CHAPTER 2

Cisco Unified Communications Overview

Multiple communication networks exist as entirely separate entities, each serving a specific application. The traditional public switched telephone network (PSTN) time-division multiplexing (TDM) network serves the voice application; the Internet and intranets serve data communications.

Business requirements often force these networks to interoperate. As a result, deploying multiservice (data, voice, and video) applications such as unified messaging or web-based customer contact centers requires expensive and complex links between proprietary systems, such as private branch exchanges (PBXs) and standards-based data networks.

The traditional enterprise communication takes place on two separate networks:

- Voice
- Data

Internet Ecosystem

Over time, the Internet (and data networking technology in general) encompassed the traditional traffic types. This convergence recently started to absorb voice and video as applications into the data network. Several large Post, Telephone, and Telegraph (PTT) carriers use packet switching or voice over ATM as their backbone technology, and enterprise customers accept virtual trunking, or connect their disparate PBXs via their wide-area data network, to avoid long-distance charges.

Converging these previously disparate networks into a single, unified network realizes savings in multiple areas, including lower total cost of ownership, toll savings, and increased productivity.

Cisco Unified Communications Manager (formerly Cisco Unified CallManager) and Cisco Unified IP Phones provide an IP telephony solution that operates on an IP infrastructure. The clustering architecture of Cisco Unified Communications Managers allows you to scale to a highly available voice-over-IP (VoIP) network.

Cisco Unified Communications Support

Cisco Unified Communications support encompasses the following components:

- Converged client devices
- Hardware/software
- Directory services
- Call processing

- Telephony/data applications
- Network management
- Service and support

Cisco Unified Communications solutions enable you to

- Deploy IP-enabled business applications
- Implement a standards-based open architecture
- Migrate to a converged network in your own time frame

Cisco Unified Communications support enables you to move from maintaining a separate data network and a closed, proprietary voice PBX system to maintaining one open and standards-based, converged network for all your data, voice, and video needs.

Applications

The following list includes the major Cisco Unified Communications voice and video applications:

- Cisco Unified Communications Manager—This software-only call-processing application distributes calls, features, phones, regions, and groups over an IP network.
- Cisco Unity—The Cisco Unity messaging application provides voice messaging to enterprise communications.
- Cisco Unity Connection—For more information about Cisco Unity Connection, see the applicable *Cisco Unified Communications Manager SCCP Integration Guide for Cisco Unity Connection* or the *Cisco Unified Communications Manager SIP Trunk Integration Guide for Cisco Unity Connection*.
- Video—IP-TV and IP-video conferencing products enable distance learning and workgroup collaboration.
- Cisco Unified IP-IVR—As an IP-powered interactive voice response (IVR) solution, Cisco Unified IP-IVR, combined with Cisco IP Auto-Attendant, provides an open and feature-rich foundation for delivering IVR solutions over an IP network.
- Cisco IP Communicator—The Cisco IP Communicator, a software, computer-based phone, provides communication capabilities that increase efficiency and promote collaboration.

Call Processing

Cisco Unified Communications Manager, a software-only call-processing application, distributes calls and features and clusters phones, regions, and groups over an IP network, which allows scalability to 30,000 users and triple call-processing redundancy.

Cisco Unified Communications Manager provides signaling and call-control services to Cisco-integrated applications, as well as to third-party applications.

Infrastructure

The following list shows the components of the infrastructure layer of Cisco Unified Communications:

- Media convergence servers
- General voice products for Cisco Unified Communications Solutions

- Switches
- Integrated IP telephony solution
- Voice trunks
- Voice gateways
- Toll bypass products
- IP protocols such as MGCP, H.323, and SIP

Clients

Cisco delivers the following IP-enabled communication devices:

- Cisco Unified IP Video Phone 7985—supports SCCP
- Cisco Unified IP Phone 7975—supports SCCP and SIP
- Cisco Unified IP Phone 7970/7971—supports SCCP and SIP
- Cisco Unified IP Phone 7962/7965—supports SCCP and SIP
- Cisco Unified IP Phone 7960/7961—supports SCCP and SIP
- Cisco Unified IP Phone 7942/7945—supports SCCP and SIP
- Cisco Unified IP Phone 7940/7941—supports SCCP and SIP
- Cisco Unified IP Phone 7931—supports SCCP
- Cisco Unified Wireless IP Phone 7921—supports SCCP
- Cisco Unified Wireless IP Phone 7920—supports SCCP
- Cisco Unified IP Phone 7912—supports SCCP and SIP
- Cisco Unified IP Phone 7911—supports SCCP and SIP
- Cisco Unified IP Phone 7910—supports SCCP
- Cisco Unified IP Phone 7906—supports SCCP and SIP
- Cisco Unified IP Phone 7905—supports SCCP and SIP
- Cisco Unified IP Phone 7902—supports SCCP
- Cisco Unified IP Conference Station 7936
- Cisco Unified IP Conference Station 7935
- Cisco IP Communicator
- Cisco Unified IP Phone Expansion Module 7914/7915/7916

Cisco also supports various third-party phones that are running SIP. Contact your Cisco representative for more information.

Cisco Unified Communications Network

The Cisco Unified Communications network includes the following components:

- Cisco Unified Communications Manager
- Cisco Unified IP Phones

- IOS platforms
- Power Over Ethernet (POE) switches
- Digital gateways and trunks
- Analog gateways
- Transcoders
- Conferencing (hardware/software)
- Media Termination Point (MTP)
- Music On Hold (MOH)
- Annunciator
- Inline power modules (10/100 Ethernet switching modules)
- Cisco IP Communicator

Control from the Cisco Unified IP Phone to Cisco Unified Communications Manager uses SCCP client control protocol and, independently, desktop computer to Cisco Unified Communications Manager, as an H.323 gatekeeper that is using H.225/H.245 over transmission control protocol (TCP).

Where to Find More Information

Related Topics

- Introduction, page 1-1
- System Configuration Overview, page 3-1
- Device Support, page 11-1
- Understanding Cisco Unified Communications Manager Voice Gateways, page 38-1
- Transcoders, page 25-1
- Conference Bridges, page 24-1

Additional Cisco Documentation

- Cisco Unified Communications Manager Configuration, *Cisco Unified Communications Manager Administration Guide*
- Device Defaults Configuration, *Cisco Unified Communications Manager Administration Guide*
- Cisco Unified IP Phone Configuration, *Cisco Unified Communications Manager Administration Guide*
- Gateway Configuration, *Cisco Unified Communications Manager Administration Guide*
- Transcoder Configuration, *Cisco Unified Communications Manager Administration Guide*
- Conference Bridge Configuration, *Cisco Unified Communications Manager Administration Guide*
- *Cisco Unified Communications Manager Features and Services Guide*
- *Cisco Unified Communications Solution Reference Network Design (SRND)*
- *System Administration Guide for Cisco Unity*
- *Cisco Unified Communications Manager Integration Guide for Cisco Unity*
- *Cisco Unified Communications Manager SCCP Integration Guide for Cisco Unity Connection*

- *User Moves, Adds, and Changes Guide for Cisco Unity Connection*
- Cisco Unified IP Phone user and administration documentation
- Gateway documentation