



**Managing Windows 2000  
with  
OpenView Express**

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# Agenda.



## What is OpenView Express?

### “New” technologies within Windows 2000

- **Networking**
- **MMC**
- **Active Directory**
- **WMI (WBEM)**
- **Exchange 2000**
- **Windows Scripting Host**
- **IIS and Firewalls**

### Wrap-up and Q&A



# What is OpenView Express?

## A Complete Windows NT & Windows 2000 Management Solution



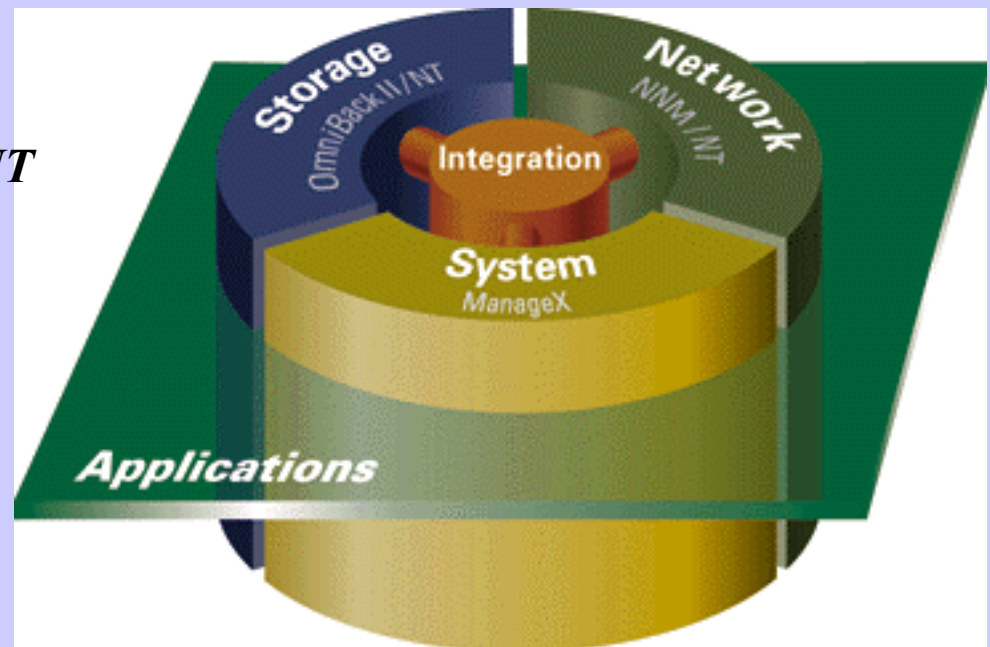
### Industry-Leading Products

- Application & System Management
  - *ManageX*
- Network Management
  - *Network Node Manager / NT*
- Storage Management
  - *Omniback II / NT*

Unique, cross-product

Integration

Quick ROI: Fast, Proactive Control





# “New” technologies within Windows 2000

Technologies which impact distributed monitoring & management.

- **Networking - TCP / DNS impact**
- **MMC - usage and customization**
- **Active Directory - monitoring and load**
- **WMI (WBEM) - making use of it**
- **Exchange 2000 - how to monitor**
- **Windows Scripting Host - how to use**
- **IIS and Firewalls - how to monitor**

## What’s new in Windows 2000 Server

Function	Description of feature or type of support	Information on how to use
File server	<ul style="list-style-type: none"> <li>• <a href="#">Active Directory</a></li> <li>• <a href="#">Disk and file management features</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Active Directory overview</a></li> <li>• <a href="#">Files and printers</a></li> <li>• <a href="#">Storing data</a></li> </ul>
Print server	<ul style="list-style-type: none"> <li>• <a href="#">Active Directory</a></li> <li>• <a href="#">Printer and protocol support</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Active Directory overview</a></li> <li>• <a href="#">Printing</a></li> </ul>
Internet server	<ul style="list-style-type: none"> <li>• <a href="#">Internet Information Services features</a></li> <li>• <a href="#">Application support</a></li> </ul> <p><b>Related areas:</b> Application server Networking/communications Server security</p>	<ul style="list-style-type: none"> <li>• <a href="#">Internet Information Services</a></li> <li>• <a href="#">Application and programming tools</a></li> </ul>
Multimedia server	<ul style="list-style-type: none"> <li>• <a href="#">Multimedia support</a></li> </ul> <p><b>Related area:</b> Internet server</p>	<ul style="list-style-type: none"> <li>• <a href="#">Using Windows Media Services</a></li> </ul>
Application server	<ul style="list-style-type: none"> <li>• <a href="#">Support for existing systems</a></li> <li>• <a href="#">Terminal Services features</a></li> <li>• <a href="#">Application support</a></li> <li>• <a href="#">Management and deployment of applications</a></li> <li>• <a href="#">Performance and tuning features</a></li> </ul> <p><b>Related area:</b> Development support</p>	<ul style="list-style-type: none"> <li>• <a href="#">Network Interoperability</a></li> <li>• <a href="#">Terminal Services</a></li> <li>• <a href="#">Application and programming tools</a></li> <li>• <a href="#">Policy-based administration</a></li> <li>• <a href="#">IntelliMirror</a></li> <li>• <a href="#">Monitoring and diagnostics tools</a></li> <li>• <a href="#">QoS Admission Control</a></li> <li>• <a href="#">Windows ATM services</a></li> </ul>
Development support	<ul style="list-style-type: none"> <li>• <a href="#">Development support</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Application and programming tools</a></li> <li>• See also the Microsoft Platform SDK</li> </ul>
Networking/communications	<ul style="list-style-type: none"> <li>• <a href="#">Network protocols and technologies</a></li> <li>• <a href="#">Support for existing systems</a></li> <li>• <a href="#">Performance and tuning features</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Networking</a></li> <li>• <a href="#">Connections</a></li> <li>• <a href="#">Network interoperability</a></li> <li>• <a href="#">Monitoring and diagnostics tools</a></li> <li>• <a href="#">QoS Admission Control</a></li> <li>• <a href="#">Windows ATM services</a></li> </ul>
Server reliability, availability, and scalability	<ul style="list-style-type: none"> <li>• <a href="#">Server reliability</a></li> <li>• <a href="#">Server availability</a></li> <li>• <a href="#">Server scalability</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Disaster protection</a></li> <li>• <a href="#">Monitoring and diagnostics tools</a></li> <li>• <a href="#">Plug and Play overview</a></li> </ul>
Server security	<ul style="list-style-type: none"> <li>• <a href="#">Authentication and smart card support</a></li> <li>• <a href="#">Additional security features</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Security</a></li> <li>• <a href="#">Information security</a> (in Active Directory)</li> <li>• <a href="#">Authentication</a></li> <li>• <a href="#">Internet Authentication Service</a></li> <li>• <a href="#">Internet Protocol Security</a></li> </ul>
Configuration and management	<ul style="list-style-type: none"> <li>• <a href="#">Active Directory</a></li> <li>• <a href="#">IntelliMirror features</a></li> <li>• <a href="#">Terminal Services features</a></li> <li>• <a href="#">Remote management</a></li> <li>• <a href="#">Disk and file management features</a></li> <li>• <a href="#">Internationalization features</a></li> </ul> <p><b>Related area:</b> File server</p>	<ul style="list-style-type: none"> <li>• <a href="#">Active Directory overview</a></li> <li>• <a href="#">IntelliMirror</a></li> <li>• <a href="#">Terminal Services</a></li> <li>• <a href="#">Using the Microsoft Management Console</a></li> <li>• <a href="#">Managing servers remotely</a> (using Administration Tools)</li> <li>• <a href="#">Automating administrative tasks</a></li> <li>• <a href="#">Remote Installation Services</a></li> </ul>





## Networking

So what's changed?

