Shared Component Installation

Configure an Identity Provider (IdP)

To support SSO for the contact center solution, configure an Identity Provider (IdP) that is compliant with the Security Assertion Markup Language 2.0 (SAML v2) Oasis standard. The IdP stores user profiles and provides authentication services to the contact center solution.

Note For a current list of supported Identity Provider products and versions, see the *Contact Center Enterprise Compatibility Matrix*.

This section provides sample configuration information for Microsoft AD FS.

Follow this sequence of tasks to configure the Identity Provider.

Sequence	Task
1	Install and Configure Active Directory Federation Services, on page 1
2	Set Authentication Type. See Authentication Types, on page 2.

Install and Configure Active Directory Federation Services

Follow Microsoft instructions and guidelines to install Microsoft Active Directory Federation Services (AD FS).

For example, see *Active Directory Federation Services Overview* at https://technet.microsoft.com/en-us/library/hh831502(v=ws.11).aspx

- For AD FS in Windows Server (AD FS 3.0), see the *AD FS Content Map* at http://aka.ms/adfscontentmap and *AD FS Technical Reference* at https://technet.microsoft.com/en-us/library/dn303410(v=ws.11).aspx.

Note Cisco IdS does not support AD FS Automatic Certificate Rollover. If the AD FS certificate gets rolled over, then re-establish the trust relationship between the IdS and AD FS.

Authentication Types

Cisco Identity Service supports form-based authentication of the Identity Provider.

For information on enabling form-based authentication in ADFS, see Microsoft documentation:

- For ADFS 3.0 see https://blogs.msdn.microsoft.com/josrod/2014/10/15/enabled-forms-based-authentication-in-adfs-3-0/

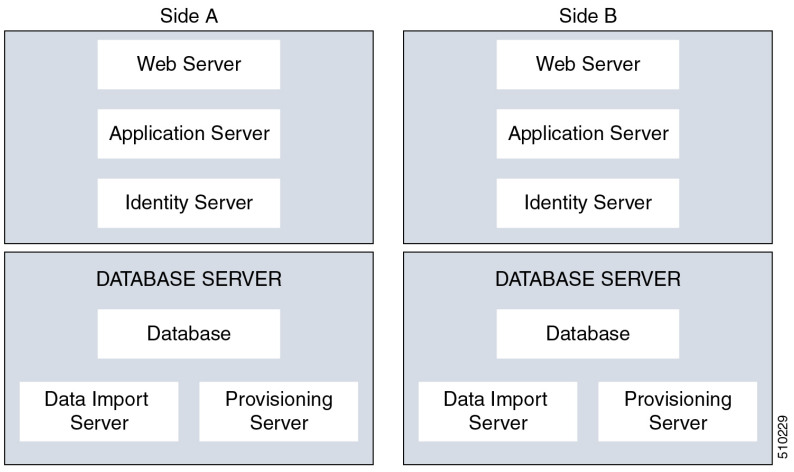
For Kerberos authentication to work, ensure to disable the form-based authentication.

- In AD FS on Windows Server , set the Authentication Type to Forms-based authentication (FBA). Refer to the following Microsoft TechNet article, http://social.technet.microsoft.com/wiki/contents/articles/1600.ad-fs-2-0-how-to-change-the-local-authentication-type.aspx
- In AD FS on Windows Server, set the Authentication Policy to Forms Authentication. Refer to the following Microsoft TechNet article, https://blogs.msdn.microsoft.com/josrod/2014/10/15/enabled-forms-based-authentication-in-adfs-3-0/

Install and Configure Unified CCDM

For Cisco HCS for Contact Center, implement a dual-tier (distributed) system, as shown in the following figure. This system keeps the Web/Application and Identity Components of the Unified CCDM separated from the database server components.

Figure 1: Unified CCDM Dual-Tier Deployment



For dual-sided systems, complete the installation of the Unified CCDM servers on side A, before you begin the installation on side B.

Related Topics

Deploy Unified CCDM Database Server, on page 8
Deploy Unified CCDM Web Server, on page 14
Configure Unified CCDM, on page 16

Common Procedures for Deploying Unified CCDM Servers

Configure Windows

Complete the following procedure to configure Windows on all the Unified CCDM servers.

Related Topics

Configure Windows Feature Requirements, on page 3
Turn off FIPS Compliance, on page 4
Disable UAC, on page 4

Configure Windows Feature Requirements

Procedure

Step 1 Select **Server Manager** > **Manage** > **Add Roles and Features**.

Step 2 On the **Before you begin** page, click **Next**.

Step 3 On the **Select Installation Type** page, select the **Role-based or feature-based installation** option, then click **Next**.

Step 4 On the **Select destination server** page, select the **Select a server from the server pool** option, then click **Next**.

Step 5 On the **Select server roles** page, check the following check boxes:

- Application Server
- Select **File and Storage Services** > **File and iSCSI Services** and check the **File Server** check-box
- Web Server (IIS)

Step 6 Click **Next**.

Step 7 On the **Select features** page, check the **.Net Framework 4.5 Features** check box, then click **Next**.

Step 8 On the **Application server** page, click **Next**.

Step 9 On the **Select role services** page, check the following check boxes:

- .NET Framework 4.5
- COM+ Network Access
- Incoming Network Transactions
- Outgoing Networking Transactions

- TCP Port Sharing
- Web Server (IIS) Support
- Message Queuing Activation
- Named Pipes Activation
- TCP Activation

Step 10 Click **Next**.

Step 11 On the **Web server roles (IIS)** page, click **Next**.

Step 12 On the **Select role services** page, select the required role services, then click **Next**.

Step 13 Click **Specify an alternate source path**, then enter `\sources\sxs` this is available at Microsoft Windows Installer DVD or ISO. Click **OK**.

Step 14 Click **Install**.

Step 15 After installation, restart the server.

Turn off FIPS Compliance

Procedure

Step 1 Open the **Local Security Policy** application.

Step 2 Open the **Local Policies** folder, and then double-click **Security Options** to view the list of policies.

Step 3 Ensure that you disable the **System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing** policy.

Disable UAC

User Account Control (UAC) protects the operating system from malicious programs. When enabled, UAC may cause issues with the software used to install Unified CCDM. Disable UAC on all servers before you install the Unified CCDM. Complete the following procedure to disable UAC.

Procedure

Step 1 Select **Start** > **Control Panel** > **System and Security** > **Action Center** > **Change User Account Control settings**.

Step 2 Set **UAC** to **Never Notify**.

Step 3 Click **OK**.

Step 4 Restart your machine to commit to the new UAC settings.

You have now disabled UAC and are ready to install the Unified CCDM.

Note Re-enable UAC after you complete the Unified CCDM installation.

Associate Unified CCDM Component Servers with Service Provider AD Domain

Complete the following procedure to associate the Unified CCDM Component servers with Service Provider AD Domain.

Procedure

Step 1 Sign in to the machine using a local administrator account.
Step 2 Select **Start** > **Administrative Tools** > **Server Manager**.
Step 3 Select **Local Server** in the left panel and click **WORKGROUP** to change system properties.
Step 4 In the **Computer Name** tab, click **Change**.
Step 5 Select the **Domain** option to change the member from **Workgroup** to **Domain**.
Step 6 Enter the fully qualified Service Provider domain name and click **OK**.
Step 7 In the **Windows Security** pop-up window, validate the domain credentials and click **OK**.
Step 8 After successful authentication, click **OK**.
Step 9 Reboot the server and sign in with domain credentials.

Configure Secondary Drive

DO THIS FOR Virtual Machines that require an additional hard drive to archive data.

Procedure

Step 1 Open **Computer Management**.
Step 2 Expand **Storage** in the left pane, click **Disk Management**.
Step 3 Right-click **Disk 1** and choose **Online**.
Step 4 Right-click **Disk 1** and choose **Initialize Disk**.
Step 5 In Initialize Disk pop up window, under Select disks. Check **Disk 1** and choose **MBR (Master Boot Record)** under **Use the following partition style for the selected disks** pane. Click **OK**.
Step 6 Create a new disk partition as follows: right-click the disk you just initialized, choose **New Simple Volume**, and run the wizard.

