CiscoWorks LMS & Netmanager



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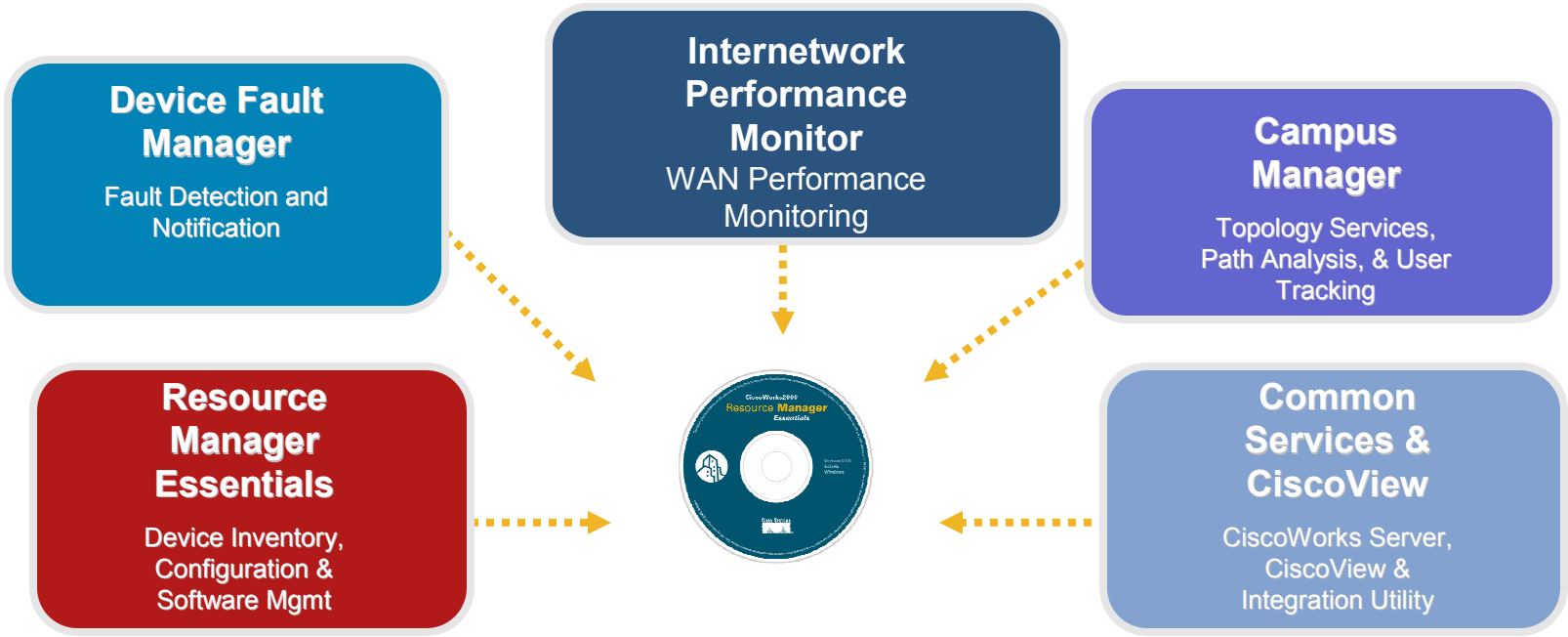
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Executive Summary

- LAN Management Solution (LMS) is a suite of five integrated applications designed to simplify and augment the daily tasks required to manage a Cisco end-to-end network - reducing total cost of ownership and improving network availability.
  - ***Simplifies*** and automates tasks associated with day-to-day management – inventory, configuration, software deployment and troubleshooting
  - ***Supports*** a broad range of Cisco devices down to the interface – detailed reporting, monitoring and configuration
  - ***Provides*** detailed visibility of users, ports and network connectivity – topology services, user tracking, inventory
  - ***Automates*** the change management process quickly identifying hardware, software and configuration changes – change audit reports
- LMS 3.0 is a MAJOR software version release with significant new features, improved usability, scalability and performance.
  - As a major release, upgrades are NOT covered under existing SAS contracts.
  - A limited promotion is available to help protect existing customer investment in the LMS product line (see details at the end of this presentation)

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LAN Management Solution 3.0





Suite of management tools that simplifies configuration, administration, monitoring and troubleshooting of Cisco networks

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What's NEW in LMS 3.0

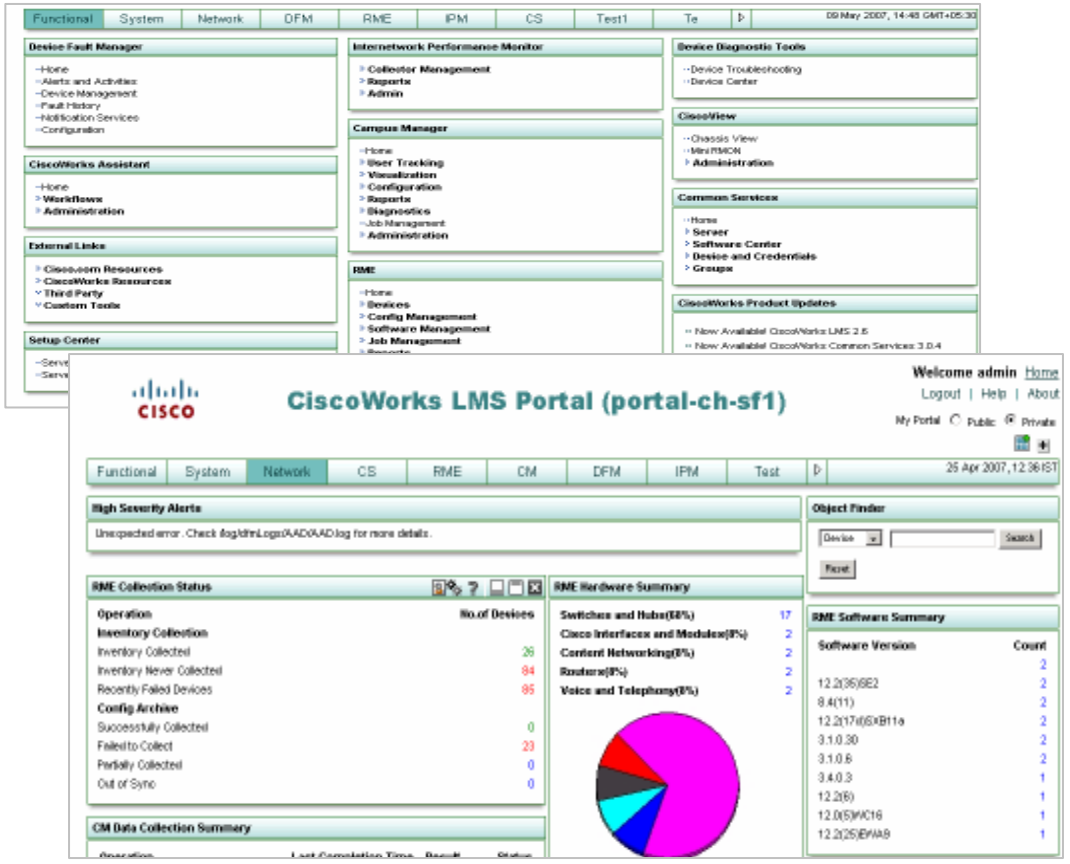
- Significant enhancements in overall usability
  - –New desktop portal framework – allows end user customization of homepage and access to frequently used content
  - -CiscoWorks Assistant workflow engine – provides a single set of workflows to help with setup and troubleshooting
- Single DVD for faster, easier installation
- Improved scalability and reliability
- Many new application features; some highlights include:
  - Support for multiple credentials, improved device administration in DCR
  - New reports for EoX, PSIRT, Best Practices, Discrepancies
  - Dynamic User Tracking, N-hop analysis
  - IPM new UI, reporting and IPSLA support
  - Environmental support; Sol10, Firefox, IE7 and SSHv2

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CiscoWorks Portal

NEW

- Provides default views to simplify navigation and usability
  - Functional, SysAdmin and NetAdmin views
- Portals can be customized to meet end-user needs
- Common access to important statistics/details
- Top-level navigation for frequently-used functions

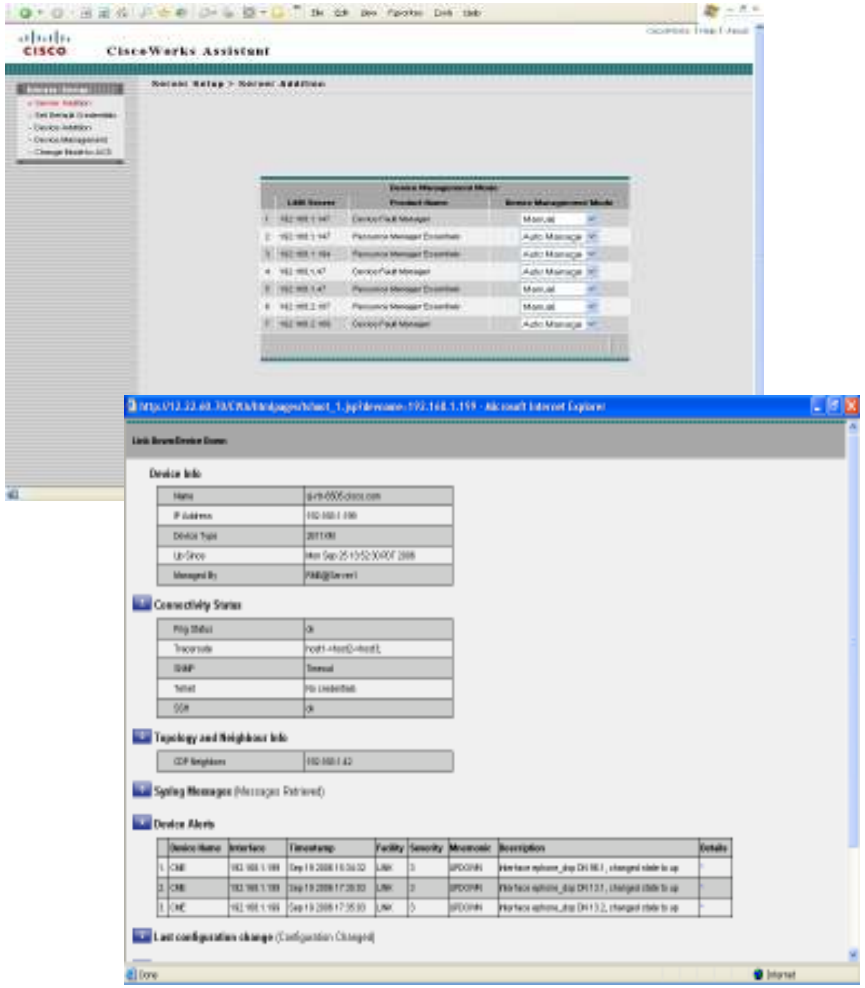


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CiscoWorks Assistant

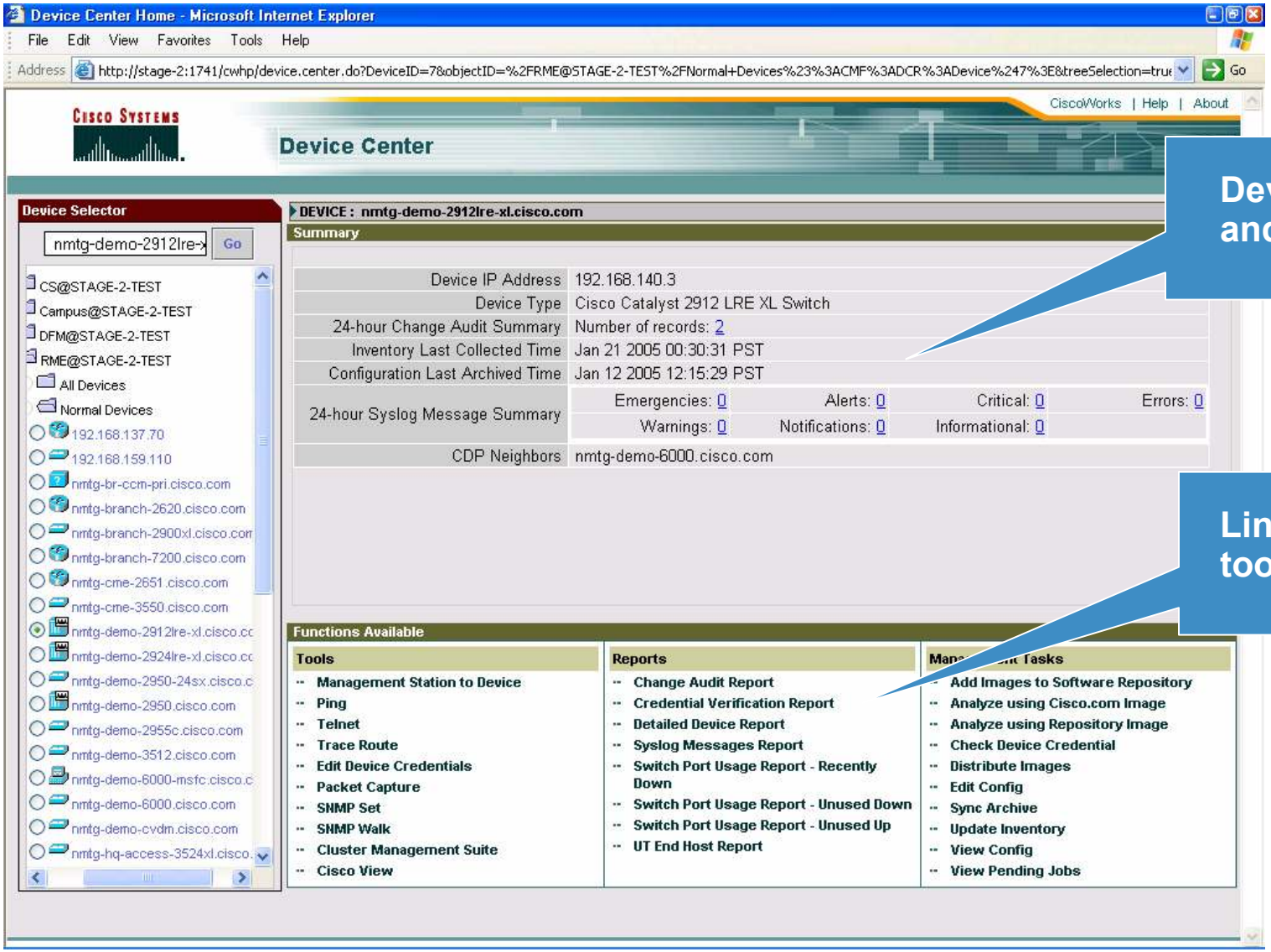
NEW

- Simplified deployment and setup of LMS server
  - **Faster turnaround and improved efficiencies with LMS rollouts**
- Large scale multi-server LMS deployments
  - **Comprehensive coverage from setup SSO, DCR master-slave, device management- import and allocation of devices, and addition of default credentials and ACS integration**
- Troubleshooting
  - **Locating End host**
  - **Device down**



