Common Upgrade Tasks

Upgrade Voice and Data Gateways

Perform the following procedure on each machine that hosts gateways that are used for TDM ingress, Outbound Option dialer egress, and VXML processing.

Procedure

Step 1   For VXML gateways only, perform this step. For all other gateways, proceed to the next step.

Run the `#copy tftp flash <IP Address> <filename>.bin` command to copy the flash from a remote machine to the gateway.

Step 2   Run the `#sh flash` command to check the version.

Step 3   Run the following commands in order:

a) `#conf t`
b) `#no boot system flash: <old image>`
c) `#boot system flash: <new image>`
d) `#wr`
e) `#reload`

Step 4   Run the `#sh version` command to verify that the new version shows in the gateway.

Bring Upgraded Side A into Service

After the Side A Unified CCE Logger, Call Router, and Administration & Data Server are upgraded, follow this procedure to bring Side A into service.

The logger and distributor services run with existing service logon account and is authorized by service security group in the domain. If you want to run logger and distributor services with local authorization, then you have to modify the service accounts using **Service Account Manager** Tool.

For more information on how to run Service Account Manager tool, see the *Staging Guide for Cisco Unified ICM/Contact Center Enterprise* at
http://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-installation-guides-list.html.

Procedure

Step 1   Use Unified CCE Service Control to stop all Unified CCE services on the side B Call Router and Logger. However, before stopping Side B Router and Logger, also make sure that all non-upgraded Adminitration and Data Servers are stopped and shutdown, before starting the upgraded Side A Logger and Router servers.

Step 2   Manually start the Unified CCE services on the Side A Call Router and Logger, and the upgraded Administration & Data Server. Verify the following basic operations of the Side A Central Controller categories:

Category	Operation
General	• Setup logs indicate no errors or failure conditions. • AD domain has all users. • Schema upgrade is successful for all databases (no loss of data integrity or loss of data). • All component services start without errors. • Calls are successfully processed.
Call Router	• The Rtsvr logs indicate that the upgraded Administration & Data Server has connected successfully.
Logger	• Recovery process that is not required, no activity other than process start up. • Users are in correct domain. • Configuration information is passed to Call Router. • Replication process begins when HDS comes online.
Adminitration & Data Server	• The updateAW process logs indicate that the Administration & Data Server is waiting for work. • Replication process begins with no errors.[1]
Security	• Specified users are able to use configuration manager.
Script Editor	• Previous settings for users are present when application is opened. • Validate All script yields the same results that the preupgrade test yielded. • You can open, edit, delete, or create new scripts.

Category	Operation
ICMDBA	• Import or Export functionality is present. • Database space allocation and percent used are correct.

[1] During replication, data from Config_Message_Log table is replicated from Logger database to AW database. A purge mechanism is also introduced for Config_Message_Log table in AW Database. The default retention period is set to 90 days. To change the retention period, modify the following registry key:

```
Cisco Systems,
Inc.\ICM\<instancename>\Distributor\RealTimeDistributor
\CurrentVersion\Recovery\CurrentVersion\Purge\Retain\System\ConfigMessageLog
```

Step 3 Use Unified CCE Service Control to set the Unified CCE services to Automatic Start on each of the upgraded Unified CCE components.

Step 4 Verify production system operation while running with the upgraded Side A Call Router and Side A Logger.

Verify Operation of Upgraded Side B Call Router and Logger

Before you begin

The logger and distributor services that are run with existing service logon account and is authorized by service security group in the domain. If you want to run logger and distributor services with local authorization, then you have to modify the service accounts using Service Account Manager Tool.

For more information on how to run Service Account Manager tool, see the *Staging Guide for Cisco Unified ICM/Contact Center Enterprise* at http://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-installation-guides-list.html.

Procedure

Step 1 Before bringing Side B into service, manually synchronize Logger B to Logger A using ICMDBA.

Step 2 Start the Side B Call Router and Logger services.

As each node starts up, it searches for the other server components and attempts to register with them. If you completed the ICM-CCE-Installer and network testing successfully, no major errors should occur.

To verify whether a process is up, use the Diagnostic Framework Portico ListProcess option, available through the Unified CCE Tools shortcut that is created by the installer.

In order to add configuration data, the Central Controller, and Administration & Data Servers must be running.

