

Performance and Bandwidth Testing for Data Circuits

In some cases, customers report that they are experiencing slower than expected data connections. These can be caused by any number of factors, including increased traffic on an internal network, hardware or software issues on an individual computer or network server, larger than normal file transfers, or issues with the circuit itself.

Many web sites offer bandwidth testing services, but, because they measure only the performance of an individual computer, they are not considered to be accurate for the purposes of measuring bandwidth (also called through put) on a full data circuit. These are certainly good to compare the bandwidth on individual computers within your network, as well as to compare the individual computer's performance with the circuit's performance. Other factors can affect these speed tests, such as processor speed, memory, heavy Internet or LAN traffic, and additional programs running on your individual computer at the time of the test.

Examples:

<http://www.bandwidthplace.com/speedtest/>

http://reviews.cnet.com/Bandwidth_meter/7004-7254_7-0.html

<http://tech.msn.com/downloads/speedtest.armx>

If you experience slowness, you may call our 24/7 Customer Support line at 1.800.881.2638 or send an email to support@citynet.net for assistance. Depending upon the circumstances, a Citynet representative may ask you to run some bandwidth testing to isolate the cause(s) for sluggish upload or download speeds.

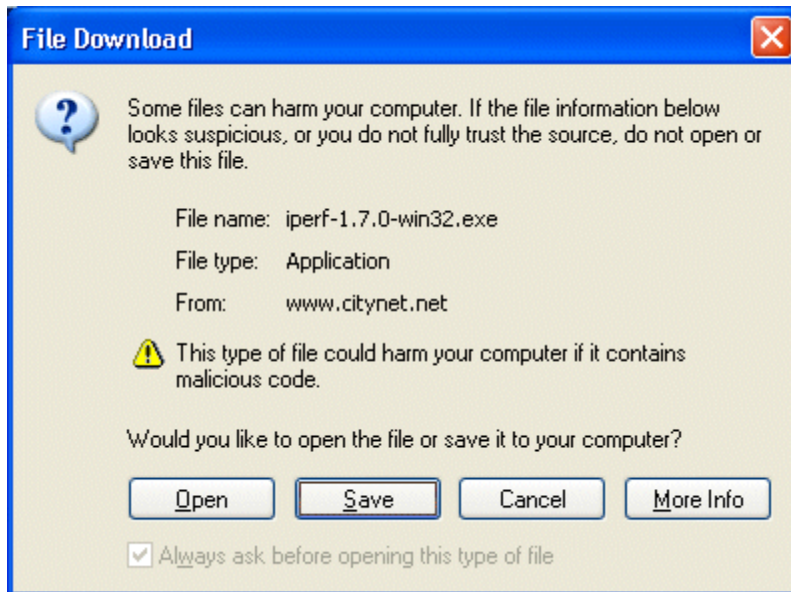
To test the actual bandwidth available on the data circuit, Citynet and other major carriers depend upon IPERF. IPERF tests the data circuit with a procedure called "overcasting," in which more data than the maximum size of your circuit is sent. During the time allotted for the IPERF test (generally 60 seconds), no other data will be sent or received on your circuit. This means no one in your office will be able to send or receive email or access web pages for the 60 seconds of testing.

For more information about IPERF, visit the [IPERF Webpage](http://dast.nlanr.net/Projects/Iperf/). <http://dast.nlanr.net/Projects/Iperf/>

[Unix IPERF Test](http://www.citynet.net/performance/iperf-1.7.0-source.tar.gz) <http://www.citynet.net/performance/iperf-1.7.0-source.tar.gz>

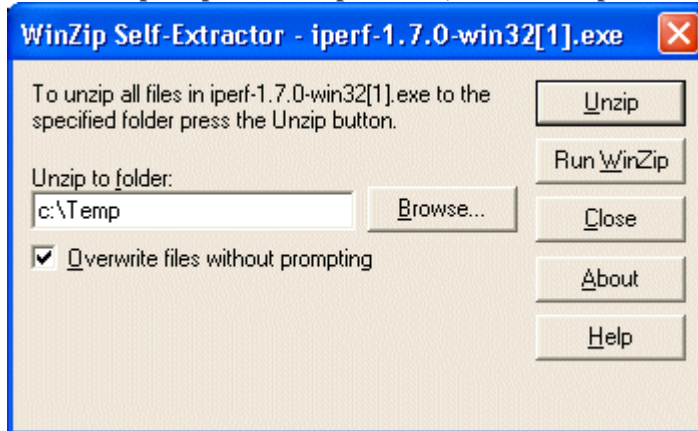
IPERF Test Instructions for Windows

1. [Click Here to Get IPERF for Windows](http://www.citynet.net/performance/iperf-1.7.0-win32.exe) <http://www.citynet.net/performance/iperf-1.7.0-win32.exe>
2. When prompted, choose the Open button.



