

Cloud Computing LAB 4

Name: M. Sri Asritha
SRN: PES2UG23CS320

SS1 Docker hello world

```
krithi@LAPTOP-1C4NHNJ5:~$ echo $SRN
PES2UG23CS320
krithi@LAPTOP-1C4NHNJ5:~$ export PS1="[\u@$SRN \w]\$ "
[krithi@PES2UG23CS320 ~]$ 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/
[krithi@PES2UG23CS320 ~]$
```

SS2 docker-compose version

```
[krithi@PES2UG23CS320 ~]$ docker-compose --version
docker-compose version 1.29.2, build unknown
```

SS3 docker ps

```
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED            STATUS              PORTS
 NAMES
3c2ae8bfbbbd      rabbitmq:3-management   "docker-entrypoint.s..."  34 seconds ago   Up 33 seconds   4369/tcp, 5671-5672/tcp, 15671-15672/tcp, 15691-15692/tcp,
25672/tcp          rabbitmq
[krithi@PES2UG23CS320 docker-advanced-lab]$
```

SS4 ran container without network

```
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker run -it --name user-a chat-app
--- 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 Terminal 1

```
[krithi@PES2UG23CS320 ~]$ docker run -it --name user-a \
--network chat-net \
-e RABBIT_HOST=rabbitmq \
-e QUEUE_NAME=queue_a \
-e TARGET_QUEUE=queue_b \
chat-app

--- No Previous Chat History ---

--- Chat Started (unknown-user connecting to rabbitmq) ---
Type message: this is SRN PES2UG23CS320
Sent by unknown-user: this is SRN PES2UG23CS320
Type message: SRN PES2UG23CS320
Sent by unknown-user: SRN PES2UG23CS320
Type message:
Received from unknown-user: NAME
Type message: M. Sri Asritha
Sent by unknown-user: M. Sri Asritha
Type message:
Received from unknown-user: section
Type message: E
Sent by unknown-user: E
Type message:
```

SS6 Terminal 2

```
krithi@LAPTOP-1C4NHNJ5:~$ export PS1="[\u@$SRN \w]\$\n"
[krithi@ ~]$ export SRN=PES2UG23CS320
[krithi@ ~]$ export PS1="[\u@$SRN \w]\$\n"
[krithi@PES2UG23CS320 ~]$ 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

--- No Previous Chat History ---

--- Chat Started (unknown-user connecting to rabbitmq) ---
Type message:
Received from unknown-user: this is SRN PES2UG23CS320
Type message:
Received from unknown-user: SRN PES2UG23CS320
Type message: NAME
Sent by unknown-user: NAME
Type message:
Received from unknown-user: M. Sri Asritha
Type message: section
Sent by unknown-user: section
Type message:
Received from unknown-user: E
Type message:
```

SS7 Cleanup

```
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker stop user-a user-b rabbitmq
docker rm user-a user-b rabbitmq
docker network rm chat-net
user-a
user-b
rabbitmq
user-a
user-b
rabbitmq
chat-net
[krithi@PES2UG23CS320 docker-advanced-lab]$
```

SS8 Terminal 1

