

Date: 25/Nov/2024

Submitted by: Sumit Prasad

Github repo link: <https://github.com/sumitkp11/docker-basic-assignment>

Multi-service application project:

1. Web Service:
 - a. A simple todo application running on nodejs

2. Database Service:
 - a. Image used is MySQL
 - b. Repository: <https://hub.docker.com/repository/docker/sumitkp497/basic-db-service/general>

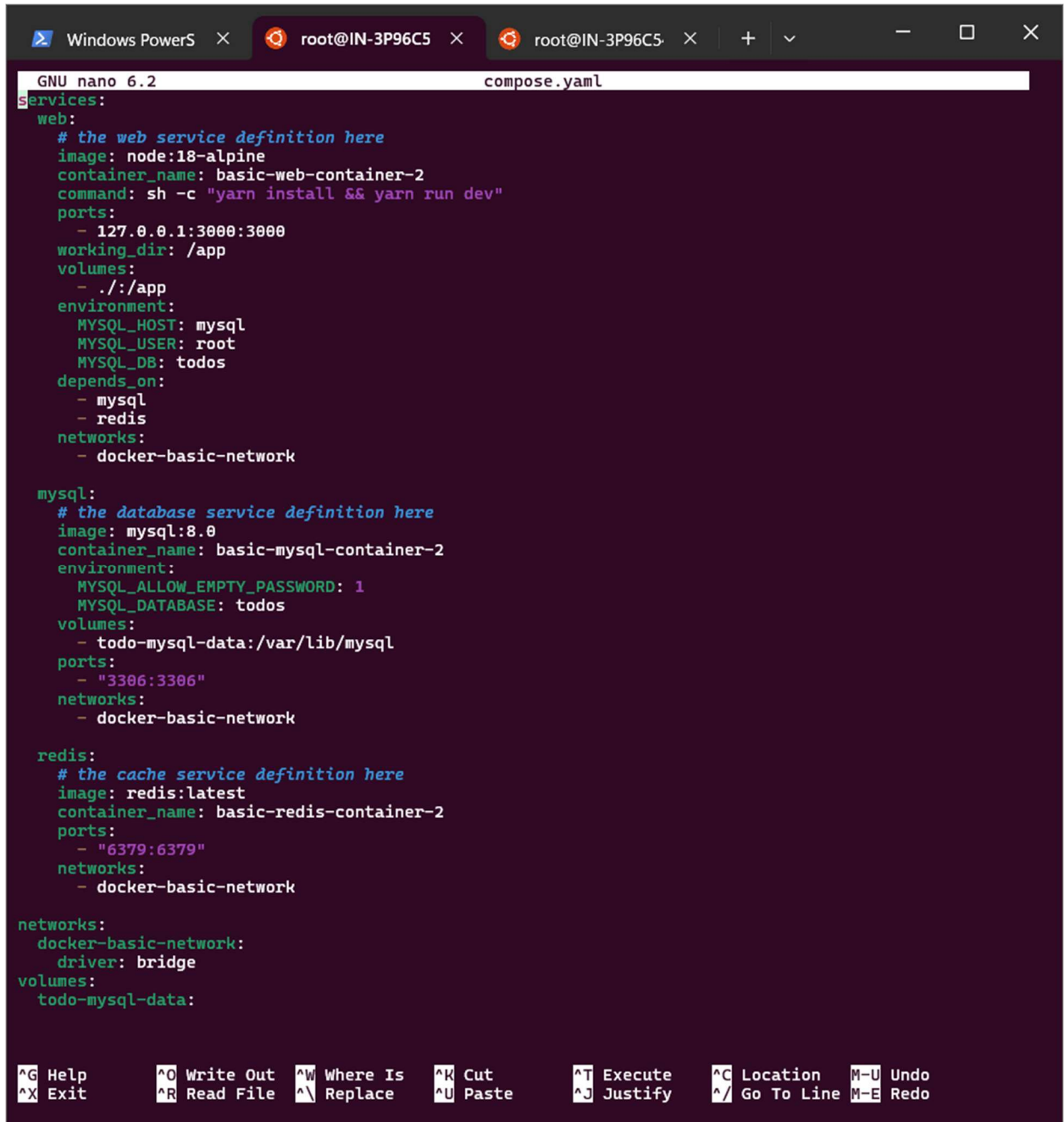
3. Cache Service
 - a. Image used is Redis.

