



Riyadh, Saudi Arabia  
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# Innovative Network Management for Borderless Networks

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# Session Objectives



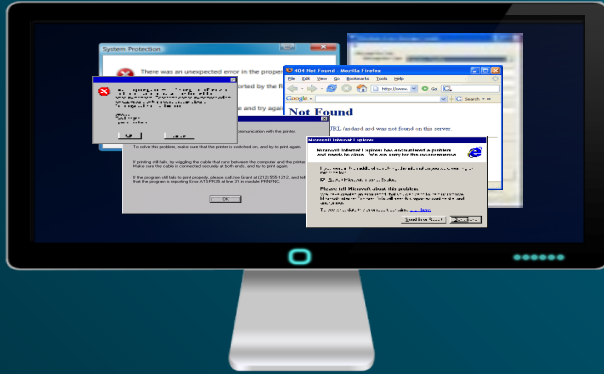
Need to Prime
What is Prime
Deployment Scenarios and Use Cases

Need to Prime

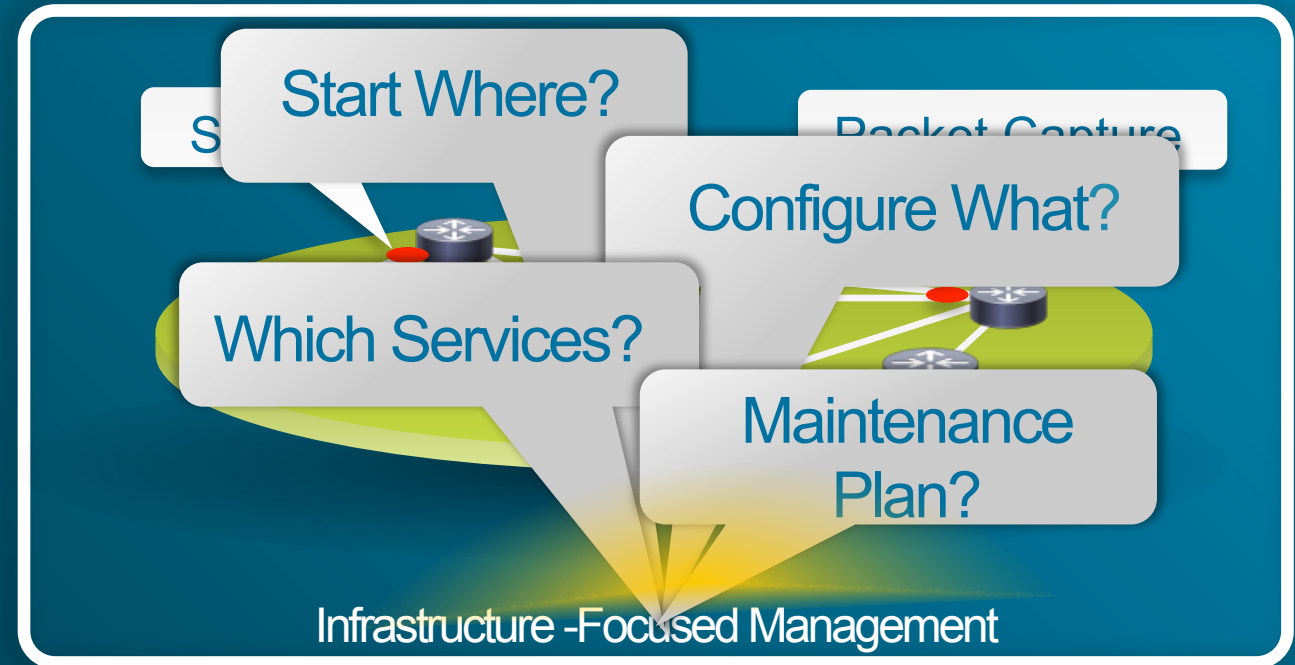
What is Prime

Deployment Scenarios and  
Use Cases

# Network Management Challenges



- ❌ Complex
- ❌ Manual
- ❌ Error Prone



- ❌ Siloed nonintegrated management products and processes
- ❌ Inefficient infrastructure-focused management approach
- ❌ Inadequate tools to rapidly deploy devices and services



# Cisco Prime for Enterprise

## Network Services Management Foundation



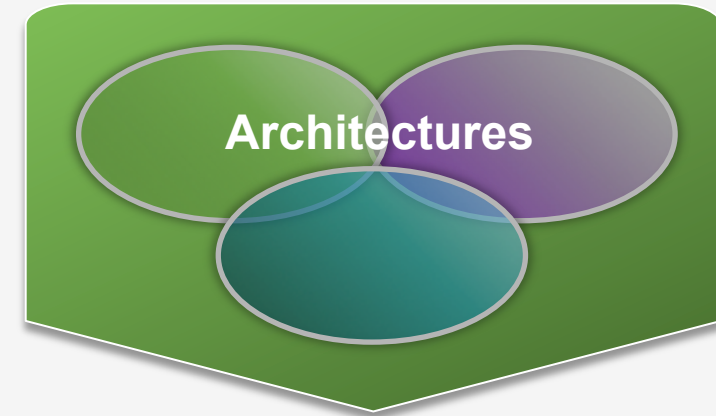
Moving from Device Management to Service Management

Services



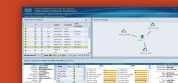
Network

## Common Attributes



- ✓ Simplified
- ✓ Automated
- ✓ Efficient
- ✓ Predictable

## Innovative Product Portfolio





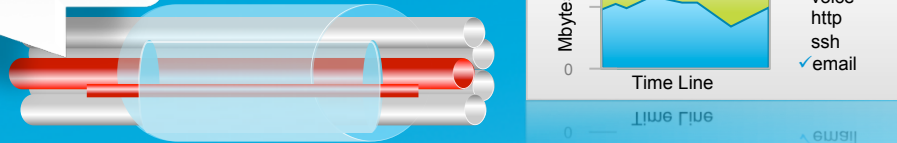
# Cisco Prime for Enterprise

## Example: Network Services Management Foundation

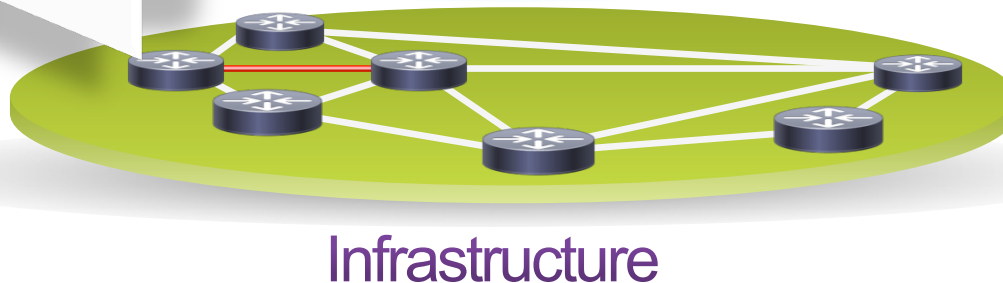
An end user is experiencing problems with the video display