Install the Diagnostic Framework for System CLI

Procedure

Step 1 To install the Diagnostic Framework component, start the Unified CCDM Installer, click **Support Tools** and select **Diagnostic Framework**.

The **Domain Manager: Diagnostic Framework Install Shield Wizard** window displays.

Step 2 Click **Next** to go through each window in turn.

Step 3 Accept the license agreement, then click **Next**.

Step 4 In the **Certificate** window, select the type of certificate installed with the Diagnostic Framework.

- **Self Signed:** A new certificate will be generated by the installer. This type of certificate should be used only for lab or test deployments.
- **Trusted Certificate:** An existing certificate, issued by a valid certificate server, will be associated at a later date. This option should be used for production deployments.

Step 5 Click **Next**.

Step 6 In the **wsmadmin Password Information** window, enter and confirm the password for the **wsmadmin** user, which is created to access the Unified System CLI tool. Click **Next**.

Step 7 In the **Ready to Install the Program** window, click **Install**.

Step 8 After installation, click **Finish**.

Step 9 Unmount the ISO image.

Configure SNMP Traps

Simple Network Management Protocol (SNMP) traps may be raised from Unified CCDM by configuring Windows to send selected events to an SNMP monitor. Configure Windows using a Windows utility called evntwin.exe. This utility converts events written to the Windows Event log into SNMP traps that are raised and forwarded by the Windows SNMP service to an SNMP management tool.

To configure SNMP traps for use with Unified CCDM, follow these steps:

- Enable Windows SNMP Feature, on page 6
- Configure SNMP Service for Trap Forwarding, on page 7
- Configure Windows Events to Forward to SNMP, on page 7

Enable Windows SNMP Feature

Enabling the SNMP feature in Windows is required to configure the Windows event forwarding to SNMP. In the Unified CCDM servers, enable the SNMP feature as follows:

Procedure

Step 1 Select **Server Manager** > **Manage** > **Add Roles and Features**.

Step 2 On the **Before you begin** page, click **Next**.

Step 3 On the **Select Installation Type** page, select the **Role-based or feature-based installation** option, then click **Next**.

Step 4 On the **Select destination server** page, select the **Select a server from the server pool** option, then click **Next**.

Step 5 On the **Select server roles** page, click **Next** .

Step 6 On the **Select features** page, check the **SNMP Service** . Check the **SNMP WMI Provider** check box, then click **Next**.

Step 7 Click **Install** to complete the SNMP deployment.

Step 8 Close the **Server Manager** application.

Configure SNMP Service for Trap Forwarding

Configure the SNMP service to forward traps to the management tool, which is used to report and alert.

Procedure

Step 1 In the MMC console, select **Files > Add/Remove Snap-in...**

Step 2 From the **Available Snap-ins** list, select **Services** and click **Add**.

Step 3 In the **Services** dialog box, select **Local computer** and click **Finish**.

Step 4 Click **OK**.
The **Services(Local)** node will be added to the **Console Root** node.

Step 5 Select **Services(Local)** and in the **Services(Local)** tab that is displayed, right-click **SNMP Services** and then select **Properties**.
The **SNMP Service Properties** dialog box is displayed.

Step 6 In the **Traps** tab, in the **Community Name** field, enter **`public`**, then click **Add to list**.

Step 7 Click **Add**.

Step 8 In the **SNMP Service Configuration** dialog box, enter the hostname or IP address of the system, which receives the trap information—The server hosting the management agents or reporting and alerting tools. Click **Add** to add the trap destination.

Step 9 If there is more than one system, it is required to receive the trap information, configure SNMP services for the trap forwarding on all systems.

Step 10 Click **OK**.

Configure Windows Events to Forward to SNMP

Finally, use the `evntwin.exe` tool to configure the Windows events to be forwarded as SNMP traps. Any event that is raised in the Windows Event Log may be configured to generate an SNMP trap.

Procedure

Step 1 In the **Run** command, enter **`evntwin.exe`**.

Step 2 Select **Custom**, then click **Edit**.

Step 3 In the **Event Sources** list, expand the **Application** source to see the available Unified CCDM events. The Unified CCDM events and their uses are listed in the following table.

Event Source	Description
Unified CCDM Application Server Monitoring	The core monitoring service for the application server—This posts connection change events to the event log.
Unified CCDM Data Import Server Monitoring	The data import service used for importing data from CCE etc.
Unified CCDM Partition Table Manager Monitoring	Connection monitoring for the partition manager service, which creates partitioning tables in the database.
Unified CCDM Provisioning Server Monitoring	Service used for provisioning changes on remote equipment, for example, CCE etc.
Unified CCDM Partition Table Manager	Core application service to create partitioning tables in the database.
X_ANALYTICALDATA, X_HIERARCHY, X_IMPORTER etc.	Individual services configured in Windows for Unified CCDM—These can be used for subscribing to standard service events. For example, start/stop events etc.

Step 4 Configure an event source for generating SNMP traps, select the event source, wait a few moments, then click **Add** once it is enabled. In the **Properties** window, specify the required trap properties, then click **OK**.

Step 5 After setting the required SNMP traps, click **Apply**.

Deploy Unified CCDM Database Server

Follow the procedure to install the Unified CCDM database server on side A and side B.

Before you begin

Download the OVA files. Use `UCCE_12.5_Win2016_vmv13_v1.0` to deploy the Unified CCDM Database server.

Create a naming convention for the Unified CCDM Web server, as the hostname of the Unified CCDM Web server is required to install and configure the Unified CCDM Database server.

Note Do not use hyphens in the server name.

Procedure

Step 1 Create Virtual Machine for the Unified CCDM Database server.

Step 2 Install Microsoft Windows server.

Step 3 Configure Windows.

Step 4 Associate Unified CCDM component servers with the service provider AD domain.

Step 5 Configure secondary drive.

Step 6 Install Microsoft SQL server.

Step 7 Configure Distributed Transaction Coordinator (DTC).

Step 8 Configure Windows Server Firewall for SQL Server.

Step 9 Install SQL Server Management Studio.

Step 10 Install the Unified CCDM Database server.

Note Before installing the Unified CCDM Database server on side B, install the Unified CCDM Web server on side A.

Step 11 Add SQL sign-in for the Unified CCDM Web server.

Step 12 Install the Unified CCDM Portal Database.

Step 13 Install the diagnostic framework for the system CLI.

Step 14 Configure SNMP traps.

Note
- Back up the SQL Server databases regularly and truncate the transaction logs to prevent them from becoming excessively large.
- Schedule backups when there is no user activity.

Related Topics

Create Virtual Machines
Configure Windows , on page 3
Associate Unified CCDM Component Servers with Service Provider AD Domain, on page 5
Configure Secondary Drive, on page 5
Install Microsoft SQL Server
Configure DTC, on page 10
Install Microsoft Windows Server
Install Unified CCDM Database Server, on page 10
Add SQL Login for Unified CCDM Web Server, on page 13
Install Unified CCDM Portal Database, on page 11
Install the Diagnostic Framework for System CLI , on page 6
Configure SNMP Traps, on page 6

Procedures for Deploying Unified CCDM Data Server

Configure DTC

Procedure

Step 1 Open the **Component Services** application.

Step 2 Expand **Component Services** > **Computers** > **My Computer** > **Distributed Transaction Coordinator**.

Step 3 Right click **Local DTC** and select **Properties**.

Step 4 Select the **Security** tab.

Step 5 In the **Security** tab, configure:

a) Ensure that **Security Settings** has **Network DTC Access** checked, and **Transaction Manager Communication** has **Allow Inbound** and **Allow Outbound** checked.

b) Set the **Transaction Manager Communication** to **No Authentication Required**.

c) Click **OK**.

Configure Windows Server Firewall for SQL Server

Procedure

Step 1 Open the **Server Manager** application.

