
High Availability Observatory -

Why I'd Want It If I Were You

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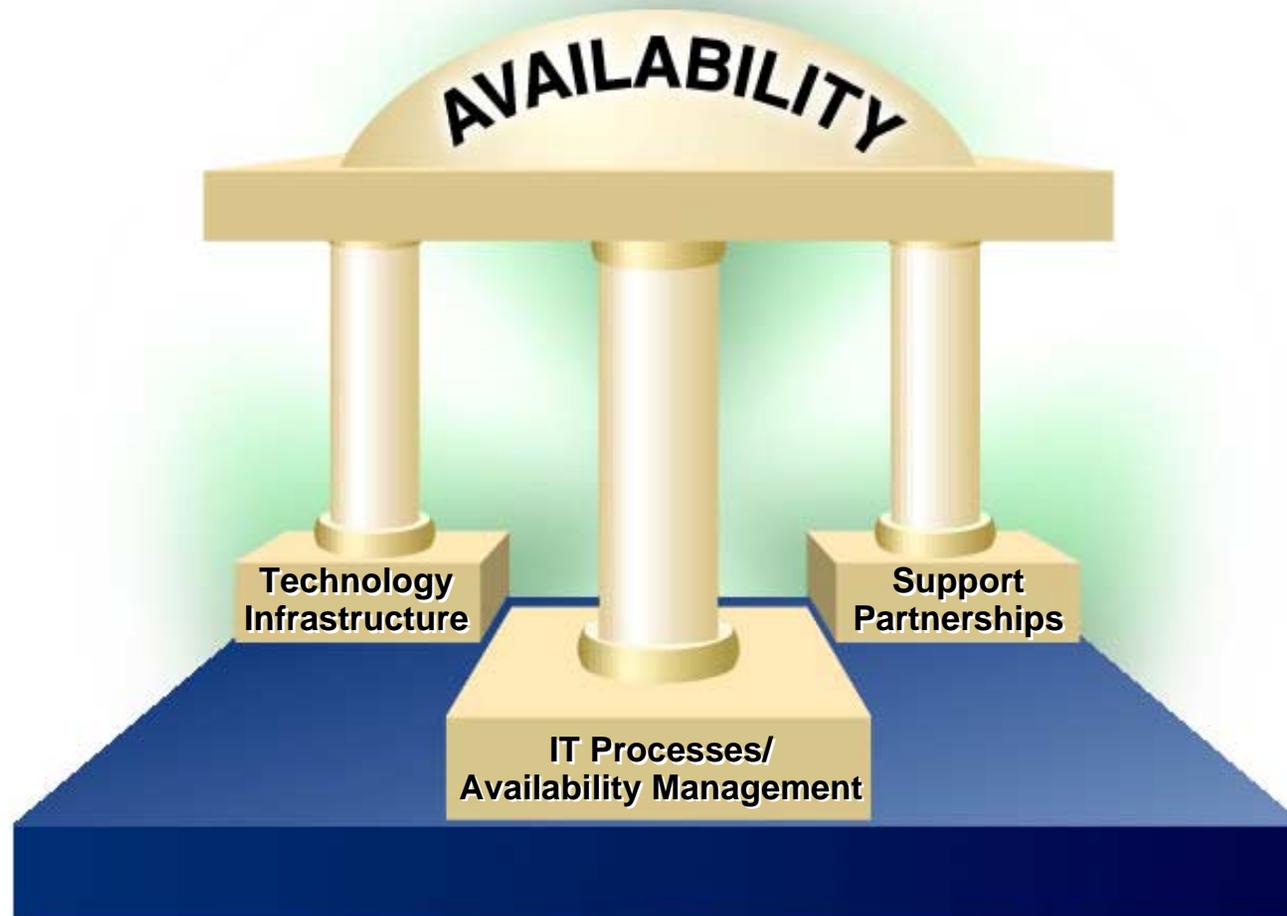
Introducing HP's High Availability Observatory



- ✓ High availability business need
- ✓ How to achieve high availability
- ✓ The benefits of HP's High Availability Observatory (HAO)
- ✓ How the HAO works

