

VYATTA, INC.



Vyatta System

XenServer

INSTALLING AND UPGRADING



Vyatta
Suite 200
1301 Shoreway Road
Belmont, CA 94002
vyatta.com
650 413 7200
1 888 VYATTA 1 (US and Canada)

COPYRIGHT

Copyright © 2005–2012 Vyatta, Inc. All rights reserved.

Vyatta reserves the right to make changes to software, hardware, and documentation without notice. For the most recent version of documentation, visit the Vyatta web site at vyatta.com.

PROPRIETARY NOTICES

Vyatta is a registered trademark of Vyatta, Inc.

VMware, VMware ESX, and VMware server are trademarks of VMware, Inc.

XenServer, and XenCenter are trademarks of Citrix Systems, Inc.

All other trademarks are the property of their respective owners.

RELEASE DATE: March 2012

DOCUMENT REVISION: R6.4 v01

RELEASED WITH: R6.4.0

PART NO. A0-0248-10-0000

Contents

Quick List of Examples	v
Quick List of Commands	vi
Preface	vii
Intended Audience	viii
Organization of This Guide	viii
Document Conventions	ix
Vyatta Publications	x
Chapter 1 Installing the System	1
Overview	2
Before You Begin	2
Installing Vyatta’s XenServer Template	2
Install the Vyatta Template	3
Create the Vyatta Virtual Machine	3
Installing Using the Vyatta Virt ISO	4
Operating a Vyatta Virtual Machine	5
Testing Your Installation	5
Verify the Release and System Type	5
Verify Connectivity	6
Chapter 2 Upgrading the System	8
Release-Specific Upgrade Information	9
Before Upgrading	9
Upgrade Overview	9
Upgrading a Template-installed System	10
Upgrading the System Image	10
Sample Session for “upgrade system image”	11
Upgrading the Full Template	12
Upgrading a Virt ISO-installed System	13
Upgrading Using “upgrade system image”	13
Sample Session: “upgrade system image”	13
Upgrading Using “add system image”	15
Sample Session: “add system image”	15

Chapter 3 Installation and Upgrade Commands	17
add system image	19
clone system image	21
delete system image	23
install image	24
install system	25
rename system image	26
set system image default-boot	27
show system image	28
upgrade system image	29
Glossary	30

Quick List of Examples

Use this list to help you locate examples you'd like to look at or try.

Example 1-1	Displaying version information	6
Example 1-2	Configuring a test Ethernet interface	7
Example 2-1	Upgrading a system image	11
Example 2-2	Upgrading a system image	14
Example 2-3	Adding a system image	15
Example 2-4	Showing system images	16

Quick List of Commands

Use this list to help you quickly locate commands.

add system image	19
clone system image	21
delete system image	23
install image	24
install system	25
rename system image	26
set system image default-boot	27
show system image	28
upgrade system image	29

Preface

This document describes how to install and upgrade Vyatta software on systems running XenServer.

This preface provides information about using this guide. The following topics are presented:

- [Intended Audience](#)
- [Organization of This Guide](#)
- [Document Conventions](#)
- [Vyatta Publications](#)

Intended Audience

This guide is intended for experienced system and network administrators. Depending on the functionality to be used, readers should have specific knowledge in the following areas:

- Networking and data communications
- TCP/IP protocols
- General router configuration
- Routing protocols
- Network administration
- Network security
- IP services

Organization of This Guide

This guide has the following aids to help you find the information you are looking for:

- [Quick List of Examples](#)
Use this list to help you locate examples you'd like to look at or try.
- [Quick List of Commands](#)
Use this list to help you quickly locate commands.

This guide has the following chapters:

Chapter	Description	Page
Chapter 1: Installing the System	This chapter describes how to perform a new install of the Vyatta software onto systems running XenServer.	1
Chapter 2: Upgrading the System	This chapter describes how to upgrade Vyatta system software in a XenServer environment.	8
Chapter 3: Installation and Upgrade Commands	This chapter describes installation and upgrade commands.	17
Glossary		30

Document Conventions

This guide uses the following advisory paragraphs, as follows.



WARNING Warnings alert you to situations that may pose a threat to personal safety.



CAUTION Cautions alert you to situations that might cause harm to your system or damage to equipment, or that may affect service.

NOTE Notes provide information you might need to avoid problems or configuration errors.

This document uses the following typographic conventions.

Monospace	Examples, command-line output, and representations of configuration nodes.
bold Monospace	Your input: something you type at a command line.
bold	Commands, keywords, and file names, when mentioned inline. Objects in the user interface, such as tabs, buttons, screens, and panes.
<i>italics</i>	An argument or variable where you supply a value.
<key>	A key on your keyboard, such as <Enter>. Combinations of keys are joined by plus signs (“+”), as in <Ctrl>+c.
[key1 key2]	Enumerated options for completing a syntax. An example is [enable disable].
<i>num1–numN</i>	A inclusive range of numbers. An example is 1–65535, which means 1 through 65535, inclusive.
<i>arg1..argN</i>	A range of enumerated values. An example is eth0..eth3, which means eth0, eth1, eth2, or eth3.
<i>arg[arg...]</i> <i>arg[,arg...]</i>	A value that can optionally represent a list of elements (a space-separated list and a comma-separated list, respectively).

