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## Introduction

This page provides configuration information for a Cisco Unified Communications Manager Post-Routed call flow model using SIP signaling within a Cisco Unified Communications deployment. In the Unified Communications Manager Post-Routed call flow model, the customer call comes in first to the Unified Communications Manager, which informs Cisco Unified Intelligent Contact Management Enterprise (Unified ICME). Unified ICME handles the subsequent routing of the call and Cisco Unified IP IVR (Unified IP IVR) provides call prompting and queuing functionality.

The intended audience should be able to perform system-level configuration of Cisco Unified Communications components and deployments and be familiar with the Cisco Unified Communications family of products.

TIP: Use Unified Communications Post-Routed Call Flow (Project Features Tested label) as a keyword to search for related test cases in [System Test Results for Contact Center](#).

The configuration information is based primarily on testing performed in the Unified Communications Manager Post-Routed Call Flow test bed (Test Bed 1) during Cisco Unified Communications system releases.

This topic does not contain detailed step-by-step procedures; for detailed information about installing, configuring, and administering Unified Communications Manager, refer to Unified Communications Manager documentation (see Related Documentation).

## Design

For information on design considerations and guidelines for deploying Unified Communications Manager 8.x releases, see the [Cisco Unified Communications System 8.x Solution Reference Network Design \(SRND\)](#).

For information on specific deployments and sites where Unified Communications Manager system testing was performed, see Unified Communications Manager Post-Routed Call Flow test bed (Test Bed 1) in [Tested Deployments and Site Models](#).

