Test Bed Software Implementation

This topic describes how customer contact software, security, Unified CCE, Unified CVP, Cisco Unified Border Element, Cisco MediaSense and Cisco Finesse are implemented in the test beds.

For information on installation and configuration documentation on these and other contact center components, see Components Installation and Configuration Guides at:
http://www.cisco.com/cisco/web/docs/iam/unified/ipcc901/Component_Installation_and_Configuration_Guides.html

Additional configuration information for contact center call flows and components is available at:
http://docwiki.cisco.com/wiki/Category:Unified_Communications_System_Implementation

Cisco Unified Contact Center Enterprise and Cisco Unified Intelligent Contact Management Enterprise

Unified CCE and Unified ICME, integral components of the Cisco Unified Communications System, provide intelligent routing and call treatment with transparent blending of multiple communication channels, while easing the transition from a traditional automatic call distributor (ACD) to an IP-based ACD.

Unified CCE/Unified ICME are part of a strategic platform that helps customers move into the next phase of customer contact, beyond today's contact center to a Customer Interaction Network. The Customer Interaction Network is a distributed, IP-based customer service infrastructure that comprises a continuously evolving suite of innovative, multichannel services and customer-relationship-management (CRM) applications.

Unified CCE/Unified ICME software is deployed at the test sites in the contact center environment. With Unified CCE/Unified ICME, the call center manager can configure agents to handle inbound and outbound voice calls. The agents can switch between these media on a task-by-task basis. Customers can choose the medium that is most comfortable and convenient for them. Unified CCE/Unified ICME can be used in a single-site environment or integrated into a multisite call center.

For Cisco Unified Communications System Release 9.0(1), see Release Notes for Cisco Unified Contact Center Enterprise, Release 9.0(1) for configuration options.

Cisco Outbound Option

Cisco Outbound Option application provides outbound dialing functionality along with the existing inbound capabilities of Unified CCE. This application enables the contact center to dial customers and direct contacted customers to agents or IVRs. The Outbound Option Dialer component, which resides

on the Peripheral Gateway Server dials customers using Unified Communications Manager and voice gateways, reserves agents via the Media Routing (MR) interface and transfers answered customers calls to reserved agents.

Unified CCE offers the Session Initiation Protocol (SIP) Dialer alongside the Skinny Call Control Protocol (SCCP) Dialer. In an Outbound Option deployment that uses the SIP Dialer, functions such as dialing, call control, and Call Progress Analysis for Outbound campaigns are handled by the voice gateway, and not by Unified Communications Manager. This increases the number of outbound agents that a deployment can service on a Peripheral Gateway, and reduces the number of Peripheral Gateways and Dialers customers need to deploy for larger enterprise systems.

Cisco Unified Customer Voice Portal

The Cisco Unified Customer Service Portal (Unified CVP) provides interactive voice response and queuing capabilities in a contact center environment and supports automated speech recognition (ASR) and text-to-speech (TTS) capabilities. Unified CVP, which is implemented at this test environment in the comprehensive mode, includes support for agent queuing, multisite call switching, and speech-enabled and touch-tone applications. Customers can use touchtone signals or their own voice to request self-service information. Its components work together to enable you to create and deploy IVR applications that include voice interaction as well as traditional numeric input to provide intelligent, personalized self-service over the phone.

Unified CVP Call Server consists of SIP services and plays media files to the caller and collects information in return. It also interprets messages from Unified ICME and generates VXML documents that it uses to route the call.

Unified CVP also provides the ability, via an Operations Console, to monitor, manage, and configure all Unified CVP solution components from a central, single operations console.

A standalone Unified CVP Reporting Server provides the ability to generate custom reports on the activities of Unified CVP components, Unified CVP IVR applications, and Unified CVP IVR callers. The centralized reporting server aggregates all Unified CVP-related call information into a relational database with associated reporting tools and pre-packaged report templates.

Cisco Unified Border Element with Unified CVP (SIP)

The Cisco Unified Border Element (Unified Border Element) in High Availability (HA) mode deployment includes Active and Stand-by Unified Border Elements placed in data center side A and data center side B respectively. The Unified Border Element provides High Availability via box-to-box redundancy configurations implemented on a Cisco Integrated Services Router Generation 2 router (ISR G2) platform. Unified Border Element box-to-box redundancy leverages available router-based Hot Standby Routing Protocol (HSRP) router technology. Unified Border Element bidirectional redundancy is achieved towards Unified CCE/Unified CVP and Service Provider Sides.

From each Active and Stand-by Unified Border Element, a SIP trunk runs on TCP protocol (using VOIP dial-peer) to Unified CVP. From Unified CVP, a SIP trunk runs on TCP protocol to Floating IP of Unified Border Element in HA mode. In addition, from each Active and Stand-by Unified Border Element, one more SIP trunk runs on UDP protocol (using VOIP Dial-peers) on each Unified Border Element to accept the IP calls from IP PSTN Service Provider network.

