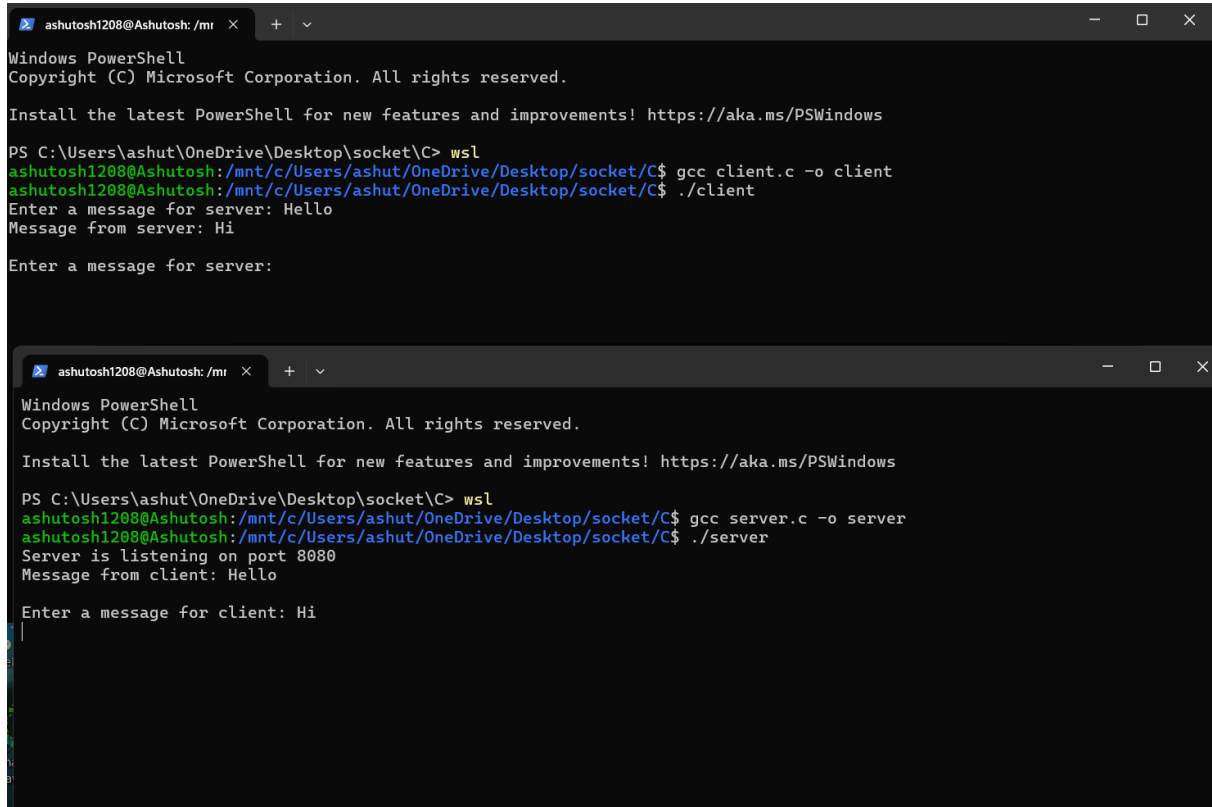


CAPSTONE-4

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Regd No: 2141004162

socket-local/c



The image shows two screenshots of a Windows PowerShell terminal window. The top screenshot shows the user navigating to a directory and compiling a C client program. The bottom screenshot shows the user compiling a C server program and then running it, which receives a message from the client.

```
ashutosh1208@Ashutosh: /mi x + v
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\ashut\OneDrive\Desktop\socket\C> wsl
ashutosh1208@Ashutosh: /mnt/c/Users/ashut/OneDrive/Desktop/socket/C$ gcc client.c -o client
ashutosh1208@Ashutosh: /mnt/c/Users/ashut/OneDrive/Desktop/socket/C$ ./client
Enter a message for server: Hello
Message from server: Hi

Enter a message for server:
```