The problem is traced through the service



The source of the video problem is located on the infrastructure device



Users

**Service or Network Operator**

View across all network layers

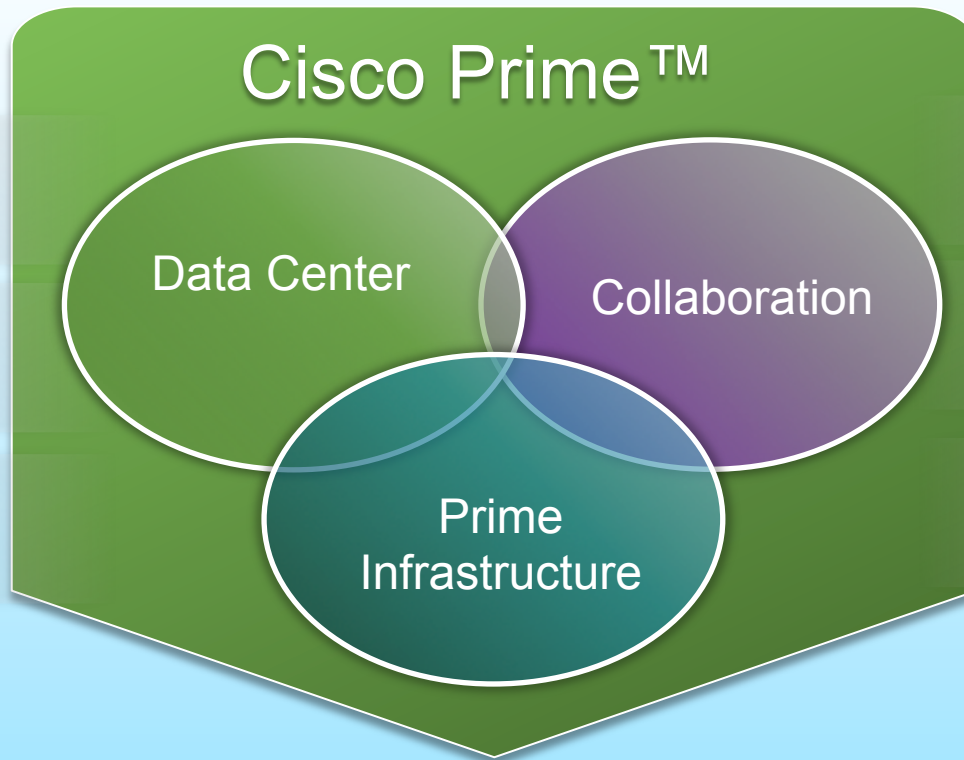
Performance



Network

# Cisco Prime for Enterprise

## Common Attributes



Optimized Operations Experience

Integrated Cisco® Best Practices

Complete Lifecycle Management

Day-1 Device Support

Smart Interactions

Physical and Virtual Appliance

Simple and Efficient Management Across Architectures, Networks, and Services

# Cisco Prime for Enterprise Common Attributes

## Optimized Operations Experience

- Common user interface
- Intuitive user experience
- Optimized operator workflows

## Integrated Cisco Best Practices

- Guided deployment of Cisco-validated best practices
- Automated trouble-shooting and diagnostics

## Complete Lifecycle Management

- End-to-end lifecycle
- ITIL-aligned operations
- Northbound integration to customer back office

## Day-One Device Support

- Support for new devices and technologies upon shipment
- Non-disruptive support upgrades

## Smart Interactions

- Context-based help tool
- Real-time access to Cisco support community
- Automated Cisco TAC case creation and management

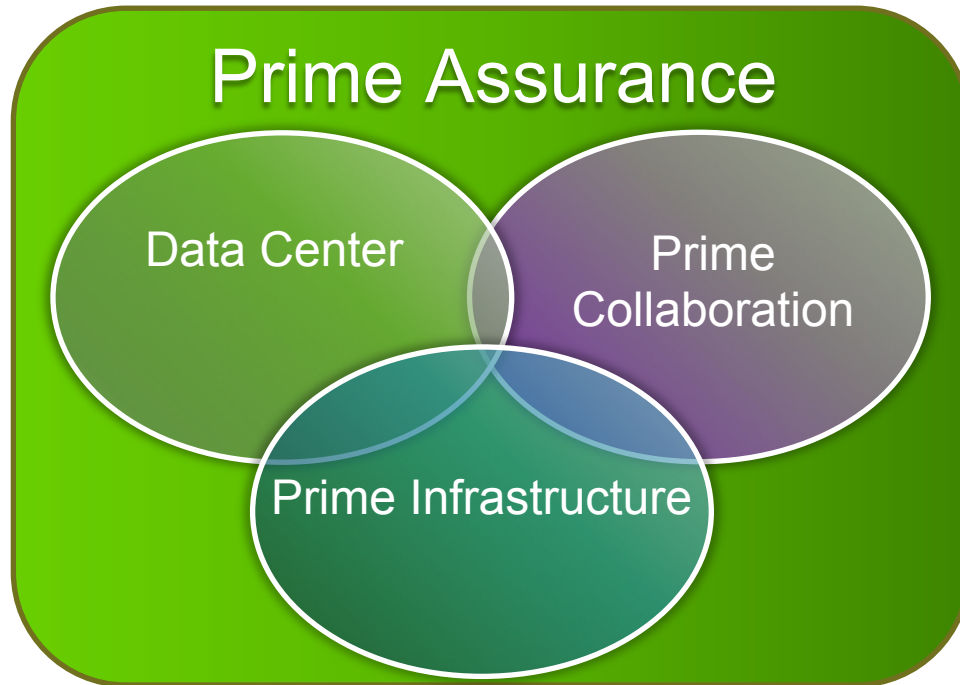
## Physical and/or Virtual Appliance

- Two delivery options
- Both options fully self-contained
- Includes operating system, software application, database, and CLI



# Cisco Prime for Enterprise

## Innovative Product Portfolio



**Prime Infrastructure** – a bundled solution for complete wired and wireless lifecycle management

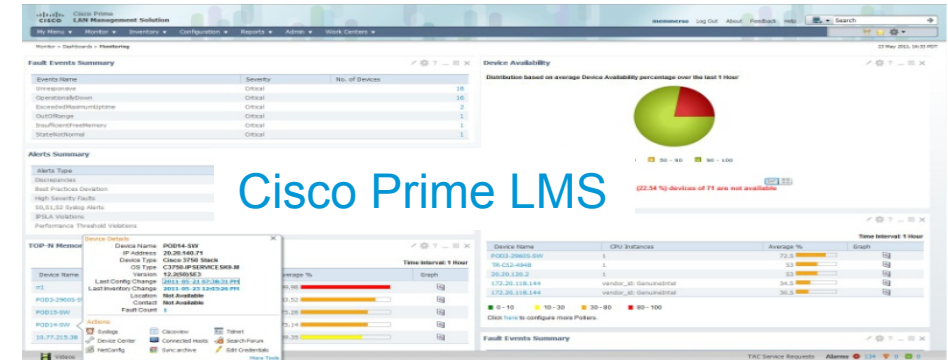
**Prime Collaboration** – delivers products to simplify the deployment and management of voice, video and collaborative services

**Prime Assurance** – provides visibility across architectures for effective troubleshooting of performance, application, and end user related issues

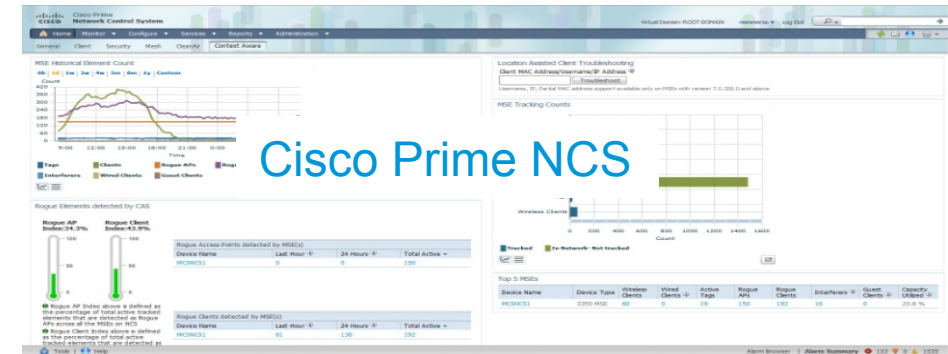
# Cisco Prime Infrastructure

## Integrated Wired/Wireless Lifecycle Management

- A bundled solution for complete wired and wireless lifecycle management
- Converged user and access management
- Configuration, change and compliance management
- Monitoring, troubleshooting and reporting