Vyatta Publications

Full product documentation is provided in the Vyatta technical library. To see what documentation is available for your release, see the *Guide to Vyatta Documentation*. This guide is posted with every release of Vyatta software and provides a great starting point for finding the information you need.

Additional information is available on www.vyatta.com and www.vyatta.org.

Chapter 1: Installing the System

This chapter describes how to perform a new install of the Vyatta software onto systems running XenServer.

This chapter presents the following topics:

- [Overview](#)
- [Before You Begin](#)
- [Installing Vyatta's XenServer Template](#)
- [Installing Using the Vyatta Virt ISO](#)
- [Operating a Vyatta Virtual Machine](#)
- [Testing Your Installation](#)

Overview

Citrix XenServer is a server virtualization platform. Like other virtualization platforms, XenServer provides the ability to run multiple virtual machines on a single hardware platform.

XenCenter is the management system for XenServer. XenCenter allows you to manage multiple physical servers running XenServer, in addition to all the virtual machines running on each of the physical servers.

On XenServer, virtual machines are created on using virtual machine templates. For each release of its software, Vyatta provides a XenServer virtual machine template that can be used to create virtual machines running the Vyatta system.

Before You Begin

Before installing, prepare for the installation:

- Install XenServer on a server and install XenCenter on a management PC. Instructions for downloading and installing these products can be found at <http://www.citrix.com>.
- Make sure you have a minimum of 1 GB of free space on the system for a root partition. A minimum of 2 GB of free space is recommended for a production installation.

Installing Vyatta's XenServer Template

To simplify the installation process, Vyatta provides an optimized XenServer template to subscription users for each release. The template includes the Vyatta system with optimizations for virtual environments as well as XenServer-specific customizations and optimizations.



This feature is available only in the Vyatta Subscription Edition.

This section presents the following topics:

- [Install the Vyatta Template](#)
- [Create the Vyatta Virtual Machine](#)

Install the Vyatta Template

In order to allow Vyatta system virtual machines to run on XenServer, you must install the Vyatta XenServer template. The template file is available to subscription users at <http://packages.vyatta.com/vyatta-supported/iso/stable/>.

NOTE The following example describes the procedure using XenCenter 6.0. A similar procedure is required for other versions of XenCenter.

To install the Vyatta XenServer template

- 1 Download the Vyatta XenServer template file from the Vyatta web site to a location accessible by your XenCenter machine.
- 2 Within XenCenter, select **File > Import ...** .
- 3 On the Import Source screen, browse to the extracted template file. Click Next; the Home Server screen opens.
- 4 On the Home Server screen, select the server to be used as the home server for any virtual machines created from the template. Click Next; the Storage screen opens.
- 5 On the Storage screen, select the storage repository where virtual disks for the template will be stored. Click Import and wait for the template to be imported. The Networking screen opens.
- 6 On the Networking screen, set up any required network interfaces. Click Next; the Finish screen opens.
- 7 On the Finish screen, click Finish to complete the import process. The imported Vyatta template appears in the left pane of XenCenter.

Create the Vyatta Virtual Machine

Once the Vyatta template is loaded on the XenServer machine, you can create a virtual machine from the template.

NOTE The following example describes the procedure using XenCenter 6.0. A similar procedure is required for other versions of XenCenter.

To create a Vyatta virtual machine

- 1 Within XenCenter, select the XenServer that you wish to add the new virtual machine to.
- 2 Click the **New VM** button. The Template screen opens.

- 3 From the Template screen, select the Vyatta template that imported. Click Next; the Name screen opens.
- 4 On the Name screen, enter a name and a description for the new virtual machine. Click Next; the Installation Media screen opens.
- 5 On the Installation Media screen, set the DVD drive to **<empty>**. Click Next; the Home Server screen opens.
- 6 On the Home Server screen, select the server you wish to locate the VM on. Click Next; the CPU & Memory screen opens.
- 7 On the CPU & Memory screen, specify the number of vCPUs and the amount of memory that the virtual machine is to use. Click Next; the Storage screen opens.
- 8 On the Storage screen, specify a virtual disk for the Vyatta virtual machine. Click Next; the Networking screen opens.
- 9 On the Networking screen, specify the virtual network interfaces to be installed on the Vyatta virtual machine. Click Next; the Finish screen opens.
- 10 On the Finish screen, select Start VM automatically if you would like the Vyatta virtual machine to start when the XenServer machine starts. Click Finish. The new virtual machine is created and appears in the left pane of XenCenter.

Installing Using the Vyatta Virt ISO

Vyatta also prepares a special “virt ISO” that has kernel parameters optimized for the virtualized environment.

The procedure in this section installs the Vyatta virt ISO on XenServer.

