Space Manager with LiveReorg® 8.5

Release Notes

Wednesday, April 25, 2018

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About Space Manager with LiveReorg

Space Manager with LiveReorg® is Quest Software's solution for optimizing space use and performance in Oracle® databases. It provides DBAs with a comprehensive set of tools for making the most of storage resources. These tools allow you to collect statistics, visualize space use, detect space-use problems, reorganize and resize objects to reclaim wasted space, create tablespaces, partition objects, and resize datafiles. Space Manager's powerful reorganization functionality makes it possible to reorganize and restructure large, volatile databases while tables are online.

As you manage capacity with Space Manager, you can monitor it with Capacity Manager for Oracle. Capacity Manager is Quest Software's solution for tracking and planning capacity across multiple Oracle databases. Designed to report on collective space use in databases, Capacity Manager lets you evaluate current allocation, forecast future growth, and identify emerging issues. To resolve these issues, you can run Space Manager from Capacity Manager. Launch points are provided throughout the Capacity Manager interface.

Together, Space Manager and Capacity Manager provide the information and control you need to efficiently maintain and plan your database resources. Capacity Manager uses the Space Manager license and can be installed when you install Space Manager.

Note: Capacity Manager is not available in a 64-bit version at this time and is not included in the 64-bit installer.

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New Features

Space Manager 8.5

Space Manager 8.5 includes the following new features and enhancements.

Reorg Manager

Customize DataPump Options for Individual Objects (Oracle 12c)

In the Reorg Manager, you can now specify DataPump options for individual objects. This allows you to override the default (global) setting you specified on the first page of the Reorg Manager. Review the following details:

- This new feature is included in the Customize Object Allocations page of the Reorg Manager.
- You can specify a global option on the first page of the Reorg Manager, or you can specify DataPump options for each object individually on the Customize Object Allocations page.
- The custom settings for Individual objects override the global setting.

Oracle 12c Support

Support for Oracle 12c Release 2

This release of Space Manager includes support for Oracle Database 12c Release 2.

Note: When using Space Manager with Oracle 12c R2, additional requirements apply. Please see the System Requirements for more information.

Explorer

Advanced Search Window

The Advanced Search window now conveniently includes an **Add to Results** button in addition to the menu item.

1. To add to your current search results, specify additional search conditions or modify existing conditions.
2. Then click the **Add to Results** button. The new or modified conditions are used to select additional objects which are added to your existing results.

General

Support for Oracle Database 9 and 10 is Discontinued

Beginning with Space Manager 8.5, Oracle Database 9 and 10 are no longer supported.

Space Manager 8.4.1

Space Manager 8.4.1 includes the following new features.

Reorg Manager

Additional DataPump options (Oracle 12c)

When connected to Oracle 12c, the first page of the Reorg Manager allows you to specify the following options for the DataPump data movement method:

- **Use DataPump only for tables with LONG columns**—(Recommended) Select this option to allow to automatically select the most efficient data movement method, either SQL or DataPump, to use for each object to be reorganized.
- **Use DataPump for all tables**—Select this option to use DataPump for all tables that are supported for this method. Tables that are not supported are excluded from reorganization.

  Caution: Care should be taken when selecting this method. DataPump is not always the most efficient data movement method and should be used only for large tables where table copy might cause Oracle errors.
- **Max File Size**—Use this field if you want to specify a maximum file size. When the file reaches the size specified, a new file is created. Leave this field blank to specify unlimited.
- **Parallel Degree**—Specify the number of parallel processes to use if you want to request parallel processing.

DataPump uses OVERFLOW_DIR_*nn* directories (Oracle 12c)

The DataPump data movement method (available for Oracle 12c) now uses the overflow directory/directories specified in the OVERFLOW_DIR_*nn* parameter/parameters. See "QSA Server Agent Parameters" in the online Help or *Space Manager User Guide* for more information.

