

Resources	
Files	None
Machines	Windows 10, Windows Server 2012, Ubuntu Server

In this exercise, you will use basic network utilities.

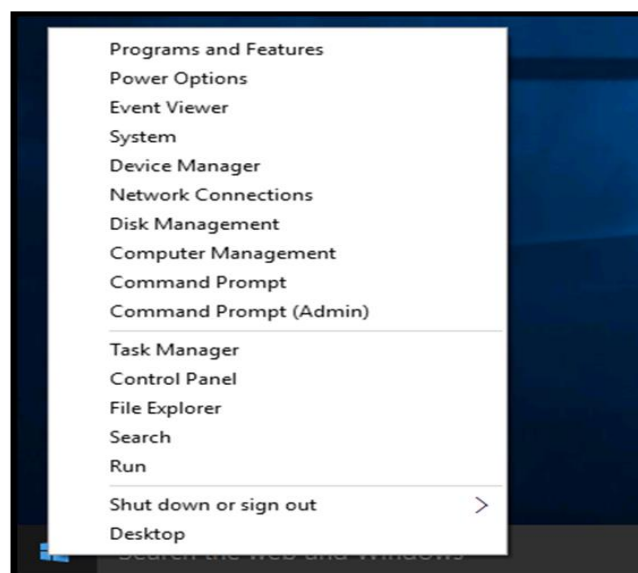
Use the ipconfig command on Windows 10 to identify the IP address.

Login to Windows 10 using the following credentials:

Username: Admin

Password: Pa\$\$w0rd

Once logged in right click on Start button.



Then select Command Prompt (Admin) and click Yes on the User Account Control window. On the command prompt window, write the command ipconfig and then press the enter button.

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Administrator: Command Prompt
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

C:\Windows\system32>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

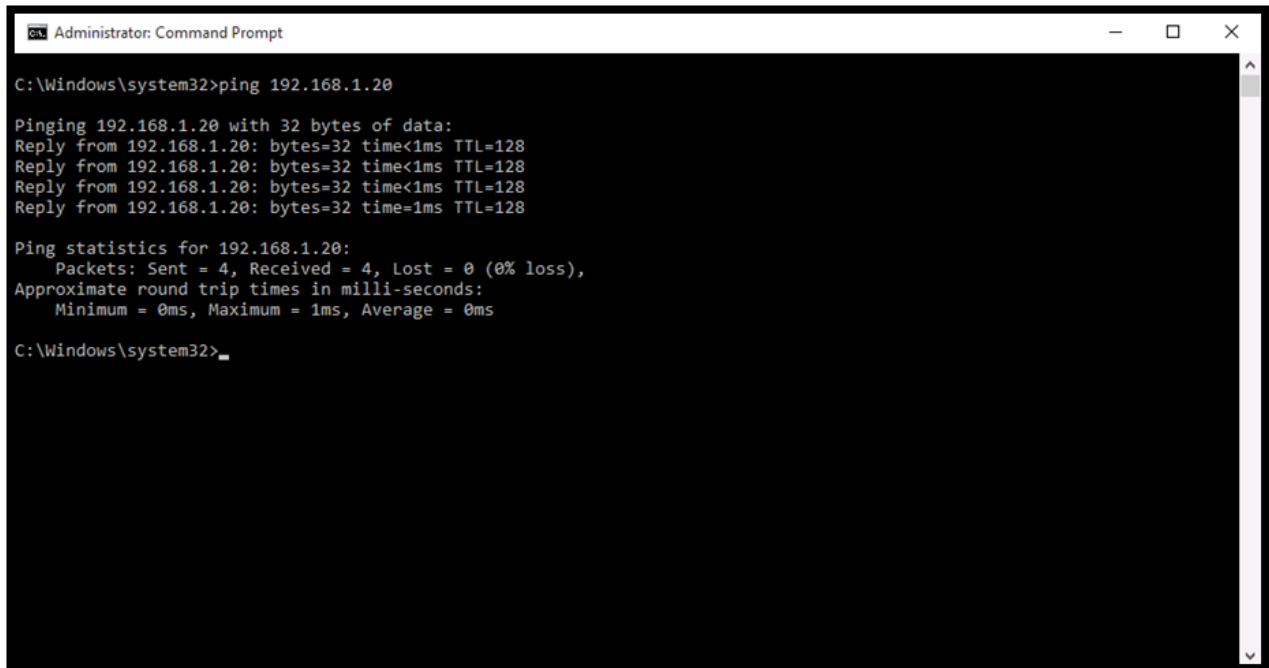
    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::4dc2:153f:4070:6208%3
    IPv4 Address. . . . . : 192.168.1.10
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Tunnel adapter isatap.{AC1C9E4A-DAFB-4A47-93FE-BCF894B8DF33}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 
C:\Windows\system32>

```

Windows 10 to ping the host 192.168.1.20



