Quest™

Space Manager with LiveReorg® 9.2

Installation Guide

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Legend

IMPORTANT, NOTE, TIP, MOBILE, VIDEO: An information icon indicates supporting information.

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

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Installation Guide
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1

Architecture and Requirements

Architecture

Space Manager with LiveReorg® includes a Windows client, server components, and the Server Agent, a script execution engine. It also includes demonstration data, which you can use to explore Space Manager functionality using simulated objects and tablespaces.

You can manage multiple Oracle® databases from a single Space Manager client. Server components and the Server Agent must be installed for each database you plan to manage. Server components are normally installed for one database at a time. To install them for multiple databases simultaneously, create a shell script to run the manual install script.

Space Manager Client

The Space Manager client is a graphic user interface designed to let you easily and efficiently manage space in Oracle databases.

Space Manager Server Components

Space Manager server components include objects, views, and packages. Space Manager tables store scheduled scripts and the statistics collected by Space Manager. The script and statistics tables comprise the Space Manager repository. The repository is located in the tablespace specified during installation of server components.

Space Manager includes the Find Long LONGs package that works in conjunction with the Reorg Manager reorganization wizard. The Find Long LONGs package allows you to find tables with LONG or LONG RAW columns that are larger than 32,760 bytes (long LONGs). Populate the Find Long LONGs table before you run the Reorg Manager.

Server Agent

The Server Agent is a script execution engine that Space Manager uses to run reorganization, repair, and statistics collection scripts from the database server on a scheduled basis. The agent must be used to run live reorganization scripts and scripts that use FastCopy, FSCopy, or parallel agent processes. Scripts are automatically run by the agent when they are scheduled and stored in the Space Manager repository.

The agent is started when it is installed. It then runs continuously. On UNIX® and Linux®, the agent runs as a daemon. On Windows®, it runs as a service. The agent uses one connection for itself. It establishes additional connections for each script it runs and for each parallel process it uses.

You can stop and start the agent from the Space Manager Tools menu and the Scripts/Job Monitor.

Note: Before you upgrade to a major new version of Oracle, uninstall the agent. After the new Oracle database is installed, reinstall the agent. This ensures that the agent uses the correct files for the new version of Oracle.

Demonstration Data

Demonstration data comprises objects and tablespaces that are subject to the space-use problems found in a typical database. You can use it to learn how Space Manager detects and resolves problems. After you resolve problems, you can refresh demonstration data to restore its original condition.

Installation of demonstration data is optional. It requires 20 MB or 24 MB of disk space, depending on your default database block size. The demo user is the owner of all demo objects.

Note: Demonstration data functions are only enabled for database administrators.

System Requirements

Refer to the *Space Manager with LiveReorg® Release Notes* for the most up-to-date Client, database, and Capacity Manager repository requirements. Before installing Space Manager and Capacity Manager, ensure that your system meets the minimum hardware and software requirements.

Space Manager User Requirements

This section describes the privileges required to install Space Manager server components and to run Space Manager.

Server Objects Installation

To install Space Manager server components, you must have the DBA role and full privileges for the target database. (Do not use SYS or SYSTEM.) Your user name must not require double quotes.

Note: In an Oracle database, the server objects and Server Agent must be installed by a common user with DBA privileges on all containers. See Installation DBA in Oracle 12c and 19c.

The DBA account that installs the Space Manager server objects (components) owns the objects. This same DBA account must be used to upgrade and uninstall the server components (which include Space Manager objects).

The DBA account used to install the server components should also be used to install the Server Agent.

The privileges needed to run FND_STATS as a non-APPs user are automatically granted during installation of Space Manager server components. Any user with the DBA or QUEST_SPC_APP_PRIV role can run FND_STATS from Space Manager.

Installation DBA in Oracle 12c and 19c

In an Oracle database, the server objects and Server Agent must be installed by a common user with DBA privileges on all containers. This account must be created prior to installation of the server objects and Server Agent.

1. In the Oracle root container, using a common user account such as SYS or SYSTEM, create another common user account to be used for installing server objects (and Server Agent).
2. Grant the new common user account DBA privileges across all containers. For example, use a grant statement such as the following:

```
grant dba to c##<user> container = all;
```

Privileges and the O7_DICTIONARY_ACCESSIBILITY Parameter

When Oracle's O7_DICTIONARY_ACCESSIBILITY initialization parameter is set to FALSE for a target database, the following requirements must be met:

- The installation DBA must have the EXECUTE on SYS.DBMS_SYS_SQL privilege. During installation, the installation DBA is prompted to log in using a SYSDBA account and then run scripts to grant this privilege.
- If the target database does not allow remote login by users with the SYSDBA privilege, the installation DBA must have remote database administration capability. This capability must be granted prior to installation.
    1. First, create an authentication password file for the target database.
    2. Second, set the REMOTE_LOGIN_PASSWORDFILE parameter to EXCLUSIVE for the DBA account you plan to use as the user for Space Manager server components.

Server Agent Installation

The Server Agent must be installed by user accounts with sufficient privileges. The agent must be upgraded, configured, and uninstalled by its installation account. On UNIX and Linux servers, the agent is installed by an operating system account and an Oracle DBA. On Windows servers, the agent is installed by an Oracle DBA.

Note: In an Oracle database, the server objects and Server Agent must be installed by a common user with DBA privileges on all containers. See Installation DBA in Oracle 12c and 19c.

UNIX and Linux Privileges

To install the agent on UNIX or Linux, you must have READ, WRITE, and DELETE privileges for the installation directory. During installation, the user connects to the database server host using SSH. The user needs privileges similar to the operating system user that installed Oracle.

Oracle Privileges

To install the agent on Oracle, you must have the UNLIMITED TABLESPACE system privilege and full privileges for the target database. (Do not use SYS or SYSTEM.) To install the agent on Windows, you must have all permissions for the agent installation folder.

On all supported platforms, the installation DBA must have the EXECUTE privilege on:

- DBMS_PIPE
- DBMS_SQL
- DBMS_SYS_SQL
- DBMS_LOB

Normally, EXECUTE privileges are granted as part of the DBA role or during Server Agent installation. If the privileges cannot be granted during installation or if they are revoked, the agent does not run correctly. To fix the problem, grant the missing privileges to the installation DBA.

The installation DBA connects to the target database when QSA is installed. It also automatically connects the agent to the database each time the system is started.

Note: Use the same DBA account to install Space Manager server components and the Server Agent. The same account is automatically used when you run the Server Agent Installer from Space Manager immediately after server components are installed.

Running Space Manager

Space Manager can be run by DBA users and by non-DBA users that have the QUEST_SPC_APP_PRIV role. This section describes how to grant the QUEST_SPC_APP_PRIV role from Space Manager.

To grant privileges from Space Manager

To grant privileges from Space Manager, the installation DBA runs the following procedure in the SQL Editor (in the procedure, 'USER NAME' is the user name of the user being granted privileges):

```
Begin
quest_spc_user_manager.grant_user ('USER NAME');
End;
```

The procedure should be run for non-DBA users that will run Space Manager. The procedure grants the QUEST_SPC_APP_PRIV role and additional privileges to non-DBAs. It grants only the QUEST_SPC_APP_PRIV role to non-installation DBAs.

Note: Privileges must be granted after each upgrade, as well as after the initial installation.

Global Operation Requirements

This section describes what is required to install Space Manager and QSA in non-English configurations such as those used outside North America.

Note: See the online help to learn all the requirements for non-English operation of Space Manager.

User Name and Password Requirements

The users that install Space Manager and QSA for non-English operation must meet the following requirements:

- The user name and password of the installation DBA must conform to Oracle guidelines.
- The user name and password of the installation DBA must use characters that can be converted between your client computer character set and your database character set.
- The user name of the installation DBA must not be in double quotation marks ("x").
- The user name for QSA's operating-system account on UNIX or Linux must use ASCII characters.