Step 2 Select **Tools** > **Windows Firewall with Advanced Security** and click **Inbound Rules**.

Step 3 In the **Actions** pane, click **New Rule**.

Step 4 Select **Port** as the rule type and click **Next**.

Step 5 Select **TCP** as the protocol and enter `1433` as the specific local ports, then **Next**.

Step 6 Select `Allow the connection`. Click **Next**.

Step 7 Select the profile options that are appropriate to your deployment and click **Next**.

Step 8 Enter a name for the rule and click **Finish** to create the rule.

Install Unified CCDM Database Server

Procedure

Step 1 Mount the Unified CCDM ISO image to the virtual machine.

Step 2 Double-click the ISO image.

Step 3 In the **Cisco Unified CCDM Installation** window, from the **Server Installation** list, select the **Database server** component.
System runs the prerequisite check.

Step 4 Ensure all the prerequisites are checked. After the prerequisite check, click **Install**.

Step 5 In the **Domain Manager: Database Components - InstallShield wizard** window, click **Next**.

Step 6 Accept the license agreement, then click **Next**.

Step 7 In the **Cryptography Configuration** window, enter and confirm the passphrase using 6 to 35 characters, then click **Next**.

This passphrase encrypts system passwords and must be identical across all servers within a cluster. Enter the same password in the **Confirm Passphrase** field.

Step 8 In the **Configure Database** window, configure:

a) In the **Catalog** field, enter the name of the Unified CCDM database catalog. The default catalog name is Portal.

b) In the **Authentication** field, select the authentication mode to connect to the Unified CCDM database.

- **Windows Authentication** - This is the default authentication mode.
- **SQL Authentication** - Select this option only if you are using a database server on a different domain. For this option, enter the SQL Server Username and Password.

c) Click **Next**.

Step 9 In the **Destination Folder** window, accept the default location to install the database server, then click **Next**.

Step 10 In the **Ready to Install Program** window, click **Install**.

Step 11 After the installation, uncheck the **Launch Database Management Utility** check box. You can manually set up the database, later.

Step 12 Click **Finish**.

Note Repeat the steps to set up the Unified CCDM Database server on Side B.

Install Unified CCDM Portal Database

Complete the following procedure to set up the database server:

Procedure

Step 1 Open **Database Installer**.

Step 2 On the **Database Setup** page, click **Next**.

Step 3 From the **Database setup** page, select **Install a new database**.

Step 4 Click **Next**.

Step 5 On the **SQL Server Connection Details** page, enter:

a) In the **Server Name** field, enter the name of the Unified CCDM database server. The default server name is Local.

b) From the **Database Name** drop-down list, enter the name of the Unified CCDM database catalog. The default database name is Portal.

c) In the **Authentication** field, select the authentication mode to connect to the Unified CCDM database.

- **Windows Authentication** - This is the default authentication mode.

- **SQL Authentication** - Select this option only if you are using a database server on a different domain. For this option, enter the SQL Server Username and Password.

d) Click **Next**.

Step 6 Click **Test Connection** to ensure the connection is established to the SQL Server, then click **OK**.

Step 7 Click **Next**.

Step 8 In the **Optimize System Databases** window, then click **Next**.

Step 9 For installation of the portal database server on Side B, check the **Replicated Configuration** check box.

a) In the **Setup Replication** window, select **Replicated Configuration** and enter:

- In the **Share Name** field, enter the name. The default share name is **ReplData Folder**.
- In the **Folder Path** field, enter the path. The default path is `C:\Program Files\Microsoft SQL Server\MSSQL13.MSSQLSERVER\MSSQL\repldata`.

b) Click **Next**.

Step 10 In the **Configure the Location of Data Files** window, for non-customized installation of SQL Server, accept the defaults and click **Next**. For the custom installation of SQL Server, configure the data files:

a) Check the file group or file groups check box which you want to change.
b) Browse the file group or file groups location.
c) Enter the size for the selected file group or file groups.

Note Uncheck the **Set Initial Size to Max Size** check box to specify the initial size.

d) Click **Update**.
e) Click **Default** to restore all file groups to default settings.
f) Click **Next**.

Step 11 In the **Configure Local Administrator Details** window. Enter the password and confirm, then click **Next**.

Note You cannot retrieve or reset the password.

Step 12 In the **Configure SQL Server Agent Service Identity** window, configure:

a) In the **Account Type** field, enter the user account type. For a distributed installation, this must be a domain user account.
b) In the **User Name** field, enter the user name. The default username is **sql_agent_user**.
c) Optional, for a single sided single server system, check the **Automatically create the user account if missing** check box to automatically create a local user.
d) Enter and confirm the password.

Ensure that the password meets the system's complexity requirements.

e) Click **Next**.

- **User Name** - Enter the name of the user account. Default value is sql_agent_user. If you selected the Account Type as Domain, enter the domain user account name instead. If you have specified a domain user, you will need to prefix the user name with the domain name, followed by a backslash.
-

Step 13 In the **Configure the Location of the Identity Database Data Files** window, check all the file group check boxes to set the location, then click **Next**.

Step 14 In Ready to Install the database page, Click **Next**.

Step 15 In the Web Application Servers Network Service Configuration window, configure the following:

- **Domain** - The network domain in which the web server is on, for example ACMEDOM.
- **Machine Name** - The name of the machine, for example WEBSERVERA.
- Click **Add** to add each Web Server to the list.
- When all Web Servers have been added, click **Next**.

Step 16 In the **Ready to install the Database** window, click **Next**.

Step 17 Click **Close**.

Step 18 Start the following Unified CCDM services under the Windows services:

- CCDM: Data Import Server
- CCDM: Partition Table Manager
- CCDM: Provisioning Server

Step 19 Repeat the steps to set up database for Unified CCDM Data Server on Side B.

Add SQL Login for Unified CCDM Web Server

In distributed deployment, create SQL logins to establish connection between the Unified CCDM web server and data server.

Procedure

Step 1 Log in to the Cisco Unified CCDM database server using domain administrator credentials.

Step 2 Open the **SQL Server Management Studio** window.

Step 3 Select **Security** > **Logins**.

Step 4 Right-click the **Logins** option and click **New Logins**.

Step 5 To add SQL logins for Side A and Side B Unified CCDM web servers, configure the following settings on the **General** page:

a) In the **Login Name** field, enter the machine name. The default name is **<DOMAIN>\<Unified CCDM-WEB SERVER HOSTNAME>$**.
b) Select the **Windows Authentication** unless you are connecting to a server on another domain.
c) Set the **Default language** to **English**.

Step 6 On the **Server Roles** page, check the **public** and **sysadmin** check boxes.

Step 7 On the **User Mapping** page, configure the settings:

a) From the **Users Mapped to this Login** options, check the **Portal** and **IdSvr3Config** check boxes.
b) From the **Database role membership for Portal** options, check the **portalapp_role**, **portalreporting_role**, **portalrs_role**, and **public** check boxes to grant the portal login credentials.
c) From the **Database role membership for IdSvr3Config** options, check the **db_owner** and **public** check boxes.

Step 8 Click **OK**.

Step 9 Repeat the steps to add SQL login for the Unified CCDM Web Servers for Side B.

Deploy Unified CCDM Web Server

Follow the procedure to install the Unified CCDM Web server on side A and side B.

Before you begin

Download the OVA files. Use `UCCE_12.5_Win2016_vmv13_v1.0` to deploy the Unified CCDM Web server.

Note Do not use hyphens in the server name.

Procedure

Step 1 Create Virtual Machine for the Unified CCDM Web server.

Step 2 Install Microsoft Windows Server.

Step 3 Configure Windows.

Step 4 Associate Unified CCDM component servers to respective service provider AD domain.

Step 5 Configure the secondary drive.

Step 6 Install the Unified CCDM Web server.

Note Before installing Unified CCDM Web server on Side B, install the Unified CCDM Data server on Side B.

Step 7 Install the Unified CCDM Identity server on the Web server.

