



Cluster

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Cluster Overview

Cisco Jabber Guest supports a three-server cluster. Three operational servers are required for full redundancy. Cisco Jabber Guest will function properly with two operational servers in the cluster; however, we recommend to only run with two operational servers for short periods of time, for example, when upgrading the servers in a Cisco Jabber Guest cluster. Cisco Jabber Guest will not function properly if only one server in the cluster is operational.

Recommended Deployment

Configure the reverse proxy to send requests to only one server in the cluster at a time. You set the order in which requests are sent on the Cisco Expressway-C, from the **Priority** field in **Configuration > Unified Communications > Configuration > Configure Jabber Guest servers**. All Cisco Jabber Guest servers should have a different priority. Requests are sent to a different server only if a server becomes unresponsive.

Cisco Jabber Guest can be administered from any server in the cluster; however, to simplify troubleshooting, we recommend that you use one server in the cluster for administration purposes.

Data Replication

The following table describes which data replicates in a cluster.

Table 1: Cluster Data Replication

Data That Replicates	Data That Does Not Replicate
Users	Settings > Local SSL Certificate

Data That Replicates	Data That Does Not Replicate
Links	Settings > Call Control and Media (Local)
Services > Passwords	Logs
Settings > Links	
Settings > Mobile	
Settings > Secure SIP Trust Certificate	
Settings > Call Control and Media	

Cluster Latency

The upper latency limit is 15 milliseconds.

Create Cluster

In this procedure, we refer to the primary server as *primary* and to the two secondary servers as *node A* and *node B*.

Before You Begin

When a secondary server joins a cluster, all of the data on the secondary server is discarded. If you need to retain the data for future use, back up the secondary server before joining it to the cluster.

Procedure

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- Step 1** Deploy the .OVA to all three servers.
- Step 2** For all three Cisco Jabber Guest servers, make sure that you set the FQDN. For more information, see [Set FQDN of Cisco Jabber Guest Server](#).
- Step 3** Sign in to each server as root.
- Step 4** To establish the primary, on one of the three servers:
- Type `cluster initiate`, and follow the on-screen prompts.
It takes a minute or two for the database to stabilize in its new configuration.
 - Verify that the database has stabilized by typing `cluster status`.
When the database has stabilized, the status shows: `---> <IP address/hostname of primary> PRIMARY`.
The symbol `--->` indicates the current server.
 - Restart Tomcat: `service tomcat-as-standalone.sh restart`.
- Step 5** To join node A to the cluster, on one of the remaining servers:
- Type `cluster join <IP address/hostname of primary>`, and follow the on-screen prompts.
It takes a minute or two for the database to stabilize in its new configuration.
 - Verify that the database has stabilized by typing `cluster status`.
When the database has stabilized, the status shows: `---> <IP address/hostname of node A> SECONDARY`.

c) Restart Tomcat: `service tomcat-as-standalone.sh restart`.

Step 6 To join node B to the cluster, on the remaining server:

- a) Type `cluster join <IP address/hostname of primary>`, and follow the on-screen prompts. It takes a minute or two for the database to stabilize in its new configuration.
- b) Verify that the database has stabilized by typing `cluster status`.
When the database has stabilized, the status shows as: `---> <IP address/hostname of node B> SECONDARY`.
- c) Restart Tomcat: `service tomcat-as-standalone.sh restart`.

Step 7 Allow node A to communicate with node B:

- a) Type `cluster allow <IP address/hostname of node B>`.
- b) Verify that communication is allowed by typing `cluster status`.
When communication is allowed, the status of node B changes from `---> <IP address/hostname of node B> not reachable/healthy` to `---> <IP address/hostname of node B> SECONDARY`.

Step 8 Allow node B to communicate with node A:

- a) Type `cluster allow <IP address/hostname of node A>`.
- b) Verify that communication is allowed by typing `cluster status`.
When communication is allowed, the status of node A changes from `---> <IP address/hostname of node A> not reachable/healthy` to `---> <IP address/hostname of node A> SECONDARY`.

What to Do Next

For each of the three servers in the cluster, configure the appropriate SIP trunk in Cisco Unified Communications Manager or zones in Cisco TelePresence Video Communication Server, depending on the type of servers deployed in your network.

Change IP Address or Hostname of Server in Cluster

You can modify the IP address or hostname of a server in the cluster if it changes for any reason.

In this procedure, we refer to the server that we change the IP address or hostname of as the *target server*.