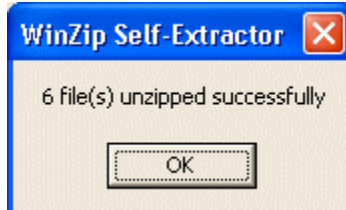
3. If you get a window referring to an “unknown publisher,” click the Run button.

4. When prompted to unzip the files, in the “Unzip to folder field,” type C:\Temp



5. Click the Unzip button.

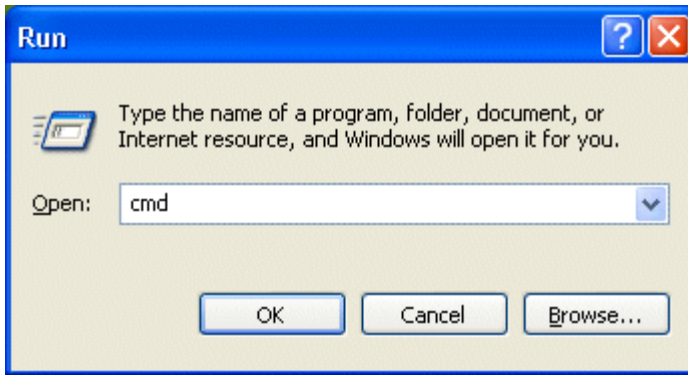
6. When the files are successfully unzipped, click the OK button.



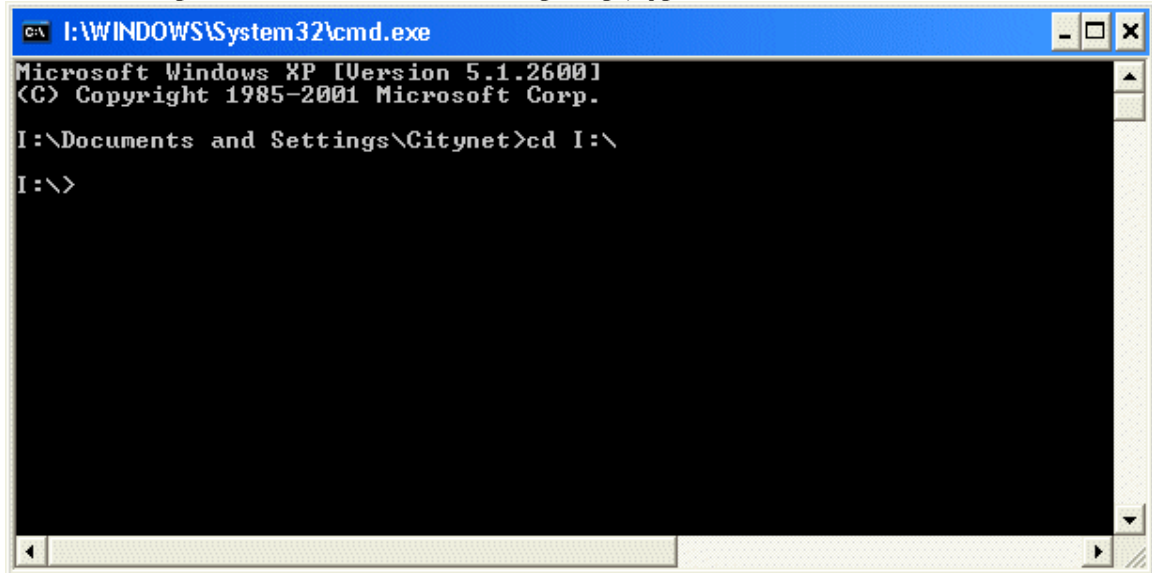
7. Click the Close button.