Note Before installing Unified CCDM Identity Server, install the Unified CCDM Web Server and Data server.

Step 8 Install the diagnostic framework for the system CLI.

Step 9 Configure SNMP traps.

Related Topics

Create Virtual Machines
Install Microsoft Windows Server
Configure Windows , on page 3
Associate Unified CCDM Component Servers with Service Provider AD Domain, on page 5
Configure Secondary Drive, on page 5
Install Unified CCDM Web Server, on page 15
Install CCDM Identity Server on Web Server, on page 16
Install the Diagnostic Framework for System CLI , on page 6
Configure SNMP Traps, on page 6

Install Unified CCDM Web Server

Complete the following procedure to install the App or Web server component:

Before you begin

Complete the Unified CCDM Data server installation.

Procedure

Step 1 Mount the Unified CCDM ISO image to the virtual machine.

Step 2 Double-click the ISO image.

Step 3 In the **Cisco Unified CCDM Installation** window, select **App/Web Server** and wait until it completes all prerequisite checks, then click **Install**.

Step 4 In the **Domain Manager: Application Server Components - IntsallShield Wizard** window, click **Next**.

Step 5 Accept the license agreement, then click **Next**.

Step 6 In the **Cryptography Configuration** window, enter and confirm the passphrase using 6 to 35 characters, then click **Next**.

This passphrase encrypts system passwords and must be identical across all servers within a cluster. Enter the same password in the **Confirm Passphrase** field.

Step 7 In the **Destination Folder** field, retain the default location, then click **Next**.

Step 8 In the **Configure Database** window:

a) In the **SQLServer Name** field, enter the Side A database server hostname. The default option is valid only for the All-in-One deployment type.

Note When you install the app or web server on Side B, enter the Side B database server hostname.

b) From the **Catalog Name** list, select the name that is used while installing the Database Server component. The default value is Portal.

c) In the **Connect Using** pane, select the appropriate sign-in option:

- **Windows authentication** - This is a default option.
- **SQL Server authentication** - Select this option only if you are using a database catalog on a different domain.

Note For this option, enter the SQL Server Username and Password.

Step 9 In the **Ready to Install the Program** window, click **Install**. When the installation completes, click **Finish**.

Step 10 Click **Yes** to restart your system for the changes to take effect.

Note In a dual-sided Unified CCDM deployment, repeat this installation for side B replication. Before installing side B, complete the side A installation for all the components.

Install CCDM Identity Server on Web Server

Complete the following procedure to install the Identity server on CCDM App or Web Server.

Procedure

Step 1 In the **Cisco Unified CCDM Installation** window, select **Identity Server** and wait for the prerequisite checks, click **Install**.

Step 2 In the **Identity Server setup Wizard** window, click **Next**.

Step 3 Accept the license agreement, then click **Next**.

Step 4 In the **Destination Folder** field, retain the default location for the Identity Server Installation, then click **Next**.

Step 5 Click **Finish**.

Configure Unified CCDM

Unified CCDM cluster configuration is to establish the communications channel between different Unified CCDM components. This configuration helps each Unified CCDM component to connect to the appropriate channels during failure.

Procedure

Step 1 Launch the Integrated Configuration Environment.

Step 2 Set up Unified CCDM Servers.

Step 3 Configure Replication.

Step 4 Obtain Digital Certificates.

Step 5 Log into Unified CCDM.

Related Topics

Obtain Digital Certificate , on page 19
Login to Unified CCDM, on page 22

Procedures for Configuring Unified CCDM

Launch the Integrated Configuration Environment

Complete the following procedure to launch the Integrated Configuration Environment (ICE) in the Unified CCDM data server.

Procedure

Step 1 Open the **Integrated Configuration Environment** application.

Step 2 On the **Database Connection** page, enter:

a) The **Server Name** field default value is **current machine**.
b) In the **Database Name** field, accept the default value (Portal).
c) In the **Authentication** field, accept the default value.

Step 3 Click **Test** to test the connection to the database server for the first time. If the test fails, check the **Database Connection** settings.

Step 4 Click **OK** to open the ICE.

When ICE starts, the Cluster Configuration tool is the default tool. You can use the **Tool** drop-down list in the toolbar to switch to other ICE tools.

Set up Unified CCDM Servers

Complete the following procedure to set up Unified CCDM servers.

Procedure

Step 1 Open the **Integrated Configuration Environment** application.

Step 2 In the **Select Deployment Type** window, select the **Two Tier** option, then click **Next**.

Step 3 In the **Configure Redundancy** window, select **Dual-Sided system**, then click **Next**.

Step 4 For the two-tier deployment, enter the number of web servers for each side. For dual-sided configurations, configure the equal number of app or web servers for each side of the system, then click **Next**.

Step 5 In the **Configure Servers** window, enter:

a) In the **Primary Server** pane, enter the name and IP address of the primary database server.
b) In the **Secondary Server** pane, enter the name and IP address of the secondary database server, then click **Next**.

Step 6 In the **Configure Application Servers (1)** window, enter:

a) In the **Primary Server** pane, enter the name, IP address, and FQDN of the primary web server.
b) In the **Secondary Server** pane, enter the name, IP address, and FQDN of the secondary web server, then click **Next**.

Note Enter the FQDN in lowercase.

Step 7 In the **Configure Database Connection** window, enter:

a) In the **Catalog** field, enter the name of the Unified CCDM Relational database. The default catalog name is Portal.
b) In the **Authentication** field, select the authentication mode to connect to the Unified CCDM relational database.

- **Windows Authentication** - This is the default authentication mode.
- **SQL Authentication** - Select this option only if you are using a database server on a different domain. Enter the SQL Server username and password.

Step 8 Click **Next**.

Step 9 Optional, click **Print** to print the deployment summary.

Step 10 Verify deployment details, then click **Next**.

Displays a confirmation message.

Step 11 Click **Exit**.

Step 12 Click **Save**.

Configure Replication

Procedure

Step 1 Launch the Integrated Configuration Environment for Unified CCDM Database Server.

Step 2 From the **Tool** drop-down list, select **Replication Manager**.

The dual-sided Unified CCDM deployment, Replication Manager helps to replicate SQL Servers between Unified CCDM databases.

Step 3 Set up SQL Server replication for the Unified CCDM databases.

Step 4 Monitor the general health of SQL Server replication between Unified CCDM databases.

Setup

Procedure

Step 1 Click the **Setup** tab to see the replication setup details and configure or disable replication.

Step 2 In the **CCDM Database Server Properties** pane, check the **Identity Database Replication Enabled** check-box.

Step 3 In the **Distributor Properties** pane, retain the default values.

Note The distributor is created on the Unified CCDM Database Subscriber Server.

Step 4 Click **Configure** to start the replication process.

Note After replication, all the options are dimmed except **Disable**.

Monitor

The Monitor option monitors the general health of SQL Server Replication between Unified CCDM databases. The monitor can also start or stop various replication agents. This option shows the agent details only if SQL Server Replication is currently configured.

Procedure

Step 1 Click the **Monitor** tab.

Step 2 After Unified CCDM replication, top-left pane shows a list of **Publishers** and their publications.

Step 3 Select the **Publication** to see **Subscriptions** or **Agents** details.
The **Agents** tab lists **Snapshot Agent**, **Log Reader Agent**, and **Queue Reader Agent** that are available for the selected publication.

Step 4 In the **Sessions in the 24 Hours** pane, you can see the session details of the subscriptions or agents.

Step 5 In the **Actions in selected session** pane, shows the actions during the selected session and also provides the information about the agent's failure.

Note You can start or stop the replication agents, select the **Agents** tab, right-click on the status of the agent and select **Start** or **Stop**.

Configuring SSL for Unified CCDM

Follow these steps, to configure SSL for the Unified CCDM web application:

Sequence	Task
1	Obtain Digital Certificate , on page 19
2	Export the Certificate in PFX Format , on page 21
3	Configure SSL for the Web Application, on page 21

Obtain Digital Certificate

You can obtain a digital certificate in one of the following ways:

- purchase from an external certificate authority, for public use
- generate internally, for secure use within the issuing organization

Note Use a digital certificate with a key length of at least 2048 bits. Some recent browsers may reject certificates with shorted key lengths.

