

F5[®] BIG-IQ[®] Centralized Management: Upgrading a DCD Cluster to Version 5.4

Version 5.4



Table of Contents

| | |
|--|-----------|
| Data Collection Device Cluster Upgrade Overview..... | 5 |
| Decide which upgrade guide to use..... | 5 |
| Upgrading from version 5.0..... | 5 |
| Upgrading from version 5.1..... | 5 |
| Upgrading from version 5.2 or 5.3..... | 6 |
| How do I upgrade my data collection device cluster to version 5.4?..... | 6 |
| Data collection device cluster update requirements..... | 7 |
| Prepare for Data Collection Device Upgrade..... | 8 |
| Download the BIG-IQ version 5.4 software image from F5 Networks..... | 8 |
| Upload the latest version of the BIG-IQ software image..... | 8 |
| Remove the secondary BIG-IQ from the HA pair..... | 9 |
| Prepare the DCD cluster for upgrade..... | 9 |
| | |
| Upgrade the Data Collection Devices in Your Cluster..... | 11 |
| Upgrading the data collection devices to version 5.4..... | 11 |
| Prerequisites for upgrading the data collection device to the latest version..... | 11 |
| Upload the latest version of the BIG-IQ software image..... | 11 |
| Upgrade the data collection devices to the latest version..... | 11 |
| | |
| Upgrading BIG-IQ Centralized Management with Data Collection Devices to the Latest Version..... | 15 |
| What you need to do before you upgrade BIG-IQ from version 5.x to 5.4..... | 15 |
| Remove the secondary BIG-IQ from the HA pair..... | 15 |
| Upload the BIG-IQ software image to the secondary BIG-IQ system..... | 16 |
| Install the latest version of BIG-IQ software on the HA peer..... | 16 |
| Upload the latest version of the BIG-IQ software image..... | 17 |
| Upgrade the primary BIG-IQ system to the latest version | 18 |
| | |
| Completing Post-Upgrade Processes..... | 21 |
| Complete post upgrade processing..... | 21 |
| Reestablish the HA configuration after upgrading to BIG-IQ version 5.4..... | 21 |
| Upgrade the statistics agent..... | 21 |
| Recheck data collection device health..... | 22 |
| Upgrade the BIG-IP framework..... | 22 |
| Re-discover devices and re-import services..... | 23 |
| | |
| Legal Notices..... | 25 |
| Legal notices..... | 25 |

Data Collection Device Cluster Upgrade Overview

Decide which upgrade guide to use

There are a number of different upgrade guides you can use to upgrade the BIG-IQ® Centralized Management data collection device (DCD) cluster to the latest version. To decide which guide to use, you need to consider a number of factors. First, consider which version you are upgrading from. Then use the appropriate table to determine which guide is most appropriate for your business needs.

Upgrading from version 5.0

To upgrade from version 5.0, use the guide on support.f5.com titled: *F5 BIG-IQ Centralized Management: Upgrading Logging Nodes to Version 5.1*. When a task instructs you to download and install a v5.1.0 file, download and install a v5.4.0 file instead.

Additionally, after the upgrade is complete, you need to use the 5.4.0 user interface to configure an external storage location for the snapshots created for this cluster. To configure the external storage, you will need the IP address, storage file path, domain name, user name, and password for the location you plan to configure. To access the External Storage screen, click **System > BIG-IQ DATA COLLECTION > Big-IQ Data Collection Cluster > Configuration > External Storage & Snapshots** and then click **Configure**. For additional details, refer to *Define external storage snapshots location* on support.f5.com.

Upgrading from version 5.1

Before you upgrade BIG-IQ from version 5.1, you need to answer a couple of questions.

- Do you need to preserve the data on your logging node cluster?
- If so, can you allow your logging node cluster to go offline for an extended period during the upgrade?

Depending on your answers, select one of the following scenarios for further instructions:

I do not need to preserve my data

Use the guide titled: *F5 BIG-IQ Centralized Management: Upgrading Logging Nodes to Version 5.2 Without Preserving Existing Data*. When a task instructs you to download and install a v5.2.0 file, download and install a v5.4.0 file instead.

I need to preserve my data and I can take my logging node cluster offline during upgrade

Use the guide titled: *F5 BIG-IQ Centralized Management: Upgrading Logging Nodes to Version 5.2 While Preserving Existing Data*. When a task instructs you to download and install a v5.2.0 file, download and install a v5.4.0 file instead.

I need to preserve my data, I have at least 3 logging nodes, and I need to minimize logging cluster downtime during upgrade

Use the guide titled: *F5® BIG-IQ® Centralized Management: Upgrading a Logging Node Cluster from 5.1 to Version 5.4 with Minimal Downtime*.

Regardless of which guide you use, after the upgrade is complete, you need to use the 5.4.0 user interface to configure an external storage location for the snapshots created for this cluster. To configure the external storage, you will need the IP address, storage file path, domain name, user name, and password for the location you plan to configure. To access the External Storage screen, click **System > BIG-IQ DATA COLLECTION > Big-IQ Data Collection Cluster > Configuration > External Storage &**

Snapshots and then click **Configure**. For additional detail, refer to *Define external storage snapshots location* on support.f5.com.

