System upgrade

This chapter discusses in more detail the upgrade sequence for all the contact center components configured in specific deployment models for Cisco Unified Communications System Release 9.0(1).

Upgrade procedures for individual components are not described in this document, because they are available in individual component upgrade documents. See the Related compatibility documentation, on page 23 section at the end of this chapter for the appropriate upgrade documents and their URLs.

Note Many of the contact center component names have changed as part of Cisco Unified Communications System releases. Only the latest product names are used in this document, even when referencing products from previous releases.

Note The following upgrade strategies are recommendations only, as no formal upgrade testing was done for the UC 9.0 system release.

Upgrade deployment models

Upgrade procedures should be specifically tailored for each of the deployment models in the contact center test environment, because it is possible that each site includes different components.

Detailed information about these contact center deployment models at the different sites is available at: http://www.cisco.com/cisco/web/docs/iam/unified/ipcc861/Review_Tested_Deployment_Models.html

Listed in this section are the various deployment models tested in the Cisco Unified Communications contact center test environment:

- Single-site upgrade model

- Multisite centralized upgrade model

- Multisite distributed upgrade model

- Clustering over the WAN (CoW) model

Compare these deployments to your specific deployment to best understand the upgrade process that is applicable in your environment. The following section provides the general upgrade sequence for the various contact center components in the different deployment models.

After you determine the general upgrade sequence, depending on the base release set in your network, use one of the upgrade strategies discussed in Component upgrades, on page 3 to upgrade your components. Additional upgrade procedures for contact center components are discussed in Contact Center test bed upgrades, on page 4.

Related Topics

Single-site upgrade model

In the single-site model, be aware of the following upgrade sequence for the components:

1 Switches, routers and security components

2 Gatekeepers/proxy servers, and voice and data gateways

3 Network management components

4 Contact center routing components

5 Agent management components

6 Agent desktop client software

7 Call processing components

8 Queuing and self-service components

Multisite centralized upgrade model

In the multisite centralized model, the central site is typically upgraded in conjunction with the remote sites.

Central site

In the central site, be aware of the following upgrade sequence for the components:

1 Switches, routers and security components

2 Gatekeepers/proxy servers and voice and data gateways

3 Network management components

4 Contact center routing components

5 Agent management components

6 Agent desktop client software

7 Call processing components

8 Queuing and self-service components

Multisite distributed upgrade model

In the multisite distributed model, be aware of the following upgrade sequence for the components in each cluster site and any small remote sites as listed in the Multisite centralized upgrade model, on page 2 section.

✎

Note Treat the upgrade of each cluster site as a separate stage in the overall system upgrade process.

Clustering over the WAN model

In the Clustering over the WAN (CoW) model, be aware of the following upgrade sequence for the components in the central sites first where CoW is implemented and any remote sites as listed in the Multisite centralized upgrade model, on page 2 section.

✎

Note Upgrade clustered components in the same upgrade period and stage at each of the central sites. Other components in the central sites must be upgraded in conjunction with the remote sites.

Component upgrades

Once you have reviewed the general upgrade sequence for your specific deployment model, perform your upgrades based on the following upgrade strategies:

- Single-stage upgrade—Recommended for small single-site and multisite installations.

- Multistage system upgrade—Recommended for medium and large single-site and medium multisite installations.

- Multisite Migration—To upgrade large, multisite contact center installations to the Cisco Unified Communications release set using the multisite migration upgrade strategy, you can use either the single-stage or multistage system upgrade procedures listed in this section.

See System upgrade planning for detailed information about the above upgrade strategies and System upgrade preparation for the software release versions of the components involved in the upgrade. For more information about the number of seats in these various types of sites, see System upgrade planning.

The upgrade path available for upgrading contact center components is defined in System upgrade planning. For components that are new to the target release and that you may want to install, see New components and features in target release set.

See Related compatibility documentation, on page 23 for a list of URLs to component-specific release notes and installation and upgrade documents. When performing the upgrade of each component, see the product-specific upgrade document for the relevant release for detailed information.

Note Some of the listed components might not apply to your specific installed base. Therefore, if there is an application, component, or feature listed that you do not already have installed in your environment, you need not upgrade them.

Related Topics

Single-stage upgrade, on page 4
Multistage system upgrade, on page 6

Contact Center test bed upgrades

The contact center test sites are set up as two separate test beds:

- Cisco Unified CVP Post-Routed Call Flow Test Bed, Local and Remote Agents Test Bed. Use normal upgrade procedures based on the single-stage or multistage upgrade approaches discussed in System upgrade planning.

- Cisco Unified CVP Post-Routed Call Flow Test Bed Local Agents—Unified CVP test bed with Unified CVP Post-Routed call flows. Use normal upgrade procedures based on the single-stage or multistage upgrade approaches discussed in System upgrade planning.

Note To verify the interoperability between clusters running different release set versions, some of the Unified Communications Manager clusters and other components in the Cisco Unified CVP Post-Routed Call Flow Test Bed have not been upgraded to Cisco Unified Communications System Release 9.0(1).

Single-stage upgrade

The single-stage upgrade process is recommended for small single-site and multisite installations and can be performed in a single maintenance window. This enables you to upgrade all the components in a brief period of time with no loss of functionality.