If you do not already have a suitable certificate, you can request or generate one as follows:

1. Open **Internet Information Services (IIS) Manager** and select the web server in the folder hierarchy.
2. Select the **Features View** tab, and in the IIS group, click **Server Certificates**.
3. Create a internal or external digital certificate.

Note The Common Name is the application domain name. Ensure that you enter the Common Name exactly as it is specified. The Common Name is derived as follows:

- For deployments with a registered address (including load-balanced deployments): enter the registered address, starting from www. For example, if your registered address is `https://www.Unified CCDM.com`, enter `www.Unified CCDM.com`.
- For deployments with a single internal address (including load-balanced deployments): enter the part of the address after https://. For example, if your internal address is `https://UnifiedCCDM.intranet.local`, enter `Unified CCDM.intranet.local`
- For deployments where the web servers will be accessed directly with no load-balancing: enter the fully qualified domain name of the server being configured. For example, `webserver1.mydomain.com`.

Related Topics

Request an External Certificate , on page 20
Generate an Internal Certificate, on page 20

Request an External Certificate

Procedure

Step 1 In the **Actions** pane, select **Create Certificate Request** to display the **Request Certificate** dialog box.

Step 2 In the **Common Name** field, enter the application domain name as defined above.

Step 3 Complete the other fields as appropriate, and click **Next**.

Step 4 In the **Cryptographic Service Provider Properties** dialog box leave the default **Cryptographic Service Provider**.

Step 5 Select a bit length of at least 2048. Click **Next**.

Step 6 Specify a file name for the certificate, and then click **Finish**.

Step 7 When you receive the certificate from the certificate authority, repeat step 1 and step 2 above to show the Server Certificates and Action panes, and in the **Action** pane, select **Complete Certificate Request**.

Step 8 Enter the file name of the certificate, and a friendly name of your choice and click **OK**.

Generate an Internal Certificate

Procedure

Step 1 Select **Create Domain Certificate** in the **Actions** pane to display the **Distinguished Name Properties** dialog box.

Step 2 In the **Common Name** field, enter the application domain name as defined above.

Step 3 Complete the other fields as appropriate, and click **Next**.

Step 4 In the **Online Certification Authority** dialog box specify the **Online Authority** and a friendly name.

Step 5 Click **Finish**.

Export the Certificate in PFX Format

Procedure

Step 1 In IIS Manager, select the **Features View** tab, and in the IIS group, click on **Server Certificates**.

Step 2 Select the certificate in the **Actions** pane and click **Export**.

Step 3 In the **Export Certificate** dialog box, do the following:

a) Enter a file name in the **Export to** field or click **Browse** to select the folder in which you want the exported certificate stored.

b) If you want to protect the exported certificate with a password, enter a password in the **Password** field.

c) Click **OK**.

The certificate is exported as a PFX file.

Configure SSL for the Web Application

Procedure

Step 1 In a web browser, navigate to `https://<web-address>/SSLConfig`, where `<web-address>` is the web address of your Unified CCDM deployment.

Example:

For example, if your web address is `https://Unified CCDM.intranet.local`, enter `https://UnifiedCCDM.intranet.local/SSLConfig`.

Step 2 In the **Authentication** dialog box, enter the user name and password of a Windows domain user with administrator rights on the domain.

Step 3 On the **SSL Certificate Configuration** page, click **Choose File** and browse to the PFX file you created in the previous section. Click **Open** to select the file.

Step 4 If the PFX file is password-protected, enter the password in **Password** field. If not, leave **Password** field empty.

Step 5 Click **Upload** to start the SSL configuration.

When the SSL configuration is complete, the following message is shown:

```
SSL Configuration Complete.
```

Login to Unified CCDM

Procedure

Step 1 To access the Unified CCDM portal, enter *https://<webserver FQDN>/Portal* in browser.
This displays the **Unified CCDM** web page.

Step 2 To sign in to a new system, use **`Administrator`**' as the username and enter the password you entered when you installed Unified CCDM.

Related Topics

Procedures for Configuring Unified CCDM, on page 16

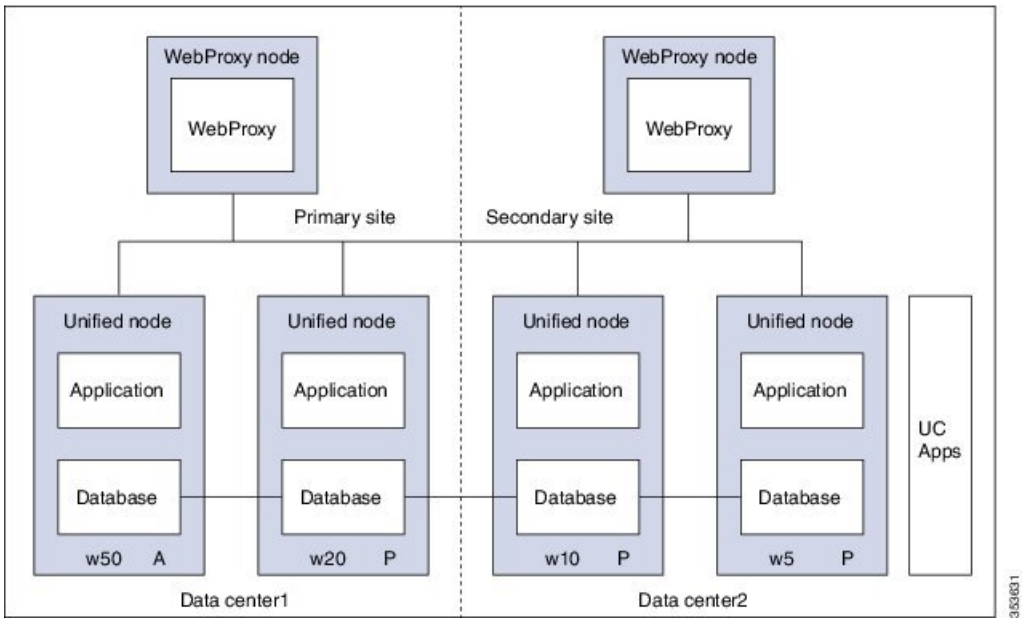
Install and Configure Unified Communication Domain Manager

Cisco HCS for Contact Center, implements the VOS-based—Unified Communication Domain Manager multinode deployment. In this deployment, install four (or more) Unified instances and two (or more) WebProxy instances. These instances are clustered and split over two different geographical locations to provide high availability and disaster recovery.

- A WebProxy role installs only the front-end web server together with an ability to distribute load among multiple middleware nodes.
- A Unified node comprises of application and database roles on a single node.
- WebProxy and Unified nodes can be contained in separate firewalled networks.
- Database synchronization takes places between all database roles, therefore it provides disaster recovery and high availability.
- All nodes in the cluster are active.

Following figure shows the multinode implementation of the Unified Communication Domain Manager:

Figure 2: Graphical Representation of Geo-Redundant Cluster



The functional roles of each node are:

- **WebProxy:** It does load balancing across multiple application roles.
- **Application:** It is a transactional business logic.
- **Database:** It is a persistent data store.

Related Topics

Multinode Installation, on page 23

Multinode Cluster Hardware Specifications

For information about implementing virtual machines within the HCS solution, see Cisco HCS Virtual Machine Requirements.

Multinode Installation

Install a multinode consisting of either four or six Unified instances of and two WebProxy instances.

- A WebProxy node installs only the front-end web server, with the ability to distribute load among multiple middleware nodes.
- A Unified node consists of the Application and Database roles on one node. For geo-redundancy, there are two or four Unified nodes in the Primary Site and two Unified nodes in the Disaster Recovery (DR) Site in active-active setup.

