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# High Availability Observatory -

## Why I'd Want It If I Were You

Pres067-1of2.ppt

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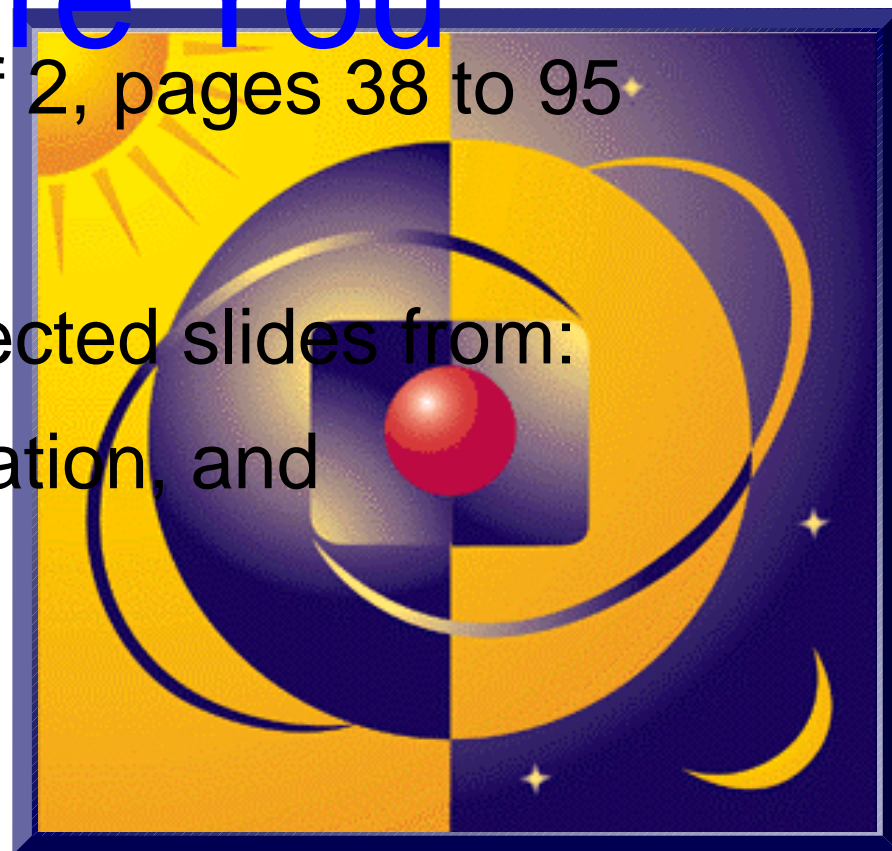


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# High Availability Observatory - Why I'd Want It If I Were You

Presentation #067, file 2 of 2, pages 38 to 95

InterWorks/HPWorld - Selected slides from:  
HAO Installation, Configuration, and  
Maintenance  
(DJM.02/07/01)





# Site Preparation Workbook



## HEWLETT-PACKARD HIGH AVAILABILITY OBSERVATORY SITE PREPARATION WORKBOOK

Release A.03.00.010

Company or Site Name	<input type="text"/>
Address1	<input type="text"/>
Address2	<input type="text"/>
City	<input type="text"/>
State/Province	<input type="text"/>
Zip/Postal Code	<input type="text"/>
Country	<input type="text"/>
Contact Name	<input type="text"/>
Contact Phone	<input type="text"/>
Contact E-mail	<input type="text"/>
HP Contact Name	<input type="text"/>

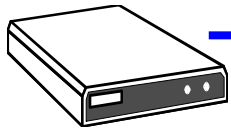
Introduction



[See the HAO Site Preparation Reference Guide for more information.](#)

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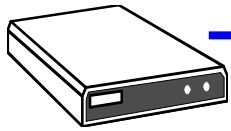


# HP Support Node Router



## About the Cisco Router

- Equipment
  - ◆ Cisco 801 or 802
  - ◆ Cisco 1003 or 1004
  - ◆ Cisco 1603-R or 1604-R
- MCSC System Administrator
  - ◆ Pre-configures router at the MCSC
  - ◆ Sends router to customer site
  - ◆ Configures a primary and secondary LAN
- HASE
  - ◆ Checks router functionality at customer's site
  - ◆ Works with MCSC Administrator



# HP Support Node Router Installation



Cisco 801/802, 1003/1004 or 1603/1604  
Router Configuration Information

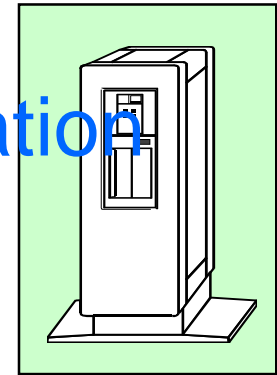
- Expectations of HASE
  - ◆ Plug in ISDN, LAN, Laptop cables
  - ◆ Power up router
  - ◆ Work with MCSC Administrator to verify connectivity and configuration
- Custom installations may require more configuration work at the customer site

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# HP Support Node Workstation (HPSN)



## About the HP Support Node Workstation



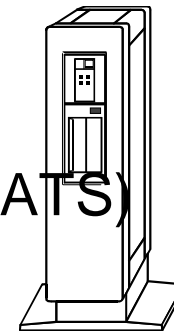
- Equipment:
  - ◆ B180L Series 700 Workstation
- Super Region Staging Center
  - ◆ Installs HPSN with HAO software
  - ◆ Sends to MC customer
- HASE/Account Team Member
  - ◆ Completes the configuration at the customer's site
  - ◆ Performs the backup

# What's on the HP Support Node?



HP Support Node is a depot for HAO Support Tools:

- HA Meter 2.0
- HAO Network Node Manager/ HA-NISP
- HP Configuration Tracker
- mc\_connect script
- Q4 Dump Analyzer
- Remote Administration Tool Suite (RATS)
- Secure Shell (SSH)
- SharedX
- Support Tools Manager (STM)
- Transport Office Manager (TOM)
- Virtual Network Computing (VNC)





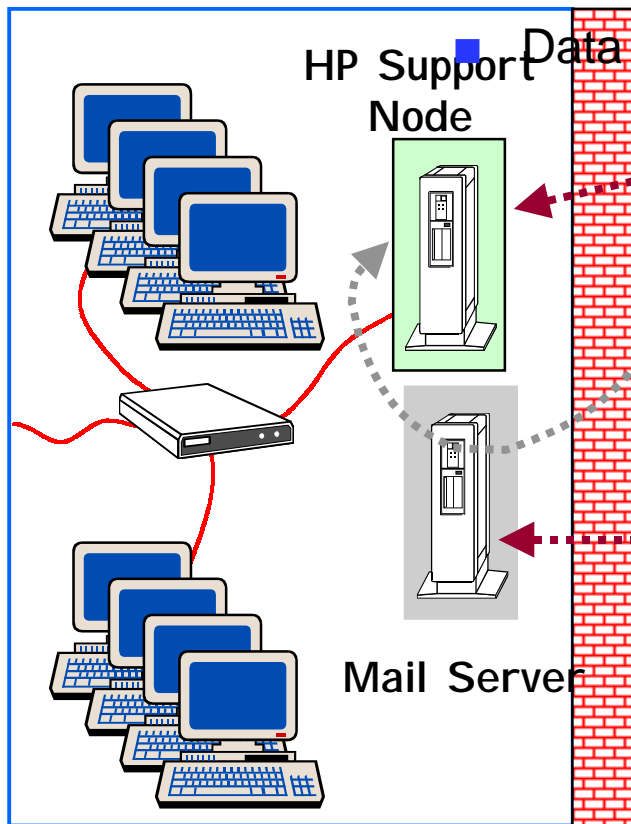
# HAO Provides E-mail Transfer

E-mail over the Internet or ISDN link

Data from the HP Support Node to the MCSC

- Data Transport occurs nightly
- Proactive analysis at MCSC

Customer Site



■ Data encryption

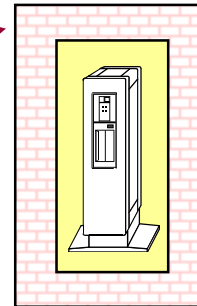
ISDN e-mail

Optional

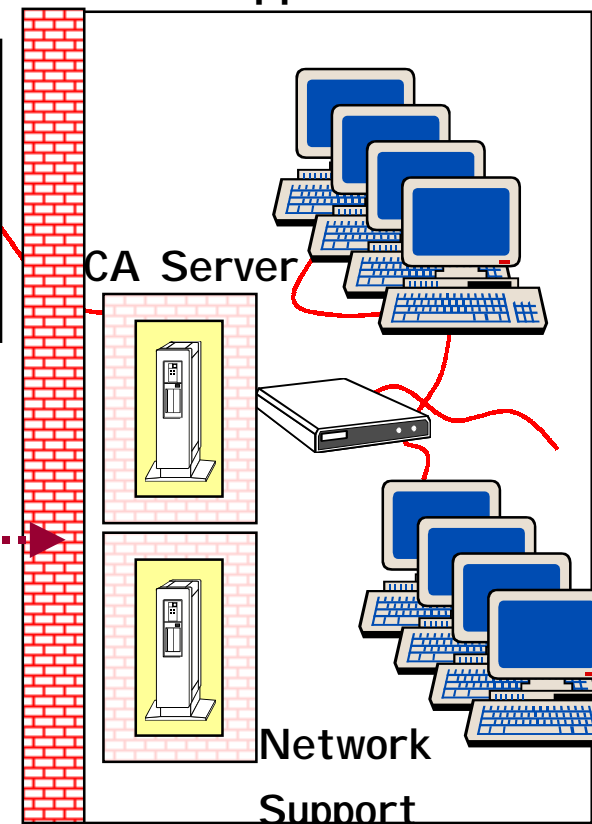
Internet e-mail

- Configuration to CA server
- Network topology to NSR
- Hardware fault events from customer's Systems (e-mail/modem)

RSR



MC Support Center

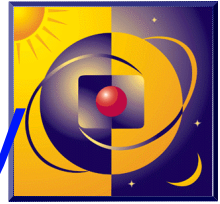


CA Server

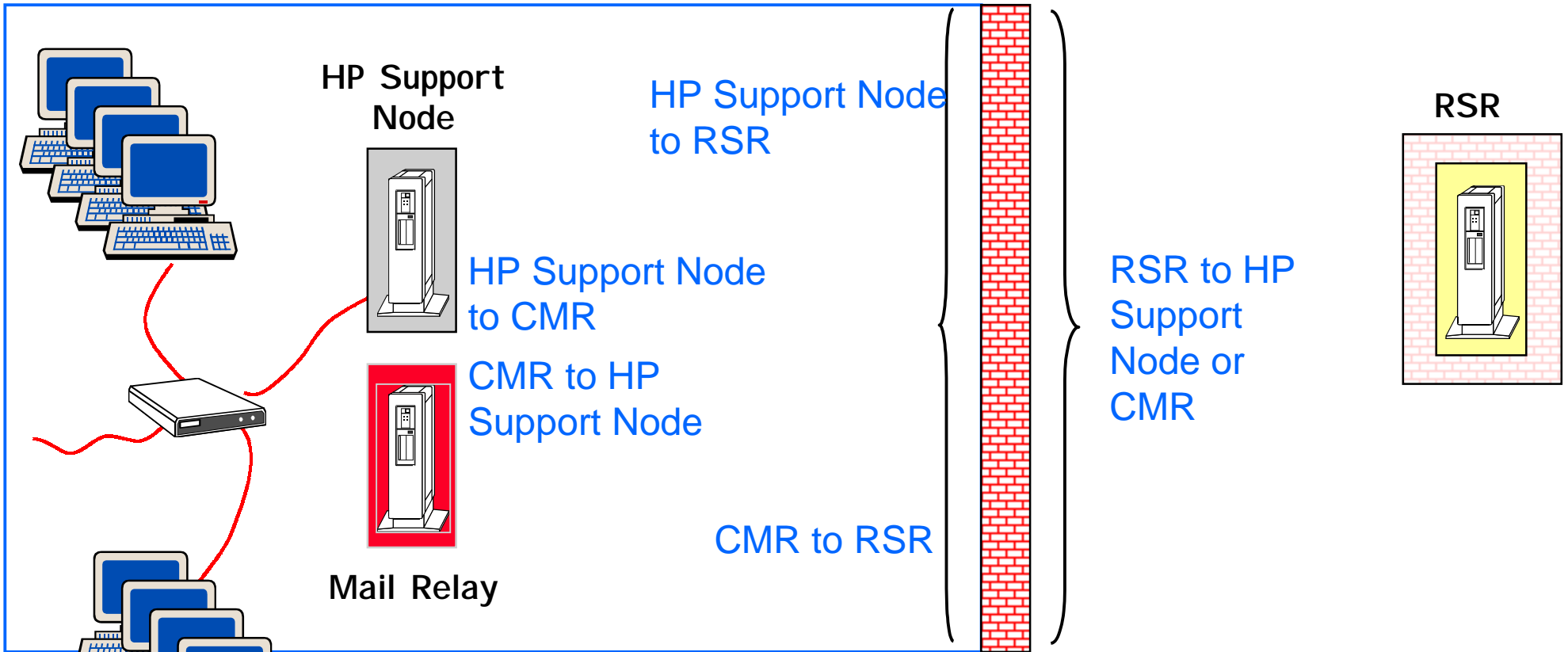
Network Support Repository



# Updates at the Customer Site (ISDN)- Firewall and Mail Relay



## Customer Site



## Changes to Mail Relay

- Paths from CMR to HP Support Node
- Paths from HP Support to CMR

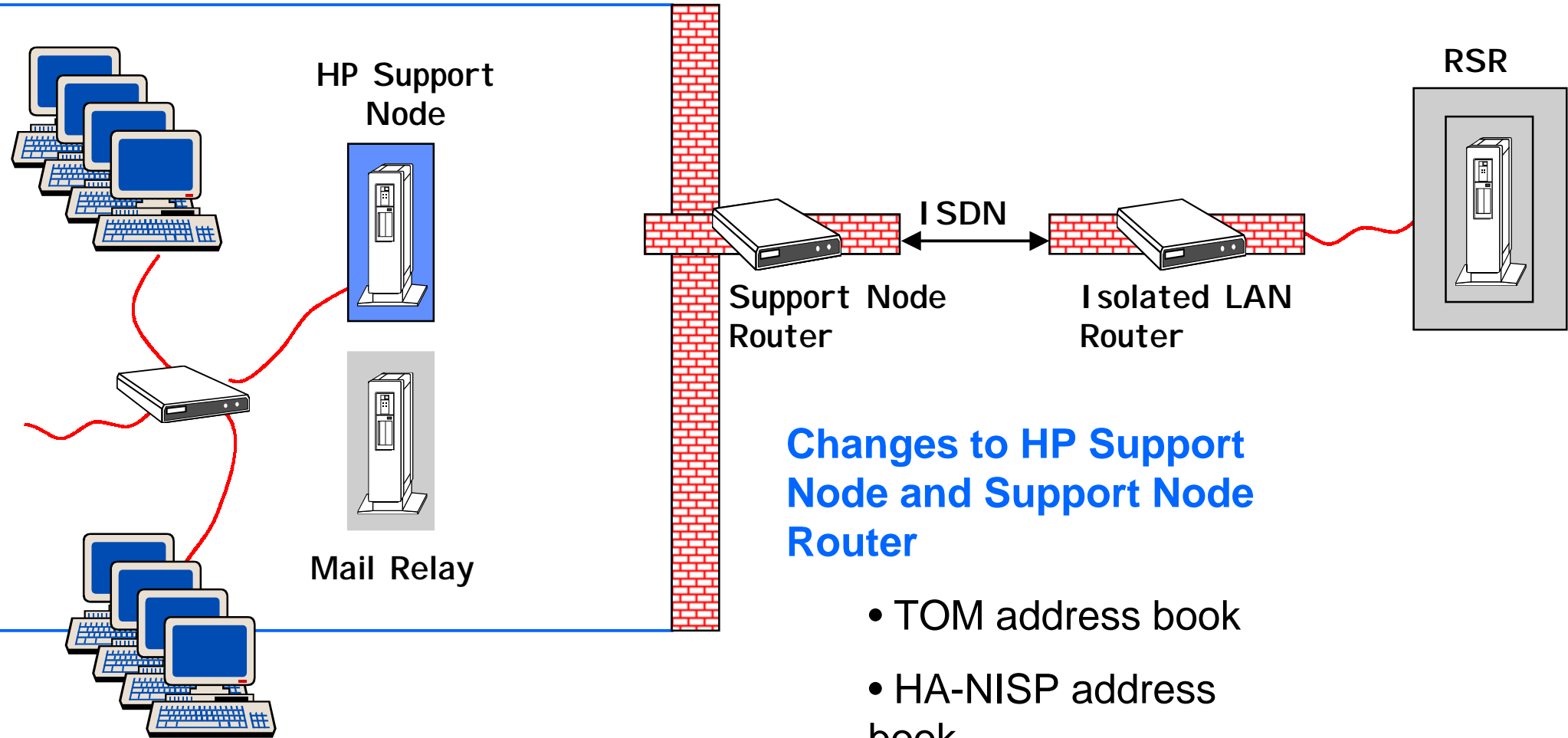
## Changes to firewall

- Port openings in firewall

# Updates at the Customer Site - HP Support Node and Router

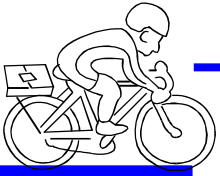


Customer Site



## Changes to HP Support Node and Support Node Router


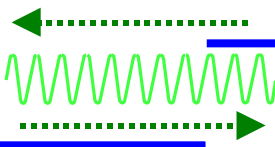
- TOM address book
- HA-NISP address book
- TOM Configuration file
- Access List



