



## Lab 5.2.4 Using features of the Internetworking Operating System (IOS) command line interface (CLI)

Estimated Time: 30 minutes

Number of Team Members: Students will work in teams of two.

### Objective

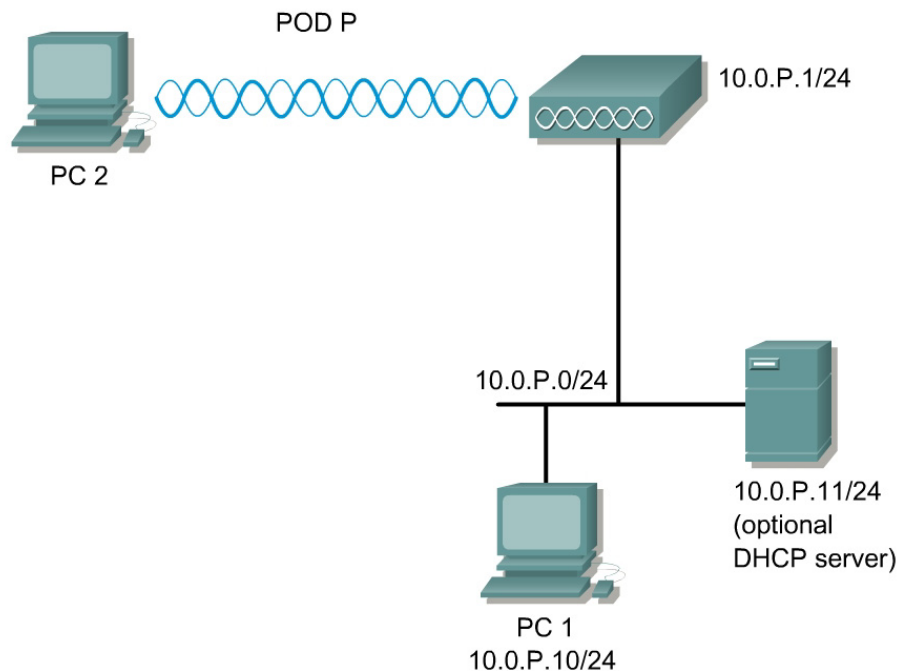
In this lab, the student will learn the following objectives:

- Command Line Interface help features
- Abbreviated commands
- Using the no command to remove config statements
- Command History
- Editing features

### Scenario

Students will learn the features of the AP Internetworking operating system (IOS).

### Topology



## Preparation

<u>Team</u>	<u>AP Name</u>	<u>SSID</u>	<u>Address</u>
1	Pod1	AP1	10.0.1.1/24
2	Pod2	AP2	10.0.2.1/24

## Tools and Resources

Each team will need:

- The AP
- A PC or laptop
- Console cable

## Additional Materials:

[http://www.cisco.com/en/US/products/hw/wireless/ps430/products\\_installation\\_and\\_configuration\\_guide\\_book09186a0080147d69.html](http://www.cisco.com/en/US/products/hw/wireless/ps430/products_installation_and_configuration_guide_book09186a0080147d69.html)

## Command List:

In this lab exercise, the following commands will be used. Refer to this list if assistance or help is needed during the lab exercise.

Command	Description
<b>help</b>	Obtains a brief description of the help system in any command mode.
<b>?</b>	Lists all commands available for a particular command mode.
<b>command?</b>	Lists the associated keywords for a command.
<b>command keyword ?</b>	Lists the associated arguments for a keyword.
<b>abbreviated-command-entry?</b>	Obtains a list of commands that begin with a particular character string.
<b>no</b>	Use the no form to disable a feature or function or reverse the action of a command
<b>history</b>	The number of commands that are displayed is determined by the setting of the terminal history global configuration command and history line configuration command.
<b>terminal history</b>	The number of commands that are displayed is determined by the setting of the terminal history global configuration command and history line configuration command.
<b>show history</b>	While in privileged EXEC mode, list the last several commands that you just entered.

Press Ctrl-P or the up arrow key.	Recall commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall successively older commands.
Press Ctrl-N or the down arrow key.	Return to more recent commands in the history buffer after recalling commands with Ctrl-P or the up arrow key. Repeat the key sequence to recall successively more recent commands.

### Step 1 Connect to the AP through the console

- a. Connecting a Cisco rollover cable (console cable) between PC1 and the AP
- b. Open a terminal emulator.
  1. What settings are required?
    - Bits per second (baud rate):
    - Data bits:
    - Parity:
    - Stop bits:
    - Flow control:
- c. Press return to get started
 

```
ap>
```

### Step 2 Enter into privileged mode

Enter privileged mode. Cisco is the default password. If the password has been changed, reset the AP to factory defaults. If help is needed refer to the previous lab or Cisco online documentation.

```
ap>enable
Password:
ap#
```

### Step 3 Erase the existing configuration

If there is an existing configuration on the AP, erase the configuration and reload.

```
ap#erase startup-config
Erasing the nvram filesystem will remove all files! Continue?
[confirm] Y [OK]
Erase of nvram: complete
ap#
*Mar  1 00:42:37.099: %SYS-7-NV_BLOCK_INIT: Initialized the geometry
of nvram
ap#reload
System configuration has been modified. Save? [yes/no]: no
Proceed with reload? [confirm]
Radio system is preparing for reload...
Radio system is ready for reload.
*Mar  1 00:45:08.446: %SYS-5-RELOAD: Reload requested by console.
```

- a. What command is used to check the existing running configuration?
- 

- b. What command is used to check the existing startup configuration?
- 

#### Step 4 Configure the AP

- a. Enter global configuration mode. Configure the hostname, SSID, and passwords. Use the previous lab for configuration help if needed

```
ap#configure terminal
ap(config)#
ap(config)#hostname PodP
PodP(config)#
...
```

- b. Configure the remaining steps  
c. Configure a wireless PC or laptop to connect the AP.  
d. From PC2 Telnet to the AP to complete the remaining lab.

