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 Network 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

Figure 1 shows Cisco Configuration Assistant.

Figure 1. Cisco Configuration Assistant Can Configure the Full Smart Business Communications System Solution

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 (Figure 2). This application allows customers to manage their own network infrastructure, including data and voice. Supported features include:
  – Network discovery
  – Device inventory
  – Configuration archive
  – Performance monitoring
  – Fault management
  – Performance and fault history
  – Reporting
  – Alerts

Figure 2. Cisco Monitor Manager Provides Management Capability at the SMB Main and Branch Offices
End-of-sale (EoS) reports
Discovery, inventory, topology, monitoring, and reporting, including IP telephony devices
Cisco Unified Communications Manager Express monitoring
Cisco Unity Express monitoring
Monitoring of IP phones
Voice gateway monitoring

Cisco Monitor Director: The Cisco Monitor Director enables partners to manage 50 individual customers at the same time (Figure 3). Partners gain intimate knowledge of their SMB customers and can migrate to the managed service provider (MSP) monthly recurring revenue model. They can manage customers' sites using features such as:
- Real-time alerts and notifications
- Configurable e-mail and pager addresses based on time-of-day setting
- Automated e-mails sent to prevalent trouble ticketing applications
- Multilayer alert filtering capability
- End-of-life/end-of-sale database reference and notifications
- Scheduled, HTML-based, automated e-mail reports that include a network alert summary, a device availability analysis, Top Number (TopN) performance reports, and a network topology

Network Designs
The Cisco Smart Business Communications System is a versatile solution that can be designed to satisfy multiple customer requirements. The infrastructure and application designs in this section can be used as a starting point for any customer design.

Infrastructure designs
- Smart Business Communications System with 8 users
- Smart Business Communications System with 16 users
- Smart Business Communications System with wireless access

Application designs
- Smart Business Communications Systems: Adding advanced call features and presence integration
- Smart Business Communications Systems: Integrating customer relationship management

Infrastructure Designs
The infrastructure designs are reference architectures that can be used as a starting point when designing a voice and data network with the Smart Business Communications System.
Smart Business Communications System with 8 Users
The 8-user solution includes the following products:

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

The IP phones are connected to and powered directly by the Cisco Unified Communications 500 Series. Workstations can be connected directly to the IP phones, taking advantage of a single cabling infrastructure. Figure 4 demonstrates the network connectivity for both the IP phones and workstations.

The Cisco Unified Communications 500 Series can be connected directly to the Internet to enable Internet connectivity for end users. It is possible to configure a Cisco IOS® Firewall on the Cisco Unified Communications 500 Series to protect the solution.

Smart Business Communications System with 16 Users
The Smart Business Communications System is available in a 16-user version, with the addition of the Cisco Catalyst Express 520 Series Switch. This switch adds 8 ports for 8 additional IP phones. Figure 5 demonstrates the connection of IP phones and workstations into the Cisco Catalyst 520 Series Switch, taking advantage of a single cable infrastructure.

The 16-user solution includes the following products:

- Cisco Unified Communications 500 Series (Cisco Unified 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 4. Smart Business Communications System with 8 Users

Figure 5. Smart Business Communications System with 16 Users
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 from 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

When using the integrated wireless option, no additional network hardware is needed for both voice and data wireless connectivity. When only one access point is deployed no roaming is needed as shown in Figure 6.

![Figure 6. Integrated Wireless Option](image)

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; this is demonstrated in Figure 7.

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 and offers 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
- Secure wireless guest access

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; this is demonstrated in Figure 8.

To obtain optimal performance, a wireless site survey on the facility into which wireless will be introduced is recommended.

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.
When the controller features are not needed, a standalone architecture can be deployed. 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 a 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.

Figure 9 shows the Cisco Mobility Express Solution in a standalone architecture.

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. 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.

Figure 10 shows the Cisco Mobility Express Solution in a controller-based architecture.

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 11 demonstrates how 12 Cisco 500 Series Wireless Express Access Points can be managed by two Cisco 500 Series Wireless Express Mobility Controllers.
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.

Application Designs
Different applications can be integrated in the Smart Business Communications System. An example of additional features that could be added through application integration would be:

- Advanced call features
- Presence
- Integration with customer relationship management (CRM) applications

Smart Business Communications System: Adding Advanced Call Features and Presence integration
Through Cisco Unified CallConnector for Microsoft Office, the Smart Business Communications System can support multiple advanced call features, including presence (Figure 12).

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Cisco Unified CallConnector for Microsoft Office comes in three configurations:

- **Cisco Unified CallConnector Personal**: This user-based application requires no additional server. With this solution, the user has the benefit of:
  - A toolbar in Microsoft Outlook or Internet Explorer to help manipulate calls
  - Quick Dial (click to dial) from personal or Outlook contacts or from any highlighted text in any Microsoft application
  - Inbound screen pop (such as Outlook e-mail) with calling line identification (CLID) and name from Outlook with the option of answering or rejecting the call
  - Ability to control all Cisco Unified Communications Manager Express phone features from Outlook or Internet Explorer, including transfer, conference, or end call