# Transport Office Manager - Encryption



- Transport Office Manager (TOM) automatically transports and encrypts data files via e-mail (ISDN and internet).
- Transports Tracker, HA-NISP and HA Meter data to HP
- Provides 56-bit DES (data encryption standard) from the HP Support Node to the MCSC for e-mail over internet and ISDN
- Generates keys on a per-session basis
- Uses public key exchange handshake to generate private key
- Provides encryption for Tracker data only

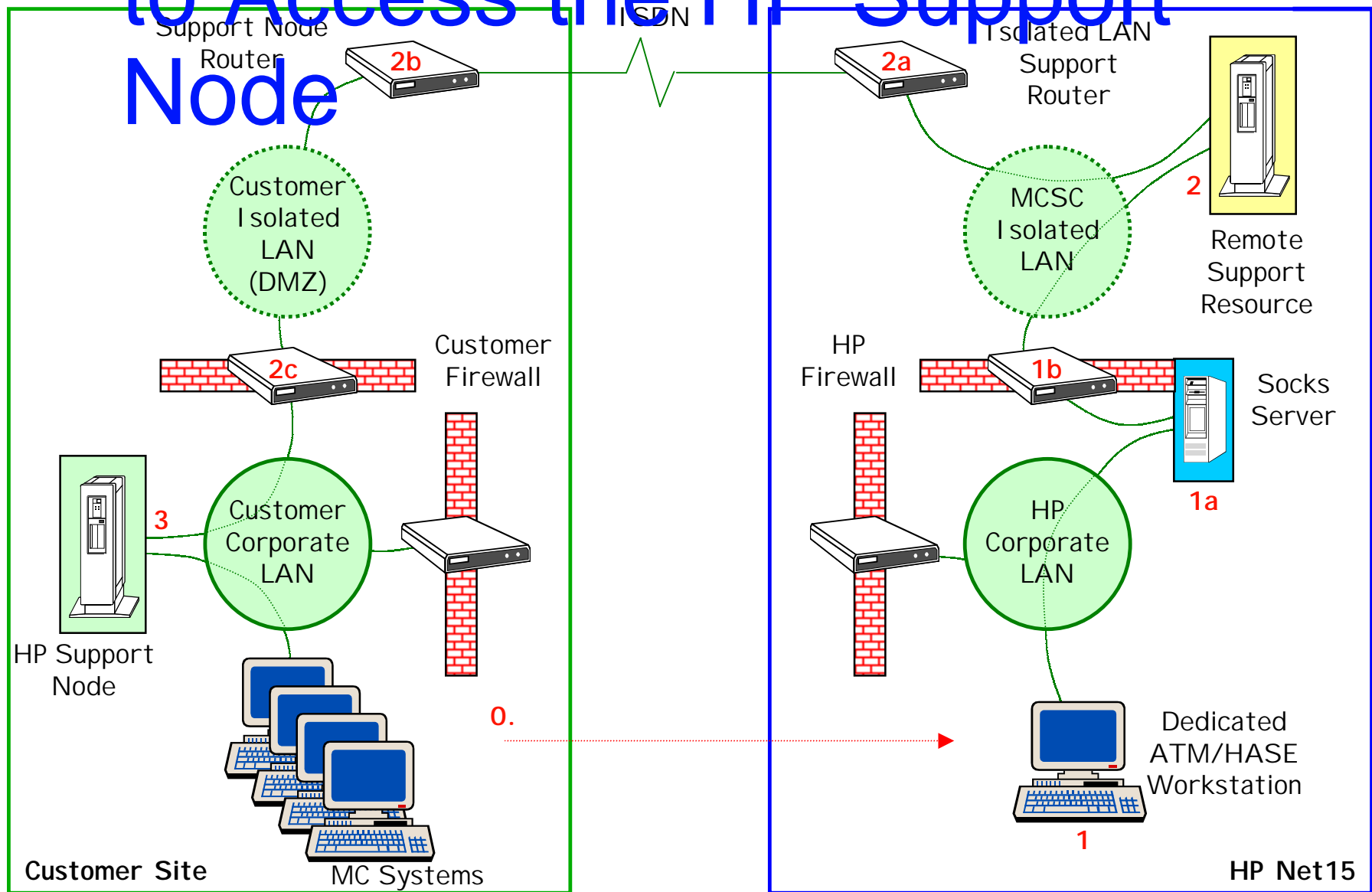


# What is Remote Connectivity in the HAO Program?

It is a method by which HP Support Engineers provide support to MC customers.

- Enables access to customer's MC machines for support purposes
  - ◆ Quicker access to diagnostic and administration tools
  - ◆ Shorter time to problem resolution
- Enables access to HP Configuration Tracker and NNM
- Provides an enabling infrastructure for more support tools or applications

# Detailed Logon Procedure to Access the HP Support Node





# Detailed Logon Procedure



**0. Obtain permission from customer to access their environment.**

**1. From your HASE HP-UX or Windows workstation, connect to the Remote Support Resource (RSR) and log on using your MCSC-assigned username/password.**

1a. The Socks Server will authenticate that you are authorized to pass through.

1b. The HP Firewall will verify that you are authorized to pass through.

**2. From the RSR, connect to the HP Support Node and log on using the same username/password you used for the RSR.**

2a. Isolated LAN router verifies traffic coming from known RSR and destined for known customer site.

2b. HP Support Node Router verifies traffic coming from known HP RSR and destined for the HP Support Node.

2c. Customer firewall verifies incoming traffic meets customer security requirements.

**3. Optionally, access the HAO tools and log on to MC systems using your customer-assigned username/password. Perform support tasks**

# Remote Support Resource

Provides security, data transfer, a repository for information

## (RSR)

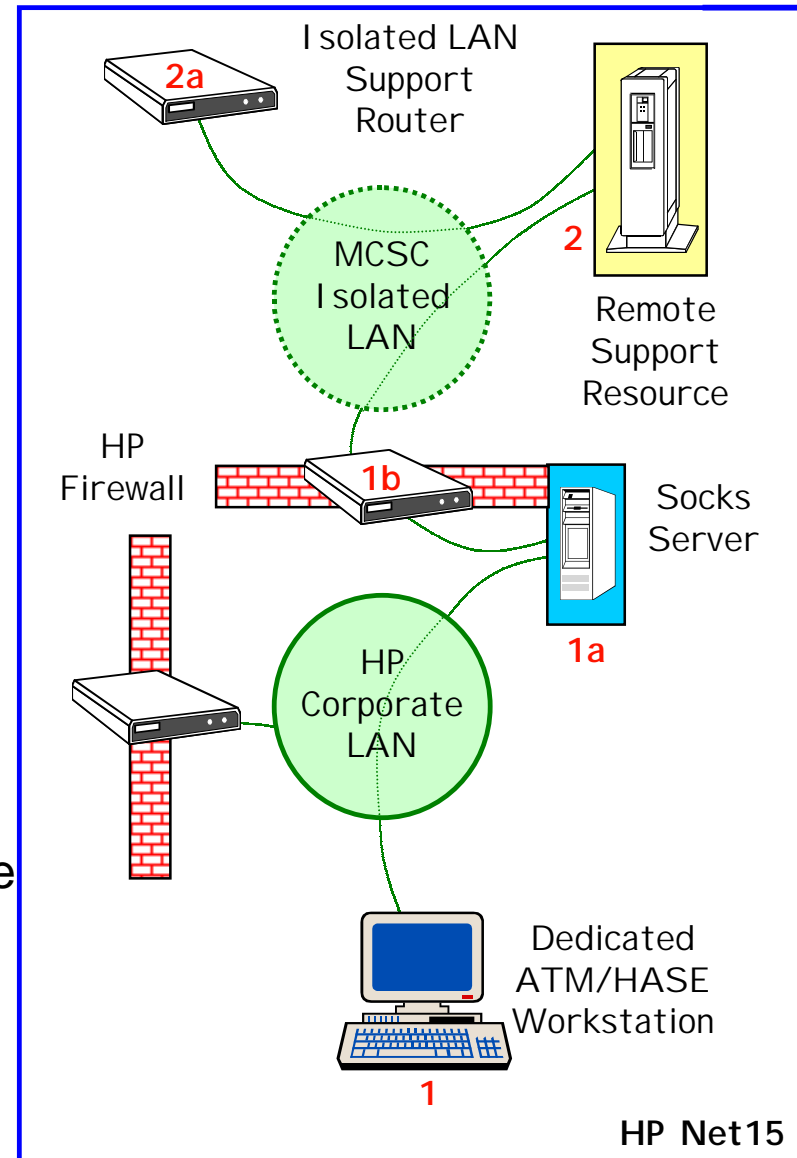


### ■ Purposes

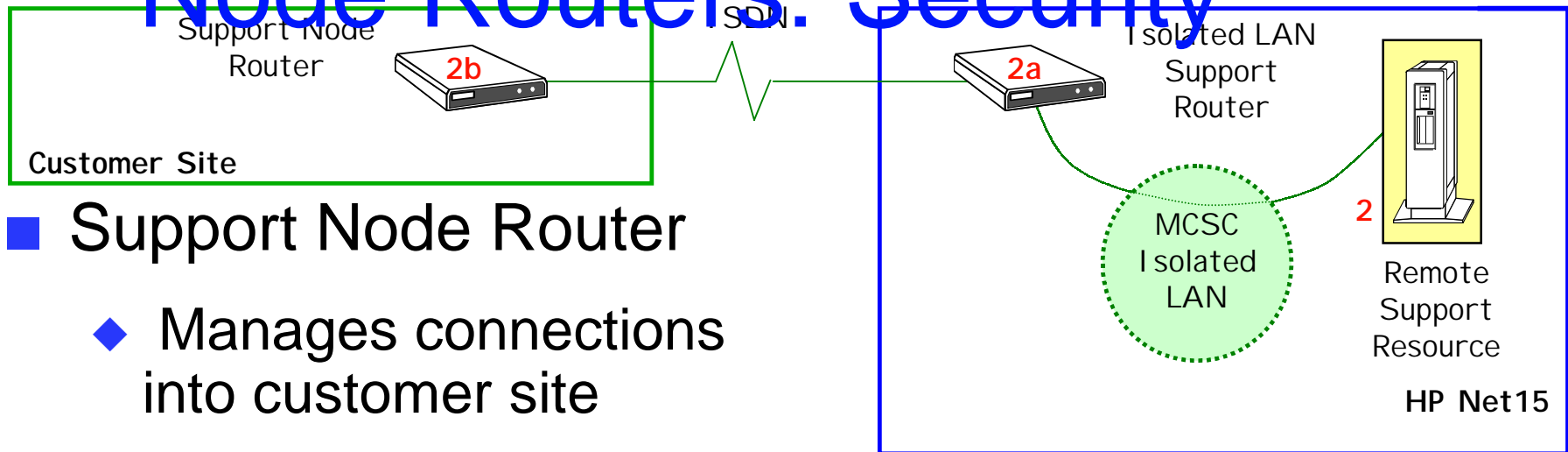
- ◆ First “hop” for HASEs/Account Team Members
- ◆ Tool storage to reduce ISDN traffic
- ◆ Depot for problem-solving information
- ◆ Directs e-mail over ISDN into HP

### ■ Security

- ◆ Allow only connections via the Isolated LAN Socks Server or Secure Shell
- ◆ MCSC support engineer-specific logins with complex username / password
- ◆ No sharing accounts; separate user space for each HASE/Account Team Member
- ◆ Customer data handled under HP Policy
- ◆ Highly-secured configuration
- ◆ Login / Activity logging



# Isolated LAN and Support Node Routers: Security



## ■ Support Node Router

- ◆ Manages connections into customer site
- ◆ Can be customer or HP owned. If HP:
  - Installed by HASE/Account Team Member
  - Jointly configured and verified by HASE and MCSC Administrator
  - Administered by MCSC Administrator

## ■ Isolated LAN Support Router

- ◆ Manages connections to multiple customer sites
- ◆ Configured and administered by MCSC Administrator





# The ISDN Link



## Connectivity Link to MC Customer Site

- High Availability in all regions
- PRI line with:
  - ◆ 23 simultaneous connection channels (MCSC ISDN) in Americas and Asia-Pacific
  - ◆ 30 simultaneous connection channels (MCSC ISDN) in Europe
- BRI line with 2 simultaneous connection channels (customer ISDN)

## Installation at MC Customer Site

- Contact the ISDN provider
- Specify options
- Get configuration information from provider
  - ◆ Access Numbers
  - ◆ ISDN switch type (being used by provider)