General

Support for Oracle Database 9 and 10 to be discontinued

Space Manager 8.4.1 has been tested with Oracle Database 9 and 10. However, support for Oracle 9 and 10 will be discontinued after the Space Manager 8.4.1 release.

Space Manager 8.3

Space Manager 8.3 includes the following new features.

General

New 64-bit version of Space Manager

Beginning with release 8.3, Space Manager is now available in a 64-bit version, as well as a 32-bit version.

- **Benefits of 64-bit Space Manager.** Use the 64-bit version of Space Manager to take advantage of performance benefits in a 64-bit environment.
- **Installation.** Select the 64-bit set up program (installer) to install 64-bit Space Manager.
- **Oracle client.** The bitness/architecture of the Oracle client used by Space Manager must match the bitness/architecture of the Space Manager application. Ensure a 64-bit Oracle client is installed if you intend to use the 64-bit version of Space Manager.
- **Side-by-side installation.** Space Manager 8.3 (or later) supports side-by-side installation of versions with different bitness/architecture as long as they are also different releases (e.g., 8.2 and 8.3).

Window tabs identify the associated connection

- Window tabs now display the connection profile name for the database connection associated with the window. In addition, an informative tool tip displays additional connection information.

Reorg Manager

Instruct Space Manager to use FsCopy/DataPump

For special situations, you can now instruct Space Manager to use only *FsCopy* or only *DataPump* as the data movement method. If the database is Oracle 9, 10, or 11, the Reorg Manager allows you to specify FsCopy. If the database is Oracle 12, the Reorg Manager allows you to specify DataPump.

When to use the FsCopy/DataPump option

Selecting the **Use FsCopy** or **Use DataPump** option is recommended **only** for tables that would otherwise get a "snapshot too old" error during table copy. FsCopy and DataPump are not the most efficient data movement methods and should be selected only for large tables where table copy may cause a "snapshot too old" Oracle error.

Important: Because FsCopy and DataPump use the file system to store a copy of the table, make sure that the file system is prepared and the QSA parameter WORKDIR is set correctly. If using FsCopy, make sure the QSA parameter OVERFLOW_DIR_## is also set correctly.

What is Space Manager FsCopy? FsCopy uses an import and export process to move data. It is one of the actions included in the Space Manager FastCopy data movement method.

How to use this feature:

- To use only FsCopy/DataPump, on the Select Reorganization Method page of the Reorg Manager select either **Use FsCopy** or **Use DataPump**, depending on the Oracle version.
- **If this option is selected.** If selected, FsCopy/DataPump is used for all tables that are supported for this method. Tables that are not supported are excluded from reorganization.
- **If this option is cleared.** (Recommended) If the option check box is cleared, Space Manager automatically selects the most efficient data movement method, either SQL or FastCopy/DataPump, to use for each object to be reorganized.
- To allow Space Manager to automatically script the most appropriate data movement method, clear this option check box. This would be the most inclusive strategy.
- To reorganize objects that are not supported for FsCopy or DataPump, clear this option check box and allow the Reorg Manager to select the most appropriate data movement method.

Oracle 12c Support

This release of Space Manager now supports the following Oracle database 12c features.

- Attribute clustering (attribute-clustered tables)
- Tables with in-memory column store
- Temporal validity for tables

Reorg scripts. New options supporting 12c features in Reorg scripts.

- **Attribute clustering.** In the Reorg wizards, you can now apply attribute clustering or modify existing clustering options for reorganized tables.
- **In-Memory Column Store.** In the Reorg wizards, you can now enable or modify In-Memory Column Store options for reorganized objects/segments.

Note: Space Manager 8.3 does not support Oracle database releases later than 12.1.0.2.0.

Explorer

Reorder databases in Explorer tree-list

- You can now reorder databases within the Explorer tree-list. Drag and drop a database name to move it up or down the list.

