



# **Vanu® Anywave™ LTE BTS**

## **Software Installation Guide**

**Software Version: 1.0**

**Date of Release: July 2023**

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# PREFACE

This guide provides the information for the installing the Anywave™ LTE BTS software. The following table lists the chapters and topics of this guide.

<b>Chapter</b>	<b>Title</b>	<b>Description</b>
1	Overview	Provides a brief overview of the network.
2	Installing the Operating System	Provides the instructions for installing the operating system software on the servers.
3	Installing the Server	Provides the instructions for installing the primary server software, including the Controller, ConfigCenter™, and EMS (monitoring).

## AUDIENCE

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This guide is intended for operators who install, configure, and upgrade the software. You should be familiar with the following:

- Linux®
- Radio Access Networks (RAN) standards and terminology
- Networking fundamentals

## CONVENTIONS

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Notes and Cautions call attention to certain topics. To avoid loss of data or to make the most efficient use of the product, pay special attention to these areas.

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**Note:** This symbol calls attention to additional information that may be of practical use in following a procedure or understanding a concept.

---



**Caution:** This symbol indicates issues or practices that could damage the equipment or cause loss of data if you disregard the required safety precautions.

## REGULATORY INFORMATION

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**Note:** The Vanu Anywave LTE BTS Model VA60003-0001 is compliant with FCC Title 47 Parts 22, 24, and 27.

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**Caution:** This device is intended to be installed outdoors. In accordance with EN 62311 and related standards, humans should be more than .2 m away from the Anywave LTE eNodeB and its transmit antenna during operation.

## RELATED DOCUMENTATION

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The following documents will assist you in installing, configuring, and using your Anywave LTE network:

- *Vanu Anywave LTE BTS Configuration User Guide*
- *Vanu Anywave LTE BTS Software Installation Guide*
- *Vanu Anywave LTE BTS Release Notes*
- *Vanu Anywave LTE BTS Hardware Installation Guide*

## TECHNICAL SUPPORT

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For questions about any Vanu products, contact:

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- US: 1.617.864.1711, option 5
- India: +91-80-49196868

E-mail:[techsupport@vanu.com](mailto:techsupport@vanu.com)

Technical support is available for products and services provided by Vanu. If you need assistance with any product or service not provided by Vanu, consult the respective vendor's user manual for technical support information.



# OVERVIEW

This guide provides the installation instructions for the software applications needed to configure and monitor your network. These applications include the Controllers, ConfigCenter, and the Element Management System (EMS) server and client.

Before beginning your installation, refer to the [Preinstallation Checklist](#) to make sure you have the required equipment and network information. Refer to [Installation Media](#) to make sure you have the required installation software.



**Caution:** Do NOT install any third-party software on any server running this software.

Do NOT install any third-party software on the Anywave LTE base station.

Contact [Technical Support](#) for more information.

## PREINSTALLATION CHECKLIST

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Before beginning your software installation, make sure you have installed your servers and have other necessary installation information easily accessible.

### Server Requirements

Two servers are required for a typical configuration. I

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**Note:** The ConfigCenter software is usually installed on the same server as the Controller software.

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- Controller/ConfigCenter server
- EMS server

The recommended server for this installation is the Dell™ PowerEdge™ R340 server with the following:

Dell™ PowerEdge™ R340 server with the following:

- Processor - Intel® Xeon® E-2278G 3.4GHz, 16M cache, 8C/16T
- Memory - 2 x 16GB
- Hard Drives - 2 x 480GB SSD SATA
- Hard Drive - 2 x 2TB 7.2K RPM SATA 6Gbps
- Broadcom® 5720 Dual Port 1 GP network card
- Intel X550 Dual Port 10GbE BASE-T network card
- iDRAC9 Enterprise
- DVD-ROM
- Dual Power Supply

## Additional Equipment

You need the following additional equipment:

- Networking cables
  - These are needed to connect the server to your network.
- You need the following to install the EMS client.
  - ◆ Laptop with Windows® 10 or later

## Required Information

You need the following information before you begin installing the software:

- IP Address, Netmask, and Gateway address for each of the servers.
- A license file and user name for the EMS server.

Contact [Technical Support](#) for the license agreements and information.

## INSTALLATION MEDIA

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There are five installation iso files needed to complete the installations described in this document:

### ■ **Operating System Installer**

- ◆ VanuEL7-1.37.0 - For new installations
- ◆ VanuEL7-0.32.0-1.37.0.iso - For upgrades

This software is installed on all servers. Refer to [Installing the Operating System Software](#) for more information.

### ■ **ConfigCenter Installer**

VanuAWV-ConfigCenter <version number>.iso

This software is installed on the Controller server. Refer to [Installing the Server Software](#) for more information.

### ■ **Controller Server Installer**

VanuAWV-Controller-<version number>.iso

This software is installed on the Controller server. Refer to [Installing the Server Software](#) for more information.

### ■ **EMS Server Installer**

VanuAWV-EMS-<version number>.iso

This software is installed on the EMS server. Refer to [Installing the Server Software](#) for more information.

# INSTALLING THE OPERATING SYSTEM SOFTWARE

This chapter provides the information necessary to install the Operating System software on the servers. Refer to the [Preinstallation Checklist](#) for preinstallation information.

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**Note:** The Operating System software must be installed on all servers - Controller/ConfigCenter, Standby, and the Element Management System (EMS). It must be installed before the other software applications.

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This chapter contains the following information:

- [Installing the Operating System](#)
- [Adding Additional Users](#)

## INSTALLING THE OPERATING SYSTEM

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Complete the following steps to install the operating system software:

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**Note:** To install the operating system, it is recommended that you create a CD/DVD with the VANUEL7-<version number>.iso file on it.

