Deployment models

This chapter describes the deployment models for Cisco Unified Intelligence Center. Each model addresses scalability of the solution. The exact model that must be employed at different sites depends upon on the number of clients to be supported and, to a lesser extent, on the amount of data being reported.

For more information about sizing calculations, see Chapter 4.

This chapter contains the following topics:

Unified Intelligence Center deployment

Unified Intelligence Center 9.0 supports the deployment model of one to eight servers clustered together with an optional ACE load balancer for deployments consisting of two or more nodes.

The deployment models supported by Unified Intelligence Center are

- Unified Intelligence Center deployment model without ACE:
  This deployment model consists of a Unified Intelligence Center cluster that communicates directly with the database running on the data source server.
- Unified Intelligence Center Deployment Model with ACE: In this model, the multiple Unified Intelligence Center reporting nodes are deployed across an ACE load balancer module.

Note The differences between the two deployment models are the number of servers and the use of the ACE load balancer.

Unified Intelligence Center deployment model without ACE

The standard model includes the following components:

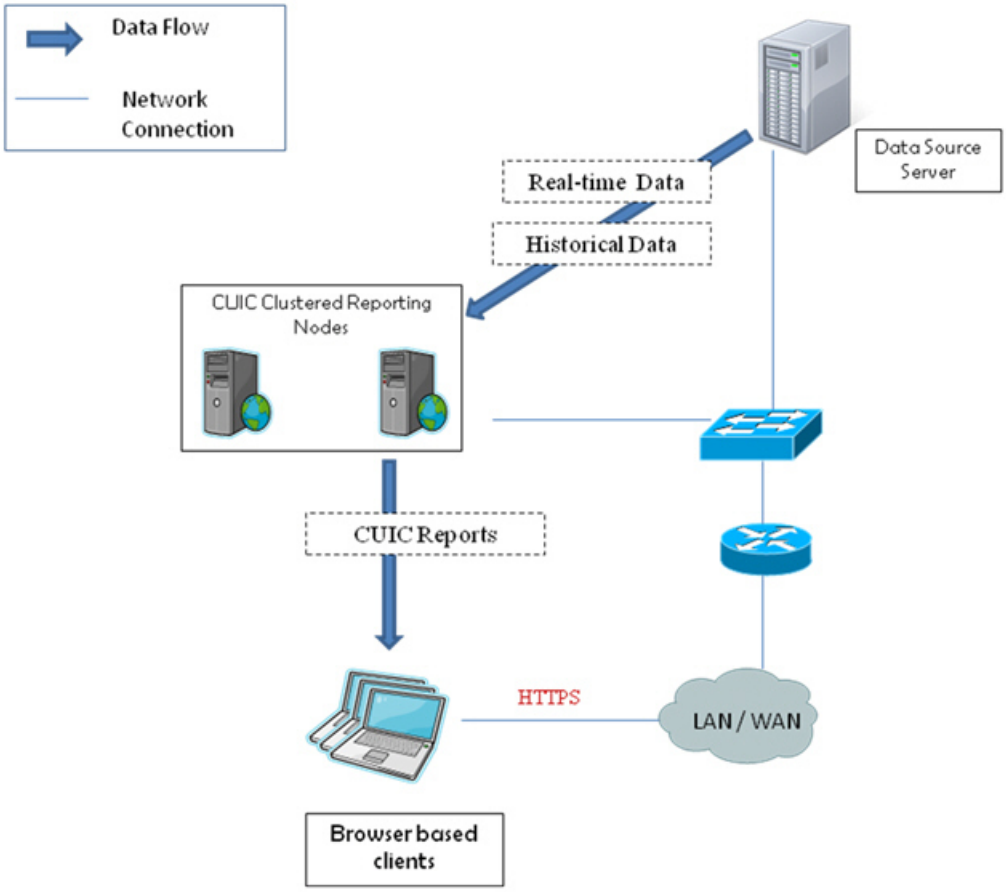
- One or two Unified Intelligence Center reporting (member) nodes in a cluster
- Realtime and historical Unified CCE data source or sources
- Optionally, other data sources

This deployment model consists of a Unified Intelligence Center cluster that communicates directly with the database running on the data source server. Data for all reports—both realtime and historical—are fetched when required, based on report requests issued by web clients.

