

User Manual:
Performance Benchmarking Suite

Contents

Pre-requisites for each Work Load Model	3
1 Work Load Model: WL1	4
1.1 Running the Publisher	4
1.2 Running the Subscriber	4
2 Work Load Model: WL2	5
2.1 Running the Publisher	5
2.2 Running the Subscriber	5
3 Work Load Model: WL2.1	6
3.1 Running the Publisher	6
3.2 Running the Subscriber	6
4 Work Load Model : WL3	7
4.1 Running the Publisher	7
4.2 Running the Subscriber	7
5 Work Load Model : WL3.1	8
5.1 Running the Publisher	8
5.2 Running the Subscriber	8
6 Work Load Model : WL4	9
6.1 Running the Publisher	9
6.2 Running the Subscriber	10
7 Work Load Model: WL4.1	10
7.1 Running the Publisher	10
7.2 Running the Subscriber	11
8 Work Load Model: WL5	11
9 Work Load Model: WL6	11
9.1 Running the Publisher	11
9.2 Running the Subscriber	12
10 Work Load Model: WL7	15
10.1 Running the Publisher	15
10.2 Running the Subscriber	15

User Manual for MBSuite

Important –

1. Before running the scripts, run the following commands in each shell–

```
source /opt/RTI/rti_set_bash_5.0.0
export RTI_LICENSE_FILE=/opt/RTI/rti_license.dat
echo RTI_LICENSE_FILE=$RTI_LICENSE_FILE
export NDDSHOME=/opt/RTI/ndds.5.0.0/
echo NDDSHOME=$NDDSHOME
export LD_LIBRARY_PATH=$NDDSHOME/lib/x64Linux2.6gcc4.4.5jdk/
echo LD_LIBRARY_PATH=$LD_LIBRARY_PATH
```

where /opt/RTI is the installation location of RTI and a valid license file

“rti_license.dat” is available

2. Please note, whenever running the tests, ensure that the publisher is started first and then the subscriber
3. When running multiple iterations of a test, please press enter at the end of each run on the publisher and subscriber console to start the next iteration.
4. For corresponding subscriber and publisher runs, please give the same tokens for correlating the results.
5. For detailed description of each workload model, please refer the document – **Performance Benchmarking Plan.pdf**
6. All the tests are with Reliability enabled
7. 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. Publisher and Subscriber installed on two different machines
2. Open a terminal and navigate to the mbsuite/config folder of the publisher
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/rtiDDS-mbsuite?user=root&password=root123
4. Repeat steps 2 and 3 for subscriber

1 Work Load Model: WL1

1.1 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. `max_publisher=1`
 - c. `msg_size=60`
 - d. `dump_details=false`
 - e. `max_topics=1`
 - f. `iteration=10`**
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the publisher

```
./run-publisher-vary-size.sh 60 1 60 rtiddstput rticonfig rtiWL1
```

Where `rtiWL1` – token name by which the test data will be stored in the database
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
```

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=17`
 - b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=1`
 - e. `iteration=10`**
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the subscriber

```
./run-subscriber-vary-size.sh 60 1 60 rtiddstput rticonfig rtiWL1
```

where
`rtiWL1` – token name by which the test data will be stored in the database
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
```

2 Work Load Model: WL2

2.1 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. `max_publisher=1`
 - c. `msg_size=100`
 - d. `dump_details=false`
 - e. `max_topics=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 5 100 8000 rtiddstput rticonfig  
rtiWL2
```

Where

`rtiWL2` – token name by which the test data will be stored in the database

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
```

2.2 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. `shutdownelay=17`
 - b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=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 5 100 8000 rtiddstput rticonfig  
rtiWL2
```

where

`rtiWL2` – token name by which the test data will be stored in the database

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
```

3 Work Load Model: WL2.1

3.1 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. **`max_publisher=5`**
 - c. `msg_size=100`
 - d. `dump_details=false`
 - e. `max_topics=1`
3. Navigate to `mbsuite/config/publisher-config.tmpl` and set the value for following property-

```
<key>numSubscribers</key>  
<value>5</value>
```

4. Navigate to `mbsuite/bin/ext` folder
5. Run the following command for starting the publisher
`./run-publisher-vary-size.sh 100 500 8000 rtiddstput rticonfig rtiWL2.1`

Where

`rtiWL2.1` – token name by which the test data will be stored in the database

6. 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`

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=17`
 - b. **`max_subscriber=5`**
 - c. `dump_details=false`

- d. `max_topics=1`
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the subscriber
`./run-subscriber-vary-size.sh 100 500 8000 rtiddstput rticonfig rtiWL2.1`
where
`rtiWL2.1` – token name by which the test data will be stored in the database
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`

NOTE : Please reset the value for the `numSubscribers` to 1 (Refer to step 3 in the Section 3.1) after finishing the execution of this test.

