

LiteSpeed[®] for SQL Server[®] 8.8

Release Notes

March 2019

These release notes provide information about the LiteSpeed for SQL Server release.

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About this release

LiteSpeed for SQL Server, or LiteSpeed, is a fast and flexible backup and recovery solution that allows DBAs to easily maintain complete control over the backup and recovery process. Its low-impact, high-performance compression and encryption technology enables users to reduce storage costs and protect data, while improving both backup and disaster recovery times. With the improved compression and LiteSpeed's Fast Compression technology, LiteSpeed for SQL Server can further reduce disk space and backup time up to another 85% over traditional, compressed full backup solutions. The result is a unique backup and recovery approach, unmatched in flexibility, that greatly reduces backup times, creates a significantly smaller storage footprint, and maintains a high level of recoverability.

- LiteSpeed 8.8 is a minor release.

- [with new features and functionality. See New features and Enhancements.](#)

Key Benefits

- Store database backups directly into the following cloud platforms: Microsoft Azure Blob storage, Amazon S3 and Google Storage.
- Reduce storage requirements to save valuable disk space with Fast Compression (reduce storage and improve backup times up to 85% over traditional full backup solutions)
- Optimize use of available server resources with LiteSpeed's Adaptive Compression
- Reduce backup times to improve maintenance windows
- Reduce restore times to avoid excessive downtime
- Automate backup testing and running database consistency checks using Automated Restore
- Easily configure backup jobs and maintenance plans on multiple instances by deploying LiteSpeed Backup Templates
- Easily configure and monitor Log Shipping using the Create LiteSpeed Log Shipping Plan Wizard and Monitoring tab in the LiteSpeed UI Console
- Recover data and schema from backups using LiteSpeed's Object Level Recovery
- Undo critical transactions using LiteSpeed's Transaction Log Reader
- View backup performance across the enterprise using LiteSpeed's centralized reporting repository
- Easily manage SQL Agent jobs across multiple servers using LiteSpeed's Job Manager
- Easily configure maintenance plans across the enterprise using LiteSpeed's Maintenance Plan Designer
- Leverage LiteSpeed's advanced engine tuning, including CPU Affinity, CPU Throttling, and Threading options
- Analyze your environment for best backup performance and identify bottlenecks using LiteSpeed's Backup Analyzer
- Eight highly optimized levels of compression
- Secure data using backup encryption up to AES-256

New features

New features in LiteSpeed 8.8:

- Backup Templates now support the differential backup type [LS-230]
- Backup Templates now support IBM Spectrum Protect (Tivoli Storage Manager) [LS-547]
- Automated Restore now has the ability to do point in time restores [LS-532]
- LiteSpeed now support backups for TDE databases with Sql Server 2017 CU7 [LS-825]
- There have been Remote Deploy improvements [LS-505, LS-506, LS-508, LS-509, LS-818]

See also:

- [Enhancements](#)
- [Resolved issues](#)

Enhancements

The following is a list of enhancements implemented in LiteSpeed 8.8.

Table 1: General enhancements

Enhancement	Issue ID
Use a backup template to skip LOG backups only on LogShipping databases.	LS-1193
Azure Germany region has been added to supported regions.	LS-1006
Amazon S3 Paris region has been added to supported regions.	LS-1005
Windows Server Core versions are supported (starting with Windows Server Core 2008 R2)	LS-933
Verify backups from the console (disk, cloud and TSM backups)	LS-870
Log Reader and OLR now support the SQL Server Graph databases.	LS-736
Use regular expressions to exclude databases from backups in the backup template (Maintenance Plans only).	LS-729
Overview and Backup History reports have been updated	LS-624
Automated restore can do point in time restores: either a static point in time or something dynamic (for example 4 hours prior to recovery).	LS-532
LogReader now supports export of changed data to CSV, DB, and HTML.	LS-518
OLR now supports the SQL Server Varbinary(max) data type.	LS-395

