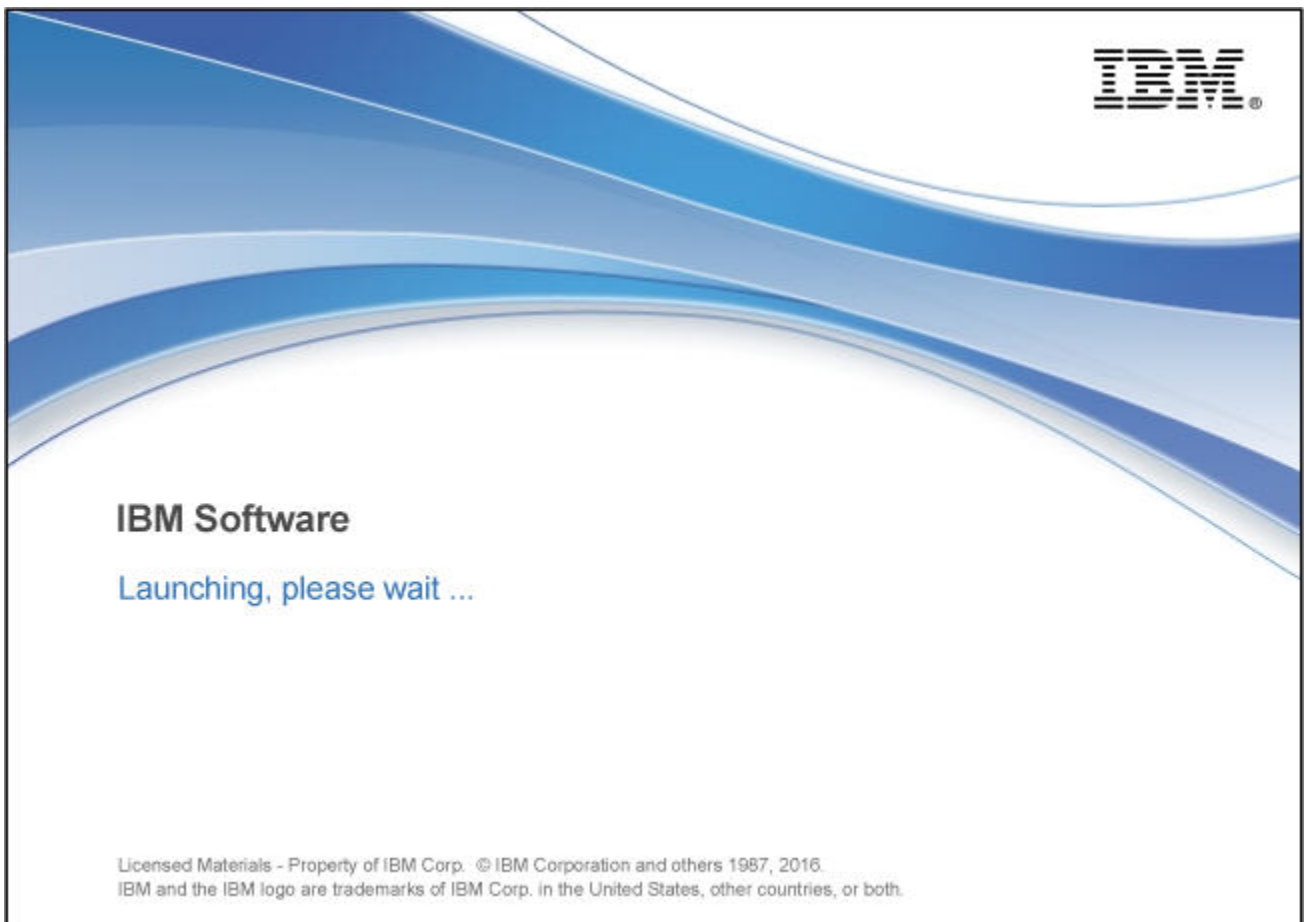


How to fine-tune test execution



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Overview

To optimize the execution of your IBM Rational Performance Tester test, you can override default settings through parameters. You can also debug Citrix® tests and tests where *Kerberos* authentication or *SSL* is involved.