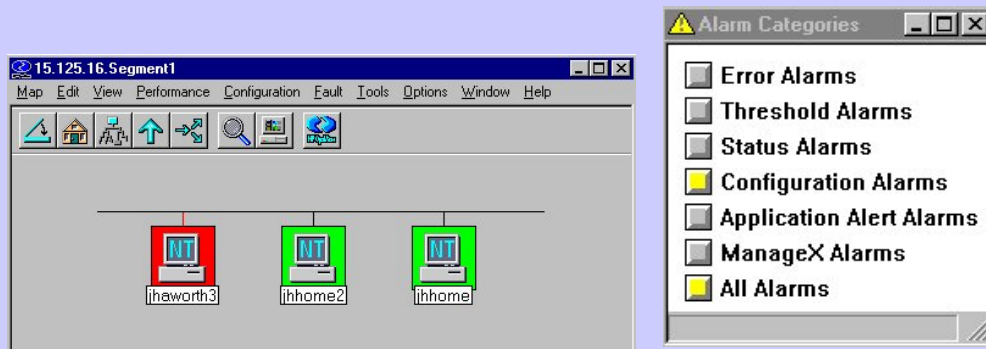
- ✓ Enhanced support for & greater reliance upon TCP/IP
  - e.g. WINS no longer required for pure Win2K networks
  - Dynamic DNS services
- ✓ Integration of Active Directory with DNS & DHCP
- ✓ ADS & TCP/IP planning is one of the most significant migration tasks
- ✓ You **NEED** to know what is out there before you can plan!



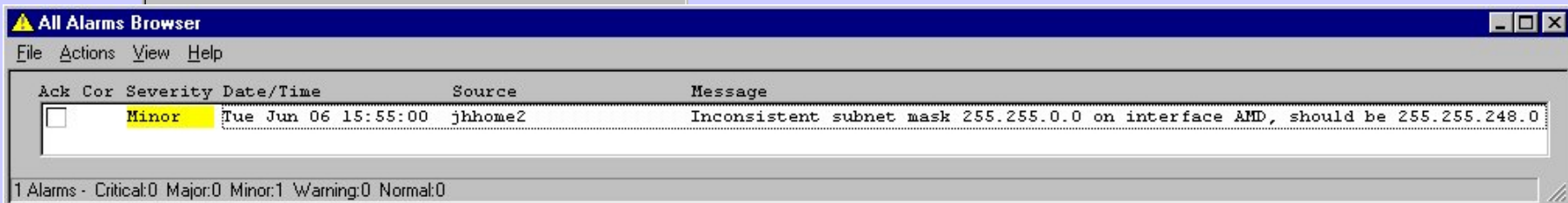
# Networking

## Monitoring the network

- ✓ Essential for planning Migration!
- ✓ Required for ongoing operation during and after migration to Windows 2000.
- ✓ The move to TCP/IP (and IPX/SPX for legacy Netware systems) makes OpenView Network Node Manager a GREAT fit.



**Example showing detection of an incorrectly set subnet mask**





# MMC

## The Microsoft Management Console

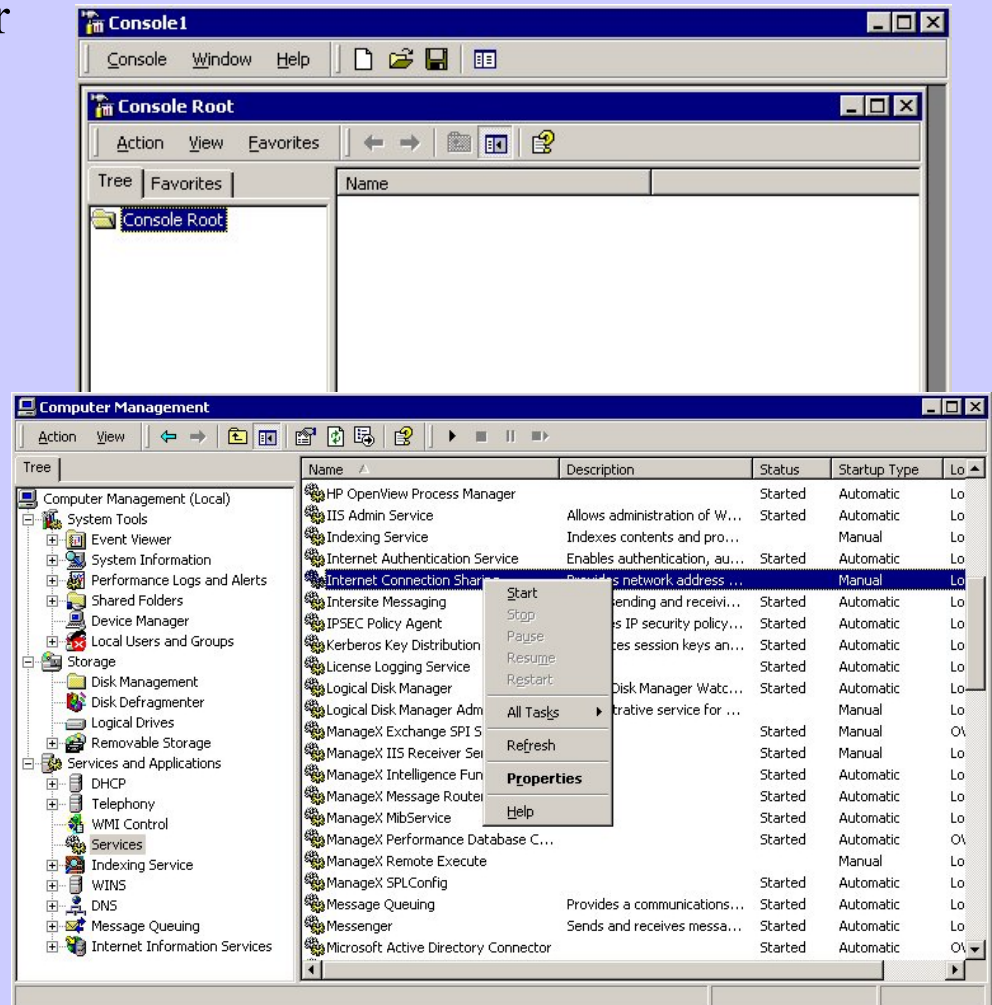
Microsoft's standard interface for Windows 2000 administration tools.

Available on NT 4 and used by tools such as SQL server 7 and IIS 4.

MMC is 'just' a container that you add "snap-ins" to.

Most Win2K tools are MMC snap-ins.

MMC 1.2 has Taskpad function.



