



Introducing Cisco Instant Connect

Cisco Instant Connect is a platform that enables push-to-talk (PTT) communications in a Cisco Unified Communications (UC) suite of products and other devices such as third-party radios and smart phones. It allows users to use their own devices that run the Apple iOS or Android operating systems, and to use supported Cisco Unified IP Phone models to create an on-premises PTT solution. A PTT solution for off-premises users can be implemented with the addition of the Cisco Video Communication Server (VCS) Expressway and the Cisco Adaptive Security Appliance (ASA) Firewall to connect to Cisco Instant Connect for IOS Devices and Cisco Instant Connect for Android devices.

Cisco Instant Connect allows redundancy, flexibility and scalability of various components of the solution. It also provides a virtual IP address that clients can use to connect to the system. This virtual IP address is supported for logging in and media allocation purposes. Multiple Unified Media Server (UMS) components allow resource allocation based on proximity to the Cisco Instant Connect server, availability of server resources, and connectivity between UMS servers.

This chapter includes these topics:

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- [Cisco Instant Connect Components, page 1-2](#)

Cisco Instant Connect Benefits

On-premises PTT is an important requirement in many markets, including the following segments:

- Enterprise (operations, safety and security)
- Commercial
- Retail
- Education
- Healthcare
- Government
- Service provider

Organizations in these market segments typically deploy several wired networks and wireless networks to achieve their business and service goals. However, such disparate solutions often do not support interoperability and collaboration, which can affect operational efficiency and customer satisfaction.

Examples of such disparate networks include:

- Legacy push-to-talk (PTT) radio networks (analog or digital at different frequencies) that are used for voice communications within groups. Communication is usually restricted within a specified group or network because of radio frequency (RF) limitations and proprietary protocols.
- Traditional hoot bridges that are connected over time-division multiplexing (TDM) circuits. These deployments cannot provide audit trails and they do not seamlessly integrate with other PTT or Voice over IP (VoIP) networks. In addition, they do not offer the mobility and serviceability that an IP deployment provides.
- VoIP networks that are used to carry packetized voice on wired or wireless IP phones or on other IP clients. These clients do not interact with the PTT services.
- Location affinity or proximity identification to allow efficient and relevant resource utilization scalability.
- Resource allocation and addition based on need.

For organizations that use disparate networks, Cisco Instant Connect provides the following benefits:

- Easy-to-use installation, management, and operational features, which enable a migration path to more robust IP applications, devices, and IP-based solutions for greater operational efficiencies.
- Effective solution that streamlines operations, and command and control while protecting investments in deployed radio networks or legacy hoot bridges and applications.
- Efficient deployment that leverages the current IP infrastructure with minimal upgrades required, decreasing total cost of ownership.
- Resiliency, which eliminates communications silos and single points of failure.
- VPNless connectivity to the Cisco Instant Connect network.
- Seamless switchover between VoIP and LTE networks based on movements of end users.
- Enhanced WiFi connectivity to devices, which provides improved application robustness and recoverability.

Cisco Instant Connect Components

A Cisco Instant Connect deployment involves several hardware and software components to enable true interoperability and collaboration. Components include the Cisco Instant Connect server, database, UMS, notifier, reporter, location server, Cisco Unified Communications Manager, Cisco Unified Contact Center Express, and others.

[Figure 1-1](#) illustrates the major components of a Cisco Instant Connect deployment.