To install on XenServer

- 1 Set up a location where you can store your virt ISO image. The location must be shared on the network so that you can access it from within XenCenter.
- 2 Download the virt ISO to the share. Subscription customers can obtain the latest Vyatta Subscription Edition virt ISO from <http://packages.vyatta.com/vyatta-supported/iso/stable/>. Community customers can obtain the latest Vyatta Core virt ISO from <http://www.vyatta.org/downloads/>.
- 3 Using XenCenter, create an appropriate type of storage repository and point it to the ISO image.
- 4 Create a generic Linux virtual machine.
- 5 Set up the virtual machine so that its DVD will boot from the ISO.
- 6 Configure the virtual machine so that it boots from DVD first.
- 7 Reboot the virtual machine. The virtual machine boots the Vyatta virt ISO.

- 8 At the Vyatta command line, issue the **install image** command to install the system.
- 9 When the install process has completed, power down the virtual machine.
- 10 While the machine is powered down, reset the virtual DVD so that it no longer points to the ISO.
- 11 Start the virtual machine.
- 12 Test the installation.

Operating a Vyatta Virtual Machine

Once a Vyatta virtual machine has been created on XenServer, the virtual machine can be operated from XenCenter in the same way as any other virtual machine on XenServer.

To operate the Vyatta virtual machine

- 1 Select the Vyatta virtual machine in the left pane of XenCenter. Click the **Start** button.
- 2 Select the Console tab to access the Vyatta console.

Testing Your Installation

Once the system has successfully booted you will see the **vyatta login:** prompt. This indicates that the system is operational.

You should:

- [Verify the Release and System Type](#)
- [Verify Connectivity](#)

Verify the Release and System Type

The next step is to confirm that the correct release is running and it is running on the device that you expect.

To verify the release and system type

- 1 Login as user **vyatta** with password **vyatta** (default login ID).
- 2 Run the **show version** command, as in the following example. [Example 1-1](#) shows version information for a system running on an Intel 32-bit hardware-based system.

Example 1-1 Displaying version information

```
vyatta@vyatta:~$ show version
Version:      VSE6.3-2011.07.21
Description:  Vyatta Subscription Edition 6.3 2011.07.21
Copyright:    2006-2011 Vyatta, Inc.
Built by:     autobuild@vyatta.com
Built on:     Thu Jul 21 06:05:29 UTC 2011
Build ID:     1107210624-d7a3790
System type:  Intel 32bit
Boot via:     image
HW model:     Latitude E6520
HW S/N:       9KC95P2
HW UUID:      43454D4C-4B00-1022-3454-B9B044382349
Uptime:       19:44:57 up 15 min,  1 user,  load average: 0.00, 0.12, 0.11
vyatta@vyatta:~$
```

The **Version:** line shows the version number of the running system. In this example the version is **VSE6.3-2011.07.21**.

The **System Type:** line shows the type of hardware the system is running on and whether it is in a virtual environment. The system in the example is running on an Intel 32-bit system, not in a virtual environment.

The **Boot via:** line shows the type of system that is running:

- **livecd** — The system is running from a LiveCD.
- **image** — The system is running as an image-based system.
- **disk** — The system is running as a disk-based system.

The system in the example is running as an image-based system.

Verify Connectivity

The final step is to confirm that the Vyatta system can be accessed on the local network. A quick and easy way to do this is to configure an Ethernet interface on the system and then ping the interface from another host on the network.

NOTE Make sure that the system is physically connected to the network first.

To test system connectivity

- 1 At the command prompt, enter the commands shown in the example, substituting an IP address on your existing subnet. In this example:

- The network is 192.168.1.0/24
- The IP address of the interface is 192.168.1.81

Make the appropriate substitutions for your network, as in the following example.

Example 1-2 Configuring a test Ethernet interface

```
vyatta@vyatta:~$ configure
vyatta@vyatta# set interfaces ethernet eth0 address 192.168.1.81/24
vyatta@vyatta# commit
vyatta@vyatta# exit
vyatta@vyatta:~$
```

- 2** From another host on the same subnet, ping the interface to ensure that it is up. From a Linux or Windows command prompt, enter the following command (substituting the IP address you assigned to the interface):

```
ping 192.168.1.81
```

If the Vyatta system is reachable, you will see replies from it in response to the pings. If so, your system is installed and accessible on your network.

Chapter 2: Upgrading the System

This chapter describes how to upgrade Vyatta system software in a XenServer environment.

In this chapter:

- [Release-Specific Upgrade Information](#)
- [Before Upgrading](#)
- [Upgrade Overview](#)
- [Upgrading a Template-installed System](#)
- [Upgrading a Virt ISO-installed System](#)

Release-Specific Upgrade Information

Your system may have special upgrade considerations, depending on the release.

For release-specific upgrade information, and to ensure that configuration information is correctly preserved across upgrade, consult the Release Notes for your release.

Before Upgrading

Before upgrading:

- Save your existing configuration file for reference. Your configuration file is named **config.boot** and is located in the directory **/config**.
- Make sure you have enough space on your root partition to load the image. You can determine the amount of space available using the **show system storage** command.

Upgrade Overview

The method you use to upgrade your system depends on the way it was installed last time.

- If you installed it using the Vyatta XenServer template, upgrade using the instructions given in the section [“Upgrading a Template-installed System” on page 10](#).
- If you installed it using the Vyatta virtualization ISO (the “virt ISO”), upgrade using the instructions given in the section [“Upgrading a Virt ISO-installed System” on page 13](#).