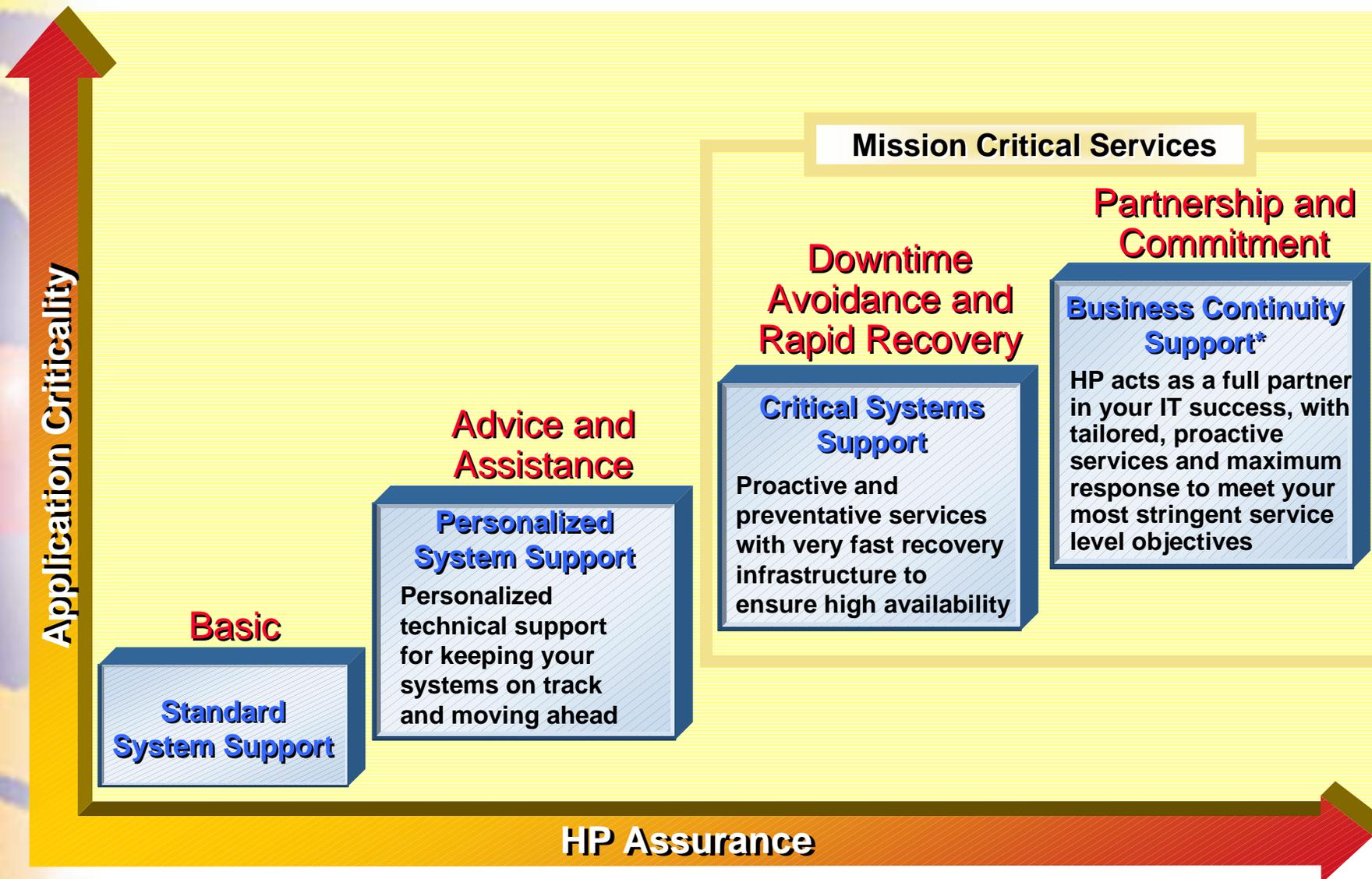
***The HAO Is Changing the Face
of Mission Critical Support***

Achieving High Availability



“Build It Right, Keep It Running, and Fix It Fast”

HP Provides Support for Mission Critical E-Services



*BCS is not available for Windows Servers customers. See note

Taking Mission Critical Service to New Heights



The High Availability Observatory for HP-UX Sets a New Standard

Mission Critical Services

Significantly Raises Systems Availability

- Continually searches for and predicts potential problems
- Automates configuration analysis and decreases risk of operating with atypical system configurations

Stabilizes the IT Environment

- Easily identifies missing security, application, and critical patches, and bad firmware
- Tracks the state of system configuration and easily highlights configuration changes

Increases the Value of HP Mission Critical Services

- Simplifies customers' patch management
- Dramatically increases the speed and effectiveness of troubleshooting Cisco and HP network problems
- Puts critical information in the hands of HP experts to help them resolve issues faster

HAO Scope



What's Supported Now:

- HP9000 Servers
- HP Netserver, Compaq and Dell PC Servers
- HP Disk Array including XP
- HP-UX 10.20, 11.0, 11.04 (VVOS), 11.i
- Microsoft Windows NT 4.0
- Microsoft Windows 2000 Server Edition
- HP/Cisco Routers, Cisco Catalyst Switches
- BroadVision, SAP applications

NOT currently supported by the HAO:

- HP9000 s700 Workstations
- HP3000 Enterprise Servers
- OS: HP-UX 9.x, MPE

HAO Is/Is Not Summary



HAO Is:

- Available for BCS* and CSS support contracts
- An enabler for HP Mission Critical Services that provides critical information and capabilities to HP support engineers
- A suite of technologies and tools, a high-speed link to HP, and the Mission Critical Support Centers
- The platform for additional preventive support and call home capabilities
- Available for HP-UX and Windows Servers platforms
- A real-time failure notification application (Superdome systems)

*BCS is not available for Windows Servers customers

HAO Is Not:

- A product with a \$ price
- A service product or service level
- Replacing the way we currently deliver mission critical support
- A tool for the customer's sys admin team (except for HP Configuration Tracker)
- A replacement for OpenView, ITO, or other tools that the customer may currently be using
- An on-line monitoring tool that initiates immediate corrective action or changes for the customer

What is the HAO?



