Unified IP IVR Architecture

This chapter briefly describes the deployment models that you can use with Unified IP IVR.

The following are brief descriptions of key items for a Unified IP IVR deployment:

- **Voice Gateway**: Connects the Unified Communications network to the Public Switched Telephone Network (PSTN) and to other private telephone systems. You must purchase gateways separately. Both inbound and outbound calls to the PSTN travel through the gateway.

- **Unified CM**: Provides the features that are required to implement IP phones, manages gateways, and directs Voice over IP traffic to the Unified CCX system. You must purchase Unified CM separately.

- **Unified IP IVR**: Contains the Unified CCX Engine that runs Unified IP IVR.

- The following optional, dedicated servers for a Unified IP IVR deployment:

    - **MRCP TTS**: A dedicated, vendor-specific server that converts text into speech and plays it back to the caller.

    - **MRCP ASR**: A dedicated, vendor-specific server that performs real-time ASR.

Note   For the currently supported MRCP ASR/TTS vendors, see the current *Unified CCX Compatibility* at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html.

This chapter contains the following:

Available Deployment Models

Unified IP IVR can be deployed in your IP network on any Cisco approved virtual servers.

The following four figures illustrate the different ways you might deploy Unified IP IVR:

- The first two figures show how you can deploy Unified IP IVR, without Unified CCE.

- The second two figures show how you can deploy Unified IP IVR with Unified CCE.

For more information on Unified IP IVR deployment models, see the design guide for Unified Customer Contact Express, which includes information for *Unified IP IVR Design Guides* at http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_implementation_design_guides_list.html.

Standalone Deployment

The following Unified IP IVR deployment models show Unified IP IVR deployed apart from Unified CCE.

The following figure shows Unified IP IVR installed on a separate server. The following are brief descriptions of key items in the figure:

- **Gateway**. Connects the enterprise Unified Communications network to the Public Switched Telephone Network (PSTN) and to other private telephone systems such as Public Branch Exchange (PBX). You purchase gateways separately. Both voice and web correspondence travel through the gateway.

- **Unified CM Server**. Provides the features that are required to implement IP phones, manage gateways, provides failover and redundancy service for the telephony system, and directs voice over IP traffic to the Cisco Unified Contact Center Express system. You must purchase Unified CM separately.
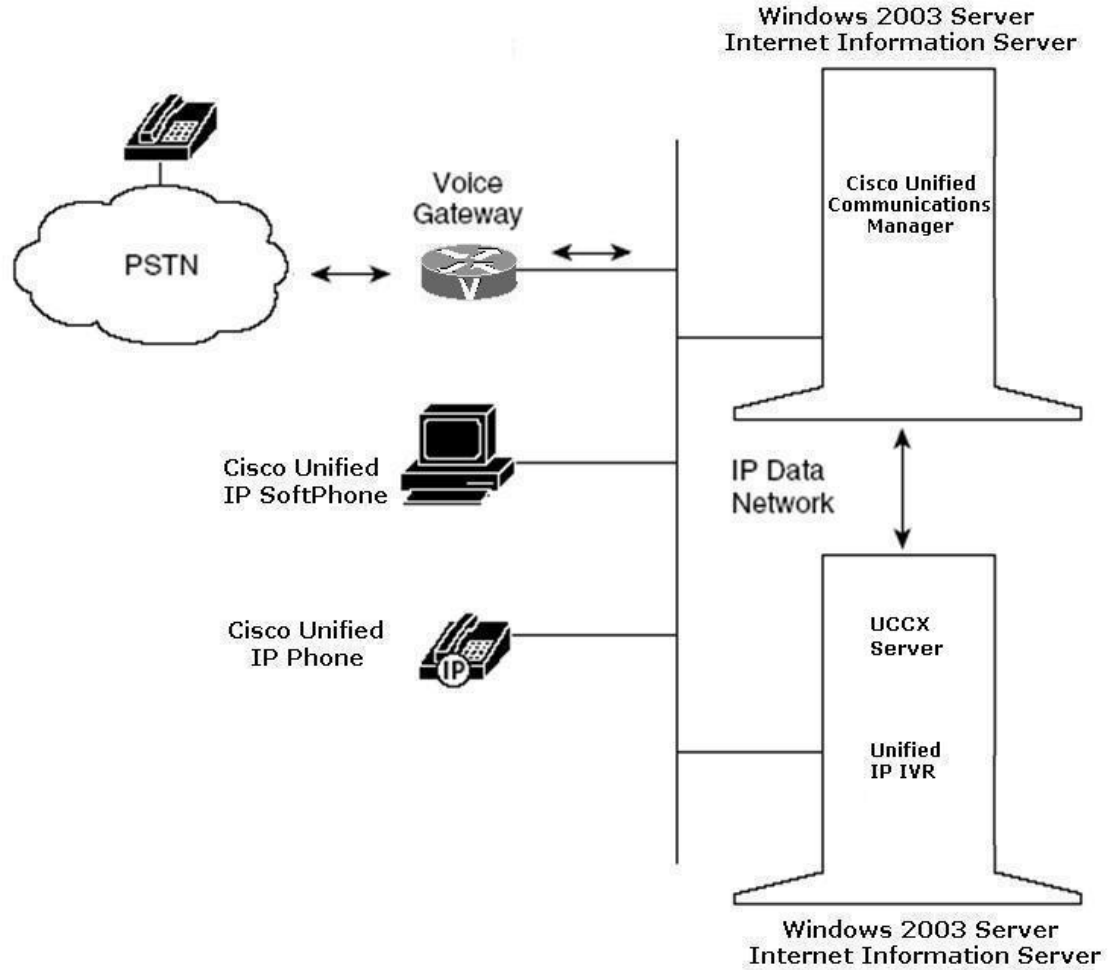
**Note**   Unified IP IVR and CM have to be installed on separate servers.

