Installing and Configuring Redis

1) Get Latest Redis source from https://download.redis.io/releases/redis-6.2.6.tar.gz

```
[ec2-user@ip-172-31-91-13 ~]$ wget https://download.redis.io/releases/redis-6.2.6.tar.gz
--2022-04-16 01:13:23--  https://download.redis.io/releases/redis-6.2.6.tar.gz
Resolving download.redis.io (download.redis.io)... 45.60.121.1
Connecting to download.redis.io (download.redis.io)|45.60.121.1|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2476542 (2.4M) [application/octet-stream]
Saving to: 'redis-6.2.6.tar.gz'

100%[==============================================================================================>] 2,476,542   --.-K/s   in 0.08s

2022-04-16 01:13:23 (30.3 MB/s) - 'redis-6.2.6.tar.gz' saved [2476542/2476542]

[ec2-user@ip-172-31-91-13 ~]$ ls
redis-6.2.6.tar.gz
```

2) Extract the components: tar -xzf redis-6.2.6.tar.gz

```
[ec2-user@ip-172-31-91-13 ~]$ tar -xzf redis-6.2.6.tar.gz
[ec2-user@ip-172-31-91-13 ~]$ ls
redis-6.2.6  redis-6.2.6.tar.gz
[ec2-user@ip-172-31-91-13 ~]$
```

3) Browse to the directory using the cd redis-6.2.6 command

```
[ec2-user@ip-172-31-91-13 ~]$ cd redis-6.2.6/
[ec2-user@ip-172-31-91-13 redis-6.2.6]$ ls
00-RELEASENOTES  CONDUCT         COPYING  INSTALL   MANIFESTO  redis.conf  runtest-cluster    runtest-sentinel  src    TLS.md
BUGS             CONTRIBUTING    deps     Makefile  README.md  runtest     runtest-moduleapi  sentinel.conf     tests  utils
[ec2-user@ip-172-31-91-13 redis-6.2.6]$
```

4) Execute sudo yum groupinstall 'Development Tools'

```
[ec2-user@ip-172-31-91-13 redis-6.2.6]$ sudo yum groupinstall 'Development Tools'
```

5) Execute sudo yum install gcc make

```
[ec2-user@ip-172-31-91-13 redis-6.2.6]$ sudo yum install gcc make
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Package 1:make-3.82-24.amzn2.x86_64 already installed and latest version
Resolving Dependencies
--> Running transaction check
---> Package gcc.x86_64 0:7.3.1-13.amzn2 will be installed
--> Processing Dependency: cpp = 7.3.1-13.amzn2 for package: gcc-7.3.1-13.amzn2.x86_64
--> Processing Dependency: libsanitizer >= 7.3.1-13.amzn2 for package: gcc-7.3.1-13.amzn2.x86_64
--> Processing Dependency: libquadmath >= 7.3.1-13.amzn2 for package: gcc-7.3.1-13.amzn2.x86_64
--> Processing Dependency: libmpx >= 7.3.1-13.amzn2 for package: gcc-7.3.1-13.amzn2.x86_64
--> Processing Dependency: libitm >= 7.3.1-13.amzn2 for package: gcc-7.3.1-13.amzn2.x86_64
--> Processing Dependency: libcilkrts >= 7.3.1-13.amzn2 for package: gcc-7.3.1-13.amzn2.x86_64
--> Processing Dependency: libatomic >= 7.3.1-13.amzn2 for package: gcc-7.3.1-13.amzn2.x86_64
--> Processing Dependency: glibc-devel >= 2.2.90-12 for package: gcc-7.3.1-13.amzn2.x86_64
```

Press y

```
Total download size: 36 M
Installed size: 95 M
Is this ok [y/d/N]: y
Downloading packages:
(1/13): cpp-7.3.1-13.amzn2.x86_64.rpm                                              |  9.2 MB  00:00:00
(2/13): glibc-devel-2.26-58.amzn2.x86_64.rpm                                       |  994 kB  00:00:00
(3/13): glibc-headers-2.26-58.amzn2.x86_64.rpm                                     |  514 kB  00:00:00
(4/13): libatomic-7.3.1-13.amzn2.x86_64.rpm                                        |   46 kB  00:00:00
(5/13): libcilkrts-7.3.1-13.amzn2.x86_64.rpm                                       |   85 kB  00:00:00
(6/13): libitm-7.3.1-13.amzn2.x86_64.rpm                                           |   84 kB  00:00:00
(7/13): libmpc-1.0.1-3.amzn2.0.2.x86_64.rpm                                        |   52 kB  00:00:00
(8/13): libmpx-7.3.1-13.amzn2.x86_64.rpm                                           |   51 kB  00:00:00
(9/13): libquadmath-7.3.1-13.amzn2.x86_64.rpm                                      |  189 kB  00:00:00
(10/13): gcc-7.3.1-13.amzn2.x86_64.rpm                                             |   22 MB  00:00:00
(11/13): libsanitizer-7.3.1-13.amzn2.x86_64.rpm                                    |  641 kB  00:00:00
(12/13): kernel-headers-5.10.106-102.504.amzn2.x86_64.rpm                          |  1.4 MB  00:00:00
(13/13): mpfr-3.1.1-4.amzn2.0.2.x86_64.rpm                                         |  208 kB  00:00:00
--------------------------------------------------------------------------------------------------------
Total                                                                  44 MB/s |   36 MB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : mpfr-3.1.1-4.amzn2.0.2.x86_64                                                        1/13
  Installing : libmpc-1.0.1-3.amzn2.0.2.x86_64                                                      2/13
  Installing : cpp-7.3.1-13.amzn2.x86_64                                                            3/13
  Installing : libitm-7.3.1-13.amzn2.x86_64                                                         4/13
  Installing : libmpx-7.3.1-13.amzn2.x86_64                                                         5/13
  Installing : kernel-headers-5.10.106-102.504.amzn2.x86_64 [###################################  ] 6/13
```