Data flow:

- The web client makes an HTTPS request for a Unified Intelligence Center page/report
- The web request is handled by the web server on the Unified Intelligence Center reporting node
- When a report is requested, the data is pulled from the data source server, which supplies the actual data for both historical and realtime reports

Figure 1: Unified Intelligence Center Deployment without ACE



Unified Intelligence Center Deployment Model with ACE

The deployment model with ACE includes the following components:

- Multiple (maximum of eight) Unified Intelligence Center reporting nodes deployed in a cluster
- Multiple data source servers
- A Cisco switch/router capable of deploying ACE module
- Single ACE load balancer module

In this model, the multiple Unified Intelligence Center reporting nodes are deployed across an ACE load balancer module. This allows clients to use the same URL to access the application. The ACE module performs Load Balancing by distributing user sessions among multiple member nodes in the Unified Intelligence Center cluster that are available at the beginning of the session. The nodes are synchronized through database replication.

If a single data source server is insufficient to serve all the reporting data requests from multiple clients, multiple data source servers can be used to spread the report load. The server load factor numbers (present in the bandwidth and sizing section) determine the number of data source servers, depending on the number of simultaneous real clients running the Unified Intelligence Center reports.

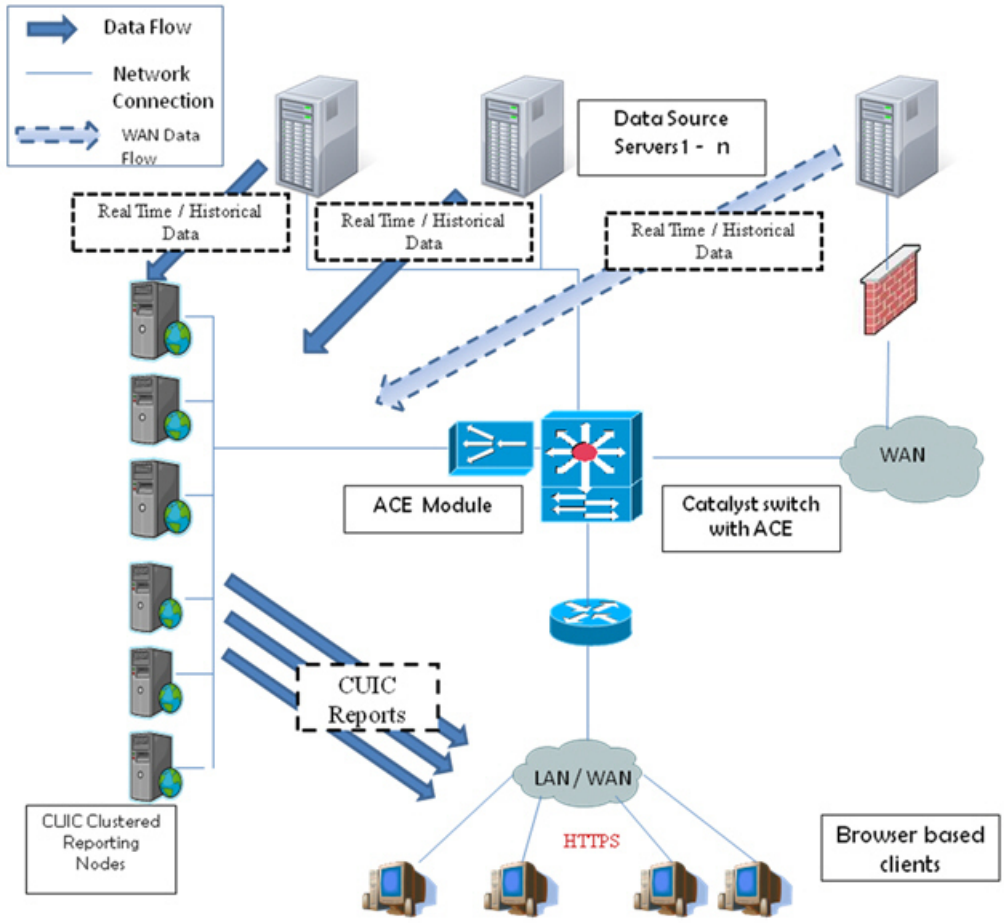
Firefox is the preferred client for administrators in scaled deployments with ACE due to the large amount of data that is displayed, which render faster on the Firefox browser.

Data flow:

- The web client makes an HTTPS request for a Unified Intelligence Center page/report using the virtual server configured on the ACE module.
- The ACE load balancer determines which available working member (reporting) node handles the request and redirects it to that node. ACE continues to redirect subsequent HTTPS requests from the browser session to the same node (sticky mode).
- The web request is handled by the Unified Intelligence Center reporting node.

