Redis User Manual:

Performance Benchmarking Suite

Contents

User Manual for Redis MBSuite

Important –

1 For the benchmarking purpose we used Redis java client known as Jedis.

2 Redis is broker based product, so before running any tests ensure that redis-server is installed in your machine.

3 Download the redis from " http://download.redis.io/releases/redis-2.6.16.tar.gz "

4 To install redis extract the file   redis-2.6.16.tar.gz , for that go to terminal and run command

      tar –zxvf redis-2.6.16.tar.gz

5 It then creates   redis-2.6.16 directory under the path that you specified.

6 We provide you a configuration file called as redis.conf which is available in

  es-perftest/setup-info/ copy this file into your redis Installation directory.

  e.g (If you installed redis in /root/redis-setup /   then copy the redis.conf which we gave

  You into /root/redis-setup/redis-2.6.16 /) which overrides

  The original file which is already present.

7 To run the broker go to redis installation directory (if redis installed in /root/redis-setup/ then go to

  /root/redis-setup/redis-2.6.16/src/ and type   ./redis-server ../redis.conf   to start broker and Ctrl + c to stop broker)

8 Run the broker in separate terminal and check if broker is successfully started & alive.

9 Please note, whenever running the tests, ensure that the broker-statistics is started first then subscriber and

  then the publisher.

10 When running multiple iterations of a test, please press enter at the end of each run on the broker-statistics

  Publisher and subscriber console to start the next iteration.

11 For corresponding subscriber and publisher runs, please give the same tokens for correlating the results.

12 For detailed description of each workload model, please refer the document

      Performance Benchmarking Plan.pdf

14 The database and all the allied tables have to be created manually before running the Publishers/Subscribers

  this is a one-time activity.

Pre-requisites for each Work Load Model

1. Broker , Publisher and Subscriber installed on three different machines

2. Open a terminal and navigate to the mbsuite/config folder of the broker-statistics

3. Open the common-settings.properties and set the values for the following –

  db-url=jdbc:mysql://<host-name/IP address>/<database-name>?user=<database

  username>&password=<database password>

  For e.g.

  db-url=jdbc:mysql://10.88.203.39/redis-mbsuite?user=root&password=root123

4. Repeat steps 2 and 3 for subscriber & publisher

1 Work Load Model: WL1

1.1 Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal
2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker
3. Open the broker-config.properties file and give the following values
   a. shutdownDelay= 40
   b. broker = redis-server
4. Navigate to mbsuite/bin/ext folder
5. Run the following command for starting the broker statistics

   ./run-broker-statistics.sh 100 500 8100 redis redistest WL1

   Where WL1 – token name by which the test data will be stored in the database

   100 - Min message size in bytes

   500 - Increment in bytes

   8100- Max message size in bytes

   redis-is the task

   redistest-is the group-name

1.2 Running the Subscriber

1. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the subscriber
2. Open the subscriber-config.properties file and give the following values
   a. shutdownDelay =40
   b. maxSubscriber =1
   c. dumpDetails =false
   d. maxTopics =1
   e iteration=1
3. Navigate to mbsuite/bin/ext folder
4. Run the following command for starting the subscriber

   ./run-subscriber-vary-size.sh 100 500 8100 redis redistest WL1

   where WL1 – token name by which the test data will be stored in the database

   100 - Min message size in bytes

   500 - Increment in bytes

   8100- Max message size in bytes

   redis-is the task in mbsuite/config/subscriber-config.tmpl file

   redistest-is the group-name in mbsuite/config/subscriber-config.tmpl file

5. To check if the subscriber is running properly and receiving messages, in another terminal, navigate to the mbsuite/bin/ext/logs folder and give the following command

   tail –f run-subscriber-vary-size.log

1.3 Running the Publisher

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the publisher

2. Open the publisher-config.properties file and give the following values

   a. runSec=10

   b. maxPublisher=1

   c. **msgSize**=100 (or may be blank because this is varying message-size test)

   d. dumpDetails=false

   e. maxTopics=1

   f. iteration=1

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the publisher

   ./run-publisher-vary-size.sh 100 500 8100 redis redistest WL1

   Where WL1 – token name by which the test data will be stored in the database

   100 - Min message size in bytes

   500 - Increment in bytes

   8100- Max message size in bytes

   redis -is the task in mbsuite/config/publisher-config.tmpl file

   redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the mbsuite/bin/ext/logs folder and give the following command

   tail –f run-publisher-vary-size.log

2 Work Load Model: WL4

2.1 Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal
2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker
3. Open the broker-config.properties file and give the following values
   a. shutdownDelay=40
   b. broker = redis-server
4. Navigate to mbsuite/bin/ext folder
5. Run the following command for starting the broker statistics