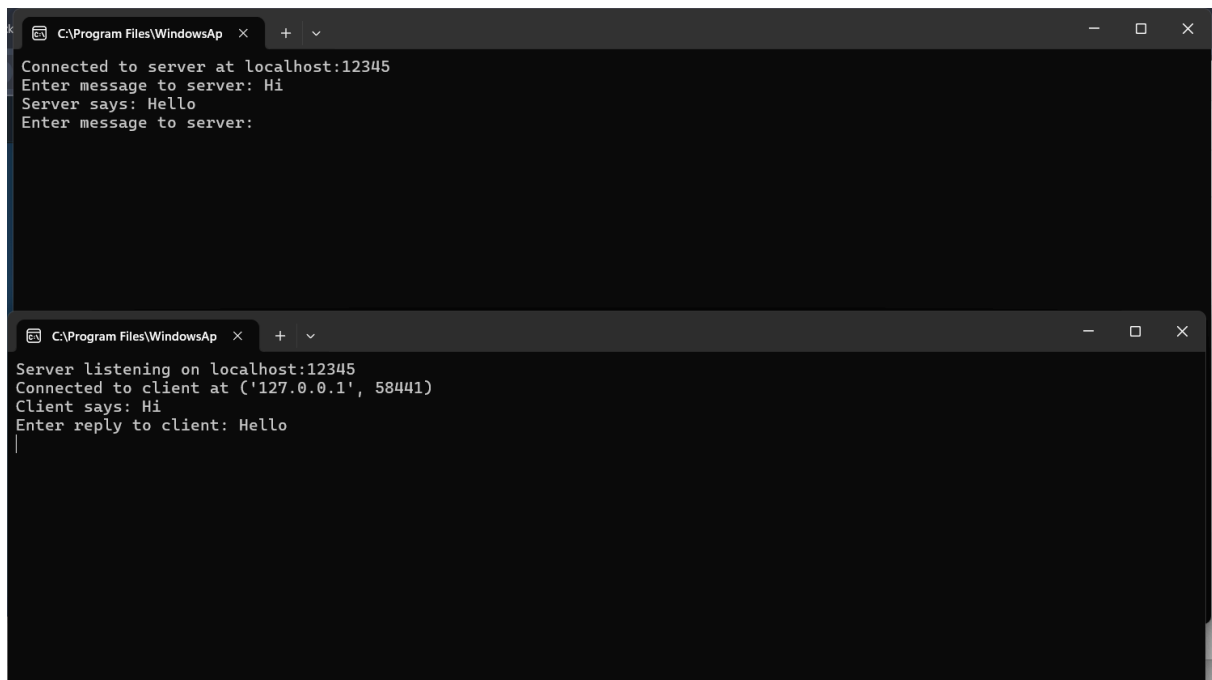
```
ashutosh1208@Ashutosh: /mi x + v
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\ashut\OneDrive\Desktop\socket\C> wsl
ashutosh1208@Ashutosh: /mnt/c/Users/ashut/OneDrive/Desktop/socket/C$ gcc server.c -o server
ashutosh1208@Ashutosh: /mnt/c/Users/ashut/OneDrive/Desktop/socket/C$ ./server
Server is listening on port 8080
Message from client: Hello

Enter a message for client: Hi
```

socket-local/python



The image shows two screenshots of a Windows command prompt window. The top screenshot shows the client program running and sending a message to the server. The bottom screenshot shows the server program running, listening for connections, and replying to the client.

```
C:\Program Files\WindowsAp x + v
Connected to server at localhost:12345
Enter message to server: Hi
Server says: Hello
Enter message to server:
```

```
C:\Program Files\WindowsAp x + v
Server listening on localhost:12345
Connected to client at ('127.0.0.1', 58441)
Client says: Hi
Enter reply to client: Hello
```