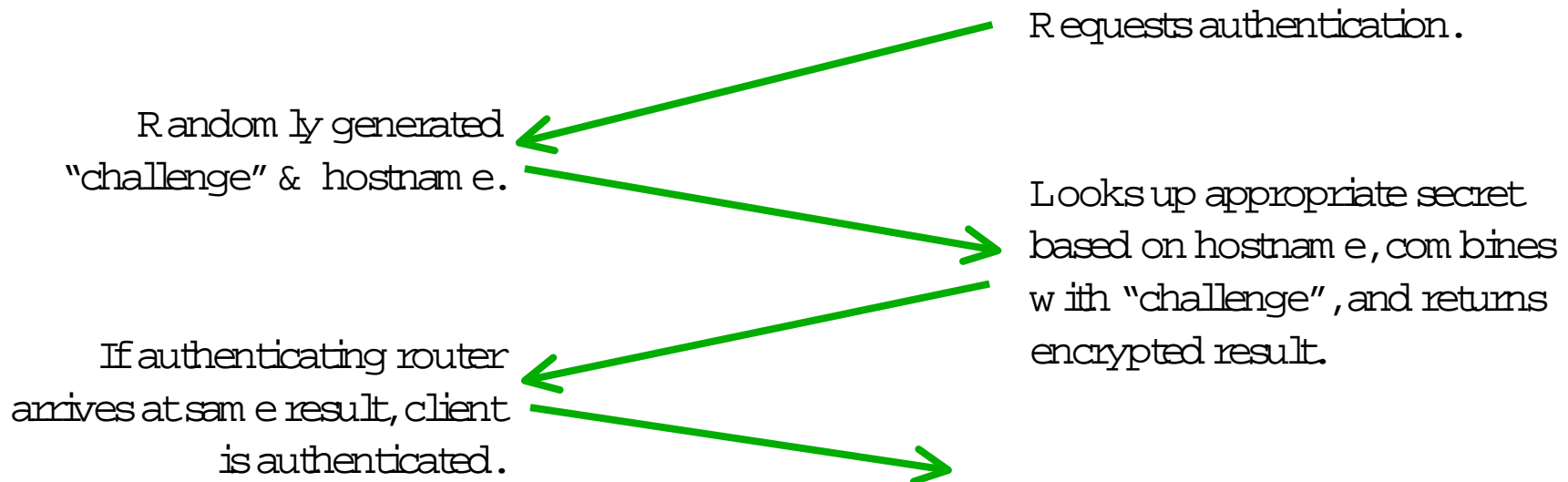


# Challenge Handshake Authentication Protocol (CHAP)



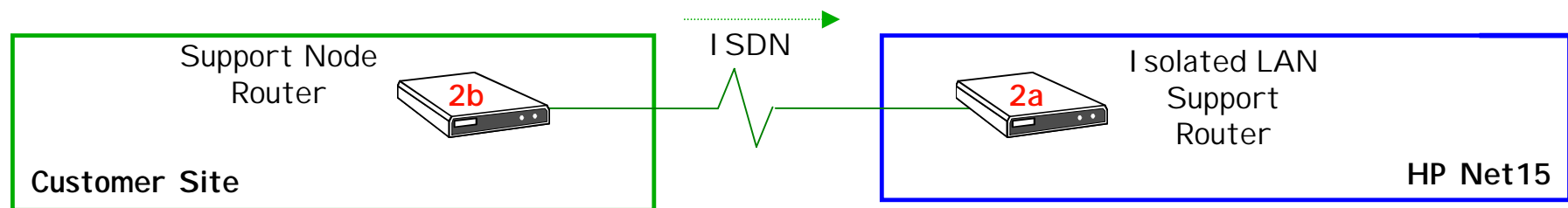
Authenticating Router

Requesting Router



CHAP also sends challenges at regular intervals during an authenticated session to ensure that the client router has not been replaced by an intruder.

# Dialback



## ■ Operation

- ◆ MCSC router calls Support Node Router and gets authenticated
- ◆ MCSC router requests dialback
- ◆ Customer router hangs up
- ◆ Customer router dials HP router and gets authenticated
- ◆ Secure connection is established

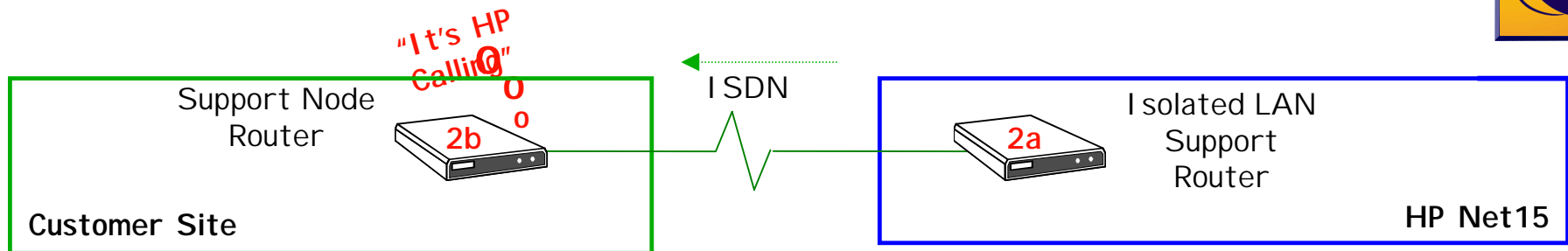
## ■ Advantages

- ◆ Customer knows it was HP that called
- ◆ Customer is assured that connection is with HP

## ■ Disadvantages

- ◆ Connection times are longer

# Caller ID



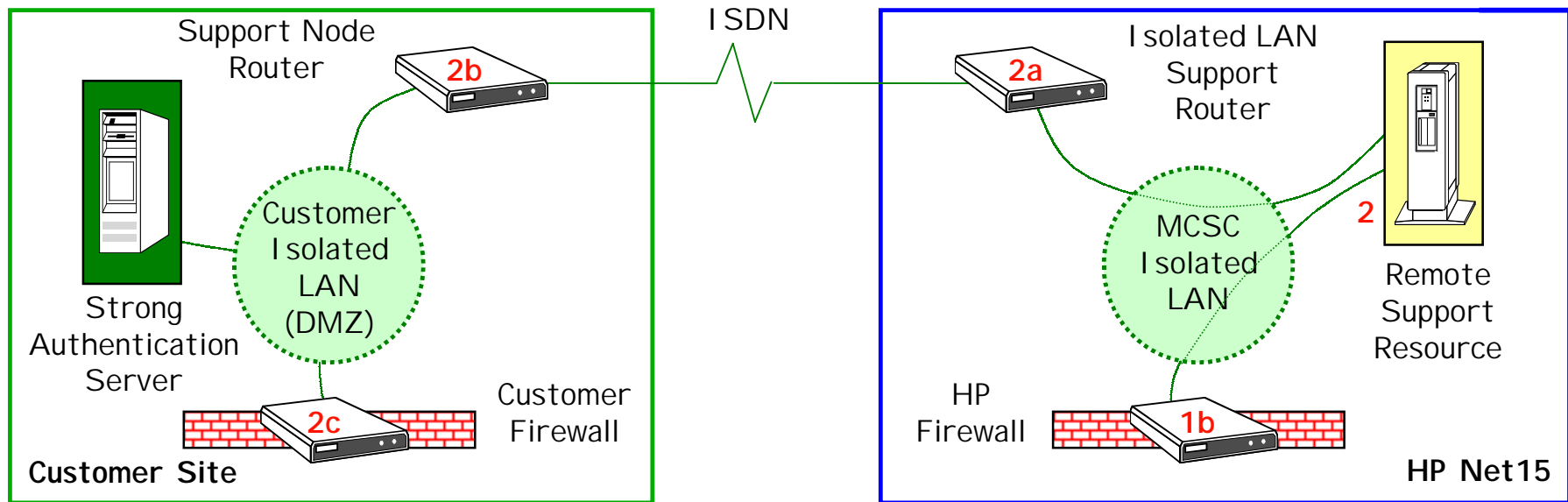
## ■ Advantages

- ◆ Customer router verifies calling # is HP before answering the call

## ■ Disadvantages

- ◆ Does not work across all telco boundaries

# Strong Authentication



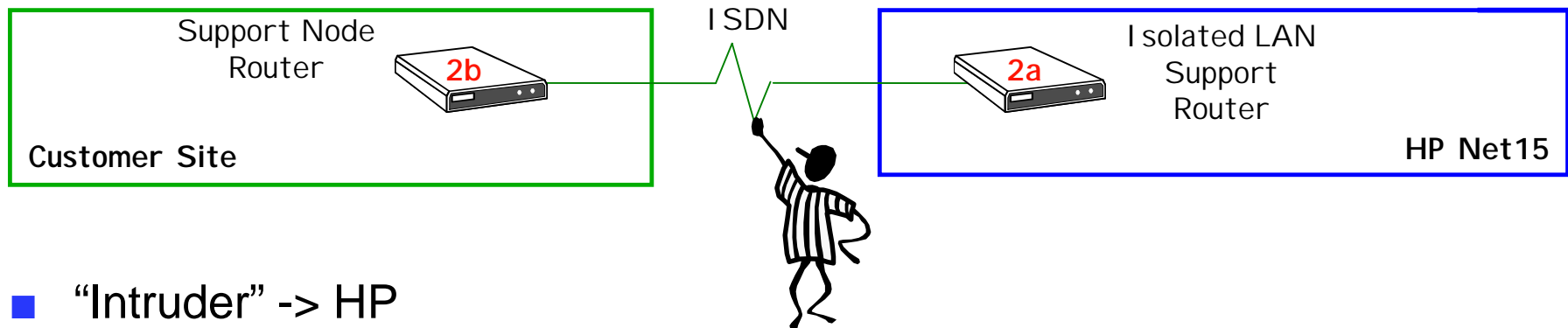
## ■ Advantages

- ◆ Accesses can be tracked to a specific Account Team Member
- ◆ Increases security (token ID changes often and is impossible to guess)

## ■ Disadvantages

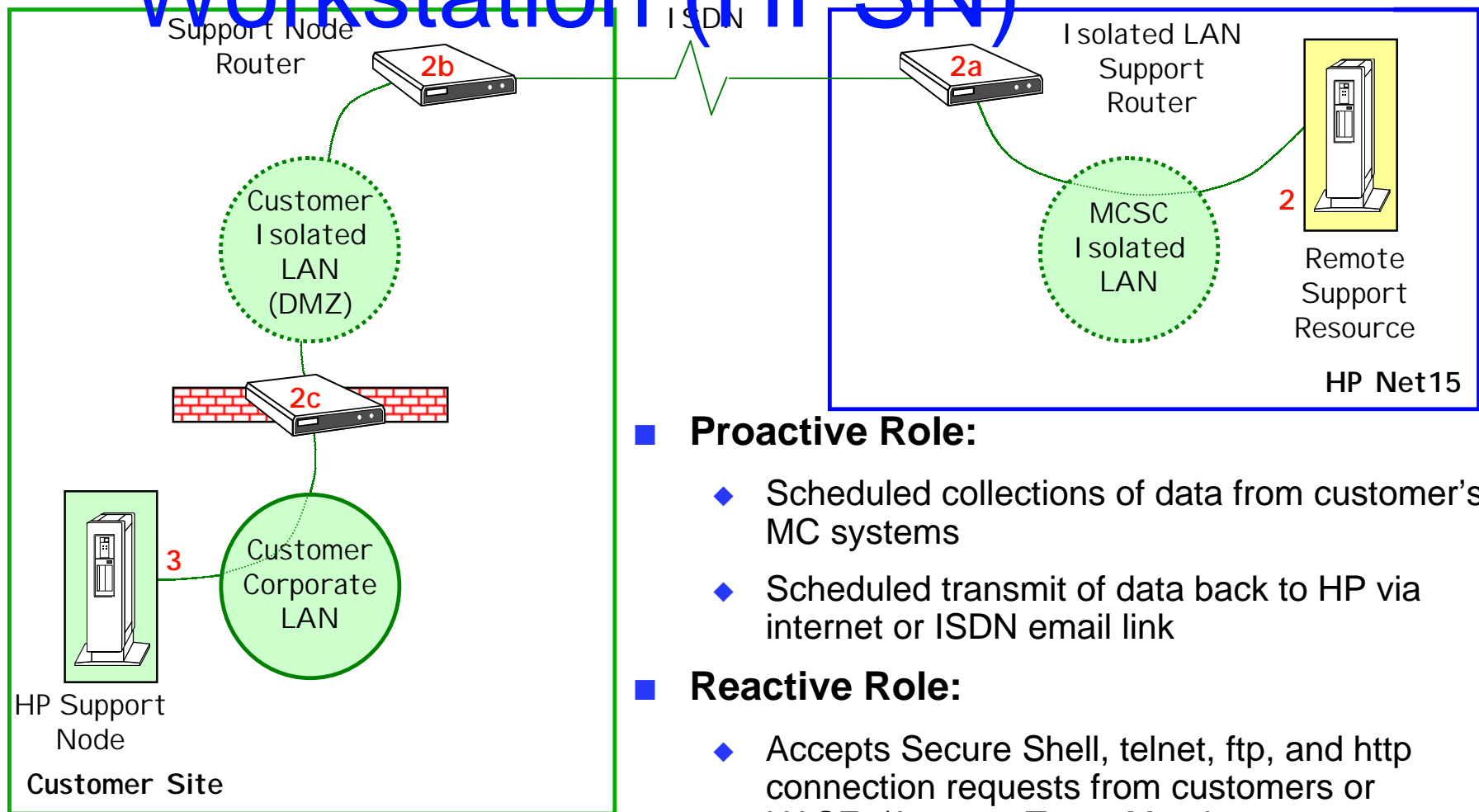
- ◆ Increases connect times
- ◆ More software (and possibly more hardware) for the customer and HP to manage
- ◆ Token ID cards must be managed (if supplied by the customer)

# “Intruder” Precautions



- “Intruder” -> HP
  - ◆ Router doesn't allow connections from outside
- “Intruder” -> Customer
  - ◆ Telephone number of customer router or ISDN
  - ◆ IP address of RSR
  - ◆ Router CHAP authentication information
  - ◆ IP address and username/password of HPSN
  - ◆ IP address and username/password of MC system(s)
  - ◆ Dialback -> Intruder has to physically answer callback to MCSC router
  - ◆ Additional barriers:
    - Caller ID -> ISDN telephone # of the MCSC router
    - Strong authentication -> Strong authentication username/token ID

