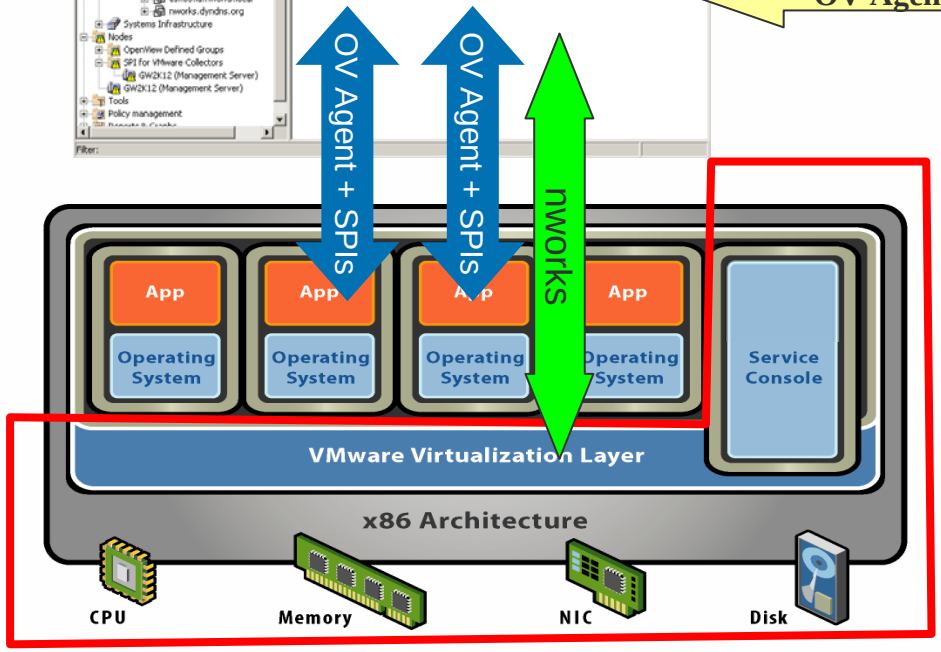
Application Services Management

HP OpenView Operations



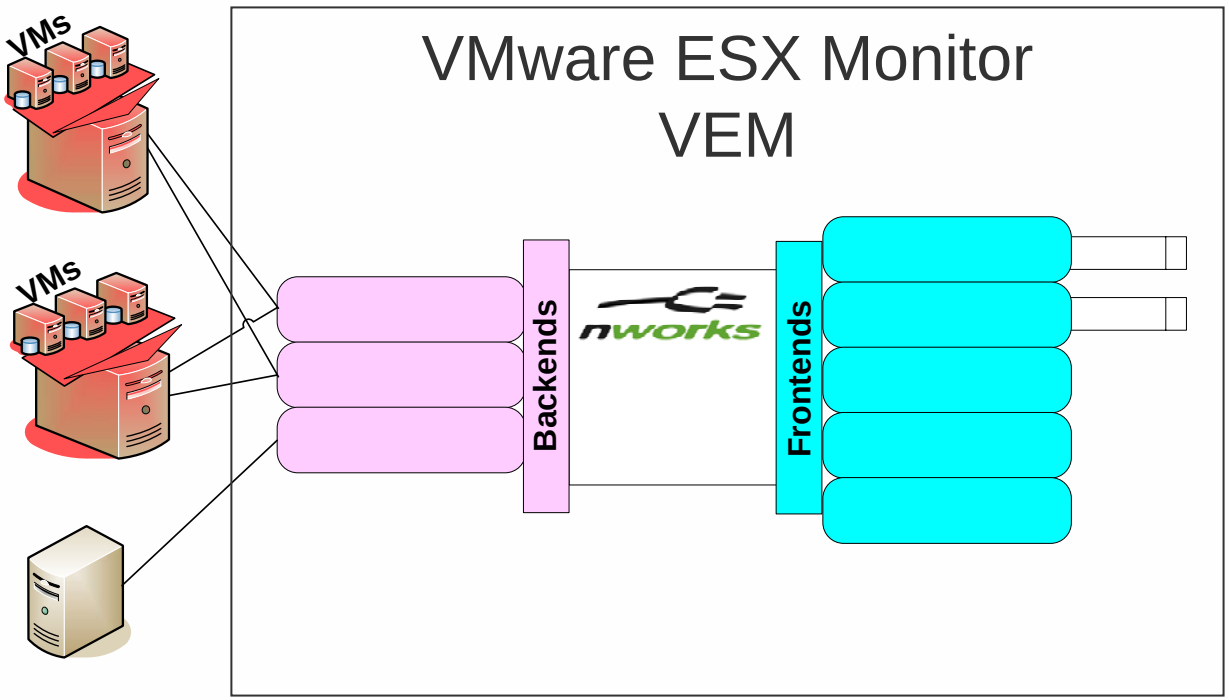


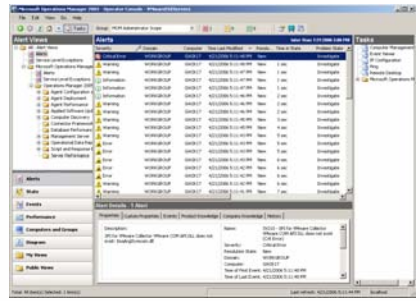
ESX Server

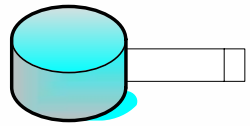


- Time becomes non-linear with virtualization
- What is the true physical resource usage?
- Where is my Virtual Machine?
- Do I have capacity?