Set the parameters in either of the following locations.

- `eclipse.ini`
- RPT_VMARGS parameter in the workbench user interface that you apply to a location.

Parameters that you set in `eclipse.ini` apply only to the workbench because the workbench runs on the local eclipse instance. If you set a parameter in RPT_VMARGS, the parameter can also apply to the agent.

You can change the following settings and behaviors from default.

- *Test log generation and content*
 - Discovering POST content.
 - Keeping agent log files.
 - Keeping temp files after execution.
- *Time measurements*
 - Setting timer precision,
 - Adjusting time calculation.
 - Setting timeout value workbench.
 - Setting timeout value agent.
 - Including responses with HTTP errors.
- *Execution settings*
 - Specifying JVM heap size.
 - Setting initial number of threads.
 - Setting maximum threads.
 - Closing connections after loop execution.
 - Closing the connection after last response.
- *Debugging settings*
 - *SSL* debugging.
 - *Kerberos* debugging.
 - Citrix monitoring.
- *SSL settings.*
 - Forcing *TLS* 1.2.
 - Specifying *SSL* cipher.
 - Enabling *TLS* SNI extension.

The following values are available for RPT_VMARGS.

- `-DrptLargePostReportSize=nnnn`
- `-DrptNanoTime`
- `-Xmx`

Note: You can influence more settings in Rational Performance Tester 8.2 and newer. However, use these changes only for special cases because possibly these changes cause unwanted side-effects.

Note: Parameters can change without prior notice.