Cisco Prime LMS



Cisco Prime NCS

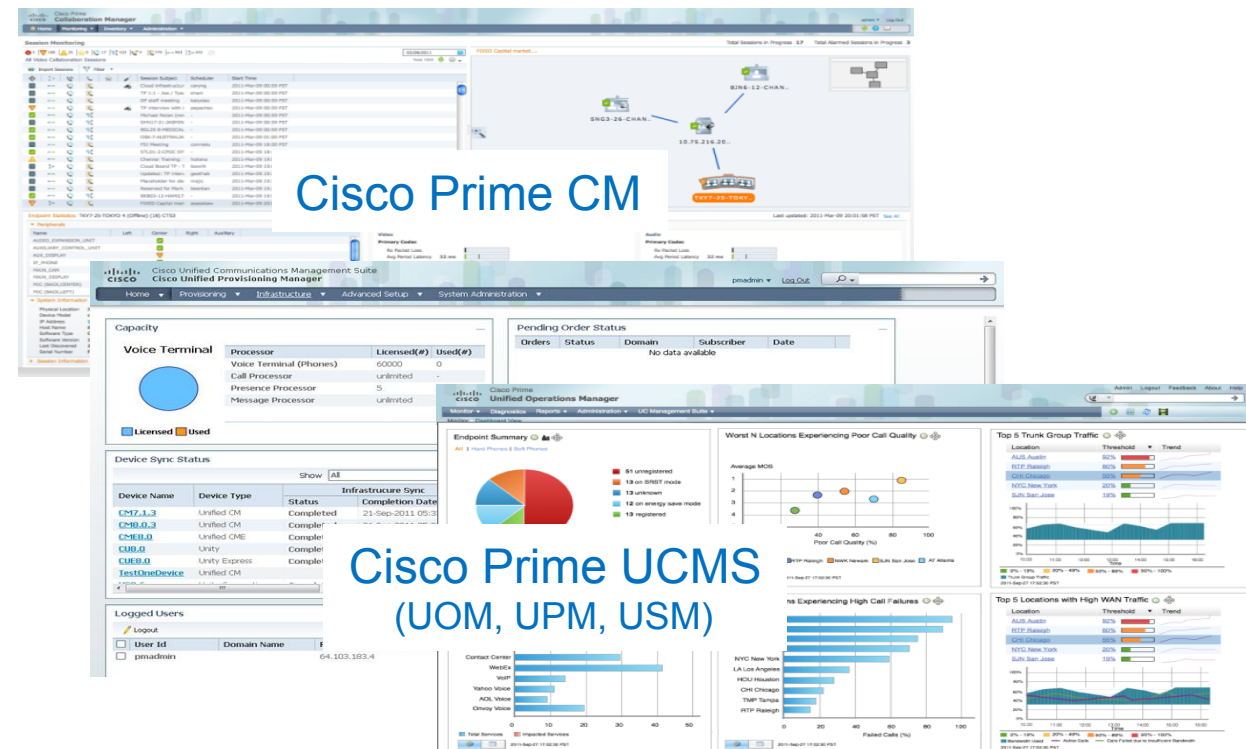


- ✓ Simplified ordering and license management
- ✓ Lower TCO with intuitive user experience and workflows
- ✓ Speed troubleshooting, improve network availability

# Cisco Prime Collaboration

## Improves Quality of Experience with Robust Voice and Video Management

- Gain real-time access to actionable information for quick and easy troubleshooting
- Quickly isolate the root cause of service degradation
- Solve problems pro-actively prior to impacting quality of service



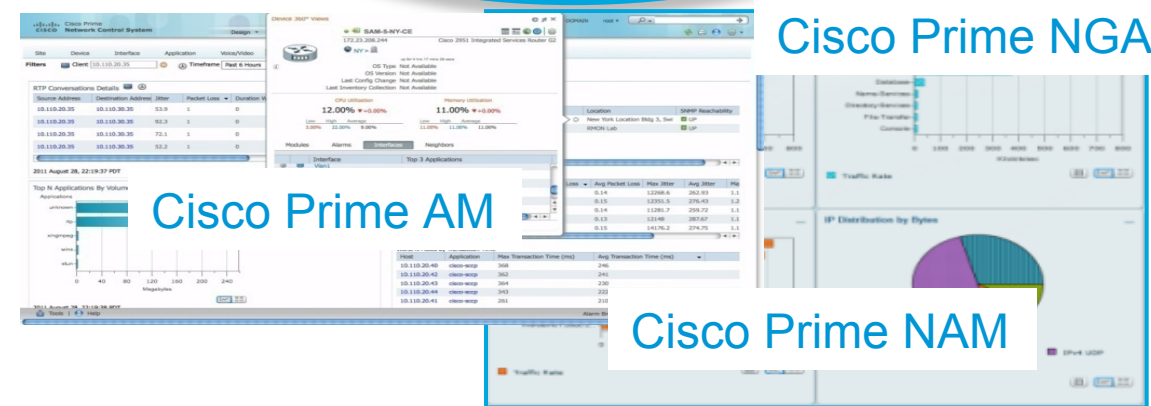
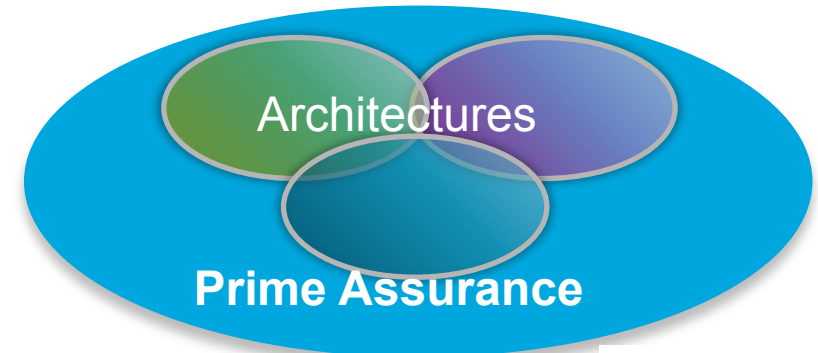
- ✓ Improve quality of experience with intuitive troubleshooting workflows
- ✓ Reduce training costs with common user experience
- ✓ Quickly isolate and fix problems, improving service availability



# Cisco Prime Assurance

## Application-aware Network Performance Visibility and Troubleshooting

- Provides end-to-end visibility for service-aware networking and assurance for applications, services and end-users
- Correlates and aggregates network instrumentation for consistent end-to-end visibility and faster troubleshooting
- Complete network and traffic instrumentation and analysis



- ✓ Improve service levels with complete end-to-end network visibility
- ✓ Simplify troubleshooting with normalized data from multiple sources
- ✓ Reduce end-user and application downtime with lower TCO

# Cisco Prime Portfolio Products

For More Information: [www.cisco.com/go/prime](http://www.cisco.com/go/prime)

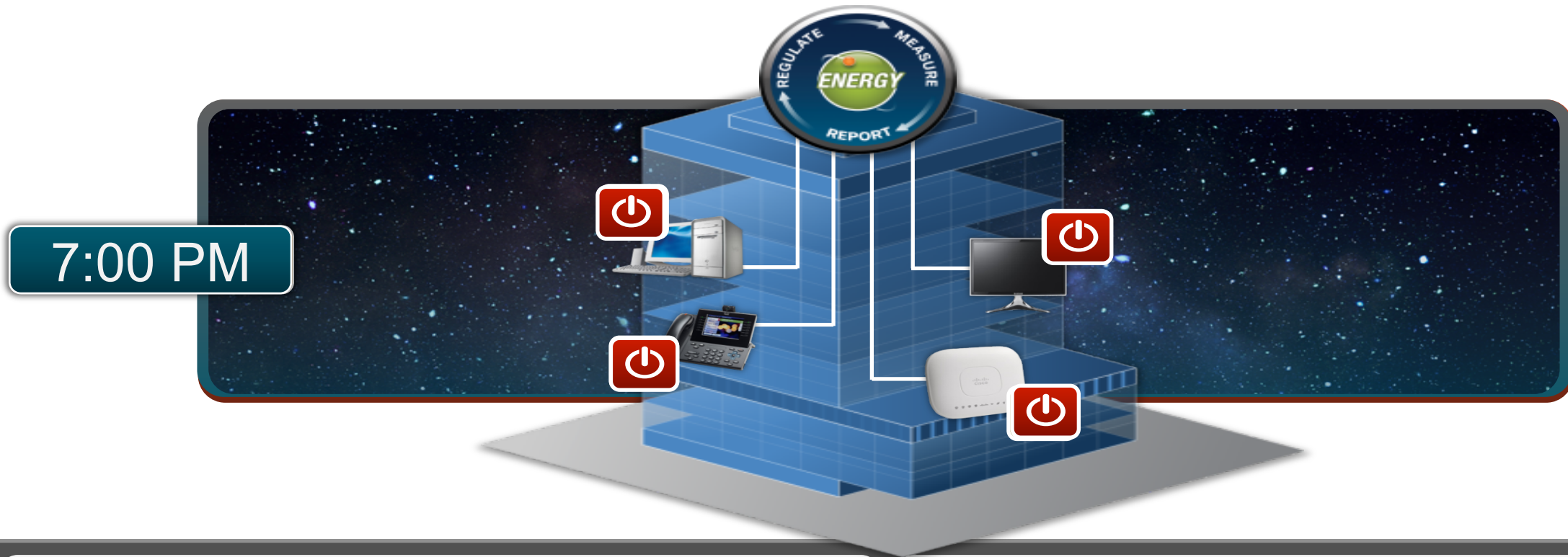
Category	Product(s)	Function	Common Attributes					
			UE	BP	Life	Day 1	SI	App
Prime Infrastructure	Cisco Prime LMS 4.2	Wired lifecycle management	✓	✓	✓	✓	✓	✓
	Cisco Prime NCS 1.1	Wireless lifecycle management	✓	✓	✓	✓	✓	✓
Prime Collaboration	Cisco Prime CM 1.1	Telepresence monitoring and troubleshooting	✓	✓	✓	✓	✓	
	Cisco Prime Unified PM	Voice provisioning (MACD)	✓	✓	✓	✓	✓	
	Cisco Prime Unified OM	Voice monitoring and troubleshooting	✓	✓	✓	✓	✓	
	Cisco Prime Unified SM	Voice of services monitoring	✓	✓	✓	✓	✓	
Prime Assurance	Cisco Prime NAM	Performance visibility and traffic analysis	✓	✓	✓	na	✓	✓
	Cisco Prime AM	Application aware performance and multi-NAM management	✓	✓	✓	na	✓	✓

