

Benchmark Factory® 8.1

Release Notes

Tuesday, August 07, 2018

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About Benchmark Factory

Quest Software is pleased to make available Benchmark Factory® 8.1 to meet your database workload testing needs. Benchmark Factory is a database performance and code scalability testing tool that simulates users and transactions on the database and replays production workload in non-production environments. With Benchmark Factory developers, DBAs, and QA teams can validate that their databases will scale as user loads increase, application changes are made, and platform changes are implemented.

Benchmark Factory is available for Oracle®, SQL Server®, IBM® DB2®, SAP®, MySQL, and other databases via ODBC connectivity. Benchmark Factory:

- Simulates thousands of concurrent users with a minimal amount of hardware.
- Simulates database production workloads.
- Reports tests results with built-in reporting features.

Upon completion of a test execution, all test results are collected and stored in the repository for data analysis and reporting. Benchmark Factory collects a variety of informative and detailed statistics that include:

- Overall server throughput (measured in transactions per second/minute or bytes transferred).
- Detailed transaction executed statistics by individual agent workstations producing a load.

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New Features

This release of Benchmark Factory includes the following new features and enhancements.

Benchmark Factory Agent for Linux

This release includes an exciting new feature. Benchmark Factory now provides an agent which you can deploy in your **Linux environment**. After installing the Linux version of Benchmark Factory Agent in your Linux environment, use the Benchmark Factory Console to set up the new agent. After setup, you can select the new agent from the list of agents available for load testing. In addition, the Benchmark Factory REST API supports configuring and modifying the Benchmark Factory Agent for Linux.

Supported Databases. The Benchmark Factory Agent for Linux can be used to test workloads against PostgreSQL databases.

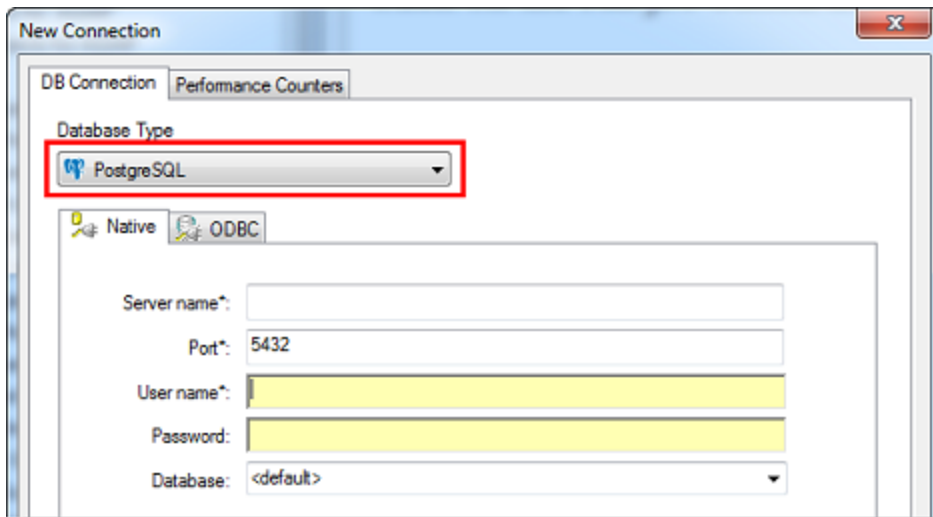
Note: The Benchmark Factory Agent for Linux supports the following platforms only: Red Hat 7.x (64-bit), CentOS 7.x (64-bit), and Oracle Linux 7.x (64-bit).

The Benchmark Factory Agent for Linux is available for download from the [Benchmark Factory Community](#) on Toad World.

PostgreSQL Native Connection

This release of Benchmark Factory includes a PostgreSQL Native connection.

1. To create a PostgreSQL connection, click **New Connection** in the main toolbar.
2. Then select **PostgreSQL** from the Connection Type drop-down list.



3. Enter connection information in this dialog to create a PostgreSQL native connection. Alternatively, if you want to create a PostgreSQL ODBC connection, select the ODBC tab and enter connection information.

The following PostgreSQL database versions are supported: PostgreSQL 9.4, 9.5, 9.6 and 10, and EnterpriseDB Postgres 10.

Enhanced Licensing Dialog

This release includes an enhanced Licensing dialog which provides a simpler, easier-to-use interface.