   ./run-broker-statistics.sh 1 2 20 redis redistest WL4

   Where WL4 – token name by which the test data will be stored in the database

   1 - Min subscribers

   2 - Increment

   20- Max subscribers

   redis -is the task

   redistest-is the group-name

2.2 Running the Subscriber

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the subscriber
2. Open the subscriber-config.properties file and give the following values
   a. shutdownDelay=40
   b. **maxSubscriber**=1(or may be blank because this is varying subscriber test)
   c. dumpDetails=false
   d. maxTopics=1
   e. iteration=1
3. Navigate to mbsuite/bin/ext folder
4. Run the following command for starting the subscriber

   ./run-subscriber-vary-sub.sh 1 2 20 redis redistest WL4

   Where WL4 – token name by which the test data will be stored in the database

   1 - Min subscribers

   2 - Increment

   20- Max subscribers

   redis-is the task in mbsuite/config/subscriber-config.tmpl file

   redistest-is the group-name in mbsuite/config/subscriber-config.tmpl file

5. To check if the subscriber is running properly and receiving messages, in another terminal,
   navigate to the mbsuite/bin/ext/logs folder and give the following command

   tail –f run-subscriber-vary-sub.log

2.3 Running the Publisher

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the publisher

2. Open the publisher-config.properties file and give the following values

    a. runSec=10

    b. maxPublisher=1

    c. msgSize=60

    d. dumpDetails=false

    e. maxTopics=1

    f. iteration=1

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the publisher

    ./run-publisher-vary-sub.sh 1 2 20 redis redistest WL4

    Where WL4 – token name by which the test data will be stored in the database

    1 - Min subscribers

    2 - Increment

    20- Max subscribers

    redis -is the task in mbsuite/config/publisher-config.tmpl file

    redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the

    mbsuite/bin/ext/logs folder and give the following command

    tail –f run-publisher-vary-sub.log

3 Work Load Model: WL4.1

3.1 Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal
2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker
3. Open the broker-config.properties file and give the following values
   a. shutdownDelay=40
   b. broker = redis-server
4. Navigate to mbsuite/bin/ext folder
5. Run the following command for starting the broker statistics

   ./run-broker-statistics.sh 1 2 20 redis redistest WL4.1

   Where WL4.1 – token name by which the test data will be stored in the database

   1 - Min subscribers

   2 - Increment

   20- Max subscribers

   redis-is the task

   redistest-is the group-name

3.2 Running the Subscriber

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the subscriber
2. Open the subscriber-config.properties file and give the following values
   a. shutdownDelay=40
   b. **maxSubscriber**=1(or may be blank because this is varying subscriber test)
   c. dumpDetails=false
   d. maxTopics=1
   e. iteration=1
3. Navigate to mbsuite/bin/ext folder
4. Run the following command for starting the subscriber

   ./run-subscriber-vary-sub.sh 1 2 20 redis redistest WL4.1

   Where WL4.1 – token name by which the test data will be stored in the database

   1 - Min subscribers

   2 - Increment

   20- Max subscribers

   redis-is the task in mbsuite/config/subscriber-config.tmpl file

   redistest-is the group-name in mbsuite/config/subscriber-config.tmpl file
5. To check if the subscriber is running properly and receiving messages, in another terminal, navigate to the mbsuite/bin/ext/logs folder and give the following command

