

VYATTA, INC.



Vyatta System

Guide to Vyatta Software Licensing



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

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Quick List of Commands

Use this list to help you quickly locate commands.

add entitlement service-assignment	8
delete entitlement service-assignment	10
entitlement entitlement-key <entitlement-key>	12
entitlement password <password>	13
entitlement username <username>	14
show entitlement	15

Quick List of Examples

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

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Preface

This guide explains licensing on the Vyatta system. It describes the available commands and provides configuration examples.

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

- [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 aid to help you find the information you are looking for:

- [Quick List of Commands](#)

Use this section to help you quickly locate a command.

- [Quick List of Examples](#)

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

This guide has the following chapters:

Chapter	Description	Page
Chapter 1: Introduction	This chapter provides a brief background to the Vyatta Software Licensing model.	1
Chapter 2: Entitlement	This chapter explains how Vyatta Subscription Edition and Vyatta Plus features are managed within the Vyatta system using the Vyatta entitlement server.	3
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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: Introduction

This chapter provides a brief background to the Vyatta Software Licensing model.

This chapter presents the following topic:

- [Licensing Overview](#)

Licensing Overview

The Vyatta software is provided in three offerings:

- [Vyatta Subscription Edition \(VSE\)](#)
- [Vyatta Plus](#)
- [Vyatta Core \(VC\)](#)

Vyatta Subscription Edition (VSE)

The Subscription Edition of Vyatta's Network OS (VSE) is Vyatta's enterprise-ready software and virtual machine product offering. The Subscription Edition of Vyatta's Network OS provides a professionally engineered, tested and commercially supported networking solution. Vyatta Subscription Edition is packaged for sale from Vyatta and its partners as software, virtual machines and hardware appliances. Vyatta Subscription Edition customers are presented with exclusive enterprise management features, ongoing software support (bug fixes, patches, and continual product enhancements) as well as choice of technical support access to meet business requirements.

Vyatta Plus

Vyatta Plus features are additional services that can be purchased by Vyatta Subscription Edition customers. These services provide enhanced functionality on an "a la carte" basis. Vyatta Plus Services features include the following:

Feature	Description
Vyattaguard	Enhanced URL filtering database.
Snort VRT service	Commercial IPS service.

Vyatta Core (VC)

The Vyatta Core (VC) is the Vyatta open source community project code. Vyatta Core software, its source code, and the associated documentation are available to the Vyatta.org user community at no charge. The Vyatta Core is an unsupported open source software project that does not guarantee any level of usability or feature completeness. Vyatta Core is not recommended for production network environments and is not eligible for Vyatta commercial support or professional services.

Chapter 2: Entitlement

This chapter explains how Vyatta Subscription Edition and Vyatta Plus features are managed within the Vyatta system using the Vyatta entitlement server.

This chapter presents the following topics:

- [Entitlement](#)
- [Entitlement Configuration](#)
- [Entitlement Commands](#)

Entitlement

The Vyatta entitlement server infrastructure consists of an entitlement server and back-end database, located at Vyatta, that tracks and manages entitlement keys and service keys.

When you purchase a Vyatta Subscription Edition product, your Vyatta service representative provides you with an entitlement key, a username, and a password. The entitlement key is directly associated with a specific Vyatta system and cannot be used with more than one system. The entitlement key enables you to run the Vyatta Subscription Edition product, with its additional features, and receive continual product bug fixes, updates and enhancements, and receive technical support. In addition, purchasing the Vyatta Subscription Edition product makes you eligible to purchase Vyatta Plus add-on features and services.

When you purchase a Vyatta Plus service, you are given a service key. You link the service key to your Vyatta Subscription Edition entitlement key using an operational command, and the system gives you access to the service.