Character Set Requirements for Agent Installation

When QSA is installed in a non-English configuration, the configuration must meet the following character-set requirements:

Installation Factor	UNIX and Linux	Windows
Host name for database server	Must be a DNS name; IDN names are not supported	Must be a DNS name; IDN names are not supported
Service name for database	Can use database character set or ASCII	Can use database character set or ASCII
User name for Oracle DBA that installs the agent	Can use database character set or ASCII	Can use database character set or ASCII

Installation Factor	UNIX and Linux	Windows
Password for Oracle DBA that installs the agent	Can use database character set or ASCII	Can use database character set or ASCII
User name for operating system user that installs the agent	Must use ASCII	No character-set requirement
Password for operating system user that installs the agent	Must use ASCII	No character-set requirement
Tablespace names for agent table and LW_TABLESPACE	Can use database character set or ASCII; names must not require double quotes	Can use database character set or ASCII; names must not require double quotes
Install directory and path for agent	Must use ASCII	Must use ASCII
Workdir directory and path for FastCopy	Must use ASCII	Must use ASCII
Overflow directory and paths for FastCopy	Must use ASCII	Must use ASCII

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Installation Overview

Overview - Installation Process

This chapter provides an overview of the Space Manager installation process. It also includes a Smart Start that lists the major steps in the process.

A complete installation of Space Manager includes the Space Manager client, Space Manager server components, and the Server Agent.

- **Space Manager client**—The Space Manager client is installed on a Windows computer using the Space Manager setup program. The client is available on SupportLink and on the CD.
- **Space Manager server components**—The server components are installed using the GUI install program that you can launch from the client. You should install the components in each database you plan to manage with Space Manager. The install program starts automatically the first time you connect with the client to a target database. You can run it at any time using the Reinstall Server function accessible from the client main menu. When you install server components, you can also install demonstration data.
- **Quest Server Agent**—The server agent is installed using the Server Agent Installer. You should install the agent for each database where Space Manager server components are installed. The Server Agent Installer starts automatically after the server components (or demonstration data) are installed. You can run it at any time by selecting **Tools | Admin | Quest Server Agent | Manage Quest Server Agent** from the client main menu.

Note: Before you install QSA in an OPS or RAC active-active environment, see Install Server Agent on OPS or RAC.

Smart Start for Installing Space Manager

If this is your first time installing Space Manager, start here! This section outlines the basics steps to install the Space Manager desktop application, the server components, and the server agent.

Click the links provided for each step to see detailed information.

1. **Prepare for installation.** Review the following before installing:
   - **System requirements**—Make sure all system requirements are met. For example, make sure all required Oracle packages are installed and valid for each target database. If the LiveReorg option is licensed, make sure Oracle's partitioning option is installed. See the System Requirements section of the *Space Manager with LiveReorg Release Notes*.
   - **tnsnames.ora**—Make sure the tnsnames.ora file on the Space Manager client computer contains service names for all databases to be managed with Space Manager.
   - **OPS or RAC active-active**—If you plan to run Space Manager in an active-active OPS or RAC environment, see Install Server Agent on OPS or RAC. QSA should be installed on only one instance for a cluster database. You need to connect to this instance when you run Space Manager for that database or install or update QSA.

- **O7_DICTIONARY_ACCESSIBILITY**—Check the setting for this initialization parameter in each target database. If the parameter is set to FALSE and a database does not allow remote login by users with the SYSDBA privilege, grant the installation DBA remote database administration capability. See Space Manager User Requirements on page 6 for more information.

2. **Choose installation user accounts.** Choose installation users for Space Manager server components and QSA for each target database. Server components must be installed by an Oracle DBA with full privileges for a target database. (Do not use SYS or SYSTEM.) See Space Manager User Requirements on page 6 for more information. QSA must be installed by Oracle, UNIX, or Linux users with sufficient privileges. Use the same DBA account to install both the server components and the server agent.
3. **Choose tablespaces.** Choose or create a tablespace for Space Manager tables and indexes. During installation of server components, you have the opportunity to select the tablespace. It must have a standard name. For an upgrade, it must have enough free space for temporary copies of statistics and analysis-group tables. The copies are created for recovery purposes and dropped when an upgrade is successfully completed.

   Also choose or create tablespaces for QSA's permanent objects and temporary LiveReorg objects. The tablespace chosen for Space Manager objects is recommended for the agent's permanent objects. A separate tablespace is recommended for LiveReorg objects. During installation of the agent, you have the opportunity to select agent tablespaces. The LiveReorg tablespace is specified with the LW_TABLESPACE parameter. It must be specified even if LiveReorg is not licensed.

   Note: SAP users should use SAP administrative tools to create tablespaces for Space Manager and QSA.
4. **Install the Space Manager client.** To install the Space Manager client on a Windows computer, use the installation executable available from SupportLink. See Install Space Manager Client on page 12 for more information.
5. **Install Space Manager server components.** The first time you connect to a database from the Space Manager client, you are prompted to install Space Manager server components. Connect as the Oracle DBA chosen to install both the server components and the server agent. See Install or Upgrade Server Objects on page 19 for more information.
6. **Install demonstration data (optional).** After server components are installed, you can install demonstration data for a target database. See Install or Upgrade Server Objects on page 19 for more information.
7. **Install the Server Agent.** The Server Agent Installer displays automatically after server components or demonstration data are installed. It is used to install QSA for a target database. The Oracle DBA that installed server components also installs the agent. The same DBA account should be used for both. See Overview - Install Server Agent on page 22 for more information.
8. **Grant privileges to non-DBA users.** To allow non-DBA users to use Space Manager for a target database, grant them the QUEST_SPC_APP_PRIV role. See Running Space Manager on page 8 for more information.
9. **Run the Find Long LONGs procedure for a target database.** The Find Long LONGs EXECUTE procedure identifies tables that contain LONG or LONG RAW columns that are larger than 32,760 bytes. The size of LONG columns determines which data-movement method can be used for their tables during reorganization.

Note: After you upgrade Space Manager, you can run stored statistics collection scripts generated with an earlier version. However, you should not run stored reorganization and repair scripts generated with an earlier version. Instead, generate new reorganization and repair scripts with the new version.

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Install Space Manager Client

Install Space Manager Client

Install Space Manager using the setup program that is available on the CD and from the Support Portal. See About Us on page 44 for more information.

The setup program installs both Space Manager and Capacity Manager for Oracle. You can run Space Manager from Capacity Manager. For more information, see the Capacity Manager online help.

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

You can manage multiple databases from a single Space Manager client.

Note: When you perform a first-time installation, you are prompted to enter your Space Manager license key. This key is also used for Capacity Manager for Oracle, which does not require a separate key.

Upgrading Space Manager

Important Information about Script Compatibility

A script is compatible with the version of Space Manager that was used to generate the script. If after upgrading Space Manager you run a script generated in a previous version and then script execution fails with a QSA-20500 error, regenerate the script. See *QSA Error Messages* in the online Help for more information.

Configure DEP if Enabled

If installing on Windows 2003 or Windows XP where Data Execution Prevention (DEP) enabled, the Space Manager client will not run. You must first configure DEP.

To configure DEP

Use one of the following methods to configure DEP:

- Select the following option in the Windows Control Panel: *Turn on DEP for Essential Windows programs and services only*.
- Add the Space Manager executable to the list of excluded programs for DEP. To change settings for DEP, select **Control Panel | System | Advanced | Performance | Data Execution Prevention**. Consult your system administrator before altering these settings.

Install or Upgrade the Space Manager Client

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

Use the following procedure to install or upgrade the Space Manager client.

To install (or upgrade) the Space Manager client

1. Run the Space Manager setup program (*Installer*). This is available from the CD or from the Quest Software Support Portal. Run either the 32-bit or the 64-bit Installer.
2. From the Installer, select the products you want to install. Install Space Manager and Capacity Manager and any other products or updates.

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

3. When the installation is finished, do one of the following to launch Space Manager:
   - Select **Start | All Programs | Quest Software | Space Manager version**
   - On your desktop, double-click the Space Manager icon.
4. If the Space Manager License dialog displays, enter your license key and site message.
5. Space Manager starts. If necessary, create a new database connection. See Connect to Databases on page 14 for more information.
   - If the database does not have Space Manager server components installed, you will be prompted to install them. See Install or Upgrade Server Objects on page 19 for more information.

Side-by-Side Installation

Space Manager 8.3 (or later) supports side-by-side installation of versions with different architecture (bitness) as long as they are also different releases (e.g., 8.2 and 8.3).

For example, you could install the following side-by-side:

- 32-bit Space Manager 8.2 and 64-bit Space Manager 8.3

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Licensing and Connections

License Key

After you first install the Space Manager client and try to connect to a database, you are prompted to enter a license key. Once you enter a permanent key, you do not need to enter it again. It is preserved during upgrades. You only need to change or re-enter a license key when:

- Your trial key expires.
- You switch from a trial key to a permanent key.
- You change your licensing agreement with Quest Software.
- You uninstall and then reinstall the Space Manager client.