   tail –f run-subscriber-vary-sub.log

3.3 Running the Publisher

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the publisher

2. Open the publisher-config.properties file and give the following values

   a. runSec=10

   b. maxPublisher=1

   c. msgSize=1024

   d. dumpDetails=false

   e. maxTopics=1

   f. iteration=1

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the publisher

   ./run-publisher-vary-sub.sh 1 2 20 redis redistest WL4.1

   Where WL4.1 – token name by which the test data will be stored in the database

   1 - Min subscribers

   2 - Increment

   20- Max subscribers

   redis-is the task in mbsuite/config/publisher-config.tmpl file

   redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the mbsuite/bin/ext/logs folder and give the following command

   tail –f run-publisher-vary-sub.log

4 Work Load Model : WL7

4.1 Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal
2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker
3. Open the broker-config.properties file and give the following values
   a. shutdownDelay=40
   b. broker = redis-server
4. Navigate to mbsuite/bin/ext folder
5. Run the following command for starting the broker statistics

   ./run-broker-statistics.sh 1 5 101 redis redistest WL7

   Where WL7 – token name by which the test data will be stored in the database

   1 - Min subscribers,publishers,topics

   5 - Increment

   101- Max subscribers,publishers,topics

   redis-is the task

   redistest-is the group-name

4.2 Running the Subscriber

1. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the Subscriber
2. Open the subscriber-config.properties file and give the following values
   a. shutdownDelay=40
   b. maxSubscriber=1
   c. dumpDetails=false
   d. **maxTopics**=1(or may be blank because this is varying topics test)
   e. iteration=1
3. Navigate to mbsuite/bin/ext folder
4. Run the following command for starting the subscriber

   ./run-subscriber-vary-topics.sh 1 5 101 redis redistest WL7

   where WL7 – token name by which the test data will be stored in the database

   1 - Min subscribers,publishers,topics

   5 - Increment

   101- Max subscribers,publishers,topics

   redis-is the task in mbsuite/config/subscriber-config.tmpl file

   redistest-is the group-name in mbsuite/config/subscriber-config.tmpl file

5. To check if the subscriber is running properly and receiving messages, in another terminal, navigate to the mbsuite/bin/ext/logs folder and give the following command
   tail –f run-subscriber-vary-topics.log

4.3 Running the Publisher

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the publisher

2. Open the publisher-config.properties file and give the following values

    a. runSec=10

    b. maxPublisher=1

    c. **msgSize**=100 (This message should vary from 100 to 8100 in increment of 500)

    d. dumpDetails=false

    e. **maxTopics**=1 (or may be blank because this is varying topics test)

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the publisher

    ./run-publisher-vary-topics.sh 1 5 101 redis redistest WL7

    Where WL7 – token name by which the test data will be stored in the database

    1 - Min subscribers,publishers,topics

    5 - Increment

    101- Max subscribers,publishers,topics

    redis-is the task in mbsuite/config/publisher-config.tmpl file

    redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the

    mbsuite/bin/ext/logs folder and give the following command

    tail –f run-publisher-vary-topics.log

    NOTE: After completion of 1 iteration go to mbsuite/bin/ext/config and change the message
    size in publisher-config,properties to 600 (for next run it will be increment of 500 i.e 1100
    and continue up to 8100 increment of 500)

5   Work Load Model : WL8

5.1   Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal

2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker

3. Open the broker-config.properties file and give the following values

    a.   shutdownDelay=40

    b.   broker = redis-server

4. Navigate to mbsuite/bin/ext folder

5. Run the following command for starting the broker statistics

    ./run-broker-statistics.sh 50 50 600 redis redistest WL8

    Where WL8 – token name by which the test data will be stored in the database

    > 50 - Min subscribers,publishers,topics
    >
    > 50 - Increment
    >
    > 600- Max subscribers,publishers,topics
    >
    > redis-is the task
    >
    > redistest-is the group-name

5.2   Running the Subscriber

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the subscriber

2. Open the subscriber-config.properties file and give the following values

    a.   shutdownDelay=40

    b.   maxSubscriber=1

    c.   dumpDetails=false

    d.   **maxTopics**=1(or may be blank because this is varying topics test)

    e.   iteration=1

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the subscriber

    ./run-subscriber-vary-topics.sh   50 50 600 redis redistest WL8

    Where WL8 – token name by which the test data will be stored in the database

    > 50 - Min subscribers,publishers,topics
    >
    > 50 - Increment
    >
    > 600- Max subscribers,publishers,topics
    >
    > redis-is the task in mbsuite/config/subscriber-config.tmpl file
    >
    > redistest-is the group-name in mbsuite/config/subscriber-config.tmpl file

