InterWorks 2000

1/16/2000

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Table of Contents

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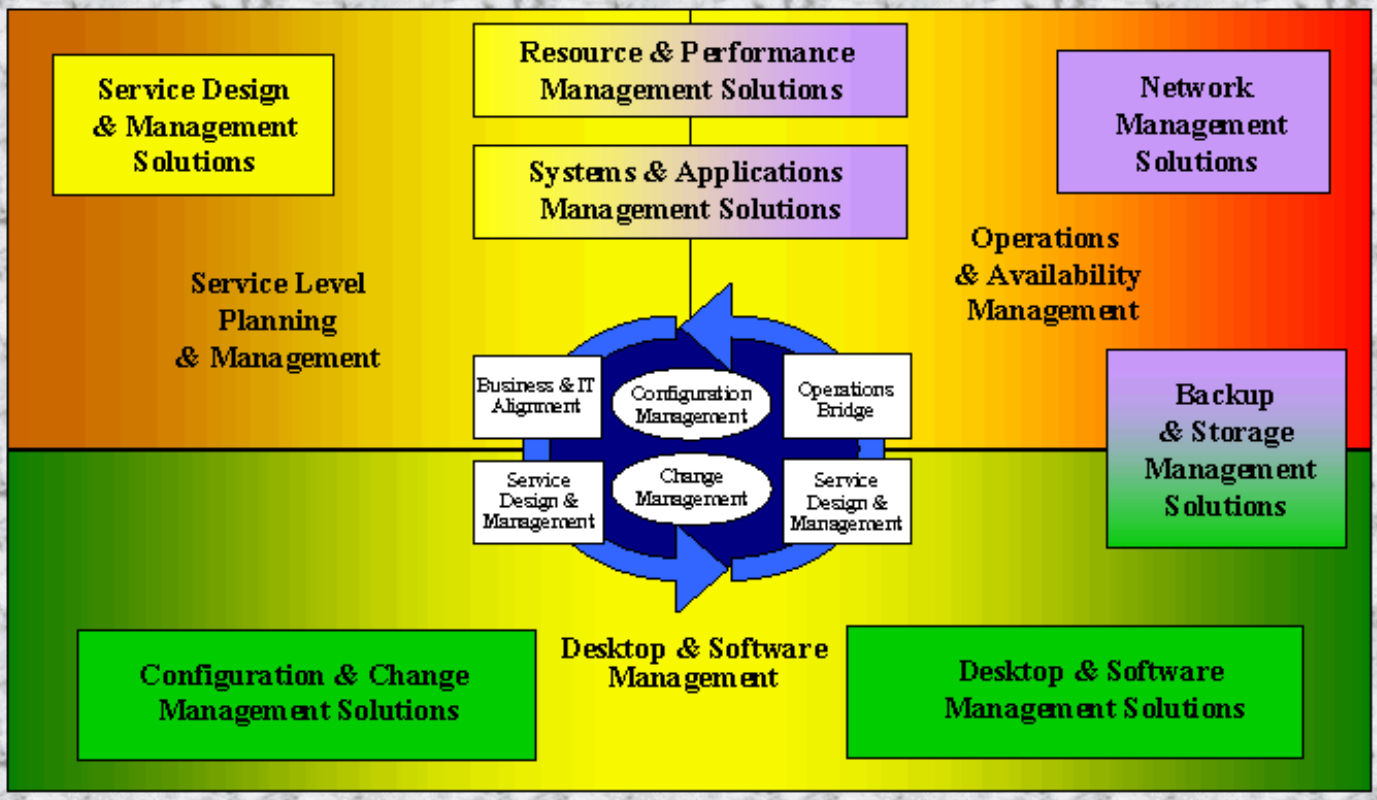
HP's UNIX and NT-Based Network and System Management Tools



A Presentation for InterWorks 2000

by

Tammy Sealey and Stan M. Zitello

Hewlett-Packard Company

Abstract

Purpose

This presentation is intended for System/Network Administrators and IT Management Personnel with an intermediate technical competency level. The tutorial is intended to show the new Unix and NT based tools available from Hewlett-Packard for performing Enterprise Wide Network and System Management. The presenters will demonstrate the trend within these tools to provide and ever-increasing amount of product functionality via web-based technologies.

What attendees will learn

1. Customers will learn about HP's Unix and NT based NSM tools.
2. Customers will learn about managing their network across the Web.
3. Customers will learn how the tools can be configured to interface to their world.

Abstract

In the last 18-24 months there have been a number of Network and System Management (NSM) tools either newly released or revised in a major way. Some of these tools are only available for HP-UX, some for Windows NT, and still others are available for both HP-UX and Windows NT. There is no doubt that a major trend within the OpenView Software Division (OVSD) has been the creation of tools for the NT platform. At the same time, there has also been a push to make the capabilities of the NSM tools, no matter the platform they are architected on, available using web-based technologies, such as via WWW browsers or standalone JAVA applets. Among the tools we will be discussing and demonstrating will be Network Node Manager (which is available for both Unix and NT), IT Operations (Unix with agents for NT), and ManageX (NT). Our discussions will include an overview of the OpenView framework, and where each of these tools fits within it.

2

Abstract

Abstract (continued)

We will also provide the customers with information to enable them to decide the appropriate tool for their requirements. One of the features of these tools which we will demonstrate is their ability to inform the user of their monitored parameter over/under flows via many techniques, such as email, paging, annunciator devices, etc. One of the hallmarks of the OVSD products has been this ability to conform to the need of the users environment.

The presentation will begin with a technical overview of IT/Operations. The purpose of this tool is to be proactive in monitoring your applications in a multi-vendor environment. IT management has become more challenging with the advent of distributed, multi-vendor environments. IT/O offers a flexible and extensible management solution from a single point. IT/O offers support for many vendors, has the ability to Correlate Events, and may be configured to manage the Enterprise with multiple management stations. We will discuss some of the configuration aspects of the Operators and show the GUI windows used in the configuration and monitoring of IT/O. We will demonstrate the ability to monitor using the JAVA based interface. We will also discuss the feature of configuring automatic actions in response to some event.

ManageX is also a Windows NT centric tool This product parallels the functionality of IT/O and PerfView/MeasureWare in an NT based enterprise. The underlying framework for ManageX is Microsoft's Management Console (MMC). We will discuss the various components of ManageX including the Device Selector (based on NT's network neighborhood) and the Command Queue (the ability to view manual actions performed on remote machines). ManageX allows you to customize groups of systems to increase management productivity; you have the ability to reboot many systems at once with a single command. ManageX policies allow you to monitor specific aspects of a system; you may want to be notified of multiple consecutive failed login for a system. ManageX ships with 200+ defined policies that can be pushed out to the managed systems. We will demo the web capability of ManageX.

3

Abstract

Abstract (continued)

Network Node Manager provides discovery, mapping, and event handling for IP based networks. Some of the features we will be discussing in this presentation include pan and zoom, submap backgrounds, and the graphing capability of SNMP MIB variables. Our presentation will include a demo of the JAVA based web interface for remote network management. The ability to correlate events into one single message is feature of the latest version of Network Node Manager.

Presenters

Tammy Sealey has been in the computer industry for over 13 years, and is presently a Consultant for HP Education. She teaches a wide variety of Openview Courses, including Network Node Manager, ManageX, DTA, PerfView/MeasureWare, and IT Operations. She holds a variety of industry certifications including HP's HP-UX System and Network Administration, HP OpenView Network Node Manger, HP Openview ManageX, and HP Openview PerfView/MeasureWare.

Stan Zitello has been in the computer industry for over 20 years, and is presently a Senior Consultant for HP Education. He has been teaching Openview Seminars since he started working for Hewlett-Packard. For HP Education he teaches a variety of classes, specializing in Security, Network Systems Managment (The Openview Family), and Windows NT. He holds a variety of industry certifications including HP's HP-UX System and Network Administration and Microsofts MCP, MCSE and MCT certifications.

Notice

This document was prepared by Stan Zitello and Tammy Sealey for the purpose of a live Tutorial to be presented at Interex 2000 in Las Vegas during the month of April, 2000. As such, it does not contain enough information to

Abstract

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5

IT Operations

Works | Right | Now

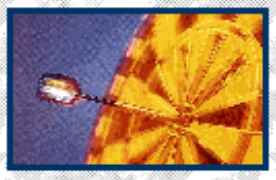
6

Slide 6 of 70

What is expected from IT?

Expectations

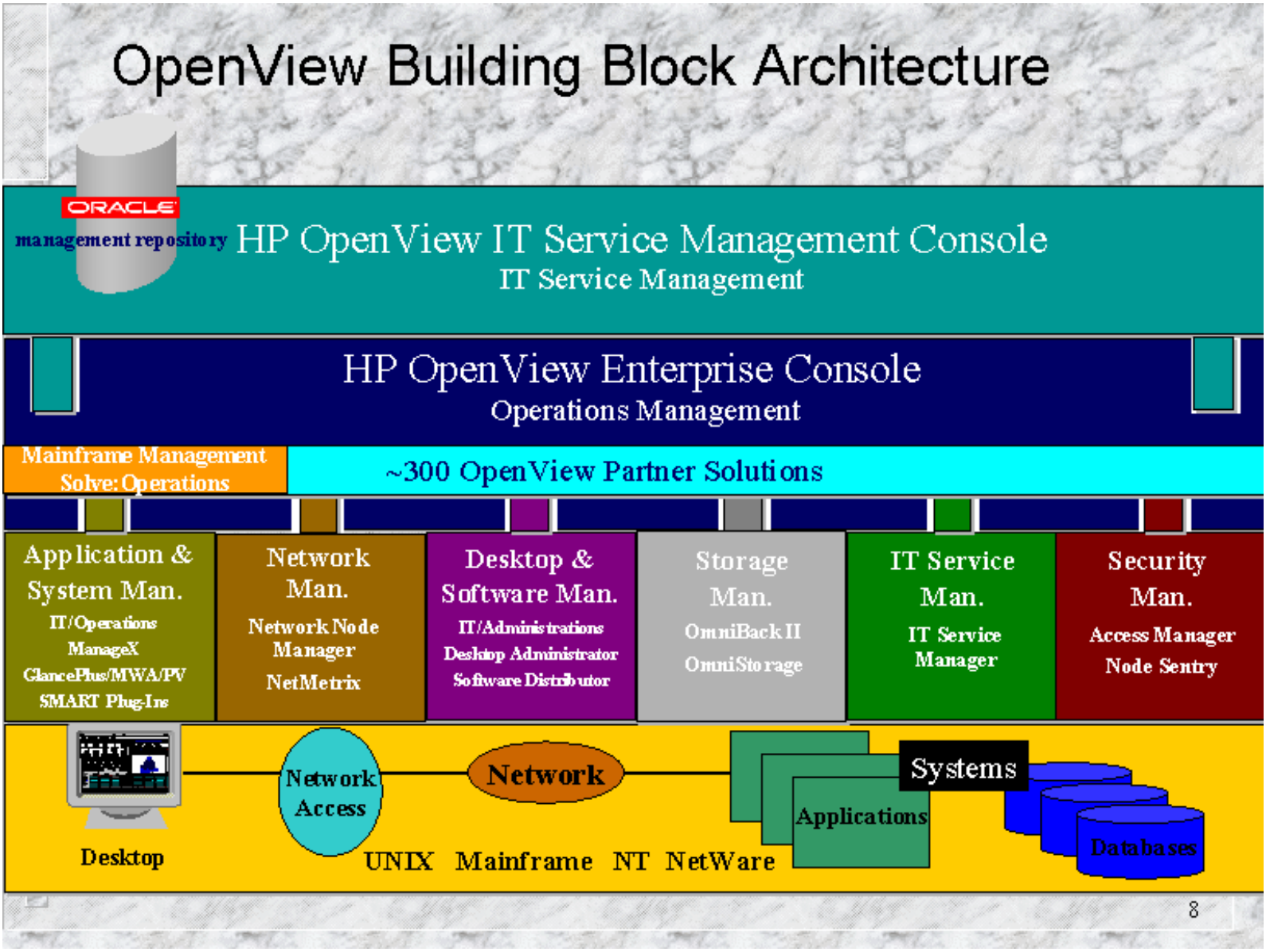
Availability



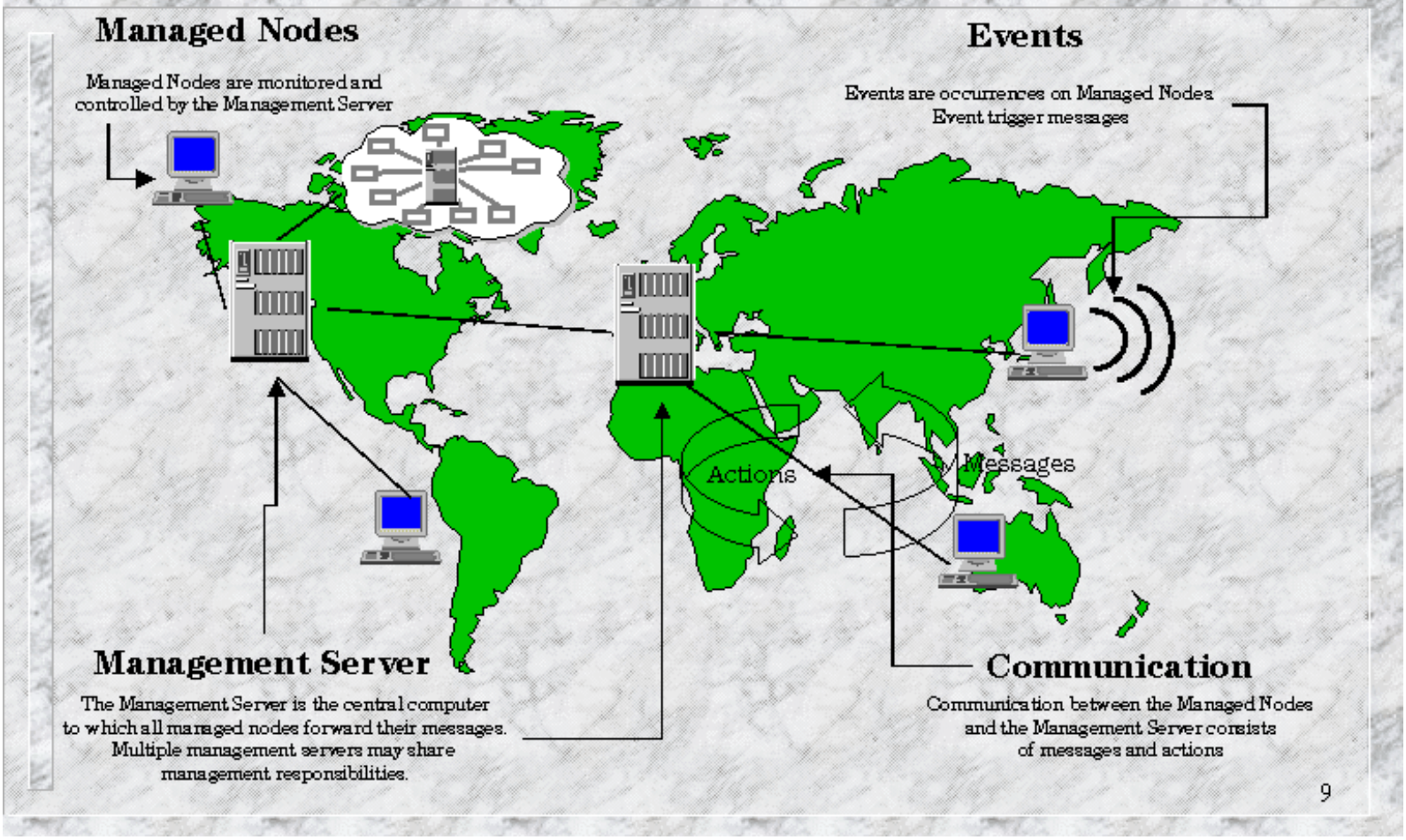
Performance

Cost
Effectiveness

7

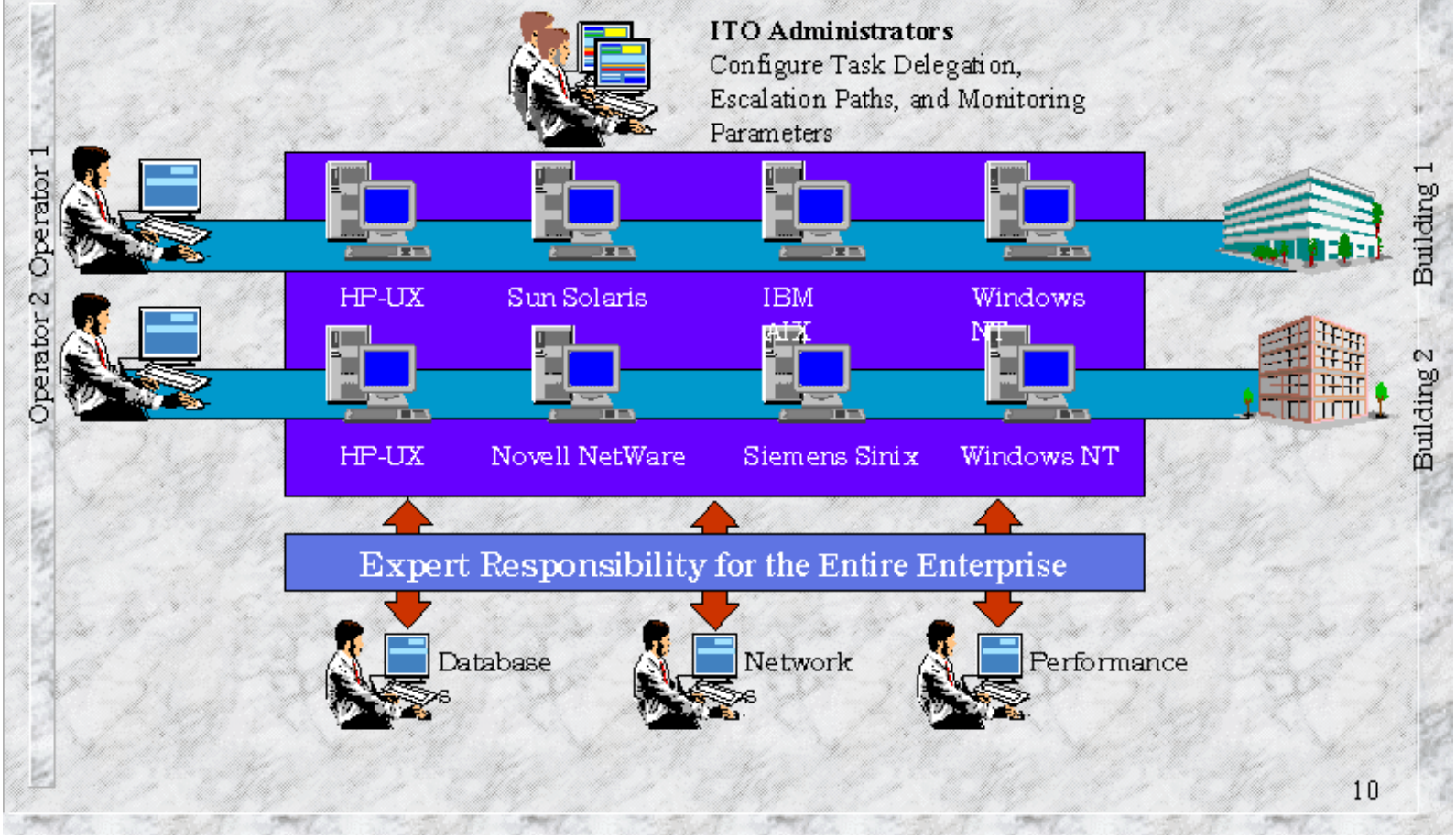

OpenView Building Block Architecture
ORACLE
management repository
HP OpenView IT Service Management
IT Service Management
HP OpenView Enterprise Console
Operations Management
Mainframe Management
Solve: Operations
~300 OpenView Partner Solutions
Application & System Man.
IT/Operations
ManageX
ClancePlus/MWA/PV
SMART Plug-Ins
Network Man.
Network Node Manager
NetMetrix
Desktop & Software Man.
IT/Administrations
Desktop Administrator
Software Distributor
Storage Man.
OmniBack II
OmniStorage
IT Service Man.
IT Service Manager
Security Man.
Access Manager
Node Sentry
Desktop
Network Access
Network
Systems
Applications
Databases
UNIX Mainframe NT NetWare
8

