

Rational TestManager

Release Notes

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About These Release Notes

These Release Notes provide information that is not available in the printed documentation or the Help for Rational TestManager.

Trademarks and Copyrights

A complete online trademark and copyright information page for all Rational products resides in the /doc subfolder of your installation folder. The file is called copyright.html, and its default location is C:/Program Files/Rational/doc.

Scope—Product Definition

This release incorporates several enhancements to the Rational TestManager product.

Getting Started

Installation Information and System Requirements

You will find complete installation instructions and system requirements in *Rational Testing Products Installation Guide*, which is available as a printed book and electronically as a PDF file on the Rational Solutions for Windows Online Documentation CD, which also includes a version of the Acrobat Reader.

Installation Issues

Evaluation Artifacts

Evaluation artifacts are not included as a part of this installation procedure. As a result, when you select the Evaluator option on the Software Use page of the Rational Software Setup program, sample data will not be installed.

To obtain the sample data, download the Rational Suite Tutorial from <http://www.rational.com/documentation>.

New and Changed Features

The following new features have been added to Rational TestManager. For details, see the "What's New in Rational TestManager" topic in the TestManager Help.

Enhanced Test Asset Management

Upgrading project assets

You can use the current version of Rational TestManager with a Rational project created using a previous version of the Rational Administrator (version 2001.A.04 or version 2001.03). Upgrading your project also lets you use the new features in this version of TestManager.

Importing and exporting test assets

You can move or copy existing test assets between and within Rational projects, use third party tools to create importable versions of test assets, or use third party tools to analyze exported test assets.

Cutting, copying, and pasting test assets

You can cut, copy, and paste test case folders and test cases. You can also copy and paste test plans within Rational projects.

General Enhancements

Test Impact Analysis

If a test input changes, TestManager now informs you of the impact of that change on your test plan. For example, if a requirement changes in some meaningful way, you need to know which test cases in your test plans are affected so that you can update them to reflect requirement changes. TestManager automatically identifies and marks the affected test cases as “suspect” for you.

Enhanced filtering of Test Input Sources

The Test Input Adapter Extensibility feature of TestManager now supports the ability to save test input source filters and Test Case Coverage report filters. When you set a filter for a test input source, the last filter that you set persists in the Test Inputs window and Test Input Select dialog box. When you set a filter for a Test Case Coverage report, the Test Input Adapter saves the filter with the report.

New built-in test input type: Microsoft Excel

You can now use one or more Excel spreadsheets as test input sources. This test input adapter can be useful in many ways. Many teams use Excel to manage information in their projects. For example, some teams may document requirements or capture project planning information in an Excel spreadsheet. In either case, the new Excel test

input adapter allows teams to track the testing effort with respect to their information in an Excel spreadsheet. Specifically, they could associate test cases with tasks defined in rows of a spreadsheet so that a coverage report could be generated to show progress or completion of those tasks.

Defining test script options

You can now define test script and test script instance options that can be used by execution adapters and test scripts to control how a test script instance behaves as it executes.

New Test Scripts window

You can now view all your test scripts sorted by type from the Test Scripts window. From this window you can perform test management operations on test scripts. You can also perform basic version control operations (check-in, checkout, etc.) on registered test script sources.

Defining test tool options

Lets you set test tool options to control how a particular test tool plays back a test script. You can define a test tool option in the test script execution adapter that you have written for a particular test tool.

New actions in the test script and test input adapters

Test script adapter and test input adapter developers can now add their own custom actions, or commands. You can run these custom actions or commands in TestManager.

Enhanced Reporting

New performance testing reports

There are two new performance testing reports in TestManager: Command Data and Command Trace. Command Data reports let you identify the differences between expected and actual responses in a test run. They show the commands sent and the reponse data that is written to the test log. The Command Trace report lists the activity of a suite run and enables you to examine in detail unusual or unexpected events. This report formats raw data from the suite run without performing statistical analysis.

Changes to the test case reports

Lets you run test case reports that display test case suspicion status. Using the test case suspicion feature you can track meaningful changes to test inputs so that you can update the associated test cases or their implementations. Also, TestManager now has several new pre-defined test case coverage reports.

Red Hat Linux Version 7.1 support

Lets you run TestManager Agent software on Red Hat Linux version 7.1.

Improved license allocation of virtual testers

Lets you combine multiple non-pooled virtual tester packs. Thus, if you had a 100 virtual tester pack and a 500 virtual tester pack, you could execute a single run of as many as 600 virtual testers.