Running screenshots:

1. Docker compose successfully started:
 - a. Command: docker compose up -d

```
Windows PowerShell x root@IN-3P96C5 x root@IN-3P96C5 x + - [X]
root@IN-3P96C54:~/docker_training/docker-basic-assignment# nano compose.yaml
root@IN-3P96C54:~/docker_training/docker-basic-assignment# docker compose up -d
validating /root/docker_training/docker-basic-assignment/compose.yaml: services.mysql Additional property container_image is not allowed
root@IN-3P96C54:~/docker_training/docker-basic-assignment# nano compose.yaml
root@IN-3P96C54:~/docker_training/docker-basic-assignment# docker compose up -d
[+] Running 14/14
  ✓ web Pulled 6.7s
  ✓ da9db072f522 Already exists 0.0s
  ✓ 2c683692384c Already exists 0.0s
  ✓ e7428cb4ffb3 Already exists 0.0s
  ✓ d9f81725f57f Already exists 0.0s
  ✓ redis Pulled 23.1s
  ✓ 2d429b9e73a6 Pull complete 14.1s
  ✓ 92ef1ecbb9f Pull complete 14.1s
  ✓ 5e00ad97561c Pull complete 14.2s
  ✓ 8f865c3d417c Pull complete 14.3s
  ✓ 74c736b00471 Pull complete 17.7s
  ✓ 928f5dbb5007 Pull complete 17.7s
  ✓ 4f4fb700ef54 Pull complete 17.7s
  ✓ 6fd0c1bf3b91 Pull complete 17.8s
[+] Running 3/4
  ✓ Network docker-basic-assignment_docker-basic-network Created 0.3s
  ✓ Container basic-redis-container Started 1.5s
  ✓ Container basic-mysql-container Started 1.5s
  ⚠ Container docker-basic-assignment-web-1 Starting 1.3s
Error response from daemon: driver failed programming external connectivity on endpoint docker-basic-assignment-web-1 (3a429c98afd65410bab548dacf96e918eb78e96cb692b0978e847fae924baf2): Bind for 127.0.0.1:3000 failed: port is already allocated
root@IN-3P96C54:~/docker_training/docker-basic-assignment# docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS
PORTS
75987526d27d   redis:latest   "docker-entrypoint.s..." 33 seconds ago Up 32 seconds
0.0.0.0:6379->6379/tcp, :::6379->6379/tcp   basic-redis-container
72b0769cdf52   mysql:8.0      "docker-entrypoint.s..." 4 days ago    Up 4 days
3306/tcp, 33060/tcp      silly_bell
636b75f29033   getting-started "docker-entrypoint.s..." 4 days ago    Up 4 days
127.0.0.1:3000->3000/tcp   interesting_clarke
root@IN-3P96C54:~/docker_training/docker-basic-assignment# docker rm -f "636b75f29033"
636b75f29033
root@IN-3P96C54:~/docker_training/docker-basic-assignment# docker rm -f "72b0769cdf52"
72b0769cdf52
root@IN-3P96C54:~/docker_training/docker-basic-assignment# docker rm -f "75987526d27d"
75987526d27d
root@IN-3P96C54:~/docker_training/docker-basic-assignment# docker compose up -d
[+] Running 3/3
  ✓ Container basic-redis-container Star... 0.8s
  ✓ Container basic-mysql-container Star... 0.8s
  ✓ Container docker-basic-assignment-web-1 Started 0.4s
root@IN-3P96C54:~/docker_training/docker-basic-assignment#
```