See System upgrade preparation for the software release versions of the components involved in the upgrade. Based on your environment and the base release set deployed in your network, upgrade the components in the order listed in the following table.

Table 1: Single-stage upgrade order for Contact Center components

Component to Upgrade	Upgrade Order for Base Release Set
	8.5(1)
Core switch	1
Access switch	2
Cisco Security Agent Management Console	3
Cisco IOS Gateways (MGCP, H.323 and SIP)	4
Unified CVP VXML Gateways	5
Cisco Aironet Access Point 1240AG	6
Cisco IOS-based Transcoders and Conference Bridges	7
Cisco Unified Videoconferencing 3545 MCU	8
Cisco Gatekeepers/Proxy Servers	9
Unified Border Element	10
Unified Operations Manager	11
Unified ICME Rogger/Progger	13
Real Time AW/HDS	14
Peripheral Gateways[1], Unified Contact Center Gateway Enterprise (Unified CCGE)	15
CTI OS Server	16
CAD Server	17
Outbound Option	18
CTI OS Agent/Supervisor Desktop	19
CAD Agent/Supervisor Desktop	20
Cisco Unified Communications Manager IM and Presence Service (formerly Cisco Unified Presence)[2]	21
Unified Communications Manager	22

Component to Upgrade	Upgrade Order for Base Release Set
	8.5(1)
JTAPI (upgrade if needed on client applications)	23
Cisco Security Agent and virus scanning software	24
Unified IP Phones firmware (if needed) including ATA and 6608	25
Cisco IP Communicator	26
Unified CVP system components	27
Unified IP IVR	28
Unified Contact Center Express[3]	29
Unified Intelligence Center	30
Cisco MediaSense	31
Cisco Finesse	32
SocialMiner	33
Cisco and third-party applications resident on other servers	34
Install new components	35
Remove obsolete or end-of-life components	36

[1] Cisco Unified System Contact Center Enterprise (Unified SCCE) is supported in Unified CCE Release 8.5(1); however, there is no separate Unified SCCE Release 8.5(1). If you request features that are in Release 8.5(1), you must migrate all Unified SCCE deployments to Unified CCE deployments. For more information on the migration from Unified SCCE Release 8.0(1) to Unified CCE 8.5(1), see *Upgrade Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted, Release 8.0(1a)* at: http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/ipcc_enterprise/ipccenterprise8_0_1/installation/guide/icm80ug.pdf.

[2] For Cisco Unified Communications System Release 9.0, Cisco Unified Presence has been integrated into Cisco Unified Communications Manager and is now known as Cisco Unified Communications Manager IM and Presence Service (IM and Presence Service).

[3] Unified CCX versions prior to 8.5(1) are not supported with Unified Communications Manager 9.0. You must upgrade Unified CCX to 8.5(1)SU3 or 9.0(1) before upgrading Unified Communications Manager to 9.0(1).

Multistage system upgrade

A multistage system upgrade is the recommended approach for medium and large single-site and medium multisite installations. In this upgrade process, components are grouped together for upgrading in several stages or maintenance windows. Within each maintenance window, there is a recommended order for upgrading each component.

The grouping of the components into the stages may vary depending on the size of the networks being upgraded. For smaller networks, one or more stages may be collapsed into a single maintenance window. For larger networks, some stages may require multiple maintenance windows.

After each maintenance window, we recommend that you verify that the operation of all basic and critical call types remains unaffected before you initiate the next upgrade stage listed in the table. See detailed information about the upgrade exit criteria and procedures for verifying component interoperability for each stage in Multistage system upgrade verification, on page 11. We also recommend that you maintain a list to track the components that have been upgraded and the ones yet to be upgraded.

See System upgrade preparation for the software release versions of the components involved in the upgrade. Based on your environment and the base release set deployed in your network, upgrade the components in the order listed in the following table for an upgrade from base release set 8.5(1) to 9.0(1).

Table 2: Multistage system upgrade order for Contact Center components for Release 8.5(1) to 9.0(1)

Stage	Component Groupings	Upgrade Order for Contact Center Components within Stages	Upgrade Verification
1	Switches, routers and security components	1 Core Switch 2 Access Switch • Cisco Adaptive Security Appliance 5540 • Cisco Security Agent Management Console	Verify the following exit criteria for Stage 1: 1 Verify upgrade to core switches and routers, on page 13 2 Verify IOS gateway upgrade, on page 14 3 Verify upgrade to Cisco Unified Communications Manager, on page 20 4 Verify upgrade to Cisco Security Agent Management Console, on page 21

Stage	Component Groupings	Upgrade Order for Contact Center Components within Stages	Upgrade Verification
2	Gatekeepers/proxy servers and voice and data gateways	• Cisco IOS Gateways (MGCP, H.323 and SIP) • Cisco Unified CVP VXML Gateways • Cisco Aironet Access Point 1240AG • Cisco IOS-based transcoders and conference bridges • Cisco Gatekeepers/Proxy Servers • Cisco Unified Border Element	Verify the following exit criteria for Stage 2: 1 Verify IOS gateway upgrade, on page 14 2 Verify upgrade to Cisco Unified Intelligent Contact Management Enterprise Rogger/Progger, on page 17 3 Verify upgrade to Cisco Unified IP IVR, on page 22 4 Verify upgrade to Cisco IOS gatekeeper and Cisco Unified Border Element Gateway, on page 15 5 Verify upgrade to Cisco IOS-based transcoders and conference bridges, on page 15
3	Network management components	1 Cisco Unified Operations Manager	Verify the following exit criteria for Stage 3: 1 Verify upgrade to network management components, on page 16
4	Contact center routing components	1 Cisco Unified ICME Rogger/Progger 2 Real Time AW/HDS	Verify the following exit criteria for Stage 4: 1 Verify upgrade to Cisco Unified Intelligent Contact Management Enterprise Rogger/Progger, on page 17 2 Verify upgrade to Cisco Real Time Administration Workstation, Historical Database Server, on page 17