socket-docker/c

```
Command Prompt - docker-c x + v
Microsoft Windows [Version 10.0.22631.5189]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ashut>cd "C:\Users\ashut\OneDrive\Desktop\socket - docker"

C:\Users\ashut\OneDrive\Desktop\socket - docker>cd c

C:\Users\ashut\OneDrive\Desktop\socket - docker>docker-compose run server
time="2025-04-10T13:02:48+05:30" level=warning msg="C:\\Users\\ashut\\OneDrive\\Desktop\\socket - docker\\c\\docker-compose.yml: the attribute 'version' is
obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 1/1
  ✓Network c_chatnet Created 0.1s
Server waiting for connection...

Command Prompt - docker-c x + v
Microsoft Windows [Version 10.0.22631.5189]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ashut>cd "C:\Users\ashut\OneDrive\Desktop\socket - docker"

C:\Users\ashut\OneDrive\Desktop\socket - docker>cd c

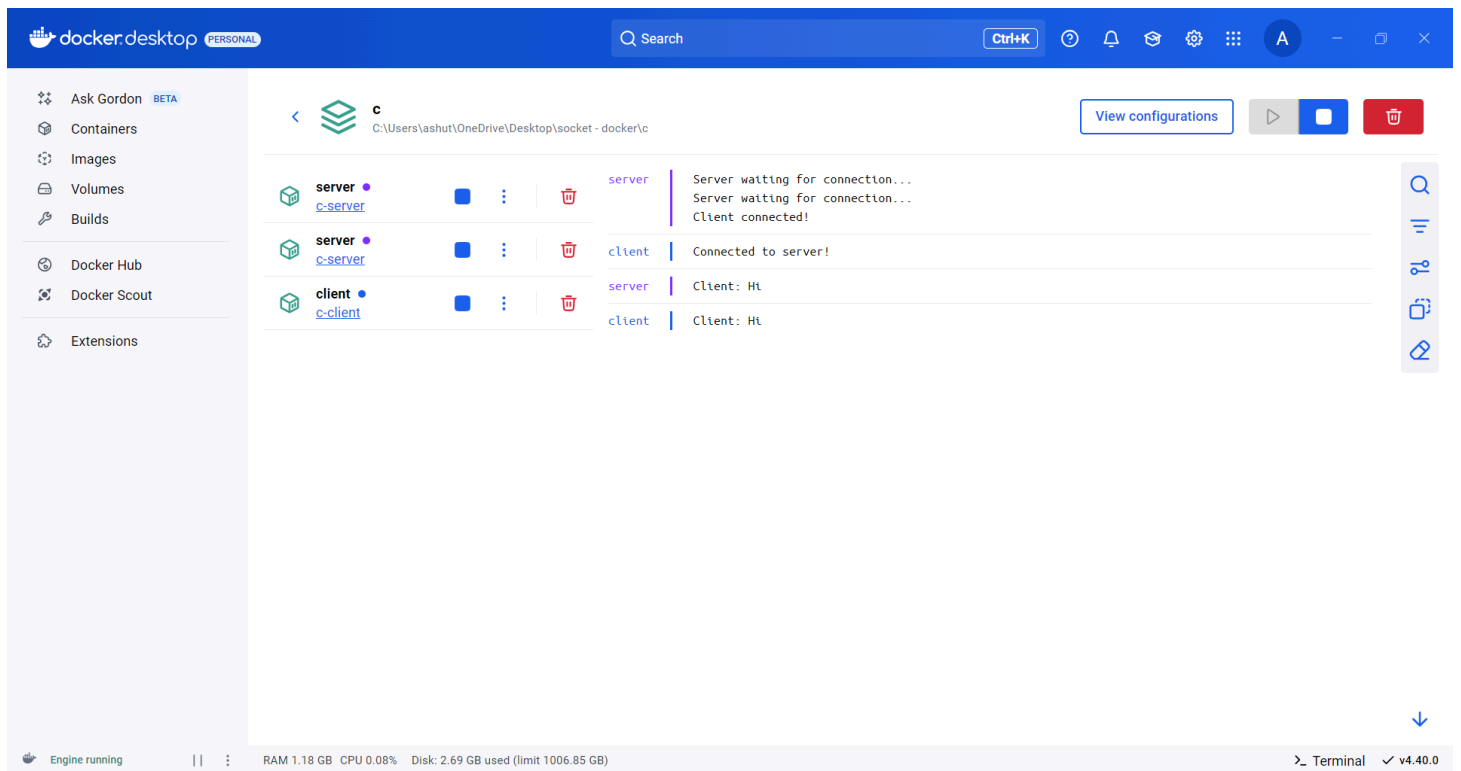
C:\Users\ashut\OneDrive\Desktop\socket - docker>docker-compose run client
time="2025-04-10T13:03:13+05:30" level=warning msg="C:\\Users\\ashut\\OneDrive\\Desktop\\socket - docker\\c\\docker-compose.yml: the attribute 'version' is
obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 1/1
  ✓Container chat_server Created 0.1s
[+] Running 1/1
  ✓Container chat_server Started 0.2s
Connected to server!
Client: Hi
```