To use a Vyatta Plus feature, you do the following:

- 1 Configure your Vyatta system with your username, password, and the entitlement key for that system.
- 2 Assign the service key associated with the feature you purchased to your Vyatta Subscription Edition entitlement key. (This assignment is recorded on the entitlement server database, so you can perform the assignment using any Vyatta system configured with the same username, and password. You do not have to perform assignment on the same system that will be using the Vyatta Plus feature.)

The Vyatta Plus feature (for example, the Vyattaguard URL filtering database) running on the Vyatta system with the service key assigned procures your configured information (that is, your username, password, and entitlement key) and forwards it to the Vyatta entitlement server. The Vyatta entitlement server authenticates the information sent and confirms that the service being used is linked to the entitlement key for the system it is running on. Upon successful verification, the entitlement server sends the requested information for the Vyatta Plus feature.

Entitlement Configuration

This section presents the following topics:

- [Configuring a System for Vyatta Subscription Edition](#)
- [Adding a Vyatta Plus Feature](#)

Configuring a System for Vyatta Subscription Edition

The following example shows how to configure a Vyatta system with a Subscription Edition username, password, and entitlement key in configuration mode.

Example 2-1 Configuring an Entitlement Key

Step	Command
Configure a Vyatta Subscription Edition entitlement key.	<code>vyatta@vyatta# set entitlement entitlement-key 5300-3000-0200-0050-0001</code>
Configure a Vyatta Subscription Edition username.	<code>vyatta@vyatta# set entitlement username customer1</code>
Configure a Vyatta Subscription Edition password.	<code>vyatta@vyatta# set entitlement password password1</code>
Commit the configuration.	<code>vyatta@vyatta# commit</code>
Display the configuration.	<code>vyatta@vyatta# show entitlement entitlement-key 5300-3000-0200-0050-0001 password password1 username customer1</code>

Adding a Vyatta Plus Feature

To add a Vyatta Plus feature the system must first be configured for Vyatta Subscription Edition as in the previous example. Once this is done the service key for a Vyatta Plus feature can be assigned to the entitlement key.

NOTE This service assignment can be run on any Vyatta system configured with the same username, and password because the actual assignment takes place on Vyatta's entitlement server, not on the local Vyatta system.

The following example shows how to add a service key for the Vyattaguard feature in operational mode (where the entitlement key is 5300-3000-0200-0050-0001 and the service key is 0090-5601-0900-0340-0002).

Example 2-2 Adding a Service Key to an entitlement key

Step	Command
Add a service key to an entitlement key.	<code>vyatta@vyatta:~\$ add entitlement service-assignment 5300-3000-0200-0050-0001 0090-5601-0900-0340-0002</code>

Example 2-2 Adding a Service Key to an entitlement key

```
Display the status of entitlement and service keys.  vyatta@vyatta:~$ show entitlement
=====
Current entitlement information
=====

Available entitlement keys:
Entitlement key: 5300-3000-0200-0050-0001
Start date: 2008/07/01 00:00
Expire date: 2010/07/01 00:00
Services assigned to this entitlement key:
  [vyattaguard] service:
    Service key: 0090-5601-0900-0340-0002
    Start date: 2009/07/01 00:00
    Expire date: 2010/07/01 00:00

Available and unassigned service keys:
None

vyatta@vyatta:~$
```

Entitlement Commands

Configuration Commands

<code>delete entitlement service-assignment</code>	Deletes a service key from an entitlement key.
<code>entitlement password <password></code>	Specifies the entitlement password associated with the system.
<code>entitlement username <username></code>	Specifies the entitlement username associated with the system.

Operational Commands

<code>add entitlement service-assignment</code>	Adds a service key to an entitlement key.
<code>delete entitlement service-assignment</code>	Deletes a service key from an entitlement key.
<code>show entitlement</code>	Displays a entitlement key and service key status.

add entitlement service-assignment

Adds a service key to an entitlement key.

Syntax

```
add entitlement service-assignment entitlement-key service-key
```

Command Mode

Operational mode.