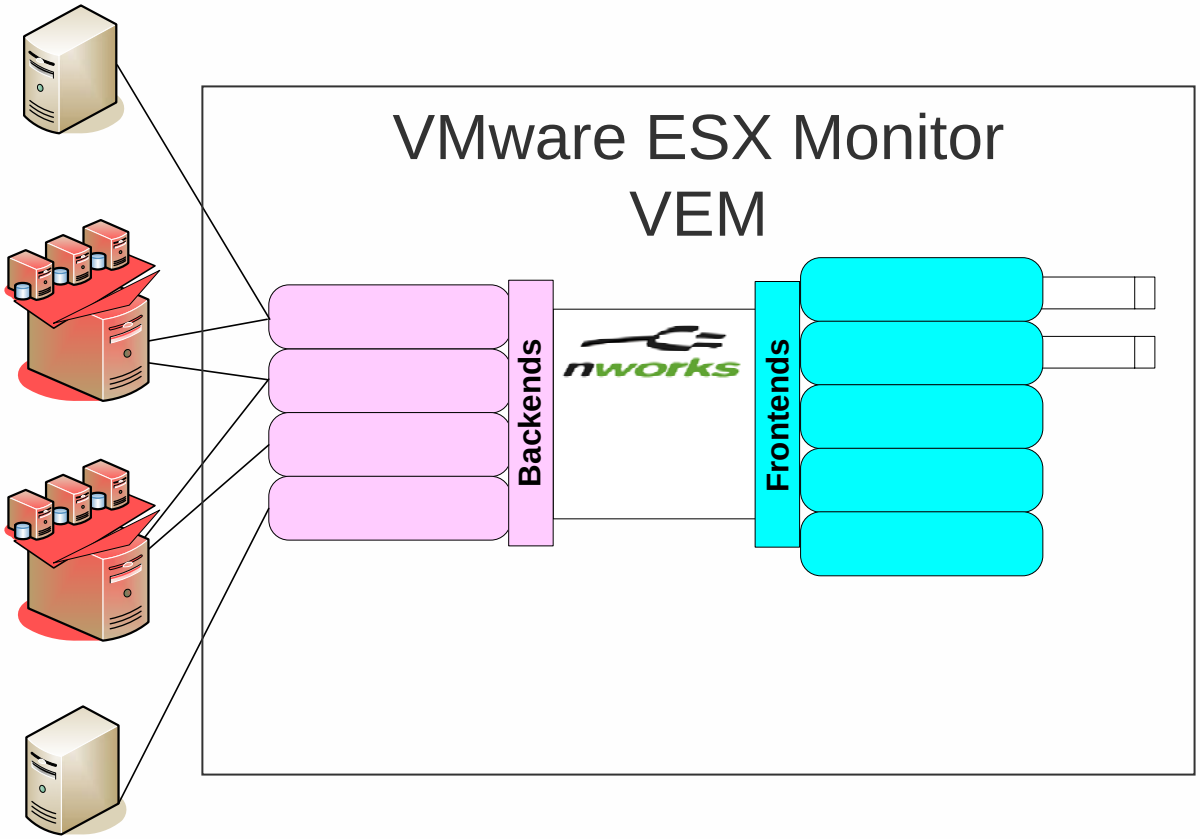
Version 2.10

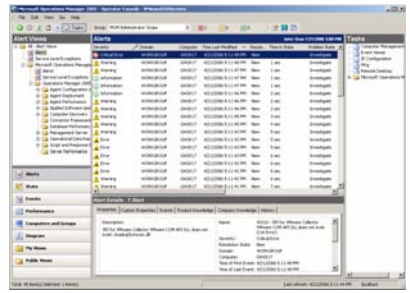


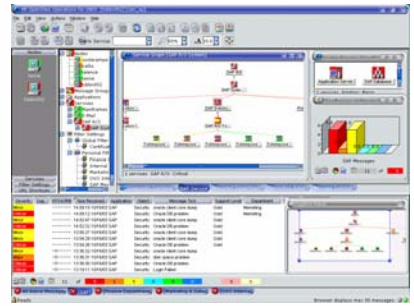


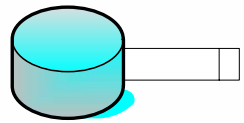


Version 3









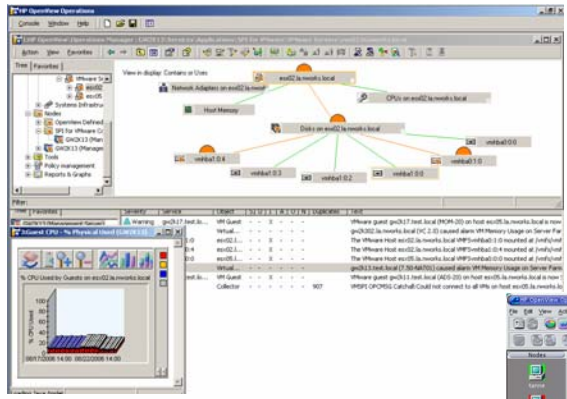
nworks Smart Plug-in for VMware

- **nworks.com/vmware - SPI for VMware**
  - **Performance, capacity, configuration, and event tracking**
  - **No agents on the ESX server or VirtualCenter**
  - **Graphing & reporting**
  - **Policies/templates**
  - **Service maps**

