



Installation Guide

# AWS Elemental Statmux



**Version 2.20**

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# AWS Elemental Statmux: Installation Guide

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This is version 2.20 of the AWS Elemental Statmux documentation. This is the latest version. For prior versions, see the *Previous Versions* section of [AWS Elemental Statmux and AWS Elemental Live Documentation](#).

# About this Guide

This guide describes how to install AWS Elemental Statmux software for the first time. These are the reference documents for each installation type.

Installation type	Description
Node-locked licenses on AWS Elemental appliances	<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 <a href="#">Cabling Setup</a>.</p> <p>If you're using AWS Elemental Conductor Live 3 to control your Statmux nodes, see <a href="#">AWS Elemental Conductor Live 3 Installation Guide</a> 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 <a href="#">Installing AWS Elemental Statmux Node-locked Licenses on Qualified Hardware</a>.</p> <p>If you're using AWS Elemental Conductor Live 3 to control your Statmux nodes, see <a href="#">AWS Elemental Conductor Live 3 Installation Guide</a> as well.</p>

All of these scenarios get you through phase 1 of the 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 Statmux 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 Statmux Node-locked Licenses on Qualified Hardware

This section is for IT administrators who perform the first-time installation of AWS Elemental Statmux 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 or 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 Secure Shell (SSH) in order to run install commands 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 Statmux is the same; only the version number in the file name changes. In this procedure, we show how to install version 2.20.3.12345 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 Hardware and Download Files](#)
- [Step B: Install \(Kickstart\) the Operating System Software](#)
- [Step C: Install the AWS Elemental Software](#)

- [Step D: Set-up Licensing](#)
- [Step E: Complete Node Configuration](#)

## Step A: Prepare Hardware and Download Files

### Prepare 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 Statmux Software](#).
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_statmux_2.20.3.44452.run`.

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

## Create Bootable Kickstart

You must install the host operating system from an .iso file onto each physical machine that will be running AWS Elemental software. Doing so is referred to as “kickstarting the system”.

Make sure that you install the right version of the operating system with each piece of software. The correct .iso file is available at [AWS Elemental Support Center Activations](#).

### Create a Boot USB Drive

Do this from your workstation.

Use a third-party utility (such as PowerISO or ISO2USB) to create a bootable USB drive from your .iso file. For help, see the knowledge base article [Creating Bootable Recovery \(kickstart\) Media](#).

## 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	<p>Change the hostname to a useful name such as <b>statmux-01</b> or <b>statmux-c hicago-01</b> .</p> <p>Do not use localhost as the hostname!</p> <p>Do not use periods or underscores in the hostname.</p>
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.

- 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

Perform these 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 AWS Elemental Statmux software on the nodes that you kickstarted with the Statmux `.iso` and worker software on nodes that you kickstarted with the worker `.iso`.

### To install the software

- At the Linux command line, log in with the *elemental* user credentials.

2. Run the installer as follows. Use the actual file name of your `.run` file, rather than the example below.

```
[elemental@hostname ~]$ sudo sh ./elemental_production_statmux_2.20.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 <b>Yes</b> or <b>No</b> . (You must enter Yes to continue.)
Enter this server's Hostname	Type the hostname of this hardware unit. For example, <b>statmux-01</b>
Does eth0 use DHCP to get its IP address?	Type <b>Yes</b> to use DHCP or type <b>No</b> 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 <b>none</b> ):	If you chose static, type <b>none</b> 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 <b>No</b> ; you can configure eth1 in the next phase of the configuration.

Prompt	Action
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.
Select time zone ('n' for more)	Enter the time zone you want to show on the web interface of the nodes. This setting does not affect activity via SSH or via the REST API.
Would you like to start the Elemental service now?	Type <b>Yes</b> .

Then the software will be installed. Finally, this message will appear:

```
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 Statmux 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 it is not yet enabled. To begin using the software, install a valid license file on each node.

This table provides the steps for installing a license. Detailed instructions for each step follow.

