

Barefoot Shell

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About the Barefoot Shell

The Cisco Nexus 3464C and Cisco Nexus 34180YC are top of the rack (ToR) switches that contain the Barefoot Networks Tofino ASICs. Because these switches are TORs, they do not feature any interchangeable fabric modules or line cards. The Barefoot Networks Tofino ASICs exist on the switches' system boards.

On the Cisco Nexus 3464C and Cisco Nexus 34180YC switches, a specific shell enables access directly to the ASICs. This shell is called the Barefoot shell.

Guidelines and Limitations

Note Beginning with Cisco NX-OS Release 9.3(3), this feature is no longer supported.

Following are the guidelines and limitations for the Barefoot shell:

- For notes about platform support, see Nexus Switch Platform Support Matrix.
- The Barefoot shell is for authorized use only. Use it with extreme caution and only when authorized by Cisco.
- You can access and read information from the Barefoot ASICs without any limitations. However, Cisco does not recommend changing the Barefoot configuration settings.

Accessing the Barefoot Shell with CLI API

The Barefoot shell is available directly from EXEC mode. The shell enables you to issue commands directly to the Barefoot Networks Tofino ASICs, which are supported in the Cisco Nexus 3464C and Cisco Nexus 34180YC switches. You can check the model of your switch by issuing the **show module** command.

Example:

```
switch-1# show module
Mod Ports  Module-Type                          Model                Status
--- ----- ------------------------------------ -------------------- ---------
1    66   64x100G QSFP28 + 2x10G SFP+ Ethernet  N3K-C3464C           active *
```

This topic documents how to access the Barefoot shell from NX-OS, use the online help function, and exit the Barefoot shell. For detailed documentation about the Barefoot shell and its commands, consult the Barefoot Networks Tofino documentation.

- To enter the Barefoot shell, issue the **bfshell** command.

  Example:

  ```
  switch-1# bfshell
  Warning: bfshell access should be used with caution


          ****************************************
          *      WARNING: Authorised Access Only     *
          ****************************************

  bfshell>
  ```

  The command prompt changes to `bfshell` to indicate that you are in the Barefoot shell.

- To get a list of top-level commands in the hierarchy, type **?** (question mark).

  Example:

  ```
  bfshell> ?
    cint       C Interpreter
    exit       Exit this CLI session
    help       Display an overview of the CLI syntax
    pd-switch  pd_switch Related Commands
    pipemgr    Pipe manager commands
    quit       Exit this CLI session
    switchapi  switchAPI commands
    ucli       UCLI commands
    version    Display the SDE version
  ```

- To get details about the types of help available, type **help** at the prompt.

  Example:

  ```
  bfshell> help

  CONTEXT SENSITIVE HELP
  [?] - Display context sensitive help. This is either a list of possible
        command completions with summaries, or the full syntax of the
        current command. A subsequent repeat of this key, when a command
        has been resolved, will display a detailed reference.

  AUTO-COMPLETION
  The following keys both perform auto-completion for the current command line.
  ```

```
If the command prefix is not unique then the bell will ring and a subsequent
repeat of the key will display possible completions.

[enter] - Auto-completes, syntax-checks then executes a command. If there is
          a syntax error then offending part of the command line will be
          highlighted and explained.

[space] - Auto-completes, or if the command is already resolved inserts a space.

MOVEMENT KEY
[CTRL-A] - Move to the start of the line.
[CTRL-E] - Move to the end of the line.
[up]     - Move to the previous command line held in history.
[down]   - Move to the next command line held in history.
[left]   - Move the insertion point left one character.
[right]  - Move the insertion point right one character.

DELETION KEYS
[CTRL-C]    - Delete and abort the current line.
[CTRL-D]    - Delete the character to the right on the insertion point.
[CTRL-K]    - Delete all the characters to the right of the insertion point.
[CTRL-U]    - Delete the whole line.
[backspace] - Delete the character to the left of the insertion point.

ESCAPE SEQUENCES
!!  - Subsitute the the last command line.
!N  - Substitute the Nth command line (absolute as per 'history' command)
!-N - Substitute the command line entered N lines before (relative)
bfshell>
```

- To change to different command subsystems in the hierarchy, enter the top-level command name.

  For example, to change to the **pd-switch** commands:

```
bfshell> ?
  cint       C Interpreter
  exit       Exit this CLI session
  help       Display an overview of the CLI syntax
  pd-switch  pd_switch Related Commands
  pipemgr    Pipe manager commands
  quit       Exit this CLI session
  switchapi  switchAPI commands
  ucli       UCLI commands
  version    Display the SDE version

bfshell> pd-switch
pd-switch:0>
```

  Notice the prompt changes to display the subsystem.

  New commands are available within each subsystem in the hierarchy.

```
pd-switch:0> ?
  dump_profile  dump action profile entries
  dump_table    dump table entries
  end           End pd-switch sub-commands
  exit          Exit this CLI session
  get           Display value of shell variable
  help          Display an overview of the CLI syntax
  pd            prefix for all pd commands
  quit          Exit this CLI session
  set           Set value of shell variable
  var           Declare new shell variable
```

- To exit the Barefoot shell, issue either the **exit** or **quit** command, which terminates the current Barefoot CLI session and returns you to the NX-OS prompt. You can issue these commands from anywhere in the hierarchy.

  Examples:

```
pd-switch:0> exit
switch-1#
bfshell> quit
switch-1#
```