

# Cisco Unified Communications over WLAN Technology Quick Reference

## Introduction to Cisco Unified Communications over the Cisco Unified Wireless Network

The extension of Cisco® Unified Communications over the Cisco Unified Wireless Network empowers mobile employees by giving them reliable and effective communication and collaboration solutions that improve productivity and efficiency. For the business, this also implies a better return on investment and potentially lower costs by taking advantage of the wireless voice-over-IP (VoIP) infrastructure for advanced communications solutions.

### Sample Scenarios

- **Retail:** Sales clerks can provide efficient service by quickly responding to customer queries.
- **Healthcare:** Nurses can respond promptly to patient needs by maintaining critical communication at the bedside.
- **Manufacturing:** Plant managers can accelerate decision making by reaching the right people in real time to resolve issues.

### Why Should Customers Deploy Cisco Unified Communications over WLAN?

- **Lower telecom costs:** In cases where a flat fee hasn't been negotiated with a carrier, businesses may incur potentially high cellular costs as employees call each other locally and internationally.
- **Increased customer loyalty:** Improve employee communication in industries such as healthcare and retail, where collaboration is required to improve customer response time.

### Why Should You Sell Unified Communications over WLAN?

- Increased revenue potential
  - Migrating customers from standalone to controller-based deployment or from sporadic to pervasive WLAN coverage
  - Updating and selling mobile unified communications infrastructure and applications
  - Ongoing services revenue opportunity
- Competitive advantage—Cisco is the only vendor delivering both UC and WLAN
  - Positioning against Aruba and other voice-over-WLAN vendors
  - Positioning against unified communications solutions from Microsoft and Avaya

### [Competitive Positioning](#)

The table below indicates the typical Cisco Competitors in the UC over WLAN space. For a detailed competitive insight, please visit the [Competitive Portal](#) site.

**Table 1.**

Technology	Competitors
Voice over WLAN	Aruba, Meru, Motorola, Trapeze
Unified communications	Microsoft, Avaya

### **Components of Cisco Unified Communications over WLAN**

To address market demand, Cisco has defined a suite of unified communications solutions. These solutions can be extended over laptops and wireless devices that operate over the Cisco Unified Wireless Network.

Figure 1 shows the components of Cisco Unified Communications over WLAN solution

**Figure 1.**

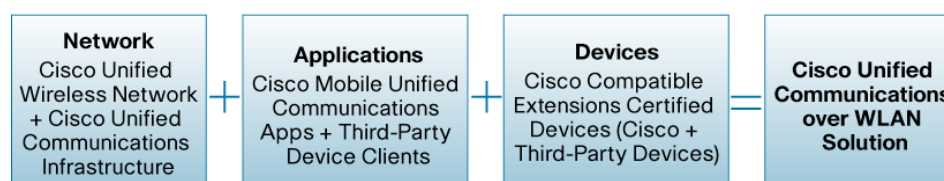
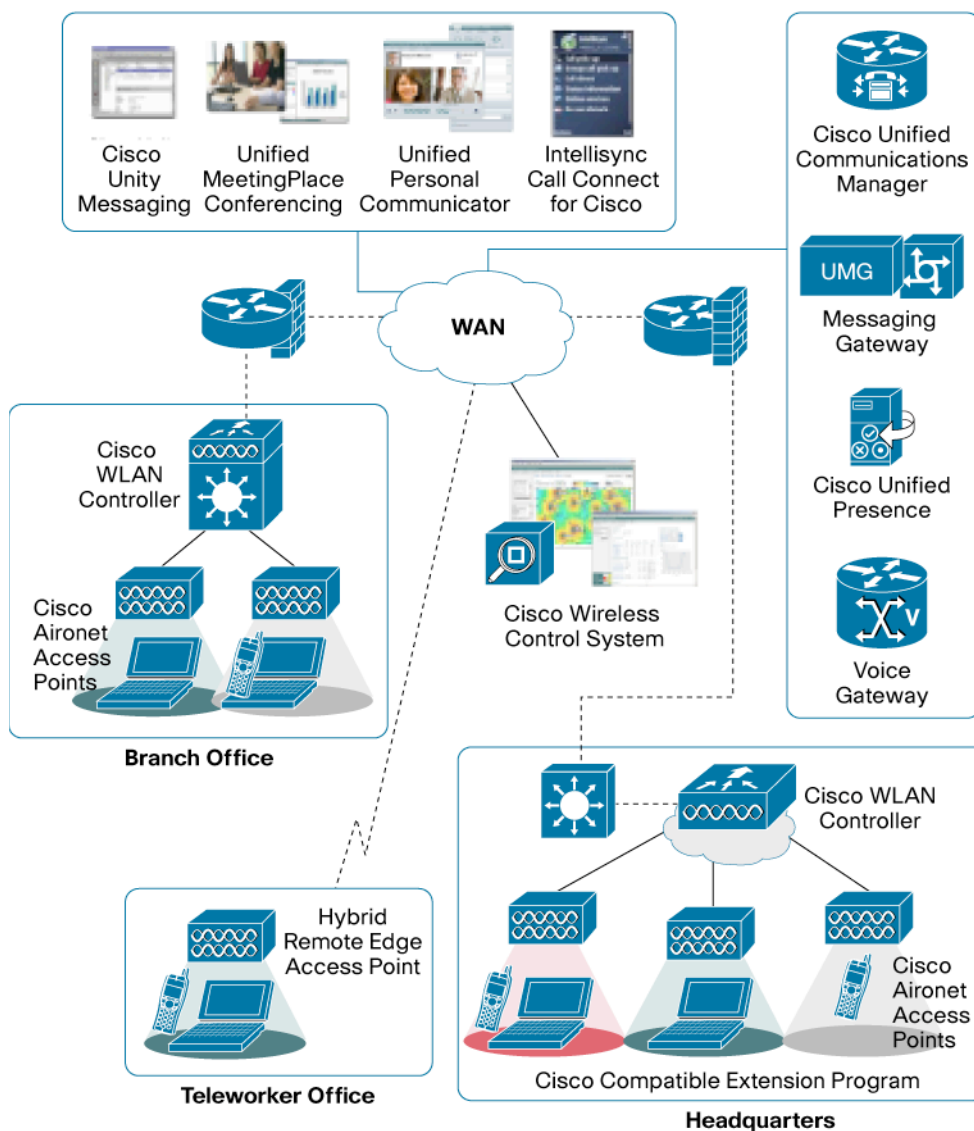