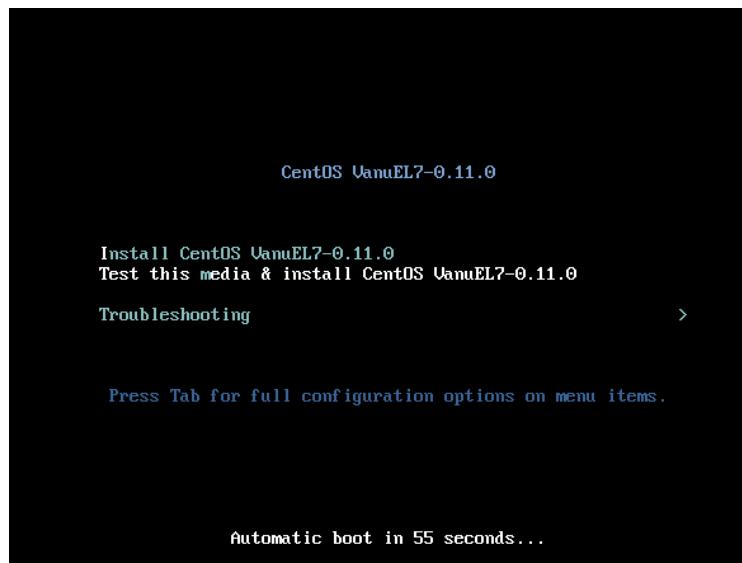
---

1. Insert the VANUEL7-<version number>.iso CD into the DVD-ROM.

**Note:** You may have to configure the boot device order in the BIOS so that the DVD-ROM is on the top of the list.

The CentOS VanuEL7-<version number> screen displays (Figure 2-1):

**Figure 2-1.** CentOS VanuEL7-<version number> Screen



**Note:** If you are installing the operating system for the first time, it is recommended that you test the media. Otherwise, skip to step 3.

2. Select **Test this media & install CentOS VanuEL7-<version number>** and press **Enter**.

**Note:** Use the **Tab** and the **arrow** keys to navigate through this installation screen.

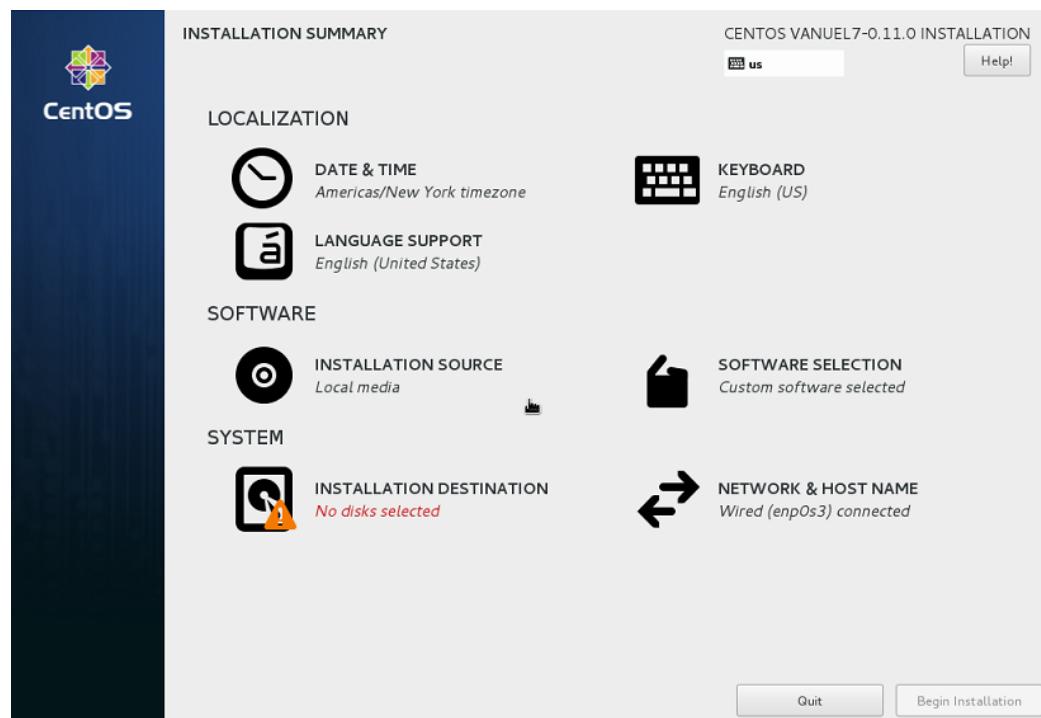
This may take several minutes. The screen goes blank, text scrolls, and the screen goes blank again. After running this test, the CentOS VanuEL7-<version number> screens displays again ([Figure 2-1](#)).

3. Select **Install CentOS VanuEL7-<version number>** and press **Enter**.

**Note:** Use the **Tab** and the **arrow** keys to navigate through this installation screen.

The screen goes blank, text scrolls, and the screen goes blank again. It may take ten minutes or more for the LOCALIZATION screen ([Figure 2-2](#)).to display.

**Figure 2-2. LOCALIZATION Screen**



4. (Optional) Set the date and time of the server.

**Note:** It is recommended that you use UTC (Coordinated Universal Time) instead of the local time.

**A. Select DATE & TIME.**

The DATE & TIME screen displays (Figure 2-3).

**B. Select the Region from the drop-down list.**

**C. Select the nearest City from the drop-down list.**

**D. Enter the time.**

**E. Click Done.**

The LOCALIZATION screen displays (Figure 2-2).

**Figure 2-3. DATE & TIME Screen**



5. (Optional) Select the language of the user interface.