Oracle 12c PDB. Oracle 12c pluggable (PDB) databases are now nested under the 12c container (CDB) database in the Explorer tree-list.

Advanced Search

This release includes a new Advanced Search feature in the Explorer. The advanced search allows you to use multiple search criteria to find objects or filter the list. This is useful when you want to find a diverse set of objects to include in one reorganization script group.

1. In the Explorer tree-list, select the database in which you want to search. To limit your search to one tablespace, select the tablespace.

2. Click the **Advanced** button beside the Search box in the Explorer window to open the Advanced Search window.

3. Use the fields provided to create one or more conditions to use as your search criteria. Select an operator and then select or enter a value for each applicable field.

4. After specifying search criteria, click **Start New Search**. Result are displayed in the lower pane.

5. Click the **Show search text** button to display the text of your search conditions.

6. Add additional criteria and click **Start New Search** to refine your search.

7. You can add to your current search results by adding new criteria and then selecting **Add to results** from the Search drop-down list. Or select **Remove from results** to remove results matching the new criteria.

Scripts/Job Monitor

Display latest execution logs for a script group

- You can now display the execution logs for all scripts in a group in one window. The latest log for each script in the group is displayed.

- To display the latest script group logs, select a script group from the list in the Job Monitor. Right-click the group and select **Retrieve Script Group Logs**.

Cancel and Clean Up command

- In the Scripts/Job Monitor, the right-click menu includes a new command, **Cancel and Clean Up**. This new command cancels the script and then performs a Clean Up action. Use this command only in cases where you would normally initiate the **Cancel** and the **Clean Up** commands in sequence.

Deprecated Features

Oracle Database 9 and 10. Beginning with Space Manager 8.5, Oracle Database 9 and Oracle Database 10 are no longer supported.

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Resolved Issues

The following is a list of issues addressed and enhancements implemented in this release of Space Manager.

Resolved Issues in 8.5

Feature	Enhancement / Resolved Issue	Defect ID
Advanced Search	Enhancement: The Advanced Search window now includes an "Add to Results" button in addition to the menu item.	SPC-410
General	This release includes support for maximum object name length of 128 bytes in Oracle 12c Release 2.	SPC-308
General	This release includes support for Windows 10.	SPC-379
Reorg Manager	(Oracle 12c) You can now specify the DataPump method for objects individually.	SPC-323
Reorg Manager	(Oracle 12c) Corrected an issue that in some cases prevented a successful cleanup if a script was cancelled or failed during the datapump procedure.	SPC-393
Reorg Manager	Corrected an issue that caused a "Value was either too large or too small for an Int32" error when running a reorganization on objects that include large integer values.	SPC-381
Reorg Manager	Corrected an issue that prevented the Index partition attributes from being scripted correctly when creating a partition-level reorg script for a partitioned table with a local index.	SPC-431

Resolved Issues in 8.4.1

Feature	Enhancement / Resolved Issue	Defect ID
LiveReorg	Corrected an issue that caused an ORA-04067 error during a LiveReorg of a table containing a LOB data type column when other processes attempted to access the table.	SPC-392
LiveReorg	Corrected an issue that caused an ORA-04067 error during LiveReorg Cleanup of a table containing a LOB data type column when other processes attempted to access the table. This issue is related to SPC-392.	SPC-398
LiveReorg	The DataPump data movement method (available for Oracle 12c) can now use the overflow directory/directories specified in the OVERFLOW_DIR_nn parameter/parameters.	SPC-363
LiveReorg	When connected to Oracle 12c, the Reorg Manager now allows you to specify the following options for the DataPump data movement method: a maximum file size and the number of parallel processes to use. See New Feature in this release for more information.	SPC-321
Object Properties	(Oracle 12c) Corrected an issue that caused an "Unable to cast object	SPC-388

	of type" error when attempting to view Object Properties of a table. This issue occurred when connected to an Oracle 12c database.	

