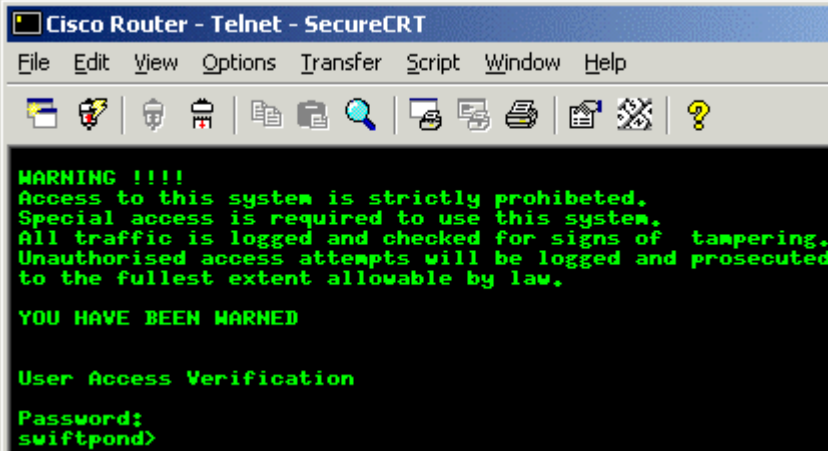


## Cisco Basics - User Exec Mode

### Introduction

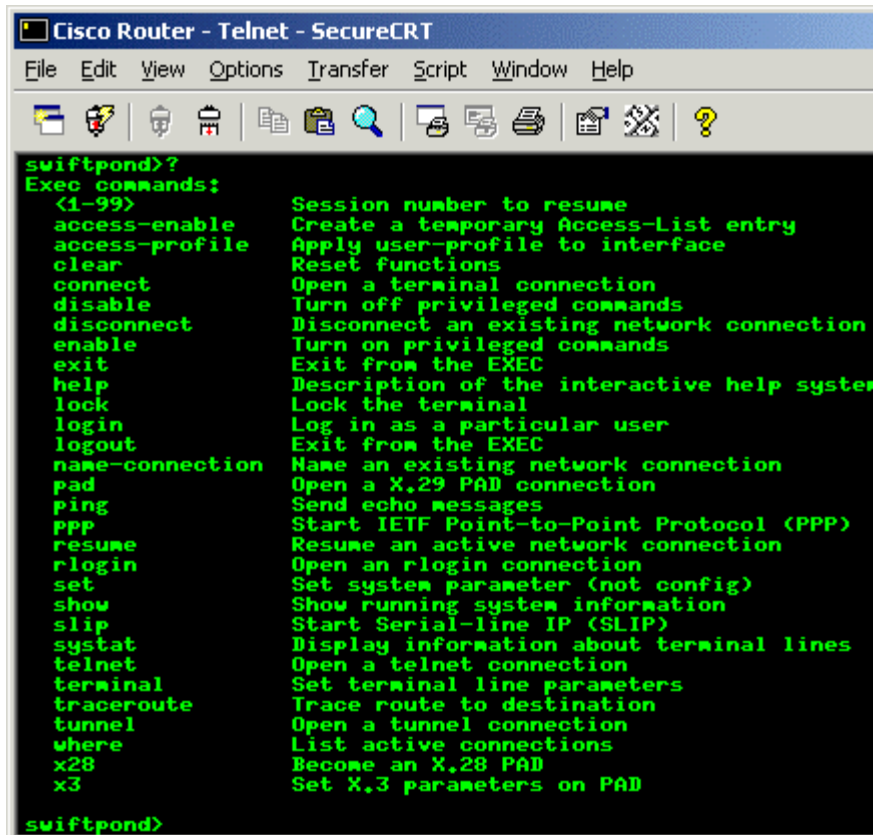
Let's see what it looks like to be in each one of these modes. Here I have telneted into our lab router and I am in User Exec Mode:

A screenshot of a SecureCRT window titled "Cisco Router - Telnet - SecureCRT". The window has a menu bar with "File", "Edit", "View", "Options", "Transfer", "Script", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main terminal area has a black background with green text. The text reads: "WARNING !!!!", "Access to this system is strictly prohibited.", "Special access is required to use this system.", "All traffic is logged and checked for signs of tampering.", "Unauthorised access attempts will be logged and prosecuted to the fullest extent allowable by law.", "YOU HAVE BEEN WARNED", "User Access Verification", "Password:", "swiftpond>".

```
Cisco Router - Telnet - SecureCRT
File Edit View Options Transfer Script Window Help
[Icons]
WARNING !!!!
Access to this system is strictly prohibited.
Special access is required to use this system.
All traffic is logged and checked for signs of tampering.
Unauthorised access attempts will be logged and prosecuted
to the fullest extent allowable by law.
YOU HAVE BEEN WARNED
User Access Verification
Password:
swiftpond>
```

The easiest way to keep track of the mode you're in is by looking at the prompt. The ">" means we are in User Exec Mode. From this mode, we are able to get information like the version of IOS, contents of the Flash memory and a few others.