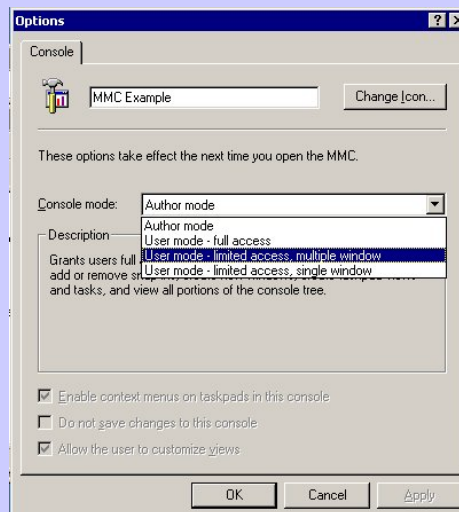


# MMC

What can you do with it?

☺ Create custom Consoles with your choice of tools.

- ✓ Not just MMC snap-ins, HTTP links too.
- ✓ Can define snap-ins to reference other systems.
- ✓ Save as .MSC files and give to other users.
- ✓ Set security.....to prevent changes or invalid use.

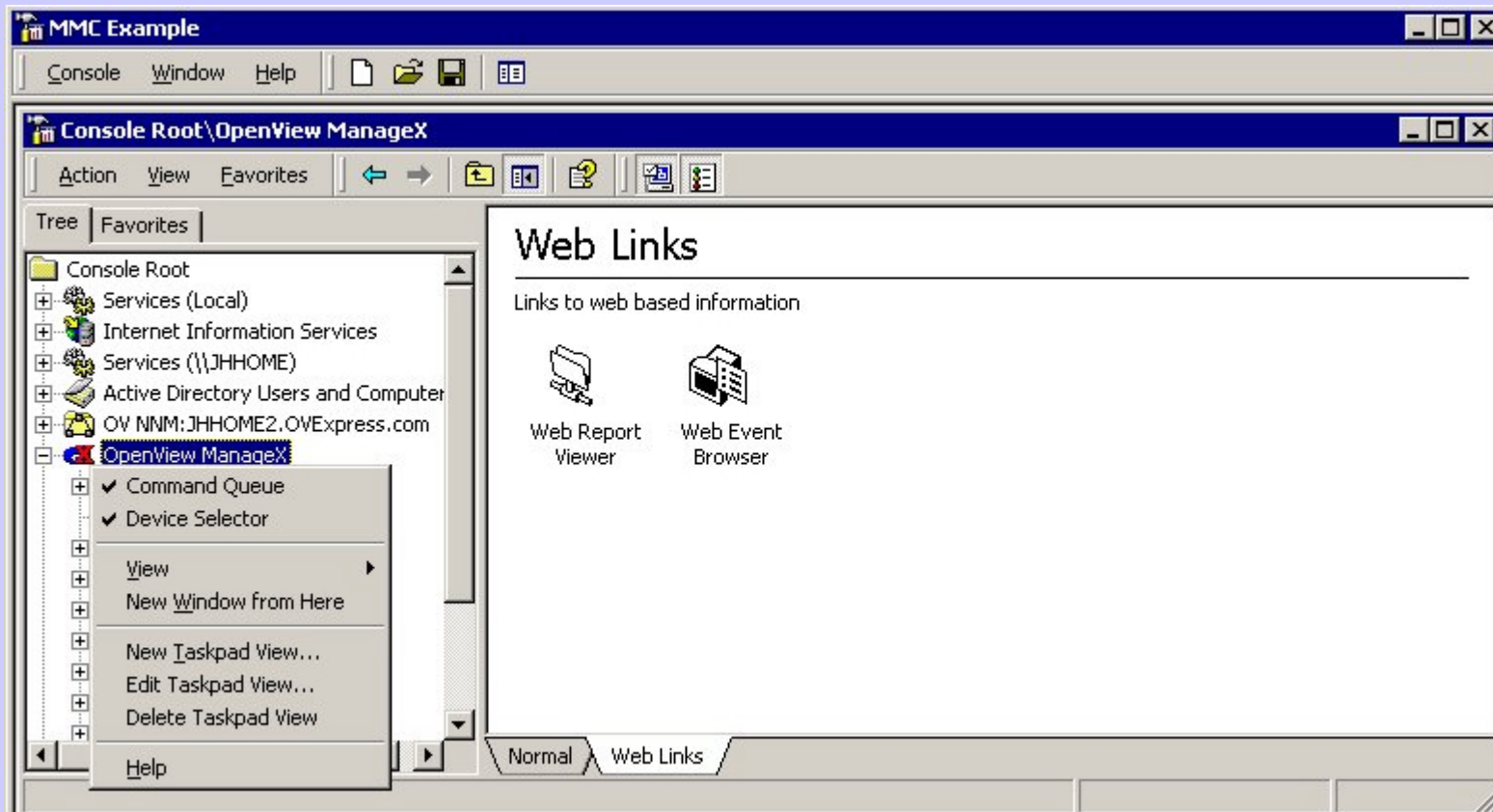




# MMC

What can you do with it?

☺ Create Taskpads of commonly used tasks.



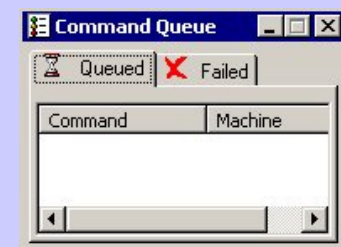
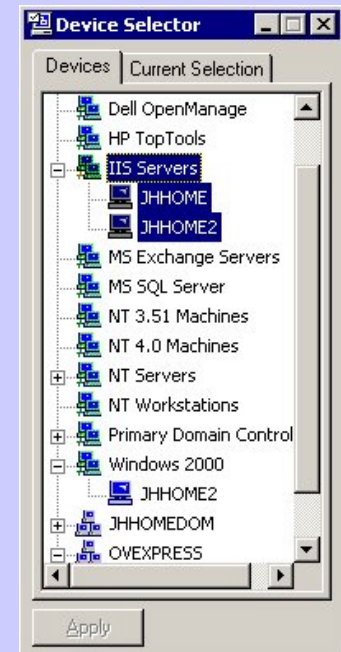
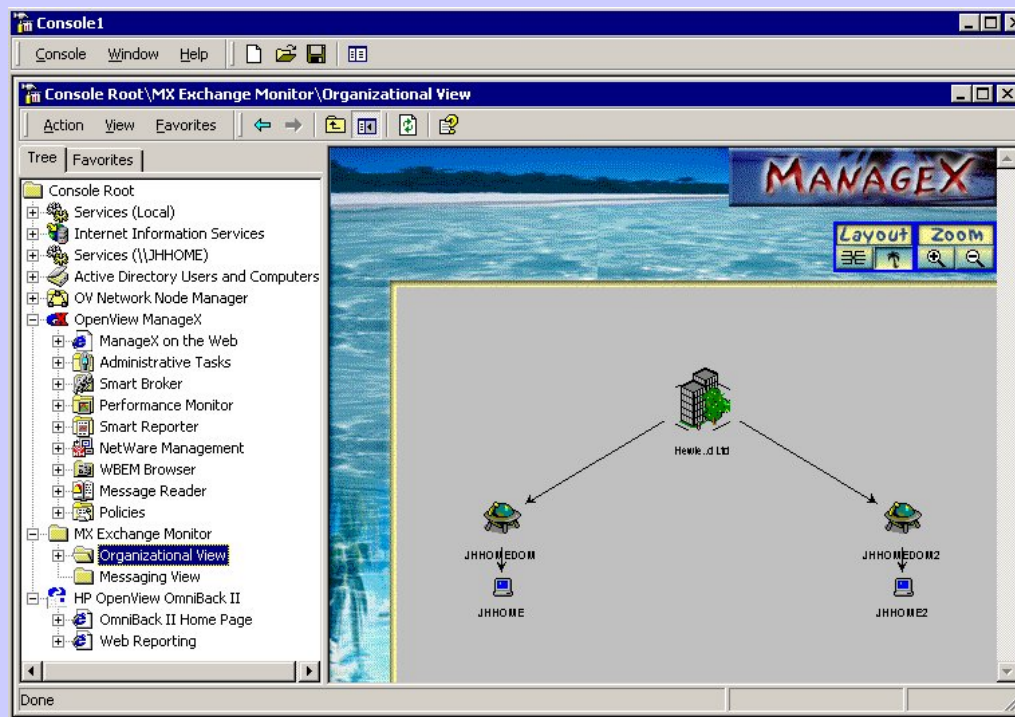




