

- 1) ICMP allows information to be carried between what types of devices (e.g. router to...)?

Router to Router

Router to Source Host

Source Host to Destination Host

Destination Host to Source Host

- 2) Where is the ICMP carried?

The ICMP message is in the payload of the IP datagram. The format of the information in the payload depends on the type of ICMP message being sent.

- 3) If an IPv4 datagram had to traverse 15 routers to reach its destination host, and I set the IPv4 header TTL field to 10, what would happen?

The datagram would be dropped by the 10<sup>th</sup> router in the path, and that router would send an ICMP Type 11 (Time Exceeded), Code 0 (TTL expired in transit) message back to the sending host.

- 4) Give four common usages of ICMP.

- PING requests use ICMP messages with echo requested.
- Traceroute (tracert) uses a series of ICMP messages, each with an incrementing TTL, to trace the path from source to destination.
- Destination Network Unreachable is extremely common if your internet goes down somewhere.
- Destination Port Unreachable is common if a web server goes down.
- Internet Core Routing Algorithms use ICMP to establish paths and active router listings.
- MANY other answers possible

- 5) If you never have before, use ping and traceroute!

Now you're one of the cool kids!