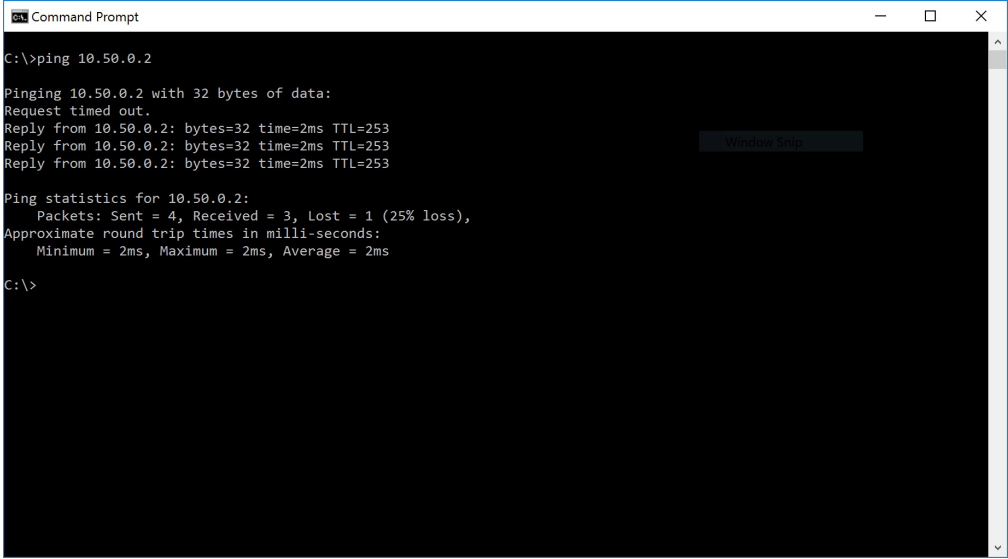# Why Does the First Ping Usually Fail?

When pinging a remote device, why does the first ping usually fail to get a response in most, but not all cases?

```
Command Prompt                                                    —    □    ×

C:\>ping 10.50.0.2

Pinging 10.50.0.2 with 32 bytes of data:
Request timed out.
Reply from 10.50.0.2: bytes=32 time=2ms TTL=253
Reply from 10.50.0.2: bytes=32 time=2ms TTL=253            Window Snip
Reply from 10.50.0.2: bytes=32 time=2ms TTL=253

Ping statistics for 10.50.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 2ms, Average = 2ms

C:\>
```

The reason the first ping usually fails is that the remote router in that LAN has to put the ping request on hold to send out an ARP broadcast to learn the MAC address of the remote device, then wait for a response, and then send the first ping through. This delay is usually too long. That's why the initial ping request from your PC times out and declares that the ping failed.

Subsequent ping requests are successful because the ARP cache in the remote router is now valid, and the request can go all the way through.

This first ping failing is not a defect in the network, as there is no fault to remedy, it is normal for networks to operate this way.

However, if the remote device has been communicated with in the past five minutes, the ARP information is still in the remote router's ARP cache. In this case, the first ping might not fail.

Note: If you are pinging a router's own interface, there is no ARP cache that needs to be updated, as the router knows its own interface. In this case, the first ping should always reply successfully.