- **Cisco Unified CallConnector Server**: This server-based solution supports multiple users and provides the following features:
  - Same toolbar in Microsoft Outlook or Internet Explorer as the Personal version
  - Easy to deploy: simply send an e-mail with an install link to all users
  - Same features as Cisco Unified CallConnector Personal plus dynamic presence showing availability, location, phone status (busy or idle), and optional custom message to fellow workers
  - Quick Message instant messaging service
  - Ability for operator or administrator to change users' status

- **Cisco Unified CallConnector Mobility**: In addition to the CallConnector Server features, CallConnector Mobility adds rules-based call routing plus single number reach (SNR), providing the following capabilities:
  - Ability to route calls to a mobile phone or home phone and to return calls that are not answered to Cisco Unity Express voicemail, giving users a single mailbox
  - An option to bridge calls, even with a mobile phone, and then press a button to switch from the mobile phone back to the IP phone

Design Considerations
This design gives end users the ability to use some of the advanced features of Cisco Unified CallConnector. Once this solution becomes accepted, it is possible to add the server to gain the dynamic presence features.
Smart Business Communications System: Integrating Customer Relationship Management

Many vendors have created customer relationship management (CRM) applications, but few have the ability to scale down into the SMB in the way that Microsoft and Salesforce.com can.

Using Microsoft Dynamics CRM Server

Figure 13 shows the integration of Microsoft Dynamics CRM with the Smart Business Communications System.

Figure 13. Microsoft Dynamics CRM Integration

Together with Microsoft, Cisco has co-developed Cisco Unified CallConnector for Microsoft Dynamics CRM to integrate its Dynamics CRM Server into the Cisco Unified Communications solutions, as demonstrated in figure 13. Cisco Unified CallConnector for Microsoft Dynamics CRM currently supports the features listed in Table 1.

Table 1. Features Supported by Cisco Unified CallConnector for Microsoft Dynamics CRM

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Click-to-dial</td>
<td>Allows a user to click to dial from within a Microsoft CRM contact record</td>
</tr>
<tr>
<td>Screen pops</td>
<td>Provides screen pops of customer contact records or prepopulated phone call activity records</td>
</tr>
<tr>
<td>Call tracking</td>
<td>Tracks and inserts call-related information automatically into phone call activity records, eliminating the need to manually enter call information</td>
</tr>
<tr>
<td>Tracking call duration</td>
<td>Tracks the actual call duration and inserts the time into the Microsoft Dynamics CRM phone call activity record</td>
</tr>
<tr>
<td>Pop associated customer service case</td>
<td>Associates a Microsoft CRM customer service case with any incoming call or available contact</td>
</tr>
<tr>
<td>Cisco platforms supported</td>
<td>Integrates with Smart Business Communications System; Cisco Unified Communications Manager Express Software Releases 4.0 or higher; Cisco Unified Communications Manager Software Releases 4.x and 5.x; and Cisco Unified Contact Center Express Software Release 4.0</td>
</tr>
</tbody>
</table>

Cisco Unified CallConnector for Microsoft Dynamics CRM consists of two pieces of software. One is installed on the user's desktop or laptop, and the other is installed on the Microsoft CRM Server. The software is supported on the following platforms:

- Microsoft Dynamics CRM Server 3.0
- Cisco Smart Business Communications System
- Cisco Unified Communications Manager Express 4.0 or higher
- Cisco Unified Communications Manager 4.0 or higher
- Cisco Unified Contact Center Express 4.0 or higher
**Design Considerations**

This solution does require a Microsoft Dynamics CRM Server; it will not work with other CRM vendors at this time. Cisco Unified CallConnector for Microsoft Dynamics CRM is a free download from http://www.cisco.com; it does not require any licensing from Cisco. If your customer currently has a Microsoft Dynamics CRM Server and a Cisco Unified Communications solution, they have everything they require.

**Using Salesforce.com**

Figure 14 shows the integration of Salesforce.com with the Smart Business Communications System.

It is now possible to connect Salesforce.com to the Cisco Unified Communications solution, shown in figure 14. This connection requires no additional server at the customer site from either Cisco or Salesforce.com. As long as an existing relationship is in place with Salesforce.com, it is necessary to add only the following to the workstation or laptop:

- Cisco Unified CallConnector for Salesforce.com for the connection to Salesforce.com
- A Telephony Application Programming Interface (TAPI) connection to Cisco Unified Communications Manager Express on the Cisco Unified Communications 500 Series (Cisco Unified 500 Series)

As the call comes into the Cisco Unified Communications 500 Series, through Cisco Unified Communications Manager Express, it notifies the workstation using the TAPI connection. The workstation then notifies the Salesforce.com solution and the information is presented to the screen as the user picks up the phone. Some of the information that can be displayed, created, and monitored includes:

- Screen pops: Opens a contact record and creates a new phone call activity record as the call arrives; creates screen pops from both click-to-dial calls and manually dialed outbound calls
- Click-to-dial: Allows users to click to dial from a Salesforce.com contact record
- Call duration tracking: Accurately tracks the duration of a phone call and associates it with a phone activity record
- Call information capture: Captures incoming and outgoing call information, including calling number, called number, and call start and end times
- Customer record creation: Easily creates a new Salesforce.com customer record when a call arrives from a new customer

**Design Considerations**

When designing this solution, it is important to confirm with the customer that they either have or will have:

- A Salesforce.com relationship
- A Cisco Unified Communications solution based on the Smart Business Communications System, Cisco Unified Communications Manager Express, or Cisco Unified Communications Manager