
AWS Elemental Conductor Live 3

Installation Guide

Version 3.20



AWS Elemental Conductor Live 3: Installation Guide

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This is version 3.20 of the AWS Elemental Conductor Live 3 documentation. This is the latest version. For prior versions, see the *Previous Versions* section of [AWS Elemental Conductor Live 3 Documentation](#).

About This Guide

This guide describes how to install AWS Elemental Conductor Live 3 software for the first time. These are the reference documents for the different types of installation:

Installation type	Description
Node-locked licenses on AWS Elemental appliance	<p>You received AWS Elemental appliance edition hardware, which comes with the appropriate licenses already installed. To complete setup of each node, see the getting started guide that came in your product box or Cabling Setup.</p> <p>For your worker nodes, see AWS Elemental Live Installation Guide and AWS Elemental Statmux Installation Guide as needed, as well.</p>
Node-locked licenses on hardware	<p>You're installing unique licenses for each piece of physical, qualified hardware that's running AWS Elemental software.</p> <p>See Installing AWS Elemental Conductor Live 3 Node-locked Licenses on Qualified Hardware (p. 3).</p> <p>For your worker nodes, see AWS Elemental Live Installation Guide and AWS Elemental Statmux Installation Guide as needed, as well.</p>
Node-locked licenses on a virtual machine (VM)	<p>You're installing unique licenses for each VM guest that's running AWS Elemental software.</p> <p>See Installing AWS Elemental Conductor Live 3 Node-locked Licenses on a Virtual Machine (VM) (p. 11).</p> <p>For your worker nodes, see AWS Elemental Live Installation Guide and AWS Elemental Statmux Installation Guide as needed, as well.</p>
Pooled licenses on a virtual machine (VM)	<p>You're installing pooled licenses for each VM guest that's running AWS Elemental software. The AWS Elemental Conductor Live 3 nodes hold the license pool and disseminate licenses to the worker nodes. All worker nodes have the same licensing options.</p> <p>See Installing Pooled Licenses on a Virtual Machine (VM) (p. 18). Steps for your worker nodes are included in this section.</p>

All of these scenarios get you through phase 1 of the software installation process: the preconfigured operating system is installed, the software is installed, eth0 is configured, and licenses are installed.

Phase 2 is configuration of the software and is addressed in [AWS Elemental Conductor Live 3 Configuration Guide](#).

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](#).

Installing AWS Elemental Conductor Live 3 Node-locked Licenses on Qualified Hardware

This section is for IT administrators who perform the first-time installation of AWS Elemental Conductor Live 3 software on a hardware unit that is considered qualified hardware.

For information on hardware that AWS Elemental has qualified, contact your AWS Elemental Sales representative contact AWS Elemental Support through your company's Private Space in [AWS Elemental Support Center](#).

Prerequisite Knowledge

It is assumed that you know how to:

- Log in to the AWS Elemental machine over SSH to work via the command line interface.
- Use Windows Share (on a Windows computer), Samba (on a Mac workstation), or a utility such as scp (on a Linux workstation) to move files.
- Access recently downloaded files on your workstation.

The procedure for installing any version of AWS Elemental Conductor Live 3 is the same; only the version number in the file name changes. In this procedure, we show how to install version 3.20.3.12345 of the software.

Installation consists of four parts:

1. Downloading files from AWS Elemental
2. Installing the host operating system (OS)
3. Installing the AWS Elemental software
4. Setting up licensing

Topics

- [Step A: Prepare the Hardware and Download Files](#) (p. 3)
- [Step B: Install \(Kickstart\) the Operating System Software](#) (p. 4)
- [Step C: Install the AWS Elemental Software](#) (p. 5)
- [Step D: Set Up Licensing](#) (p. 6)
- [Step E: Complete Node Configuration](#) (p. 10)

Step A: Prepare the Hardware and Download Files

Prepare the Hardware and Network

To prepare your hardware and network, make sure you have done the following:

- Physically installed the hardware unit.
- Set up the unit as a node on your network.
- Configured network cards and ensured that they're able to reach other machines on the network.
- Set up a method, such as SCP, for transferring files from your workstation to the node.

Note Your Activation Code

You should have received an email with your activation code. You need this number for the installation.

If you're installing AWS Elemental software on more than one system, you received an activation code for each system. Decide and note which activation code you will use for each unit. The codes are not tied ahead of time to any specific system, but you cannot use the same code on more than one.

Download Files

Download the installation files for each unique AWS Elemental product that you're using.

To download installation files

1. Log in to [AWS Elemental Support Center Activations](#). For detailed steps to download installation files, see [Downloading AWS Elemental Conductor Live 3 Software \(p. 26\)](#).
2. Download your files.

You need the following files for each unique piece of AWS Elemental software that you're installing.

- A kickstart (.iso) file for creating a USB boot drive. For example, `centos-20161028T12270-production-usb.iso`.

You use this file to put a preconfigured installation of your operating system on your physical machine.

- An installation (.run) file for the AWS Elemental software itself. For example, `elemental_production_conductor_live247_3.20.3.44452.run`.

For example, if you're installing AWS Elemental Conductor Live 3 on two systems and AWS Elemental Live on five systems, you need to download two .iso files and two .run files.

Step B: Install (Kickstart) the Operating System Software

To kickstart the system

1. Insert the USB thumb drive into the hardware unit.
2. Restart the system using the following command.

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

3. Use the arrow keys to select each option and complete the field, using the instructions in the following table as a guide.

Menu Option	Instructions
Set Hostname	Change the hostname to a useful name such as conductor-live-3-01 or conductor-live-3-chicago-01 . Do not use localhost as the hostname! Do not use periods or underscores in the hostname.
Disk layout: Auto-detect	Leave this set at Auto-detect.
Set Key	Arrow down to skip this option.
Install and configure base operating system	Press Enter to begin the OS installation.

The operating system is installed.

4. For the changes to take effect, reboot the system by pressing **Enter** at the prompt `Press return to quit`.

Step C: Install the AWS Elemental Software

These steps must be performed on each node where you are installing AWS Elemental software, either directly at the machine or from your workstation via SSH.

Make sure that you use the `.run` file that corresponds to the `.iso` file that you used to set up the operating system on the node. That is, install Conductor software on the nodes that you kickstarted with the Conductor `.iso` and worker software on nodes that you kickstarted with the worker `.iso`.