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Device Center

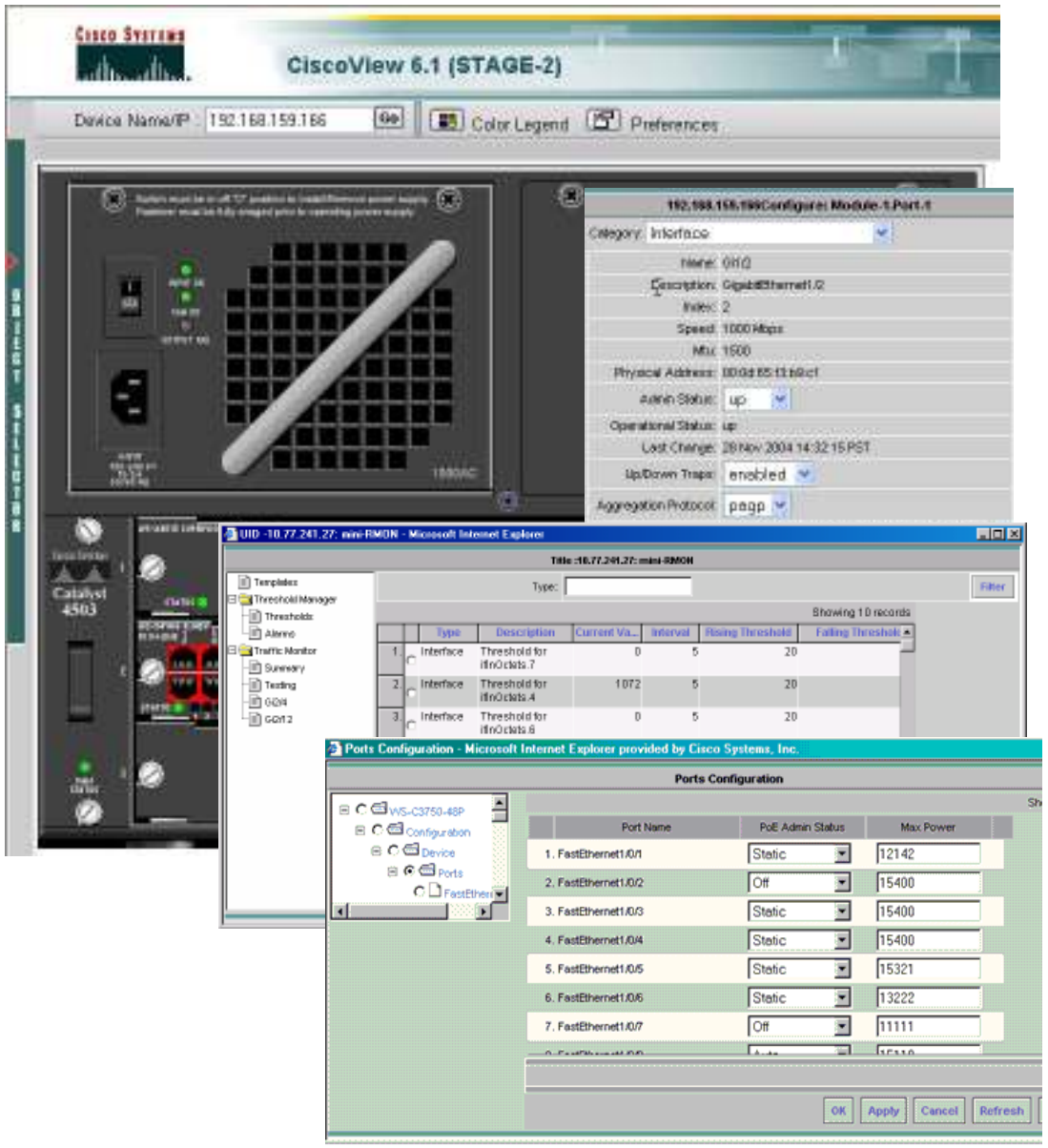


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CiscoView

- SNMP-based device management tool – all monitoring and configuration capabilities based on MIB support
- Monitor real-time statistics for interfaces, resource utilization, and device performance
- Threshold manager, mini-RMON support
- Supports a broad range of Cisco switches and routers
- PoE configuration and monitoring

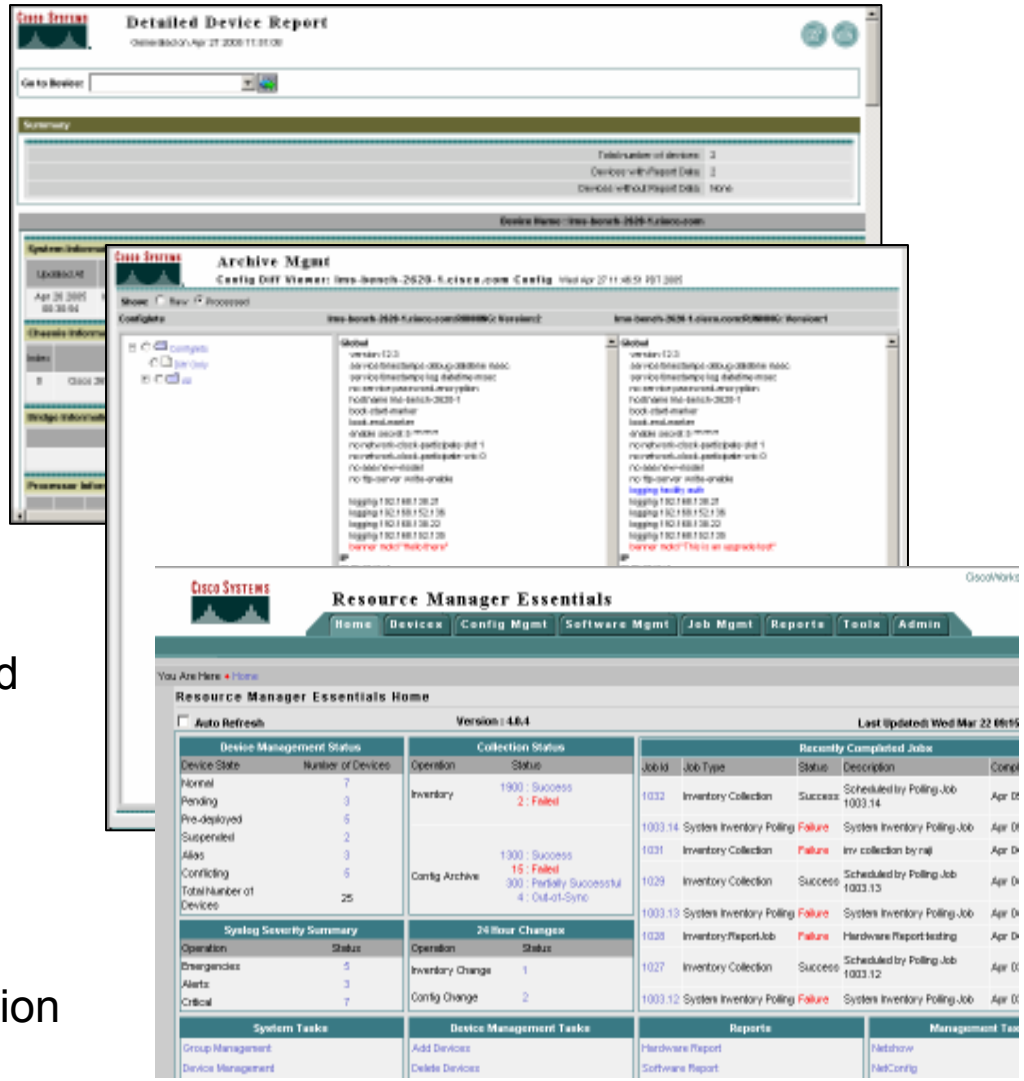
NEW



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Resource Manager Essentials

- Inventory Manager
  - Detailed inventory collection and reporting
- Software Image Manager
  - Complete software image mgmt, download and tracking
  - Modular IOS support NEW
- Configuration Manager
  - Version control, archival, editing and reporting
  - Network-wide config changes
- Change Audit Services
  - Single interface to view all hardware, software, and configuration changes



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Resource Manager Essentials

- Syslog Analyzer

  Distributed collection, flexible reporting, and action scripts to pinpoint network incidents

- PSIRT Report NEW

  PSIRT details, Announced date, Description , Severity, IOS Version (s) impacted, Image File Name (s), Fixed in IOS Version, Number of Devices Impacted, Devices affected due to PSIRT

- EoSale/EoLife Report NEW

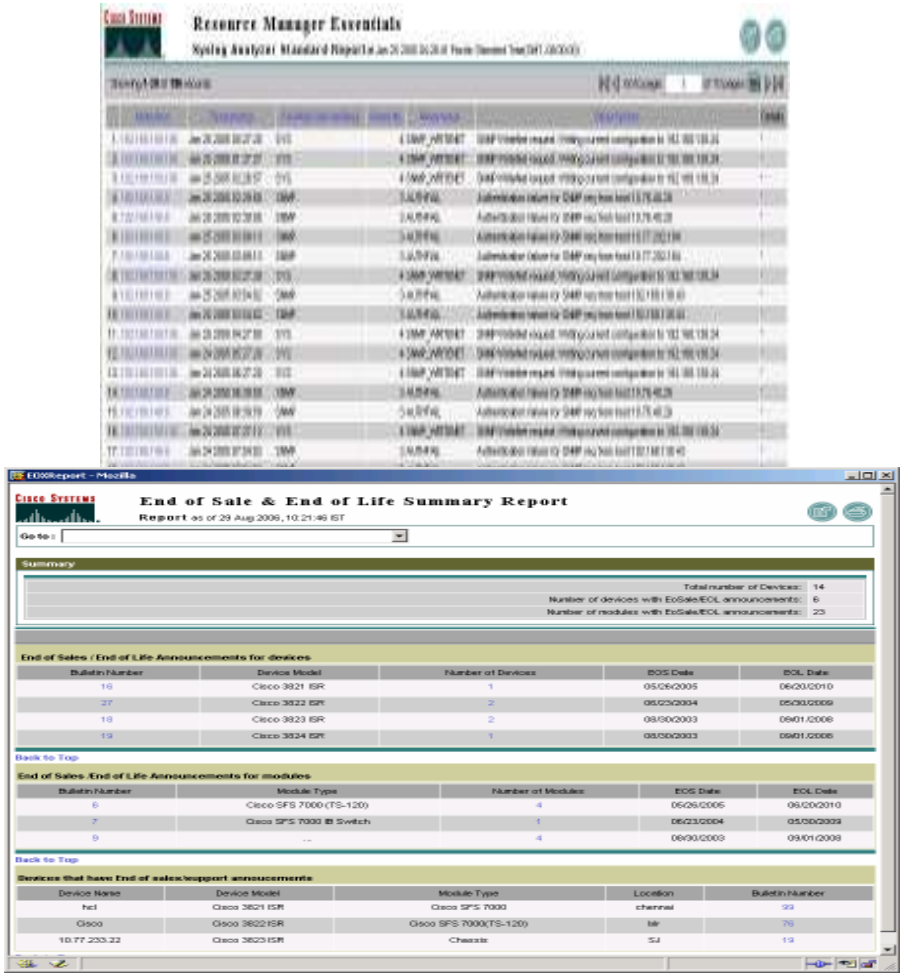
  Hardware Platforms with published EoX bulletin, Cards/Modules with published EoX bulletin.

- Diagnostics & Tools

  Troubleshoot device connectivity

  Desktop integration of partner and customer applications

  User customizable Network-wide show command tool

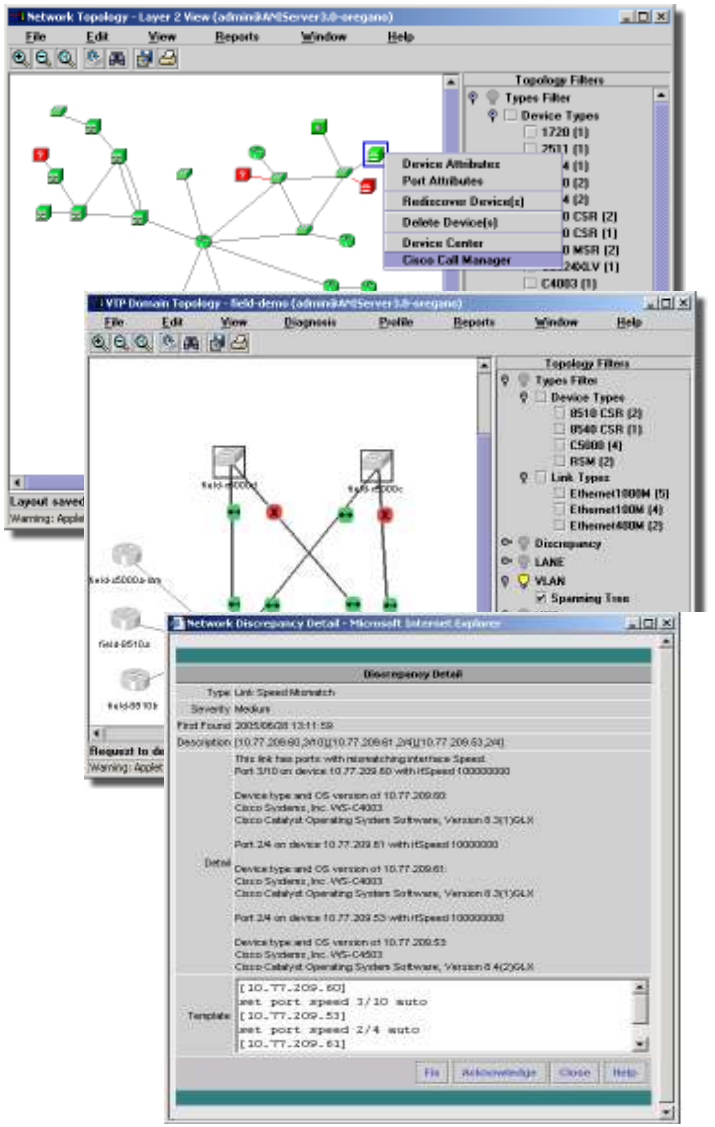


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Campus Manager

Provides powerful tools for configuring, managing, and understanding complex physical and logical Layer 2 Infrastructure

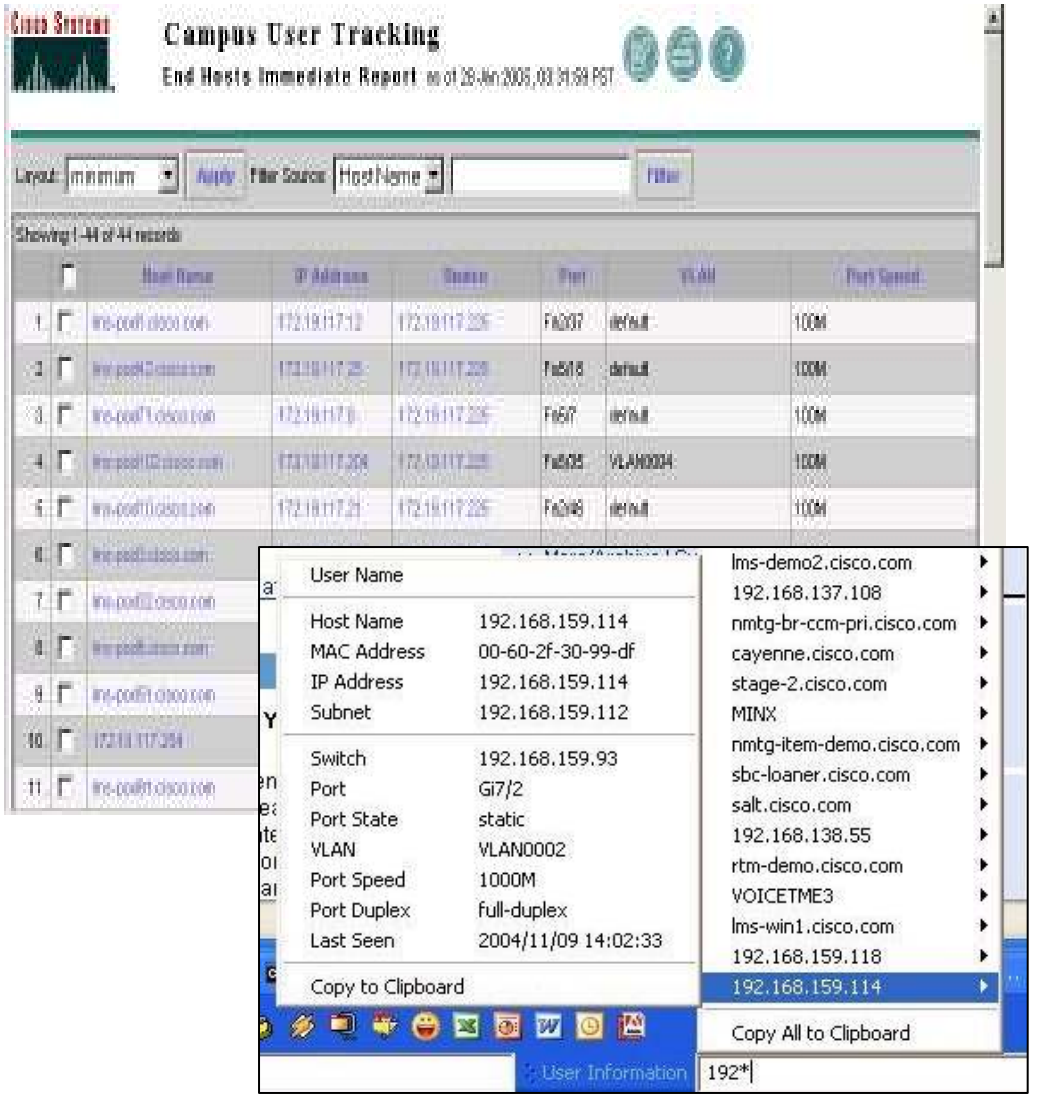
- Enhanced network discovery and topology mapping
  - N-Hop View portlet (N-hop view from a specified device) NEW
- VLAN Management
- End-station mobility and tracking
- Path Trace Analysis
- New improved discrepancy reporting NEW



