CLOUD COMPUTING

LAB 4

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SECTION : C

DATE : 03/02/2026

SSS1

```
pes2ug23cs146:~¬$ docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/

pes2ug23cs146:~¬$
```

SS2

```
pes2ug23cs146:~¬$ sudo curl -L "https://github.com/docker/compose/releases/download/v2.10.2/doc
ker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
100 24.5M  100 24.5M    0     0  6424k      0  0:00:03  0:00:03 --:--:-- 9088k
pes2ug23cs146:~¬$ sudo chmod +x /usr/local/bin/docker-compose
pes2ug23cs146:~¬$ docker-compose --version
Docker Compose version v2.10.2
pes2ug23cs146:~¬$
```

SS3

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker ps
CONTAINER ID    IMAGE                   COMMAND                 CREATED         STATUS
  PORTS                                                              NAMES
734954cf0e68    rabbitmq:3-management   "docker-entrypoint.s…"  13 seconds ago  Up 12 seconds
  4369/tcp, 5671-5672/tcp, 15671-15672/tcp, 15691-15692/tcp, 25672/tcp    rabbitmq
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$
```

SS4

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker run -it --name user-a chat-a
pp

--- No Previous Chat History ---

--- Chat Started (unknown-user connecting to localhost) ---
RabbitMQ not ready, retrying... (1/5)RabbitMQ not ready, retrying... (1/5)

RabbitMQ not ready, retrying... (2/5)
RabbitMQ not ready, retrying... (2/5)
RabbitMQ not ready, retrying... (3/5)
RabbitMQ not ready, retrying... (3/5)
RabbitMQ not ready, retrying... (4/5)
RabbitMQ not ready, retrying... (4/5)
RabbitMQ not ready, retrying... (5/5)
RabbitMQ not ready, retrying... (5/5)

ERROR: Could not connect to RabbitMQ at localhost

ERROR: Could not connect to RabbitMQ at localhost

Falling back to standalone mode...
================================================
STANDALONE MODE (No RabbitMQ)
================================================

--- No Previous Chat History ---

Messages will not be sent to any other container.

Type message (standalone):
```

SS5

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker run -it --name user-b \
--network chat-net \
-e RABBIT_HOST=rabbitmq \
-e QUEUE_NAME=queue_b \
-e TARGET_QUEUE=queue_a \
chat-app
[sudo] password for pes2ug23cs146:

--- No Previous Chat History ---

--- Chat Started (unknown-user connecting to rabbitmq) ---
Type message:
Received from unknown-user: hello
Type message: hi
Sent by unknown-user: hi
Type message:
Received from unknown-user: how are you
Type message: fine
Sent by unknown-user: fine
Type message:
Received from unknown-user: are you pes2ug23cs146
Type message: yes
Sent by unknown-user: yes
Type message:
```

SS6

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker run -it --name user-b \
--network chat-net \
-e RABBIT_HOST=rabbitmq \
-e QUEUE_NAME=queue_b \
-e TARGET_QUEUE=queue_a \
chat-app
[sudo] password for pes2ug23cs146:

--- No Previous Chat History ---

--- Chat Started (unknown-user connecting to rabbitmq) ---
Type message:
Received from unknown-user: hello
Type message: hi
Sent by unknown-user: hi
Type message:
Received from unknown-user: how are you
Type message: fine
Sent by unknown-user: fine
Type message:
Received from unknown-user: are you pes2ug23cs146
Type message: yes
Sent by unknown-user: yes
Type message: █
```

SS7

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker stop user-a user-b rabbitmq
user-a
user-b
rabbitmq
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker rm user-a user-b rabbitmq
user-a
user-b
rabbitmq
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker network rm chat-net
chat-net
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ █
```

SS8