Resolved Issues in 8.3

Feature	Enhancement / Resolved Issue	Defect ID
Reorg Manager	Improved performance when the analysis option "Restore original statistics in data dictionary for the CBO" is selected on the Scripting Options page of the Reorg Manager.	SPC-241
Scripts/Job Monitor	When deleting a script group, if the Detail pane is open, the list of scripts no longer persists in the Details pane after the group is deleted.	SPC-122
SQL Editor	Corrected an issue that caused an "access violation" error when attempting to edit a very large script or enter characters very quickly.	SPC-243
SQL Editor	Corrected an issue that caused Space Manager to become unresponsive when attempting to run a SELECT statement containing duplicate column names.	SPC-244

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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 and Workaround (if applicable)	Defect ID
General	Some wizard screens do not display correctly on Windows 7 if your text size setting is greater than 100%. **Workaround:** Set text size to 100%. 1. Select **Start | Control Panel | Appearance and Personalization**. 2. Select **Make text and other items larger or smaller** in the Display section. 3. Select **Smaller - 100% (default).** 4. Click **Apply**.	N/A
General	When running the Space Manager client (64-bit) in a 64-bit environment, some users might encounter the following error when attempting to submit a standard or live reorg script: "Error creating script group: Could not load file or assembly ManagedQP5.dll or one of its dependencies. is not a valid Win32 application."	SPC-409
Domain Indexes	**Reorganizing tables with Domain indexes.** Space Manager provides limited support for Domain indexes when performing reorganizations and warns that you might encounter a problem because of the Domain index. Space Manager scripts the	N/A

Feature	Known Issue and Workaround (if applicable)	Defect ID
	reorganization of the domain index correctly. However, the underlying implementation of the index type may be very complex, and some unforeseen dependencies may cause runtime errors. **Important:** It is recommended that you test the reorganization of a table with a Domain index on a non-production version of the table to make sure Space Manager reorganizes both the table and index correctly before you reorganize your production table.	
Installation	Error when installing QSA on Windows for Oracle Database 12cR2. Some users might encounter an "Error running setup" error after attempting to install the QSA Server Agent on Windows for Oracle Database 12c R2. **Workaround:** If you encounter this issue, contact Quest Support for assistance.	SPC-491
Live Reorg	Error when running Live Reorg on Oracle Database 12cR2 in Windows. Some users might encounter the following error when attempting to run a Live Reorg script on Oracle 12c R2 in a Windows environment: "350: Aborted QSA - 20391 ORA - 01403 during internal SQL." **Workaround:** If you encounter this issue, contact Quest Support for assistance.	SPC-493
Object Properties	Attempting to open the Object Properties dialog for a recently-created partitioned table using a Direct connection type resulted in an error.	SPC-482
Partitioning Wizard	After creating a table partitioned by range with a global index, using the Partitioning Wizard to change the partitioning method from range to hash unexpectedly changed to the index's locality to local.	SPC-483

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System Requirements

Before installing Space Manager and Capacity Manager, ensure that your system meets the following minimum hardware and software requirements.

Requirements for the Client Computer

The Space Manager and Capacity Manager clients must be installed on the same computer, and their requirements are the same unless otherwise specified. The computer must meet the following requirements:

Item	Requirement
Oracle® Client	Supported by both Space Manager and Capacity Manager: • Oracle Net version 11g, 12c **Note:** The bitness (architecture) of the Oracle client must match the bitness of the Space Manager application.
Operating System	Supported by both Space Manager and Capacity Manager: • Windows Vista® (FDCC compliant) • Windows® 7 • Windows Server® 2008 • Citrix® Metaframe XP • Windows 8 • Windows 10 • Windows Server 2012 • Windows Server 2016
Processor	1 GHz Processor (recommended minimum)
Memory	2 GB of RAM
Display Settings	A resolution of 1024 x 768; true color or high color; small fonts
Disk Space	Space Manager: Approximately 800 MB Capacity Manager: Approximately 13 MB
.NET Framework	Microsoft® .NET Framework 4 (including update 4.0.3) **Note:** The .NET Framework 4 Full Profile is required. The Client Profile is not sufficient.