  Cisco Hosted Collaboration Solution supports three configurations of Cisco Unified Communications Domain Manager 10.x+. These configurations provide the service provider with options for scale and Geo-Redundancy support.

Configuration	Number of Unified Nodes	Number of Proxy Nodes	Supported Scale (# Subscribers)	Geo-Redundancy (Y/N)
Standalone CUCDM	1	0	20,000	NA
Multi-Node CUCDM (across Data Centers)	4	2	200,000	Yes (Active-Active)
	6	2	200,000	Yes (Active-Passive)
Multi-Node CUCDM (One Data Center)	4	2	200,000	No

Note

- For geo-redundant Multinode Cluster deployment with six Unified Nodes, there are four Unified nodes in the Primary Site and two Unified nodes in the Disaster Recovery (DR) Site in active-standby setup.
- Installation of the template and upgrade takes approximately two hours. You can follow the progress on the GUI transaction list.

Before you begin

If you received the product on DVD, extract the Unified CDM ISO to get the platform-install ISO and the Unified CDM template file.

If you selected electronic software delivery, use the link that you received to download the product ISO file. Mount the Unified CDM ISO to get the platform-install ISO and the Unified CDM template file.

Optionally, download or extract language pack template files to support languages other than English.

Procedure

Step 1 Install the WebProxy instances.

For each WebProxy instance, create a new VM using the platform-install OVA. Use the instructions shown in Create Virtual Machines from OVA Files, on page 27. For role, select **(3) WebProxy**. Specify the appropriate data center (Primary/DR site) for each WebProxy instance.

Step 2 Install the Unified instances.

For each Unified instance, create a new VM using the platform-install OVA. Use the instructions shown in Create Virtual Machines from OVA Files, on page 27. For role, select **(2) Unified**. Specify the appropriate data center (Primary/DR Site) for each Unified instance.

The following Unified nodes are required in the cluster:

- One Unified node as the Primary node at the Primary site
- One Unified node as the Secondary node at the Primary site

Note For six Unified Node Multi Cluster deployment there are three Unified node as the Secondary node at the Primary site

- Two Unified nodes as the Secondary nodes at the DR site

Step 3 Prepare each node to be added to the cluster. On each WebProxy and Unified node, except for the primary Unified node, run the **cluster prepnode** command.

Step 4 Add nodes to the cluster.

a) Log in to the primary Unified node.
b) Add the Unified and WebProxy nodes to the cluster with the **cluster add <ip_addr>** command.
c) Verify the list of nodes in the cluster with the **cluster list** command.

Step 5 Add the network domain.

a) Configure the domain with the **cluster run all network domain <domain_name>** command.
b) Verify the configured network domain with the **cluster run all network domain** command.
Each node shows the domain that you configured.
c) Verify the DNS configuration with the **cluster run all network dns** command.
Each node responds with the DNS server address.
d) Attempt to contact each node in the cluster with the **cluster run all diag ping <hostname>** command.
e) (Optional) Shut down all the nodes with the **cluster run all system shutdown** command. Take a snapshot of each node. Restart each node.

Step 6 Determine whether security updates are required by running the **cluster run all security check** command on each cluster.

Step 7 If at least one update is required for any cluster, run the **cluster run all security update** command on every cluster.

Step 8 Install VMware tools on each node.

a) In vSphere, right-click the name of the appropriate VM.
b) Select **Guest** > **Install/Upgrade VMware Tools**.

If you are prompted to disconnect the mounted CD-ROM, click **Yes**.

c) Log in to each node and run the **app install vmware** command.

Step 9 Configure the cluster.

a) Provide a weight for each database server with the **database weight add <database_ip> <priority>** command.

Use weights of 40, 30, 20, and 10 for the four Unified nodes and weights of 60, 50, 40, 30, 20, and 10 for the six Unified nodes. The higher the value, the more priority.

For Multinode Cluster deployment with four Unified Nodes in a geo-redundant system containing two data center infrastructures in two physical locations the following weights are used:

- Specify a weight of 40 for the Primary node at the Primary site
- Specify a weight of 30 for the Secondary node at the Primary site
- Specify weights of 20 and 10 for the Secondary nodes at the DR site

For Multinode Cluster deployment with six Unified Nodes in a geo-redundant system containing two data center infrastructures in two physical locations the following weights are used:

- Specify a weight of 60 for the Primary node at the Primary site
- Specify a weight of 50 for the Secondary node at the Primary site
- Specify a weight of 40 for the Secondary node at the Primary site
- Specify a weight of 30 for the Secondary node at the Primary site
- Specify weights of 20 and 10 for the Secondary nodes at the DR site

Note For information on web weight used for Web Proxy node, refer *Cisco Unified Communications Domain Manager Best Practices Guide*.

b) Select a Primary Unified node and set it up as the Primary Unified node with the following command: **cluster provision primary <IP address of primary database node>**.

Allow approximately 2 hours for the operation to complete for two WebProxy and four Unified nodes.

If no primary node exists, you are prompted to select a node to be the primary node.

c) When provisioning is complete, verify the status of the cluster with the **cluster status** command.

If a service is down, run the **cluster run <node_ip> app start** command to restart the service.

d) (Optional) If required, set the web weights configurations (Active-Active, Active-Standby, Standalone). From the primary Unified node, run the required web weight commands for the Web Proxy nodes. See Multi Data Center Deployments in the *Cisco Unified Communications Domain Manager Best Practices Guide* for detailed information.

e) (Optional) If required, enable or disable Self-service or admin web services on the web proxy nodes. This may be required for security purposes.The commands must be run on the relevant web proxy node. It is not advisable to run the commands on a standalone system, but only on a cluster. The commands will automatically reconfigure and restart the nginx process, which results in some downtime. Request URLs to a disabled service will redirect the user to the active service.

- To disable or enable admin or Self-service web services on the web proxy node: use **web service disable <selfservice|admin>** or **web service enable <selfservice|admin>** command.
- To list web services on the web proxy node: use the **web service list** command.

f) (Optional) Shut down all the nodes gracefully, snapshot and restart:

1. From the selected primary Unified node, run **cluster run notme system shutdown**.
2. From the selected primary Unified node, run **system shutdown**.
3. Take a VMWare snapshot of each node and then remove any previous snapshot.
4. Restart each node.

Step 10 Initialize the database and clear all data with the **voss cleardown** command on the primary database node.

Step 11 Import the template.

a) Copy the template file to the primary Unified node with the **scp <template_file> platform@<unified_node_ip_address>:media** command.

b) Log in to the primary Unified node and import the template with the **app template media/<template_file>** command.

The following message appears: `Services have been restarted. Please ignore any other messages to restart services.` The template upgrade automatically restarts necessary applications.

c) When prompted to set the sysadmin password, provide and confirm a password.
d) When prompted to set the hcsadmin password, provide and confirm a password.

Step 12 (For Cisco Unified CDM 10.6(1) only) Install the Macro_Update.template file on secondary Unified nodes.

a) Upload the new Macro_Update.template file to the `media` directory on the Unified CDM server via SFTP.

1. From the VM console, enter **sftp platform@<cucdm10 hostname>**.
2. Enter **cd media**.
3. Enter **put Macro_Update_xx.template**.

b) Enter the following command: **app template media/Macro_Update_xx.template**.
The template installs on each secondary node in less than a minute.

Step 13 (Optional) Install language templates for languages other than English.

a) Copy the language template file to any Unified node with the **scp <language_template_file> platform@<unified_node_ip_address>:./media** command.
b) Log in to the Unified node and install the template with the **app template media/<language_template_file>** command.

Example:

For example, to install French, `app template media/CUCDMLanguagePack_fr-fr.template`.

Create Virtual Machines from OVA Files

You can import the OVA file into VMware vCenter Server. One OVA file is used to deploy all the functional roles. You choose the specific role when the installation wizard is run.