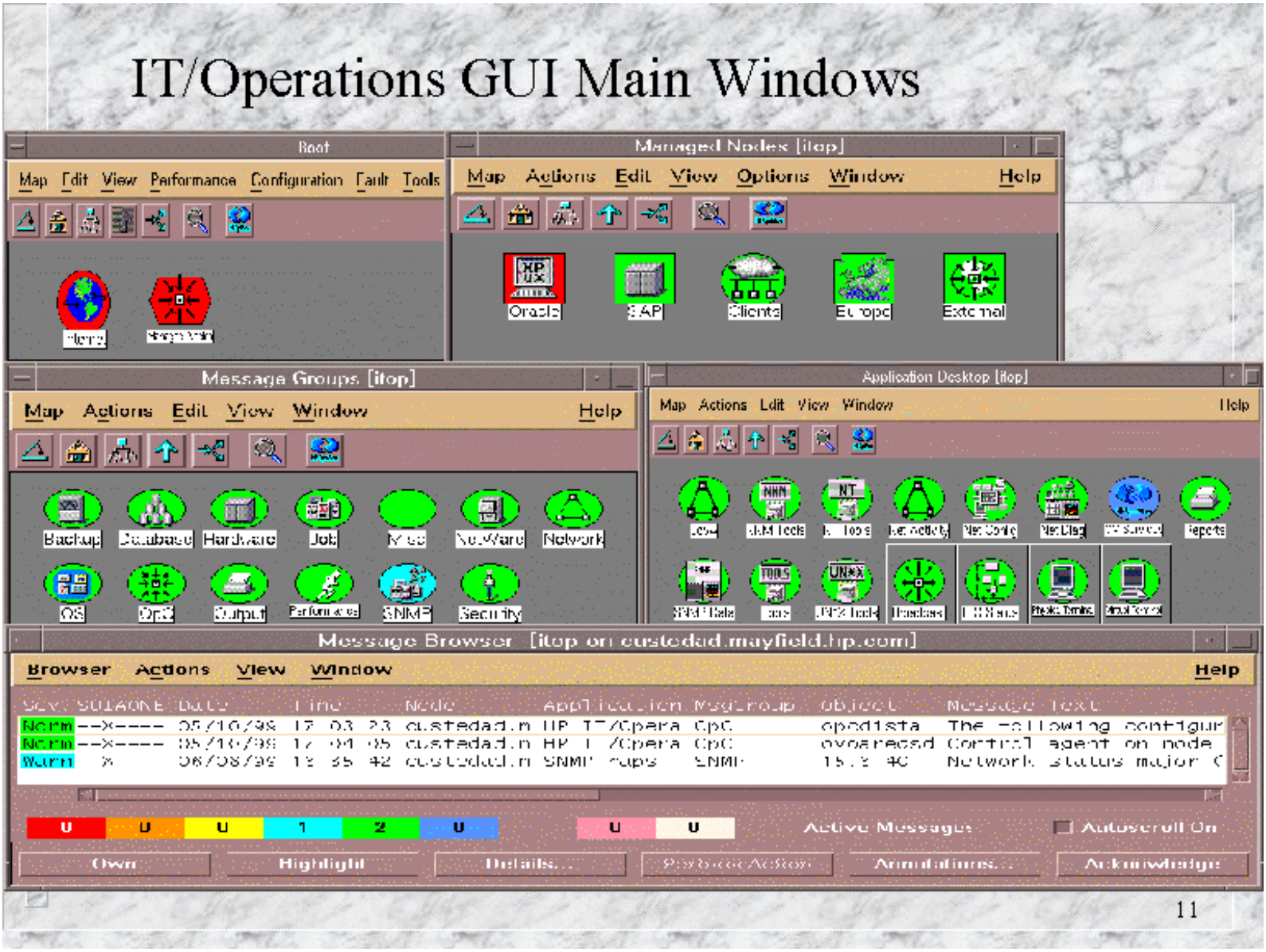
The ITO Client/Server Concept



Example: Task Orientation

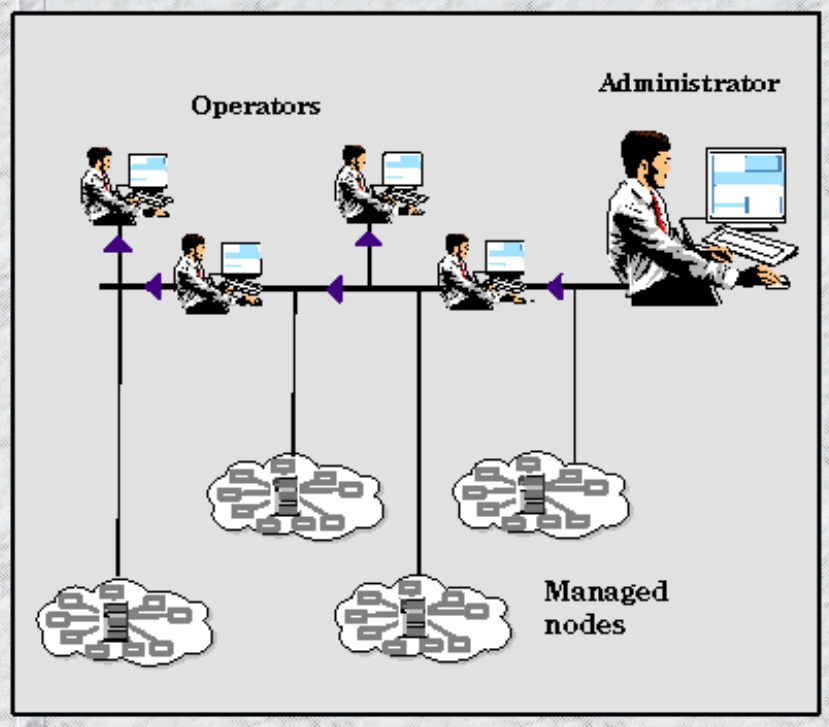
Task Specific Views, Tools and Responsibilities




IT/Operations GUI Main Windows
Root
Map Edit View Performance Configuration Fault Tools
Managed Nodes [itop]
Map Actions Edit View Options Window Help
Oracle
SAP
Clients
Europe
External
Message Groups [itop]
Map Actions Edit View Window Help
Backup
Database
Hardware
Job
Mail
NetWare
Network
OS
Output
SNMP
Security
Application Desktop [itop]
Map Actions Edit View Window Help
Reports
Message Browser [itop on custodad.mayfield.hp.com]
Browser Actions View Window Help
Active Messages
Autoscroll On
Own
Highlight
Details...
Annotations...
Acknowledge
11

HP OpenView IT/Operations

User Roles



Administrator

- Set up users with defined responsibilities and user rights
- Nodes can be added or deleted
- Configuration of monitoring parameters

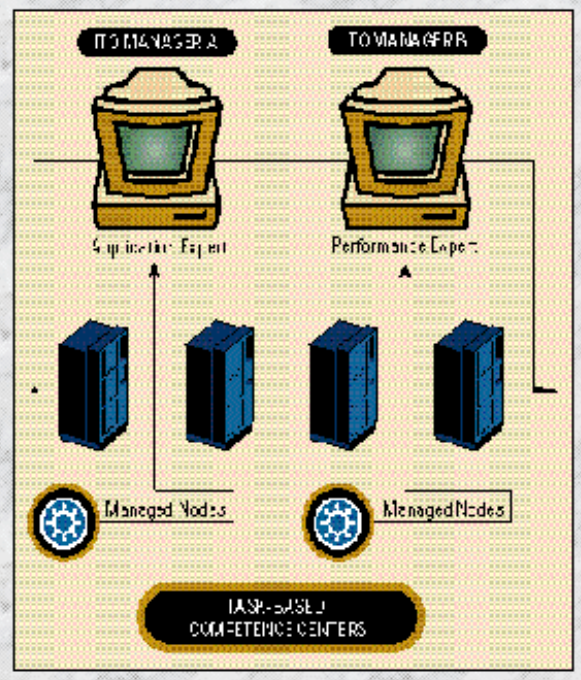
Operator

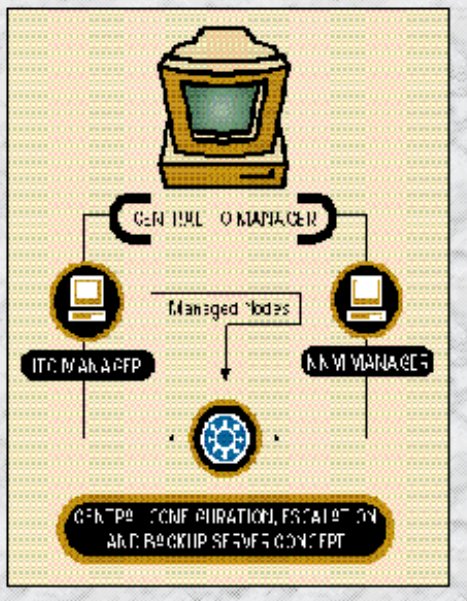
- View messages and set-up user specific browser filters
- Reusable user definitions via hierarchical virtual users (User Profiles)
- Run pre-configured actions on messages, e.g. acknowledge, own/disown, perform action,...
- Control assigned nodes with pre-defined applications

12

Flexible Management Concepts

Based on Location, Time, and Expertise

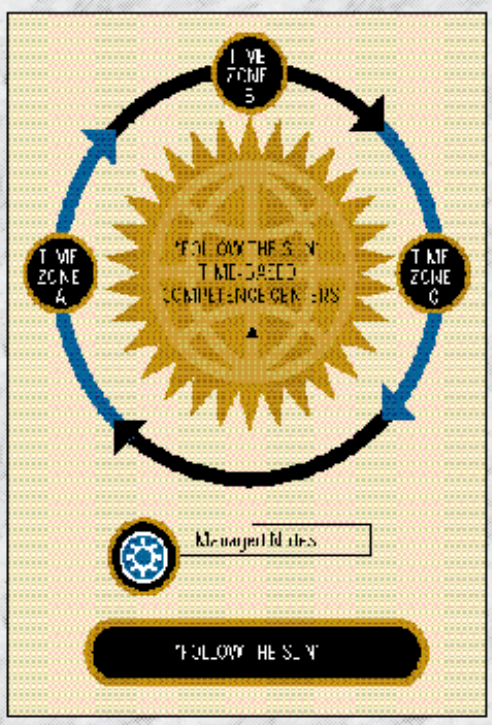




13

Slide 13 of 70

Follow-the-Sun Management

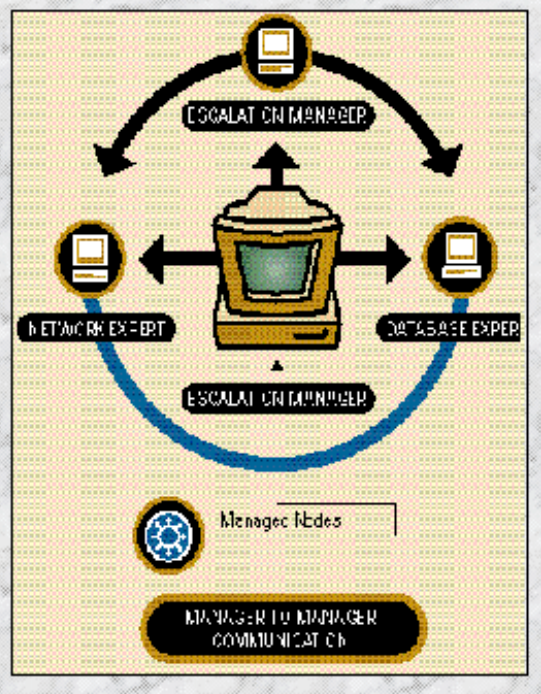


Time independence & continuous operation

- Messages can be sent to different ITO managers depending on time of day
- Tasks can be delegated between managers during peak hours
- After-hours IT management

14

Message Escalation

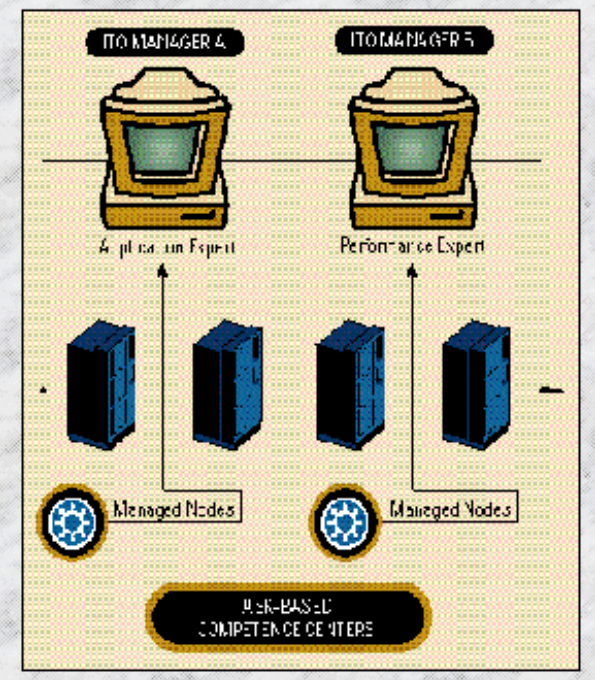


Transferring messages to other predefined management servers

- Being more capable to handle the problem
- Instead of forwarding messages to an external notification or trouble ticket service

15

Task-Based IT-Competence Centers

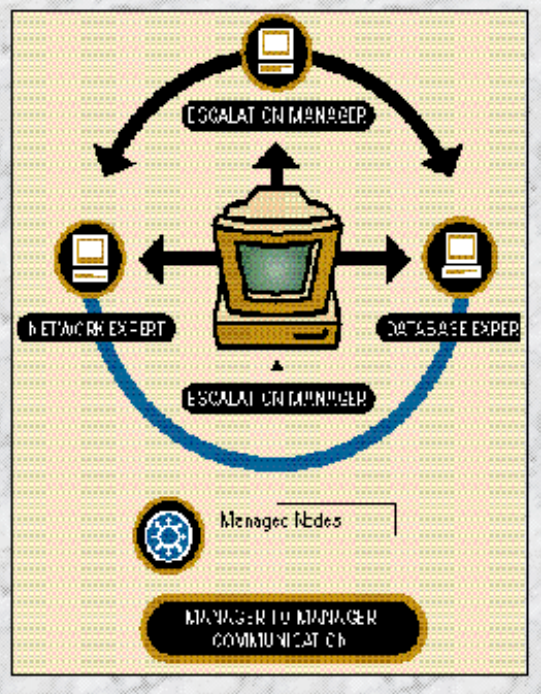


Faster and more accurate problem resolution

- Forwarding of messages to different management servers and operators, depending on the task or severity, through intelligent nodes

16

Manager-to-Manager Communication



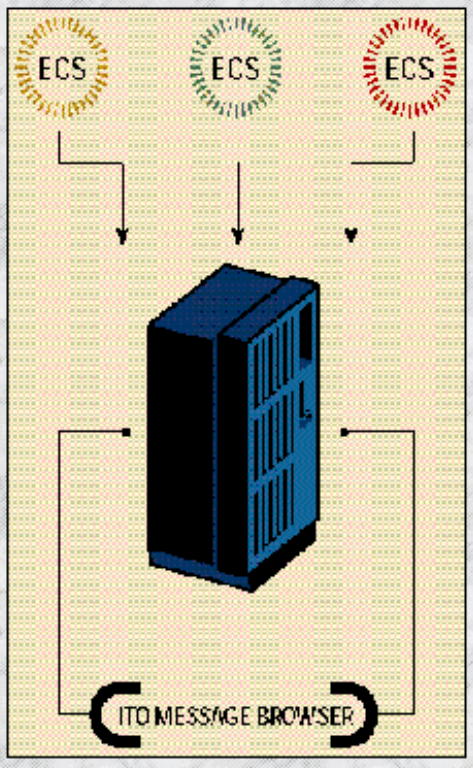
- Provides ability to forward a message from one management server to multiple management servers.
- Message updates (action status, annotations,...) are also propagated.
- Problems automatically acknowledged on other management servers when the problem has been solved at the

Event Correlation Services (ECS)

Concepts

Available on Windows NT and SUN Solaris agents

- Event Correlation Concept
  - Correlate events from networks, systems, applications, databases and the Internet resulting in reduced and more meaningful messages for the operators
  - Correlation at central management server and local intelligent agents on HP-UX, SUN Solaris and Windows NT agents
  - Expedites problem resolution by identifying the true source of problems and events
  - Integrate other correlation applications and use them as an additional information resource or to execute commands as part of the event



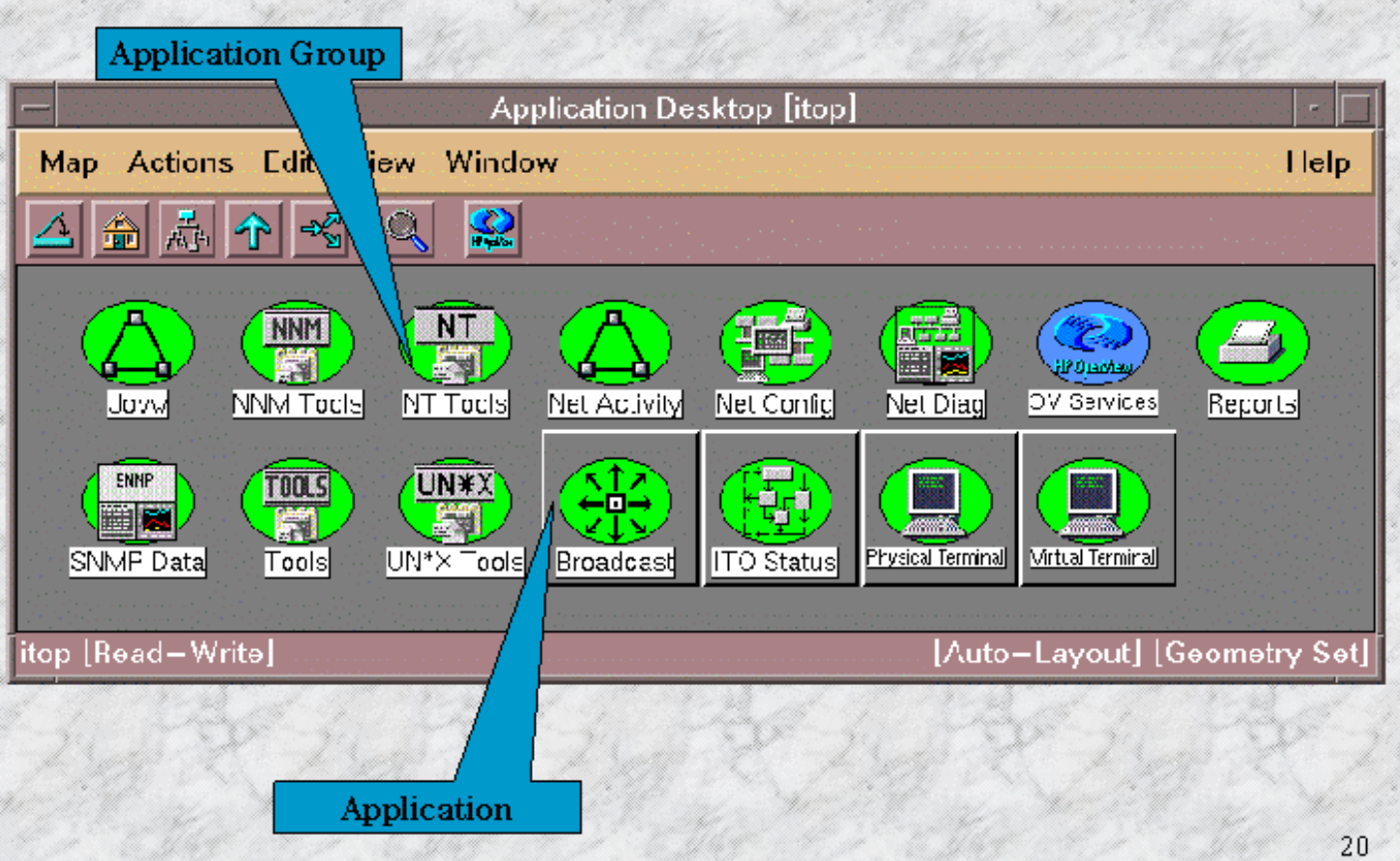
18

The Message Groups Window

- Logical grouping of application and system messages
- Typically used to build application domains
- Symbols show message group status using color codes