# MMC

How does OpenView Express use MMC?

- ✓ ManageX IS an MMC snap-in.  
Extends MMC by adding a Device Selector.
- ✓ OmniBack 3.5 Reporting is an MMC snap-in.
- ✓ NNM is accessible via an MMC snap-in.





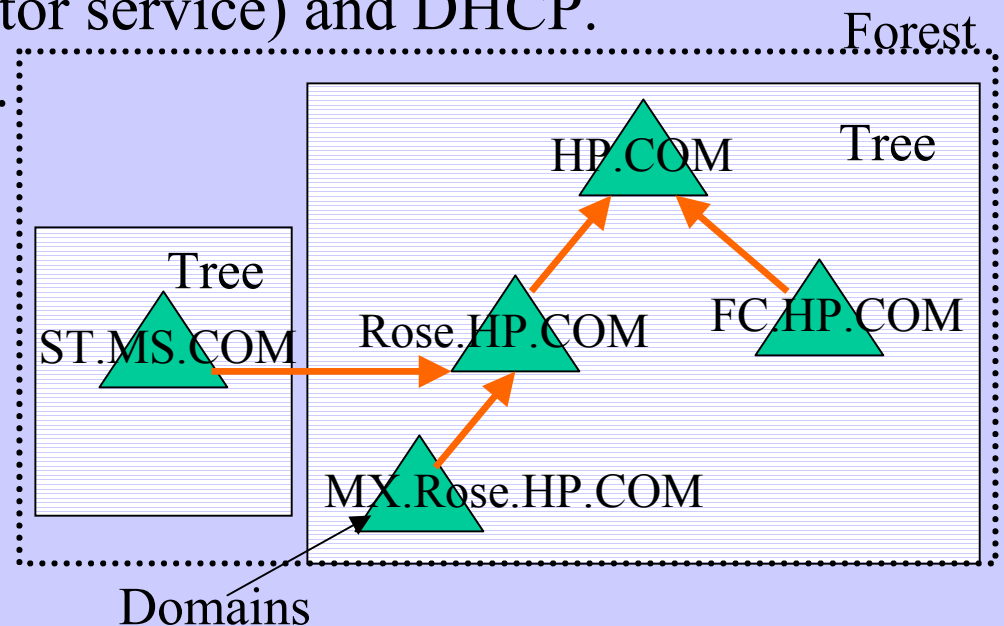


## Active Directory

What is it?

- ✓ THE reference service for resources in a Win2K environment.  
Security, directory services, applications, printers etc.
- ✓ Centralized access to all of the resource information.
- ✓ Integrated with DNS (locator service) and DHCP.
- ✓ A TRUE directory service.

- Domain is the basic unit.
- One or more domains constitutes a TREE.
- One or more TREES constitutes a FOREST.



**If AD does not work then Win2K does not work**



## Active Directory

What does it mean for me?

- ✓ You don't HAVE to use AD when you start using Win2K.
- ✓ You DO need to use AD when you start using Exchange 2000.
- ✓ If you use Exchange 5.5 and have AD then you must use Active Directory Connectors.
- ✓ You need to monitor a new set of services and a new paradigm (replication).

*“a scenario that needs emphasis on a Windows 2000 migration discussion is Windows 2000 and NT 4.0 mixed environment . . . A mixed environment is difficult to support because a troubleshooting scenario can involve several distinct interactions”*

Sean Deuby Windows 2000 Magazine

# Active Directory

Monitoring ADS - it's just another application!

ManageX 4.23 provides AD availability and health monitoring.



Intelligence Policies based on Perfmon Counters

- ✓ AD Process and Service Monitoring
- ✓ AD Schema Health Monitoring
- ✓ AD Query and Indexing performance monitoring
- ✓ Replication Statistics
- ✓ AD Security Status Monitoring
- ✓ Active Directory Connector Statistics monitoring

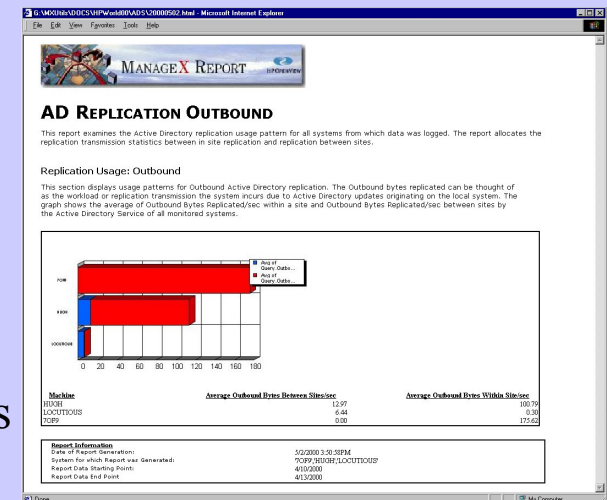
Event Monitoring Policies based on Event and WMI policies

- ✓ AD Service Event Log Files via WMI
- ✓ AD Replication Event Log Monitoring via WMI policies
- ✓ ADC Event monitoring from Standard Event Log
- ✓ NT Security Event Log Monitoring for AD related audit messages