Upgrading from version 5.2 or 5.3

To decide which guide to use when you upgrade from BIG-IQ[®] version 5.2 or 5.3, the main question to answer is whether you can allow your data collection device (DCD) cluster to go offline for an extended period during the upgrade. If you can afford the downtime, the workflow is much more straightforward and takes significantly less effort on your part.

I can take my DCD cluster offline during upgrade

Use the guide titled: *F5[®] BIG-IQ[®] Centralized Management: Upgrading a Data Collection Cluster to Version 5.4*

I need to preserve my data, I have at least 3 DCDs, and I need to minimize logging cluster downtime during upgrade

Use the guide titled: *F5[®] BIG-IQ[®] Centralized Management: Upgrading a Data Collection Device Cluster from 5.2 or 5.3 to Version 5.4 with Minimal Downtime*

How do I upgrade my data collection device cluster to version 5.4?

A *data collection device (DCD) cluster* comprises your DCDs, the BIG-IQ[®] Centralized Management device you use to manage them, and an optional BIG-IQ peer device. Additional steps are required when upgrading a DCD cluster.

Important: *The upgrade process for a DCD cluster is fully supported by the BIG-IQ user interface. Attempting to upgrade a DCD cluster using a sequence of `tmsl` commands is not recommended and is likely to result in loss of data.*

Important: *The following process requires cluster downtime. To prevent losing data, perform this process during a maintenance window. If you cannot take the DCD cluster offline and have at least 3 DCDs in your cluster, you can use the rolling upgrade process. Refer to the guide titled: *F5[®] BIG-IQ[®] Centralized Management: Upgrading a Data Collection Device Cluster from 5.2 or 5.3 to Version 5.4 with Minimal Downtime* for details.*

The diagram illustrates the process workflow.

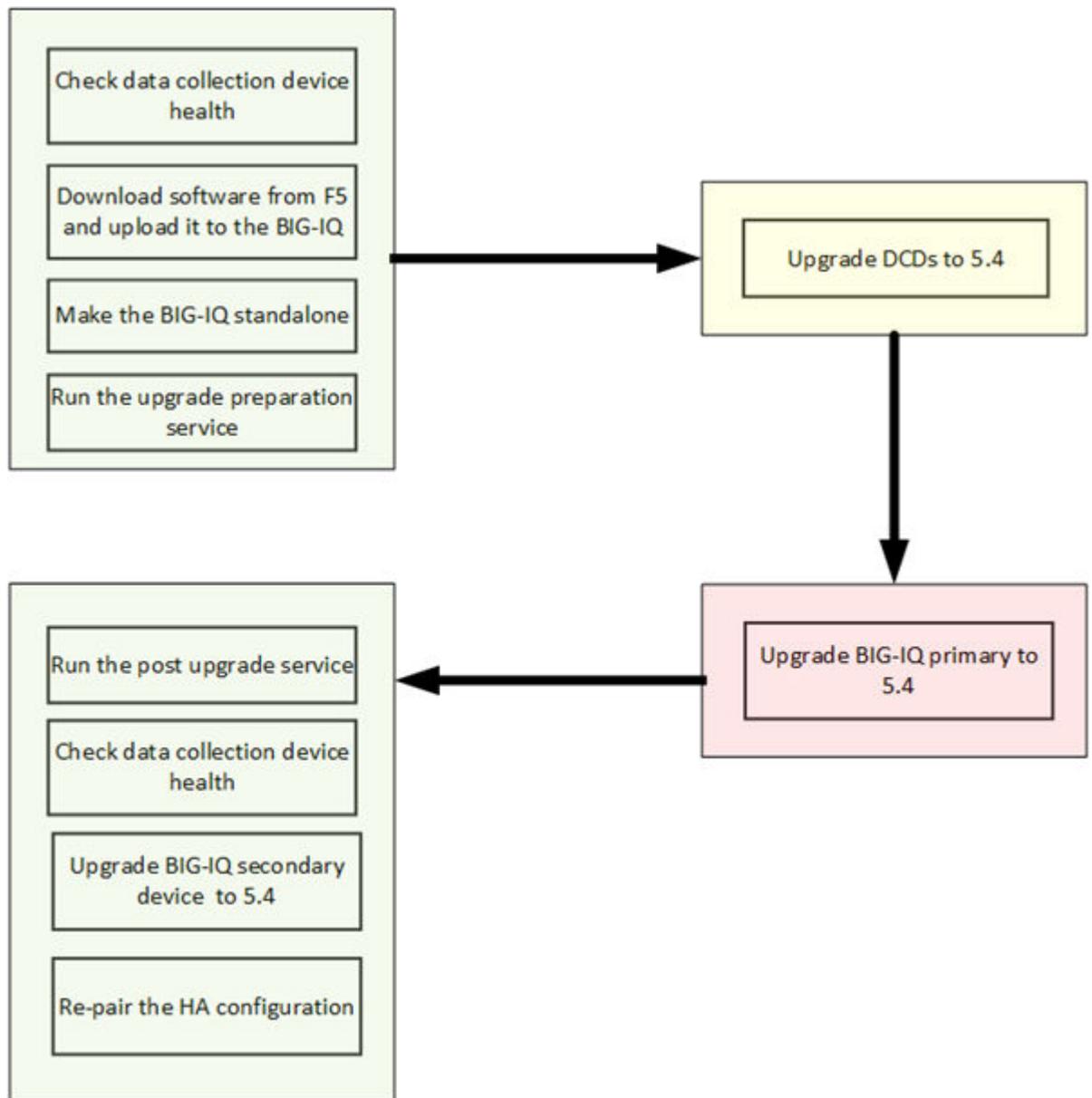


Figure 1: DCD cluster upgrade workflow

Note: For a successful upgrade, it is essential that you perform the tasks in the sequence detailed here. You cannot perform these tasks in parallel.

