AWS Elemental Delta

Upgrade Guide

Version 2.3

aws

AWS Elemental Delta: Upgrade Guide

Table of Contents

This is version 2.3 of the AWS Elemental Delta documentation. This is the latest version. For prior versions, see the *Previous Versions* section of AWS Elemental Delta Documentation.

About This Guide

This guide is intended for engineers who are upgrading or downgrading software versions of an existing installation of AWS Elemental Delta.

The following types of deployments are addressed:

Single AWS Elemental Delta node (p. 2)

One Delta node without a secondary Delta node. One node provides all input and output support. There is no redundancy for the Delta node.

Simple AWS Elemental Delta cluster (p. 5)

One Delta node is the leader, with another node as a secondary. The leader node receives input and responds to output requests. The secondary node provides input redundancy for the cluster and handles outgoing content requests.

AWS Elemental Delta cluster with egress nodes (p. 10)

One Delta node is the leader, one a secondary, and one or more additional nodes are used for egress only. The leader node receives input and responds to output requests. The secondary node provides input redundancy for the cluster and handles outgoing content requests. The egress nodes handle requests for output but don't handle input.

For more information about these various deployments, see AWS Elemental Delta version 2.3 Configuration Guide.

Prerequisite Knowledge

It is assumed that you know how to:

- Log into a Linux session in order to work via the command line interface.
- Access the location where you typically download files from the internet.

Note
To receive assistance with your AWS Elemental appliances and software products, see the forums and other helpful tools on the AWS Elemental Support Center.

File Permissions

Unless otherwise stated, enter all Linux commands from the home directory (`/home/elemental`). To ensure that the command can complete regardless of your file permissions, most commands include `sudo` to execute the command as a superuser.

Upgrades in AWS Elemental Delta

This section describes how to upgrade the software version of an existing Delta installation.

Important
To avoid service interruptions, perform upgrades during a maintenance window! All traffic to and from an AWS Elemental Delta node stops while the node is being upgraded.

When you're upgrading AWS Elemental Delta nodes, the basic command remains the same, regardless of how many nodes you have. The command you use is this:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all
```

where *version* is the software version that you're upgrading to, such as 2.3.0.123456.

If you have a cluster of nodes, though, they must be upgraded in a specific order, and extra steps might be needed. For this reason, this section includes separate topics for the different kinds of clusters.

Topics

Upgrading a Single AWS Elemental Delta Node

This section describes how to upgrade the software version of an existing Delta.

Plan to upgrade during a maintenance window or have a redundant cluster available to accept traffic during the upgrade process. All activity on the node stops during this process and content could be lost.

The procedure for upgrading any version of AWS Elemental Delta is the same; only the version numbers in the file name change. In this procedure, we show how to upgrade to version 2.3.0.123456 of the software.

Topics

Step A: Verify the Current Version of AWS Elemental Delta

Verify the current AWS Elemental Delta version one of these two ways:

- Look at the bottom of any screen on the web interface.
- Type the following command in the Linux command line, when you're logged in as the "elemental" user:

```
cat /opt/elemental_se/versions.txt
```

Step B: (Live to VOD and VOD Catalog Only) Clean the Database

Delta version 2.2 included a number of improvements to the live-to-VOD and ive-to-VOD catalog features. To take full advantage of these improvements, clean the database and do a full vacuum on each node prior to upgrading.

> **Warning**
> This process can take multiple hours to complete. Make sure you perform cleanup within a maintenance window.

1. Run the following cleanup scripts

```
cd /opt/elemental_se/web/vendor/gems/delta/script/
```

```
./clean-orphans.rb --clean-orphaned-filters
```

If you're on Delta version 2.0 or later and use live-to-VOD catalog, use the following script as well.

```
cd /opt/elemental_se/web
```

```
RAILS_ENV=production /opt/elemental-ruby/bin/rails runner ./vendor/gems/delta/script/
clean_l2vc_orphans.rb
```

2. Wait for segment cleanup to complete.

   To view progress, navigate to the **Delta Content Deletion** graph on the **Stats** tab in the Delta web interface. Wait for Delta to reestablish a normal 60 second cleanup cadence. This indicates that the content files on the disk that were bound to the leaked filters have been cleaned up.

3. Stop elemental_se using the following command.

```
sudo service elemental_se stop
```

4. Do a full vacuum of the database to recover any wasted space. Use the following commands.

```
psql web_production
```

```
vacuum full;
```

> **Note**
> You get a number of "superuser" warnings at this point. Ignore these.

```
\q
```

5. Continue with the upgrade process.

Step C: Locate the Software

1. From your regular workstation, open a web browser, go to AWS Elemental Support Center Activations and download the software for the version that you're going to.

2. Make a note of where downloads are stored on your workstation. For example:

```
h:/corporate/downloads/.
```

3. Make a note of the name of the download file. For example:
   `elemental_production_delta_2.3.0.123456.run`

4. Copy the download file from your workstation to `/home/elemental/` on one of the nodes. For example:
   - Use SFTP protocol and an FTP client application on your workstation computer. Connect to the IP address for AWS Elemental Delta on port 22 with the *elemental* user credentials and transfer the file.
   - Use SCP protocol and an SCP client application on your workstation computer. Copy the file with the *elemental* user credentials and transfer the file.

5. Repeat the download to any other nodes that are changing versions. If you're changing versions on several nodes, copy the download file to every hardware unit at once. Doing so reduces downtime on each node as you start installing the new software.

Step D: Upgrade the Node

The node must be in a working state prior to upgrade. If the node is in a degraded state (for example, the web interface isn't responding), the upgrade fails.

Perform these steps on the AWS Elemental Delta hardware unit.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you're logged in, the initial directory is `/home/elemental.`

2. Run the installer with the skip-all option:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all
```

The installer automatically stops the software, if it's still running. The following prompts are skipped:
   - You are not prompted to change the network setup (eth0 and eth1) or the Ethernet partitioning (setup of eth0 as a management interface).
   - You are not prompted to choose the time zone.
   - You are not prompted to enable or disable user authentication.

You *are* prompted to accept the EULA (end user license agreement).

The new software is installed and all services except `elemental_se` are automatically restarted.

3. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

4. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

5. Refresh your web browser to load the updated AWS Elemental Delta web interface.

Upgrading a Leader-Secondary AWS Elemental Delta Cluster

This section describes how to upgrade software versions of an existing cluster of Delta nodes that includes a leader and a secondary node.

Plan to upgrade during a maintenance window or have a redundant cluster available to accept traffic during the upgrade process. All activity on the node stops during this process and content could be lost.

If you have a cluster that includes a leader node and a secondary node, follow this procedure to upgrade the nodes. If you're not using a health checker, ensure that your load balancer doesn't reference the node that's currently being upgraded and isn't in the correct state to output content.

You must upgrade the nodes in concert with each other, in order to be able to continue ingesting and egressing content during the upgrade.

Warning
To ensure a seamless upgrade, do not use a VIP for content ingest. Instead, use one of these options:

- Use a multicast source feed.
- Send dual, matching streams to each ingest node.

This way, content can continue to be ingested during upgrade.

These are the node references in this procedure:

- The current (as of the start of the upgrade process) leader is referred to as "node A".
- The current secondary node is referred to as "node B".

You will upgrade node B and set it as the leader, and then upgrade node A and add it to node B's cluster. In the end, the two nodes will have switched roles.

> **Note**
> We strongly recommend that you review this entire procedure before starting, in order to understand what will happen.

Topics

Step A: Verify the Current Version of AWS Elemental Delta

Verify the current AWS Elemental Delta version one of these two ways:

- Look at the bottom of any screen on the web interface.
- Type the following command in the Linux command line, when you're logged in as the "elemental" user:

```
cat /opt/elemental_se/versions.txt
```

Step B: (Live to VOD and VOD Catalog Only) Clean the Database

Delta version 2.2 included a number of improvements to the live-to-VOD and ive-to-VOD catalog features. To take full advantage of these improvements, clean the database and do a full vacuum on each node prior to upgrading.

> **Warning**
> This process can take multiple hours to complete. Make sure you perform cleanup within a maintenance window.

1. Run the following cleanup scripts

```
cd /opt/elemental_se/web/vendor/gems/delta/script/
```

```
./clean-orphans.rb --clean-orphaned-filters
```

If you're on Delta version 2.0 or later and use live-to-VOD catalog, use the following script as well.

```
cd /opt/elemental_se/web
```

```
RAILS_ENV=production /opt/elemental-ruby/bin/rails runner ./vendor/gems/delta/script/
clean_l2vc_orphans.rb
```

2. Wait for segment cleanup to complete.

   To view progress, navigate to the **Delta Content Deletion** graph on the **Stats** tab in the Delta web interface. Wait for Delta to reestablish a normal 60 second cleanup cadence. This indicates that the content files on the disk that were bound to the leaked filters have been cleaned up.