Upgrading a Template-installed System



XenServer templates are supported only for the Vyatta Subscription Edition.

The Vyatta XenServer template consists of the following:

- The Vyatta virt ISO
- Other XenServer-specific modifications and optimizations.

The way you upgrade a Vyatta template-installed system depends on what part of the template has changed. [Table 2-1](#) shows the upgrade options for Vyatta template-installed systems.

Table 2-1 Upgrade options for Vyatta XenServer template-installed systems

What has changed:	What you need to upgrade:
The virt ISO	Upgrade just the virt ISO. You can use the upgrade system image command. Use the procedure given in Upgrading the System Image .
XenServer-specific modifications	Upgrade the full template. Use the procedure given in Upgrading the Full Template
You're not sure	Use the procedure given in Upgrading the System Image . The system will detect whether anything else in the template has changed and will alert you if you need to upgrade the template.

Upgrading the System Image

The **upgrade system image** command provides a simplified, streamlined upgrade process. If the **upgrade system image** command is executed, the system automatically does all of the following:

- Finds the most recent stable Vyatta Subscription Edition virt ISO image
- Downloads the image
- Installs the image
- Migrates configuration files from the running system
- Sets the new image as the default boot image.

The new image is run the next time the system reboots.

To upgrade using the “upgrade system image” command

- 1 At the command prompt, issue the **upgrade system image** command. Follow the prompts; see the sample session given in [Example 2-1](#).
- 2 When the install has completed, reboot the system using the **reboot** command. The system restarts using the new system image.

Sample Session for “upgrade system image”

[Example 2-1](#) shows a session where the **upgrade system image** command is used to upgrade to the latest system image.

NOTE You will not be prompted for your repository username and password if they are already configured within the entitlement system.

Example 2-1 Upgrading a system image

```
vyatta@vyatta:~$ upgrade system image
Vyatta image upgrade utility.
Please enter repository username: testco
Please enter repository password: testpassword
Checking for updated images on the Vyatta repository...
I have found a newer system image on the Vyatta repository.
The new image is version: VSE6.4-2012.02.09
Would you like to upgrade to this image? [Yes/No] yes
OK... Starting process to upgrade system image.
Trying to fetch ISO file from
http://packages.vyatta.com/vyatta-supported/iso/stable/vyatta-livecd-virt_
VSE6.4-2012.02.09_i386.iso
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left  Speed
100 196M 100 196M    0     0  489k      0  0:06:49  0:06:49  ---:--:-- 559k
ISO download succeeded.
Checking for digital signature file...
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left  Speed
100 189 100 189    0     0  169      0  0:00:01  0:00:01  ---:--:-- 2333
Found it. Checking digital signature...
gpg: directory `/root/.gnupg' created
gpg: new configuration file `/root/.gnupg/gpg.conf' created
gpg: WARNING: options in `/root/.gnupg/gpg.conf' are not yet active during
this run
gpg: keyring `/root/.gnupg/pubring.gpg' created
gpg: Signature made Mon Feb 6 16:42:22 2012 GMT+8 using DSA key ID 9436A9F8
gpg: /root/.gnupg/trustdb.gpg: trustdb created
gpg: Good signature from "Autobuild <autobuild@vyatta.com>"
```

```
gpg: WARNING: This key is not certified with a trusted signature!  
gpg:       There is no indication that the signature belongs to the owner.  
Primary key fingerprint: 1B49 FE0A 0239 706A C6D4 13B0 04A2 5B93 9436 A9F8  
Digital signature is valid.  
Checking MD5 checksums of files on the ISO image...OK.  
Done!  
What would you like to name this image? [VSE6.4-2012.02.09]: <Enter>  
OK. This image will be named: VSE6.4-2012.02.09  
Installing "VSE6.4-2012.02.09" image.  
Copying new release files...  
Would you like to save the current configuration  
directory and config file? (Yes/No) [Yes]: <Enter>  
Copying current configuration...  
Would you like to save the SSH host keys from your  
current configuration? (Yes/No) [Yes]: <Enter>  
Copying SSH keys...  
Setting up grub configuration...  
Done.
```

Upgrading the Full Template

When XenServer-specific content in the Vyatta XenServer template changes, you must perform an upgrade to the new Vyatta XenServer template, using the procedure in this section.

To upgrade the Vyatta XenServer template.

- 1 Save your current system configuration (`/config`) to a separate location on your network.
- 2 Using the new Vyatta XenServer template, create a new Vyatta virtual machine in your XenServer environment. Use the instructions given in [Chapter 1: Installing the System](#), in the section “Installing Vyatta’s XenServer Template” on page 2.
- 3 Perform initial configuration of the new virtual machine and test the installation to verify connectivity on the network.
- 4 Shut down the old system so it does not conflict with the new system.
- 5 Load the configuration you saved onto the new Vyatta virtual machine.
- 6 Make the following modification to the loaded configuration:
 - For each Ethernet interface, delete the hardware ID. (In configuration mode, use the `delete interface ethernet ethx hw-id` command, where *ethx* is the name of the Ethernet interface).
- 7 Reboot the system using the `reboot` command. The system restarts using the new configuration.