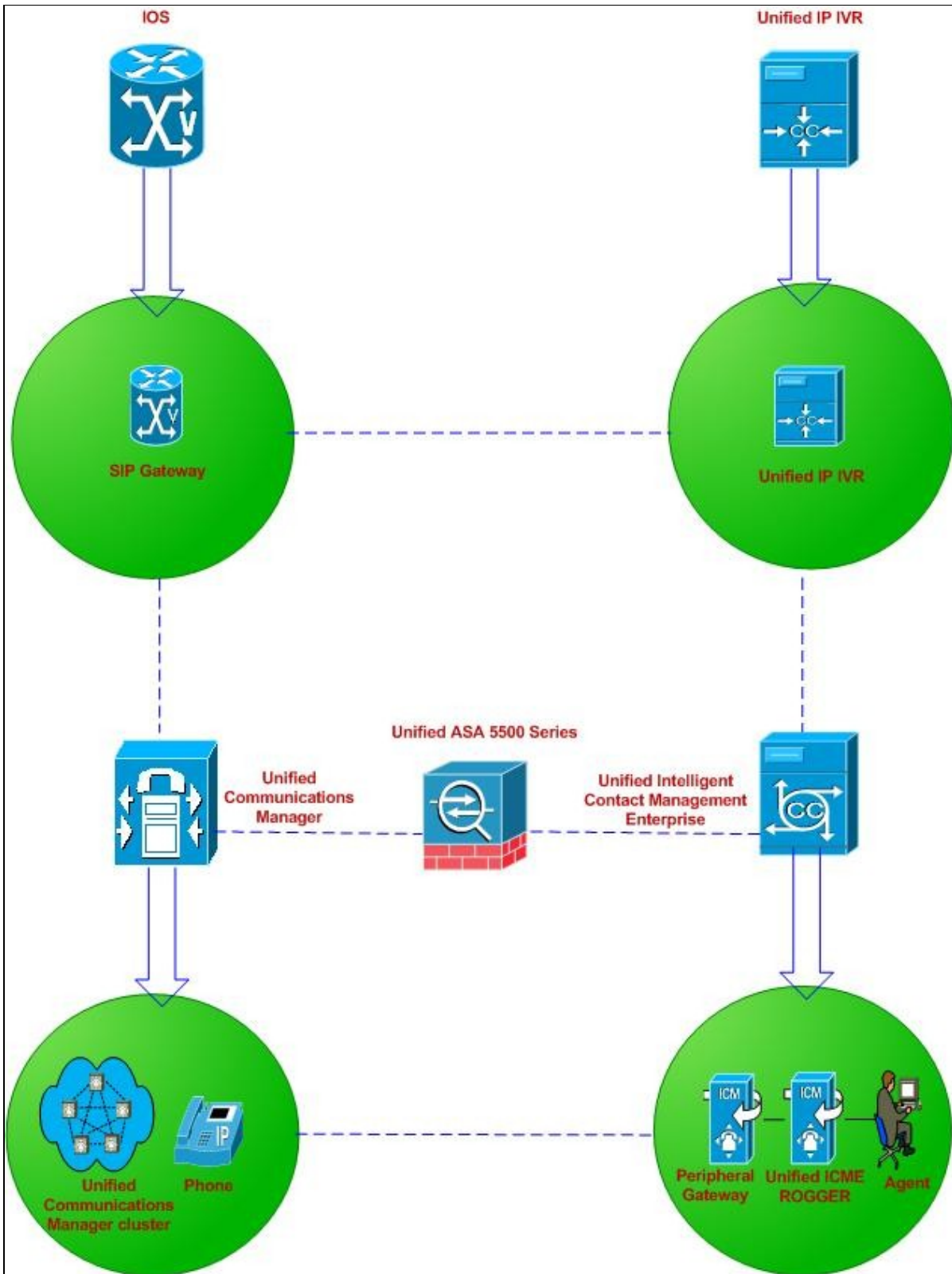
## **Topologies**

This section provides information about the Unified Communications Manager Post-Routed call flow. During Cisco Unified Communications system testing, various components including Unified Communications Manager, Unified IP IVR, Cisco Unified Contact Center Enterprise (Unified CCE)/Unified ICME system, SIP Gateway, and CAD and CTI OS server and desktop software were installed and tested in several sites in the Unified Communications Manager Post-Routed Call Flow test bed.