Procedure

- Step 1** Make a note of the current IP address or hostname of the target server. You need to enter it during Step 4.b.
- Step 2** (Optional) If you are changing the IP address or hostname of the primary server, demote the primary server to a secondary server, otherwise proceed to Step 3:
 - a) On the primary server, type `cluster stepdown`.
 - b) Verify that the target server has been demoted from the primary server to a secondary server by typing `cluster status`.
 - c) Make a note of which server is now the primary server.
- Step 3** Change the IP address or hostname of the target server.
- Step 4** In the cluster, change the IP address or hostname of the target server:
 - a) Sign in to the primary server as root.

- b) Type `cluster move <old IP address/hostname of target server> <new IP address/hostname of target server>`.
 - c) Verify that the IP address or hostname of the target server has changed by typing `cluster status`.
- Step 5** On the other secondary server (node B), block communication from the old IP address or hostname of the target server and allow communication with the new IP address or hostname of the target server:
- a) Sign in to node B as root.
 - b) On node B, block communication from the old IP address or hostname of the target server by typing `cluster disallow <old IP address/hostname of target server>`.
 - c) On node B, allow communication with the new IP address or hostname of the target server by typing `cluster allow <new IP/hostname of target server>`.
- Step 6** Make sure that each server in the cluster is healthy by typing: `cluster status`.
- Step 7** On the target server, restart Tomcat:
`service tomcat-as-standalone.sh restart`
- Step 8** If you changed the IP address or hostname of the primary server, in Cisco Jabber Guest Administration, update the domain used for links:
- a) Sign in to Cisco Jabber Guest Administration as an administrator.
 - b) Click **Settings**, and then click **Links**.
 - c) For **Domain used for Links**, enter the IP address or hostname of the new primary server.
 - d) Click **Update**.
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What to Do Next

If you are using a self-signed certificate, you must generate a new certificate after you change the IP address or hostname of the server.

Related Topics

[Change Virtual Machine Properties of a vCenter-hosted Server](#)

[Change Virtual Machine Properties of a UC Virtualization Foundation, UC Virtualization Hypervisor, or ESXi-hosted Server](#)

[Generate New Self-Signed Certificate](#)

Demote Primary Server to Secondary Server

You can demote or stepdown a primary server to a secondary server. For example, if you need to do maintenance on the primary server.

A new primary server is elected from the remaining servers in the cluster.

Procedure

- Step 1** Sign in to the primary server as root.
 - Step 2** Type `cluster stepdown`.
 - Step 3** Verify that the server has been demoted to secondary by typing `cluster status`.
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Upgrade Cluster

In this procedure, we refer to the primary server as *node A* and to the two secondary servers as *node B* and *node C*.

Procedure

- Step 1** Make a note of which nodes are the primary and secondary servers:
- Sign in to one of the Cisco Jabber Guest servers as root.
 - Type `cluster status`.
- Step 2** Make sure that you have backed up each server in the cluster.
- Step 3** Download `JabberGuest-10.x.x.x.iso`.
- Step 4** Open vSphere Client.
- Step 5** If a CD/DVD drive is not connected to the virtual machine, add one:
- In the **Virtual Machine Properties** window, click the **Hardware** tab, and then click **Add** to bring up the **Add Hardware** window.
 - In the **Add Hardware** window, select **CD/DVD Drive** as the device type, and then click **Next**.
 - For the **CD/DVD Media** type, click **Use physical drive**, and then click **Next**.
 - Accept the default CD/DVD drive when prompted to select a drive, and then click **Next**.
 - In the **Advanced Options** settings, accept the default values, and then click **Next**.
 - In the **Ready to Complete** window, click **Finish**.
 - In the **Virtual Machine Properties** window, click **OK**.
- Step 6** On each server, connect the CD/DVD drive to the ISO image:
- In the virtual machines and templates inventory tree, select the virtual machine.
 - Click the **Connect/disconnect the CD/DVD devices of the virtual machine** button. The button icon is a disk with a wrench.
 - Point to **CD/DVD drive 1**, and then click **Connect to ISO image on local disk**.
 - In the **Open** window, browse to the ISO image downloaded in Step 2 and double-click it.
- It takes a little while to connect to the ISO image. When connected, in the **Recent Tasks** list, the status of the **Connect** task shows **Completed**.
- Step 7** Prepare to upgrade node B by updating the reverse proxy so that call requests are sent to node A first, node C second, and no call requests are sent to node B:
- On Cisco Expressway-C, choose **Configuration > Unified Communications > Configuration**.
 - Under **Jabber Guest**, click **Configure Jabber Guest servers**.
 - In the row for node A, click **View/Edit**, change the value for **Priority** to 1, and click **Save**.
 - In the row for node B, click **View/Edit**, change the value for **Priority** to 0, and click **Save**.
 - In the row for node C, click **View/Edit**, change the value for **Priority** to 2, and click **Save**.
- Step 8** Make sure that there are no calls on node B:
- On Cisco Expressway-C, choose **Configuration > Zones > Zones**.