Data collection device cluster update requirements

There are a number of items that you need to have ready access to, before you can successfully complete the data collection device cluster update. It might be helpful to use the following table to record the values, so you have them at hand when needed.

| Device | Information needed | Information Recorded |
|--|-----------------------|----------------------|
| Primary BIG-IQ Centralized Management device | Management IP address | |

| Device | Information needed | Information Recorded |
|-------------------------|------------------------------|----------------------|
| Secondary BIG-IQ device | admin user name and password | |
| | root access password | |
| | Management IP address | |
| | root access password | |
| Data collection devices | admin user name and password | |
| | Management IP address | |
| | root access password | |

Prepare for Data Collection Device Upgrade

Download the BIG-IQ version 5.4 software image from F5 Networks

Downloading a software image from F5 Networks is the first step toward making it available to install on the BIG-IQ system.

1. Log in to the F5 Downloads site, downloads.f5.com.
2. Click the **Find a Download** button.
3. Click the name of the product line.
4. Click the product name, **Centralized Management**.
5. Click **V5.4.0**.
6. Read the End User Software License agreement and click the **I Accept** button if you agree with the terms.
7. Click the BIG-IQ version 5.4 .iso file name.
8. Click the name of the closest geographical location to you.
The software image downloads to your local system.

The software image is now available for you to upload.

Upload the latest version of the BIG-IQ software image

Before you can upload the software image to the BIG-IQ® system, you must have first downloaded it from the F5 Downloads site.

Upload the BIG-IQ version software image to the primary BIG-IQ system to make it available for this upgrade.

1. At the top of the screen, click **System**.
2. On the left, click **THIS DEVICE > SOFTWARE MANAGEMENT > Available Images**.
3. Click the **Upload Image** button.
4. Click the **Choose File** button and go to the location to which you downloaded the image, and click the **Open** button to upload it to BIG-IQ.
5. Click the **Upload** button.

The screen refreshes to display the progress of the upload.

When the image is finished uploading, it shows in the Available Images list.

Remove the secondary BIG-IQ from the HA pair

If the F5®BIG-IQ® Centralized Management system is configured in an HA pair, you must remove the secondary BIG-IQ system before you upgrade the primary BIG-IQ.

1. Log in to the primary BIG-IQ with your admin user name and password.
2. At the top of the screen, click **System**.
3. On the left, click **BIG-IQ HA**.
4. Click **Remove Secondary**.
A dialog box opens, prompting you to confirm that you want to remove the HA secondary device from this group.
5. Click **Remove** to confirm you want to take the HA secondary device out of the group.
The system logs you out of the BIG-IQ while it removes the secondary device.
6. Log back in to the primary BIG-IQ with your admin user name and password.
For a while, both the primary and the secondary BIG-IQ devices continue to display. After a few minutes, the screen updates to display a single standalone device.

Prepare the DCD cluster for upgrade

Before you can perform the upgrade preparation task, you must:

- Download the BIG-IQ version 5.4 software image from the F5 downloads site.
- Upload the BIG-IQ version 5.4 software to your primary BIG-IQ.
- Remove the secondary BIG-IQ from your HA pair.

Warning: *These procedures require that the BIG-IQ system is temporarily unavailable, and unable to manage BIG-IP® devices until the upgrade is complete. BIG-IP devices can continue to manage traffic during this time. This process can take up to an hour.*

The upgrade preparation process readies your data collection device cluster for the upgrade process. You can opt to back up your data or discard it.

1. Log in to the primary BIG-IQ with your admin user name and password.
2. At the top of the screen, click **System**.
3. On the left, click **THIS DEVICE > SOFTWARE MANAGEMENT > Available Images**.
4. In the list of images, select the check box next to the image you want to install, and click the **Install** button at the top of the screen
5. From the **Target Volume** list, select the volume you want to install the image on.

Note: *If the **Target Volume** list is empty, the machine you are upgrading does not have a second volume available for you to install the upgrade. You must create one to proceed.*

- If you selected a target volume, complete the remaining steps to finish the upgrade.
- If you do not have a second volume, use the following steps to create one:
 - Use SSH to log in to the machine you want to upgrade. You must log in as `root` to perform this procedure.
 - Create the new volume using the command `/usr/libexec/bigpipe software desired <volume name> add`, for example: `/usr/libexec/bigpipe software desired HD1.3 add`.
 - After the command executes, repeat this step; however, this time the **Target Volume** list will not be empty.

6. Click the **Install** button.
A dialog box opens to give you the option of saving or discarding your data.
7. Decide whether to save your data or discard it.
 - To back up the data on your data collection device, select **Yes, snapshot first and proceed with deactivating services (Recommended)** and then click **Continue**.
 - To discard the data on your data collection device, select **No, proceed directly to deactivating services** and then click **Continue**.