# HP Support Node Workstation (HPSN)



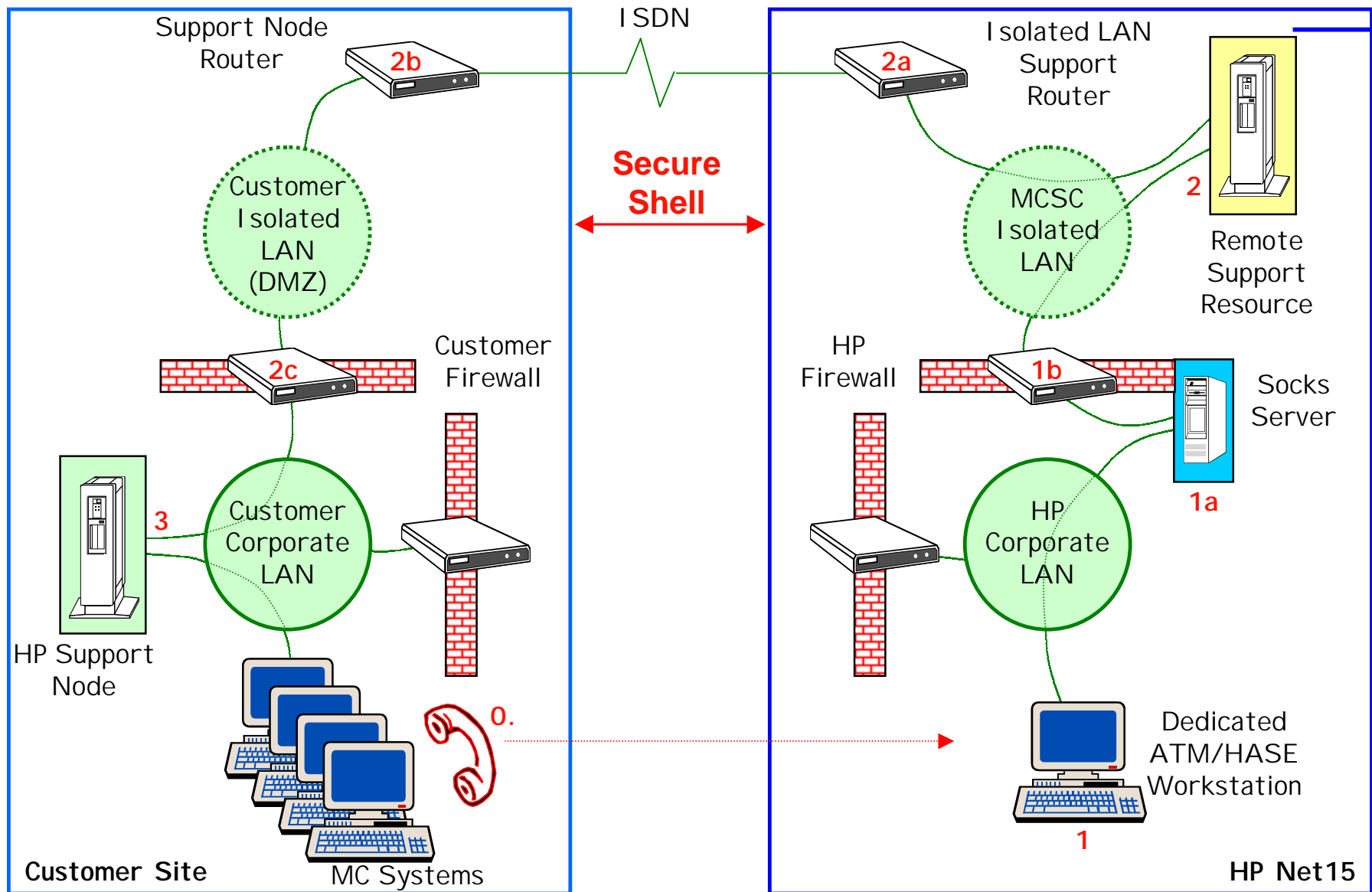
## ■ Proactive Role:

- ◆ Scheduled collections of data from customer's MC systems
- ◆ Scheduled transmit of data back to HP via internet or ISDN email link

## ■ Reactive Role:

- ◆ Accepts Secure Shell, telnet, ftp, and http connection requests from customers or HASEs/Account Team Members
- ◆ Central location for running support tools in the customer's MC environment
- ◆ Facilitates HASE logins to MC machines

# Connecting: Secure Shell

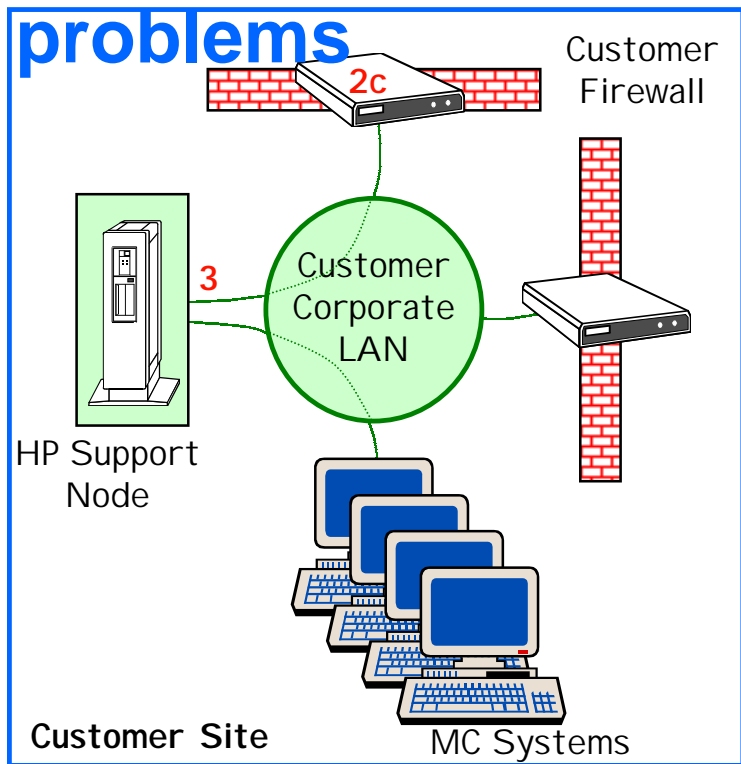




# Devices Covered by Mission Critical Support



Ability to provide faster support for customers' problems



## ■ Access to MC systems

- ◆ Must come from HP Support Node
- ◆ Only to customer authorized machines
- ◆ No “telnets” to other machines
- ◆ Unique HP login username/password for each HASE
- ◆ Login and activity logging

## ■ System changes required:

- ◆ Tracker agent and HA Meter agent installation
- ◆ Connectivity to HP Support Node (if needed)

## ■ No Other Changes are Necessary!

- ◆ No further change in security on these machines from present-day standards.
- ◆ HASEs perform the same actions on these machines as they do today.

# Connections: mc\_connect



- Automatically determines connectivity method
- Select connectivity method
- Works with HP-UX, Windows NT/2000, VirtualVault, and network interconnect devices

```
156.152.228.74 - F-Secure SSH - [csl-rsr (RemConn_RSR).ssh]
File Edit View Tools Help
jscott@amber:/home/jscott:$ mc_connect -i alcazar

Select connection method for alcazar
a Auto-detect services.
  1 Telnet.
  2 Netscape.
  3 Microsoft Windows 95/98/NT running VNC.
  4 Virtual Vault using basic authentication.
  5 Virtual Vault Netscape connection.
q Quit.
Enter your choice: █

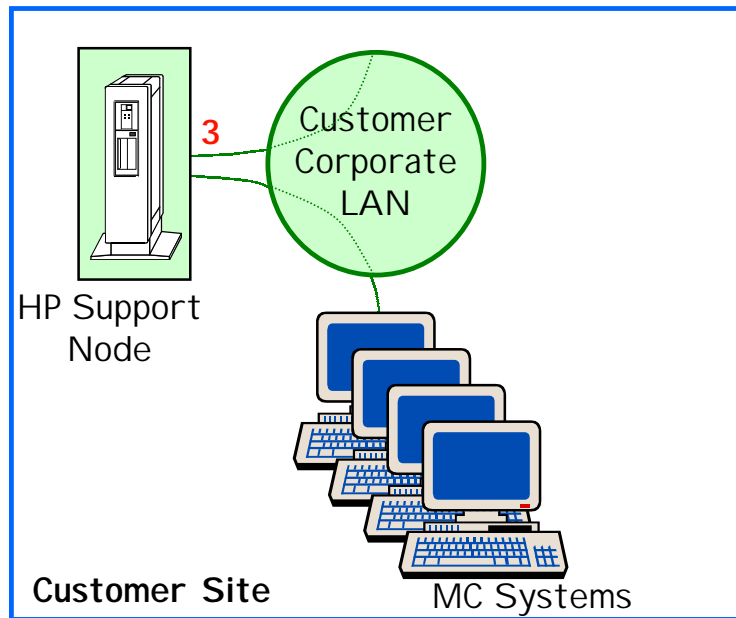
Connected to 156.152.228.74 Compression off Cipher: 3des 20,12 80x24
```



# Connecting: VNC (Windows NT or 2000)



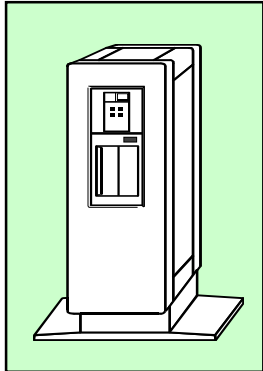
- Virtual Network Computing allows connectivity from the HP Support Node to the NT servers



# Using VNC



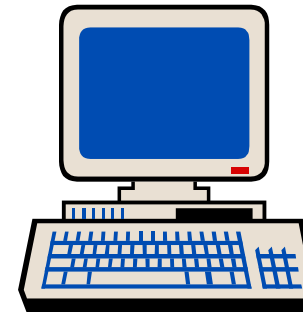
VNC Viewer



HP Support Node

VNC  
Protocol

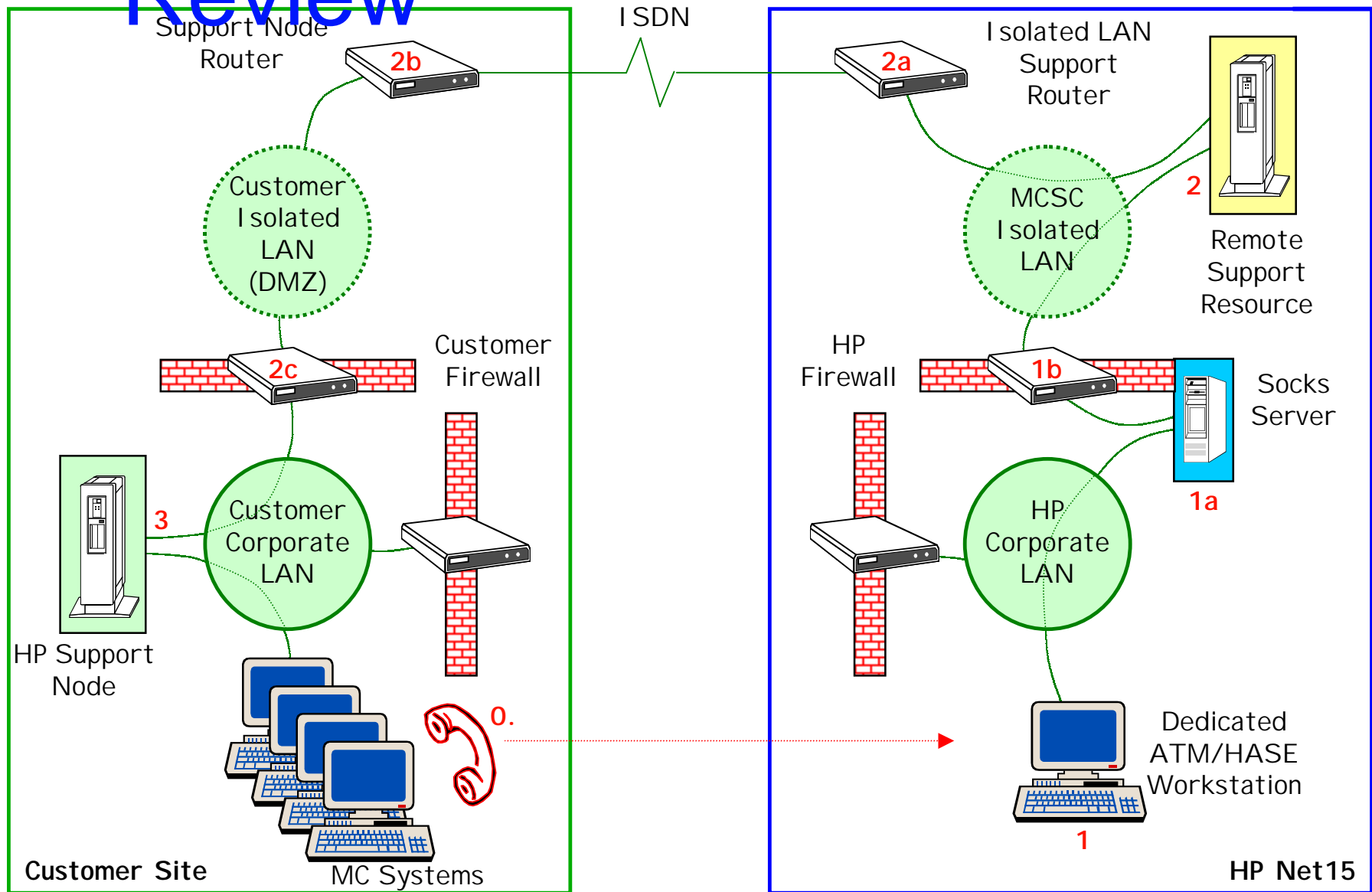
VNC Server



Mission Critical  
Windows NT or 2000  
Server

- Install VNC Server software onto Windows NT or 2000 Server using Tracker
- Initiate a session from the HP Support Node using the VNC Viewer

# Remote Connectivity Review

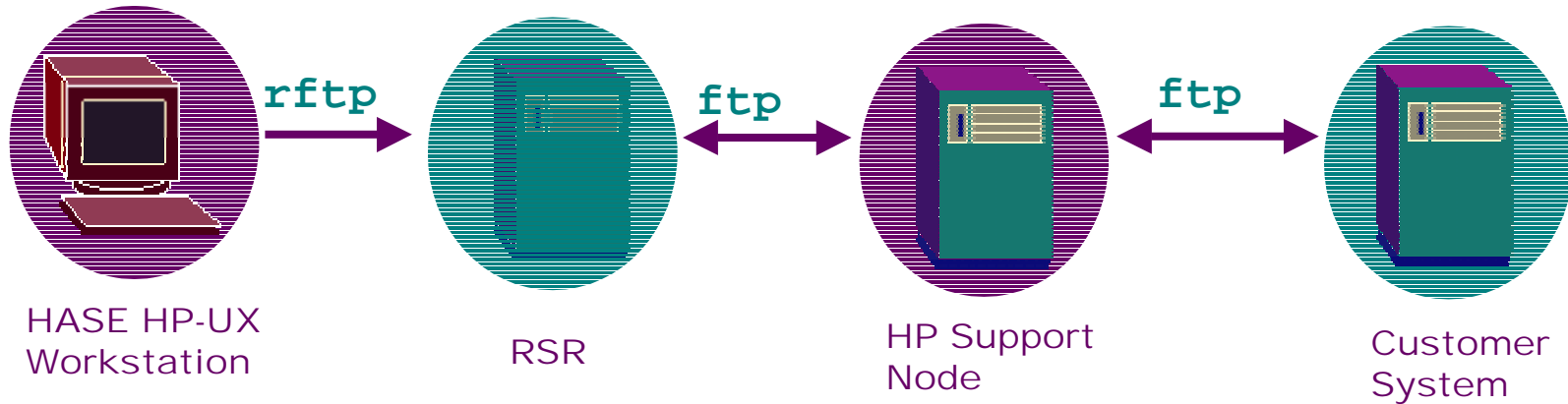




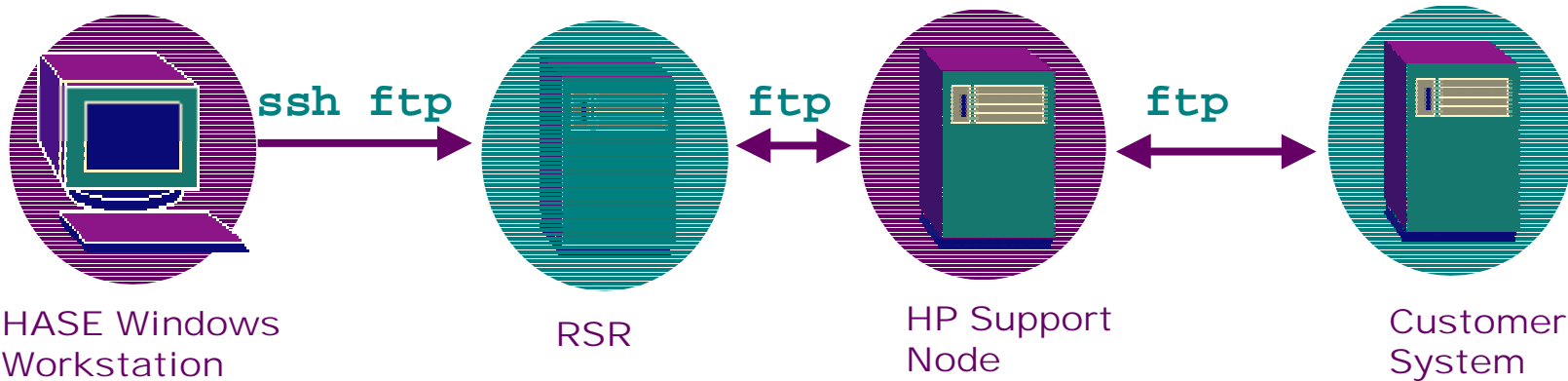
# Connecting: File Transfer



Use `rftp` and `ftp` to transfer files from an HP-UX workstation.