- b) In the row for node B, wait until the **Calls** column show 0 calls.

Step 9 Upgrade node B by doing the following:

- a) Sign in to the server as root.
- b) Under the `/mnt` directory, create a new directory named `cdrom` to be used as the mount location for the CD/DVD drive:

```
mkdir /mnt/cdrom
```

- c) Mount the CD/DVD drive to `/mnt/cdrom`:

```
mount /dev/cdrom /mnt/cdrom
```

When the CD/DVD drive is mounted, the following message appears: `mount: block device /dev/sr0 is write-protected, mounting read only.`

- d) Change directory to `/mnt/cdrom`:

```
cd /mnt/cdrom
```

- e) Execute the upgrade script:

```
bash upgrade
```

When the upgrade is complete, the following message appears: The log file, for this upgrade, can be found in `/var/log/webcommon/upgrade.log`.

Step 10 Prepare to upgrade node C by updating the reverse proxy so that call requests are sent to node A first, node B second, and no call requests are sent to node C:

- a) On Cisco Expressway-C, choose **Configuration > Unified Communications > Configuration**.
- b) Under **Jabber Guest**, click **Configure Jabber Guest servers**.
- c) In the row for node A, leave the priority set to 1.
- d) In the row for node B, click **View/Edit**, change the value for **Priority** to 2, and click **Save**.
- e) In the row for node C, click **View/Edit**, change the value for **Priority** to 0, and click **Save**.

Step 11 Make sure that there are no calls on node C:

- a) On Cisco Expressway-C, choose **Configuration > Zones > Zones**.
- b) In the row for node C, wait until the **Calls** column show 0 calls.

Step 12 Upgrade node C by repeating Step 9.

Step 13 Verify that node B and node C are back up and running by signing in to Cisco Jabber Guest Administration as an administrator.

- a) Confirm that the Cisco Jabber Guest version number to which you upgraded appears at the bottom of the screen.
- b) Check to make sure that all users and links look correct.

Step 14 Prepare to upgrade node A by updating the reverse proxy so that call requests are sent to node C first, node B second, and no call requests are sent to node A:

- a) On Cisco Expressway-C, choose **Configuration > Unified Communications > Configuration**.
- b) Under **Jabber Guest**, click **Configure Jabber Guest servers**.
- c) In the row for node A, click **View/Edit**, change the value for **Priority** to 0, and click **Save**.
- d) In the row for node B, leave the priority set to 2.
- e) In the row for node C, click **View/Edit**, change the value for **Priority** to 1, and click **Save**.

Step 15 Wait until there are no calls on node A:

- a) On Cisco Expressway-C, choose **Configuration > Zones > Zones**.
- b) In the row for node C, wait until the **Calls** column show 0 calls.

This may take a few minutes because this server handled all of the calls while the other two servers were upgraded.

- Step 16** Demote node A to a secondary server:
- Type `cluster stepdown`.
 - Verify that either node B or node C has been promoted to primary server by typing `cluster status`.
Make sure that the status of either node B or node C shows: ---> <IP address/hostname of node B or node C> PRIMARY.
- Step 17** Upgrade node A by repeating Step 9.
- Step 18** Verify that node A is back up and running by signing in to Cisco Jabber Guest Administration as an administrator.
The Cisco Jabber Guest version number to which you upgraded appears at the bottom of the screen.
- Step 19** Promote node A to the primary server:
- On the server that is currently the primary, type `cluster stepdown`.
 - Check to see if node A was promoted to primary by typing `cluster status`.
If node A is the primary, the status shows: ---> <IP address/hostname of node A> PRIMARY.
 - If node A was not promoted to primary, repeat Step 12.a until node A is promoted to the primary server.
- Step 20** Update the order of the reverse proxy.
- Step 21** To ensure that the latest version of Cisco Jabber Guest Administration is loaded in your browser, refresh any browser instances that are signed in to Cisco Jabber Guest Administration or that have the Cisco Jabber Guest Administration sign-in page loaded.
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Remove Server from Cluster



Important

After a server is removed from a cluster, it cannot be run as a standalone Cisco Jabber Guest instance. To do this, the server must be reinstalled.

In this procedure, we refer to the secondary server that we want to remove as *node A*, and to the other secondary server as *node B*.

Procedure

- Step 1** Sign in to each server in the cluster as root.
- Step 2** On the primary server:
- Type `cluster remove <IP address/hostname of node A>`, and follow the on-screen prompts.
 - Verify that node A is removed from the cluster by typing `cluster status`.

Node A is removed from the list of servers.

Step 3 On node A, block communication from node B by typing `cluster disallow <IP address/hostname of node B>`.

Step 4 On node B, block communication with node A by typing `cluster disallow <IP address/hostname of node A>`.