2. Docker compose file located on “./websevice/compose.yaml”:



```
GNU nano 6.2 compose.yaml
services:
  web:
    # the web service definition here
    image: node:18-alpine
    container_name: basic-web-container-2
    command: sh -c "yarn install && yarn run dev"
    ports:
      - 127.0.0.1:3000:3000
    working_dir: /app
    volumes:
      - ./:/app
    environment:
      MYSQL_HOST: mysql
      MYSQL_USER: root
      MYSQL_DB: todos
    depends_on:
      - mysql
      - redis
    networks:
      - docker-basic-network

  mysql:
    # the database service definition here
    image: mysql:8.0
    container_name: basic-mysql-container-2
    environment:
      MYSQL_ALLOW_EMPTY_PASSWORD: 1
      MYSQL_DATABASE: todos
    volumes:
      - todo-mysql-data:/var/lib/mysql
    ports:
      - "3306:3306"
    networks:
      - docker-basic-network

  redis:
    # the cache service definition here
    image: redis:latest
    container_name: basic-redis-container-2
    ports:
      - "6379:6379"
    networks:
      - docker-basic-network

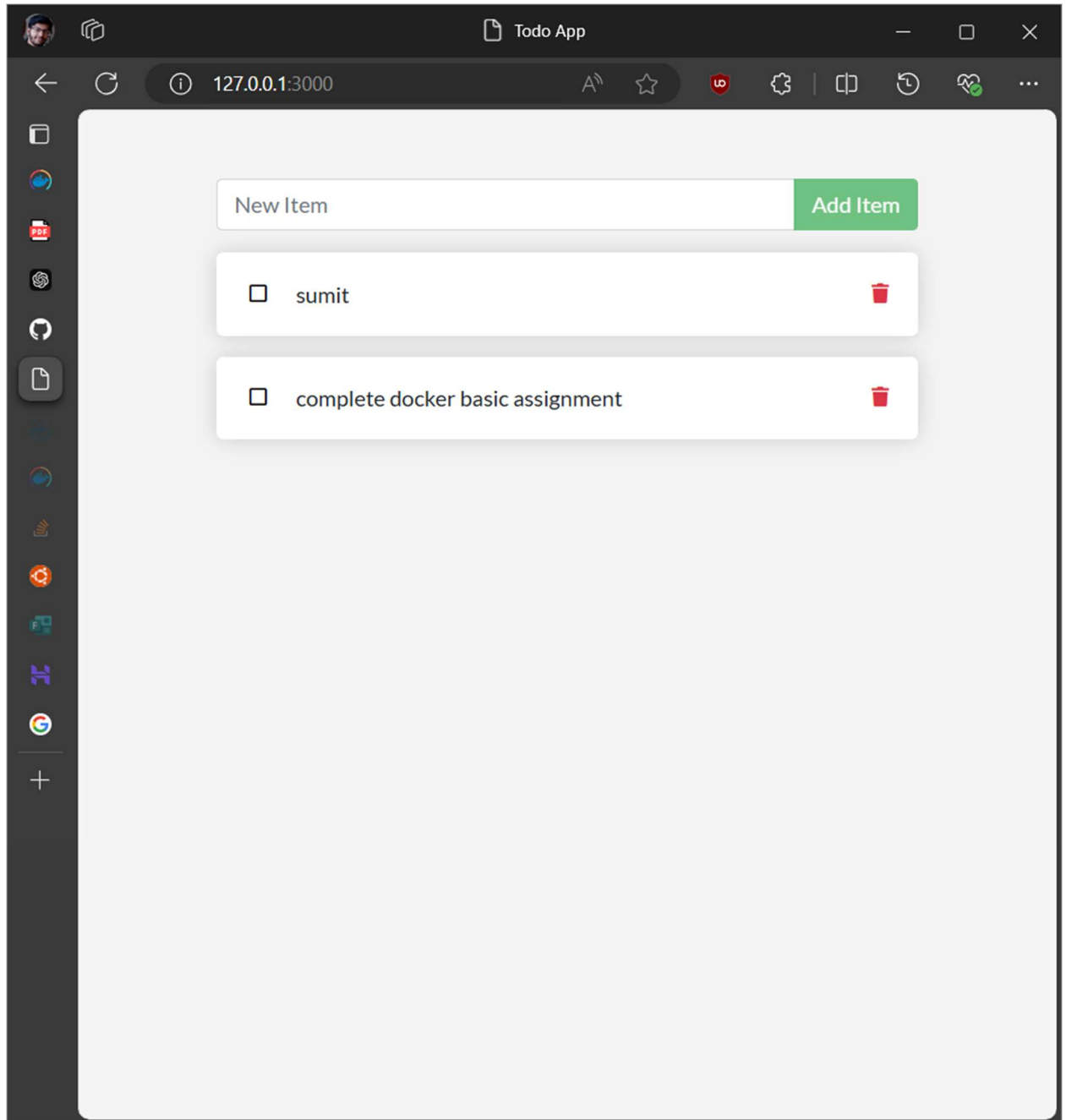
networks:
  docker-basic-network:
    driver: bridge
volumes:
  todo-mysql-data:
```

