Ping and Traceroute

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Add your content using `reStructuredText` syntax. See the reStructuredText documentation for details.

CHAPTER

ONE

MY_PING MODULE

my_ping.py

Python implementation of ping command. Sends ICMP echo requests and measures round-trip time.

Usage:
python my_ping.py [-c COUNT] [-i WAIT] [-s PACKETSIZE] [-t TIMEOUT] destination

my_ping.**handle_interrupt**(*signum*, *frame*, *sent_count*, *received_count*, *rtts*, *destination*)

Handle Ctrl+C

Parameters:
signum: Signal number frame: Current frame sent_count: Total packets sent received_count: Total responses received rtts: List of round-trip times destination: Target IP

my_ping.**main**()

Parse command line arguments and do ping. ICMP echo requests and displays results.

my_ping.**print_stats**(*sent_count*, *received_count*, *rtts*, *destination*)

Print ping summary

Parameters:
sent_count: Total number sent received_count: Total number received rtts: List of round-trip times destination: Target hostname or IP

my_ping.**send_ping**(*dest_ip*, *timeout*, *packet_size*, *sent_count*, *received_count*)

Send a ping and wait for response

Parameters:
dest_ip: Destination IP address timeout: Maximum wait time for response packet_size: Size sent_count: Number of packets sent received_count: Number of responses received

Returns:
tuple: (success_bool, rtt_ms)

CHAPTER

TWO

MY_TRACEROUTE MODULE

my_traceroute.py

Python implementation of traceroute command. Sends UDP probes with incrementing TTL values.

Usage:
sudo python my_traceroute.py [-n] [-q NQUERIES] [-S] destination

my_traceroute.**main**()

Parse arguments and execute traceroute Shows network path with response times for each hop

my_traceroute.**send_probe**(*send_socket*, *recv_socket*, *dest_ip*, *ttl*, *port*, *timeout*)

Send a probe and wait for response

Parameters:
send_socket: Socket for probes recv_socket: Socket for responses dest_ip: Destination IP ttl: Time-to-live port: destination port timeout: Maximum wait time for response

Returns:
tuple: (responding_ip, elapsed_time_ms)

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