DOCKER BUILD (C)

```
Command Prompt x + v
=> => sha256:54059b0e9deabd432ff3bca1bc50c101f9ba8d8dc8bb5528ac71276d17e04f01 7.34kB / 7.34kB 0.0s
=> => sha256:a0fcfad35b187f556943bae42047e6b09c6a79788921825df88a820773ec0ecb 2.81MB / 2.81MB 3.2s
=> => sha256:8b77cd7514d65ebffdfc56971b896c1e9f0067d45e9ffcf96a76802cbd596d6 9.61kB / 9.61kB 0.4s
=> => sha256:14dab890a5a7098e80e5a9e0aaaa5aee291140632734b72e0e702798d8dea5d 2.49kB / 2.49kB 0.0s
=> => sha256:ea589c0b318a435eaaa443207f64cbb47ec482575de53c1b3ad00642ab59c4b4 1.78kB / 1.78kB 1.9s
=> => extracting sha256:a0fcfad35b187f556943bae42047e6b09c6a79788921825df88a820773ec0ecb 0.1s
=> => extracting sha256:e4dd9c002dd2bb0fbb6de1f18a350e5c0aeabcc16e0fa702c1aba0c09c9936cd 4.0s
=> => extracting sha256:8b77cd7514d65ebffdfc56971b896c1e9f0067d45e9ffcf96a76802cbd596d6 0.0s
=> => extracting sha256:ea589c0b318a435eaaa443207f64cbb47ec482575de53c1b3ad00642ab59c4b4 0.0s
=> [server internal] load build context 0.0s
=> => transferring context: 2.93kB 0.0s
=> CACHED [client 2/6] WORKDIR /app 0.2s
=> [server 3/6] COPY server.c . 0.0s
=> [server 4/6] COPY client.c . 0.0s
=> [server 5/6] RUN gcc -o server server.c 0.4s
=> [server 6/6] RUN gcc -o client client.c 0.5s
=> [server] exporting to image 0.1s
=> => exporting layers 0.1s
=> => writing image sha256:94bb109084da703f26c5bb6fff8cc346f45d12eb2166d0f7e9a638d2ea5c31ced 0.0s
=> => naming to docker.io/library/c-server 0.0s
=> [server] resolving provenance for metadata file 0.0s
=> [client internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 291B 0.0s
=> [client internal] load .dockerignore 1.1s
=> => transferring context: 2B 0.0s
=> [client internal] load build context 0.0s
=> => transferring context: 58B 0.0s
=> CACHED [client 3/6] COPY server.c . 0.0s
=> CACHED [client 4/6] COPY client.c . 0.0s
=> CACHED [client 5/6] RUN gcc -o server server.c 0.0s
=> CACHED [client 6/6] RUN gcc -o client client.c 0.0s
=> [client] exporting to image 0.0s
=> => exporting layers 0.0s
=> => writing image sha256:545c6f064b31717b7c448cf8e2143b0c672a1e62c52676478c1de207a270a13c 0.0s
=> => naming to docker.io/library/c-client 0.0s
=> [client] resolving provenance for metadata file 0.0s
[+] Building 2/2
  ✓client Built 0.0s
  ✓server Built 0.0s

C:\Users\ashut\OneDrive\Desktop\socket - docker>
```