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User Tracking

- Lightweight HTML Interface
- Support up to 250,000 end hosts
- Dynamic UT – real-time end host data – based on asynchronous SNMP MAC notification trap NEW
- Improved historical reporting by user NEW
- User tracking utility available from Windows taskbar
- Supports XML export for UT records



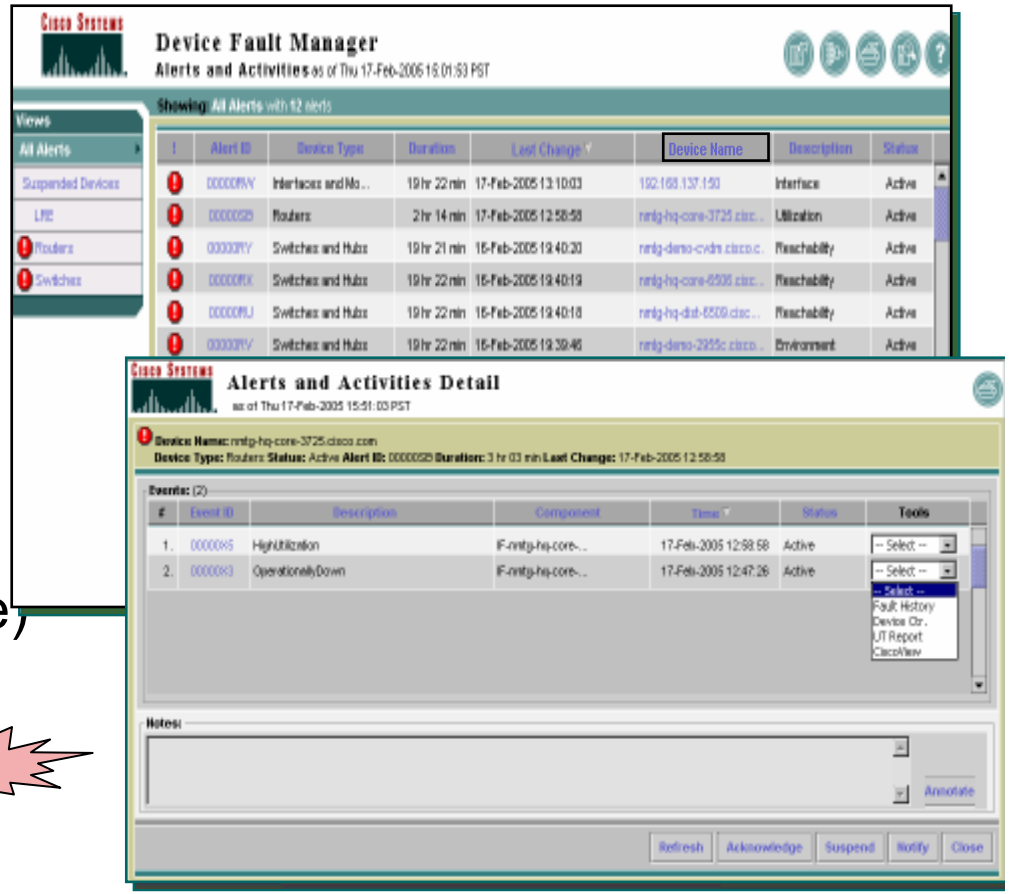
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Device Fault Manager

- Quickly and easily detect, isolate, and correct network device faults
- Identify POSSIBLE Problems
- Pager/Email/Trap notification
- MIBs, Polling Intervals and Thresholds Set - OUT OF THE BOX
- Group by interface (ifDesc, ifType)
- New Active Alarm Display with paging tables and search

NEW

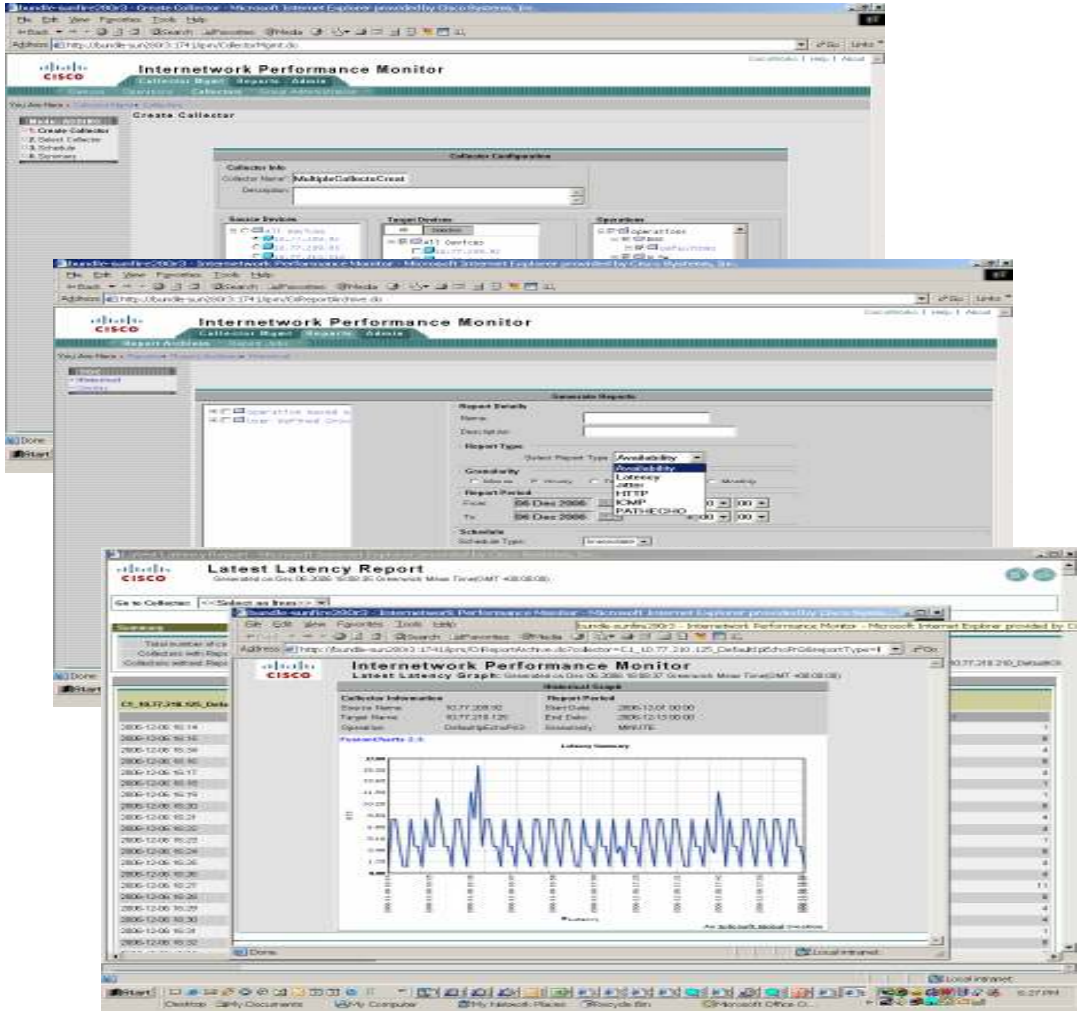
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Internetwork Performance Monitor

- WAN Troubleshooting
  - Measures hop-by-hop response time, availability, jitter, and drops
  - Provides real-time and historical reports
- Utilizes IP SLA (previously known as Cisco's Service Assurance Agent) embedded in Cisco IOS
  - Validates & measures TCP, UDP, HTTP, VoIP, DNS, ICMP with QoS awareness
  - Customizable polling frequency for collectors
- New UI, improved scalability, and report generator and reports



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Key Value Propositions

- Breadth of device support (over 400 Cisco device types) provides a single application suite for managing most Cisco-labeled devices
- Built on a set of common management components helps to ensure co-existence and integration between application functionality providing a more seamless end-user experience
- Robust suite of product functionality for day-to-day operations built on a lightweight HTML-based user interface allows flexibility in workflows and troubleshooting scenarios
- Significant improvements in scalability, usability, security and performance enhance overall customer satisfaction and improve product usage
- Reduces and automates many time consuming tasks; config and change, software image management, troubleshooting saving overall OPEX dollars

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Cisco netManager - Overview



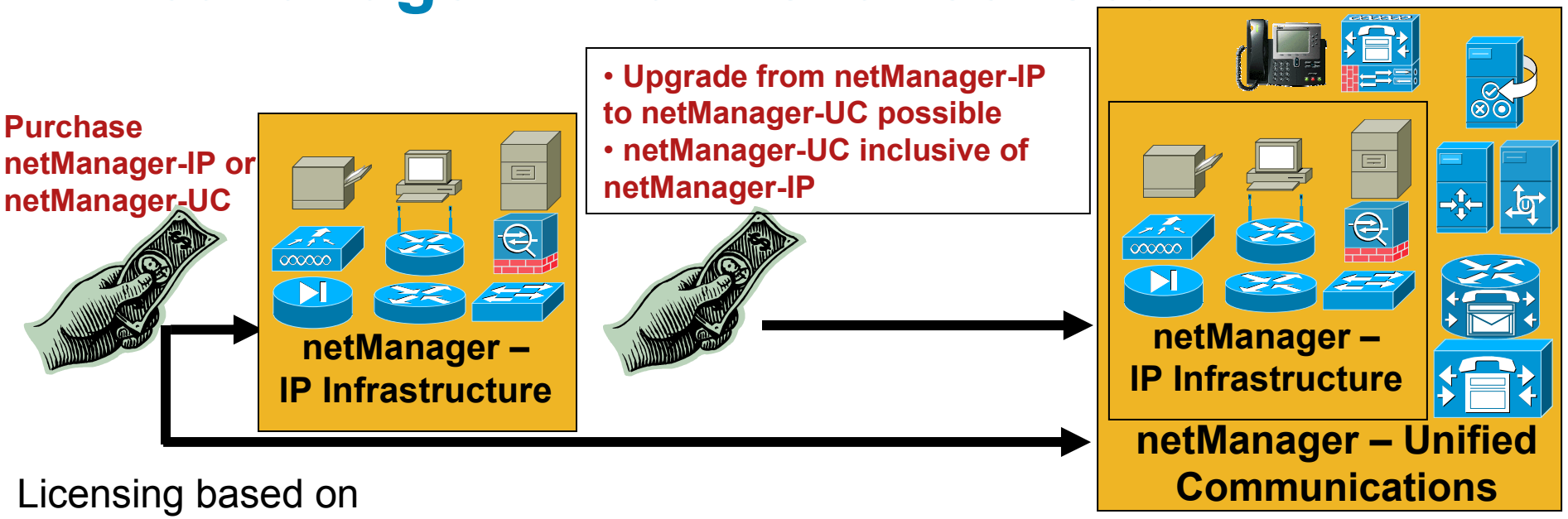
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What is Cisco netManager?

- Simple, easy to use, proactive monitoring and troubleshooting application for commercial mid-market networks – addressing mid-market concerns
- Real-time operational and performance monitoring for a converged network, including coverage for Cisco Unified Communications elements
- Support for broad range of Cisco platforms (routers, switches, PIX firewalls, IDS, ASA and Wireless Access Points)
- Easy visualization of network status through topology and service-level views (SLV)
- Increases productivity and speeds troubleshooting by providing contextual diagnostic tools and easy one-click access to devices
- Single monitoring interface for both Cisco and non-Cisco elements of the network/application infrastructure.
- Powerful reports providing the ability to view historical trends
- Can be licensed as:
  - Cisco netManager - IP Infrastructure
  - Cisco netManager - Unified Communications (Unified Communications is inclusive of IP Infrastructure)
  - Licensed based on time (subscription/permanent), feature (Data/UC) and scale (50/100 device and AP's, 250/500/1000 phones)

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netManager – How is it licensed?



