Chapter 2: Basic CLI Commands

This chapter describes the basic commands for using the CLI.

This chapter contains the following commands.

Command	Mode	Description
Basic CLI Configuration Commands		
delete	Configuration	Deletes a configuration node.
edit	Configuration	Navigates to a subnode in the configuration tree for editing.
exit	Configuration	Navigates up one level of use.
commit	Configuration	Applies any uncommitted configuration changes.
help	Configuration	Displays help for available system shell commands.
load	Configuration	Loads a saved configuration.
run	Configuration	Runs an operational command without leaving configuration mode.
save	Configuration	Saves the running configuration to a file.
set	Configuration	Creates a new configuration node, or modifies a value in an existing configuration node.
show	Configuration	Displays configuration information in configuration mode.

Command	Mode	Description
top	Configuration	Exits to the top level of configuration mode.
up	Configuration	Navigates up one level in the configuration tree.
Basic CLI Operational Commands		
configure	Operational	Enters configuration mode.
exit	Operational	Navigates up one level of use.
help	Operational	Displays help for available system shell commands.
show configuration	Operational	Displays configuration information in configuration mode.

See also the following commands in other chapters.

init-floppy	Operational	Formats a floppy diskette and prepares it to receive a configuration file. *See page 254.*
show arp	Operational	Displays the system's ARP cache. *See page 257.*
init-floppy	Operational	Formats a floppy diskette and prepares it to receive a configuration file. *See page 254.*

commit

Applies any uncommitted configuration changes.

Syntax

commit

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

None.

Default

None.

Usage Guidelines

Use this command to apply changes to configuration.

When you add configuration to the router, modify existing configuration, or delete configuration from the router, the changes you make must be committed before they take effect. To do this, you issue the **commit** statement.

If you try to exit or quit from configuration mode while there are still uncommitted configuration changes, the system will give you a warning. You will not be able to exit from configuration mode until you either commit the changes by issuing the **commit** statement, or you discard the changes using the **exit discard** statement (see page 10).

Until a configuration change is committed, the system marks the change when displaying the information.

Committing information can take time, depending on the complexity of the configuration and how busy the router is. Be prepared to wait for several seconds for the system to complete committing the information.

If two or more users are logged on to the router in configuration mode and one user changes the configuration, the other user(s) will receive a warning.

Examples

Example 2-1 shows an uncommitted deletion which is then committed. In this example, note how the uncommitted deletion is flagged with a minus sign ("-"), which disappears after the change is committed.

Example 2-1 "commit": Committing configuration changes

```
vyatta@R1# show interfaces ethernet eth2
-address "192.168.1.100/24"
hw-id: 00:13:46:e6:f6:87
[edit]
vyatta@R1# commit
[edit]
vyatta@R1# show interfaces ethernet eth2
hw-id: 00:13:46:e6:f6:87
[edit]
```

configure

Enters configuration mode.

Syntax

configure

Command Mode

Operational mode.

Parameters

None.

Default

None.

Usage Guidelines

Use this command to enter configuration mode from operational mode. In configuration mode, you can add, delete, and modify configuration information.

When you are in configuration mode, the command prompt changes to mark the change in command mode.

Examples

Example 2-2 shows the system's response to entering configuration mode. In this example, notice how the command prompt changes when the user enters configuration mode.

Example 2-2 "configure": Entering configuration mode

```
vyatta@vyatta:~ configure
Entering configuration mode.
There are no other users in configuration mode.
[edit]
vyatta@vyatta#
```

delete

Deletes a configuration node.

Syntax

delete *config-node*

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

config-node	The configuration node to be deleted, including the full path, separated by spaces, through the configuration hierarchy to the node.

Default

None.

Usage Guidelines

Use this command to delete a part of configuration. To do this, you delete the appropriate subnode of a configuration node.

If you show configuration before it is committed, you will see the deleted statement flagged with a minus sign ("-"); the statement disappears after the configuration change is committed.

Some configuration nodes and statements are mandatory; these nodes or statements cannot be deleted. Some configuration statements are mandatory but have default values; if you delete one of these statements, the default value is restored.

Examples

Example 2-3 deletes a DNS server from system configuration.

Example 2-3 “delete”: Deleting configuration

```
vyatta@charon# show system name-server <Tab>
10.0.0.30  10.0.0.31  10.0.0.32
[edit]
vyatta@charon# show system name-server 10.0.0.3
vyatta@R1# delete system name-server 10.0.0.32
[edit]
vyatta@charon# show system name-server <Tab>
10.0.0.30  10.0.0.31
vyatta@charon# show system name-server
[edit]
```

edit

Navigates to a subnode in the configuration tree for editing.