Enhanced Oracle support

TestManager now supports Oracle 8 OCI playback, additional data types, and Oracle sessions in Robot recording and VU test script generation.

Late Changes to Documentation

Installing Rational Testing Products

The installation manual (*Rational Testing Products Installation Guide*) refers to the installation types as Typical, Custom/Full, Compact/Laptop, and Minimal. In this release, Minimal installation is now called Network installation.

Guidelines and Restrictions

Test Script Playback

General

- If text being logged with the `log_msg()` function exceeds 60KB, either a crash occurs or the playback engine enters an infinite loop. Workaround: limit messages to be logged to 60KB.
- At the end of a run, the playback engine removes temporary log files. In some cases where a network project is being used, a fatal 'Permission Denied' error message may occur, rendering the log useless. Workaround: use a local project file.

VU

- Playback of VU test scripts is not supported for Windows Me, Windows 98, or Windows 95, whether the system is a Local computer or Agent computer.
- When VU test scripts are played back on HP-UX, AIX, or Solaris Agents, pass/fail status information is not available in the Test Log window.

Command Line

- Playback of command line test scripts is not supported for HP-UX and AIX Agents.
- When running command line test scripts or custom test script types that use the command line adapter on Windows NT systems as Agents, TestManager may report test script failure even though the test scripts executed successfully. To avoid this, install Service Pack 5 or Service Pack 6a on the Agent.

Manual

- Playback of manual test scripts is not supported on any Agent.
- When playing back manual test scripts, be sure to dismiss the Manual Test dialog box before trying to terminate users.

Visual Basic

Test Script Services (TSS) support test script playback from a proxy TSS server. However, Visual Basic test scripts cannot be played back by proxy TSS servers.

Check Suite When Saving Option

When working with suites in TestManager, be sure to save a suite before checking it. Accordingly, the "Check suite when saving" option on the Create Suite tab of the Options dialog box should be cleared.

F5 (Refresh All) Does Not Work in Test Asset Workspace

You can press the F5 key to refresh all in the Test Plan window and in the Test Input window. This key does not work in the Test Asset Workspace. You must right-click a folder in each of the Test Asset Workspace tabs or go to **View > Refresh Workspace** from the main menu to refresh all the Test Asset Workspace.

Viewing Properties of VU Test Scripts

The Test Script Properties dialog box does not reference the Robot session from which the VU test script was generated. To view this information, go to the Session Properties dialog box in Rational Robot to look for the test script as a contained script.

Monitoring Options

Occasionally, Monitor menu items may be unavailable. To access monitoring options in this case, use the Monitor toolbar.

Resource Monitoring

- Monitoring system resources during test runs is not supported for Windows Me, Windows 98, or Windows 95, Local or Agent.
- In order to monitor resources on an Agent computer that is running AIX, you must install the bos.acct package on that agent.

Executing Test Cases on Agents

- Windows Me and Windows 98 are considered equivalent when matching computer configurations against test case configurations.
- When you choose a parallel selector in a suite, the option **Use multiple computers to maximize test case coverage** is checked by default. The functionality behind this option is disabled for this release. This affects not only configured test cases run in parallel on multiple computers, but also configured test cases run automatically.

This means that when running configured test cases in parallel on multiple computers, depending on test case order, all configured test cases can not be run even if computers matching defined configurations are available. To work around this, limit running configured test cases to one computer at a time, and repeat over the list of desired computers in sequential order.

Report Generation

General

- TestManager provides a “previous” button allowing you to change the log selection after you have selected the virtual tester, script, and commandID filters to be used in generating a report. This causes a problem because the previous log is not closed and conflicts with the new log. Workaround: if you need to change the log selection after you’ve selected filters, start over rather than use the “previous” button.

Command Data Report

This report includes data written to the log by emulation commands. However, there are some commands (testcase & emulate) that do not write data to the log in all cases. If a run consists only of emulation commands that wrote no data to the log, the Command Data report may fail to execute.

Status Report

The graph index (0-based) does not match the table index (1-based).

Response vs. Time Reports

The Show Resource dialog box for data points in the Response vs. Time report for a Performance Testing Report, refers to the MASTER computer. This should read Local computer.