Related tasks

[Setting RPT_VMARGS parameters](#) on page 4

Setting RPT_VMARGS parameters

1. Open the **Location** in the **Test Navigator**.
2. Click tab **General Properties**.
3. Click **Add**.

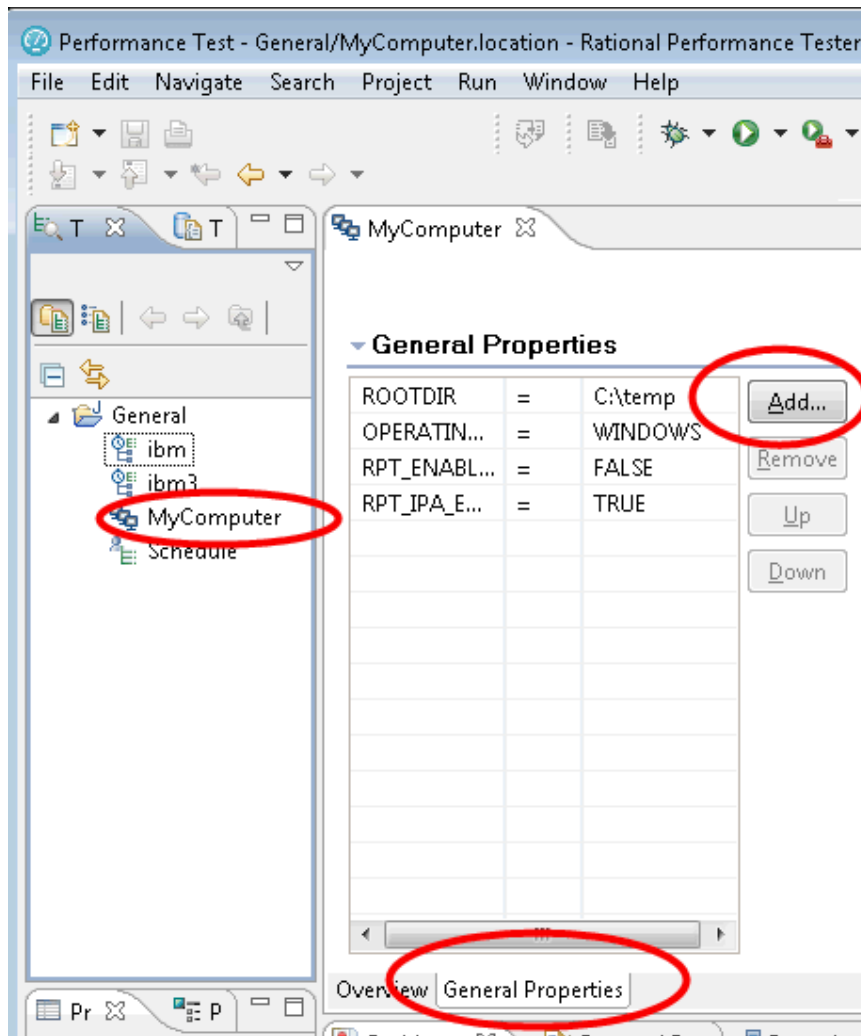


Figure 1: Opening the property dialog

4. Enter RPT_VMARGS into the field **Property**.
5. Enter a value in the fields **Property Value**.
6. Separate multiple parameters by a space. Then, enter the next parameter.
`RPT_VMARGS = -DrptLargePostReportSize=9000 -Xmx1500m -DrptNanoTime`
 In this example, you make *POST* content visible for the first 9000 characters, set the Java heap memory to 1500 Mb, enable the high-resolution timer.

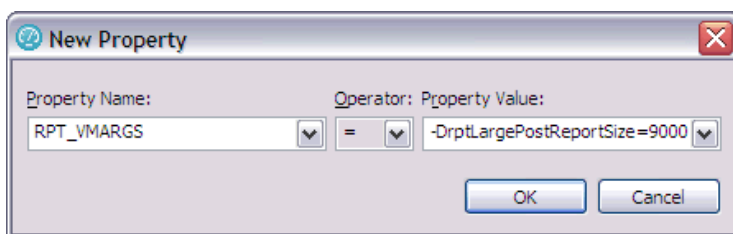


Figure 2: Adding new property

Related concepts

[Debugging parameters](#) on page 9

[Execution parameters](#) on page 7

[Overview](#) on page 3

[SSL parameters](#) on page 10

[Test log parameters](#) on page 5

[Time parameters](#) on page 6

Test log parameters

The following parameters are available to change the test log content.

LargePostReportSize	Changes the maximum number to log.
TestLogFile	Keeps a copy of the agent data.
SaveTempFiles	Keeps test log files in the deployment directory.

Related tasks

[Setting RPT_VMARGS parameters](#) on page 4

DrptLargePostReportSize

`-DrptLargePostReportSize=nnnn`

nnn	Maximum number of characters to log
-----	-------------------------------------

`-DrptLargePostReportSize=9000`

RPT_VMARGS parameter

This value makes the complete *POST* content visible for any request with 90000 or fewer characters. This setting has no effect on the characters that you sent to the server.

DrptTestLogFile

`-DrptTestLogFile=path`

RPT_VMARGS parameter

Specify a location for the agent to keep a copy of XML-formatted test log related data. After the equal sign, you specify a full path to a directory on the agent.

```
-DrptTestLogFile=C:\Agent\Agent1.xml
```

You can use parameter with `-DrptSaveTempFiles=true`. With the XML file and the saved deployment test log files, it might be possible to re-create the test log.

DrptSaveTempFiles

```
-DrptSaveTempFiles="false|true"
```

RPT_VMARGS parameter

Add this option to an agent to instruct it to keep its test log files in the deployment directory after the execution finishes.

By default, the agent sends the test log files to the workbench at the end of the execution and deletes the files in the deployment directory. This option is useful when the test log transfer stops because you can then reconstruct the test log.

Time parameters

The following parameters are available to change time functions.

<i>DrptNanoTime</i>	Enables the high-resolution timer.
<i>Pre811PageResponseTimes</i>	Includes overhead time.
<i>RunnerHeartBeatTimeout</i>	Specifies how long the agent waits for a heartbeat message from the workbench.
<i>WorkbenchHeartBeatTimeout</i>	Specifies how long the workbench waits for a heartbeat message from the agent.
<i>IncludeErrorRTStats</i>	Include response times from <i>HTTP</i> 4xx and 5xx responses.

Related tasks

[Setting RPT_VMARGS parameters](#) on page 4

DrptNanoTime

```
-DrptNanoTime
```

RPT_VMARGS parameter

Use this option to enable the high-resolution timer for Windows®, IBM® AIX®, and IBM z/OS® agents. The timer is already used for *Linux*.