- Select **Help | Licensing** to open the Licensing dialog. The Licensing dialog opens and displays the list of licenses for Benchmark Factory. Benchmark Factory supports multiple licenses. For example, a Toad for Oracle Edition license and a Toad for SQL Server Edition license may be active simultaneously.
 - To enter a new license, click **Add** and enter the license key and the site message included with the license key.
 - To modify a license, select the license to update and click **Modify**. Then update the key and site message.
 - If Benchmark Factory was activated by a Toad Edition license, the Toad license is listed. Select the license and click **Modify** to update it.
 - To delete a license, select the license to delete and click **Delete License**.
- Important:** If you delete a license key, any features enabled by that license and not supported by another currently-active license are disabled.

BMFServer.exe Enhancements

- The default REST API port number for BMFServer.exe is now the same as the Benchmark Factory console, port 30100.
- The BMFServer log file (BMFServer.log) is now located in: \My Benchmark Factory\<version>\<bitness>\Error Logs

See [Resolved Issues](#) for more enhancements and resolved issues in this release of Benchmark Factory.

Learn More

Learn more and connect with the community at the [Benchmark Factory Community](#) page on Toad World.

- Find interesting blogs and other useful information.
- Ask questions in the forum.
- Link to Commercial, Trial, and Freeware downloads.
- Find Benchmark Factory documentation.

Deprecated Features

SQL Server Native Client

Beginning with Benchmark Factory 8.1, the Microsoft SQL Server Native Client (11.0) is no longer distributed along with Benchmark Factory.

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Resolved Issues and Enhancements

The following is a list of issues addressed and enhancements implemented in this release of Benchmark Factory.

Feature	Resolved Issue	Defect ID
Agents	When attempting to create a new, additional local agent through the Benchmark Factory console, user credentials cannot be used. A warning message now informs the user when this is the case.	BMF-2767
Benchmark Testing	Corrected an issue that created a slight inaccuracy in the calculation of scale factor from database size in the Scale tab in the Test Options section. This issue was encountered when creating a TPC-C or TPC-E benchmark test.	BMF-2146
Benchmark Testing	Corrected an issue in which the job fails during the Create Objects step if "Create/Load objects if objects don't exist" is selected and only some objects exist (for example, tables don't exist but procedures do).	BMF-3031
Benchmark Testing	The CPU and memory usage statistics now display as expected when running a job using BMFAgent.exe.	BMF-3254
Benchmark Testing	Oracle: Corrected an issue that caused an ORA-01406 error when attempting to run a TPC-E test against Oracle when the NLS_DATE_FORMAT variable was set to DD-MON-YYYY HH24:MI:SS.	BMF-3759
BFScripts	Corrected an issue in which using BFURand generated duplicate values.	BMF-1011
BMFServer	The BMFServer.ini file is now located in C:\ProgramData\Quest Software\BMF.	BMF-2704
BMFServer	The default REST API port number for BMFServer.exe is now the same as the Benchmark Factory console, port 30100.	BMF-2702
BMFServer	The BMFServer log file (BMFServer.log) is now located in: \My Benchmark Factory\<version>\<bitness>\Error Logs	BMF-2703
Capture and Replay	SQL Server: When creating a job and adding the "Replay load from SQL Server trace table" test, Benchmark Factory no longer automatically searches the network for hosts To search for hosts, click "Refresh" on the SQL Server Authentication page.	BMF-3371
Capture and Replay	Oracle: Simplified the replay test name for an imported Oracle capture. The replay test name is now "Replay Oracle Workload" regardless of the capture mode used.	BMF-3264
Capture and Replay	Oracle: Corrected an issue in which a capture using FGAC failed when the capture included SQL longer than 4K. The following warning message displayed in the Status window when the capture process was running: ORA-02003: invalid USERENV parameter.	BMF-3707
Capture and Replay	When importing from the Oracle Dynamic Performance View, transactions with a very low execution rate might not be imported. When this is the case, Benchmark Factory now displays a message informing the user.	BMF-2997
Capture and Replay	Enhancement: When importing from an ODBC trace file, other statements in addition to Insert, Update, Delete, and Select statements are now included (e.g., Drop statements).	BMF-3067