```
Administrator: Command Prompt

C:\Windows\system32>ping 192.168.1.20

Pinging 192.168.1.20 with 32 bytes of data:
Reply from 192.168.1.20: bytes=32 time<1ms TTL=128
Reply from 192.168.1.20: bytes=32 time<1ms TTL=128
Reply from 192.168.1.20: bytes=32 time<1ms TTL=128
Reply from 192.168.1.20: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Windows\system32>
```

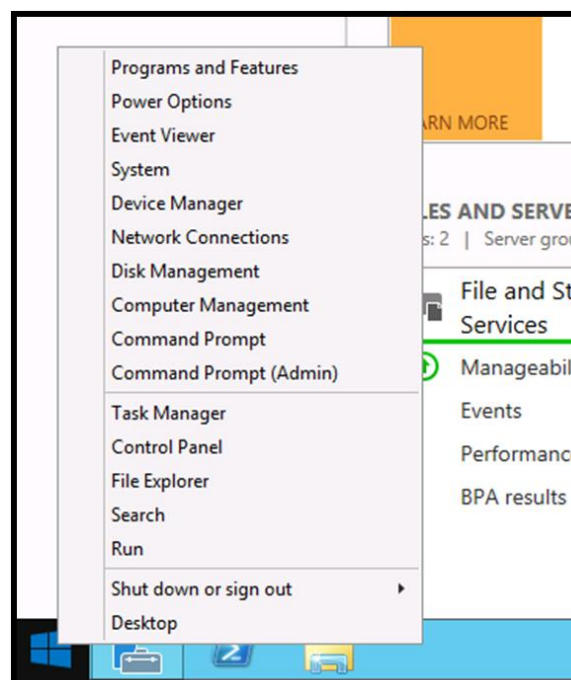
Use the ipconfig command on Windows Server 2012 to identify the IP address.

Login to Windows Server 2012 using the following credentials:

Username: Administrator

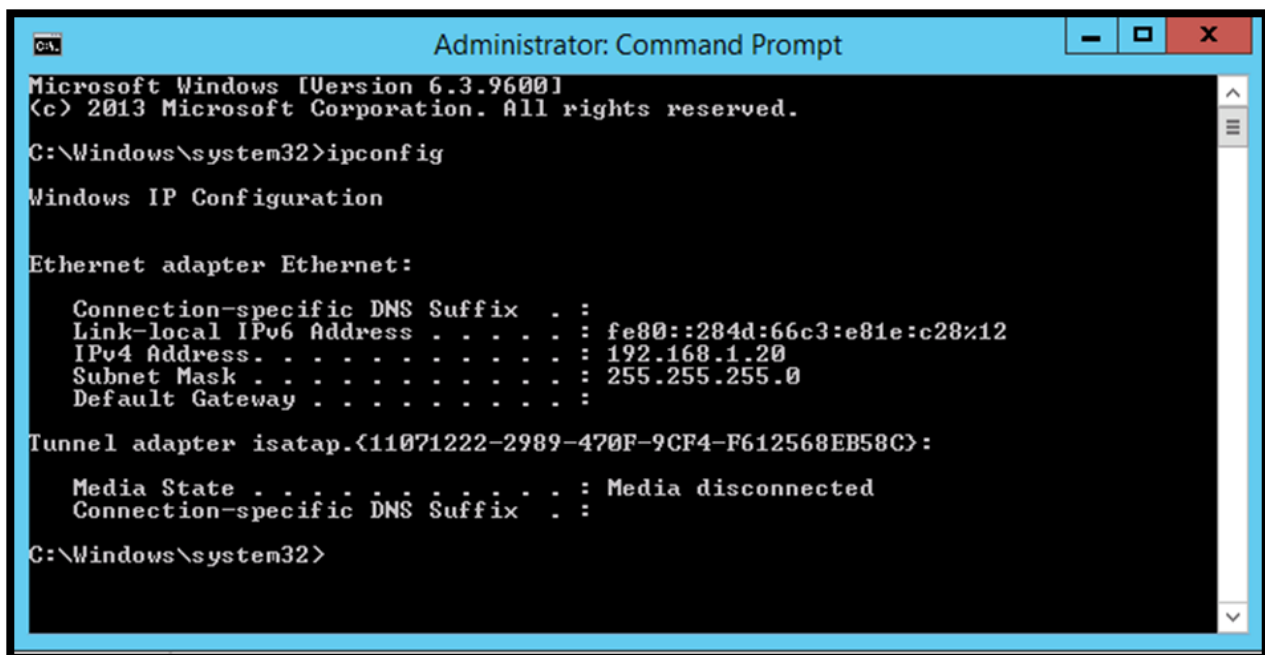
Password: Pa\$\$w0rd

Then right click on the Start button and select Command Prompt (Admin)



On the command

prompt window write the command ipconfig and press enter.

A screenshot of a Windows Command Prompt window titled "Administrator: Command Prompt". The window shows the output of the 'ipconfig' command. It displays the IP configuration for the Ethernet adapter, including the IPv4 address 192.168.1.20, subnet mask 255.255.255.0, and default gateway. It also shows the configuration for the Tunnel adapter isatap, which is currently disconnected.

