CHAPTER 7

Optimize

Optimizing Your System

Optimization covers any changes to an existing system, including hardware and software upgrades, that enhance the functionality and performance of your network.

Collecting and analyzing data from your system's performance reports will provide crucial information for optimizing your system. By maintaining the routine system management procedures that you set up for your operations lifecycle, you will know when your traffic load increases, and when to increase your capacity.

Tip You can navigate to any topic on this tab by using the tab navigation pane at the left of the content pane. This navigation pane contains the table of contents (TOC) for the active tab.

Input to This Process

Your network has been operational for some period of time and is ready to optimize based on system performance criteria. Your daily operations and growing business needs provide continuous feedback for optimization.

Output of This Process

User feedback, audits, and test results provide data to continue optimizing the system.

Major Tasks in This Process

- Small Business: Performing a System Upgrade
- Medium Business: Performing a System Upgrade

Small Business: Performing a System Upgrade

Before You Begin

See the Prepare and Plan tab to plan your overall strategy.

Prepare for System Upgrade

To ensure that you have completed upgrade prerequisites, see Prepare for the System Upgrade in the *System Install and Upgrade Manual for IP Telephony for Small and Medium Business: Cisco Unified Communications System Release 7.0(1)*.

Upgrade IP Telephony Software Components

Once you have your upgrade plan and preparations in place, perform your system upgrade following the guidelines and sequence in Upgrading IP Telephony Components:

- See IP Telephony Deployment Models for the general upgrade sequence for the various components in the different deployment models,

For Related documentation on compatibility and component upgrades, see these topics:

- Compatibility Guides
- Component Release Notes and Installation and Upgrade Documentation

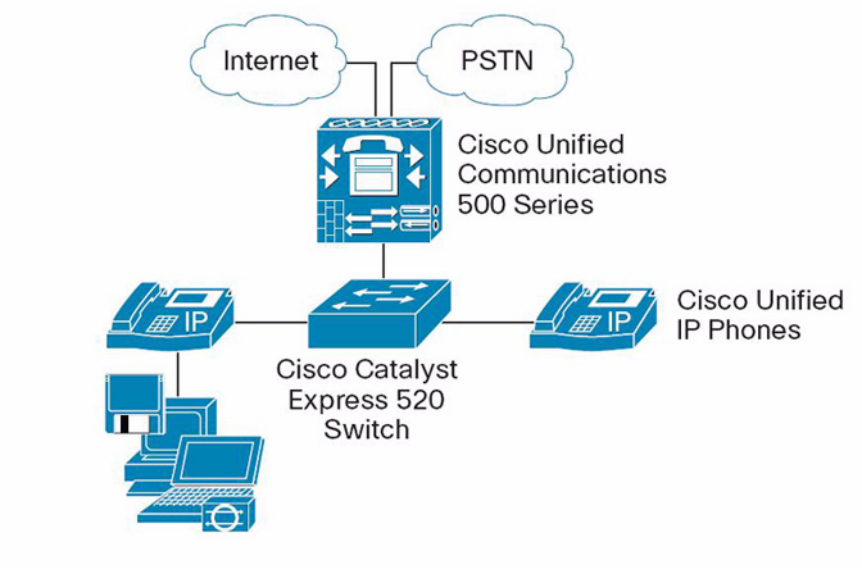
Scaling Up Unified Communications 500 Series

The Cisco Unified Communications 500 Series expands in voice ports through the Cisco Catalyst Express 520 companion switches. Every Cisco Unified Communications 500 Series user configuration comes with 8 phone licenses. For the 16-user configuration to utilize the additional 8 phone licenses, the 8-port Cisco Catalyst Express 520 must be connected to the Cisco Unified Communications 500 Series. For the 32-user Cisco Unified Communications 500 Series solution, the 24-port Cisco Catalyst Express 520 must be connected to the Cisco Unified Communications 500 Series. Similarly, for the 48-user Cisco Unified Communications 500 Series solution, two 24-port Cisco Catalyst Express 520 Switches must be connected to the Cisco Unified Communications 500 Series unit. User count on a given configuration determines the maximum number of users supported. For example, an 8-user configuration does not support more than 8 IP phones, even with the Cisco Catalyst Express 520 connected. If a customer plans to grow beyond 8 ports, the customer should initially procure the 16-user configuration and add the Cisco Catalyst Express 520 when needed to support additional ports.

For more information on Cisco Unified Communications Manager Express and Cisco Unity Express licensing, see Cisco Unified Communications 500 Series User Models.