Licensing based on

- **Feature:** Cisco netManager – IP or Cisco netManager - UC
- **Scale:**
  - Device and AP based for netManager – IP (50 device/AP or 100 device/AP)
  - Phone based for netManager – UC (250 phones or 500 phones) – possible to stack UC license up to 1000 phones
- **Time:** 1 year subscription (Annual right-to-use (RTU)) or Perpetual RTU
- Upgrade from Cisco netManager - IP to Cisco netManager - UC supported
- No upgrades possible with 1 year time limited licenses

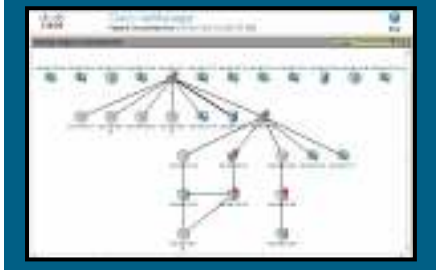
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Cisco netManager - IP Infrastructure

Manage your network proactively and efficiently

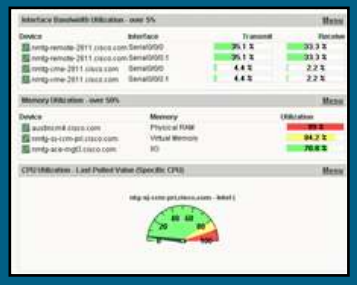
Discovery & Visualization

- Discover the network and collect detailed device inventory
- Support for broad range of Cisco devices (routers, switches, PIX firewalls, IDS, ASA and Access Points)
- Get visibility into servers, workstations, printers and network devices
- Visualize the network using physical and service level* view



Monitoring

- Monitor network status using a customizable dashboard
- Get real-time visibility into key performance metrics such as CPU, interface, and response time for network devices
- Flexible monitoring, users select monitoring parameters



Alerting and troubleshooting

- Proactive and reactive alerts sent via: email, SMS, SNMP Traps, windows pop-ups, launching programs, etc
- Rapid troubleshooting using contextual diagnostics (ping, traceroute, DNS lookup)



Analyze network trends

- Extensive, out of the box pre-configured reports, including various top 10 reports
- Analyze short-term and long-term historical network trends
- Easily extend reports to meet specific network needs



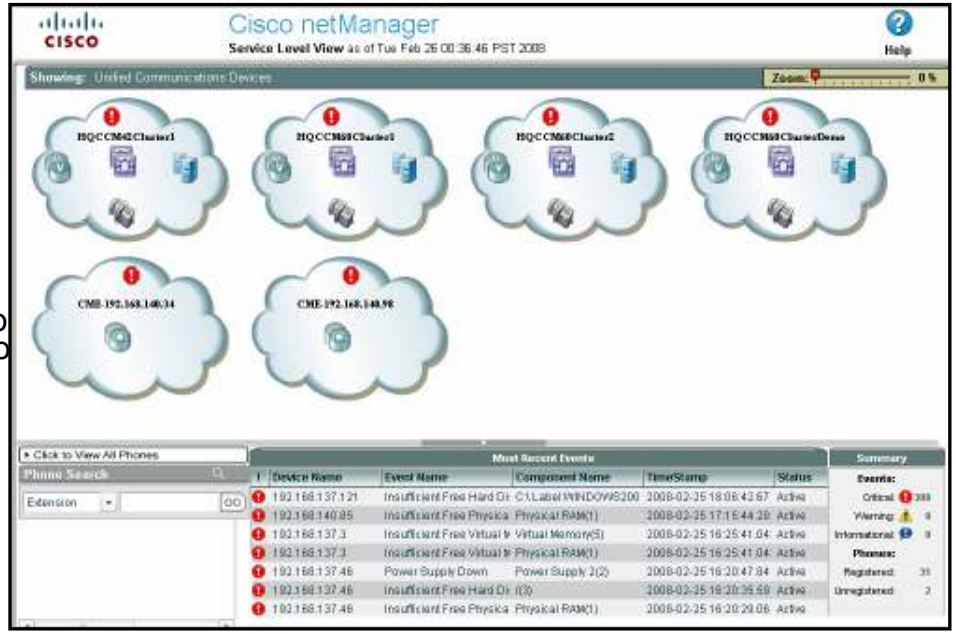
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Cisco netManager – Unified Communications

netManager – UC includes all features in netManager – IP, and in addition, provides support for Unified Communications

- Real-time portals for network status/UC status
- Support for both data and UC applications*
- Actionable service level view for UC deployments (Cluster views, gateway and application operational status)
- Phone and device inventory reports: phone status, phone search
  - SCCP and SIP Phones
  - Phone status change reports



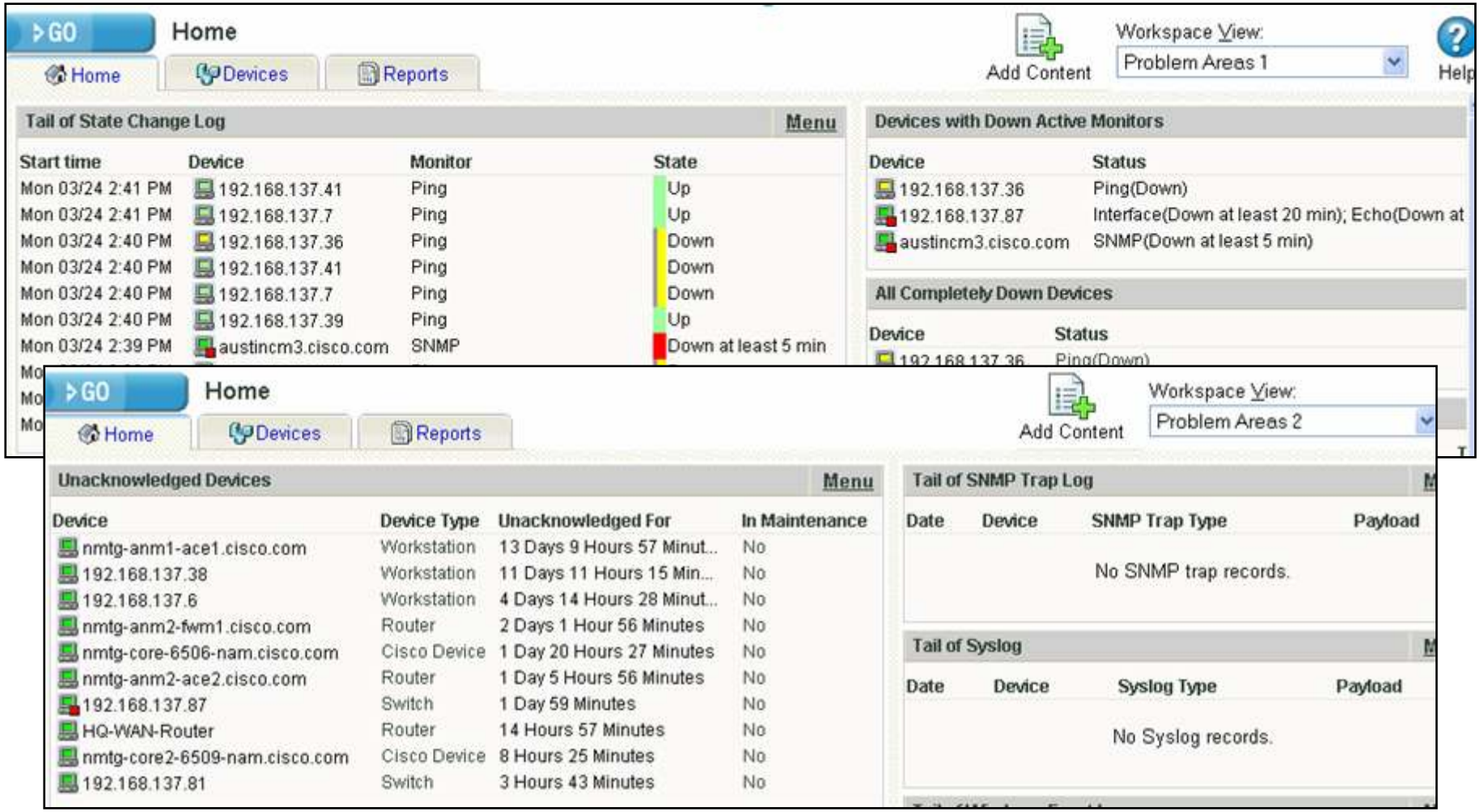


* UC support includes Cisco Unified Communications Manager, Cisco Unified Communications Manager Business Edition, Cisco Unified Communications Manager Express, Cisco Unity® , Cisco Unity Express, Cisco Unity Connection, Cisco Unified Contact Center Express, Cisco Unified Presence Server, Cisco Unified MeetingPlace® Express and IP phones

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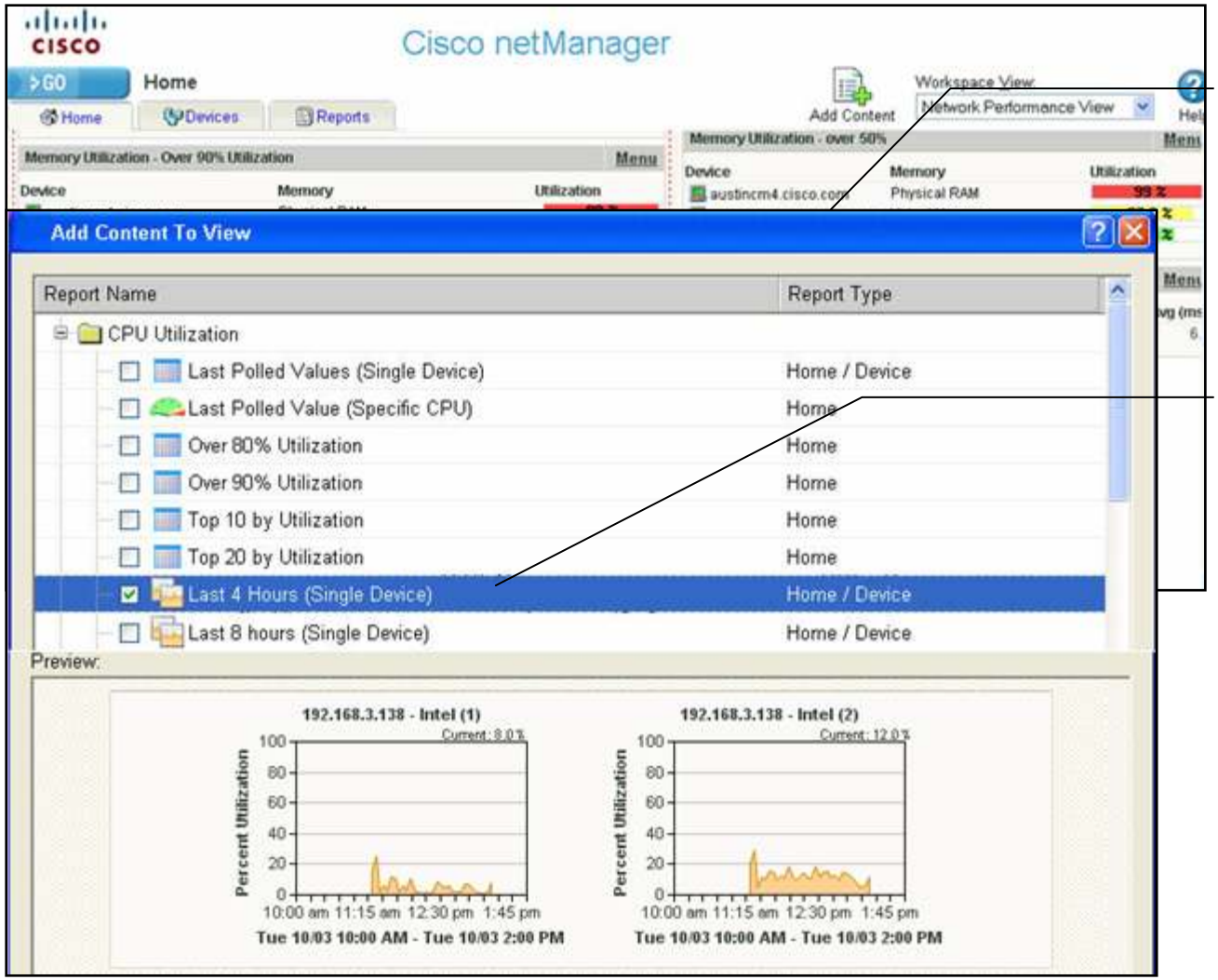
Dashboard - View of “Problem Areas”

- Use drop-down menus to get quick access to problem areas in the network



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Customizable Dashboards - Personalized Look & Feel



Move around individual portlets to personalized the dashboard (customizable per user)

Add new portlets to the dashboard to monitor specific metrics

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Cisco netManager

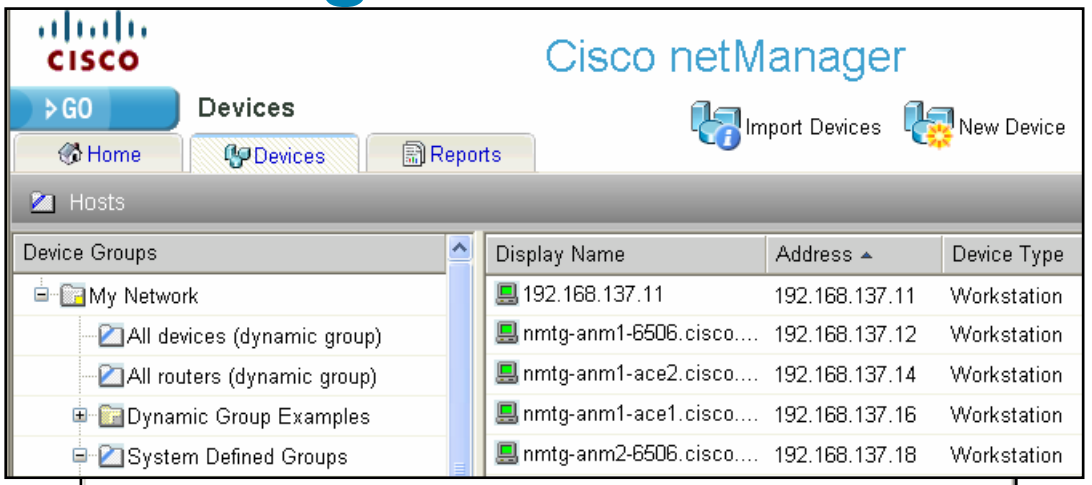
- **Discover** your network
- **Visualize** the network via network maps and logical device groupings
- **Monitor** all network devices, servers, interfaces
- **Be alerted** when a problem occurs and troubleshoot rapidly
- **Generate reports** for historical analysis and trending

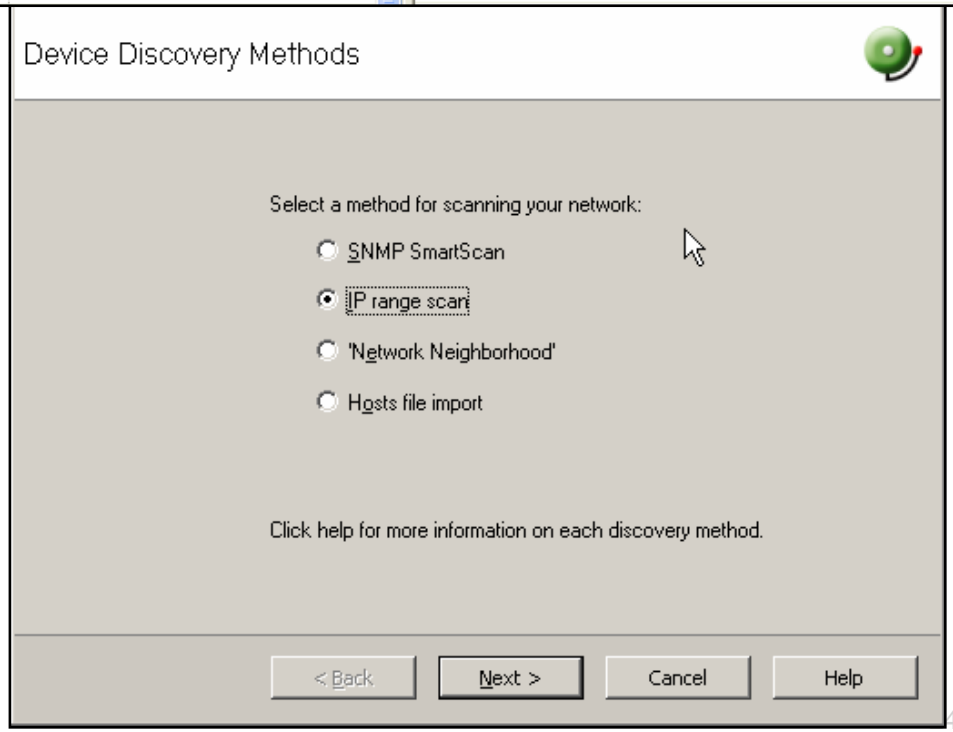
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netManager - Discovering the Network

netManager provides multiple options to discover the network

- Discovery is fast and easy from netManager web based user interface
  1. Rapidly import a large list of devices using an import file
  2. Import specific devices by using the “New device” import feature on the devices page
- netManager’s console offers a variety of discovery options:
  1. SNMP SmartScan discovers the network using a seed device
  2. IP range scan discovers all devices in a given range

