

# Traceroute and Ping – Internet Troubleshooting Tools

## Traceroute:

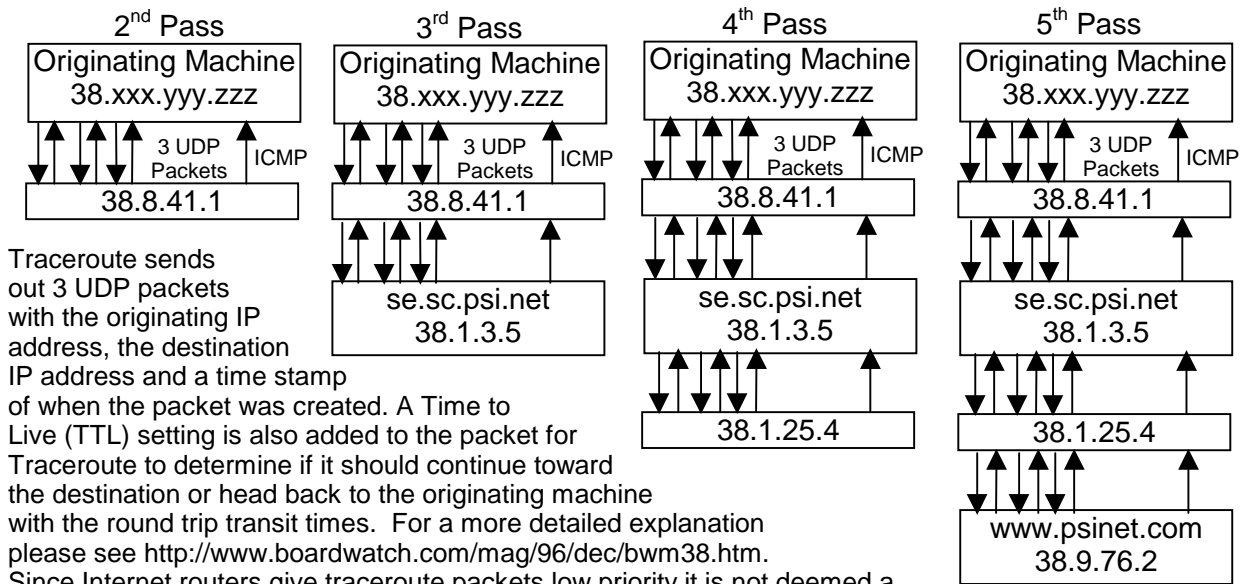
This utility can help determine where a problem might be on an internet connection. The traceroute command sends out packets from your computer or router to a remote endstation and reports back to you each step of the way. Routers receive Internet Protocol packets and pass them on. A router receives a packet, opens the packet to find the destination address, and then does a lookup in a routing table to determine where to "route" the packet. The following is the output of a traceroute session with a simple diagram showing the process: (for Win95/NT, type `tracert <destination-name/ip address>`)

Tracing route to `www.psinet.com` [`38.9.76.2`] over a maximum of 30 hops:

```

1  10 ms  10 ms  10 ms  your.domain.com [38.xxx.yyy.zzz]
2  31 ms  10 ms  10 ms  38.8.41.1
3  10 ms  20 ms  10 ms  se.sc.psi.net [38.1.3.5]
4  20 ms  20 ms  30 ms  38.1.25.4
5  10 ms  20 ms  10 ms  www.psinet.com [38.9.76.2]
  
```

Trace complete.



Traceroute sends out 3 UDP packets with the originating IP address, the destination IP address and a time stamp of when the packet was created. A Time to Live (TTL) setting is also added to the packet for Traceroute to determine if it should continue toward the destination or head back to the originating machine with the round trip transit times. For a more detailed explanation please see <http://www.boardwatch.com/mag/96/dec/bwm38.htm>. Since Internet routers give traceroute packets low priority it is not deemed a reliable tool for pinpointing problems. It should be used in conjunction with other utilities such as:

## Ping:

This utility will help verify connectivity by sending out a packet from your workstation to a remote host and return it back to you. At the prompt type `ping <destination-name/ip address>`. Please verify the following prior to running the ping command:

- The analog, ISDN or leased line is active.
- TCP/IP is configured on the workstation.
- The router is configured with a valid IP address and gateway.
- Cables are in good condition and the connections are tight.