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^_ Go To Line M-E Redo

3. Docker compose running

```
Windows PowerShell x root@IN-3P96C5 x root@IN-3P96C5 x + - □ x
certificate ca.pem is self signed.
basic-mysql-container-2 | 2024-11-26T07:13:54.354224Z 0 [System] [MY-013602] [Server] Channel mysql_main configured to support TLS. Encrypted connections are now supported for this channel.
basic-mysql-container-2 | 2024-11-26T07:13:54.358483Z 0 [Warning] [MY-011810] [Server] Insecure configuration for --pid-file: Location '/var/run/mysqld' in the path is accessible to all OS users. Consider choosing a different directory.
basic-mysql-container-2 | 2024-11-26T07:13:54.376234Z 0 [System] [MY-011323] [Server] X Plugin ready for connections. Bind-address: '::' port: 33060, socket: /var/run/mysqld/mysqld.sock
basic-mysql-container-2 | 2024-11-26T07:13:54.376436Z 0 [System] [MY-010931] [Server] /usr/sbin/mysqld: ready for connections. Version: '8.0.40' socket: '/var/run/mysqld/mysqld.sock' port: 3306 MySQL Community Server - GPL.
basic-redis-container-2 | 1:C 26 Nov 2024 07:02:32.434 # WARNING Memory overcommit must be enabled! Without it, a background save or replication may fail under low memory condition. Being disabled, it can also cause failures without low memory condition, see https://github.com/jemalloc/jemalloc/issues/1328. To fix this issue add 'vm.overcommit_memory = 1' to /etc/sysctl.conf and then reboot or run the command 'sysctl vm.overcommit_memory=1' for this to take effect.
basic-redis-container-2 | 1:C 26 Nov 2024 07:02:32.435 * oOoOoOoOoOoOo Redis is starting oOoOoOoOoOoOo
basic-redis-container-2 | 1:C 26 Nov 2024 07:02:32.435 * Redis version=7.4.1, bits=64, commit=00000000, modified=0, pid=1, just started
basic-redis-container-2 | 1:C 26 Nov 2024 07:02:32.435 # Warning: no config file specified, using the default config. In order to specify a config file use redis-server /path/to/redis.conf
basic-redis-container-2 | 1:M 26 Nov 2024 07:02:32.435 * Increased maximum number of open files to 10032 (it was originally set to 1024).
basic-redis-container-2 | 1:M 26 Nov 2024 07:02:32.435 * monotonic clock: POSIX clock_gettime
basic-redis-container-2 | 1:M 26 Nov 2024 07:02:32.437 * Running mode=standalone, port=6379.
basic-redis-container-2 | 1:M 26 Nov 2024 07:02:32.438 * Server initialized
basic-redis-container-2 | 1:M 26 Nov 2024 07:02:32.438 * Ready to accept connections tcp
basic-web-container-2 | yarn install v1.22.22
basic-web-container-2 | [1/4] Resolving packages...
basic-web-container-2 | success Already up-to-date.
basic-web-container-2 | Done in 0.34s.
basic-web-container-2 | yarn run v1.22.22
basic-web-container-2 | $ nodemon -L src/index.js
basic-web-container-2 | [nodemon] 2.0.20
basic-web-container-2 | [nodemon] to restart at any time, enter `rs`
basic-web-container-2 | [nodemon] watching path(s): *.*
basic-web-container-2 | [nodemon] watching extensions: js,mjs,json
basic-web-container-2 | [nodemon] starting `node src/index.js`
basic-web-container-2 | Waiting for mysql:3306.
basic-web-container-2 | Connected!
basic-web-container-2 | Connected to mysql db at host mysql
basic-web-container-2 | Listening on port 3000
```