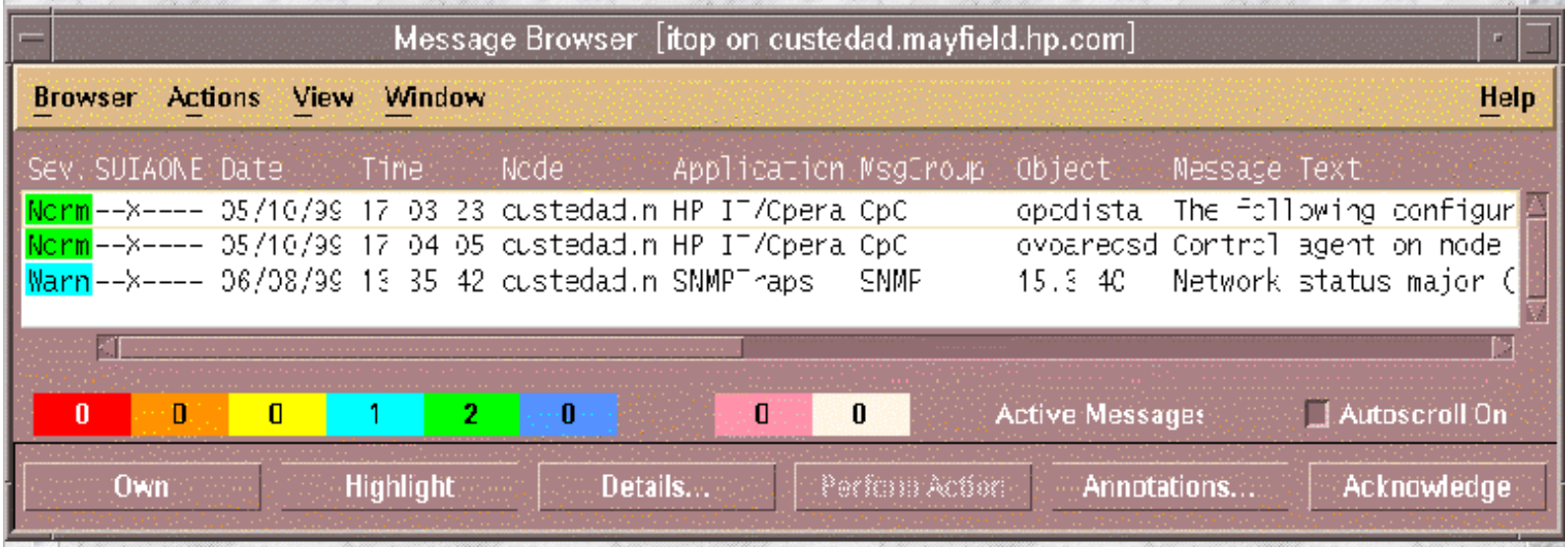
19

The Application Desktop Window



Slide 20 of 70

The Message Browser Window

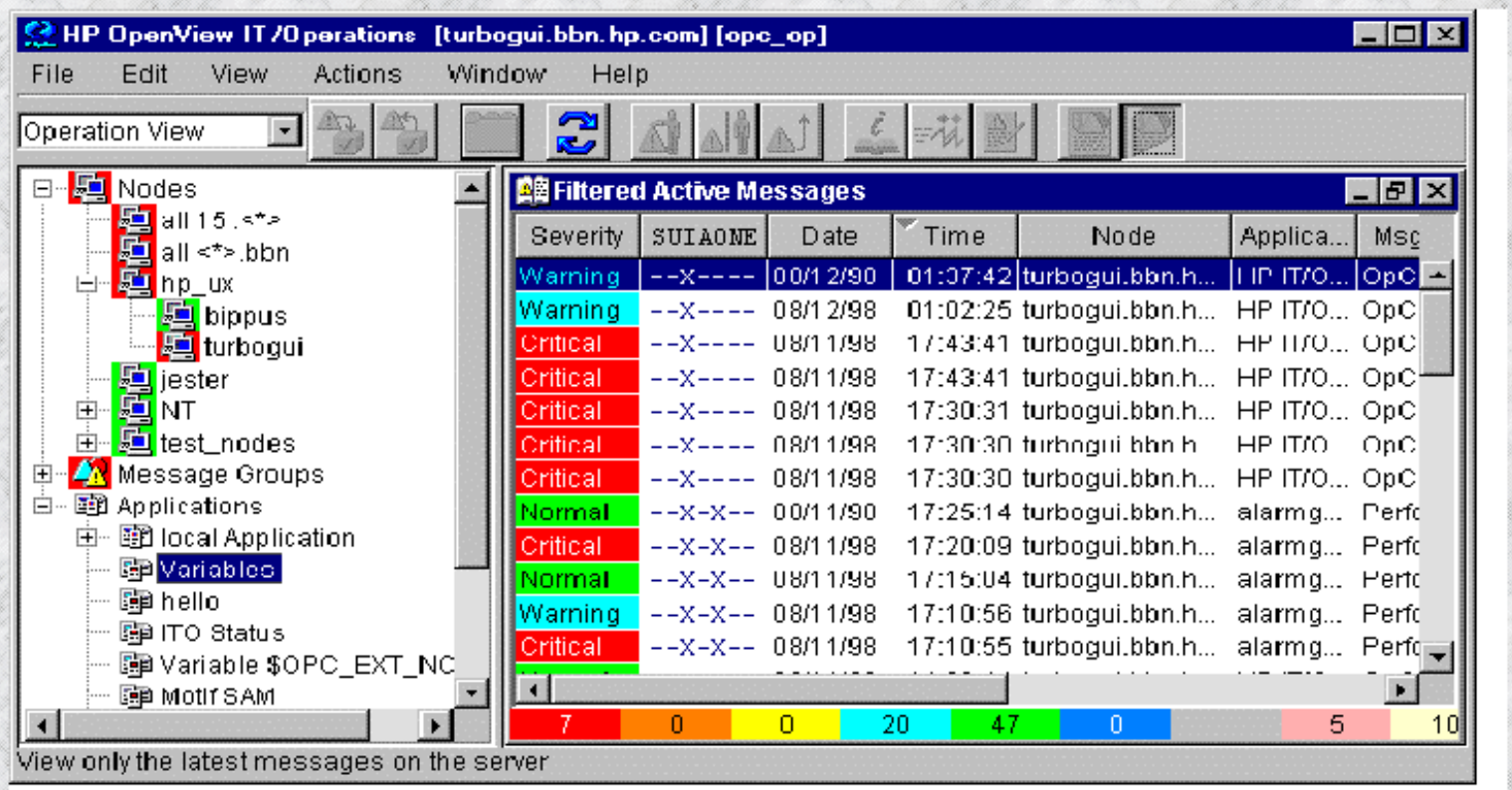


- Central information component of ITO
- Lists all events an operator is responsible for
- Point-of-control for actions

21

Slide 21 of 70

Java GUI Main Window



Slide 22 of 70

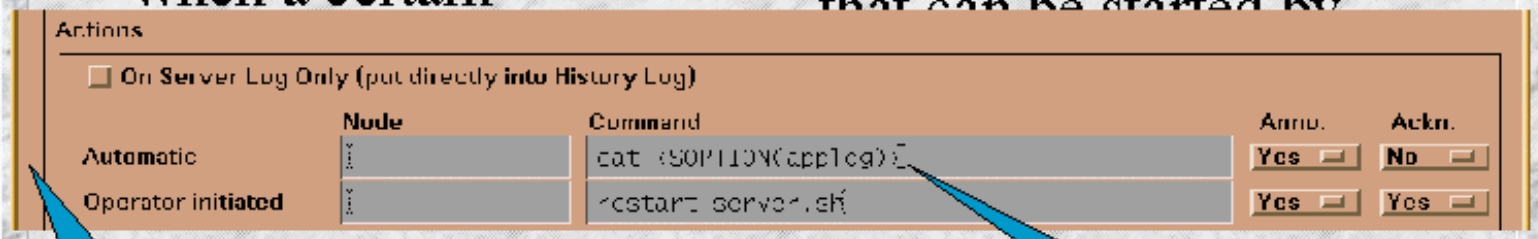
Action Types

Automatic Actions

- Predefined commands started automatically when a certain

Operator-initiated Actions

- Predefined commands that can be started by

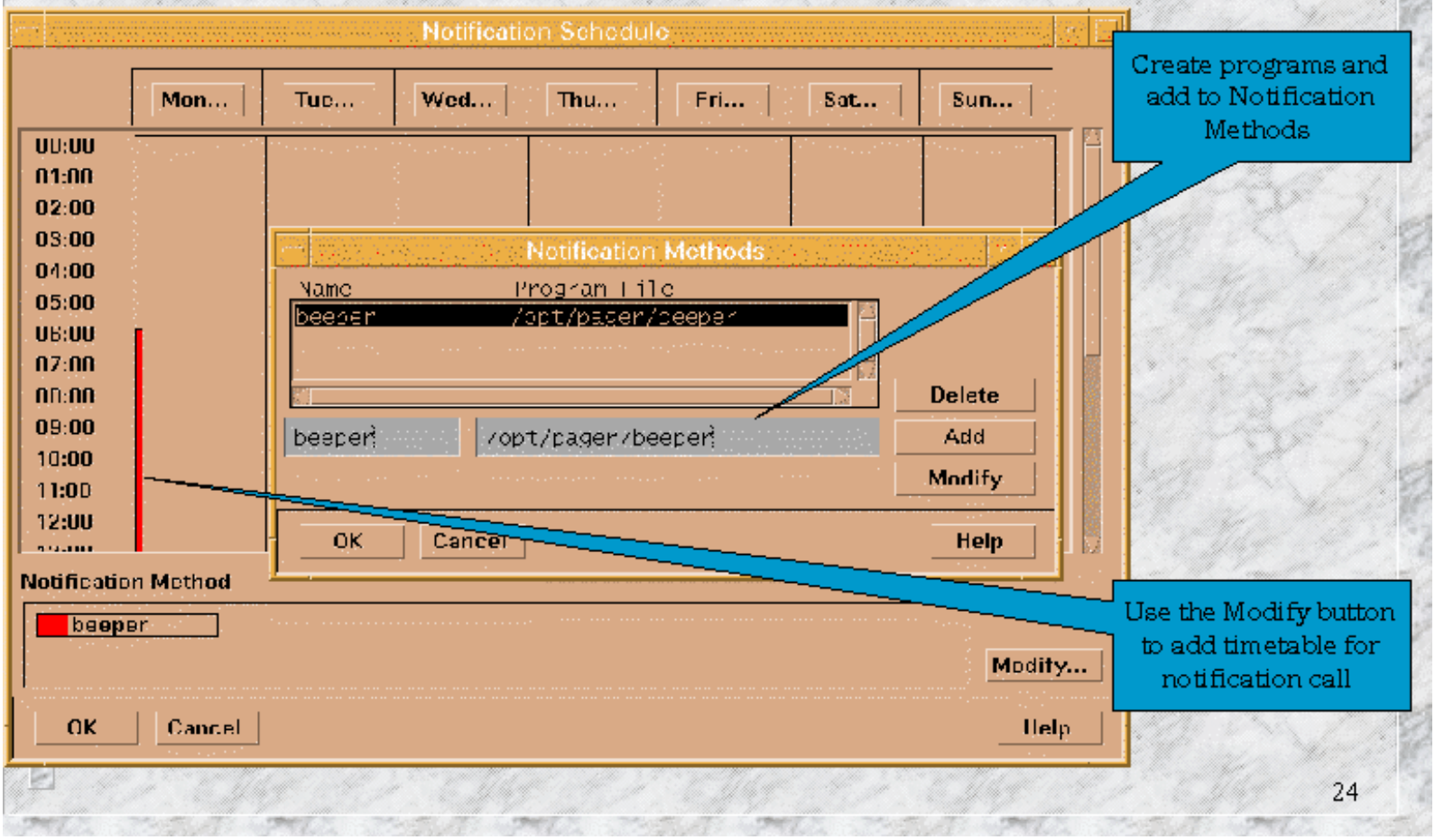


Taken from the Message Conditions Window

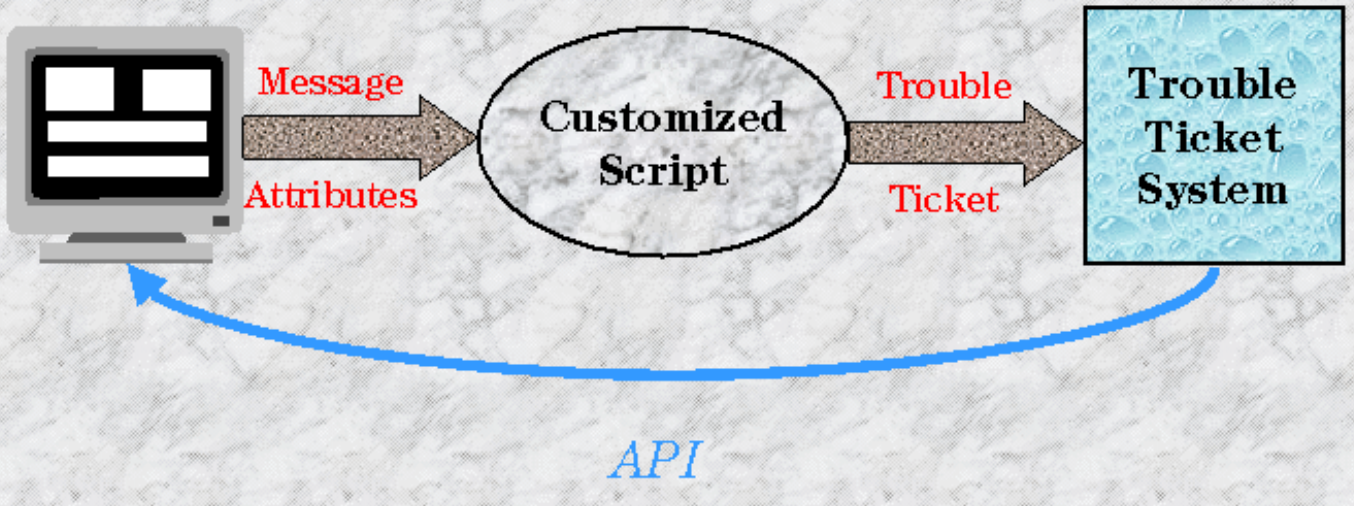
Variables can be ITO parameters or passed from the command line

23

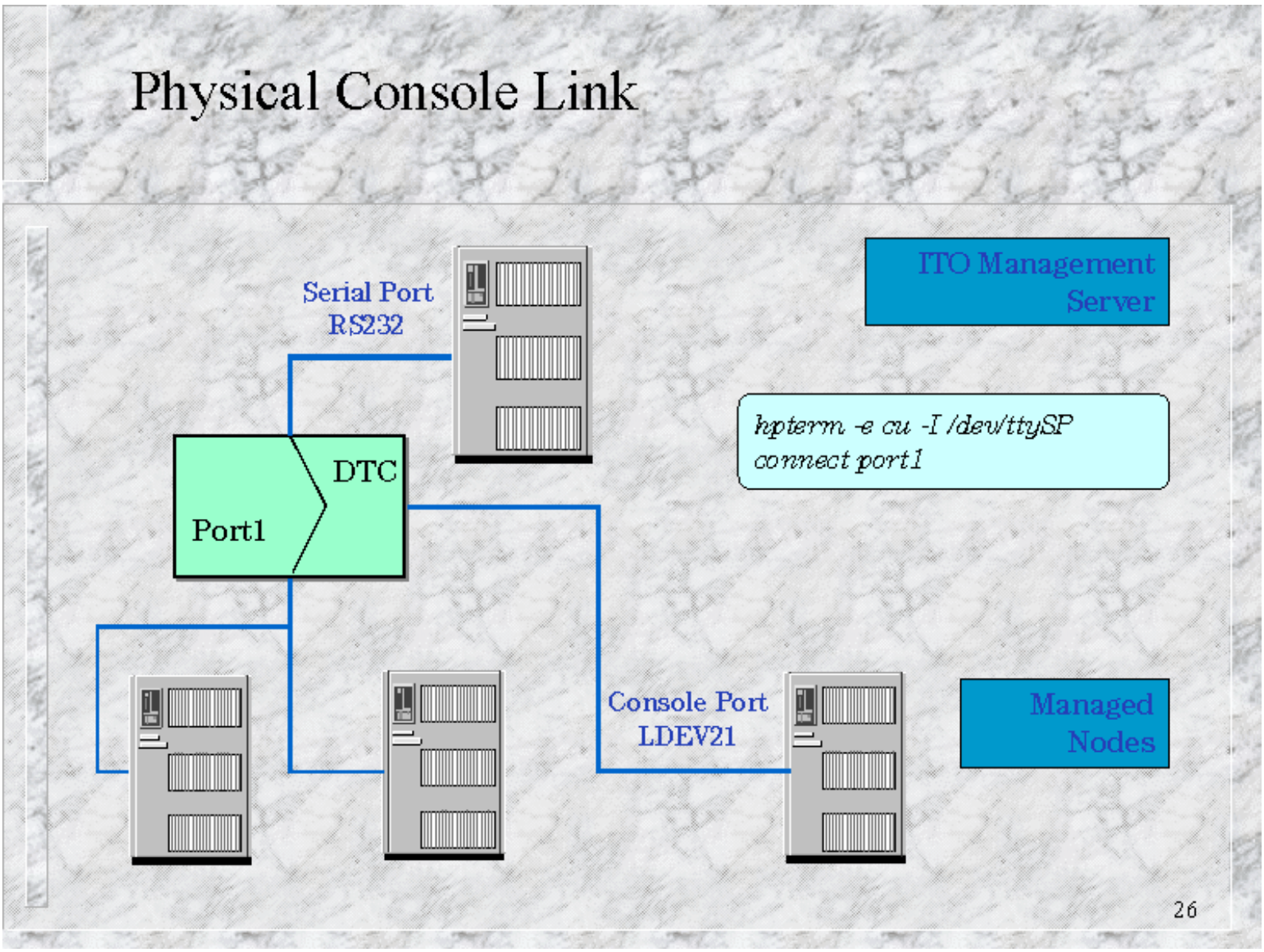
External Notification Service



Link to Trouble Ticket System



25

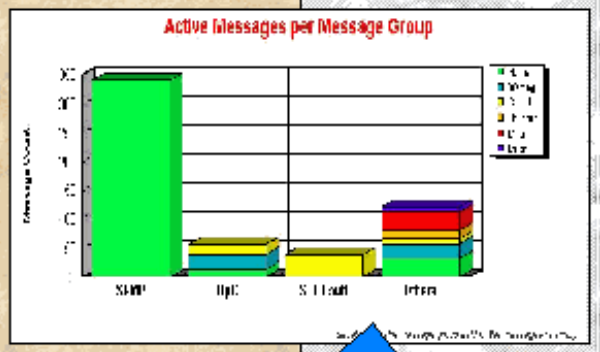


Slide 26 of 70

HP OpenView Service Reporter

Write reports by using the ITO Database Manual:

- Service Reports record the provided services and crosscheck with the specified SLA criteria
- A data dictionary listing all fields, their meaning, their data format and possible values
- Examples (Service Reports) show how to write a report



27

Slide 27 of 70

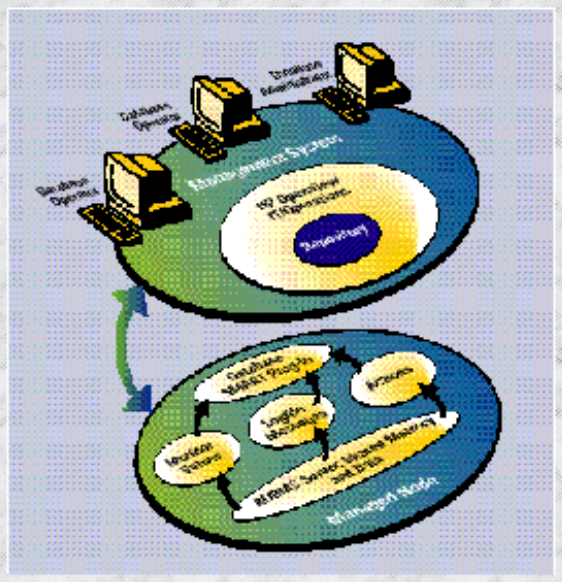
SMART Plug-Ins are Fully Integrated

SMART Plug-Ins are *not* discrete management tools

Use existing HP OpenView User Interface, management server, and agent infrastructure

Full process integration, e.g. pre-configured message grouping, application bank, node bank

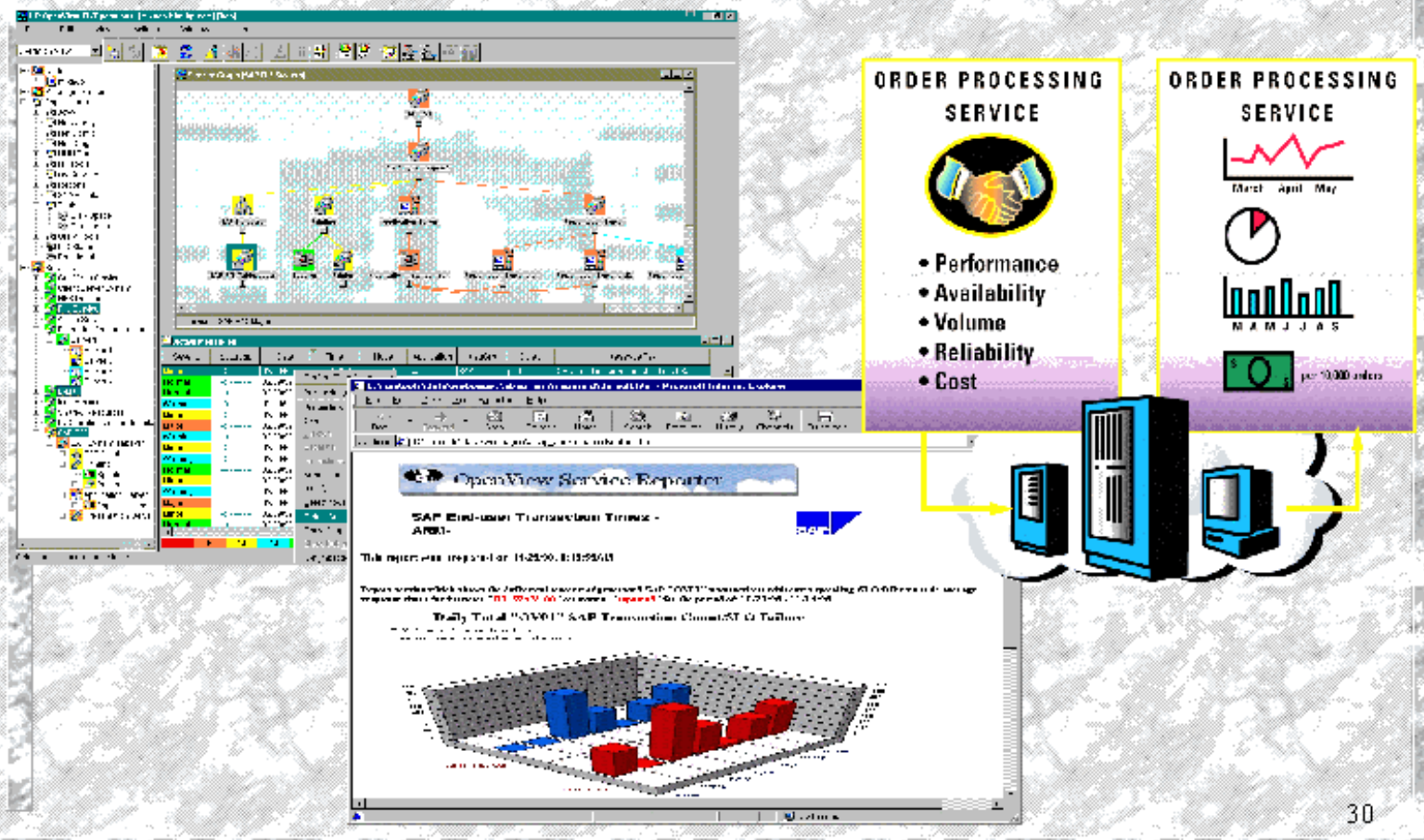
Leverage of HP OpenView



One platform to manage networks, systems, middleware, databases and applications!

29

Application Quality of Service



ManageX

Works | Right | Now

31

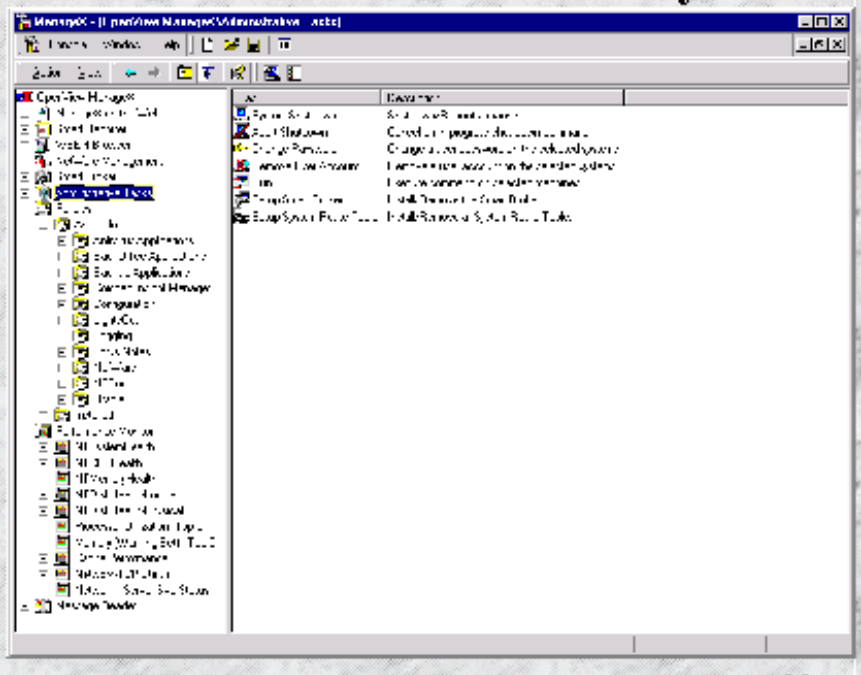
Slide 31 of 70

What Is ManageX?

New breed of snap-ins for MS Management Console

MMC supplies basic framework for one-to-one management

- **ManageX is a standalone snap-in that extends MMC's functionality by adding:**
  - one-to-many management
  - custom machine groupings
  - command monitoring
  - event management
  - performance monitoring
  - fault evaluation
  - automated corrective actions



32

Slide 32 of 70

System Management: NT and ManageX

NT

- Discover: view and connect
  - My Computer
  - Network Neighborhood
  - Microsoft Computer Browser
  - Security Models
  - TCP/IP
- Assess: monitor and evaluate
  - Event Log
  - PerfLib and PerfMon
  - Registry
  - Services
- Correct
  - ??

ManageX

- Device Selector and Aliases
- Message Reader
- Performance Monitor

- Performance Monitor
- Smart Reporter
- Policies, especially Conditions

- Administrative Tasks
- Policies, especially Actions

33

ManageX Architecture: One-to-Many Management

Master machine is the administrator's machine on which MMC, ManageX, and the ManageX extensions are installed.

ManageX Master Machine

(1) Administrator at the Master Machine selects several machines and policies, then chooses the "Install policy" command. ManageX (installed on Master) queues "Install policy" command.

(4) ManageX Message Reader extension accepts and displays received messages

(2) SmartBroker (on Master) sends policies to selected managed machines and installs needed Functionality Modules (FMs)

(3)

Managed Machines

FMs interpret policy conditions and send exceptions back to the Master Machine. Policy-specified actions are taken locally (on managed machines).

Managed machines are users' machines which have installed only certain pieces of ManageX (Smart Broker, FMs, policies, SRTs).

34

Slide 34 of 70

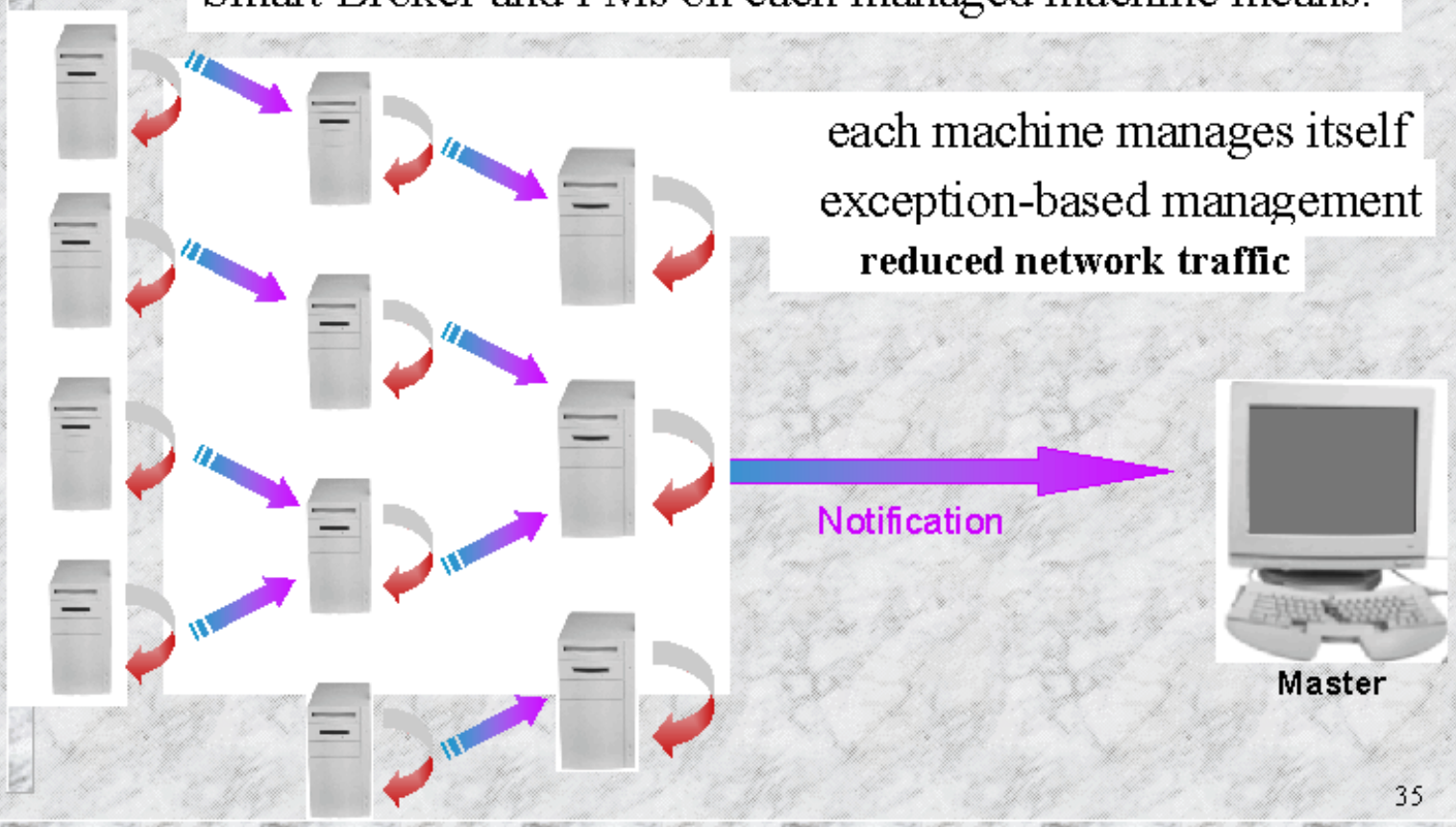
(Self)-Managed Machine

Smart Broker and FMs on each managed machine means:

each machine manages itself

exception-based management

reduced network traffic

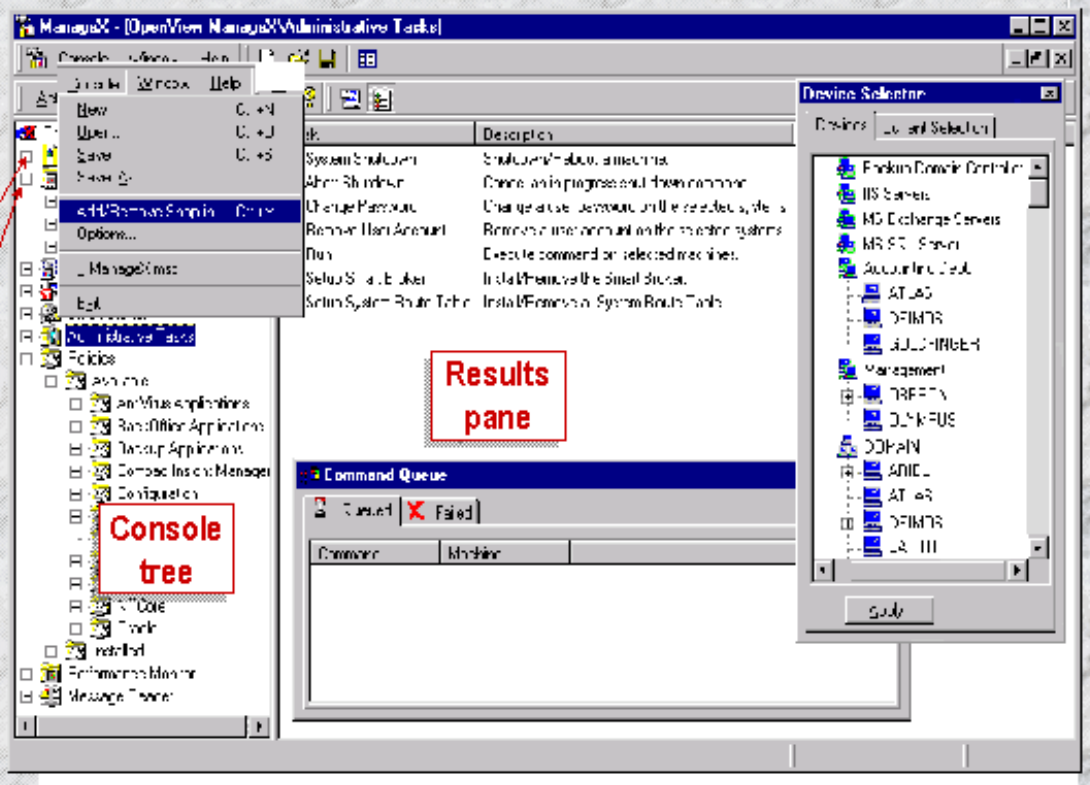


35

Slide 35 of 70

Snapping ManageX into MMC

- Console tree
- Results pane
- Standalone snap-in
- Extensions

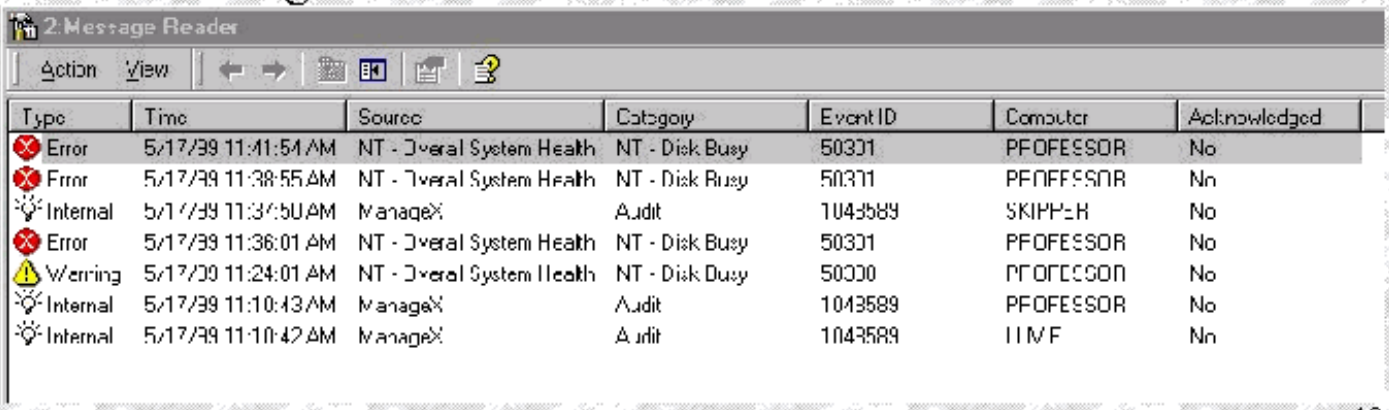


36

Slide 36 of 70

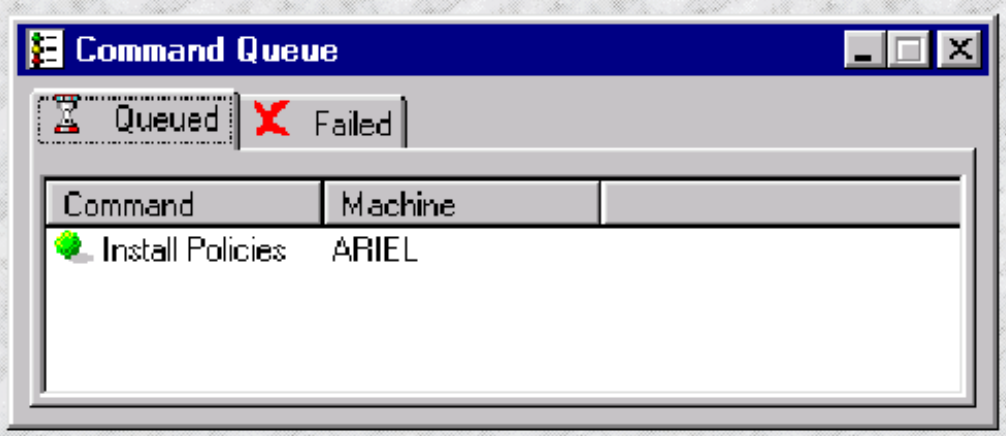
ManageX Discovery:
View and Connect

- Message Reader
  - Lets administrator see *all* messages of interest but *only* messages of interest
  - Default view: all messages broadcast in domain, subnet
  - Configuration files subscribe to specific sources, reject message types, trigger automated actions according to message content