- When a report is requested, the reporting data is pulled from the database on the associated data source, whose connection parameters are resolved by the reporting node.

Figure 2: Unified Intelligence Center Scaled Deployment



Cisco Unified CCE deployment

Cisco Unified Contact Center Enterprise (Unified CCE) is an integral component of the Cisco Unified Communications system and delivers a comprehensive solution that provides intelligent routing and logging functionality and call treatment. Unified CCE uses a synchronized, lock and step message-based routing functionality to keep configuration and reporting data up to date. This data is maintained in databases in the Administration and Data Server, formerly called the Distributor Admin Workstation (AW).

Administration and Data Server as Unified Intelligence Center Data Source

The Administration and Data Server holds the database used as the Unified Intelligence Center data source for Unified Intelligence Center stock reports. Unified CCE can support multiple Administration and Data Servers.

Unified CCE introduced a new set of options based on deployment size:

- For small or medium deployments, select **Administration Server, Historical Data Server, and Detail Data Server (AW-HDS-DDS)**. This is the selection for Unified Intelligence Center data feed.
- For large deployments, select **Administration Server and Historical Data Server (AW-HDS)**.

These selections are documented in the Cisco Unified Contact Center Enterprise Solution Reference Network Design (SRND).

Note Unified Intelligence Center uses AW/HDS as a data source for standard historical reports and AW/HDS or AW as a data source for standard real-time reports. For more information about the use of DDS for custom reporting, see the recommendations for call detail reporting in the Reporting Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted, Release 8.5(3).

In all cases, the database on the Administration and Data Server and the views inside it are used as the tables for the data source queries run from Unified Intelligence Center. This makes it unnecessary to maintain additional database network connections to multiple databases from the Unified Intelligence Center, and all the data pertaining to Unified CCE can be referenced by single data source.

The Unified Intelligence Center installation adds two data sources to the reporting (member) nodes:

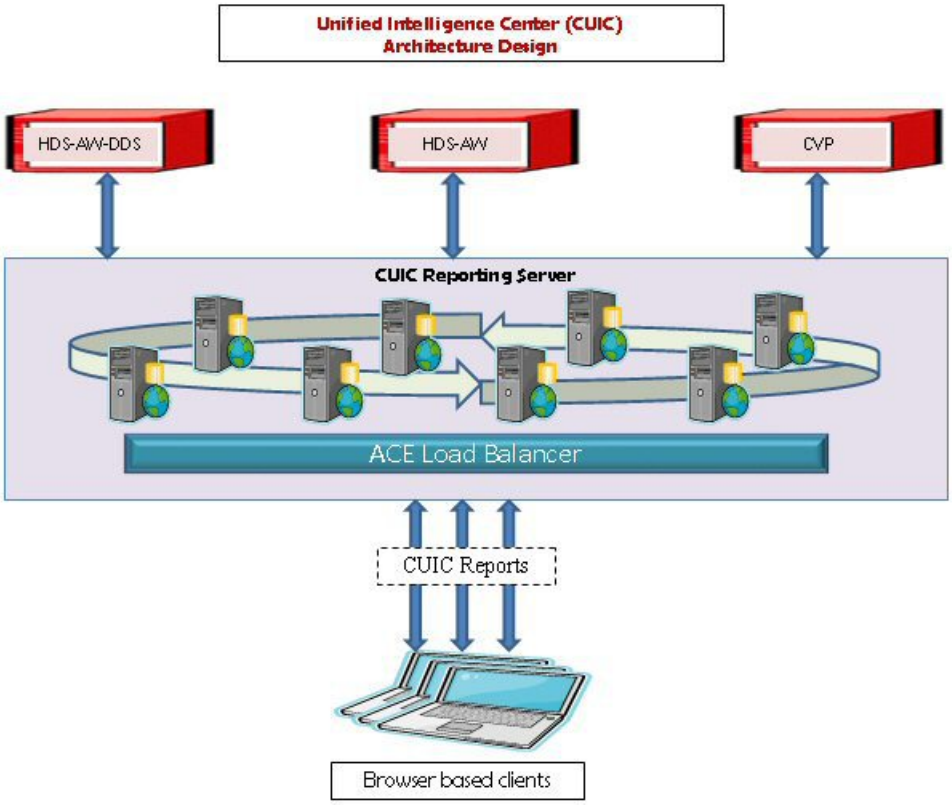
- The Unified CCE Historical data source, which support the Unified ICM/CC stocks historical reports and UCCE User Integration.
- The Unified CCE Realtime data source—-This data source is added by default to support the Unified ICM/CC stock realtime reports.

