

NAME

icmp – Send ICMP messages to hosts on the Internet.

DESCRIPTION

The **icmp** command allows to send Internet Control Messages (ICMP) (RFC 792, RFC 1122) to a list of hosts on the Internet. ICMP messages can be used to check whether hosts are reachable. The **icmp command** can also be used to trace routes to Internet hosts by sending UDP datagrams to unused UDP ports and interpreting the ICMP responses (Van Jacobsen and Steve Deering algorithm).

ICMP COMMAND

The **icmp** command always accepts a list of target hosts. ICMP messages are sent to the targets in a round-robin fashion which allows to check entire IP address ranges or a list of core routers efficiently. The user of the **icmp** command should be careful not to flood a network with ICMP requests.

icmp [*options*]

Invoking the **icmp** command with options but without any command arguments allows to retrieve and change the default values. See the description of supported options below. Default values are bound to a Tcl interpreter which allows to have multiple Tcl interpreter with different defaults.

icmp [*options*] **echo** *hosts*

The **icmp echo** command can be used to test the reachability of IP devices by sending ICMP echo requests to the *hosts*. The command returns a list of host / round trip time pairs. The round trip time is returned in milliseconds. A negative round trip time indicates that a host did not respond in the timeout interval.

icmp [*options*] **mask** *hosts*

The **icmp mask** command sends ICMP mask requests and returns a list of host / netmask pairs. The mask will be set to 0.0.0.0 if a host does not respond to ICMP mask requests.

icmp [*options*] **timestamp** *hosts*

The **icmp timestamp** command retrieves timestamps using the ICMP timestamp request. This command returns an estimate of the time difference between local time and the time on the hosts given in *hosts*. The command returns a list of host / time offset pairs. The time offset is returned in milliseconds. An empty time offset indicates that a host did not respond in the timeout interval.

icmp [*options*] **ttl** *num* *hosts*

The **icmp ttl** command, which may not be supported on every operating system, sends a UDP packet to an unused port number with the time to live field of the IP header set to *num*. This command returns a list of host / round trip time pairs, where the host is the IP device being *num* hops away. The round trip time is returned in milliseconds. A negative round trip time indicates that a host did not respond in the timeout interval.

icmp [*options*] **trace** *num* *hosts*

The **icmp trace** command works similar to the **icmp ttl** command but it always returns the destination address even when the responding host chooses another interface with a different IP address to send the reply. This can be used to trace a route to a host since the command returns the host that discards the packet if it does not reach the destination.

ICMP OPTIONS

The following options control how ICMP requests are sent and how the **icmp** command deals with lost ICMP packets.

-timeout *time*

The **-timeout** option defines the time the **icmp command** will wait for a response. The *time* is defined in seconds with a default of 5 seconds.

-retries *number*

The **-retries** option defines how many times a request is retransmitted during the timeout interval. The default *number* of retries is 2.

-delay *time*

The **-delay** option defines the minimum delay between two outgoing ICMP packets. The *time* is defined in milliseconds with a default delay of 0 milliseconds. Delays are useful to reduce the load on intermediate devices like gateways or bridges.

-size *number*

The **-size** option allows to control the size of ICMP packets. The *number* defines the size of ICMP packets in bytes with a default size of 64 bytes. Sizes smaller than 64 bytes are silently rounded to 64 bytes.

BUGS

The **icmp** command requires the setuid root program ntping(8) because sending icmp packets requires access to raw sockets on most operating systems.

SEE ALSO

scotty(1), ntping(8), Tnm(n), Tcl(n)

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