Command Queue

- Shows status of requests
- Commands submitted to multiple machines create multiple commands
- Monitor command progress and success
- Use Failed tab to resubmit failed commands



39

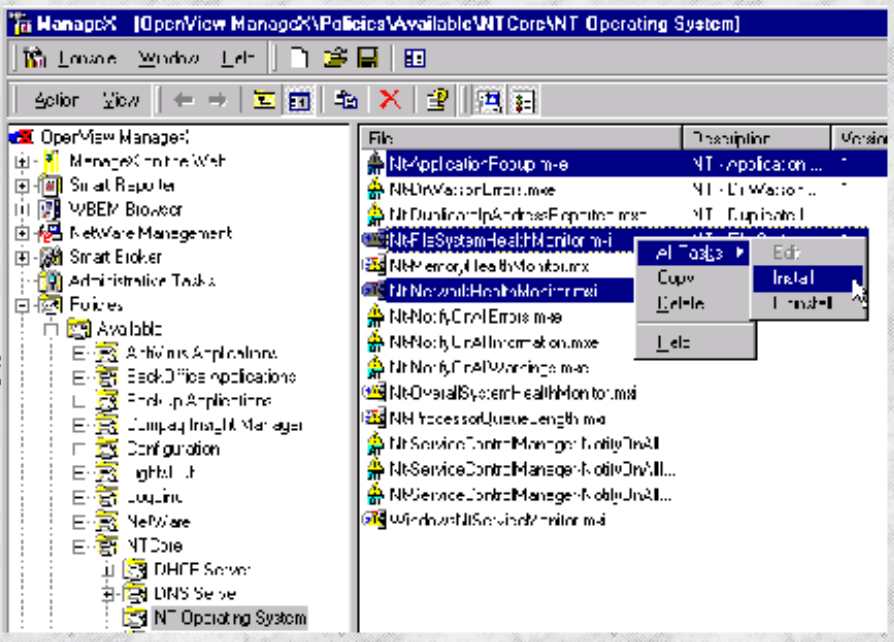
Supplied Policies

- **Policies & editors appear in Policies extension**
- **Organized by type and application**

Quick installation

Select machines in **Device Selector**

Select policies, then right-click & choose **All Tasks > Install.**

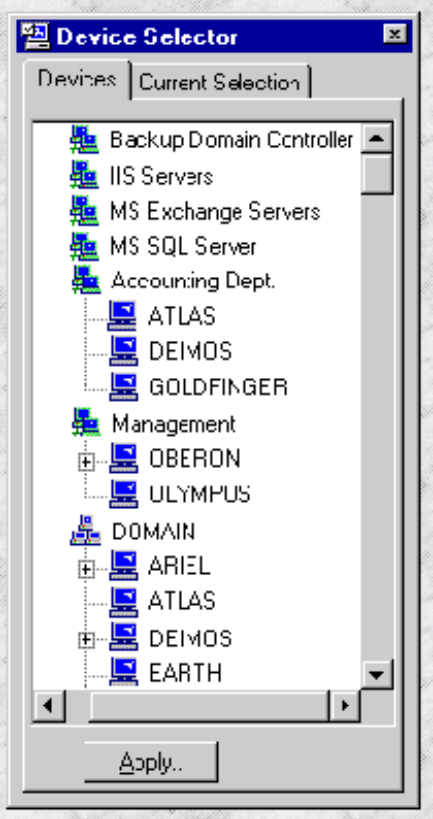


40

Slide 40 of 70

ManageX Discovery:
View and Connect

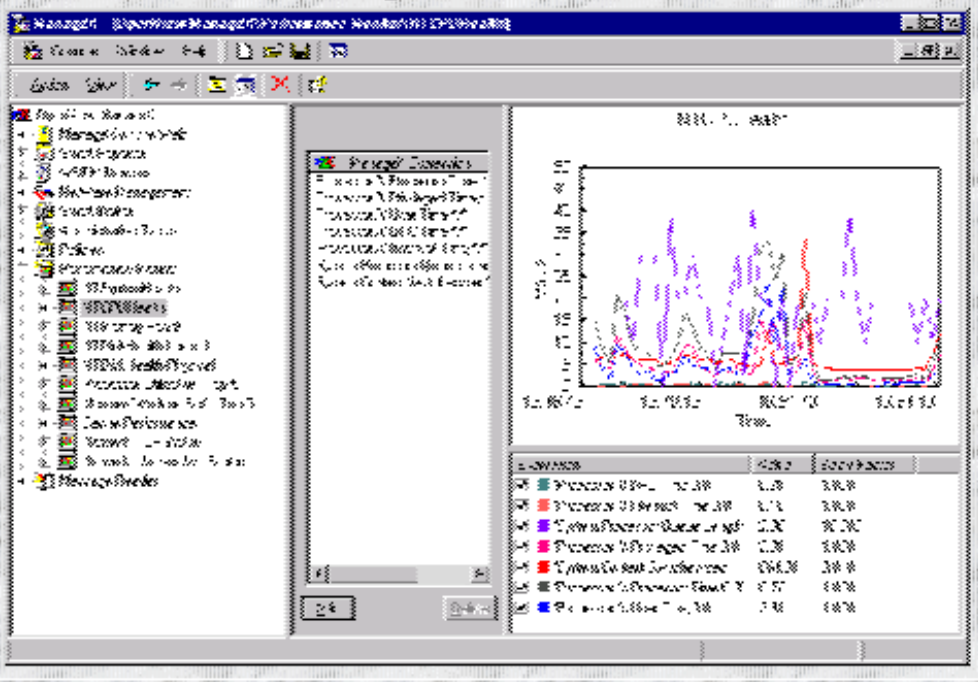
- Device Selector and Aliases
  - View available machines and domains
  - Select the machines and domains to which commands will apply
  - Aliases let you group machines statically (by machine name lists, e.g. “Management”)or dynamically (by O/S, application, etce.g. “IIS Servers”.)



41

ManageX Assessment:
Monitor and Evaluate

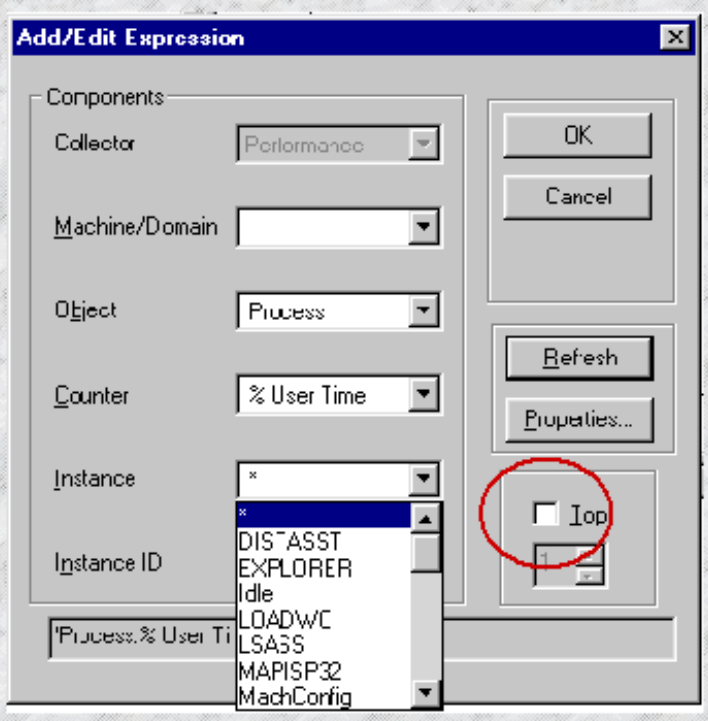
- Performance Monitor
  - Lists and graphs PerfLib counters in real time
  - Charts across multiple machines



43

The “Top” Function

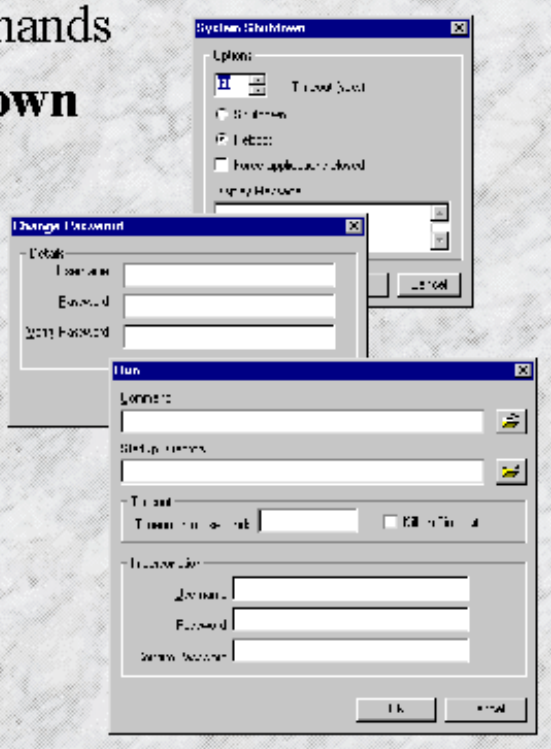
- Gathers occurrences of specified expression with highest values
  - Example:
    5 processes
    taking up most user time
    on a given machine



Slide 44 of 70

ManageX Correction:
Manual Facilities

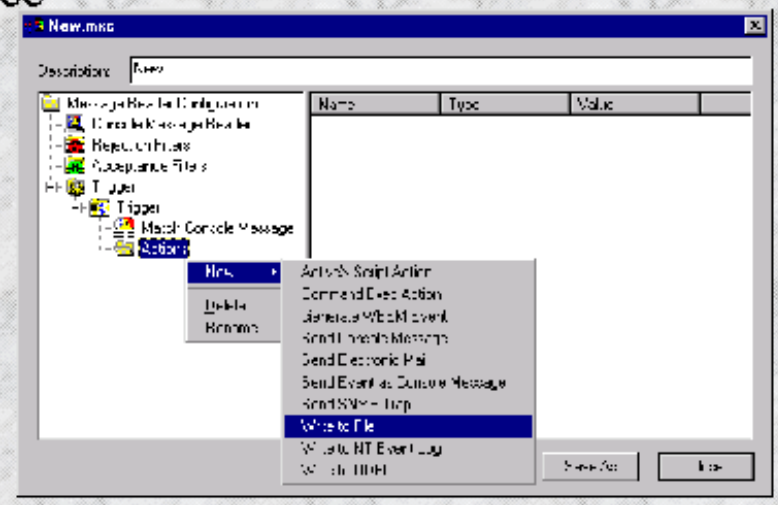
- Administrative Tasks
  - Access to basic administrative commands
    - **System shutdown/Abort shutdown**
    - **Change Password**
    - **Remove user account**
    - **Remote run**
    - **Setup Smart Broker and SRTs**
  - Ability to apply a single command to multiple machines



45

ManageX Correction:
Automated Facilities

- Policies with corrective triggers
  - Actions triggered by Event Logs, WBEM events, performance counters, messages
  - 5 standard condition types define triggering criteria
  - 10 standard action types send notification, take automatic corrective measures



46

Policy Actions

- Corrective moves made when an exception to the policy trigger's condition occurs.
- Multiple actions can be assigned to any exception.
- ActiveX action adds total scripting capability.
- Ten standard action types:
  - ActiveX Script
  - Command Exec
  - Generate WBEM Event
  - Send Console Message
  - Send Electronic Mail
  - Sent Event as Console Message
  - Send SNMP Trap
  - Write to File
  - Write to NT Event Log
  - Write to ODBC

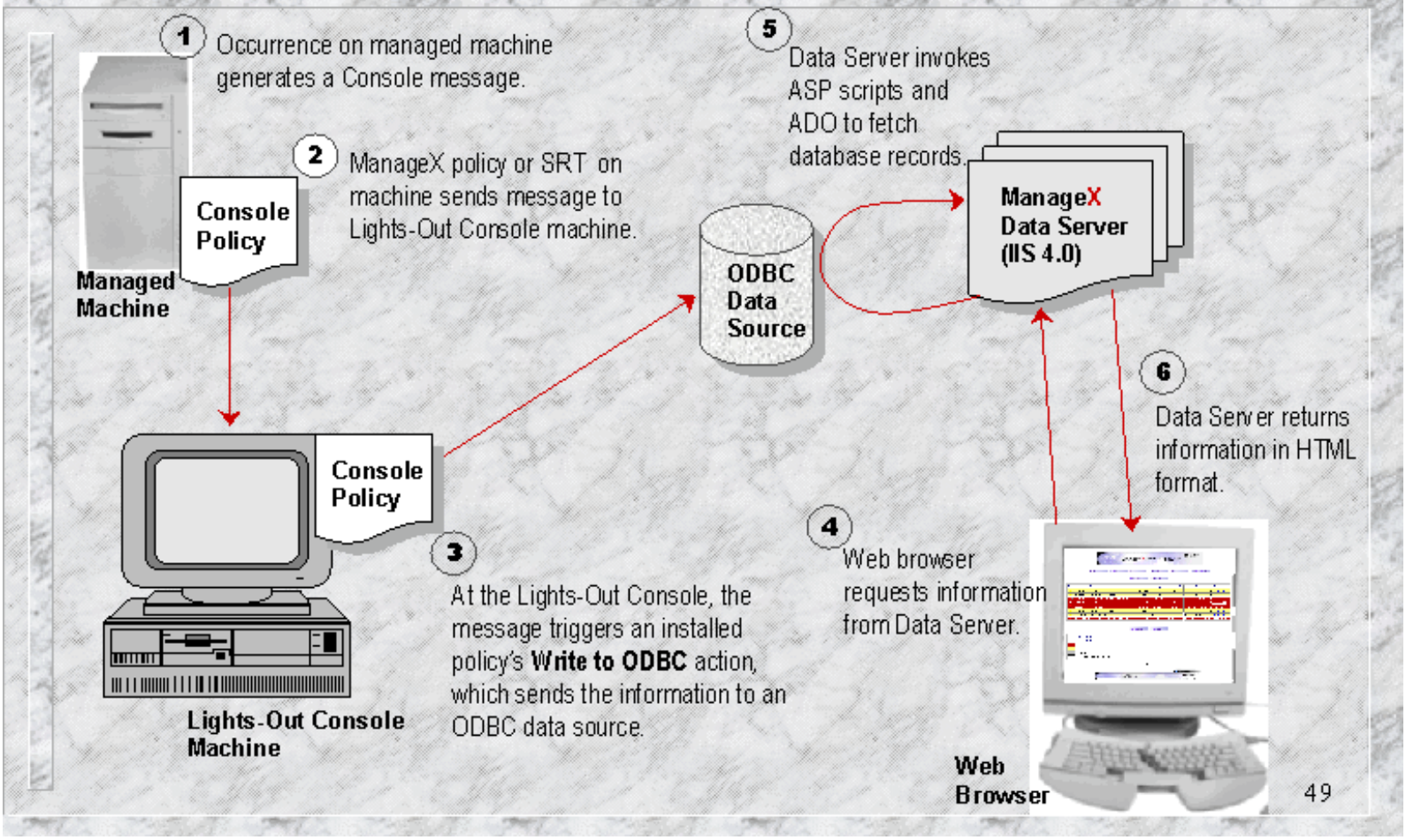
47

The Web Event Browser

- Views only ManageX-generated Console messages sent to an ODBC data source via "Write to ODBC"
  - MS Access (default; run-time version installed with WEB)
  - MS SQL Server (requires additional software and installation)
- Messages appear on Active Server Pages
- Available from any location with a standard Web browser and appropriate SQL permissions
  - IE 3.02 or higher
  - Navigator 3.03 or higher; Communicator 4.05 or higher

48

The WEB process

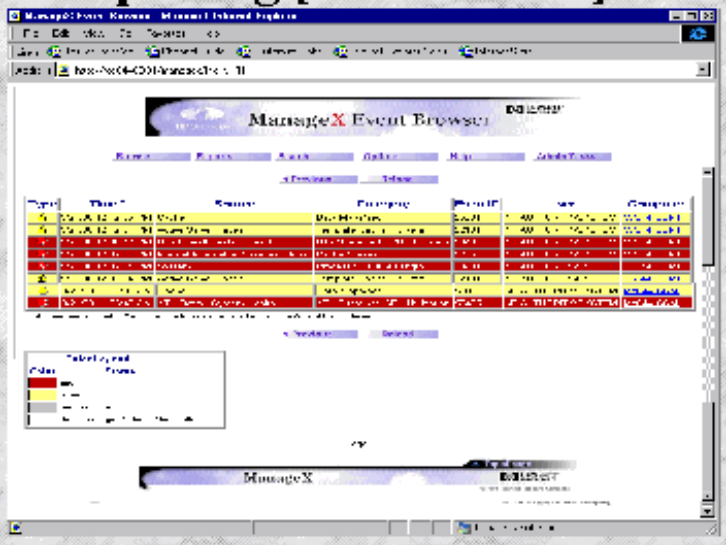


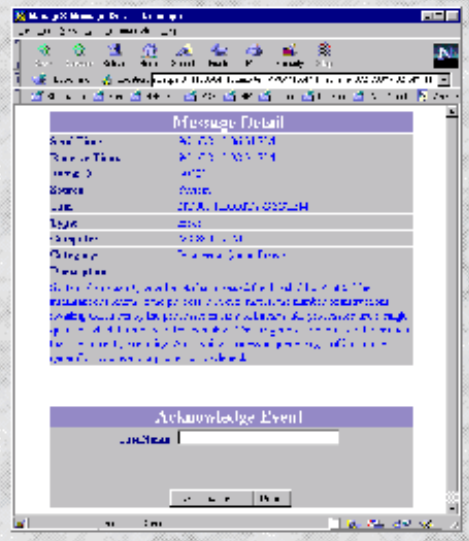
Viewing WEB Events in a Web browser

- **Point Web browser to**

  `http://[webmachine]/managex`

  replacing [webmachine] with your Web server's name.