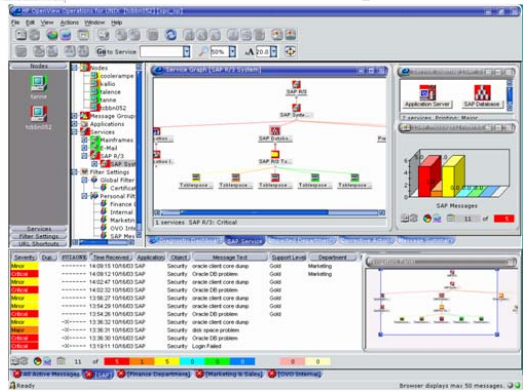
HP OpenView CERTIFIED SMART Plug-In

HP OpenView PLATINUM BUSINESS PARTNER

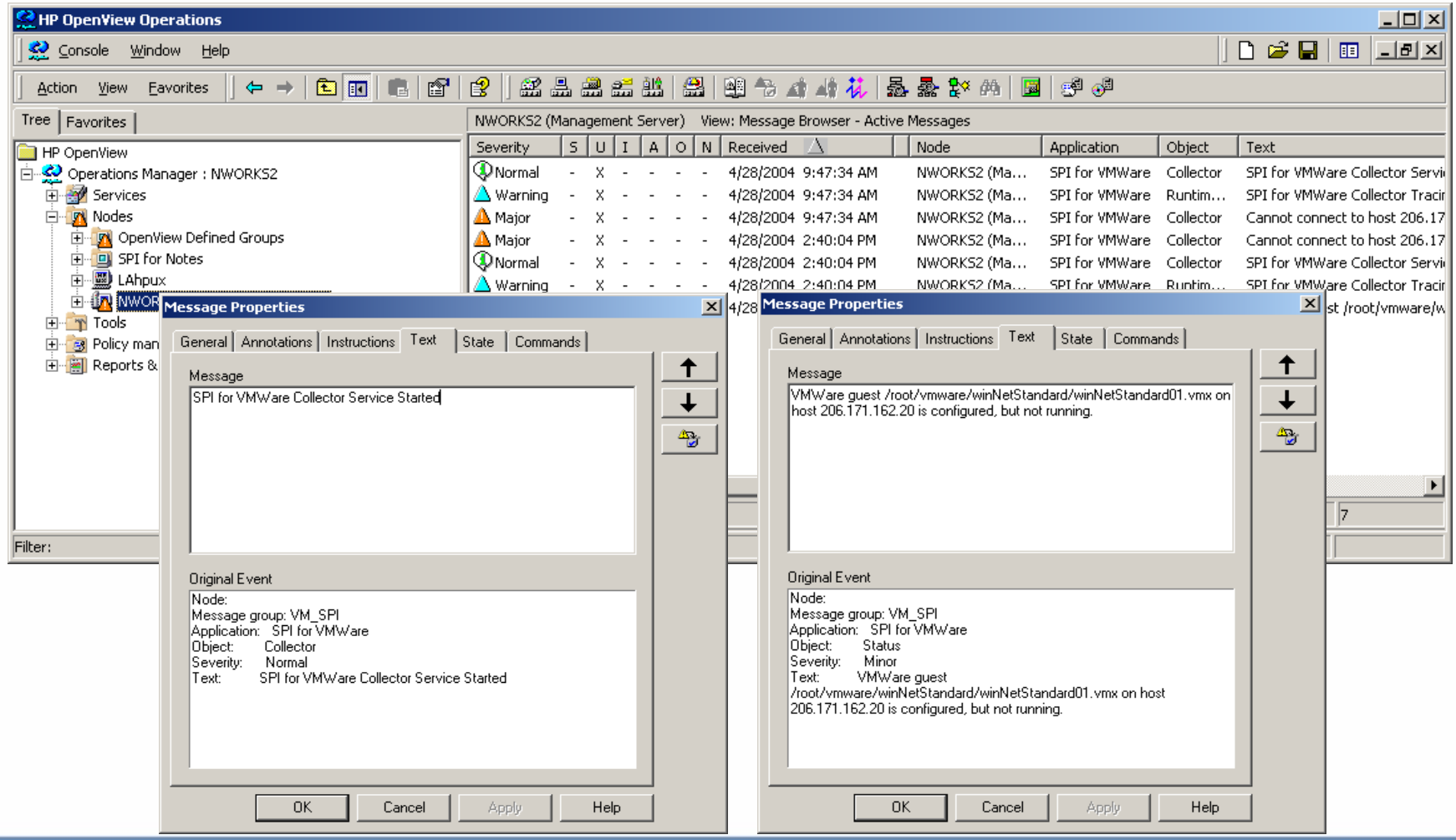
OVOW 7



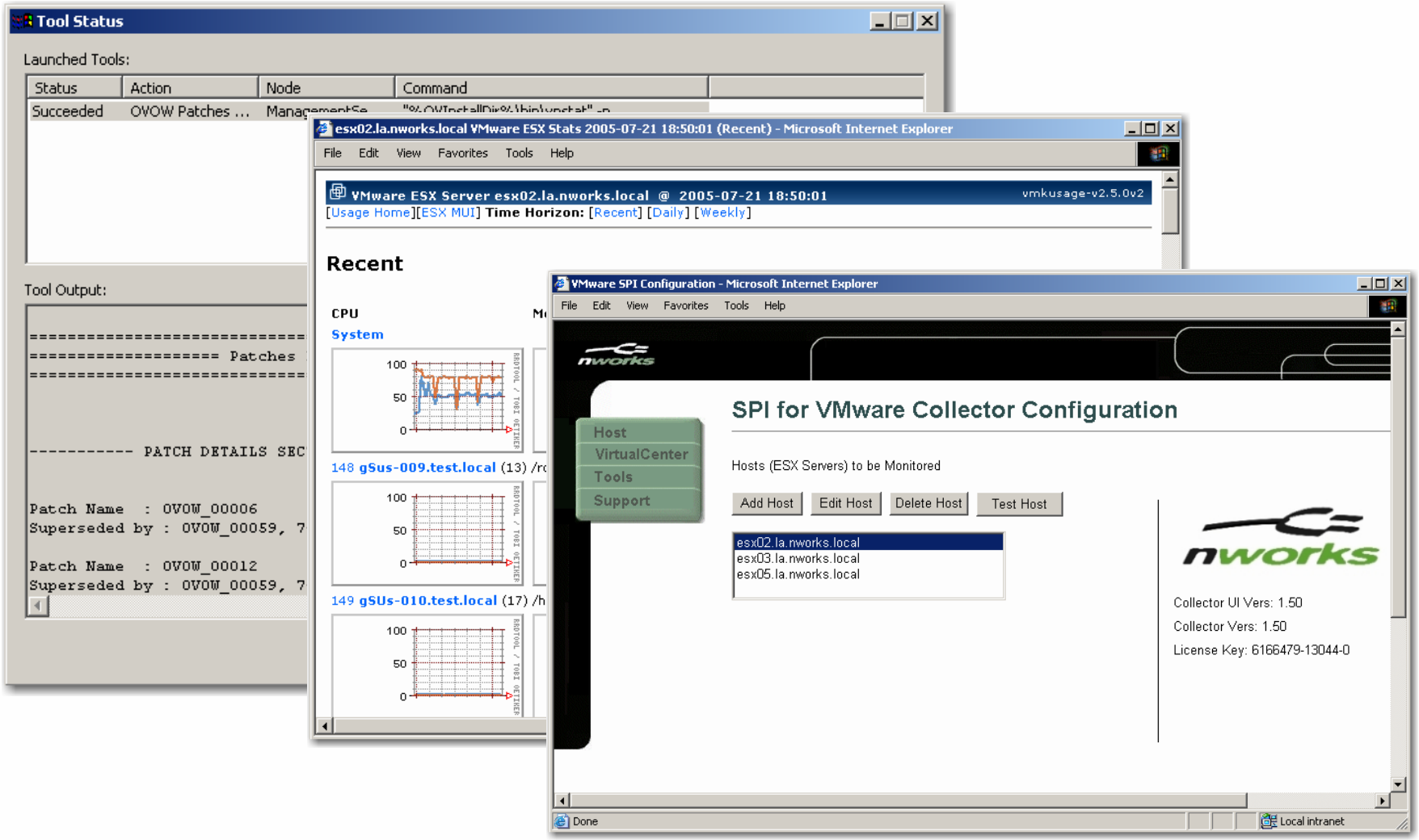
OVOU 7/8



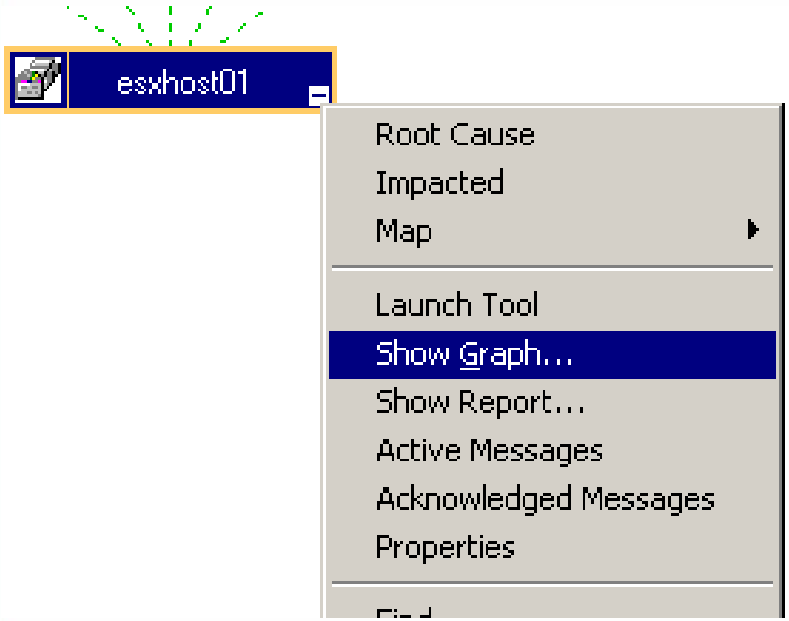
Events

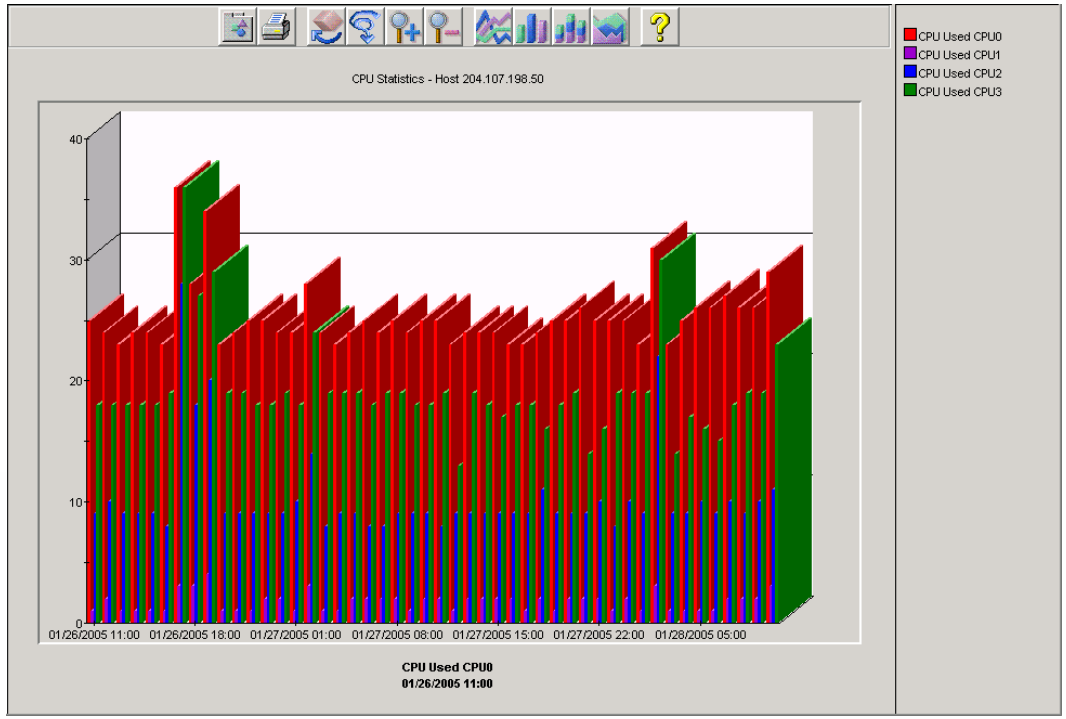

HP OpenView Operations
Console Window Help
Action View Favorites
Tree Favorites
HP OpenView
Operations Manager : NWORKS2
Services
Nodes
OpenView Defined Groups
SPI for Notes
LAhpux
Tools
Policy man
Reports &
Filter:
NWORKS2 (Management Server) View: Message Browser - Active Messages
Severity S U I A 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
Warning - X - - - - 4/28/2004 2:40:04 PM NWORKS2 (Ma... SPI for VMWare Runtim... SPI for VMWare Collector Tracir
Message Properties
General Annotations Instructions Text State Commands
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
OK Cancel Apply Help
Message Properties
General Annotations Instructions Text State Commands
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.
OK Cancel Apply Help

