# Login and Exec Banners

- Messages can be displayed in the CLI before and/or after an administrator logs in to a Cisco IOS device
- This is most commonly used to display security warnings



# Login and Exec Banners

R1(config)#banner login " (hit enter here) Enter TEXT message. End with the character '"'. Authorized users only"

R1(config)#banner exec " Enter TEXT message. End with the character '"'. Please log out immediately if you are not an authorized administrator"



# Login and Exec Banners

C:\> telnet 10.0.0.1 Trying 10.0.0.1 ...Open

### Authorized users only

User Access Verification Password: Flackbox3 Please log out immediately if you are not an authorized administrator

R1>enable



# **Disable Unused Services**

- It is best practice to disable unused services
- This reduces the attack surface and also the load on the device
- HTTPS is sometimes used by GUI administration tools but HTTP should be disabled
- CDP should also be disabled in highly secure environments

R1(config)#no ip http server R1(config)#no cdp run



# **Time Synchronisation**

- All servers and infrastructure devices in your network should be synchronised to the same time
- This aids in troubleshooting as logs will report the correct time that events occurred
- It is also required by several security features such as Kerberos authentication and digital certificates



# NTP Network Time Protocol

- Servers and infrastructure devices can use their own internal clock or synchronise with an external NTP server
- An NTP server should be used to ensure all devices have the same time
- A Cisco router can function as an NTP server and/or client



### NTP Configuration

R1(config)#clock timezone PST -8 R1(config)#ntp server 10.0.1.100 (configures router to be NTP client) R1(config)#ntp master (configures router to be NTP server)

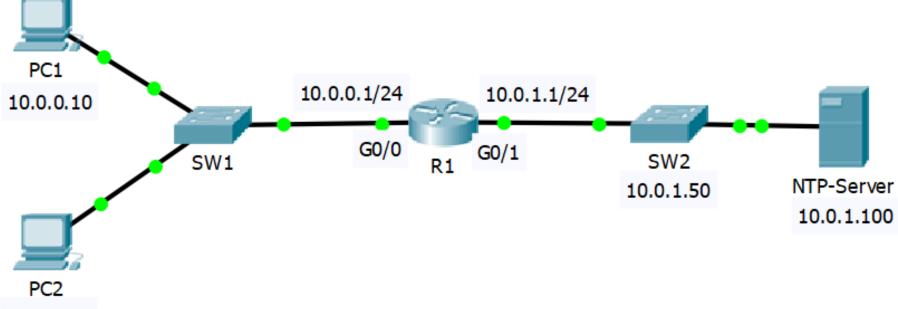
R1#show clock 16:19:36.51 PST Mon Oct 2 2017

R1#show ntp status

Clock is synchronized, stratum 2, reference is 10.0.1.100 nominal freq is 250.0000 Hz, actual freq is 249.9990 Hz, precision is 2\*\*19 reference time is DD53255C.0000039C (00:16:28.924 UTC Tue Jan 2 2018) clock offset is 0.00 msec, root delay is 0.00 msec root dispersion is 0.02 msec, peer dispersion is 0.02 msec.







10.0.0.11