To update a license key

1. Select **Tools | Admin | License Key**.
2. Enter your permanent or trial license key.

Note : License validation will happen in Space Manager, QSA independently will not authorize the license key.

Connect to Databases

Space Manager allows you to create connection profiles to store database connection information. Each profile is comprised of the service name, user name, and password for a database connection. When you select a connection from the tree-list in the Explorer, these values are entered automatically.

The profiles created from a Space Manager client are for that client only. You can create as many profiles as needed for different databases or the same database. A database can have different profiles for different users.

You can have multiple database connections open concurrently during a Space Manager session.

Note: Connection information for the current connection is displayed in the Space Manager title bar. Information consists of service name for the current connection and user name of the connecting user.

Before creating a new connection

- **Oracle client must match architecture (bitness) of Space Manager.** Install an Oracle client that matches the bitness of the Space Manager application. For example, 64-bit Space Manager requires a 64-bit Oracle client and 32-bit Space Manager requires a 32-bit Oracle client.
- **Tnsnames file.** Make sure the tnsnames.ora file on the Space Manager client computer contains service names for all databases to be managed with Space Manager.

To create a new database connection

1. Select **File | Add New Connection**.
2. Enter the connection information in the Connection dialog. Review the following for additional information:

TNS / Direct	Select the type of connection to create. **TNS**—Select if using a TNSNames.ora file. **Direct**—Select to enter database address information directly, without using a TNSNames.ora file.
Server	(TNS only) Select the TNS name (net service name) for the target database. The field lists all names in the TNSNames.ora file on the client computer. **Note** If you are running Space Manager in an active-active OPS or RAC environment, select the service name for the instance where the Quest Server Agent (QSA) is installed.
SID	(Direct only) Enter the SID or service name for the target database.
Host	(Direct only) Enter the host name for the target database.
Port	(Direct only) Enter port number, if other than the default.
User Name	Enter the user name of an Oracle user. The user must have the DBA role or the QUEST_SPC_APP_PRIV role. See Space Manager User Requirements on page 6 for more information.
Password	Enter the password for the Oracle user. **Note:** Saved passwords are encrypted.
Profile Name	Enter a name for the profile. This name is used to identify the connection in the Explorer tree-list (left pane of Explorer window).
Oracle Home	Allows you to select the Oracle home to use, if you have multiple Oracle homes specified. Space Manager reads the TNSNames.ora file associated with the selected Oracle home.

3. Click **Add Database** to save the profile. Space Manager adds the connection to the tree view in the Explorer window.

To connect

Use one of the following methods to open a connection:

- Select a database connection in the tree view (left pane) in the Explorer.
- Right-click a database connection and select **Connect** .
- Select a connection and click .

Note: Space Manager server components must be installed in the database to which you want to connect. See Install or Upgrade Server Objects on page 19 for more information.

To disconnect

Do one of the following:

- Right-click the connection name in the tree-list and select **Disconnect**.
- Select a connection name in the tree-list and click .

- Select a window that is connected to the database from which you want to disconnect. With this window as the active window, click .

Note: If you disconnect from a database, all Space Manager windows associated to that database connection will close.

To modify connection properties

- Right-click a connection in the tree-list and select **Edit Connection Parameters**.

Working with Multiple Connections

When multiple connections are open for a Space Manager session, you can select one as the current connection. All functions performed and all windows opened will apply to the database that is set as the current database connection.

To set the current connection (or switch connections)

Do one of the following:

- In the Explorer window, select the database connection in the Explorer tree-list.
- Select a window associated to the database connection.

5

Install Space Manager Server Componenets

Overview - Install Server Components

This chapter describes how to install Space Manager server components using a GUI-based method.

You must install Space Manager server components for each database you intend to manage with Space Manager. The installation program automatically detects which Oracle version you are using and installs the applicable server components.

You are prompted to install (or upgrade) server components the first time you connect to a database from a newly-installed (or upgraded) Space Manager client. Connect as the Oracle DBA chosen to install the server components and QSA.

SAP Users

Server components are installed in the tablespace you specify during installation. SAP users should use SAP administrative tools to create the tablespace for Space Manager objects.

Demonstration Data

You can install the demonstration data when you install the server components. You can also install the data at a later time. To do so, select **Tools | Admin | Demonstration Data** from the Space Manager main menu. (This function is enabled for users with the DBA role.)

Tip: Normally, server components are installed for one database at a time. To install them for multiple databases at the same time, create a shell script that runs a manual install script.

Before Installing Server Components

Specify Password Version for Oracle 12c R2 and 19c Databases

This procedure applies to **Oracle 12c Release 2** and **19c** databases that you intend to manage with Space Manager.

Beginning with Space Manager 8.5, for each Oracle database you intend to manage, specify a password version in the SQLNET.ORA file of the target database.

If you attempted to install QSA without performing this procedure and encountered an Oracle error, see Troubleshooting.

To specify password version for target database

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. The file is stored in a default directory or one specified with the TNS_ADMIN environment variable. The default directory varies by platform:
   - On UNIX and Linux database servers, the default directory is $ORACLE_HOME/network/admin
   - On Windows database servers, the default directory is ORACLE_HOME\network\admin
5. Enter the following:

```
SQLNET.ALLOWED_LOGON_VERSION_SERVER = 8

SQLNET.ALLOWED_LOGON_VERSION_CLIENT = 8

BEQUEATH_DETACH = YES
```

6. Save the `SQLNET.ORA` file.
7. Add the below command in the `listener.ora` file.

```
USE_SID_AS_SERVICE_<oracle-sid>=on
```

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

```
lsnrctl stop

lsnrctl start
```

   The listener may take a few minutes to fully restart.

9. 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;
```

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

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

11. 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.

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