```
pes2ug23cs146@pes2ug23cs14...3CS146/docker-advanced-lab ×     pes2ug23cs146@pes2ug23cs14...3CS146/docker-advanced-lab ×
tion_exchange defined by app rabbitmq_federation
rabbitmq-1  | 2026-02-03 09:39:59.067528+00:00 [info] <0.254.0> Running boot step rabbit_manage
ment_load_definitions defined by app rabbitmq_management
rabbitmq-1  | 2026-02-03 09:39:59.067582+00:00 [info] <0.680.0> Resetting node maintenance stat
us
rabbitmq-1  | 2026-02-03 09:39:59.280304+00:00 [warning] <0.709.0> Deprecated features: `manage
ment_metrics_collection`: Feature `management_metrics_collection` is deprecated.
rabbitmq-1  | 2026-02-03 09:39:59.280304+00:00 [warning] <0.709.0> By default, this feature can
 still be used for now.
rabbitmq-1  | 2026-02-03 09:39:59.280304+00:00 [warning] <0.709.0> Its use will not be permitte
d by default in a future minor RabbitMQ version and the feature will be removed from a future m
ajor RabbitMQ version; actual versions to be determined.
rabbitmq-1  | 2026-02-03 09:39:59.280304+00:00 [warning] <0.709.0> To continue using this featu
re when it is not permitted by default, set the following parameter in your configuration:
rabbitmq-1  | 2026-02-03 09:39:59.280304+00:00 [warning] <0.709.0>     "deprecated_features.per
mit.management_metrics_collection = true"
rabbitmq-1  | 2026-02-03 09:39:59.280304+00:00 [warning] <0.709.0> To test RabbitMQ as if the f
eature was removed, set this in your configuration:
rabbitmq-1  | 2026-02-03 09:39:59.280304+00:00 [warning] <0.709.0>     "deprecated_features.per
mit.management_metrics_collection = false"
rabbitmq-1  | 2026-02-03 09:40:04.085055+00:00 [info] <0.746.0> Management plugin: HTTP (non-TL
S) listener started on port 15672
rabbitmq-1  | 2026-02-03 09:40:04.085354+00:00 [info] <0.776.0> Statistics database started.
rabbitmq-1  | 2026-02-03 09:40:04.085433+00:00 [info] <0.775.0> Starting worker pool 'managemen
t_worker_pool' with 3 processes in it
rabbitmq-1  | 2026-02-03 09:40:04.100540+00:00 [info] <0.794.0> Prometheus metrics: HTTP (non-T
LS) listener started on port 15692
rabbitmq-1  | 2026-02-03 09:40:04.100806+00:00 [info] <0.680.0> Ready to start client connectio
n listeners
rabbitmq-1  | 2026-02-03 09:40:04.107415+00:00 [info] <0.838.0> started TCP listener on [::]:56
72
rabbitmq-1  |   completed with 5 plugins.
rabbitmq-1  | 2026-02-03 09:40:04.322126+00:00 [info] <0.680.0> Server startup complete; 5 plug
ins started.
```

SS9

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab$ sudo docker compose run --rm user-a
WARN[0000] /home/pes2ug23cs146/CC_PES2UG23CS146/docker-advanced-lab/docker-compose.yml: the att
ribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion

[+]  1/1t 1/11
 ✔ Container docker-advanced-lab-rabbitmq-1  Running                                     0.0s
Image docker-advanced-lab-user-a  Building
[+] Building 2.5s (12/12) FINISHED
 => [internal] load local bake definitions                                              0.0s
 => => reading from stdin 588B                                                          0.0s
 => [internal] load build definition from Dockerfile                                    0.0s
 => => transferring dockerfile: 323B                                                    0.0s
 => [internal] load metadata for docker.io/library/python:3.9-slim                      1.9s
 => [internal] load .dockerignore                                                       0.0s
 => => transferring context: 2B                                                         0.0s
 => [1/5] FROM docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f14  0.1s
 => => resolve docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f14  0.0s
 => [internal] load build context                                                       0.0s
 => => transferring context: 29B                                                        0.0s
 => CACHED [2/5] RUN pip install pika                                                   0.0s
 => CACHED [3/5] WORKDIR /app                                                           0.0s
 => CACHED [4/5] COPY chat.py .                                                         0.0s
 => CACHED [5/5] RUN mkdir -p /app/data                                                 0.0s
 => exporting to image                                                                  0.2s
 => => exporting layers                                                                 0.0s
 => => exporting manifest sha256:c902d5686f63d3b13d14b096f8e5a8b09b002b1b51d5b66de01cf7c  0.0s
 => => exporting config sha256:2981ae1f694a790981b1c4d6a7343fb8347d2ee9ff88779bc4cb79d19  0.0s
 => => exporting attestation manifest sha256:565347a979605cf17fa77f009bebc2b0706ffda5232  0.0s
 => => exporting manifest list sha256:5c47e3c5f0bc31096cdc4746561e1d1fa28557ff0acd678875  0.0s
 => => naming to docker.io/library/docker-advanced-lab-user-a:latest                    0.0s
 => => unpacking to docker.io/library/docker-advanced-lab-user-a:latest                 0.0s
 => resolving provenance for metadata file                                              0.0s
Image docker-advanced-lab-user-a  Built
Container docker-advanced-lab-user-a-run-696ea1f04343  Creating
Container docker-advanced-lab-user-a-run-696ea1f04343  Created

--- No Previous Chat History ---

--- Chat Started (user-a connecting to rabbitmq) ---
Type message: hello
Sent by user-a: hello
Type message:
```