```
C:\Windows\system32>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

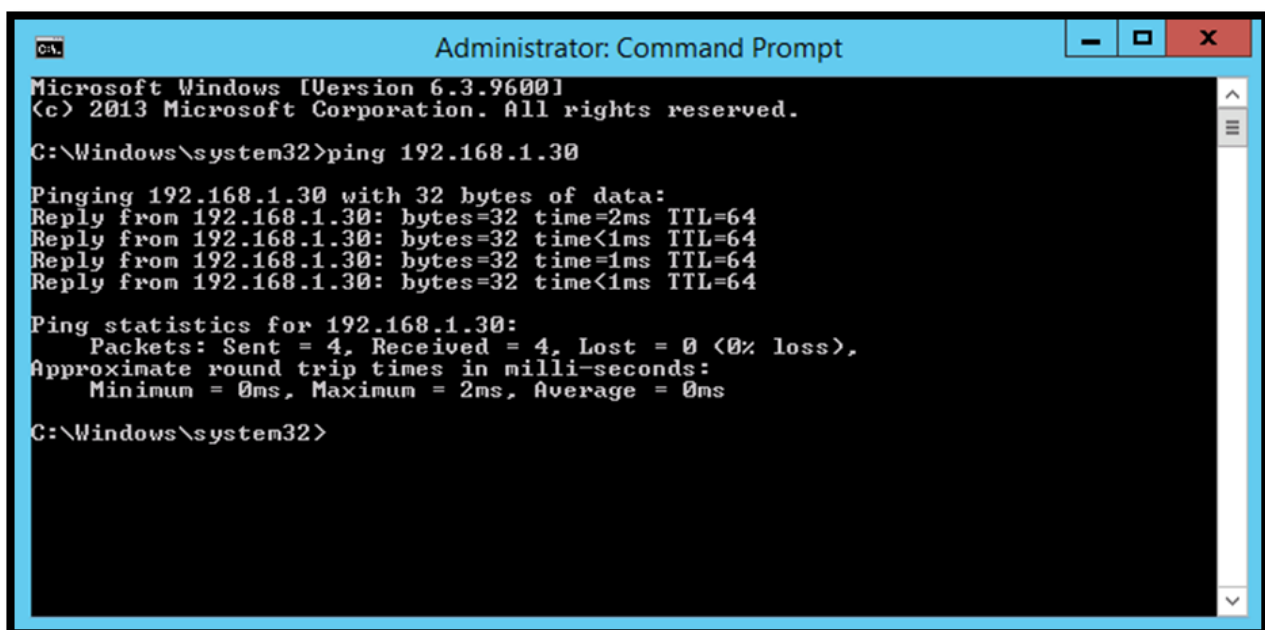
    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : fe80::284d:66c3:e81e:c28%12
    IPv4 Address. . . . . : 192.168.1.20
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Tunnel adapter isatap.{11071222-2989-470F-9CF4-F612568EB58C}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : 