Syntax

edit *path*

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

path	The path to the node of configuration tree you want to edit.

Default

None.

Usage Guidelines

Use this command to navigate to a specific configuration subnode for editing. The **[edit]** prompt changes dynamically to mark your place in the configuration tree.

Once at that location, any actions you take such as showing, creating, or deleting configuration are relative to your location in the tree.

You can only navigate to a configuration node that has already been created and committed. Configuration nodes are created and modified using the **set** command (see page 20) and are committed using the **commit** command (see page 3).

Examples

The following example begins at the top of the configuration tree in configuration mode and navigates to the **system login** configuration node. Once at the **system login** node, a **show** command displays just the contents of the **login** node.

In this example, notice how the prompt changes to mark the location in the configuration tree.

Example 2-4 “edit”: Navigating in the configuration tree

```
[edit]
vyatta@vyatta# edit system login
[edit system login]
vyatta@vyatta# show
user mike {
    authentication {
        encrypted-password: "$1$hccJixQo$V6sL5hDl6CUmVZvaH1vTf0"
        plaintext-password: ""
    }
}
user root {
    authentication {
        encrypted-password: "$1$$Ht7gBYnxI1xCdO/JOnodh."
    }
}
user vyatta {
    authentication {
        encrypted-password: "$1$$Ht7gBYnxI1xCdO/JOnodh."
    }
}
[edit system login]
```

exit

Navigates up one level of use.

- From a configuration subnode, jumps to the top of the configuration tree.
- From the top of the configuration tree, exits to operational mode.
- From operational mode, exits the system.

Syntax

exit [**discard**]

Command Mode

Configuration mode.

Operational mode.

Configuration Statement

None.

Parameters

discard	Applies when exiting from configuration mode to operational mode with uncommitted configuration changes. Allows you to exit from configuration mode by discarding all configuration changes.

Default

None.

Usage Guidelines

Use this command from a subnode in the configuration tree to navigate to the top of the configuration tree.

Use this command from the top of the configuration tree to exit from configuration mode to operational mode.

If you try to exit from configuration mode while there are still uncommitted configuration changes, the system will give you a warning. You will not be able to exit from configuration mode until you either commit the changes by issuing the **commit** statement, or you discard the changes using the **exit** command with the **discard** option. This is the only case where this option applies.

Use this command in operational mode to exit from the system.

help

Displays help for available system shell commands.

Command Mode

Configuration mode.

Operational mode.

Syntax

help [*command*]

Configuration Statement

None.

Parameters

command	Displays more detailed usage information about the specified shell command.

Default

When used with no option, this command lists all available shell commands.

Usage Guidelines

Use this command to display brief information about the usage of a shell command.

Examples

Example 2-5 shows the **help** command used with no options.

Example 2-5 "help": Listing available shell commands

```
vyatta@vyatta:~ help
GNU bash, version 3.1.17(1)-release (i486-pc-linux-gnu)
These shell commands are defined internally.  Type `help' to see
this list.
Type `help name' to find out more about the function `name'.
Use `info bash' to find out more about the shell in general.
```

```
Use `man -k' or `info' to find out more about commands not in
this list.

A star (*) next to a name means that the command is disabled.

 JOB_SPEC [&]                        (( expression ))
 . filename [arguments]              :
 [ arg... ]                          [[ expression ]]
 alias [-p] [name[=value] ... ]      bg [job_spec ...]
 bind [-lpvsPVS] [-m keymap] [-f fi  break [n]
 builtin [shell-builtin [arg ...]]   caller [EXPR]
 case WORD in [PATTERN [| PATTERN]. cd [-L|-P] [dir]
--More--
```

Example 2-5 shows a request for detailed help for the **pwd** system shell command.

Example 2-6 “help”: Obtaining help for shell commands

```
vyatta@vyatta:~ help pwd
pwd: pwd [-LP]
Print the current working directory.  With the -P option,
pwd prints the physical directory, without any symbolic links;
the -L option makes pwd follow symbolic links.
vyatta@vyatta:~
```

load

Loads a saved configuration.

Syntax

load *file-name*

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

file-name	The name of the configuration file, including the full path to its location.

Default

None.

Usage Guidelines

Use this command to manually load a configuration previously saved to a file.

The loaded configuration becomes the active (running) configuration and the previous running configuration is discarded.

Configuration can be loaded from a hard disk (including a Flash disk or USB device), a TFTP server, an FTP server, or an HTTP server. Note that you cannot load an empty configuration file; the configuration file must contain at least one configuration node.

The default configuration directory is **/opt/vyatta/etc/config**. This can be changed by modifying the **config-directory** attribute of the rtrmgr configuration node.