Configure the Contact Center Enterprise data sources, labeled *Unified CCE Historical and Unified CCE Real time* in Intelligence Center's data sources tab, to use the Contact Center Enterprise stock reports.

These data sources can be the same AW/HDS server or you can configure them to use two different servers. The Cisco Unified Contact Center Enterprise Solution Reference Network Design(SRND) provides detailed information about database deployment models using AW, HDS and DDS and should be consulted for sizing guidance. To be used as the Unified CCE Realtime or Unified CCE Historical data source in Unified Intelligence

Center, the system must include both AW and HDS. To develop custom reports on TCD records, the data source must also include the DDS.

Figure 3: Unified Intelligence Center and HDS-AW

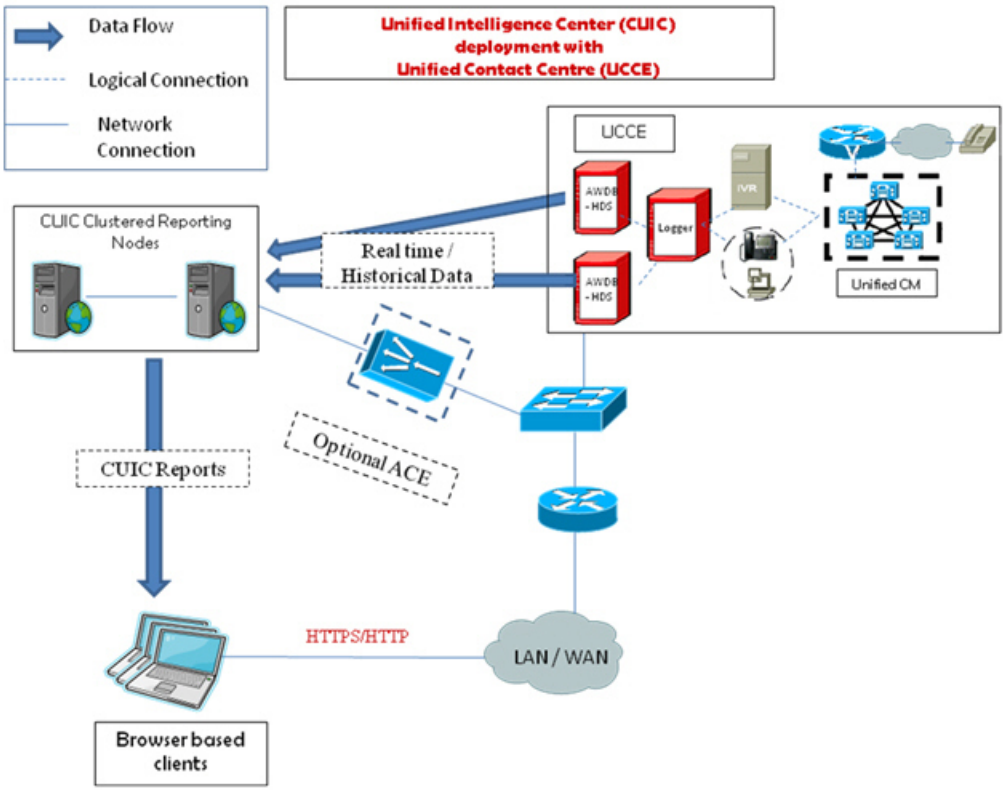


Unified Intelligence Center deployment with Unified CCE

The Unified Intelligence Center deployment with Unified CCE utilizes the AW-HDS as its data source server. It is possible to connect to multiple AW-HDS databases to handle the load from multiple Unified Intelligence Center reporting nodes. Other data sources such as the CVP Reporting Server can be used along with the Unified CCE AW-HDS as data source servers. The ACE load balancer, an optional component, provides load

balancing for report queries across the multiple reporting nodes and servers as a single point of access to the cluster.

Figure 4: Unified Intelligence Center deployment with Unified CCE



Unified CCE deployments with a distributed AW-HDS can be used a data source for Unified Intelligence Center reports. However local area network AW-HDS access ensures better throughput in data extracted and ensures faster response times for reports, especially realtime reports with repeated refresh intervals.