## **Component Deployment**

The following provides a non-site specific overview of the components deployed in Test Bed 1 that participated in the Unified Communications Manager Post-Routed call flow using SIP. Security is implemented using Unified 5500 Series Adaptive Security Appliance to provide firewall and policy enforcement services and intrusion protection systems. Cisco Security Agent is implemented as core endpoint security on all the servers. Infrastructure components include routers, switches, and gateways.

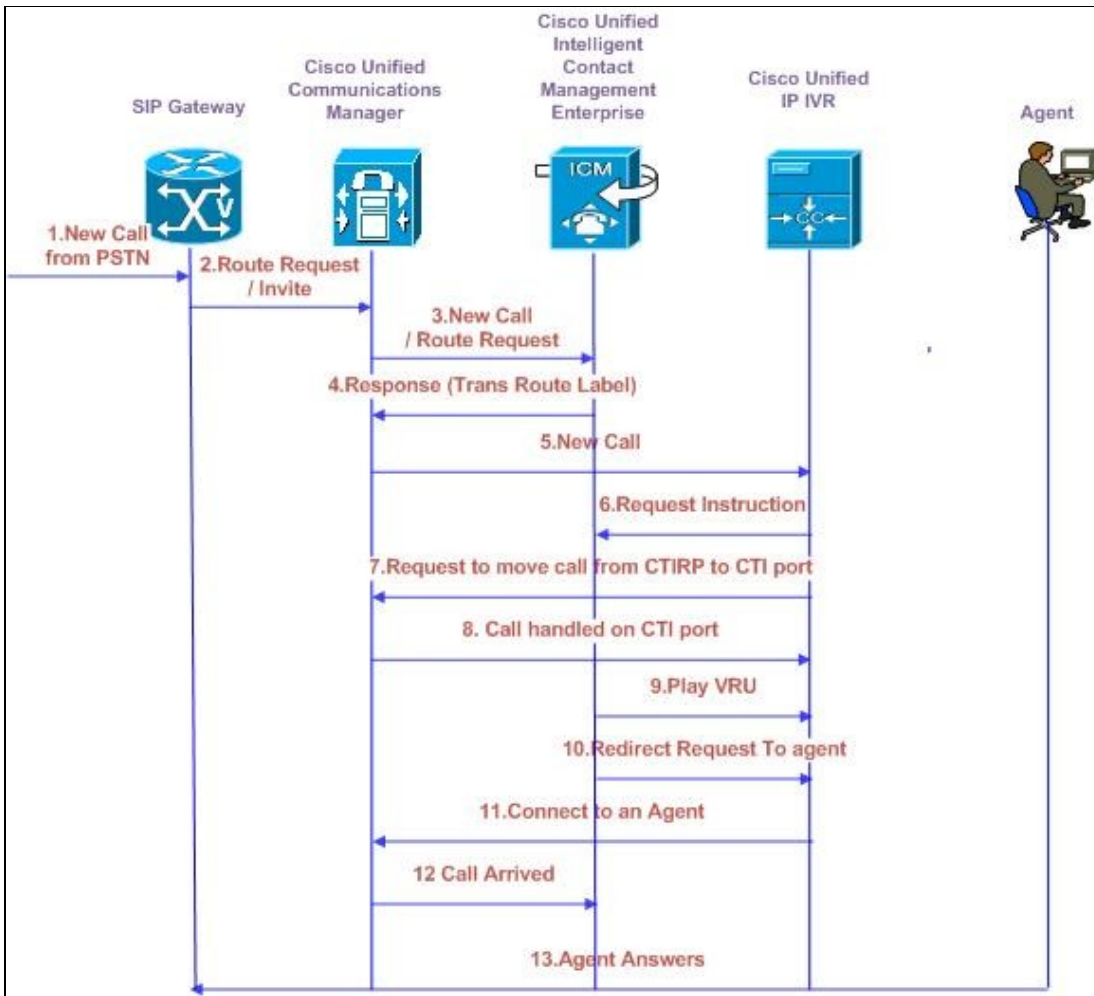
## Unified\_CM\_Post-Routed\_Call\_Flow\_Using\_SIP\_Configuration