Cisco MediaSense

MediaSense is an IP media recording and playback system that implements the Open Recording Architecture open interfaces. MediaSense comprises of many elements to support IP based recording. It solves the topology issues and accelerates the adoption of Cisco Unified Communications Solutions. It captures, stores, and processes multimedia on a unified network platform, enables contact center supervisors to live monitor conversations and assist agents in resolving caller issues and provides open, standardized hooks for real-time speech analytics, to help customer service representatives assist callers faster and more effectively.

Cisco Finesse

Cisco Finesse (Finesse) is a next-generation agent and supervisor desktop that provides a collaborative experience for the various communities that interact within a customer service organization.

In this deployment, Finesse is installed on a virtual machine as a primary and secondary node. Finesse is installed on the Linux-based Unified Communications Operating System (OS). The Primary and Secondary Finesse Server are installed on the same site as Unified CCE components. Currently Finesse doesn't support primary and secondary node separated over WAN

Agents log in to the Finesse Server from Internet Explorer 8.0 either using laptop or desktop connected directly to the data center, or remotely using virtual desktop infrastructure (VDI) devices: Cisco Virtualization Experience Client (Cisco VXC) 62xx and 22xx over VPN using VMWare/Citrix View.

Cisco Unified Mobile Agent

The Unified Mobile Agent feature enables Unified CCE/Unified ICME to support agents using phones not directly controlled by Unified Communications Manager. This could be an agent:

- Outside the call center, using an analog phone at home or a cell phone.
- Inside the call center, using an IP phone connection not controlled by Unified CCE or an associated Unified Communications Manager.

If you plan to configure a mobile agent:

- To use an analog phone or an Cisco Unified IP Phone (Unified IP Phone) *without* the Cisco Business Ready Teleworker setup, use the Mobile Agent option.
- To use the deployment option of Unified IP Phone *with* the Cisco Business Ready Teleworker setup, use the Remote Agent option.

With Unified Mobile Agent, contact center administrators can easily:

- Enable staff to work from home.
- Add contact center staff during busy periods.
- Hire skilled staff and knowledge workers in other regions.

Unified Mobile Agent functionality makes this possible without the overhead of additional off-site equipment or extensive on-site configuration and administration.

Agent Greeting and Whisper Announcement

Agent Greeting is defined as the ability for a computer telephony integration (CTI) application (e.g. contact center) to instruct Cisco Unified Communications Manager to automatically play a pre-recorded announcement to the customer immediately following a successful media connection to the Agent device.

Whisper Announcement is defined as the ability to play a pre-recorded announcement to an Agent right before the caller is connected. The announcement is played to the Agent only and is not heard by the customer. The announcement helps the Agent answer the call correctly.

Video Queuing

Video in Queue is a feature in a video contact center which enables streaming a video advertisement or a video prompt while a customer with a video phone calls into the contact center before an agent becomes available. Video in Queue was tested in the Unified CVP post routed environment with customer IP video phones such as Cisco Unified IP Phones 89xx,99xx, Cisco TelePresence System EX series phones and Cisco IP Video Phone E20 (E20).

The components in this deployment include Unified CVP,VXML gateway, Unified Communications Manager, Unified CCE and the Cisco TelePresence Content Server (Content Server).

Unified CVP acts as the control point of the entire call flow. When a customer calls into the contact center, Unified CVP handles the call and triggers a VXML application that then interacts with the VXML gateway to enable video queueing. Once an agent is available, Unified CVP interrupts this call leg and routes the call to the Unified Communications Manager to be handled by an agent.

The Content Server is the media streaming server in this solution. It allows one to record and playback video ads and prompts. Recording can be performed either by directly calling into the Content Server or by using a DMP player connected to the camera input of an MXP endpoint.

The VXML gateway interfaces between the Unified CVP and the media streaming server which in this case is the Content Server. The VXML application triggered by the Unified CVP interfaces with the VXML gateway and the dial peer configuration in the gateway passes on an associated directory number to the Content Server based on which corresponding video is streamed.

Scripts in Unified CCE and Cisco Unified Call Studio can be modified to accommodate a variety of options based on customer need, such as:

- Video prompt requesting customer DTMF
- Interruptible video in queue
- Audio prompt followed by video advertisement

Security

Security components include firewall, intrusion protection, and policy enforcement services, antivirus software, and domain and web server hardening. Security is implemented at the various sites as follows:

- Cisco Security Agents—The core endpoint software that resides on all Unified Communications Manager, Unified ICME, Unified CVP, Unified CCX, Unified IP IVR, Outbound Option, CTI OS, and CAD servers. Cisco Security Agent autonomously enforces local policies that prevent attacks.

Note Unified Communications Manager, Unified CCX, Unified IP IVR, and Cisco Unified Communications Manager IM and Presence Service (formerly Cisco Unified Presence) support Cisco Security Agent as a standalone agent only.

- McAfee Antivirus—Third-party antivirus agents are installed on Windows-based servers like Unified ICME, Unified IP IVR, and others, but not on non-Windows appliances such as Unified Communications Manager.