The HAO is a suite of technologies, tools, and processes that enable our customers to achieve the highest levels of availability

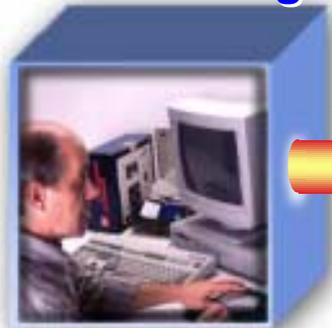
- On-site HP Support Node with innovative software tools and technology
- Secure, high-speed link to HP's Mission Critical Support Center
- Mission Critical Support Center to coordinate HAO support activities

Delivering Mission Critical Services



Mission Critical Services

High Availability Observatory



Customer Site

*Remote diagnostic
and support tools*

Secure High-speed Link



Mission Critical Support Center

*HP's "glass room"
staffed 24X7*

- Unique support partnerships
 - World-class people and processes
- Enabled by...*
- Cutting-edge technology

HAO Architecture - Customer Site Features



Mission Critical Services

Customer Site



HP Response Center



HP Support Node

- Configuration tracking
- Network topology tracking
- Remote diagnostics
- System availability measurement*

Scheduled System Health Polling

- Failure event notification*
- Failure prediction capabilities*

Remote Problem Resolution

Information Transfer

Phone Home Problem Prediction

HAO Architecture - HP's MCSC Features



Mission Critical Services

Customer Site



HP Response Center



HP Mission Critical Support Center

- HP's "glass room"
- **Configuration Analyzer*** identifies missing critical, application, security and recalled patches and firmware updates
- **Systematic Notification*** to HP support engineers for further analysis and action
- **Network Tools** store network topologies and track changes
- **MCSC Monitor** displays configuration data

Remote Problem Resolution

Information Transfer

Phone Home Problem Prediction

Benefits of the HAO Features



Mission Critical Services

Customer Site

HP Support Node

Configuration and network topology tracking captures the state of IT environment and highlights changes. System availability is accurately measured.

Scheduled System Health Polling

HP Predictive alerts HP support engineers to problems and potential failures

HP Event Notifier

communicates real-time hardware failure events to HP



HP Response Center

HP Mission Critical Support Center

Configuration Analyzer

predicts and analyzes problems before they occur and ensures a stable customer IT environment

Systematic Notification

ensures critical information is in the hands of HP experts for analysis and action

Network Tools

enable precise and fast troubleshooting of network problems

MCSC Monitor

enables faster, more accurate troubleshooting of system problems

Remote Problem Resolution

Information Transfer

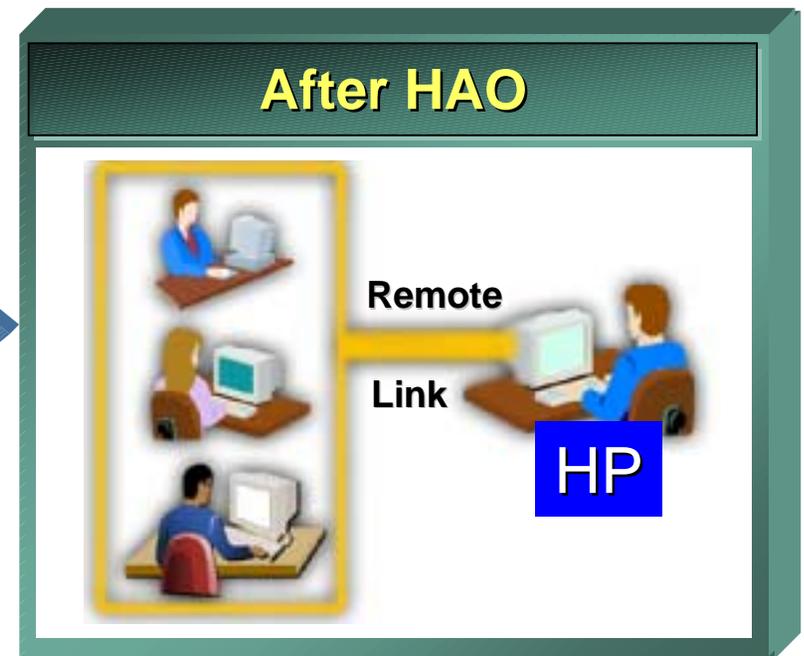
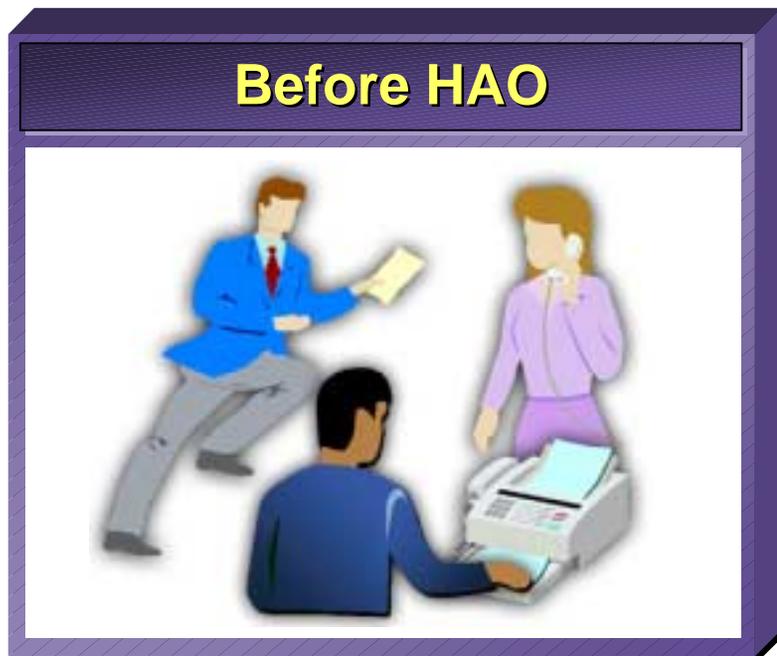
Phone Home Problem Prediction