To install the Conductor software

1. At the Linux command line, log in with the *elemental* user credentials.
2. Run the installer with this command. Use the actual file name of your `.run` file rather than the example below.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_conductor_live247_3.20.nnnnn.run  
-l -z -t
```

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

3. You are prompted as described in the table below.

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.)

Prompt	Action
Enter this server's Hostname	Type the hostname of this hardware unit. For example, conductor-live-3-01
Does eth0 use DHCP to get its IP address?	Type Yes to use DHCP or type No to enter a static IP address.
Enter eth0's IP address:	If you chose static, type the IP address for this hardware unit.
Enter eth0's NETMASK:	If you chose static, type the netmask for this hardware unit.
Enter eth0's Gateway (or type none):	If you chose static, type none or type the gateway for this hardware unit.
Keep this configured nameserver?	Skip; you set up a nameserver in the next phase of configuration.
Would you like to configure eth1?	Type 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?	Type Yes .

Then the software will be 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 Conductor Live 3 web interface by typing the following:

```
http://<hostname>
```

Make sure the web interface displays.

Step D: Set Up Licensing

At this point, the software is installed but is not yet enabled. To begin using the software, install a valid license file on each node.

To do so, follow the detailed steps described in the table below.

Step	Where to Perform Step	Start Step With	Finish Step With
Step a: Retrieve Activation Code	Your workstation	Activation email	Activation code

Step	Where to Perform Step	Start Step With	Finish Step With
Step b: Generate License Activation Key File	The AWS Elemental system, via an SSH client like PuTTY	Activation code	Key file (.key)
Step c: Download Licenses from the AWS Elemental User Community	Your workstation	Key file (.key)	Tarball file (.tgz)
Step d: Install the License Files	Your workstation	Unlicensed software with limited functionality	Fully licensed, full-feature software

Step a: Retrieve Activation Code

You should have received an email containing an activation code. If you're installing software for more than one node, you will have received a separate code for each one.

If you didn't receive this email or have lost it, contact AWS Elemental Support through your company's Private Space in [AWS Elemental Support Center](#).

Step b: Generate a License Activation Key File

The operating system that you installed on your hardware has a utility you can use to generate an activation key file.

To generate an activation key file

1. Using an SSH client such as PuTTY, log in to the hardware unit with the *elemental* user credentials.

You are logged in at the home directory (/elemental).

2. Enter this command.

