Cisco Smart Business Communications System

Blueprint

Introduction

Today's growing businesses face relentless competitive pressures. To keep up with large global organizations as well as smaller, more technology-enabled businesses, your company must boost productivity, streamline business processes, get full value from resources and applications, and manage costs effectively. Superior customer service and business agility can help your organization stand apart from the competition. The Cisco® Smart Business Communications System can help you compete more successfully on all of these levels with an affordable, complete portfolio of Cisco Unified Communications products that are made for small businesses.

The Cisco Smart Business Communications System offers a new way for small businesses to reach, serve, and retain customers. Having secure access—anytime, anywhere—to voice, video, and wireless networking enables more effective and efficient communication with customers and employees. Cisco Unified Communications solutions give you the right mix of communications, productivity, and business operations applications, designed to work together so they are easier to deploy, operate, and manage. The Cisco Smart Business Communications System lets you integrate your voice, video, and wireless communications in an affordable, complete system, complemented by award-winning support and easy financing, all delivered through trusted local partners.

Integrating your communications systems with an intelligent IT infrastructure transforms your network into a "human network" in which your business moves with you, security is everywhere, and your information is always available—whenever and wherever it's needed. You can efficiently access information on demand, interact with virtual teams all over the world, and manage these interactions on the go, in real time, as if you were everywhere at once. Every interaction is more valuable. Everyone is more efficient. All communications are more effective and secure. These unified communications capabilities let you excel in today's fast-paced marketplace and give your business the agility it needs to innovate continuously, adapt quickly, and grow successfully.

Cisco Smart Business Communications System Components

The Cisco Smart Business Communications System is made up of multiple components:

- Cisco Unified Communications 500 Series for Small Business
  - With integrated wireless option
- Cisco Catalyst® Express 520 Series Switch
- Cisco Mobility Express Solution
  - Cisco 500 Series Wireless Express Access Point
  - Cisco 500 Series Wireless Express Mobility Controller
- System management
  - Cisco Smart Assist
  - Cisco Configuration Assistant
  - Cisco Monitor Manager and Cisco Monitor Director

Cisco Unified Communications 500 Series for Small Business

The Cisco Unified Communications 500 Series comes with 8 Power over Ethernet (PoE) ports to support both IP phones and workstations, and can be expanded to support up to 16 IP phones and workstations. The Cisco Unified 500 Series delivers an array of features, including:

- Call processing, with the intelligence of a telephony solution, directing how calls should be routed and used throughout the network
- Local storage of voicemail
- Eight Ethernet ports that support PoE, to provide power to IP phones using the IEEE 802.3af power standard
- WAN connection (Ethernet only) for either Internet connectivity or connection into a corporate data network
- Connectivity to the public switched telephone network (PSTN) for making and receiving external calls
- FXS ports to connect local analog devices, such as fax machines
- Optional wireless connectivity for both wireless voice and data
- Security for connectivity to the Internet

Integrated Wireless Access Point Option

The Cisco Unified Communications 500 Series offers an integrated wireless access point option. Use this approach when the Cisco Unified Communications 500 Series can be placed in a centralized area for the best wireless access.

This single access point resides in the Cisco Unified Communications 500 Series and provides wireless access that functions like a standalone access point. This is an ideal solution, for instance, to deploy wireless IP phones in a small area without running wires.

As your business grows and you need to expand your wireless coverage, up to two Cisco 500 Series Wireless Express Access Points can be added.

Note: The integrated wireless access point on the Cisco Unified Communications 500 Series is not part of the Cisco Mobility Express Solution and cannot be upgraded into a controller-based architecture.

Cisco Catalyst Express 520 Series Switch

The Cisco Catalyst Express 520 Switch is a fixed-configuration, managed Ethernet switch that provides 8 ports of 10/100 Power over Ethernet (PoE) and enables the Smart Business Communications System to scale to 16 users.