Requirements for Databases

Each database being managed with Space Manager must meet the following requirements:

Item	Requirement
Oracle Database	- Oracle 11g - Oracle 11g R2 - Oracle 12c Release 1 - Oracle 12c Release 2 **Additional Requirements for Oracle 12c Release 2:** To be supported by Space Manager, an Oracle 12c Release 2 database is required to have the following sqlnet.ora profile parameter values specified: SQLNET.ALLOWED_LOGON_VERSION_CLIENT = 10 SQLNET.ALLOWED_LOGON_VERSION_SERVER = 10 See "Additional Requirements for Oracle 12c Release 2" below for more information. **Notes:** - Space Manager supports Oracle Enterprise Edition and Standard Edition databases. - Space Manager does not support Oracle databases which use Oracle Database Vault.
Database Server Operating System	Space Manager supports the following operating systems: - HP-UX 11i on Itanium - Oracle Solaris 11 and 11.1 - IBM® AIX 7.1 and 7.2 - Red Hat® Linux Advanced Server 6.4, 6.5, 6.6, 6.7, 7.1, 7.2, 7.3, and 7.4 - Oracle® Linux® 6 and 7 - Oracle Linux 6 and 7 with Unbreakable Enterprise Kernel - SuSE Linux Enterprise Server 11 SP2 and 12 - Windows Server 2008 - Windows Server 2012 - Windows Server 2016 **Note:** When using Oracle 11.1 or earlier on 64-bit systems, the installing user must be configured to use the Oracle 32-bit client libraries. For Oracle 11.2 or later on 64-bit systems, the installing user can use the Oracle 64-bit client libraries.
Disk Space	Disk-space requirements are: 80 MB for statistics tables 20 MB for scripts tables 20 MB contiguous free space for LiveReorg objects in the LiveReorg tablespace (set with QSA's LW_TABLESPACE parameter) 40 MB in the filesystem for QSA executables and logs
Oracle Packages	**Space Manager:** DBMS_SQL, DBMS_PIPE, DBMS_LOCK, DBMS_SPACE_ADMIN **QSA:** DBMS_SQL, DBMS_PIPE, DBMS_OUTPUT, DBMS_APPLICATION_INFO **Find Long LONGs feature:** UTL_RAW **Email notifications:** UTL_SMTP

Item	Requirement
Oracle's Partitioning Option	Required for the Online Switch (a feature available for live reorganizations) and the Partitioning Wizard; Partitioning Option must be installed and licensed.
XDB Schema	Required for XMLType datatypes.

Additional Requirements for Oracle 12c Release 2

Before installing the server components (and QSA), specify a password version for the Oracle 12c Release 2 database by performing the following procedure.

1. First, to verify that this procedure is necessary for the target database, run the following query:

    ```
    select username, password_versions
    from dba_users
    where username = 'SPACER'
    ```

    Note: Username is the installation DBA.

2. If results returned include "10G, 11G, 12c" in the PASSWORD VERSIONS column, then this procedure is not necessary for this database.

3. If results do not include 10G, you must perform this procedure for the target database.

4. Open the SQLNET.ORA file for the target database.

5. Enter the following:

    ```
    SQLNET.ALLOWED_LOGON_VERSION_CLIENT = 10
    SQLNET.ALLOWED_LOGON_VERSION_SERVER = 10
    ```

6. Save the SQLNET.ORA file.

7. Stop and restart the listener. Use the following commands:

    ```
    lsnrctl stop
    lsnrctl start
    ```

    The listener may take a few minutes to fully restart.