Comparison of the HAO's HP-UX/Windows Servers Functionality



FUNCTIONALITY	TOOL	UNIX	TOOL	NT/2000
Remote diagnostic capabilities	Dedicated ISDN line	X	Dedicated ISDN line	X
Configuration tracking	Configuration Tracker	X	Configuration Tracker	X
Configuration analysis / Systematic notification of an ASE	Configuration Analyzer	X		
Hardware failure event notification	HP Predictive	X		
Potential hardware problem alerts	HP Predictive	X		
Network troubleshooting tools	NNM	X	NNM	X
Realtime hardware event detection (Superdome only)	HP Event Notifier	X		

Scenario #1: HP Configuration Tracker



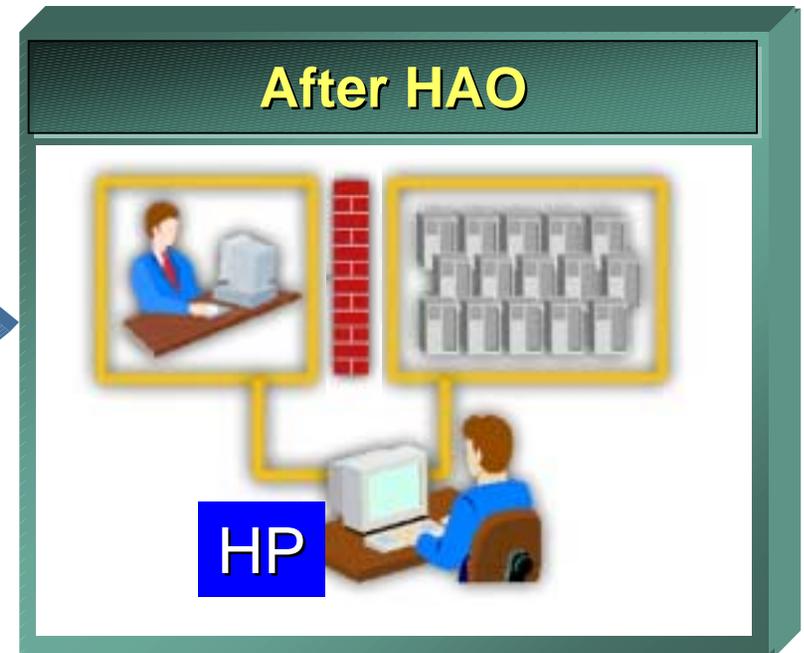
- Problem occurs due to configuration change
- Customer manually gathers configuration information to identify “what’s changed?”
- Manually locates differences
- Information manually sent to HP

Result: Most time is spent trying to get latest config info... which may not exist

- HP systematically takes snapshots of system configuration
- HP can easily identify configuration changes and access configuration change history to pinpoint the problem
- HP can remotely access the system to fix the problem found

Result: HP quickly identifies problem and implements solution

Scenario #2: Hardware Failure Event Notification



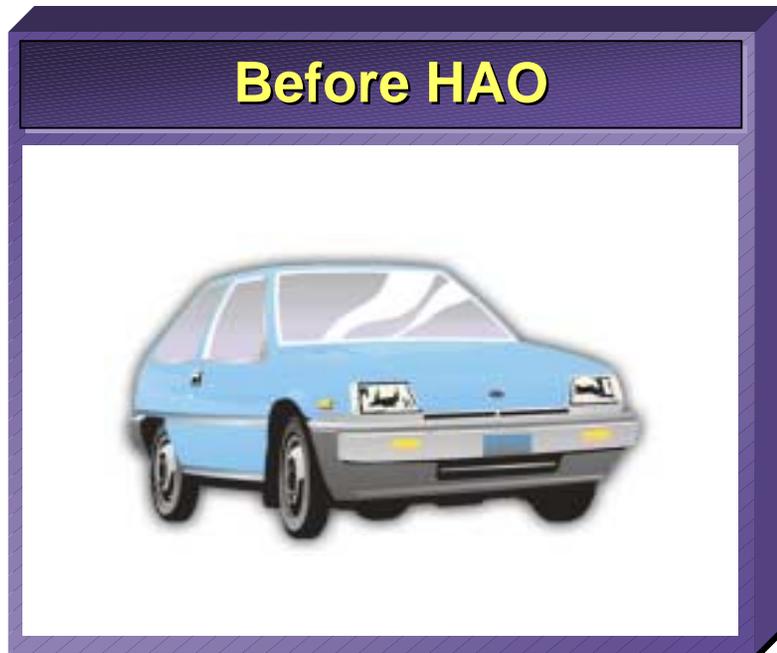
- Customer unaware of mirrored disk failure
- If noticed, customer calls HP for help