**A. Select LANGUAGE SUPPORT.**

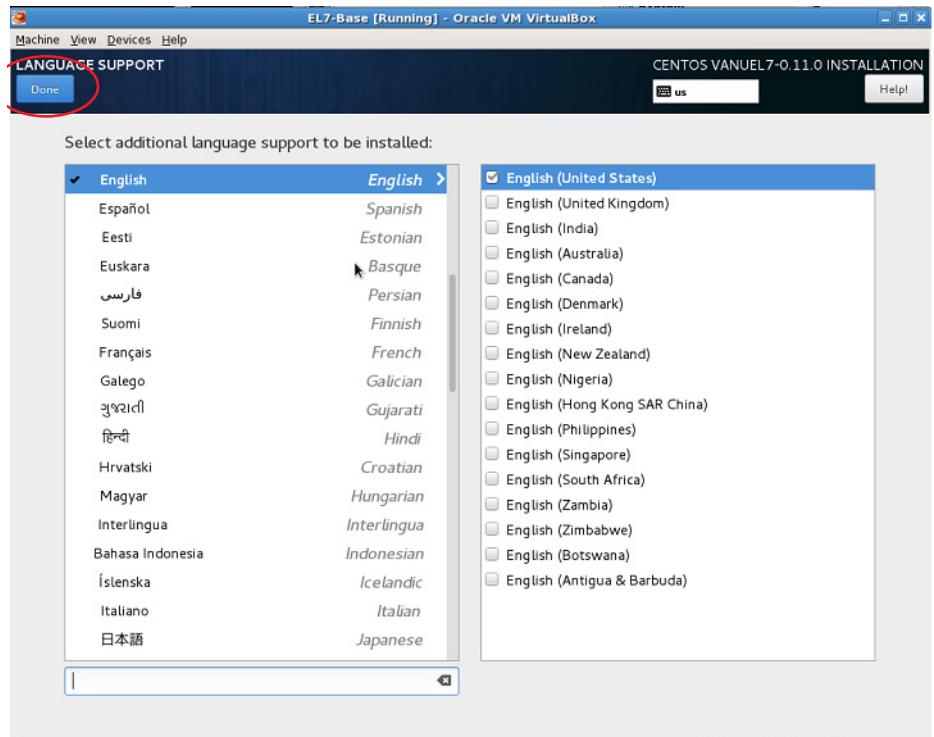
The LANGUAGE SUPPORT screen displays (Figure 2-2).

**B. Select the **Language** you want the installation screens to display from the drop-down list.**

**C. Click **Done**.**

The LOCALIZATION screen displays (Figure 2-2).

**Figure 2-4. LANGUAGE SUPPORT Screen**



**6.** (Optional) Select the Keyboard.

**A. Click KEYBOARD.**

The KEYBOARD LAYOUT screen displays (Figure 2-5).

**B. Select the keyboard from the drop-down list.**

OR

Click + to add a keyboard.

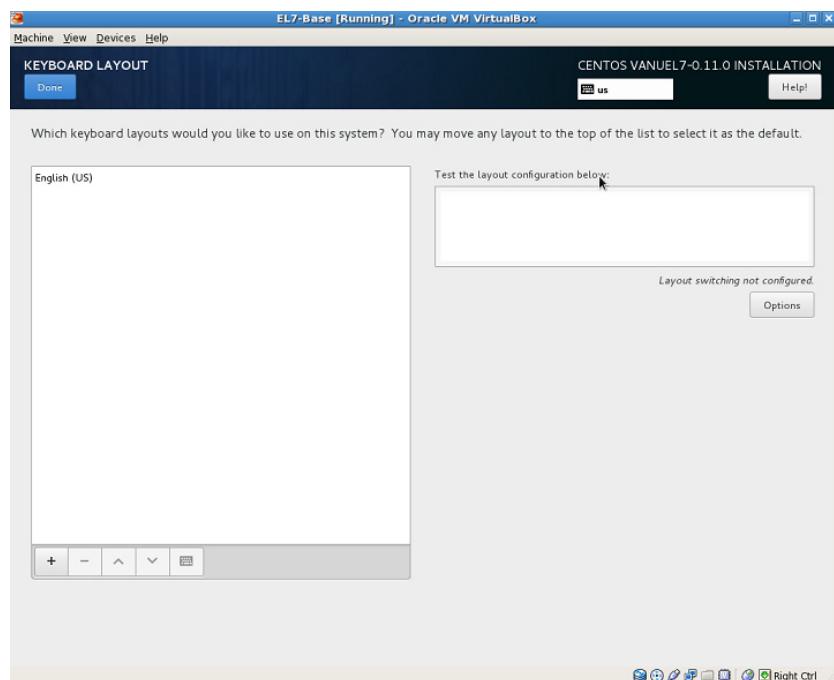
**C. Click Add.**

**D. Click Done (upper left corner of the screen)**

**Note:** You can test the keyboard using the test feature on the right side of the screen (Figure 2-5).

The LOCALIZATION screen displays (Figure 2-2).

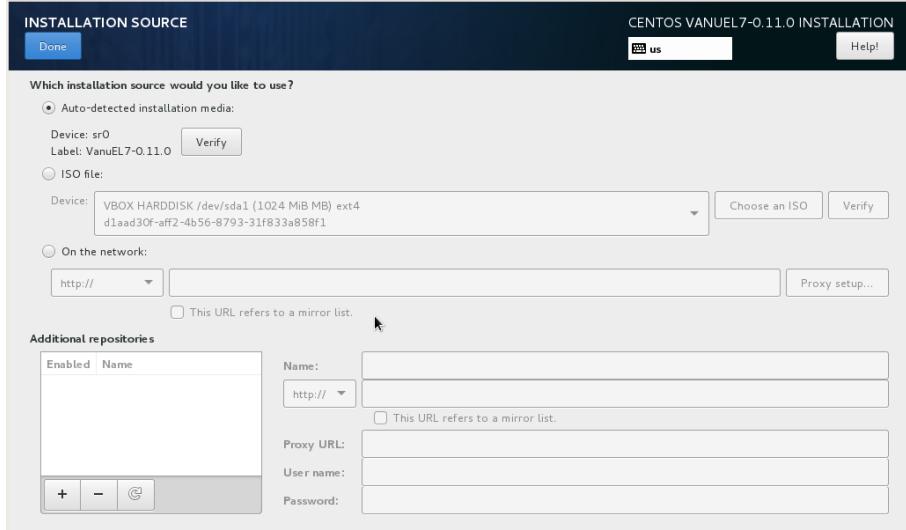
**Figure 2-5. Keyboard Layout Screen.**



**7. Click **INSTALLATION SOURCE**.**

The **INSTALLATION SOURCE** screen displays (Figure 2-6).