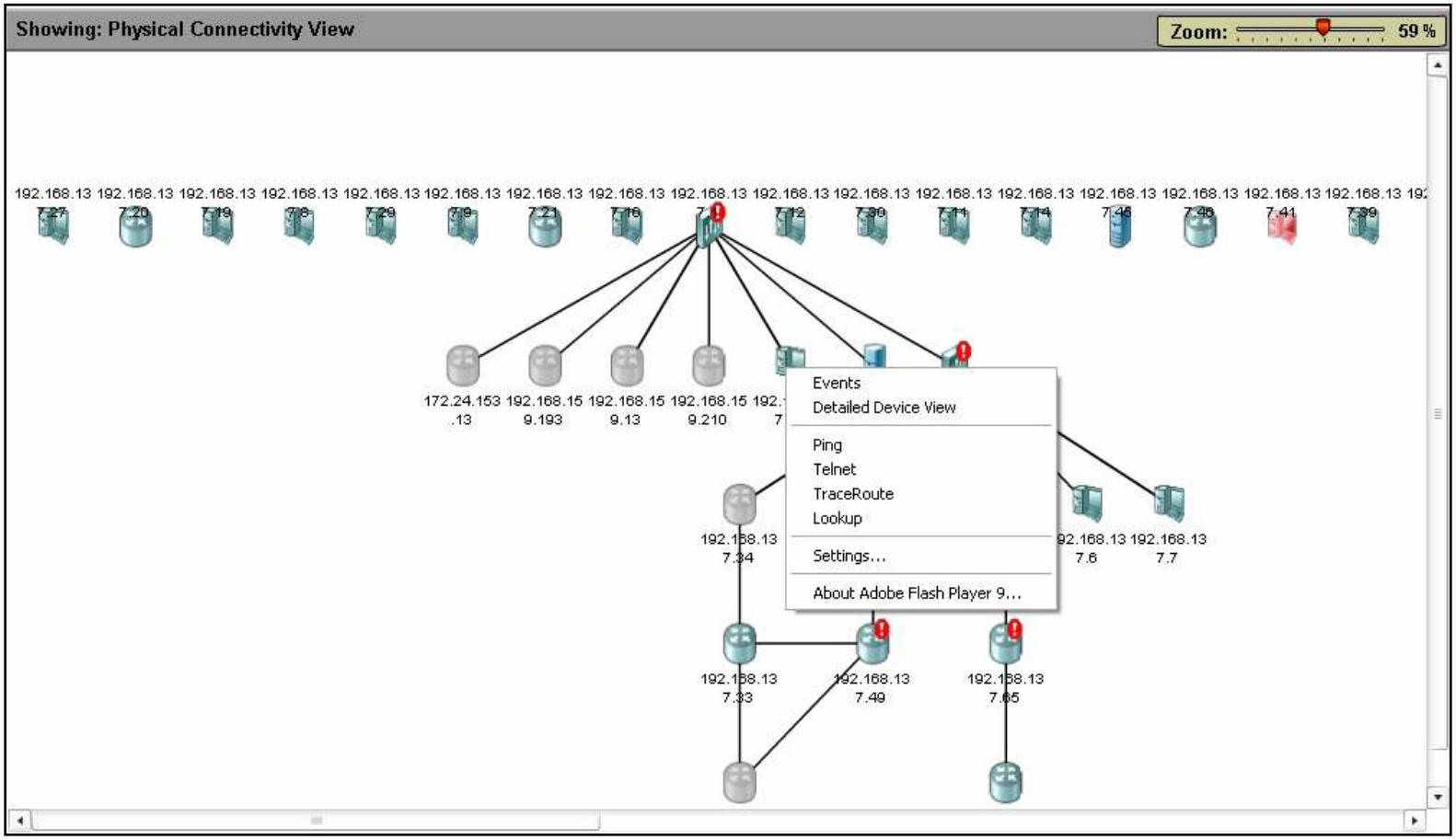




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Visualize – Physical Connectivity View

- Physical Connectivity View provides contextual launch points for:
  - Events
  - Detailed Device View
  - Diagnostic tools e.g. Ping, Telnet, Traceroute, Lookup

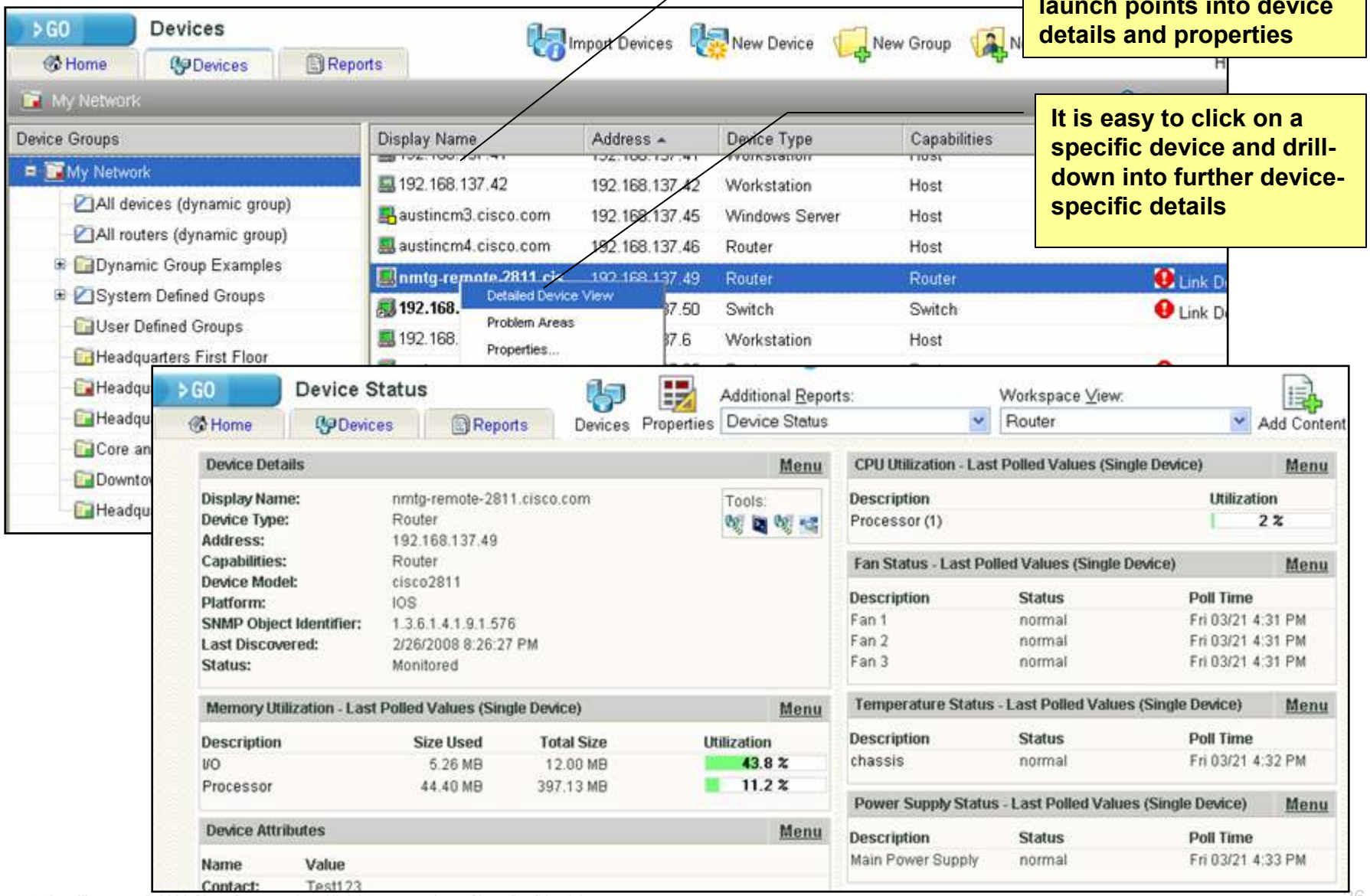


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Detailed Device View

A tabular device list is also available, with similar launch points into device details and properties

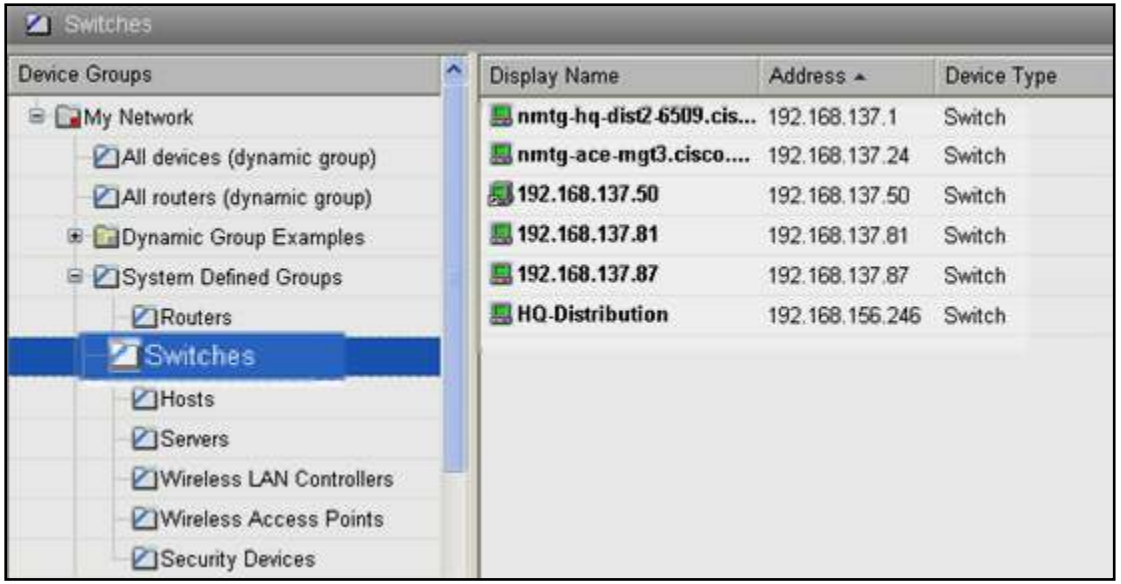
It is easy to click on a specific device and drill-down into further device-specific details

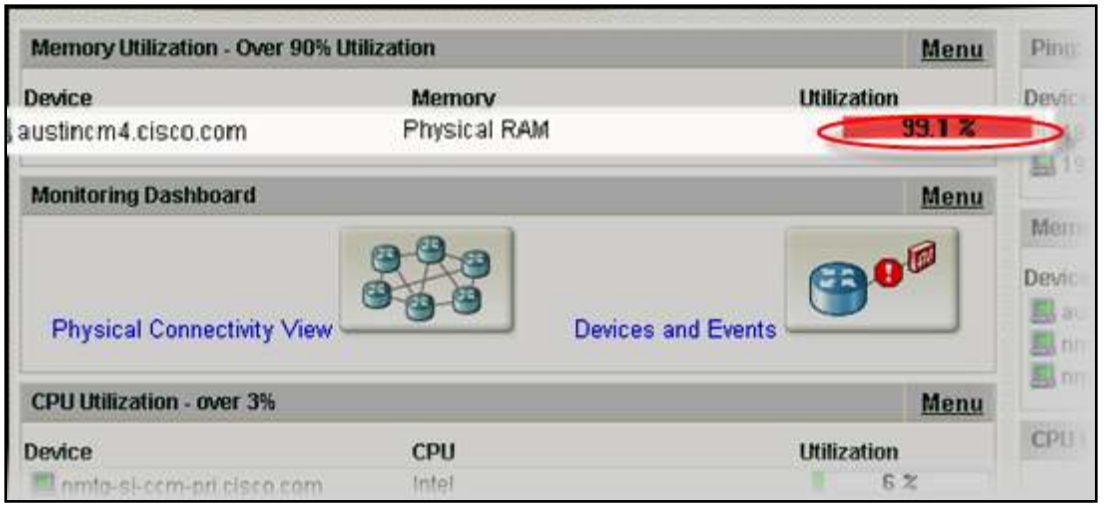


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System Defined Groups and Monitoring

- netManager provides a number of useful pre-defined device groups, e.g., Routers, Switches, etc
- Use the “Switches” group to focus your analysis
- Create a portlet on the dashboard to monitor memory utilization for the “Servers” group



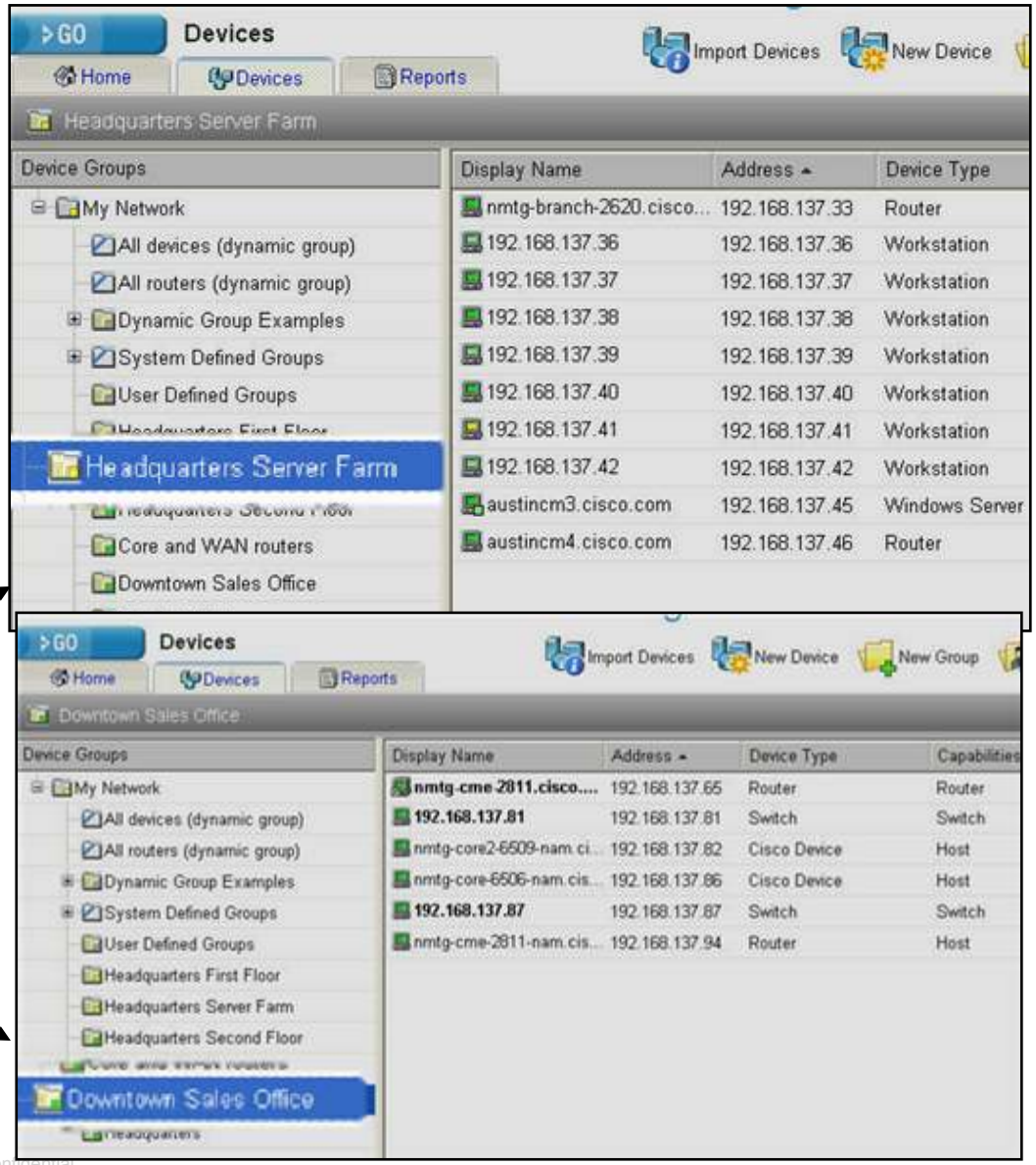


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User Defined Groups

- Users can combine multiple network elements into a group, e.g. Headquarters devices
- User defined groups are easy to create, and help logically divide the network into functional/ geographical groups