3. Stop elemental_se using the following command.

```
sudo service elemental_se stop
```

4. Do a full vacuum of the database to recover any wasted space. Use the following commands.

```
psql web_production
```

```
vacuum full;
```

> **Note**
> You get a number of "superuser" warnings at this point. Ignore these.

```
\q
```

5. Continue with the upgrade process.

Step C: Locate the Software

1. From your regular workstation, open a web browser, go to AWS Elemental Support Center Activations and download the software for the version that you're going to.

2. Make a note of where downloads are stored on your workstation. For example:

```
h:/corporate/downloads/.
```

3. Make a note of the name of the download file. For example:
   `elemental_production_delta_2.3.0.123456.run`

4. Copy the download file from your workstation to `/home/elemental/` on one of the nodes. For example:
   - Use SFTP protocol and an FTP client application on your workstation computer. Connect to the IP address for AWS Elemental Delta on port 22 with the *elemental* user credentials and transfer the file.
   - Use SCP protocol and an SCP client application on your workstation computer. Copy the file with the *elemental* user credentials and transfer the file.

5. Repeat the download to any other nodes that are changing versions. If you're changing versions on several nodes, copy the download file to every hardware unit at once. Doing so reduces downtime on each node as you start installing the new software.

Step D: Upgrade Node B

The node must be in a working state prior to upgrade. If the node is in a degraded state (for example, the web interface isn't responding), the upgrade fails.

If you're not using a health checker, remove the reference to node B from the load balancer prior to upgrade. For assistance, see product documentation specific to the load balancer.

Perform these steps at the hardware unit for node B.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you're logged in, the initial directory is `/home/elemental`.

2. Run the installer with the skip-all option:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all
```

The installer automatically stops the software, if it's still running. The following prompts are skipped:

- You are not prompted to change the network setup (eth0 and eth1) or the Ethernet partitioning (setup of eth0 as a management interface).

- You are not prompted to choose the time zone.

- You are not prompted to enable or disable user authentication.

You *are* prompted to accept the EULA (end user license agreement).

The new software is installed and all services except `elemental_se` are automatically restarted.

3. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Do not reboot yet. Instead, switch to node A, as described below.

> **Warning**
> You must not reboot node B yet because doing so would cause node B to become a Leader (along with node A), which would cause serious conflicts.

4. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Do not respond to this prompt! Instead, switch to node A, as described below.

> **Warning**
> You must not restart node B yet because doing so would cause node B to become a leader (along with node A), which would cause serious conflicts.

Step E: Stop Node A

If you're not using a health checker, swap node B for node A in the load balancer like this:

1. Add node B back to the load balancer.

2. Remove node A from the load balancer.

See product documentation specific to the load balancer for assistance.

Perform these remaining steps at node A.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is `/home/elemental`.

2. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

Step F: Complete the Upgrade on Node B

Perform these steps at node B. Remember that in Step D: Upgrade Node B (p. 7), you were prompted either to reboot or to restart elemental_se. You now obey that prompt.

- Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

- If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Once node B has restarted, node B becomes leader and starts to ingest content.

Step G: Upgrade Node A

The node must be in a working state prior to upgrade. If the node is in a degraded state (for example, the web interface isn't responding), the upgrade fails.

Perform these steps at the hardware unit for node A.

1. Run the installer with the skip-all option:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all
```

The installer automatically stops the software, if it's still running. The following prompts are skipped:
- You are not prompted to change the network setup (eth0 and eth1) or the Ethernet partitioning (setup of eth0 as a management interface).
- You are not prompted to choose the time zone.
- You are not prompted to enable or disable user authentication.

You *are* prompted to accept the EULA (end user license agreement).

The new software is installed and all services except `elemental_se` are automatically restarted.

2. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

Node A joins the cluster. Node B is the leader now and node A is the secondary.

3. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Node A joins the cluster. Node B is the leader now and node A is the secondary.

4. If you're not using a health checker, add the node back to the load balancer.

5. Refresh your web browser to load the updated AWS Elemental Delta web interface.

Upgrading a Leader-Secondary-Egress AWS Elemental Delta Cluster

This section describes how to upgrade software versions of an existing cluster of Delta nodes that includes a leader node, a secondary node, and nodes designated for egress only.

Plan to upgrade during a maintenance window or have a redundant cluster available to accept traffic during the upgrade process. All activity on the node stops during this process and content could be lost.

If you have a cluster that includes a leader node, a secondary node, and one or more nodes dedicated for egress, follow this procedure to upgrade the nodes. If you're not using a health checker, ensure that your load balancer doesn't reference nodes that are currently being upgraded and aren't in the correct state to output content.

You must upgrade the nodes in concert with each other, in order to be able to continue ingesting and egressing content during the upgrade.

Warning
To ensure a seamless upgrade, do not use a VIP for content ingest. Instead, use one of these options:

- Use a multicast source feed.

- Send dual, matching streams to each ingest node.

This way, content can continue to be ingested during upgrade.

These are the node references in this procedure:

- The current (as of the start of the upgrade process) leader is referred to as "node A".

- The current secondary node is referred to as "node B".

You will upgrade node B and set it as the leader, and then upgrade node A and add it to node B's cluster. In the end, the two nodes will have switched roles.

Note
We strongly recommend that you review this entire procedure before starting, in order to understand what will happen.

Topics

Step A: Verify the Current Version of AWS Elemental Delta

Verify the current AWS Elemental Delta version one of these two ways:

- Look at the bottom of any screen on the web interface.
- Type the following command in the Linux command line, when you're logged in as the "elemental" user:

```
cat /opt/elemental_se/versions.txt
```

Step B: (Live to VOD and VOD Catalog Only) Clean the Database

Delta version 2.2 included a number of improvements to the live-to-VOD and ive-to-VOD catalog features. To take full advantage of these improvements, clean the database and do a full vacuum on each node prior to upgrading.

> **Warning**
> This process can take multiple hours to complete. Make sure you perform cleanup within a maintenance window.

1. Run the following cleanup scripts

```
cd /opt/elemental_se/web/vendor/gems/delta/script/
```

```
./clean-orphans.rb --clean-orphaned-filters
```

If you're on Delta version 2.0 or later and use live-to-VOD catalog, use the following script as well.

```
cd /opt/elemental_se/web
```

```
RAILS_ENV=production /opt/elemental-ruby/bin/rails runner ./vendor/gems/delta/script/
clean_l2vc_orphans.rb
```

2. Wait for segment cleanup to complete.

   To view progress, navigate to the **Delta Content Deletion** graph on the **Stats** tab in the Delta web interface. Wait for Delta to reestablish a normal 60 second cleanup cadence. This indicates that the content files on the disk that were bound to the leaked filters have been cleaned up.

3. Stop elemental_se using the following command.

```
sudo service elemental_se stop
```

4. Do a full vacuum of the database to recover any wasted space. Use the following commands.

```
psql web_production
```

```
vacuum full;
```

> **Note**
> You get a number of "superuser" warnings at this point. Ignore these.

```
\q
```

5. Continue with the upgrade process.

Step C: Locate the Software

1. From your regular workstation, open a web browser, go to AWS Elemental Support Center Activations and download the software for the version that you're going to.

2. Make a note of where downloads are stored on your workstation. For example:

```
h:/corporate/downloads/.
```

3. Make a note of the name of the download file. For example:
   `elemental_production_delta_2.3.0.123456.run`

4. Copy the download file from your workstation to `/home/elemental/` on one of the nodes. For
   example:
   - Use SFTP protocol and an FTP client application on your workstation computer. Connect to the IP
     address for AWS Elemental Delta on port 22 with the *elemental* user credentials and transfer the
     file.
   - Use SCP protocol and an SCP client application on your workstation computer. Copy the file with
     the *elemental* user credentials and transfer the file.

5. Repeat the download to any other nodes that are changing versions. If you're changing versions on
   several nodes, copy the download file to every hardware unit at once. Doing so reduces downtime on
   each node as you start installing the new software.

Step D: Upgrade Node B

The node must be in a working state prior to upgrade. If the node is in a degraded state (for example, the
web interface isn't responding), the upgrade fails.

If you're not using a health checker, remove the reference to node B from the load balancer prior to
upgrade. For assistance, see product documentation specific to the load balancer.

Perform these steps at the hardware unit for node B.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you're logged in, the initial
   directory is `/home/elemental`.

2. Run the installer with the skip-all option:

   ```
   [elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all
   ```

   The installer automatically stops the software, if it's still running. The following prompts are skipped:
   - You are not prompted to change the network setup (eth0 and eth1) or the Ethernet partitioning
     (setup of eth0 as a management interface).
   - You are not prompted to choose the time zone.
   - You are not prompted to enable or disable user authentication.

   You *are* prompted to accept the EULA (end user license agreement).

   The new software is installed and all services except `elemental_se` are automatically restarted.

3. Once installation is complete, you might be prompted to reboot:

   ```
   Installation and configuration complete!
   .
   .
   .
   NOTE: You must reboot your system to finish the installation!
   ```

   Do not reboot yet. Instead, switch to node A, as described below.