Use `ssh ftp` and `ftp` to transfer files from a Windows workstation.



The arrows show where the transfer command must originate. However, files can be transferred in either direction.



# Network Node Manager



- ✓ NNM tracks device status and identifies topology changes within a specified Management Region. This enables rapid isolation of the network problem.
- Displays an up-to-date map of all servers and interconnect devices
- Collects status data and logs status changes of servers and interconnect devices
- Extends HP's view beyond the system - to the MC customer's environment
- NNM on the HP Support Node is a special version for HAO
  - ◆ It does not interfere with any installed customer copies running in the environment
  - ◆ It is for use only by HP support personnel



# HAO NNM and HA-NISP

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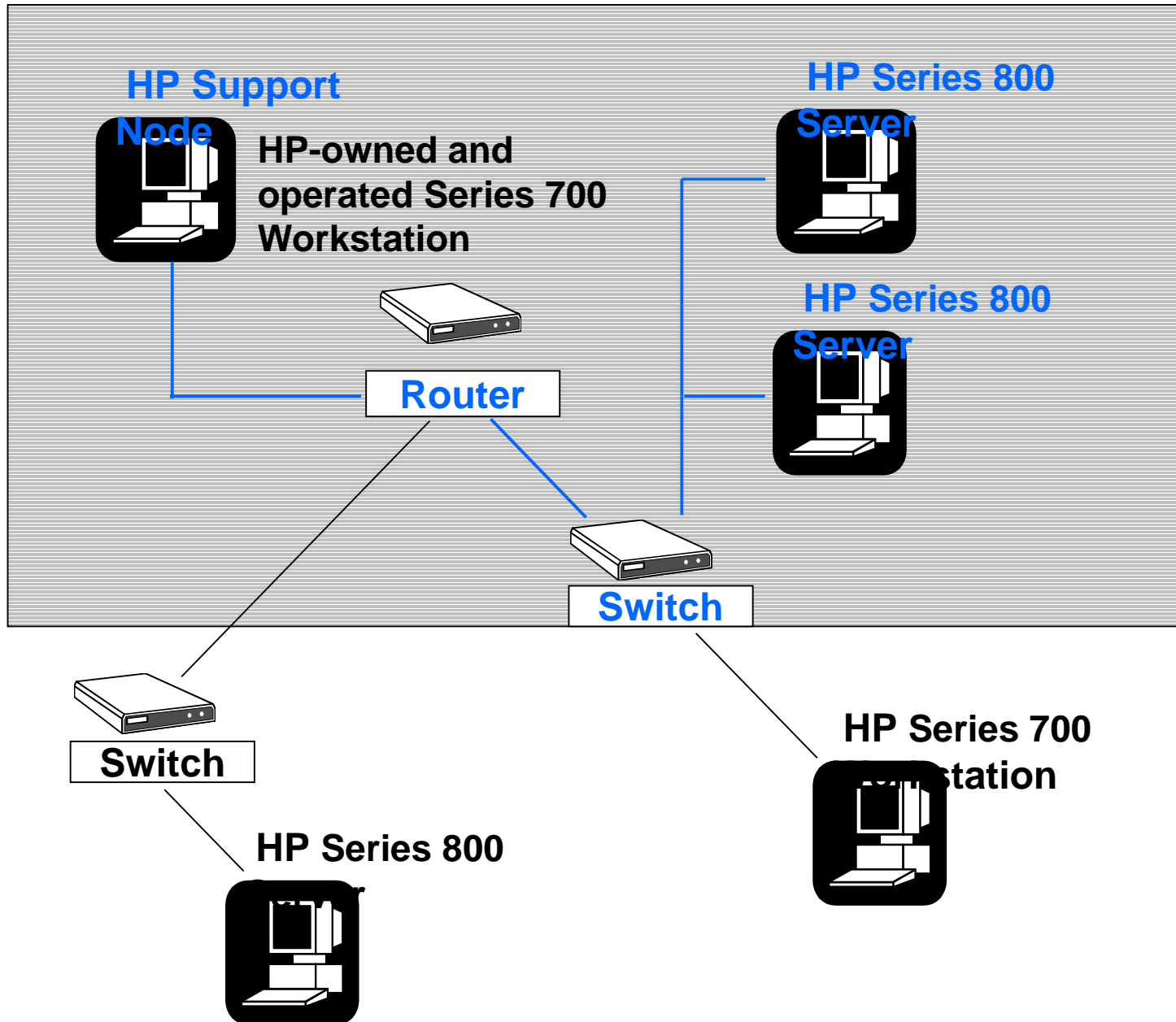


- ✓ HA-NISP collects and packages HAO NNM network topology and Tracker customer Information. It then sends this information to the MCSC via TOM.
- Network topology information available to Network Support Engineers
- Information updated once per week and loaded into the Network Support Repository residing in the MCSC
- Specialists use AutoMAP and WebNISP Manager to view topology information
- HASE/Account Team Member modifies the HP-NISP configuration file to set up data transport





# Network Traffic - Example





# HP Configuration Tracker



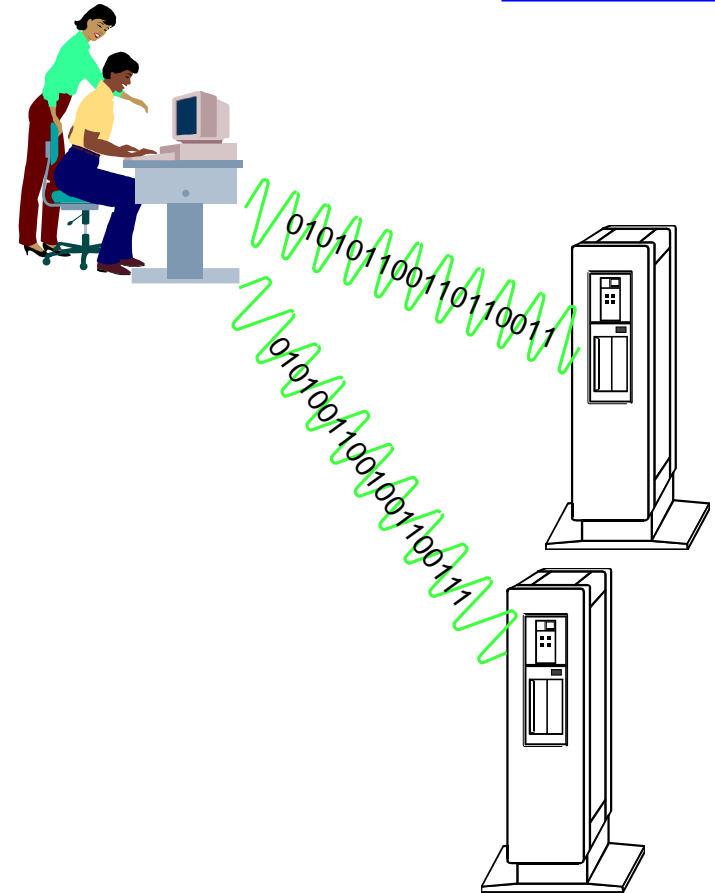
- ✓ Significantly reduces time of gathering critical information
- Snapshots of critical systems configurations at daily or weekly intervals
- Differences between snapshots identified
- Hardware, software, network interconnect device configuration information transmitted to the MCSC
- Controls transport of configuration data to the MCSC



# About Tracker



- Four Components
  - ◆ Tracker server
  - ◆ Tracked clients
  - ◆ Browser (Netscape or MS Internet Explorer)
  - ◆ Client software

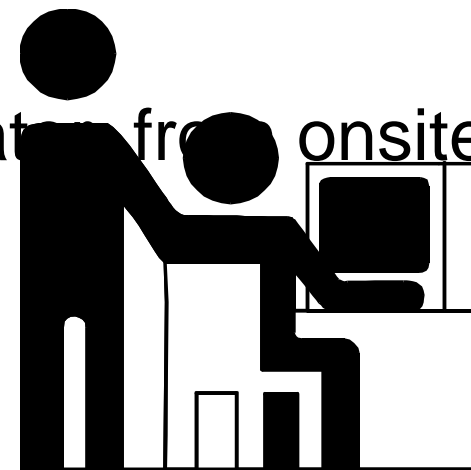




# Tracker Users




- HA Support Engineer, from onsite or a remote HASE workstation, to view data and research problems
- MCSC Administrator or Account Team Member, from the Mission Critical Support Center (MCSC) at HP, to view data and research problems
- Customer System Administrator from onsite, to view data only





# Tracker Login Page



 **HEWLETT  
PACKARD** **Configuration Tracker**

Login

User:

Password:

[Enter User and Password](#)

[Improve Loading Speed](#)

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Hewlett-Packard Company  
3000 Hanover Street  
Palo Alto, CA 94304 U.S.A.

The High Availability Observatory (HAO) is an HP-owned and operated technology consisting of HP 9000 Series 700 system(s) with software tools and a network router and a secure connection to the HP Response Centers (including the Mission Critical Support Center [MCSC]). The HAO is for use solely to support systems on HP Critical Systems Support (CSS) and HP Business Continuity Support (BCS) contracts for the life of the contract.

HP Configuration Tracker (Tracker) and MCSC Monitor are HP-owned and operated software tools for use solely to support systems covered by HP CSS and HP BCS contracts during the life of the contract.

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# Data Collection Templates



**hp HEWLETT PACKARD Configuration Tracker** Collection: Idle  
Transport: Disabled

Tracking Admin **Info**

Admin Tasks Collection Templates

**Collection Templates**

- Available Collection Templates
  - HP-UX Computer Systems
    - HP9000 S800 HP-UX 10.X, 11.X**
  - Network Interconnect Devices
    - Cisco Catalyst Switch
    - Cisco Catalyst Switch with TFTP capability
    - Cisco IOS Device
    - Default
    - HP IOS Device
    - HP ProCurve Routing Switch
    - HP ProCurve Switch
    - HP Router
    - HP Switch
    - HP Switch II
  - Windows Computer Systems
    - Windows 2000, NT 4.X Intel-based Server

**Modify Collection Template** or [Cancel This Task](#)

Configuration Item Types	Collect	Transport
<b>Boot and Shutdown</b>		
<a href="#">Boot Messages</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Boot Script</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Bootconf</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Crashconf (Always Changing)</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">LVM Activation</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Setboot</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Shutdown Log</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>File System</b>		
<a href="#">Autoboot Info</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Disk Usage (Always Changing)</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">File Sys Config</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">File Sys Info (Always Changing)</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">LVM Info</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Lvmstab</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">Super Block Info</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Hardware Configuration</b>		
<a href="#">Adapters</a>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



# Add Devices



Add devices in Tracker to collect configuration data

- HP-UX Servers
- NT Servers
- Windows 2000 Servers
- Network interconnect devices

The screenshot shows the HP Configuration Tracker application window. The title bar reads "HEWLETT PACKARD Configuration Tracker". In the top right corner, it displays "Collection: Idle" and "Transport: Disabled". The interface has three tabs: "Tracking", "Admin", and "Info", with "Info" being the active tab. Below the tabs are two sub-tabs: "Admin Tasks" and "Collection Templates". Under "Admin Tasks", there are two buttons: "Change Password" and "Help". Below these is a section titled "Admin Tasks" containing a tree view of administrative actions. The "Devices" folder is expanded, and the "Add Devices" sub-item is selected. Under "Add Devices", there are three options: "Add A Network Device", "Add An HP-UX Computer", and "Add An NT Computer". Other actions in the tree include "Delete Any Device", "Edit Info For Any Device", and "Rename Any Device". At the bottom of the tree are "Enterprise Management" and "Users". To the right of the tree view, the text "Add Devices" is displayed in a large font, followed by a paragraph: "Devices" is a collective term to refer to both computers and network interconnect devices. These forms enable adding new devices to be tracked and updating information about the devices if it changes.



# Edit Collection Schedule



**hp HEWLETT PACKARD Configuration Tracker** Collection: Idle  
Transport: Disabled

Tracking Admin **Info**

Admin Tasks Collection Templates

**Available Actions For User: admin**

Change Password Help

**Admin Tasks**

- Administration Tasks
  - Administrator Notes
- Configuration Database
  - Data Transport
    - Edit Collection Schedule**
- Devices
  - Add Devices
    - Add A Network Device
    - Add An HP-UX Computer
    - Add An NT Computer
  - Delete Any Device
  - Edit Info For Any Device
  - Rename Any Device
- Enterprise Management
- Users

---

**\* Edit Collection Schedule \***

collection schedule : Daily, Starting Tue, 20 Jun 2000 00:51 MST7MDT.

---

**Set the Collection Frequency:**

Daily  
 Weekly

**Set the next Collection start date/time:**  
(this form has been posted: Mon, 19 Jun 2000 10:21 MST7MDT)

Day at Hours (24 hour format) : Minutes.

Tuesday at 00 : 51


*Note:* Data Transport, if enabled, occurs automatically after a scheduled collection is complete.

**Finish** or [Cancel This Task](#)





# Data Transport: Data Transport Settings

**Configuration Tracker**Collection: Idle  
Transport: Disabled

Tracking Admin Info

Admin Tasks Collection Templates

**Available Actions For User: admin**

Change Password Help

**Admin Tasks**

- Administration Tasks
  - Administrator Notes
  - Configuration Database
    - Data Transport
      - Current Settings**
      - Reset Transport
      - Transport Now
    - Edit Collection Schedule
  - Devices
  - Enterprise Management
  - Users


### Data Transport Settings

<b>Destination:</b>	americas-hao-tracker	<a href="#">Modify</a>
<b>State:</b>	Disabled	<a href="#">Modify</a>
<b>Encryption:</b>	Enabled	<a href="#">Modify</a>

*Destination* indicates the HP MCSC that receives configuration data from this node. A setting of 'Local File Store' indicates that data is written to the local file system instead of an e-mail transport.

*State*, if enabled, signals the data transport to occur immediately following a [Scheduled Collection](#).

View the [Status Report](#) on the current state of the Data Transport.



invent



# Modify Collection Templates



**hp HEWLETT PACKARD Configuration Tracker** Collection: Idle  
Transport: **Running**

Tracking Admin Info

Admin Tasks Collection Templates

**Collection Templates**

- Available Collection Templates
  - HP-UX Computer Systems
    - HP9000 S800 HP-UX 10.X, 11.X**
  - Network Interconnect Devices
    - Cisco Catalyst Switch
    - Cisco Catalyst Switch with TFTP capability
    - Cisco IOS Device
    - Default
    - HP IOS Device
    - HP ProCurve Routing Switch
    - HP ProCurve Switch
    - HP Router
    - HP Switch
    - HP Switch II
  - Windows Computer Systems
    - Windows 2000, NT 4.X Intel-based Server

**HP9000 S800 HP-UX 10.X, 11.X: HP9000 Series 800 Business Server supporting the 10.X and 11.X HP-UX operating systems.**

**Enabling Collection and Transport.** Use the table below to exclude any items from being collected or eligible for transport by de-selecting the related checkbox, then pressing the 'Modify Collection Template' button. Any modifications apply to all [associated devices](#) and models for this collection template.

