Troubleshooting Address Change Issues

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Troubleshoot Cluster Authentication

You can troubleshoot cluster authentication issues on subscriber nodes using the Command Line Interface (CLI).

Procedure

Step 1 Enter **`show network eth0 [detail]`** to verify network configuration.

Step 2 Enter **`show network cluster`** to verify the network cluster information.

- If the output displays incorrect publisher information, enter the **`set network cluster publisher [hostname/IP address]`** CLI command on the subscriber node to correct the information.
- If you are on a publisher node, and the `show network cluster` CLI command displays incorrect subscriber information, login to Cisco Unified Communications Manager Administration and choose **System** > **Server** to check the output.
- If you are on a subscriber node and the `show network cluster` output displays incorrect publisher information, use the `set network cluster publisher [hostname | IP_address]` CLI command to change the publisher hostname or IP address.

Troubleshoot Database Replication

You can use the Command Line Interface (CLI) to troubleshoot database replication on the nodes in your cluster.

- Verify that database replication is in a correct state in the cluster.

- Repair and reestablish database replication for the nodes.
- Reset database replication.

For more information about these commands or using the CLI, see the *Command Line Interface Guide for Cisco Unified Communications Solutions*.

Verify Database Replication

Use the Command Line Interface (CLI) to check the database replication status for all nodes in the cluster. Verify that the Replication Setup (RTMT) & Details shows a value of `2`. Anything other than 2 means that there is a problem with database replication and that you need to reset replication for the node. See topics related to database replication examples for example output.

Procedure

Step 1 Enter **`utils dbreplication runtimestate`** on the first node to check database replication on all nodes in the cluster.

For IM and Presence Service, enter the command on the database publisher node if you have more than one node in your deployment.

Tip
If replication is not set up for the nodes in your cluster, you can reset database replication for the nodes using the CLI. For more information, see topics related to resetting database replication using the CLI.

Example:

```
admin: utils dbreplication runtimestate

DDB and Replication Services: ALL RUNNING

DB CLI Status: No other dbreplication CLI is running...

Cluster Replication State: BROADCAST SYNC Completed on 1 servers at:
2013-09-26-15-18
     Last Sync Result: SYNC COMPLETED 257 tables sync'ed out of 257
     Sync Errors: NO ERRORS

DB Version: ccm9_0_1_10000_9000
Number of replicated tables: 257
Repltimeout set to: 300s

Cluster Detailed View from PUB (2 Servers):

                          PING        REPLICATION REPL. DBver& REPL. REPLICATION
SETUP
SERVER-NAME IP ADDRESS   (msec) RPC? STATUS      QUEUE TABLES LOOP? (RTMT) &
details
----------- ------------ ------ ---- ----------- ----- ------ -----
-----------------
server1     100.10.10.17 0.052  Yes  Connected   0     match  Yes   (2) PUB Setup
 Completed
server2     100.10.10.14 0.166  Yes  Connected   0     match  Yes   (2) Setup
Completed
```

Step 2 Verify the output.

The output should show a replication status of **Connected** and a replication setup value of **(2) Setup Complete** for each node. This means that the replication network within the cluster is functioning properly. If the output results are different, proceed to troubleshoot and repair database replication.

Example Database Replication CLI Output

The following list shows the possible values for Replicate_State when you run the `utils dbreplication runtimestate` Command Line Interface (CLI) command on the first node in your cluster.

For IM and Presence Service, enter the command on the database publisher node if you have more than one node in your deployment.

- 0 - Replication Not Started. Either no subscribers exist, or the Database Layer Monitor service has not been running since the subscriber was installed.
- 1 - Replicates have been created, but their count is incorrect.
- 2 - Replication is good.
- 3 - Replication is bad in the cluster.
- 4 - Replication setup did not succeed.

Note It is important to verify that the Replication Setup (RTMT) & Details shows a value of `2`. Anything other than 2 means that there is a problem with database replication and that you need to reset replication. For information about resolving database replication issues, see topics related to troubleshooting database replication.

Example CLI Output for Cisco Unified Communications Manager Node

In this example, the Replication Setup (RTMT) & Details shows a value of `2`. Replication is good.

```
admin: utils dbreplication runtimestate
Server Time: Mon Jun 1 12:00:00 EDT 2013

Cluster Replication State: BROADCAST SYNC Completed on 1 servers at:
2013-06-01-12-00
   Last Sync Result: SYNC COMPLETED on 672 tables out of 672
   Sync Status: NO ERRORS
   Use CLI to see detail: 'file view activelog
cm/trace/dbl/2013_06_01_12_00_00_dbl_repl_output_Broadcast.log'

DB Version: ccm10_0_1_10000_1
Repltimeout set to: 300s
PROCESS option set to: 1

Cluster Detailed View from uc10-pub (2 Servers):

                        PING       Replication  REPLICATION SETUP
SERVER-NAME IP ADDRESS (msec) RPC? Group ID     (RTMT) & Details
----------- ---------- ------ ---- ----------- -------------------
uc10-pub    192.0.2.95 0.040  Yes    (g_2)     (2) Setup Completed
uc10-sub1   192.0.2.96 0.282  Yes    (g_3)     (2) Setup Completed
```