Figure 2 provides an overview of the Cisco Unified Communications over WLAN architecture, highlighting the different components involved.



**Figure 2.** Cisco Unified Communications over WLAN Network Architecture









**Cisco Unified Wireless Network**

The Cisco Unified Wireless Network includes the following components: access points, controllers, network management services through the wireless control system, and advanced mobility services such as voice over Wi-Fi, location-based solutions, security, and guest access (Table 2).

**Table 2.** Cisco Unified Wireless Network Components

Network Component	Description
<a href="#">Cisco Aironet® Access Points</a> 	IEEE 802.11a/b/g and 802.11n access points offering wireless connectivity within the campus environment
<a href="#">Wireless LAN Controller (WLC)</a> 	The WLC is the brain of the wireless infrastructure. It offers centralized access point management, dynamic radio resource management, mobility management, and security.

Network Component	Description
<a href="#">Wireless Control System (WCS)</a> 	The WCS is the Web interface tool that enables the configuration, management, and troubleshooting of the wireless LAN network. The WCS connects to the WLC via Simple Network Management Protocol (SNMP).
<a href="#">Mobility Service—Voice over Wi-Fi</a> 	Support for voice applications over Wi-Fi-based devices
<a href="#">Mobility Service—Location</a> 	Ability to locate wireless client devices in the network
<a href="#">Mobility Service—Security</a> 	Unified wired and wireless security solution for enterprises
<a href="#">Mobility Service—Guest Access</a> 	Wired and wireless guest access without compromising the corporate network
<a href="#">Cisco Compatible Extensions Program</a> 	The Cisco Compatible Extensions program provides compatibility testing between client devices and innovations in the Cisco Unified Wireless Network for optimum performance.

**Network prerequisites:** Businesses that have deployed Cisco WLAN in a standalone architecture (no controllers) **must migrate** their network to controller-based architecture as the first step toward enabling the extension of unified communications applications to Wi-Fi handhelds.




#### Trigger Questions—Unified Wireless Network

- Does your network support end-to-end quality of service (QoS)? Is QoS supported on all the IT equipment on the path of the voice traffic to help ensure that there is no jitter or latency in the voice traffic.
- Is your deployment pervasive in the areas where you want to support voice roaming?
- Is there sufficient wireless security enabled?

#### Cisco Unified Communications

The Cisco Unified Communications Manager offers call processing capabilities for businesses, including features such as call forwarding, conferencing, and integration with voicemail (Table 3).