### Call Flow Diagram

The following is a graphical representation of the Unified Communications Manager Post-Routed call flow using SIP:

## Unified\_CM\_Post-Routed\_Call\_Flow\_Using\_SIP\_Configuration



### Configuration

This section provides the high-level tasks and related information for configuring a Unified Communications Manager Post-Routed call flow model using SIP. The following tables provide this information:

- **Configuration Tasks:** List of high-level configuration tasks
- **System Test Specifics:** System test variations from default values documented in the product documentation.
- **More Information:** Links to product documentation for detailed configuration information related to the high-level tasks.

NOTE: Default and recommended values specified in the product documentation were used during system testing, unless otherwise noted in the **System Test Specifics** column.

**Table 1: Unified IP IVR Configuration**

Configuration Tasks	System Test Specifics	For More Information, see:
1. Configure the Cisco Unified CM Telephony Provider information.		<i>Installation and Configuration Guide Cisco Unified Contact Center Enterprise</i> Chapter: Installing and Configuring Cisco Unified IP IVR for Cisco Unified Contact Center

Unified\_CM\_Post-Routed\_Call\_Flow\_Using\_SIP\_Configuration

		Enterprise Section: Accessing the Cisco Unified CCX Administration Utility > How to Configure the Unified CM Telephony Provider on Unified CCX Administration
2. Configure the Unified ICME subsystem.		<u><i>Installation and Configuration Guide Cisco Unified Contact Center Enterprise</i></u> Chapter: Installing and Configuring Cisco Unified IP IVR for Cisco Unified Contact Center Enterprise Section: Accessing the Cisco Unified CCX Administration Utility > How to Configure the Unified ICM Subsystem
3. Create and upload VRU scripts on Unified IP IVR.		<u><i>Installation and Configuration Guide Cisco Unified Contact Center Enterprise</i></u> Chapter: Installing and Configuring Cisco Unified IP IVR for Cisco Unified Contact Center Enterprise Section: Accessing the Cisco Unified CCX Administration Utility > How to Configure and Upload VRU Scripts
4. Configure Unified IP IVR for Unified ICME Translation Routing.		<u><i>Installation and Configuration Guide Cisco Unified Contact Center Enterprise</i></u> Chapter: Installing and Configuring Cisco Unified IP IVR for Cisco Unified Contact Center Enterprise Section: About Translation Routing and Post Routing > How to Configure Unified IP IVR for Unified ICME/Unified CCE/CCH Translation Routing
5. Provision a Cisco Unified CM Telephony Call Control Group.		<u><i>Installation and Configuration Guide Cisco Unified Contact Center Enterprise</i></u> Chapter: Installing and Configuring Cisco Unified IP IVR for Cisco Unified Contact Center Enterprise Section: Accessing the Cisco Unified CCX Administration Utility > How to Configure a Unified CM Telephony Call Control Group
6. Provision a Cisco Media Termination Group.		<u><i>Cisco Unified CCX Administration Guide, Release</i></u> Chapter: Provisioning Telephony and Media Section: About Unified CCX Telephony and Media > Media Termination Groups
7. Configure Cisco Unified CM Telephony Trigger and associate with previously configured Cisco Media Termination Group. .		<u><i>Cisco Unified CCX Administration Guide, Release</i></u> Chapter: Provisioning Telephony and Media Section: Provisioning Unified CM Telephony Subsystem > Adding a Unified CM Telephony

Table 1: Unified IP IVR Configuration

Unified\_CM\_Post-Routed\_Call\_Flow\_Using\_SIP\_Configuration

		Trigger
8. Create and upload user prompts on Unified IP IVR.		<u><a href="#">Cisco Unified CCX Administration Guide, Release</a></u> Chapter: Managing Prompts, Grammars, Documents, and Custom Files Section: Managing Prompt Files

**Table 2: Unified IP IVR and Unified Communications Manager Components in Unified Intelligent Contact Management Enterprise System: Translation Routes, Peripheral Gateways, Agents, Skill Groups, and Unified ICME Scripting Configuration**

Configuration Tasks	System Test Specifics	For More Information, see: <u><a href="#">Configuration Guide for Cisco Unified ICM/Contact Center Enterprise and Hosted</a></u>
1. Configure the appropriate Agent Desk Settings (for each Skill Group) and associate with the PG.		Chapter: Configuring Peripherals and Trunk Groups Section: Configuring a PG > PG Explorer Tab Descriptions > Peripheral Tab
2. Configure the Unified IP IVR and Unified Communications Manager PGs with the appropriate number of routing clients for each Unified IP IVR and Unified Communications Manager.		Chapter: Configuring Peripherals and Trunk Groups Section: Configuring a PG
3. Configure the Network Trunk Groups and Trunks for the Unified IP IVR PG.  NOTE: Ensure that the Trunk Group peripheral number in Unified ICME/ Unified CCE matches the CTI Port Group ID on Unified IP IVR.		Chapter: Configuring Peripherals and Trunk Groups Section: Configuring Trunk Groups and Trunks
4. Configure Translation Routes and Labels for Unified IP IVR.  NOTE: Ensure that the Translation Route Label matches the Cisco Unified CM Telephony Trigger.		Chapter: Configuring Routes and Routing Targets > Translation Routes
5. Configure Call Types.  NOTE: Specify unique call type Name and Customer associated with the call type in List Tools > Call Type List in the ICM Configuration Manager.		Chapter: How Routing Works Section: Targets > Determine Call Type
6. Configure inbound Dialed Numbers for each Unified Communications Manager routing client. Associate the Dialed Numbers with their respective Call Types.		Chapter: Configuring Routing Clients Section: Configuring Dialed Numbers and Script Selectors > Dialed Number/Script Selector List Tab Descriptions
7. Configure the Network VRU Scripts.		Chapter: Network IVRs/VRUs Section: Accessing VRUs in Cisco

Table 2: Unified IP IVR and Unified Communications Manager Components in Unified Intelligent Contact Management Enterprise System