Result: Increased risk of running on unprotected or singular components

- Failure event automatically transmitted to HP
- Repair visit can be scheduled

Result: Lowered risk of running on single component

Scenario #3: Proactive Support with Critical Patch Reviews



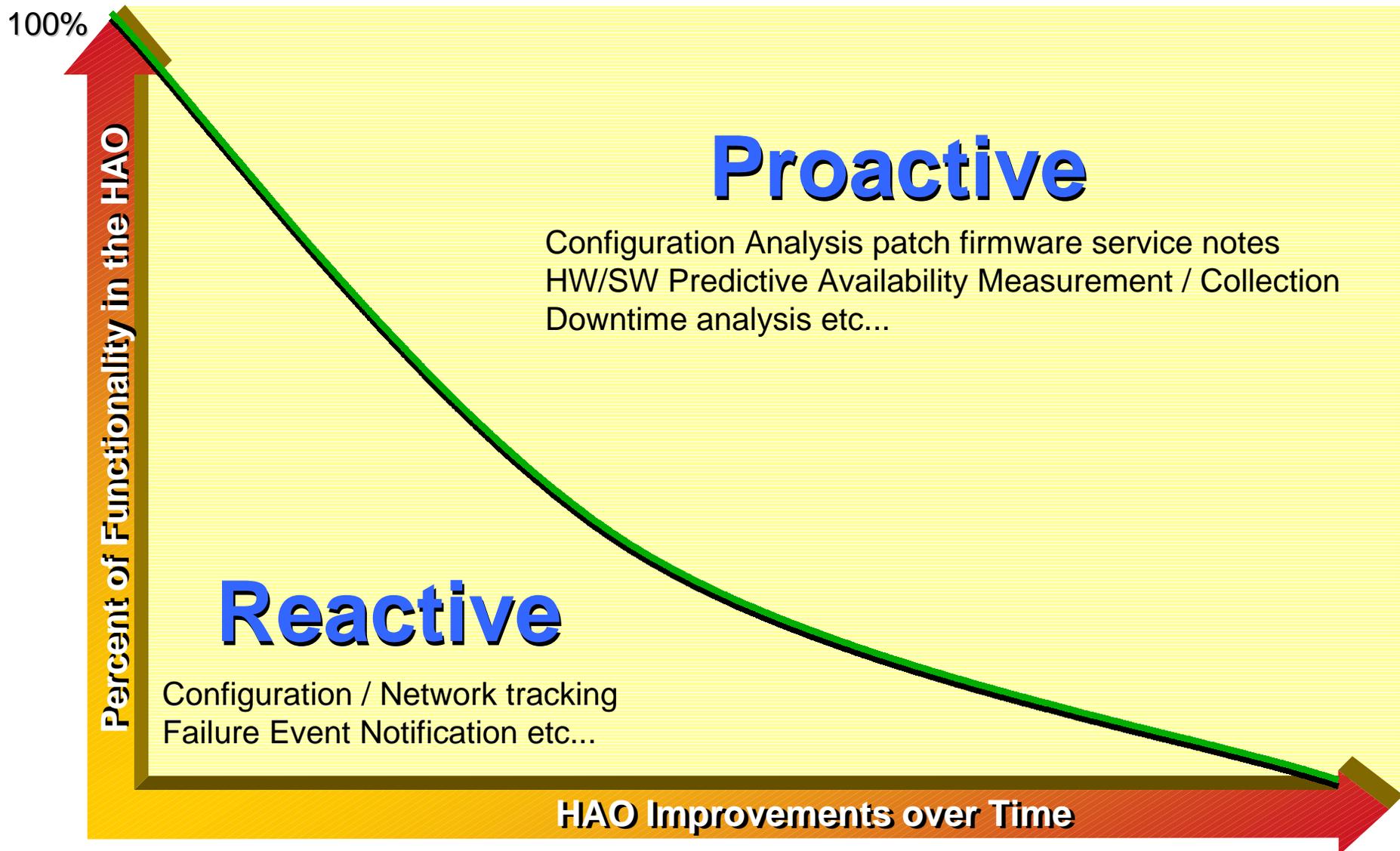
- Customer and HP manually identify missing patches

Result: Customer may not get to patch before issue is critical

- Systematic daily analysis for patch and firmware irregularities

Result: HP works with customer to proactively address configuration issues before they impact the operating environment

What will the HAO Focus On?