- **Display shows up to 20 messages/page, for easy onscreen viewing**
  - **Click** Computer **for detail information.**

50

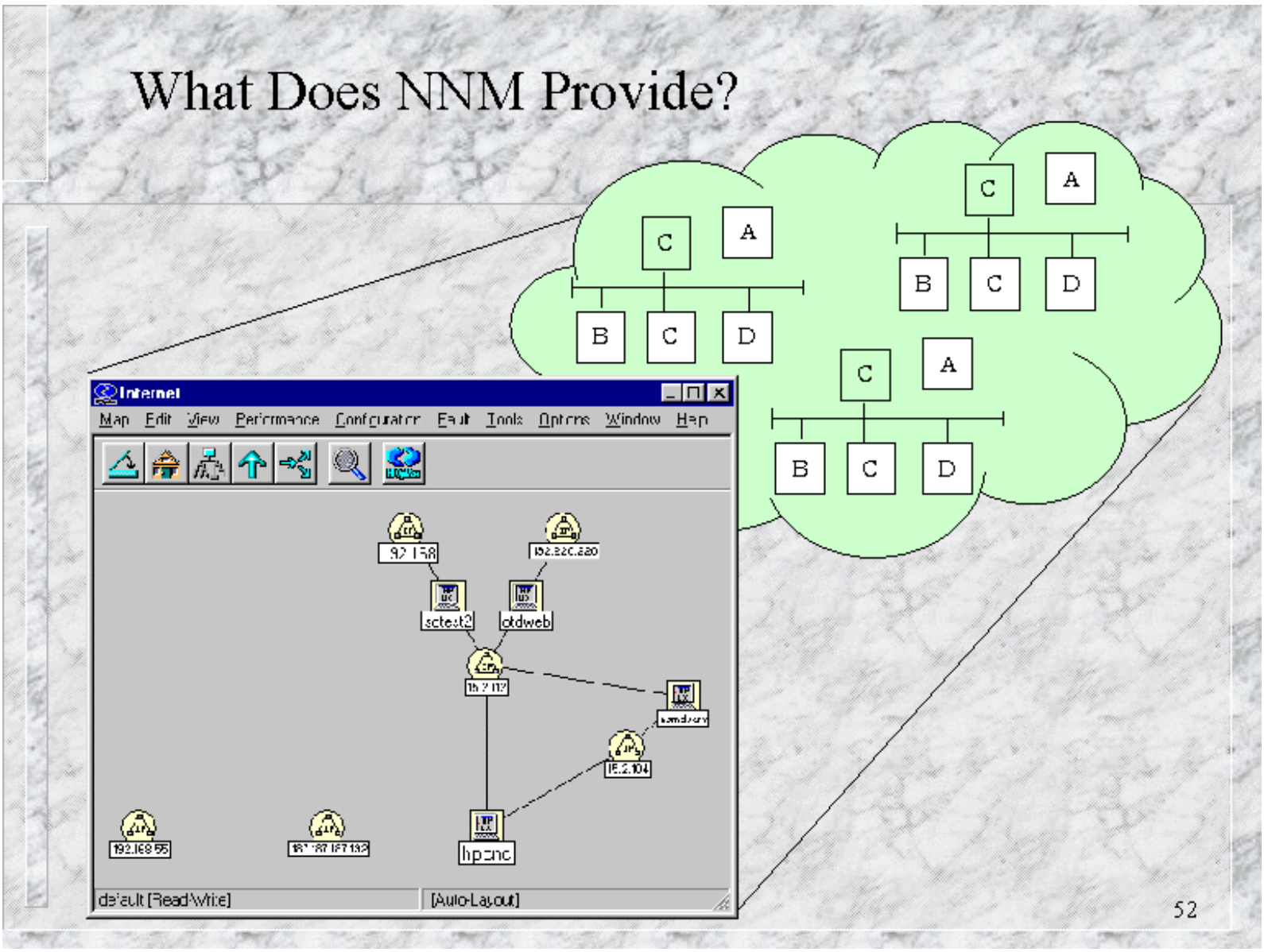
Slide 50 of 70

Network Node Manager

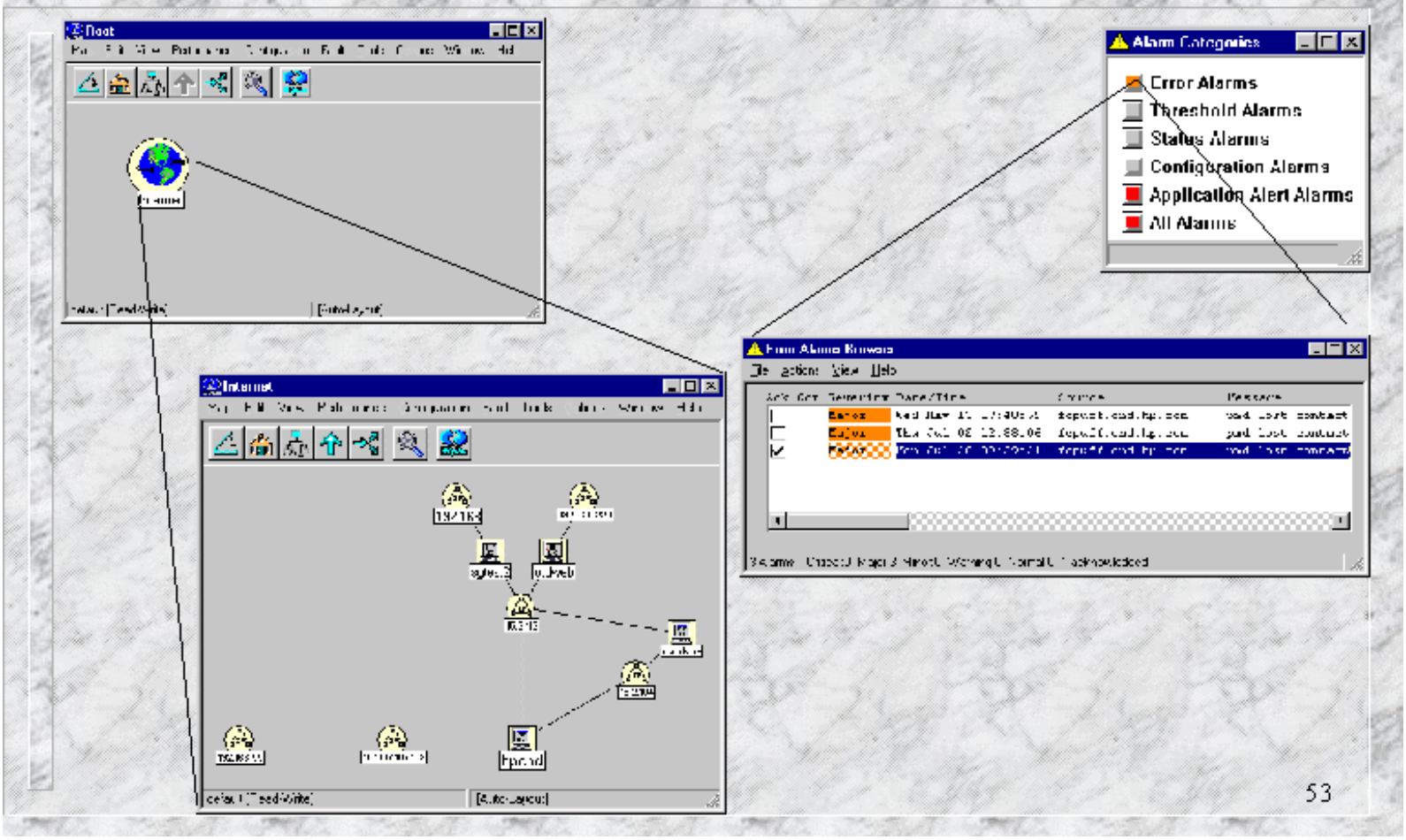
Works | Right | Now

51

Slide 51 of 70

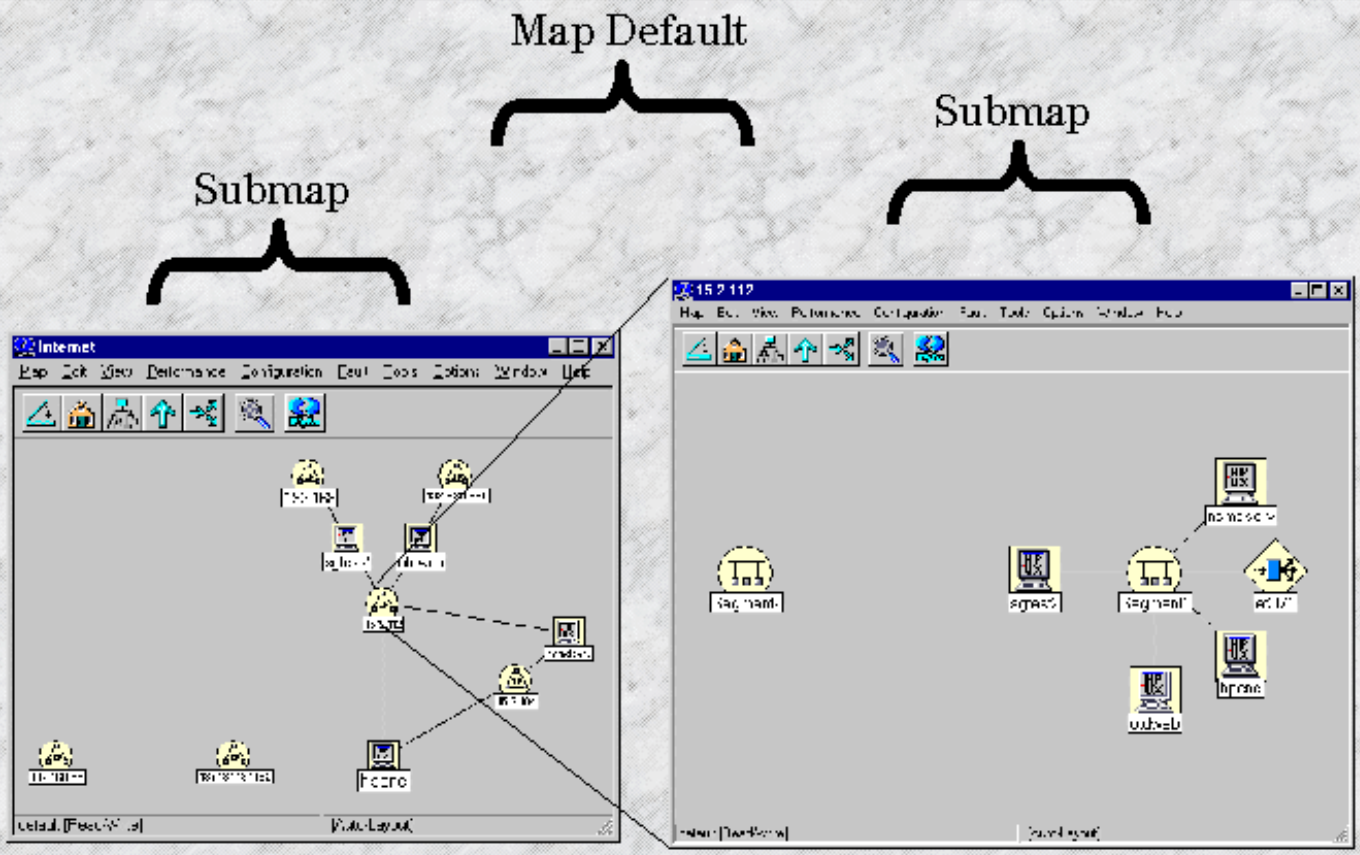

What Does NNM Provide?
C
A
B
C
D
C
A
B
C
D
C
A
B
C
D
Internet
Map Edit View Performance Configuration Fault Tools Options Window Help
sctest2
otdweb
hpcnc
default [Read/Write]
[Auto-Layout]
52