If you are backing up your data, the system creates a snapshot on an external storage location, and then deactivates the services on your BIG-IQ system. Depending on the amount of accumulated data, this step takes some time. If you do not save your data, the system begins deactivating services immediately.

8. If you chose to back up your data, but have not yet defined an external storage location, a dialog box opens so you can configure it.
 - a) In the **User name** and **Password** fields, type the user name and password for the user account configured on the external storage device.
 - b) For the **Domain**, type in the domain name for the user account configured on the external storage device.
 - c) For the **Storage Path**, type the path to the external storage location.
You can specify the device using the IP address or the host name. Additionally, you need to specify the path to the folder on the external storage device. For example:

```
//<storage machine ip-address>/<storage-file-path>
```

Note: Remember, the folder you specify must have full read, write, and execute permissions.
 - d) To test the settings just specified, click **Test**.
A message displays to tell you whether the test completes successfully. If it does not, correct the settings and permissions until it completes successfully.
 - e) When the external storage is specified successfully, click **Save**.

9. Wait while BIG-IQ creates a snapshot.

Depending on the amount of data you have, this could take up to an hour. During this time, it is important that you not interrupt the installation process by restarting services or the server.

Note: If this is the first time you have created a snapshot, this step takes significantly more time. If you have been creating regular backups, the snapshot step completes relatively quickly.

When the process completes, a message displays to tell you that the snapshot and deactivation have finished.

10. Click **Close** to close the deactivating services message.
11. If you used a self IP address to discover your data collection devices, you need to stop the elasticsearch service before proceeding.
If you use the management IP address to discover the DCDs in your cluster, you can skip this step.
 - a) Use SSH to log in to the DCD as root.
 - b) Use the `bigstart stop elasticsearch` command to stop the elasticsearch service. Type `bigstart stop elasticsearch`, and press **Enter**.

Note: You must perform this task for each DCD in the cluster.

Although the upgrade preparation process is now complete, you can not yet upgrade the BIG-IQ. You must upgrade your data collection devices before you can upgrade the BIG-IQ.

Upgrade the Data Collection Devices in Your Cluster

Upgrading the data collection devices to version 5.4

After you prepare the data collection device (DCD) cluster for upgrade, use these procedures to upgrade the DCDs in your cluster. Perform the following tasks for each DCD in the cluster.

1. Upload the BIG-IQ[®] version 5.4 software image.
2. Upgrade the DCD to version 5.4.
3. Confirm that the DCD is back in service

Prerequisites for upgrading the data collection device to the latest version

Before upgrading the F5[®] BIG-IQ[®] Centralized Management data collection device, perform these tasks.

| Tasks | Additional information |
|--|--|
| Reactivate the BIG-IQ system license. | You must do this for each data collection device in the cluster. For specific instructions about how to reactivate a license, refer to the <i>F5[®] BIG-IQ[®] Central Management: Licensing and Initial Setup</i> guide. |
| Decide which disk volume to install the upgrade on. At least two volumes are required to upgrade BIG-IQ. | If the machine you are upgrading does not have two volumes, you must create one using a <code>CLI</code> command. The upgrade task provides options for either case. |

Upload the latest version of the BIG-IQ software image

Before you can upload the software image to your data collection device (DCD), you must have first downloaded it from the F5 Downloads site.

You upload the latest BIG-IQ[®] version of the software image to your DCD to make it available for this upgrade.

1. At the top of the screen, click **System**.
2. On the left, click **THIS DEVICE > SOFTWARE MANAGEMENT > Available Images**.
3. Click the **Upload Image** button.
4. Click the **Choose File** button and go to the location to which you downloaded the image, and click the **Open** button to upload it to BIG-IQ.
5. Click the **Upload** button.

The screen refreshes to display the progress of the upload.

When the image is finished uploading, it shows in the Available Images list.

Upgrade the data collection devices to the latest version

Note: If the machine you are upgrading does not have two volumes, you must create one using a `CLI` command. The following steps provide options for either case.

Before upgrading the data collection device (DCD), you must have downloaded the latest version of the BIG-IQ software image from the F5 downloads site.

The upgrade process installs the new version of the software on one DCD. You must repeat this process for each DCD in your cluster.

1. At the top of the screen, click **System**.
2. On the left, expand **THIS DEVICE > Software Management**, and then click **Available Images**.
The Available Images screen lists the software image files that are available for install on this BIG-IQ system.
3. Select the check box for the image you want to install and click **Install**.
4. From the **Target Volume** list, select the volume you want to install the image on.

Note: If the Target Volume list is empty, the machine you are upgrading does not have a second volume available for you to install the upgrade. You must create one to proceed.