```
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker compose up rabbitmq
[WARN[0000] /home/krithi/docker-advanced-lab/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential
confusion
[+] up 2/2
  ✓ Network docker-advanced-lab_chat-net      Created
  ✓ Container docker-advanced-lab-rabbitmq-1  Created
Attaching to rabbitmq-1
rabbitmq-1 | 2026-02-13 09:14:57.122188+00:00 [notice] <0.44.0> Application syslog exited with reason: stopped
rabbitmq-1 | 2026-02-13 09:14:57.130235+00:00 [notice] <0.254.0> Logging: switching to configured handler(s); following messages may not be visible in this
log output
rabbitmq-1 | 2026-02-13 09:14:57.131695+00:00 [notice] <0.254.0> Logging: configured log handlers are now ACTIVE
rabbitmq-1 | 2026-02-13 09:14:57.151692+00:00 [info] <0.254.0> ra: starting system quorum_queues
rabbitmq-1 | 2026-02-13 09:14:57.151841+00:00 [info] <0.254.0> starting Ra system: quorum_queues in directory: /var/lib/rabbitmq/mnesia/rabbit@lf9b965e30a0
/quorum/rabbit@lf9b965e30a0
rabbitmq-1 | 2026-02-13 09:14:57.241938+00:00 [info] <0.268.0> ra system 'quorum_queues' running pre init for 0 registered servers
rabbitmq-1 | 2026-02-13 09:14:57.259607+00:00 [info] <0.269.0> ra: meta data store initialised for system quorum_queues. 0 record(s) recovered
rabbitmq-1 | 2026-02-13 09:14:57.285559+00:00 [notice] <0.274.0> WAL: ra_log_wal init, open tbls: ra_log_open_mem_tables, closed tbls: ra_log_closed_mem_ta
bles
rabbitmq-1 | 2026-02-13 09:14:57.307846+00:00 [info] <0.254.0> ra: starting system coordination
rabbitmq-1 | 2026-02-13 09:14:57.307911+00:00 [info] <0.254.0> starting Ra system: coordination in directory: /var/lib/rabbitmq/mnesia/rabbit@lf9b965e30a0/
coordination/rabbit@lf9b965e30a0
rabbitmq-1 | 2026-02-13 09:14:57.310874+00:00 [info] <0.282.0> ra system 'coordination' running pre init for 0 registered servers
rabbitmq-1 | 2026-02-13 09:14:57.314904+00:00 [info] <0.283.0> ra: meta data store initialised for system coordination. 0 record(s) recovered
rabbitmq-1 | 2026-02-13 09:14:57.315247+00:00 [notice] <0.288.0> WAL: ra_coordination_log_wal init, open tbls: ra_coordination_log_open_mem_tables, closed
tbls: ra_coordination_log_closed_mem_table
rabbitmq-1 | 2026-02-13 09:14:57.321044+00:00 [info] <0.254.0> ra: starting system coordination
rabbitmq-1 | 2026-02-13 09:14:57.321317+00:00 [info] <0.254.0> starting Ra system: coordination in directory: /var/lib/rabbitmq/mnesia/rabbit@lf9b965e30a0/
coordination/rabbit@lf9b965e30a0
rabbitmq-1 | 2026-02-13 09:14:57.427943+00:00 [info] <0.254.0> Waiting for Khepri leader for 30000 ms, 9 retries left
rabbitmq-1 | 2026-02-13 09:14:57.437424+00:00 [notice] <0.292.0> RabbitMQ metadata store: candidate -> leader in term: 1 machine version: 1
rabbitmq-1 | 2026-02-13 09:14:57.450719+00:00 [info] <0.254.0> Khepri leader elected
rabbitmq-1 | 2026-02-13 09:14:57.450794+00:00 [info] <0.254.0> Waiting for Khepri projections for 30000 ms, 9 retries left
rabbitmq-1 | 2026-02-13 09:14:57.455710+00:00 [info] <0.254.0>
rabbitmq-1 | 2026-02-13 09:14:57.455710+00:00 [info] <0.254.0> Starting RabbitMQ 3.13.7 on Erlang 26.2.5.16 [jit]
rabbitmq-1 | 2026-02-13 09:14:57.455710+00:00 [info] <0.254.0> Copyright (c) 2007-2024 Broadcom Inc and/or its subsidiaries
rabbitmq-1 | 2026-02-13 09:14:57.455710+00:00 [info] <0.254.0> Licensed under the MPL 2.0. Website: https://rabbitmq.com
```

SS9 Terminal 2