1. **Navigate to the headquarters portion of the network**
2. **With one click, move to the remote office, and check network status there**



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Monitoring the Network

- netManager monitors the network and takes action based on alerts received
- Three types of monitors can be defined:
  1. Passive Monitors -

     Waits passively for device to send a log or traps
  2. Active Monitors -

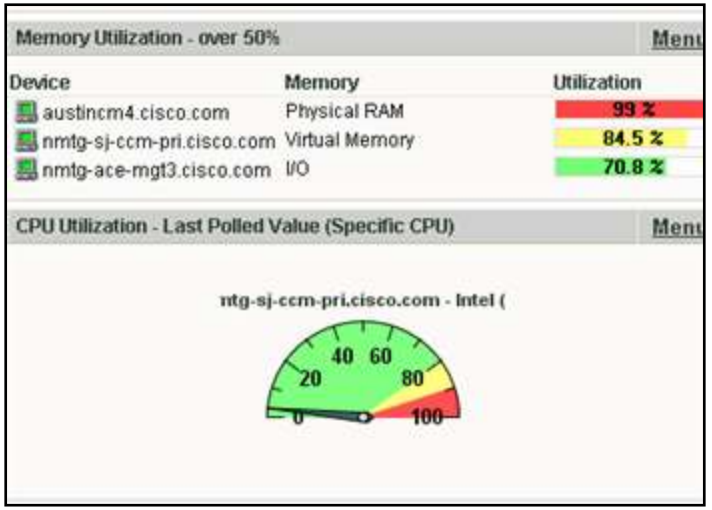
     Actively polls device to get status on specific variables
  3. Performance monitors -

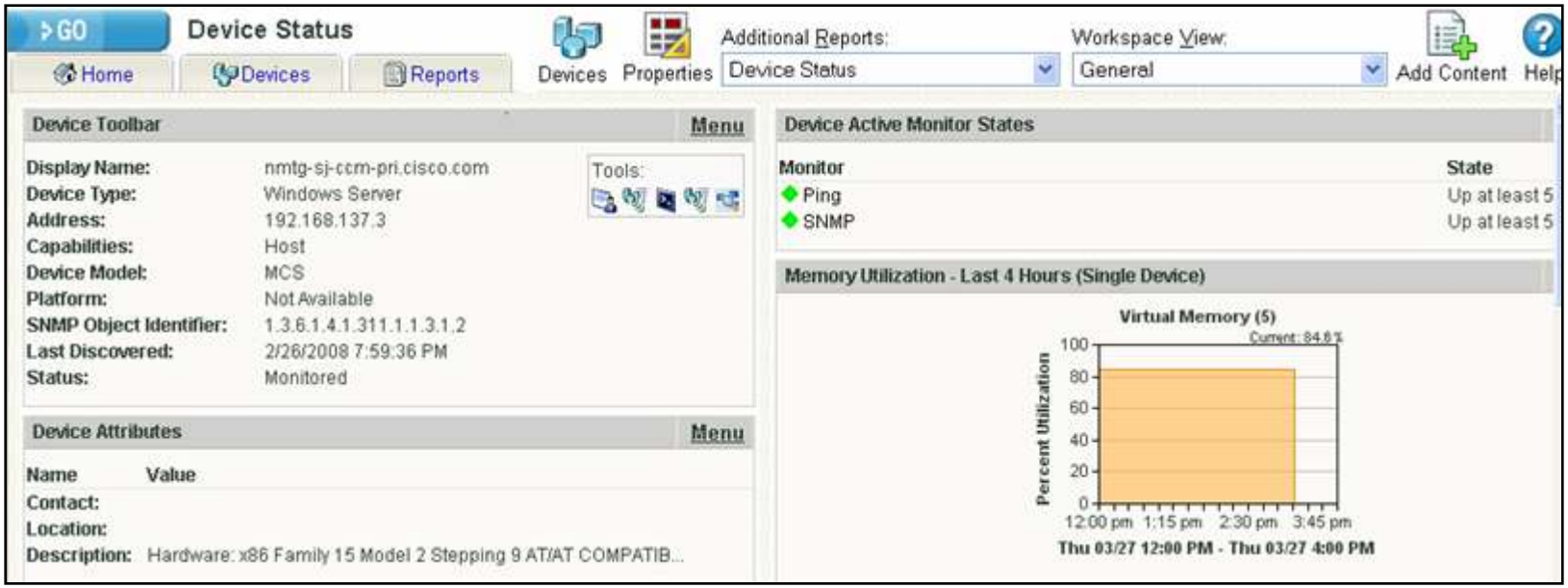
     Ongoing measurements of critical performance measurements relating to system health
- Once monitors are created, they need to be associated to a device or device group

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Monitoring server health

- **Monitor critical servers on the main dashboard to be notified of abnormal activity**
  - nmtg-sj-ccm-pri is at 85% virtual memory
- **Drilldown to get detailed server status including hardware specs and historical analysis.**
  - What are nmtg-sj-ccm-pri's hardware specs?
  - Is the system up and running?
  - How long has virtual memory been high?

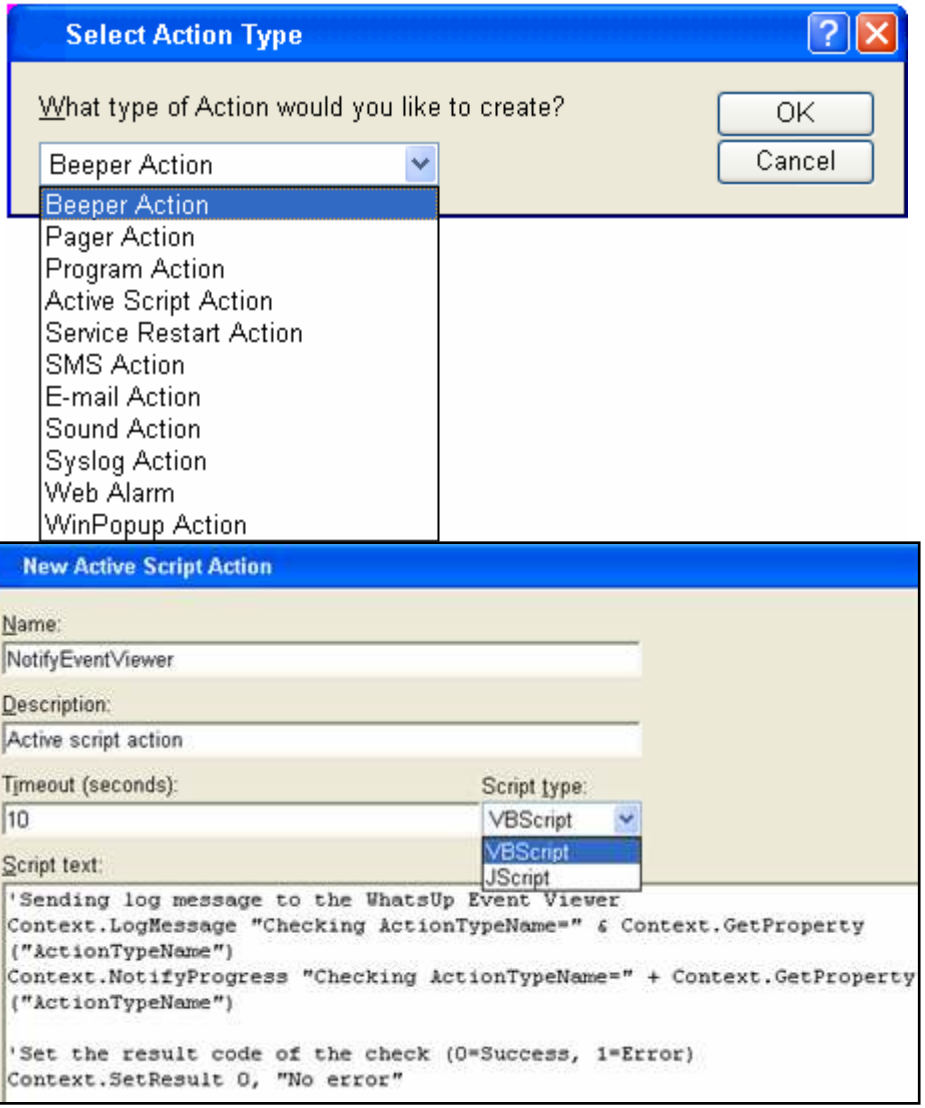




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Configuring Actions and Policies

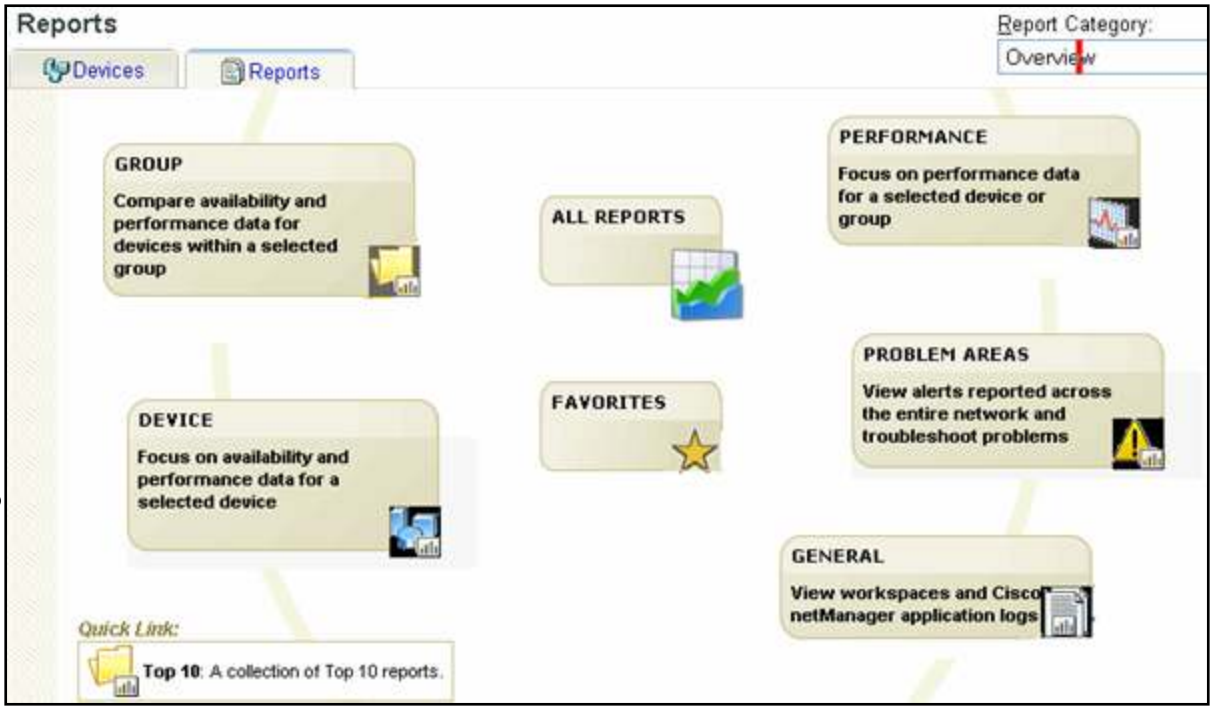
- Once monitors are configured, netManager is watching the network for events - active as well as passive
- When an abnormal network event occurs, netManager can take action!
  - Notification can be via email, SMS, pager, etc
  - Programs can be launched directly by netManager
  - Scripts can launched to execute specific tasks

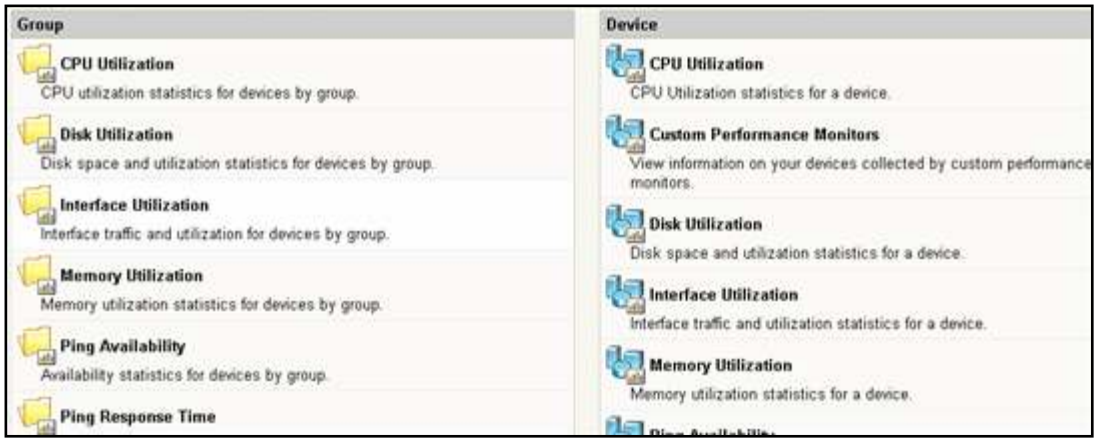


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Cisco netManager Reports Overview

- netManager reports provide users a historical trend on a large number of network variables
- A large number of pre-configured reports are provided
- Reports fall into various categories: performance based reports, device reports, etc

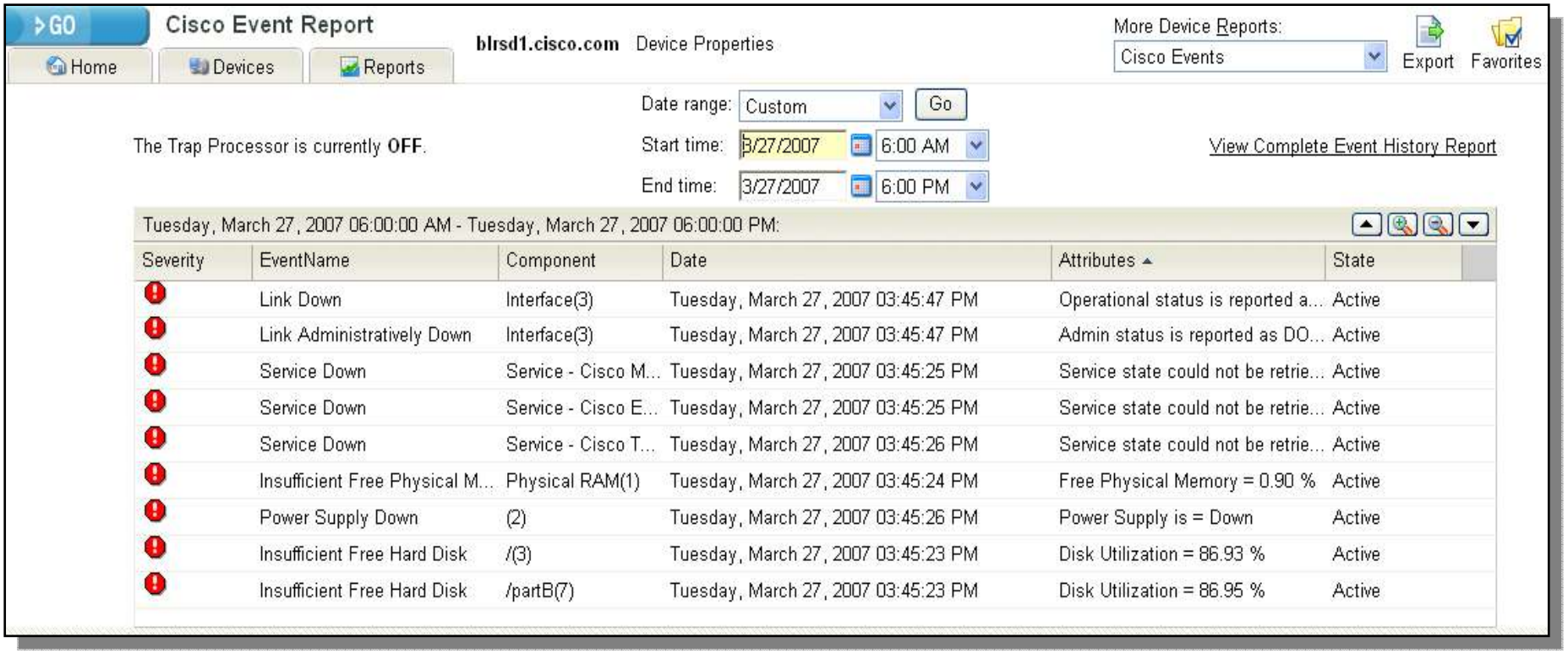




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Event History Reports

- **Network level Event history report**
- **Device and Group level reports**
- **Reports based on problem areas**
- **Time filtering on reports**
- **User customizable portlet based reports (work views)**