Tools


Tool Status
Launched Tools:
Status
Action
Node
Command
Succeeded
OVOW Patches ...
Tool Output:
---------- PATCH DETAILS SEC
Patch Name : OVOW_00006
Superseded by : OVOW_00059, 7
Patch Name : OVOW_00012
Superseded by : OVOW_00059, 7
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 MUI] Time Horizon: [Recent] [Daily] [Weekly]
Recent
CPU
System
148 gSus-009.test.local (13) /r
149 gSUs-010.test.local (17) /h
VMware SPI Configuration - Microsoft Internet Explorer
File Edit View Favorites Tools Help
SPI for VMware Collector Configuration
Host
VirtualCenter
Tools
Support
Hosts (ESX Servers) 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
Done
Local intranet

Graphs


esxhost01
Root Cause
Impacted
Map
Launch Tool
Show Graph...
Show Report...
Active Messages
Acknowledged Messages
Properties


CPU Statistics - Host 204.107.198.50
CPU Used CPU0
CPU Used CPU1
CPU Used CPU2
CPU Used CPU3
40
30
20
10
0
01/26/2005 11:00
01/26/2005 18:00
01/27/2005 01:00
01/27/2005 08:00
01/27/2005 15:00
01/27/2005 22:00
01/28/2005 05:00
CPU Used CPU0
01/26/2005 11:00