**Other Available Actions:** (from this form)

- **Individual item information and actions** are accessible via the item's hyperlink in the table. Actions include:
  - Toggling the '**Always Changing**' field.
  - For 'Custom' or 'New Configuration Items'
    - **Delete** the item.
    - **Export** the item to a file.
    - **Modify** the new configuration item.
- [Add/import new item\(s\)](#) to this template in the 'User-Defined' subsystem.
- [Edit Attributes](#): For items that are files, attributes such as permissions and timestamps are also collected. You can affect how attributes are used in generating 'change indicators' (!).



# Modify Collection Templates: Attribute

**hp HEWLETT PACKARD Configuration Tracker** Collection: Idle  
Transport: **Running**

Tracking Admin Info

Admin Tasks Collection Templates

**Collection Templates**

- Available Collection Templates
  - HP-UX Computer Systems
    - HP9000 S800 HP-UX 10.X, 11.X**
  - Network Interconnect Devices
    - Cisco Catalyst Switch
    - Cisco Catalyst Switch with TFTP capability
    - Cisco IOS Device
    - Default
    - HP IOS Device
    - HP ProCurve Routing Switch
    - HP ProCurve Switch
    - HP Router
    - HP Switch
    - HP Switch II
  - Windows Computer Systems
    - Windows 2000, NT 4.X Intel-based Server

**\* Collection Template Attribute Settings \***

Collection templates contain configuration items that are either files or commands. Items that are files have their attributes collected. For these items, you can continue collecting data while excluding 'change indicators' (!) for data changes. When you have the desired attribute settings, push the 'Modify Attribute Settings' button.

**Note:** Attribute changes are only applied from this point forward.

**Viewing Options for this Form**

<a href="#">All Items (current settings)</a>	<a href="#">All Items (factory defaults)</a>
>> Only Items With Attributes (current settings) <<	<a href="#">Only Items With Attributes (factory defaults)</a>

or [Cancel This Task](#)

Boot and Shutdown					
Config Item Type	<a href="#">Perms</a>	<a href="#">NumLinks</a>	<a href="#">Owner</a>	<a href="#">Group</a>	<a href="#">Timestamp</a>
Boot Script	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



# Modify Collection Templates: Create New Configuration Item

The screenshot shows the HP Configuration Tracker web interface. The top navigation bar includes 'Tracking', 'Admin', and 'Info'. The 'Admin' tab is active, and the 'Collection Templates' sub-tab is selected. On the left, a tree view under 'Collection Templates' shows various device categories, with 'HP9000 S800 HP-UX 10.X, 11.X' highlighted. The main content area is titled '\* Create New Configuration Item \*' and contains the following text:

Create a new configuration item for this template. This item is added to the subsystem: 'User-Defined'.

**Other Available Actions:** (from this form)

- [Import an item](#) from a file.

**Configuration Item Name:** (max 80 chars, [character restrictions](#), [space handling](#))(required) Name displayed in the collection template.

**Configuration Item Description:** (max 400 chars)(required) Description used in the collection template.



# Modify Collection Templates: Create New Configuration Item

**HEWLETT PACKARD Configuration Tracker** Collection: *Running* Transport: *Running*

Tracking Admin Info

Admin Tasks Collection Templates

**Collection Templates**

- Available Collection Templates
  - HP-UX Computer Systems
    - HP9000 S800 HP-UX 10.X, 11.X**
  - Network Interconnect Devices
    - Cisco Catalyst Switch
    - Cisco Catalyst Switch with TFTP capability
    - Cisco IOS Device
    - Default
    - HP IOS Device
    - HP ProCurve Routing Switch
    - HP ProCurve Switch
    - HP Router
    - HP Switch
    - HP Switch II
  - Windows Computer Systems
    - Windows 2000, NT 4.X Intel-based Server

**Collection Method Type:** This can either be a command that is run on the client, or a file that is collected from the client (required)

- File** (absolute path of the file):(max 800 chars)
  - Must* be an ASCII file.
- Command:** How to collect the data (single line): (max 800 chars)
  - This command is run on clients as entered. Use caution in defining this command.
  - Since no 'PATH' variable is defined, use absolute paths when defining this command.
  - The output of this command *must* be ASCII.


**Change Alert Setting:** If this configuration item is 'Always Changing', you can disable the 'Change Alert'. (you must select one).

- This item is 'Always Changing' do not display the Change Alert
- Display Change Alert (!)



# Tracking



 **HEWLETT  
PACKARD** **Configuration Tracker** Collection: Idle  
Transport: Disabled

Tracking Admin Info

**Available Actions**

Changes Time1 Time2 Command

Collect Now Properties List Changes

Reload Search Help

**Timeframe (MDT)**

Change Time1: 21 Jun 2000 09:17  
Timeframe Time2: 21 Jun 2000 09:22

- The Enterprise
- HP-UX devices
- NICs
- NT Devices

### Getting Started with Configuration Tracker


Configuration Tracker has 3 main tabs:

- **Tracking:** Used to access individual configuration data items for specific devices, as well as historical changes for configuration data items.
- **Admin:** Intended for the 'Tracker Administrator', this tab is used to manage the devices monitored by Configuration Tracker, set transport options, as well as manage users for the system.
- **Info:** The colored ball indicator displays the current state of the health of Configuration Tracker itself. Use this tab to access information about alarms associated with the colored ball indicator. Additionally, access to this system's error and log files is available via this tab.



# Tracking: Data Changes



**HEWLETT  
PACKARD**

## Configuration Tracker

Collection: Idle  
Transport: Disabled

Tracking Admin Info

**Available Actions**

Changes Time1 Time2 Command

Collect Now Properties List Changes

Reload Search Help

**Timeframe (MDT)**

Change Time1: 21 Jun 2000 09:17  
Timeframe Time2: 21 Jun 2000 09:22

- The Enterprise
  - HP-UX devices
  - NICs
  - NT Devices

HP-UX devices

**List of Configuration Changes for: The Enterprise:HP-UX devices**

Note: this operation may take some time. You can continue when the cursor returns to normal when over the left side.

[ You may also see a [List Of Failures](#) ]

- [aquaman: Boot and Shutdown: Boot Messages](#)
  - o (21 Jun 2000 09:18 MDT)
- [aquaman: File System: File Sys Config](#)
  - o (21 Jun 2000 09:18 MDT)
- [aquaman: HP-UX Configuration: Level1 Scripts](#)
  - o (21 Jun 2000 09:18 MDT)
- [aquaman: HP-UX Configuration: Level2 Scripts](#)
  - o (21 Jun 2000 09:18 MDT)
- [aquaman: HP-UX Configuration: Script Level Flags](#)
  - o (21 Jun 2000 09:18 MDT)
- [aquaman: HP-UX Configuration: Sys Filesets](#)
  - o (21 Jun 2000 09:18 MDT)
- [aquaman: Software Configuration: PSIFile](#)
  - o (21 Jun 2000 09:22 MDT)
- [cb4: HP-UX Configuration: Level1 Scripts](#)
  - o (21 Jun 2000 09:18 MDT)
- [cb4: HP-UX Configuration: Level2 Scripts](#)
  - o (21 Jun 2000 09:18 MDT)
- [cb4: HP-UX Configuration: Script Level Flags](#)
  - o (21 Jun 2000 09:18 MDT)
- [cb4: HP-UX Configuration: Sys Filesets](#)
  - o (21 Jun 2000 09:18 MDT)
- [cb4: Software Configuration: PSIFile](#)
  - o (21 Jun 2000 09:22 MDT)



# Tracking: Individual Changes



**hp HEWLETT PACKARD Configuration Tracker** Collection: Idle  
Transport: Disabled

Tracking Admin Info

**Available Actions**

Changes Time1 Time2 Command

Collect Now Properties List Changes

Reload Search Help

**Timeframe (MDT)**

Change Time1: 21 Jun 2000 09:17  
Timeframe Time2: 21 Jun 2000 10:22

- File System
- Hardware Configuration
- HP-UX Configuration
  - Device Drivers
  - HPUX Lib
  - Init File
  - Kernel Config
  - Kernel Version (Current)
  - Kernel Version (Previous)
  - Level1 Scripts**
  - Level2 Scripts
  - Level3 Scripts

...aquaman:HP-UX Configuration:Level1 Scripts

**Data changes detected between Time2 and Time1:**

Line 4 of the *time1* revision:

```
lrwxr-xr-x 1 root sys 21 Apr 19 02:42 2000 K110HAMagent -> /sbin/init
```

**replaced by** line 4 of the *time2* revision:

```
lrwxr-xr-x 1 root sys 21 Jun 19 14:38 2000 K110HAMagent -> /sbin/init
```

---

Line 266 of the *time1* revision:

```
lrwxr-xr-x 1 root sys 21 Apr 19 02:42 2000 /sbin/rc1.d/K110HAMagent -
```

**replaced by** line 266 of the *time2* revision:

```
lrwxr-xr-x 1 root sys 21 Jun 19 14:38 2000 /sbin/rc1.d/K110HAMagent -
```

Event Time	Event Information
21 Jun 2000 10:22	'Time2'
21 Jun 2000 09:18	The item changed.
21 Jun 2000 09:17	'Time1'

(Always Changing' items won't have change events.)





# Change the Collection Timeframe



**hp HEWLETT PACKARD Configuration Tracker** Collection: Idle  
Transport: Disabled

Tracking Admin Info

**Available Actions**

Changes Time1 Time2 Command

Collect Now Properties List Changes

Reload Search Help

**Timeframe (MDT)**

Change Timeframe Time1: 21 Jun 2000 09:17  
Time2: 21 Jun 2000 09:22

- The Enterprise
  - HP-LUX devices
  - NICs
  - NT Devices

HP-LUX devices

**+ Change Timeframe +**

The data displayed for all tracked devices is limited by the Timeframe setting. **Change the Timeframe** by assigning the Time1 and Time2 boundaries below to include your choice of Tracker data collections.

The change symbol associated with a collection indicates an observed data change since the previous collection. Times listed with a represent a *failure* of Tracker to collect.

The most recent 30 collections, ([All Collections](#))

Finish or [Cancel This Task](#)

from Time2	to Time1		Collection
<input type="radio"/>	<input type="radio"/>		21 Jun 2000 10:17 <a href="#">sched</a>
<input checked="" type="radio"/>	<input checked="" type="radio"/>		21 Jun 2000 09:17 <a href="#">sched</a>
<input type="radio"/>	<input type="radio"/>		17 May 2000 16:05 <a href="#">sched</a>
<input type="radio"/>	<input type="radio"/>		17 May 2000 15:05 <a href="#">sched</a>
<input type="radio"/>	<input type="radio"/>		17 May 2000 14:05 <a href="#">sched</a>
<input type="radio"/>	<input type="radio"/>		17 May 2000 13:05 <a href="#">sched</a>
<input type="radio"/>	<input type="radio"/>		17 May 2000 12:05 <a href="#">sched</a>
<input type="radio"/>	<input type="radio"/>		17 May 2000 11:05 <a href="#">sched</a>
<input type="radio"/>	<input type="radio"/>		17 May 2000 10:05 <a href="#">sched</a>

# Health/Link Checker

## HAO Support Node Health & ISDN Link Status Report



version:  
created: Jul/07/2000 08:15 (UTC)  
[Germany](#), [ISE](#), [Other](#), [Spain](#), [UK](#), [US](#)

Customer	Node	Bracknell bracknell.hp.com Bra/01/2000 01:01 (UTC) Link Status (time tested)	Brussels brussels.hp.com Bru/01/2000 01:01 (UTC) Link Status (time tested)	Comment
<b>Germany</b>				
<a href="#">Company 1 (Germany)</a> Jun/21/2000 01:01 (UTC)	1.1.1.1	OK May/14/2000 01:01 (UTC)	OK May/14/2000 01:01 (UTC)	
<a href="#">Company 2 (Germany)</a> Jun/21/2000 01:02 (UTC)	1.1.1.2	<a href="#">data not available yet</a>	OK May/14/2000 01:02 (UTC)	
<a href="#">Company 3 (Germany)</a> Jun/21/2000 01:03 (UTC)	1.1.1.3	OK May/14/2000 01:03 (UTC)	<a href="#">data not available yet</a>	
<a href="#">Company 6 (Germany)</a> Jun/21/2000 01:06 (UTC)	1.1.1.6	<a href="#">not configured</a>	ISDN May/14/2000 01:06 (UTC)	* no call logged yet, ... link failure in 6 report cycle is below configured limit
<a href="#">Company 7 (Germany)</a> Jun/21/2000 01:07 (UTC)	1.1.1.7	OK May/14/2000 01:07 (UTC)	n/a RATS switched off	
Company 8 (Germany)	1.1.1.8	<a href="#">data not available yet</a>	<a href="#">data not available yet</a>	
<b>ISE</b>				
<a href="#">Company 44 (ISE)</a> Jun/21/2000 04:04 (UTC)	1.1.4.4	OK May/14/2000 04:04 (UTC) special connection required	OK May/14/2000 04:04 (UTC) special connection required	* brussels.hp.com: no customer name configured
<b>Other</b>				
<a href="#">Company 41 (Other)</a> Jun/21/2000 04:01 (UTC)	1.1.4.1	ISDN (200 200 200 200) May/14/2000 04:01 (UTC)	ISDN (200 200 200 200) May/14/2000 04:01 (UTC)	* call logged Jul/04/2000
<a href="#">Company 42</a> Jun/21/2000 04:02 (UTC)	1.1.4.2	ISDN May/14/2000 04:02 (UTC) special connection required	ISDN May/14/2000 04:02 (UTC)	* known link issue, but no call info stored
<a href="#">Company 43</a> Jun/21/2000 04:03 (UTC)	1.1.4.3	OK May/14/2000 04:03 (UTC) special connection required	OK May/14/2000 04:03 (UTC) special connection required	



MCSC Monitor - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://dos.fc.hp.com/tracker/tmp/index.955481408.html> Links

---

**HEWLETT  
PACKARD** **MCSC Monitor**

Enterprises Customer Data Admin Info

**Available Actions**

Reload Search Properties Help

Patch Summary Scheduling Subscription

**Customer Enterprises**

- PSR tests (don't use)
- Alert Summary 1
- Alert Summary 2
- Alert Summary 3
- Alert Summary 4
- Alert Summary 5
- Alert Summary 6
- Southern Europe
  - Customer A
  - Customer B**
  - Customer C
  - Customer D
  - Unassigned
  - Customer E

Southern Europe: Customer B

**Current Status of 'Customer B'**  
(consisting of all 'stoplights' appearing below)

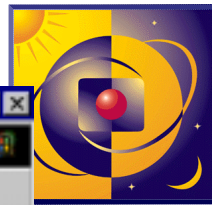
- Data Transport [is recent](#) (occurred < 2 days ago)  
last date: 10 Apr 2000 13:28 - reset
- Support Node alarm state is clear.
- Support Node is transporting [full data](#).
- Enterprise is [configured](#) for analysis.