SAP Limitations

The following list gives SAP testing limitations in TestManager:

- UNIX Agents are not supported for the SAP protocol.
- The personalizing option (the multicolored circle in the upper right of SAPGUI) is not supported.
- Multiple SAP sessions with a single client are not supported.
- Only the active screen is rendered, while SAPGUI sometimes renders inactive screens.
- The control box in table controls is not supported.
- Transaction IQ03 is not supported.
- Automatic logon load balancing, as performed by `SAPLOGON.EXE` and the SAP Session Manager, is not supported.
- The Manager's Desktop functionality under the "Human Resources" menu is not supported.

BLOB Transfer Unsupported

TestManager does not support BLOB (Binary Large Object) transfer. If you are recording a Sybase or SQL Server session that transfers BLOB data, the connection is ignored and the generated test script does not refer to BLOB transfer activity.

Suspended Users in Transactors

When you monitor a TestManager suite (formerly called a *LoadTest schedule*), and suspend a virtual tester in an independent transactor, upon restarting, the tester will try to catch up on the missed transactions. If you suspend a virtual tester in a coordinated transactor, the remaining testers will pick up the slack and try to maintain the desired transactor rate. If the rate cannot be maintained, then as testers are restarted, they will try to catch up on the missed transactions.

Oracle Testing Limitations

The following list gives Oracle testing limitations in TestManager:

- Oracle 8 support is limited to API recording.
- Oracle array support is also limited to API recording.
- To play back Oracle 7 with Oracle 7 libraries on HP-UX, you must set the following environment variable before invoking TestManager:

```
RT_MASTER_USE_STATE_FOR_SQL
```

Set the variable in the **Environment** tab of the System Properties Control Panel.

ODBC Limitations

When playing back a SQL statement that generates multiple result sets, TestManager logs only the data for the first fetch. The other fetches show the number of rows returned, but does not log the data actually returned.

If a `sqlfetch_cursor` is run multiple times in a row with `ALL_ROWS`, and expect rows 0, an error for the second `sqlfetch_cursor` is generated stating:

```
ERROR -1: {error} STATE=S1010, CODE=0, MSG=[Microsoft][ODBC Driver Manager] Function sequence error
```

When logging data returned from `sqlfetch_cursor`, sometimes the data is truncated and the next SQL command appears on the same line as a row of data. This is a logging problem only; the test script is executing correctly.

Named Pipes Unsupported for Network Recording

Named pipes are not supported for network recording.

Visual Basic and Java Test Scripts

Generated Visual Basic test scripts do not pass script line numbers to TestManager. As a result, the TestManager Script view feature (the Script check box under **Tools > Options**) does not work with generated Visual Basic test scripts. If you manually add

method calls to your Visual Basic and Java test scripts that pass test script line numbers to TestManager, the Script view will work. The relevant methods are `TSSMonitor.PositionSet` (Visual Basic) and `TSSMonitor.positionSet` (Java).

Setting the Madge Token Ring Card to Gather Traffic Statistics

For Windows NT only, if you are using a Madge token ring card for network recording, make sure that the Traffic Statistics Gathering option is set to enabled. To enable this option, click **Start > Settings > Control Panel**, and click the Network icon. Then click the **Adapters** tab, click the **Properties** button, and enable the **Traffic Statistics Gathering** option.