8. Alter the password for the installation DBA to a temporary password and then back again to reset it, for example:

    ```
    alter user spacer identified by X;
    alter user spacer identified by spacer;
    ```

9. Reset the sys password using alter, for example:

    ```
    alter user sys identified by syspassword;
    ```

10. Now run the query again to verify the change.

    ```
    select username, password_versions
    from dba_users
    where username = 'SPACER'
    ```

    Note: Username is the installation DBA.

11. You can also verify the change for the sys user.

    ```
    select username, password_versions
    from dba_users
    where username = 'SYS'
    ```

12. If results returned from the queries include "10G, 11G, 12c" in the PASSWORD VERSIONS column, the password version was successfully set.

For additional information, see the Oracle documentation:
https://docs.oracle.com/database/121/NETRF/sqlnet.htm#NETRF2010.

Requirements for the Capacity Manager Repository

Note: Capacity Manager is not available in a 64-bit version at this time and is not included in the 64-bit installer.

The database used for the Capacity Manager repository must meet the following requirements:

Item	Requirement
Oracle Database	Supported for the repository: ● Oracle 11g ● Oracle 11g R2 ● Oracle 12c
Disk Space	8 MB recommended per monitored database assigned to a repository (accommodates one year of growth in repository objects)
Job Scheduler	One of the following schedules is needed for snapshot jobs, report scheduling, and Windows scheduling: ● Oracle DBMS_SCHEDULER is used for scheduling snapshot jobs. ● A third-party job scheduler can be used instead of an Oracle DBMS package.
Oracle Initialization Parameters	Oracle initialization parameters should be set as follows: ● OPEN_LINKS—The value for OPEN_LINKS initialization parameter should be equal to or greater than the number of monitored databases assigned to a repository. The default value for this parameter is 4; the maximum is 255. ● JOB_QUEUE_PROCESSES—For optimal performance of snapshot jobs, the value for the JOB_QUEUE_PROCESSES initialization parameter should be equal to or greater than the number of monitored databases assigned to a repository. The maximum is 1,000.
Character Set	Must be a superset of the character sets for all monitored databases. A UTF8 character set is recommended.
Activity Level	Light activity level.

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Product Licensing

To activate a trial license

1. In the License Key dialog, enter your Authorization Key.
2. Enter the Site Message included with your Authorization Key.

To activate a purchased commercial license

1. In the License Key dialog, enter your Authorization Key.
2. Enter the Site Message included with your Authorization Key.

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Getting Started

Contents of the Release Package

Space Manager with LiveReorg 8.5 and Capacity Manager for Oracle 1.4 include the following documentation:

- Space Manager online help and user guide
- Capacity Manager online help

Note: The *Installation Guide* and Release Notes are not included in the setup executable and need to be downloaded separately. These documents are also available from the Quest Software Support Portal.

Installation Instructions

The clients for Space Manager with LiveReorg 8.5 and Capacity Manager for Oracle 1.4 can be installed together using the Installer.

Note: Capacity Manager is not available in a 64-bit version at this time and is not included in the 64-bit installer.

The installer is identified as the Space Manager with LiveReorg 8.5 Installer. The executable for the installer is available at our Support Portal at https://support.quest.com/ and on the installation CD for Space Manager with LiveReorg.

After installing the Space Manager client, you install server components and the QSA Server Agent. Each database you plan to manage with Space Manager must have server components and an agent. Job scheduling and LiveReorg require an agent. After installing the Capacity Manager client, you install the repository and assign monitored databases to the repository. Each database you plan to manage with Capacity Manager must be assigned to the repository.

QSA Server Agent version 8.5 is included in this release of Space Manager with LiveReorg 8.5.

Refer to the *Space Manager with LiveReorg Installation Guide* for more information about installing Space Manager.

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Upgrade and Compatibility

After you upgrade the Space Manager client, when you connect to a database with Space Manager server objects already installed, you are prompted to upgrade server components and the QSA Server Agent.

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 supports any single-byte or multi-byte 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

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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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