Table 2-2 shows the syntax for file specification for different file locations.

Location	Specification
An absolute path	Use standard UNIX file specification.

Location	Specification
A relative path	Specify the path name relative to the location configured for the the config-directory parameter of the rtrmgr configuration node.
TFTP server	Use the following syntax for *file-name*: tftp://*ip-address*/*config-file* where *ip-address* is the IP address of the TFTP server, and *config-file* is the configuration file, including the path relative to the TFTP root directory.
FTP server	Use the following syntax for *file-name*: ftp://*ip-address*/*config-file* where *ip-address* is the IP address of the FTP server, and *config-file* is the configuration file, including the path. If you use FTP, you will be prompted for a user name and password.
HTTP server	use the following syntax for file-name: http://*ip-address*/*config-file* where *ip-address* is the IP address of the HTTP server, and *config-file* is the configuration file, including the path.

Examples

Example 2-7 loads the configuration file **testconfig** from the default configuration directory.

Example 2-7 Loading configuration from a file

```
vyatta@R1# load testconfig
Loading config file /opt/vyatta/etc/config/testconfig...
Done
[edit]
vyatta@R1#
```

run

Runs an operational command without leaving configuration mode.

Syntax

run *command*

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

command	The operational command to be executed.

Default

None.

Usage Guidelines

Use this command to run an operational command without leaving configuration mode.

Examples

Example 2-8 executes the **show date** command (an operational command) from configuration mode.

Example 2-8 "run": Running an operational command in configuration mode

```
vyatta@R1# run show date
Sun Dec 16 23:34:06 GMT 2007
[edit]
vyatta@R1#
```

save

Saves the running configuration to a file.

Syntax

save *file-name*

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

file-name	The name of the file where the information is to be saved, including the path to the file.

Default

None.

Usage Guidelines

Use this command to save the running configuration to a file.

The resulting file can later be loaded into the running router to replace the previous running configuration, using the **load** command (see page 14). A non-absolute path is interpreted relative to the default configuration directory, which is **/opt/vyatta/etc/config**.

Table 2-2 shows the syntax for file specification for different file locations.

Location	Specification
An absolute path	Use standard UNIX file specification.
A relative path	Specify the path name relative to the location configured for the the config-directory parameter of the rtrmgr configuration node.

Location	Specification
TFTP server	Use the following syntax for *file-name*: tftp://*ip-address/config-file* where *ip-address* is the IP address of the TFTP server, and *config-file* is the configuration file, including the path relative to the TFTP root directory.
FTP server	Use the following syntax for *file-name*: ftp://*ip-address/config-file* where *ip-address* is the IP address of the FTP server, and *config-file* is the configuration file, including the path. If you use FTP, you will be prompted for a user name and password.
HTTP server	use the following syntax for file-name: http://*ip-address/config-file* where *ip-address* is the IP address of the HTTP server, and *config-file* is the configuration file, including the path.

If you overwrite a configuration file, the router retains one backup, using a *file-name*~ convention. For example, if you save over **my-config.boot**, the router moves the previous file to **my-config.boot**~.

Note that the **save** command only writes committed changes. If you makes configuration changes and try to save, the system warns you that you have uncommitted changes and then saves only the committed changes.

Examples

Example 2-9 saves the running configuration into the file **my-config** in the default configuration directory, exits from configuration mode, and displays the set of files stored in the configuration directory.

Example 2-9 "save": Saving configuration to a file

```
vyatta@vyatta# save
Saving configuration to '/opt/vyatta/etc/config/config.boot'...
Done
[edit]
vyatta@vyatta# exit
vyatta@vyatta:~ show files
total 24K
-rw-rw-r-- 1 vyatta xorp 2.8K Nov 28 10:30 config.boot
-rw-rw-r-- 1 vyatta xorp 2.8K Nov 27 14:32 config.boot~
-rw-rw-r-- 1 vyatta xorp 2.8K Nov 28 10:30 my-config
-rw-rw-r-- 1 vyatta xorp 2.8K Nov 27 21:50 my-config~
```

```
vyatta@vyatta:~
```

Example 2-10 saves the current running configuration to the file **my-config** in the root directory of a TFTP server at 10.1.0.35.

Example 2-10 “save”: Saving configuration to a file on a TFTP server

```
vyatta@vyatta# save tftp://10.1.0.35/my-config
Saving configuration to 'tftp://10.1.0.35/my-config'...
Done
[edit]
vyatta@vyatta#
```

set

Creates a new configuration node, or modifies a value in an existing configuration node.