```
[elemental@hostname ~] ./keygen
```

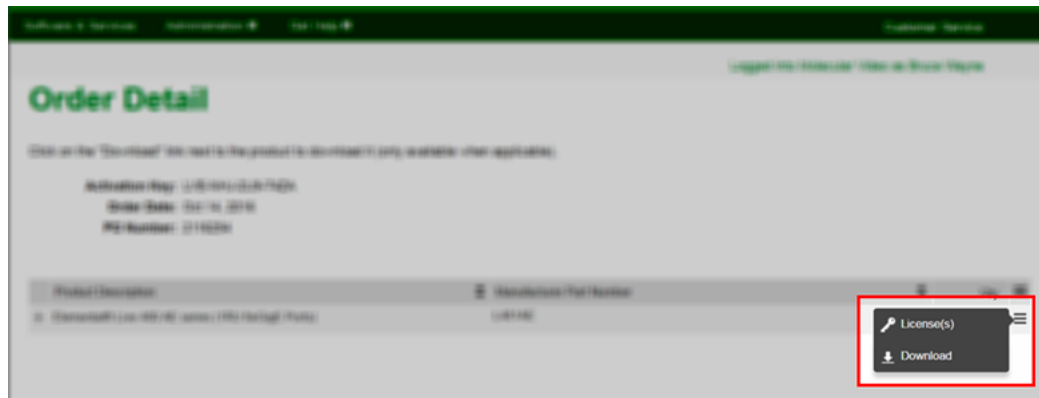
3. At the prompt, enter the activation code. The following file is created in the home directory: `activation_<hostname of the system>.key`.
4. Copy the file to your workstation. For example:
 - Use SCP or a similar utility on a Linux workstation.

Use the *elemental* user credentials and copy and paste the file from the network share.

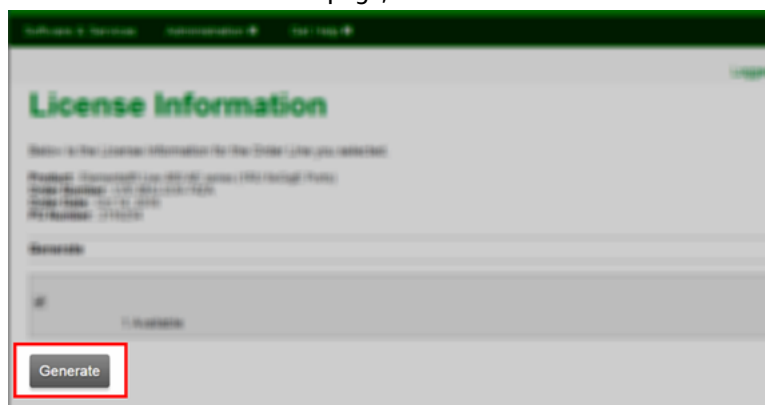
5. Repeat these steps for each AWS Elemental Conductor Live 3 hardware unit.
 - Make sure to log in to each hardware unit for each activation key file that you want to generate: each activation key file that you create must contain the hostname of the individual hardware unit.
 - Make sure to use a different activation code on each unit.

Step c: Download Licenses from the AWS Elemental User Community

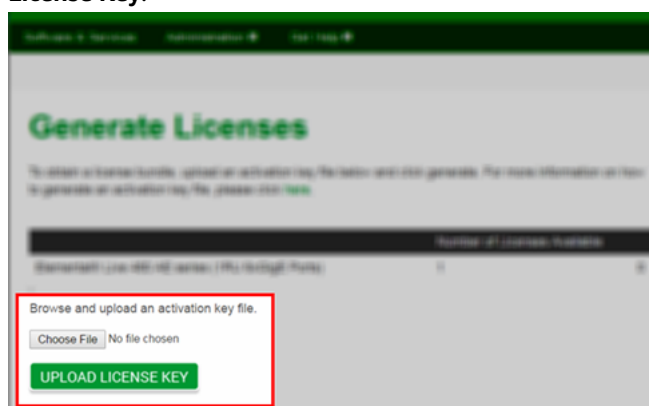
1. Follow the instructions in [Downloading AWS Elemental Conductor Live 3 Software \(p. 26\)](#) to get to the **Order Detail** page on the [AWS Elemental Support Center Activations](#).
2. Hover over the three-bar icon on the right of the screen to bring up a small menu. Choose **License(s)**.



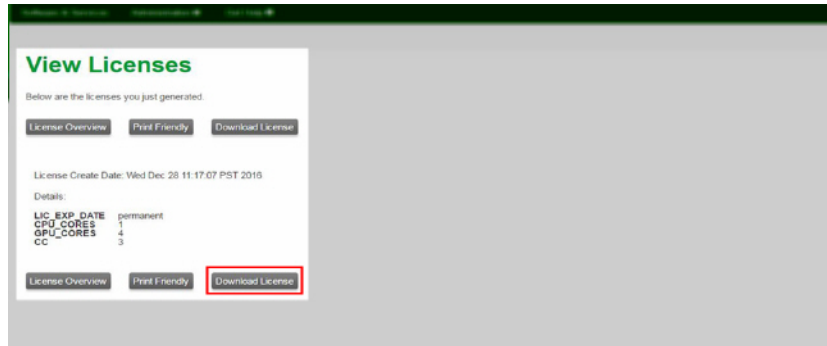
3. On the **License Information** page, choose **Generate**.



4. On the **Generate Licenses** page, select **Choose File** to browse to and select your .key file.
5. This returns you to the **Generate Licenses** page, with your .key file selected. Choose **Upload License Key**.



- This takes you to the **View Licenses** page, where you can download a `.tgz` file. This is a compressed, aggregated file that contains all the license files that you need for this system.



- Save the `.tgz` file to a place accessible to the AWS Elemental system that will be using this license, for example, a directory on your workstation called "licenses". Make a note of the path.

The files are named `lic-download-<hostname>.tgz`.

- Repeat these steps for each hardware unit that will have AWS Elemental software.

Step d: Install the License Files

Now that you have a `.tgz` compressed license file for each instance of the software you are running, you must point the software to it.

From your workstation, perform the following steps for each newly installed AWS Elemental system.

- Navigate to the directory where you saved the `.tgz` file and unpack it.
- Bring up the web interface for the AWS Elemental Conductor Live 3 system. From the main menu, select **Settings > Licenses**. The Licenses screen appears.
- Select **cl3_choose**; and navigate to the directory where you placed the license files. Select the file name with the hostname portion matching the hostname of this node.



- Choose **Upload**. The license file is installed.
- Repeat steps 1 through 4 on each node.

Ignore the message about the license pools. You are setting a node-locked deployment, so you don't need a license pool (`pool.lic`).

Step E: Complete Node Configuration

You have now installed and performed basic configuration of AWS Elemental Conductor Live 3. To complete the configuration, refer to the [AWS Elemental Conductor Live 3 Configuration Guide](#).

Installing AWS Elemental Conductor Live 3 Node-locked Licenses on a Virtual Machine (VM)

This section is for IT administrators who perform the first-time installation of AWS Elemental Conductor Live 3 software on a VM .

VM Guest Requirements

AWS Elemental software can run only on a virtual machine (VM) generated by VMware virtualization software. You must use VMware vCenter Server to create the VM. The vSphere client by itself does not work.

For version and system requirements and other information about VMware, see [System Requirements for Virtual Machines \(VMs\) \(p. 27\)](#).

Phase 1 Setup

This section explains how to perform the following on each blade:

- Create a virtual machine and install the AWS Elemental OVA.
- Install the licenses.
- Install the AWS Elemental Conductor Live 3 software.
- Configure eth0 as the management interface on each virtual machine.

Prerequisite Knowledge

To complete this process, you must have the following knowledge:

- A basic understanding of server virtualization.
- Installing and using VMware Center and the VMware vSphere client interface, including Open Console.
- Moving files from a VM guest to other systems over the network. We recommend using a utility such as SCP.
- Locating recently downloaded files.

The procedure for installing any version of AWS Elemental Conductor Live 3 is the same; only the version number in the file name changes. In this procedure, we show how to install version 3.20.3.12345 of the software.

Installation consists of four parts:

1. Downloading files from AWS Elemental
2. Installing the host operating system (OS)

3. Installing the AWS Elemental software
4. Setting up licensing

Topics

- [Step A: Prepare the Hardware and Download Files \(p. 12\)](#)
- [Step B: Deploy the VM \(p. 13\)](#)
- [Step C: Install the AWS Elemental Software \(p. 13\)](#)
- [Step D: Set Up Licensing \(p. 14\)](#)
- [Step E: Complete Node Configuration \(p. 17\)](#)

Step A: Prepare the Hardware and Download Files

Prepare the Hardware and Network

To prepare your hardware and network, make sure you have done the following:

- Physically installed the hardware unit.
- Set up the unit as a node on your network.
- Configured network cards and ensured that they're able to reach other machines on the network.
- Set up a method, such as SCP, for transferring files from your workstation to the VM guest.

Note Your Activation Code

You should have received an email with your activation code. You need this number for the installation.

If you're installing AWS Elemental software on more than one system, you received an activation code for each system. Decide and note which activation code you will use for each unit. The codes are not tied ahead of time to any specific system, but you cannot use the same code on more than one.

Download Files

Download the installation files for each unique AWS Elemental product that you're using.

To download installation files

1. Log in to [AWS Elemental Support Center Activations](#). For detailed steps to download installation files, see [Downloading AWS Elemental Conductor Live 3 Software \(p. 26\)](#).
2. Download your files.

You need the following files for each unique piece of AWS Elemental software that you're installing.

- A kickstart (.ova) file for creating a VM instance. For example, `centos-20161028T12270-production-usb.ova`.

You will use this file to put a preconfigured installation of your operating system on your VM.

- An installation (.run) file for the AWS Elemental software itself. For example, `elemental_production_conductor_live247_3.20.3.44452.run`.

For example, if you're installing AWS Elemental Conductor Live 3 on two systems and AWS Elemental Live on five systems, you need to download two `.iso` files and two `.run` files.

Step B: Deploy the VM

Perform these steps from your workstation.

1. Place the OVA image in a location convenient and accessible to the VM host.
2. Start the VMware vSphere client and choose the option that lets you run the OVF Deploy wizard.
3. Complete the fields in the wizard. Pay special attention to the following settings:
 - For the *source*, enter the location where you saved the OVA file.
 - Ensure that the *hostname* that you assign to the VM guest is unique across all of your AWS Elemental products.
 - For *network settings*, such as DNS servers and eth configuration, leave the fields blank. You will configure these settings later in the AWS Elemental Conductor Live 3 installation and configuration process.

When you finish and save your inputs, the OVA is installed, the guest is created, and the eth0 is configured as specified.

4. Before you proceed, take a snapshot of the VM as described in the VMware vSphere help text.
5. Repeat these steps to install the OVA on all VM instances.

Step C: Install the AWS Elemental Software

1. Use SCP to move each AWS Elemental software installer (`.run` file) to the `/home/elemental` directory on the appropriate virtual machine (VM). Use the *elemental* user credentials.
2. From the VMware vSphere client, choose **Open Console** and access the VM with the *elemental* username and default password.

You are logged in at the home directory (`/home/elemental`).

3. Run the installer as follows. When you do this use the actual file name of your `.run` file, rather than the file name in the example below.

```
[elemental@hostname ~]$ sudo sh ./<product> -xeula -l -z
```

Where:

- `<product>` is the file name of the file that you downloaded. For example, `elemental_production_conductor_live247_3.20.0.123456.run`.
 - `-l` is a letter, not a number.
4. You are prompted as described in the table below.

Prompt	Action
<code>Enter this server's Hostname</code>	Accept the suggestion, which is the value that you entered when you installed the OVA.

Prompt	Action
Does eth0 use DHCP to get its IP address?	Accept the suggestion.
Enter eth0's IP address:	If the prompt appears, accept the suggestion.
Enter eth0's NETMASK:	If the prompt appears, accept the suggestion.
Enter eth0's Gateway (or type none):	If the prompt appears, accept the suggestion.
Keep this configured nameserver?	Skip; you set up a nameserver in the next phase of configuration.
Would you like to configure eth1?	Type 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.
For security purposes, we require that you change the default password.	This prompt is shown if you are still using the default password.
Would you like to start the Elemental service now?	Type Yes .

The software is installed. This message confirms both installation and configuration are complete:

```
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!
```

- Take a snapshot of the VM as described in the CentOS 7 Virtual Manager online help.
- Start a web browser and start the AWS Elemental Conductor Live 3 web interface by typing:

```
http://<hostname>
```

Make sure the web interface displays.

Step D: Set Up Licensing

Install a valid license file for each AWS Elemental system using the steps described in the following table. Detailed instructions for each step also appear below.

Step	Where to Perform Step	Start Step With	Finish Step With
Step a: Retrieve Activation Code	Your workstation	Activation email	Activation code
Step b: Generate License Activation Key File	The keygen utility available on the VM	Activation code	Key file (.key)

Step	Where to Perform Step	Start Step With	Finish Step With
Step c: Download Licenses from the AWS Elemental User Community	Your workstation	Key file (.key)	Tarball file (.tgz)
Step d: Install the License Files	Your workstation	Unlicensed software with limited functionality	Fully licensed, full-feature software

Step a: Retrieve Activation Code

You should have received an email containing an activation code. If you're installing software for more than one VM guest, you will have received a separate code for each one.

If you didn't receive this email or have lost it, contact AWS Elemental Support through your company's Private Space in [AWS Elemental Support Center](#).

Step b: Generate a License Activation Key File

The operating system that you installed on your virtual machine (VM) has a utility you can use to generate an activation key file.

To generate an activation key file

1. From the VMware vSphere client, choose **Open Console** and access the desired VM, using the *elemental* user credentials.

You are logged in at the home directory (/elemental).

2. Enter this command.