Logging Policies based on standard Perfmon counters

Reports based on standard data collected

- ✓ General Active Directory Help
- ✓ Replication Status and Historical Trends



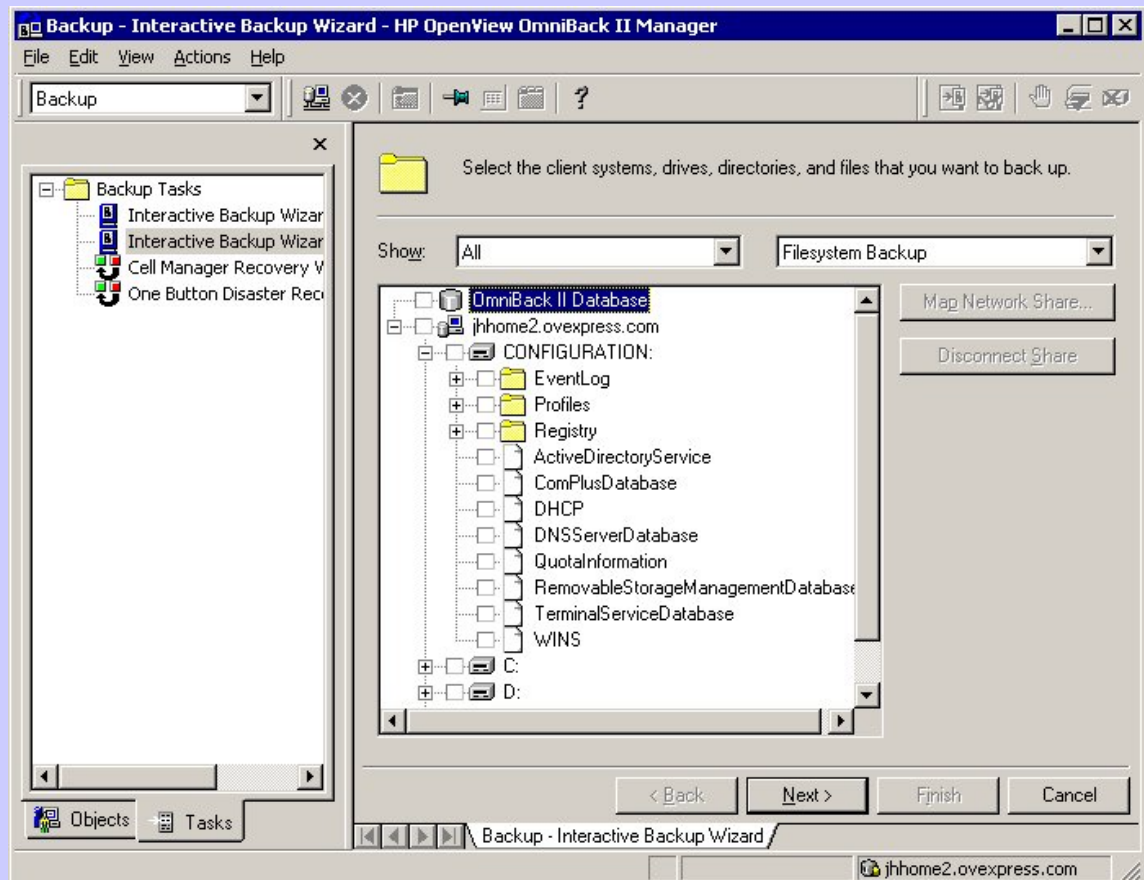


## Active Directory

Backing up ADS - critical configuration information.

OmniBack 3.5 provides AD backup.

- ✓ Win2K systems are detected.
- ✓ If the system is an AD controller then AD components can be backed up.
- ✓ Additional support for other Win2K datastores.





## WMI (WBEM)

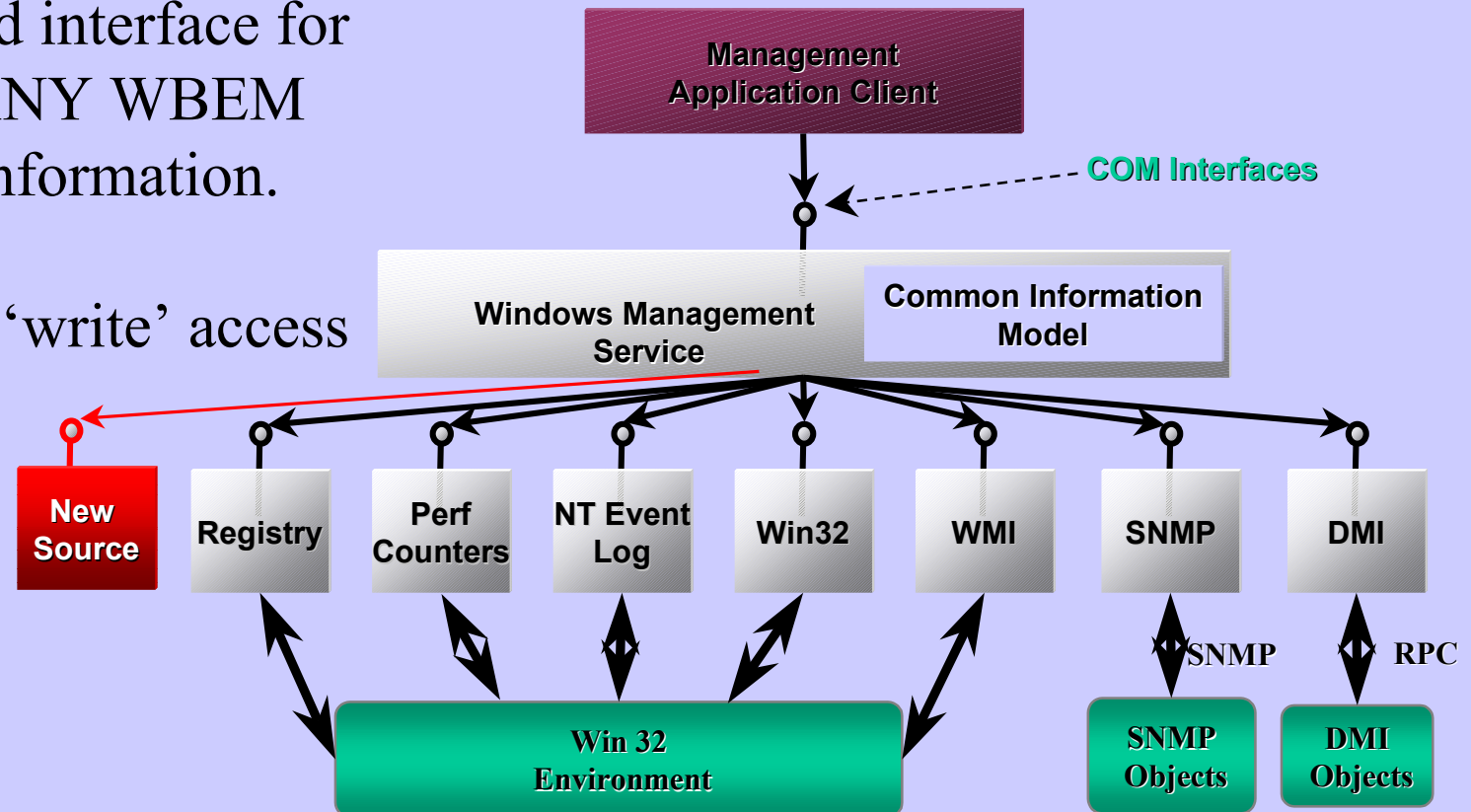
What is Windows Management Instrumentation?

WBEM - a DTMF initiative / specification.

WMI - Microsoft's implementation.

✓ A standard interface for accessing ANY WBEM compliant information.

✓ Read and 'write' access







# WMI (WBEM)

What does it do for me?

**X** NOT a tool that most users are going to want to dig into!

✓ New functionality for WMI will come from MS and vendors.

✓ New capabilities are the key benefits.

✓ Easier access to new management information.