Upgrading a Virt ISO-installed System

The Vyatta virt ISO preparation of the Vyatta system has modifications and optimizations intended, in general, for virtual environments. On a virt ISO–installed system, two upgrade methods are available:

- Upgrading using the **upgrade system image** command. This command is supported only on the Vyatta Subscription Edition.
- Upgrading using the **add system image** command.

Upgrading Using “upgrade system image”



The upgrade system image command is only available in the Vyatta Subscription Edition.

The upgrade system image command provides a simplified, streamlined upgrade process. If the **upgrade system image** command is executed, the system automatically does all of the following:

- Finds the most recent stable Vyatta Subscription Edition virt ISO image
- Downloads the image
- Installs the image
- Migrates configuration files from the running system
- Sets the new image as the default boot image.

The new image is run the next time the system reboots.

To upgrade using the “upgrade system image” command

- 1 At the command prompt, issue the **upgrade system image** command. Follow the prompts; see the sample session given in [Example 2-2](#).
- 2 When the install has completed, reboot the system using the **reboot** command. The system restarts using the new system image.

Sample Session: “upgrade system image”

[Example 2-2](#) shows a session where the **upgrade system image** command is used to upgrade to the latest system image.

NOTE You will not be prompted for your repository username and password if they are already configured within the entitlement system.

Example 2-2 Upgrading a system image

```

vyatta@vyatta:~$ upgrade system image
Vyatta image upgrade utility.
Please enter repository username: testco
Please enter repository password: testpassword
Checking for updated images on the Vyatta repository...
I have found a newer system image on the Vyatta repository.
The new image is version: VSE6.4-2012.02.09
Would you like to upgrade to this image? [Yes/No] yes
OK... Starting process to upgrade system image.
Trying to fetch ISO file from
http://packages.vyatta.com/vyatta-supported/iso/stable/vyatta-livecd-virt_VSE6.4-2012.02.09_i386.iso
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload  Total   Spent    Left  Speed
100 196M 100 196M    0     0  489k      0  0:06:49  0:06:49 --:--:-- 559k
ISO download succeeded.
Checking for digital signature file...
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload  Total   Spent    Left  Speed
100 189 100 189    0     0   169      0  0:00:01  0:00:01 --:--:-- 2333
Found it. Checking digital signature...
gpg: directory `/root/.gnupg' created
gpg: new configuration file `/root/.gnupg/gpg.conf' created
gpg: WARNING: options in `/root/.gnupg/gpg.conf' are not yet active during
this run
gpg: keyring `/root/.gnupg/pubring.gpg' created
gpg: Signature made Mon Feb 6 16:42:22 2012 GMT+8 using DSA key ID 9436A9F8
gpg: /root/.gnupg/trustdb.gpg: trustdb created
gpg: Good signature from "Autobuild <autobuild@vyatta.com>"
gpg: WARNING: This key is not certified with a trusted signature!
gpg:          There is no indication that the signature belongs to the owner.
Primary key fingerprint: 1B49 FE0A 0239 706A C6D4 13B0 04A2 5B93 9436 A9F8
Digital signature is valid.
Checking MD5 checksums of files on the ISO image...OK.
Done!
What would you like to name this image? [VSE6.4-2012.02.09]: <Enter>
OK. This image will be named: VSE6.4-2012.02.09
Installing "VSE6.4-2012.02.09" image.
Copying new release files...
Would you like to save the current configuration

```

```
directory and config file? (Yes/No) [Yes]: <Enter>
Copying current configuration...
Would you like to save the SSH host keys from your
current configuration? (Yes/No) [Yes]: <Enter>
Copying SSH keys...
Setting up grub configuration...
Done.
```

Upgrading Using “add system image”

The **add system image** command also uses a Vyatta virt ISO file as the image source. It installs the image with existing images and sets the new image as the default boot image. The new image is run the next time the system reboots.

Preparation

Determine the location of the Vyatta virt ISO file.

- For the Vyatta Subscription Edition, the image is stored at <http://packages.vyatta.com/vyatta-supported/iso/stable/>.
- The Vyatta Core system, the image is stored at <http://www.vyatta.org/downloads/>.

Record the name of the virt ISO file.

To upgrade using the “add system image” command

- 1 Execute the **add system image** command. Use the location and name of the Vyatta virt ISO file as arguments to the command, as shown in [Example 2-3](#).
- 2 Before you reboot, confirm that the new image is loaded and ready to run the next time the system is rebooted. (Use the **show system image** command; see [Example 2-4](#).)
- 3 Reboot the system, using the **reboot** command. The system restarts using the new system image.

Sample Session: “add system image”

[Example 2-3](#) shows a session where the **add system image** command is used to upgrade to system image **xxx.iso** located at <http://www.vyatta.org/downloads/>.