Now, let's check out the available commands in this mode. This is done by using the "?" command and hitting enter:

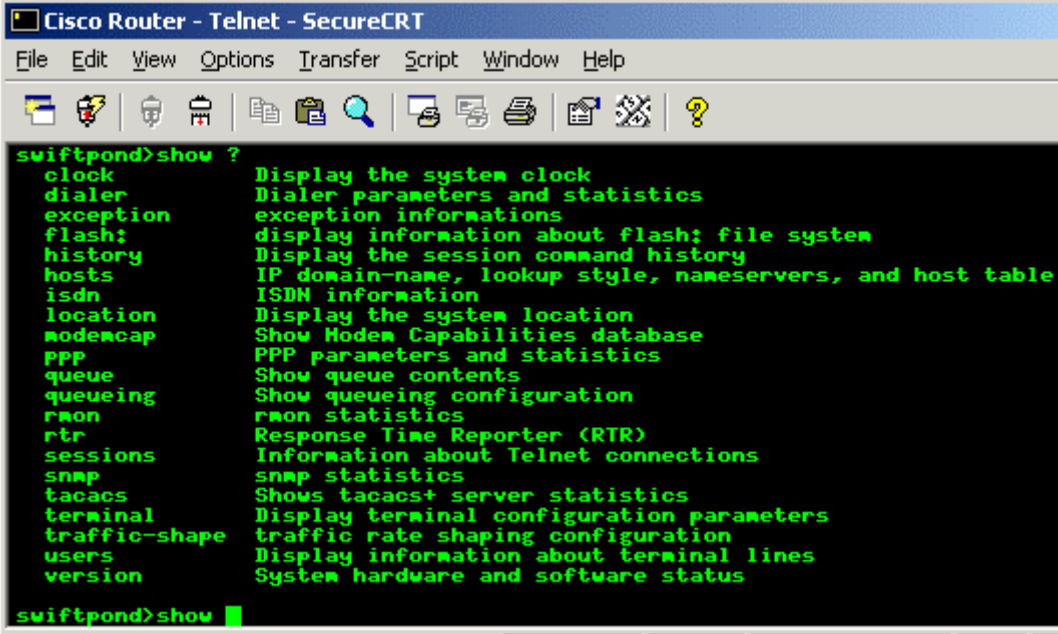


```
Cisco Router - Telnet - SecureCRT
File Edit View Options Transfer Script Window Help
swiftpond>?
Exec commands:
<1-99>
access-enable      Create a temporary Access-List entry
access-profile     Apply user-profile to interface
clear              Reset functions
connect            Open a terminal connection
disable            Turn off privileged commands
disconnect         Disconnect an existing network connection
enable             Turn on privileged commands
exit              Exit from the EXEC
help              Description of the interactive help system
lock               Lock the terminal
login              Log in as a particular user
logout            Exit from the EXEC
name-connection   Name an existing network connection
pad               Open a X.29 PAD connection
ping              Send echo messages
ppp               Start IETF Point-to-Point Protocol (PPP)
resume            Resume an active network connection
rlogin            Open an rlogin connection
set               Set system parameter (not config)
show              Show running system information
slip              Start Serial-line IP (SLIP)
systat            Display information about terminal lines
telnet            Open a telnet connection
terminal          Set terminal line parameters
traceroute        Trace route to destination
tunnel            Open a tunnel connection
where             List active connections
x28               Become an X.28 PAD
x3                Set X.3 parameters on PAD
swiftpond>
```

Wow, see all those commands available ? And just to think that this is considered a small portion of the total commands available when in Privileged Mode ! Keep in mind that when you're in the console and configuring your router, you can use some short cuts to save you typing full command lines. Some of these are :

Tab: By typing the first few letters of a command and then hitting the TAB key, it will automatically complete the rest of the command. Where there is more than one command starting with the same characters, when you hit TAB all those commands will be displayed. In the picture above, if i were to type "lo" and hit TAB, I would get a listing of "lock, login and logout" because all 3 commands start with "lo".

?: The question mark symbol "?" forces the router to print a list of all available commands. A lot of the commands have various parameters or interfaces which you can combine. In this case, by typing the main command e.g "show" and then putting the "?" you will get a list of the subcommands. This picture shows this clearly:



```
Cisco Router - Telnet - SecureCRT
File Edit View Options Transfer Script Window Help
swiftpond>show ?
clock          Display the system clock
dialer         Dialer parameters and statistics
exception      exception informations
flash:         display information about flash: file system
history        Display the session command history
hosts          IP domain-name, lookup style, nameservers, and host table
isdn           ISDN information
location       Display the system location
modemcap       Show Modem Capabilities database
ppp            PPP parameters and statistics
queue          Show queue contents
queueing       Show queueing configuration
rmon           rmon statistics
rtr            Response Time Reporter (RTR)
sessions       Information about Telnet connections
snmp           snmp statistics
tacacs         Shows tacacs+ server statistics
terminal       Display terminal configuration parameters
traffic-shape  traffic rate shaping configuration
users          Display information about terminal lines
version        System hardware and software status
swiftpond>show
```

Other shortcut keys are :

CTRL-A: Positions the cursor at the beginning of the line.

CTRL-E: Positions the cursor at the end of the line.