Severity	EventName	Component	Date	Attributes	State
	Link Down	Interface(3)	Tuesday, March 27, 2007 03:45:47 PM	Operational status is reported a...	Active
	Link Administratively Down	Interface(3)	Tuesday, March 27, 2007 03:45:47 PM	Admin status is reported as DO...	Active
	Service Down	Service - Cisco M...	Tuesday, March 27, 2007 03:45:25 PM	Service state could not be retrie...	Active
	Service Down	Service - Cisco E...	Tuesday, March 27, 2007 03:45:25 PM	Service state could not be retrie...	Active
	Service Down	Service - Cisco T...	Tuesday, March 27, 2007 03:45:26 PM	Service state could not be retrie...	Active
	Insufficient Free Physical M...	Physical RAM(1)	Tuesday, March 27, 2007 03:45:24 PM	Free Physical Memory = 0.90 %	Active
	Power Supply Down	(2)	Tuesday, March 27, 2007 03:45:26 PM	Power Supply is = Down	Active
	Insufficient Free Hard Disk	/(3)	Tuesday, March 27, 2007 03:45:23 PM	Disk Utilization = 86.93 %	Active
	Insufficient Free Hard Disk	/partB(7)	Tuesday, March 27, 2007 03:45:23 PM	Disk Utilization = 86.95 %	Active

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Cisco netManager – Unified Communications



NOTE:

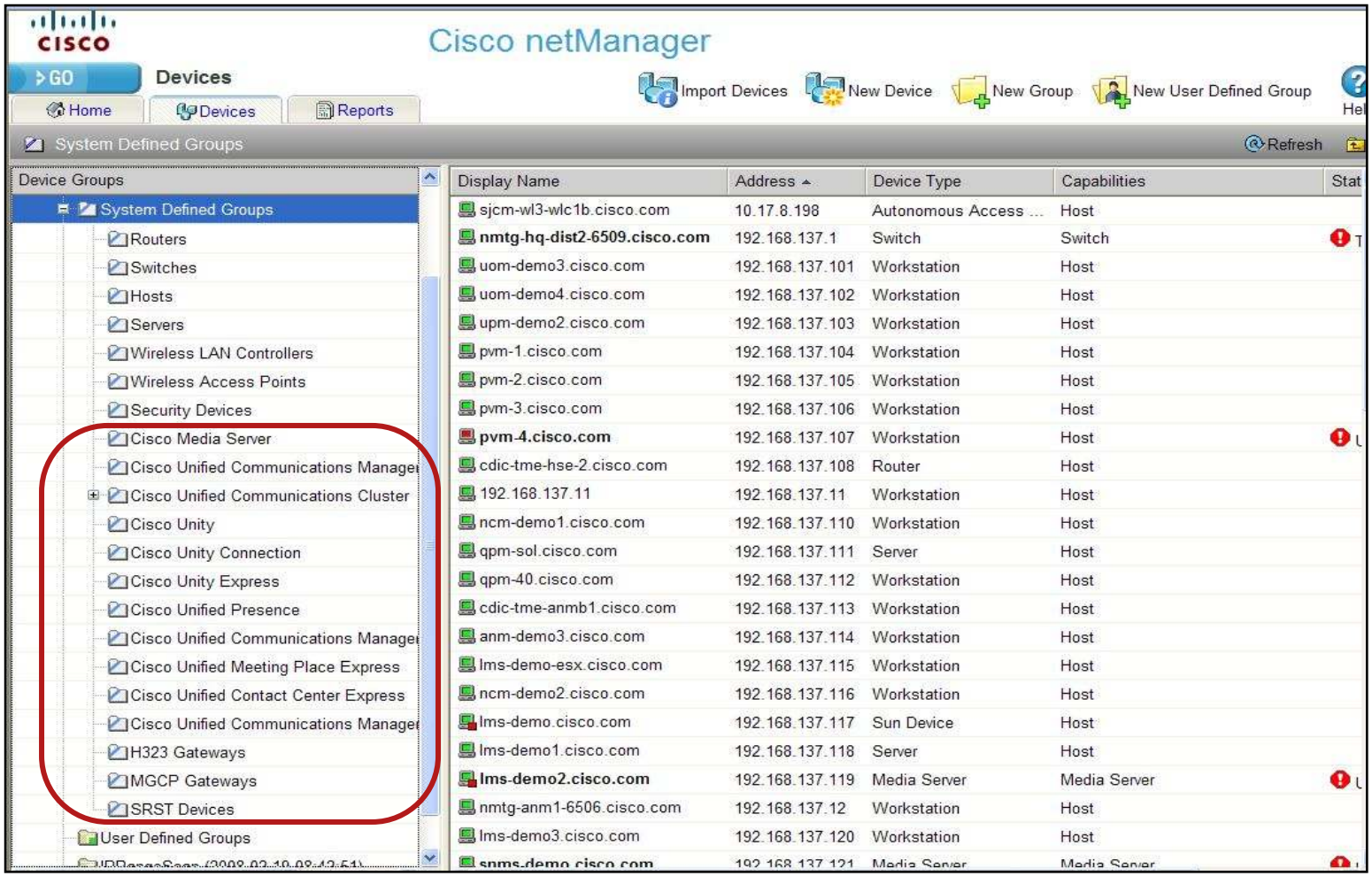
Components Highlighted in this section are part of netManager-UC only

netManager-UC is a superset of netManager-IP (All features available in netManager-IP are available in netManager-UC also)

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netManager - UC Device Groups

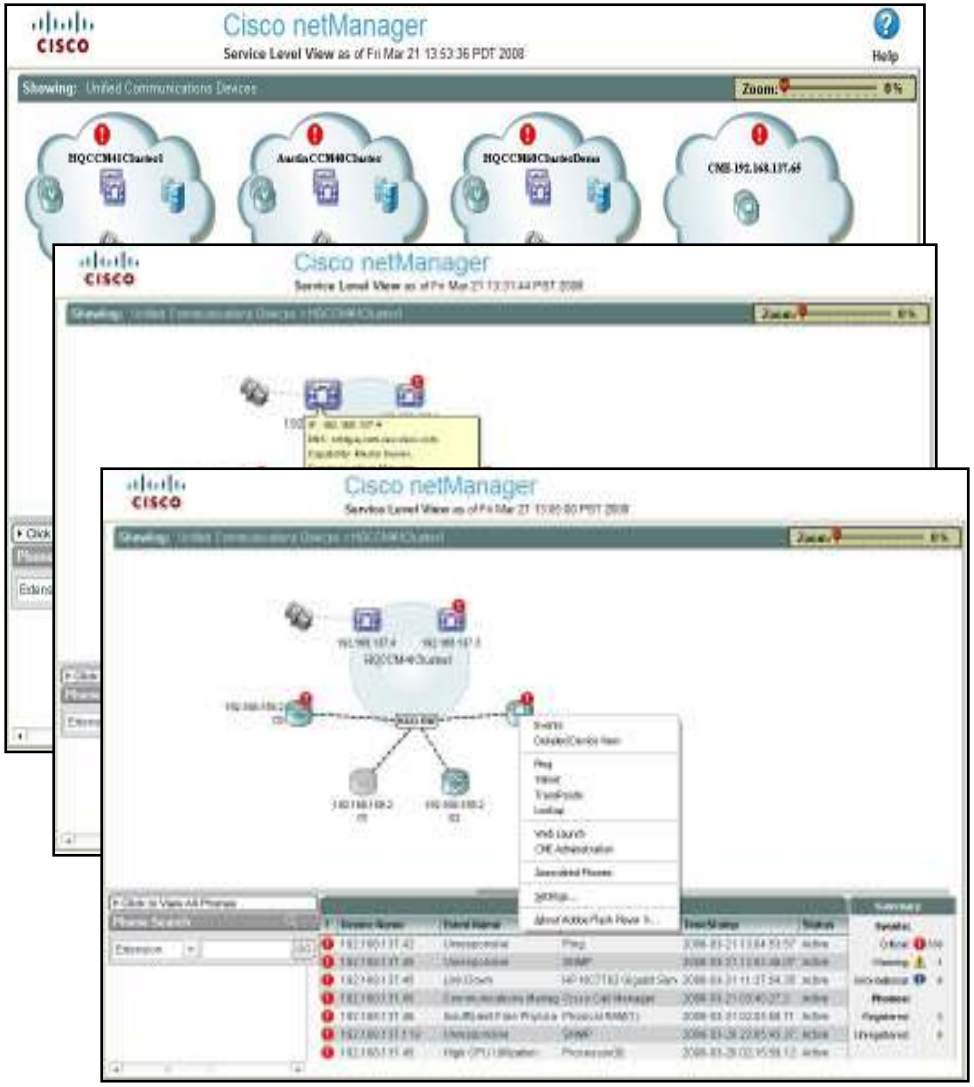
- Out of the box UC application device groups
- Enables visibility into UC applications



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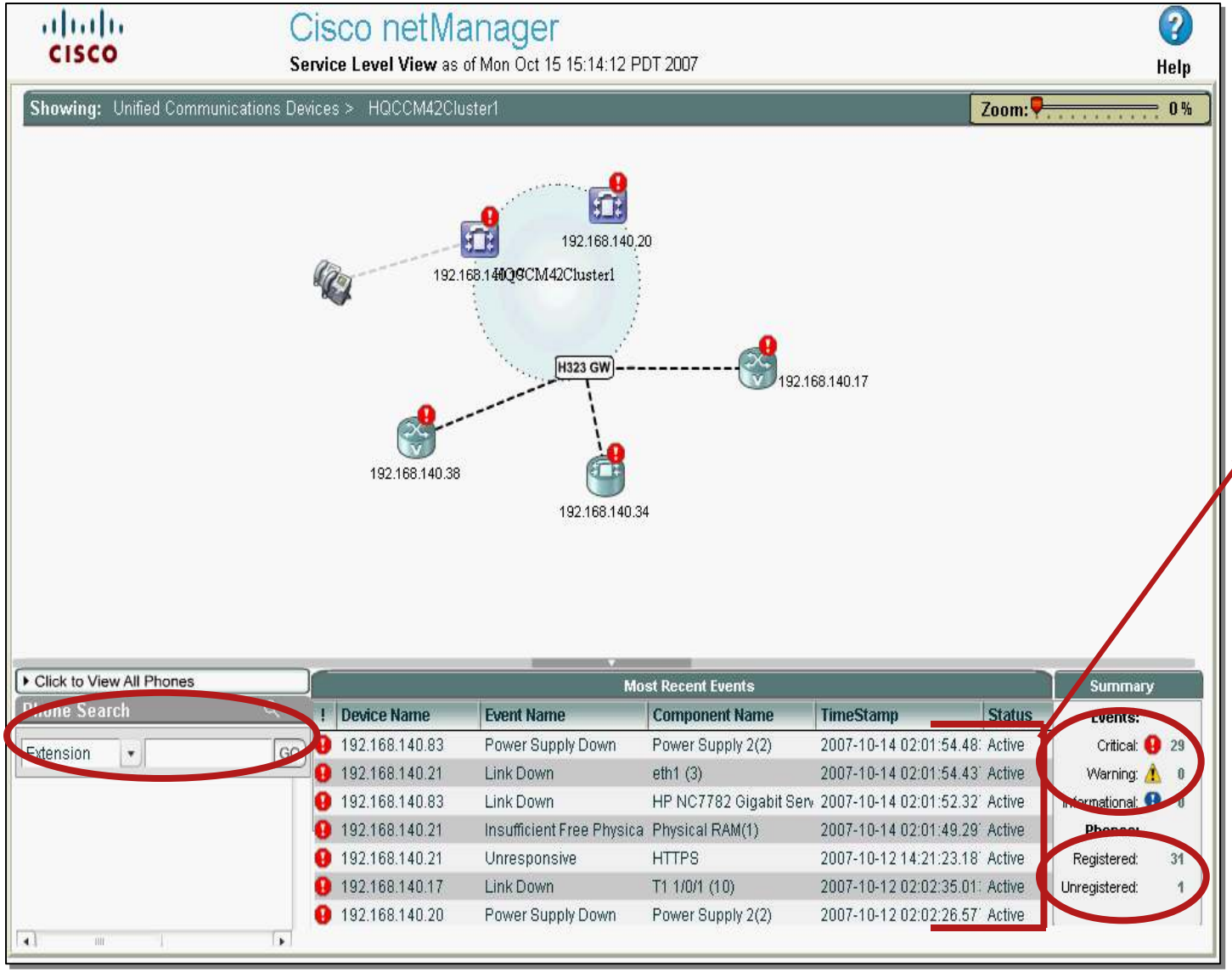
Service Level View

- **Real-time visualization of operational status of UC deployment**
- **UC Service dependency status, context sensitive drill down diagnostics**
- **Phone search and phone status. Most recent operational events**
- **Context sensitive device/service status, performance monitoring and trending**



