Introduction to Unified CCE Remote Agent Option

Unified CCE Remote Agent Option provides the capability to use remote agents when staffing contact centers.

A remote agent is classified as limited to a single agent working at a remote site, such as the agent's home or in an office outside the contact center's headquarters. They are not classified as agents working at one of the contact center's sites. Multiple agents sitting in remote sites are considered branch agents.

Support is provided for remote agents using one of the following options:

- Remote Agent with IP Phone (over a Cisco Business Ready Teleworker setup)


- Remote Agent with analog phone

By means of this support, Cisco Unified CCE remote agents with IP Phone can benefit from standard Cisco 8xx series Router support, persistent VPN, Cisco IOS based security, and QoS for voice.

Agents are connected to the corporate network using a residential broadband (cable or DSL) network connection that can support voice, data, and video traffic. The connection is secure, and provides “always-on” access to call-center applications using a VPN. Built-in, end-to-end security helps ensure that confidential customer information, such as medical records and financial information, is protected, and the corporate network is secure from “back door” attacks.

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Unified CCE Remote Agent Option primary components

The primary components of the Unified CCE Remote Agent Option are:

- **Cisco IP Contact Center solution**: Cisco IP Contact Center combines Cisco IP telephony and ready-to-use computer telephony integration (CTI) capabilities in a call-center product suite. The software includes intelligent call routing, multichannel automatic call distribution (ACD) capability, IVR, call queuing, and consolidated reporting features.

  Cisco IP Contact Center components include the following:
  - Unified CM: Provides traditional private branch exchange (PBX) telephony features and functions to packet-telephony devices. Installed on a server-class PC, Unified CM software provides basic call processing, signaling, and connection services to Cisco IP Phones, VoIP gateways, and software applications.
  - Cisco Computer Telephony Integration Object Server (CTI OS) Desktop and Cisco Agent Desktop: Allow an agent to control the remote agent state (for example, Login, Available/Unavailable, and Work or Wrap Up) and perform call control (answer, release, hold, and transfer).
  - Cisco Unified Customer Voice Portal (Unified CVP) (formerly Internet Service Node) or Cisco Unified IP-IVR: Provides announcements, prompting, gathering of caller-entered digits, and a queue point to park calls when all remote agents are busy.
  - VoIP gateways.
  - Centralized monitoring and recording: Provides call-center managers with real-time and historic data for all remote agents.

- **Cisco Business Ready Teleworker architecture** (for IP Phone only): The Cisco Business Ready Teleworker architecture, combined with Cisco IP Contact Center, gives remote agents the same accessibility to call-center applications as staff based at central sites. Cisco Business Ready Teleworker provides the most comprehensive security and network management available in a teleworking environment over a standard cable or broadband connection. This includes QoS to help ensure prioritization of mission-critical or delay-sensitive traffic. Cisco Business Ready Teleworker can be quickly and cost-effectively deployed to deliver high-quality, consistent application access for remote agents through an always-on, secure, and centrally managed connection to the enterprise network.

  **Note** A remote agent using an analog phone does not require a Cisco 8xx Series Router and does not use the Cisco Business Ready Teleworker setup.

Cisco Business Ready Teleworker components include the following:

  - VPN: Provides secure, consistent access to information, call-center applications, and customer data. The VPN tunnel is transparent to applications and the end user, and promotes stable and consistent application behavior over the WAN, protecting and extending existing infrastructure investments.

  **Note** Agents receive persistent VPN communication from the Cisco 800 Series Router.
Advanced application access: With IP telephony a separate PBX, voice switch, or ACD call-control platform at the remote-agent location is not needed. Network-based ACD extends call-center services to thousands of remote-agent locations simultaneously.

QoS: Helps ensure high-quality voice communication between the caller and remote agent. Voice, data, and video can be delivered over the same line by prioritizing applications based on bandwidth requirements or business priorities.

**Note**
QoS delivers marked tagged packets, but the service is not guaranteed because it is over a service provider network.

Network security and authentication: Security is integrated completely with all other functions. End-to-end security options for remote agents include trust and identity options (802.1x authentication), integrated firewall, and intrusion detection system (IDS).

Centralized management and support: Helps ensure control over the performance of remote agents as though they were based on the main call center. Administrators can push policies and configurations transparently to remote-agent locations, perform quality surveys, and do real-time remote monitoring.

For more information, see:

**How Unified CCE Remote Agent Option works with an IP phone**

**Note**
Unified CCE Remote Agent Option with IP Phone is supported on the Unified CCE, the Cisco Unified Contact Center Hosted (Unified CCH), and the Cisco Unified Contact Center Express solutions.

At the remote agent site, a Cisco IP Phone, with an ACD extension number, connects to a Cisco 8xx Series secure, persistent Broadband Router that provides a secure VPN connection back to the call center over a broadband facility. The router, based on Cisco IOS Software, provides all the features necessary for an always-on, business-ready connection in a single cost-effective platform. A Unified CM on the corporate network provides the call management on the IP Phone.
This is one option available when using Unified CCE Remote Agent Option. This product is also available using the Remote Agent with analog phone.

Figure 1: IPCC Remote Agent Option with IP Phone

When a call comes in to the call center, the Unified CM alerts the Cisco IP Contact Center, which then finds the best available remote agent based on customer-defined business rules. If no remote agents are available, the call is held in an IVR queue, and the caller hears a recorded message or music until an agent becomes available.

How Unified CCE Remote Agent Option works with an analog phone

Note Unified CCE Remote Agent Option with analog phone is supported only on the Unified CCE Enterprise Edition and the Unified CCE Hosted Edition solutions.
At the remote agent site, an analog phone connects to the PSTN and using an active broadband connection, the agent uses VPN to access the corporate site (using SoftVPN client) from their PC.

**Figure 2: IPCC Remote Agent Option with analog phone**

When a call comes in to the contact center, the Unified CM alerts the Cisco IP Contact Center, which then finds the best available remote agent based on customer-defined business rules. If the remote agent is on an analog phone, Unified CM sends the call to the Voice Gateway (VG248), which in turn sends it to the PSTN through the VoIP gateway’s PRI lines. If no remote agents are available, the call is held in an IVR queue, and the caller hears a recorded message or music until an agent becomes available.

## Remote agent with IP phone call flow

The following figure displays a typical call flow.

**Figure 3: Remote Agent with IP Phone Call Flow**

The following describes the call flow for a remote agent with IP phone:

1. The remote agent becomes available by logging in to the corporate domain using VPN over the ADSL/Cable connection, and by launching the agent desktop interface to log in to the CTI server. The remote agent then goes into a ready mode.

2. Customer calls in from PSTN.
Remote agent with analog phone call flow

The following describes the call flow for a remote agent with an analog phone:

1. The remote agent becomes available by logging in to the corporate domain using VPN over the ADSL/Cable connection, and by launching the agent desktop interface to log in to the CTI server. The remote agent then goes into a ready mode.
2. Customer calls in from PSTN.
3. Call flows in on PRI VoIP gateway.
4. Call is processed by Unified CM and routed to Unified IP IVR.
5 A VG248 port is designated as the remote agent phone. An incoming call to Unified CCE sends a ring command to the VG248 port.

6 The VG248 FXS port is connected to the FXO port on the voice gateway.

7 The voice gateway using Private Line Automatic Ring down (PLAR) forwards the ring command over PSTN to the remote agent's analog phone.

8 The analog phone receives the ring command from its local PSTN provider. (This happens because the PLAR was sent from the Unified CCE voice gateway.)

9 The remote agent's analog phone rings and the agent desktop receives a screen pop with the incoming call.
Remote agent with analog phone call flow