6) Execute sudo make. This step takes some time. Please wait

```
[ec2-user@ip-172-31-91-13 redis-6.2.6]$ sudo make
cd src && make all
make[1]: Entering directory '/home/ec2-user/redis-6.2.6/src'
    CC Makefile.dep
```

At the end you should find the following message:

```
    CC gopher.o
    CC tracking.o
    CC connection.o
    CC tls.o
    CC sha256.o
    CC timeout.o
    CC setcpuaffinity.o
    CC monotonic.o
    CC mt19937-64.o
    LINK redis-server
    INSTALL redis-sentinel
    CC redis-cli.o
    CC cli_common.o
    LINK redis-cli
    CC redis-benchmark.o
    LINK redis-benchmark
    INSTALL redis-check-rdb
    INSTALL redis-check-aof

Hint: It's a good idea to run 'make test' ;)

make[1]: Leaving directory '/home/ec2-user/redis-6.2.6/src'
```

7) Execute sudo yum install tcl

```
[ec2-user@ip-172-31-91-13 redis-6.2.6]$ sudo yum install tcl
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
---> Package tcl.x86_64 1:8.5.13-8.amzn2.0.2 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package          Arch         Version                   Repository        Size
================================================================================
Installing:
 tcl              x86_64       1:8.5.13-8.amzn2.0.2       amzn2-core        1.9 M

Transaction Summary
================================================================================
Install  1 Package

Total download size: 1.9 M
Installed size: 4.4 M
Is this ok [y/d/N]: y
```

8) Execute sudo make test. This step will take some time. Please wait. Once completed you should see this message. Incase you don't see this message, **run this command again**.


```
  1 seconds - unit/tls
 64 seconds - integration/redis-cli
  2 seconds - unit/tracking
157 seconds - unit/type/list-2
  2 seconds - unit/shutdown
  2 seconds - unit/oom-score-adj
  1 seconds - unit/networking
 47 seconds - unit/memefficiency
179 seconds - unit/type/zset
 73 seconds - unit/obuf-limits
 49 seconds - unit/pendingquerybuf
123 seconds - unit/scripting
183 seconds - integration/replication-4
187 seconds - integration/replication-3
193 seconds - integration/replication-psync
238 seconds - unit/type/stream
122 seconds - unit/hyperloglog
207 seconds - north
226 seconds - unit/maxmemory
334 seconds - integration/replication
114 seconds - defrag

\o/ All tests passed without errors!

Cleanup: may take some time... OK
make[1]: Leaving directory '/home/ec2-user/redis-6.2.6/src'
[ec2-user@ip-172-31-91-13 redis-6.2.6]$
```

9) Execute sudo make test install. This command will make redis commands available across the system. You can run redis commands from anywhere in your machine
10) Browse to /home/ec2-user/redis-6.2.6 and edit the redis.conf file

```
 80 # When protected mode is on and if:
 81 #
 82 # 1) The server is not binding explicitly to a set of addresses usin
 83 #    "bind" directive.
 84 # 2) No password is configured.
 85 #
 86 # The server only accepts connections from clients connecting from
 87 # IPv4 and IPv6 loopback addresses 127.0.0.1 and ::1, and from Unix
 88 # sockets.
 89 #
 90 # By default protected mode is enabled. You should disable it only i
 91 # you are sure you want clients from other hosts to connect to Redis
 92 # even if no authentication is configured, nor a specific set of int
 93 # are explicitly listed using the "bind" directive.
 94 protected-mode no
 95
 96 # Accept connections on the specified port, default is 6379 (IANA #8
 97 # If port 0 is specified Redis will not listen on a TCP socket.
 98 port 6379
 99
:set nu
```