Resolved Issues

In LiteSpeed 8.8

The following is a list of issues addressed in release 8.8

Resolved Issue	Issue ID
Corrected a problem on restoring on old backup to source database. Automated restore used to incorrectly choose older backups with a higher LSN number than newer backups created after the restore.	LS-514
Corrected a problem where DCR backup files larger than 4GB with Verify option turned on failed.	LS-924
Corrected a problem behind error on upgrade of server during upgrade of LiteSpeed Local	LS-982

Resolved Issue	Issue ID
'Latin1_General_100_CS_AS_KS_WS_SC'	
Cloud browsing performance has been improved in maintenance plans. This is specifically related to the time taken to complete backup jobs when cleanup is enabled.	LS-1000
Corrected a display problem, when a backup or restore verify ran for a longer period of time it showed up in the console as failed but was still running in the background.. The central repository is now updated in real time with progress percentage of restore.	LS-1027
Corrected a problem where OLR failed to start when processing more than 200 TLOG backups.	LS-1030
TSM Issue "Error in conversion TSMEstimatedSize" has been fixed.	LS-1035
Issue related to TSM server generates too many TSM database transactions has been fixed.	LS-1036
Issue "Template was not deployed. Installed LiteSpeed version (8.6.1.36) does not support Azure Blob Storage." when deploying the template has been fixed.	LS-1037
The help files have been updated to include always on group support in SQL Server 2014 and SQL Server 2016.	LS-1123
Log shipping jobs do not check contiguous memory before executing any more.	LS-1127
The option to "Force a full backup if one has not been created" is now applied in the case where a database name does not match the logical name of the MDF file.	LS-1150
xp_restore_verifyonly now reports compression level or adaptive compression mode	LS-1187
Overlapped write has been disabled by default for network storage since it generates too many issues with non-compatible windows storage.	LS-1197
The ability to add / hide copy-only full backups from a selection has been added to Intellirestore	LS-1207
Fast compression template job now records failed backups to Litespeed activity.	LS-1220
Fast compression maintenance plans now support variable "%TYPE%".	LS-1246
Litepseed now sets maximum striping/CloudPartSize values for backups to cloud databases that cannot be read.	LS-1262
Improve stability of a backup transfer process to Amazon cloud.	LS-1289
Disable OLRMAP option for TLOGS in Backup Templates.	LS-1296
Backup wizard no longer ignores "Use SSL" setting for Microsoft Azure.	LS-1340

In LiteSpeed 8.7.1

The following is a list of issues addressed in release 8.7.1

Table 2: Core issues

Resolved Issue	Issue ID
Corrected a problem where Log shipping calls to check memory should not crash server or consume up server resources.	LS-1127
Corrected a problem behind a Delete File error on backup to Google Storage for files containing special symbols, slashes or spaces including files in subfolders.	LS-1320

Resolved Issue	Issue ID
With tlog backups, changed the default setting for the option "Optimize Object Level Recovery speed" to off as in some cases there is more difficulty with its usage than profit.	LS-1222
Corrected a display problem, when a backup or restore verify ran for a longer period of time it showed up in the console as failed but was still running in the background.	LS-1027
LiteSpeed now sets maximum striping/CloudPartSize values for backups to cloud databases that cannot be read.	LS-1262
The LiteSpeed activity page now records successful and failed fast compression backups.	LS-1220
Fast Compression now shows all messages in the logs, not just messages from the last database.	LS-1218
Fast Compression backups no longer backup databases in STANDBY mode.	LS-1236
OLR is now able to execute requests to process more than 200 TLOG backups.	LS-1030 CSR 4369943
LiteSpeed now locks backup files during regular backup full / differential / TLOG / fast compression.	LS-1194
LiteSpeed now includes logging and retries into the CloudProxy where it checks for bucket existence and requests a bucket's region	LS-1161

In LiteSpeed 8.7

The following is a list of issues addressed in release 8.7

Table 3: Core issues

Resolved Issue	Issue ID
The Instance configuration wizard now allows you to edit the instance name at the SQL Instances step. Ctrl+Left Click on an empty place near the "use the same login ..." check box.	LS-552
When the console is setup to use "central" view, refresh now correctly updates the list of registered SQL Servers.	LS-570
Automated restore now reports the correct message for a dropped database..	LS-576
The Database tab at the instance level now shows the last backup for all databases.	LS-580
LiteSpeed Core is now able to correctly read files with non-standard sector sizes from storage.	LS-643
LiteSpeed now handles license information from old license types (License types used by LiteSpeed versions prior to 8.6).	LS-646 LS-647 LS-649 LS-780
Instance configuration now allows the SQL name to include a port number.	LS-656
Multi-database Fast Compression now correctly works with the %DATABASENAME%	LS-708

