Running Redis on Docker

# Download redis configuration file

1. wget -O redis.conf 'http://download.redis.io/redis-stable/redis.conf'

# Create directory

1. mkdir /usr/local/etc/redis
2. chown 777 /usr/local/etc/redis
3. cp redis.conf /usr/local/etc/redis

# Create Dockerfile

1. cat > Dockerfile

FROM redis

COPY redis.conf /usr/local/etc/redis/redis.conf

CMD [ "redis-server", "/usr/local/etc/redis/redis.conf" ]

# Build docker image

1. docker build --pull .

*Sending build context to Docker daemon 60.93 kB*

*Step 1/3 : FROM redis*

*latest: Pulling from library/redis*

*b0568b191983: Pull complete*

*6637dc5b29fe: Pull complete*

*7b4314315f15: Pull complete*

*67b22db27e51: Pull complete*

*350dbcc91819: Pull complete*

*eee5ee716895: Pull complete*

*Digest: sha256:26c93c5b06eaa323bb1089500f42b0dd158138772348b865e364127f1d554982*

*Status: Downloaded newer image for redis:latest*

*---> 4760dc956b2d*

*Step 2/3 : COPY redis.conf /usr/local/etc/redis/redis.conf*

*---> cc347512e29e*

*Removing intermediate container 37c07997fa46*

*Step 3/3 : CMD redis-server /usr/local/etc/redis/redis.conf*

*---> Running in 70ef3478ce80*

*---> 57fafcfdea29*

*Removing intermediate container 70ef3478ce80*

*Successfully built* ***57fafcfdea29***

# Run container

1. sudo docker run -d -p 6379:6379 -it --rm 57fafcfdea29

*2c6d2b6fb9ac4362f5741c081aed5b091e6a4c5ede106711132d50543b0ac969*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/redisdir$ sudo docker logs 2c6d2b6fb*

*1:C 19 Mar 10:44:12.815 # oO0OoO0OoO0Oo Redis is starting oO0OoO0OoO0Oo*

*1:C 19 Mar 10:44:12.815 # Redis version=4.0.8, bits=64, commit=00000000, modified=0, pid=1, just started*

*1:C 19 Mar 10:44:12.815 # Configuration loaded*

*\_.\_*

*\_.-``\_\_ ''-.\_*

*\_.-`` `. `\_. ''-.\_ Redis 4.0.8 (00000000/0) 64 bit*

*.-`` .-```. ```\/ \_.,\_ ''-.\_*

*( ' , .-` | `, ) Running in standalone mode*

*|`-.\_`-...-` \_\_...-.``-.\_|'` \_.-'| Port: 6379*

*| `-.\_ `.\_ / \_.-' | PID: 1*

*`-.\_ `-.\_ `-./ \_.-' \_.-'*

*|`-.\_`-.\_ `-.\_\_.-' \_.-'\_.-'|*

*| `-.\_`-.\_ \_.-'\_.-' | http://redis.io*

*`-.\_ `-.\_`-.\_\_.-'\_.-' \_.-'*

*|`-.\_`-.\_ `-.\_\_.-' \_.-'\_.-'|*

*| `-.\_`-.\_ \_.-'\_.-' |*

*`-.\_ `-.\_`-.\_\_.-'\_.-' \_.-'*

*`-.\_ `-.\_\_.-' \_.-'*

*`-.\_ \_.-'*

*`-.\_\_.-'*

*1:M 19 Mar 10:44:12.816 # WARNING: The TCP backlog setting of 511 cannot be enforced because /proc/sys/net/core/somaxconn is set to the lower value of 128.*

*1:M 19 Mar 10:44:12.816 # Server initialized*

*1:M 19 Mar 10:44:12.817 # WARNING overcommit\_memory is set to 0! Background save may fail under low memory condition. 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.*