WMI SDK Object Browser

The screenshot shows the WMI SDK Object Browser interface. The left pane displays a tree view of WMI classes under the root namespace root\cimv2. The right pane shows the properties of a selected instance of the Win32\_ComputerSystem class. The properties table is as follows:

Name	Type	Value
BootupState	string	Normal
Caption	string	JHHOME2
ChassisBootupState	uint16	2
CreationClassName	string	Win32_ComputerSystem
CurrentTimeZone	sint16	60
DaylightInEffect	boolean	true
Description	string	AT/AT COMPATIBLE
Domain	string	DVEXPRESS
DomainRole	uint16	5
FrontPanelResetStatus	uint16	3
InfraredSupported	boolean	false
InitialLoadInfo	array of string	<empty>
InstallDate	datetime	<empty>
KeyboardPasswordStatus	uint16	3
LastLoadInfo	string	<empty>
Manufacturer	string	Hewlett-Packard
Model	string	HP Kayak PC Workstation
Name	string	JHHOME2
NameFormat	string	<empty>
NetworkServerModeEnabled	boolean	true
NumberOfProcessors	uint32	1
OEMLogoBitmap	array of uint8	<empty>



# WMI (WBEM)

## ...and OpenView Express?



- ✓ ManageX has been WMI enabled since late 1998.
- ✓ WMI policies are used to provide event integration with NNM.
  - ManageX uses WBEM policies to receive SNMP traps (NNM, CIM etc.)
- ✓ WMI policies are used to gain access to new Win2K eventlogs.
- ✓ WMI is used to capture status information about Exchange 2000.
- ✓ The WBEM browser is a user friendly view of WMI data.
- ✓ All of this is customizable!

```
MxClassGroupJON.mof - Notepad
File Edit Format Help

instance of MxGroupClassMap
{
    Group = "Network View";
    DisplayName = "Share";
    WbemNamespace = "root\\cimv2";
    WbemQuery = "select Caption, Name, Path, Status from win32_Share";
};

instance of MxGroupClassMap
{
    Group = "Event Log";
    DisplayName = "NTLogEvent";
    WbemNamespace = "root\\cimv2";
    WbemQuery = "select ComputerName, Category, Type, Message, RecordNumber, SC";
};

instance of MxGroupClassMap
{
    Group = "System Configuration";
    DisplayName = "Processor";
    WbemNamespace = "root\\cimv2";
    WbemQuery = "select Caption, CreationClassName, CurrentClockSpeed, Descript";
};

instance of MxGroupClassMap
{
    Group = "User";
    DisplayName = "Logged on User";
    WbemNamespace = "root\\cimv2";
    WbemQuery = "select Caption, Username from win32_ComputerSystem";
};
```

The screenshot shows the OpenView ManageX WBEM Browser interface. The main window displays a tree view on the left and a table of data on the right. The tree view is expanded to show the 'User' class under the 'Logged on User' group. The table on the right shows the following data:

Caption	UserName
JHAWORTH3	jhaworth
JHHOME	Administrator
JHHOME2	OVEXPRESS\Administrator

Below the main window, there are two smaller windows: 'Device Selector' and 'Command Queue'. The 'Device Selector' window shows a list of devices: 'Device Name', 'jhaworth3', 'JHHOME', and 'JHHOME2'. The 'Command Queue' window shows a table with columns for 'Command' and 'Machine', and a status indicator for 'Queued' and 'Failed'.



## Exchange 2000

### Why Exchange 2000?

Lots of new functionality.

Part of Microsofts Win2K drive.

Release train for all new Exchange functionality.

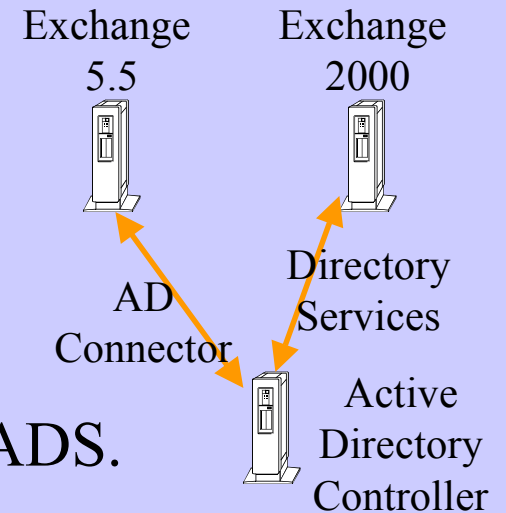
- ✓ Fully integrated with ADS - simpler administration.
- ✓ More reliable / Scaleable.
  - + Multiple Message Databases - cluster / load balancing.
  - + Distributed configuration - spreads processing.
  - + Fault tolerant SMTP routing - increased messaging reliability.
- ✓ Enhanced Management & Security capabilities.
  - + MMC based console & Policy based management.
  - + WMI based management.
  - + Win2K security model and field level access permissions.
- ✓ Web Enabled applications.
  - + IIS / ASP / FrontPage Integration.
  - + Enhanced Web client.
- ✓ Conferencing, Instant Messaging and Chat.
  - + Exchange 2000 Conferencing Server.



## Exchange 2000

### Migration from Exchange 5.5?

- ✓ Co-existence is no problem - AD Connector.
- ✓ Same planning as for Win2K - network, DNS, ADS.
- ✓ Also must consider message flows and loadings.  
Map Exchange 5.5 sites / connectors to Exchange 2000 Routing groups
- ✓ Must be able to monitor AD Connector, site replication etc. during mixed mode operations.

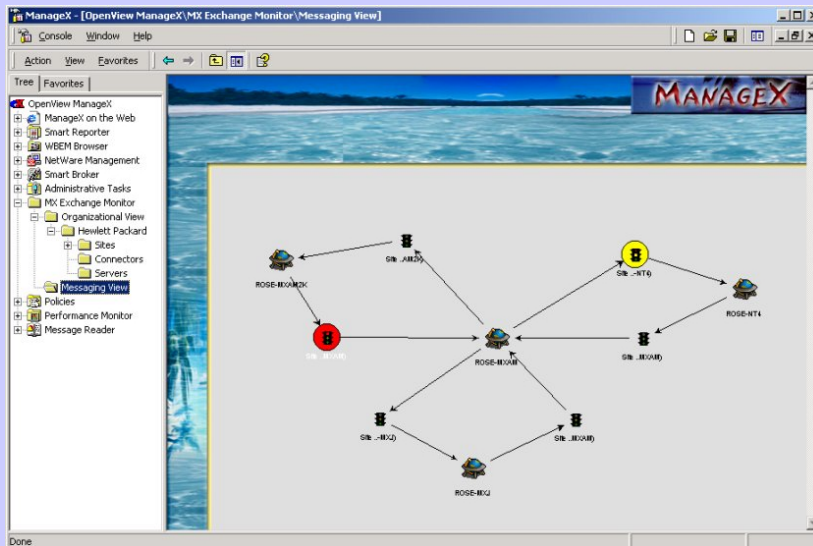
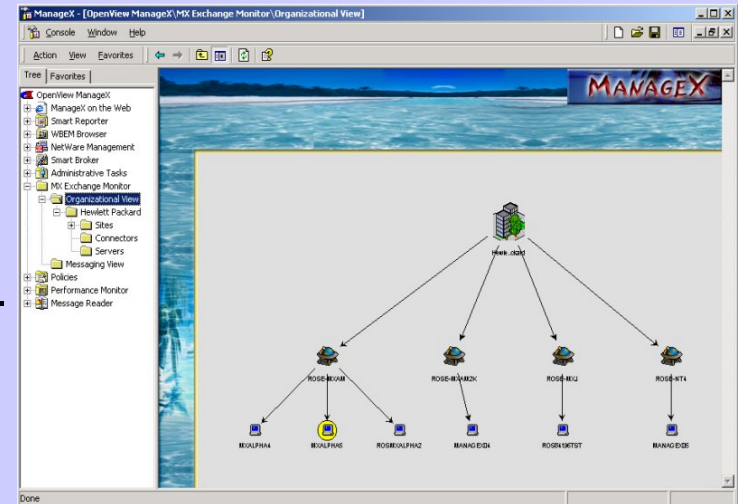




# Exchange 2000

## OpenView Express and Exchange 5.5/2000?

- ✓ The ManageX Smart PlugIn for Exchange monitors 5.5 and 2000.
- ✓ Site Connector / Message Groups auto-discovered and dynamically mapped.