**Figure 2-6. INSTALLATION SOURCE SCREEN**



**8. Select one of the following:**

- ◆ Auto-detected installation media (if installing from a CD).
- or
- ◆ Select an ISO file.

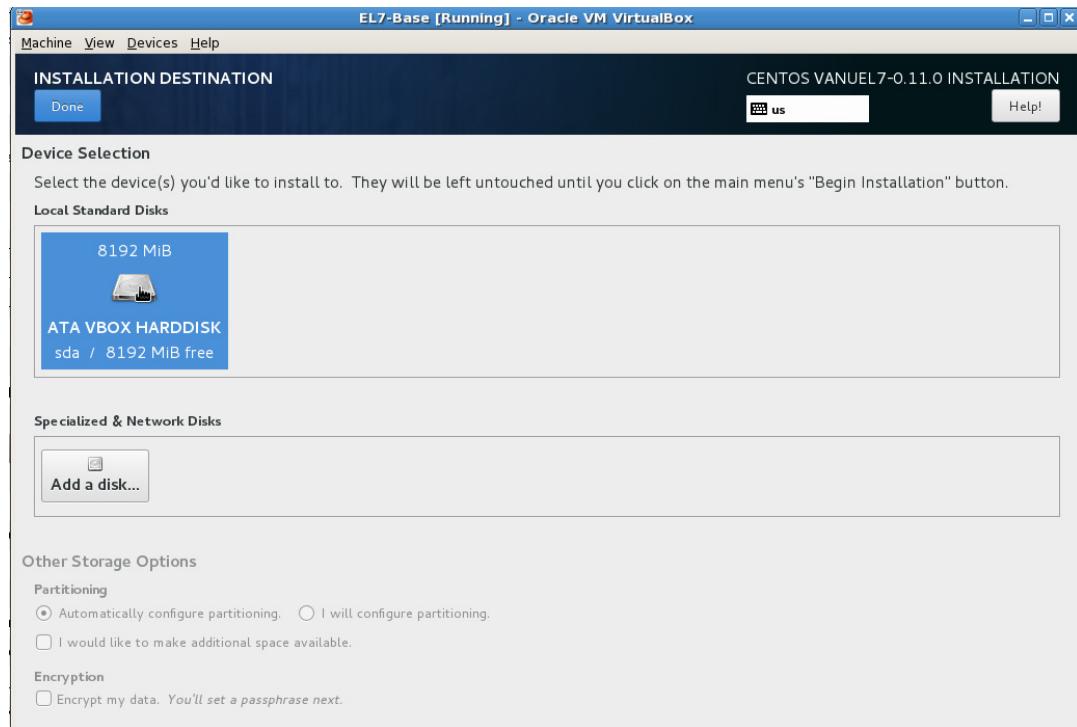
**9. Click **Done**.**

The Localization screen displays (Figure 2-2).

**10. Click **INSTALLATION DESTINATION**.**

The **INSTALLATION DESTINATION** screen displays (Figure 2-7).

**Figure 2-7. INSTALLATION DESTINATION Screen**



**11. Select Local Standard Disks.**

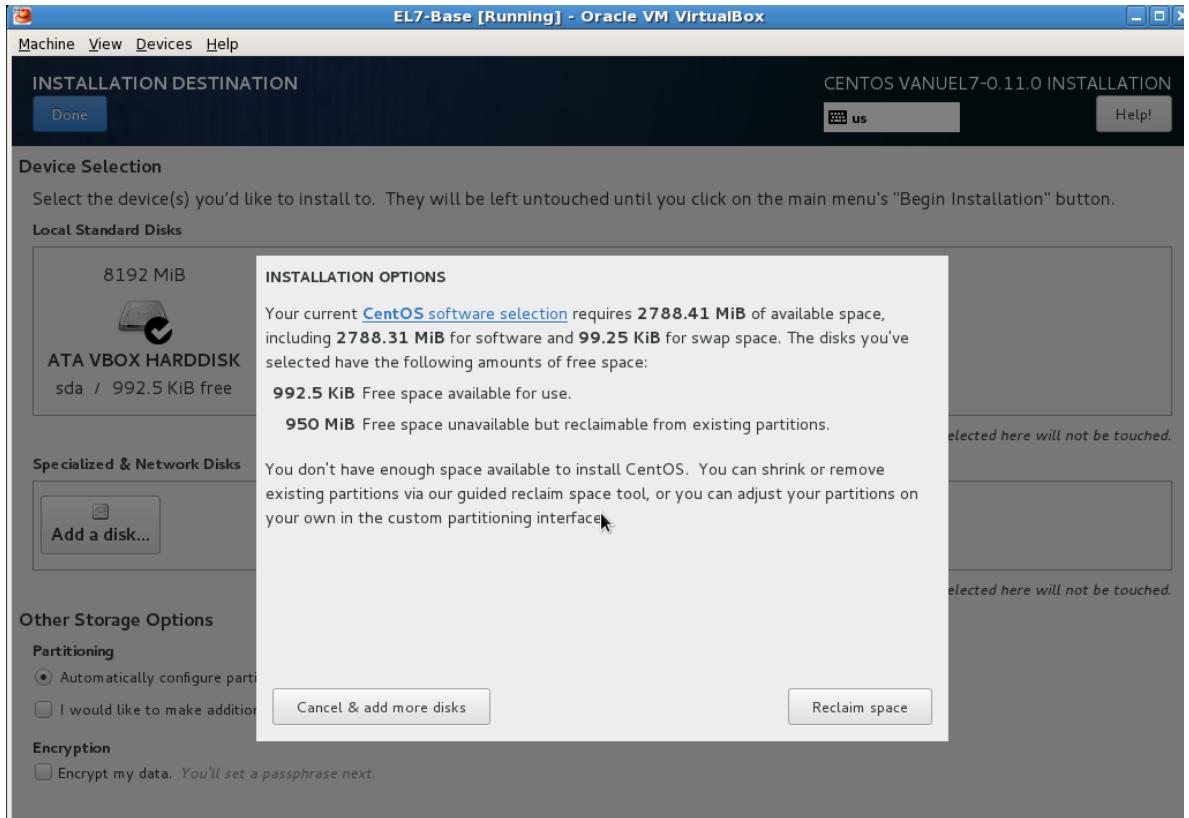
**Note:** The **Local Standard Disk** should already be checked. If not, select it.