C:\Windows\system32>
```

Use the ping command on Windows Server 2012 to ping the host 192.168.1.30.

A screenshot of a Windows Command Prompt window titled "Administrator: Command Prompt". The window shows the output of the 'ping 192.168.1.30' command. It displays four successful replies from 192.168.1.30 with 32 bytes of data, showing round trip times of 2ms, 1ms, 1ms, and 1ms. Ping statistics show 4 packets sent, 4 received, and 0 lost.

```
C:\Windows\system32>ping 192.168.1.30

Pinging 192.168.1.30 with 32 bytes of data:
Reply from 192.168.1.30: bytes=32 time=2ms TTL=64
Reply from 192.168.1.30: bytes=32 time<1ms TTL=64
Reply from 192.168.1.30: bytes=32 time=1ms TTL=64
Reply from 192.168.1.30: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\Windows\system32>
```

Use the ifconfig command on Ubuntu Server to identify the IP address. Login with the following credentials:

Username: user

Password: Pa\$\$w0rd

Once logged in click on the terminal icon (last icon) the left side menu.

On the terminal window write the command ifconfig and press enter.

```
user@ubuntu: ~  
File Edit View Search Terminal Help  
user@ubuntu:~$ ifconfig  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 192.168.1.30 netmask 255.255.255.0 broadcast 192.168.1.255  
    inet6 fe80::215:5dff:fe04:8a7f prefixlen 64 scopeid 0x20<link>  
    ether 00:15:5d:04:8a:7f txqueuelen 1000 (Ethernet)  
    RX packets 66 bytes 9736 (9.7 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 837 bytes 40351 (40.3 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128 scopeid 0x10<host>  
    loop txqueuelen 1000 (Local Loopback)  
    RX packets 1616 bytes 137295 (137.2 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 1616 bytes 137295 (137.2 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
user@ubuntu:~$
```

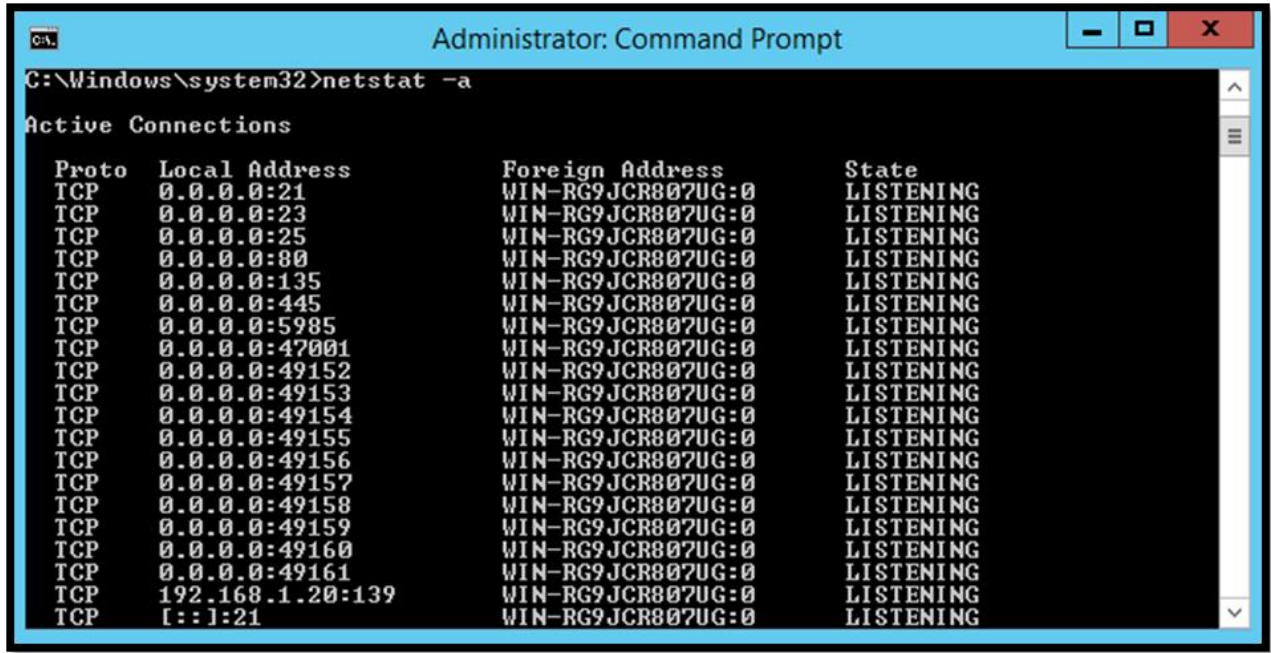
Open a terminal window and use the command “**ping -c 4 192.168.1.10**” on Ubuntu Server to ping the host 192.168.1.10.

