Overview

Cisco Unified ICM PG and Avaya ACD

The Cisco Unified Intelligent Contact Management (Unified ICM) Peripheral Gateway (PG) supports Avaya ACD using CVLAN or TSAPI Service, running on Avaya Application Enablement Services (AES).

CVLAN and TSAPI are Avaya software options that allow the Unified ICM PG to communicate with the Avaya ACD. Both CVLAN and TSAPI provide the PG with real time call events and allow the PG to query the ECS/MultiVantage/Avaya about splits, trunk groups, and agents.

CVLAN and TSAPI allow the PG to perform post-routing, station monitoring, and third-party call control.

The CVLAN and TSAPI software can be purchased from Avaya.

The *Call Management System (CMS)* is the Avaya ACD Management Information System (MIS). It provides the PG with real-time agent state data for non-station-monitored agents.

This chapter describes the options for connecting the Avaya ACD to the Unified ICM PG. To work with the system software, the Avaya ACD must meet several hardware and software requirements. This chapter lists the requirements for both CMS and non-CMS environments.

Note Avaya ACD is used across this document to represent the different names used by Avaya for their platform. Some of these names are Avaya Aura Communication Manager, Avaya Communication Manager, MultiVantage, Definity, and so on.

Avaya ACD Interface Requirements

A basic, simplexed Unified ICM PG has the following interface requirements:

- You must have at least one CVLAN / TSAPI link on the Avaya ACD. Up to eight CVLAN links can be supported for higher call loads.

- If CMS is used, the PG requires one Ethernet connection to the CMS system that is connected to the Avaya ACD.
- If CMS is used, the PG requires a Unified ICM Real-Time Adherence (RTA) custom report. This report is developed and provided by Avaya for the Unified ICM system.

Note A configuration without the CMS may be possible, subject to the restrictions listed in Avaya "CMS-less" Interface later in this chapter. If a "CMS-less" solution is possible, all references to CMS requirements in this document do not apply.