Feature	Resolved Issue	Defect ID
Capture and Replay	Corrected an issue in which the user was unable to specify a start time when scheduling a capture if the user's datetime format (Regional settings) was set to Polish (24h format).	BMF-4397
Custom Mix Test	In a custom mix or goal test, if no results are obtained during the test run, it could be due to the fact that not all executions were completed in the specified pre-sampling time. The console now displays a message when this is possible.	BMF-2858
General	The Support Bundle now includes information about BMFServer and BMFAgent and the BMFServer log file.	BMF-2705
REST API	Corrected an issue in which attempting to GET testrun information using the zero-based index id or the test run, for example <code>http://{server}:{port}/api/testruns/{index id}</code> , resulted in a 404 error. This issue occurred with the following resource collections: TestRuns, UserLoadResults, TransactionResults, SubTransactionResults, and NodeResults.	BMF-2700
REST API	Requesting latency for a transaction in a test now returns the latency information, as expected.	BMF-2745
REST API	The time format is now the same in the current results returned by the console or the BMFServer (BMFServer.exe).	BMF-2857
REST API	Corrected an issue that allowed a job to post successfully even though the request body contained invalid connection information.	BMF-2904
REST API	The Database Flush property is now included in the Connection request/response body when using the REST API.	BMF-2918
REST API	A request for TOTALRESPONSETIME from a test run now successfully returns data. An example URI is: <code>http://{server}:{port}/api/TestRuns/1/UserloadResults/0/transactionresults/0/totalresponsetime</code> .	BMF-3174
REST API	Corrected an issue that caused an error when attempting to GET the Settings resource using the REST API (<code>/api/settings</code>).	BMF-2744
REST API	Corrected an issue in which the ID number of a job created through the Benchmark Factory console unexpectedly changed (increased incrementally) when a subsequent job was created and added to the queue.	BMF-2856
REST API	Added a read-only resource to the REST API which returns the BMF version number.	BMF-3706
Run Reports	In a Transaction Mix graph, long transaction names are no longer truncated and are displayed correctly.	BMF-4660
TPC-E Benchmark Test	IBM DB2: Corrected an issue which caused a TPC-E transaction (Trade-Result Transaction) to fail in a test using a DB2 native connection.	BMF-4603
User Interface	Licensing dialog. The Licensing dialog has been redesigned to streamline the process of entering and modifying Benchmark Factory license keys.	BMF-1233
User Interface	If one of the directories specified in Settings (Edit Settings General) does not have appropriate permissions applied and Benchmark Factory attempts to write to it, an informative message reminds the user to check directory permissions.	BMF-3715
User Interface	Oracle: After importing an ODBC trace file, the path and file name are now displayed in full in the Trace File Summary tab of the New Job Wizard.	BMF-2973

Feature	Resolved Issue	Defect ID
User Interface	Corrected text display issues found in the New Job Wizard in a Windows 10 environment when text size (DPI) was set to 125% or greater.	BMF-1670, BMF-4895

For the most recent list of resolved issues, see the Benchmark Factory 8.1 Release Notes at: <https://support.quest.com/benchmark-factory-for-database/technical-documents>.

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Known Issues

The following is a list of issues known to exist at the time of this release.

Feature	Known Issue	Defect ID
Capture and Replay	Oracle workload: Capturing using the trace file method is not available and is disabled when connected to an Oracle 12c pluggable database (PDB).	N/A
Capture and Replay	Oracle workload: In Benchmark Factory 7.2 or later, if you attempt to use Oracle capture files created in an earlier version of Benchmark Factory (6.9.3 or earlier) and .NET Framework 2.0 is not installed, Windows may prompt you to install it (for example, in Windows 8 or later). Workaround: Install .NET Framework 2.0 (3.5).	N/A
Capture and Replay	Oracle workload: Capturing using the trace file method is not available and is disabled when connected to an Oracle RAC system.	N/A
Capture and Replay	Issue: If you start a trace file capture using the current version of Benchmark Factory and then start another trace file capture using version 7.2 (or earlier) on the same database, the earlier version of Benchmark Factory cannot detect the current version performing a capture. This can result in an invalid capture. Solution: For best results, do not perform trace file captures using both the current and an earlier version of Benchmark Factory concurrently on the same database.	N/A
Capture and Replay	SQL Server workload: After capturing activity from a user logged-in using Windows authentication, attempting to replay the capture using the ODBC profile results in the following error: "Could not obtain information about Windows NT group/user '<group/user>', error code 0x5." Workaround: Use a domain account to start SQL Server service and make sure the account can connect to the Active Directory of <i>Domain</i> .	N/A
Capture and Replay	Oracle workload: In an Oracle capture and replay, Benchmark Factory cannot generate the Statspack report if the local replay directory is mapped to drive "B." This is because Benchmark Factory must have drive B open to execute a background .bat file during oracle capture and replay. Workaround: Do not map your local replay directory to drive "B" when running an Oracle capture and replay in which you chose to generate the Statspack report.	109221