```
[elemental@hostname ~] ./keygen
```

3. At the prompt, enter the activation code for the first VM, including the dashes. The following file is created in the home directory: `activation_<hostname of the system>.key`
4. Copy the activation key file from the VM to your workstation using SCP.

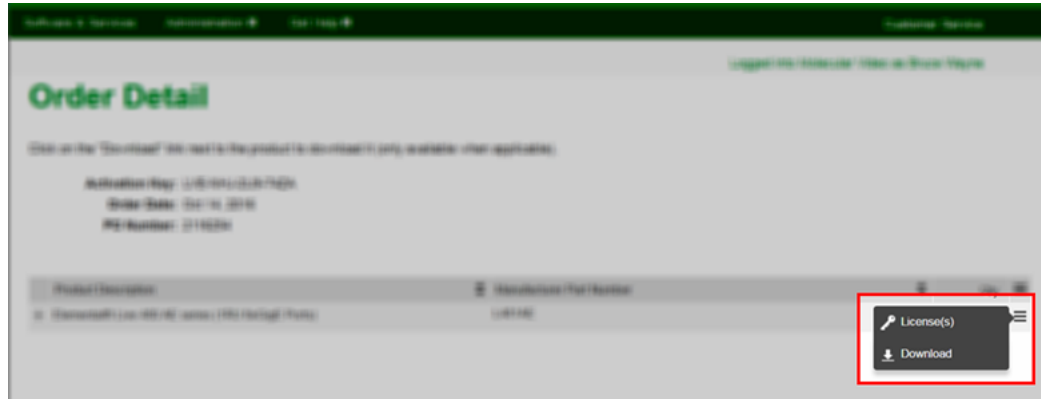
Use the *elemental* user credentials.

5. Repeat these steps for each VM.
 - Make sure to repeat step 1 for each AWS Elemental Conductor Live 3 activation key file that you want to generate: each key file must contain the hostname of the individual VM.
 - Make sure to use a different activation code on each VM.

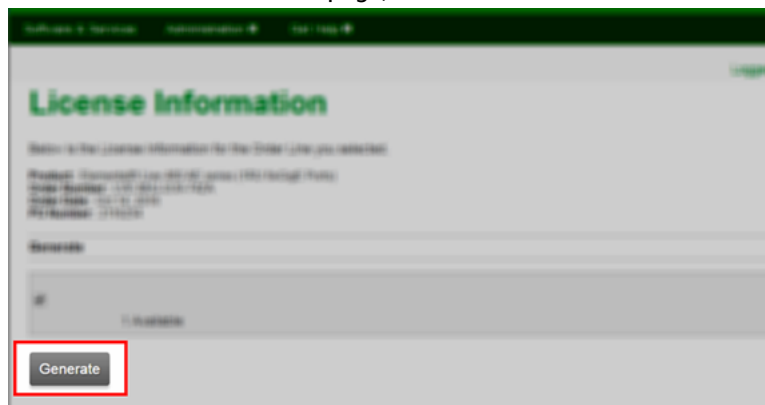
Step c: Download Licenses from the AWS Elemental User Community

1. Follow the instructions in [Downloading AWS Elemental Conductor Live 3 Software \(p. 26\)](#) to get to the **Order Detail** page on the [AWS Elemental Support Center Activations](#).
2. Hover over the three-bar icon on the right of the screen to bring up a small menu. Choose **License(s)**.

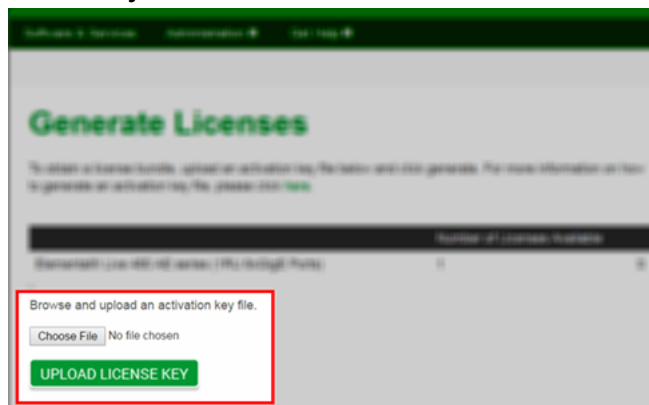
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Step c: Download Licenses from the
AWS Elemental User Community



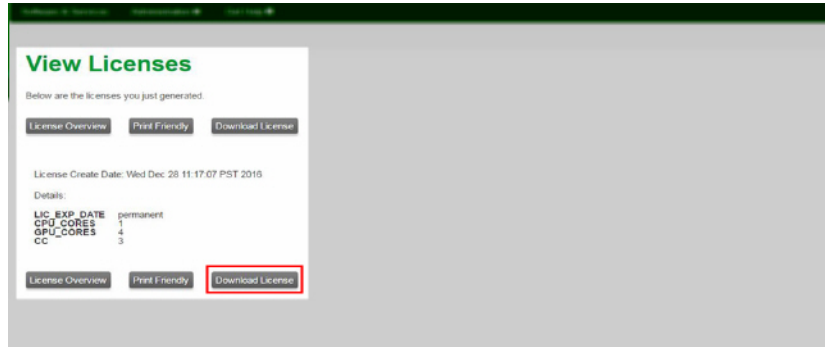
3. On the **License Information** page, choose **Generate**.



4. On the **Generate Licenses** page, select **Choose File** to browse to and select your `.key` file.
5. This returns you to the **Generate Licenses** page, with your `.key` file selected. Choose **Upload License Key**.



6. This takes you to the **View Licenses** page, where you can download a `.tgz` file. This is a compressed, aggregated file that contains all the license files that you need for this system.



7. Save the .tgz file to a place accessible to the AWS Elemental system that will be using this license, for example, a directory on your workstation called "licenses". Make a note of the path.

The files are named `lic-download-<hostname>.tgz`.

8. Repeat these steps for each virtual machine that will have AWS Elemental software.

Step d: Install the License Files

- Navigate to the directory where you saved the .tgz file.
- Unpack each .tgz file. The .tgz file contains:
 - `ui.lic`
 - `conductor.lic`
- Rename the `conductor.lic` file. For example, you can rename the file for the primary Conductor node to `conductor1.lic`, and the file for the backup to `conductor2.lic`.
- Display the AWS Elemental Conductor Live 3 web interface. From the main menu, choose **Settings**, then **Licenses**. The Licenses screen appears. Notice that the menu bar shows an alert (orange icon) because you do not yet have a license.
- Choose **Upload License** and navigate to the directory where you placed the license files.
- Select the applicable `conductor.lic` file, then back on the **Upload License** dialog, choose **Upload**. The license file is installed.

Note

There is no need to install the `ui.lic` file. But you should not discard it; instead, leave it in the location where you save all your license files.

Step E: Complete Node Configuration

You have now installed and performed basic configuration of AWS Elemental Conductor Live 3. To complete the configuration, refer to the [AWS Elemental Conductor Live 3 Configuration Guide](#).

Installing AWS Elemental Conductor Live 3 Pooled Licenses on a Virtual Machine (VM)

This section is for IT administrators who perform the first-time installation of AWS Elemental Conductor Live 3 software on a VM (virtual machine) using pooled licenses. The AWS Elemental Live worker nodes have the same licensed options and so can share the same license.

Note

AWS Elemental Conductor Live 3 manages AWS Elemental Statmux as well as AWS Elemental Live. However, Statmux typically runs on an AWS Elemental appliance, which means that it has a node-locked license. You can mix node-locked and pooled licenses in the same cluster, but must use the [AWS Elemental Statmux Installation Guide](#) to setup the node-locked licenses.

VM Guest Requirements

AWS Elemental software can run only on a virtual machine generated by VMware virtualization software. You must use VMware vCenter Server to create the VM. The vSphere client by itself does not work.

For version and system requirements and other information about VMware, see [System Requirements for Virtual Machines \(VMs\)](#) (p. 27).

Phase 1 Setup

This section explains how to perform the following on each blade:

- Create a virtual machine and install the AWS Elemental OVA.
- Install the licenses.
- Install the AWS Elemental Conductor Live 3 and AWS Elemental Live software.
- Configure eth0 as the management interface on each virtual machine.

Prerequisite Knowledge

To complete this process, you must have the following knowledge:

- A basic understanding of server virtualization.
- Installing and using VMware Center and the VMware vSphere client interface, including Open Console.
- Moving files from a VM guest to other systems over the network. We recommend using a utility such as SCP.
- Locating recently downloaded files.

The procedure for installing any version of AWS Elemental Conductor Live 3 is the same; only the version number in the file name changes. In this procedure, we show how to install version 3.20.3.12345 of the software.

Installation consists of four parts:

1. Downloading files from AWS Elemental

2. Installing the host operating system (OS)
3. Installing the AWS Elemental software
4. Setting up licensing

Topics

- [Step A: Prepare the Hardware and Download Files \(p. 19\)](#)
- [Step B: Deploy the VM and Install AWS Elemental Conductor Live 3 \(p. 20\)](#)
- [Step C: Set Up Licensing \(p. 21\)](#)
- [Step D: Deploy the VM and Install AWS Elemental Live \(p. 24\)](#)
- [Step E: Verify that Workers Receive Licenses \(p. 25\)](#)
- [Step F: Complete Node Configuration \(p. 25\)](#)

Step A: Prepare the Hardware and Download Files

Determine Primary Conductor Node

Typically, you have two AWS Elemental Conductor Live 3 nodes to support failover to a backup if the primary fails. Decide which of the Conductor nodes will be the primary and which will be the secondary. Note that the primary node takes on the role of primary license server and the secondary that of secondary license server. The Conductor nodes are license servers because they manage the pooled licenses that the AWS Elemental Live worker nodes use.

Prepare the Hardware and Network

To prepare your hardware and network, make sure you have done the following:

- Physically installed the hardware unit.
- Set up the unit as a node on your network.
- Configured network cards and ensured that they're able to reach other machines on the network.
- Set up a method, such as SCP, for transferring files from your workstation to the VM guest.

Note Your Activation Code

You should have received an email with your activation code. You need this number for the installation.

If you're installing AWS Elemental software on more than one system, you received an activation code for each system. Decide and note which activation code you will use for each unit. The codes are not tied ahead of time to any specific system, but you cannot use the same code on more than one.

Download Files

Download the installation files for each unique AWS Elemental product that you're using.

To download installation files

1. Log in to [AWS Elemental Support Center Activations](#). For detailed steps to download installation files, see [Downloading AWS Elemental Conductor Live 3 Software \(p. 26\)](#).
2. Download your files.

You need the following files for each unique piece of AWS Elemental software that you're installing.

- A kickstart (.ova) file for creating a VM instance. For example, `centos-20161028T12270-production-usb.ova`.

You will use this file to put a preconfigured installation of your operating system on your VM.

- An installation (.run) file for the AWS Elemental software itself. For example, `elemental_production_conductor_live247_3.20.3.44452.run`.

Make sure that you download the right version of software for the processing architecture that you need, either CPU-only or GPU-enabled.

For example, if you're installing AWS Elemental Conductor Live 3 on two systems and AWS Elemental Live on five systems, you need to download two .ova files and two .run files.

Make Downloads Accessible

Move the .ova and .run files to a location where they can be accessed during installation. Note that:

- The AWS Elemental software installers (.run) must be stored on a network share that the virtual machines have access to. This location can't require login credentials.
- The OVA image can be left in your workstation download directory, or you can put it on the same network share as the software installers.

Step B: Deploy the VM and Install AWS Elemental Conductor Live 3

Set up the AWS Elemental Conductor Live 3 nodes before setting up the worker AWS Elemental Live nodes.

Perform these steps from your workstation.

Install the Conductor Software on the Primary Node

1. Place the OVA image in a convenient location accessible to the VM host.
2. Start the VMware vSphere client and choose the option that lets you run the OVF Deploy wizard to create the VM guest.
3. Complete the fields in the wizard. Pay special attention to the following settings:
 - For the *source*, enter the location where you saved the OVA file.
 - Ensure that the *hostname* that you assign to the VM guest is unique across all of your AWS Elemental products.
 - For the *installer* details, enter the path and filename for the AWS Elemental Conductor Live 3 installer.
 - For *network settings*, such as DNS servers and eth configuration, leave the fields blank. You will configure these settings later in the AWS Elemental Conductor Live 3 installation and configuration process.

When you finish and save your inputs, the OVA is installed, the guest is created, and the eth0 is configured as specified.

4. Before you proceed, take a snapshot of the VM as described in the VMware vSphere help text.

Verify Installation

The VMware vSphere client provides feedback about creation of the VM guest. However, it does not provide status feedback during installation of the AWS Elemental software. Therefore, to monitor progress of the installation once the VM guest has been created, follow these steps:

1. From the VMware vSphere client, choose **Open Console** and access the AWS Elemental Conductor Live 3 VM. The screen shows a progress bar.
2. Press **Esc** on your keyboard to switch the display to showing text.
3. Watch for the following:
 - Early in the installation process, the display pauses on the line **Starting: ATD**. This indicates that the installation is in progress.
 - The log-in prompt appears when the installation is complete.
4. At the login prompt, enter the *elemental* user credentials.

You are logged in at the home directory (/elemental). If the installation succeeds, the AWS Elemental banner is displayed.

Install on Secondary Node

Perform the same installation and verification on the secondary AWS Elemental Conductor Live 3 node.

Step C: Set Up Licensing

Install a valid license file for each AWS Elemental system using the detailed steps described in the table below. .

Step	Where to Perform Step	Start Step With	Finish Step With
Step a: Retrieve Activation Code	Your workstation	Activation email	Activation code
Step b: Generate License Activation Key File	The keygen utility available on the VM	Activation code	Key file (.key)
Step c: Download Licenses from the AWS Elemental User Community	Your workstation	Key file (.key)	Tarball file (.tgz)
Step d: Install the License Files	Your workstation	Unlicensed software with limited functionality	Fully licensed, full-feature software

Step a: Retrieve Activation Code

You should have received an email containing an activation code. If you're installing software for more than one VM guest, you will have received a separate code for each one.

If you didn't receive this email or have lost it, contact AWS Elemental Support through your company's Private Space in [AWS Elemental Support Center](#).

Step b: Generate a License Activation Key File

The operating system that you installed on your virtual machine (VM) has a utility you can use to generate an activation key file.

To generate an activation key file

1. From the VMware vSphere client, choose **Open Console** and access the desired VM, using the *elemental* user credentials.

You are logged in at the home directory (/elemental).

2. Enter this command.