Resolved Issue	Issue ID
parameter.	
Maintenance Plans can now run backups without an additional call to xp_restore_headeronly	LS-721
On upgrade LiteSpeed is now able to correctly handle the old license type (License types used by LiteSpeed versions prior to 8.6).	LS-780
Corrected an issue where Automated Restore ran with no results.	LS-819
Symbol "]" is now allowed in the database name in backup Maintenance Plans.	LS-823
Symbol "{" is now allowed in OLR scripts..	LS-845
"Always on availability group" options are now disabled when "System Databases" is selected in Maintenance Plans.	LS-854
Remote Deploy now supports TLS 1.2 automated provider selection.	LS-855
Backup Template jobs now produce an error when the backup path option is selected and not used.	LS-871
LiteSpeed Core now works correctly on receipt of unexpected errors from the SQL Server.	LS-890
Browsing for a backup location on windows 2016 no longer results the error "Arithmetic operation resulted in an overflow."	LS-904
The LiteSpeed Console now reports the server as registered when the native Log Shipping plan includes a server port number in "name".	LS-186
The Log Shipping wizard now uses the port number of a registered SQL Server instance.	LS-897
Fast Compression smart cleanup tasks are now able to delete files in the case of locked files.	LS-903 LS-820

In LiteSpeed 8.6.1

The following is a list of issues addressed in release 8.6.1.

Table 4: Core issues

Resolved Issue	Issue ID
Handling of the error "The process cannot access the file because it is being used by another process" in maintenance plans has been improved.	LS-721
Fast Compression backup for multiple databases now supports the %DATABASENAME% variable.	LS-708
LiteSpeed core work with different drive sector sizes has been improved.	LS-643, LS-649
Smart cleanup is able to work with a larger number of files now.	LS-644
License verification is now optimized for old format keys (prior to version 8.6).	LS-646, LS-647
The Instance Configuration Wizard now allows you to set a port number for SQL Server instances on non-standard ports.	LS-656

In LiteSpeed 8.6.0

The following is a list of issues addressed in release 8.6.0.

Table 5: Core issues

Resolved Issue	Issue ID
Errors "Database 'name' is invalid: not found" may occur during smart cleanup process on fast computers	LS-293
Cloud buckets browsing may fail with error "List of Objects in cloud exception: The remote server returned an error: (404) Not Found" in case of a lot of cloud objects	LS-369
Automated restore does not show error in case of drop database operation fail	LS-207
Automated restore may fail drop database if the database in use by other connection	LS-214
Backups executed with depreciating @LSECompatible=1 parameter can't be restored.	LS-323
Backup performance slow due to the running of unneeded T SQL statement.	LS-384
Automated restore changes file names and extension for secondary data files	LS-483
Backup of AG secondary replica fails if the replica is not set to be readable.	LS-498

Table 6: Log Reader issues

Resolved Issue	Issue ID
Log reader may fail when reading large log files because it could not use all available RAM on the machine	LS-6

Table 7: OLR issues

Resolved Issue	Issue ID
OLR should support sparse columns	LS-258

Table 8: Job Manager issues

Resolved Issue	Issue ID
Job Manager may raise an error in case of adding job step to a job.	LS-446

Table 9: Backup Template issues

Resolved Issue	Issue ID
Template deployment may move registered instances to the "unregistered instances" category	LS-448

Table 10: Console issues

Resolved Issue	Issue ID
The user interface console displays an incorrect message if the central repository instance is setup with a port number	LS-503

Table 11: Maintenance Plan issues

Resolved Issue	Issue ID
Maintenance plans create but do not drop temp tables.	LS-516
Maintenance plans may fail with error "Access violation at address 00511475 in module 'slssqlmaint.exe'. Read of address 7FFD5DF6" during fast compression with smart cleanup plan execution in some cases.	LS-521

In LiteSpeed 8.5

The following is a list of issues addressed in release 8.5.

