

Ex. No. 04

Customized ping

Date: 19-08-2025

Aim:

To develop a customized ping command to test the server connectivity

Algorithm:

1. Start
2. Initialize host, port, count, and an empty list times.
3. Repeat count times.
 - Create a socket
 - Record start time.
 - Try to connect to chosen port.
 - Record end time.
 - Close the socket
 - Compute RTT - (end-Start) * 1000ms and store it in times
 - If connection fails --> print "Request times out"
4. After loop, if times is not empty:
 - calculate min RTT, max RTT, average RTT
5. Print the results.
6. End

```
import socket
```

```
import time
```

```
host = "google.com" # you can change this
```

```
port = 80 # HTTP port
```

```
count = 4 # number of pings
```

```
for i in range(count):
    try:
        s = socket.socket()
        start = time.time()
        s.connect((host, port))
        end = time.time()
        s.close()
        print(f'Reply from {host}: time={((end-start)*1000:.2f} ms')
    except Exception:
        print("Request timed out")
```

Customized Ping Program to Measure Min, Max, and Average RTT

```
import socket, time
```

```
host = "google.com"
```

```
port = 80
```

```
count = 4
```

```
times = []
```

```
for i in range(count):
```

```
    try:
```

```
        s = socket.socket()
```

```
        start = time.time()
```

```
        s.connect((host, port))
```

```
        end = time.time()
```

```
        s.close()
```

```
        rtt = (end - start) * 1000
```

```
        times.append(rtt)
```

```
print(f'Reply from {host}: time={rtt:.2f} ms')

except:

    print("Request timed out")

if times:

    print("\nMin RTT =", min(times), "ms")
    print("Max RTT =", max(times), "ms")
    print("Avg RTT =", sum(times)/len(times), "ms")
```

```
*****
```

Sample Output

Basic ping:

```
Reply grom google.com: time = 0.83ms
Reply grom google.com: time = 0.03ms
Reply grom google.com: time = 1.38ms
```

customized ping command

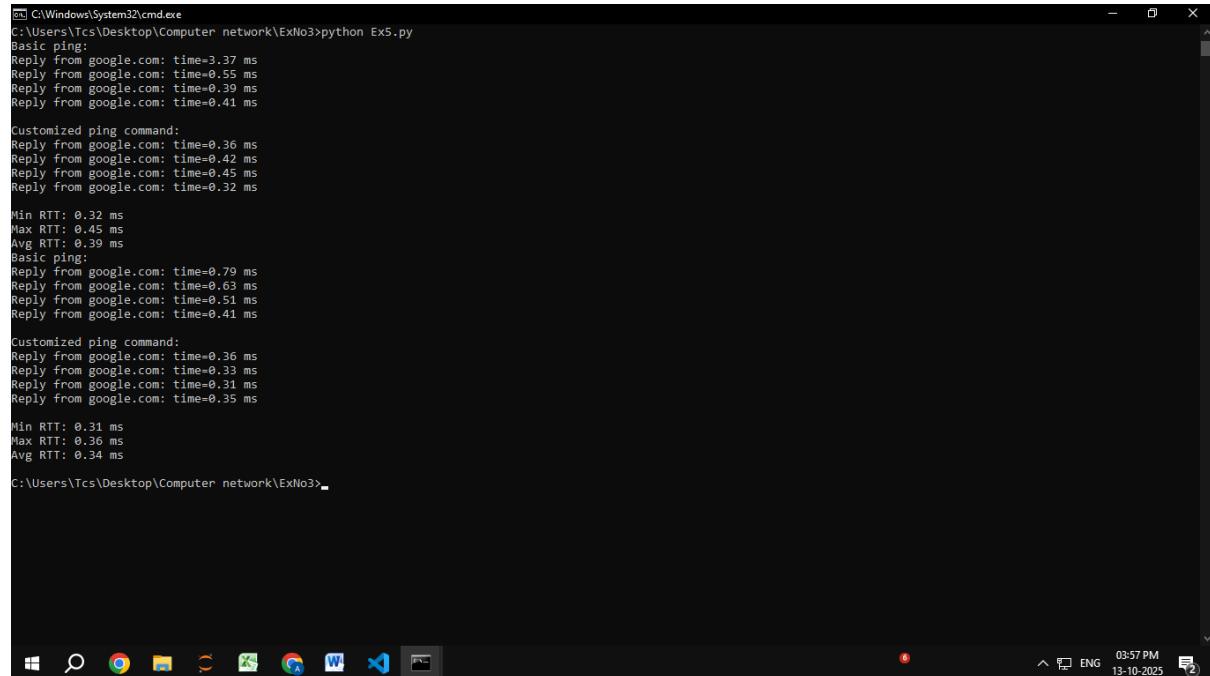
```
Reply grom google.com: time = 3.11ms
Reply grom google.com: time = 0.99ms
Reply grom google.com: time = 1.35ms
```

min RTT : 0.11ms

max RTT : 3.11ms

avg RTT : 1.09ms

Output



The screenshot shows a Windows Command Prompt window titled 'cmd.exe' with the path 'C:\Windows\System32\cmd.exe'. The command run is 'C:\Users\Tcs\Desktop\Computer network\ExNo3>python Ex5.py'. The output displays three sets of ping results to 'google.com' with increasing packet sizes (32, 36, and 39 ms). Each set includes individual replies and summary statistics (Min, Max, Avg RTT).

```
C:\Windows\System32\cmd.exe
C:\Users\Tcs\Desktop\Computer network\ExNo3>python Ex5.py
Basic ping:
Reply from google.com: time=3.37 ms
Reply from google.com: time=0.55 ms
Reply from google.com: time=0.39 ms
Reply from google.com: time=0.41 ms

Customized ping command:
Reply from google.com: time=0.36 ms
Reply from google.com: time=0.42 ms
Reply from google.com: time=0.45 ms
Reply from google.com: time=0.32 ms

Min RTT: 0.32 ms
Max RTT: 0.45 ms
Avg RTT: 0.39 ms

Basic ping:
Reply from google.com: time=0.79 ms
Reply from google.com: time=0.63 ms
Reply from google.com: time=0.51 ms
Reply from google.com: time=0.41 ms

Customized ping command:
Reply from google.com: time=0.36 ms
Reply from google.com: time=0.33 ms
Reply from google.com: time=0.31 ms
Reply from google.com: time=0.35 ms

Min RTT: 0.31 ms
Max RTT: 0.36 ms
Avg RTT: 0.34 ms

C:\Users\Tcs\Desktop\Computer network\ExNo3>
```

Result:

Thus the developed a customized pind program using python socket programming to test server connectivity and measure round-trip time (RTT).