Stage	Component Groupings	Upgrade Order for Contact Center Components within Stages	Upgrade Verification
5	Agent management components	1 Peripheral, VRU, and MGCP Gateways 2 CTI OS Server 3 CAD Server 4 Outbound Option	Verify the following exit criteria for Stage 5: 1 Verify upgrade to Peripheral, VRU and MRPG gateways, on page 18 2 Verify upgrade to Cisco Telephony Integration Object Server and Cisco Agent Desktop Server, on page 19 3 Verify upgrade to Cisco Outbound Option, on page 20
6	Agent desktop client software	1 CTI OS Agent/Supervisor Desktop 2 CAD Agent/Supervisor Desktop	Verify the following exit criteria for Stage 6: • Verify upgrade to CTI OS and Cisco Agent Desktop Agent/Desktop Clients, on page 20 • Verify upgrade to Cisco Remote Agent, on page 20

Stage	Component Groupings	Upgrade Order for Contact Center Components within Stages	Upgrade Verification
7	Call processing components	The following components should be upgraded first and in the order listed below: 1 Cisco Unified Communications Manager IM and Presence Service (formerly Cisco Unified Presence) 2 Unified Communications Manager 3 JTAPI (upgrade if needed on client applications) 4 Cisco Security Agent and virus scanning software 5 Unified IP Phones firmware (if needed) The following components may be upgraded in any order after completing the above upgrades: • Cisco IP Communicator • Cisco VT Advantage (Video PC Endpoint)	Verify the following exit criteria for Stage 7: 1 Verify Cisco Unified Communications Manager IM and Presence Service upgrade, on page 21 2 Verify upgrade to Cisco Unified Communications Manager, on page 20 3 Verify Cisco Unified IP Phones upgrade, on page 22
8	Queuing and self-service components	• Unified CVP system components • Unified IP IVR • Unified Contact Center Express [4]	Verify the following exit criteria for Stage 8: 1 Verify upgrade to Cisco Unified Customer Voice Portal, on page 22 2 Verify upgrade to Cisco Unified IP IVR, on page 22
9	Cisco and third party Applications resident on other servers		
10	Install new components		
11	Remove obsolete or end-of-life components		

[4] Unified CCX versions prior to 8.5(1) are not supported with Unified Communications Manager 9.0. You must upgrade Unified CCX to 8.5(1)SU3 or 9.0(1) before upgrading Unified Communications Manager to 9.0(1).

Note   After upgrading the existing components, install any new components and then remove any obsolete or end-of-life components from your system.

Note   After upgrading the existing components, install any new components and then remove any obsolete or end-of-life components from your system.

Multistage system upgrade verification

Components that are upgraded in each stage must interoperate with components that have been upgraded in a previous stage as well as with components that have yet to be upgraded in subsequent stages to ensure the overall operation of the network.

Therefore it is important to verify this interoperability as well as check that basic call service has not been adversely affected during multistage system upgrade operations. This section provides detailed information about the verification procedures as you exit each system upgrade stage.

Exit criteria for multistage system upgrade stages

The following table provides exit criteria you need to execute after completing each system upgrade stage.

Table 3: System upgrade stages and exit criteria matrix

Components	Multistage System Upgrade Stage							
	1	2	3	4	5	6	7	8
Switches and Routers Upgrade Exit Criteria	X							
Security Components Upgrade Exit Criteria	X							
Gatekeepers/Proxy Servers and Voice and Data Gateways Upgrade Exit Criteria	X	X						
Cisco Aironet Access Point 1240AG Upgrade Exit Criteria		X						
Cisco IOS-based Transcoders and Conference Bridges Upgrade Exit Criteria		X						

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Components	Multistage System Upgrade Stage							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Cisco IOS Gatekeeper and Unified Border Element Gateway Upgrade Exit Criteria		X						
Network Management Components Upgrade Exit Criteria			X					
Unified Intelligent Contact Management Enterprise Support Tools Server Upgrade Exit Criteria			X					
Unified Intelligent Contact Management Enterprise Rogger/Progger Upgrade Exit Criteria		X		X				
Cisco Real Time Administration Workstation, Historical Database Server Upgrade Exit Criteria				X				
Peripheral Gateways, VRU PGs and MRPG Gateways Upgrade Exit Criteria					X			
Cisco Telephony Integration Object Server and Cisco Agent Desktop Server Upgrade Exit Criteria					X			
Outbound Option Upgrade Exit Criteria					X			
Cisco Telephony Integration Object Server and Cisco Agent Desktop Agent/Desktop Clients Upgrade Exit Criteria						X		
Cisco Remote Agent Upgrade Exit Criteria						X		
Unified Communications Manager Upgrade Exit Criteria	X						X	
Cisco Unified Communications Manager IM and Presence Service (formerly Cisco Unified Presence) Upgrade Exit Criteria							X	

Components	Multistage System Upgrade Stage							
	1	2	3	4	5	6	7	8
Cisco Security Agent (CSA) Management Console Upgrade Exit Criteria	X							
Cisco Unified IP Phones Upgrade Exit Criteria							X	
Cisco Unified CVP Upgrade Exit Criteria								X
Cisco Unified IP IVR Upgrade Exit Criteria	X	X						X

Verify upgrade to core switches and routers

After upgrading core routers and switches, verify the following:

Procedure

Step 1 Check the buffer log or console for error messages.