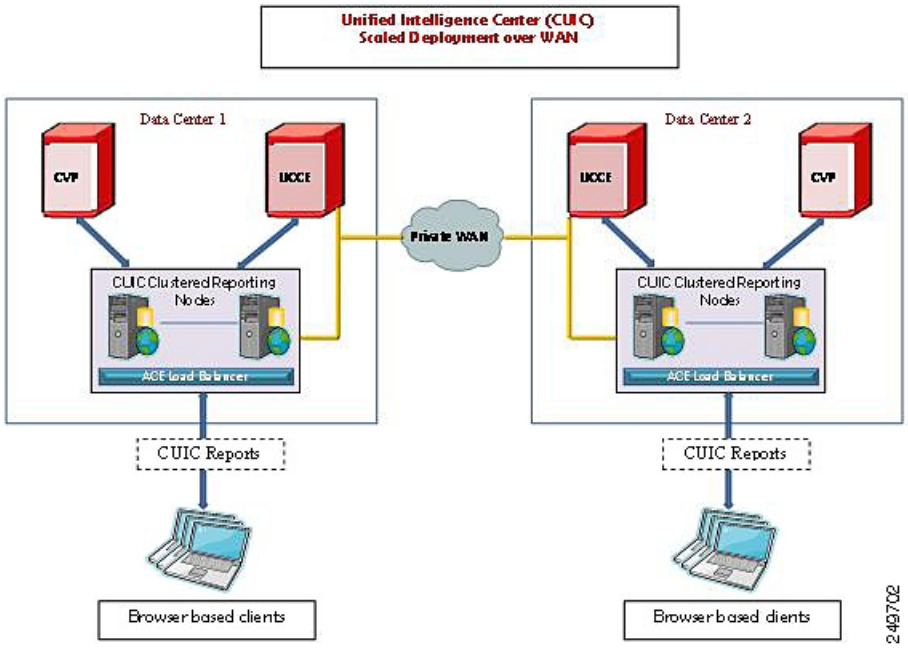
The exact response times and latencies are available in the Bandwidth and performance recommendations section of this document.

Network Design - Unified Intelligence Center deployments over WAN

Unified Intelligence Center can be deployed as the reporting solution with Unified CCE deployments that scale over WAN networks. In these deployments, Unified Intelligence Center is deployed locally with one section / data center of the scaled Unified CCE deployment and can access the local AW-HDS over the Local Area Network (LAN) as well as the remote AW-HDS which is deployed along with the remote section of the Unified CCE over the Wide Area Network (WAN).

Other data sources such as Unified CVP can be deployed along with Unified CCE. Firewall considerations when deploying over WAN are applicable to the data source servers and appropriate ports as described in the Firewall Integration notes should be opened, depending on the remote database configuration.

Figure 5: Network Design - Unified Intelligence Center deployments over WAN



Cisco Unified Customer Voice Portal deployment

Cisco Unified Customer Voice Portal is a VoiceXML-based solution that provides Interactive Voice Response (IVR) and IP switching functionality on Voice over IP (VoIP) networks. It can be deployed in a standalone mode or integrated as part of Unified Contact Center Enterprise (Unified CCE) solution.

Unified CVP Reporting Server as Unified Intelligence Center Data Source

The Unified CVP Reporting Server component of Unified CVP is used as the data source in a Unified Intelligence Center deployment that imports reports for the Unified CVP platform.

The Unified CVP Reporting component provides the basic reporting capabilities in a Unified CVP environment. This reporting server is a Windows 2008 server that hosts an IBM Informix Dynamic Server (IDS) database management system. It contains a published schema, which customers can use to create custom reports.

Network design - Unified Intelligence Center deployment with Unified CVP

The Unified CVP Reporting Server receives reporting data from the IVR Service, the SIP Service (if used), and the Unified CVP VXML Servers. The Reporting Server depends on the Call Server to receive call records.

For standalone Unified CVP VXML Server deployments, one Call Server is needed per Reporting Server. The Reporting Server must also be local to the Call Server(s) and Unified CVP VXML Server(s) that it is servicing. Deploying the Reporting Server at a remote location across the WAN is not supported by Unified CVP.

The Unified CVP deployment model shown in the diagram below is a not a strict requirement for Unified IC. Unified IC is independent of the components connected to the data source server it uses to fetch its data. Therefore the exact Unified CVP deployment can vary depending on the customer installation and on the required number of Reporting Servers available for the Unified IC reporting nodes to connect to.

Figure 6: Unified Intelligence Center Deployed with Unified CVP