**12. Click Done.**

---

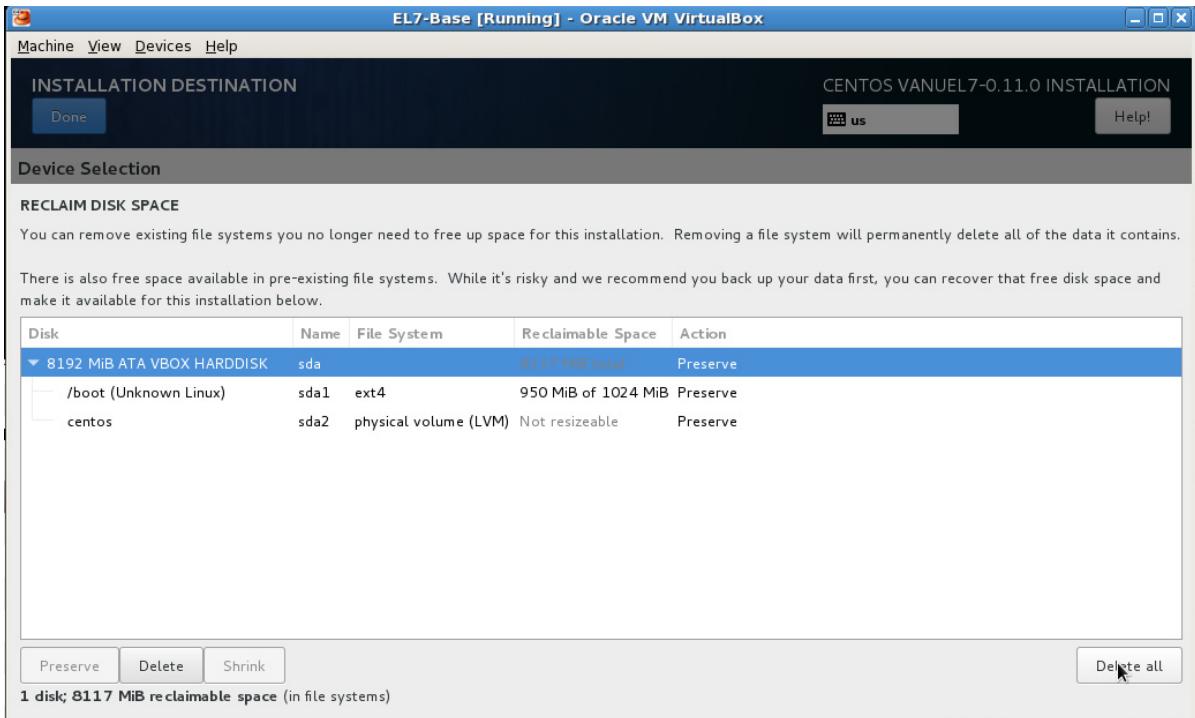
**Note:** If the server has been used previously and no free space is available, a prompt appears indicating you can reclaim the space ([Figure 2-8](#)). If you do not receive this message, continue to step 15.

---

**Figure 2-8.** Installation Options Message**13. Click Reclaim space.**

The Reclaim Disk Space screen displays (Figure 2-9).

**Figure 2-9.** Reclaim Disk Space



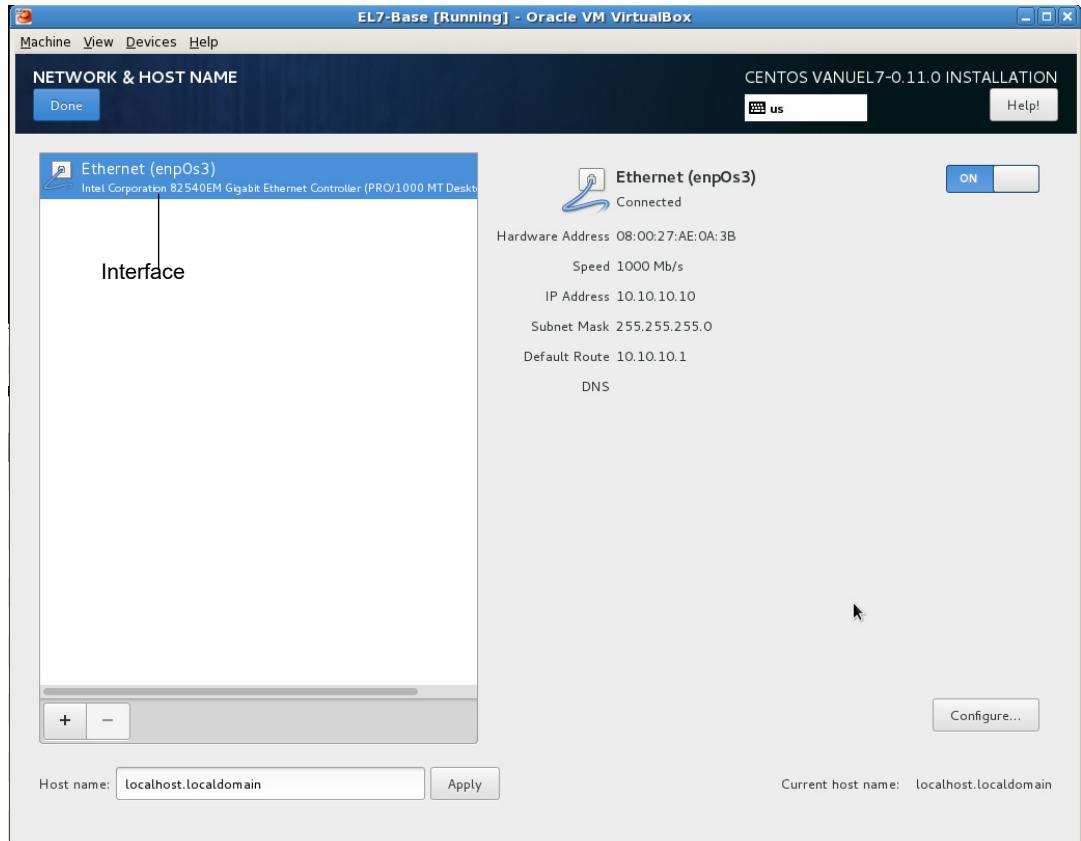
**14.** Click **Delete all**.