The Cisco Catalyst Express 520 Switch features:

- Eight Ethernet ports that support PoE, to provide power to IP phones using the IEEE 802.3af power standard
- Embedded device security - Management traffic can be encrypted with Secure Sockets Layer (SSL) and Simple Netowrk Management Protocol Version 3 (SNMPv3)
- Wire-speed managed Fast Ethernet and Gigabit Ethernet connectivity
- 2 Small Form-Factor Pluggable (SFP) ports
- Predefined software configuration to work immediately with Cisco Unified Communication 500 Series

Cisco Mobility Express Solution

Wireless access to the Smart Business Communications System has been designed for both standalone and controller-based operation. It is composed of:

- Cisco 500 Series Wireless Express Access Points: The Cisco 521 Wireless Express Access Points can function in two modes:
- Standalone mode: The access points are directly connected to the wired infrastructure and provide wireless connectivity to users in the area they cover. Configuration and management must be done at the individual access point level.
- Controller-based mode: The access points associate with a Cisco Wireless Express Mobility Controller and, in addition to providing wireless connectivity, act as air monitors. The Cisco Wireless Express Mobility Controller manages the configurations of all the access points through a single interface.
- Cisco 500 Series Wireless Express Mobility Controller: The Cisco 526 Wireless Express Mobility Controller retrieves air monitoring information from the access points, analyzes it, and takes the appropriate measures for optimum coverage. It provides network administrators with the visibility and control necessary to effectively and securely manage the wireless network.

System Management

The Cisco Smart Business Communications System is managed by a suite of applications that provide:

- Setup
- Optimization
- Transparent integration
- Local management
- Remote management by a managed service provider (reseller, integrator, consultant, or service provider)

Each application is part of the overall solution to set up, optimize, and maintain the Smart Business Communications System.

Cisco Smart Assist

Cisco Smart Assist is a collection of features that provide auto-configuration and service activation between Cisco products and applications. Cisco Smart Assist features, initially supported on products in the Smart Business Communications System, are unique in offering assistance in:

- Improved ease of setup and deployment of Cisco products
- Optimizing network performance and security
- The ongoing operation of Cisco networks as they grow

Cisco Configuration Assistant

Cisco Configuration Assistant simplifies the task of configuring, deploying, and administering Cisco network solutions and provides everything needed to quickly set up a small office network. Purpose-built for single-site networks serving eight to 250 users, this PC-based application with a simple graphical user interface (GUI) discovers all devices in the network and dynamically configures all routers, switches, and wireless access points as well as Cisco Unified Communications call-routing and voicemail systems.

Cisco Configuration Assistant was purpose-built to provide comprehensive configuration, deployment, and ongoing network management support for the entire line of products in the Cisco Smart Business Communications System.

Cisco Configuration Assistant provides the following:

- Holistic, network-level insight through multiple network views
- Simplified network design and deployment through dynamic discovery
- Clear separation of services through VLAN highlighting

- Improved network visibility with continual health monitoring
- Simplified network reporting
- ·Enhanced security for configuration and monitoring activities
- Increased IT staff efficiency through simplified software updates
- Improved network security and performance with dynamic application updates
- Increased security and performance through network synchronization
- Simplified troubleshooting with the Troubleshooting Advisor
- Faster network configuration and improved network performance through intelligent port configuration with Cisco Smartports Advisor

Cisco Monitor Manager and Cisco Monitor Director

The Cisco Monitor Manager and Cisco Monitor Director bring real-time management to the Smart Business Communications System. Whether you are a small or medium-sized business (SMB) managing your own network or a partner needing to manage your customers' networks remotely, these two products offer the perfect solution.

- Cisco Monitor Manager: The Cisco Monitor Manager provides management capability at the SMB main and branch offices. This application allows customers to manage their own network infrastructure, including data and voice.
- Cisco Monitor Director: The Cisco Monitor Director enables partners to manage 50 individual customers at the same time. Partners gain intimate knowledge of their SMB customers and can migrate to the managed service provider (MSP) monthly recurring revenue model.

Network Designs

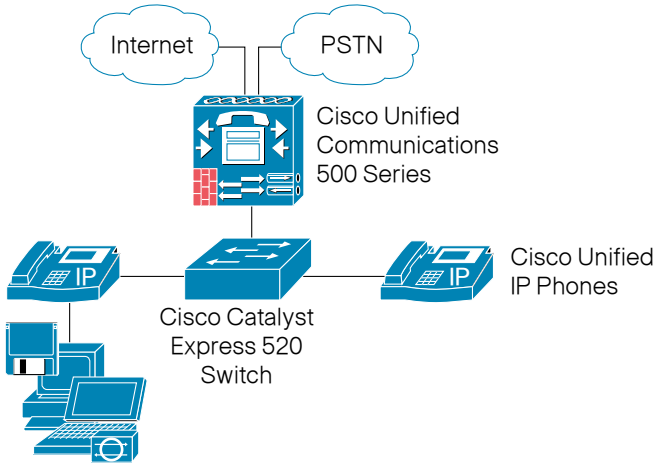
The Smart Business Communications System is a versatile solution that can be designed to satisfy multiple customer requirements. Following are some reference network designs that can be used as a starting point for any customer.