# Use Cases



# Cisco EnergyWise

The Central Nervous System for Energy Intelligence



## SOLUTION DESCRIPTION

- Policy based energy management via the network
- Delivers both monitoring and control
- Broad adoption across
  - Cisco enterprise platforms
  - Partner applications and devices

## CUSTOMER BENEFITS

- Energy and operational cost savings
- Greater visibility into energy usage
- Energy mandate compliance

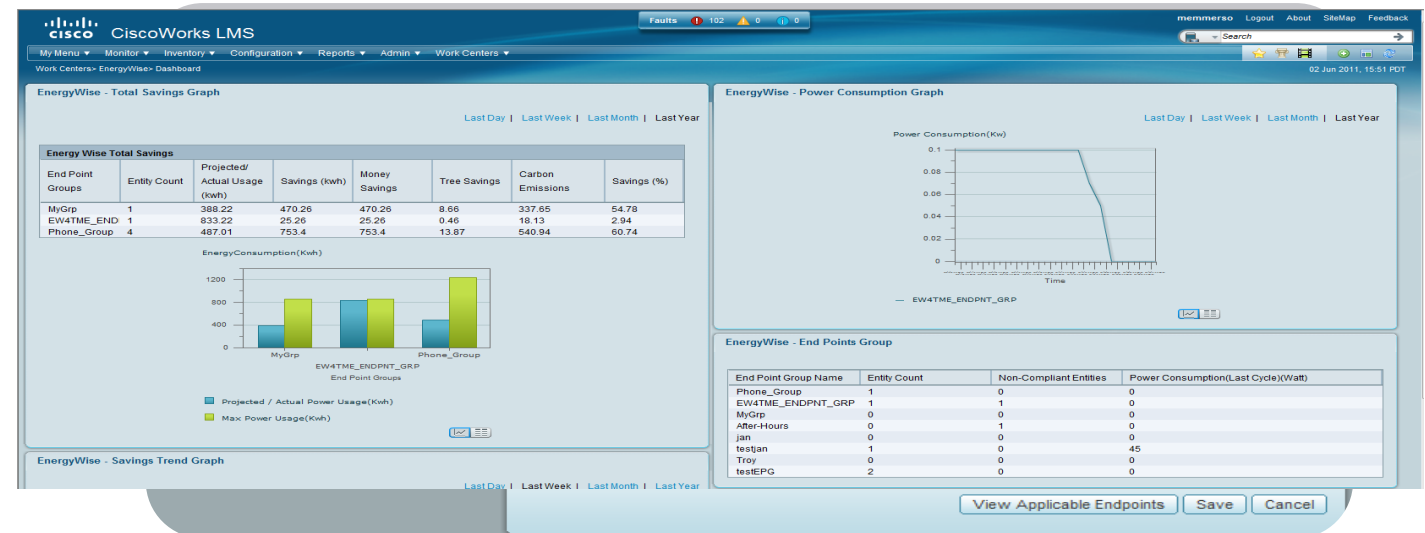
# Simplify Deployment

## Using Cisco Prime to Deploy EnergyWise

USE CASE: Corporate IT wants to deploy EnergyWise to save power and lower overall network costs.

1. Define the policy
2. Prepare the network
3. Configure the network
4. Apply the policy
5. Monitor the savings

Cisco Prime LAN Management Solution (LMS)



Define and configure the endpoints  
Setup and apply policy to endpoint groups



Speed service deployment from days to hours



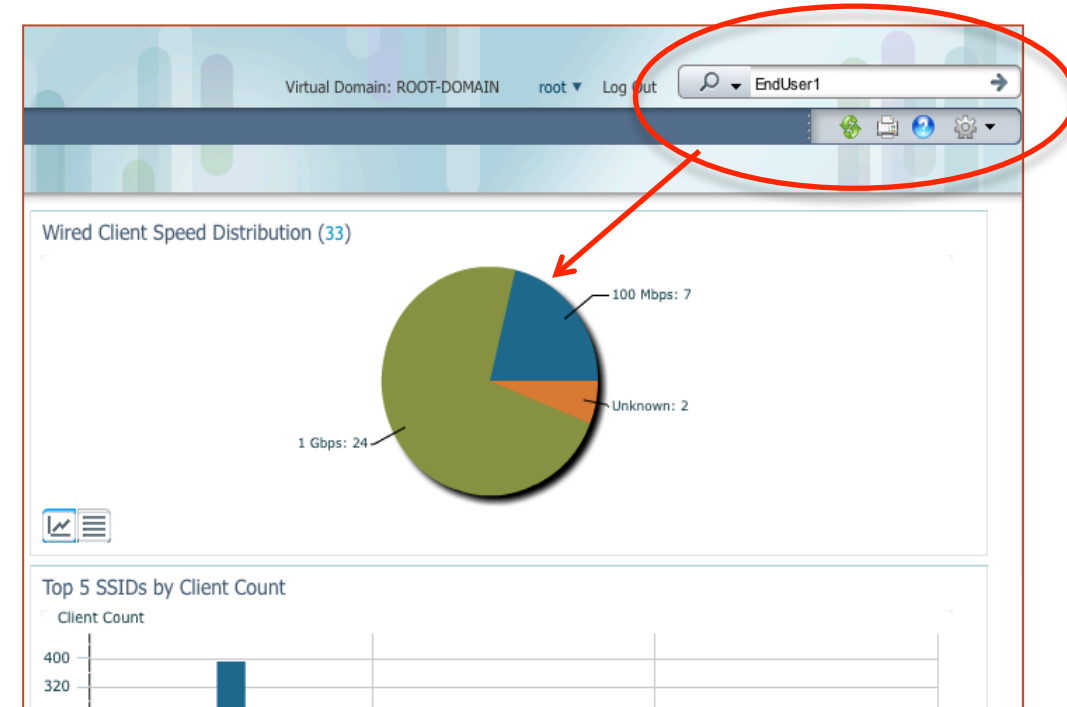
Reduce errors and gain immediate ROI

# Troubleshoot Wired and Wireless Access

Using Cisco Prime NCS to quickly resolve client access problems

USE CASE: User calls in to help center because they cannot get access to the network from their iPad.

1. Search on user name



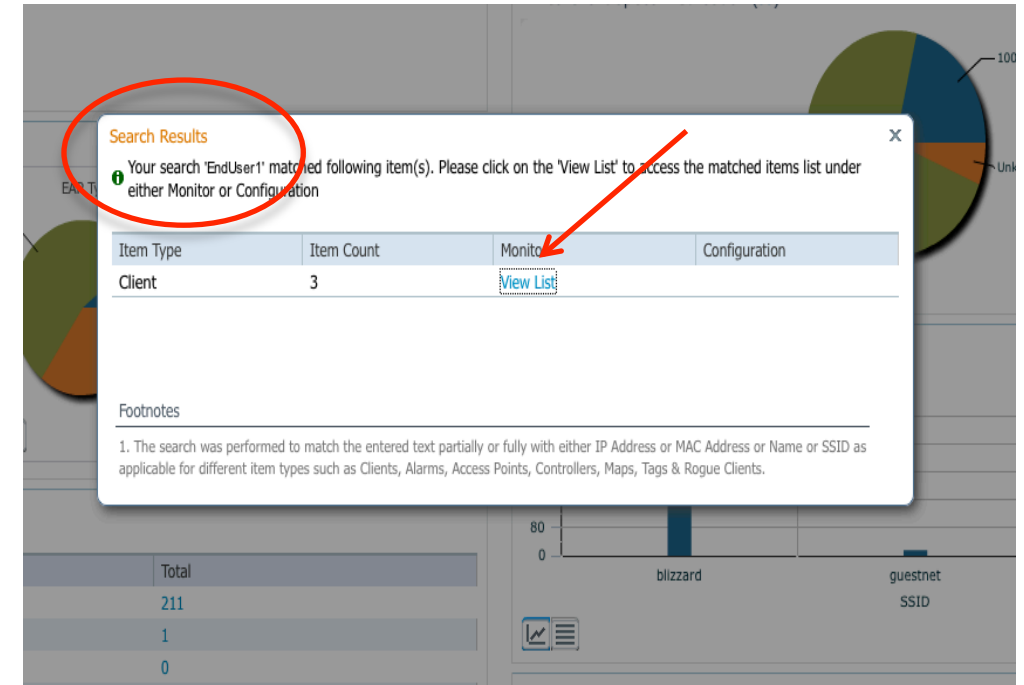


# Troubleshoot Wired and Wireless Access

Using Cisco Prime NCS to quickly resolve client access problems

USE CASE: User calls in to help center because they cannot get access to the network from their iPad.