Table 12: Backup and Restore resolved issues

Resolved Issue	Issue ID
Performance issue related to mirrored backups resolved	115926
Issue with hanging backups on high load systems resolved	119546 119800
LiteSpeed install on windows 2012/2016 servers does not need NET 3.5 any more	119868
"Provider" parameter added to LS Core ini file	119658

Table 13: Fast Compression resolved issues

Resolved Issue	Issue ID
Number of threads from LiteSpeed defaults correctly applied in Fast Compression	119711
Escalation events do not raise error status for backup	119780
Fast Compression can figure out special cases caused by SmartCleanup	119735

Table 14: Remote Deploy resolved issues

Resolved Issue	Issue ID
Remote deploy wizard opens normally on all systems	119799

Table 15: OLR resolved issues

Resolved Issue	Issue ID
Filtered Index is supported	119598
NTEXT,TEXT, IMAGE types can be restored via Direct Mode	119724

Table 16: Maintenance plans resolved issues

Resolved Issue	Issue ID
Maintenance plan reports can be emailed in all cases	119476
Striped backups can be deleted from cloud with “delete files older then” option	119689

Table 17: Instance Configuration Wizard resolved issues

Resolved Issue	Issue ID
AlwaysOn Group listener can be used for the central repository connection	119600 119596

Known Issues

The following is a list of issues, including those attributed to third-party products, known to exist at the time of release.

Table 18: Version compatibility known issues

Known Issue	Issue ID
Database backups created with LiteSpeed Version 8.x cannot be restored using older versions of LiteSpeed. However, backups created with previous versions of LiteSpeed can be restored with LiteSpeed 8.2.	N/A

Table 19: Console known issues

Known Issue	Issue ID
On Windows 8.1, console logging cannot be enabled when UAC is enabled. The workaround is to run LiteSpeed with the “Run as Administrator” option to enable console logging.	113540

Table 20: Backup and restore known issues

Known Issue	Issue ID
Mirroring is not supported for TSM backups.	49305
LiteSpeed incorrectly writes successful backup details to the SQL Server error log or event viewer if DBCC TRACEON (3226) is run with the backup. These details are not written for a native backup.	38972

Known Issue	Issue ID
<p>On using LiteSpeed Automated Restore to restore an old backup to the source database, automated restore chooses older backups with a higher LSN number in preference to newer backups created after the restore.</p> <p>Workaround: Remove all the backups from old the database (created before the restore) from the backup folders scanned by Automated Restore.</p>	LS-514

Table 21: Activity logging known issues

Known Issue	Issue ID
<p>NT AUTHORITY\SYSTEM account must be added to the sysadmin server role on the local instances of SQL Server 2012 or higher in this very rare scenario:</p> <ul style="list-style-type: none"> • The central repository is on the same server as the Local repository and • You selected Local System on the Service Account wizard page of the Instance Configuration Wizard and • You selected to use Windows authentication for the repositories. <p>Otherwise, the local instance will not report to the central repository.</p> <p>Workaround: Instead of adding NT AUTHORITY\SYSTEM account to the sysadmin server role, you can either provide a Windows domain account on the Service Account wizard page or use SQL Server Authentication for the local and central repositories.</p>	104669

Table 22: Backup Analyzer known issues

Known Issue	Issue ID
<p>The LiteSpeed Backup Analyzer backs up the requested amount of data for analysis and then automatically aborts the backup process. This generates VDI error messages in the LiteSpeed SQL Server error log. Please ignore them.</p>	79697

Table 23: Log shipping known issues

Known Issue	Issue ID
<p>The publisher and subscriber servers must have the same version of LiteSpeed.</p>	52230
<p>In the native SQL Server 2000 log shipping plans, if the monitoring server is not the same as the subscriber server, information about the restore time is based on the restore job history and may be different from the actual restore time.</p>	98644
<p>On uninstall of LiteSpeed 8.1 followed by install of a modern LiteSpeed, logshipping jobs do not point to the new executable path.</p> <p>Workaround: At the logshipping module, select the plan and right-click on its name. Click convert to LiteSpeed plan.</p>	LS-1286