Parameters

<i>entitlement-key</i>	The key that identifies an instance of the Vyatta Subscription Edition product.
<i>service-key</i>	The key that identifies an instance of a Vyatta Plus service.

Default

None.

Usage Guidelines

Use this command to add a Vyatta Plus service key to a Vyatta Subscription Edition entitlement key. An entitlement key (see [“delete entitlement service-assignment” on page 10](#)), an entitlement username (see [“entitlement username <username>” on page 14](#)), and an entitlement password (see [“entitlement password <password>” on page 13](#)) must be configured on the system in order to use this command.

Examples

[Example 2-3](#) shows a service key being added to an entitlement key.

Example 2-3 Adding a service key to an entitlement key.

```
vyatta@vyatta:~$ add entitlement service-assignment
5300-3000-0200-0050-1111 0090-5601-0900-0340-2222
Operation succeeded
vyatta@vyatta:~$ show entitlement
=====
Current entitlement information
=====
```

```
Available entitlement keys:
  Entitlement key: 5300-3000-0200-0050-0001
    Start date: 2008/07/01 00:00
    Expire date: 2010/07/01 00:00
    Services assigned to this entitlement key:
      [vyattaguard] service:
        Service key: 0090-5601-0900-0340-0002
        Start date: 2009/07/01 00:00
        Expire date: 2010/07/01 00:00

  Entitlement key: 5300-3000-0200-0050-1111
    Start date: 2008/07/01 00:00
    Expire date: 2010/07/01 00:00
    Services assigned to this entitlement key:
      [vyattaguard] service:
        Service key: 0090-5601-0900-0340-2222
        Start date: 2009/07/01 00:00
        Expire date: 2010/07/01 00:00

Available and unassigned service keys:
  None

vyatta@vyatta:~$
```

delete entitlement service-assignment

Deletes a service key from an entitlement key.

Syntax

```
delete entitlement service-assignment entitlement-key service-key
```

Command Mode

Operational mode.

Parameters

<i>entitlement-key</i>	The key that identifies an instance of the Vyatta Subscription Edition product.
<i>service-key</i>	The key that identifies an instance of a Vyatta Plus service.

Default

None.

Usage Guidelines

Use this command to delete a Vyatta Plus service key from its associated Vyatta Subscription Edition entitlement key. An entitlement key (see “[delete entitlement service-assignment](#)” on page 10), an entitlement username (see “[entitlement username <username>](#)” on page 14), and an entitlement password (see “[entitlement password <password>](#)” on page 13) must be configured on the system in order to use this command.

Examples

[Example 2-4](#) shows a service key being deleted from an entitlement key.

Example 2-4 Deleting a service key from an entitlement key.

```
vyatta@vyatta:~$ delete entitlement service-assignment
5300-3000-0200-0050-1111 0090-5601-0900-0340-2222
Operation succeeded
vyatta@vyatta:~$ show entitlement
=====
Current entitlement information
```

```
=====

Available entitlement keys:
  Entitlement key: 5300-3000-0200-0050-0001
    Start date: 2008/07/01 00:00
    Expire date: 2010/07/01 00:00
    Services assigned to this entitlement key:
      [vyattaguard] service:
        Service key: 0090-5601-0900-0340-0002
        Start date: 2009/07/01 00:00
        Expire date: 2010/07/01 00:00

  Entitlement key: 5300-3000-0200-0050-1111
    Start date: 2008/07/01 00:00
    Expire date: 2010/07/01 00:00
    Services assigned to this entitlement key:
      None

Available and unassigned service keys:
  [vyattaguard] service:
    Service key: 0090-5601-0900-0340-2222
    Start date: 2009/07/01 00:00
    Expire date: 2010/07/01 00:00

vyatta@vyatta:~$
```

entitlement entitlement-key <entitlement-key>

Specifies the entitlement key associated with the system.