4 Work Load Model : WL3

4.1 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. `max_publisher=1`
 - c. `msg_size=60`
 - d. `dump_details=false`
 - e. `max_topics=1`
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the publisher
`./run-publisher-vary-pub.sh 1 5 51 rtiddstput rticonfig rtiWL3`
Where
`rtiWL3` – token name by which the test data will be stored in the database
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-pub.log`

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=17`

- b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=1`
- 3. Navigate to `mbsuite/bin/ext` folder
- 4. Run the following command for starting the subscriber
`./run-subscriber-vary-pub.sh 1 5 51 rtiddstput rticonfig rtiWL3`
 where
`rtiWL3` – token name by which the test data will be stored in the database
- 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-pub.log`

5 Work Load Model : WL3.1

5.1 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. `max_publisher=1`
 - c. **`msg_size=256`**
 - d. `dump_details=false`
 - e. `max_topics=1`
 - f. `iteration=1`
- 3. Navigate to `mbsuite/bin/ext` folder
- 4. Run the following command for starting the publisher
`./run-publisher-vary-pub.sh 1 5 51 rtiddstput rticonfig rtiWL3.1`
 Where
`rtiWL3.1` – token name by which the test data will be stored in the database
- 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-pub.log`

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=17`
 - b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=1`
 - e. `iteration=1`
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the subscriber


```
./run-subscriber-vary-pub.sh 1 5 51 rtiddstput rticonfig rtiWL3.1
```

 where
`rtiWL3.1` – token name by which the test data will be stored in the database
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-pub.log
```

6 Work Load Model : WL4

6.1 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. `max_publisher=1`
 - c. **`msg_size=60`**
 - d. `dump_details=false`
 - e. `max_topics=1`
 - f. `iteration=1`
3. For each subscriber run, navigate to `mbsuite/config/publisher-config.tmpl` and set the corresponding number of subscribers for following property-


```
<key>numSubscribers</key>
<value><numberOfSubscribers></value>
```
4. Navigate to `mbsuite/bin/ext` folder
5. Run the following command for starting the publisher


```
./run-publisher-vary-sub.sh 1 5 51 rtiddstput rticonfig rtiWL4
```

 Where
`rtiWL4` – token name by which the test data will be stored in the database
6. 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
```

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=17`
 - b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=1`
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the subscriber
`./run-subscriber-vary-sub.sh 1 5 51 rtiddstput rticonfig rtiWL4`
where
`rtiWL4` – token name by which the test data will be stored in the database
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`

NOTE: Please reset the value for the `numSubscribers` to 1 (Refer to step 3 in the Section 6.1) after finishing the execution of this test.

7 Work Load Model: WL4.1

7.1 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. `max_publisher=1`
 - c. **`msg_size=256`**
 - d. `dump_details=false`
 - e. `max_topics=1`
3. For each subscriber run, navigate to `mbsuite/config/publisher-config.tmpl` and set the corresponding number of subscribers for following property-

```
<key>numSubscribers</key>
<value><numberOfSubscribers></value>
```
4. Navigate to `mbsuite/bin/ext` folder
5. Run the following command for starting the publisher

```
./run-publisher-vary-sub.sh 1 5 51 rtiddstput rticonfig  
rtiWL4.1
```

Where

rtiWL4.1 – token name by which the test data will be stored in the database

6. 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`

7.2 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=17`
 - b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=1`
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the subscriber

```
./run-subscriber-vary-sub.sh 1 5 51 rtiddstput rticonfig  
rtiWL4.1
```

where

rtiWL4.1 – token name by which the test data will be stored in the database
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`

8 Work Load Model: WL5

Not applicable for RTI, refer to WL7 instead.

9 Work Load Model: WL6

9.1 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. `max_publisher=50`

- c. `msg_size=100`
 - d. `dump_details=false`
 - e. `max_topics=1`
- 3. For each subscriber run, navigate to `mbsuite/config/publisher-config.tmpl` and set the corresponding number of subscribers for following property-


```
<key>numSubscribers</key>
      <value><numberOfSubscribers></value>
```
- 4. Navigate to ***mbsuite/bin/ext*** folder
- 5. Run the following command for starting the publisher


```
./run-publisher-vary-size.sh 100 1 100 rtiddstput rticonfig rtiWL6
```

Where

`rtiWL6` – token name by which the test data will be stored in the database
- 6. 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: for this test, for every run of the subscriber the publisher has to be started using the above mentioned command.

9.2 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=17`
 - b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=1`
- 3. Navigate to `mbsuite/bin/ext` folder
- 4. Run the following command for starting the subscriber


```
./run-subscriber-vary-sub.sh 1 5 51 rtiddstput rticonfig rtiWL6
```

where

`rtiWL6` – token name by which the test data will be stored in the database
- 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
```

10 Work Load Model: WL7

10.1 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. `max_publisher=1`
 - c. `msg_size=100`
 - d. `dump_details=false`
 - e. `max_topics=1`
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the publisher

```
./run-publisher-vary-topics.sh 1 5 50 rtiddstput rticonfig rtiWL7
```

Where

`rtiWL7` – token name by which the test data will be stored in the database
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
```

10.2 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=17`
 - b. `max_subscriber=1`
 - c. `dump_details=false`
 - d. `max_topics=1`
3. Navigate to `mbsuite/bin/ext` folder
4. Run the following command for starting the subscriber

```
./run-subscriber-vary-topics.sh 1 5 50 rtiddstput rticonfig rtiWL7
```

where

`rtiWL7` – token name by which the test data will be stored in the database
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
```

NOTE: By default the all the scripts have a maximum heap size of 14 GB allocated to Java. In case the program runs out of heap space, increase this value to a higher value in the script `run-subscriber-vary-topics.sh` and rerun the test.

For e.g. `java -d64 -Xms4048M -Xmx18432M`