Step 2 Verify that a dump file was not created in the flash memory.

Step 3 Use the "show running-config" command to verify that the previous configuration was not deleted during the upgrade process.

Step 4 Use the "show ip interface brief" command to verify that the configured interfaces are in up/up state.

Step 5 Verify that the Unified IP Phones connected to the switches are powered up and register correctly with their primary Unified Communications Manager node.

Verify security components upgrade

After upgrading Cisco Catalyst 6500 Services Switch and Cisco Adaptive Security Appliance, verify the following:

Procedure

Step 1 In a deployment where Unified Communications Manager servers are separated by an Adaptive Security Appliance, place a call from a Unified IP Phone that is registered to one Unified Communications Manager to a Unified IP Phone that is registered to another Unified Communications Manager.

Step 2 Verify that the database replication is successful between Unified Communications Manager servers which are separated by an Adaptive Security Appliance.

Verify IOS gateway upgrade

After upgrading IOS gateways, verify the following:

Procedure

Step 1 At the Cisco IOS exec level, execute the following CLI commands:

- To check that the upgraded IOS target image is running:

  show version

- To verify that the boot system is configured to boot the correct image:

  show running-config

- To verify that configuration done previously (i.e. H.323/SIP dial-peer and MGCP) is not lost:

  show running-config

- To verify that the ISDN connection status is at MULTIFRAME_ESTABLISHED:

  show isdn status

- To verify that configured interfaces are in up/up state:

  show ip interface brief

- To verify manually placed incoming calls:

  show isdn history

- To verify IP routing from branch site to a data center:

  ping or **traceroute**

- To verify IP routing from one branch site to another branch site:

  ping or **traceroute**

- To verify system startup process after software reload:

  show logging

Step 2 Ensure that the following devices are configured and registered correctly: Gatekeeper, MGCP and H.323 gateways, trunks, and CTI Route Point.

Step 3 Ensure that all MGCP end points (FXS, FXO, PRI, T1 CAS and BRI) are properly registered with Unified Communications Manager.

Step 4 Manually spot check calls as appropriate:

- IP (SCCP and SIP) <-> PSTN via MGCP Gateway.

- IP (SCCP and SIP) <-> PSTN via SIP Gateway.

Step 5 Verify that a PSTN user who places an inbound call from the PSTN to a Unified IP Phone in a Unified Communications Manager cluster through gateways such as MGCP, SIP, and H.323 and puts the call on hold can hear Music-on-Hold (MOH) and can also finally resume the call.

Verify upgrade to Cisco IOS gatekeeper and Cisco Unified Border Element Gateway

After upgrading the Cisco IOS gatekeeper and the Cisco Unified Border Element Gateway, verify the following:

Procedure

Step 1 To verify the running IVS version of IOS image (for example: Cisco IOS software, 3800 software (C3845-IPVOICE_IVS-M), type the following command:
show version

Step 2 To check that the configuration is not lost, use the following command:
show running-config

Step 3 Verify that all H.323 end points that are configured to register with the gatekeeper and gateway register properly.

Step 4 Verify that Unified Communications Manager registers with the gatekeeper and gateway.

Step 5 Make a call between two end points that uses the gatekeeper and gateway; verify that the call is successful and proper bandwidth is reduced in the gatekeeper for that call.

Verify upgrade to Cisco Aironet Access Point

After upgrading Cisco Aironet Access Point 1240AG, verify the following:

Procedure

Step 1 Verify that Unified IP Phones 7920 and 7921 register with Cisco Unified Communications Manager; and stay registered after the upgrade.

Step 2 Make a call from IP Unified Phone 7920 and Unified IP Phone 7921 to another Unified IP Phone and ensure audio is available in both directions.

Step 3 When the call is active, verify audio is available in both directions when Unified IP Phone 7920/21 phones roam between access points.

Step 4 Verify if Unified IP Phone 7920/21 phones can register with different types of encryption.

Verify upgrade to Cisco IOS-based transcoders and conference bridges

After upgrading Cisco IOS-based transcoders and conference bridges, verify the following:

Procedure

Step 1   Check if the complete configuration before the upgrade still exists.

Step 2   Check if all DSPs are registered and are functioning normally.

Step 3   Check if there are no error messages in the buffer log or console.

Step 4   Check if no dump file is created in the flash memory.

Step 5   To verify that the configuration is not lost, type the "show running-config" command.

Step 6   To verify that the interfaces are in up state, type the "show ip interface brief" command.

Step 7   To verify the system startup process, type the "show logging" command after reload.