5. To check if the subscriber is running properly and receiving messages, in another terminal, navigate to the mbsuite/bin/ext/logs folder and give the following command

    tail –f run-subscriber-vary-topics.log

5.3　Running the Publisher

Note: For this test go to mbsuite/config open publisher-config.tmpl and set value of `throttlingFactor` to 150 and
For e.g
```
<attribute>
        <key>throttlingFactor</key>
        <value>150</value>
    </attribute
```

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the publisher

2. Open the publisher-config.properties file and give the following values

   a.　runSec=10

   b.　maxPublisher=1

   c.　msgSize=256

   d.　dumpDetails=false

   e.　maxTopics=1 (or may be blank because this is varying topics test)

   f.　iteration=1

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the publisher

   ./run-publisher-vary-topics.sh 50 50 600 redis redistest WL8

   Where WL8 – token name by which the test data will be stored in the database

   　　50 - Min subscribers,publishers,topics

   　　50 - Increment

   　　600- Max subscribers,publishers,topics

   　　redis-is the task in mbsuite/config/publisher-config.tmpl file

   　　redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the
   mbsuite/bin/ext/logs folder and give the following command

   tail –f run-publisher-vary-topics.log

Note: After the test finish go to mbsuite/config open publisher-config.tmpl and reset value of
`throttlingFactor` to -1 .

6   Work Load Model : WL8 (message size 1024)

6.1   Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal
2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker
3. Open the broker-config.properties file and give the following values
    a. shutdownDelay=40
    b. broker = redis-server
4. Navigate to mbsuite/bin/ext folder
5. Run the following command for starting the broker statistics

    ./run-broker-statistics.sh 50 50 600 redis redistest WL8

    Where WL8 – token name by which the test data will be stored in the database

    50 - Min subscribers,publishers,topics

    50 - Increment

    600- Max subscribers,publishers,topics

    redis-is the task

    redistest-is the group-name

6.2   Running the Subscriber

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the subscriber
2. Open the subscriber-config.properties file and give the following values
    a. shutdownDelay=40
    b. maxSubscriber=1
    c. dumpDetails=false
    d. **maxTopics**=1(or may be blank because this is varying topics test)
    e. iteration=1
3. Navigate to mbsuite/bin/ext folder
4. Run the following command for starting the subscriber

    ./run-subscriber-vary-topics.sh 50 50 600 redis redistest WL8

    Where WL8 – token name by which the test data will be stored in the database

    50 - Min subscribers,publishers,topics

    50 - Increment

    600- Max subscribers,publishers,topics

    redis-is the task in mbsuite/config/subscriber-config.tmpl file

    redistest-is the group-name in mbsuite/config/subscriber-config.tmpl file

5. To check if the subscriber is running properly and receiving messages, in another terminal, navigate to the mbsuite/bin/ext/logs folder and give the following command

    tail –f run-subscriber-vary-topics.log

6.3 Running the Publisher

Note: For this test go to mbsuite/config open publisher-config.tmpl and set value of `throttlingFactor` to 150 and
   For e.g
```
<attribute>
    <key> throttlingFactor</key>
    <value>150</value>
</attribute>
```

1. Open a terminal and navigate to the mbsuite/bin/ext/config   folder of the publisher

2. Open the publisher-config.properties file and give the following values

    a. runSec=10

    b. maxPublisher=1

    c. msgSize=1024

    d. dumpDetails=false

    e. **maxTopics**=1 (or may be blank because this is varying topics test)

    f. iteration=1

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the publisher

    ./run-publisher-vary-topics.sh 50 50 600 redis redistest WL8

    Where WL8 – token name by which the test data will be stored in the database

        50 - Min subscribers,publishers,topics

        50 - Increment

        600- Max subscribers,publishers,topics

        redis-is the task in mbsuite/config/publisher-config.tmpl file

        redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the

    mbsuite/bin/ext/logs folder and give the following command

    tail –f run-publisher-vary-topics.log

Note: After the test finish go to mbsuite/config open publisher-config.tmpl and reset value of
   `throttlingFactor` to -1 .