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 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
```

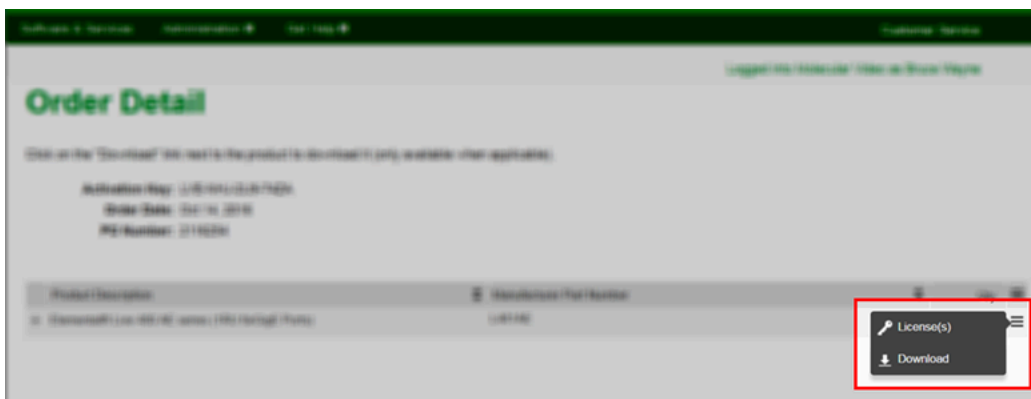
3. At the prompt, enter the activation code. The following file is created in the home directory: `activation_<hostname of the system>.key` .
4. Copy the file to your workstation. For example:
  - Use SCP or a similar utility on a Linux workstation.

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

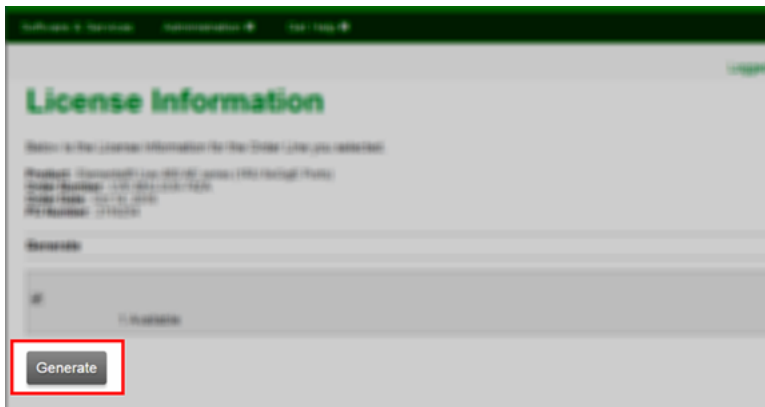
5. Repeat these steps for each AWS Elemental Statmux hardware unit.
  - Make sure to log in to each hardware unit for each activation key file that you want to generate: each activation key file that you create must contain the hostname of the individual hardware unit.
  - Make sure to use a different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

## Step c: Download Licenses from the AWS Elemental User Community

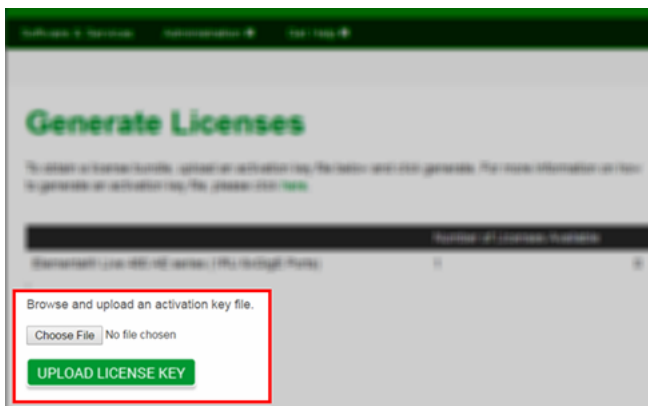
1. Follow the instructions in [Downloading AWS Elemental Statmux Software](#) to get to the **Order Detail** page on the [AWS Elemental Support Center Activations](#).
2. Hover over the three-bar icon on the right of the screen to bring up a small menu. Choose **License(s)**.



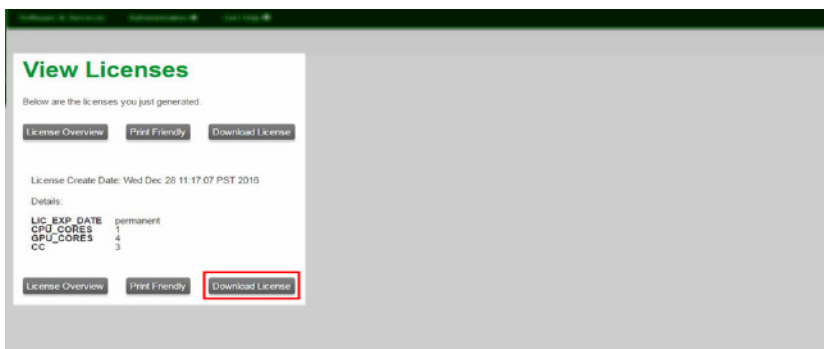
3. On the **License Information** page, choose **Generate**.



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>.tgz`.

8. 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.

1. Navigate to the directory where you saved the .tgz file and unpack it.
2. Bring up the web interface for the AWS Elemental Statmux system. From the main menu, select **Settings** > **Licenses**. The Licenses screen appears.
3. Select **Choose File** 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. Back on the Licenses screen, choose **Update**. The license file is installed.
5. Repeat steps 1 through 4 on each node.

## Step E: Complete Node Configuration

You have now installed and performed basic configuration of AWS Elemental Statmux. To complete the configuration, refer to the following:

Scenario	Guide
AWS Elemental Statmux in a stand-alone configuration. Statmux is not managed by AWS Elemental Conductor Live 3.	<a href="#">AWS Elemental Statmux Configuration Guide</a>
Multiple AWS Elemental Statmux nodes managed by AWS Elemental Conductor Live 3.	<a href="#">AWS Elemental Conductor Live 3 Configuration Guide</a>

# Downloading AWS Elemental Statmux 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.

# 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 <a href="#">Step C: Install the AWS Elemental Software</a> .
Products do not match	You might have requested and installed a license for one product (for example, AWS Elemental Statmux) and then installed a different product (for example, AWS Elemental Live).

# Sample Install

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