8. From your computer’s Start Menu, select Run.

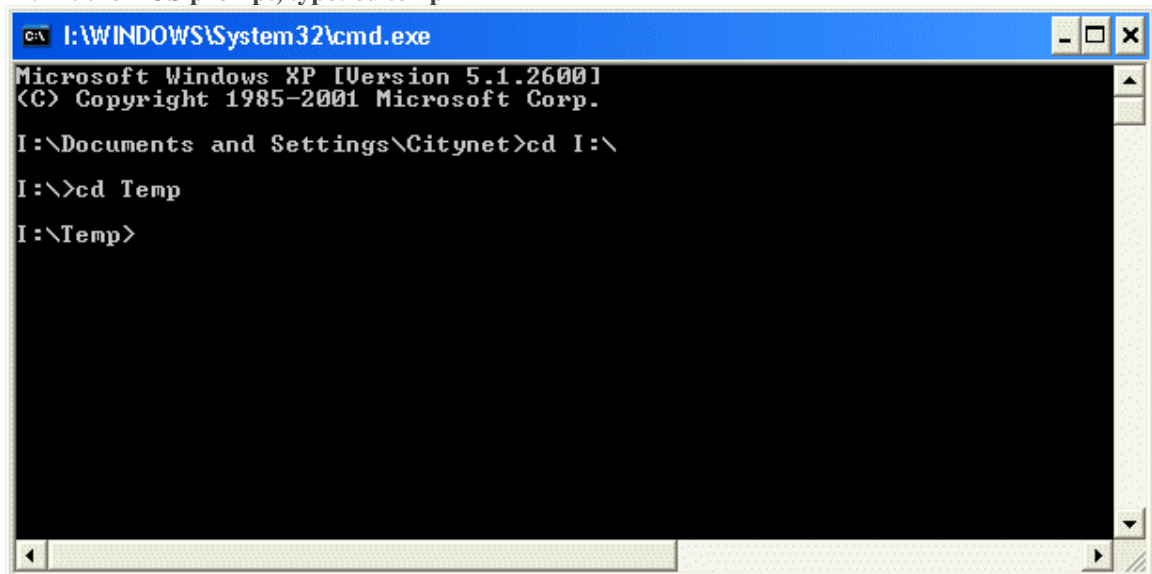
9. Type cmd in the Open field and click the OK button.



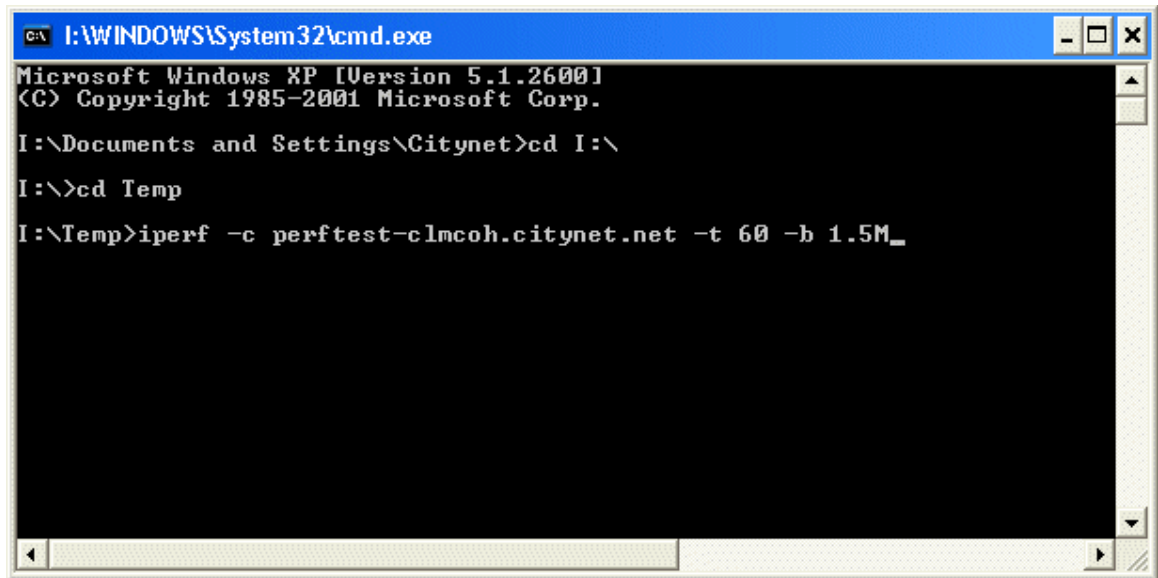
10. This will open a DOS window. at the DOS prompt, type: cd c:\