- If you selected a target volume, complete the remaining steps to finish the upgrade.
 - If you do not have a second volume, use the following procedure to install the upgrade for this machine:
 - Use SSH to log in to the machine you want to upgrade. You must log in as `root` to perform this procedure.
 - Navigate to the folder where you install software using the command: `cd /shared/images`
 - Install the upgrade to a new volume by running one of the following commands:
 - If you are upgrading a virtual machine: `tmsh install sys software image <full name of the iso file> volume hd1.2 create-volume reboot`
 - If you are upgrading a BIG-IQ 7000 series platform: `tmsh install sys software image <full name of the iso file> volume md1.2 create-volume reboot`
 - While the system installs the upgrade to the new volume, you can check on the status of the upgrade using the command: `tmsh show sys software status`.
 - When the upgrade finishes installing, the machine reboots. Proceed to the next to the last (login) step in this task.
5. To prompt the data collection device to reboot into the new software installation volume, select the **Reboot into Target Volume** check box.
 6. Click the **Install** button.
A confirmation dialog box appears.
 7. Click the **Continue** button.
 8. Wait while the data collection device loads the new software and reboots.
Depending on your configuration and the number of devices you are managing, this could take up to 15 minutes. During this time, it is important that you not interrupt the installation process by restarting services or the server.
 9. Log back in to the data collection device to confirm that the upgrade succeeded.
 10. If needed, extend the `/var` partition.

The default size of the `/var` file system in a newly installed or upgraded node is 30 GB. This amount of available storage might not be enough to store your data. If you previously extended your disk space, you'll need to do it again after you upgrade, as explained in *K16103: Extending disk space on BIG-IQ Virtual Edition*.

Important: *Upgrading a node requires at least two volumes, so be sure you can extend the `/var` file system on both volumes to the same size; otherwise, upgrades might fail.*

Note: Remember to complete this process for each DCD in the cluster.

Important: In the unlikely event that you are unable to log in to a BIG-IQ[®] 7000 series platform after you upgraded it, refer to SOL40338232: The BIG-IQ system interface might be inaccessible after the BIG-IQ system is upgraded from BIG-IQ Centralized Management version to 5.2.0 at support.f5.com/kb/en-us/solutions/public/k/40/sol40338232.html for more information.

Upgrading BIG-IQ Centralized Management with Data Collection Devices to the Latest Version

What you need to do before you upgrade BIG-IQ from version 5.x to 5.4

Before upgrading F5® BIG-IQ® Centralized Management, perform the following tasks.

| Tasks | Additional information |
|---|--|
| Create a backup of the BIG-IQ system's current compressed user configuration set (UCS) and store it on a remote server. | The UCS file includes: system-specific configuration files; license, user account and password information; and SSL certificates and keys. You can use this backup if you want to restore to the previous version of BIG-IQ. |
| Decide which disk volume to install the upgrade on. At least two volumes are required to upgrade BIG-IQ. | If the machine you are upgrading does not have two volumes, you must create one using a CLI command. The upgrade task provides options for either case. |
| Deploy any staged configuration changes to your managed devices. | Deploy configuration changes you have staged for your devices. When addressing configuration conflicts for each BIG-IP device, we recommend you use BIG-IP to override the configuration settings stored on BIG-IQ. Refer to the section titled, <i>Re-discover devices and re-import services from the user interface</i> . |
| If you are currently using a self-IP address for device discovery, make a note of that IP address. | You'll need to enter it when you perform setup after you upgrade and reboot the BIG-IQ system. |

If you're currently running a version of BIG-IQ prior to version 5.0, you must first upgrade to version 5.0 before you can upgrade to version 5.4. For more information, refer to the guide titled, *F5 BIG-IQ Centralized Management: Upgrading BIG-IQ to Version 5.0*.

Remove the secondary BIG-IQ from the HA pair

If the F5® BIG-IQ® Centralized Management system is configured in an HA pair, you must remove the secondary BIG-IQ system before you upgrade it.

1. Log in to the primary BIG-IQ with your admin user name and password.
2. At the top of the screen, click **System**.
3. On the left, click **BIG-IQ HA**.
4. Click **Remove Secondary**.
A dialog box opens, prompting you to confirm that you want to remove the HA secondary device from this group.
5. Click **Remove** to confirm that you want to take the HA secondary device out of the group.
The system logs you out of the BIG-IQ while it removes the secondary device.
6. Log back in to the primary BIG-IQ with your admin user name and password.
For a while, both the primary and the secondary BIG-IQ devices continue to display. After a few minutes, the screen updates to display a single standalone device.

Upload the BIG-IQ software image to the secondary BIG-IQ system

Before you can upload the software image to your secondary BIG-IQ[®] system, you must have first downloaded it from the F5 Downloads site.

Upload the latest version of the BIG-IQ software image to your secondary BIG-IQ system to make it available for this upgrade.

1. At the top of the screen, click **System**.
2. On the left, expand **THIS DEVICE > Software Management**, and then click **Available Images**. The Available Images screen lists the software image files that are available for installation on this BIG-IQ system.
3. Click the **Upload Image** button.
4. Click the **Choose File** button and go to the location to which you downloaded the image, and click the **Open** button to upload it to BIG-IQ.
5. Click the **Upload** button.
The screen refreshes to display the progress of the upload.

When the image is finished uploading, it shows in the Available Images list.

Install the latest version of BIG-IQ software on the HA peer

Note: If the machine you are upgrading does not have two volumes, you must create one using a CLI command. The following steps provide options for either case.

Install the latest version of the BIG-IQ software on the peer BIG-IQ system so it will be running the same version as the primary BIG-IQ system you are upgrading.