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Service Level View



Recent Events

Phone Search

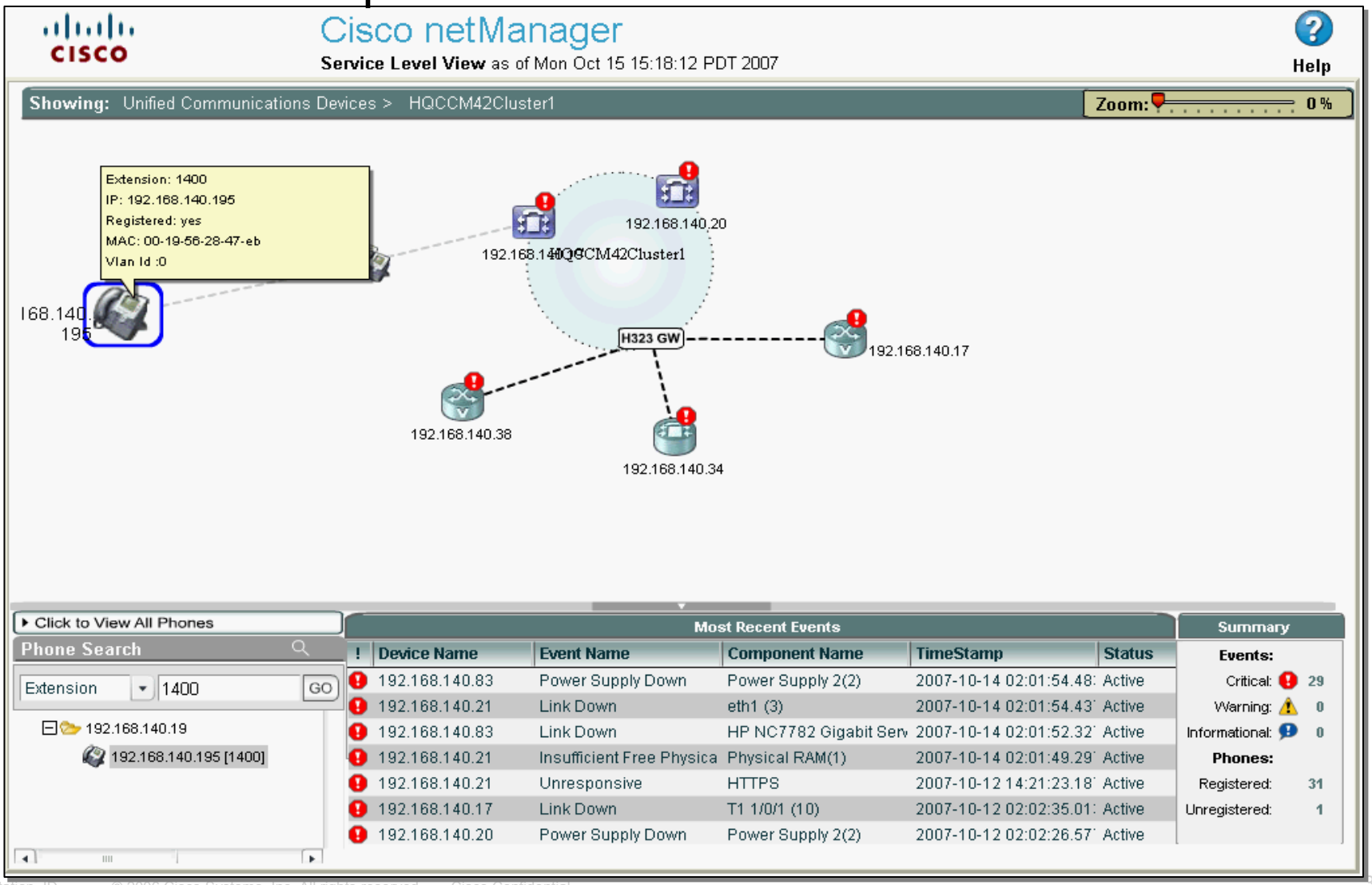
Device Status

Phone Status

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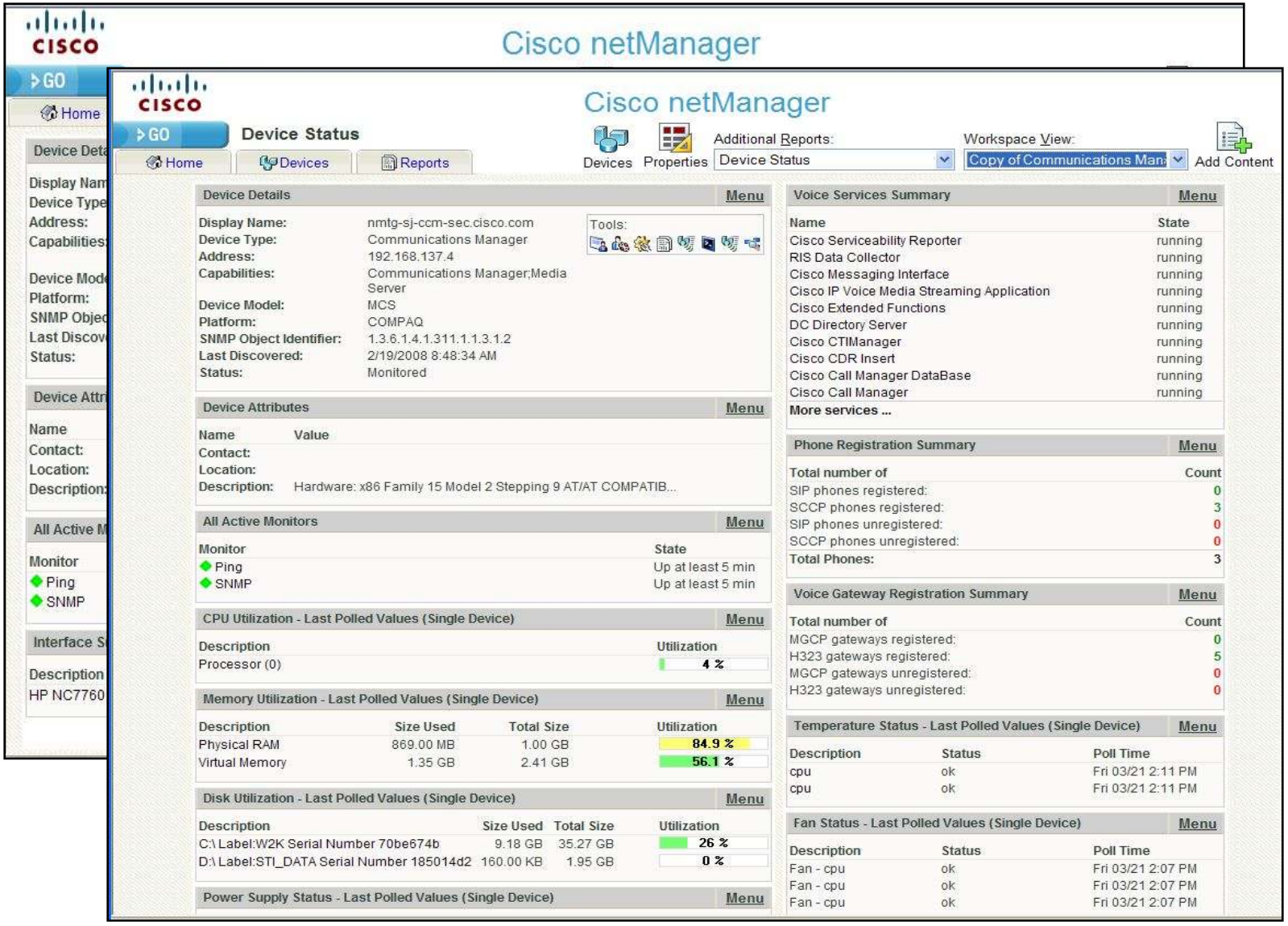
Service Level View

- Phone Search – Enables quick phone search, highlighting association of phone with cluster



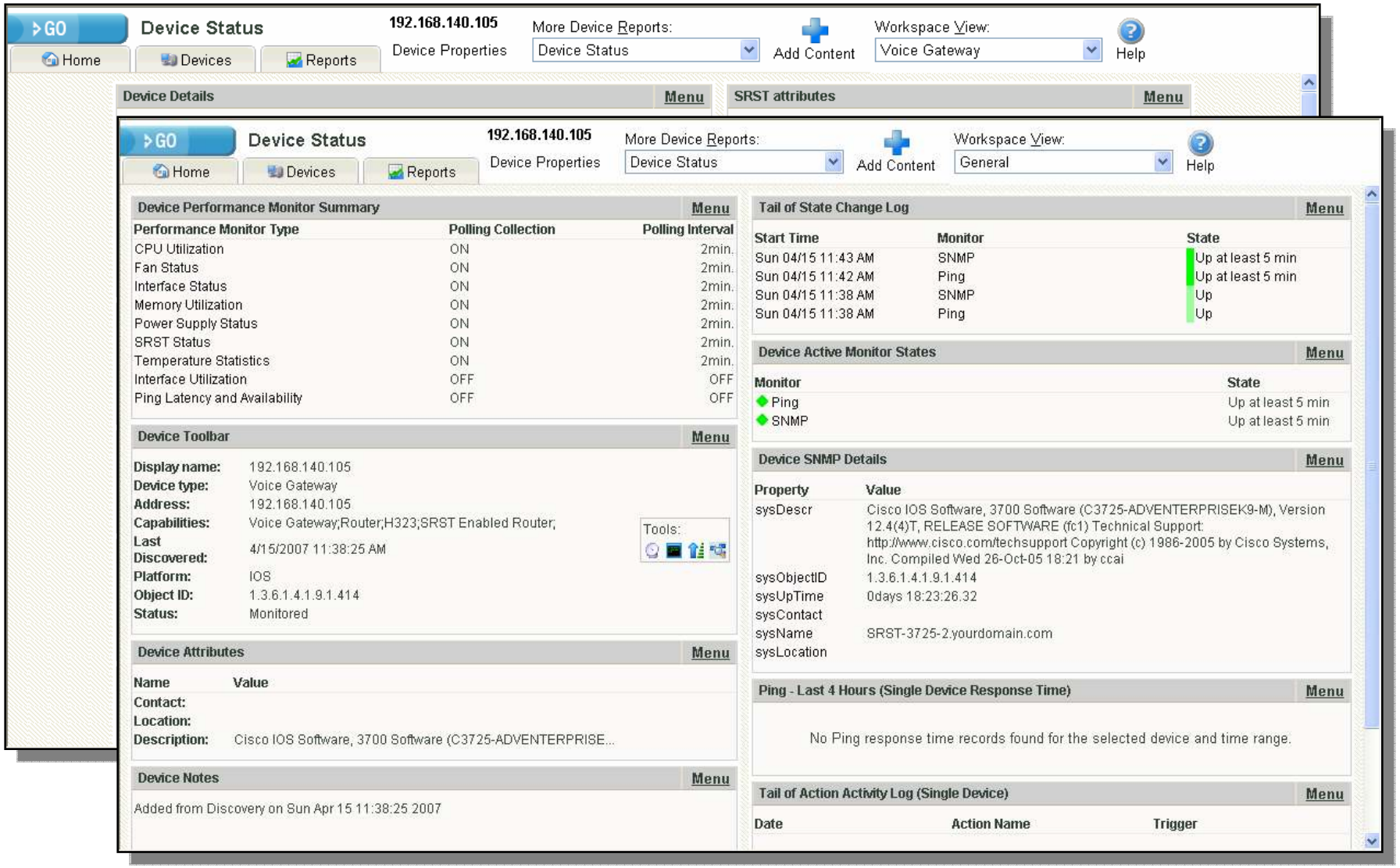
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Detailed Device Status – Communications Manager



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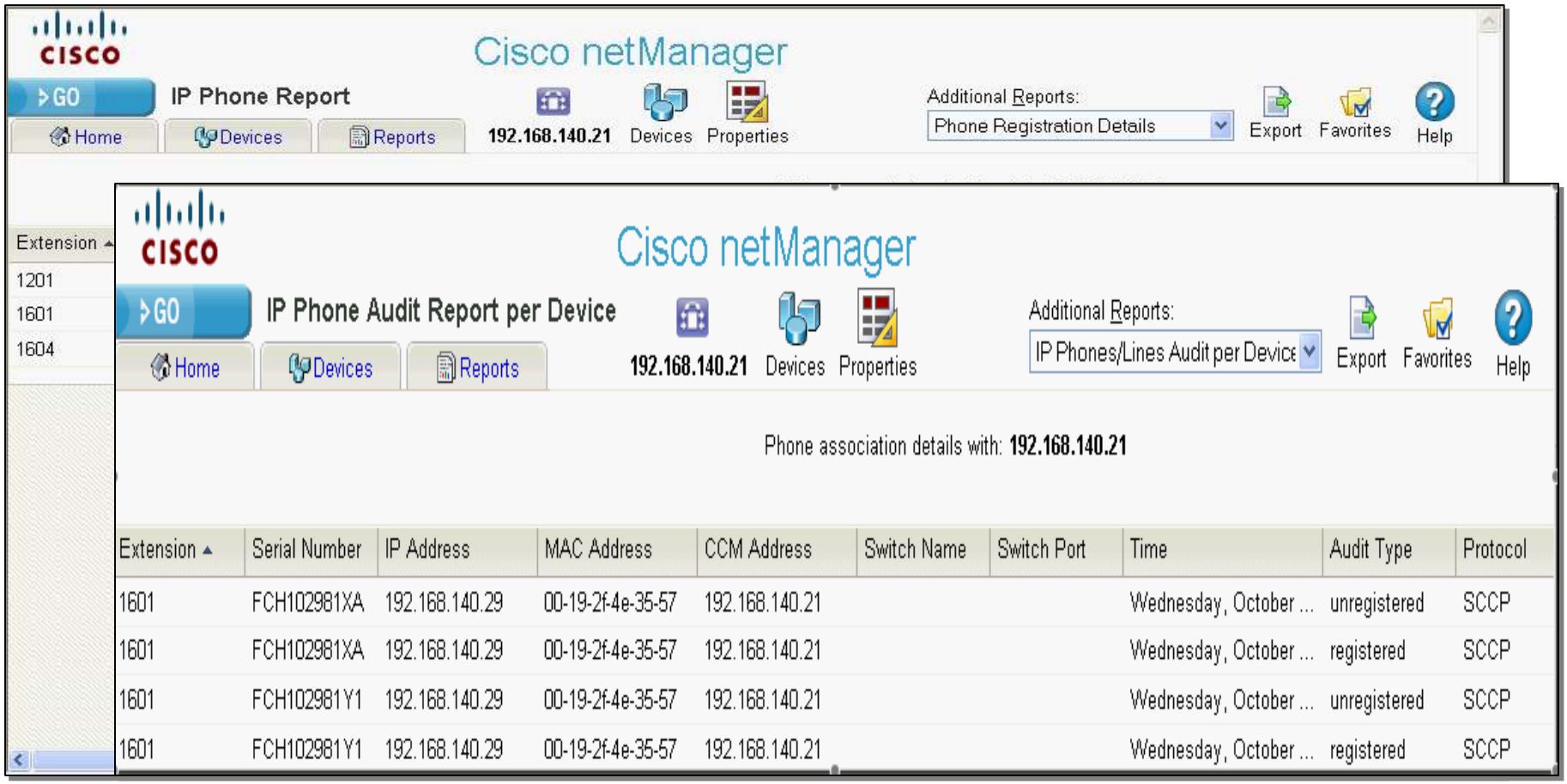
Device Details – Voice Gateway



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Phone Reports

- **Phone reports contain information on User, IP, MAC, CM/CME details, Switch/port details etc**
- **Different Types of reports**
  - **IP Phone Inventory reports**
  - **IP Phone status change reports**



Extension	Serial Number	IP Address	MAC Address	CCM Address	Switch Name	Switch Port	Time	Audit Type	Protocol
1601	FCH102981XA	192.168.140.29	00-19-2f-4e-35-57	192.168.140.21			Wednesday, October ...	unregistered	SCCP
1601	FCH102981XA	192.168.140.29	00-19-2f-4e-35-57	192.168.140.21			Wednesday, October ...	registered	SCCP
1601	FCH102981Y1	192.168.140.29	00-19-2f-4e-35-57	192.168.140.21			Wednesday, October ...	unregistered	SCCP
1601	FCH102981Y1	192.168.140.29	00-19-2f-4e-35-57	192.168.140.21			Wednesday, October ...	registered	SCCP

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netManager - Server and OS Requirements

Requirement Type	Minimum Requirements
System Hardware	• Any PC or server platform with a Intel or AMD processor equal to or greater than 2.0 GHz. • Color monitor. • CD-ROM drive.
Memory (RAM)	1GB
Swap File Space	1.5 GB
Available Drive Space	• 30 GB hard disk space. • NTFS file system (required for secure operation). • At least 16 MB in Windows temporary directory (%TEMP%).
System Software	• ODBC Driver Manager4 3.5.10 or later • Windows Server 2003 with Service Pack 1 and Service Pack 2, Standard and Enterprise Editions

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Cisco netManager Summary

- Affordable, easy to use tool for monitoring mid-size networks
- Enables customers to optimize their network and introduce new services
- Reduces complexity to manage your network
- Provides investment protection by helping grow management application as your network grows
- Comprehensive coverage of Cisco devices
- Real time operational and performance monitoring for a converged network, including Cisco Unified Communications

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