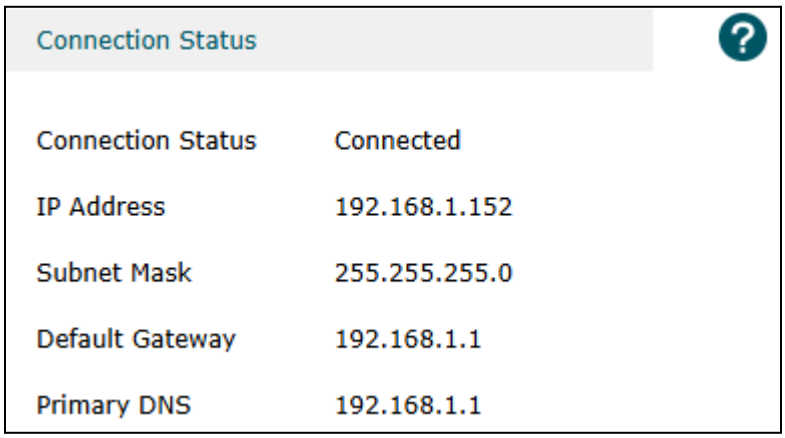
Problem Title: connectivity issues after DNS misconfig

- **Date & Time Reported**: 07/29/2025 Morning
- **Device(s) Affected**: Users on Net-B
- **Symptoms:**
    - Users on Net-A cannot ping Users on Net-B
- **Recent Changes**: **Net-A-Route**r DNS server change
- **Steps to Reproduce problem**:Misconfigure the DNS in the **Network-A-Router**:
    - Log into the **Network-A-Router** > Advanced > Network Settings > Network Connections > click on edit next to Broadband Connection (Ethernet) > scroll > settings > scroll > IPv4 DNS: click and select “use the following IPv4 DNS Addresses” > type in a DNS server > click Apply

Establish a Theory of Probable Cause

- **Initial Hypothesis**: DNS misconfiguration, firewall , Access Control
- **Reasoning:** Happened after in changed the DNS server on the Core-Router
    - Factory resetting the **Net-A-Router** assigned **Net-B-Router** a new WAN IP
- **Approach**: I checked the IP address **Network-A-Router** assigned to **Net-B-Router** WAN interface after factory resetting it.

New WAN IP:



- Check **Net-A-Router** routing table and updated it if necessary
- Check the firewalls (**Net-A-Router**, **Net-B-Router, Access Control, and end devices Firewall**)
- Check the routing tables in **Net-A-Router** & **Net-B-Router**

Troubleshooting Actions:

- After factory resetting **Net-A-Router** it assigned a new IP to the WAN interface of Network B router. (this is the IP address traffic will leave through to Network B)

Ping Comp-A from Comp-B success:

```
C:\Users\d_tester>ping 192.168.1.151

Pinging 192.168.1.151 with 32 bytes of data:
Reply from 192.168.1.151: bytes=32 time=5ms TTL=127
Reply from 192.168.1.151: bytes=32 time=4ms TTL=127
Reply from 192.168.1.151: bytes=32 time=4ms TTL=127
Reply from 192.168.1.151: bytes=32 time=7ms TTL=127

Ping statistics for 192.168.1.151:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 7ms, Average = 5ms
```

1st Tracert to Comp-B results:

```
C:\Users\daysean_labs>tracert 192.168.0.100

Tracing route to 192.168.0.100 over a maximum of 30 hops

  1    20 ms     *        3 ms  CR1000B.mynetworksettings.com [192.168.1.1]
  2     *        *        *     Request timed out.
  3     *        *        *     Request timed out.
  4     *        *        *     Request timed out.
  5     *     ^C
```

- The packet reaches **Net-A-Router** and it fails to leave :
- I Unplugged the **Net-A-Router** for 30 seconds and plugged it back in

2nd Tracert to Comp-B results:

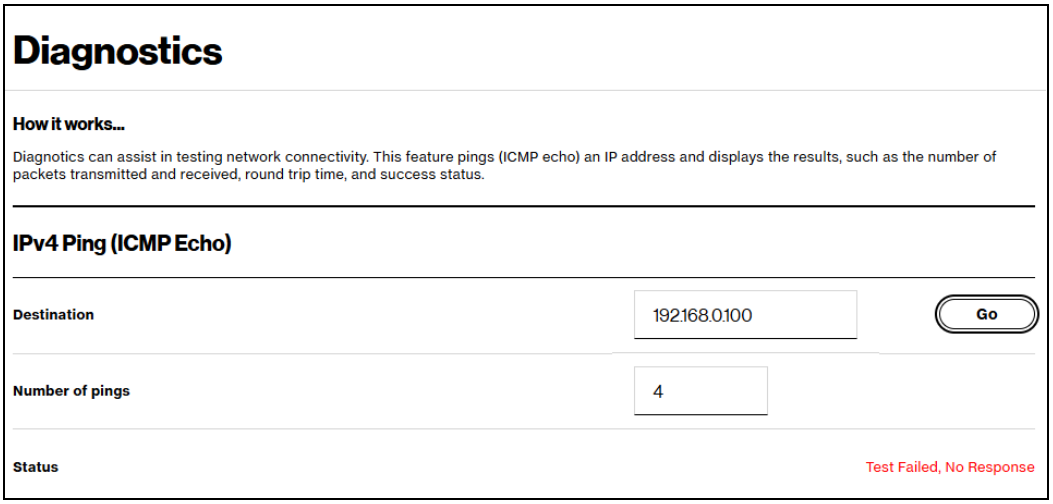
```
C:\Users\daysean_labs>tracert 192.168.0.100

Tracing route to 192.168.0.100 over a maximum of 30 hops

  1     4 ms     *       73 ms  CR1000B.mynetworksettings.com [192.168.1.1]
  2     5 ms     3 ms     3 ms  192.168.1.152
  3     *        *        *     Request timed out.
  4     *        *        *     Request timed out.
  5     *        *     ^C
```