   Warning
   You must not reboot node B yet because doing so would cause node B to become a Leader
   (along with node A), which would cause serious conflicts.

4. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Do not respond to this prompt! Instead, switch to node A, as described below.

> **Warning**
> You must not restart node B yet because doing so would cause node B to become a leader (along with node A), which would cause serious conflicts.

Step E: Stop Egress Nodes

If you're not using a health checker, remove all egress nodes from the load balancer prior to starting the process of changing versions. For assistance, see product documentation specific to the load balancer.

Perform these steps at each egress node.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is /home/elemental.
2. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

Step F: Stop Node A

If you're not using a health checker, swap node B for node A in the load balancer like this:

1. Add node B back to the load balancer.
2. Remove node A from the load balancer.

See product documentation specific to the load balancer for assistance.

Perform these remaining steps at node A.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is /home/elemental.
2. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

Step G: Complete the Upgrade on Node B

Perform these steps at node B. Remember that in , you were prompted either to reboot or to restart elemental_se. You now obey that prompt.

- Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

- If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Once node B has restarted, node B becomes leader and starts to ingest content.

Step H: Upgrade Node A

The node must be in a working state prior to upgrade. If the node is in a degraded state (for example, the web interface isn't responding), the upgrade fails.

Perform these steps at the hardware unit for node A.

1. Run the installer with the skip-all option:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all
```

The installer automatically stops the software, if it's still running. The following prompts are skipped:

- You are not prompted to change the network setup (eth0 and eth1) or the Ethernet partitioning (setup of eth0 as a management interface).
- You are not prompted to choose the time zone.
- You are not prompted to enable or disable user authentication.

You *are* prompted to accept the EULA (end user license agreement).

The new software is installed and all services except elemental_se are automatically restarted.

2. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

Node A joins the cluster. Node B is the leader now and node A is the secondary.

3. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Node A joins the cluster. Node B is the leader now and node A is the secondary.

4. If you're not using a health checker, add the node back to the load balancer.

5. Refresh your web browser to load the updated AWS Elemental Delta web interface.

When both node A and node B show as green on the **Nodes** tab, proceed to the next step (Upgrade Egress Nodes).

Step I: Upgrade Egress Nodes

The node must be in a working state prior to upgrade. If the node is in a degraded state (for example, the web interface isn't responding), the upgrade fails.

Perform these steps at the hardware unit for each egress node, one at a time.

1. Run the installer with the skip-all option:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all
```

The installer automatically stops the software, if it's still running. The following prompts are skipped:

- You are not prompted to change the network setup (eth0 and eth1) or the Ethernet partitioning (setup of eth0 as a management interface).
- You are not prompted to choose the time zone.
- You are not prompted to enable or disable user authentication.

You *are* prompted to accept the EULA (end user license agreement).

The new software is installed and all services except `elemental_se` are automatically restarted.

2. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

The egress node joins the cluster. Verify that the egress node is on the same version as the leader and secondary nodes.

3. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

The egress node joins the cluster. Verify that the egress node is on the same version as the leader and secondary nodes.

4. If you're not using a health checker, add the node back to the load balancer.

5. Refresh your web browser to load the updated AWS Elemental Delta web interface.

When the upgraded egress node shows as green on the **Nodes** tab, repeat the steps in this section on the next egress node, until all nodes are upgraded.

Adding Egress Nodes while Upgrading AWS Elemental Delta

Follow these steps if you're adding egress nodes at the same time that you're upgrading an existing cluster.

1. Upgrade the existing cluster.
   - If you don't currently have any egress nodes, use the procedure in Upgrading a Leader-Secondary AWS Elemental Delta Cluster (p. 5).
   - If you have egress nodes in your cluster and are adding more, first upgrade using the procedure Upgrading a Leader-Secondary-Egress AWS Elemental Delta Cluster (p. 10).
2. Add the new egress nodes as described in AWS Elemental Delta version 2.3 Configuration Guide.

Sample Upgrade of AWS Elemental Delta

Following is a screen printout of a typical single node upgrade, showing the prompts and possible responses.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_2.3.0.12345.run --skip-all
```

```
Verifying archive integrity... All good.
Uncompressing Elemental Installer 100%
Network device eth0 already initialized...

INFO: moving ui.lic to location ./ ui.lic
Current version is: AWS Elemental Delta 2.2.2.98765
New version is: AWS Elemental Delta 2.3.0.12345

Stopping Apache..
Stopping replication
Backing up the database
Checking Elemental System Update
Starting system update
New system update version: 17006
System packages are now being updated and modified!
Please DO NOT interrupt the installer after this point!
Running pre-installation tasks...
Installing MOTD
Installing /etc/issue
.
Installing RPMs...
...
Installing gems...
Running scripts...
Updating PostgreSQL configuration
Stopping replication
Setting up config files
Restarting Postgres
Stopping postgresql-9.3 service: [ OK ]
Starting postgresql-9.3 service: [ OK ]
Installing AWS Elemental Delta 2.3.0.12345
Restoring previous logs and thumbnails
Merging supported audio & video codec lists
Network device eth0 already initialized...


Welcome to the product installation utility!
Version information:
 AWS Elemental Delta(CPU) 2.3.0.12345
 ------------------------
 ruby 1.9.3p484 (2013-11-22 revision 43786) [x86_64-linux]
 Rails 3.2.21
 psql (PostgreSQL) 9.3.6
 Elemental Git revision 9bf23ee9

Checking license files.
IMPORTANT INFORMATION
.
.
.
Continue? [Y] y

2. LICENSE AND RESTRICTIONS.
.
.
.
Continue? [Y] y

TERM AND TERMINATION. This Agreement is effective until terminated. This
.
.
.

Continue? [Y] y
.
.
```

```
.
Do you agree to these terms? [N] y
```

The AWS Elemental Delta services and the database are stopped:

```
Stopping services...
The software is updated:
Applying network settings to system...
Starting postgresql-9.3 service: [60G[[0;32m OK [0;39m]
User 'elemental' already exists
Replication user 'repl' already exists
PgManagement:: SystemManager restarting postgres
Granting all privileges on 'web_production' to user 'elemental'
Creating/Updating database...
Running migrations - this could take a while.
Database updated!
Database creation complete!
Loading Rails environment...
Updating node information...
Saving settings...
Adding node stat monitors...
Adding node scheduled tasks...
Adding licensing scheduled tasks...
```

Files are verified:

```
Hardware and license check complete
Creating default directory structures and data
Configuring log rotation...
Configuring apache...
Updating Delta Playlists...
..Configuring SNMP...
Configuring dynamic libraries...
Configuring NTP...
Setting sysctl configuration and adding to / etc/ rc.local...
```

Services are started:

```
Shutting down SMB services: [ OK ]
Starting SMB services: [ OK ]

Configuring RabbitMQ.........

Setting CPU scaling governorStarting services...
Starting system logger: [ OK ]
Starting httpd: [ OK ]
Starting ntpd: [ OK ]
Starting snmpd: [ OK ]
```

You are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y] y
Starting elemental_se: [ OK ]
Starting elemental-motd: [ OK ]

Installation and configuration complete!
Please open a web browser and point it to http://10.6.80.187:8080 to get to the web
 interface.
Enjoy!
[elemental@hostname ~]$
```

Downgrades in AWS Elemental Delta

This section describes how to downgrade the software version of an existing Delta installation.

> **Important**
> To avoid service interruptions, perform downgrades during a maintenance window! All traffic to and from an AWS Elemental Delta node stops while the node is being downgraded.

When you're downgrading AWS Elemental Delta nodes, the basic command remains the same regardless of how many nodes you have. The command you use is this:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

Where *version* is the software version that you're downgrading to, such as 2.1.4.123456. Finding the *path/to/database/backup* is part of the downgrade steps.

If you have a cluster of nodes, though, they must be downgraded in a specific order, and there might be extra steps needed. For this reason, this section includes separate topics for the different kinds of clusters.

We support downgrades up to two major versions back. With AWS Elemental Delta version 2.3.x, you can perform a standard downgrade to versions 2.2.x and 2.1.x. Note that there may be special consideration for downgrades to versions 2.1.0 through 2.1.2. For more information about these considerations, see the following section.

Downgrade Special Consideration

Because of the way the installers are configured, if the you meet the conditions for special consideration, you have to first downgrade to version 2.1.3 before going to an earlier version.

The special consideration applies to you if you're downgrading to version 2.1.2, or 2.1.1 and your nodes have previously been on version 1.7.x or earlier.

Topics

Downgrading a Single AWS Elemental Delta Node

This procedure describes how to downgrade from version 2.3 of the software to 2.2 or 2.1.

Plan to downgrade during a maintenance window or have a redundant cluster available to accept traffic during the downgrade process. All activity on the node stops during this process and content could be lost.

You can't perform a regular downgrade to version 2.0.x and earlier. To downgrade to an earlier version, see Kickstarting AWS Elemental Delta (p. 44). Note that there may be also special consideration if you're downgrading to versions 2.1.0 through 2.1.2. For more information, see Downgrade Special Consideration (p. 20).