1. Search on user name
2. Identify wired and wireless devices associated with the user



The screenshot shows a 'Search Results' dialog box in the Cisco Prime NCS interface. The dialog box has a title bar with 'Search Results' and a close button. The main content area contains a message: 'Your search 'EndUser1' matched following item(s). Please click on the 'View List' to access the matched items list under either Monitor or Configuration'. Below this message is a table with the following data:

Item Type	Item Count	Monitor	Configuration
Client	3	<a href="#">View List</a>	

Below the table is a 'Footnotes' section with the following text: '1. The search was performed to match the entered text partially or fully with either IP Address or MAC Address or Name or SSID as applicable for different item types such as Clients, Alarms, Access Points, Controllers, Maps, Tags & Rogue Clients.' A red circle highlights the 'Search Results' title bar, and a red arrow points to the 'View List' link in the table.

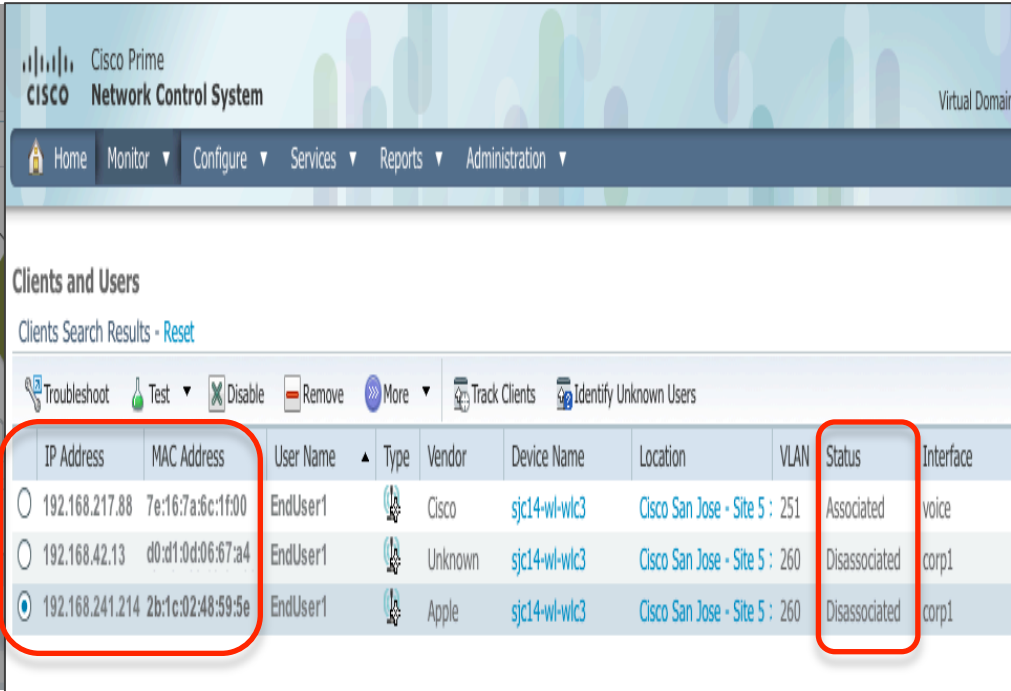


# Troubleshoot Wired and Wireless Access

Using Cisco Prime NCS to quickly resolve client access problems

USE CASE: User calls in to help center because they cannot get access to the network from their iPad.

1. Search on user name
2. Identify wired and wireless devices associated with the user
3. Display associated and disassociated devices



Cisco Prime  
Network Control System

Home Monitor Configure Services Reports Administration

Clients and Users

Clients Search Results - Reset

Troubleshoot Test Disable Remove More Track Clients Identify Unknown Users

	IP Address	MAC Address	User Name	Type	Vendor	Device Name	Location	VLAN	Status	Interface
<input type="radio"/>	192.168.217.88	7e:16:7a:6c:1f:00	EndUser1		Cisco	sjc14-wl-wlc3	Cisco San Jose - Site 5	251	Associated	voice
<input type="radio"/>	192.168.42.13	d0:d1:0d:06:67:a4	EndUser1		Unknown	sjc14-wl-wlc3	Cisco San Jose - Site 5	260	Disassociated	corp1
<input checked="" type="radio"/>	192.168.241.214	2b:1c:02:48:59:5e	EndUser1		Apple	sjc14-wl-wlc3	Cisco San Jose - Site 5	260	Disassociated	corp1



# Troubleshoot Wired and Wireless Access

Using Cisco Prime NCS to quickly resolve client access problems

USE CASE: User calls in to help center because they cannot get access to the network from their iPad.

1. Search on user name
2. Identify wired and wireless devices associated with the user
3. Display associated and disassociated devices
4. Use automated client troubleshooting workflow to

Troubleshoot

✓ 802.11 Association ✓ 802.1X Authentication ⚠ IP Address Assignment ? Successful Association

**Problem**  
Client could not complete the dhcp interaction.

**Recommendation**  
Check whether the DHCP server is reachable.  
Check whether dhcp server is configured to serve the wlan.  
Check whether dhcp scope is exhausted.  
Check whether multiple dhcp servers are configured with overlapping scopes.  
Check local dhcp server is present if dhcp bridging mode enabled (move it to second) client  
Check if client has static ip configured and ensure client generates ip traffic \* if ipsec wlan, exchanges in open(safenet/netscreen default config does not include it).

**Step by Step Recommendations**

**System Detail**  
Client PEM State: DHCP\_REQD  
Client is using dot1x security  
Checked at : 2011-Apr-25, 12:50:56 PDT [Check Again!](#)

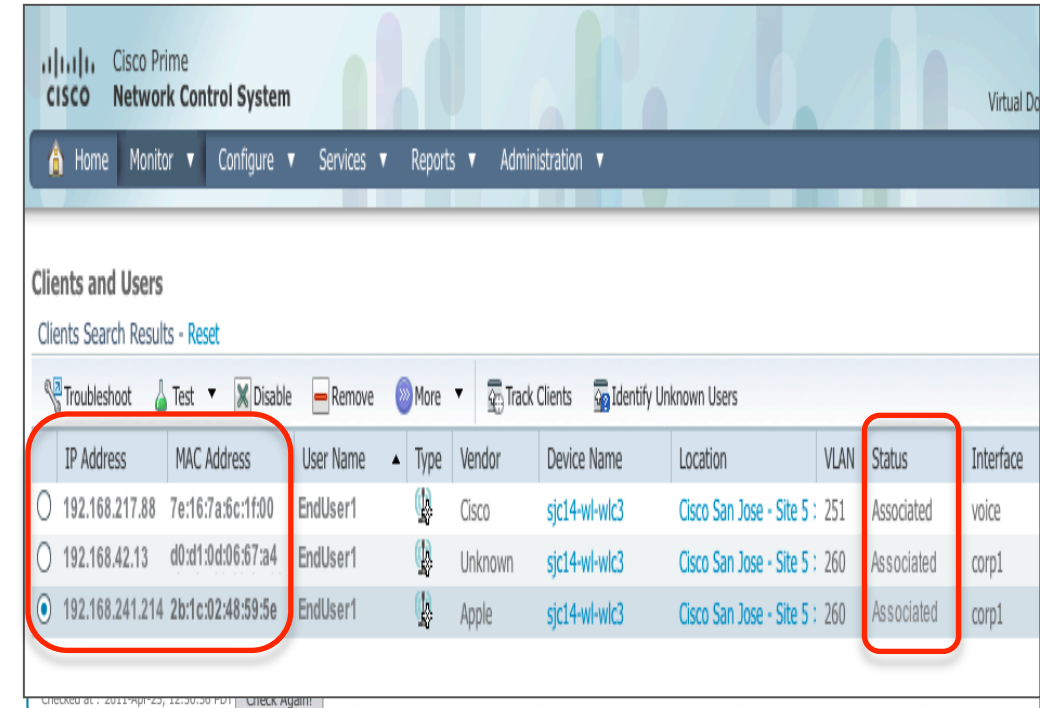


# Troubleshoot Wired and Wireless Access

Using Cisco Prime NCS to quickly resolve client access problems

USE CASE: User calls in to help center because they cannot get access to the network from their iPad.