Example CLI Output for IM and Presence Service Node

In this example, the Replication Setup (RTMT) & Details shows a value of 2. Replication is good.

```
admin: utils dbreplication runtimestate
Server Time: Mon Jun 1 12:00:00 EDT 2013

DB and Replication Services: ALL RUNNING

Cluster Replication State: Replication status command started at: 2012-02-26-09-40

   Replication status command COMPLETED 269 tables checked out of 269
   No Errors or Mismatches found.
   Use 'file view activelog
cm/trace/dbl/sdi/ReplicationStatus.2012_02_26_09_40_34.out' to see the details

DB Version: ccm8_6_3_10000_23
Number of replicated tables: 269

Cluster Detailed View from PUB (2 Servers):

                        PING       REPLICATION   REPL. DBver&  REPL.  REPLICATION
 SETUP
SERVER-NAME IP ADDRESS (msec) RPC? STATUS        QUEUE TABLES  LOOP? (RTMT) &
details
----------- ------------ ------ ---- ----------- ----- ------- -----
-----------------
gwydla020218 10.53.46.130 0.038 Yes Connected    0     match   Yes   (2) PUB Setup
 Completed
gwydla020220 10.53.46.133 0.248 Yes Connected    128   match   Yes   (2) Setup
Completed
```

Repair Database Replication

Use the Command Line Interface (CLI) to repair database replication.

Procedure

Step 1 Enter **utils dbreplication repair all** on the first node to attempt to repair database replication.

For IM and Presence Service, repair the database replication status from the database publisher node if you have more than one node in your deployment.

Depending on the size of the database, it may take several minutes to repair database replication. Proceed to the next step to monitor the progress of database replication repair.

Example:

```
admin:utils dbreplication repair all
-------------------- utils dbreplication repair --------------------

Replication Repair is now running in the background.
Use command 'utils dbreplication runtimestate' to check its progress

Output will be in file cm/trace/dbl/sdi/ReplicationRepair.2013_05_11_12_33_57.out
```

```
Please use "file view activelog
cm/trace/dbl/sdi/ReplicationRepair.2013_05_11_12_33_57.out " command to see the
output
```

Step 2 Enter **utils dbreplication runtimestate** on the first node to check the progress of replication repair.

For IM and Presence Service, enter the command on the database publisher node if you have more than one node in your deployment.

The bolded text in the example replication output highlights the final status of the replication repair.

Example:

```
admin:utils dbreplication runtimestate

DB and Replication Services: ALL RUNNING

Cluster Replication State: Replication repair command started at: 2013-05-11-12-33

     Replication repair command COMPLETED 269 tables processed out of 269
     No Errors or Mismatches found.

     Use 'file view activelog
cm/trace/dbl/sdi/ReplicationRepair.2013_05_11_12_33_57.out' to see the details

DB Version: ccm8_6_4_98000_192
Number of replicated tables: 269

Cluster Detailed View from PUB (2 Servers):

                          PING        REPLICATION REPL. DBver& REPL. REPLICATION
SETUP
SERVER-NAME IP ADDRESS    (msec) RPC? STATUS      QUEUE TABLES LOOP? (RTMT) &
details
----------- ------------ ------ ---- ----------- ----- ------ -----
-----------------
server1     100.10.10.17 0.052  Yes  Connected   0     match  Yes   (2) PUB Setup
 Completed
server2     100.10.10.14 0.166  Yes  Connected   0     match  Yes   (2) Setup
Completed
```

a) If replication repair runs to completion without any errors or mismatches, run the procedure to verify the node name change again to validate that the new node name is now correctly replicated.
b) If errors or mismatches are found, there may be a transient mismatch between nodes. Run the procedure to repair database replication again.

Note
If, after several attempts to repair replication, mismatches or errors are being reported, contact your Cisco Support Representative to resolve this issue.

Step 3 Enter **utils dbreplication reset all** on the first node to attempt to reestablish replication.

For IM and Presence Service, enter the command on the database publisher node if you have more than one node in the deployment.

Depending on the size of the database, it may take several minutes to over an hour for replication to be fully reestablished. Proceed to the next step to monitor the progress of database replication reestablishment.

Example:

```
admin:utils dbreplication reset all
This command will try to start Replication reset and will return in 1-2 minutes.
Background repair of replication will continue after that for 1 hour.
Please watch RTMT replication state. It should go from 0 to 2. When all subs
have an RTMT Replicate State of 2, replication is complete.
If Sub replication state becomes 4 or 1, there is an error in replication setup.
Monitor the RTMT counters on all subs to determine when replication is complete.
Error details if found will be listed below
OK [10.53.56.14]
```

Step 4 Enter **utils dbreplication runtimestate** on the first node to monitor the progress of the attempt to reestablish database replication.