Step 8   Make an inbound call to a Unified IP Phone through a gateway (MGCP, SIP, H.323) and conference the call with another Unified IP Phone, using a conference bridge in the gateway.

Step 9   Verify IOS Transcoding is working with G711 codec configure for one device while G729 codec is configured on another device.

Verify upgrade to network management components

After upgrading network management components, verify the following:

Procedure

Step 1   Verify the software version and the build ID using CiscoWorks to ensure that the upgrade was successful.

Step 2   Ensure that access to the Unified Operations Manager console is still available.

Step 3   Ensure that access to all devices managed by Unified Operations Manager is still available.

Verify upgrade to Cisco Unified Intelligent Contact Management Enterprise Support Tools Server

After upgrading the Unified ICME Support Tools Server, verify the following:

Procedure

Step 1   Verify that the complete configuration prior to the upgrade still exists on the Unified ICME Support Tools server.

Step 2   Ensure that access to the Unified ICME Support Tools server console is still available.

Step 3   Ensure that access to all the devices managed by the Unified ICME Support Tools server is still available.

Verify upgrade to Cisco Unified Intelligent Contact Management Enterprise Rogger/Progger

After upgrading the Cisco Unified Intelligent Contact Management Enterprise Rogger/Progger, verify the following:

Procedure

Step 1 Ensure that basic calls and call functionality such as transfers, conferences, call treatment and queuing by Unified IP IVR, etc. are working properly.

Step 2 Verify that all previously registered endpoint devices have re-registered correctly.

Step 3 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Step 4 After Side A Central Controller components have been upgraded, verify basic operations such as the following:

- Setup logs indicate no errors or failure conditions.

- All components can "ping" public and private IP addresses as applicable.

- Schema upgrade is successful for all databases and there is no loss of data integrity or data.

- Registry changes are correct and match the information in the setup logs.

- All component services start correctly without generating errors.

- All general activities such as ability to access SQL server and to run third-party software components like VNC or PCAnywhere, etc. are not stopped by Cisco Security Agent.

- "Ccagent" is in service and connected to any Peripheral Gateways located in Side A.

- Recovery process not required, no activity other than process start up.

- Configuration information is passed to the router by the logger. Replication process begins when the Historical Database Server comes online.

- Replication process begins with no errors.

- Database space allocation and % used are reported correctly.

- Unified ICM-CCE-CCH Diagnostic Framework Portico. (Unified ICM-CCE-CCH Diagnostic Framework Portico is installed automatically along with ICM software.)

Verify upgrade to Cisco Real Time Administration Workstation, Historical Database Server

After upgrading the Real Time AW/HDS software, verify the following:

Procedure

Step 1 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Step 2 After Side A Central Controller components have been upgraded, verify basic operations such as the following:

- Setup logs indicate no errors or failure conditions.

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- All components can "ping" public and private IP addresses as applicable.

- Schema upgrade is successful for all databases and there is no loss of data integrity or data.

- Registry changes are correct and match the information in the setup logs.

- All component services start correctly without generating errors.

- All general activities such as the ability to access SQL server and to run third-party software components like VNC or PCAnywhere, etc. are not stopped by Cisco Security Agent.

- "Rtsvr" is connected to the primary Administrative Workstation.

- Configuration information is passed to the router by the logger. Replication process begins when the Historical Database Server comes online.

- Real Time Administrative Workstation indicates that it is ready.

- Replication process begins with no errors.

- Authorized users are able to use the Configuration Manager on the Real Time Administrative Workstation.

- Authorized users are able to log into Cisco Unified Intelligence Center and can access both public and private reports and that all previously existing reports are still available.

- Previous settings for users are still valid when any application is opened.

- The "Validate All" script yields the same results after the upgrade as prior to the upgrade.

  Note All existing scripts can be opened and edited and new scripts can be created.

- Database space allocation and % used are reported correctly.

- Unified ICM-CCE-CCH Diagnostic Framework Portico can acquire logs, capture registry information, and schedule collection of logs.

- Verify that configuration changes are possible.

Verify upgrade to Peripheral, VRU and MRPG gateways

After upgrading the Peripheral, VRU and MRPG gateways, verify the following:

Procedure

Step 1 Ensure that basic calls and call functionality (such as transfers, conferences, call treatment and queuing by Unified IP IVR, etc.) are working properly.

Step 2 Ensure that the peripheral is running properly on the upgraded gateway by verifying call flows, CTI desktops and other applications, Outbound Option, etc.

Step 3 Verify that all previously registered endpoint devices have re-registered correctly.

Step 4 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Verify upgrade to Cisco Unified Contact Center Gateway Enterprise and Cisco Unified System Contact Center Gateway

After upgrading the Unified CCGE and Unified SCCG, verify the following:

Procedure

Step 1 Ensure that basic calls and call functionality (such as transfers, conferences, call treatment and queuing by Unified IP IVR, etc.) are working properly.

Step 2 Ensure that the peripheral is running properly on the upgraded gateway by verifying call flows, CTI desktops and other applications, Outbound Option, etc.

Step 3 Verify that all previously registered endpoint devices have re-registered correctly.