1. Log on to the system you are going to establish as the secondary BIG-IQ system's command line as **root** and type the following command: `/usr/bin/clear-rest-storage`.
Although this step is not required, it clears the database storage on the system so the upgrade goes more quickly. After you upgrade both peer systems and re-establish the HA pair, the peer BIG-IQ will synchronize its database with this BIG-IQ system and repopulate the database.
2. Log on to the system you are going to establish as the secondary BIG-IQ system's user interface.
3. If you ran the `clear-rest-storage` command, complete the setup wizard. Otherwise, continue to the next step.
4. At the top of the screen, click **System Management**.
5. On the left, click **BIG-IQ DEVICES > BIG-IQ HA**.
6. On the left, click **Software Version**.
7. Click the **Update** button.
8. From the **Software Image** list, select the image you want to install.
9. From the **Target Volume** list, select the volume you want to install the image on.

Note: If the Target Volume list is empty, the machine you are upgrading does not have a second volume available for you to install the upgrade. You must create one to proceed.

- If you selected a target volume, complete the remaining steps to finish the upgrade.

- If you do not have a second volume, use the following procedure to install the upgrade for this machine:
 - Use SSH to log in to the machine you want to upgrade. You must log in as `root` to perform this procedure.
 - Navigate to the folder where you install software using the command: `cd /shared/images`
 - Install the upgrade to a new volume by running one of the following commands:
 - If you are upgrading a virtual machine: `tmsh install sys software image <full name of the iso file> volume hd1.2 create-volume reboot`
 - If you are upgrading a BIG-IQ 7000 series platform: `tmsh install sys software image <full name of the iso file> volume md1.2 create-volume reboot`
 - While the system installs the upgrade to the new volume, you can check on the status of the upgrade using the command: `tmsh show sys software status`.
 - When the upgrade finishes installing, the machine reboots. Proceed to the next to the last (login) step in this task.
10. To prompt BIG-IQ to reboot into the new software installation volume, select the **Reboot into Target Volume** check box.
 11. Click the **Apply** button.
A popup screen opens, prompting you to confirm the installation.
 12. Click the **Continue** button.
 13. Wait while BIG-IQ loads the new software and reboots.
Depending on your configuration and the number of devices you are managing, this could take up to an hour. During this time, it is important that you not interrupt the installation process by restarting services or the server.
 14. Log in to the BIG-IQ that will be the secondary BIG-IQ system to confirm that the upgrade succeeded and complete the setup wizard.
To complete the setup task, you must supply a master key pass phrase that all devices in the logging node cluster must share. Make note of the phrase you use. Each logging node, as well as the primary and secondary BIG-IQ systems must use this phrase before they can join the cluster.
 15. If needed, extend the `/var` partition.
The default size of the `/var` file system in a newly installed or upgraded node is 30 GB. This amount of available storage might not be enough to store your data. If you previously extended your disk space, you'll need to do it again after you upgrade, as explained in *K16103: Extending disk space on BIG-IQ Virtual Edition*.

Important: *Upgrading a node requires at least two volumes, so be sure you can extend the `/var` file system on both volumes to the same size; otherwise, upgrades might fail.*

Upload the latest version of the BIG-IQ software image

Before you can upload the software image to the BIG-IQ[®] system, you must have first downloaded it from the F5 Downloads site.

Upload the BIG-IQ version software image to the primary BIG-IQ system to make it available for this upgrade.

1. At the top of the screen, click **System**.
2. On the left, click **THIS DEVICE > SOFTWARE MANAGEMENT > Available Images**.
3. Click the **Upload Image** button.
4. Click the **Choose File** button and go to the location to which you downloaded the image, and click the **Open** button to upload it to BIG-IQ.

5. Click the **Upload** button.

The screen refreshes to display the progress of the upload.

When the image is finished uploading, it shows in the Available Images list.

Upgrade the primary BIG-IQ system to the latest version

Note: If the machine you are upgrading does not have two volumes, you must create one using a CLI command. The following steps provide options for either case.

Before upgrading the primary BIG-IQ in a DCD cluster you must:

1. Prepare the DCD cluster for upgrade. See *Prepare for Data Collection Device Upgrade* on support.f5.com.
2. Update the DCDs in the cluster.
3. Download the BIG-IQ version 5.4 .iso image from the F5 downloads site.

Upgrade the BIG-IQ primary to take advantage of the newest functionality and features.

1. Log in to the primary BIG-IQ system with your admin user name and password.
2. At the top of the screen, click **System**.
3. On the left, expand **THIS DEVICE > Software Management**, then click **Available Images**.
The Available Images screen lists the software image files that are available for install on this BIG-IQ system.
4. Select the check box for the image you want to install and click **Install**.
5. From the **Target Volume** list, select the volume you want to install the image on.

Note: If the Target Volume list is empty, the machine you are upgrading does not have a second volume available for you to install the upgrade. You must create one to proceed.