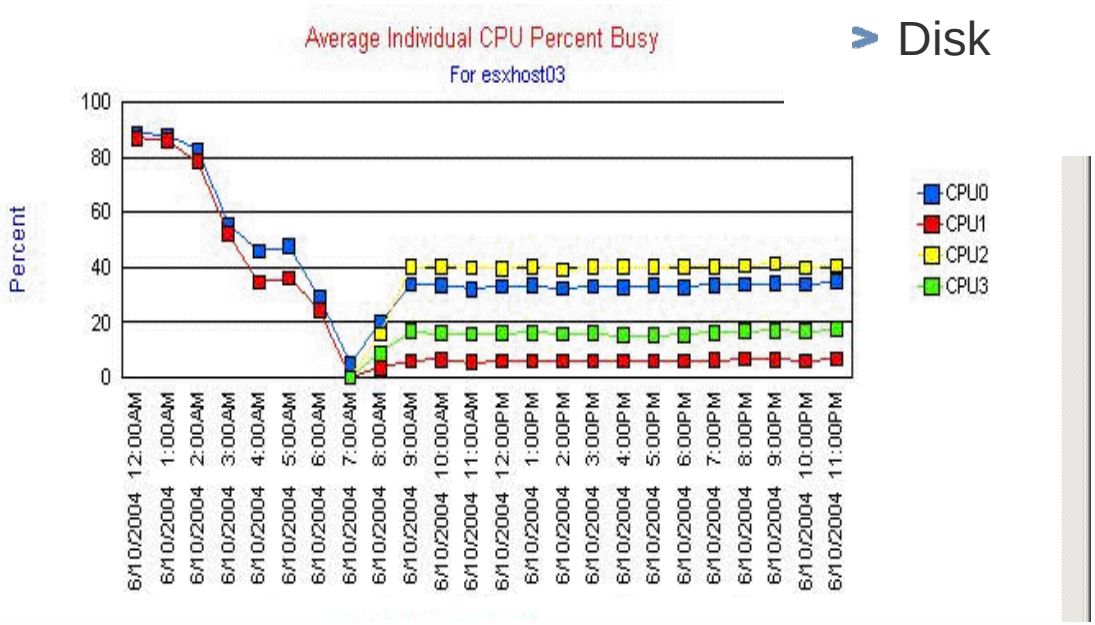
Reports

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

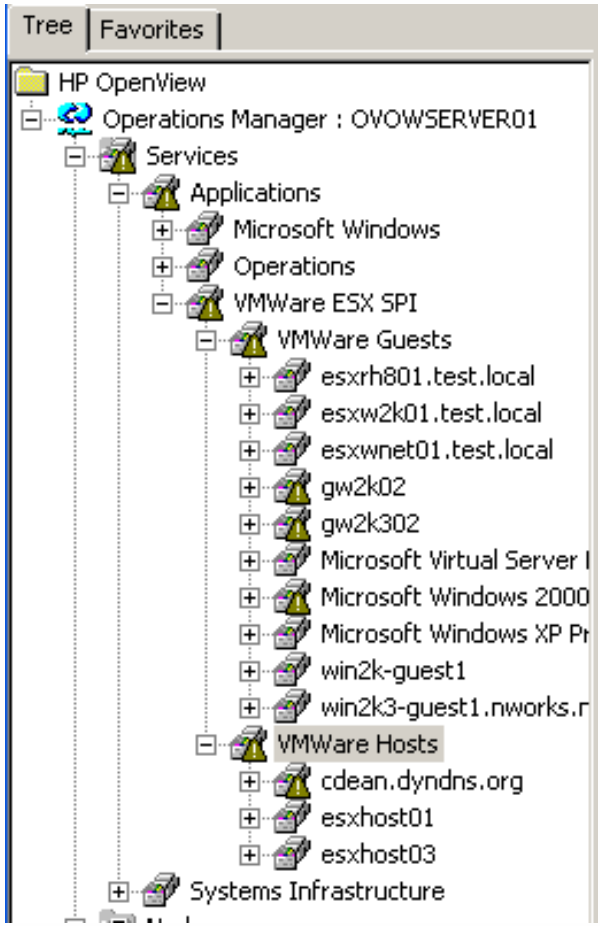
- Guest
  - Memory
  - CPU
  - CPU affinity
  - Network
  - Disk