**15.** Click **Reclaim Disk Space**.

The LOCALIZATION screen displays (Figure 2-2).

**16.** Click **NETWORK & HOST NAME**.

The NETWORK & HOST NAME screen displays (Figure 2-10).

**Figure 2-10.** NETWORK & HOST NAME Screen

**17.** Enter the **Host name** (lower left corner of the screen) and click **Apply**.

**Note:** The hostname should be alphanumeric and should not contain the upper case letters.

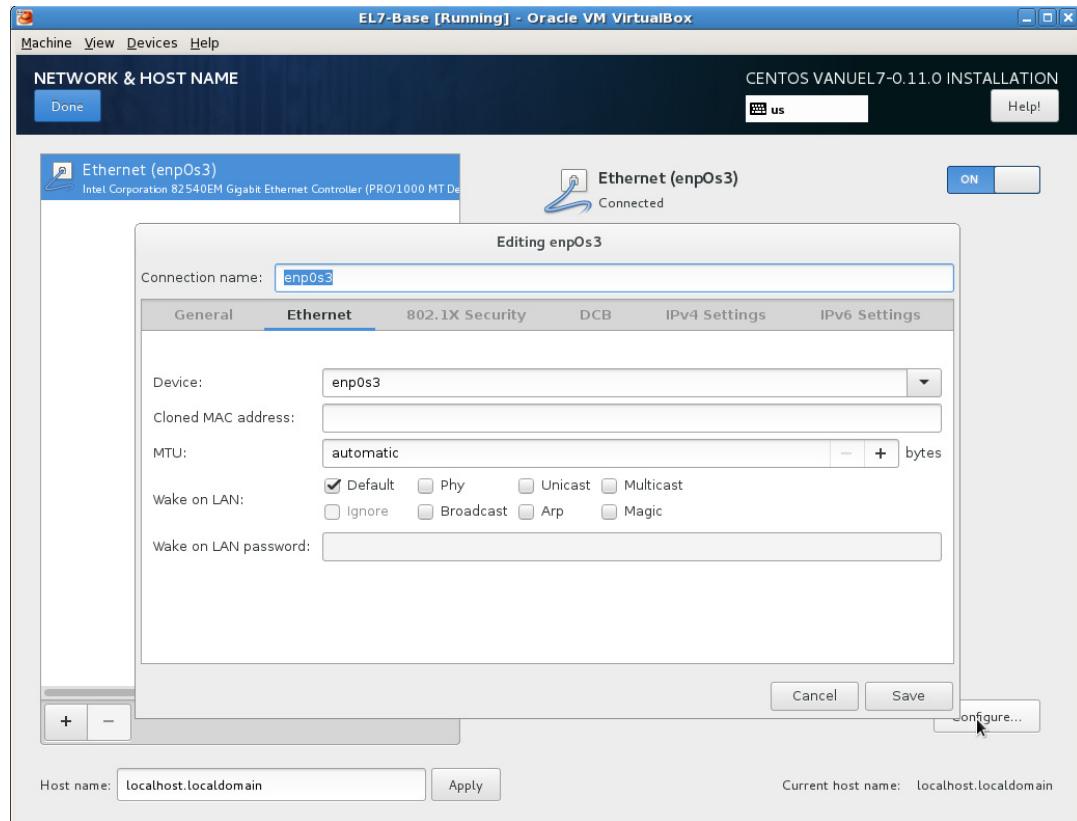
The hostname should not contain any extensions, for example, .localdomain.

**18.** Select the **Interface** you want to use (Figure 2-10).

**19.** Click **Configure** (lower right corner of the screen).

The Editing pop-up screen displays (Figure 2-11).