About PeopleSoft Certificates

When TestManager creates test scripts that contain PeopleSoft traffic (Tuxedo or Jolt), TestManager automatically correlates any PeopleSoft certificate information required for proper client authentication during playback. The correlations take the form of string variables, declared with the prefix `psft_cert`, and various operations on them. The following code shows a typical example of certificate correlation in a PeopleSoft/Jolt test script:

```
1  sock_send
2    jolt_request(0, jolt_sessionid_1, jolt_handlerid_1, 3,
3      jolt_dataxfer(jolt_sessionid_1, JOLT_CALL_RQST,
4        jolt_setatt_name("GetCertificate") +
5        jolt_setatt_version(1) +
6        jolt_setatt_flags(4) +
7        jolt_setatt_data(
8          jolt_setpar_carray(1,
9            "`0000004801020304000000000000002bcffffffff0000001f0004`SCTX"
10           "`0a`JavaClient`02`PS`02`PS`00000000000000150008`SCertReq`0"
11           "`2`PS`02`PS`00`"))));
12
13  sock_nrecv ["suzy027h"] jolt_response_header();
14  sock_nrecv ["suzy027b"] jolt_response_body();
15  { string psft_cert_1; }
16  psft_cert_1 = "`" + substr(mixed2hexstring(jolt_getpar_carray(1)),
17    72, 32) +
18    "`";
19
20  set Think_avg = 230;
21
22  sock_send
23    jolt_request(0, jolt_sessionid_1, jolt_handlerid_1, 4,
24      jolt_dataxfer(jolt_sessionid_1, JOLT_GETDEF_RQST,
25        jolt_setatt_repname("SVC`2f`StmGetTimeOut")));
```

```

23
24 sock_nrecv ["suzy028h"] jolt_response_header();
25 sock_nrecv ["suzy028b"] jolt_response_body();
26 set Think_avg = 240;
27
28 sock_send
29   jolt_request(0, jolt_sessionid_1, jolt_handlerid_1, 5,
30     jolt_dataxfer(jolt_sessionid_1, JOLT_CALL_RQST,
31       jolt_setatt_name("StmGetTimeOut") +
32       jolt_setatt_version(1) +
33       jolt_setatt_flags(4) +
34       jolt_setatt_data(
35         jolt_setpar_carray(1,
36   "`0000005a0102030400000000000002bcffffff0000002f0004`SCTX"
37   "`0a`JavaClient`02`PS`02`PS`10`"+ psft_cert_1 +
38   "`00000000000017000e`SGetTimeOutReq`02`PS" ))));\

```

In lines 15 and 16 a certificate correlation variable, `psft_cert_1`, is declared and assigned a value based on the contents of a previous Jolt response message. The variable is then properly applied to the contents of a subsequent Jolt request message in line 37.

Because this feature is necessary for proper playback of PeopleSoft test scripts, do not change the contents of the certification correlation variables or change the variable's position within the context of the surrounding message data. Doing so improperly may cause corrupt messages to be sent to the application-under-test, leading to unpredictable results. Should correlation variable manipulation be necessary, however, all automatically scripted variables represent 16 bytes of certificate data, in hexstring form, delimited by single backquotes ("`"), for a total of 34 text characters (16 * 2 + 2). For example, "`664d689999999999c99a9ac9c9c9c9`".

Testing CORBA Applications

To test CORBA applications with TestManager, you must have the following software installed:

- Windows 2000 or Windows NT Version 4.0 with at least Service Pack 4
- Visibroker (C++ or Java) Version 3.3 or 3.4

IDL

IDL (Interface Definition Language) defines an application's interfaces, including method names, parameters, data types, and exceptions. You can use IDL to map to many languages for implementation. To record test scripts in Robot and play back test

scripts in TestManager with methods, parameter names, and data described in a meaningful way, you must import the application's IDL into TestManager before test script generation.

To import IDL into TestManager:

- Click **Tools > Interfaces**.
- From the Interfaces dialog box, click **Import**.
- From the Select IDL File dialog box, browse to find and choose the IDL file to import.
- Click **OK**.

The information imported is stored in the project for use by TestManager at test script generation and play back. You will not be able to play back test scripts until the IDL has been imported into TestManager.

TestManager stores the IDL information within the project based on the interface name.

If you do not load all the IDL prior to test script generation, some methods may script opaquely. That is, method parameter names will not be listed. Instead, only a single parameter with the name "*" is listed, and all data is asciified hexadecimal.

Sometimes, IDL files will include other IDL files. If include path information is not relative, you may have to specify an IDL include path. You may specify such a path using the `IDLINCLUDE` environment variable. For example,

```
IDLINCLUDE=d:\myidl;d:\otheridl.
```

Recording

Recording of CORBA applications is similar to recording of other environments. Both Network and API recording methods are supported.

Before recording, you must select **IIOP** in the **Generator Filtering** tab of the Virtual User Record Options dialog box in Rational Robot. IIOP traffic between client and server is used to produce VU test scripts.

Test Script Generation

After recording, a VU test script is produced that describes the interactions between client and server. There are two common IIOP VU emulation commands:

- `iiop_bind`, which describes how to locate an object that supports a certain interface.

- `iiop_invoke`, which specifies a method invocation, including parameter names and data.

You can limit the scripting of client traffic to a particular computer using the `LT7_IIOPCLIENTIP` environment variable. For example,
`LT7_IIOPCLIENTIP=137.162.195.135.`

By default, IDL sequences are scripted with a limit of ten members. You can increase this number using the `LT7_DEFAULT_SEQUENCE_SIZE` environment variable. For example, `LT7_DEFAULT_SEQUENCE_SIZE=20.`

In each case, the variable is set in the **Environment** tab of the System Properties dialog box under the Control Panel.