The high-resolution timer makes all measurements are precise to within 1 millisecond.

Enabling the high-resolution timer can increase processor usage on *Windows* agent computers by 10% to 25%.
Enabling the high-resolution timer can increase processor usage on *Windows* agent computers by 10% to 25%.

DrptPre811PageResponseTimes

-DrptPre811PageResponseTimes

RPT_VMARGS parameter

From the 8.1.1 release, modified the page response time calculation. As a consequence the tool would adjust the actual elapsed time to omit overhead time such as data correlation, custom code, and others.

Therefore, the reported response times might be less than the actual elapsed time that you measure with a chronometer.

If you set this value, the page response time calculation reverts to the behavior of releases older than v8.1.1.

DrptRunnerHeartBeatTimeout

-DrptRunnerHeartBeatTimeout=*nnnn*

<i>nnnn</i>	The unit of <i>nnnn</i> is millisecond
-------------	--

This value specifies how long the agent waits for a heartbeat message from the workbench.

DrptWorkbenchHeartBeatTimeout

-DrptWorkbenchHeartBeatTimeout=*nnnn*

<i>nnnn</i>	The unit of <i>nnnn</i> is millisecond
-------------	--

eclipse.ini parameter

This value specifies how long the agent waits for a heartbeat message from the workbench.

DrptIncludeErrorRTStats

-DrptIncludeErrorRTStats="*false|tru*"*e*

RPT_VMARGS parameter

By default, response time counters omit page response times for pages that contain requests with status codes in the range of 4XX (client errors) to 5XX (server errors). If you set this value to *true*, Rational Performance Tester includes these response times.

Execution parameters

The following parameters are available to change execution parameters.

<i>Xmx</i>	Specifies the <i>Java</i> maximum heap size.
<i>ThreadCount</i>	Sets the initial number of execution threads.
<i>MaxThreadCount</i>	Sets the initial number of execution threads.
<i>KEEP_ALIVE_ACROSS_TEST</i>	Controls keep-alive behavior across test invocations.

KEEP_ALIVE_ACROSS_LOOPS_WITHIN_TEST.dita	Controls keep-alive behavior when a test contains loops.
StaticContext	Sets same <i>SSL</i> Session ID for all virtual users.

Related tasks

[Setting RPT_VMARGS parameters](#) on page 4

Xmx

-Xmxnnnm

nnnn	The unit of nnn is dimensionless.
------	-----------------------------------

eclipse.ini parameter**RPT_VMARGS parameter**

-Xmx1200m

This value specifies a maximum heap size of 1200 Mb. Typically, this option is not necessary since Rational Performance Tester automatically sets the maximum heap size for the location through the RPT_DEFAULT_MEMORY_SIZE property.

DrptThreadCount

-DrptThreadCount=nnn

nnnn	The unit of nnn is dimensionless.
------	-----------------------------------

RPT_VMARGS parameter

This value sets the initial number of execution engine threads; the default is 30.

You increase this value, if you determine that a test was in a deadlock. The deadlock could be due to not enough available threads to apply the workload.

The best way to determine a deadlock would be to look for the following entries in the Rational Performance Tester Engine Room (<http://<agent>:1903>). "Action queue size" greater than 0 All Engine threads WORKING Under certain circumstances, Rational Performance Tester automatically increases the number of threads.

See [DrptMaxThreadCount](#). Be careful when you increase this value. If you set the value too high, you can get excessive CPU use.

DrptMaxThreadCount

-DrptMaxThreadCount=nnn

nnnn	The unit of nnn is dimensionless.
------	-----------------------------------

-DrptThreadCount=100 -DrptMaxThreadCount=100

RPT_VMARGS parameter

Sets the maximum number of execution engine threads; If you set `-DrptThreadCount`, also set `-DrptMaxThreadCount` to at least the same value.

DKEEP_ALIVE_ACROSS_TEST

`-DKEEP_ALIVE_ACROSS_TEST=false|true`

RPT_VMARGS parameter

This setting controls connection keep-alive behavior across test invocations.