```
user@ubuntu:~$ ping -c 4 192.168.1.10  
PING 192.168.1.10 (192.168.1.10) 56(84) bytes of data.  
64 bytes from 192.168.1.10: icmp_seq=1 ttl=128 time=1.63 ms  
64 bytes from 192.168.1.10: icmp_seq=2 ttl=128 time=1.38 ms  
64 bytes from 192.168.1.10: icmp_seq=3 ttl=128 time=0.474 ms  
64 bytes from 192.168.1.10: icmp_seq=4 ttl=128 time=0.490 ms  
  
--- 192.168.1.10 ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3020ms  
rtt min/avg/max/mdev = 0.474/0.995/1.636/0.521 ms
```

Use the command “**netstat -tulpn**” on the Ubuntu Server and observe the output. You will notice that the Local Address bound with a port is a specific service listening on that port. Also there is a Foreign Address which is a remote host connected to that specific service. There is also a state which is listening or can be established in the case of a remote host connection.


```
user@ubuntu:~$ netstat -tulpn
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
PID/Program name
tcp        0      0 127.0.0.53:53           0.0.0.0:*              LISTEN
-
tcp        0      0 0.0.0.0:22              0.0.0.0:*              LISTEN
-
tcp        0      0 127.0.0.1:631           0.0.0.0:*              LISTEN
-
tcp6       0      0 :::80                   :::*                    LISTEN
-
tcp6       0      0 :::22                   :::*                    LISTEN
-
tcp6       0      0 :::1:631               :::*                    LISTEN
-
udp        0      0 0.0.0.0:45965           0.0.0.0:*              LISTEN
-
udp        0      0 127.0.0.53:53           0.0.0.0:*              LISTEN
-
udp        0      0 0.0.0.0:631            0.0.0.0:*              LISTEN
```

Use the command “**netstat -a**” on the Windows Server 2012 and observe the output. You will notice that the Local Address bound with a port is a specific service listening on that port. Also there is a Foreign Address which is a remote host connected to that specific service. There is also a state which is listening or can be established in the case of a remote host connection.



The screenshot shows a Windows Server 2012 Administrator Command Prompt window. The title bar reads "Administrator: Command Prompt". The command prompt shows the command "C:\Windows\system32>netstat -a" and its output. The output is titled "Active Connections" and lists various TCP connections in a table format. The columns are "Proto", "Local Address", "Foreign Address", and "State". All listed connections are in the "LISTENING" state.

Proto	Local Address	Foreign Address	State
TCP	0.0.0.0:21	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:23	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:25	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:80	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:135	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:445	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:5985	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:47001	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49152	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49153	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49154	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49155	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49156	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49157	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49158	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49159	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49160	WIN-RG9JCR807UG:0	LISTENING
TCP	0.0.0.0:49161	WIN-RG9JCR807UG:0	LISTENING
TCP	192.168.1.20:139	WIN-RG9JCR807UG:0	LISTENING
TCP	:::1:21	WIN-RG9JCR807UG:0	LISTENING