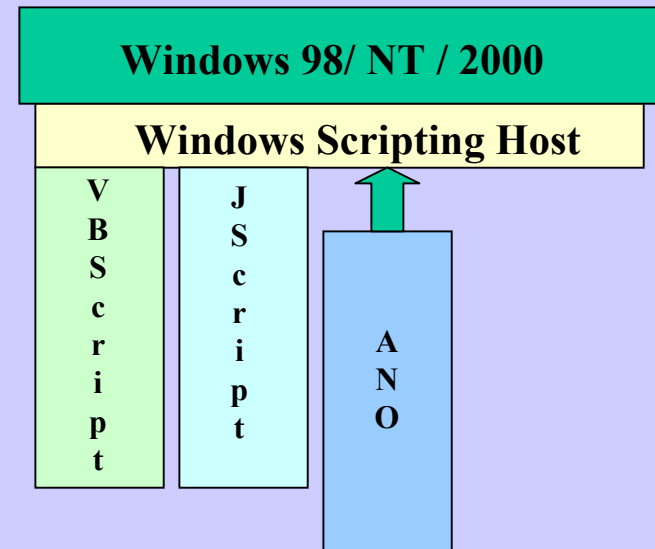
- ✓ Message flows tracked and reported.
- ✓ Availability and health of Exchange and AD Connector monitored.



# Windows Scripting Host

## What is WSH?

- Language independent 'scripting host' for NT/98/2000 - was called ActiveX.
- Optional install on NT 4 but ships with Option Pack, IE5 etc. or downloadable.
- Ships with support for VBScript and Jscript - other 'plug-ins' available (Rexx, Perl etc.).
- Has a wide range of 'objects' which allow script access to files, registry, commands etc.
- Great for automation of administrative tasks.
- Has been called the 'best kept secret' in NT!



### Downloads....

[Http://msdn.microsoft.com/scripting](http://msdn.microsoft.com/scripting)

- ✓ Windows Scripting Host.
- ✓ WSH Tutorial.
- ✓ VBScript / Jscript Tutorial.
- ✓ Samples.





# Windows Scripting Host

How can I use it?

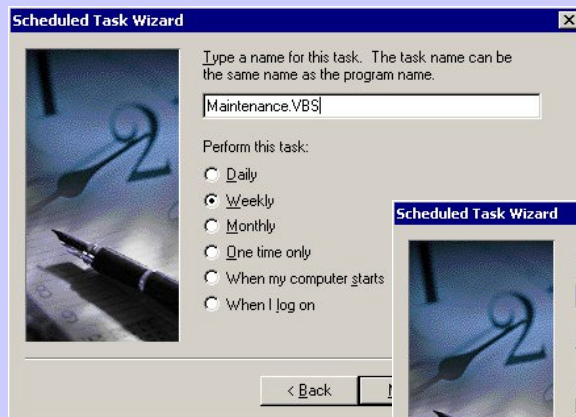
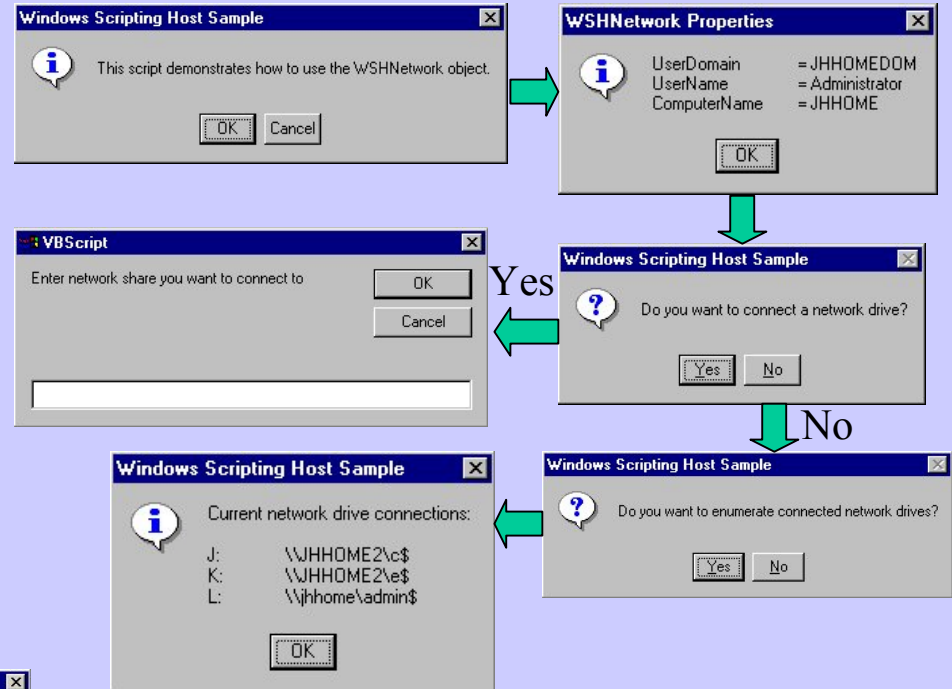
☺ Take a look at the samples.

Download from MSDN site. Look in WINNT\Samples

☺ Create batch functions for system admin.

E.g. delete old temp files.

E.g WINNT\Samples\wsh\network.vbs



☺ Can Schedule using the

Win2k Task Scheduler or AT.

☺ Add to Taskpads in MMC.

☹ Problem is distribution and version control.