Figure 1-1 Cisco Instant Connect Solution Major Components

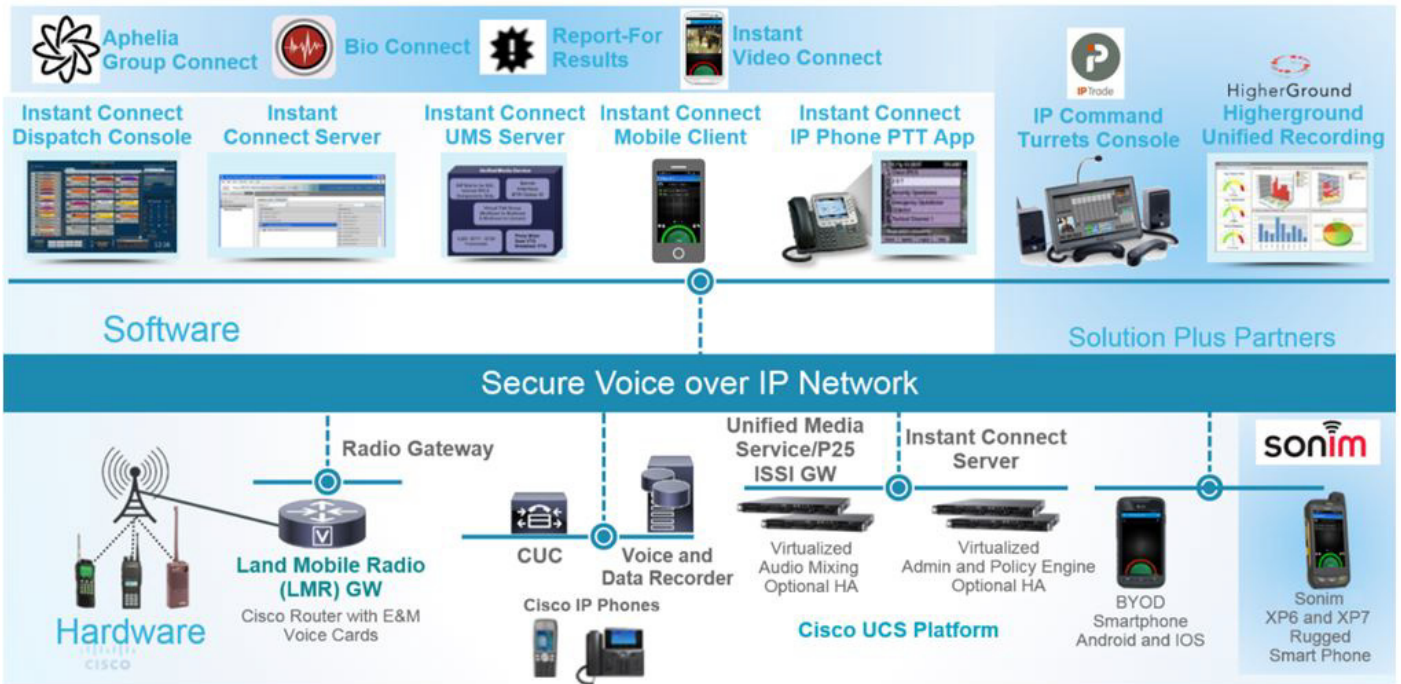


Table 1-1 provides an overview of major Cisco Instant Connect components. Other chapters in this manual provide more detailed information about using and configuring several of these components. In addition, Cisco provides a wide variety of technical and user documentation that explains in detail Cisco components that are used in the deployment of Cisco Instant Connect. These documents include information about installing, configuring, operating, managing, maintaining, and troubleshooting components.

For version and compatibility information, see *Cisco Instant Connect Compatibility Matrix*.

Table 1-1 Cisco Instant Connect Component Overview

Component	Description
Cisco Instant Connect server	<p>Provides the core functionality of the Cisco Instant Connect system. The Cisco Instant Connect server software runs on the Cisco Linux operating system (based on Red Hat Linux) on selected Cisco Unified Computing System (UCS) platforms and performs these functions:</p> <ul style="list-style-type: none"> • Hosts the Cisco Instant Connect Administration Console, an administration GUI that enables dynamic resource management for users, channels, and virtual talk groups (VTGs). • Provides Cisco Instant Connect authentication and security services • Stores configuration and operational data • Enables integration with various media resources, such as UMS components, Cisco Unified IP Phones, Cisco UCCX, location server, and Cisco IOS SIP gateways

Table 1-1 Cisco Instant Connect Component Overview

Component	Description
Dispatch Console (IDC)	A graphical-based application that installs and runs on a client PC and allows Cisco Instant Connect users to communicate with other users via radio, telephone, mobile device, or PC. Also lets users participate in VTGs and incidents, manage and operate a variety of resource such as channels, radios, incidents, and VTGs, and perform a variety of other activities.
Database Server	Stores configuration and operational data.
Unified Media Service (UMS)	Enables media services and provides these capabilities: <ul style="list-style-type: none"> • Functions that are required to combine two or more channels or VTGs. • Multicast restreaming, mixing, codec transcoding, floor control, and priority and preemption • PTT media convergence for multicast, unicast, TDM, and SIP endpoints
Reverse Proxy Server	Allows external users and clients to access enterprise resources via a firewall.
Notifier	Handles the notification feature, which allows users to send alerts to users of the IDC, Cisco Instant Connect for Android Devices, and Cisco Instant Connect for Apple Devices. A notifier alert includes subject text and message text. An alert also can include up to three of these media file types in any combination: image, audio, or video. (Users of Cisco Instant Connect for mobile devices can receive audio files in .wav and mp3 formats.)
Reporter	The reporter is an optional Cisco Instant Connect component that captures and stores information for reports, and passes this information to the Cisco Instant Connect server, which prepares reports that you can download. The reporter includes following components: <ul style="list-style-type: none"> • Report collector—Captures information about PTT events in the associated location, and pushes this information to the reporter database, which stores the raw data for reports. • Report engine—Stores and manages the reporter database for all report collectors, including itself.
Cisco VCS Expressway	Enables users who are outside of the Cisco Instant Connect network to connect to Cisco Instant Connect solution without needing to use VPN resources.
Cisco UCCX	Allows IVR based Dial Engine calls via Cisco Unified Contact Center Express. In this way, a telephone user who dials in can follow IVR prompts to join an active channel or talkline. In addition, a Cisco Instant Connect dispatcher can dial out to a user from a VTG to add that user to the VTG.
Cisco Instant Connect for Apple Devices	Application that allow users of Apple IOS devices to use mobile clients to interact with other participants in a Cisco Instant Connect talkline and perform a variety of other activities.
Cisco Instant Connect for Android Devices	Application that allow users of Android devices to use mobile clients to interact with other participants in a Cisco Instant Connect talkline and perform a variety of other activities.

Table 1-1 *Cisco Instant Connect Component Overview*

Component	Description
LMR gateway	LMR gateways provide voice interoperability between radio and non-radio networks by bridging radio channels and talk groups to IP multicast streams. The LMR gateway functionality is available in certain versions of Cisco IOS software.
Networking components	Include switches, routers, firewalls, mobile access routers, and wireless access points and bridges.
Cisco Unified IP Phone	Cisco Instant Connect integrates selected models of the Cisco Unified IP Phone. Users of these phones can select a channel from a list of channels on which to participate when Cisco Instant Connect is configured as a phone service for Cisco Unified Communications Manager when it is bundled with supported versions of Cisco IOS software.

