

EX NO:10b Customized ping command to test the server connectivity using socket**Date:22.9.24****Aim:**

To develop a ping program to test server connectivity using socket.

Algorithm:**Servers.py**

1. Import the socket package
2. Initialize local IP address and local port
3. Create a socket
4. Bind the IP address and port number
5. Receive client message and send reply

Clients.py

1. Import the socket package
2. Initialize server IP address and port
3. Create a socket
4. Start the timer and send message
5. Receive reply and stop timer

Server Program:

```
import socket
```

```
def start_server(host='127.0.0.1', port=12345):
```

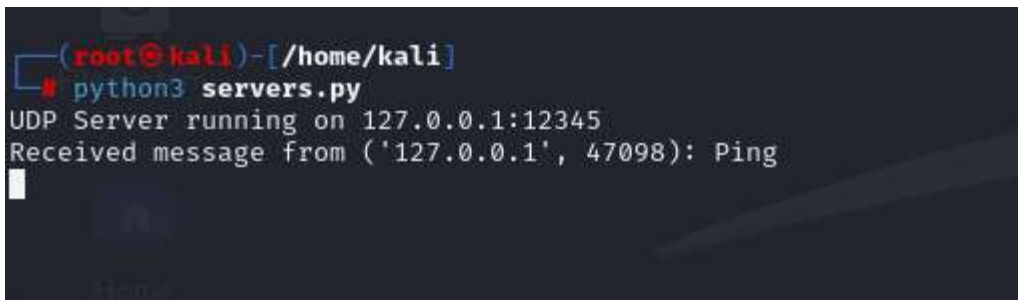
```
    with socket.socket(socket.AF_INET, socket.SOCK_DGRAM) as s:
```

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

```
        print(f"UDP Server running on {host}:{port}")
```

```
while True:
    data, addr = s.recvfrom(1024)
    print(f"Received message from {addr}: {data.decode()}")
    s.sendto(b'Pong', addr)

if __name__ == "__main__":
    start_server()
```

Output:

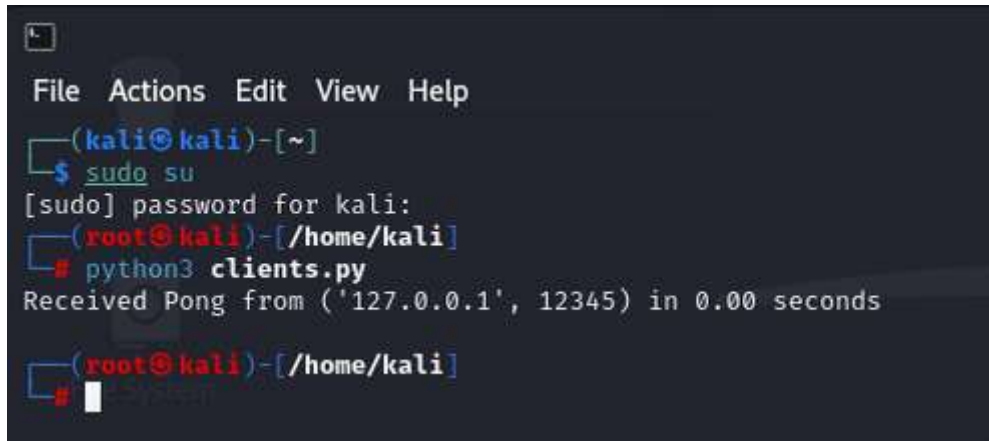
```
(root@kali) - [/home/kali]
python3 servers.py
UDP Server running on 127.0.0.1:12345
Received message from ('127.0.0.1', 47098): Ping
```

Client Program:

```
import socket
import time

def ping_server(host='127.0.0.1', port=12345):
    with socket.socket(socket.AF_INET, socket.SOCK_DGRAM) as s:
        try:
            s.settimeout(2)
            start = time.time()
            s.sendto(b'Ping', (host, port))
            data, addr = s.recvfrom(1024)
            end = time.time()
            print(f"Received {data.decode()} from {addr} in {end - start:.2f} seconds")
        except socket.timeout:
            print("Request timed out")
```

```
if __name__ == "__main__":  
    ping_server()
```

Output:A terminal window with a dark background and light-colored text. The window has a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. The prompt is '(kali㉿kali)-[~]'. The user enters '\$ sudo su'. The prompt changes to '[sudo] password for kali:'. The user enters '(root㉿kali)-[/home/kali]'. The user enters '# python3 clients.py'. The output is 'Received Pong from ('127.0.0.1', 12345) in 0.00 seconds'. The prompt returns to '(root㉿kali)-[/home/kali]'. The user enters '#'.

```
(kali㉿kali)-[~]  
$ sudo su  
[sudo] password for kali:  
(root㉿kali)-[/home/kali]  
# python3 clients.py  
Received Pong from ('127.0.0.1', 12345) in 0.00 seconds  
(root㉿kali)-[/home/kali]  
#
```

Result:

Ping program to test server connectivity using socket is verified.