- Now the packet leaves the **Net-A-Router** and Reaches **Net-B-Route**r through WAN IP(192.168.1.152) & it stops there
    - **What's causing this?: Net-B-Router** Firewall or Comp-B window firewall

Ping Comp-B from Net-A-Router Diagnostics results:



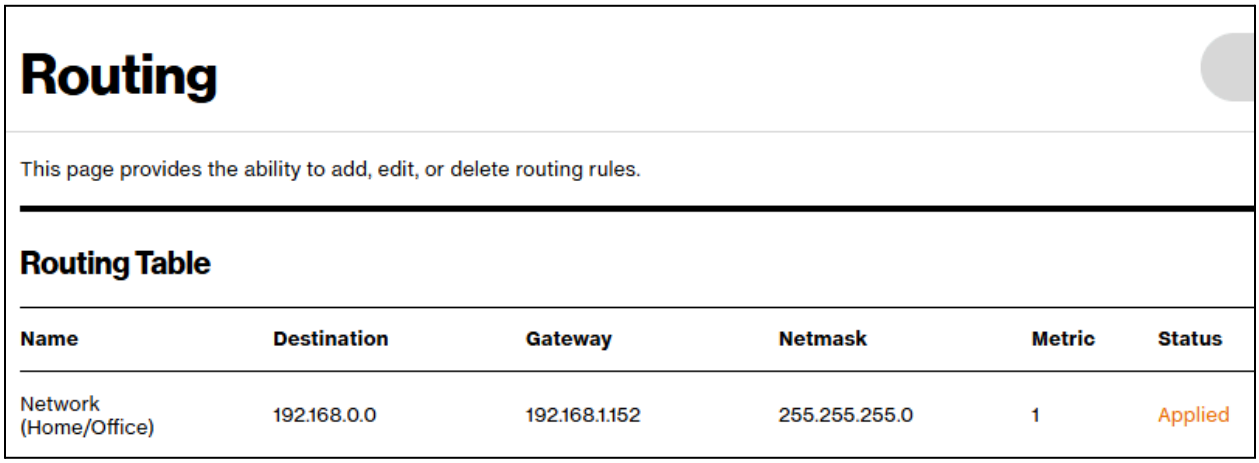
Check Comp-B firewall:
Disabled windows firewall on Comp-B completely and pinged Comp-B from Comp-A
Results: request timed out

Key Findings/Error Codes:

- **Ping Comp-B** from **Net-A-Router** Diagonistics: test failed, no response
- **1st** traceroute to Comp-B showed that ping packet reaches Core-Router but it doesn't reach Net-B-router
- **2nd** traceroute to Comp-B showed that the ping packet reaches the **Net-A-Router** and forwards its to **Net-B-route**r and it stops: which means firewall (**Net-B-Router-Firewall** or Comp-B firewall)

Date/Time Resolved: 07/29/2025

Solution implemented:
Updated **Net-A-Router** Routing table with the new WAN IP: 192.168.1.152 from **Net-A-Router**



- Updated the Gateway to Net-B with **Net-B-Router** WAN IP which was assigned by the **Net-A-Router** after factory reset

Created a firewall inbound rule allowing ICMP and pinged Comp-B from Comp-A results
Results:

```
C:\Users\daysean_labs>ping 192.168.0.100

Pinging 192.168.0.100 with 32 bytes of data:
Reply from 192.168.0.100: bytes=32 time=6ms TTL=126
Reply from 192.168.0.100: bytes=32 time=4ms TTL=126
Reply from 192.168.0.100: bytes=32 time=5ms TTL=126
Reply from 192.168.0.100: bytes=32 time=5ms TTL=126

Ping statistics for 192.168.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 6ms, Average = 5ms
```

Verification:
Traroute to Comp-A from Comp-B results:

```
C:\Users\d_tester>tracert 192.168.1.151

Tracing route to 192.168.1.151 over a maximum of 30 hops

  1    <1 ms    <1 ms    <1 ms  192.168.0.1
  2     1 ms     1 ms     2 ms  192.168.1.1
  3     4 ms     5 ms     3 ms  192.168.1.151

Trace complete.
```

- Ping packet leaves to **net-b-router** then it reaches net-a-router then it reaches Comp-A

Traroute to Comp-B from Comp-A results:

```
C:\Users\daysean_labs>tracert 192.168.0.100

Tracing route to 192.168.0.100 over a maximum of 30 hops

  1     3 ms     2 ms     2 ms  CR1000B.mynetworksettings.com [192.168.1.1]
  2     5 ms     3 ms     2 ms  192.168.1.152
  3     5 ms     4 ms     3 ms  192.168.0.100

Trace complete.
```

- Ping packet leaves to **net-a-router** through the WAN IP that leads to Net-B to **Net-B-Router** then it reaches Comp-B

Notes

Lessons Learned/Preventative Measures: use tracert & check firewalls