



Troubleshoot

Network Issues

Instructor Led Training
Chapter 5 – Exercise B



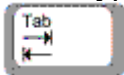
Topics include:

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Are the Link Lights Lit?









1. These are the lights on the network device: one should be steady amber and the other a blinking green.
2. If one or both of the lights are not lit, verify that the device is plugged in and turned on.
3. Test the network cable in another network device or replace it with a known working cable.

Using DOS Commands in a Command Prompt Window

1. Press the  key to repeat previously typed commands. Each press of the key scrolls to the previous entry.
2. Type **CLS** and press the  key to clear the Command Prompt window of text.
3. When typing a file path, if you type the first few letters of a folder name and then press the  key, the remainder of the folder name automatically appears.
4. Type **EXIT** to close the Command Prompt window.




ARP

This command displays the known MAC addresses of network devices that your computer has communicated with.

1. Click **Start>Run**, type **CMD** and press the  key to open a Command Prompt window.
2. Type: **ARP/?** and press the  key; a list of available switches appears.
3. Type: **ARP -a** and press the  key to display a list of currently known MAC addresses.
4. Type: **ARP -b** and press the  key to clear the current list.
5. Type: **ARP -a** and press the  key to display the list of currently know MAC addresses; the list is now empty.
6. Ping three different IP addresses.
7. Type: **ARP -a** and press the  key. A new list of known MAC addresses appears.
HINT: Use the  key to scroll through the recently typed commands.
8. Type **CLS** and press the  key to clear the Command Prompt window of text.






NetStat

This command displays a list of ports your computer is listening to.

1. Open a Command Prompt window.
2. Type **netstat /?** and press the  key; a list of available switches appears.
3. Type **netstat -a** and press the  key; review the list of Equitrac ports.
4. Type **CLS** and press the  key to clear the Command Prompt window.



IPconfig


This command displays the IP configuration information of your computer.

1. Open a Command Prompt window.
2. Type **ipconfig /?** and press the  key; a list of available switches appears.
3. Type **ipconfig** and press the  key to return a summary list of information.
4. Type **ipconfig /all** and press the  key to return a detailed list of information.
5. Type **ipconfig /renew** and press the  key to reestablish the IP address of your computer. NOTE: This command is only available when you are configured as a DHCP client and may take several minutes to complete before displaying your new IP address.
6. Type **CLS** and press the  key to clear the Command Prompt window of text.

Ping




This command tests whether your computer can communicate with a specific IP address. Ping is a software test; you are not pinging the physical NIC card. A favorable response indicates that TCP/IP is configured and working properly.

1. Open a Command Prompt window.
2. Type **Ping 127.0.0.1** and press the  key.
3. **Ping** the **IP address** of the **virtual server** from within the virtual server. This test confirms that your NIC is configured, but does not guarantee that it can send or receive packets.
4. **Ping** the same **IP address** with a trailing **-t**. The trailing **-t** creates a continuous ping. This command is useful when troubleshooting connections. Press +**C** to terminate the command.

5. **Ping** your **virtual server name** from the host computer. This test confirms that **DNS** and **Name Resolution** are working on the network.
6. **Ping** the **IP address** of the **default gateway**. This test confirms that the hub or switch and the router are working.
7. **Ping** the **IP address** of a remote host (for example, **www.cnn.com**). This test confirms that you have access to the internet using DNS or Name Resolution.
8. Type **CLS** and press the  key to clear the Command Prompt window.



Tracert

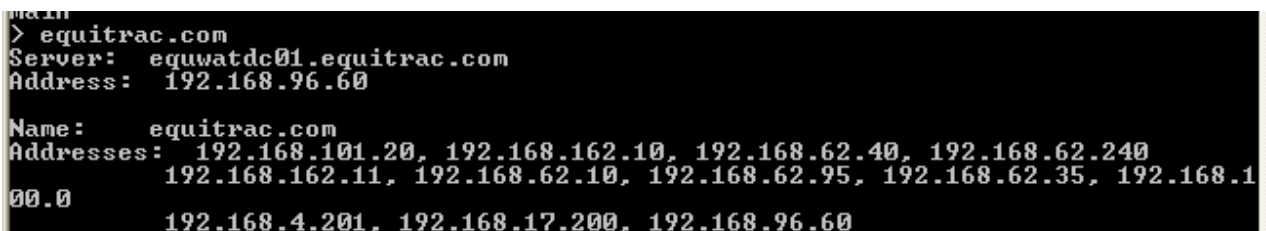
This command traces the router path to the destination address and helps to identify non-functioning or failed routers.