Example 2-3 Adding a system image

```
vyatta@vyatta:~$ add system image http://www.vyatta.org/downloads/xxx.iso
Welcome to the Vyatta install program. This script
will walk you through the process of installing the
```

```
Vyatta image to a local hard drive.
Would you like to continue? (Yes/No) [Yes]:<Enter>
Trying to fetch ISO file from http://www.vyatta.org/downloads/xxx.iso
#####
100.0%
ISO download succeeded.
Checking MD5 checksums of files on the ISO image...OK.
You are running an installed system. Do you want to use the current install
partition? (Yes/No) [Yes]:<Enter>

Done!
Installing "xxx" release.
Copying new release files...
Would you like to save the current configuration
directory and use the current start-up configuration
for the new version? (Yes/No) [Yes]:<Enter>
Copying current configuration...
Setting up grub configuration...
Done.
```

[Example 2-4](#) uses the **show system image** command to view installed images.

Example 2-4 Showing system images

```
vyatta@vyatta:~$ show system image
The system currently has the following image(s) installed:

  1: xxx (default boot)
  2: yyy (running version)
```

Chapter 3: Installation and Upgrade Commands

This chapter describes installation and upgrade commands.

This chapter presents the following commands.

Configuration Commands	
None.	
Operational Commands	
<code>add system image</code>	Adds a binary system image to the currently running system.
<code>clone system image</code>	Creates a copy of a Vyatta system image installed on the local system or on a remote system.
<code>delete system image</code>	Deletes a Vyatta system image.
<code>install image</code>	Installs a Vyatta system image, using a binary system image.
<code>install system</code>	Installs Vyatta system software, using a traditional layout of files.
<code>rename system image</code>	Renames a Vyatta system image.
<code>set system image default-boot</code>	Selects a Vyatta system image to be run when the system is next rebooted.
<code>show system image</code>	Displays a list of Vyatta system images installed on the system.
<code>upgrade system image</code>	Upgrades the currently running system to the latest version.

add system image

Adds a binary system image to the currently running system.

Syntax

```
add system image {iso-filename | iso-URL [username username password password]}
```

Command Mode

Operational mode.

Parameters

<i>iso-filename</i>	The name of the Vyatta system image file to be added.
<i>iso-URL</i>	The URL location of the Vyatta system image file to be added.
<i>username</i>	Optional. The username required to login to the remote system at the specified URL location.
<i>password</i>	Optional. The password required to login to the remote system at the specified URL location. If the username is specified, then a password must also be specified.

Default

None.

Usage Guidelines

Use this command to add a binary Vyatta system image to the currently running system. A system image can be added to a system that was installed using a disk-based install (using the **install system** command) or an image-based install (using the **install image** command). Once added, it will be set as the new default boot image and will be run the next time the system is booted.

The command will validate the MD5 checksums of the files contained in the ISO image to ensure that it has not been corrupted. In addition, it will not allow more than a single copy of an image to exist on the same system.

The *iso-filename* or *iso-URL* arguments provide the source for the ISO image file.

NOTE If you are accessing the ISO image on the web, in most browsers right-clicking the link to the file will provide access to the URL which can then be copied and pasted as the *iso-URL* argument to this command.

The following table shows the syntax for file specification for different file locations.

Table 3-1

Location	Specification
An absolute path	For <i>iso-filename</i> use standard UNIX file specification.
A relative path	For <i>iso-filename</i> you can also specify the path name relative to the current directory.
FTP server	<p>Use the following syntax for the <i>iso-URL</i> argument:</p> <pre>ftp://user:passwd@host/image-file</pre> <p>where <i>user</i> is the username on the host, <i>passwd</i> is the password associated with the username, <i>host</i> is the host name or IP address of the FTP server, and <i>image-file</i> is the ISO image file, including the path. Alternatively, the username and password can be specified as username and password arguments to the add system image command.</p> <p>If you do not specify <i>user</i> and <i>passwd</i> you are prompted for them.</p>
SCP server	<p>Use the following syntax for the <i>iso-URL</i> argument:</p> <pre>scp://user:passwd@host/image-file</pre> <p>where <i>user</i> is the username on the host, <i>passwd</i> is the password associated with the username, <i>host</i> is the host name or IP address of the SCP server, and <i>image-file</i> is the ISO image file, including the path. Alternatively, the username and password can be specified as username and password arguments to the add system image command.</p> <p>If you do not specify <i>user</i> and <i>passwd</i> you will be prompted for them.</p>
HTTP server	<p>Use the following syntax for the <i>iso-URL</i> argument:</p> <pre>http://host/image-file</pre> <p>where <i>host</i> is the host name or IP address of the HTTP server and <i>image-file</i> is the ISO image file, including the path.</p>
TFTP server	<p>Use the following syntax for the <i>iso-URL</i> argument:</p> <pre>tftp://host/image-file</pre> <p>where <i>host</i> is the host name or IP address of the TFTP server, and <i>image-file</i> is the ISO image file, including the path relative to the TFTP root directory.</p>

clone system image

Creates a copy of a Vyatta system image installed on the local system or on a remote system.

Syntax

```
clone system image [user@host:]source-image-name new-image-name [clean]
```

Availability



Vyatta Subscription Edition.

Command Mode

Operational mode.

Parameters

<i>user</i>	The user name on a remote host. Required for remote host access via SCP. Not required for cloning a local system image.
<i>host</i>	The hostname or IP address of a remote host. Required for remote host access using SCP. Not required for cloning a local system image.
<i>source_image-name</i>	The name of the system image to be copied. The source image can exist on the local system or a remote system.
<i>new-image-name</i>	The name of the new (copied) system image. An image with this name must not already exist on the system.
clean	Creates an empty read-write directory tree for the new image. This creates a new image that is functionally equivalent to the source image as it existed when it was originally installed.