DOCKER DESKTOP (C)



socket-docker/python

```
Command Prompt - docker a X + v
Microsoft Windows [Version 10.0.22631.5189]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ashut>cd "C:\Users\ashut\OneDrive\Desktop\socket - docker"

C:\Users\ashut\OneDrive\Desktop\socket - docker>docker login
Authenticating with existing credentials... [Username: ashutoshdas1208]

Info → To login with a different account, run 'docker logout' followed by 'docker login'

Login Succeeded

C:\Users\ashut\OneDrive\Desktop\socket - docker>docker attach python_socket_client
Hi
[SERVER] hii
[YOU] Enter message: hello
[SERVER] Hello
[YOU] Enter message: How are you ?

Command Prompt - docker a X + v
Microsoft Windows [Version 10.0.22631.5189]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ashut>docker attach python_socket_server
hii
[CLIENT] Hi
[YOU] Enter response: Hello
[CLIENT] hello
[YOU] Enter response: [CLIENT] How are you ?
[YOU] Enter response: |
```

DOCKER BUILD (PYTHON)

```
Command Prompt - docker-c x + v
=> => transferring context: 727B 0.0s
=> CACHED [client 2/3] WORKDIR /app 0.1s
=> [server 3/3] COPY server.py . 0.0s
=> [server] exporting to image 0.1s
=> exporting layers 0.0s
=> writing image sha256:b2d04d06dd58e5ca1893307439f6c1b482e54656981f71a8f6bc51ba06e7c8b 0.0s
=> naming to docker.io/library/python-server 0.0s
=> [server] resolving provenance for metadata file 0.0s
=> [client internal] load build definition from Dockerfile 0.0s
=> transferring dockerfile: 116B 0.0s
=> [client internal] load .dockerignore 0.0s
=> transferring context: 2B 0.0s
=> [client internal] load build context 0.0s
=> transferring context: 558B 0.0s
=> [client 3/3] COPY client.py . 0.0s
=> [client] exporting to image 0.0s
=> exporting layers 0.0s
=> writing image sha256:6f18d800557c5675865c5f0cfcf2c98a70838660e01ba8b282d0775c2658a5cb 0.0s
=> naming to docker.io/library/python-client 0.0s
=> [client] resolving provenance for metadata file 0.0s
[+] Running 5/5
✔ client Built 0.0s
✔ server Built 0.0s
✔ Network python_default Created 0.1s
✔ Container python_socket_server Created 0.1s
✔ Container python_socket_client Created 0.1s
Attaching to python_socket_client, python_socket_server
python_socket_server | [SERVER] Listening on 0.0.0.0:12345...
python_socket_client | [CLIENT] Connected to server at server:12345
python_socket_server | [SERVER] Connected to client at ('172.18.0.3', 37350)
python_socket_server | hii
python_socket_client | [YOU] Enter message: Hi
python_socket_server | [CLIENT] Hi
python_socket_client | [SERVER] hii
python_socket_server | [YOU] Enter response: Hello
python_socket_client | [YOU] Enter message: hello
python_socket_client | [SERVER] Hello
python_socket_server | [CLIENT] hello
python_socket_client | [YOU] Enter message: How are you ?
python_socket_server | [YOU] Enter response: [CLIENT] How are you ?
```

DOCKER DESKTOP (PYTHON)