Table 24: Maintenance plans known issues

Known Issue	Issue ID
Legacy native plans on SQL Server 2008 may fail due to Microsoft backward compatibility issue. See http://support.microsoft.com/kb/955626 .	60281
LiteSpeed does not support regular expressions with the IgnoreCase option. To ignore case, use ([Aa][Bb][Cc]) instead of (?i:abc).	94513

Table 25: Log Reader known issues

Known Issue	Issue ID
User information displays only for operations in sessions that are currently active. The online log and backups do not contain user information and only contain the SPID for the transaction.	37112
Log Reader does not support row-level and page-level compression.	N/A

Table 26: Object Level Recovery known issues

Known Issue	Issue ID
Restore of a table with default values after adding a NOT NULL column to the existing table will result in an error in the case of using Direct Mode (the issue is related to SQL Server 2012 and higher). Workaround: use Bulk Insert recovery mode.	119733
If there is data of variant type with size > 7991 in the table data, recovery using Bulk Insert will result in a BCP internal error: " The column is too long in the data file for...". Workaround: use Direct Mode for data recovery.	119732

System Requirements

Before installing LiteSpeed 8.8, ensure that your system meets the following minimum hardware and software requirements.

Hardware Requirements

Table 27: List of hardware requirements

Requirements	Details
Processor	Follow the recommendations for the SQL Server version used.
Disk Space	250 MB of disk space for installation NOTE: The disk space required may vary based on options selected during installation.
Memory	Follow the recommendations for the SQL Server version used. NOTE: The memory required may vary based on the following:

Requirements	Details
	<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
Monitor	SVGA with a minimum resolution of 1024x768

Software Requirements

Table 28: List of software requirements

Requirements	Details
Operating System	<p>Microsoft Windows Server 2008 32-bit and 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows Server 2008 R2 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows Server Core 2008 R2</p> <p>Microsoft Windows Server 2012 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows Server Core 2012</p> <p>Microsoft Windows Server 2012 R2 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows Server Core 2012 R2</p> <p>Microsoft Windows Server 2016 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows Server Core 2016</p> <p>Microsoft Windows Server 2019 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows XP 32-bit and 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows Vista 32-bit and 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows 7 32-bit and 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows 8 32-bit and 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows 8.1 32-bit and 64-bit (x64) (All Service Packs)</p> <p>Microsoft Windows 10 32-bit and 64-bit (x64) (All Service Packs)</p>
Database Software	<p>SQL Server 2005 32-bit and 64-bit (x64) (All Service Packs)</p> <p>SQL Server 2008 32-bit and 64-bit (x64) (All Service Packs)</p> <p>SQL Server 2008 R2 32-bit and 64-bit (x64) (All Service Packs)</p> <p>SQL Server 2012 32-bit and 64-bit (x64) (All Service Packs)</p> <p>SQL Server 2014 32-bit and 64-bit (x64) (All Service Packs)</p> <p>SQL Server 2016 64-bit (x64) (All Service Packs)</p> <p>SQL Server 2017 64-bit (x64) (All Service Packs) when hosted on a Windows operating system.</p>
Additional Software	<p>.Net Framework 4.5 installed before you install the LiteSpeed UI Console and LiteSpeed Core Cloud Components.</p> <p>.Net Framework 3.5 required with SQL Server 2005, 2008 and 2008R2.</p> <p>If using IBM Spectrum Protect (Tivoli Storage Manager - TSM), the TSM API and Backup/Archive Client version 5.3 or later should be installed.</p>

Microsoft Internet Explorer 6.0 or later.
Adobe Reader 8 or later to view PDF guides.