#### Step 5 Using the `help` feature of the AP

The AP IOS includes help features. Typing the word `help` at the command prompt will give you a brief summary of the help usage features. Display the help usage summary by typing the command `help` at the prompt:

```
PodP#help
Help may be requested at any point in a command by entering
a question mark '?'. If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)

PodP#
```

#### Step 6 Display the available commands of the command mode

To display a list of available commands of the command mode, type the `?` character at the command line prompt:

```
PodP#?
Exec commands:
<1-99>          Session number to resume
access-enable   Create a temporary Access-List entry
access-template Create a temporary Access-List entry
archive         manage archive files
cd              Change current directory
clear           Reset functions
clock           Manage the system clock
configure      Enter configuration mode
```

connect	Open a terminal connection
copy	Copy from one file to another
debug	Debugging functions (see also 'undebg')
delete	Delete a file
dir	List files on a filesystem
disable	Turn off privileged commands
disconnect	Disconnect an existing network connection
dot11	IEEE 802.11 commands
enable	Turn on privileged commands
erase	Erase a filesystem

[output omitted]

To get help on a specific command, type the command name followed by the ? at the command prompt.

Type **configure ?** at the command prompt to display the available options for the configure command:

```
PodP#configure ?
memory          Configure from NV memory
network         Configure from a TFTP network host
overwrite-network Overwrite NV memory from TFTP network host
terminal        Configure from the terminal
<cr>
```

```
PodP#configure
```

## Step 7 Abbreviated commands

The IOS supports the use of abbreviated commands. Type in a partial command at the command prompt and then press the tab button. Pressing the tab button will complete the partial command. Type in show conf rather than show configuration. Press the tab button and it will complete the partial command:

```
PodP#show conf (press the tab button)
PodP#show configuration
Using 2660 out of 32768 bytes
!
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname AP1200
!
aaa new-model
!
!
aaa group server radius rad_eap
!
aaa group server radius rad_mac
```

[output omitted]

The Navigation keystrokes below help display the output as needed:

Key	Action
Return	Scroll down one line.
Space	Scroll down one screen.
any other key	Exit the output

## Step 8 Command history

The IOS provides a history or record of commands that you have entered. This feature is particularly useful for recalling long or complex commands or entries, including access lists. You can customize the command history feature to suit your needs as described in these sections:

### Changing the Command History Buffer Size

By default, the AP records ten command lines in its history buffer. Beginning in privileged EXEC mode, enter this command to set the number of command lines that the AP records during the current terminal session:

```
PodP# terminal history 10
```

(The range is from 0 to 256)

Beginning in line configuration mode, enter this command to configure the number of command lines the AP records for all sessions on a particular line, the example below configures the number of lines to 10:

```
PodP(config) #line console 0
```

```
PodP(config-line) # history 10
```

(The range is from 0 to 256)

## Step 9 Using **no** Forms of Commands to remove configuration statements

Most configuration commands also have a **no** form. In general, use the **no** form to disable a feature or function or reverse the action of a command. For example, the **no shutdown** interface configuration command reverses the **shutdown** of an interface. Use the command without the keyword **no** to re-enable a disabled feature or to enable a feature that is disabled by default.

You will perform a **no** command in Step 10 below.

## Step 10 Enabling and disabling editing features

This section describes the editing features that can help you manipulate the command line. Although enhanced editing mode is automatically enabled, you can disable it.

To re-enable the enhanced editing mode for the current terminal session, enter this command in privileged EXEC mode:

```
PodP#terminal editing
```

```
PodP#
```

To reconfigure a specific line to have enhanced editing mode, enter this command in line configuration mode:

```
PodP(config-line) # editing
```

To globally disable enhanced editing mode, enter this command in line configuration mode:

```
PodP(config-line) # no editing
```

## Step 11 Editing commands through keystrokes

Use the keystrokes listed below to practice editing command lines. Perform each keystroke starting at the top of the list.

Keystroke1	Purpose
Ctrl-B or the left arrow key	Move the cursor back one character.
Ctrl-F or the right arrow key	Move the cursor forward one character.
Ctrl-A	Move the cursor to the beginning of the command line.
Ctrl-E	Move the cursor to the end of the command line.
Esc B	Move the cursor back one word.
Esc F	Move the cursor forward one word.
Ctrl-T	Transpose the character to the left of the cursor with the character located at the cursor.
Delete or Backspace	Erase the character to the left of the cursor.
Ctrl-P (or up arrow)	View the previous command in the command history buffer
Ctrl-N (or down arrow)	View the next command in the command history buffer