Verify that the Unified CCE processes have no errors:

Category	Operation
Call Routers	• Router: Running and synchronized with peer. • Rtsvr: Indicates no connectivity to Administration & Data Server currently.
Loggers	• Logger: Connected to its respective database and synchronized with peer. MDS is in service. • Replication: No connectivity to Administration & Data Server HDS currently.

Step 3   To start the Unified CCE Distributor services, verify that the Unified CCE processes have no errors.

Category	Operation
Call Routers	• Router: Running and synchronized with peer. • CCAgent: In service, and without any errors. • Rtsvr: Feed activated to Administration & Data Server.
Loggers	• Logger: Connected to its respective database and synchronized with peer. MDS is in service. • Replication: Connected to the Administration & Data Server.
Administration & Data Server	• Updateaw: Displays "Waiting for new work." • Iseman: Listen thread waiting for client connection. (Exists only if Internet Script Editor is configured). • Replication: Replication and recovery client connection initialized. [2]

> [2] **Note**   During replication, data from Config_Message_Log table is replicated from Logger database to AW database. A purge mechanism is also introduced for Config_Message_Log table in AW Database. The default retention period is set to 90 days. To change the retention period, modify the following registry key:
>
> ```
> Cisco Systems, Inc.\ICM\<instancename>\Distributor\RealTimeDistributor
> \CurrentVersion\Recovery\CurrentVersion\Purge\Retain\System\ConfigMessageLog
> ```

Step 4   Validate the following settings from the system diagram for the Production Environment and make the required changes before you place the systems in production:

a) Clear event logs.
b) Remove any media from drives.
c) Ensure that all services are set to Manual Start. Services are not set to Automatic Start until after the implementation testing in the production environment.

Step 5   Verify overall system operation.

Step 6   Enable configuration changes.

a) Set the following registry key to 0 on the Side A and Side B Call Routers of the system: **HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems, Inc.\ICM\<instance name>\Router<A/B>\Router\CurrentVersion\Configuration\Global\DBMaintenance**.

b) Verify that configuration changes can be made.

Step 7 Upgrade any other Administration & Data Servers or HDSs using the steps that are documented in Migrate HDS Database and Upgrade Unified CCE Administration & Data Server.

Upgrade Cisco JTAPI Client on PG

If you upgrade Unified Communications Manager (Unified CM) in the contact center, also upgrade the JTAPI client that resides on the PG. To upgrade the JTAPI client, uninstall the old version of the client, restart the server, and reinstall a new version. You install the JTAPI client using the Unified Communications Manager Administration application.

To install the JTAPI client for the Unified CM release that you have upgraded to, see the Install Cisco JTAPI Client on PG topic.

Before you begin

Before you perform this procedure, you must:

• Uninstall the old JTAPI client from the Unified Communications Manager PG

• Restart the PG server.

Database Performance Enhancement

After you perform a Common Ground or a Technology Refresh upgrade, complete the procedures described in this section to enhance the performance of the database. This is a one-time process and must be run only on the Logger and AW-HDS databases during a maintenance window.

• Performance Enhancement of TempDB, on page 5 (You can skip this when performing a Technology Refresh upgrade)

• Performance Enhancement of Logger Database, on page 6

• Performance Enhancement of AW-HDS Database, on page 7

Performance Enhancement of TempDB

Perform this procedure on Logger, Rogger, AW-HDS-DDS, AW-HDS and HDS-DDS machines to get the benefits of TempDB features for SQL Server. For more information about the SQL Server TempDB Database and its use, see the Microsoft SQL Server documentation for TempDB Database.

Note This procedure applies to the Common Ground upgrade process only.

Procedure

Step 1 Use **Unified CCE Service Control** to stop the Logger and Distributor services.

Step 2 Login to **SQL Server Management Studio** and run the following queries on the master database.