*1:M 19 Mar 10:44:12.817 # WARNING you have Transparent Huge Pages (THP) support enabled in your kernel. This will create latency and memory usage issues with Redis. To fix this issue run the command 'echo never > /sys/kernel/mm/transparent\_hugepage/enabled' as root, and add it to your /etc/rc.local in order to retain the setting after a reboot. Redis must be restarted after THP is disabled.*

*1:M 19 Mar 10:44:12.817 \* Ready to accept connections*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/redisdir$*

# Verify container

ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/redisdir$ sudo docker ps

*CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES*

*2c6d2b6fb9ac 57fafcfdea29 "docker-entrypoint..." 9 minutes ago Up 9 minutes 0.0.0.0:6379->6379/tcp elated\_roentgen*

# Build springboot application docker image

ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/redisdir$ cd ..

ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$ ls

*com.michaelcgood-0.0.1.jar Dockerfile redisdir*

ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$ cat Dockerfile

FROM java:8

WORKDIR /

ADD com.michaelcgood-0.0.1.jar app.jar

CMD java -jar app.jar

1. ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$ sudo docker build -t kokateaniket/spring-data-redis .

*Sending build context to Docker daemon 24.7 MB*

*Step 1/4 : FROM java:8*

*---> d23bdf5b1b1b*

*Step 2/4 : WORKDIR /*

*---> Using cache*

*---> 2066ba9bbc23*

*Step 3/4 : ADD com.michaelcgood-0.0.1.jar app.jar*

*---> 7f7428d802fb*

*Removing intermediate container 462f69317ff6*

*Step 4/4 : CMD java -jar app.jar*

*---> Running in 64b6186cf61a*

*---> f528f1c18515*

*Removing intermediate container 64b6186cf61a*

*Successfully built f528f1c18515*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$*

1. ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$ sudo docker images

*REPOSITORY TAG IMAGE ID CREATED SIZE*

*kokateaniket/spring-data-redis latest f528f1c18515 24 minutes ago 668 MB*

*<none> <none> 57fafcfdea29 42 minutes ago 107 MB*

*kokateaniket/gs-spring-boot-docker latest af65a8efbee5 3 hours ago 658 MB*

*arunsharma/employee-consumer latest 902c9999fc16 27 hours ago 679 MB*

*arunsharma/edge-server latest eb1617aed8c7 29 hours ago 683 MB*

*kokateaniket/compute-interest-api latest ac0ef72835a1 3 days ago 332 MB*

*arunsharma/hystrix latest c807cdcbb848 4 days ago 191 MB*

*redis latest 4760dc956b2d 4 days ago 107 MB*

*maven 3.3.9-jdk-8-alpine dd9d4e1cd9db 12 months ago 116 MB*

*java 8-alpine 3fd9dd82815c 12 months ago 145 MB*

*java 8 d23bdf5b1b1b 14 months ago 643 MB*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$*

# Run spring application

*sudo docker run -d -p 9011:9011 -e "spring.redis.host=0.0.0.0" -e "spring.redis.port=6379" -e "server.port=9011" kokateaniket/spring-data-redis*