Features of the HAO for HP-UX



- Transmission of customer's system configuration and network topology data between HP Support Node and HP's Mission Critical Support Center
- Automated system configuration analysis for patch (missing critical, security, application and recalled patches), firmware updates, and service note conditions
- Automatic opening of trouble ticket to alert HP support engineers based on results of analysis of customer's configuration
- Storage of system configuration data and network topology data within MCSC
- Viewing of customer's hardware, operating system, select software applications, and network change histories and modifications
- Hardware failure alerts to the MCSC
- System availability measurement

Features of the HAO for Windows Servers



- Transmission of customer's network topology data between HP Support Node and HP's Mission Critical Support Center
- Storage of system configuration data and network topology data within HP Response Center
- Viewing of customer's hardware, software, and network change histories and modifications
- Dedicated ISDN line
- Automated configuration tracking
- Detection of Windows Servers systems configuration and network changes

The HAO On-Site Technology



- HP Support Node
 - ◆ HP-owned and operated
 - ◆ HP9000 Series 700 Workstation
- HP Support Node Router
 - ◆ HP-owned and operated
 - ◆ Cisco Router
- Leading Edge Technology:
 - ◆ configuration tracking
 - ◆ network topology tracking
 - ◆ failure event notification
 - ◆ system availability measurement
 - ◆ secure high-speed link
 - ◆ other support tools

HAO for HP-UX Tools



HAO “Flagship” Technologies:

- **HP Configuration Tracker** - collects configuration data and tracks configuration changes
- **Configuration Analyzer** - systematically analyzes customer’s configuration data for irregularities
- **HP OpenView Network Node Manager** - tracks network topology and device status
- **HA-NISP** - packages and sends customer’s network topology to HP to track network topology changes
- **HP Predictive with Event Notification** - notifies the Mission Critical Support Center of hardware failures and potential failures
- **HP Event Notifier (Superdome only)** - Detects hardware events on a real-time basis
- **MCSC Monitor** - displays current and historical configuration data at the MCSC
- **High Availability Meter** - measures system availability

Other support tools:

- ◆ **Q4** - tool for analyzing core dump files
- ◆ **SharedX** - application sharing tool
- ◆ **Secure Shell** - tool to enable remote connectivity
- ◆ **TOM** - email transport mechanism
- ◆ **Support Node Health/Link Checker** - tool to check health of support node and link

HAO for Windows Servers Software Tools



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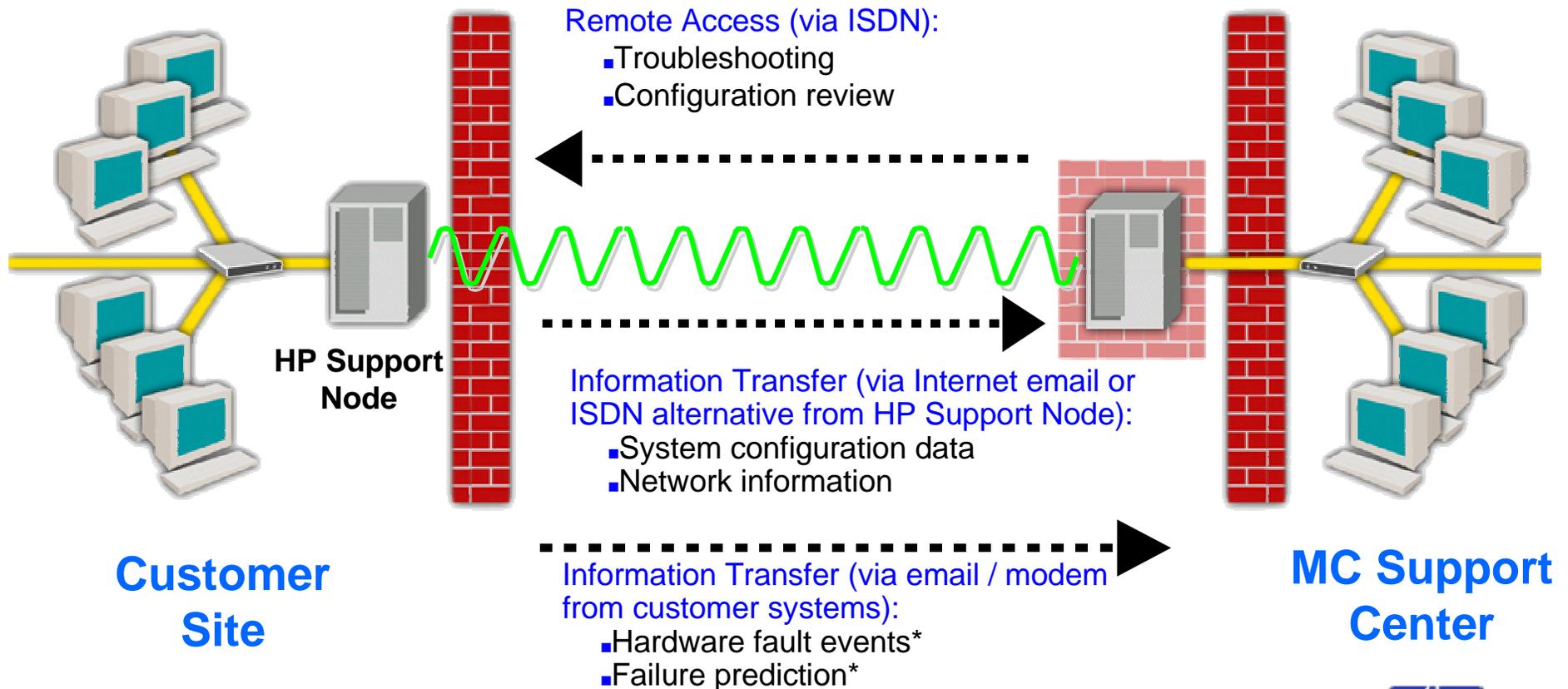
- ◆ **Virtual Network Computing (VNC)** - application sharing tool
- ◆ **Secure Shell** - tool to enable remote connectivity
- ◆ **TOM** - email transport mechanism
- ◆ **Support Node Health/Link Checker** - tool to check health of support node and link

