Explanation of ICMP message types

Echo Request, Echo Reply

Used to test destination accessibility and status. A host sends an **Echo Request** and listens for a corresponding **Echo Reply**. This is most commonly done using the `ping` command.

Destination Unreachable, Echo Reply

Sent by a router when it cannot deliver an IP datagram. A datagram is the unit of data, or packet, transmitted in a TCP/IP network.

Source Quench

Sent by a host or router if it is receiving data too quickly for it to handle. The message is a request that the source reduce its rate of datagram transmission.

Redirect Message

Sent by a router if it receives a datagram that should have been sent to a different router. The message contains the address to which the source should direct future datagrams. This is used to optimize the routing of network traffic.

Router Advertisement, Router Solicitation

Allow hosts to discover the existence of routers. Routers periodically broadcast their IP addresses via **Router Advertisement** messages. Hosts may also request a router address by broadcasting a **Router Solicitation** message to which a router

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Time Exceeded

Sent by a router if the datagram has reached the maximum limit of routers through which it can travel.

Parameter Problem

Sent by a router if a problem occurs during the transmission of a datagram such that it cannot complete processing. One potential source of such a problem is invalid datagram header.

Timestamp Request, Timestamp Reply

Used to synchronize the clocks between hosts and to estimate transit time.

Information Request, Information Reply

Obsolete. These messages were used earlier by hosts to determine their inter-network addresses, but are now considered outdated and should not be used.

Address Mask Request, Address Mask Reply

Used to find the mask of the subnet (i.e. what address bits define the network). A host sends an **Address Mask Request** to a router and receives an **Address Mask Reply** in return.