# Tag redis image

ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$ sudo docker images -a

*REPOSITORY TAG IMAGE ID CREATED SIZE*

*kokateaniket/spring-data-redis latest f528f1c18515 59 minutes ago 668 MB*

*<none> <none> 7f7428d802fb 59 minutes ago 668 MB*

*<none> <none> 57fafcfdea29 About an hour ago 107 MB*

*<none> <none> cc347512e29e About an hour ago 107 MB*

*kokateaniket/gs-spring-boot-docker latest af65a8efbee5 4 hours ago 658 MB*

*<none> <none> 61454361e889 4 hours ago 658 MB*

*<none> <none> ee151e1dbd09 28 hours ago 679 MB*

*<none> <none> 6bc2fd48f43a 28 hours ago 679 MB*

*arunsharma/employee-consumer latest 902c9999fc16 28 hours ago 679 MB*

*<none> <none> 23dbcac67843 29 hours ago 683 MB*

*arunsharma/edge-server latest eb1617aed8c7 29 hours ago 683 MB*

*<none> <none> 8034a8748bc2 29 hours ago 683 MB*

*<none> <none> 2066ba9bbc23 29 hours ago 643 MB*

*kokateaniket/compute-interest-api latest ac0ef72835a1 3 days ago 332 MB*

*<none> <none> 5b1e922f7d51 3 days ago 332 MB*

*<none> <none> ac3f5dece7a9 3 days ago 142 MB*

*<none> <none> 966d9aa9eb4f 3 days ago 142 MB*

*arunsharma/hystrix latest c807cdcbb848 4 days ago 191 MB*

*<none> <none> 5f450cf9934d 4 days ago 191 MB*

*<none> <none> c734d7e6a9f1 4 days ago 191 MB*

*<none> <none> 267eac59d374 4 days ago 145 MB*

*kokateaniket/redis latest 4760dc956b2d 4 days ago 107 MB*

*redis latest 4760dc956b2d 4 days ago 107 MB*

*maven 3.3.9-jdk-8-alpine dd9d4e1cd9db 12 months ago 116 MB*

*java 8-alpine 3fd9dd82815c 12 months ago 145 MB*

*java 8 d23bdf5b1b1b 14 months ago 643 MB*

sudo docker tag 4760dc956b2d kokateaniket/redis

# Push Image

ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master$ sudo docker push kokateaniket/redis

*The push refers to a repository [docker.io/kokateaniket/redis]*

*0209c1ade8f4: Mounted from library/redis*

*bb5c6286e241: Mounted from library/redis*

*303f4ecc36fb: Mounted from library/redis*

*b92d098685e5: Mounted from library/redis*

*27af3b14aa14: Mounted from library/redis*

*43efe85a991c: Mounted from library/redis*

*latest: digest: sha256:edb0f060fdeb089d2e05b7a69b0fb91418eb7d5cfb7b268b2e2f24a31807ae65 size: 1571*

*sudo docker push kokateaniket/spring-data-redis*

# Redis-CLI

*ubuntu@ip-172-31-81-185:~$ sudo docker exec -it 2c6d2b6fb9ac /bin/bash*

*root@1f6689b38a91:/data# redis-cli info stats*

*# Stats*

*total\_connections\_received:1*

*total\_commands\_processed:0*

*instantaneous\_ops\_per\_sec:0*

*total\_net\_input\_bytes:25*

*total\_net\_output\_bytes:0*

*instantaneous\_input\_kbps:0.00*

*instantaneous\_output\_kbps:0.00*

*rejected\_connections:0*

*sync\_full:0*

*sync\_partial\_ok:0*

*sync\_partial\_err:0*

*expired\_keys:0*

*evicted\_keys:0*

*keyspace\_hits:0*

*keyspace\_misses:0*

*pubsub\_channels:0*

*pubsub\_patterns:0*

*latest\_fork\_usec:0*

*migrate\_cached\_sockets:0*

*slave\_expires\_tracked\_keys:0*

*active\_defrag\_hits:0*

*active\_defrag\_misses:0*

*active\_defrag\_key\_hits:0*

*active\_defrag\_key\_misses:0*

*root@1f6689b38a91:/data#*

*ubuntu@ip-172-31-81-185:~$* ***sudo docker inspect --format='{{range .NetworkSettings.Networks}}{{.IPAddress}}{{end}}' 1f6689b38a***

*172.17.0.2*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$ ls*

*Dockerfile RedisClient.jar RedisClient.jar.172.17.0.2 RedisClient.jar.localhost*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker build -t redis-test-client .***

*Sending build context to Docker daemon 384.5 kB*

*Step 1/4 : FROM java:8*

*---> d23bdf5b1b1b*

*Step 2/4 : WORKDIR /*

*---> Using cache*

*---> 2066ba9bbc23*

*Step 3/4 : ADD RedisClient.jar app.jar*

*---> 0aa02f6f1d3a*

*Removing intermediate container 4b1026ce635d*

*Step 4/4 : CMD java -jar app.jar*

*---> Running in e6ed09349cab*

*---> 21c29b2455f3*

*Removing intermediate container e6ed09349cab*

*Successfully built 21c29b2455f3*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker run redis-test-client***