• **Cisco Unified CCX Server**. Contains the Unified CCX Engine that runs Unified IP IVR.

Figure 1: Unified IP IVR Architecture Without Unified CCE

The figure below shows how you can deploy Unified IP IVR apart from Unified CCE. This figure expands the focus to a Unified CM cluster and depicts the possibility of having a single Unified CCX server with optional ASR and TTS servers.
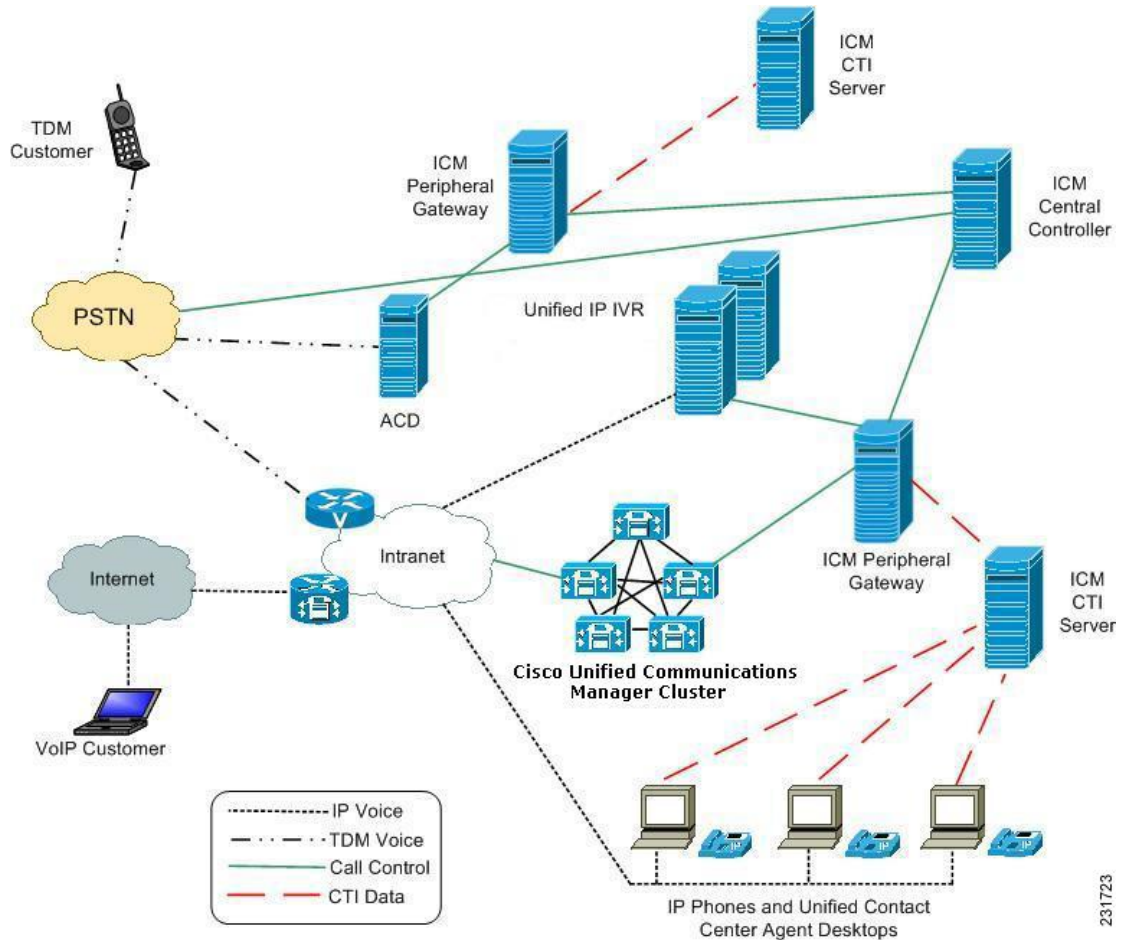
Figure 2: Standalone Deployment Model for Unified IP IVR
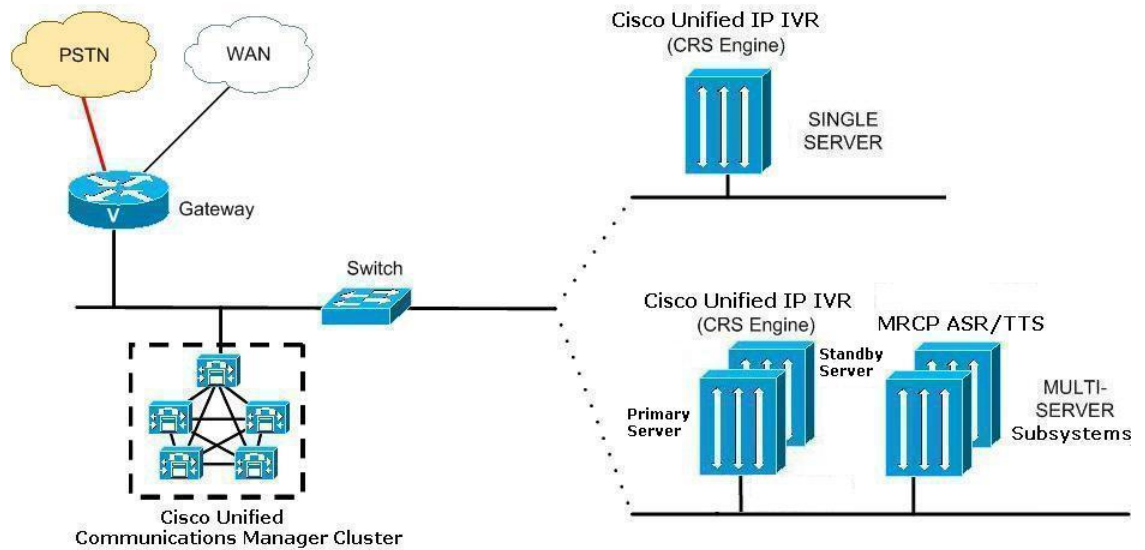
Cisco Unified Contact Center Enterprise Deployment

The following figure shows how one or more Unified IP IVR servers fit into an Unified CCE system.

Figure 3: A Unified Deployment Model within Unified CCE

The following figure shows a Unified CCE deployment model, but focuses on the Unified CM, Unified IP IVR, and Unified CCE servers. In a Unified CCE system, there is the Unified CM server or servers, the Unified CCX server or servers, optional Unified CCX subsystem servers such as MRCP ASR or MRCP TTS servers, and the Unified CCE servers.