1. Search on user name
2. Identify wired and wireless devices associated with the user
3. Display associated and disassociated devices
4. Use automated client troubleshooting workflow to resolve the issue
5. Issue resolved



The screenshot shows the Cisco Prime Network Control System interface. The 'Clients and Users' section is active, displaying search results for 'EndUser1'. A table lists three associated devices, with the first two highlighted by a red box. The 'Status' column for all three devices is 'Associated', also highlighted by a red box.

IP Address	MAC Address	User Name	Type	Vendor	Device Name	Location	VLAN	Status	Interface
192.168.217.88	7e:16:7a:6c:1f:00	EndUser1	Wireless	Cisco	sjc14-wl-wlc3	Cisco San Jose - Site 5	251	Associated	voice
192.168.42.13	d0:d1:0d:06:67:a4	EndUser1	Wireless	Unknown	sjc14-wl-wlc3	Cisco San Jose - Site 5	260	Associated	corp1
192.168.241.214	2b:1c:02:48:59:5e	EndUser1	Wireless	Apple	sjc14-wl-wlc3	Cisco San Jose - Site 5	260	Associated	corp1



Troubleshoot user and access issues based on identity  
Speed resolution with intuitive guided workflows



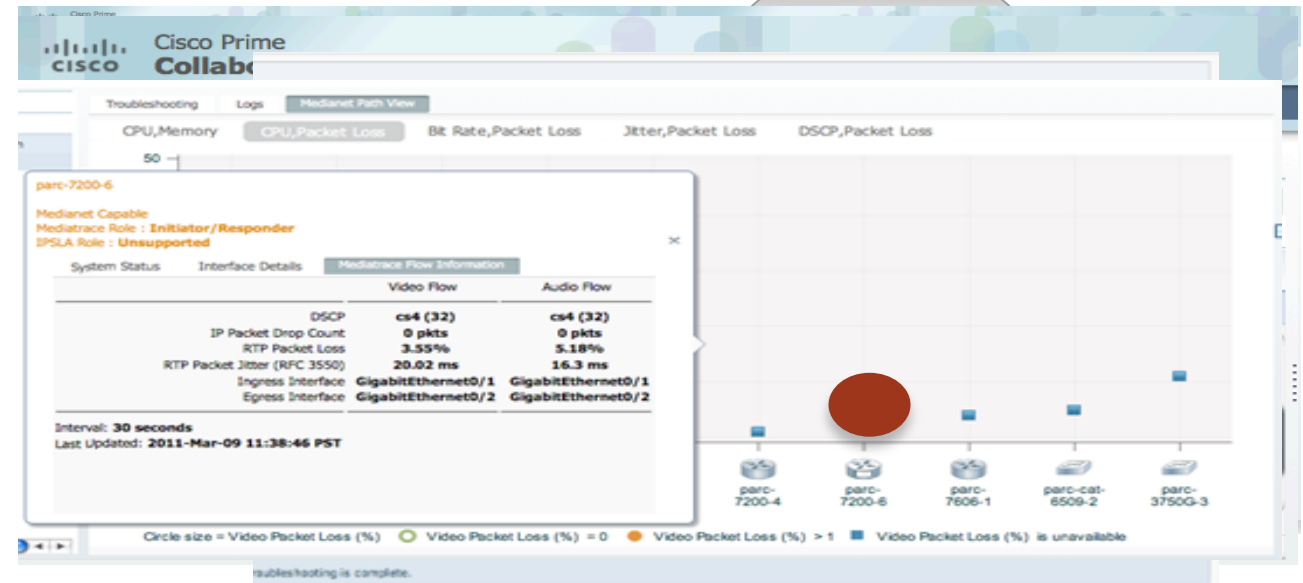


# Automate Lifecycle Processes

## Troubleshooting Video with Cisco Prime Collaboration Manager

USE CASE: Users are experiencing intermittent video problems during TelePresence sessions between HQ and the branch office, operations must isolate and fix the problem.

1. Identify and select the session (HQ to Branch)
2. View the session status
3. Drill down to visualize the media path
4. Quickly isolate the root cause of the problem
5. Fix the problem



- ✓ Quickly isolate and troubleshoot service related problems
- ✓ Improve service quality and end-user experience

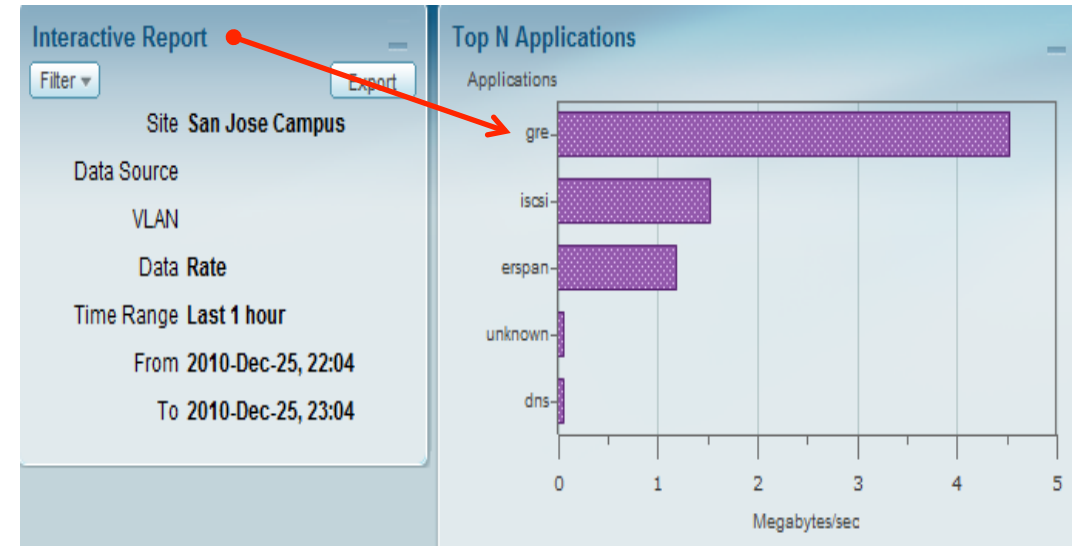
# Improve Operational Efficiency

## Using Cisco Prime NAM to Resolve Network Problems

USE CASE: End users are complaining about slow application response times and unresponsive applications.

1. Identify the busiest network applications

Cisco Prime Network Analysis Module (NAM)



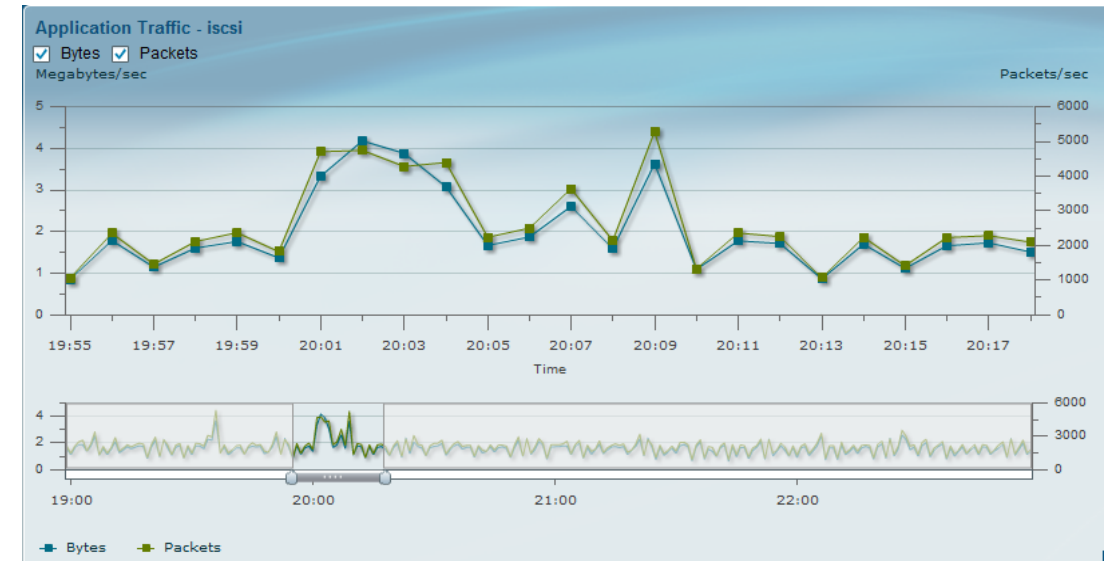
# Improve Operational Efficiency

## Using Cisco Prime NAM to Resolve Network Problems

USE CASE: End users are complaining about slow application response times and unresponsive applications.