Topics

Step A: Verify the Current Version of AWS Elemental Delta

Verify the current AWS Elemental Delta version one of these two ways:

- Look at the bottom of any screen on the web interface.
- Type the following command in the Linux command line, when you're logged in as the "elemental" user:

```
cat /opt/elemental_se/versions.txt
```

Step B: Locate the Database Backup

Locate and make note of the database file to restore.

> **Important**
> If you meet the conditions in Downgrade Special Consideration (p. 20), locate the database backup for version 2.1.3 as well as the version that you're downgrading to.

Every time that you downgrade, AWS Elemental Delta automatically makes a backup of the database similar to this:

```
/home/elemental/database_backups/elemental-db-backup_Delta_2.1.0_2015-02-08_21-01-36.tar
```

When you perform the downgrade, you specify the database backup that you're restoring. Ideally, you should restore the backup that corresponds to the version that you are downgrading to. For example, when you're downgrading to version 2.2.0, you would restore the 2.2.0 database.

If the database for the version that you're downgrading to isn't available, you can use an earlier database. For example, if you're downgrading to 2.2.1 and that database isn't available, you can restore the 2.2.0 database. Be aware that you will lose all entities (input filters, output filters, and so on) that you created between 2.2.0 and 2.2.1, though.

Step C: Locate the Software

1. Find the version of the software that you're downgrading to.

> **Important**
> If you meet the conditions in Downgrade Special Consideration (p. 20), locate and download version 2.1.3 as well as the version that you're downgrading to.

Follow these steps:

a. From a Linux prompt, log in to the hardware until with the "elemental" user credentials.

b. Look for the desired installer as shown here:

```
[elemental@hostname ~] ls
```

Look for the file named similar to this
`...elemental_production_delta_2.2.0.123456.run...`

2. If you find the software, skip to Step D: Downgrade the Node (p. 22).

   If the software isn't on the hardware unit, go to the next step.

3. From your regular workstation, open a web browser, go to AWS Elemental Support Center Activations and download the software for the version that you're going to.

4. Make a note of where downloads are stored on your workstation. For example:

```
h:/corporate/downloads/.
```

5. Make a note of the name of the download file. For example:
   `elemental_production_delta_2.2.0.123456.run`

6. Copy the download file from your workstation to `/home/elemental/` on one of the nodes. For example:

   - Use SFTP protocol and an FTP client application on your workstation computer. Connect to the IP address for AWS Elemental Delta on port 22 with the *elemental* user credentials and transfer the file.

   - Use SCP protocol and an SCP client application on your workstation computer. Copy the file with the *elemental* user credentials and transfer the file.

7. Repeat the download to any other nodes that are changing versions. If you're changing versions on several nodes, copy the download file to every hardware unit at once. Doing so reduces downtime on each node as you start installing the new software.

Step D: Downgrade the Node

The node must be in a working state prior to downgrade. If the node is in a degraded state (for example, the web interface isn't responding), the downgrade fails.

Perform these steps on the AWS Elemental Delta hardware unit.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is `/home/elemental`.

2. Enter the following command:

```
[elemental@hostname ~]$ chmod 755 elemental_production_delta_2.3.n.nnnn.run
```

3. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

4. If you're not downgrading from Delta version 2.3.1, skip this step. If you are downgrading from 2.3.1, delete the `filter_stats` RabbitMQ queue by using the following steps:

   a. From a Linux command prompt, locate the RabbitMQ username and password in the following directory: `/etc/elemental/rabbitmq`

   b. Navigate to the RabbitMQ web interface using the following address:
      `http://delta.hostname:15672`

   c. Log in to the RabbitMQ interface and choose the **Queues** tab.

   d. Choose **filter_stats**.

    e. Expand the **Delete/purge** section and choose **Delete**.

5. Make sure that the node has timed out on the web interface before running the prepare for downgrade script.

```
[elemental@hostname ~]$ sudo /opt/elemental_se/web/script/prepare_for_downgrade.sh -i ./
elemental_production_delta_<version>.nnnnnn.run
```

These are the guidelines for the version to use in the script:

- If you meet the conditions in , run the script for version 2.1.3.

- If you *don't* meet the conditions for special consideration, run the script for the version that you're downgrading to.

6. Enter this command to remove the existing package cache.

```
[elemental@hostname ~]$ sudo rm -r /var/cache/yum/local/
```

7. Run the installer as follows:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

where:

- `version`: If you meet the downgrade special conditions, the version is 2.1.3. Otherwise, use the version that you're downgrading to.

- `--skip-all`: Skips the configuration prompts you followed the first time you installed. The existing configuration is unchanged.

- `-xeula`: Skips the prompts to read through the EULA. You are prompted once to accept it.

- `--start`: Specifies to start the services without being prompted.

- `--downgrade`: Tells the installer that an earlier version is being installed.

- `--restore-db <path>`: Installs the backup file that you identified earlier. Specify just the filename, in this format: **elemental_production_delta_*n.n.n.nnnnnn_yyyy-mm-dd_hh-mm-ss***

The installer looks for the database file you specified and checks that it is a compatible version. If the file is not found or is not compatible, the downgrade fails.

The installer automatically stops the software, if it is running. You are prompted to accept the EULA (end user license agreement).

The new software is installed. During installation, the database is restored. Finally, all services except elemental_se are automatically restarted.

> **Note**
> During downgrade, the logs display a `RubyVersionMismatch` error. This is expected and doesn't affect the downgrade process. For reference, the full error is as follows: /opt/elemental-ruby/lib/ruby/gems/1.9.1/gems/bundler-1.11.2/lib/bundler/definition.rb:402:in `validate_ruby!': Your Ruby version is 1.9.3, but your Gemfile specified 2.3.6 (Bundler::RubyVersionMismatch)

8. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
```

```
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

9. If you *didn't* meet the conditions for special downgrade, skip this step.

   If you met the conditions for special downgrade, run the installer with downgrade to your desired version.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

The new software is installed and all services except elemental_se are automatically restarted.

Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

10 If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

11 Refresh your web browser to load the updated AWS Elemental Delta web interface.

Downgrading a Leader-Secondary AWS Elemental Delta Cluster

This procedure describes how to downgrade from version 2.3 of the software to 2.2 or 2.1.

Plan to downgrade during a maintenance window or have a redundant cluster available to accept traffic during the downgrade process. All activity on the node stops during this process and content could be lost.

If you have a cluster that includes a leader node and a secondary node, follow this procedure to downgrade the nodes. If you're not using a health checker, ensure that your load balancer doesn't reference the node that's currently being downgraded and isn't in the correct state to output content.

You must downgrade the nodes in concert with each other, in order to be able to continue ingesting and egressing content during the downgrade.

> **Warning**
> To ensure a seamless downgrade, do not use a VIP for content ingest. Instead, use one of these options:
>
> - Use a multicast source feed.
> - Send dual, matching streams to each ingest node.
>
> This way, content can continue to be ingested during downgrade.

These are the node references in this procedure:

- The current (as of the start of the downgrade process) leader is referred to as "node A".
- The current secondary node is referred to as "node B".

You will downgrade node B and set it as the leader, and then downgrade node A and add it to node B's cluster. In the end, the two nodes will have switched roles.

> **Note**
> We strongly recommend that you review this entire procedure before starting, in order to understand what will happen.

You can't perform a regular downgrade to version 2.0.x and earlier. To downgrade to an earlier version, see Kickstarting AWS Elemental Delta (p. 44). Note that there may be also special consideration if you're downgrading to versions 2.1.0 through 2.1.2. For more information, see Downgrade Special Consideration (p. 20).

Topics

Step A: Verify the Current Version of AWS Elemental Delta

Verify the current AWS Elemental Delta version one of these two ways:

- Look at the bottom of any screen on the web interface.
- Type the following command in the Linux command line, when you're logged in as the "elemental" user:

```
cat /opt/elemental_se/versions.txt
```

Step B: Locate the Database

Locate and make note of the database file to restore.

> **Important**
> If you meet the conditions in Downgrade Special Consideration (p. 20), locate the database backup for version 2.1.3 as well as the version that you're downgrading to.

Every time that you downgrade, AWS Elemental Delta automatically makes a backup of the database similar to this:

```
/home/elemental/database_backups/elemental-db-backup_Delta_2.1.0_2015-02-08_21-01-36.tar
```

When you perform the downgrade, you specify the database backup that you're restoring. Ideally, you should restore the backup that corresponds to the version that you are downgrading to. For example, when you're downgrading to version 2.2.0, you would restore the 2.2.0 database.

If the database for the version that you're downgrading to isn't available, you can use an earlier database. For example, if you're downgrading to 2.2.1 and that database isn't available, you can restore the 2.2.0 database. Be aware that you will lose all entities (input filters, output filters, and so on) that you created between 2.2.0 and 2.2.1, though.

Step C: Locate the Software

Download the version of the AWS Elemental Delta software that you're going to.