Feature	Known Issue	Defect ID
Capture and Replay	In an Oracle 12c container database (CDB), Benchmark Factory cannot replay an existing workload that was captured in an earlier version of an Oracle database. In an Oracle 12c container database, a user name (common user) is prefixed with "c##" by default.	N/A
Capture and Replay	Oracle Capture Using FGAC: When performing an Oracle Capture using the FGAC method, if the application has a trigger with a multi-schema select, additional transactions will be recorded.	N/A
Connections - Teradata ODBC	When creating or modifying a Teradata ODBC connection, if the Teradata DSN has incorrect connection information and you click Test Connection in the Connection dialog, Benchmark Factory might close unexpectedly.	BMF-1497
Connections - Transaction Wizard and IBM CLI Driver	When using the 64-bit version of Benchmark Factory, the Transaction Wizard stops working when using the IBM DB2 CLI Driver profile to connect the database which created objects using the ODBC Driver.	N/A
Connections - Microsoft Oracle ODBC Driver	When using Microsoft's Oracle ODBC driver for either testing or for Benchmark Factory repository access, there is an issue with the ODBC driver. It does not work with CLOB data.	N/A
Connections - Oracle ODBC driver	When using the Oracle 11g R2 Client and Oracle 32-bit ODBC driver in a Windows 64-bit environment, the Oracle 32-bit ODBC driver requires an 8-byte int data type. Workaround: Use the Oracle native client or Oracle 32-bit ODBC driver.	N/A
Connections - Microsoft SQL Server (Obsolete DB-Library) Connection	If you run a benchmark test using a Microsoft SQL Server (Obsolete DB-Library) connection to SQL Server 2014, and you have the "Recreate objects and reload data every execution" option selected, you might encounter the following error: "DB-Library Message - Insert bulk is not supported over this access protocol" Workaround: Use the Microsoft SQL Server ODBC driver.	N/A
Connections - IBM CLI Driver	A profile created with a DB2 ODBC data source may crash Benchmark Factory if the IBM DB2 client catalog becomes broken/corrupted.	N/A
Connections	In Windows 10, if you open a New Connection dialog, create an SAP data source and then attempt to create a SQL Server data source, Benchmark Factory might close unexpectedly.	BMF-555
General - Benchmark Factory Console	Benchmark Factory does not support data types that are created by the user.	N/A
Industry Standard Benchmark Testing	Background: This issue applies to benchmark testing using a SQL Server or SAP native connection when the Refresh data retention option is selected in the Test Options tab. Issue Description: In a test where the connection is lost while tables are loading, if you reconnect and attempt to rerun the job, Benchmark Factory might error with the following messages: "The Expected Total rows are not the same as the Actual Total rows," or "a duplicate key was found" (when creating an index). The test is	N/A