Smart Business Communications System with 16 Users

The 16-user solution is shown in Figure 1 and includes the following products:

- Cisco Unified Communications 500 Series
- Cisco Unified Communications Manager Express
- Cisco Unity Express
- Cisco Catalyst Express 520 Series Switch
- Cisco Configuration Assistant
- Cisco Monitor Manager and Cisco Monitor Director
- Cisco Unified IP Phones

Figure 1. Smart Business Communications System with 16 Users



The IP phones are connected to both the Cisco Unified Communications 500 Series and the Cisco Catalyst Express 520 Series Switch. Workstations can be connected directly to the IP phones, taking advantage of a single cabling infrastructure.

The Smart Business Communications System can also be purchased in an 8-user version, which does not include the Cisco Catalyst Express 520 Series Switch.

Smart Business Communications System with Wireless Access

Wireless access allows the customer to take full advantage of the Smart Business Communications System, using every aspect of the solution, from a wired network for both voice and data to a wireless solution that allows mobility throughout the facility.

Wireless access to the Smart Business Communications System can be provided in two ways:

- Using an integrated wireless option in a standalone mode that can eventually be expanded with up to two Cisco 500 Series Wireless Express Access Points. This configuration is recommended for small coverage areas and when roaming across access points is not needed for voice over Wi-Fi.

- Using the Cisco Mobility Express Solution in a standalone or controller-based architecture. The controller-based architecture enables the dynamic Cisco Radio Resource Management feature, which continually optimizes bandwidth and roaming to maintain voice over Wi-Fi calls between access points. The Cisco Mobility Express Solution is designed for businesses with fewer than 250 employees.

Each access point can support between 8 and 10 wireless IP phones with data connectivity (depending on the applications being used). Each Cisco 500 Series Wireless Express Mobility Controllers can support up to 6 Cisco 500 Series Wireless Express Access Points.

The Cisco Mobility Express Solution can be implemented with or without the Cisco Unified Communications 500 Series, offering customers the ability to start today with wireless connectivity for their data network and complete wired and wireless security and then add voice in the future.

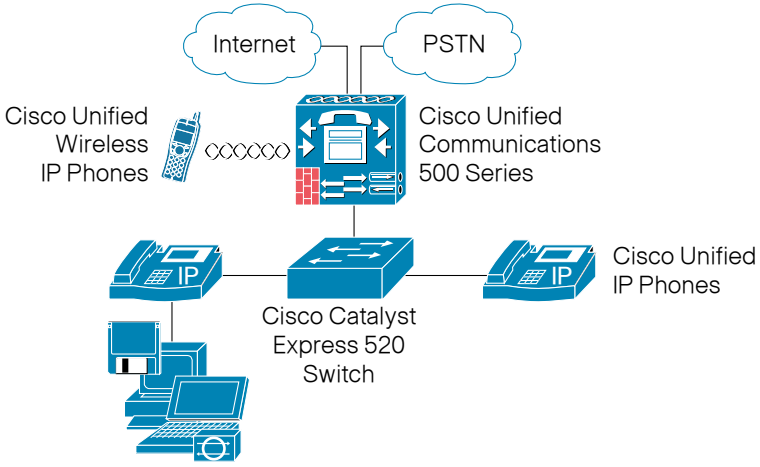
Unified Communications and Mobility Express Solutions

The following products are used for wireless access:

- Cisco Unified Communication 500 Series
- Cisco Unified Communications Manager Express
- Cisco Unity Express
- Integrated wireless option
- Cisco Catalyst Express 520 Series Switch (16-user version)
- Cisco Configuration Assistant
- Cisco Monitor Manager and Cisco Monitor Director
- Cisco Unified IP Phones
- Cisco Mobility Express Solution
- Cisco 500 Series Wireless Express Access Point
- Cisco 500 Series Wireless Express Mobility Controller