**Table 3.** Cisco Unified Communications Network Components

Network Component	Description
Unified Communications Manager 	Call manager functionality such as call processing, support for voice and data, advanced IP telephony, and features such as call forwarding and voice conferencing <ul style="list-style-type: none"> <li>• <a href="#">Cisco Unified Communications Manager Express</a> <ul style="list-style-type: none"> <li>◦ Targeted to businesses with 250 employees or less</li> </ul> </li> <li>• <a href="#">Cisco Unified Communications Manager</a> <ul style="list-style-type: none"> <li>◦ Targeted to enterprises ranging from 250 users to 30,000 users</li> </ul> </li> <li>• <a href="#">Cisco Unified Communications 500 Series</a> <ul style="list-style-type: none"> <li>◦ Support for Cisco Unified Wireless Network in addition to call processing</li> <li>◦ Targeted to businesses with up to 49 users</li> </ul> </li> <li>• <a href="#">Communications Manager Business Edition</a> <ul style="list-style-type: none"> <li>◦ Support for Cisco Unified Wireless Network in addition to call processing</li> <li>◦ Targeted to businesses with up to 500 employees and five remote sites</li> </ul> </li> </ul>
<a href="#">Cisco Unified Messaging Gateway</a> 	The messaging gateway securely and intelligently routes messages and subscriber and directory information within the unified communications network and can also interface with older third-party voicemail systems.
<a href="#">Cisco Unified Presence</a> 	The Cisco Unified Presence Server provides user presence information for instant messaging applications.



**Trigger Questions—Unified Communications over WLAN**


- Do you have a mobile workforce that needs to be connected regardless of the device, network or operating system they are using?
- Is your communications infrastructure integrated with your wireless network?
- Are you interested in ensuring that your network supports a consistent end-user communications experience with such features as single-number reach, unified messaging and presence applications?

**Devices**

When employees roam within a campus or branch environment, they use a range of devices depending on their specific job function and needs. The typical devices used are described in Table 4.

**Table 4.** Typical Unified Communications Devices

Device Type	Description
<b>Cisco Unified Wireless IP Phones</b> 	The Cisco Unified Wireless IP Phone 7921 has been certified with Cisco Compatible Extensions Version 4 and provides access to call manager functionality over the Cisco Unified Wireless Network.
<b>Dual-mode devices</b> 	Dual-mode devices include Symbian, RIM, or Windows Mobile OS devices that operate over both the Wi-Fi and cellular networks.

Device Type	Description
<b>Wi-Fi laptops</b> 	Laptops are widely available with 802.11a/b/g and 802.11n support and can be used by employees to access IP voice and video calls through softphone applications.

### Trigger Questions—Devices

- Will the device be used only within the campus environment or outside as well?
- Does the device need to support any specialized line of business applications?
- Has the device been tested for interoperability with the wireless infrastructure?

### Applications

The Cisco Unified Communications applications for mobility that are supported on the Cisco Unified Wireless Network include:

- Cisco Unity Messaging
- Cisco Unified MeetingPlace®
- Cisco Unified IP Communicator
- Cisco Unified Personal Communicator
- Mobile Business Solutions from Cisco and Nokia
- Cisco Unified Mobility

For additional details on the individual applications, see the last section of this quick reference guide.

### Trigger Questions—Applications

- Which unified communications applications are most relevant to your mobile employees?
- Are your unified communications applications optimized to run on the wireless LAN?
- Do your employees have easy access to their mission critical unified communications applications through their device of choice?

## Unified Communications over WLAN Solutions by Mobile Workforce Type

Cisco has defined mobile workforce types based on industry analyst research and Cisco's experience with its employee base and customers. The five categories of mobile workforce types are:

- **Road warriors:** Employees who are mobile more than 80 percent of the time within and outside of the campus—for example, sales executives and consultants
- **Campus mobiles:** Employees who are mobile within the campus environment more than 60 percent of the time—for example, retail employees or hospital nurses
- **Corridor cruisers:** Employees who are mobile more than 20 percent of the time and who work primarily in a campus environment—for example, office professionals
- **Field force:** Employees who are mobile 90 percent of the time and who work outside of the campus at customer sites—for example, field technicians
- **Teleworkers:** Employees who work outside the office, typically in their homes—for example, IT help desk services and call center support staff

Unified communications over WLAN solutions are relevant mainly to employees who are mobile within a campus environment. For this reason, this document focuses on solutions relevant to campus mobiles, corridor cruisers, and road warriors, all of whom roam within the campus WLAN.

**Note:** Understand your customer's mobile workforce profile before recommending mobility solutions. This will help you target the right solution to the right audience for maximum user adoption and return on investment (ROI).

Customers can also build their own workforce profile by visiting: [Cisco Mobility Quotient](#)

## Applications Snapshots

Table 5 provides a snapshot of typical network types, applications, and devices **for road warriors, corridor cruisers, and campus mobile workers.**