Feature	Known Issue	Defect ID
	<p>then canceled due to errors.</p> <p>Resolution: Recreate and run a new job against your selected database using the native connection.</p>	
Industry Standard Benchmark Testing	<p>If testing against a database other than Oracle, SQL Server, DB2, SAP, or MySQL, and using the Object/Data Retention option Refresh data using backup sets, backup sets might not be created resulting in a canceled test.</p>	114266
Benchmark Test - Scalable Hardware Test	<p>Attempting to use a native connection to run a Scalable Hardware benchmark test in which the objects were created using an ODBC connection and the objects are not recreated will result in a failed test with errors. The reverse is also true.</p> <p>Solution: When running a Scalable Hardware test using a native connection and objects were created using an ODBC connection (or vice versa) always recreate the objects.</p>	N/A
Installation (uninstall)	<p>Beginning with release 7.1.1 in Windows 7 or later, if you have multiple editions of Benchmark Factory installed side-by-side (e.g., a Beta and a Commercial edition), and then uninstall one edition, you might encounter the following error when attempting to run a job:</p> <p>" This object does not represent an OLE control"</p> <p>Workaround: Do one of the following:</p> <ul style="list-style-type: none"> • Open the Benchmark Factory application directory for the edition that is displaying the error. Then right-click the Benchmark Factory executable (BFactory.exe) and select Run As Administrator. • Or run the installer in Repair mode. To do this, right-click the .msi installer used to install the edition that is displaying the error and select Repair. 	ST115773
Integration with other Toad products	<p>Applies in Toad for Oracle suites (12.5 or later): When the database connection or the SQL statement contains Chinese characters, attempting to send SQL from SQL Optimizer for Oracle to Benchmark Factory results in an error. This issue only occurs when Spotlight on Oracle is launched prior to the other applications mentioned here.</p> <p>Workaround: Always launch Benchmark Factory and SQL Optimizer for Oracle prior to launching Spotlight on Oracle if sending SQL from SQL Optimizer to Benchmark Factory.</p>	N/A
Licensing	<p>License keys compatible with Benchmark Factory 5.8.1 (or earlier) are no longer supported. See Product Licensing for instructions on how to upgrade an earlier-version license key.</p>	N/A
Licensing	<p>If your current Benchmark Factory license key is a 21-digit format (x-xxxxx-xxxxx-xxxxx-xxxxx) and you want to use the 64-Bit installation, you will need to request a new license key. Please obtain the new key before installing the new release. To obtain a new key, please refer to the Licensing Assistance page on our support portal: https://support.quest.com/licensing-assistance.</p>	N/A
Oracle Database Privileges	<p>In Oracle 12c, the RESOURCE role no longer includes the UNLIMITED TABLESPACE system privilege. Therefore, Benchmark Factory users with the RESOURCE role must also be granted the UNLIMITED TABLESPACE privilege.</p>	N/A

Feature	Known Issue	Defect ID
Repository	<p>In a new installation (not an upgrade) of Benchmark Factory 7.2 or later, a Standard (Limited) user may encounter a Repository error when attempting to launch the application. The issue involves the SQLite database that is used as the default database in a new installation of Benchmark Factory 7.2 or later.</p> <p>Workaround: Do one of the following:</p> <ul style="list-style-type: none"> • Run Benchmark Factory using an Administrator account. • In the directory containing the SQLite database file, grant <i>Write</i> permission to all users. This directory is located in the following location in Windows 7: C:\ProgramData\Quest Software\BMF\Repository. 	BMF-202
Repository	<p>If you created a Data Source Name for the BMF MySQL ODBC Driver in a previous release (6.9.3 or 7.0), attempting to edit this DSN results in an error.</p>	N/A

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Third-Party Known Issues

Feature	Known Issue	Defect ID
Connections - Oracle	<p>If you have multiple Oracle clients installed, after connecting using one Oracle home, attempting another connection using a different Oracle home results in an error.</p> <p>Workaround: Close and then re-open Benchmark Factory.</p>	N/A
Connections - SAP	<p>When creating a new SAP connection, if you partially define an SAP ASE ODBC DSN, then click "Cancel," and then switch to the Native tab of the New Connection dialog (or select a different connection type), Benchmark Factory quits unexpectedly. This is a known issue with the SAP ASE ODBC driver.</p> <p>To create a native SAP connection, use the Native tab of the New Connection dialog. To create an SAP ODBC connection, finish defining the SAP ODBC DSN in the ODBC tab of the New Connection dialog.</p>	N/A

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System Requirements

Before installing Benchmark, ensure your system meets the following minimum hardware and software requirements:

Requirement	Details
Repository	Benchmark Factory cannot run without a repository, and during installation a SQLite file-based repository is installed. After installation, you can select a repository of your choice. Benchmark Factory supports the following databases: <ul style="list-style-type: none">• Oracle®• SQL Server®• MySQL• SQLite• SAP SQL Anywhere® (Adaptive Server® Anywhere)
Memory	512 MB of RAM recommended Note: The memory required may vary based on the following: <ul style="list-style-type: none">• Applications that are running on your system.• Size and complexity of the database.• Amount of database activity.• Number of concurrent users accessing the database.
Platform	1.0 GHz x86 or x64 compatible CPU
Browser Requirements	Benchmark Factory requires Internet Explorer® 9 or later.
Hard Disk Space	120 MB of disk space for installation Note: The disk space required may vary based on options selected for installation.
Operating System	Microsoft® Windows Server® 2008 R2 Service Pack 1 Microsoft Windows® 7 Service Pack 1 Microsoft Windows 8 Microsoft Windows 8.1 (Update) Microsoft Windows Server 2012 Microsoft Windows Server 2016 Microsoft Windows 10
.NET Framework	.NET Framework 2.0 is required to use Oracle workloads captured using Benchmark Factory 6.9.3 or earlier.
Additional Software	The Universal C Runtime component for Windows is required. See Universal C Runtime Update or Visual C++ Redistributable for Visual Studio 2015 to download this software. Note: If you encounter an error when installing this software, install the missing prerequisite software. For Windows 8.1 or Windows Server 2012 R2, install the April 2014 update: https://support.microsoft.com/en-us/kb/2919355 . For other operating systems, see the Universal C Runtime Update Prerequisites section.
Database Server	Oracle®: 10g R2, 11g, and 12c (requires Oracle 10 client libraries or higher.) Benchmark Factory has been tested on Oracle Exadata 2.0 running Oracle database 11g R2. Note: Oracle Capture/Replay of workloads does not support Oracle databases