Procedure

Step 1 Sign in to vSphere to access the ESXi Host.
Step 2 Choose **File > Deploy OVF Template**.
Step 3 Choose **Source**, browse to the location of the .ova file, and click **Next**.
Step 4 On the Name and Location page, enter a Name for this server.
Step 5 Choose the resource pool in which to locate the VM.
Step 6 Choose the data store you want to use to deploy the new VM.
Step 7 On the **Disk Format** page, choose **Thick provisioned Eager Zeroed format** for the virtual disk format.

Note In production environments, "thick provisioning" is mandatory. Thick provisioned Lazy Zero is also supported, but Thin provisioned is not supported.

Step 8 On the Network Mapping, choose your network on which this VM will reside.

Step 9 Do not select **Power on after deployment**.

Step 10 On the **Ready to Complete** page, click **Finish** to start the deployment.

Step 11 After the VM is created, verify the memory, CPU, and disk settings against the requirements shown in Multinode Cluster Hardware Specifications, on page 23.

Step 12 Power on the VM.

Step 13 Select the following options in the installation wizard:

Option	Option name	Description
1	IP	The IP address of the server.
2	netmask	The network mask for the server.
3	gateway	The IP address of the network gateway.
4	DNS	The DNS server is optional. Ensure that the DNS server is capable of looking up all hostnames referred to, including NTP server and remote backup locations.
5	NTP	The NTP server is mandatory to ensure that time keeping is accurate and synchronized among nodes in the same cluster.
6	hostname	The hostname, not the fully qualified domain name (FQDN).
7	role	• A WebProxy role installs only the front-end web server together with ability to distribute load among multiple middleware nodes. • An Application node is the main transaction processing engine and includes a web server which can operate by itself, or route transactions from a web node. • A Database node provides persistent storage of data. • A Standalone node consists of the Web, Application, and Database roles on one node. • A Unified node consists of the Web, Application, and Database roles on one node. On installation, the system needs to be clustered with other nodes and the cluster provisioned.
8	data center	The system's geographic location (data center name, city, country that a customer can use to identify the system location). You cannot change this setting once set.
9	platform password	Platform password must be at least eight characters long and must contain both uppercase and lowercase letters and at least one numeric or special character.
13	install	Completes the installation configuration and installs .

When the installation of the OVA is complete, a sign-in prompt for the platform user is displayed.

What to do next

Return to Multinode Installation, on page 23 to complete the overall installation procedure.

Create the HCM-F Device

After you create the HCM-F device, data synchronization begins if there is a network connection and the NBI REST service is running on the HCM-F server.

Before you begin

- Install and configure HCM-F. For more information, see the **Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide**

  .
- Verify that the NBI REST SDR Web Service is running
  1. Sign in to the HCM-F CLI as the user administrator.
  2. Run the **utils service list** command. Verify that the Cisco HCS NBI REST SDR Web Service is running.
  3. If not running, start it with the **utils service start Cisco HCS NBI REST SDR Web Service** command.

Procedure

Step 1 Sign in to as hcsadmin@sys.hcs.

Step 2 Create a new HCM-F instance:

a) Select **Device Management** > **HCM-F** and click **Add**.
b) Enter the HCM-F hostname.
c) Enter the HCM-F administrator Username.
d) Enter the HCM-F administrator Password.
e) Select the HCM-F Version v10_0 from the drop-down list.
f) Click **Save**.

Step 3 If the previous step fails:

- Verify that HCM-F Hostname is correct
- Verify that HCM-F administrator Username and administrator Password are correct
- Verify that HCM-F Version is correct
- Verify that the domain is set correctly using the CLI:
  a. `ssh platform@<cucdm hostname>`
  b. **network domain**

Step 4 After a couple of minutes, verify that the initial synchronization between and HCM-F is successful:

a) Select **Provider Management** > **Advanced** > **SDR Service Provider**.
b) The sync is successful if the default entry, "Service Provider Name", appears.

What to do next

If the initial sync is not working after following the previous steps, verify that the HCM-F REST API is working by browsing to the following: `http://<hcmf_app_node_host>/sdr/rest/<hcmf_version>/entity/ServiceProvider`. This command returns the JSON representation of the predefined service provider instance in the HCM-F Shared Data Repository (SDR). If you get an error, log in as the administrator on the HCM-F app node CLI and verify that the REST service is running:

To display the services, run the command: **utils service list**.

In the output, you see `Cisco HCS NBI REST SDR Web Service[STARTED].`

If this service is not started, start it with the command: **utils service start Cisco HCS NBI REST SDR Web Service**

For data sync failures, try importing the new HCM-F:

1. Select **Device Management** > **HCM-F** and click the HCM-F device.
2. Update the Hostname and click **Save**.
3. Import the new HCM-F:
   a. Select **Device Management** > **Advanced** > **Perform Actions**.
   b. In the Action field, select Import.
   c. In the Device field, select the HCM-F server.
   d. Click **Save** and wait a few minutes.
4. Check the provider under **Provider Management** > **Advanced** > **SDR Service Provider**.

Create a Provider

Note In Cisco Unified CDM 10.6(2) or later, the provider name is set to the current service provider name in HCM-F. You can decouple the provider name in Cisco Unified CDM from the service provider name in HCM-F.

Procedure

Step 1 Log in to as hcsadmin@sys.hcs.

Step 2 Select **Provider Management** > **Providers**.

Step 3 Click **Add**.

Step 4 On the **Service Provider Details** tab, complete the following fields:

Field	Description
Name	The name of the provider. This field is mandatory. **Note** Once you have saved the provider, you cannot change the provider name.

Field	Description
	Note Any spaces in the provider name are converted to underscores in the provider local administrator name and email, if **Create Local Admin** is checked.
Description	A description of the provider.
Domain Name	The domain of the provider. For example, provider.com. Used when creating the default local administrator so the administrator can sign in with an email ID such as ProviderAdmin@provider.com. This field is mandatory.
Create Local Admin	Controls whether a default local administrator is created.
Cloned Admin Role	The HCS default provider role used to create a new role prefixed with the provider name. The created provider role, shown in **Default Admin Role** field, is assigned to the default local administrator. This field appears only if **Create Local Admin** is checked.
Default Admin Role	The created provider role that is assigned to the default local administrator. This field is read only and appears only if **Create Local Admin** is checked.
Default Admin Password	The password to assign to the default local administrator. This mandatory field appears only if **Create Local Admin** is checked.
Repeat Default Admin Password	Confirm the default local administrator password. This mandatory field appears only if **Create Local Admin** is checked.

Step 5 On the **Contact Information** tab, enter address, email, and phone information as appropriate.

Step 6 Click **Save**.

The provider hierarchy node in , the Service Provider name in SDR, and optionally a default provider administrator are created.

Add Reseller

Procedure

Step 1 Login to the Cisco Unified Communications Domain Manager as the Provider admin. Enter provider admin's email address as username, it is case sensitive.

Example:

<provider_name>Admin@<domain_name>.

Step 2 Navigate to **Reseller Management** > **Resellers** from the menu.

Step 3 Click **Add**.

Step 4 Provide necessary details in the following:

a) Enter **Name**.

b) Enter **Description**.
c) Enter **Domain Name**.
d) Check **Create Local Admin** check box.
e) Keep the default values for **Clone Admin role** and **Default Admin Role**.
f) Enter **Default Admin** password and confirm in **Confirm** password text box.

Step 5 Click **Save**.

What to do next

Integrate Unified Communication Domain Manager with the customer instance. For more information, see the *Configuration Guide for Cisco Hosted Collaboration Solution for Contact Center* at https://www.cisco.com/c/en/us/support/unified-communications/hosted-collaboration-solution-contact-center/tsd-products-support-series-home.html

Install and Configure Session Border Controller

For complete installation and configuration instructions, see https://www.cisco.com/c/en/us/support/unified-communications/hosted-collaboration-solution-hcs/tsd-products-support-series-home.html

Installing and Configuring Prime Collaboration Assurance and Analytics

To verify the supported version of Prime Collaboration Assurance and Analytics for this release of Cisco HCS, 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.