Related Topics

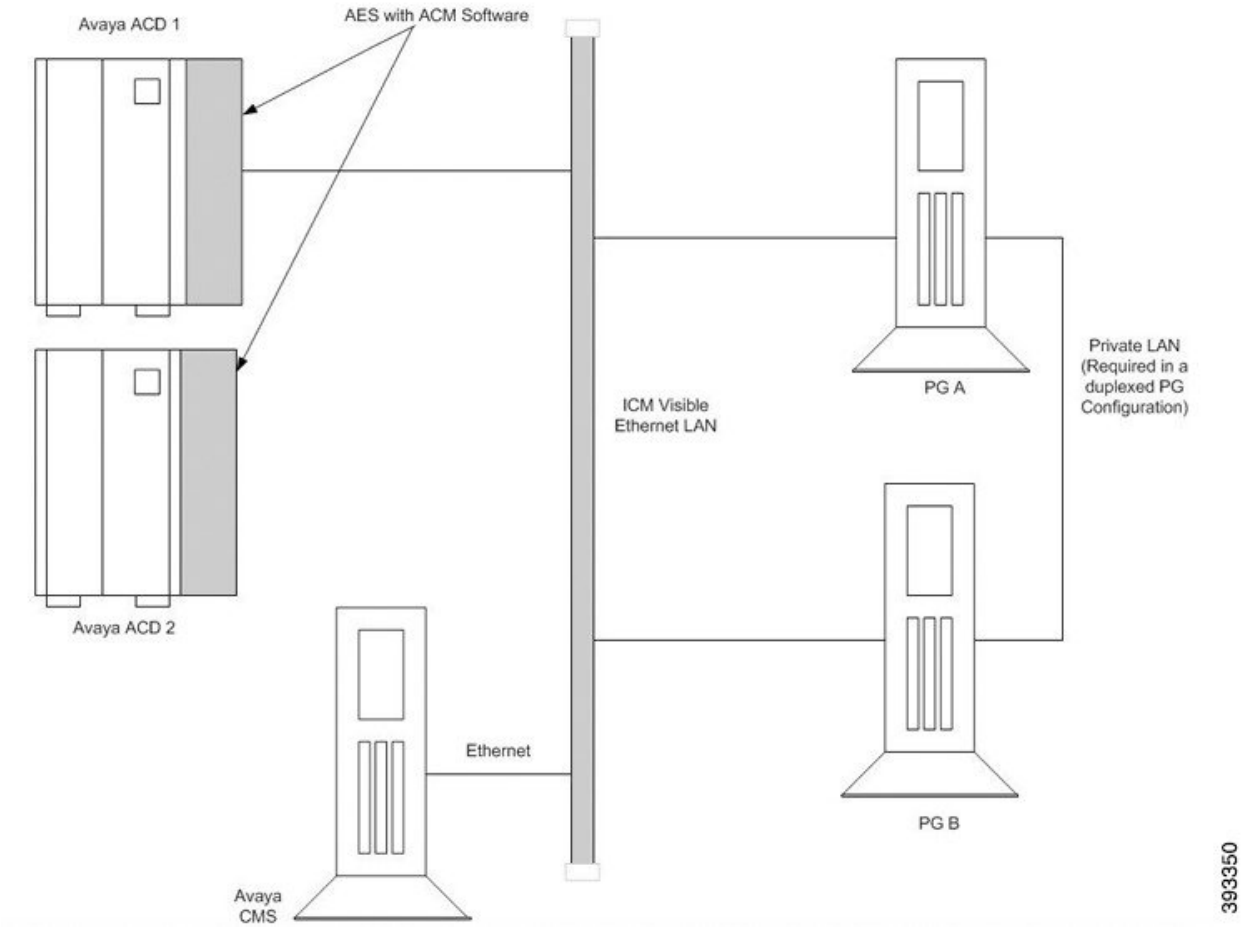
Avaya “CMS-less” Interface, on page 4

Avaya ACD with CVLAN/TSAPI Service running on Avaya AES

The AES interface allows the PG and Avaya ACD to communicate directly. In this configuration, CVLAN / TSAPI Service runs on Avaya AES software. The PG connects directly to the Avaya ACD through an Ethernet LAN. The PG acts as a client while the Avaya ACD acts as the server. An adjunct processor platform is not required in this configuration.

The following figure shows an example of AES interface with Avaya ACD.

Figure 1: Avaya ACD Interface



The CMS, if used, connects to Unified ICM visible LAN through a single Ethernet connection. A Cisco CMS custom report is installed on the CMS platform (one for each Peripheral Interface Manager).

The Avaya ACD Interface figure shows a two-ACD site. Some sites may have a single ACD only.

Install the PG and Avaya ACD on the same LAN.

For specifics on AES Server installation and SCO UNIX patch requirements, see the Configuring AES section.

Related Topics

Configuring AES

Call Management System (CMS)

The Avaya CMS provides snapshots of the real-time agent login/logout and non-ACD-related agent state data to the PG through the CMS Ethernet connection. In configurations that use CMS, a custom report is required to ensure that real-time call and agent data is available to the system software.

CMS Report Versions

Avaya has Unified ICM RTA custom reports in Expert Agent Selection (EAS) and non-EAS versions. The Avaya CMS Professional Services Group installs the proper Unified ICM custom report (EAS or non-EAS) on the CMS. To support EAS, the custom report must have a major revision of at least 3 (for example: 3.x.x).

Single- and Multiple-PIM Configurations

One custom report must be installed on the CMS for each Peripheral Interface Manager (PIM) on the PG. A PIM is a system software module that allows communication between a peripheral and the PG. For example, if you have one Avaya ACD and a duplexed PG, each PG has one PIM. Therefore, the CMS requires two custom reports. If you have two ACDs and a duplexed PG, each PG has two PIMs. The CMS would therefore require four custom reports (two for each PG).

On a single Avaya ACD duplexed PG environment two CMS reports are installed. However, only one of the reports provide agent state data to the PG at any given time.

In other words, only one CMS report is running at any given time per Avaya ACD. From a resource utilization perspective on CMS, a single CMS report (when running) is equivalent to one more Supervisor running a real-time report.

For more information on CMS report requirements, see the CMS Cisco Real-Time Report section.

Note Customers who are using CMS with Unified ICM, over 1,000 agents/high call loads, may want to change certain ICM ACD PIM default settings. Changing settings may improve agent station visibility. But it can also cause a possible increase in message traffic to the Avaya ACD, switch CPU load, and network traffic between the PG and Central Controller (CC). Customers are supposed to work with the Cisco Content Security and Control (CSC) to evaluate and mitigate any possible issues. Cisco CSC must refer to internal documents on PIM registry configuration.