Figure 2-11. Editing Ethernet Screen

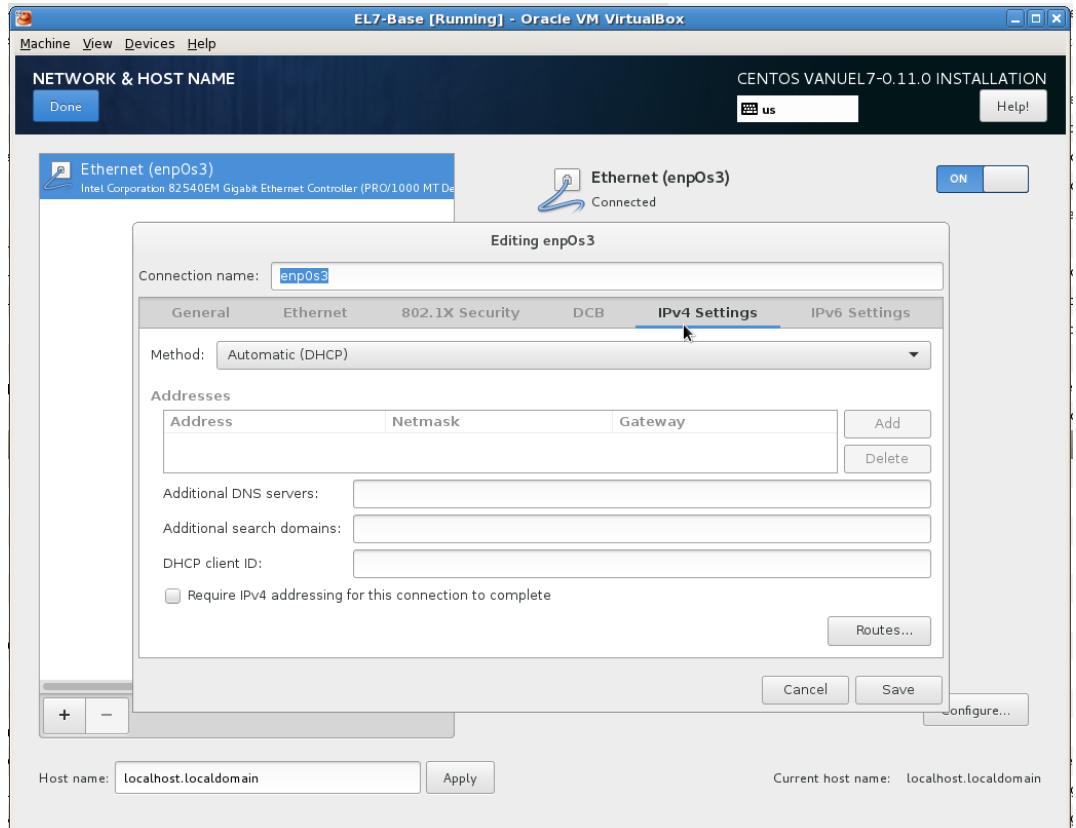


**20. Select IPV4 Settings.**

The IPV4 Settings screen displays (Figure 2-12).

**Note:** The other options are not used in this installation.

Figure 2-12. Editing IPV4 Screen



21. Select **Manual** from the Method drop-down list.
22. Click **Add**.
23. Enter the following information for the server in the **Addresses** field.

- IP address (in Address field)
- Netmask
- Gateway

**Note:** The other fields are not used in this installation.

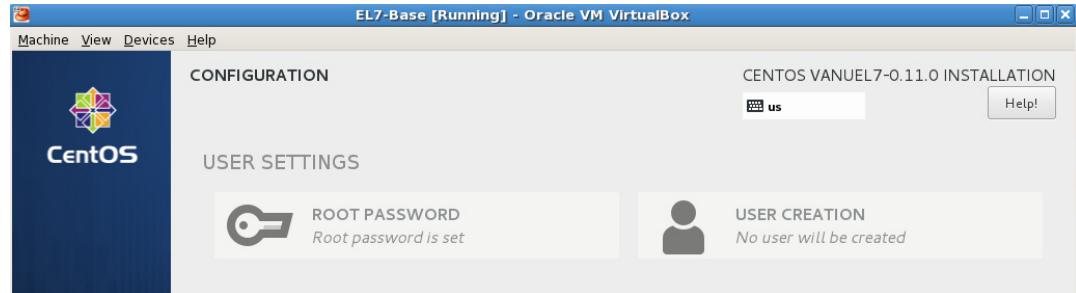
24. Click **Save**.
25. Click **Done** (upper left corner of the screen)

The LOCALIZATION screen displays (Figure 2-2).

26. Click **Begin installation** (lower right corner of the screen).

The Configuration screen displays (Figure 2-13).

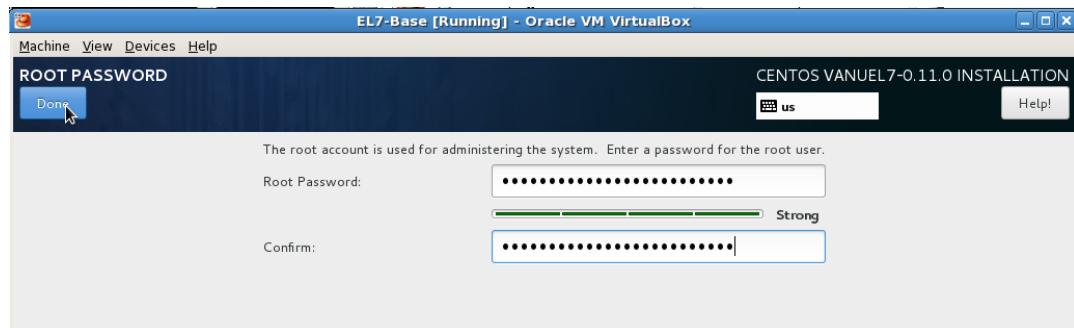
**Figure 2-13.** Configuration Screen



27. Click **ROOT PASSWORD**.

The Root Password screen displays (Figure 2-14).

**Figure 2-14.** Root Password Screen



28. Enter the **Root Password**.

29. Re-enter the **root password** in the **Confirm** field.

30. Click **Done** (upper left corner of the screen).

**Note:** The password should be at least eight characters long. If you provide a “weak” password, a message displays. It is recommended that you proved a different password. If you choose to use the “weak” password, click **Done** again.

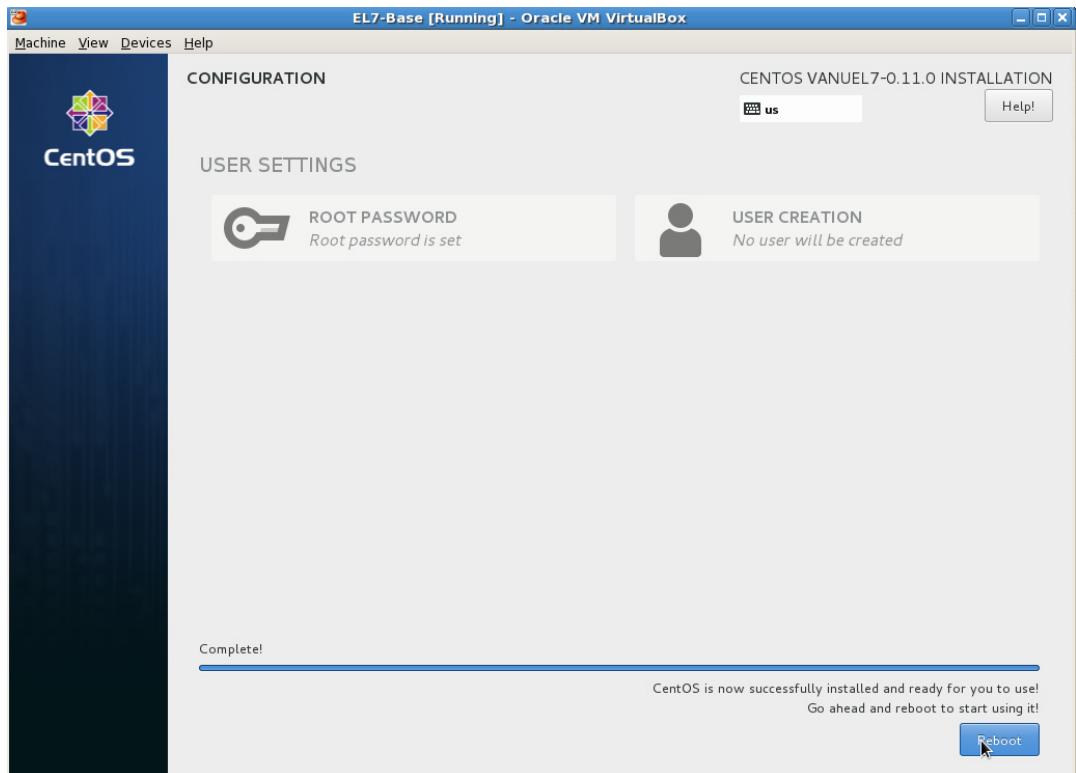
The installation begins.