- If you selected a target volume, complete the remaining steps to finish the upgrade.
 - If you do not have a second volume, use the following procedure to install the upgrade for this machine:
 - Use SSH to log in to the machine you want to upgrade. You must log in as `root` to perform this procedure.
 - Navigate to the folder where you install software using the command: `cd /shared/images`
 - Install the upgrade to a new volume by running one of the following commands:
 - If you are upgrading a virtual machine: `tmsh install sys software image <full name of the iso file> volume hd1.2 create-volume reboot`
 - If you are upgrading a BIG-IQ 7000 series platform: `tmsh install sys software image <full name of the iso file> volume md1.2 create-volume reboot`
 - While the system installs the upgrade to the new volume, you can check on the status of the upgrade using the command: `tmsh show sys software status`.
 - When the upgrade finishes installing, the machine reboots. Proceed to the next to the last (login) step in this task.
6. To prompt BIG-IQ to reboot into the new software installation volume, select the **Reboot into Target Volume** check box.
 7. Click the **Install** button.
 8. Click the **Continue** button.
 9. Wait while BIG-IQ loads the new software and reboots.

Depending on your configuration and the number of devices you are managing, this could take up to an hour. During this time, it is important that you not interrupt the installation process by restarting services or the server.

10. Log in to the primary BIG-IQ to confirm that the upgrade succeeded.

11. If needed, extend the `/var` partition.

The default size of the `/var` file system in a newly installed or upgraded node is 30 GB. This amount of available storage might not be enough to store your data. If you previously extended your disk space, you'll need to do it again after you upgrade, as explained in *K16103: Extending disk space on BIG-IQ Virtual Edition*.

Important: *Upgrading a node requires at least two volumes, so be sure you can extend the `/var` file system on both volumes to the same size; otherwise, upgrades might fail.*

Even though you can log in to the BIG-IQ system after the software is installed, the system continues running background database re-indexing processes. For large configurations, re-indexing can take up to an hour. If you perform any searches on objects before re-indexing is complete, BIG-IQ might not return the expected results. During this time, you can continue with the rest of the upgrade process.

Completing Post-Upgrade Processes

Complete post upgrade processing

After you upgrade the DCDs and primary BIG-IQ[®] in your cluster, you need to complete the post-upgrade processing. This is an automated process.

Note: Perform this task on the DCD cluster's primary BIG-IQ system.

1. At the top of the screen, click **System**.
2. At the top of the screen, click **System**, and then, on the left, click **BIG-IQ DATA COLLECTION** and select **BIG-IQ Data Collection Devices**.
The first time you access this screen after performing an upgrade, it triggers a dialog box that prompts you to start the post upgrade processing tasks.
3. Click **Continue**.
The system restores your cluster to the pre-upgrade state. This includes restoring the data snapshot. Because it is restoring this snapshot for the first time (on your upgraded device), if you have a substantial amount of data, this process takes an extended amount of time.

Once your cluster is back online, you need to upgrade the secondary device and rediscover your devices to complete the upgrade.

Reestablish the HA configuration after upgrading to BIG-IQ version 5.4

After you upgrade both F5[®] BIG-IQ[®] Centralized Management systems in a HA configuration, you can re-associate the secondary system with the primary BIG-IQ system.

1. Log in to primary BIG-IQ system with your administrator user name and password.
2. At the top of the screen, click **System**.
3. On the left, click **BIG-IQ HA**.
4. Click the **Add Secondary** button.
5. In the **IP Address** field, type the discovery address you specified on the BIG-IQ system during setup.
This is the same IP address the peers in a high availability confirmation use to communicate.
6. In the **User name** and **Password** fields, type the administrative user name and password for the system.
7. In the **Root Password** field, type the root password for the system.
8. Click the **Add** button to add this device to this high availability configuration.

Even though you can log in to the secondary BIG-IQ after the you reestablish the HA configuration, the system continues some database re-indexing processes in the background. For larger configurations, that can take up to an hour. If you perform any searches on objects before it's done re-indexing, BIG-IQ might not return the expected results. During this time, you can use the primary BIG-IQ.

Next, you should verify that both BIG-IQ systems have the same configuration.

Upgrade the statistics agent

If you collected statistics in the prior version, then when you finish upgrading the primary BIG-IQ, you need to upgrade the statistics agent on each BIG-IP device that had statistics enabled before the upgrade.

Note: Perform this task on the primary BIG-IQ that manages the DCD cluster.

1. At the top of the screen, click **Devices**.
2. Select all of the BIG-IP devices managed by this DCD cluster by selecting the check box next to **Status**.
3. Click **More**, and then select **Upgrade Stats Agent**.
The Statistics Collection Agent Upgrade screen opens.
4. For **Modules/Services**, select the check box next to the services that you collected statistics for in the previous version.
5. For **Frequency** select how often you want the DCD to collect statistics for these services.
6. Click the **Continue** button.
7. Wait while the stats collection agent for each BIG-IP device is upgraded.
Depending on the number of devices in your cluster, this could take several minutes to complete.
When the agent is upgraded on each BIG-IP device, the status icon turns to green.

Recheck data collection device health

You can use the Summary Status screen to review the overall health and status of the data collection devices you've configured. You can use the data displayed on this screen both before and after an upgrade to verify that your data collection device cluster configuration is as you expect.

1. At the top of the screen, click **System**, and then, on the left, click **BIG-IQ DATA COLLECTION** and select **BIG-IQ Data Collection Cluster**.
 - Under Summary, you can view information detailing how much data is stored, as well as how the data is stored.
 - Under Configuration, you can access the screens that control DCD cluster performance.
2. Note the status icon color for the cluster. If it is not green yet, wait until it turns to green before proceeding. When the icon turns green it indicates that the primary BIG-IQ DCD cluster is functioning again.
3. Analyze the data collection device cluster details listed in the Summary area, and make sure that the values after upgrade match the values from the health check you did before the upgrade. At a minimum, you should confirm that the Data Node Count value is correct.