1. Identify the busiest network applications
2. Drill down to identify and isolate network performance trends

Cisco Prime Network Analysis Module (NAM)



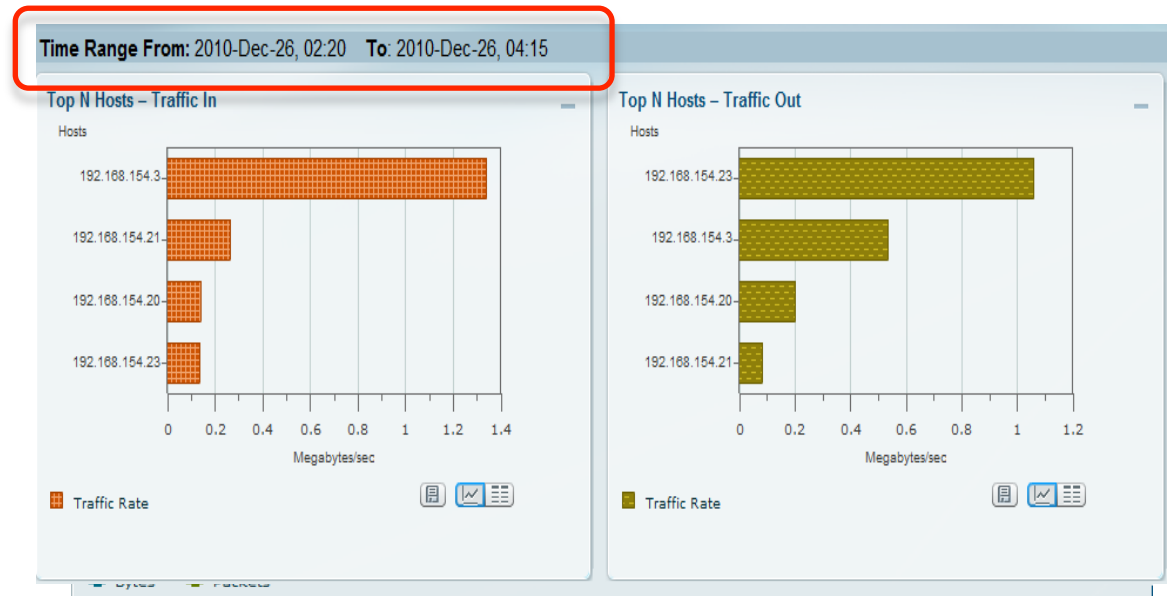
# Improve Operational Efficiency

## Using Cisco Prime NAM to Resolve Network Problems

USE CASE: End users are complaining about slow application response times and unresponsive applications.

1. Identify the busiest network applications
2. Drill down to identify and isolate network performance trends
3. Zoom into a specific time interval to identify the offending application process

Cisco Prime Network Analysis Module (NAM)





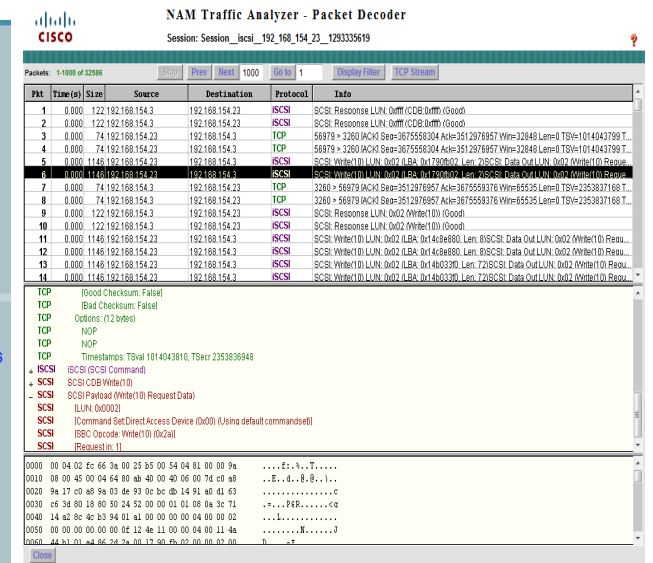
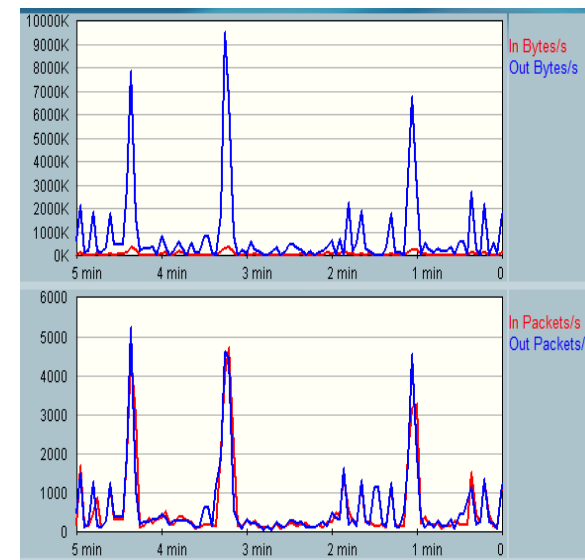
# Improve Operational Efficiency

## Using Cisco Prime NAM to Resolve Network Problems

**USE CASE:** End users are complaining about slow application response times and unresponsive applications.

1. Identify the busiest network applications
2. Drill down to identify and isolate network performance trends
3. Zoom into a specific time interval to identify the offending application process
4. Correlate performance data into a single view to isolate the problem

Cisco Prime Network Analysis Module (NAM)



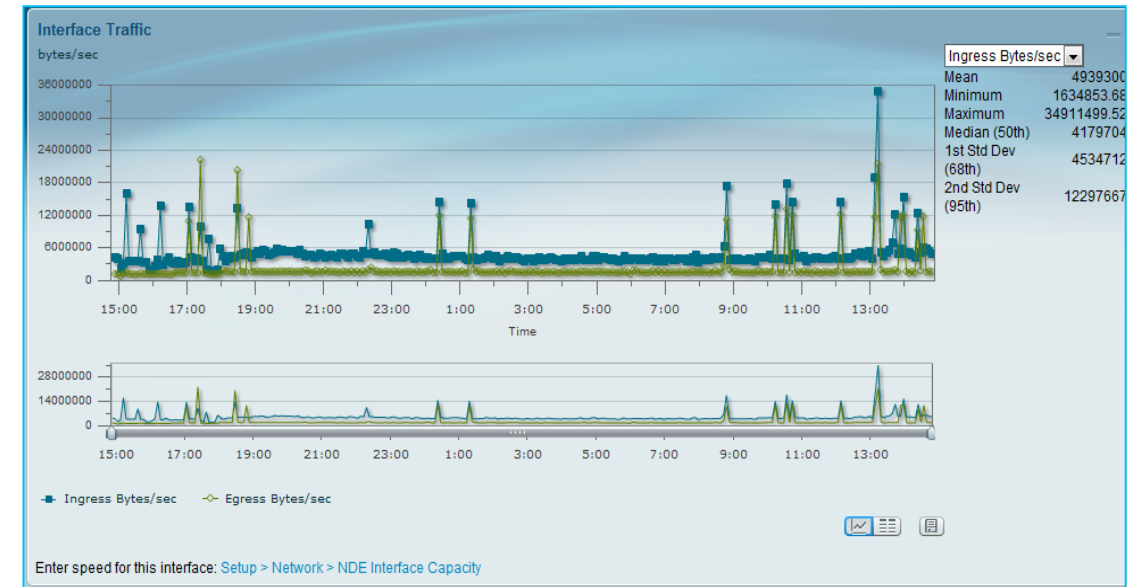
# Improve Operational Efficiency

## Using Cisco Prime NAM to Resolve Network Problems

**USE CASE:** End users are complaining about slow application response times and unresponsive applications.

1. Identify the busiest network applications
2. Drill down to identify and isolate network performance trends
3. Zoom into a specific time interval to identify the offending application process
4. Correlate performance data into a single view to isolate the problem
5. Resolve the problem by allocating more resources or stopping the offending process

Cisco Prime Network Analysis Module (NAM)