Default

None.

Usage Guidelines

Use this command to create a copy of a system image installed on the local system or on a remote system to the local system.

If `user@host` is specified, the image is fetched from the named host using the SCP protocol. If `user@host` is omitted, the `source-image-name` is the name of an image that already exists on the system. The `new-image-name` is the image name that the system uses for the clone. There must be no image by that name already existing on the system.

Command completion is performed for local image names if `user@host` is not specified. No command completion is performed on remote image names if `user@host` is specified.

If the `clean` argument is omitted, the command copies the `squashfs` file being used by the image named `source-image-name` as well as the read-write directory tree of `source-image-name`. If the `clean` argument is given, then the read-write directory tree of `source-image-name` is NOT copied. Instead, an empty read-write directory tree is created for the new image. This creates a new image that is functionally equivalent to the source image as it existed when it was initially installed.

Images created by this command behave the same as images installed by the [install image](#) or the [add system image](#) commands.

The `https` and `ssh` services must both be enabled on the remote Vyatta system in order for the [clone system image](#) command to work properly. The `https` service is enabled using `set service https` in Configuration mode. The `ssh` service is enabled using `set service ssh` in Configuration mode.

NOTE *This command is only available in the Vyatta Subscription Edition.*

delete system image

Deletes a Vyatta system image.

Syntax

```
delete system image [image-name]
```

Command Mode

Operational mode.

Parameters

<i>image-name</i>	The name of the Vyatta system image to be deleted.
-------------------	--

Default

When used with no options, the system prompts for the image to delete.

Usage Guidelines

Use this command to delete a Vyatta system image from the local disk drive.

The image and all of its local files, including its Vyatta configuration file, are all destroyed. Since this command is destructive, the system prompts for confirmation.

Command completion displays all valid completions for the *image-name* argument. If the *image-name* argument is omitted, the system displays a list of available images and prompts you to select one.

If the system was originally installed in disk-based mode, an **image-name** option is available that you can use to direct that the disk-based installation should be deleted.

The system does not allow you to delete the currently running system image. However, the system does allow you to delete the image currently selected to be run at the next reboot. If you choose this, the system uses the currently running image when the system is next rebooted.

install image

Installs a Vyatta system image, using a binary system image.

Syntax

```
install image
```

Command Mode

Operational mode.

Parameters

None.

Default

None.

Usage Guidelines

Use this command to install a Vyatta system binary image.

This command is similar to the **install system** command in functionality. Once the installation is complete you can add multiple Vyatta versions into the same partition, using the **add system image** command, and you can then choose which version to boot, using the **set system image default-boot** command. This allows you to move easily between different versions of the system.

If you have a new system and want to install the Vyatta system from scratch, you can boot the Vyatta LiveCD and then run the **install image** command to install the image on the LiveCD to the disk. The **install image** command operates similarly to the **install system** command—it creates and formats a new disk partition and then installs the image to the partition while preserving the system configuration.

install system

Installs Vyatta system software, using a traditional layout of files.

Syntax

```
install system
```

Command Mode

Operational mode.

Parameters

None.

Default

None.

Usage Guidelines

Use this command to install Vyatta software from a LiveCD onto a persistent device such as a hard disk.

NOTE Vyatta recommends using the **install image** command over the **install system** command.

If you have a new system and want to install the Vyatta system from scratch, you can boot the Vyatta LiveCD and then run the **install system** command to install the system on the LiveCD to the disk. The **install system** command operates similarly to the **install image** command—it creates and formats a new disk partition and then installs the system to the partition while preserving the system configuration.

rename system image

Renames a Vyatta system image.

Syntax

```
rename system image old-image-name new-image-name
```

Command Mode

Operational mode.

Parameters

<i>old-image-name</i>	The name of an existing Vyatta system image to be renamed.
<i>new-image-name</i>	The new name of the Vyatta system image.

Default

None.

Usage Guidelines

Use this command to rename a Vyatta system image.

The old name must match the name of an image on the system. The system does not allow you to rename the currently running system image. The new system image name cannot be in use by another image.

set system image default-boot

Selects a Vyatta system image to be run when the system is next rebooted.

Syntax

```
set system image default-boot [image-name]
```

Command Mode

Operational mode.

Parameters

<i>image-name</i>	The name of the Vyatta system image to be run when the system is rebooted.
-------------------	--

Default

If used with no image name specified, the system displays a list of available images and prompts you to select one.

Usage Guidelines

Use this command to specify which Vyatta system image is to be run when the system is next rebooted.

When multiple system images have been installed using the **add system image** command, you can use this command to direct the system to boot from a specific system image the next time it is restarted.

Command completion displays all valid completions for the *image-name* argument. If the *image-name* argument is omitted, the system displays a list showing all images installed on the system and prompts you to select one. If the system was originally installed in disk-based mode, then a special **image-name** option is available so that you can select the disk-based system as the default system from which to boot.

show system image

Displays a list of Vyatta system images installed on the system.

