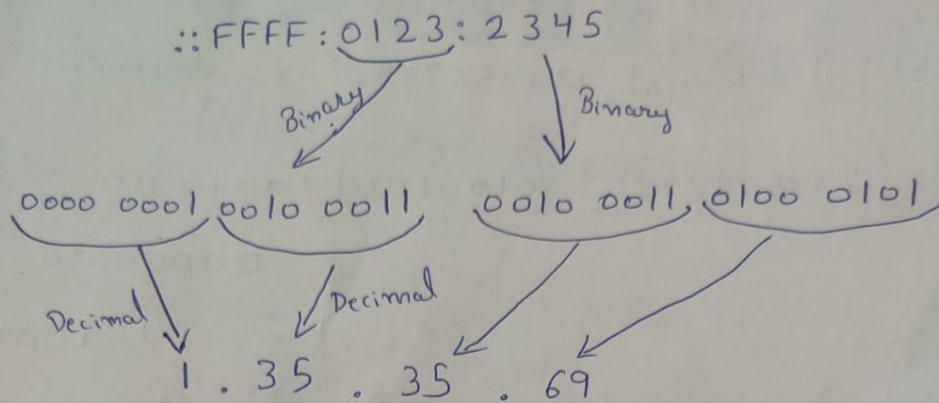


a) IPv6 address →



IPv4 Address → 1.35.35.69

So

>ping ::FFFF:0123:2345

There the conversion takes place from IPv6 to IPv4
to 1.35.35.69

```
C:\Users\itsme>ping ::FFFF:0123:2345

Pinging 1.35.35.69 with 32 bytes of data:
Request timed out.
Request timed out.

Ping statistics for 1.35.35.69:
    Packets: Sent = 2, Received = 0, Lost = 2 (100% loss),
```

Figure 1 CMD OUTPUT

b) Conversion of Decimal to dotted decimal

Eg.

>ping 1234567890

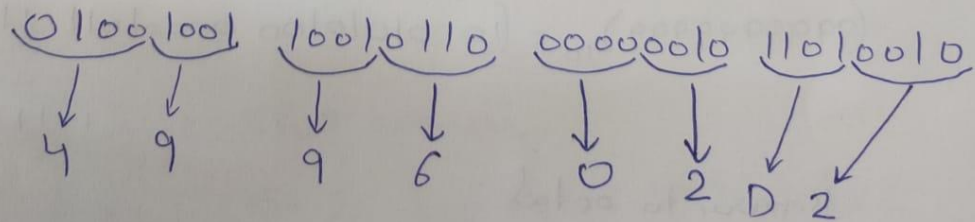
Step-1 Convert '1234567890' to Binary.

$$(1234567890)_{10} = (01001001\ 10010110\ 00000010\ 11010010)_2$$

Step-2

For IPv6

→ Convert Binary to Hexadecimal



::FFFF:4996:02D2

```
C:\Users\itsme>ping 1234567890

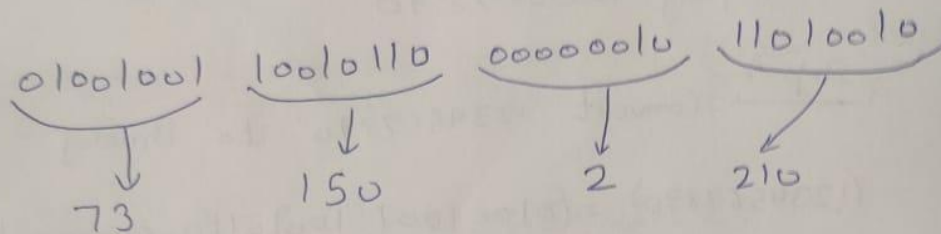
Pinging 73.150.2.210 with 32 bytes of data:
Reply from 73.150.2.210: bytes=32 time=329ms TTL=45
Reply from 73.150.2.210: bytes=32 time=386ms TTL=45

Ping statistics for 73.150.2.210:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 329ms, Maximum = 386ms, Average = 357ms
```

Figure 2 CMD OUTPUT

For IPv4

→ Convert Binary to ~~Octal~~ decimal in chunks of 8



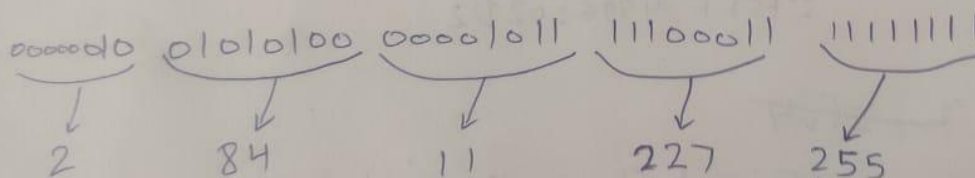
IPv4 address = 73.150.2.210

Q. Does it always have to be 10 digits in decimal?
Can it be more?

A. Eg. >ping 9999999999

$(9999999999)_{10} = (10\ 01010100\ 00001011\ 11100011\ 11111111)_2$

Binary to ~~Octal~~ decimal in chunks of 8



But System pings to IPv4 address → 84.11.227.255
It depicts that it discards extra bits in IPv4 format.
That means 2^{32} is not the limit for IPv4 pings.
 $2^{32} = 4294967296$ and $9999999999 > 2^{32}$
Maximum number of digits can't be specified.

```
C:\Users\itsme>ping 9999999999
```

```
Pinging 84.11.227.255 with 32 bytes of data:
```

Figure 3 CMD OUTPUT

IPv6 :-

Binary to hexadecimal →

$\begin{array}{cccccccc} \underbrace{00000001}_0 & \underbrace{01010100}_5 & \underbrace{00001011}_B & \underbrace{11100011}_E & \underbrace{11111111}_F & \underbrace{11111111}_F \\ & & & & & & & \end{array}$

Equivalent IPv6 :- ::2:540B:E3FF