Step 4 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Note Cisco Unified System Contact Center Enterprise (Unified SCCE) is supported in Unified CCE Release 8.5(1); however, there is no separate Unified SCCE Release 8.5(1). If you request features that are in Release 8.5(1), you must migrate all Unified SCCE deployments to Unified CCE deployments. For more information on the migration from Unified SCCE Release 8.0(2) to Unified CCE 8.5(1), see *Upgrade Guide for Cisco Unified ICM/Contact Center Enterprise & Hosted, Release 8.0(1a)* at: http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/ipcc_enterprise/ipccenterprise8_0_1/installation/guide/icm80ug.pdf

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Verify upgrade to Cisco Telephony Integration Object Server and Cisco Agent Desktop Server

After upgrading the CTI OS and CAD Servers, verify the following:

Procedure

Step 1 Ensure that basic calls and call functionality (such as transfers, conferences, call treatment and queuing by Unified IP IVR, etc.) are working properly.

Step 2 Verify that all previously registered endpoint devices have re-registered correctly.

Step 3 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Verify upgrade to Cisco Outbound Option

Procedure

Step 1 Ensure that basic calls and call functionality (such as transfers, conferences, call treatment and queuing by Unified IP IVR, etc.) are working properly.

Step 2 Verify that all previously registered endpoint devices have re-registered correctly.

Step 3 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Verify upgrade to CTI OS and Cisco Agent Desktop Agent/Desktop Clients

After upgrading the Cisco Telephony Integration Object Server (CTI OS) and CAD agent client software, verify the following:

Procedure

Step 1 Ensure that basic calls and call functionality (such as transfers, conferences, call treatment and queuing by Unified IP IVR, etc.) are working properly.

Step 2 Verify that all previously registered endpoint devices have re-registered correctly.

Step 3 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Step 4 Check that agents are still able to log in and answer calls.

Verify upgrade to Cisco Remote Agent

After upgrading the remote agent CAD desktop, verify the following:

Procedure

Step 1 Ensure that basic calls and call functionality such as transfers, conferences, call treatment and queuing by Unified IP IVR, etc.) are working properly.

Step 2 Verify that all previously registered endpoint devices have re-registered correctly.

Step 3 Check that no exceptions, errors, or unexpected events have occurred or found in the log buffer.

Step 4 Check that remote CAD agents are still able to log in and answer calls.

Verify upgrade to Cisco Unified Communications Manager

After upgrading Unified Communications Manager, verify the following:

Procedure

Step 1   Verify that no error messages have occurred during the upgrade process.

Step 2   Check the upgrade log file for any errors.

Step 3   Start all first node and subsequent node servers.

Step 4   Verify that there is no replication failure between the first node and subsequent node servers.

Step 5   Verify that SIP and SCCP IP Phones are registered with Unified Communications Manager.

Step 6   Ensure that the following devices are configured correctly: gatekeeper, MGCP, H.323 gateways, trunks, and CTI route points.

Step 7   Ensure that the media resources (conference bridges, MTP and transcoders) are configured correctly by checking their status.

Step 8   Verify if the end users are able to connect to their CTI managers.

Step 9   Check if the license usage is correct as reported in the License Unit Report.

Step 10   Check if services on all servers in the cluster are up.

Step 11   Perform the Unified Communications Manager first node and subsequent node process verification using the following Real Time Monitoring Tool feature verification process:

   a)   Verify if Multiple Route Patterns and Route Lists are configured and working properly.
   b)   Verify if Extension Mobility is configured and working properly.
   c)   Verify if Unified IP Phone Services are configured and working properly.

Verify Cisco Unified Communications Manager IM and Presence Service upgrade

After upgrading Cisco Unified Communications Manager IM and Presence Service , verify the following:

Procedure

Step 1   Verify that no error messages have occurred during the upgrade process.

Step 2   Check the upgrade log file for any errors.

Step 3   Verify the Static Route configuration.

Step 4   Check if the license usage is correct as reported in the License Unit Report. Using the Real Time Monitoring Tool, check if the CPU usage is consistent over 5 minutes without any spikes.

Verify upgrade to Cisco Security Agent Management Console

After upgrading Cisco Security Agent (CSA) Management Console, verify the following:

System Installation and Upgrade Manual for Contact Center: Cisco Unified Communications System Release 9.0(1)

Procedure

Step 1	Ensure that basic functionality of call flows that previously worked before the upgrade work the same and operate normally.
Step 2	Check if the previous configuration still exists after the upgrade.
Step 3	Check if access to the console is still available.
Step 4	Check if all managed devices are visible.

Verify Cisco Unified IP Phones upgrade

After upgrading Cisco Unified IP Phones, verify the following:

Procedure

Step 1	Verify that the phones are upgraded to the target firmware images as indicated in the Unified Communications Manager.
Step 2	Verify access to the Corporate Directories in the Unified IP Phones.
Step 3	Verify that Unified IP Phone services such as Fast Dial, Extension Mobility, and so on, are working properly.
Step 4	Check if Unified Personal Communicator is able to control IP hard phones.