Basic NNM Windows



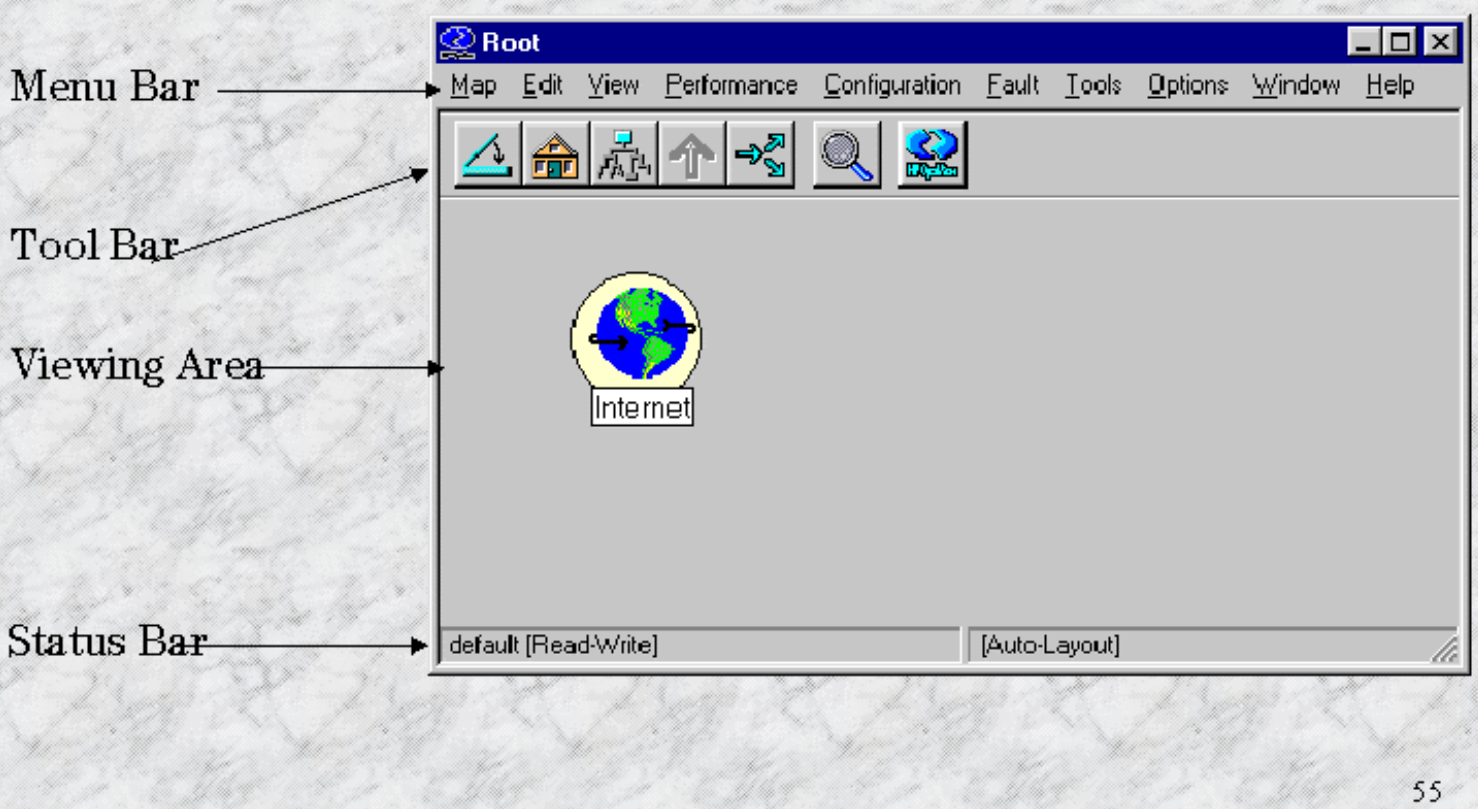
Slide 53 of 70

Introduction to Maps and Submaps



Slide 54 of 70

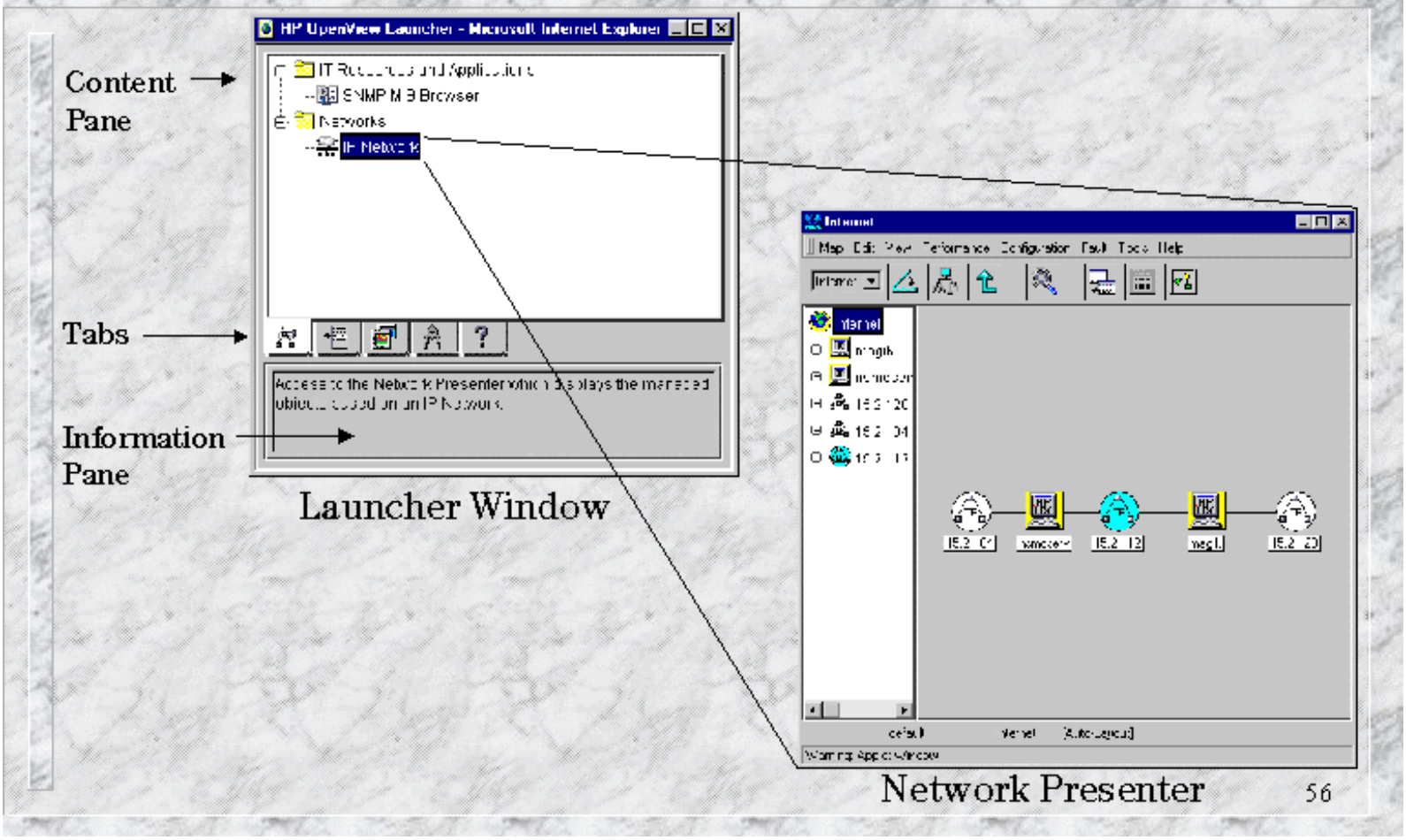
The Submap Window Components



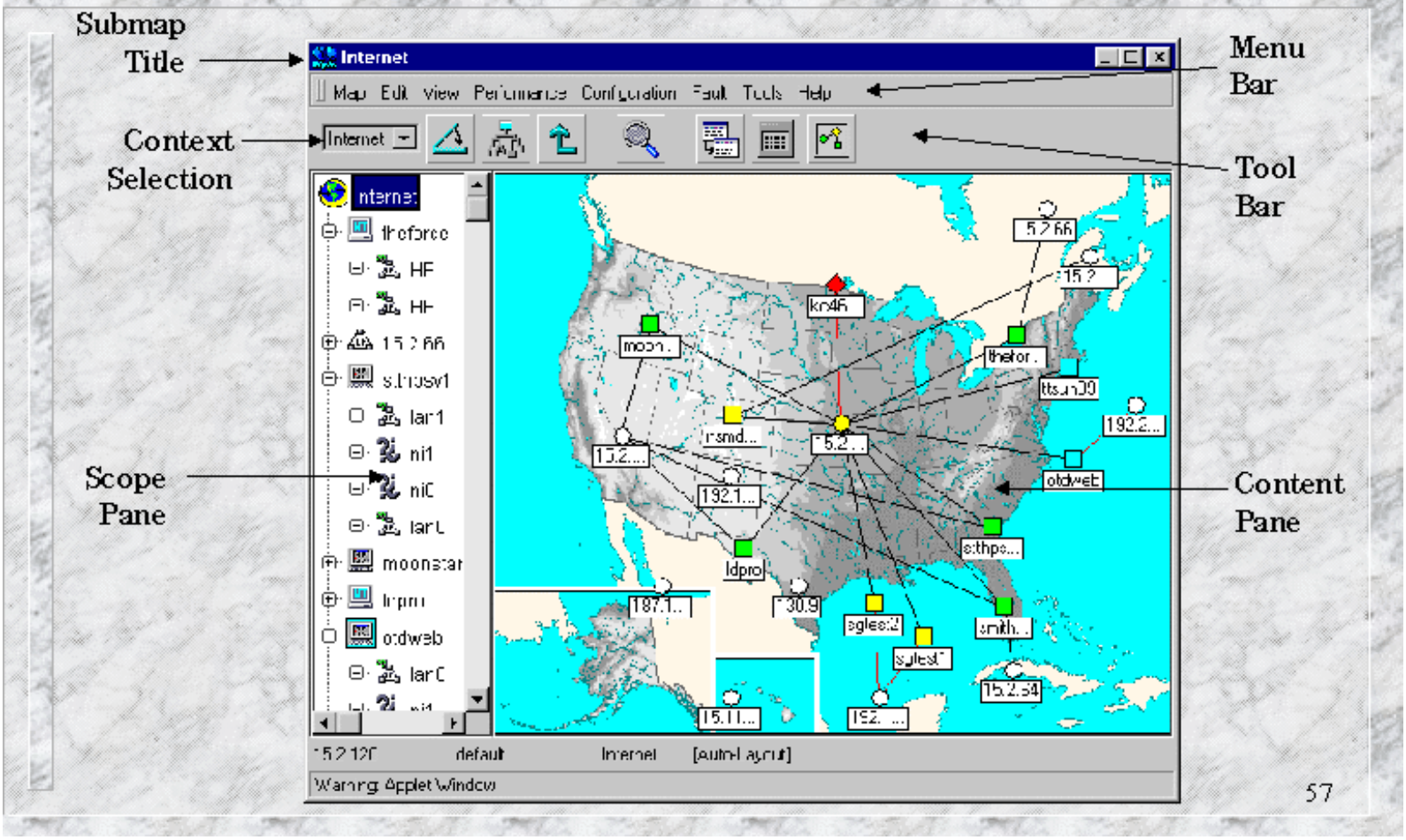
55

Slide 55 of 70

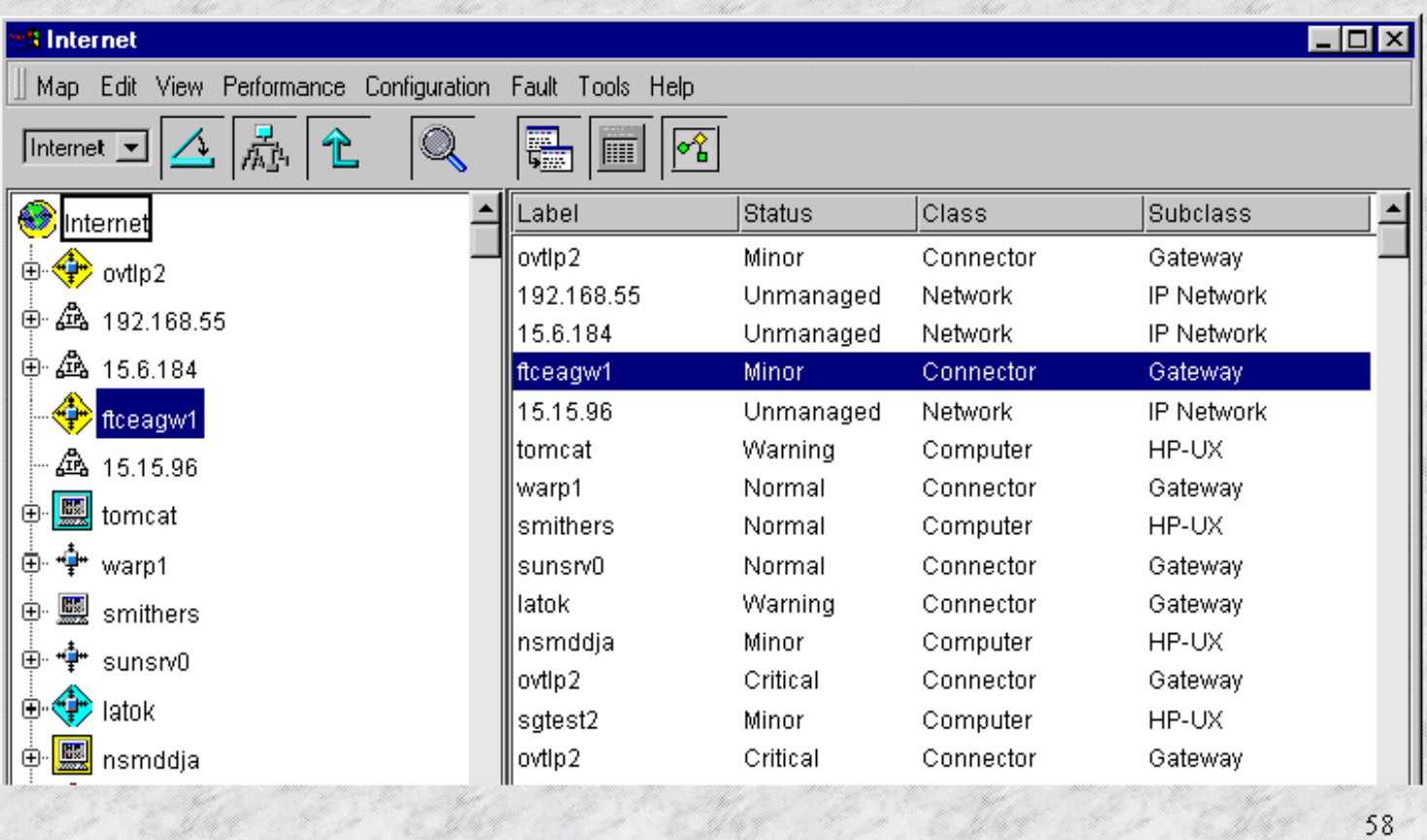
The Launcher Window



The Network Presenter Window

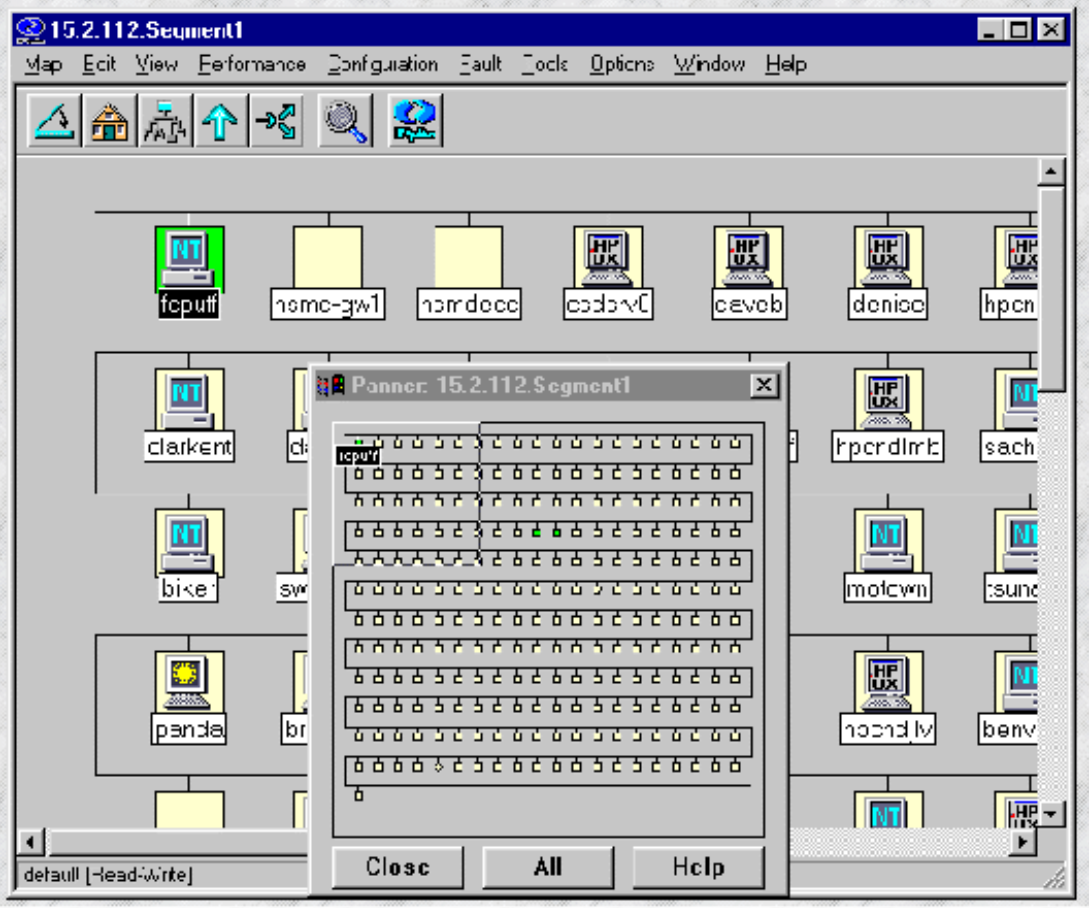


Network Presenter Tabular View



Slide 58 of 70

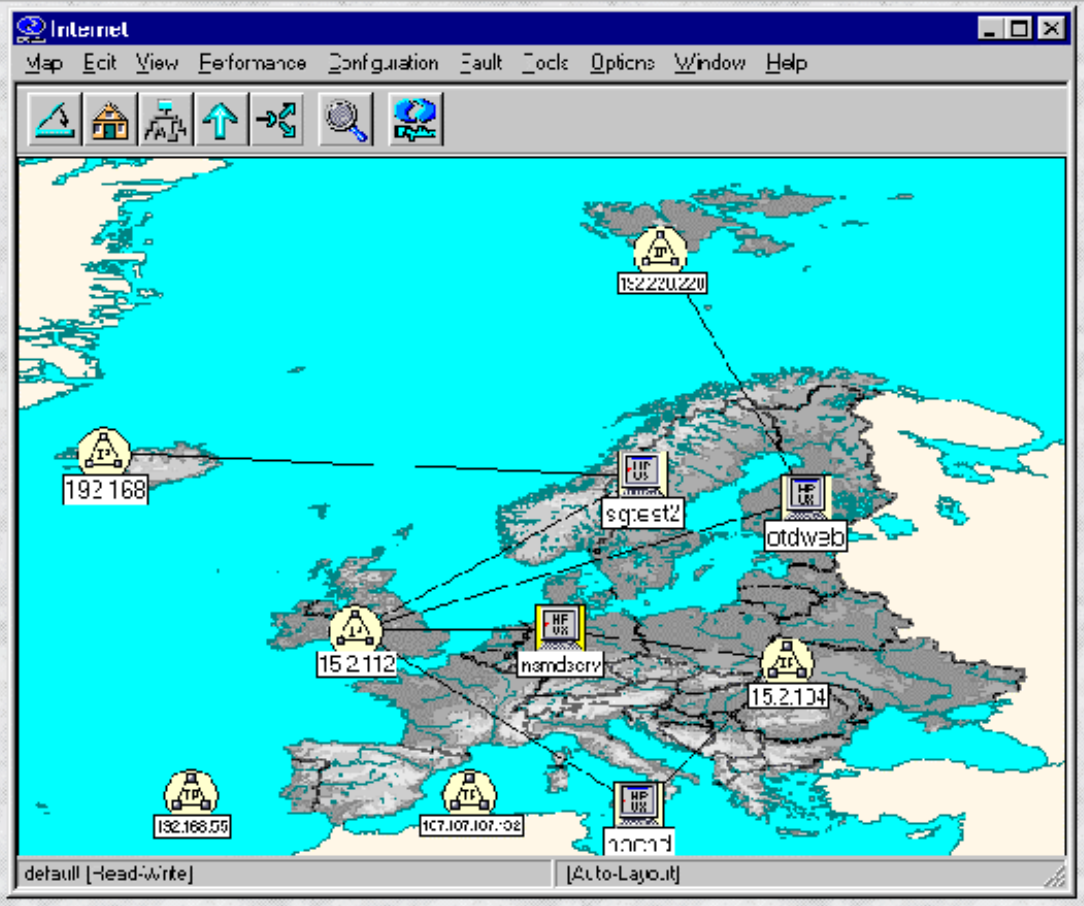
Using Pan and Zoom



59

Slide 59 of 70

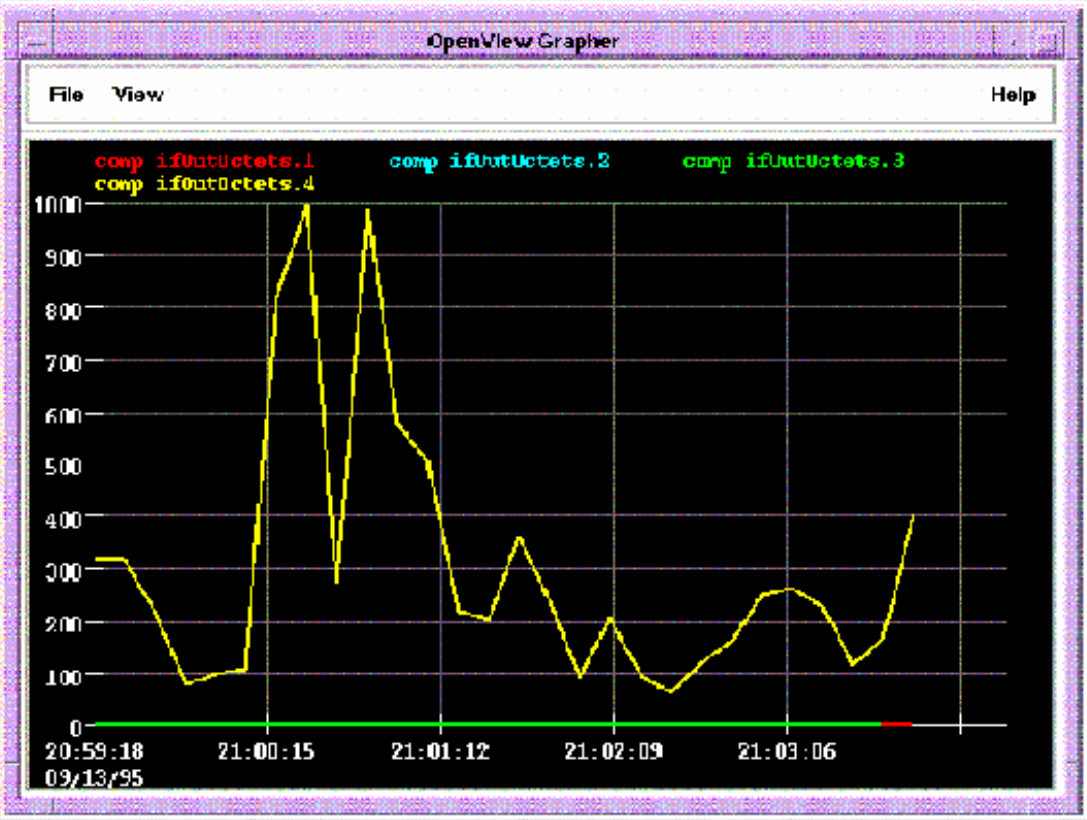
Adding Submap Backgrounds



60

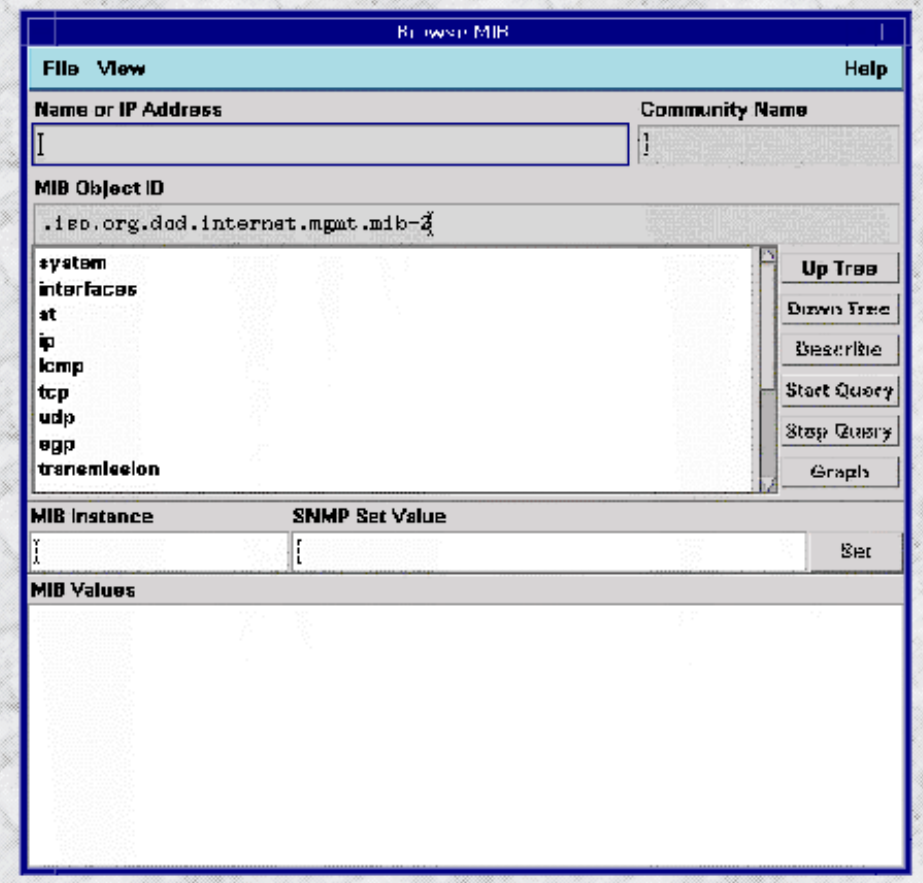
Slide 60 of 70

Graphing Selected MIB Values



61

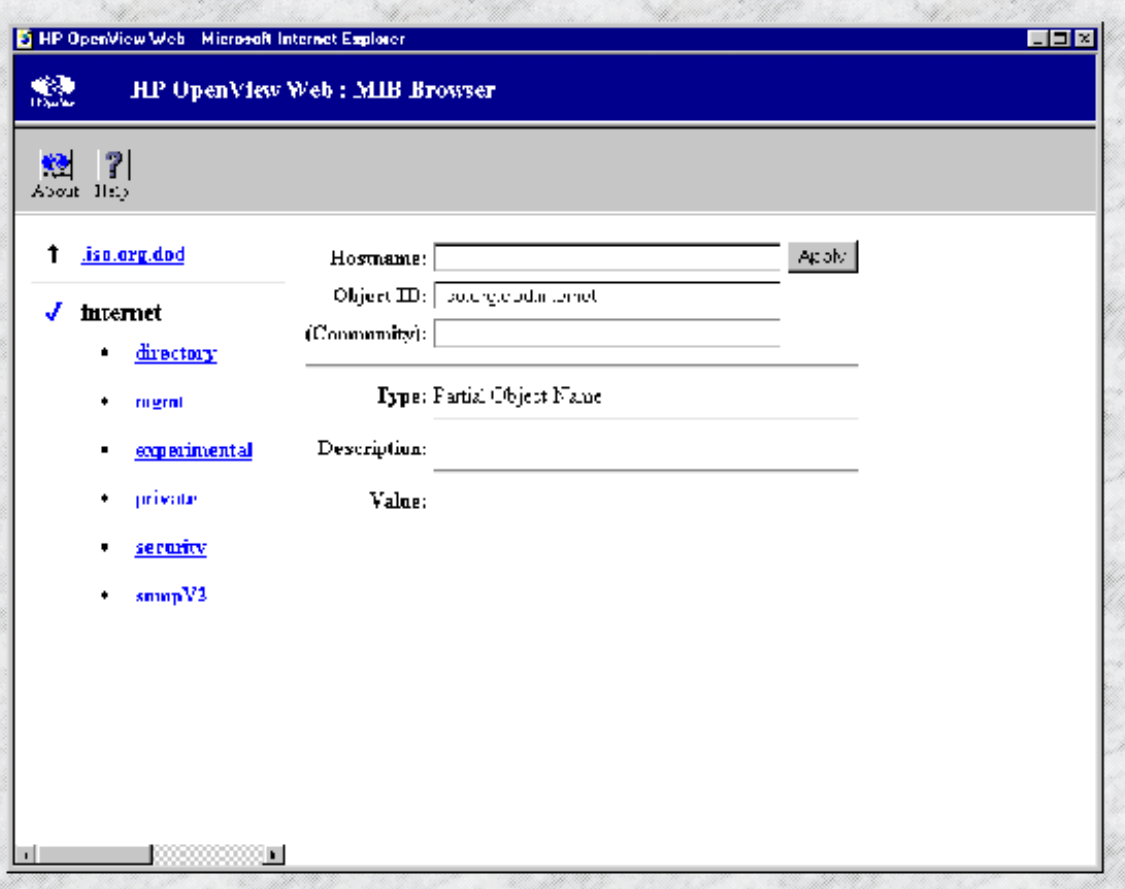
Using the MIB Browser



62

Slide 62 of 70