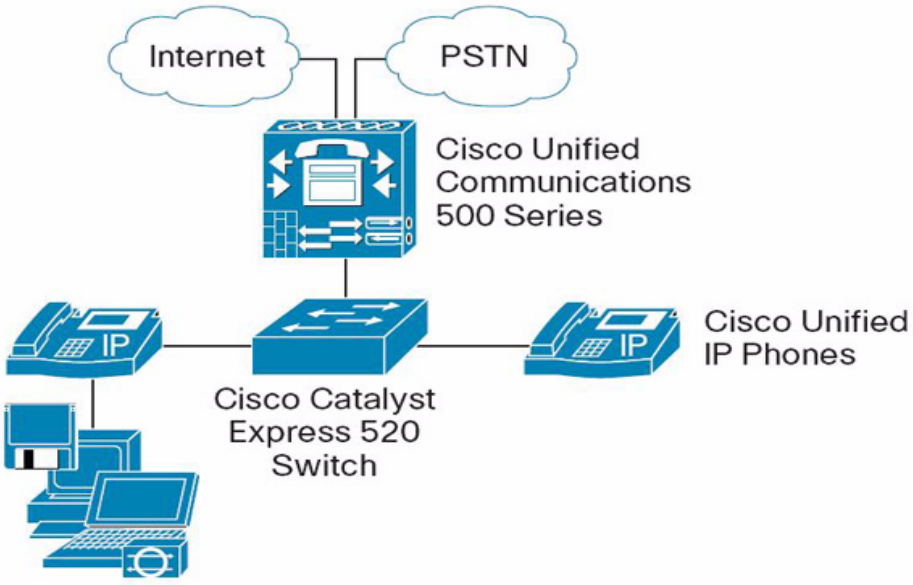
The addition of the 8-port Cisco Catalyst Express 520 Series Switch with the existing 8 ports on the Cisco Unified Communications 500 Series, it is now possible to support up to 16 IP phones. Figure 1 shows Cisco Unified Communications 500 Series and 8-port CE520 connecting 16 Unified IP Phones.

Figure 1 Cisco Unified Communications 500 Series and 8-port CE520 Switch Connecting 16 Unified IP Phones



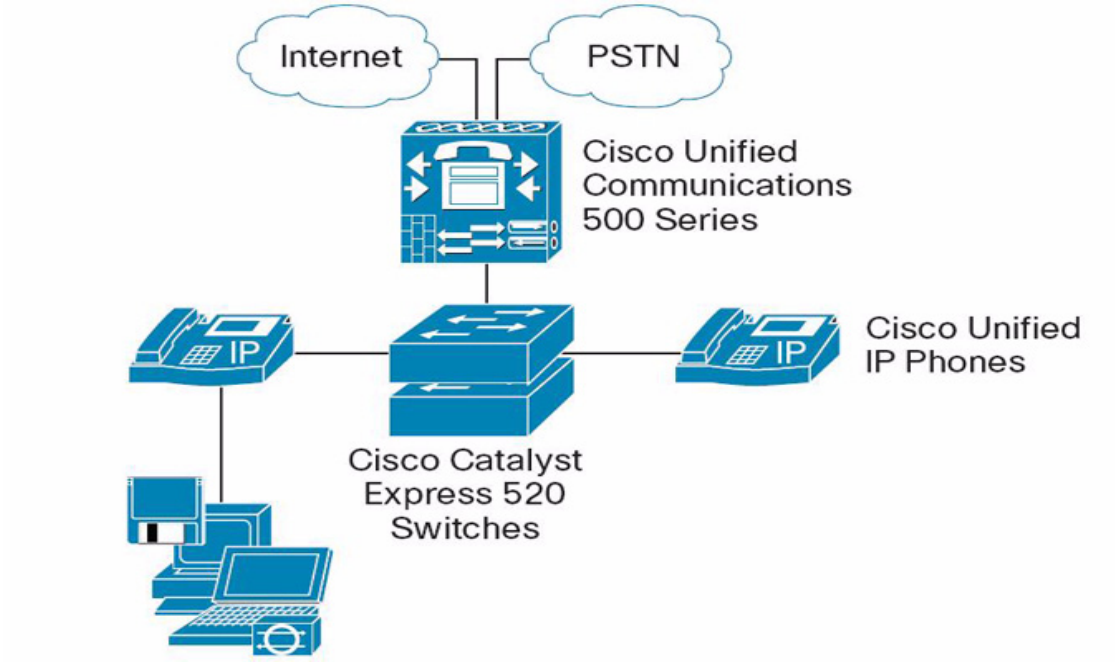
With the addition of the 24-port Cisco Catalyst Express 520 Series Switch and the existing 8 ports on the Cisco Unified Communications 500 Series, it is now possible to to support up to 32 Unified IP phones. Figure 2 shows Unified Communications 500 Series and 24-port CE520 connecting 32 IP Phones.