```
[elemental@hostname ~] sudo sh ./elemental_production_statmux_2.20.0.12345.run -z -t
Verifying archive integrity... All good.
Uncompressing Elemental Installer 100%
/tmp/selfgz142612827/elemental_system_update/rpms /tmp/selfgz142612827
/tmp/selfgz142612827
Stopping Services
..
.
Checking Elemental System Update
Starting system update
New system update version: 2152005
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 AJA Driver
Installing Deltacast Driver
Installing DekTec Driver
'./elemental_system_update/configuration/60-dektec-net.rules' -> '/etc/udev/rules.d/60-
dektec-net.rules'

Installing MOTD
Installing /etc/issue
.....
.....
Reload the systemd manager configuration
.
Installing gems...
Installation of passenger failed, please check the log for details

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
Installing Elemental Live 2.20.3.3011641
Welcome to the product installation and configuration utility!
Welcome to the product installation utility!
Version information:
  Elemental Live (CPU) 2.20.3.3011641
  -----
  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're 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 and update the password.

```
Enter this server's Hostname: [elemental@hostname ~]statmux-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]
For security purposes, we require that you change the default password.
```

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 Statmux 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 Statmux.

- **API version:** 2.20
- **Release notes:** [AWS Elemental Statmux Release Notes](#)

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

Change	Description	Date
<a href="#">Version 2.20 release</a>	Changes to support the 2.20 software release.	December 23, 2020