SS10

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker compose run --rm user-b
[sudo] password for pes2ug23cs146:
WARN[0000] /home/pes2ug23cs146/CC_PES2UG23CS146/docker-advanced-lab/docker-compose.yml: the att
ribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion

[+]  1/1t 1/11
 ✔ Container docker-advanced-lab-rabbitmq-1  Running                                     0.0s
Image docker-advanced-lab-user-b  Building
[+] Building 1.6s (12/12) FINISHED
 => [internal] load local bake definitions                                              0.0s
 => => reading from stdin 588B                                                          0.0s
 => [internal] load build definition from Dockerfile                                    0.0s
 => => transferring dockerfile: 323B                                                    0.0s
 => [internal] load metadata for docker.io/library/python:3.9-slim                      1.0s
 => [internal] load .dockerignore                                                       0.0s
 => => transferring context: 2B                                                         0.0s
 => [1/5] FROM docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f14  0.1s
 => => resolve docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f14  0.0s
 => [internal] load build context                                                       0.0s
 => => transferring context: 29B                                                        0.0s
 => CACHED [2/5] RUN pip install pika                                                   0.0s
 => CACHED [3/5] WORKDIR /app                                                           0.0s
 => CACHED [4/5] COPY chat.py .                                                         0.0s
 => CACHED [5/5] RUN mkdir -p /app/data                                                 0.0s
 => exporting to image                                                                  0.2s
 => => exporting layers                                                                 0.0s
 => => exporting manifest sha256:07b0d136f593813bceceb23c0bda631ba10948ed2891f92d5f13bbf  0.0s
 => => exporting config sha256:193d69f6af4145f4c6150bc540b20bb09a323fb171c6f725b4dbb3eb9  0.0s
 => => exporting attestation manifest sha256:025bae2e62a02fdb367e941d1d3047746e7de475b15  0.0s
 => => exporting manifest list sha256:f0f28acb010e8f2bd80db5fe46af112d61f5a415db6f508865  0.0s
 => => naming to docker.io/library/docker-advanced-lab-user-b:latest                    0.0s
 => => unpacking to docker.io/library/docker-advanced-lab-user-b:latest                 0.0s
 => resolving provenance for metadata file                                              0.0s
Image docker-advanced-lab-user-b  Built
Container docker-advanced-lab-user-b-run-2c9e353d5620  Creating
Container docker-advanced-lab-user-b-run-2c9e353d5620  Created

--- No Previous Chat History ---

--- Chat Started (user-b connecting to rabbitmq) ---
Type message:
Received from user-a: hello
Type message: hi
```

SS11

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ docker compose run --rm user-a
WARN[0000] /home/pes2ug23cs146/CC_PES2UG23CS146/docker-advanced-lab/docker-compose.yml: the att
ribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion

[+]  1/1t 1/11
 ✔ Container docker-advanced-lab-rabbitmq-1 Running                                        0.0s
Container docker-advanced-lab-user-a-run-0b745f6310a4 Creating
Container docker-advanced-lab-user-a-run-0b745f6310a4 Created

--- Chat History ---
Sent by user-b: hi
Received from user-b: hi
--- End of History ---

--- Chat Started (user-a connecting to rabbitmq) ---
Type message: █
```

SS12

```
pes2ug23cs146:~/CC_PES2UG23CS146/docker-advanced-lab¬$ sudo docker compose run --rm user-b
WARN[0000] /home/pes2ug23cs146/CC_PES2UG23CS146/docker-advanced-lab/docker-compose.yml: the att
ribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion

[+]  1/1t 1/11
 ✔ Container docker-advanced-lab-rabbitmq-1 Running                                        0.0s
Container docker-advanced-lab-user-b-run-30319bd06d1d Creating
Container docker-advanced-lab-user-b-run-30319bd06d1d Created

--- Chat History ---
Sent by user-b: hi
Received from user-b: hi
--- End of History ---

--- Chat Started (user-b connecting to rabbitmq) ---
Type message: █
```