```
[elemental@hostname ~] ./keygen
```

3. At the prompt, enter the activation code for the first VM, including the dashes. The following file is created in the home directory: `activation_<hostname of the system>.key`
4. Copy the activation key file from the VM to your workstation using SCP.

Use the *elemental* user credentials.

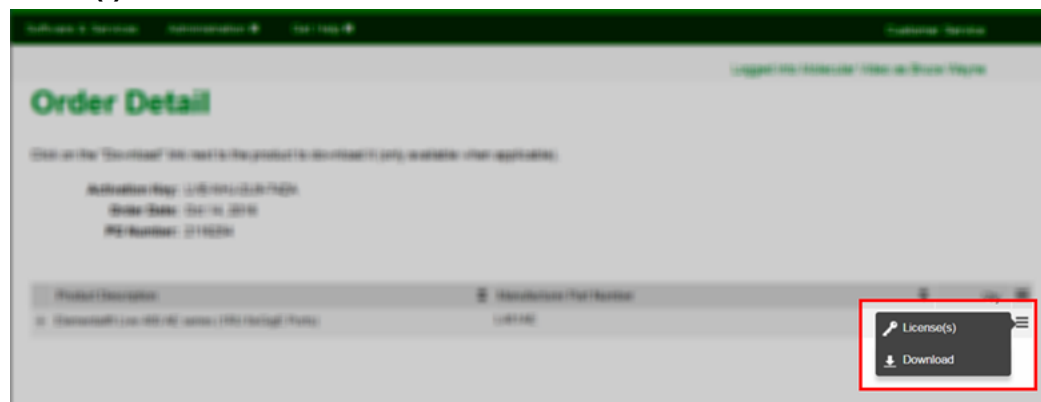
5. Repeat these steps for each VM.
 - Make sure to repeat step 1 for each AWS Elemental Conductor Live 3 activation key file that you want to generate: each key file must contain the hostname of the individual VM.
 - Make sure to use a different activation code on each VM.

Step c: Download Licenses from the AWS Elemental User Community

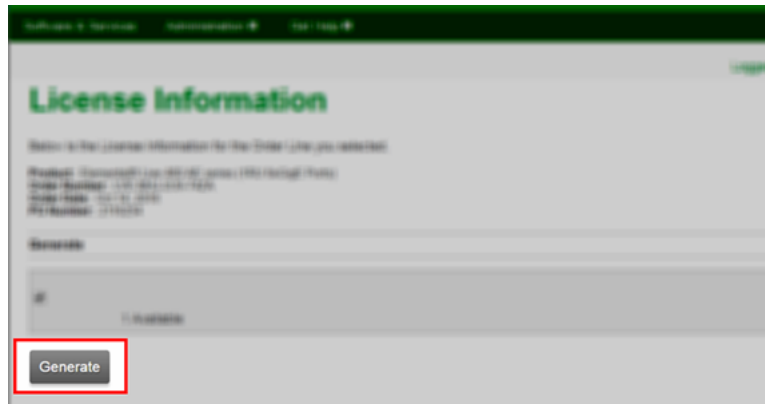
Important

You must perform these steps for the system that will act as the primary AWS Elemental Conductor Live 3 node first and then for the secondary.

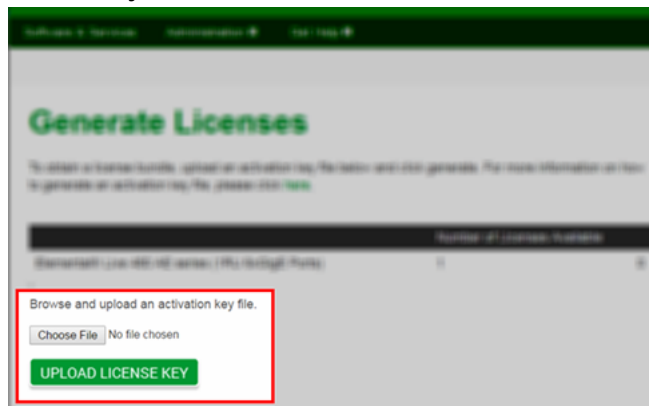
1. Follow the instructions in [Downloading AWS Elemental Conductor Live 3 Software \(p. 26\)](#) to get to the **Order Detail** page on the [AWS Elemental Support Center Activations](#).
2. Hover over the three-bar icon on the right of the screen to bring up a small menu. Choose **License(s)**.



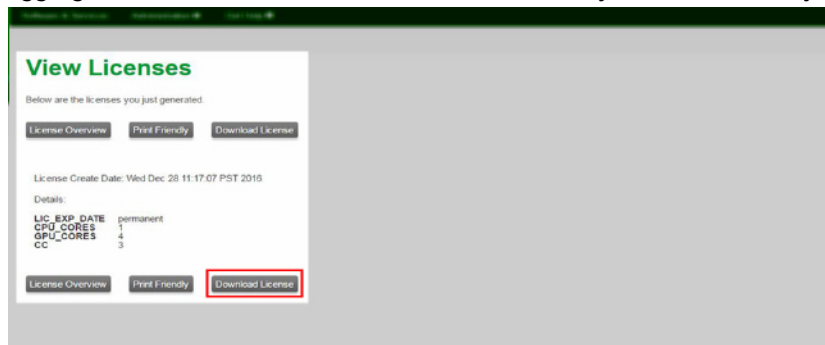
3. On the **License Information** page, choose **Generate**.



4. On the **Generate Licenses** page, select **Choose File** to browse to and select your **.key** file.
5. This returns you to the **Generate Licenses** page, with your **.key** file selected. Choose **Upload License Key**.



6. This takes you to the **View Licenses** page, where you can download a **.tgz** file. This is a compressed, aggregated file that contains all the license files that you need for this system.



7. Save the **.tgz** file to a place accessible to the AWS Elemental system that will be using this license, for example, a directory on your workstation called "licenses". Make a note of the path.

The files are named `lic-download-<hostname>-primary.tgz` and `lic-download-<hostname>-secondary.tgz`.

8. Download the license files for the secondary AWS Elemental Conductor Live 3 node using these same steps.

Step d: Install the License Files

Now that you have a .tgz compressed license file for each instance of the software you are running, you must point the software to it.

From your workstation, perform the following steps on each AWS Elemental Conductor Live 3 node.

1. Navigate to the directory where you saved the .tgz file and unpack it.
2. Bring up the web interface for the primary AWS Elemental Conductor Live 3 system. From the main menu, select **Settings > Licenses**. The Licenses screen appears.
3. Select **Upload License** and navigate to the directory where you placed the license files. Select the file name with the hostname portion matching the hostname of this node.



4. Choose **Upload**. The license file will be installed. Be sure to install each license file: `conductor.lic` and `ui.lic`.
5. Repeat on the secondary AWS Elemental Conductor Live 3 node.

Step D: Deploy the VM and Install AWS Elemental Live

After you've installed the AWS Elemental Conductor Live 3 nodes, perform these steps on each individual blade that you're adding to the cluster in order to deploy a VM and install the AWS Elemental Live worker software.

1. Place the OVA image in a convenient location accessible to the VM host.
2. Start the VMware vSphere client and choose the option that lets you run the OVF Deploy wizard.
3. Complete the fields in the wizard. Pay special attention to the following settings:
 - For the *source*, enter the location where you saved the OVA file.
 - Ensure that the *hostname* that you assign to the VM guest is unique across all of your AWS Elemental products.
 - For the *installer* details, enter the path and file name for the AWS Elemental Conductor Live 3 installer. For the *options*, enter this string:

```
-s -e 2790@<IP.address.of.primary.Conductor>:2790@<IP.address.of.secondary.Conductor>
```

For example, `-s -e 2790@10.24.34.2:2790@10.24.34.0`

where :

- `-s` instructs the installer to start the service (`elemental_se`) automatically.
- `-e` configures the worker node with the IP address and port of each AWS Elemental Conductor Live 3 node. This address is used to obtain a polled license when required.
- For *network settings*, such as DNS servers and eth configuration, leave the fields blank. You configure these settings later in the AWS Elemental Conductor Live 3 installation and configuration process.

When you finish and save your inputs, the OVA is installed, the guest is created, and the eth0 is configured as specified.

4. Before you proceed, take a snapshot of the VM as described in the VMware vSphere help text.
5. When you've finished installing, enter the hostname of the worker node into a web browser and make sure that the web interface appears.
6. Repeat these steps for each worker node.

Step E: Verify that Workers Receive Licenses

Access the web interface for AWS Elemental Conductor Live 3 and navigate to the **Licenses** screen. Displayed is a count of licenses that have been consumed by worker nodes. Verify that this number matches your expectation.

Step F: Complete Node Configuration

You have now installed and performed basic configuration of AWS Elemental Conductor Live 3 and AWS Elemental Live. To complete setup of your cluster, consider:

- For AWS Elemental products that aren't using pooled licenses, see the installation guide specific to those products.
- For phase 2 (full configuration) of the products using the pooled licenses, see [AWS Elemental Conductor Live 3 Configuration Guide](#).

Downloading AWS Elemental Conductor Live 3 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.

System Requirements for Virtual Machines (VMs)

This section describes the system requirements if you're using a virtual machine (VM).

Note

Other than recommended and minimum hardware requirements, this information pertains only to VMs. It is not intended for kernel-based virtual machines (KVMs).

Required Software

This is the software that you need when using a VM.

- VMware® vSphere® Hypervisor (ESXi) version 6 or higher, installed onto bare-metal hardware.
- VMware® vCenter Server™, required to install the AWS Elemental OVA.
- VMware® vSphere® web client or desktop client.

Important

Do not use the free versions of these products; they do not include all the required features.

Guests per Host Hardware

Each instance of AWS Elemental products is considered a *guest*.

We recommend one AWS Elemental Live or AWS Elemental Server virtual machine per host hardware.

For other AWS Elemental products, make sure the combined loads for all products do not exceed recommended hardware requirements. See the following sections for details.

Recommended Hardware Requirements

The resources that you have available impact your performance. For encoders, the resources determine the speed for encoding assets and the number of streams, bitrate, and type of encoding that's possible. We recommend the following hardware specifications for optimum performance.

AWS Elemental Conductor Live 3, AWS Elemental Conductor File, AWS Elemental Statmux

- RAM: 16 GB
- Disk space: 500 GB
- CPU cores: 24
- Processor speed: 2.3 GHz or more (Comparable to an Intel® Xeon processor E5-2630)

AWS Elemental Server and AWS Elemental Live

- RAM: 16 GB
- Disk space: 500 GB

- CPU cores: 32
- Processor speed: 2.0 GHz or more (Comparable to an Intel® Xeon processor E5-2650)

AWS Elemental Delta

- RAM: 128 GB
- Disk space: 500 GB
- CPU cores: 24
- Processor speed: 2.3 GHz or more (Comparable to an Intel® Xeon processor E5-2630)

Minimum Hardware Requirements

You can use host hardware with these minimum resources to run AWS Elemental products for functional testing or for integrating with the AWS Elemental software API. These resource levels are not for performance testing.

All products except AWS Elemental Delta

- RAM: 12 GB
- Disk space: 400 GB
- CPU cores: 8

EDLTlong;

- RAM: 16 GB
- Disk space: 40 GB
- CPU cores: 8

Compatible Hardware Platform

Verify that the host hardware platform is compatible with the VMware platform. Look at the *VMware Compatibility Guide* at vmware.com. AWS Elemental has specifically tested and qualified the following hardware:

- Cisco® UCS®
- HP® ProLiant® BL460c Gen8 Server Blade in an HP® C7000 enclosure
- Supermicro® SuperBlade™ and Supermicro® SYS-1027GR-TRF chassis

Install Error Messages

During install, you might see the error message `Hardware and license validation failed` at the command line. The table below provides a list of possible problems and causes that might result in this error.

Possible Problem	Possible Reason
eth0 is not set up	You didn't specify the address for eth0. Review the prompts in Step C: Install the AWS Elemental Software (p. 5) .
Products do not match	You might have requested and installed a license for one product (for example, AWS Elemental Conductor Live 3) and then installed a different product (for example, AWS Elemental Conductor File).

Sample Install

Following is a screen printout of a typical install, showing the prompts and possible responses.