7 Latency test : latency as a varying message size

7.1 Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal
2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker
3. Open the broker-config.properties file and give the following values
   a. shutdownDelay=40
   b. broker = redis-server
4. Navigate to mbsuite/bin/ext folder
5. Run the following command for starting the broker statistics

   ./run-broker-statistics.sh 100 500 3100 redis-latency redistest LAT-VARY-SIZE

   Where LAT-VARY-SIZE – token name by which the test data will be stored in the database

   100 - Min message size bytes

   500 - Increment in bytes

   3100- Max message size in bytes

   redis-latency-is the task

   redistest-is the group-name

7.2 Running the Publisher

Note: For this test go to mbsuite/config open publisher-config.tmpl and set value of `throttlingFactor` to 150 and
For e.g
```
<attribute>
     <key>throttlingFactor</key>
     <value>150</value>
</attribute>
```

1. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the publisher
2. Open the publisher-config.properties file and give the following values
   a. runSec=10
   b. maxPublisher=1
   c. msgSize=100(or may be blank because this is varying message size test)
   d. dumpDetails=true
   e. maxTopics=1
   f. iteration=1
3. Navigate to mbsuite/bin/ext folder
4. Run the following command for starting the publisher

   ./run-publisher-vary-size.sh 100 500 3100 redis-latency redistest LAT-VARY-SIZE

   Where LAT-VARY-SIZE – token name by which the test data will be stored in the database

   100 - Min message size bytes

   500 - Increment in bytes

   3100- Max message size in bytes

   redis-latency -is the task in mbsuite/config/publisher-config.tmpl file

   redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the
   mbsuite/bin/ext/logs folder and give the following command

   tail –f run-publisher-vary-size.log

   NOTE: 1) There is no need of subscriber for latency test only broker-statistics & publishers are sufficient

   2) After the test finish go to mbsuite/config open publisher-config.tmpl and reset value of
   `throttlingFactor` to -1 .

8 Latency test : latency as a varying throughput

8.1 Running the Broker-Statistics

1. Before running this model ensure that broker is running in another separate terminal

2. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the broker

3. Open the broker-config.properties file and give the following values

   a. shutdownDelay=40

   b. broker = redis-server

4. Navigate to mbsuite/bin/ext folder

5. Run the following command for starting the broker statistics

   ./run-broker-statistics.sh 2 2 20 redis-latency redistest LAT-VARY-THPUT

   Where LAT-VARY-THPUT – token name by which the test data will be stored in the database

   2 - Min subscribers,publishers,topics

   2 - Increment

   20- Max subscribers,publishers,topics

   redis-latency -is the task

   redistest-is the group-name

8.2 Running the Publisher

Note: For this test go to mbsuite/config open publisher-config.tmpl and set value of `throttlingFactor` to 150 and

For e.g
```
<attribute>
    <key>throttlingFactor</key>
    <value>150</value>
</attribute>
```

1. Open a terminal and navigate to the mbsuite/bin/ext/config folder of the publisher

2. Open the publisher-config.properties file and give the following values

   a. runSec=10

   b. maxPublisher=1

   c. msgSize=100

   d. **dumpDetails=true**

   e. **maxTopics=1** (or may be blank because this is varying topics test)

   f. iteration=1

3. Navigate to mbsuite/bin/ext folder

4. Run the following command for starting the publisher

   ./run-publisher-vary-topics.sh 2 2 20 redis-latency redistest LAT-VARY-THPUT

   Where LAT-VARY-THPUT – token name by which the test data will be stored in the database

   2 - Min subscribers,publishers,topics

   2 - Increment

   20- Max subscribers,publishers,topics

   redis-latency -is the task in mbsuite/config/publisher-config.tmpl file

   redistest-is the group-name in mbsuite/config/ publisher -config.tmpl file

5. To check if the publisher is running properly, in another terminal, navigate to the

   mbsuite/bin/ext/logs folder and give the following command

   tail –f run-publisher-vary- topics.log

   NOTE: 1) There is no need of subscriber for latency test only broker-statistics & publishers are sufficient

   2) After the test finish go to mbsuite/config open publisher-config.tmpl and reset value of
   `throttlingFactor` to -1