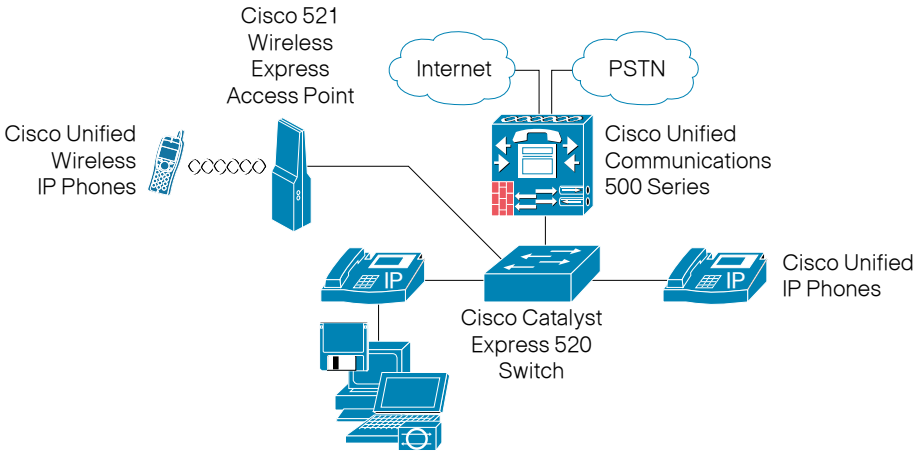
When using the integrated wireless option, no additional network hardware is needed for both voice and data wireless connectivity (Figure 2). When only one access point is deployed, no roaming is needed.

Figure 2. Integrated Wireless Option



It is not always possible to use the integrated wireless option, even when only one access point is needed, due to the location of the Cisco Unified Communications 500 Series system. In such cases, an external wireless access point, the Cisco 521 Wireless Express Access Point, can be added to the solution and placed anywhere in the facility to provide wireless connectivity where it is needed (Figure 3).

Figure 3. Wireless Access Through a Cisco 521 Wireless Express Access Point



When multiple access points are needed to provide the necessary coverage and bandwidth, an organization could add two additional access points (Cisco 521 Wireless Express Access Points), together with the integrated access point. These access points are implemented in standalone mode.

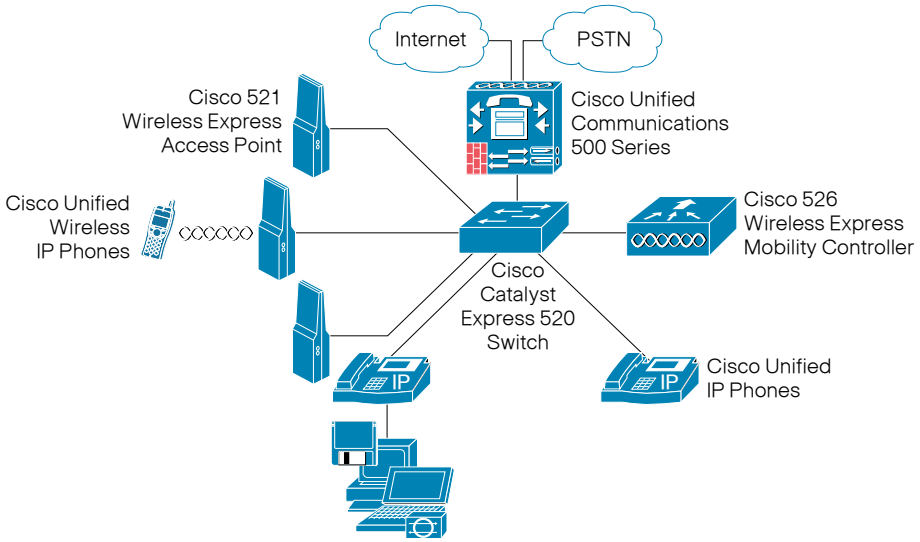
An alternate solution would be to deploy three Cisco 500 Series Wireless Express Access Points in controller-based mode. In this configuration, a Cisco 500 Series Wireless Express Mobility Controller can manage up to six Cisco 500 Series Wireless Express Access Points, offering numerous advanced features such as:

- Centralized management of users, access points, or policies
- Automated radio resource management
- Simple setup of up to eight VLANs
- Mobility management for roaming between access points (Figure 4)
- Secure wireless guest access
- Optimized bandwidth for voice over Wi-Fi

The Cisco Mobility Express Solution can be implemented with or without the Cisco Unified Communications 500 Series, enabling you to support immediate, secure wireless connectivity for your data network, then add voice in the future.

To obtain optimal performance, a wireless site survey on the facility is recommended.

Figure 4. The Cisco Mobility Express Solution Offers Mobility Management for Voice over Wi-Fi



Wireless access allows the customer to take full advantage of the Smart Business Communications System, using every aspect of the solution, from a wired network for both voice and data to a wireless solution that allows mobility throughout the facility.