**Available Actions**

- [Browse Configuration Data](#).
- Generate a [Patch Summary Report](#) for this enterprise.
- [Modify the Analyzer Schedules](#) for this enterprise.
- [Modify Analyzer Subscription Settings](#) for all devices in this enterprise.
- See all devices by expanding this item in the tree.

Support Node Name: custb.cust.com

Done Local intranet zone



MCSC Monitor - Microsoft Internet Explorer provided by SoftQuad Software Inc.

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit

Address http://h8oca.fc.hp.com/tracker/tmp/index.961446587.html

---

**hp HEWLETT PACKARD MCSC Monitor**

Enterprises Customer Data Admin Info

Tracking Collection Templates Info

**Available Actions**

Changes Time1 Time2 Command

Collect Now Properties List Changes

Reload Search Help

**Timeframe (MDT)**

Change Time1: 09 Nov 1999 18:51

Timeframe Time2: 31 May 2000 19:59

**Caltex Australia**

- condb1
- prcdpp1.ampol.com.au
- prcdpp2.ampol.com.au
- prcdpp3.ampol.com.au
- prcdpp4.ampol.com.au
- prcdpp5.ampol.com.au
- prcdb0.ampol.com.au

Caltex Australia

---

**Patch Summary Report for 'Caltex Australia'**

This report depicts the overall set of patch candidates for HP-UX devices in this enterprise. Each cell may contain an indicator of the type of patch candidate. A blank cell indicates that the patch is not installed and not a candidate. A cell containing an 'I' indicates that the patch is already installed.

Links to:

- [System Summary](#)
- [Analyzer Legend](#)

HP-UX 10.XX	P	P	P	P	P	P	c
	r	r	r	r	r	r	o
	d	d	d	d	d	d	n
	a	a	a	a	a	d	d
	p	p	p	p	p	b	b
	p	p	p	p	p	0	1
	1	2	3	4	5		
B.10.20							
<a href="#">PHCO 7891</a>	I	I	I	I	I	I	I
<a href="#">PHCO 7892</a>	I	I	I	I	I	I	I
<a href="#">PHCO 8009</a>	I	I	I	I	I	I	I
<a href="#">PHCO 8246</a>				I	I	I	I
<a href="#">PHCO 8247</a>				I	I	I	I
<a href="#">PHCO 8621</a>	I	I	I	I	I	I	I

Start | Inbox - Outlook Expr... | MCSC Monitor - ... | untitled - Paint | Exploring - C:\HP | 2:53 PM





MCSC Monitor - Microsoft Internet Explorer

Address: http://nacondo.fc.hp.com/tracker/mp/index.955664190.html

**HEWLETT PACKARD MCSC Monitor**

Enterprises: Customer Data Admin Info

**Available Actions**

Reload Search Properties Help

Patch Summary Scheduling Subscription

**Customer Enterprises**

- MCSC
  - At MCSC Before A.03.00
    - Customer A**
    - Customer B
    - Customer's Name has apostrophe
    - Set Company Name (neruda)
  - Unassigned
  - Customer C

At MCSC Before A.03.00 Customer A

**\* Modify the Analyzer Schedule for the Enterprise 'Customer A' \***

The analyzer schedule for this enterprise is summarized below. The analyzer schedule displays how often the devices of this enterprise are analyzed. Designating which analyzers are applied to a device is accomplished via [Analyzer Subscription](#). **Note:** this operation may take up to a minute to complete.

Modify Analyzer Schedule or [Cancel This Task](#)

Analyzer Name	Interval
critical	<input type="radio"/> Disabled <input checked="" type="radio"/> Daily <input type="radio"/> Every N Days: 2 <input type="radio"/> Weekly on day: Sun <input type="radio"/> Monthly on day: 1
firmware	<input type="radio"/> Disabled <input checked="" type="radio"/> Daily <input type="radio"/> Every N Days: 2 <input type="radio"/> Weekly on day: Sun <input type="radio"/> Monthly on day: 1
recalled	<input type="radio"/> Disabled <input checked="" type="radio"/> Daily <input type="radio"/> Every N Days: 2 <input type="radio"/> Weekly on day: Sun <input type="radio"/> Monthly on day: 1
	<input type="radio"/> Disabled

Done Internet



MCSC Monitor - Microsoft Internet Explorer

Address: http://macondo.ic.hp.com/tracker/imp/index.955664190.html

**hp HEWLETT PACKARD MCSC Monitor**

Enterprises Customer Data Admin Info

**Available Actions**

Reload Search Properties Help

Patch Summary Scheduling Subscription

**Customer Enterprises**

- MCSC
  - At MCSC Before A.03.00
    - Customer A
    - Customer B
    - Customer's Name has apostrophe
    - Set Company Name (neruda)
  - Unassigned
  - Customer C

**\* Current Analysis State for devices in 'Customer A' \***

The table below represents the analyzer subscription state for all HP-UX devices in this enterprise. If a device is subscribed to a specific patch analyzer, it is processed during the scheduled run that analyzer. Modify the set of analyzers scheduled to process these devices with the check-boxes then push the 'Finish' button.

[Analyzer abbreviations legend.](#)

HP-UX Device	c	f	r	s	s	y	R	l	d	E	HP-UX Device	F	f	F	F	F	H	h	I
	r	i	r	e	e	2	a	0	l	t		b	d	C	C	W	w	f	f
	t	m	a	u	v	k	i	0	t	t		p	i	M	N	S	d	s	m
monstro	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	monstro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
thisway	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	thisway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Finish or [Cancel This Task](#)

**Analyzer Abbreviations:**

abbrev	Analyzer	Description
crit	critical	Reports applicable Critical (and Supersedes Critical) patches.
firm	firmware	Reports disks, SPUs and interfaces that have problem firmware revisions.
reca	recalled	Reports active recalled patches that are installed on the system.
secu	security	Reports applicable security patches.
serv	service_notes	Reports Service Notes, less than two years old, for SPUs.
y2k	y2k	Reports applicable patches that fix Y2K-specific problems.
Raid	AutoRaid	Reports applicable patches for disk arrays manufactured by HP.
100t	A 100BaseT	Reports applicable patches for 100BaseT networking



MCSC Monitor - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit

Address http://nacondo.fc.hp.com/tracker/tmp/index.95559483.html

---

**hp HEWLETT PACKARD MCSC Monitor**

Enterprises Customer Data Admin Info

Tracking Collection Templates Info

**Available Actions**

Changes Time1 Time2 Command

Collect Now Properties List Changes

Reload Search Help

**Timeframe (MDT)**

Change Time1: 12 Apr 2000 12:04

Timeframe Time2: 12 Apr 2000 12:04

- HP-UX Configuration
- Network
- Printing and Spooling
- Software Configuration
- ph3400nt**
- Boot & Shutdown
- Cluster Config
- Components
- Event Log
- Hardware
- Network
- NT Configuration
- Ports
- Printing
- Resources

ph3400nt

Note: this operation may take some time. You can continue when the cursor returns to normal when over the left side.

**All Configuration Items**

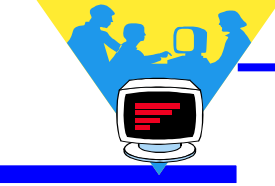
NOTE: Any configuration data that contains a '<' is processed in this view as an html tag therefore causing the display of data to look incorrect. However, a 'Save to File' or 'View Source' contains the actual data.

```
*****
### START OF Adapter

----- "AMDPCN1"
AdapterType           "Ethernet 802.3"
Availability           3
Caption               "[1] AMD PCNET PCI Ethernet Adapter"
CreationClassName     "Win32_NetworkAdapter"
Description           "AMD PCNET PCI Ethernet Adapter"
DeviceID              "AMDPCN1"
Index                 1
InstallDate           30 May 1997 10:85 GMT -06:00
Installed             TRUE
MACAddress             "00:60:BD:7C:F9:FC"
Manufacturer          "Microsoft"
MaxNumberControlled   1
Name                  "[1] AMD PCNET PCI Ethernet Adapter"
NetworkAddresses      "00:60:BD:7C:F9:FC"
PermanentAddress      "00:60:BD:7C:F9:FC"
PNPDeviceID           "PCI\VEN_1106&DEV_1000&SUBSYS_1000_0000"
PowerManagementSupported FALSE
ProductName           "AMDPCN"
ServiceName           "AMDPCN1"
Speed                 100000000
Status                "OK"
StatusInfo            3
SystemCreationClassName "Win32_ComputerSystem"
SystemName            "PH3400NT"
TimeOfLastReset       03 Jun 1999 03:15 GMT -06:00
```

Done Internet





# HP Configuration Analyzer



- ✓ HP Configuration Analyzer (CA) automatically analyzes customer configurations by patch, service note, and firmware analyzers. It automatically notifies the Mission Critical Support Center by creating workflow cases.
- Proactive analysis occurs automatically once configuration data arrives at the MCSC
- Case automatically generated in Workflow Management System to notify HP Support Personnel of potential problems





# Application Patch Analyzers - List of Analyzers

- AutoRaid
- A\_100BaseT
- DLT
- Ethernet
- Fbackup
- FDDI
- FibreChannelIMS
- FibreChannelNet
- FWSCSI
- HardwareModel
- HFS
- Informix
- JFS



# Application Patch Analyzers - List of Analyzers (continued)

- LP Spooler
- LVM
- Mirroring
- NFS
- OmniBack
- OnlineJFS
- Oracle
- OS
- Predictive
- SAP
- ServiceGuard
- SE SCSI
- SNA
- X25



# HP High Availability Observatory Level 200 Training

Course Objectives

- ◆ Part 1 - Review the Site Prep Process
- ◆ Part 2 - Install and Configure the Support Node Router and HP Support Node
- ◆ Part 3 - Connect to the customer's MC Environment
- ◆ Part 4 - Configure and use the HAO Support Tools
- ◆ Part 5 - Use Support Tools in the MCSC
- ◆ **Completed!**



# 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

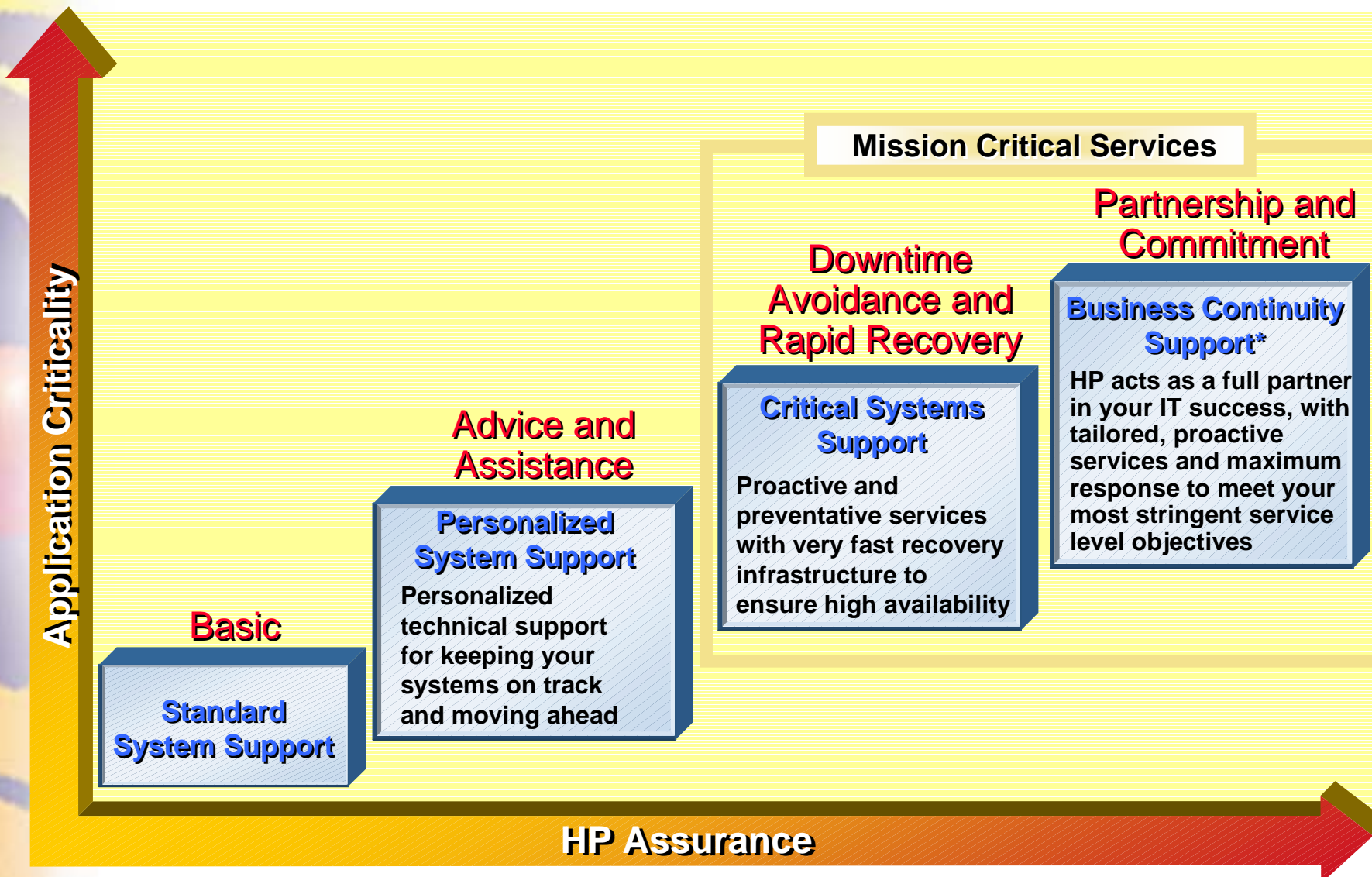
***The HAO Is Changing the Face  
of Mission Critical Support***

# 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

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# 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