**Table 5.** Networks, Applications, and Devices by Workforce Type

Workforce Type	Typical Networks	Typical Applications	Typical Devices
Road Warriors	<ul style="list-style-type: none"> <li>• Public</li> <li>• Cellular</li> <li>• Corporate WLAN</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cisco Unified Personal Communicator</b>—IP softphone for laptops to access their contacts and voicemail, as well as presence and conferencing information</li> <li>• <b>Cisco Unified Mobility</b> offering single-number reach on devices of choice, as well as a single mailbox</li> <li>• Mobile Business Solutions from Cisco and Nokia—Intellisync Call Connect client for Cisco, providing access to unified communications applications on the Nokia dual-mode phone</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi laptops</li> <li>• Dual Mode Phones</li> </ul>
Corridor Cruisers	Corporate WLAN	<ul style="list-style-type: none"> <li>• <b>Cisco Unified Personal Communicator</b>—IP softphone for laptops to access their contacts and voicemail, as well as presence and conferencing information</li> <li>• <b>Cisco Unified Mobility</b> offering single-number reach on devices of choice, as well as a single mailbox</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi Laptops</li> <li>• Cisco Unified Wireless IP phones</li> </ul>

Workforce Type	Typical Networks	Typical Applications	Typical Devices
Campus Mobiles	Corporate WLAN	<ul style="list-style-type: none"> <li>• <b>Cisco Unified Mobility</b> offering single-number reach on devices of choice, as well as a single mailbox</li> <li>• <b>Mobile Business Solution from Cisco and Nokia</b>—Intellisync Call Connect client for Cisco, providing access to unified communications applications on the Nokia dual-mode phone</li> <li>• <b>Mobile Business Solutions from Cisco and Intermec</b>—The Intermec CN3 rugged handheld device is Cisco Compatible certified as well as certified with the Cisco Unified Communications infrastructure. This solution is appropriate for industries such as manufacturing because of the rugged nature of the device.</li> </ul>	<ul style="list-style-type: none"> <li>• Cisco Unified Wireless IP phones</li> <li>• Nokia and Intermec dual-mode phones</li> <li>• Wi-Fi phones such as the Intermec CV30 (Cisco Compatible Extensions Version 4)</li> </ul>

Table 6 provides a snapshot of applications that support Cisco Unified Communications over WLAN. For additional information, see the solution overview.

**Table 6.** Applications for Cisco Unified Communications over WLAN

Application	Products	WLAN Support	Cellular Support	Solution Requirements
<a href="#">Cisco Unity® Messaging</a>	<p>Enterprise voice and unified messaging solution. Provides voice messaging features such as message review, forwarding, and reply. Also supports unified messaging features such as a single mailbox for voicemail and e-mail through integration with Microsoft Outlook and Lotus Notes, with the ability to access all messages in a single mailbox from the desk phone, a Web client, e-mail, or a mobile handset.</p> <p><a href="#">Cisco Unity Express</a></p> <p>Targeted to branch and small offices</p> <p><a href="#">Cisco Unity Connection</a></p> <p>Targeted to multisite businesses of up to 3000 users</p> <p><a href="#">Cisco Unity Messaging</a></p> <p>Targeted to large enterprise organizations</p>	Yes on Wi-Fi phone, dual-mode phone or laptop	N/A	<ul style="list-style-type: none"> <li>• Softphone clients such as Cisco Unified Personal Communicator and Cisco IP Communicator that provide access to the voice mailbox from the PC</li> <li>• Cisco Unified IP Phones that connect to the Unity messaging system to access voice messages</li> </ul>
<a href="#">Cisco Unified MeetingPlace</a>	<ul style="list-style-type: none"> <li>• Rich-media conferencing solution, including voice, video, and Web meetings</li> <li>• Integrated with desktop applications such as calendar, instant messaging, and Web phone</li> <li>• Ability to set up private and public conference meetings</li> </ul>	Yes through a laptop	N/A	Deployed on the network behind the enterprise firewall so that all traffic goes on the corporate network, eliminating external toll charges and recurring conferencing fees
<a href="#">Cisco Unified Personal Communicator</a>	Access to voice, video, Web conferencing, voicemail, instant messaging, and presence from a Mac or PC device	Yes	Yes, using a 3G cellular card and accessed through VPN	<ul style="list-style-type: none"> <li>• Cisco Unified Communications Manager</li> <li>• Cisco Unified Presence Server</li> <li>• Cisco Unified Messaging Gateway</li> </ul>
<a href="#">Cisco IP Communicator</a>	Software-based application that serves as an enterprise IP phone from any PC that is connected to the corporate network	Yes, through a laptop	Yes if the laptop is connected to the corporate network over a 3G wireless card	<ul style="list-style-type: none"> <li>• Cisco Unified Call Manager</li> <li>• Other Cisco Unified Communications applications</li> </ul>

Application	Products	WLAN Support	Cellular Support	Solution Requirements
<a href="#">Nokia Intellisync Call Connect for Cisco</a>	Software client on Nokia Eseries dual-mode devices that offers connectivity with Cisco Unified Communications applications such as voice, messaging, conferencing	Yes	Yes	<ul style="list-style-type: none"> <li>• Cisco Unified Communications</li> <li>• Cisco Unified Wireless Network optimized for voice</li> <li>• Nokia Intellisync Call Connect for Cisco client</li> </ul>



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