*Connection to server sucessfully*

*Server is running: PONG*

*Stored string in redis:: Mysql*

*Stored string in redis:: Mongodb*

*Stored string in redis:: Redis*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker ps***

*CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES*

*1f6689b38a91 kokateaniket/redis "docker-entrypoint..." About an hour ago Up About an hour 127.0.0.1:6379->6379/tcp modest\_bhaskara*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker ps -a***

*CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES*

*172c6997307f redis-test-client "/bin/sh -c 'java ..." 53 seconds ago Exited (0) 53 seconds ago epic\_ardinghelli*

*83d219d8420c kokateaniket/spring-data-redis "/bin/sh -c 'java ..." 6 minutes ago Exited (137) 5 minutes ago suspicious\_bohr*

*499e5a5524a4 a09d2c96084b "/bin/sh -c 'java ..." 8 minutes ago Exited (0) 8 minutes ago angry\_goldwasser*

*1d8ec26fbac8 0c359eaddff1 "/bin/sh -c 'java ..." 11 minutes ago Exited (1) 11 minutes ago jovial\_shirley*

*1f6689b38a91 kokateaniket/redis "docker-entrypoint..." About an hour ago Up About an hour 127.0.0.1:6379->6379/tcp modest\_bhaskara*

*b4f3923391b9 kokateaniket/gs-spring-boot-docker "/bin/sh -c 'java ..." 7 hours ago Exited (137) 5 hours ago sharp\_shirley*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker exec -it 1f6689b38a91 /bin/bash***

*root@1f6689b38a91:/data#* ***redis-cli info stats***

*# Stats*

***total\_connections\_received:5***

***total\_commands\_processed:8***

*instantaneous\_ops\_per\_sec:0*

*total\_net\_input\_bytes:282*

*total\_net\_output\_bytes:649*

*instantaneous\_input\_kbps:0.00*

*instantaneous\_output\_kbps:0.00*

*rejected\_connections:0*

*sync\_full:0*

*sync\_partial\_ok:0*

*sync\_partial\_err:0*

*expired\_keys:0*

*evicted\_keys:0*

*keyspace\_hits:1*

*keyspace\_misses:0*

*pubsub\_channels:0*

*pubsub\_patterns:0*

*latest\_fork\_usec:639*

*migrate\_cached\_sockets:0*

*slave\_expires\_tracked\_keys:0*

*active\_defrag\_hits:0*

*active\_defrag\_misses:0*

*active\_defrag\_key\_hits:0*

*active\_defrag\_key\_misses:0*

*root@1f6689b38a91:/data# exit*

*exit*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker run redis-test-client***

*Connection to server sucessfully*

*Server is running: PONG*

*Stored string in redis:: Mysql*

*Stored string in redis:: Mongodb*

*Stored string in redis:: Redis*

*Stored string in redis:: Mysql*

*Stored string in redis:: Mongodb*

*Stored string in redis:: Redis*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker run redis-test-client***

*Connection to server sucessfully*

*Server is running: PONG*

*Stored string in redis:: Mysql*

*Stored string in redis:: Mongodb*

*Stored string in redis:: Redis*

*Stored string in redis:: Mysql*

*Stored string in redis:: Mongodb*

*Stored string in redis:: Redis*

*ubuntu@ip-172-31-81-185:~/spring-data-redis-example-master/RedisClient$* ***sudo docker exec -it 1f6689b38a91 /bin/bash***