Verify upgrade to Cisco Unified Customer Voice Portal

After upgrading Unified CVP, verify the following:

Procedure

Step 1	Verify that error messages did not display during the upgrade process.
Step 2	Check the upgrade logs for error messages.
Step 3	Ensure that the Unified CVP Operations, Administration, Monitoring and Provisioning (OAMP) Web interface is available for use.
Step 4	Use the diagnostic page at http://<CVPHOST>:8000/cvp/diag to verify the status of the Unified CVP system.
Step 5	Ensure that the Unified CVP Voice Browser is registered with the H.323 gatekeeper.
Step 6	Check that the H.323 gatekeeper for Unified CVP Server is registered as an H.323 endpoint.
Step 7	Verify that the appropriate voice prompt is heard when the call is made.
Step 8	Ensure that the Unified CVP license is properly installed.

Verify upgrade to Cisco Unified IP IVR

After upgrading Unified IP IVR, verify the following:

Procedure

Step 1   Verify that no error messages have occurred during the upgrade process.

Step 2   Check the upgrade log file for any errors.Verify if all required services are operational after the upgrade.

Step 3   Verify if JTAPI is upgraded to the proper version and it is properly connected and synchronized to Unified Communications Manager.

Step 4   Check if all CTI Ports are registered with Unified Communications Manager.

Step 5   Check if all CTI Route Points are registered with Unified Communications Manager.

Step 6   Check if a prompt is heard when a call is made.

Step 7   Perform Telephony Synchronization and ensure that it is successful.

Step 8   If you are using a CAD desktop, ensure that the desktop auto upgrades to the version bundled with Unified IP IVR.

Step 9   Log in to IP Phone Agent, CAD Agent and CRSADMIN, and ensure that all the logins are successful.

Step 10   Make an inbound call and ensure that the call is presented to Ready Agent.

Step 11   If it is dual node, ensure one node is the Master while other node is in Slave state.

Related compatibility documentation

The following sections list compatibility guides and installation documentation for Cisco Unified Communications System components:

- Compatibility guides, on page 23
- Component release notes and installation and upgrade documents, on page 24

For information about support for legacy products and third-party product interoperability with Cisco Unified Communications contact center products, see the Cisco Interoperability Portal at:

http://www.cisco.com/go/interoperability

Compatibility guides

For compatibility and interoperability information about Unified Communications Manager, Unified Contact Center Enterprise, Unified IP IVR and other Cisco Unified Communications contact center products, see the following sites:

- Cisco Unified Communications Compatibility Tool:

  http://tools.cisco.com/ITDIT/vtgsca

- Cisco Unified Communications Manager (CallManager) Compatibility Information:

  http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_device_support_tables_list.html

- Hardware and Software Compatibility Information for Cisco Unified Presence Release 9.0(1), including TCP and UDP port usage:

  http://www.cisco.com/en/US/products/ps6837/products_device_support_tables_list.html

- *Cisco Unified Contact Center Enterprise (Unified CCE) Software Compatibility Guide:*

  http://docwiki.cisco.com/wiki/Compatibility_Matrix_for_Unified_CCE

- *Hardware and System Software Specification (Bill of Materials) for Cisco Unified ICM/ Contact Center Enterprise & Hosted:*

  http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/icm_enterprise/icm_enterprise_9_0_1/reference/guide/_ICM9.0_BOM.pdf

- *Cisco Unified Contact Center Express (Cisco Unified CCX) Software and Hardware Compatibility Guide*:

  http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/crs/express_compatibility/matrix/crscomtx.pdf

- *Hardware and System Software Specification for Cisco Unified Customer Voice Portal (Unified CVP), Release 9.0(1)* at:

  http://www.cisco.com/en/US/products/sw/custcosw/ps1006/prod_technical_reference_list.html

- Cisco 7800 Series Media Convergence Servers:

  http://www.cisco.com/en/US/products/hw/voiceapp/ps378/index.html

- Hardware and Software Interoperability Matrix for Unified Computing System (UCS) B-series Servers:

  http://www.cisco.com/en/US/docs/unified_computing/ucs/interoperability/matrix/hw_sw_interop_matrix_seriesB_111.pdf

- Hardware and Software Interoperability Matrix for Unified Computing System (UCS) C-series Servers:

  http://www.cisco.com/en/US/docs/unified_computing/ucs/interoperability/matrix/hw_sw_interop_matrix_seriesC_101.pdf

- Cisco Unified Communications Manager Server Support Matrix:

  http://www.cisco.com/en/US/products/hw/voiceapp/ps378/prod_brochure0900aecd8062a4f9.html

- Cisco Unified Communications Virtualization (including links to UCS hardware information):

  http://www.cisco.com/go/uc-virtualized

- Cisco Unified Communications System Release Summary Matrix for Contact Center:

  http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/unified/communications/system/versions/CCMtrix.html

- IP Communications System Test Release Matrix:

  http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/GB_resources/ipcmtrix.htm

Component release notes and installation and upgrade documents

The following table provides a listing of contact center components and URLs for related component release notes and installation and upgrade documents. These URLs link to webpages that list various release versions of these documents. Review the appropriate documents based on the release versions of the components in your base and target release sets.