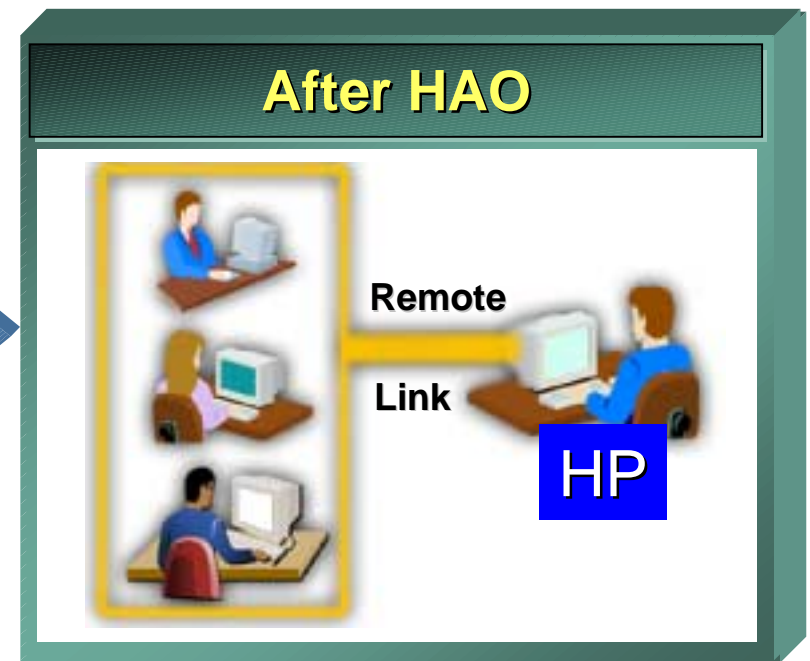
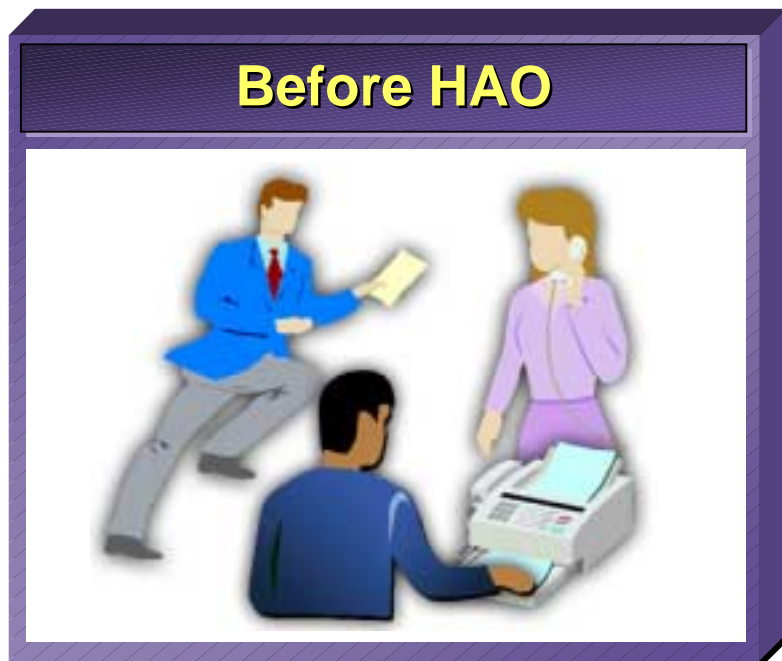
Phone Home Problem Prediction

# 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

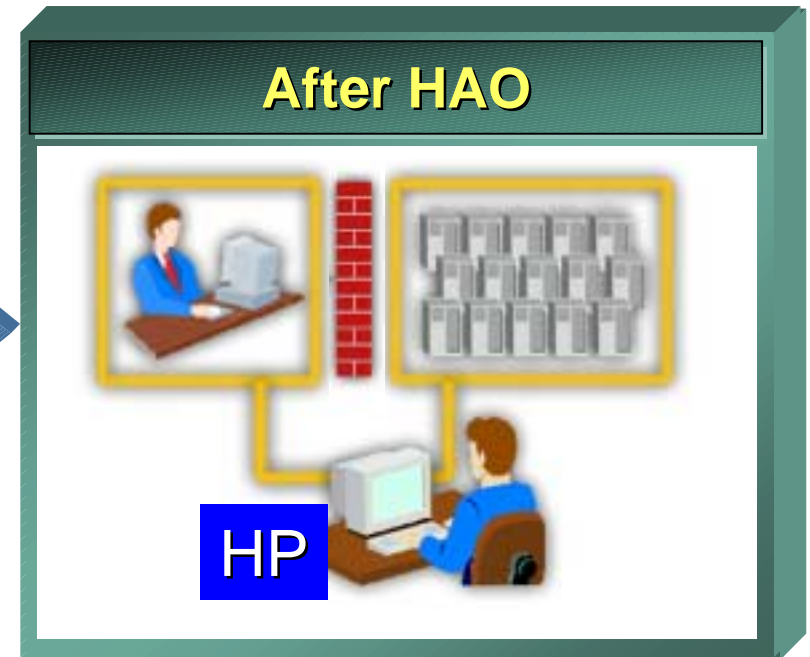
**Result:** Most time is spent trying to get latest config info... which may not exist

- 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



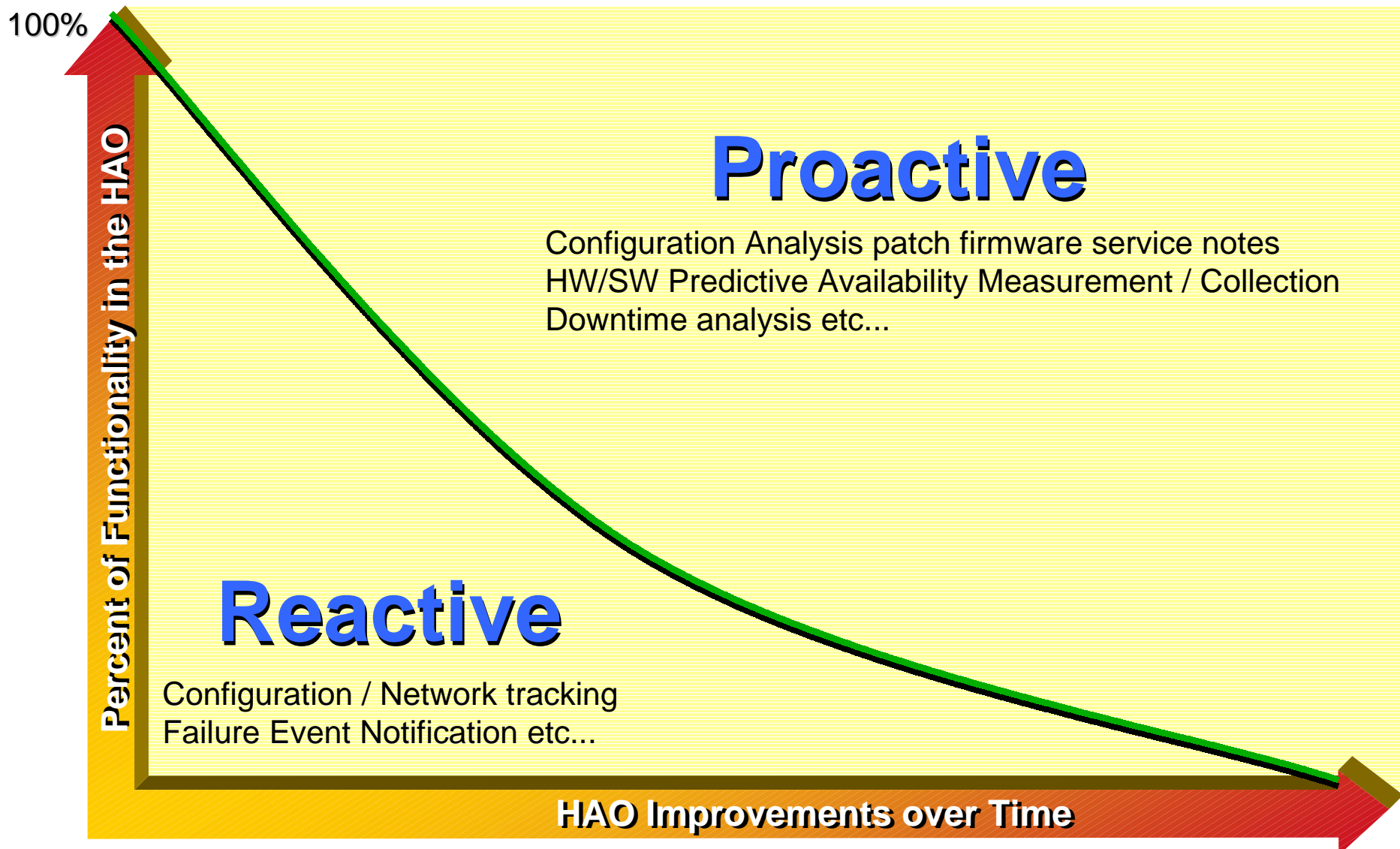
- Customer and HP manually identify missing patches

**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



## HAO “Flagship” Technologies:

- **HP Configuration Tracker** - collects configuration data and tracks configuration changes
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## Other support tools:

- ◆ **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

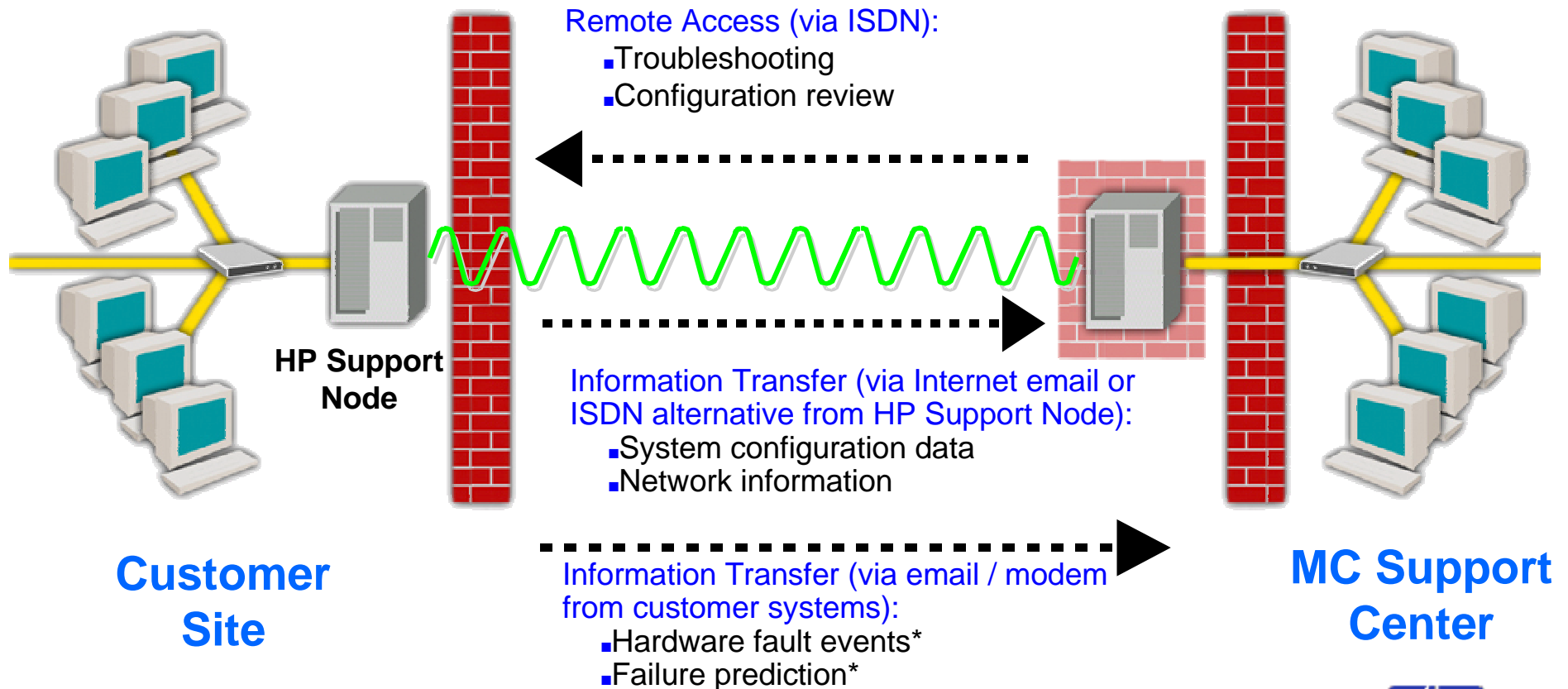


# The Link to HP



**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



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# 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

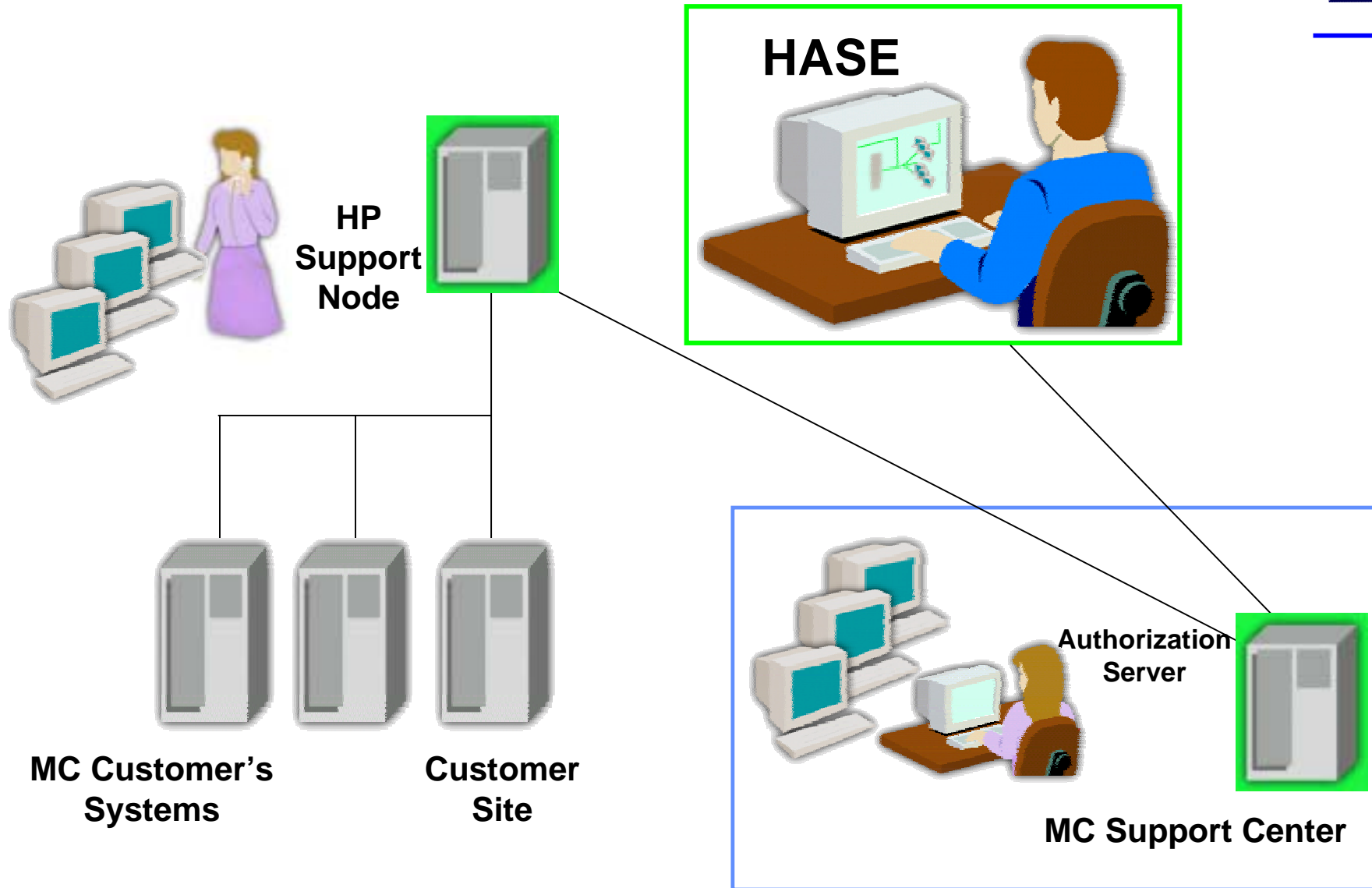
# HP Event Notifier for HP-UX



- ✓ 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



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# 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

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# 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)
<b>Purpose</b>	<b>Monitor and Manage Networks</b>	<b>Monitor and Manage Corporate IT Environments</b>	<b>Monitor Mission Critical Systems and Network</b>
<b>Automatic discovery</b>	X	X	X
<b>Show current status</b>	X	X	X
<b>Automatic corrective reaction</b>	X	X	--
<b>Show configuration history and differences</b>	--	--	X
<b>Automated transfer of information to HP's Mission Critical Support Center</b>	--		X

# The HAO Addresses Common Causes of Downtime



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