Unified\_CM\_Post-Routed\_Call\_Flow\_Using\_SIP\_Configuration

		Unified Intelligent Contact Management Scripts > Network VRU Script Configuration
8. Develop routing scripts for the Call Types.		Chapter: Configuring Routing Clients Section: Configuring Dialed Numbers and Script Selectors > Dialed Number/Script Selector List Tab Descriptions
9. Configure Agents and Supervisors.		Chapter: Configuring Skill Targets Section: Agents > How to Create an Agent Section: Agents > Agent Explorer Tab Descriptions
10. Configure the Skill Groups and associate Agent IDs with them.		Chapter: Configuring Skill Targets Section: Skill Groups > Skill Group Explorer
11. Add a Route to each Skill Group.		Chapter: Configuring Skill Targets Section: Skill Groups > How to Define a Skill Group and/or Its Associated Records
12. Configure Services and associate each Service to the appropriate Skill Group.		Chapter: Configuring Skill Targets Section: Services > Service Explorer Section: Skill Groups > Mapping Skill Groups to Services
13. Add a Route to the Service.		Chapter: Configuring Routes and Routing Targets Section: Route Configuration > How to Define or Modify a Route
14. Configure all the endpoints as Device Targets using Agent Targeting Rules.		Chapter: Configuring Peripherals and Trunk Groups Section: Configuring Agent Targeting Rules
15. Define Labels for the Device Targets and associate them with the corresponding routing clients.		Chapter: Configuring Routes and Routing Targets Section: Labels

**Table 3: Unified Communications Manager Components, CAD Server and Desktop, and CTI OS Server and Desktop Configuration**

General Configuration Tasks	System Test Specifics	For More Information, see
1. Create user accounts and associate them with the JTAPI phones.		<i>Installation and Configuration Guide, Cisco Unified Contact Center Enterprise</i> Chapter: Installing and Configuring Unified Communications Manager for Cisco Unified Contact

Table 3: Unified Communications Manager Components, CAD Server and Desktop, and CTI OS Server and Desktop Configuration

## Unified\_CM\_Post-Routed\_Call\_Flow\_Using\_SIP\_Configuration

		Center Enterprise Section: About the Unified CM Administration Utility > Unified CM Configuration Tasks.
2. Configure a SIP Trunk and associate with the SIP Gateway.		<i>Cisco Unified Communications Manager System Guide, Release 8.0(2)</i> Chapter: Devices and Protocols Section: Understanding Cisco Unified Communications Manager Trunk Types > Configuration Considerations for SIP trunks
3. Add CTI Route and associate with Unified Communications Manager PG user.  NOTE: CTI Route Points are the Dialed Numbers created in the Unified ICME subsystem.		<u><i>Installation and Configuration Guide, Cisco Unified Contact Center Enterprise</i></u> Chapter: Installing and Configuring Unified Communications Manager for Cisco Unified Contact Center Enterprise Section: About the Unified CM Administration Utility > Unified CM Configuration Tasks
4. Configure Unified Communications Manager components, including agent phones.		<u><i>Installation and Configuration Guide, Cisco Unified Contact Center Enterprise</i></u> Chapter: Installing and Configuring Unified Communications Manager for Unified Contact Center Enterprise Section: How to Configure Agent IP Phones for Unified CCE
5. Use the Cisco Agent Desktop (CAD) Configuration Setup utility to configure CAD services.		<u><i>Cisco CAD Installation Guide, Cisco Unified Contact Center Enterprise and Hosted</i></u> Chapter: Installing CAD 8.0 Applications Section: CAD Configuration Setup Utility
6. Install and configure the CTI OS Server.		<u><i>CTI OS System Manager's Guide for Cisco Unified ICM/Contact Center Enterprise &amp; Hosted</i></u> Chapter: CTI OS Server Installation
7. Install and configure CTI OS Agents.		<u><i>CTI OS System Manager's Guide for Cisco Unified ICM/Contact Center Enterprise &amp; Hosted</i></u> Chapter: CTI Toolkit Desktop Client Installation

### Related Documentation

- For configuration checklists and component installation and configuration documents, see [Component Installation and Configuration Guides](#).
- For information on the results obtained from the system testing, see [System Test Results for Contact Center](#).
- For information on configuring the security components, see [Security System Configurations](#).
- For information on the IOS commands used to configure infrastructure components, see [Configuration Command Files for Contact Center](#).