Syntax

```
set entitlement entitlement-key entitlement-key
delete entitlement entitlement-key
show entitlement entitlement-key
```

Command Mode

Configuration mode.

Configuration Statement

```
entitlement {
    entitlement-key entitlement-key
}
```

Parameters

<i>entitlement-key</i>	The entitlement key associated with the system.
------------------------	---

Default

None.

Usage Guidelines

Use this command to configure an entitlement key on the system. An entitlement key is provided upon purchase of the Vyatta Subscription Edition product. An entitlement key is required in order to use features specific to the Vyatta Subscription Edition product. Using the keyword “demo” as the *entitlement-key* is required to access the Vyatta Subscription Edition and Vyatta Plus features for a one time 30 day trial period.

Use the **set** form of this command to configure an entitlement key on the system.

Use the **delete** form of this command to remove an entitlement key from a system.

Use the **show** form of this command to show the entitlement key configuration.

entitlement password <password>

Specifies the entitlement password associated with the system.

Syntax

```
set entitlement password password
delete entitlement password
show entitlement password
```

Command Mode

Configuration mode.

Configuration Statement

```
entitlement {
    password password
}
```

Parameters

<i>password</i>	The entitlement password associated with the system.
-----------------	--

Default

None.

Usage Guidelines

Use this command to configure an entitlement password on the system. An entitlement password is provided upon purchase of the Vyatta Subscription Edition product. An entitlement password is required in order to use features specific to the Vyatta Subscription Edition product.

Use the **set** form of this command to configure an entitlement password on the system.

Use the **delete** form of this command to remove an entitlement password from a system.

Use the **show** form of this command to show the entitlement password configuration.

entitlement username <username>

Specifies the entitlement username associated with the system.

Syntax

```
set entitlement username username
delete entitlement username
show entitlement username
```

Command Mode

Configuration mode.

Configuration Statement

```
entitlement {
    username username
}
```

Parameters

<i>username</i>	The entitlement username associated with the system.
-----------------	--

Default

None.

Usage Guidelines

Use this command to configure an entitlement username on the system. An entitlement username is provided upon purchase of the Vyatta Subscription Edition product. An entitlement username is required in order to use features specific to the Vyatta Subscription Edition product.

Use the **set** form of this command to configure an entitlement username on the system.

Use the **delete** form of this command to remove an entitlement username from a system.

Use the **show** form of this command to show the entitlement username configuration.

show entitlement

Displays a entitlement key and service key status.

Syntax

```
show entitlement
```

Command Mode

Operational mode.

Parameters

None.

Default

None.

Usage Guidelines

Use this command to display the current status of entitlement keys and service keys associated with a customer. An entitlement key (see “[delete entitlement service-assignment](#)” on page 10), an entitlement username (see “[entitlement username <username>](#)” on page 14), and an entitlement password (see “[entitlement password <password>](#)” on page 13) must be configured on the system in order to use this command.

Examples

[Example 2-5](#) shows entitlement key and service key status.

Example 2-5 Showing entitlement key and service key status.

```
vyatta@vyatta:~$ show entitlement
=====
Current entitlement information
=====

Available entitlement keys:
Entitlement key: 5300-3000-0200-0050-0001
Start date: 2008/07/01 00:00
Expire date: 2010/07/01 00:00
```



```
Services assigned to this entitlement key:
  [vyattaguard] service:
    Service key: 0090-5601-0900-0340-0002
    Start date: 2009/07/01 00:00
    Expire date: 2010/07/01 00:00

Entitlement key: 5300-3000-0200-0050-1111
Start date: 2008/07/01 00:00
Expire date: 2010/07/01 00:00
Services assigned to this entitlement key:
  None

Available and unassigned service keys:
  [vyattaguard] service:
    Service key: 0090-5601-0900-0340-2222
    Start date: 2009/07/01 00:00
    Expire date: 2010/07/01 00:00

vyatta@vyatta:~$
```

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