Syntax

To create a new configuration node, the syntax is as follows:

set *config-node* [*identifier*]

To set an attribute within a configuration node, the syntax is as follows:

set *config-node* [*identifier*] *attribute* [*value*]

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

config-node	The configuration node to be created or modified, including the full path, separated by spaces, through the configuration hierarchy to the node.
identifier	The identifier of the configuration node. Mandatory if the configuration node has an identifier; forbidden otherwise.
attribute	The configuration attribute or property to be set. If the attribute statement does not exist, it is created. If the attribute statement already exists, the value is set to the new value.
value	The new value of the attribute. Mandatory if the attribute statement requires a value; forbidden otherwise.

Default

None.

Usage Guidelines

Use this command to add a configuration element to the current configuration—for example, to enable a routing protocol or define an interface.

You can also use this command to modify the value of an existing configuration item. When setting configuration values, note that the change does not take effect until the change is committed, using the **commit** command (see page 3).

Once a configuration node has been added, you can modify it later using the **set** command (see page 20), or delete it using the **delete** command (see page 6).

Examples

Example 2-11 adds a configuration node for an Ethernet interface and commits the change.

Example 2-11 "set": Adding a configuration node

```
vyatta@vyatta# set interfaces ethernet eth1 address
192.150.187.108 prefix-length 24
[edit]
vyatta@vyatta# commit
[edit]
```

show

Displays configuration information in configuration mode.

Syntax

show [**-all**] *config-node*

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

config-node	The configuration node you want to view, including the path. The node must exist and the created node must have been committed. The configuration node specification is interpreted relative to your current position in the configuration tree.
–all	Includes default information in the displayed information.

Default

When used with no configuration node specification, this command displays all existing configuration nodes and sub-nodes starting from your current location in the configuration tree.

When used without the **–all** option, default information is not shown

Usage Guidelines

Use this command in configuration mode to display the configured state of the router.

This command displays the specified configuration node and all sub-nodes. The node specification is interpreted relative to your current location in the configuration tree.

Unless the **–all** keyword is used, default information is not included in displayed information.

In addition to this command, there are a number of **show** commands available in operational mode. For a list of these commands, please see the Quick Reference to Commands, which begins on page xvi.

Examples

Example 2-12 shows the **service** node displayed using the **show** command in configuraiton mode..

Example 2-12 “show”: Displaying configuration information

```
vyatta@vyatta# show service
dhcp-server {
   }
    dhcp {
    }
    webgui {
    }
    ssh {
    }
    telnet {
    }

[edit]
vyatta@vyatta#
```

show configuration

Displays system configuration from operational mode.

Syntax

show [**-all**] **configuration**

Command Mode

Operational mode.

Parameters

-all	Displays all configuration, including default values that would not normally be displayed.

Default

Usage Guidelines

Use this command to list configuration information while remaining in operational mode.

Using **show configuration** in operational mode is equivalent to using **show** in configuration mode. You can display any configuration node by specifying the path for the node. For example, **show configuration firewall** in operational mode is equivalent to **show firewall** in configuration mode.

Examples

Example 2-13 displays the **firewall** configuration node from operational mode.

Example 2-13 “show configuration”: Displaying the configuration tree in operational mode

```
vyatta@R1> show configuration firewall
    log-martians: "enable"
    send-redirects: "disable"
    receive-redirects: "disable"
```

```
    ip-src-route: "disable"
    broadcast-ping: "disable"
    syn-cookies: "enable"
vyatta@R1>
```

top

Exits to the top level of configuration mode.

Syntax

top

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

None.

Usage Guidelines

Use this command to quickly navigate to the top level of configuration mode.

Examples

Example 2-14 navigates down through several nodes of the configuration tree, then uses the **top** command to jump directly to the top of the tree. In this example, notice how the **[edit]** line displays your location in the configuration tree.

Example 2-14 “top”: Navigating to the top of the configuration tree

```
vyatta@vyatta# edit protocols rip interface eth0
[edit protocols/rip/interface/eth0]
vyatta@vyatta# top
[edit]
vyatta@vyatta#
```

up

Navigates up one level in the configuration tree.

Syntax

up

Command Mode

Configuration mode.

Configuration Statement

None.

Parameters

None.

Usage Guidelines

Use this command to navigate one level up in configuration mode.

Examples

Example 2-15 navigates down through several nodes of the configuration tree, then uses the **up** command to navigate successively higher in the tree. In this example, notice how the [edit] line displays your location in the configuration tree.

Example 2-15 "up": Navigating up through the configuration tree

```
vyatta@vyatta# edit protocols rip interface eth0
[edit protocols/rip/interface/eth0]
vyatta@vyatta# up
[edit protocols/rip/interface]
vyatta@vyatta# up
[edit protocols/rip/]
```