**Note:** This process may take 15+ plus minutes depending on your system.

The Install Complete screen displays when the installation process has completed.

31. Click **Reboot** (lower right corner of the screen).

Figure 2-15. Reboot Screen



## ADDING ADDITIONAL USERS

---

Complete the following steps to add additional users after the initial installation:

1. Enter the following:

```
# useradd <user name>
# passwd <user name>
```

The following displays:

```
Changing password for user <user name>
New password:
```

2. Enter the password and press **Enter**.

```
Retype new password
```

3. Re-enter the new password and press **Enter**.

The following displays:

```
passwd: all authentication tokens updated successfully.
```

# INSTALLING THE SERVER SOFTWARE

The chapter provides the instructions to install ConfigCenter, the Controller, and the EMS software.

This chapter contains the following sections:

- Installing the ConfigCenter Software
- Installing the Controller Software
- Installing the EMS Server Software

---

**Notes:** The Controller software and ConfigCenter software are usually installed on the same server. The EMS software is installed on a separate server.

Make sure you have received the EMS license file from [Technical Support](#).

Refer to [Server Requirements](#) to make sure your server meets the requirements.

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## INSTALLING THE CONFIGCENTER SOFTWARE

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**Note:** The ConfigCenter software is usually installed on the same server as the Controller.

Make sure you have installed the Vanu-OS El-7 operating system software. Refer to [Installing the Operating System Software](#) for more information.

Complete this procedure on both the Primary server and Secondary (Standby) server if you are using the Standby feature.

---

Complete the following steps to install ConfigCenter software:

**Note:** Make sure you have installed the VANUEL7-<version number>.iso software. Refer to [Installing the Operating System Software](#) for more information.

---

1. Transfer the VanuAWV-ConfigCenter <version number>.iso on to the Controller server.
2. Log into the Controller server and go to the directory where ConfigCenter iso has been copied.
3. Enter the following command:

```
run-iso VanuAWV-ConfigCenter-<version number>.iso install-AWV-configcenter
```

4. Press **Enter**.

The following displays:

Proceed with the install?

5. Enter **yes** and press **Enter**.

The installation completes.

ConfigCenter software is now installed on the Controller server.

## INSTALLING THE CONTROLLER SOFTWARE

---

This section provides the installation instructions for the Controller software

---

**Note:** The Controller software is installed on the same server as the ConfigCenter software.

Make sure you have installed the ConfigCenter software before installing the Controller software.

---

Complete the following steps to install the Controller server:

1. Transfer the VanuAWV-Controller-<version number>.iso to the server.
2. Enter the following command and press **Enter**:

```
run-iso VanuAWV-Controller-<version number>.iso install-AWV-controller
```

The following displays:

Proceed with the install?

3. Enter **yes** and press **Enter**.

The following displays:

Installation complete.

## INSTALLING THE EMS SERVER SOFTWARE

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This section provides the installation instructions for the EMS server.

---

**Note:** Make sure you have installed the Vanu-OS El-7 operating system software. Refer to [Installing the Operating System Software](#) for more information.

Make sure you have received the EMS license file from [Technical Support](#). You need a license file for each server.

---

Complete the following steps to install the EMS server:

1. Transfer the VanuAWV-EMS-Server-<version number>.iso to the server.
2. Enter the following command and press **Enter**:

```
run-iso VanuAWV-EMS-Server-<version number>.iso install-AWV-ems-server
```

The following displays:

Proceed with the install?

3. Enter **yes** and press **Enter**.

The following displays:

Installation complete.

4. Enter the following and press **Enter**.

```
cd /usr/lib/VanuAWV-EMS-Server/bin
```

**5.** Enter the following command and press **Enter**.

```
./startnms.sh
```

The license agreement displays. At the end of the agreement, the following displays:

```
PLEASE READ THE ASSOCIATED COPYRIGHT FILE FOR INFORMATION  
ON THIRD PARTY SOFTWARE BUNDLED ALONG WITH THIS PRODUCT.  
Do you accept the LICENSE AGREEMENT (y/n)
```

**6.** Enter **y** and press **Enter**.

The following displays:

```
***** REGISTRATION *****  
HOST NAME IS <host name> in ??????  
  
Press t to start the product in Evaluation mode  
l to provide the User Name and License File path  
e to Exit  
Choose an Option ::
```

**7.** Enter **l** and press **Enter**.

The following displays:

```
Enter User Name :
```

**8.** Enter the User Name of the license file and press **Enter**.

**Note:** The User Name is provided by **Technical Support**. You should receive the User Name with the license file.

The following displays:

```
Enter the License File path :
```

9. Enter the license file path and press **Enter**.
10. Press **Ctl C**.
11. Enter the following command and press **Enter**.

```
./enable_emsh
```

The installation completes.