The Link to HP



Secure, high-speed link for remote access and information transfer

- Dedicated ISDN line for remote access
- Available on demand 24x365
- HP accesses customer systems only with customer's authorization
- End-to-end encryption of information



Mission Critical Support Center (MCSC)



- A critical enabler of the HAO technology and high availability support processes
- Contains data analysis tools, replication equipment, and reporting tools

HP Configuration Tracker



- ✓ Systematically collects configuration data for systems and network interconnect devices.
- ✓ Identifies differences in configuration to help answer the critical question: "What's changed?"
- ✓ Automatically transmits configuration data to the Mission Critical Support Center's "Configuration Analyzer" servers for proactive analysis
 - ◆ Snapshots of customer configurations occur at customer-configurable intervals
 - ◆ Significantly reduces time to gather critical information
 - ◆ Configuration data is immediately accessible by HP support engineers
 - ◆ You and the HP support engineers view the same critical information

HP Configuration Analyzer



- ✓ Systematically analyzes customer configurations for patch, service note, and firmware irregularities
- ✓ Automatically notifies HP support engineers of potential problems
 - ◆ Configuration data is sent via email from the HP Support Node to the Mission Critical Support Center for analysis
 - ◆ Trouble ticket systematically opened to notify HP support engineers of potential problems
 - ◆ HP support engineers investigate and recommend solution

HP OpenView Network Node Manager



- ✓ Tracks status of network interconnect devices
- ✓ Gathers network topology within a specified Management Region
 - ◆ Displays an up-to-date map of mission critical-designated servers and interconnect devices to HP support engineers
 - ◆ Collects status data and logs status changes of servers, bridges, routers, hubs, and switches
 - ◆ Enables rapid isolation of a network problem

HA-NISP



- ✓ Periodically packages and transmits network topology information to HP
- ✓ Enables authorized HP support engineers to view your network information when needed
- ✓ Retains history of network topology changes over time
 - ◆ Network topology is sent via email from the HP Support Node to the Network Support Repository at HP
 - ◆ Enables easy identification of changes in topology
 - ◆ Reduces the time to isolate network problems

HP Predictive Support with Event Notification for HP-UX



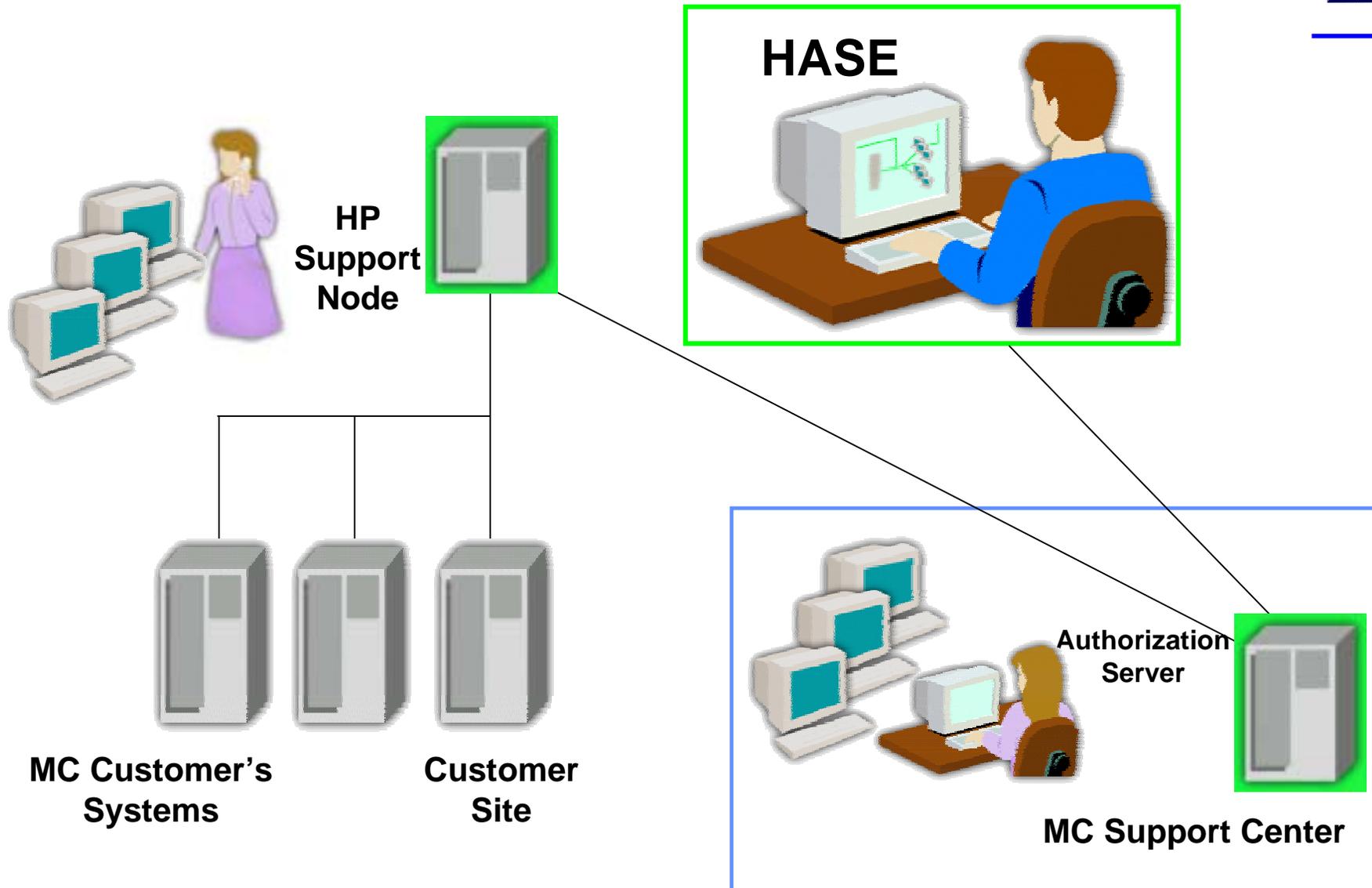
- ✓ Improves system uptime by notifying the Mission Critical Support Center of potential problems
- ✓ Minimizes risk when redundant hardware fails so full system capability can be restored
 - ◆ MC/ServiceGuard switch-over notification
 - ◆ HP Disk Array component failure detection
 - ◆ Multi-CPU failure notification
 - ◆ Detects potential problems with memory, disks, tapes
 - ◆ E-mail and/or modem connectivity between customer site and the Mission Critical Support Center