- To modify the existing TempDB Initial size to the recommended value:

```
ALTER DATABASE tempdb MODIFY FILE
    (NAME = 'tempdev', SIZE = 800, FILEGROWTH = 100)
ALTER DATABASE tempdb MODIFY FILE
    (NAME = 'templog', SIZE = 600, FILEGROWTH = 10%)
```

- To add multiple TempDB files:

```
USE [master];
GO
ALTER DATABASE [tempdb] ADD FILE (NAME = N'tempdev2', FILENAME = N'<SQL Server TempDB
path>' , SIZE = 800 , FILEGROWTH = 100);
ALTER DATABASE [tempdb] ADD FILE (NAME = N'tempdev3', FILENAME = N'<SQL Server TempDB
path>' , SIZE = 800 , FILEGROWTH = 100);
ALTER DATABASE [tempdb] ADD FILE (NAME = N'tempdev4', FILENAME = N'<SQL Server TempDB
path>' , SIZE = 800 , FILEGROWTH = 100);
GO
```

Note	- For example,

```
<SQL Server TempDB path> = C:\Program Files\Microsoft SQL
Server\MSSQL12.MSSQLSERVER\MSSQL\DATA\tempdev2.ndf
```

- Make sure that you modify the values in the query based on the machines. For more information, see Increase Database and Log File Size for TempDB.

Step 3 Restart the SQL Services.

Step 4 Start the Logger and Distributor services.

Performance Enhancement of Logger Database

Perform this procedure on Side A and Side B of the Logger database.

Procedure

Step 1 Use the Unified CCE Service Control to stop the Logger service.

Step 2 From the command prompt, run the **RunFF.bat** file which is located in the `<ICM install directory>:\icm\bin` directory.

Step 3 Proceed with the application of fill factor to Unified ICM databases.

Note: Based on the size of the database, it takes several minutes to several hours to apply fill factor to the database. For example, it takes anywhere between 2 to 3 hours for a 300-GB HDS. After the process is completed, the log file is stored in `<SystemDrive>:\temp\<DatabaseName>_Result.txt`.

Step 4 Use the Unified CCE Service Control to start the Logger service.

Performance Enhancement of AW-HDS Database

Procedure

Step 1 Use the Unified CCE Service Control to stop the Distributor service.

Step 2 From the command prompt, run the **RunFF.bat** file which is located in the `<ICM install directory>:\icm\bin` directory.

Step 3 Proceed with the application of fill factor to Unified ICM databases.

Note: Based on the size of the database, it takes several minutes to several hours to apply fill factor to the database. For example, it takes between 2 to 3 hours for a 300-GB HDS. After the process is completed, the log file is stored in `<SystemDrive>:\temp\<DatabaseName>_Result.txt`.

Step 4 Use the Unified CCE Service Control to start the Distributor service.

Troubleshooting Tips

See the `RunFF.bat/help` file for more information.

Improve Reporting Performance

To improve the performance of the reporting application, modify the following Windows settings on the database servers (AW-HDS, AW-HDS-DDS, HDS-DDS).

- Increase the Paging File Size to 1.5 times the server's memory.

  To change the Paging File Size, from the Control Panel search for Virtual Memory. In the Virtual Memory dialog box, select **Custom size**. Set both **Initial size** and **Maximum size** to 1.5 times the server memory.

- Set the server's **Power Options** to **High Performance**.

  From the Control Panel, select **Power Options**. By default, the **Balanced** plan is selected. Select **Show additional plans** and select **High performance**.

In SQL Server, disable **Auto Update Statistics** for AW and HDS databases.

In the SQL Server Management Studio, right-click the database name in the Object Explorer and select **Properties**. Select the **Options** page. In the **Automatic** section of the page, set **Auto Create Statistics** and **Auto Update Statistics** to **False**.

Reduce Reserved Unused Space for HDS

Enable trace flag 692 on HDS database server to reduce the growth of reserved unused space on the AW-HDS, AW-HDS-DDS, HDS-DDS database servers , after you upgrade or migrate to Microsoft SQL 2017 . For more information about the trace flag 692, see the Microsoft Documentation.

Procedure

Run the following command to enable trace flag 692 on HDS database server :

DBCC TRACEON (692, -1);

GO

Note An increase in the unused space may lead to unexpected purge trigger in HDS , trace flag 692 helps in mitigating this unexpected purge issue. After you enable the trace flag, there will be an increase of 10% to 15% CPU for a short duration.

Update User Role

To update the User Role in the database for the existing users, do the following in any one of the AW (distributor) machines:

- Go to the link https://software.cisco.com/download/home/268439622/type and select User Role Update Bulk Tool from the list.

- Download the file UserRoleUpdateScript_1201.zip and extract it.

- Open Windows Powershell and run the script UserRoleUpdate.PS1.