```
select username, password_versions

from dba_users

where username = 'SYS'
```

13. 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.

Troubleshooting

Error	Description
Oracle "ORA-01017: invalid username/password"	If you attempt to install QSA for a 12c R2 or 19c databases prior to specifying the password version for the target database, you might encounter an ORA-01017 error. **Solution:** Prior to attempting another installation, log in as the installation DBA. Then delete quest_com_products where product_id = 61; commit; Then perform the proceeding procedure to specify a password version for the target database.

When to Install/Upgrade/Reinstall Server Components

Install Server Components After Initially Installing the Client

After initially installing the Space Manager client, install the server components on each database you intend to manage with Space Manager.

The first time you connect to a database in which Space Manager server components are not installed, you are prompted to install them. See Install or Upgrade Server Objects on page 19 for more information.

Upgrade Server Components After Upgrading the Client

You must upgrade the server components when you upgrade the Space Manager client. The version of the server components must match the version of the Space Manager client you are using.

The first time you connect to a database after upgrading the Space Manager client, you are prompted to upgrade the server components.

Server components must be upgraded by the DBA account that installed them. Analysis groups, statistics, and stored scripts are preserved during the upgrade. This is the case even when you select a different tablespace for Space Manager objects. See Install or Upgrade Server Objects on page 19 for more information.

Reinstall Server Components after Upgrading the Oracle Database

Reinstall server components (and the server agent) after you upgrade to a major new version of Oracle Database. Uninstall the server components (and the server agent) *before* upgrading the Oracle database, then reinstall the server components (and server agent) *after* upgrading the Oracle database. See Oracle Upgrade on page 34 for more information.

Install or Upgrade Server Objects

Install server components after installing the Space Manager client. Install server components for each database you want to manage with Space Manager.

Upgrade the server components after upgrading the Space Manager client.

Use the same DBA account to install server components and the Server Agent. See Space Manager User Requirements on page 6 for more information.

To install (or upgrade) server objects

1. Launch the Space Manager client.
2. When the Connect dialog displays, connect to the database using the Oracle DBA account chosen to install the server components and the Server Agent.

   Note: For more information about creating a connection, see Connect to Databases.

3. (Upgrade only) If this is an upgrade, one or more of the following messages display:
   - **Upgrade required**—The is the default message. Click **Yes**.
   - **Running scripts**—The install program has found scripts that the Server Agent is executing. Click **OK** to cancel the upgrade and perform it later.
   - **Scheduled scripts**—The install program has found scripts that are scheduled for execution by the Server Agent. If you are sure the upgrade will complete before the first script executes, click **Yes**. Otherwise, click **No** to cancel the upgrade. You will need to upgrade later.
4. When the Create Space Manager with LiveReorg Objects dialog opens, specify an owner and tablespace for the components. See the following for more information.

Field	Description
Owner	If this is a first-time installation, specify the installation DBA. By default, the field displays the connecting user. To use a different DBA, enter the user name in the Owner field. After you click **OK**, a password prompt displays.
Tablespace	Select a tablespace for Space Manager objects. The tablespace must have a standard name and free space equal to or greater than the amount for Expected Allocation. For an upgrade, it must also have enough free space for copies of existing Space Manager tables (created for recovery purposes and dropped when an upgrade is complete). Objects are upgraded in their current tablespace. If you select a different tablespace, objects are upgraded in that tablespace and dropped from the current tablespace.
Recommended (upgrade only)	Verify the recommended space allocation for Space Manager objects. The recommendations allow for one year of growth in statistics tables. • Small is for databases with less than 1,000 non-SYS segments • Medium is for databases with 1,000 to 9,999 non-SYS segments • Large is for databases with 10,000 to 24,999 non-SYS segments • Huge is for databases with more than 25,000 non-SYS segments **Note:** Use the following guidelines for determining space allocation: small for up to 100 GB, medium for up to 500 GB, etc.
Allocation to use	Select a space allocation for Space Manager objects. The recommended allocation is entered by default.
Expected allocation	Verify the expected space allocation for Space Manager objects. This corresponds to the Allocation to use value.

Field	Description
Install Space Manager Demonstration Data (install only)	If you want to install demonstration data after server components are installed, select this checkbox. Demonstration data requires 20 MB or 24 MB of disk space, depending on your database block size. **Note:** If the Recycle Bin contains many objects, the Create Space Manager with LiveReorg Objects window might require a long time to display. To avoid this problem, empty the recycle bin before you begin the installation.

5. Click **OK**. The installation progress displays in the Executing Create dialog. To cancel installation, click **Cancel**.

   Note: In some cases, Space Manager may try to allocate more than the expected allocation. It does this when a tablespace has a large minimum extent size or is locally managed and uses uniform extent allocation. In either case, installation may fail. If it does, click **OK** to clear the installation error. Begin installation again and select a larger tablespace for Space Manager objects.

6. You will encounter a prompt if QUEST_COM_PRODUCTS_% tables are already installed for the target database but the owner is not the installation DBA for Space Manager.

   - To continue, click **Yes**. The Space Manager objects will be owned by the installation DBA. And QUEST_COM_PRODUCTS_% tables will continue to be owned by their current owner. (Public synonyms and certain views will be owned by SYS.)
   - To cancel installation, click **No**. Then, when you start the installation again, use the QUEST_COM_PRODUCTS_% table owner as the installation DBA. Space Manager objects and QUEST_COM_PRODUCTS_% tables will be owned by this user. (Public synonyms and certain views will be owned by SYS.)

7. If O7_DICTIONARY_ACCESSIBILITY is FALSE for the target database and the installation DBA does not have EXECUTE on SYS.DBMS_SYS_SQL, you are allowed to run scripts to grant the privilege.

   - When prompted, enter the user name and password for a SYSDBA account. The first script prompts you to enter the name of the installation DBA.

8. When server component installation is finished, one of the following displays:

   - A “success” message displays if you are not installing demonstration data. Click **OK**. Then the Server Agent Installer displays so that you can install the agent. See Install or Upgrade Server Agent on UNIX or Linux on page 23 for more information.
   - The Install/Refresh Demonstration Data window displays if you are installing demonstration data. See the next step.

9. To install demonstration data, click **Install** in the Install/Refresh Demonstration Data window. It is recommended that you use the default demonstration user name, tablespace names, and datafile names. A password is not required. If you specify different directories for demonstration datafiles, the directories must already exist.

10. When demonstration data installation is finished, two “success” messages display. Click **OK**. The Server Agent Installer displays so that you can install (or upgrade) QSA. See Install or Upgrade Server Agent on UNIX or Linux on page 23 for more information.

6

Install Server Agent

Overview - Install Server Agent

This chapter describes how to install QSA for Oracle databases on UNIX, Linux, and Windows servers. It also describes agent parameters and best practices to install the agent in an OPS or RAC environment.

You must install QSA in each database you plan to manage with Space Manager. The agent should be installed after Space Manager server components are installed. It must be installed before you can run scheduled scripts.

To install the agent, the QSA Installer uses files that are copied to the Space Manager client computer during client installation. The files are stored in the Quest Server Agent folder under the Space Manager folder.

During agent installation, the QSA Installer determines whether the agent files for your environment are available and current. It also determines whether your database and operating system versions are supported.

Note: Login fields in the QSA Installer are case sensitive. If you enter a user name or password in the wrong case, “logon invalid” displays at the bottom of the installer.

Before Installing the Server Agent

Specify Password Version for Oracle 12c R2 and 19c Databases

Beginning with Space Manager 8.5, for each Oracle database you intend to manage, specify a password version in the SQLNET.ORA file of the target database.

See Overview - Install Server Components on page 17 for more information.

Set BEQUEATH_DETACH for the Agent

Before you install the Server Agent, set BEQUEATH_DETACH to YES in the SQLNET.ORA file for the target database. If you do this after the agent is installed, stop and start the agent to ensure that the change is recognized.

When BEQUEATH_DETACH is set to NO or is not set for a database, the agent’s job scheduler cannot detect when scripts have been cancelled or aborted. As a result, cancelled and aborted scripts cannot be restarted from Space Manager. If you try to restart a script when BEQUEATH_DETACH is set to NO, one of the errors that might display is:

> “QSA-20311: Table conflict with script already executing.”

To set BEQUEATH_DETACH

1. Open the SQLNET.ORA file for the target database. The file is stored in a default directory or one specified with the TNS_ADMIN environment variable. The default directory varies by platform:
   - On UNIX and Linux database servers, the default directory is $ORACLE_HOME/network/admin
   - On Windows database servers, the default directory is ORACLE_HOME\network\admin

2. Change the BEQUEATH_DETACH setting from NO to YES or add the following entry to the file:

```
bequeath_detach=yes
```

3. Save the SQLNET.ORA file.

When to Install/Upgrade/Reinstall the Server Agent

Install the Server Agent After Initially Installing the Client

After initially installing the Space Manager client, install the server components and the Server Agent on each database you intend to manage with Space Manager.

The first time you connect to a database in which Space Manager server components are not installed, you are prompted to install them. After component installation is finished, the Server Agent Installer opens allowing you to install the agent.

Upgrade the Server Agent After Upgrading the Client

You must upgrade the Server Agent when you upgrade the Space Manager client. The first time you connect to a database after upgrading the Space Manager client, you are prompted to upgrade the server components. When component upgrade is finished, the Server Agent installer opens allowing you to upgrade the agent.

Just like the server components, the server agent must be upgraded by the DBA account that installed it. Agent tables are automatically upgraded in the tablespace where they were first installed. Agent executables are automatically upgraded in the installation directory where they are currently installed.

Note: If upgrading the server agent, perform the upgrade when no scheduled scripts are executing or about to execute.

Reinstall the Server Agent after Upgrading the Oracle Database

Reinstall the server agent along with the server components after you upgrade to a major new version of Oracle Database. Uninstall the server components and the server agent *before* upgrading the Oracle database, then reinstall the server components and server agent *after* upgrading the Oracle database. See Oracle Upgrade on page 34 for more information.

Install or Upgrade Server Agent on UNIX or Linux

Use the following procedure to install (or upgrade) the Server Agent in an Oracle database on a UNIX or Linux server. You can use the Server Agent Installer if you have both SSH and SFTP access to your database server. If you do not have both, you must install the agent manually. See "Manually Install Server Agent on UNIX or Linux" in the *Space Manager Installation Guide* for more information.

Install the Server Agent using the same DBA account used to install the server components. For information about installation DBA account requirements, see Space Manager User Requirements.

Notes:

- If the target database is in an OPS or RAC system that uses the active-active configuration, see "Install Server Agent on OPS or RAC" in the *Space Manager Installation Guide* for more information.
- If upgrading the server agent, perform the upgrade when no scheduled scripts are executing or about to execute.

To install (or upgrade) the Server Agent on UNIX or Linux

1. Run the Space Manager client and connect to the target database as the DBA that installed the Space Manager server components.

   Note: If the Server Agent Installer automatically opens after installing the server components, it opens to the Log on to Server page. Skip ahead to step 4.

2. To run the Server Agent Installer, select **Tools | Admin | Quest Server Agent | Manage Quest Server Agent Installation**.
3. (Upgrade only) If you are upgrading a currently installed instance of QSA, select **Upgrade Quest Server Agent** on the Select Installation Type page and click **Next**.
4. In the Log on to Server window, enter the user name and password of the UNIX or Linux account. Enter the host server name if it is not displayed. Click **Next**.
5. In the Oracle Connection Info window, review the information. If necessary, complete or modify any fields. Click **Next**. If you are upgrading, you can only edit the staging directory path in this window.
6. In the Install Quest Server Agent window, click **Install** to install QSA. In the Agent Installation Complete window, click **Next**.
7. In the QSA Parameters window, specify values for QSA parameters or use the default values.

   Note: Deselect Show only required fields with missing value to see all parameters.

   Values apply to the target database. You must enter values for **WORKDIR** (used for FastCopy/DBMS_DataPump) and **LW_TABLESPACE** (used for live reorganizations and required even if LiveReorg is not licensed). Click **Next** when finished. See QSA Server Agent Parameters on page 28 for more information.

8. In the Installation Finished window, click **Finish** to exit the Server Agent Installer.

Note: Before the Server Agent is installed, you may encounter one of the following messages:

- **Files not current**—The agent installation files are either not available or not current. Exit the Server Agent Installer, install the most recent Space Manager client. New agent files are copied to Server Agent folder on the client computer. You can then install the agent.
- **Environment not supported / cannot proceed**—Both your Oracle version and operating system version are not supported. The agent cannot be installed. You must upgrade to a supported Oracle version and a supported operating system. See the *Space Manager Release Notes* for a list of supported Oracle Database and Operating System versions.
- **Environment not supported / can proceed**—Either your Oracle version or your operating system version is not supported. In most cases, a supported version of Oracle is running on an unsupported operating system version. Although you can proceed with the installation, you may have problems.

To instruct the Server Agent to restart automatically after a server restart

If you want the Server Agent to start automatically each time the server is started, perform the following steps:

1. Log in to UNIX or Linux as **root**.
2. Change to the agent installation directory using the following command:

   ```
   # cd /$ORACLE_HOME/Quest/QSA/SID/inst
   ```

3. Run the following root.sh script:

   ```
   # ./root.sh
   ```

Install Server Agent on Windows

This section describes how to install the Server Agent on a local or a remote Windows server:

- **Local server**—A server is local if it resides on your Space Manager client computer. When a server is local, you must work from the client computer to install the Server Agent. It must be installed on a local drive.
- **Remote server**—A server is remote if it does not reside on your Space Manager client computer. When a server is remote, you should work from the server to install the Server Agent.

Install the Server Agent using the same DBA account used to install the server components. For information about installation DBA account requirements, see Space Manager User Requirements.

Prerequisites

- For installation on either a local or a remote Windows server, the installation Oracle DBA must have all permissions for the agent installation folder.
- On a remote server, the folder must be shared or copied to the server.

Note: If upgrading the server agent, perform the upgrade when no scheduled scripts are executing or about to execute.

Install the Agent on a Local Server

Use the following procedure to install QSA in a database on a local Windows server.

To install (or upgrade) the Server Agent on a local Windows server

1. Run the Space Manager client and connect to the target database using the DBA account that installed the Space Manager server components.

   Note: If you installed (or upgraded) the server components, the Server Agent Installer opens automatically after component installation is finished. Skip ahead to step 4.

2. To run the QSA Installer, select **Tools | Admin | Quest Server Agent | Manage Quest Server Agent Installation**.
3. (Upgrade only) If you are upgrading QSA, the Select Installation Type window displays. Select **Upgrade Quest Server Agent** and click **Next**.
4. In the Oracle Connection Info window, review the information. If necessary, complete or modify any fields. Click **Next**. If you are upgrading, you can only edit the staging directory path in this window.
5. In the Install Quest Server Agent window, click **Install** to install QSA. In the Agent Installation Complete window, click **Next**.
6. In the QSA Parameters window, specify values for QSA parameters or use the default values. Values apply to the target database. You must enter values for **WORKDIR** (used for FastCopy/DBMS_DataPump) and **LW_TABLESPACE** (used for live reorganizations and required even if LiveReorg is not licensed). Click **Next** when finished. See QSA Server Agent Parameters on page 28 for more information.
7. In the Installation Finished window, click **Finish** to exit the QSA Installer.

Note: Before the Server Agent is installed, you may encounter one of the following messages:

- **Files not current**—The agent installation files are either not available or not current. Exit the Server Agent Installer, install the most recent Space Manager client. New agent files are copied to Server Agent folder on the client computer. You can then install the agent.
- **Environment not supported / cannot proceed**—Both your Oracle version and operating system version are not supported. The agent cannot be installed. You must upgrade to a supported Oracle version and a supported operating system. See the *Space Manager Release Notes* for a list of supported Oracle Database and Operating System versions.
- **Environment not supported / can proceed**—Either your Oracle version or your operating system version is not supported. In most cases, a supported version of Oracle is running on an unsupported operating system version. Although you can proceed with the installation, you may have problems.

Install the Agent on a Remote Server

To install QSA on a remote Windows server, you must copy the QSA installer from the Space Manager application directory to the Windows server.

To manually install QSA on Windows, see "Manually Install and Uninstall the Server Agent on Windows" in the *Space Manager Installation Guide*.

Note: Best practice is to install locally. During remote installation, if you encounter problems or error messages such as “QSA-20375: Cannot install the daemon.” or “Network path not found” use the local install procedure.

To copy the QSA Installer to remote Windows server

1. Navigate to the Space Manager client application directory:
    - In Windows Explorer, navigate to: C:\Program Files\Quest Software\Space Manager <version number>
2. Open the QuestServerAgent folder and copy QSA_*version_build*-QSASetup.exe to the Windows server.

To install the Server Agent on a remote Windows server

1. After copying the Server Agent installer (QSA_*version_build*-QSASetup.exe) to the Windows server, double-click QSA_*version_build*-QSASetup.exe to run it.
2. Extract the files to a temporary directory.

    Note: Make sure the temporary directory is empty before you extract the files.
3. After the files are extracted, the GUI installer automatically opens.
4. In the Connect to Oracle Database window, enter the service name of the target database and connect using the DBA account that installed the Space Manager server components.
5. Follow the instructions in the previous section, “Install the Agent on a Local Server,” beginning with step 3.
6. After installation, from the Windows Services window, verify that QSA is running. If **Started** does not display as the QSA status, start the agent from the Services window or run the QSAStart.cmd from the \bin folder under the agent installation folder (<*installation path*>\Quest Server Agent\<ORACLE_SID>\bin).

    Tip: If the agent is installed for more than one database on the server, look for the “Quest Server Agent” name that includes the target database SID.

Install Server Agent on OPS or RAC

This section provides additional information and guidelines to follow when installing QSA in an OPS or RAC environment that uses an active-active configuration.

Note: The Server Agent does not failover from one instance to another in an active-active environment. If the agent instance fails during script execution by the agent, execution aborts. To resolve this problem, bring up the instance where the agent is installed and restart script execution. If you cannot bring up the agent instance, contact Quest Software Support for assistance.

Installation Guidelines

QSA should be installed on only one instance in an active-active OPS or RAC environment. The instance should be the primary instance.

To ensure that you connect to the correct instance, create a connection for that instance before you install the agent. See the following section, “Connection Setup for OPS or RAC.”

When the connection is available, the connection information is automatically passed to the QSA Installer when you run it to install or upgrade QSA. This also happens when you connect to the agent instance from Space Manager and use **Tools | Admin | Quest Server Agent | Manage Quest Server Agent** to start the QSA Installer. If a connection is not available, Oracle randomly connects to an instance.

Note: Upgrade QSA on the instance where it is currently installed. If you want to upgrade the agent on a different instance, first uninstall the agent from its current instance.

Connection Setup for OPS or RAC

To create a connection to the instance for QSA, you must configure the TNSNAMES.ORA file, the Oracle Names server, or the directory service. You configure it with information such as the service name and instance name for the agent instance.

To configure the TNSNAMES.ORA file with connection information for the agent instance, include an entry for this instance in the file. The CONNECT_DATA descriptor should contain the service name and instance name for the instance. SID is not needed.

Use the following example as a model:

```
rac11.mycompany.com =
(DESCRIPTION =
(ADDRESS_LIST =
(ADDRESS = (PROTOCOL = TCP) (HOST = srv01) (PORT = 1521))
)
(CONNECT_DATA =
(SERVICE_NAME = rac1)
(INSTANCE_NAME = rac11)
)
)
```

Installation Errors for OPS or RAC

If an error occurs during an upgrade of QSA in an active-active OPS or RAC environment, either a host or an instance message may display.

Actions to Perform When a Host Message Displays

A host message displays if you are not connected to the database server host where the agent is currently installed. The message prompts you to manually uninstall the older version of the agent.

Perform one of the following actions:

- Uninstall the agent from its current host. Then install it on another host. (This can be the host you are currently connected to.)
    1. Exit the QSA Installer and Space Manager.
    2. Manually uninstall the agent.
    3. Connect to the target instance with Space Manager, run the QSA Installer, and install the agent.

- Upgrade the agent on its current host and instance.
    1. Exit the QSA Installer and Space Manager.
    2. Perform connection setup for the instance as described in “Connection Setup for OPS or RAC”.
    3. Connect to the target instance with Space Manager, run the QSA Installer, and upgrade the agent.

Action to Perform When an Instance Message Displays

An instance message displays if you are not connected to the instance where the agent is currently installed. The message prompts you to connect to the agent instance. The message typically displays if you have not performed connection setup. In this case, Oracle randomly connects the QSA Installer to an instance that is not the agent instance.

1. Exit the QSA Installer and Space Manager.
2. Perform connection setup as described in “Connection Setup for OPS or RAC”.
3. Connect to the target instance with Space Manager, run the QSA Installer, and upgrade the agent.

QSA Server Agent Parameters

This section describes QSA parameters. All parameters except LW_TABLESPACE and WORKDIR have default values. The user must specify LW_TABLESPACE and WORKDIR parameters. You can change default values as needed.

The following table contains a list of Quest Server Agent parameters and descriptions.

Parameter	Description
LW_TABLESPACE	LW_TABLESPACE specifies the tablespace for objects created by QSA during a live reorganization. One set of LiveReorg objects is created for each table in a live reorganization script. The objects are automatically dropped after a table is reorganized. LW_TABLESPACE must have a standard name and a datafile that is at least 50 MB in size. The datafile must have at least 20 MB of contiguous free space. **Note:** A tablespace must be selected for the LW_TABLESPACE parameter even if LiveReorg is not licensed.
WORKDIR	WORKDIR specifies the main directory that FastCopy (or DBMS_DataPump) should use for the data exported to the file system during a reorganization. If QSA is installed on a remote Windows server (separate from the Space Manager client computer), specify this directory as if it were on a local drive, for example, C:\TEMP. Enter the directory and path in ASCII characters. You can use the OVERFLOW_DIR_nn parameter to specify additional directories. See the description below.
COMMIT_SIZE	COMMIT_SIZE determines the amount of data FastCopy or FSCopy imports from the file system into the database before a COMMIT is performed. The parameter value can range from 1 MB to 1024 MB. The default is 10 MB.
COUNT_STAR	This parameter determines whether Quest Server Agent (QSA) performs a select count(*) on the orig_table and compares this to the number of rows copied. Select one of the following to indicate whether you want the agent to perform this extra check. Select 1 to perform the check. This is the default. Select 0 to NOT perform the check.

Parameter	Description
DISKSPACE_ RESERVE	DISKSPACE_RESERVE determines how much space is reserved for applications in WORKDIR and OVERFLOW directories. Unreserved space can be used by FastCopy/DBMS_DataPump or FSCopy for data exported during a reorganization. Once FastCopy/DBMS_DataPump or FSCopy uses all unreserved space in the WORKDIR directory, it uses unreserved space in the first OVERFLOW directory. The parameter value can range from 1 MB to 1024 MB. The default is 10 MB.
EXPORT_BUFFER_ SIZE	EXPORT_BUFFER_SIZE determines the maximum size of the export buffer used by FastCopy or FSCopy. Reorganizations are faster when export buffer size is at least the size of the largest row being reorganized. The parameter value can range from 32 KB to 1024 MB. The default is 1 MB.
IMPORT_METHOD	IMPORT_METHOD determines how FastCopy or FSCopy imports data from the file system into the database. There are three options: • **AUTO**—FastCopy or FSCopy uses several factors (unsupported data types, rows larger than 64 KB, and SQL*Loader errors) to determine whether to use the direct or conventional import method. FastCopy or FSCopy tries the direct method first. If unsuccessful, it automatically switches to the conventional method. • **DIRECT**—FastCopy or FSCopy uses SQL*Loader's direct path load. The direct method is faster than the conventional because it uses the direct path API to move data and bypasses SQL processing. FastCopy or FSCopy aborts the reorganization, however, if it encounters an unsupported datatype, a row larger than 64 KB, or a SQL*Loader error. • **CONVENTIONAL**—FastCopy or FSCopy uses OCI array inserts to move data. Although slower than the direct method, the conventional method has fewer limitations and associated problems. This is the default.
IMPORT_BUFFER_ SIZE	IMPORT_BUFFER_SIZE determines the maximum size of the import buffer that FastCopy or FSCopy uses during imports with the conventional method. The parameter value can range from 1 MB to 1024 MB. The default is 10 MB.
LW_NULL_COLUMNS	This parameter determines the maximum number of columns to check for a NULL value. The default is 32 and should not be changed.
MAX_FILE_SIZE	MAX_FILE_SIZE determines the maximum size of FastCopy or FSCopy export files, which are used for the data exported from the database to the file system. (FastCopy files are in a proprietary format.) When the first file reaches the maximum size, a second file is created automatically, and so on. The parameter value can range from 1 MB to 1024 MB. (It must be less than your system's default maximum file size.) The default is 100 MB.
MAX_HISTORY_AGE	MAX_HISTORY_AGE determines the maximum number of days that records are kept in the QUEST_SCRIPT_HISTORY table. The table contains a history of script execution by QSA and is used to associate script logs with their scripts. The parameter value can range from 0 to 32765. (It should be greater than the value for MAX_LOG_AGE.) The default is 365.
MAX_LOG_AGE	MAX_LOG_AGE determines the maximum number of days that script execution logs and QSA log are kept. Script logs can be used to troubleshoot script execution by the agent. The agent log (QEXECD.LOG) can be used to troubleshoot all agent activity. You can view logs from Space Manager's Script/Job Monitor. You can send them to Quest Software Support . The parameter value can range from 0 to 365. (0 retains logs until Space Manager is uninstalled.) The default is 30.

Parameter	Description
MULTIBLOCK_READ_COUNT	MULTIBLOCK_READ_COUNT determines the number of data blocks that Oracle reads at one time during a FastCopy reorganization. The number should be a multiple of the size of your operating system read buffer divided by your database block size. For example, if your operating system read buffer is 256 KB and your database block size is 8 KB, set the parameter to a multiple of 32 KB. The parameter value must be greater than or equal to 0. The default is 100.
OVERFLOW_DIR_01 thru DIR_05	OVERFLOW_DIR specifies directories that can be used in addition to the WORKDIR directory for the data FastCopy/DBMS_DataPump exports. FastCopy/DBMS_DataPump uses overflow directories when WORKDIR is full. You can specify up to 5 directories. A new directory is used when the last one used is full. Directory and path names must be entered in ASCII characters. **Note:** Each overflow directory must be on a different disk. The WORKDIR disk must not be used for an OVERFLOW_DIR.

SENDMAIL Parameters

SENDMAIL parameters allow you to configure QSA to automatically send email notifications when scheduled script execution fails. Notifications identify the failure reason, script name, execution start and stop times, database server hostname, and database Oracle SID. The subject field displays “Script Failure Notice!”

SENDMAIL includes the following parameters (all except SENDMAIL_TO1 require values).

QSA Parameter	Description
SENDMAIL_DOMAIN	Specifies the domain name of the mail server or relay server. For example: yourcompany.com.
SENDMAIL_HOST	Specifies the address or fully-qualified name of the mail server or relay server host, for example: www.quest.com.
SENDMAIL_PORT	Specifies the port number on which the mail server or relay server is listening.
SENDMAIL_FROM	Specifies who sent the email notification. The text string you enter should be the email address of an individual or group, such as Administrator@yourcompany.com.
SENDMAIL_TO	Specifies the email recipient. Must be the email address of an individual or group, such as DBA@yourcompany.com. The address must be valid. Only one address may be entered.
SENDMAIL_TO1	Specifies a second recipient for email notifications. To specify three or more recipients, insert a row for each recipient in the QUEST_EXEC_PARAMETER table, where NAME is SENDMAIL_TO# and VALUE is a valid email address. Each SENDMAIL_TO# entry should increment by 1; for example, SENDMAIL_TO3, SENDMAIL_TO4. If there is a break in the number sequence, emails are not sent to recipients after the break. If you delete a recipient row, update the NAME rows that follow so the number sequence is preserved. You can specify a maximum of 99 recipients.

Note: For QSA to send email, Oracle’s UTL_SMTP package must be installed on the database server. The package must have access to an SMTP mail server or relay server.

SNMP Trap Parameters

The following parameters are used to configure Simple Network Management Protocol (SNMP) Trap notifications.

QSA Parameter	Description
SNMP_TO_HOST	Enter the host name for the SNMP monitor.
SNMP_PORT	Enter the port number that the SNMP monitor is listening on.
SNMP_COMMUNITY	Enter the name of your SNMP community (or any unique string value).

Additional Notification Parameters

After enabling SMTP email or SNMP trap notification methods, you can specify additional notification events by configuring the following parameters.

Parameter	Description
SEND_GROUP_STATUS	Send notification of a static change to the group status.
SEND_SCRIPT_START	Send notification when script starts (101).
SEND_SCRIPT_RESTART	Send notification when script is restarted (104).
SEND_SCRIPT_ UNSCHEDULED	Send notification when script is unscheduled (110).
SEND_SCRIPT_COMPLETE	Send notification when script completes (210).
SEND_SCRIPT_CANCELLED	Send notification when script is cancelled (310).
SEND_SCRIPT_ABORT	Send notification when script aborts (320).
SEND_SCRIPT_HALTED	Send notification when script is halted (370).
SEND_SCRIPT_SCHEDULED	Send notification when a script is scheduled (410).
SEND_LR_WAIT_WINDOW	Send notification when a LiveReorg is waiting for window (620).
SEND_LR_IN_WINDOW	Send notification when a LiveReorg is in the window (621).
SEND_LR_WAIT_APPROVAL	Send notification when a LiveReorg is waiting for approval (630).
SEND_LR_APPROVED	Send notification when a LiveReorg is approved (631).
SEND_LR_START	Send notification when a LiveReorg starts (710).
SEND_LR_RESTART	Send notification when a LiveReorg restarts (715).
SEND_LR_COPY_START	Send notification when a LiveReorg table copy starts (720).
SEND_LR_COPY_COMPLETE	Send notification when a LiveReorg table copy completes (730).
SEND_LR_SWITCH_START	Send notification when a LiveReorg starts to switch (740).
SEND_LR_SWITCH_ COMPLETE	Send notification when a LiveReorg switch completes (750).
SEND_LR_COMPLETE	Send notification when a LiveReorg completes (760). Setting this parameter sends an email without a results report. To include a results report, use one of the SEND_LR_COMPLETE parameters listed below.

SEND_LR_COMPLETE Options

Use the following parameters to specify the type of results report to include when using the SEND_LR_COMPLETE parameter.

Parameter	Results Report Type	Description
SEND_LR_COMPLETE	No report	No report
SEND_LR_COMPLETE_DATA	Detail objects, summary by object type and total savings reports.	This report is the most detailed and includes the object details, detailed storage data, and a storage data summary by object.
SEND_LR_COMPLETE_SUM	Summary by object type and total savings reports.	This report delivers a summary of the storage data by object.