For complete installation and configuration instructions, see the *Cisco Prime Collaboration Assurance and Analytics Install and Upgrade Guide* at https://www.cisco.com/c/en/us/support/cloud-systems-management/prime-collaboration/products-installation-guides-list.html.

The *Cisco Prime Collaboration Quick Start Guide* explains all aspects of installing and configuring Prime Collaboration Assurance in Advanced mode (so that you can select the Managed Service Provider deployment):

- Licensing
- Deployment models
- Deploying OVAs
- Configuring OVAs
- Required post installation tasks

Important

- The Prime Collaboration Assurance 12.1 and above MSP mode supports large and very large OVA. See the *Cisco Prime Collaboration Assurance and Analytics Install and Upgrade Guide* for detailed information.

Log in to Prime Collaboration

Invoke Prime Collaboration Assurance using the client browser.

To log in to the Prime Collaboration application:

Procedure

Step 1 Open a browser session from your machine. Specify the IP address of either Prime Collaboration Assurance application.

Step 2 Enter any one of the following: `http://IP Address` or `https://IP Address`.

Note HTTPS is enabled by default for Prime Collaboration Assurance. Based on the browser you are using, one of the following appears:

- In Windows Internet Explorer, the Certificate Error: Navigation Blocked window.
- In Mozilla Firefox, the Untrusted Connection window.

These windows appear because Prime Collaboration uses a self-signed certificate.

Step 3 Remove the SSL certificate warning. See Removing SSL Certificate Warning at http://docwiki.cisco.com/wiki/troubleshooting_cisco_prime_collaboration

The Prime Collaboration login page appears.

Step 4 In the Prime Collaboration login page, you must log in as a globaladmin, using the same the credentials that you specified during the configuration.

Enabling HCM-F and Prime Collaboration Assurance to Communicate

The HCM-F versions compatible with Prime Collaboration Assurance is specified in the table. Prime Collaboration Assurance 11.6 and above version supports enhanced security.

To install the patch file for Prime Collaboration Assurance and Analytics use the link Download Software.

To install the .cop file on HCM-F use the link https://upload.cisco.com/cgi-bin/swc/fileexg/main.cgi.

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 for details on the supported HCMF .cop file and PCA patch file.

Note

- Different versions of Prime Collaboration Assurance running in the same environment are not supported.
- HCM-F does not support uninstalling of ES files.
- Cisco Hosted Collaboration Solution supports a single HCM-F with one or more PCA for monitoring customer and devices.

Install and Configure ASA Firewall and NAT

Cisco Adaptive Security Appliance (ASA) Firewall partitions a single ASA into multiple virtual devices that keeps customer traffic separate and secure, and also makes configuration easier. All customer traffic is first sent to the firewall before forwarding to the computer resources.

Related Topics

Setup ASA, on page 34
Configure Multiple Context Modes, on page 35

Setup ASA

To initiate the basic setup in Cisco ASA, access the command-line interface and configure the credentials.

Procedure

Step 1 Connect a PC to the console port using console cable. Connect to console using a terminal emulator and set 9600 baud, 8 data bits, no parity, 1 stop bit, no flow control.

Step 2 Press **Enter**.

Displays the following prompt:

```
hostname>
```

This indicates you are in user EXEC mode.

Step 3 Enter the following commands to access privileged EXEC mode:

```
hostname>enable
Password:
hostname#
```

Note Default, password is blank. Press **Enter** key to continue.

Step 4 Enter the following commands to access the global configuration mode:

```
hostname#configure terminal
hostname(config)#
```

Step 5 Enter `hostname` command to configure the hostname:

Example:

```
hostname(config)#hostname CISCOASA
CISCOASA(config)#
```

Step 6 Enter `enable passsword` command to configure the password:

```
CISCOASA(config)#enable password <enter the password>
```

Example:

```
CISCOASA(config)#enable password Password1234
CISCOASA(config)#exit
```

Step 7 Enter the following commands to save configuration:

```
hostname# copy running-config startup-config
```

Configure Multiple Context Modes

Procedure

Step 1 Enable the multiple context modes.

Step 2 Enable the interfaces.

Step 3 Configure the security contexts.

Step 4 Optional, in configure mode, enter `hostname(config)#mac-address auto` command to assign the MAC addresses to the context interfaces automatically.

Step 5 Configure interfaces in the context.

Related Topics

Enable Multiple Context Modes, on page 35
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Enable Multiple Context Modes

Procedure

Enter the following commands:

```
hostname#changeto system
hostname#configure terminal
hostname(config)#mode multiple
```

Note After you enable the multiple context mode, optionally you can configure the classes for resource management. You need not to create classes for HCS as you can use the default class.

Enable Interfaces

Complete the following procedure to configure interfaces:

Procedure

Step 1 Navigate to interface management 0/0 and enter the following commands:

```
hostname(config)#interface management 0/0
hostname(config-if)#no shut
```

Step 2 Navigate to interface gigabitethernet 0/0 and enter the following commands:

```
hostname(config)#interface gigabitethernet 0/0
hostname(config-if)#no shut
```

Configure Security Contexts

Complete the following procedure to configure security contexts:

Procedure

Step 1 Configure the admin context name in the global configuration mode:

```
hostname(config)#admin-context admin
```

Step 2 Navigate to the context admin:

```
hostname(config)#context admin
```

Step 3 Configure the admin context definitions:

```
hostname(config-ctx)#description admin Context for admin purposes
```

a) Allocate interface management 0/0 for admin context.

```
hostname(config-ctx)#allocate-interface management0/0 invisible
```

b) Create `admin.cfg` in disk 0.

```
hostname(config-ctx)#config-url disk0:/admin.cfg
```

Configure Interfaces in the Context

Complete the following procedure to configure interfaces in the admin context:

Procedure

Step 1 Navigate to admin context in configure mode:

```
hostname#changeto context admin
```

Step 2 Navigate to the interface management:

```
hostname/admin#configure terminal
hostname/admin(config)#interface management 0/0
```

Step 3 Enter a name for management interface of the admin context:

```
hostname/admin(config-if)#nameif management
```

Enter the IP address of the management interface:

```
hostname/admin(config-if)#ip address ip_address subnet_mask
hostname/admin(config-if)#exit
```

Example:

```
hostname/admin(config-if)#ip address 209.165.200.225 255.255.255.224
```

Step 4 Configure the following in global configuration mode to allow SSH to the admin context:

a) Generate an RSA key pair that is required for SSH. The modulus size value is 1024.

```
hostname/admin(config)#crypto key generate rsa modulus modulus_size
```

b) Save the RSA keys to persistent flash memory.

```
hostname/admin(config)#write memory
```

c) Enables local authentication for SSH access.

```
hostname/admin(config)#aaa authentication ssh console LOCAL
```

d) Create a user in the local database for SSH access.

```
hostname/admin(config)#username abcd password xxxx
```

e) Enter the IP address of the management interface from which the ASA accepts SSH connections.

```
hostname/admin(config)# ssh ip_address subnet_mask management
```

Example:

```
hostname/admin(config)# ssh 209.165.200.225 255.255.255.224 management
```

f) Set the duration to idle SSH session before the ASA disconnects the session.

```
hostname/admin(config)#ssh timeout 5
```

g) Enable HTTPS server and default port is 443.

```
hostname/admin(config)#http server enable
```

h) Enter the same IP address of management interface to access through HTTPS.

```
hostname/admin(config)# http server ip_address subnet_mask
```

i) Enter Default Static Route.

```
hostname/admin(config)# route management 0.0.0.0 0.0.0.0 ip_address
```

Example:

```
hostname/admin(config)#http server 209.165.200.225 255.255.255.224
hostname/admin(config)#route management 0.0.0.0 0.0.0.0 209.165.200.226
```

What to do next

Integrate Cisco ASA with the customer instance. For more information, see the *Configuration Guide for Cisco Hosted Collaboration Solution for Contact Center* at https://www.cisco.com/c/en/us/support/unified-communications/hosted-collaboration-solution-contact-center/tsd-products-support-series-home.html