*root@1f6689b38a91:/data#* ***redis-cli info stats***

*# Stats*

***total\_connections\_received:8***

***total\_commands\_processed:19***

*instantaneous\_ops\_per\_sec:0*

*total\_net\_input\_bytes:715*

*total\_net\_output\_bytes:1417*

*instantaneous\_input\_kbps:0.00*

*instantaneous\_output\_kbps:0.00*

*rejected\_connections:0*

*sync\_full:0*

*sync\_partial\_ok:0*

*sync\_partial\_err:0*

*expired\_keys:0*

*evicted\_keys:0*

*keyspace\_hits:3*

*keyspace\_misses:0*

*pubsub\_channels:0*

*pubsub\_patterns:0*

*latest\_fork\_usec:639*

*migrate\_cached\_sockets:0*

*slave\_expires\_tracked\_keys:0*

*active\_defrag\_hits:0*

*active\_defrag\_misses:0*

*active\_defrag\_key\_hits:0*

*active\_defrag\_key\_misses:0*

*root@1f6689b38a91:/data#*

# Example : Spring boot Redis example

## Docker

***cat Dockerfile***

*FROM java:8*

*WORKDIR /*

*ADD spring-boot-redis-example-0.1.0.jar app.jar*

*CMD java -jar app.jar*

***ls***

*Dockerfile spring-boot-redis-example-0.1.0.jar*

***sudo docker build -t spring-boot-redis-example .***

*Sending build context to Docker daemon 15.23 MB*

*Step 1/4 : FROM java:8*

*---> d23bdf5b1b1b*

*Step 2/4 : WORKDIR /*

*---> Using cache*

*---> 2066ba9bbc23*

*Step 3/4 : ADD spring-boot-redis-example-0.1.0.jar app.jar*

*---> 95b2df7489d4*

*Removing intermediate container f6aa2b054175*

*Step 4/4 : CMD java -jar app.jar*

*---> Running in e47d6408348b*

*---> a27b0230b64c*

*Removing intermediate container e47d6408348b*

*Successfully built a27b0230b64c*

***sudo docker images***

*REPOSITORY TAG IMAGE ID CREATED SIZE*

*spring-boot-redis-example latest a27b0230b64c 8 seconds ago 658 MB*

***sudo docker tag a27b0230b64c kokateaniket/spring-boot-redis-example***

***sudo docker images***

*REPOSITORY TAG IMAGE ID CREATED SIZE*

*kokateaniket/spring-boot-redis-example latest a27b0230b64c 34 seconds ago 658 MB*

***sudo docker login***

***sudo docker push kokateaniket/spring-boot-redis-example***

***sudo docker run -d -p 9012:9012 -e "server.port=9012" -e "redis.host=172.17.0.2" -e "redis.port=6379" kokateaniket/spring-boot-redis-example***

***curl http://localhost:9012/***

*PONG*

***curl http://localhost:9012/testCache***

*Stored string in redis:: Mysql*

*Stored string in redis:: Mongodb*

*Stored string in redis:: Redis*

*Stored string in redis:: Mysql*

*Stored string in redis:: Mongodb*

*Stored string in redis:: Redis*

***curl http://localhost:9012/putInCache/123/ABC***

*OK*

***curl http://localhost:9012/getFromCache/123***

*ABC*

## Kubernetes

***kubectl run spring-boot-redis-example --replicas=1 --labels="run=spring-boot-redis-example" --image="kokateaniket/spring-boot-redis-example" --env="server.port=9012" --env="redis.host=ac1bc61a62b6d11e891220ab7e93c748-129646256.us-east-1.elb.amazonaws.com" --env="redis.port=6379" --port=9012***

***kubectl expose deployment spring-boot-redis-example --type=LoadBalancer --name spring-boot-redis-example***

[***http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/***](http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/)

***PONG***

[***http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/testCache***](http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/testCache)

***Stored string in redis:: MysqlStored string in redis:: MongodbStored string in redis:: Redis***

[***http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/putInCache/123/ABC***](http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/putInCache/123/ABC)

***OK***

[***http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/getFromCache/123***](http://af35200372c0d11e88cd90ab7e93c748-852126867.us-east-1.elb.amazonaws.com:9012/getFromCache/123)

***ABC***