Title:
Passing Cisco CCNA And CCNP Exams: Ping And Extended Ping

Word Count:
620

Summary:
Ping seems simple enough, but there are details you must know about ping and
extended ping to pass your CCNA and CCNP exams and be an effective network
engineer. Learn these vital details from Chris Bryant, CCIE #12933.

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Article Body:
I often tell CCNA and CCNP candidates that you do your best learning when you
screw something up. I often get a funny look right after I say that, but the
only way to develop your Cisco troubleshooting skills - the skills you'll need
to pass your Intro, ICND, and CCNP exams - is by actually fixing configurations.
Since your employer will take a dim view of you practicing these skills on his
or her network, you better do so on your home lab!
Three essential tools for networking and CCNA/CCNP exam success are ping,
extended ping, and traceroute. Today we're going to take a look at the ping
that we're used to using for LAN issues, and the extended ping.

We're all familiar with "basic" ping, where you use the ping command followed by
the IP address you want to confirm IP connectivity with. When you've got
connectivity, you will see five exclamation points, as seen here:

R1#ping 172.12.123.2

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 172.12.123.2, timeout is 2 seconds:

!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 68/68/72 ms

The default source IP address for ping is the IP address closest to the

destination IP address. Other defaults - five ICMP packets will be sent (that's why you see five exclamation points), and they're sent two seconds apart.

That's fine for many basic situations, but as you progress through your networking career and most advanced scenarios in your CCNA / CCNP studies, you will want to change some of these defaults. What could you do if you wanted to send 10,000 pings? What if you needed your router's loopback address to be the source IP address for the pings? What if you wanted to send them five seconds apart, instead of two?

That's where extended ping comes in. To use extended ping, just type "ping" and hit enter. (Note that you cannot use extended ping in user exec mode - you must be in enable mode to do so.)

R1>ping

% Incomplete command.

"incomplete command" indicates that the router is waiting for an IP address; you can't use extended ping in user exec mode.

R1>enable

R1#ping

Protocol [ip]:

Target IP address: 172.16.123.1

Repeat count [5]: 1000

Datagram size [100]:

Timeout in seconds [2]:

Extended commands [n]: y

Source address or interface: loopback0

Type of service [0]:

Set DF bit in IP header? [no]:

Validate reply data? [no]:

Data pattern [0xABCD]:

Loose, Strict, Record, Timestamp, Verbose[none]:

Sweep range of sizes [n]:

Type escape sequence to abort.

Sending 1000, 100-byte ICMP Echos to 172.16.123.1, timeout is 2 seconds:

Packet sent with a source address of 1.1.1.1

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In this example, I sent 1000 ICMP packets to an address that doesn't exist, so I am getting periods instead of exclamation points. This illustration shows you the many options you have with extended ping.

Now that I've sent those 1000 pings, let's say that I want to stop that process. At the beginning of the basic ping output, you see this phrase:
Type escape sequence to abort.

This escape sequence works for ping, extended ping, and traceroute. Funny thing, though - Cisco doesn't tell you what the escape sequence is! One day, this will really come in handy. The escape sequence is <CTRL-SHIFT-6>, TWICE in rapid succession.

After I used it in this example, the pings stopped and I got this message:

Success rate is 0 percent (0/192)

The ping stopped after 192 ICMP packets were sent.

This keystroke takes a little practice, so practice it in your home lab. Knowing how to use extended ping will really come in handy on your CCNA and CCNP exams as well as your real-life networking job, and knowing how to stop an extended ping will as well!