Understand how network traffic is performing and being used



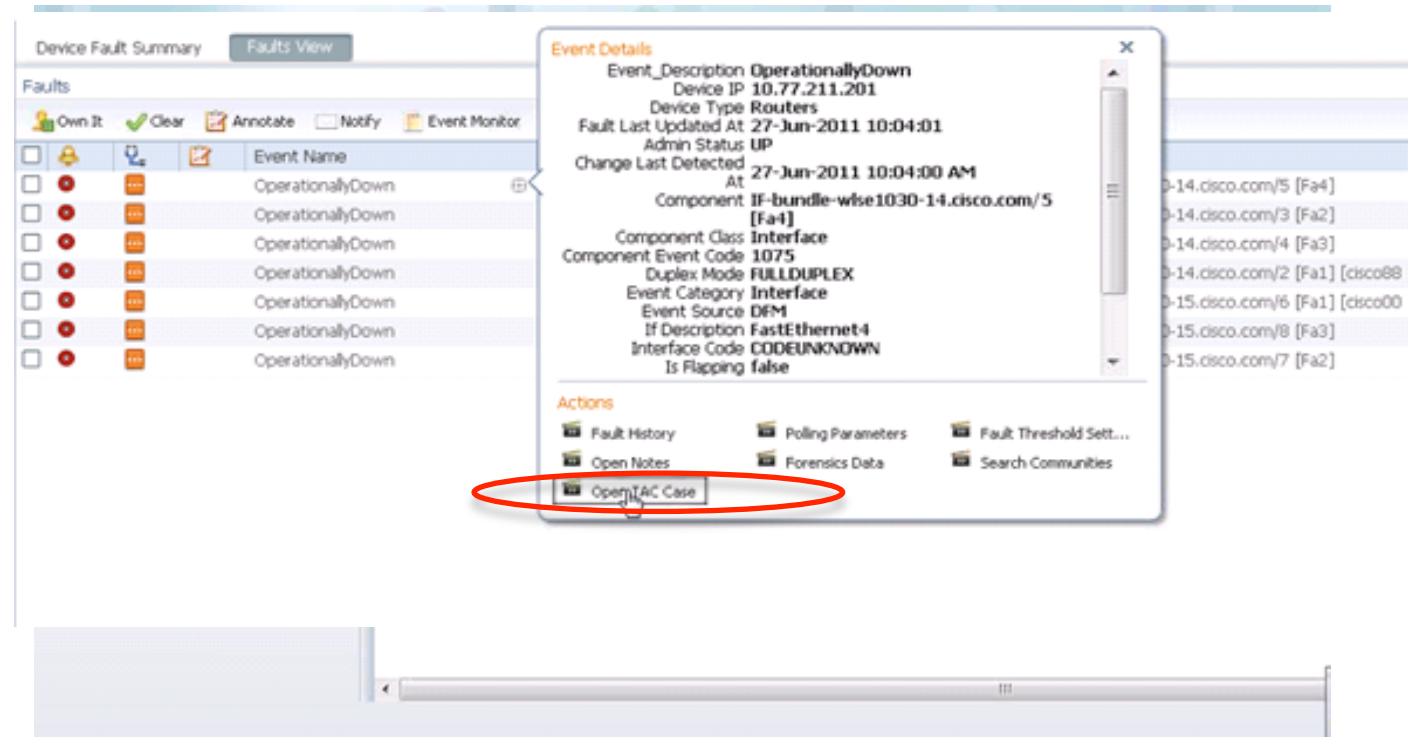
Optimize and troubleshoot network and application performance

# Speed Problem Resolution

## Utilizing Cisco Smart Interactions

USE CASE: Help desk operator sees a problem with a gateway router and uses Cisco smart interactions to help quickly isolate and solve the problem

1. Fault notification on core switch
2. Operator engages support community
3. Validates issue and opens Service Request with contextual information about the problem



Seamless access to Cisco support communities



Significantly reduce time required to resolve problems

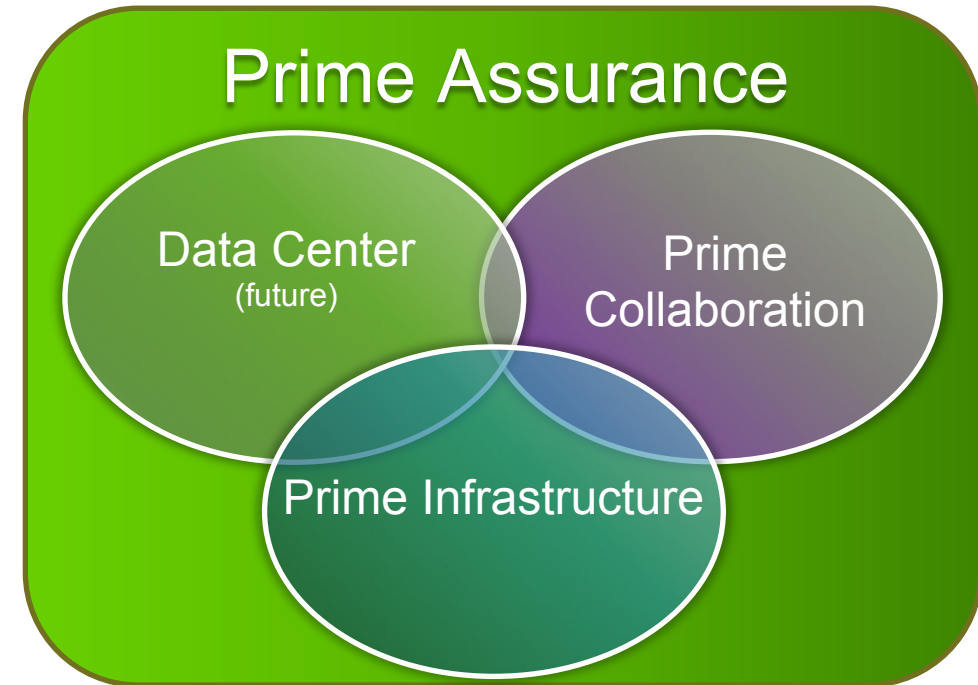
# Summary

- Cisco Prime is a strategy that delivers a “network services centric foundation” and a set of common attributes aimed at simplifying network management
- The Cisco Prime product portfolio consists of products in three areas:
  - Infrastructure for wired/wireless management
  - Collaboration for voice/video management
  - Assurance for performance management and end-to-end visibility
- Cisco Prime can help lower OpEx and simplify management
  - Preparing and meeting regulatory audit requirements
  - Deploying and managing Cisco value-added technologies
  - Proactively troubleshooting problems before they impact end-users
  - Provide visibility to ensure application and service delivery



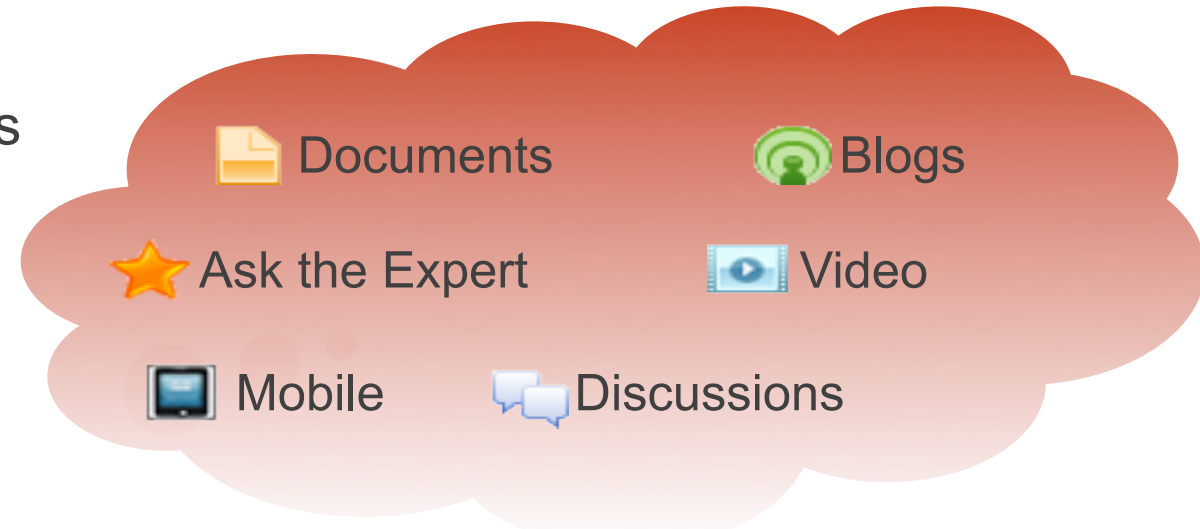
# For More Information

- Cisco Prime for Enterprise
  - [www.cisco.com/go/prime](http://www.cisco.com/go/prime)
- Cisco Prime Products
  - Cisco Prime Infrastructure
    - [www.cisco.com/go/lms](http://www.cisco.com/go/lms)
    - [www.cisco.com/go/ncs](http://www.cisco.com/go/ncs)
  - Cisco Prime Collaboration
    - [www.cisco.com/go/cm](http://www.cisco.com/go/cm)
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    - [www.cisco.com/go/uom](http://www.cisco.com/go/uom)
    - [www.cisco.com/go/usm](http://www.cisco.com/go/usm)
  - Cisco Prime Assurance
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    - [www.cisco.com/go/pam](http://www.cisco.com/go/pam)



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Thank you.

