



Title:

Most common network troubleshooting techniques

Summary/ Intro:

Network problems comes up when you list expect, and the longer it takes to identify the issue, the more emails and complaints you will get from grumpy staff or clients, asking why the problem isn't solved yet.

This are some of the guidelines on most network troubleshooting skills.

Steps:

When troubleshooting check the following

1. Hardware - When you're beginning the troubleshooting process, check all your hardware to make sure it's connected properly, turned on, and working.





2. User ipconfig - Open the command prompt and type “ipconfig” (without the quotes) into the terminal. The Default Gateway (listed last) is your router’s IP. Your computer’s IP address is the number next to “IP Address.” If your computer’s IP address starts with 169, the computer is not receiving a valid IP address. If it starts with anything other than 169, your computer is being allocated a valid IP address from your router

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Command Prompt

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : gateway.pace.net
    Link-local IPv6 Address . . . . . : fe80::5441:1d60:916e:54f4%12
    IPv4 Address. . . . . : 192.168.1.184
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.254

Tunnel adapter isatap.gateway.pace.net:

    Connection-specific DNS Suffix  . : gateway.pace.net
    Link-local IPv6 Address . . . . . : fe80::5efe:192.168.1.184%13
    Default Gateway . . . . . :

Tunnel adapter Teredo Tunneling Pseudo-Interface:

    Connection-specific DNS Suffix  . : 
    IPv6 Address. . . . . : 2001:0:9d38:6ab8:2478:139b:24a6:24f4
    Link-local IPv6 Address . . . . . : fe80::2478:139b:24a6:24f4%14
    Default Gateway . . . . . : 

C:\Users\Tester>
  
```

3. Use ping and tracert - If your router is working fine, and you have an IP address starting with something other than 169, the problems most likely located between your router and the internet. At this point, it’s time to use the **ping** tool. Try sending a ping to a well-known, large server, such as Google, to see if it can connect with your router.



```
C:\WINDOWS\system32\cmd.exe
Pinging google.com [64.233.167.99] with 32 bytes of data:
Reply from 64.233.167.99: bytes = 32, time = 1329ms, TTL = 244
Reply from 64.233.167.99: bytes = 32, time = 704ms, TTL = 244
Reply from 64.233.167.99: bytes = 32, time = 703ms, TTL = 244
Reply from 64.233.167.99: bytes = 32, time = 1391ms, TTL = 244
Ping statistics for 64.233.167.99:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)
    Approximate round trip times in milli-seconds:
        Minimum = 703ms, Maximum = 1391ms, Average = 1031.75ms
Press any key to continue . . .
```

4. Perform a DNS check - Use the command “nslookup” to determine whether there’s a problem with the server you’re trying to connect to. If you perform a DNS check on, for example, google.com and receive results such as “Timed Out,” “Server Failure,” “Refused,” “No Response from Server,” or “Network Is Unreachable,” it may indicate the problem originates in the DNS server for your destination. (You can also use nslookup to check your own DNS server.)

```
C:\Windows\system32>netsh interface tcp show global
Querying active state...

TCP Global Parameters
-----
Receive-Side Scaling State      : enabled
Chimney Offload State          : automatic
NetDMA State                    : enabled
Direct Cache Access (DCA)      : disabled
Receive Window Auto-Tuning Level : normal
Add-On Congestion Control Provider : none
ECN Capability                  : disabled
RFC 1323 Timestamps           : disabled

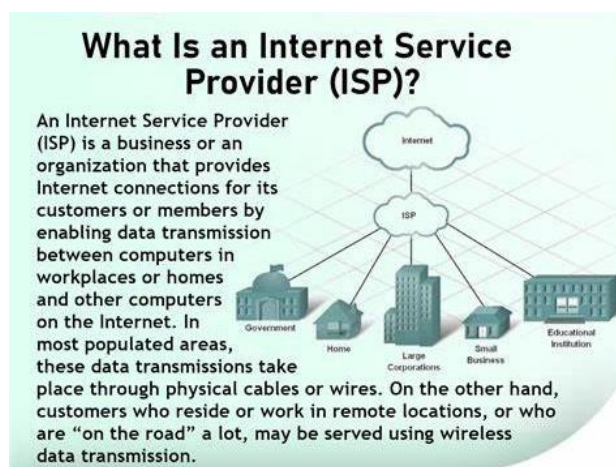
C:\Windows\system32>netsh interface tcp set global autotuning=disabled
Ok.

C:\Windows\system32>netsh interface tcp show global
Querying active state...

TCP Global Parameters
-----
Receive-Side Scaling State      : enabled
Chimney Offload State          : automatic
NetDMA State                    : enabled
Direct Cache Access (DCA)      : disabled
Receive Window Auto-Tuning Level : disabled
Add-On Congestion Control Provider : none
ECN Capability                  : disabled
RFC 1323 Timestamps           : disabled
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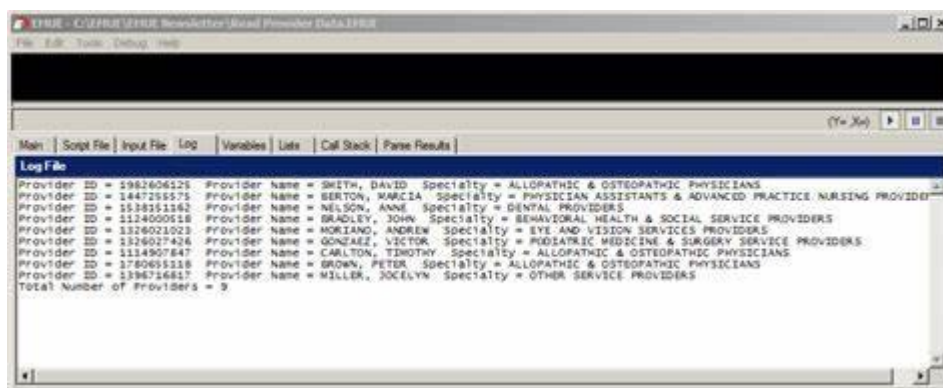
5. Contact the ISP (Internet Service Provider) - If all of the above turn up no problems, try contacting your internet service provider to see if they're having issues.



6. Check Antivirus Software - **Check on virus and malware protection.** Next, make sure your virus and malware tools are running correctly, and they haven't flagged anything that could be affecting part of your network and stopping it from functioning.



7. Review database logs. Review all your database logs to make sure the databases are functioning as expected. If your network is working but your database is full or malfunctioning, it could be causing problems that flow on and affect your network performance





Conclusion:

Network troubleshooting can be stressful at the best of times. Having clear steps to follow, an arsenal of best practices and a robust monitoring tool like Network Performance Monitor can help make the process as smooth as possible.



References (Optional):

<https://www.dnsstuff.com/network-troubleshooting-steps>

Created By:

Chris Sadiki – FSE Kusile Power Station