11) Start redis server with *redis-server redis.conf* command

```
[ec2-user@ip-172-31-91-13 redis-6.2.6]$ redis-server redis.conf
16934:C 16 Apr 2022 01:43:24.686 # oO0oO0OoO0Oo Redis is starting oO0oO0OoO0Oo
16934:C 16 Apr 2022 01:43:24.687 # Redis version=6.2.6, bits=64, commit=00000000, modified=0, pid=16934, just started
16934:C 16 Apr 2022 01:43:24.687 # Configuration loaded
16934:M 16 Apr 2022 01:43:24.687 * monotonic clock: POSIX clock_gettime
                _._
           _.-``__ ''-._
      _.-``    `.  `_.  ''-._           Redis 6.2.6 (00000000/0) 64 bit
  .-`` .-```.  ```\/    _.,_ ''-._
 (    '      ,       .-`  | `,    )     Running in standalone mode
 |`-._`-...-` __...-.``-._|'` _.-'|     Port: 6379
 |    `-._   `._    /     _.-'    |     PID: 16934
  `-._    `-._  `-./  _.-'    _.-'
 |`-._`-._    `-.__.-'    _.-'_.-'|
 |    `-._`-._        _.-'_.-'    |           https://redis.io
  `-._    `-._`-.__.-'_.-'    _.-'
 |`-._`-._    `-.__.-'    _.-'_.-'|
 |    `-._`-._        _.-'_.-'    |
  `-._    `-._`-.__.-'_.-'    _.-'
      `-._    `-.__.-'    _.-'
          `-._        _.-'
              `-.__.-'

16934:M 16 Apr 2022 01:43:24.688 # Server initialized
16934:M 16 Apr 2022 01:43:24.688 # WARNING overcommit_memory is set to 0! Background save may fail under low memory condition. To fix this issue add 'vm.ove
rcommit_memory = 1' to /etc/sysctl.conf and then reboot or run the command 'sysctl vm.overcommit_memory=1' for this to take effect.
16934:M 16 Apr 2022 01:43:24.688 * Ready to accept connections
```

12) A sample Spring Boot application has been provided at https://github.com/musibs/spring-redis to test the Redis connectivity. Build the application using mvn clean install command and run it in the server. It will publish messages to Redis.

```
[ec2-user@ip-172-31-94-199 ~]$ java -jar spring-redis-0.0.1-SNAPSHOT.jar

  .   ____          _            __ _ _
 /\\ / ___'_ __ _ _(_)_ __  __ _ \ \ \ \
( ( )\___ | '_ | '_| | '_ \/ _` | \ \ \ \
 \\/  ___)| |_)| | | | | || (_| |  ) ) ) )
  '  |____| .__|_| |_|_| |_\__, | / / / /
 =========|_|==============|___/=/_/_/_/
 :: Spring Boot ::                (v2.6.6)

2022-04-16 01:05:39.100  INFO 9526 --- [           main] c.b.s.data.redis.SpringRedisApplication  : Starting SpringRedisApplication v0.0.1-SNAPSHOT using Ja
va 11.0.13 on ip-172-31-94-199.ec2.internal with PID 9526 (/home/ec2-user/spring-redis-0.0.1-SNAPSHOT.jar started by ec2-user in /home/ec2-user)
2022-04-16 01:05:39.109  INFO 9526 --- [           main] c.b.s.data.redis.SpringRedisApplication  : No active profile set, falling back to 1 default profile
: "default"
2022-04-16 01:05:40.548  INFO 9526 --- [           main] .s.d.r.c.RepositoryConfigurationDelegate : Multiple Spring Data modules found, entering strict repo
sitory configuration mode!
2022-04-16 01:05:40.550  INFO 9526 --- [           main] .s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data Redis repositories in DEFAULT
mode.
2022-04-16 01:05:40.957  INFO 9526 --- [           main] .s.d.r.c.RepositoryConfigurationDelegate : Finished Spring Data repository scanning in 366 ms. Foun
d 1 Redis repository interfaces.
2022-04-16 01:05:42.861  INFO 9526 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 8080 (http)
2022-04-16 01:05:42.893  INFO 9526 --- [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2022-04-16 01:05:42.893  INFO 9526 --- [           main] org.apache.catalina.core.StandardEngine  : Starting Servlet engine: [Apache Tomcat/9.0.60]
2022-04-16 01:05:43.076  INFO 9526 --- [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded WebApplicationContext
2022-04-16 01:05:43.080  INFO 9526 --- [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in
3831 ms
2022-04-16 01:05:45.897  INFO 9526 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 8080 (http) with context path
''
2022-04-16 01:05:45.994  INFO 9526 --- [           main] c.b.s.data.redis.SpringRedisApplication  : Started SpringRedisApplication in 8.679 seconds (JVM run
ning for 9.945)
2022-04-16 01:05:46.279  INFO 9526 --- [           main] ication$$EnhancerBySpringCGLIB$$b0cdaba0 : Student id is Eng2015001
```

13) Access the messages from redis server using redis-cli

```
[ec2-user@ip-172-31-94-199 ~]$ redis-cli
127.0.0.1:6379> keys *
1) "Student"
2) "Student:Eng2015001"
127.0.0.1:6379>
```