SEND_LR_COMPLETE_TOTAL	Total savings report.	This report lists the storage data totals only.

Locks Reporting Parameters

Use the following parameters to configure advanced options for locks reporting.

Parameter	Description
LOCKS_REPORTING	Select **YES** to enable locks reporting. *Default: NO* **Note:** When you disable locks reporting, the values selected for the other parameters have no effect.
LOCKS_CANCELED_JOBS	Select **YES** to enable reporting of locks for canceled jobs. *Default: YES* **Note:** Space Manager reports locks held by Oracle sessions for canceled jobs to the qexecd.log file before canceling the job.
LOCKS_SCRIPT_LOG	Select **YES** to enable reporting of locks when a table lock or a T-Lock fails with a resource busy error (ORA-0054). *Default: YES* **Note:** Space Manager reports these locks to the script execution log that you can view using the Script/Job Monitor.
LOCKS_SYSTEM_FILE_LOGS	Select **YES** to enable reporting of locks to a system file. *Default: NO*
LOCKS_SYSTEM_FILE_APPEND	Select **YES** to append the system file created for locks reporting. *Default: YES* **Note:** If you disable this parameter, the system file only contains information for the most recent lock reported.
LOCKS_MAXIMUM_REPORTS	Enter a value for the number of times to report locks for a specific table. *Range: 1 to 999* *Default: 3*

Parameter	Description
	Tip: A single lock may be retired thousands of times during a single reorganization. Use the default value to minimize changes to the system file.

Note: Space Manager creates system files in the QSA log file directory with the following naming convention: <owner>.<folder>.<script>.<jobnumber>.lok

7

Uninstall Space Manager and Server Agent

Overview - Uninstall Space Manager

This chapter describes how to uninstall Space Manager and QSA.

To uninstall Space Manager, you remove server components and QSA from each database in which they are installed. You also remove the Space Manager client and demonstration data, if installed.

The main steps in the uninstall process are as follows:

1. Connect to the database as the DBA that installed the server components.
2. Uninstall Space Manager server components.
3. Manually delete the datafiles for the two demonstration tablespaces.
4. Connect to the database as the DBA that installed the agent.
5. Uninstall the Quest Server Agent.
6. Uninstall the Space Manager client.

Note: Make sure that no scripts are running or scheduled to run when uninstalling the server components and the Server Agent.

Oracle Upgrade

If you plan to upgrade from one version of Oracle Database to another, uninstall QSA first. After the new Oracle database is installed, reinstall the server and the QSA agent.

When upgrading Oracle

1. Uninstall the Server Agent.
    a. From the Space Manager main menu, select **Tools | Admin | Quest Server Agent | Manage Quest Server Agent Installation**.
    b. Select **Remove Quest Server Agent** and complete the Server Agent Installer wizard. See Uninstall the Server Agent on page 35 for more information.
2. Upgrade Oracle Database.
3. Reinstall server components.
    a. Return to Space Manager and from the main menu select **Tools | Admin | Reinstall Space Manager Server Objects**. This recreates all the Space Manager views and triggers the installation of the Server Agent.

b. When installation of the server components is finished, the Server Agent Installer opens and prompts you to install the agent.

4. Install the Server Agent. This ensures that the correct Oracle libraries are used when you upgrade Space Manager. See Install or Upgrade Server Agent on UNIX or Linux on page 23 for more information.

Uninstall (Remove) Server Objects

The **Remove Space Manager Server Objects** function can be used to uninstall server components from a database whenever needed. This function drops all Space Manager objects from a database, including statistics tables and script tables. It also drops the demonstration data.

Note: Datafiles for demonstration data tablespaces must be removed from the server manually.

Server components must be uninstalled by the DBA that installed them. They must be removed individually from each database in which they are installed.

Normally, demonstration data is automatically removed along with server components. However, the data is not removed when demonstration tablespaces contain objects that are not owned by the demonstration user. To ensure that demonstration data is removed, relocate non-demonstration objects before you uninstall the server components.

After demonstration data is uninstalled, manually delete the demonstration datafiles, SPCDEMO01_nn.dbf and SPCDEMO02_nn.dbf.

To uninstall (remove) server objects and demonstration data

1. Run the Space Manager client and connect to the target database as the DBA that installed server components.
2. To uninstall server components, select **Tools | Admin | Remove Space Manager Server Objects**. If demonstration data is installed, it is removed along with server components.

   Note: After server components and QSA are uninstalled, manually delete demonstration datafiles, SPCDEMO01_nn.dbf and SPCDEMO02_nn.dbf.

3. If the uninstall program detects scripts that are being executed by QSA, you must cancel the uninstall. You can finish the uninstall after script execution is complete.
4. If the uninstall program determines that one or more scripts are scheduled to run, a message displays the date and time for the first script and asks if you want to continue the uninstall:
   - If you want to continue and are sure that the uninstall process will finish before the first script runs, click **Yes**.
   - If you want to cancel the uninstall, click **No**.
5. Once verifications are complete, a confirmation message explains that all Space Manager objects will be removed from the server. Click **Yes**. The SQL Exec dialog displays the uninstall progress and status.
6. After server components are uninstalled, the QSA Installer displays so that you can remove the agent. See Uninstall the Server Agent on page 35 for more information.

Uninstall the Server Agent

The Server Agent must be uninstalled individually from each database for which it is installed. It must be uninstalled by the user that installed it.

Note: If you used the QSA Installer or the manual install method to install the agent, use the same method to uninstall it.

Uninstall QSA from UNIX or Linux

This section describes how to uninstall QSA from an Oracle database on a UNIX or Linux server with the QSA Installer. You can use the QSA Installer if you have both SSH and SFTP access to the database server. If you do not have both, you must use a manual procedure. See "Manually Uninstall Server Agent from UNIX or Linux" in the *Space Manager Installation Guide* for more information.

To uninstall the agent from UNIX or Linux

1. Run the Space Manager client and connect to the target database as the DBA that installed QSA.

   Note: After uninstalling the server components, the Server Agent Installer automatically opens to the Log on page. Skip ahead to step 4.

2. To run the QSA Installer, select **Tools | Admin | Quest Server Agent | Manage Quest Server Agent**.
3. In the Select Installation Type window, select **Remove Quest Server Agent**, and then click **Next**.
4. In the Log on to Server window, enter the user name and password for the UNIX or Linux account that installed the agent. Enter the host server name if it is not displayed. Click **Next**.
5. In the Uninstall Quest Server Agent window, click **Remove**.
6. In the Installation Finished window, click **Finish** to exit the QSA Installer.
7. If you did not uninstall QSA as root, log into the server as root and run the ROOT_UNINSTALL.SH script as follows. Use SID for the target database.

   ```
   # /tmp/root_uninstall.sh SID
   ```

Uninstall QSA from Windows

This section describes how to uninstall the Server Agent from a local or remote Windows server.

Note: The agent must be running when you uninstall it from a Windows server. You can start the agent from the Windows Services window, or run QSAStart.cmd in the \bin folder under the agent install folder (<*installation path*>\Quest Server Agent\<ORACLE_SID>\bin).

To manually uninstall the Server Agent from Windows, see "Manually Uninstall Server Agent from Windows" in the *Space Manager Installation Guide*.

Local Windows Server

To uninstall QSA from a local Windows server, you can run the Server Agent Installer from the Space Manager application.

To uninstall QSA from a local Windows server

1. Run the Space Manager client and connect to the target database as the DBA that installed QSA.

   Note: After uninstalling server components, the Server Agent Installer automatically opens. Skip ahead to step 3.

2. To run the QSA Installer, select **Tools | Admin | Quest Server Agent | Manage Quest Server Agent**.
3. In the Select Installation Type window, select **Remove Quest Server Agent**, and then click **Next**.
4. In the Uninstall Quest Server Agent window, click **Remove**.
5. In the Installation Finished window, click **Finish** to exit the QSA Installer.

Remote Windows Server

To uninstall QSA from a remote Windows server, you must copy the Server Agent Installer from the Space Manager application directory to the Windows server. (Installing QSA on the remote Windows server also required copying the Server Agent Installer to the Windows server.)

To copy the QSA Installer to remote Windows server

1. Navigate to the Space Manager application directory:
    - In Windows Explorer, navigate to: C:\Program Files\Quest Software\Space Manager <version number>
2. Open the QuestServerAgent folder and copy QSA_*version_build*-QSASetup.exe to the Windows server.

To uninstall QSA from a remote Windows server

1. Log in to the remote Windows server as a member of the Windows Administrators Group.
2. After copying the Server Agent installer (QSA_*version_build*-QSASetup.exe) to the Windows server, double-click QSA_*version_build*-QSASetup.exe to run it.
3. Follow the instructions in the previous section, “To uninstall QSA from a local Windows server” beginning with step 3.

Uninstall the Space Manager Client

This section describes how to uninstall the Space Manager client.

To uninstall the Space Manager client

1. Exit from all applications, including the Space Manager client.
2. Uninstall Space Manager using your Windows add/remove programs feature.
    - For example, in Windows 7, select **Control Panel | Programs | Programs and Features | Uninstall a program**.
3. Select Space Manager and then click **Uninstall**.
4. This removes all Space Manager files, folders, and registry keys from your system.

8

Manually Install/Uninstall Server Agent

Overview - Manually Install and Uninstall Server Agent

This chapter describes how to manually install and uninstall QSA for Oracle databases on UNIX, Linux, and Windows database servers.

When to Use Manual Installation

Use manual installation when SSH and SFTP are unavailable. Manual installation of the Quest Server Agent (QSA) is an alternative to installation with the QSA Installer. If you do not have both SSH and SFTP access to the UNIX and Linux servers, you must install and uninstall the agent manually.

Manually Install Server Agent on UNIX or Linux

This section describes how to manually install or upgrade QSA on UNIX and Linux servers. You perform a manual installation with the **INSTALL.SH** script and a manual uninstall with the **UNINSTALL.SH** script. Both scripts are run from the database server.

Caution: Before you manually install QSA, set the SQL*Plus PAUSE command to OFF (the default setting). If another setting is used, such as ON or PAGE, manual installation fails. After installation is complete, you can set the PAUSE command to any value.

To manually install (or upgrade) QSA on UNIX and Linux

1. From the database server, log in using the UNIX or Linux account chosen to install QSA.
2. Next, copy the QSA installation files from the Spaced Manager application directory. Navigate to the Space Manager client application directory:
    - In Windows Explorer, navigate to: C:\Program Files\Quest Software\Space Manager <version number>
3. Open the QuestServerAgent folder in the application directory and select the Quest Server Agent file (a TAR file) for your operating-system version and Oracle version. Each TAR file has the following naming format: QSA_*version_build-operating system-OS version-CPU type-Oracle version*.tar.Z

    Then copy the file to the UNIX/Linux server.

    Note: If you download multiple TAR files to the same server, download each file to a different directory.

4. To extract agent installation files from the Server Agent TAR file, use the following command (filename is the name of the TAR file):