hp OpenView

nworks

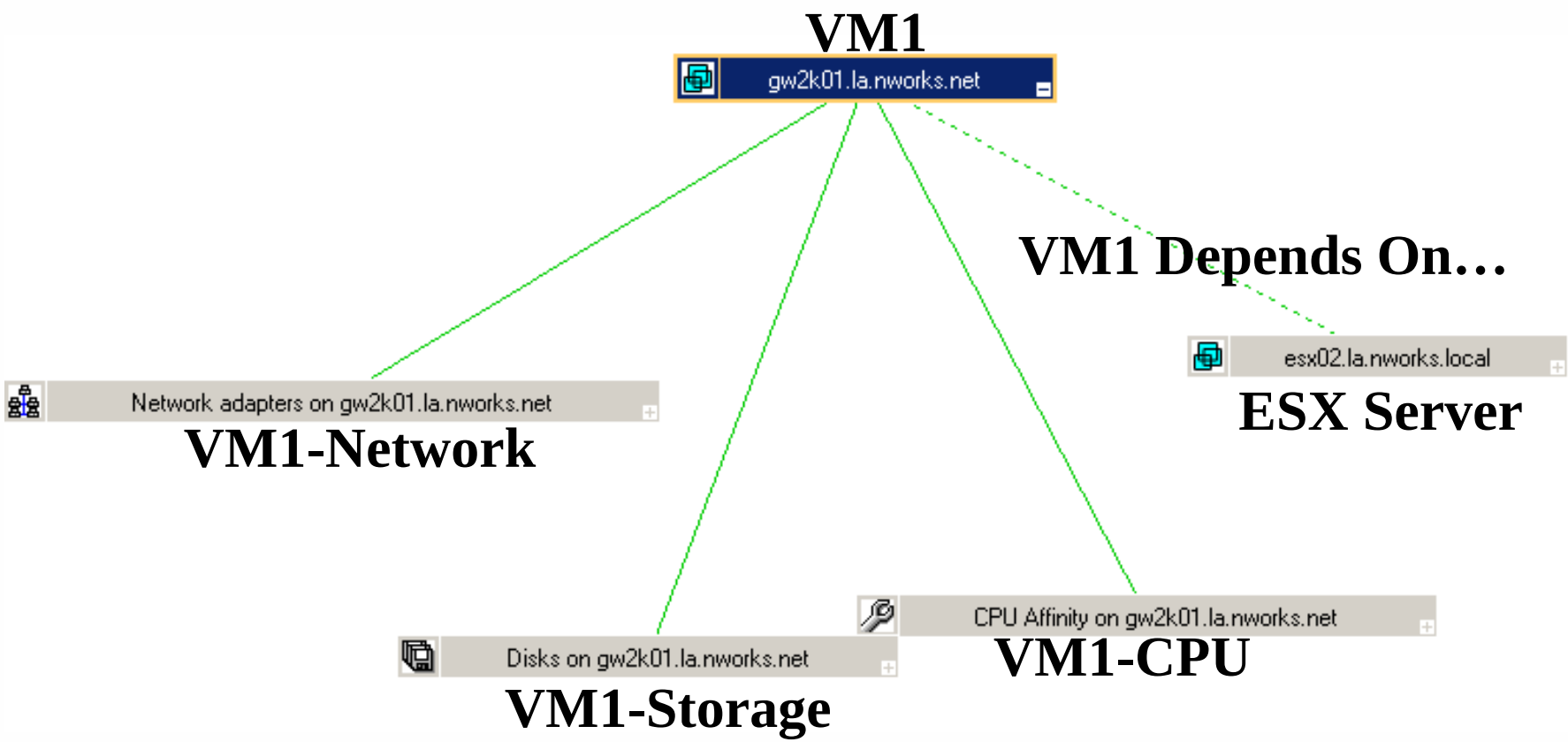


Service Mapping

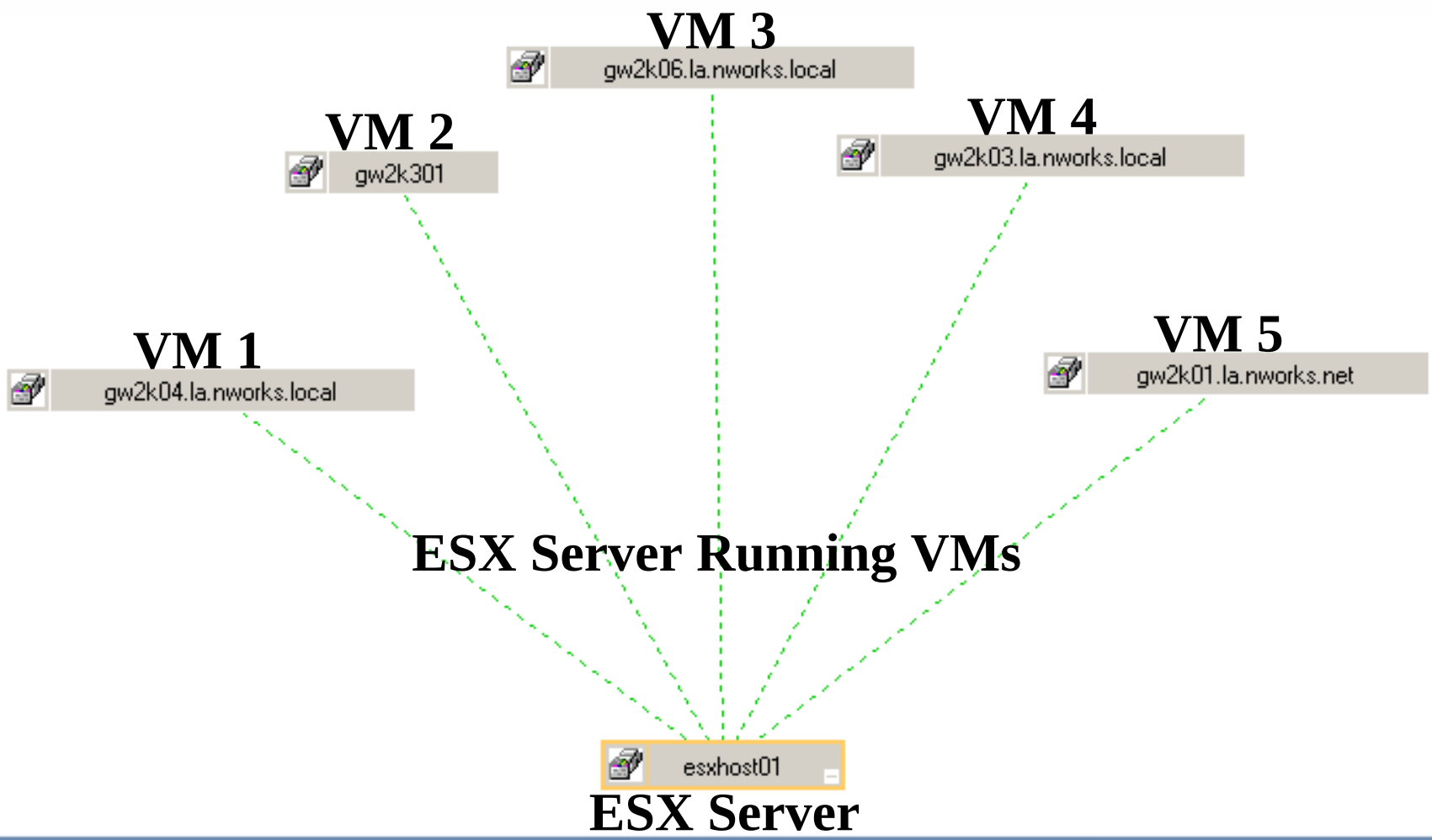


- Automatic Virtual Machine guest discovery
- Dynamically updated
- ESX Server VM guest to ESX Server mapping
- ESX Server to VM guests mapping
- Events mapped correct to ESX Server/VM guest