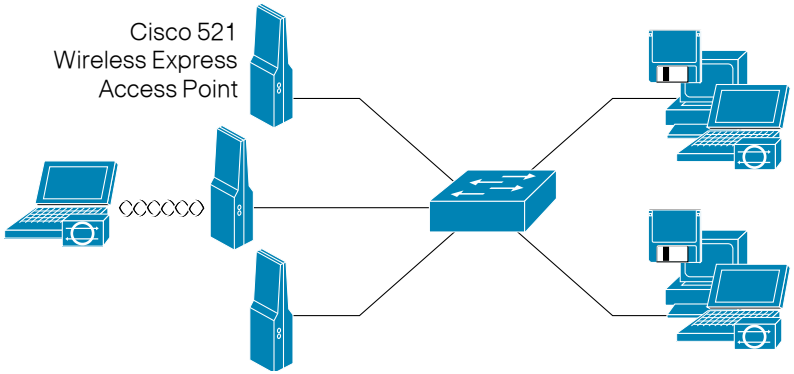
Mobility Express Solution Only

Although voice capability may already exist in a customer location, it is always important to prepare for the future. The Cisco wireless solution provided through the Smart Business Communications System provides that type of preparation. This solution consists of the following products:

- Cisco Catalyst Express 520 Series Switch (16-user version)
- Cisco Configuration Assistant
- Cisco Monitor Manager and Cisco Monitor Director (optional)
- Cisco Mobility Express Solution
  - Cisco 500 Series Wireless Express Access Point
  - Cisco 500 Series Wireless Express Mobility Controller

These products are all part of the Smart Business Communications System, allowing easy growth into the voice capabilities of this solution and into the wireless network. The Cisco Mobility Express solution can scale up to 250 users.

Figure 5. Cisco Mobility Express Solution in a Standalone Architecture



When the controller features are not needed, a standalone architecture can be deployed (Figure 5). The standalone access points, Cisco 500 Series Wireless Express Access Points, can be upgraded at any time in the future into a controller-based architecture that preserves your existing investment. In a standalone architecture, the wireless network can be designed by placing the access points throughout the facility to provide full coverage. No Cisco 500 Series Wireless Mobility Controller is deployed.

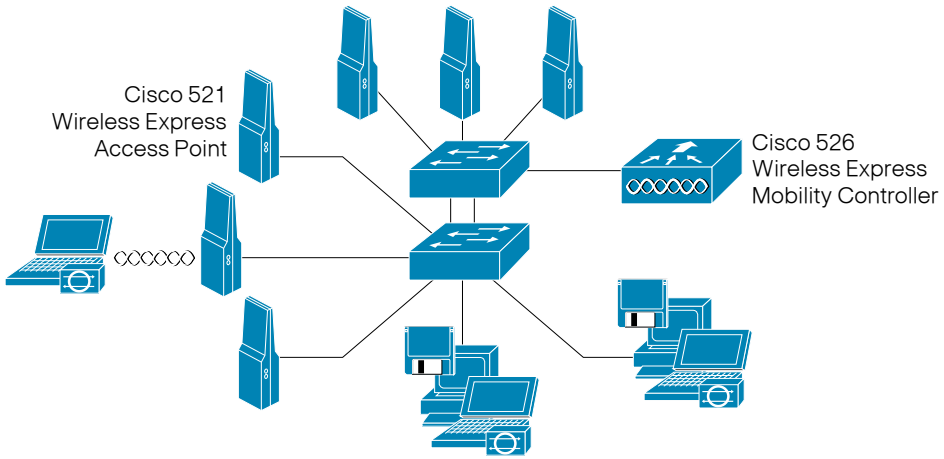
The capacity of the wireless network is limited to a maximum of three access points in this configuration.

As the number of users and the need for more bandwidth increase and as features such as centralized management, automated radio resource management, mobility management, or secure wireless guest access are needed, the access points can be deployed in a controller-based architecture (Figure 6). In this configuration, up to two Cisco 500 Series Wireless Express Mobility Controllers can be added.

A single Cisco 500 Series Wireless Express Mobility Controller can manage up to six Cisco 500 Series Wireless Express Access Points.

This solution can provide mobility for businesses of up to 250 employees. The network design can be expanded for even greater coverage, due to capacity requirements or for environmental reasons. This expansion would involve adding another Cisco 500 Series Wireless Express Mobility Controller to the solution, to cover up to 12 access points located anywhere in the network.

Figure 6. Cisco Mobility Express Solution in a Controller-Based Architecture



It is important during any wireless design to perform a wireless network assessment on the facility. This assessment will help to create a wireless network that will cover all areas of the facility while taking a variety of environmental issues into consideration. These might include steel girders, microwaves, and fluorescent lighting. Without this type of assessment, it may not be possible to guarantee service throughout the facility.

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