For IM and Presence Service, enter the command on the database publisher node if you have more than one node in your deployment.

Replication is considered to be reestablished when all nodes show a replication status of **Connected** and a replication setup value of **(2) Setup Complete**.

Example:

```
admin: utils dbreplication runtimestate

DDB and Replication Services: ALL RUNNING

DB CLI Status: No other dbreplication CLI is running...

Cluster Replication State: BROADCAST SYNC Completed on 1 servers at:
2013-09-26-15-18
     Last Sync Result: SYNC COMPLETED 257 tables sync'ed out of 257
     Sync Errors: NO ERRORS

DB Version: ccm9_0_1_10000_9000
Number of replicated tables: 257
Repltimeout set to: 300s

Cluster Detailed View from newserver100 (2 Servers):
                           PING       REPLICATION REPL. DBver& REPL. REPLICATION
 SETUP
SERVER-NAME IP ADDRESS     (msec) RPC? STATUS      QUEUE TABLES LOOP? (RTMT) &
details
----------- -------------- ------ ---- ----------- ----- ------ -----
-----------------
server1     100.10.10.201  0.038  Yes  Connected   0     match  Yes   (2) PUB
Setup Completed
server2     100.10.10.202  0.248  Yes  Connected   0     match  Yes   (2) Setup
Completed
server3     100.10.10.203  0.248  Yes  Connected   0     match  Yes   (2) Setup
Completed
server4     100.10.10.204  0.248  Yes  Connected   0
```

a) If replication is reestablished, run the procedure to verify the node name change again to validate that the new node name is now correctly replicated.

b) If replication does not recover, contact your Cisco Support Representative to resolve this issue.

Caution

Do not proceed beyond this point if database replication is broken.

Reset Database Replication

Reset database replication if replication is not set up for the nodes in your cluster. You can reset database replication using the command line interface (CLI).

Before you begin

Check database replication status for all nodes in the cluster. Verify that the Replication Setup (RTMT) & Details shows a value of `2`. Anything other than 2 means that there is a problem with database replication and that you need to reset replication for the node.

Procedure

Step 1 Reset replication on nodes in your cluster. Do one of the following:

a) For Unified Communications Manager, enter **`utils db replication reset all`**.

Before you run this CLI command on any Cisco Unified Communications Manager nodes, first run the command **`utils dbreplication stop`** on all subscriber nodes that are reset, and then on the publisher server. For more information, see the *Command Line Interface Guide for Cisco Unified Communications Solutions*.

b) For IM and Presence Service, enter **`utils db replication reset all`** on the database publisher node to reset all IM and Presence Service nodes in the cluster.

Tip
You can enter a specific hostname instead of **all** to reset database replication on only that node. For more information, see the *Command Line Interface Guide for Cisco Unified Communications Solutions*.

Step 2 Enter **`utils dbreplication runtimestate`** to check the database replication status.

For IM and Presence Service, run the CLI command on the IM and Presence database publisher node

Troubleshoot Network

You can troubleshoot network issues on nodes using the Command Line Interface (CLI).

Procedure

Step 1 Enter **`show network eth0 [detail]`** to verify network configuration.

Step 2 If any of the fields are missing, then reset the network interface.

a) Enter **`set network status eth0 down`**.

b) Enter **`set network status eth0 up`**.

Step 3 Verify the IP address, mask, and gateway.

Ensure that these values are unique across the network.

Network Time Protocol troubleshooting

Troubleshoot NTP on Subscriber Nodes

You can troubleshoot Network Time Protocol (NTP) issues on subscriber nodes using the Command Line Interface (CLI).

Procedure

Step 1 Enter **show network eth0 [detail]** to verify network configuration.

Step 2 Enter **utils ntp status** to verify NTP status.

Step 3 Enter **utils ntp restart** to Restart NTP.

Step 4 Enter **show network cluster** to verify the network cluster.

If the output displays incorrect publisher information, use the **set network cluster publisher [hostname/IP_address]** CLI command to reset the publisher.

Troubleshoot NTP on Publisher Nodes

You can troubleshoot Network Time Protocol (NTP) issues on publisher nodes using the Command Line Interface (CLI).

Procedure

	Command or Action	Purpose
Step 1	Enter **show network eth0 [detail]** to verify network configuration.	
Step 2	Enter **utils ntp status** to verify NTP status.	
Step 3	Enter **utils ntp restart** to Restart NTP.	
Step 4	Enter **utils ntp server list** to verify NTP servers.	To add or delete an NTP server, use the **utils ntp server [add/delete]** CLI command.