Requirement	Details
	<p>earlier than 9i.</p> <p>PostgreSQL 9.4, 9.5, 9.6, and 10, and EnterpriseDB Postgres 10</p> <p>SQL Server®: 2005, 2008, 2008 R2, 2012, 2014, 2016, and 2017</p> <ul style="list-style-type: none"> Benchmark Factory has been tested against SQL Server 2017 running on Windows or Linux. <p>Note: Beginning with Benchmark Factory 8.1, a SQL Server client is no longer distributed along with Benchmark Factory. To create a SQL Server native connection, ensure a SQL Server client is installed.</p> <p>SQL Azure™: Benchmark Factory provides limited support of SQL Azure.</p> <p>SAP® ASE: 15.5, 15.7, 16</p> <p>IBM® DB2® for LUW: 9.x through 10.x, 11.1</p> <p>IBM® DB2® for z/OS: 9.x through 10.x, 11.1</p> <p>MySQL: 4.5 and 5.x</p> <p>Note: The 32-bit version of Benchmark Factory requires the 32-bit versions of the client libraries (including ODBC drivers). The 64-bit version requires 64-bit client libraries.</p>
ODBC Database Server	Benchmark Factory supports almost all databases that you can connect to using an ODBC 3.0 or later driver.
Benchmark Factory Agent for Linux - Requirements	<p>Supported Operating Systems: CentOS 7.x (64-bit), RHEL 7.x (64-bit), and Oracle Linux 7.x (64-bit)</p> <p>Supported Databases for Load Testing: PostgreSQL</p>
Cloud Database Service	Oracle Database as a Service

Virtualization Support

Before installing Benchmark Factory, review the following for virtualization support:

Requirement	Details
Application Virtualization	<p>Benchmark Factory has been tested with the following:</p> <ul style="list-style-type: none"> Citrix XenApp 6.5

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Product Licensing

To activate a trial license

1. In the Licensing dialog, enter your license (Authorization) key.
2. Enter the site message included with the license key.

To activate a purchased commercial license

1. In the Licensing dialog, enter your license (Authorization) key.
2. Enter the site message included with the license key.

Earlier-Version License Keys

License keys compatible with Benchmark Factory 5.8.1 and earlier versions are no longer supported.

To upgrade your license key

1. In your current version of Benchmark Factory, go to **Help | Licensing** to find your license *number* . If not explicitly listed, it may be included as part of the Site Message associated with your key.

Example: ACCOUNTNAME-*nnn-*nnn-*nnn***

2. Then go to the License Key Upgrade page at: <http://license.quest.com/upgrade>.
3. Enter your e-mail address and your existing license number, and follow the prompts.

If you need help finding your license number or an upgrade key, please contact the License Administration team at: <https://support.quest.com/licensing-assistance>.

Getting Started

Contents of the Release Package

The Benchmark Factory release package contains the following products:

1. Benchmark Factory version 8.1
2. Product Documentation, including:
 - User Guide
 - Online Help
 - Release Notes

Globalization

This section contains information about installing and operating this product in non-English configurations, such as those needed by customers outside of North America. This section does not replace the materials about supported platforms and configurations found elsewhere in the product documentation.

This release is Unicode-enabled and supports any character set. In this release, all product components should be configured to use the same or compatible character encodings and should be installed to use the same locale and regional options. This release is targeted to support operations in the following regions: North America, Western Europe and Latin America, Central and Eastern Europe, Far-East Asia, Japan.

About Us

We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation.

Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece—you—to the community, to the new Quest.

Contact Quest

For sales or other inquiries, visit www.quest.com/contact.

Technical Support Resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product

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