```
[krithi@PES2UG23CS320 ~]$ cd docker-advanced-lab
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker compose run --rm user-a
[WARN[0000] /home/krithi/docker-advanced-lab/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential
confusion
[+] 1/1t 1/1
  ✓ Container docker-advanced-lab-user-a  Running
Image docker-advanced-lab-user-a  Building
[+] Building 2.7s (13/13) FINISHED
  => [internal] load local bake definitions
  => reading from stdin 540B
  => [internal] load build definition from Dockerfile
  => = transferring dockerfile: 323B
  => [internal] load metadata for docker.io/library/python:3.9-slim
  => [auth] library/python:pull token for registry-1.docker.io
  => [internal] load .dockercfg
  => = transferring context: 2B
  => [1/5] FROM docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f755599aablaclade13cf1731b1b
  => [2/5] RUN pip install pika
  => [3/5] WORKDIR /app
  => [4/5] COPY chat.py .
  => [5/5] RUN mkdir -p /app/data
  => exporting to image
  => exporting layers
  => exporting manifest sha256:671fcbe799ea0fd322dafbb8b4d278aa6162e7b344d088ae6a13e41892980c45d
  => exporting config sha256:a663439b475adda55f565ea8374a0354ce18aa4e31bc9c2cf9820ce5ceb3808
  => exporting attestation manifest sha256:96ef01114091b23478ada54608562da8fec10ube09d308c238e51be51377e9c
  => exporting manifest list sha256:d85cccd71eb1f4776a3ee0e996421ae1a89d6a028ec3055a970abb02227f2b7
  => naming to docker.io/library/docker-advanced-lab-user-a:latest
  => unpacking to docker.io/library/docker-advanced-lab-user-a:latest
  => resolving provenances for metadata file
Image docker-advanced-lab-user-a  Built
Container docker-advanced-lab-user-a-run-b35612418385  Creating
Container docker-advanced-lab-user-a-run-b35612418385  Created

--- No Previous Chat History ---

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

Received from user-b: srn
Type message: PES2UG23CS320
Sent by user-a: PES2UG23CS320
Type message:

--- No Previous Chat History ---

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

SS10 Terminal 3

```
[krithi@PES2UG23CS320 ~]$ cd docker-advanced-lab
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker compose run --rm user-b
[WARN@0000] /home/krithi/docker-advanced-lab/docker-compose.yml: the attribute '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
Image docker-advanced-lab-user-b Building
[*] Building 1.3s (12/12) FINISHED
  => [internal] load local build definitions
  => => reading from stdin 540B
  => [internal] load build definition from Dockerfile
  => => transferring Dockerfile: 323B
  => [internal] load metadata for docker.io/library/python:3.9-slim
  => [internal] load .dockignore
  => => transferring context: 2B
  => [1/5] FROM docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f755599aablaacda13cf1731b1b
  => => resolve docker.io/library/python:3.9-slim@sha256:2d97f6910b16bd338d3060f261f53f144965f755599aablaacda13cf1731b1b
  => [internal] load build context
  => => transferring context: 29B
  => CACHED [2/5] RUN pip install pika
  => CACHED [3/5] WORKDIR /app
  => CACHED [4/5] COPY chat.py .
  => CACHED [5/5] RUN mkdir -p /app/data
  => exporting image
  => exporting layers
  => => exporting manifest sha256:9bf4f752f58dd4fa0d7f1c25f5760282d640c8a3a4361554987cf8004e316c2d33
  => => exporting config sha256:d29301b7c23dedec9c6bb5d4233c8c3fb1285dc909ee60454fbe96a7fb4343
  => => exporting attestation manifest sha256:1a3dc0ba58a0ff9a0802fa0436067c608eacf0744f6d1edc67be7ad78af41bb6b6b
  => => exporting manifest list sha256:65507b48aaff2405f30d57ac7e980cc15aca8bde68a5da7b1e137a40f63d78f
  => => naming to docker.io/library/docker-advanced-lab-user-b:latest
  => => unpacking to docker.io/library/docker-advanced-lab-user-b:latest
  => resolving provenance for metadata file
Image docker-advanced-lab-user-b Built
Container docker-advanced-lab-user-b-run-e3cb69a8f44b Creating
Container docker-advanced-lab-user-b-run-e3cb69a8f44b Created

--- No Previous Chat History ---

--- Chat Started (user-b connecting to rabbitmq) ---
Type message: srrn
Sent by user-b: srrn
Type message:
Received from user-a: PES2UG23CS320
Type message:
```

SS11 terminal 2 with history

```
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker compose run --rm user-a
[WARN@0000] /home/krithi/docker-advanced-lab/docker-compose.yml: the attribute '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
Container docker-advanced-lab-user-a-run-4ea70b2e4eb2 Creating
Container docker-advanced-lab-user-a-run-4ea70b2e4eb2 Created

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

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

SS12 terminal 3 with history

```
[krithi@PES2UG23CS320 docker-advanced-lab]$ docker compose run --rm user-b
[WARN@0000] /home/krithi/docker-advanced-lab/docker-compose.yml: the attribute '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
Container docker-advanced-lab-user-b-run-d133341621ef Creating
Container docker-advanced-lab-user-b-run-d133341621ef Created

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

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