1. Open a Command Prompt window.
2. Type **tracert /?** and press the  key; a list of available switches appears.
3. Type **tracert www.cnn.com** and press the  key; a list of each router the packets encountered on its way to the destination address appears.
4. Type **CLS** and press the  key to clear the Command Prompt window.

Nslookup



This command displays the IP address and NetBIOS name of the DNS server you are using.

1. Open a Command Prompt window.
2. Type **nslookup** and press the  key; the IP address and NetBios name of the DNS server you are using appears.
3. To identify the DNS server responsible for resolving another domain, type the fully qualified domain name and then press the  key. For example,



```
main
> equitrac.com
Server: equwatdc01.equitrac.com
Address: 192.168.96.60

Name: equitrac.com
Addresses: 192.168.101.20, 192.168.162.10, 192.168.62.40, 192.168.62.240
          192.168.162.11, 192.168.62.10, 192.168.62.95, 192.168.62.35, 192.168.1
          00.0
          192.168.4.201, 192.168.17.200, 192.168.96.60
```

4. Type **Equitrac.com** and press the  key.
5. Type **EXIT** to exit **nslookup** mode.
6. Type **CLS** and press the  key to clear the Command Prompt window of text.

Telnet

1. Open a Command Prompt window and maximize the window.
2. Type **Telnet <IPAddressOrName> <Port>**

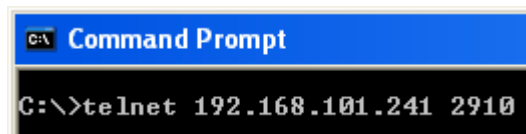
where: **<IPAddressOrName>** is the IP address of the network device you wish to test.

<Port> is the port number you wish to test. Each port must be tested separately.

Test to ensure you have access to the following Equitrac ports.

CAS = 2910 Database = 1433 EQ Scheduler = 2941 DCE = 2939 DRE = 2938 DME = 2942 PageCounter = 1234
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For example, if you enter the following command:

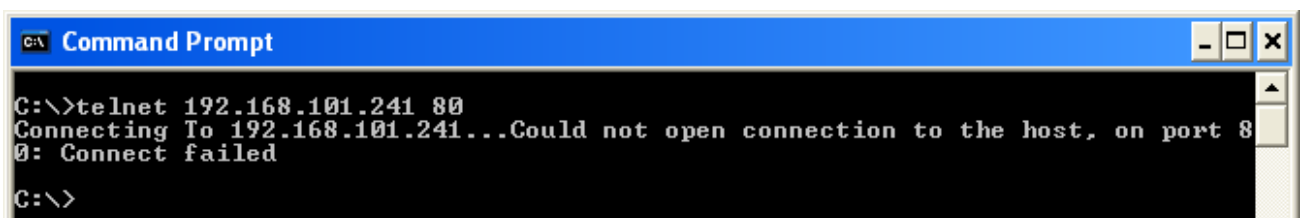


```
C:\>telnet 192.168.101.241 2910
```

A blank screen with a flashing cursor appears. This indicates that you are successfully connected to the server port.



3. Press the **ESC** key to exit the screen.
4. If you failed to connect or the port is not open, the following message appears:



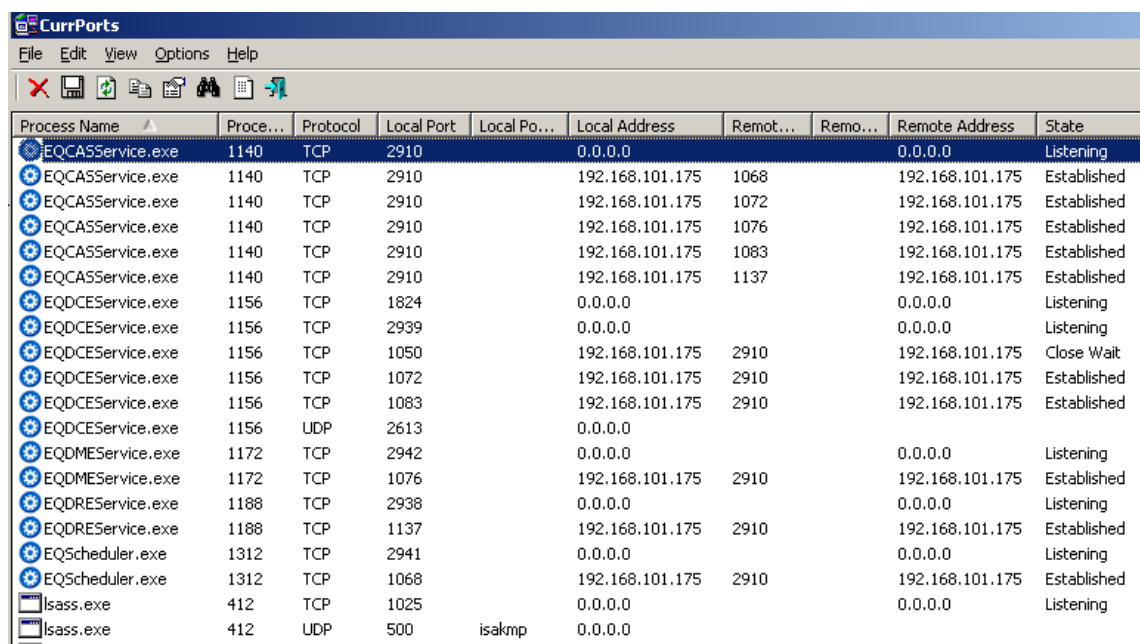
```
C:\>telnet 192.168.101.241 80
Connecting To 192.168.101.241...Could not open connection to the host, on port 80
0: Connect failed
C:\>
```

Port Scanning (Firewalls) Using NirSoft CurrPorts

This utility displays a list of all process and ports that are used on your server. [NirSoft CurrPorts](#) is freeware software.

1. On the server machine, start Microsoft Windows Explorer and browse to the **Equitrac Training CD**.
2. Open the **Cports** folder.
3. Double-click the **CPort.exe** file.

A list of all processes and ports that are used on your server appears. Note the State column, and make sure the Equitrac ports that you require are listed as listening and/or established. No required port should have a “blank” state.



Process Name	Process ID	Protocol	Local Port	Local Port	Local Address	Remote Port	Remote Port	Remote Address	State
EQCASService.exe	1140	TCP	2910		0.0.0.0			0.0.0.0	Listening
EQCASService.exe	1140	TCP	2910		192.168.101.175	1068		192.168.101.175	Established
EQCASService.exe	1140	TCP	2910		192.168.101.175	1072		192.168.101.175	Established
EQCASService.exe	1140	TCP	2910		192.168.101.175	1076		192.168.101.175	Established
EQCASService.exe	1140	TCP	2910		192.168.101.175	1083		192.168.101.175	Established
EQCASService.exe	1140	TCP	2910		192.168.101.175	1137		192.168.101.175	Established
EQDCEService.exe	1156	TCP	1824		0.0.0.0			0.0.0.0	Listening
EQDCEService.exe	1156	TCP	2939		0.0.0.0			0.0.0.0	Listening
EQDCEService.exe	1156	TCP	1050		192.168.101.175	2910		192.168.101.175	Close Wait
EQDCEService.exe	1156	TCP	1072		192.168.101.175	2910		192.168.101.175	Established
EQDCEService.exe	1156	TCP	1083		192.168.101.175	2910		192.168.101.175	Established
EQDCEService.exe	1156	UDP	2613		0.0.0.0				
EQDMEService.exe	1172	TCP	2942		0.0.0.0			0.0.0.0	Listening
EQDMEService.exe	1172	TCP	1076		192.168.101.175	2910		192.168.101.175	Established
EQDRESERVICE.exe	1188	TCP	2938		0.0.0.0			0.0.0.0	Listening
EQDRESERVICE.exe	1188	TCP	1137		192.168.101.175	2910		192.168.101.175	Established
EQScheduler.exe	1312	TCP	2941		0.0.0.0			0.0.0.0	Listening
EQScheduler.exe	1312	TCP	1068		192.168.101.175	2910		192.168.101.175	Established
lsass.exe	412	TCP	1025		0.0.0.0			0.0.0.0	Listening
lsass.exe	412	UDP	500	isakmp	0.0.0.0				