CTRL-D: Deletes a character.

CTRL-W: Deletes a whole word.

CTRL-B: Moves cursor back by one step.

CTRL-F: Moves cursor forward by one step.

One of the most used commands in this mode is the "Show" command. This will allow you to gather a lot of information about the router. Here I have executed the "Show version" command, which displays various information about the router:

```

Cisco Router - Telnet - SecureCRT
File Edit View Options Transfer Script Window Help
swiftpond>show version
Cisco Internetwork Operating System Software
IOS (tm) 1600 Software (C1600-Y-H), Version 12.0(4)T, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-1999 by cisco Systems, Inc.
Compiled Mon 28-Apr-99 16:50 by kpma
Image text-base: 0x02005000, data-base: 0x024E895C
ROM: System Bootstrap, Version 12.0(3)T, RELEASE SOFTWARE (fc1)
ROM: 1600 Software (C1600-RBOOT-R), Version 12.0(3)T, RELEASE SOFTWARE (fc1)
swiftpond uptime is 5 weeks, 5 hours, 21 minutes
System restarted by power-on
System image file is "flash:C1600-Y-HZ.120-4,T"
cisco 1603 (68360) processor (revision C) with 18432K/6144K bytes of memory.
Processor board ID 22653099, with hardware revision 00000003
Bridging software.
X.25 software, Version 3.0.0.
Basic Rate ISDN software, Version 1.1.
1 Ethernet/IEEE 802.3 interface(s)
1 ISDN Basic Rate interface(s)
System/IO memory with parity disabled
8192K bytes of DRAM onboard 16384K bytes of DRAM on SIMM
System running from RAM
8K bytes of non-volatile configuration memory.
4096K bytes of processor board PCMCIA flash (Read/Write)
Configuration register is 0x2102
swiftpond>

```

The mini-IOS version stored in the router's ROM. This is a cut-down version of the IOS in Flash.  
 The router's uptime.  
 The reason the router was last restarted.  
 File contained in our Flash memory (PCMCIA Card). This is the IOS.  
 The router model we are using.  
 The router's physical interfaces.  
 The router's memory configuration. 8 MB's Built-in and 16 MB's added into the simm slot.  
 Where the IOS is currently running from.  
 The amount of NVRAM in this router.  
 This shows us from where the router will boot from and if it will load the startup-config from NVRAM.  
 0x2102 is "boot from Flash"  
 0x2142 is "Boot from Flash, but ignore startup-config"

The "Show Interface <interface>" command shows us information on a particular interface. This includes the IP address, encapsulation type, speed, status of the physical and logical aspect of the interface and various statistics. When issuing the command, you need to replace the <interface> with the actual interface you want to look at. For example, *ethernet 0*, which indicates the first ethernet interface :

```

Cisco Router - Telnet - SecureCRT
File Edit View Options Transfer Script Window Help
swiftpond>show interfaces ethernet 0
Ethernet0 is up, line protocol is up
Hardware is QUICC Ethernet, address is 0003.6b56.7a26 (bia 0003.6b56.7a26)
Internet address is 203.42.43.49/30
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:59, output 00:00:06, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
11153103 packets input, 2467411896 bytes, 1 no buffer
Received 57 broadcasts, 0 runts, 746 giants, 4593 throttles
1440 input errors, 3 CRC, 691 frame, 0 overrun, 0 ignored
0 input packets with dribble condition detected
10776546 packets output, 1308405742 bytes, 0 underruns
3 output errors, 6680 collisions, 1 interface resets
0 babbles, 0 late collision, 23318 deferred
3 lost carrier, 0 no carrier
0 output buffer failures, 0 output buffers swapped out
swiftpond>

```

Annotations in the image:

- Blue arrow pointing to the command: "The command which was entered."
- Blue arrow pointing to "Ethernet0 is up, line protocol is up": "Means tha the Physical and logical interfaces are up"
- Blue arrow pointing to "address is 0003.6b56.7a26 (bia 0003.6b56.7a26)": "Interface's MAC address."
- Blue arrow pointing to "Internet address is 203.42.43.49/30": "The interface's IP address."
- Blue arrow pointing to "MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec, reliability 255/255, txload 1/255, rxload 1/255": "MTU and Line speed (10 Mbit)."
- Blue arrow pointing to "Encapsulation ARPA, loopback not set": "Packet encapsulation type."
- Blue arrow pointing to "ARP type: ARPA, ARP Timeout 04:00:00": "ARPA translates to Ethernet II. This for the local LAN."
- Blue arrow pointing to the statistics section: "Various interface statistics."

Some other generic commands you can use are the show "running-config" and show "startup-config". These commands show you the configuration of your router.

The running-config refers to the running configuration, which is basically the configuration of the router loaded into its memory at that time.

Startup-config refers to the configuration file stored in the NVRAM. This, upon bootup of the router, gets loaded into the router's RAM and then becomes the running-config !

So you can see that User Exec Mode is used mostly to view information on the router, rather than configuring anything. Just keep in mind that we are touching the surface here and not getting into any details.

This completes the User Exec Mode section. If you like, you can go back and continue to the Privileged Mode section.