> **Note** The optional MRCP ASR and TTS software cannot be on the same server as the Unified CCX engine and is 3rd party software, not Cisco software.

Unified IP IVR supports high availability failover between two Unified CCX servers but not between a cluster of servers. You can also deploy multiple Unified CCX servers (with Unified IP IVR) and let Unified CCE

manage the load balancing and failover between them. If one of the IVRs fails, the Unified CCE system will detect the failure, stop sending calls to the failed system, and instead send those calls to other Unified IP IVRs.

Figure 4: A Unified CCE Deployment Model for Unified IP IVR
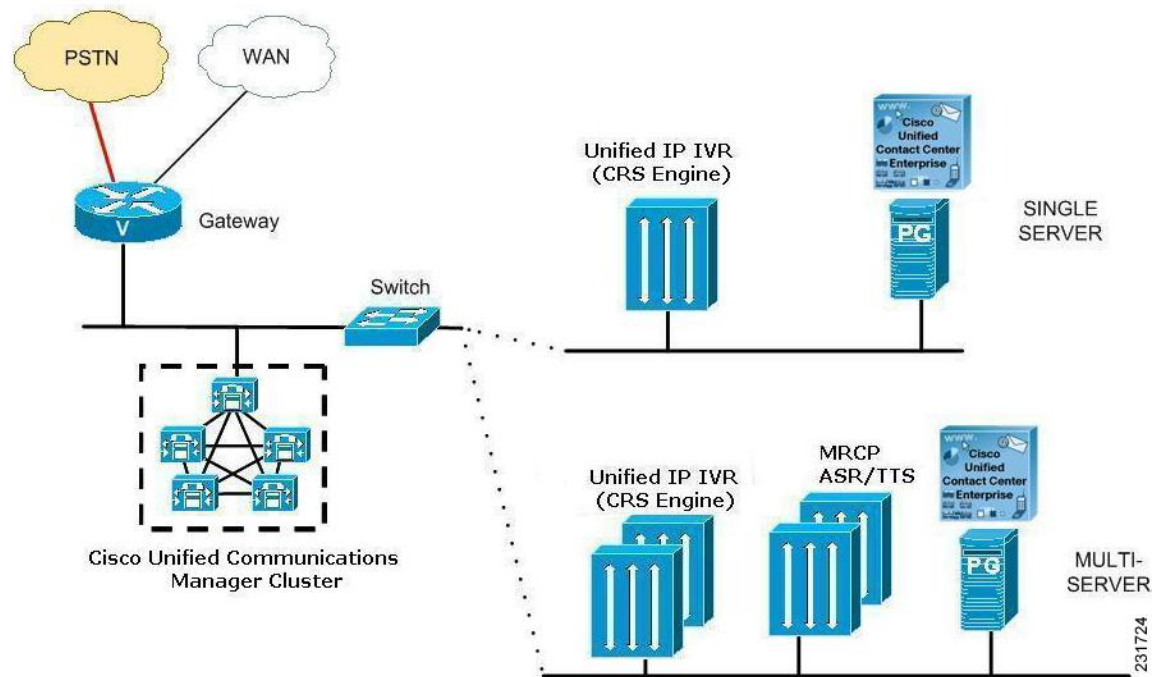
Services From Partners

Ordering from a Cisco-authorized online partner provides convenience for those customers that know which products best fit their needs and require immediate delivery. If your needs require onsite design, installation and ongoing support, a local reseller in your area could provide those value-added services. There are multiple places to order Cisco products online. Customers with Direct Purchasing agreements can order direct from Cisco. There are also numerous channel partners that transact e-commerce on their website for Cisco products. A full list of global Cisco Partners can be found on Cisco's Partner Locator website. Customers at small and medium sized business who want the convenience of online ordering can use Cisco's Online Partners.

Support Services

Depending on individual operational, maintenance, and network level requirements, each installation has unique support requirements throughout the network life cycle of planning, designing, implementing, operating, and optimizing a network.

A full list of the Cisco support services available to you can be found at Voice and IP Communications Services.