11. At the DOS prompt, type: cd temp



12. If you are testing a T1, DS1 or below, at the DOS prompt, type:
iperf -c perfctest-clmcoh.citynet.net -t 60 -b 1.5M



```
C:\ I:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

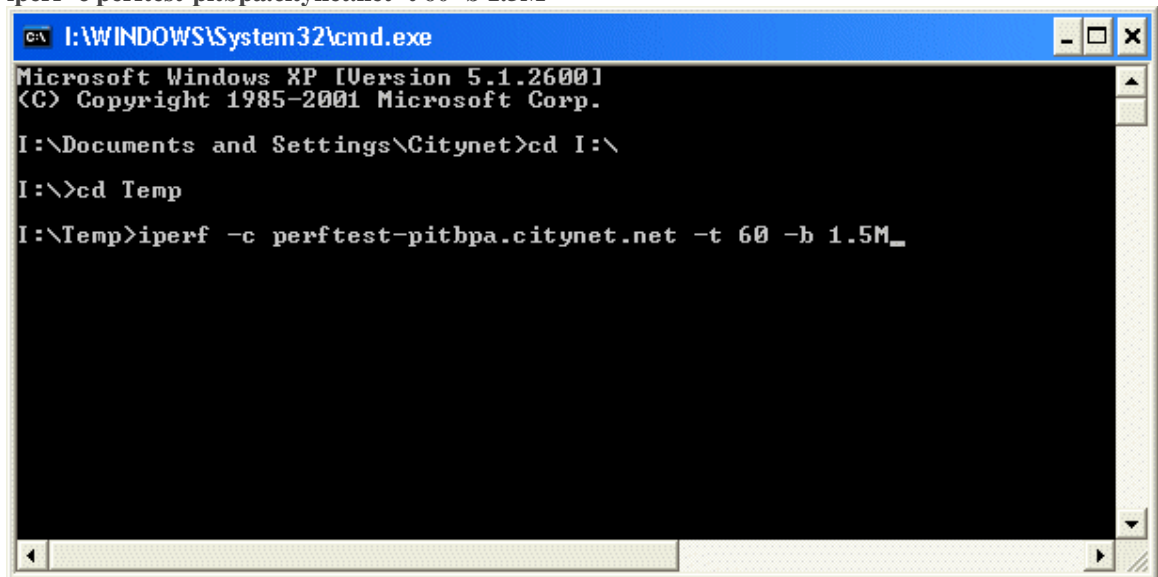
I:\Documents and Settings\Citynet>cd I:\

I:\>cd Temp

I:\Temp>iperf -c perfctest-clmcoh.citynet.net -t 60 -b 1.5M_
```

or

`iperf -c perfctest-pitbpa.citynet.net -t 60 -b 1.5M`



```
C:\ I:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

I:\Documents and Settings\Citynet>cd I:\

I:\>cd Temp

I:\Temp>iperf -c perfctest-pitbpa.citynet.net -t 60 -b 1.5M_
```

and press the ENTER key on your keyboard.

13. If you are testing a circuit larger than a T1 or DS1, contact your Citynet representative for the correct test information.
14. Upon completion of the test, forward the results to your Citynet representative via email. He or she may ask you to repeat the test periodically for monitoring purposes.
 - a. To copy the results of the test(s):
 - i. Click on the C:\ image in the top left of the DOS/CMD window.
 - ii. Click on Edit from the menu.
 - iii. Click on Select All
 - iv. Click on the C:\ image in the top left of the DOS/CMD window.
 - v. Click on Edit from the menu.
 - vi. Click on Copy.
 - iii. Paste the information into a new email, a .txt file or a Word document.

Sample Results

```
C:\>iperf -c perftest-pitbpa.citynet.net -t 60 -b 1.5M
WARNING: option -b implies udp testing
-----
Client connecting to perftest-pitbpa.citynet.net, UDP port 5001
Sending 1470 byte datagrams
UDP buffer size: 8.00 KByte (default)
-----
[1912] local 10.1.17.6 port 1762 connected with 69.43.32.27 port 5001
[ ID] Interval Transfer Bandwidth
[1912] 0.0-60.0 sec 10.7 MBytes 1.50 Mbits/sec
[1912] Server Report:
[1912] 0.0-59.8 sec 8.12 MBytes 1.14 Mbits/sec 6.124 ms 1863/ 7655 (24%)
[1912] Sent 7655 datagrams
```

Interpretation of Sample Results

```
C:\>iperf -c perftest-pitbpa.citynet.net -t 60 -b 1.5M
(This is the command line that you typed)
WARNING: option -b implies udp testing
(This is an informational statement about the test option UDP - User Datagram Protocol)
-----
Client connecting to perftest-pitbpa.citynet.net, UDP port 5001
Sending 1470 byte datagrams
(This is an information statement of your connection location, port and amount of data sent)
UDP buffer size: 8.00 KByte (default)
(Explanation of Buffer)
-----
[1912] local 10.1.17.6 port 1762 connected with 69.43.32.27 port 5001
(This is an informational statement identifying the origin and destination)
[ ID] Interval Transfer Bandwidth
[1912] 0.0-60.0 sec 10.7 MBytes 1.50 Mbits/sec
(This states that within the 60 second interval, 10.7 MBytes of data were sent or 1.50 Mbts per second.)
[1912] Server Report:
[1912] 0.0-59.8 sec 8.12 MBytes 1.14 Mbits/sec 6.124 ms 1863/ 7655 (24%)
(This states that within the 59.8 second interval, 8.12 MBytes or 1.4 Mbts per second of data were received. 1863 datagrams of the 7655 datagrams sent were lost or 24% of the total.)
[1912] Sent 7655 datagrams
(This is the total amount of data that was sent.)
```