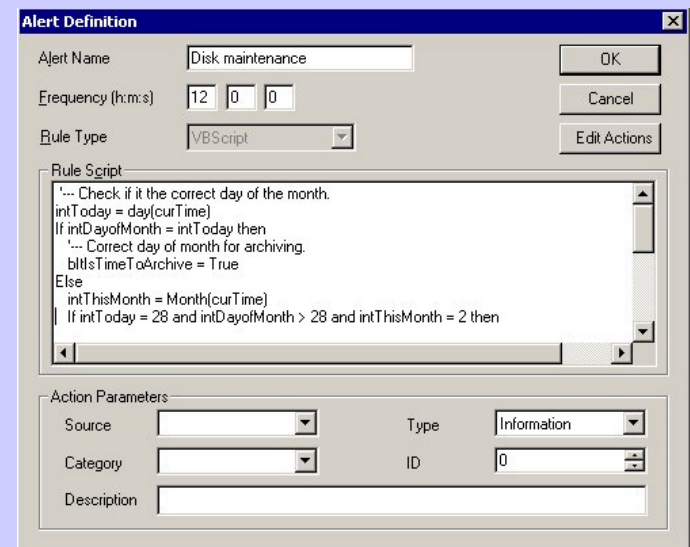
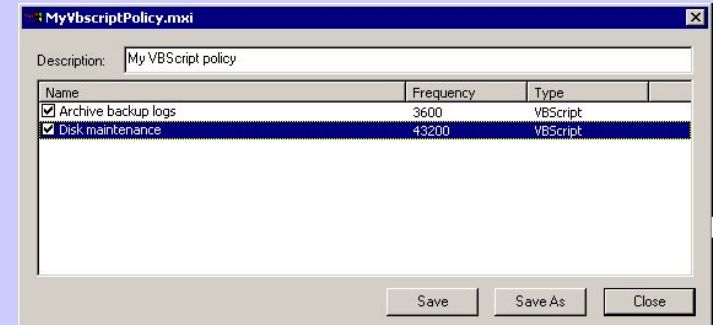
# Windows Scripting Host

## How does OpenView Express use WSH?

- ✓ ManageX policies are based on ActiveX scripting.
- ✓ You can use VBScript or JScript - as you do with WSH.
- ✓ Only a base set of objects installed with agent.
- ✓ If you install WSH then you have access to the extra objects.

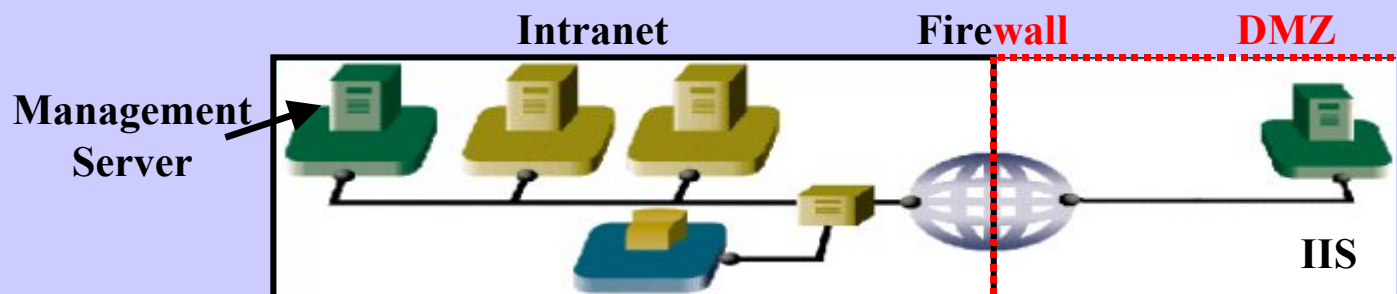
☺ Distribution and version control taken care of!

☹ No nice interface for 'scheduling'....  
but lots of sample VBScripts available



# IIS and Firewalls

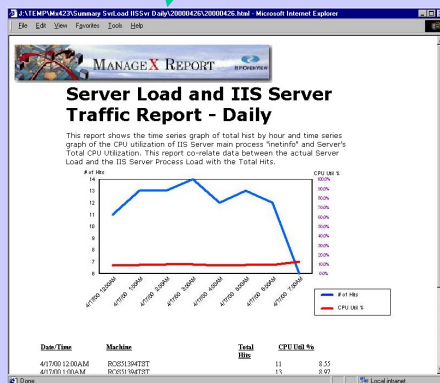
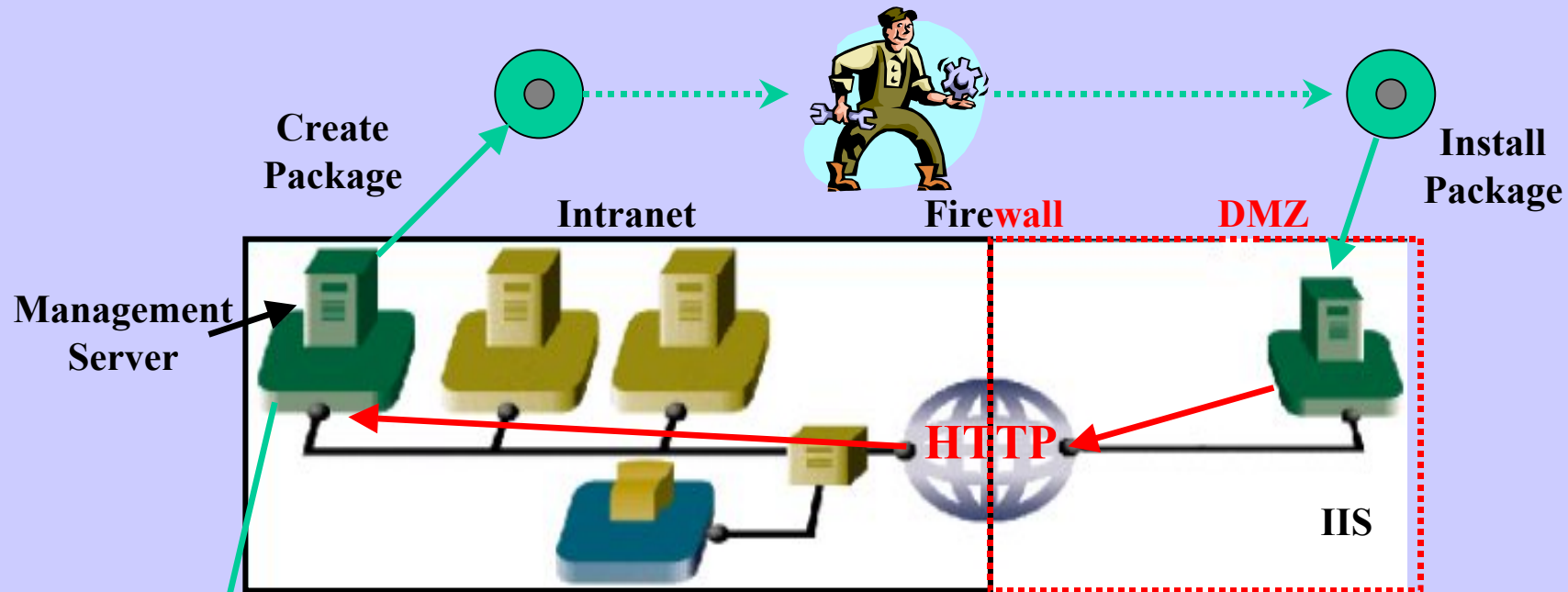
Managing IIS - the challenge.



- ✓ More businesses are presenting their company 'face' to the internet.  
Getting this wrong leaves a very bad impression with internet customers.  
Few customers return to sites that perform badly / are unavailable.
- ✓ Win2K and IIS5 expected to increase usage of IIS vs Apache etc.  
Increased scalability and reliability.
- ? How do you manage the IIS server without opening a hole in the firewall?
  - ✘ Need to deploy management agent and configuration.
  - ✘ Transport events and performance data across the firewall.

# IIS and Firewalls

OpenView Express and firewalls.



✓ Events and specific performance data transferred using XML over HTTP.



## Wrap-up and Q&A

- ① Discussed some 'new' Win2K technologies.
- ② Described what they mean to you.
- ③ Explored managing of Win2K and mixed environments.

Thanks for your time!

Questions?