Related Topics

CMS Cisco Real-Time Report

Avaya "CMS-less" Interface

ICM software support Avaya ACD configurations that do not use the Avaya CMS. Typically, this configuration is available only when agent count is less than 1,000 agents. However, the suitability of a CMS-less installation for a site may depend on several factors. This includes agent counts, **Busy Hour Call Rate** (BHCR), third-party activity, post-routing, and other **Avaya CTI** applications (if any).

Note If a CMS-less solution is used, all references to CMS requirements in this document do not apply.

In a CMS-less environment, both Unified ICM and Avaya ACD systems must meet more configuration requirements:

Additional Unified ICM Software Configuration

The following changes are possible using the Configure ICM tools.

- It is necessary for you to set all agents in the Unified ICM database.
- Map agents to skill groups in the Unified ICM database. The agent to-skill-group mapping must match the Avaya ACD configuration. In addition, the subgroup must correctly map to the agent's priority.
- It is essential for you to set monitored instruments in the Peripheral Monitor table of the Unified ICM database. Agent stations are to be monitored.
- Set up Peripheral Targets in the Unified ICM database for all Vector Directory Numbers (VDNs) through which monitored calls flow.

Additional Avaya Requirements

In a PG configuration that does not use CMS, additional configuration is necessary on Avaya.

- PG requires skill groups to be monitored to track agent login and logout events. No agents can log in to that skill group. if a skill group is not monitored. PG uses **3PDC** or **Monitor request API's** to monitor a skill group, based on the interface (CVLAN/TSAPI).

Avaya currently restricts one application to third-party domain control of a skill group.

- Enable **Event Minimization for the CVLAN CTI** links used by the **Peripheral Gateway.** This is not applicable when PG uses **TSAPI Interface** to connect to **AES**.
- Use the **EnterpriseCTI Interface** for optimal performance, external applications that alter agent state on the **Avaya ECS**.

Busy Hour Call Rates for Ethernet CTI Link

Each Avaya Ethernet CTI link can support a BHCR. This BHCR is of approximately 32,000 in normal use by the PG and excludes Post-Routing or third-party call control. This is an approximate value. This value are affected by following factors:

- The number of agents
- Anticipated peak busy hour call rate
- Average number of CTI events/calls
- Number of splits
- Trunk groups
- VDNs

Establish a dedicated Ethernet CTI link for Unified ICM application.

For more information on Ethernet BHCRs, see the Ethernet Busy Hour Call Rates section.

Related Topics

Ethernet Busy Hour Call Rates

Hardware and Software Requirements

In order to work with Unified ICM software, the Avaya ACD must meet the hardware and software requirements listed in these tables.

Table 1: Avaya Requirements-With CMS

Releases Supported	Avaya ACD CVLAN and TSAPI. For specific release information on Avaya ACD, CVLAN and TSAPI see the *Cisco ICM Software Supported Switches (ACD)* document.
Features Required	Call Management System (CMS) For specific release information for CMS, see the *Cisco ICM Software Supported Switches (ACD)* document.
	Call Vectoring
	CTI Monitoring
	CTI Host-Based Routing (only for systems using Unified ICM Post-Routing)
	Cisco Unified ICM real-time adherence custom report (developed and provided by Avaya for Cisco). The CMS requires one report for each PIM in service on the PG.
Performance	CMS minimum refresh rate: 3 seconds

Table 2: Avaya ACD Requirements—"CMS-less"

Releases Supported	Avaya ACD CVLAN and TSAPI For more information on Avaya ACD, CVLAN and TSAPI support, see the *Contact Center Enterprise Compatibility Matrix* at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-device-support-tables-list.html.

Features Required	Call Vectoring
	CTI Monitoring
	CTI Host-Based Routing (only for systems using Unified ICM Post-Routing)

Supported Unified ICM Software Features

The Avaya PG supports the following Unified ICM software features:

- Pre-Routing
- Post-Routing
- Enterprise CTI (includes third-party call control)
- Agent reporting
- Duplexed PG implementation

Note

- The Avaya PG does not support Unified ICM integration with the Avaya ProLogix System.
- PIM supports a maximum of eight CTI links per CVLAN and a maximum of two CVLANs.