HP Event Notifier for HP-UX



- ✓ Delivers automatic, real-time communication of system events to the MCSC
- ✓ Provides system event monitoring and analysis for identification of failure conditions before problems become significant
- ✓ Leverages Network Node Manager (NNM) to detect and view EMS hardware events
- ✓ Transfers encrypted event information to the Mission Critical Support Center
- ✓ Available only for Superdome HP-UX 11.i

The HAO Users



What is HP Doing to Address Any Security Needs?



- Invested significant resources
- Developed HAO-specific policies and procedures
- Utilized secure technology
- Worked with an external firm
- Will conduct periodic audits
- Will work with the customer

Overview of HP's HAO Security Process - The Four A's



- **Access**

- ✓ All access to the HP Support Node is channeled through secure servers and routers at the MCSC
- ✓ Customers restrict which machines are accessible inside their environment
- ✓ Routers use industry-standard ISDN network and router security features

- **Authentication**

-] Access to customers' systems is restricted to authorized HP support personnel
-] Aggressive password management techniques are used
-] Routers authenticate each other

Overview of HP's HAO Security Process - The Four A's



•Authorization

- ‖ HAO processes restrict actions that authorized HP personnel can perform in the customer's environment
- ‖ Customers authorize all access to their environment and level of remote capabilities
- ‖ Only authorized traffic is allowed into the MCSC

•Audit

- ‖ The HAO monitors all connections into the customers' environment, and audit logs are regularly checked by HP
- ‖ Audits ensure that HP is doing its part to ensure the security of the customers' environment
- ‖ The HAO employs a full-time security expert

What Is the Investment?



- HP needs to partner with you:
 - physical space for on-site technology
 - ISDN line and Internet e-mail connectivity
 - installation information
 - installation time

- Minimal system impact

The HAO and Other Network and System Management / Monitoring Tools



	HP OpenView / Network Node Manager (NNM)	HP OpenView / IT/Operations (ITO)	HP High Availability Observatory (HAO)
Purpose	Monitor and Manage Networks	Monitor and Manage Corporate IT Environments	Monitor Mission Critical Systems and Network
Automatic discovery	X	X	X
Show current status	X	X	X
Automatic corrective reaction	X	X	--
Show configuration history and differences	--	--	X
Automated transfer of information to HP's Mission Critical Support Center	--		X

The HAO Addresses Common Causes of Downtime



Server Hardware	<ul style="list-style-type: none">■ Switchover event notification of disks, controllers, fans, UPS■ Configuration history recorded■ Event notification of multi-CPU's, ServiceGuard events■ Trend analysis of memory, tapes
Disk Drives	<ul style="list-style-type: none">■ HP disk trend analysis and event notification
Server Software Bugs	<ul style="list-style-type: none">■ Configuration history recorded■ Event analysis used in patch management
Application or Database Bugs	<ul style="list-style-type: none">■ Configuration history of patches
Server/Network Performance	<ul style="list-style-type: none">■ Switchover event notification■ Network topology inventoried
Human Error	<ul style="list-style-type: none">■ Changes in configurations identified