VM Guest to ESX Server Mapping

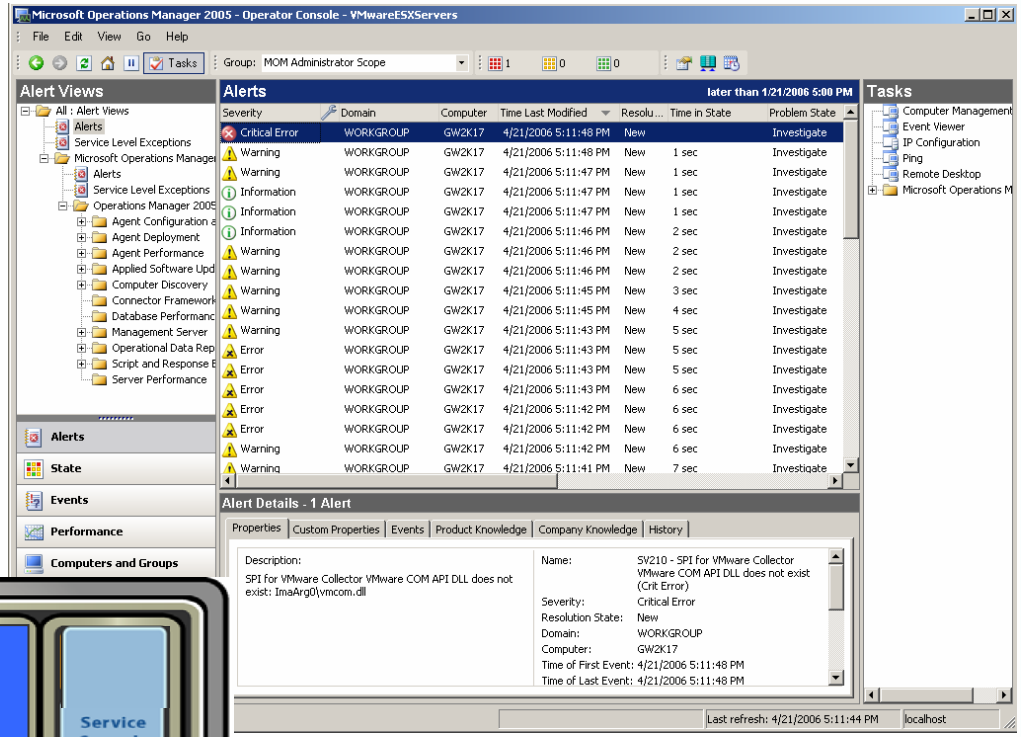


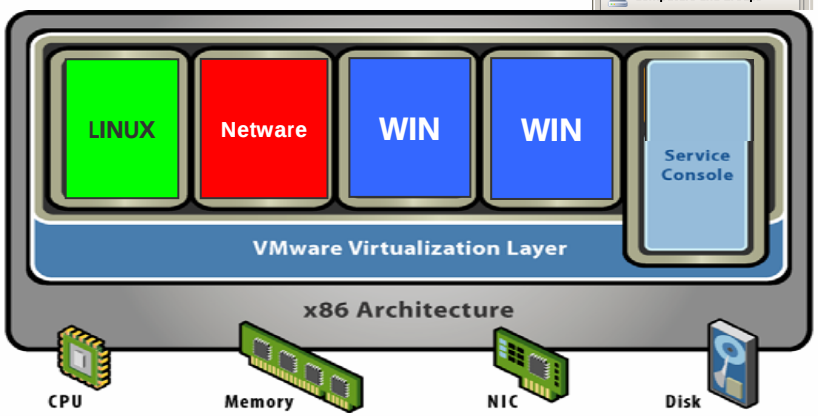
ESX Server To VM Guest Mapping



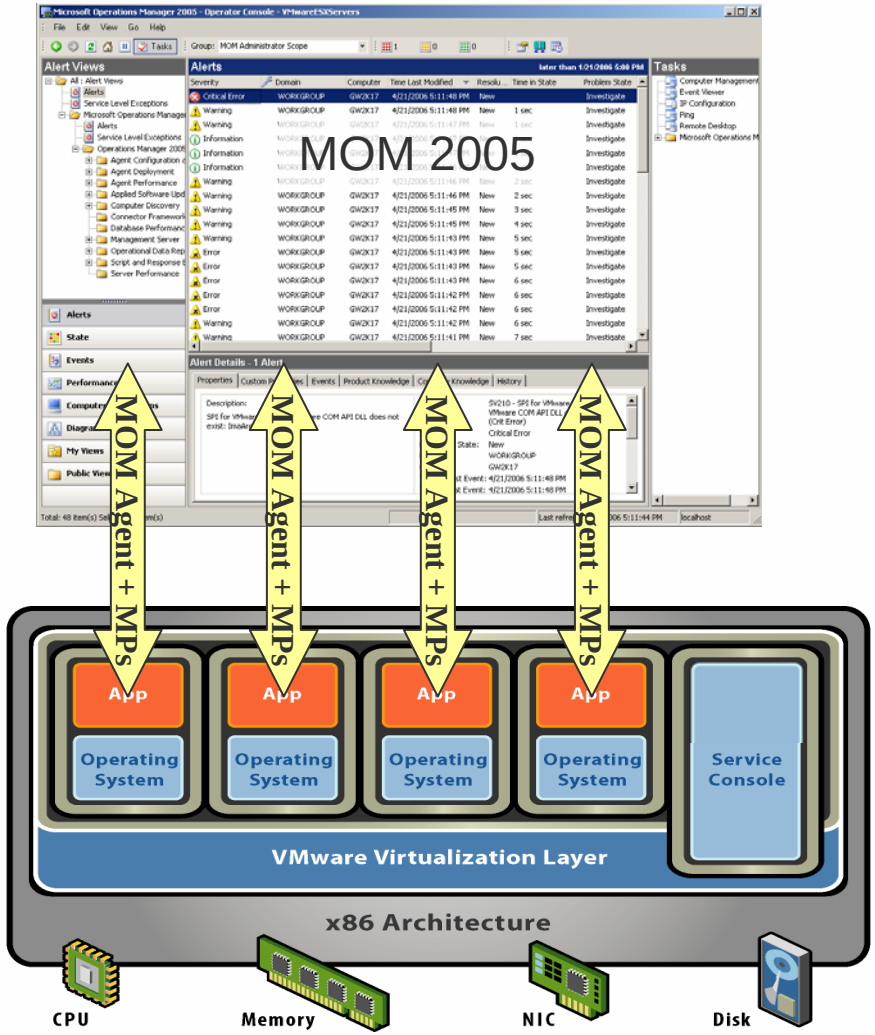
VMware Events Management Pack

- Supported on MOM 2005
- VMware ESX Server Events
- VirtualCenter Events
- Five rule groups
- Performance Thresholds
- 190 rules