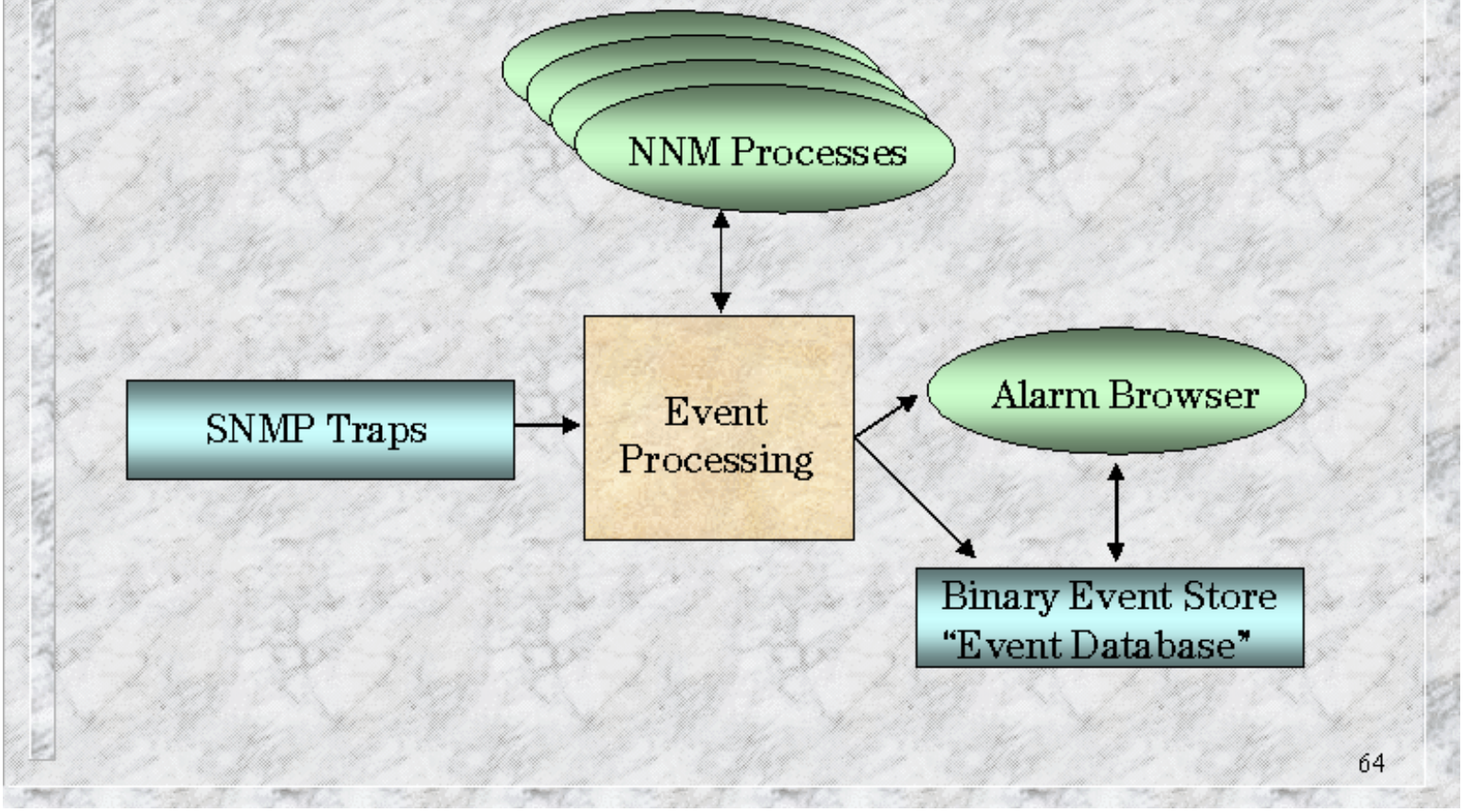
Web Based SNMP MIB Browser



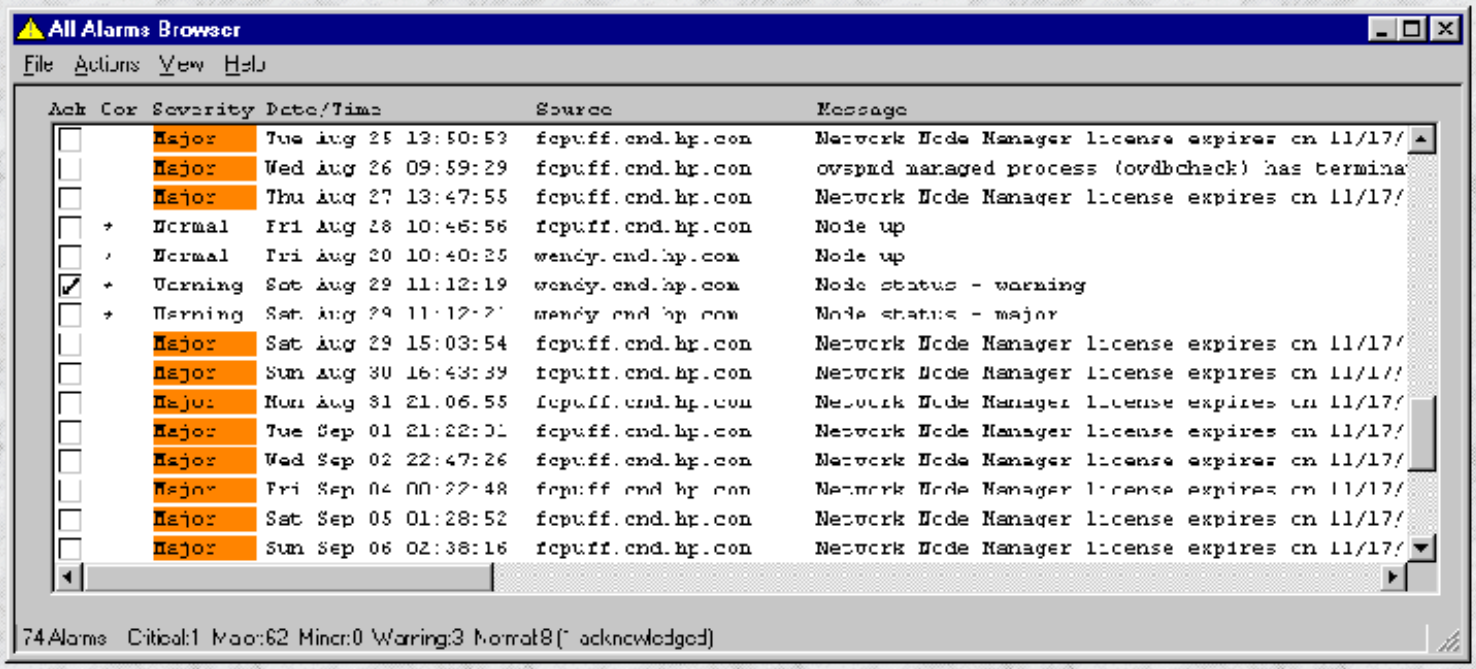
63

Slide 63 of 70

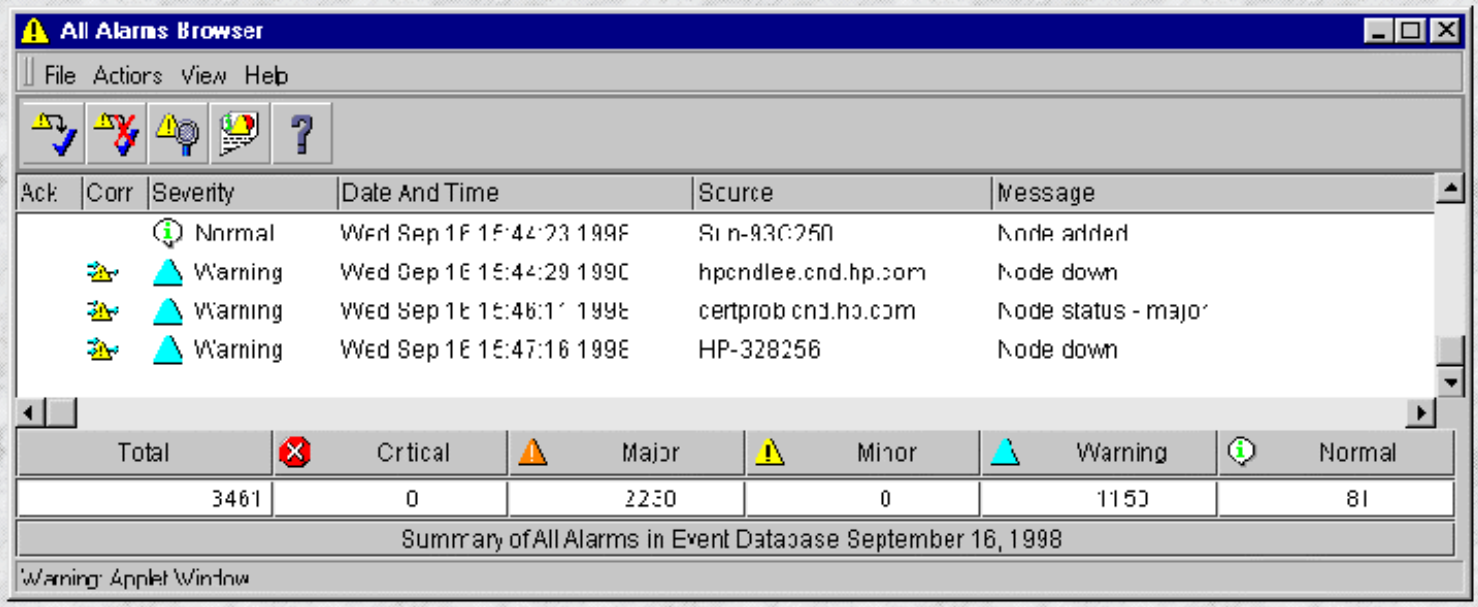
Introduction to Events and Alarms



Browsing NNM Alarms



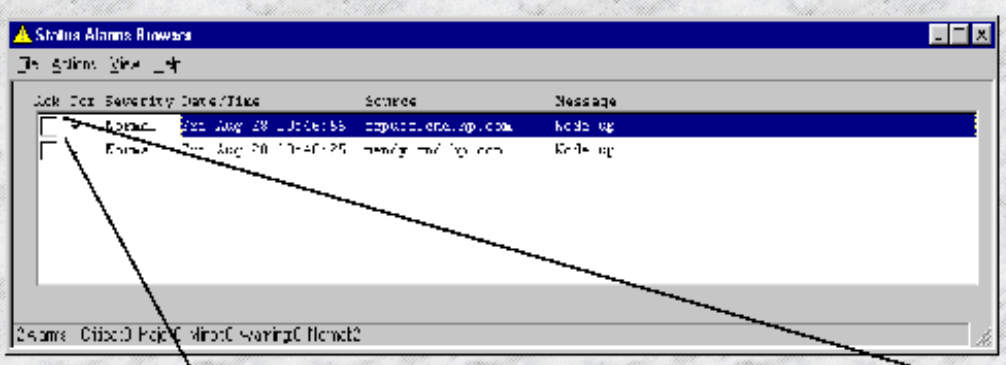
Web Based Alarms Browser

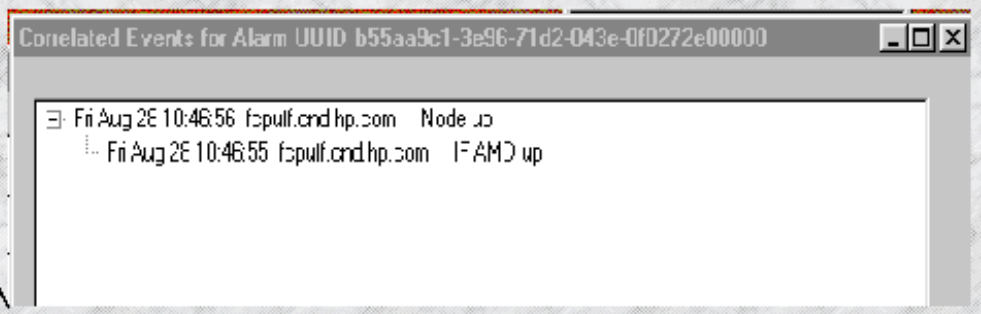


66

Slide 66 of 70

Correlated Events



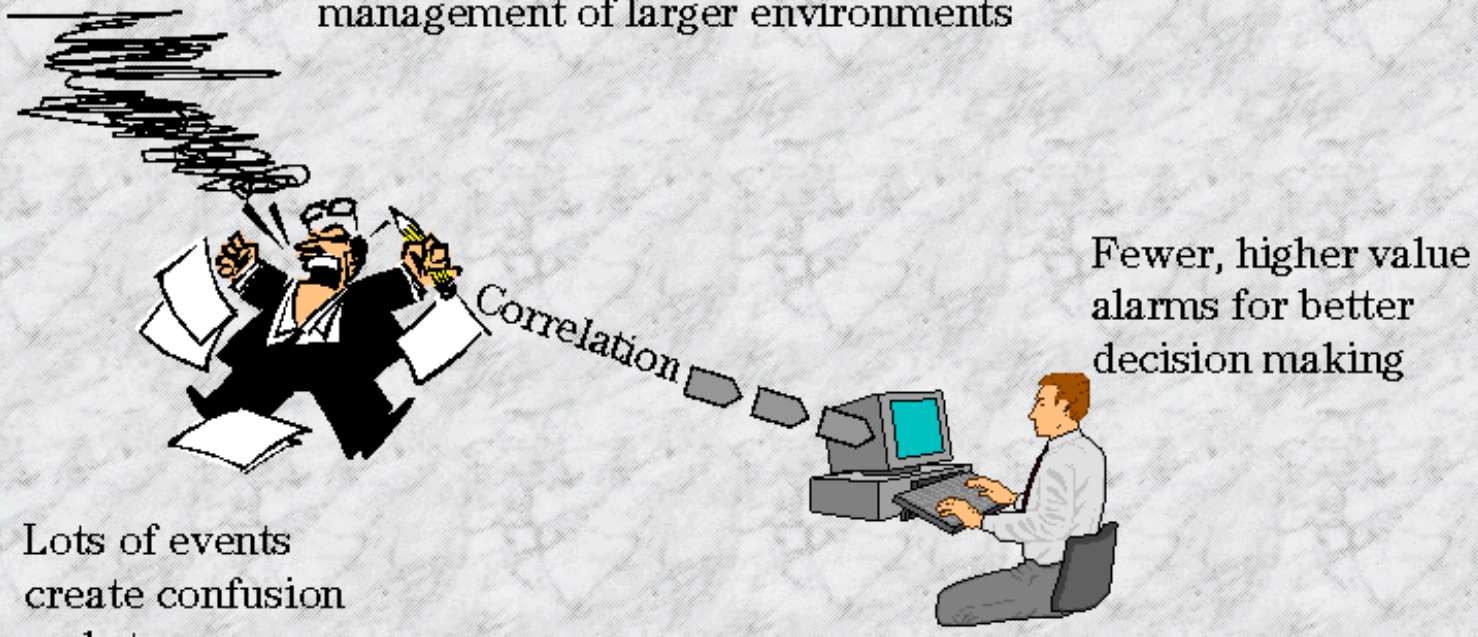


67

Slide 67 of 70

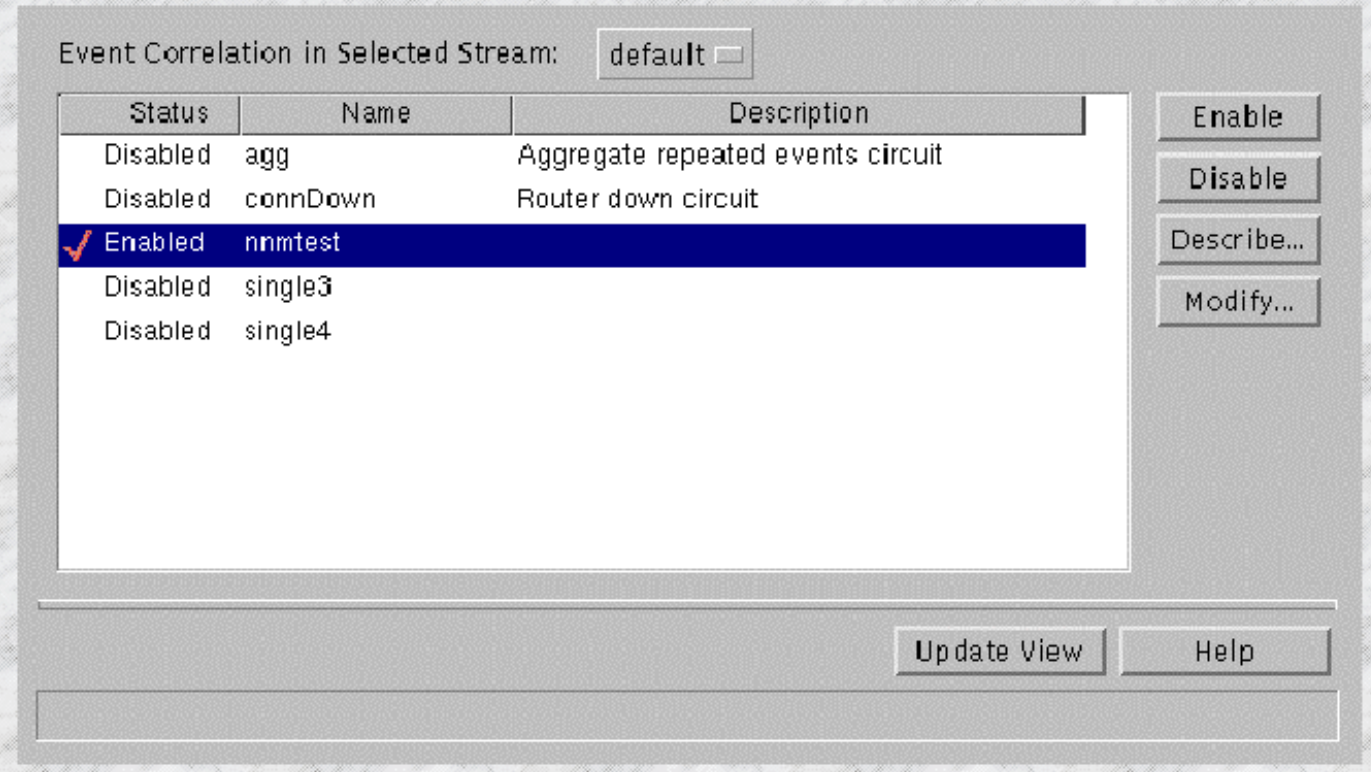
The Need for Event Correlation

- ECS' high-speed event correlation can eliminate event storms producing just a few highly useful events
- …enhancing network management quality, and allowing the management of larger environments



68

The ECS Event Configuration GUI



69

Accessing Object Descriptions