The default false behavior is to close any open connections at the end of execution of a test. Value true does not close any open connections when the test completes. The latter can be useful if you do looping at the schedule level and you want to share connections from one invocation to the next invocation.

DKEEP_ALIVE_ACROSS_LOOPS_WITHIN_TEST

`-DKEEP_ALIVE_ACROSS_LOOPS_WITHIN_TEST=false`

RPT_VMARGS parameter

With this setting, you control connection Keep-Alive behavior in certain instances when a test contains loops. Normally with no looping in a test, Rational Performance Tester detects the last request to use a particular connection. The tool then closes that connection after the response. If this same condition occurs, but the request is in a loop within a test, Rational Performance Tester does not forcefully close the connection. This behavior is the default behavior.

If you set this option to false, the opposite happens. Then, Rational Performance Tester always closes the connection after the last response, regardless of whether the test runs in a loop or not.

DrptStaticContext

`-DrptStaticContext`

RPT_VMARGS parameter

The effect of this value is that all the virtual users in a JVM share *SSL* Context share *SSL* Session IDs. By default, each Rational Performance Tester virtual user has its own *SSL* Context. Therefore, virtual users do not share *SSL* session IDs.

If you have a server that responds to a request for session resumption with a different virtual user's session ID, you can use `-DrptStaticContext` for *SSL* session IDs. Most applications must not use this option.

Debugging parameters

The following parameters are available to enable debugging in specific environments.

<i>Djavax.dita</i>	Enable additional <i>SSL</i> debugging.
<i>Dcom.ibm.security.jgss.debug=all</i> <i>Dcom.ibm.security.krb5.Krb5Debug=all</i>	Enable additional <i>Kerberos</i> debugging.
<i>CitrixMonitoringPanel</i>	Enables the Citrix® Monitoring Panel.

Related tasks

[Setting RPT_VMARGS parameters](#) on page 4

-Djavax.net.debug

-Djavax.net.debug=ssl:handshake

RPT_VMARGS parameter

Set this flag to get additional *SSL* debugging in the `CommonBaseEvents00.log` file. Also, set the **Problem Determination Log level** to **All**.

Dcom.ibm.security.jgss.debug=all Dcom.ibm.security.krb5.Krb5Debug=all

RPT_VMARGS parameter

Set these two flags to enable more *Kerberos*-related debugging information. The additional debugging goes in the `CommonBaseEvents00.log` file; also set the **Problem Determination Log level** to **All**.

DrptCitrixMonitoringPanel

-DrptCitrixMonitoringPanel=true

RPT_VMARGS parameter

This setting enables the Citrix monitoring panel during execution and is useful for debugging.

SSL parameters

The following parameters control the *SSL* connection.

SingleSSLCipher	Sets the specific cipher to use in the test.
Dcom.ibm.rational.test.lt.soa.ssl.protocols	Forces the use of a specific handshake. Applies only to SOA tests.
Enabling TLS SNI extension.Djsse.enableSNIExtension	Enabling TLS SNI extension.

Related tasks

[Setting RPT_VMARGS parameters](#) on page 4

DrptSingleSSLCipher

-DrptSingleSSLCipher=true

RPT_VMARGS parameter

If you want to use only the specific cipher in the test, set this value. By default, tries a set of *SSL* ciphers during an *SSL* handshake, starting with the cipher specified in the *SSL* object in the test. For example, `SSL_RSA_WITH_RC4_128_MD5`.

Dcom.ibm.rational.test.lt.soa.ssl.protocols

-Dcom.ibm.rational.test.lt.soa.ssl.protocols=TLSv1.2

RPT_VMARGS parameter SOA only

If you want to force the use of *TLS* 1.2 protocol for the *SSL* handshakes for the *SOA extension*, set this `RPT_VMARGS` parameter.

Djsse.enableSNIExtension

-Djsse.enableSNIExtension=true

RPT_VMARGS parameter

To enable the TLS Server Name Indication (SNI) extension in the TLS handshake, set this parameter to true.

Note: For `RPT_VMARGS` parameter v9.0 and newer, the SNI extension is enabled by default.