Table 4: Component-specific release notes and installation and upgrade documents

Components	Release Notes	Installation and Upgrade Documents
Cisco Unified Communications Manager	http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_installation_guides_list.html
Cisco Unified Communications Manager IM and Presence Service (formerly Cisco Unified Presence)	http://www.cisco.com/en/US/products/ps6837/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps6837/prod_installation_guides_list.html
Cisco Unified SIP Proxy	http://www.cisco.com/en/US/products/ps10475/prod_release_notes_list.html	—
Cisco Unified Intelligent Contact Management	http://www.cisco.com/en/US/products/sw/custcosw/ps1001/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/custcosw/ps1001/prod_installation_guides_list.html
Cisco Unified Contact Center Enterprise	http://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod_installation_guides_list.html
Cisco Unified Contact Center Express and Cisco Unified IP IVR	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html
Cisco Customer Voice Portal	http://www.cisco.com/en/US/products/sw/custcosw/ps1006/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/custcosw/ps1006/prod_installation_guides_list.html
Cisco Outbound Option	http://www.cisco.com/en/US/products/sw/custcosw/ps1001/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/custcosw/ps524/prod_installation_guides_list.html
Cisco Telephony Integration Object Server (CTI OS)	http://www.cisco.com/en/US/products/sw/custcosw/ps14/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/custcosw/ps14/prod_installation_guides_list.html
Cisco Agent Desktop (CAD)	http://www.cisco.com/en/US/products/sw/custcosw/ps427/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/custcosw/ps427/prod_installation_guides_list.html
Cisco Unified Intelligence Center	http://www.cisco.com/en/US/products/ps9755/prod_release_notes_list.html	—
Cisco Unified Operations Manager	http://www.cisco.com/en/US/products/ps6535/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps6535/prod_installation_guides_list.html

Components	Release Notes	Installation and Upgrade Documents
Cisco MediaSense	http://www.cisco.com/en/US/products/ps11389/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps11389/prod_installation_guides_list.html
Cisco Finesse	http://www.cisco.com/en/US/products/ps11324/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps11324/prod_installation_guides_list.html
Cisco SocialMiner	http://www.cisco.com/en/US/products/ps11349/prod_release_notes_list.html	—
Cisco Unified Computing System	http://www.cisco.com/en/US/products/ps10477/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps10477/prod_installation_guides_list.html
Cisco ASA 5500 Series Adaptive Security Appliances	http://www.cisco.com/en/US/products/ps6120/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps6120/tsd_products_support_install_and_upgrade.html
Cisco Security Agent	http://www.cisco.com/en/US/products/sw/secursw/ps5057/prod_release_notes_list.html	http://www.cisco.com/en/US/products/sw/secursw/ps5057/tsd_products_support_install_and_upgrade.html
Cisco Series 800 Routers	http://www.cisco.com/en/US/products/hw/routers/ps380/prod_release_notes_list.html	http://www.cisco.com/en/US/products/hw/routers/ps380/prod_installation_guides_list.html
Cisco 2900 Series Integrated Services Routers	—	http://www.cisco.com/en/US/products/ps5854/prod_installation_guides_list.html
Cisco Integrated Services Routers (ISR) 2901, 2911, 2921, 2951	—	—
Cisco Series 7200 Routers	http://www.cisco.com/en/US/products/hw/routers/ps341/prod_release_notes_list.html	http://www.cisco.com/en/US/products/hw/routers/ps341/prod_installation_guides_list.html
Cisco Catalyst 3600 Series MultiService Platforms	—	http://www.cisco.com/en/US/products/hw/routers/ps274/prod_installation_guides_list.html
Cisco AS5400 Series Universal Gateways	http://www.cisco.com/en/US/products/hw/univgate/ps505/prod_release_notes_list.html	http://www.cisco.com/en/US/products/hw/univgate/ps505/prod_installation_guides_list.html

Components	Release Notes	Installation and Upgrade Documents
Cisco 3800 Series Voice Gateways	http://www.cisco.com/en/US/products/ps5855/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps5855/prod_installation_guides_list.html
Cisco 3900 Series Routers	—	http://www.cisco.com/en/US/products/ps10536/prod_installation_guides_list.html
Cisco VGD 1T3 Voice Gateway	—	http://www.cisco.com/en/US/products/ps9890/prod_installation_guides_list.html
Cisco Catalyst 3750 Series Access Switches	http://www.cisco.com/en/US/products/hw/switches/ps5023/prod_release_notes_list.html	http://www.cisco.com/en/US/products/hw/switches/ps5023/prod_installation_guides_list.html
Cisco Catalyst 6500 Series Switches	http://www.cisco.com/en/US/products/hw/switches/ps708/prod_release_notes_list.html	http://www.cisco.com/en/US/products/hw/switches/ps708/prod_installation_guides_list.html
Cisco Unified IP Phone 9900 Series	http://www.cisco.com/en/US/products/ps10453/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps10453/prod_installation_guides_list.html
Cisco Unified IP Phone 8900 Series	http://www.cisco.com/en/US/products/ps10451/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps10451/prod_installation_guides_list.html
Cisco Unified IP Phone 7900 Series	http://www.cisco.com/en/US/products/hw/phones/ps379/prod_release_notes_list.html	http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html
Cisco Unified IP Phone 6900 Series	http://www.cisco.com/en/US/products/ps10326/prod_release_notes_list.html	—
Cisco Aironet Access Point 1240AG	http://www.cisco.com/en/US/products/ps6521/prod_release_notes_list.html	http://www.cisco.com/en/US/products/ps6521/prod_installation_guides_list.html
Cisco IOS Software Releases 15.2	http://www.cisco.com/en/US/products/ps10592/prod_release_notes_list.html	—