Supported Cluster Requirements

- Windows Server 2008 Failover Cluster
- Windows Server 2008 R2 Failover Cluster
- Windows Server 2012 Failover Cluster
- Windows Server 2012 R2 Failover Cluster
- Windows Server 2016 Failover Cluster
- Windows Server 2017 Failover Cluster
- Windows Server 2019 Failover Cluster
- HP PolyServe Matrix Server 3.6.1
- Veritas Storage Foundation HA for Windows 5.0

Supported Deduplication Storage Appliances

LiteSpeed has been tested on Dell DR, EMC Data Domain, and ExaGrid storage appliances.

VMware and Hyper-V Environments

LiteSpeed has been tested and is certified to work under VMware and Hyper-V environments.

Upgrade and Compatibility

For information about registering LiteSpeed and for upgrade instructions, please see the *LiteSpeed Installation Guide*.

Note that from LiteSpeed 8.5 the default install file path has changed. On upgrade the install file path will not change automatically. You can change the file path during the upgrade process: Browse "Folder name".

Repository Compatibility

If receiving the message "The version of the <RepositoryDatabaseName> on server <ServerName> is greater than the version of this release of LiteSpeed for SQL Server", please see the online Help topic "Upgrade Repositories". The message is an indication that the statistics agent on the older server does not match the newer version of LiteSpeed and must be upgraded.

In addition, there are special considerations if you are upgrading from LiteSpeed 4.x. Review the following before upgrading from LiteSpeed 4.x to LiteSpeed 5.0 or later.

Maintenance Plans

LiteSpeed 5.x and later do not support SSMS plug-in functionality. However, the LiteSpeed UI Console allows you to read SSMS plug-in maintenance plans and upgrade them to SSIS LiteSpeed maintenance plans.

There are two ways to remove old backup files for maintenance plans: the 'Clean up maintenance plans' task and the 'Remove files older than' option in the 'Back Up Database' task. The 'Remove files older than' option removes both LiteSpeed 4.8 and LiteSpeed 5.x/6.x backup files for legacy plans. However, for SSIS maintenance plans it only removes LiteSpeed 5.x/6.x backup files. The 'Clean up maintenance plans' task removes LiteSpeed 4.8 and LiteSpeed 5.x/6.x backup files.

Log Shipping

The SQL Server versions supported for log shipping depend upon the LiteSpeed release:

SQL Server	4.8	5.0	5.0.1	5.0.2	5.1.0-6.5.1	6.5.2	7.x	8.0-8.6.0	8.6.1-8.8
2005	•	•		•	•	•	•	•	•
2008 / R2		•	•	•	•	•	•	•	•
2012						•	•	•	•
2014							•	•	•
2016								•	•
2017									•

Product licensing

For existing customers:

- If you purchased LiteSpeed and received your new license, enter the License Key and Site Message value during the installation or register LiteSpeed later. The license is updated per server not per instance.
- If you purchased LiteSpeed but have not received your new LiteSpeed license, please go to <https://support.quest.com/contact-support> and request your upgrade.
- If you have any other licensing questions related to your purchase, please go to <https://support.quest.com/contact-support>.

For trial customers:

- If you want to purchase LiteSpeed or require a trial extension, please contact your sales representative or open <https://support.quest.com/contact-support>.

Installation instructions

Double-click on the appropriate installer (.msi file) and follow the on-screen directions.

- LiteSpeed.msi–32-bit installer
- LiteSpeed-x64.msi–64-bit installer

See the LiteSpeed *Installation Guide* for full details on installing LiteSpeed. The *Installation Guide* is located on the product web site and the Quest Support Portal.

Note: It is required that .Net 4.5 is installed before installing LiteSpeed Console and LiteSpeed Core Cloud Components.

More resources

Additional information is available from the following:

- [Online product documentation](#)
- [Database Performance Monitoring Community](#)

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. It supports simultaneous operation with multilingual data. 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.

This release has the following known capabilities or limitations: Note: Litespeed for SQL Server 4.8.4 has been localized in Japanese. 5.0 & more recent releases are English only versions.

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.

Contacting 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

Third-party contributions

This product contains the following third-party components. For third-party license information, go to <https://www.quest.com/legal/license-agreements.aspx>. Source code for components marked with an asterisk (*) is available at <https://opensource.quest.com>.

Table 29: List of Third-Party Contributions

Component	License or acknowledgement
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