1. Find the version of the software that you're downgrading to.

   > **Important**
   > If you meet the conditions in Downgrade Special Consideration (p. 20), locate and download version 2.1.3 as well as the version that you're downgrading to.

   Follow these steps:
   a. From a Linux prompt, log in to the hardware until with the "elemental" user credentials.
   b. Look for the desired installer as shown here:

   ```
   [elemental@hostname ~] ls
   ```

   Look for the file named similar to this
   `...elemental_production_delta_2.2.0.123456.run...`
2. If you find the software, skip to Step D: Downgrade Node B (p. 27).

If the software isn't on the hardware unit, go to the next step.

3. From your regular workstation, open a web browser, go to AWS Elemental Support Center Activations and download the software for the version that you're going to.

4. Make a note of where downloads are stored on your workstation. For example:

```
h:/corporate/downloads/.
```

5. Make a note of the name of the download file. For example:
   `elemental_production_delta_2.2.0.123456.run`

6. Copy the download file from your workstation to `/home/elemental/` on one of the nodes. For example:

   - Use SFTP protocol and an FTP client application on your workstation computer. Connect to the IP address for AWS Elemental Delta on port 22 with the *elemental* user credentials and transfer the file.

   - Use SCP protocol and an SCP client application on your workstation computer. Copy the file with the *elemental* user credentials and transfer the file.

7. Repeat the download to any other nodes that are changing versions. If you're changing versions on several nodes, copy the download file to every hardware unit at once. Doing so reduces downtime on each node as you start installing the new software.

Step D: Downgrade Node B

The node must be in a working state prior to downgrade. If the node is in a degraded state (for example, the web interface isn't responding), the downgrade fails.

If you're not using a health checker, remove the reference to node B from the load balancer prior to downgrade. For assistance, see product documentation specific to the load balancer.

Perform these steps at the hardware unit for node B.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is `/home/elemental`.

2. Enter the following command:

```
[elemental@hostname ~]$ chmod 755 elemental_production_delta_2.3.n.nnnn.run
```

3. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

4. If you're not downgrading from Delta version 2.3.1, skip this step. If you are downgrading from 2.3.1, delete the `filter_stats` RabbitMQ queue by using the following steps:

   a. From a Linux command prompt, locate the RabbitMQ username and password in the following directory: `/etc/elemental/rabbitmq`

   b. Navigate to the RabbitMQ web interface using the following address:
      `http://delta.hostname:15672`

   c. Log in to the RabbitMQ interface and choose the **Queues** tab.

   d. Choose **filter_stats**.

   e. Expand the **Delete/purge** section and choose **Delete**.

5. Make sure that the node has timed out on the web interface before running the prepare for downgrade script.

```
[elemental@hostname ~]$ sudo /opt/elemental_se/web/script/prepare_for_downgrade.sh -i ./
elemental_production_delta_<version>.nnnnnn.run
```

These are the guidelines for the version to use in the script:

- If you meet the conditions in Downgrade Special Consideration (p. 20), run the script for version 2.1.3.

- If you *don't* meet the conditions for special consideration, run the script for the version that you're downgrading to.

6. Enter this command to remove the existing package cache.

```
[elemental@hostname ~]$ sudo rm -r /var/cache/yum/local/
```

7. Run the installer as follows:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

where:

- `version`: If you meet the downgrade special conditions, the version is 2.1.3. Otherwise, use the version that you're downgrading to.

- `--skip-all`: Skips the configuration prompts you followed the first time you installed. The existing configuration is unchanged.

- `-xeula`: Skips the prompts to read through the EULA. You are prompted once to accept it.

- `--start`: Specifies to start the services without being prompted.

- `--downgrade`: Tells the installer that an earlier version is being installed.

- `--restore-db <path>`: Installs the backup file that you identified earlier. Specify just the filename, in this format: **elemental_production_delta_*n.n.n.nnnnnn_yyyy-mm-dd_hh-mm-ss***

The installer looks for the database file you specified and checks that it is a compatible version. If the file is not found or is not compatible, the downgrade fails.

The installer automatically stops the software, if it is running. You are prompted to accept the EULA (end user license agreement).

The new software is installed. During installation, the database is restored. Finally, all services except elemental_se are automatically restarted.

> **Note**
> During downgrade, the logs display a `RubyVersionMismatch` error. This is expected and doesn't affect the downgrade process. For reference, the full error is as follows: /opt/elemental-ruby/lib/ruby/gems/1.9.1/gems/bundler-1.11.2/lib/bundler/definition.rb:402:in `validate_ruby!': Your Ruby version is 1.9.3, but your Gemfile specified 2.3.6 (Bundler::RubyVersionMismatch)

8. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Do not reboot yet. Instead, switch to node A, as described below.

> **Warning**
> You must not reboot node B yet because doing so would cause node B to become a Leader (along with node A), which would cause serious conflicts.

9. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Do not respond to this prompt! Instead, switch to node A, as described below.

> **Warning**
> You must not restart node B yet because doing so would cause node B to become a leader (along with node A), which would cause serious conflicts.

Step E: Stop Node A

If you're not using a health checker, swap node B for node A in the load balancer like this:

1. Add node B back to the load balancer.
2. Remove node A from the load balancer.

See product documentation specific to the load balancer for assistance.

Perform these remaining steps at node A.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is `/home/elemental`.
2. Enter the following command:

```
[elemental@hostname ~]$ chmod 755 elemental_production_delta_2.3.n.nnnn.run
```

3. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

Step F: Complete the Downgrade on Node B

Perform these steps at node B. Remember that in , you were prompted either to reboot or to restart elemental_se. You now obey that prompt.

1. Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

2. If you *didn't* meet the conditions for special downgrade, skip this step.

If you met the conditions for special downgrade, run the installer with downgrade to your desired version.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

The new software is installed and all services except elemental_se are automatically restarted.

Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

3. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Once node B has restarted, node B becomes leader and starts to ingest content.

Step G: Downgrade Node A

The node must be in a working state prior to downgrade. If the node is in a degraded state (for example, the web interface isn't responding), the downgrade fails.

Perform these steps at the hardware unit for node A.

1. If you're not downgrading from Delta version 2.3.1, skip this step. If you are downgrading from 2.3.1, delete the `filter_stats` RabbitMQ queue by using the following steps:

   a. From a Linux command prompt, locate the RabbitMQ username and password in the following directory: `/etc/elemental/rabbitmq`

   b. Navigate to the RabbitMQ web interface using the following address:
      `http://delta.hostname:15672`

   c. Log in to the RabbitMQ interface and choose the **Queues** tab.

   d. Choose **filter_stats**.

    e. Expand the **Delete/purge** section and choose **Delete**.

2. Make sure that the node has timed out on the web interface before running the prepare for downgrade script.

```
[elemental@hostname ~]$ sudo /opt/elemental_se/web/script/prepare_for_downgrade.sh -i ./
elemental_production_delta_<version>.nnnnnn.run
```

These are the guidelines for the version to use in the script:

- If you meet the conditions in Downgrade Special Consideration (p. 20), run the script for version 2.1.3.

- If you *don't* meet the conditions for special consideration, run the script for the version that you're downgrading to.

3. Enter this command to remove the existing package cache.

```
[elemental@hostname ~]$ sudo rm -r /var/cache/yum/local/
```

4. Run the installer as follows:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

where:

- `version`: If you meet the downgrade special conditions, the version is 2.1.3. Otherwise, use the version that you're downgrading to.

- `--skip-all`: Skips the configuration prompts you followed the first time you installed. The existing configuration is unchanged.

- `-xeula`: Skips the prompts to read through the EULA. You are prompted once to accept it.

- `--start`: Specifies to start the services without being prompted.

- `--downgrade`: Tells the installer that an earlier version is being installed.

- `--restore-db <path>`: Installs the backup file that you identified earlier. Specify just the filename, in this format: **elemental_production_delta_*n.n.n.nnnnnn_yyyy-mm-dd_hh-mm-ss***

The installer looks for the database file you specified and checks that it is a compatible version. If the file is not found or is not compatible, the downgrade fails.

The installer automatically stops the software, if it is running. You are prompted to accept the EULA (end user license agreement).

The new software is installed. During installation, the database is restored. Finally, all services except elemental_se are automatically restarted.

> **Note**
> During downgrade, the logs display a `RubyVersionMismatch` error. This is expected and doesn't affect the downgrade process. For reference, the full error is as follows: /
> opt/elemental-ruby/lib/ruby/gems/1.9.1/gems/bundler-1.11.2/lib/bundler/
> definition.rb:402:in `validate_ruby!': Your Ruby version is 1.9.3, but your Gemfile specified
> 2.3.6 (Bundler::RubyVersionMismatch)

5. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
```

```
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

6. If you *didn't* meet the conditions for special downgrade, skip this step.

   If you met the conditions for special downgrade, run the installer with downgrade to your desired version.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

The new software is installed and all services except elemental_se are automatically restarted.

Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

7. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Node A joins the cluster. Node B is the leader now and node A is the secondary.

8. If you're not using a health checker, add the node back to the load balancer.

9. Refresh your web browser to load the updated AWS Elemental Delta web interface.

Downgrading a Leader-Secondary-Egress Cluster

This procedure describes how to downgrade from version 2.3 of the software to 2.2 or 2.1.

Plan to downgrade during a maintenance window or have a redundant cluster available to accept traffic during the downgrade process. All activity on the node stops during this process and content could be lost.

If you have a cluster that includes a leader node, a secondary node, and one or more nodes dedicated for egress, follow this procedure to downgrade the nodes. If you're not using a health checker, ensure that your load balancer doesn't reference nodes that are currently being downgraded and aren't in the correct state to output content.

You must downgrade the nodes in concert with each other, in order to be able to continue ingesting and egressing content during the downgrade.

> **Warning**
> To ensure a seamless downgrade, do not use a VIP for content ingest. Instead, use one of these options:
>
> - Use a multicast source feed.
>
> - Send dual, matching streams to each ingest node.
>
> This way, content can continue to be ingested during downgrade.

These are the node references in this procedure:

- The current (as of the start of the downgrade process) leader is referred to as "node A".

- The current secondary node is referred to as "node B".

You will downgrade node B and set it as the leader, and then downgrade node A and add it to node B's cluster. In the end, the two nodes will have switched roles.

> **Note**
> We strongly recommend that you review this entire procedure before starting, in order to understand what will happen.

You can't perform a regular downgrade to version 2.0.x and earlier. To downgrade to an earlier version, see Kickstarting AWS Elemental Delta (p. 44). Note that there may be also special consideration if you're downgrading to versions 2.1.0 through 2.1.2. For more information, see Downgrade Special Consideration (p. 20).

Step A: Verify the Current Version of AWS Elemental Delta

Verify the current AWS Elemental Delta version one of these two ways:

- Look at the bottom of any screen on the web interface.
- Type the following command in the Linux command line, when you're logged in as the "elemental" user:

```
cat /opt/elemental_se/versions.txt
```

Step B: Locate the Database

Locate and make note of the database file to restore.

> **Important**
> If you meet the conditions in Downgrade Special Consideration (p. 20), locate the database backup for version 2.1.3 as well as the version that you're downgrading to.

Every time that you downgrade, AWS Elemental Delta automatically makes a backup of the database similar to this:

```
/home/elemental/database_backups/elemental-db-backup_Delta_2.1.0_2015-02-08_21-01-36.tar
```

When you perform the downgrade, you specify the database backup that you're restoring. Ideally, you should restore the backup that corresponds to the version that you are downgrading to. For example, when you're downgrading to version 2.2.0, you would restore the 2.2.0 database.

If the database for the version that you're downgrading to isn't available, you can use an earlier database. For example, if you're downgrading to 2.2.1 and that database isn't available, you can restore the 2.2.0 database. Be aware that you will lose all entities (input filters, output filters, and so on) that you created between 2.2.0 and 2.2.1, though.

Step C: Locate the Software

1. Find the version of the software that you're downgrading to.

   > **Important**
   > If you meet the conditions in Downgrade Special Consideration (p. 20), locate and download version 2.1.3 as well as the version that you're downgrading to.

   Follow these steps:

   a. From a Linux prompt, log in to the hardware until with the "elemental" user credentials.

   b. Look for the desired installer as shown here:

   ```
   [elemental@hostname ~] ls
   ```

   Look for the file named similar to this
   `...elemental_production_delta_2.2.0.123456.run...`

2. If you find the software, skip to Step D: Downgrade Node B (p. 35).

   If the software isn't on the hardware unit, go to the next step.

3. From your regular workstation, open a web browser, go to AWS Elemental Support Center Activations and download the software for the version that you're going to.

4. Make a note of where downloads are stored on your workstation. For example:

   ```
   h:/corporate/downloads/.
   ```

5. Make a note of the name of the download file. For example:
   `elemental_production_delta_2.2.0.123456.run`

6. Copy the download file from your workstation to `/home/elemental/` on one of the nodes. For example:

   - Use SFTP protocol and an FTP client application on your workstation computer. Connect to the IP address for AWS Elemental Delta on port 22 with the *elemental* user credentials and transfer the file.

- Use SCP protocol and an SCP client application on your workstation computer. Copy the file with the *elemental* user credentials and transfer the file.

7. Repeat the download to any other nodes that are changing versions. If you're changing versions on several nodes, copy the download file to every hardware unit at once. Doing so reduces downtime on each node as you start installing the new software.

Step D: Downgrade Node B

The node must be in a working state prior to downgrade. If the node is in a degraded state (for example, the web interface isn't responding), the downgrade fails.

If you're not using a health checker, remove the reference to node B from the load balancer prior to downgrade. For assistance, see product documentation specific to the load balancer.

Perform these steps at the hardware unit for node B.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is `/home/elemental`.

2. Enter the following command:

```
[elemental@hostname ~]$ chmod 755 elemental_production_delta_2.3.n.nnnn.run
```

3. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

4. If you're not downgrading from Delta version 2.3.1, skip this step. If you are downgrading from 2.3.1, delete the `filter_stats` RabbitMQ queue by using the following steps:

   a. From a Linux command prompt, locate the RabbitMQ username and password in the following directory: `/etc/elemental/rabbitmq`

   b. Navigate to the RabbitMQ web interface using the following address: `http://delta.hostname:15672`

   c. Log in to the RabbitMQ interface and choose the **Queues** tab.

   d. Choose **filter_stats**.

   e. Expand the **Delete/purge** section and choose **Delete**.

5. Make sure that the node has timed out on the web interface before running the prepare for downgrade script.

```
[elemental@hostname ~]$ sudo /opt/elemental_se/web/script/prepare_for_downgrade.sh -i ./
elemental_production_delta_<version>.nnnnnn.run
```

These are the guidelines for the version to use in the script:

- If you meet the conditions in Downgrade Special Consideration (p. 20), run the script for version 2.1.3.

- If you *don't* meet the conditions for special consideration, run the script for the version that you're downgrading to.

6. Enter this command to remove the existing package cache.

```
[elemental@hostname ~]$ sudo rm -r /var/cache/yum/local/
```

7. Run the installer as follows:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

where:

- `version`: If you meet the downgrade special conditions, the version is 2.1.3. Otherwise, use the version that you're downgrading to.

- `--skip-all`: Skips the configuration prompts you followed the first time you installed. The existing configuration is unchanged.

- `-xeula`: Skips the prompts to read through the EULA. You are prompted once to accept it.

- `--start`: Specifies to start the services without being prompted.

- `--downgrade`: Tells the installer that an earlier version is being installed.

- `--restore-db <path>`: Installs the backup file that you identified earlier. Specify just the filename, in this format: **elemental_production_delta_*n.n.n.nnnnnn_yyyy-mm-dd_hh-mm-ss***

The installer looks for the database file you specified and checks that it is a compatible version. If the file is not found or is not compatible, the downgrade fails.

The installer automatically stops the software, if it is running. You are prompted to accept the EULA (end user license agreement).

The new software is installed. During installation, the database is restored. Finally, all services except elemental_se are automatically restarted.

> **Note**
> During downgrade, the logs display a `RubyVersionMismatch` error. This is expected and doesn't affect the downgrade process. For reference, the full error is as follows: /opt/elemental-ruby/lib/ruby/gems/1.9.1/gems/bundler-1.11.2/lib/bundler/definition.rb:402:in `validate_ruby!': Your Ruby version is 1.9.3, but your Gemfile specified 2.3.6 (Bundler::RubyVersionMismatch)

8. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Do not reboot yet. Instead, switch to node A, as described below.

> **Warning**
> You must not reboot node B yet because doing so would cause node B to become a Leader (along with node A), which would cause serious conflicts.

9. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Do not respond to this prompt! Instead, switch to node A, as described below.

> **Warning**
> You must not restart node B yet because doing so would cause node B to become a leader (along with node A), which would cause serious conflicts.

Step E: Stop Egress Nodes

If you're not using a health checker, remove all egress nodes from the load balancer prior to starting the process of changing versions. For assistance, see product documentation specific to the load balancer.

Perform these steps at each egress node.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is /home/elemental.
2. Enter the following command:

```
[elemental@hostname ~]$ chmod 755 elemental_production_delta_2.3.n.nnnn.run
```

3. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

4. Repeat these steps at each egress node.

Step F: Stop Node A

If you're not using a health checker, swap node B for node A in the load balancer like this:

1. Add node B back to the load balancer.
2. Remove node A from the load balancer.

See product documentation specific to the load balancer for assistance.

Perform these remaining steps at node A.

1. From a Linux prompt, log in with the *elemental* user credentials. Once you are logged in, the initial directory is /home/elemental.
2. Enter the following command:

```
[elemental@hostname ~]$ chmod 755 elemental_production_delta_2.3.n.nnnn.run
```

3. Enter the following command to stop the node:

```
sudo service elemental_se stop
```

Step G: Complete the Downgrade on Node B

The node must be in a working state prior to downgrade. If the node is in a degraded state (for example, the web interface isn't responding), the downgrade fails.