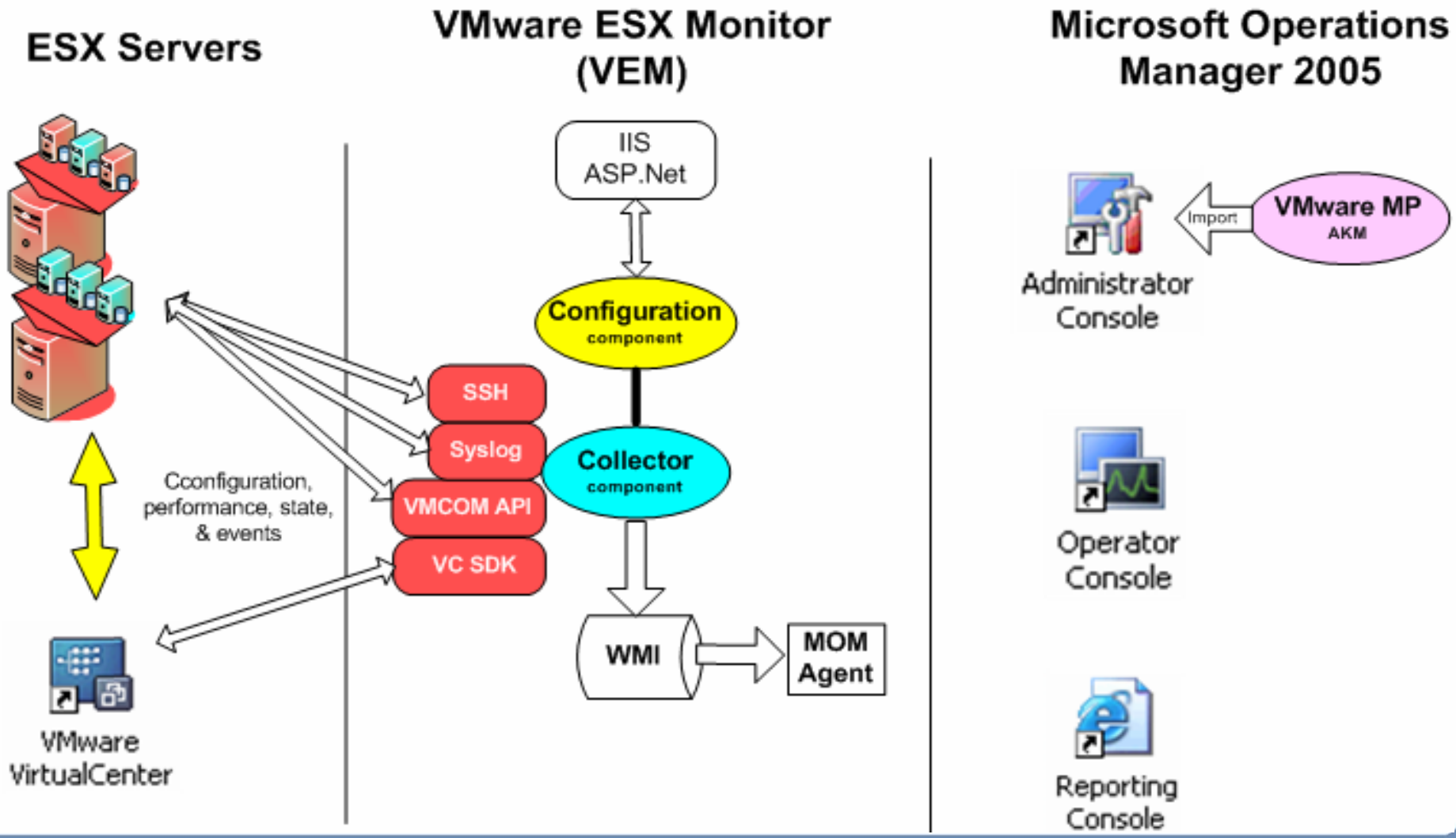




Microsoft Operations Manager 2005



Detailed Architecture

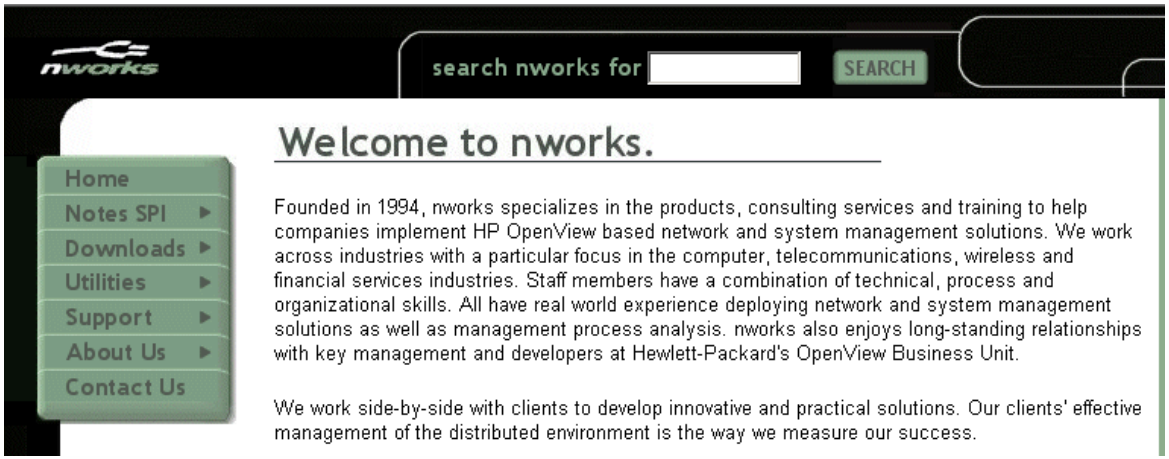


Licensing

- One License / ESX Server
  - Price per socket on server
  - Unlimited number of VMs
  - Unlimited number of VEMs (collectors)
- One agent for each VEM
- # of ESX servers / VEM depends on:
  - # of VMs on ESX Servers
  - Bandwidth between VEM and ESX Servers
  - Bandwidth between VEM and Management Server

Further Information

www.nworks.com



- sales@nworks.com
- 209/545-5000 x1
- http://www.nworks.com/vmware

Presentation Download

Please remember to complete your
session evaluation form
and return it to the room monitors
as you exit the session

The presentation for this session can be downloaded at
http://www.vmware.com/vmtn/vmworld/sessions/

Enter the following to download (case-sensitive):

Username: cbv_rep
Password: cbvfor9v9r

VMWORLD 2006