Syntax

```
show system image [storage | version]
```

Command Mode

Operational mode.

Parameters

storage	Display the amount of disk space used by each image.
version	Include the image version number in the display of system images.

Default

None.

Usage Guidelines

Use this command to display a list of all Vyatta system images currently installed on the system.

The command output identifies the image that is currently running, as well as the image that has been selected to run when the system is next rebooted. If the system was originally installed in disk-based mode, then one of the image names identifies that installation.

upgrade system image

Upgrades the currently running system to the latest version.

Syntax

```
upgrade system image
```

Availability



Vyatta Subscription Edition.

Command Mode

Operational mode.

Parameters

None.

Default

None.

Usage Guidelines

Use this command to upgrade the Vyatta system image to the latest release. It is the preferred method of system upgrade. The system image can be upgraded on a system that was installed using a disk-based install (using the **install system** command) or an image-based install (using the **install image** command or from a virtual machine template). Once the new image is added to the system, the configuration from the currently running system can be migrated. Also, the new image will be set as the new default boot image and will be run the next time the system is booted.

The command will validate the MD5 checksums of the files contained in the ISO image to ensure that it has not been corrupted. In addition, it will not allow more than a single copy of an image to exist on the same system.

Glossary

ACL	access control list
ADSL	Asymmetric Digital Subscriber Line
AMI	Amazon Machine Image
API	Application Programming Interface
AS	autonomous system
ARP	Address Resolution Protocol
AWS	Amazon Web Services
BGP	Border Gateway Protocol
BIOS	Basic Input Output System
BPDU	Bridge Protocol Data Unit
CA	certificate authority
CCMP	AES in counter mode with CBC-MAC
CHAP	Challenge Handshake Authentication Protocol
CLI	command-line interface
DDNS	dynamic DNS
DHCP	Dynamic Host Configuration Protocol
DHCPv6	Dynamic Host Configuration Protocol version 6
DLCI	data-link connection identifier
DMI	desktop management interface
DMZ	demilitarized zone
DN	distinguished name
DNS	Domain Name System
DSCP	Differentiated Services Code Point

DSL	Digital Subscriber Line
eBGP	external BGP
EBS	Amazon Elastic Block Storage
EC2	Amazon Elastic Compute Cloud
EGP	Exterior Gateway Protocol
ECMP	equal-cost multipath
ESP	Encapsulating Security Payload
FIB	Forwarding Information Base
FTP	File Transfer Protocol
GRE	Generic Routing Encapsulation
HDLC	High-Level Data Link Control
I/O	Input/Ouput
ICMP	Internet Control Message Protocol
IDS	Intrusion Detection System
IEEE	Institute of Electrical and Electronics Engineers
IGP	Interior Gateway Protocol
IPS	Intrusion Protection System
IKE	Internet Key Exchange
IP	Internet Protocol
IPOA	IP over ATM
IPsec	IP security
IPv4	IP Version 4
IPv6	IP Version 6
ISP	Internet Service Provider
KVM	Kernel-Based Virtual Machine
L2TP	Layer 2 Tunneling Protocol

LACP	Link Aggregation Control Protocol
LAN	local area network
LDAP	Lightweight Directory Access Protocol
LLDP	Link Layer Discovery Protocol
MAC	medium access control
MIB	Management Information Base
MLPPP	multilink PPP
MRRU	maximum received reconstructed unit
MTU	maximum transmission unit
NAT	Network Address Translation
ND	Neighbor Discovery
NIC	network interface card
NTP	Network Time Protocol
OSPF	Open Shortest Path First
OSPFv2	OSPF Version 2
OSPFv3	OSPF Version 3
P2P	peer-to-peer
PAM	Pluggable Authentication Module
PAP	Password Authentication Protocol
PAT	Port Address Translation
PCI	peripheral component interconnect
PKI	Public Key Infrastructure
PPP	Point-to-Point Protocol
PPPoA	PPP over ATM
PPPoE	PPP over Ethernet
PPTP	Point-to-Point Tunneling Protocol

PVC	permanent virtual circuit
QoS	quality of service
RADIUS	Remote Authentication Dial-In User Service
RHEL	Red Hat Enterprise Linux
RIB	Routing Information Base
RIP	Routing Information Protocol
RIPng	RIP next generation
Rx	receive
S3	Amazon Simple Storage Service
SLAAC	Stateless Address Auto-Configuration
SNMP	Simple Network Management Protocol
SMTP	Simple Mail Transfer Protocol
SONET	Synchronous Optical Network
SSH	Secure Shell
SSID	Service Set Identifier
STP	Spanning Tree Protocol
TACACS+	Terminal Access Controller Access Control System Plus
TCP	Transmission Control Protocol
TKIP	Temporal Key Integrity Protocol
ToS	Type of Service
Tx	transmit
UDP	User Datagram Protocol
vif	virtual interface
VLAN	virtual LAN
VPC	Amazon virtual private cloud
VPN	Virtual Private Network

VRRP	Virtual Router Redundancy Protocol
WAN	wide area network
WAP	wireless access point
WPA	Wired Protected Access