```
[elemental@hostname ~] sudo sh ./elemental_production_conductor_live247_3.20.3.12345.run -l
-z -t
Verifying archive integrity... All good.
Uncompressing Elemental Installer 100%
/tmp/selfgz1160911216/elemental_system_update/rpms /tmp/selfgz1160911216
Non-fatal POSTIN scriptlet failure in rpm package 1:logstash-6.5.4-1.noarch
/tmp/selfgz1160911216
Stopping Services
..
.
Checking Elemental System Update
Starting system update
New system update version: 3150008
System packages are now being updated and modified!
Please DO NOT interrupt the installer after this point!
.

Initializing RPM repo.....
Cleaning up old kernels
...

Installing RPMs.....
..
Installing MOTD
Installing /etc/issue
.....
.....
Reload the systemd manager configuration
.
Installing logstash-forwarder plugin for logstash
Installing gems.....
Running scripts.....
Starting plat-api.
.Created symlink from /etc/systemd/system/multi-user.target.wants/plat-api.service to /usr/
lib/systemd/system/plat-api.service.

Initializing postgres
The files belonging to this database system will be owned by user "postgres".
This user must also own the server process.

The database cluster will be initialized with locale "en_US.UTF-8".
The default database encoding has accordingly been set to "UTF8".
The default text search configuration will be set to "english".

Data page checksums are disabled.

fixing permissions on existing directory /data/pgsql/data94 ... ok
creating subdirectories ... ok
selecting default max_connections ... 100
selecting default shared_buffers ... 128MB
selecting dynamic shared memory implementation ... posix
creating configuration files ... ok
creating template1 database in /data/pgsql/data94/base/1 ... ok
initializing pg_authid ... ok
initializing dependencies ... ok
creating system views ... ok
loading system objects' descriptions ... ok
```

```

creating collations ... ok
creating conversions ... ok
creating dictionaries ... ok
setting privileges on built-in objects ... ok
creating information schema ... ok
loading PL/pgSQL server-side language ... ok
vacuuming database template1 ... ok
copying template1 to template0 ... ok
copying template1 to postgres ... ok
syncing data to disk ... ok

WARNING: enabling "trust" authentication for local connections
You can change this by editing pg_hba.conf or using the option -A, or
--auth-local and --auth-host, the next time you run initdb.

Success. You can now start the database server using:

    /usr/pgsql-9.4/bin/postgres -D /data/pgsql/data94
or
    /usr/pgsql-9.4/bin/pg_ctl -D /data/pgsql/data94 -l logfile start

Setting up config files
Starting the database service
Created symlink from /etc/systemd/system/multi-user.target.wants/postgresql-9.4.service
to /usr/lib/systemd/system/postgresql-9.4.service.
Setting password for default user 'postgres'
ALTER ROLE
Tightening Postgres access security
Reloading Postgres
Redirecting to /bin/systemctl reload postgresql-9.4.service
Welcome to the product installation utility!
Version information:
  AWS Elemental Conductor Live 3 3.20.0.12345
  -----
  ruby 2.3.7p456 (2018-03-28 revision 63024) [x86_64-linux]
  Rails 3.2.22.5
  psql (PostgreSQL) 9.4.19
  Elemental Git revision 0290c91c

```

You are prompted to read and accept the EULA.

```

Checking license files.
IMPORTANT INFORMATION
.
.
.
Continue? [Y] y
.
.
.
Continue? [Y] y
.
.
.
Continue? [Y] y
.
.
.
Do you agree to these terms? [N] y

```

You are prompted to configure the network.

```

Enter this server's Hostname: [elemental@hostname ~]live-3-01

```

```
Detected 2 ethernet devices
Configuring eth0

Does eth0 use DHCP to get its IP address? [Y]
Would you like to configure eth1? [N]
The firewall for this system is currently enabled. Would you like to disable it? [N]
```

Services are stopped (note that actually no services are running) and interfaces are shut down.

```
Stopping services...
Restarting network services
Redirecting to /bin/systemctl start postgresql-9.4.service
Creating user 'elemental'
Creating database 'web_production'
Granting all privileges on 'web_production' to user 'elemental'
```

Interfaces are configured with the new information.

```
Bringing up loopback interface: [ OK ]
Bringing up interface eth0:
Determining IP information for eth0... done.
[ OK ] Bringing up interface eth1:
Determining IP information for eth1... done.
[ OK ]
```

The AWS Elemental Conductor Live 3 software is configured.

```
Creating/Updating database...
Running migrations - this could take a while.
Database creation complete!
Loading Rails environment...
Adding node to database...
Saving settings...
Adding cluster stat monitors...
Adding node stat monitors...
Adding cluster scheduled tasks...
Adding node scheduled tasks...
Adding licensing scheduled tasks...
Hardware and license check complete
Creating default directory structures and data
```

You are prompted for the time zone and user authentication.

```
Configuring time zone...
...
Select time zone ('n' for more) [Pacific Time (US & Canada)]
Selected: Pacific Time (US & Canada)
Do you wish to enabled authentication [N]
```

The installation continues.

```
Changing permissions and ownership...
Cleaning elemental_ipc...
Removing tmp...
Removing cached files
Configuring Apache...
Adding Elemental service...
Configuring log rotation...
Configuring apache...
```

```
..Configuring SNMP...
Configuring dynamic libraries...
Configuring NTP...
Setting sysctl configuration and adding to /etc/rc.local...
Shutting down SMB services: [60G[[0;32m OK [0;39m]
Starting SMB services: [60G[[0;32m OK [0;39m]

Configuring RabbitMQ.....

Setting CPU scaling governor
Starting services...
Starting system logger: [60G[[0;32m OK [0;39m]
Starting httpd: httpd.worker: Could not reliably determine the server's fully qualified
domain name, using ::1 for ServerName
[60G[[0;32m OK [0;39m]
Starting ntpd:
Starting snmpd: [60G[[0;32m OK [0;39m]
```

You are prompted to start elemental_se.

```
Would you like to start the Elemental service now? [Y]
Starting elemental_se: [ OK ]
Starting elemental-motd: [60G[[0;32m OK [0;39m]
Starting elemental-issue: [ OK ]

Installation and configuration complete!
Please open a web browser and point it to http://10.24.34.2 to get to the web interface.
Enjoy!
```

Document History for Installation Guide

The following table describes the documentation for this release of AWS Elemental Conductor Live 3.

- **API version:** 3.20
- **Release notes:** [AWS Elemental Conductor Live 3 Release Notes](#)

The following table describes the documentation for this release of AWS Elemental Conductor Live 3. For notification about updates to this documentation, you can subscribe to an RSS feed.

update-history-change	update-history-description	update-history-date
Version 3.20 release (p. 1)	First release of the 3.20 software version.	December 23, 2020