Perform these steps at node B. Remember that in Step D: Downgrade Node B (p. 35), you were prompted either to reboot or to restart elemental_se. You now obey that prompt.

1. Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

2. If you *didn't* meet the conditions for special downgrade, skip this step.

   If you met the conditions for special downgrade, run the installer with downgrade to your desired version.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

   The new software is installed and all services except elemental_se are automatically restarted.

   Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

   Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

   The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

3. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

   Enter **Y**.

   The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Once node B has restarted, node B becomes leader and starts to ingest content.

Step H: Downgrade Node A

The node must be in a working state prior to downgrade. If the node is in a degraded state (for example, the web interface isn't responding), the downgrade fails.

Perform these steps at the hardware unit for node A.

1. If you're not downgrading from Delta version 2.3.1, skip this step. If you are downgrading from 2.3.1, delete the `filter_stats` RabbitMQ queue by using the following steps:

    a. From a Linux command prompt, locate the RabbitMQ username and password in the following directory: `/etc/elemental/rabbitmq`

    b. Navigate to the RabbitMQ web interface using the following address:
       `http://delta.hostname:15672`

    c. Log in to the RabbitMQ interface and choose the **Queues** tab.

    d. Choose **filter_stats**.

    e. Expand the **Delete/purge** section and choose **Delete**.

2. Make sure that the node has timed out on the web interface before running the prepare for downgrade script.

   ```
   [elemental@hostname ~]$ sudo /opt/elemental_se/web/script/prepare_for_downgrade.sh -i ./
   elemental_production_delta_<version>.nnnnnn.run
   ```

   These are the guidelines for the version to use in the script:

   - If you meet the conditions in Downgrade Special Consideration (p. 20), run the script for version 2.1.3.

   - If you *don't* meet the conditions for special consideration, run the script for the version that you're downgrading to.

3. Enter this command to remove the existing package cache.

   ```
   [elemental@hostname ~]$ sudo rm -r /var/cache/yum/local/
   ```

4. Run the installer as follows:

   ```
   [elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
   xeula --start --downgrade --restore-db <path/to/database/backup>
   ```

   where:

   - `version`: If you meet the downgrade special conditions, the version is 2.1.3. Otherwise, use the version that you're downgrading to.

   - `--skip-all`: Skips the configuration prompts you followed the first time you installed. The existing configuration is unchanged.

   - `-xeula`: Skips the prompts to read through the EULA. You are prompted once to accept it.

   - `--start`: Specifies to start the services without being prompted.

   - `--downgrade`: Tells the installer that an earlier version is being installed.

   - `--restore-db <path>`: Installs the backup file that you identified earlier. Specify just the filename, in this format: `elemental_production_delta_n.n.n.nnnnnn_yyyy-mm-dd_hh-mm-ss`

   The installer looks for the database file you specified and checks that it is a compatible version. If the file is not found or is not compatible, the downgrade fails.

   The installer automatically stops the software, if it is running. You are prompted to accept the EULA (end user license agreement).

   The new software is installed. During installation, the database is restored. Finally, all services except elemental_se are automatically restarted.

   > **Note**
   > During downgrade, the logs display a `RubyVersionMismatch` error. This is expected and doesn't affect the downgrade process. For reference, the full error is as follows: /

opt/elemental-ruby/lib/ruby/gems/1.9.1/gems/bundler-1.11.2/lib/bundler/
definition.rb:402:in `validate_ruby!': Your Ruby version is 1.9.3, but your Gemfile specified
2.3.6 (Bundler::RubyVersionMismatch)

5. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service
automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

6. If you *didn't* meet the conditions for special downgrade, skip this step.

If you met the conditions for special downgrade, run the installer with downgrade to your desired
version.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

The new software is installed and all services except elemental_se are automatically restarted.

Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service
automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

7. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

Node A joins the cluster. Node B is the leader now and node A is the secondary.

8. If you're not using a health checker, add the node back to the load balancer.

9. Refresh your web browser to load the updated AWS Elemental Delta web interface.

   When both node A and node B show as green on the **Nodes** tab, proceed to the next step (Downgrade Egress Nodes).

Step I: Downgrade Egress Nodes

The node must be in a working state prior to downgrade. If the node is in a degraded state (for example, the web interface isn't responding), the downgrade fails.

Perform these steps at the hardware unit for each egress node, one at a time.

1. If you're not downgrading from Delta version 2.3.1, skip this step. If you are downgrading from 2.3.1, delete the `filter_stats` RabbitMQ queue by using the following steps:

   a. From a Linux command prompt, locate the RabbitMQ username and password in the following directory: `/etc/elemental/rabbitmq`

   b. Navigate to the RabbitMQ web interface using the following address: `http://`*`delta.hostname`*`:15672`

   c. Log in to the RabbitMQ interface and choose the **Queues** tab.

   d. Choose **filter_stats**.

   e. Expand the **Delete/purge** section and choose **Delete**.

2. Make sure that the node has timed out on the web interface before running the prepare for downgrade script.

```
[elemental@hostname ~]$ sudo /opt/elemental_se/web/script/prepare_for_downgrade.sh -i ./
elemental_production_delta_<version>.nnnnnn.run
```

   These are the guidelines for the version to use in the script:

   - If you meet the conditions in , run the script for version 2.1.3.

   - If you *don't* meet the conditions for special consideration, run the script for the version that you're downgrading to.

3. Enter this command to remove the existing package cache.

```
[elemental@hostname ~]$ sudo rm -r /var/cache/yum/local/
```

4. Run the installer as follows:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

   where:

   - `version`: If you meet the downgrade special conditions, the version is 2.1.3. Otherwise, use the version that you're downgrading to.

- `--skip-all`: Skips the configuration prompts you followed the first time you installed. The existing configuration is unchanged.
- `-xeula`: Skips the prompts to read through the EULA. You are prompted once to accept it.
- `--start`: Specifies to start the services without being prompted.
- `--downgrade`: Tells the installer that an earlier version is being installed.
- `--restore-db <path>`: Installs the backup file that you identified earlier. Specify just the filename, in this format: **elemental_production_delta_*n.n.n.nnnnnn_yyyy-mm-dd_hh-mm-ss***

The installer looks for the database file you specified and checks that it is a compatible version. If the file is not found or is not compatible, the downgrade fails.

The installer automatically stops the software, if it is running. You are prompted to accept the EULA (end user license agreement).

The new software is installed. During installation, the database is restored. Finally, all services except elemental_se are automatically restarted.

> **Note**
> During downgrade, the logs display a `RubyVersionMismatch` error. This is expected and doesn't affect the downgrade process. For reference, the full error is as follows: /opt/elemental-ruby/lib/ruby/gems/1.9.1/gems/bundler-1.11.2/lib/bundler/definition.rb:402:in `validate_ruby!': Your Ruby version is 1.9.3, but your Gemfile specified 2.3.6 (Bundler::RubyVersionMismatch)

5. Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

6. If you *didn't* meet the conditions for special downgrade, skip this step.

If you met the conditions for special downgrade, run the installer with downgrade to your desired version.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_<version>.run --skip-all -
xeula --start --downgrade --restore-db <path/to/database/backup>
```

The new software is installed and all services except elemental_se are automatically restarted.

Once installation is complete, you might be prompted to reboot:

```
Installation and configuration complete!
.
.
```

```
.
NOTE: You must reboot your system to finish the installation!
```

Enter this command to reboot:

```
[elemental@hostname ~]$ sudo reboot
```

The reboot takes approximately 5 minutes. When the reboot completes, the elemental _se service automatically starts. Look for this message on the command line:

```
Starting elemental_se: [ OK ]
```

7. If you're not prompted to reboot, you are prompted to start elemental_se:

```
Would you like to start the Elemental service now? [Y]
```

Enter **Y**.

The restart takes approximately 1 minute. When the restart is done, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

The egress node joins the cluster. Verify that the egress node is on the same version as the leader and secondary nodes.

8. If you're not using a health checker, add the node back to the load balancer.
9. Refresh your web browser to load the updated AWS Elemental Delta web interface.

When the downgraded egress node shows as green on the **Nodes** tab, repeat the steps in this section on the next egress node, until all nodes are downgraded.

Kickstarting AWS Elemental Delta

Kickstarting is the process that you use to re-install an `.iso` image to an AWS Elemental Delta node.Typically, you kickstart the nodes if you're downgrading to a version that's more than two versions behind the current version (in this case, if you're downgrading to version 2.0.x or earlier).

During a kickstart, all the files in `/home/elemental` are lost, so the procedure includes steps for first copying important files to another location.

If your AWS Elemental Delta nodes are in a cluster, kickstart in this order:

1. Leader node
2. Secondary node
3. Egress nodes (if applicable)

> **Important**
> Plan to kickstart during a maintenance period. All activity on the nodes stops during the process.

Step A: Copy the Software

Download the version of the AWS Elemental Delta software that you're going to.

1. Find the version of the software that you're downgrading to.
   > **Important**
   > If you meet the conditions in Downgrade Special Consideration (p. 20), locate and download version 2.1.3 as well as the version that you're downgrading to.

   Follow these steps:
   a. From a Linux prompt, log in to the hardware until with the "elemental" user credentials.
   b. Look for the desired installer as shown here:

   ```
   [elemental@hostname ~] ls
   ```

   Look for the file named similar to this
   `...elemental_production_delta_2.2.0.123456.run...`
2. If you find the software, skip to Step B: Request the `.iso` File (p. 45).

   If the software isn't on the hardware unit, go to the next step.
3. From your regular workstation, open a web browser, go to the , click **Downloads and Licenses** and download the software for the version that you're going to.
4. Make a note of where downloads are stored on your workstation. For example:

   ```
   h:/corporate/downloads/.
   ```
5. Make a note of the name of the download file you select. For example:
   `elemental_production_delta_2.0.run`
6. Copy the download file from your workstation to `/home/elemental/` on one of the nodes. For example:
   - Use SFTP protocol and an FTP client application on your workstation computer. Connect to the IP address of the Delta node on port 22 with the *elemental* user credentials and transfer the file.

- Use SCP protocol and an SCP client application on your workstation computer. Connect to the IP address of the Delta node with the *elemental* user credentials and transfer the file.
- Use Windows Share protocol. Connect to `\\<elemental-ip>\elemental` on a PC or `smb://<elemental-ip>/elemental` on a Mac. Use the *elemental* user credentials and copy/paste the file into the network share.

7. Repeat the download to any other nodes that are changing versions. If you're changing versions on several nodes, copy the download file to every hardware unit at once. Doing so reduces downtime on each node as you start installing the new software.

Step B: Request the `.iso` File

You need an `.iso` file that corresponds to the AWS Elemental Delta version that you are going to. You can download this file from the **Software and Licenses** section of the . For detailed instructions, see Downloading AWS Elemental Delta Software (p. 49).

Step C: Copy Files Currently on the Delta Hardware Unit

You must copy some files to another workstation because they will be deleted from the AWS Elemental Delta hardware unit during the kickstart. The following able describes the files that you need to copy.

1. Locate these files on the Delta hardware unit, in the /home/elemental directory:

File	Description
`elemental_delta_2.0.n.12345.run`	The installer for the version you are upgrading or downgrading to.
`database_backups/elemental-db-backup_Delta_2.0.n.12345_yyyy-mm-dd_hh-mm-ss.tar`	Where 2.0.n is the version you want to upgrade or downgrade to, for example 2.0.0. The database backup that was automatically created when you upgraded *from* this version. **Note** Copy only the database that is on the leader node. Do not copy other databases. You will only need one database when restoring the node.
`activation_xxxx-<random characters>.key`	The activation key for your license, present only if you installed software yourself.
`eme.lic`	A license for AWS Elemental Delta.
`ui.lic`	A license for AWS Elemental Delta.

2. Copy these files to a directory on your workstation. For example:
   - Use Windows Share protocol: Connect to `\\<Delta IP>\elemental` on a PC.
   - Use Samba: Connect to `smb://<Delta IP>/elemental` on a Mac.

   Important
   Be careful to note which files belong to which node.

Step D: Install the `.iso` Images (Kickstart)

You must install the `.iso` image onto each hardware unit. Installing an `.iso` image is also referred to as *kickstarting the system*.

1. Burn the DVD image you received from Customer Support to a DVD or raw-write the USB image you downloaded to a USB thumb drive (USB stick). Follow the instructions for the utility that you use.

2. Insert the DVD or USB thumb drive into the hardware unit and boot from that DVD or USB thumb drive.

   The installer automatically starts.

3. Follow the prompts to install the `.iso` image:

   - **Hostname**: Change the hostname to a useful name such as **`delta01`** or **`delta-chicago-01`**. Typically, you use the name the node currently has. Do not use **`localhost`** as the hostname!

     Do not use periods or underscores in the hostname.
   - **Disk layout**: Choose **SDA**.
   - **Set product key**: Press **Enter** to skip this option.
   - **Upgrade**: Choose **No**.

4. Repeat steps 2 and 3 on each AWS Elemental Delta hardware unit.

The `.iso` image is installed. From now on, the hardware unit will run this customized version of the Linux operating system.

Step E: Restore Copied Files

1. Now that the `.iso` image is installed on all hardware units, restore the files you copied back onto the AWS Elemental Delta hardware unit to `/home/elemental`. Copy the files back to their original hardware units, then copy the database file to all nodes:

   - `activation_xxxx-<random characters>.key`
   - `eme.lic`
   - `ui.lic`
   - `database_backups/elemental-db-backup_yyyy-mm-dd_hh-mm-ss.tar.bz2`

2. Enter this command to extract the database. For example:

```
[elemental@hostname ~]$  tar -xvf elemental-db-
backup_Delta_1.6.0.12345_2015-03-18_17-34-38.tar
```

Step F: Install the AWS Elemental Delta Software

To install the software perform these steps on each Delta hardware unit.

1. From a Linux prompt, log in with the *elemental* user credentials.

2. Run the installer as follows:

```
[elemental@hostname ~]$ sudo sh ./elemental_production_delta_2.0.0.nnnnn.run -l -z -tz --
restore-db-backup <path to database backup>
```

where:

- `-l` is a letter, not a number.

- `--restore-db <path>`: Installs the backup file that you identified earlier. Specify just the filename in this format `elemental-db-backup_yyyy-mm-dd_hh-mm-ss.tar.bz2`

  The path for this file is `/home/elemental` on the hardware unit (you copied the file to this location in).

  The installer looks for the database file you specified and checks that it is a compatible version. If the file is not found or is not compatible, the installation fails.

3. You are prompted to answer the prompts shown in the following table.

Prompt	Action
`Do you agree to these terms?`	This prompt appears after you have paged through the EULA (End User License Agreement). Enter Yes or No. (You must enter Yes to continue.)
`Enter this server's Hostname`	Enter the hostname of this hardware unit. For example, **delta-01**
`Is eth0 a management interface?`	Enter **Yes**.
`Does eth0 use DHCP to get its IP address?`	Enter **Yes** to use DHCP or enter **No** to enter a static IP address.
`Enter eth0's IP address:`	If you chose static, enter the IP address for this hardware unit.
`Enter eth0's NETMASK:`	If you chose static, enter the netmask for this hardware unit.
`Enter eth0's Gateway (or type 'none'):`	If you chose static, type **none** or enter the gateway for this hardware unit.
`Keep this configured nameserver: 10.6.16.10?`	Skip; you set up a nameserver in the next phase of configuration.
`Would you like to configure eth1?`	Enter **No**; you can configure eth1 in the next phase of the configuration.
`The firewall for this system is currently disabled. Would you like to enable it?`	Skip; you set up the firewall in the next phase of configuration.
`Would you like to start the Elemental service now?`	Enter Yes.

Then the software is installed. Finally, this message appears:

```
Installation and configuration complete!
Please open a web browser and point it to http://xxx.xxx.xxx.xxx to get to the web
 interface.
Enjoy!
```

4. Start a web browser and start the AWS Elemental Delta web interface by typing `http://<hostname>:8080`

   Make sure the AWS Elemental Delta web interface displays.

Step G: Next Steps

You have now installed and performed the basic configuration of Delta. To complete the configuration, refer to AWS Elemental Delta version 2.3 Configuration Guide.

Downloading AWS Elemental Delta Software

These are the detailed steps for downloading files from the AWS Elemental Support Center.

1. Log in to the AWS Elemental Support Center with the email address that you used to receive your activation email and your password.
2. From the home page, click **Software and Licenses** on the right.
3. From the **Download Central Home**, choose **Your Entitlements** from the **Software & Entitlements** menu.
4. On **Your Entitlements**, your orders are listed from newest to oldest. In the **Activation Key** column, choose the link for the product that you're downloading.
5. On **Order Detail**, choose the plus sign for the package listed in the **Product Description** column to expand the order details.
6. In the expanded details, choose the product and version that you wish to download.
7. In the list of available files, choose the file you wish to download.
8. On **Product Download**, select the check box next to the file you want to download. Then click **Download Selected Files**.
9. If you are prompted to install the NetSession Interface download manager, click **download the installer** and run the executable.
10 Select a location and save the files. Note the file location for later.

Document History for Upgrade Guide

The following table describes the documentation for this release of AWS Elemental Delta.

- **API version:** 2.3
- **Release notes:** AWS Elemental Delta Release Notes

The following table describes the documentation for this release of AWS Elemental Delta. For notification about updates to this documentation, you can subscribe to an RSS feed.

update-history-change	update-history-description	update-history-date
Guide format conversion (p. 1)	This guide has been converted for HTML delivery.	January 2, 2020