4. Web service running in browser on 127.0.0.1:3000:



5. Database connected successfully getting data:

```
Windows PowerShell x root@IN-3P96C5 x root@IN-3P96C5 x + v - □ ×

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
| todos |
+-----+
5 rows in set (0.00 sec)

mysql> use todosl
ERROR 1049 (42000): Unknown database 'todosl'
mysql> use todos;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+-----+
| Tables_in_todos |
+-----+
| todo_items |
+-----+
1 row in set (0.01 sec)

mysql> select * from todo_items;
+-----+-----+-----+
| id | name | completed |
+-----+-----+-----+
| bda3a89f-055f-46ab-8481-140fc40e9380 | sumit | 0 |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select * from todo_items;
+-----+-----+-----+
| id | name | completed |
+-----+-----+-----+
| bda3a89f-055f-46ab-8481-140fc40e9380 | sumit | 0 |
| 7f3d6a0a-3504-4ff5-9e73-a2359b43e9c9 | complete docker basic assignment | 0 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> █
```

6. Database service repository:

sumitkp497/basic-db-service Tags

https://hub.docker.com/repository/do...

New More Docker. Easy Access. New Streamlined Plans. Learn more. →

hub

sumitkp497 / [Repositories](#) / [basic-db-service](#) / [Tags](#)

Using 0 of 1 private repositories.

General Tags Builds Collaborators Webhooks Settings

Sort by

Newest

Filter tags

Delete

TAG

latest

Last pushed 16 hours ago by [sumitkp497](#)

`docker pull sumitkp497/basic-db-service:latest` Copy

Digest	OS/ARCH	Last pull	Compressed size ⓘ
d5d83b267e2b	linux/amd64	16 hours ago	163.06 MB

7. Cache service repository:

sumitkp497/basic-redis-cache Tags

https://hub.docker.com/repository/do...

New More Docker. Easy Access. New Streamlined Plans. Learn more. →

hub

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Using 0 of 1 private repositories.

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Delete

TAG

latest

Last pushed 16 hours ago by [sumitkp497](#)

docker pull sumitkp497/basic-redis-cache:latest

Copy

Digest	OS/ARCH	Last pull	Compressed size ⓘ
d97112daf55e	linux/amd64	16 hours ago	18.54 MB

https://hub.docker.com/repository/docker/sumitkp497/basic-redis-cache/tags

8. Web service repository:

sumitkp497

Repositories

docker_basic

Tags

Using 0 of 1 private repositories.

General

Tags

Builds

Collaborators

Webhooks

Settings

Sort by

Newest

Filter tags

Delete

TAG

latest

Last pushed 20 hours ago by sumitkp497

docker pull sumitkp497/docker_basic:latest

Copy

Digest	OS/ARCH	Last pull	Compressed size ⓘ
d93c2448c6b5	linux/amd64	20 hours ago	90.71 MB