Upgrade the BIG-IP framework

To properly communicate, BIG-IQ® Centralized Management and managed BIG-IP® devices must be running a compatible version of its framework. If the frameworks are incompatible, BIG-IQ displays a yellow triangle next to the device in the BIG-IP Device inventory.

When you upgrade a BIG-IP device running version 11.5.x to another 11.5.x version, or to an 11.6.x version (for example, from version 11.5.3 to 11.5.4, or from version 11.5.3 to version 11.6.1), you must upgrade the REST framework so BIG-IQ can manage the device.

When you upgrade BIG-IQ from version 5.x to the latest version, you must also upgrade the REST framework for all BIG-IP devices (currently in the BIG-IP Device inventory) running a version prior to 12.0.0.

1. At the top of the screen, click **Devices**.
2. Select the check box next to a device, click the **More** button, and select **Upgrade Framework**.
A popup screen opens.

3. Into the fields, type the required credentials, and click the **Continue** button.
A REST Framework upgrade in progress message displays.

After the framework is updated, you can successfully manage this device.

Repeat these steps for each device.

Re-discover devices and re-import services

After you upgrade F5® BIG-IQ Centralized Management, you must rediscover your managed devices and reimport their services for AFM, ASM, DNS, and LTM so you can start managing those devices with the new features introduced in this release.

1. At the top of the screen, click **Devices**.
2. Select the check box next to the devices you want to rediscover and reimport services for.
3. Click the **More** button and select **Re-discover and Re-import**.
4. In the **Name** and **Description** fields, type a name and an optional description to identify this task.
5. For the Conflict Resolution Policy setting, select an option for how you want to handle any differences found between the configuration on BIG-IQ and the BIG-IP device during the re-discover and re-import task.
 - **Use BIG-IQ** to use the configuration setting stored on BIG-IQ if any differences are found.
 - **Use BIG-IP** to override the configuration settings stored on BIG-IQ with the settings from the BIG-IP device.

Important:

Some new features are introduced with each BIG-IQ release so it's a good idea to use the BIG-IP device's configuration after you upgrade BIG-IQ. This ensures you don't inadvertently overwrite a configuration that wasn't previously supported. BIG-IP devices are re-imported in the order listed, from top to bottom. You can use the arrow keys to change the processing order.

When you select **Use BIG-IP** to resolve conflicts, the BIG-IP device used to resolve those conflicts should appear last in the re-import list. If two or more BIG-IP devices contain the same object with different values, only the value in the last imported BIG-IP is used to resolve the conflict for all the BIG-IP devices.

-
6. If you want to save a snapshot of the BIG-IP device's configuration before importing their services, select the **Create a snapshot of the current configuration before importing** check box.
 7. Click the **Create** button at the bottom of the screen.

Legal Notices

Legal notices

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Index

B

- BIG-IQ
 - before you upgrade [11, 15](#)
- BIG-IQ Device inventory
 - dealing with a yellow indicator [22](#)
- BIG-IQ HA pair
 - re-establishing configuration [21](#)
 - remove secondary [9](#)
 - upgrading [9, 15](#)
- BIG-IQ version 5.4
 - about upgrading data collection devices [11](#)

C

- cluster configuration
 - checking data collection device [22](#)

D

- data collection device
 - checking health [22](#)
 - health [22](#)
 - post upgrade processing [21](#)
 - upgrading to latest version [11](#)
- data collection device upgrade
 - about [6](#)
 - prerequisites [7](#)
- DCD cluster
 - preparing upgrade for version 5.4 [9](#)
- DCD upgrade
 - about [6](#)
- devices
 - re-discover from the user interface after upgrading [23](#)

F

- framework
 - upgrading after upgrading BIG-IQ [22](#)

H

- HA pair
 - re-establishing BIG-IQ HA configuration [21](#)

P

- post upgrade processing
 - data collection device [21](#)
- primary BIG-IQ in HA pair
 - upgrading from BIG-IQ version 5.2 to version 5.4 [18](#)

R

- rediscover devices
 - from the user interface [23](#)
- reimport services

- reimport services (*continued*)
 - from the user interface [23](#)
- REST framework
 - updating [22](#)

S

- secondary BIG-IQ in an HA pair to latest version
 - upgrading [16](#)
- services
 - re-import from the user interface after upgrading [23](#)
- software
 - downloading to BIG-IQ [8](#)
 - uploading to BIG-IQ [8, 11, 16, 17](#)
- stats agent
 - upgrading [21](#)

T

- the latest version
 - before you upgrade to [11](#)

U

- update requirements
 - for data collection device [7](#)
- update requirements worksheet [7](#)
- upgrade
 - for data collection device cluster [6](#)
 - for DCD cluster [6](#)
- upgrade prerequisites [11, 15](#)
- upgrade process
 - upgrading from BIG-IQ version 5.2 to version 5.4 [18](#)
 - upgrading from BIG-IQ version 5.x to version 5.4 [9](#)
- upgrade workflow options [5, 6](#)

Y

- yellow indicator
 - displaying in BIG-IP Device inventory [22](#)