Playback

Before playback, all interfaces referenced in a test script must have their IDL imported into TestManager.

Special IOP monitoring states are provided for the state histogram monitor window.

Playback of ASCII hex (opaque) data between computers of differing byte ordering is not supported. Byte ordering specification is marked in the IOP protocol. It is possible that data may be transferred with big-endian byte order, even on Windows NT systems. This case is more likely to occur if the application is Java. The result is that data specified opaquely in these cases may not play back correctly, even though the recording computer and the playback computer have the same byte order.

Supported and Unsupported Data Types

TestManager supports record and playback of the following data types:

- `char`
- `octet`
- `short`
- `unsigned short`
- `long`
- `unsigned long`
- `float`
- `double`
- `boolean`

- enum
- struct
- union
- array
- sequence

The following data types are not supported, and will result in methods being scripted opaquely if they occur as a parameter data type in a method:

- any
- long double
- unsigned long long
- long long
- wchar
- wstring
- fixed

UNIX Agents

Only Solaris is supported for UNIX Agent playback. The Visibroker bind modus is not supported for playback. This limitation means that “Visibroker” cannot be used to locate object references at play back. Therefore, another method, such as reading IORs (Inter-operable Object Reference) from a file, or specifying them explicitly in VU test scripts, must be used to locate objects when playing back test scripts from a Solaris Agent.

SQL Anywhere Server

- In this release, only Rational ClearQuest uses the SQL Anywhere server.
- During the installation of a SQL Anywhere Server, select **Replace these files with English equivalents** independent of the language environment in which you are working. Microsoft recommends this because selected files must be replaced with their English equivalents.
- The SQL Anywhere database treats the \ (backslash) character as an escape character. This causes a translation of the backslash character and the subsequent character as they are added to the database. For example '\\ becomes '\', and '\n' becomes an unprintable character, etc.

Rational Administrator

Unified Change Management (UCM)

If you use Unified Change Management (UCM) with Rational Suite under these conditions:

- You use Rational ClearQuest to manage UCM activities, and
- You place a RequisitePro project or a Rational Test datastore under configuration control

Then make sure that you do not set the UCM policy, "Check Assignment Before Work On". (The default is for the policy not to be set.)

When you set the policy, you cannot work on an activity unless you are the owner of that activity. But in the current implementation of UCM for RequisitePro and Rational Test, an entire team of workers share the same activity. Therefore, if the policy is set, only one person, not the entire team, can work in a RequisitePro project or in a Rational Test datastore.

If the policy is mistakenly set, you will see the error message "Source control could not set activity." To work around this error:

- Start the Rational Administrator and connect to a Rational project.
- Right-click the UCM project and click **Properties**.
- On the **ClearQuest** tab, unset the policy.

For further details, see the *Rational Suite Administrator's Guide*.

Associating a Rose Test Input Source with a Project

Administrator includes a Configure Project dialog box. This dialog box does not associate a Rose test input source with a project.

To associate a Rose test input source with a project, use the Manage Test Input Types dialog box from TestManager. To reach this dialog, click **Tools > Manage > Test Input Types**.

Editing Reports with Long Pathnames

Crystal Reports is used to generate or edit reports. You can run a report regardless of the length of its pathname. However, if you attempt to edit a report whose pathname is longer than 80 characters, the message "Dictionary not found" appears. This is a Crystal Reports restriction. If you must edit a report with a long pathname, ...

Contacting Rational Technical Support

If you have questions about installing, using, or maintaining this product, contact Rational Technical Support as follows:

Your Location	Telephone	Facsimile	E-mail
North America	(800) 433-5444 (toll free) (408) 863-4000 Cupertino, CA	(781) 676-2460 Lexington, MA	support@rational.com
Europe, Middle East, Africa	+31 (0) 20-4546-200 Netherlands	+31 (0) 20-4545-201 Netherlands	support@europe.rational.com
Asia Pacific	+61-2-9419-0111 Australia	+61-2-9419-0123 Australia	support@apac.rational.com

Note: When you contact Rational Technical Support, please be prepared to supply the following information:

- Your name, telephone number, and company name
- Your computer's make and model
- Your operating system and version number
- Product release number and serial number
- Your case ID number (if you are following up on a previously-reported problem)