Figure 2 UC500 Series and 24-port CE520 Switch Connecting 32 IP Phones



The Cisco Unified Communications 500 Series with two Cisco Catalyst Express 520 Series Switches (24-port and 16-port) can support up to 48 IP phones. Figure 3 shows UC500 Series with 24-port and 16-port CE520 connecting 32 IP Phones.

Figure 3 UC500 Series with 24-port and 16-port CE520 Switches Connecting 32 IP Phones



Medium Business: Performing a System Upgrade

Before You Begin

See the Prepare and Plan tab to plan your overall strategy.

Prepare for System Upgrade

To ensure that you have completed upgrade prerequisites, see Prepare for the System Upgrade in the *System Install and Upgrade Manual for IP Telephony for Small and Medium Business: Cisco Unified Communications System Release 7.0(1)*.

Upgrade IPT Software Components

Once you have your upgrade plan and preparations in place, perform your system upgrade following the guidelines and sequence in Upgrading IP Telephony Components:

- See IP Telephony Deployment Models for the general upgrade sequence for the various components in the different deployment models.

For Related documentation on compatibility and component upgrades, see these topics:

- Compatibility Guides

- Component Release Notes and Installation and Upgrade Documentatio

System Test Results

This topic summarizes the results of Cisco Unified Communications Release 7.0(1) system testing for IP telephony environments. This topic contains the following sections:

- Testing Objectives
- Tested Deployment and Site Models
- Test Results

Testing Objectives

Cisco Systems validates Cisco Unified Communications systems by designing, installing, configuring, and testing hardware and software to achieve a predictable, effective, and reliable system. The intent of system testing is to validate the seamless interoperability and stability of the components that make up a complete and optimized Cisco Unified Communications system.

Testing performed for Cisco Unified Communications includes (but is not limited to) the following:

- Installation, Upgrade, and Usability Testing—To verify software installation and upgrades at the system level and usability for system components
- End-to-End Functionality Testing—To verify the end-to-end functionality of system components
- Basic Functionality and Feature Testing—To verify basic call flows and component features
- Customer Assurance Program (CAP) Scenario Testing—To re-create and test CAP scenarios based on TAC input
- Interoperability Testing—To verify the interoperability among system components
- Scalability Testing—To verify system functionality during scalability tests
- Performance, Load, and Stress Testing—To verify system functionality during performance, load, and stress tests
- Failover, Recovery, and Redundancy Testing—To verify system behavior during failover and recovery, and behavior in redundant configurations

Tested Deployment and Site Models

Cisco Unified Communications Release 7.0(1) testing for IP telephony was designed to test the hardware and software components that work together in a multi-site distributed IP telephony deployment. For this testing, several site models were created. Each site model was designed to test a specific set of features and interactions. For information about the components, configurations, and environment tested in Cisco Unified Communications Release 7.0(1), see Tested Deployments and Site Models.

Test Results

The results of the system tests performed for IP telephony during Cisco Unified Communications Release 7.0(1) are shown in the System Test Results (right-click to download PDF).

The test results contain the following information:

- Title—Title of the test.
- ID—Identifier for the test.
- Description—Description of the purpose of the test.
- Features Tested—Component feature tested.
- Status—Result of the test and any defects related to the test case. Possible values are:
  - Passed—Test case passed as described in the table.
  - Failed—Test case failed and the reason is described in the listed defect.
  - Passed with exception—Test case as described passed but an anomaly occurred that was not directly related to the functionality being tested. Possible anomalies are as follows:

    The test *steps* were modified based on the actual feature implementation.

    The test *setup* was modified based on the actual feature implementation.

    The test results did not exactly match what was expected although the feature performed as required.
- Defects—Identifier for any defect that was opened against the test. If you have an account with Cisco.com, you can use the Bug Toolkit to view information about defects.

  To access the Bug Toolkit, go to this URL:
  - http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

Additional Sites and Services

Steps to Success is a Cisco methodology that outlines the tasks required to complete a successful customer engagement. Registered users can visit the Steps to Success resource site for Cisco Unified Communications process flows.

Cisco Unified Communications Services is a Cisco service offering that provides engineering expertise and best practices.

- Registered users can visit the Cisco Unified Communications Services partner site.
- Nonregistered users can visit the Cisco Unified Communications Services site.