```
# uncompress < filename.tar.z ¦ tar –xvf -
```

5. To run the manual install script from the download directory, use the following command and cases:

```
# ./Install.sh
```

6. At the **ORACLE_SID** prompt, enter the SID for the target database.
7. At the **ORACLE_HOME** prompt, press **Enter** to accept the path to the Oracle home directory for the target database.
8. Log in to Oracle as the DBA chosen to install the agent (if this is an upgrade, log in as the DBA that installed the agent):
    - At the **Oracle login name** prompt, enter the account user name.
    - At the **Oracle password** prompt, enter the account password.
9. If this is a first-time installation, specify the tablespace for agent tables (the tablespace used for Space Manager objects is recommended):
    - To use the tablespace selected by default, press **Enter** at the **Tablespace** prompt.
    - To use a different tablespace, enter the name at the **Tablespace** prompt. Then press **Enter**.
10. Specify an account under which the agent should run (running account):
    - To use *oracle*, the default running account, press **Enter** at the **User to run as** prompt.
    - To use another account, enter the account login name at the **User to run as** prompt. Then press **Enter**.
11. After you log in to the operating system, one of two messages might appear:
    - **Environment not supported/cannot proceed**—Both your Oracle version and operating system version are not supported The agent cannot be installed. You must upgrade to a supported Oracle version and a supported operating system. See “System Requirements" in the *Space Manager Release Notes*.
    - **Environment not supported/can proceed**—Either your Oracle version or operating system version is not supported. In most cases, a supported version of Oracle is being run on an unsupported operating system version. Although you can proceed with the installation, you may have problems.
12. If this is a first-time installation, specify the base install directory:
    - To use the default base install directory, press **Enter** at the **Installation directory** prompt. The default is $ORACLE_HOME.
    - To use a different base install directory, enter the directory name and path at the Installation directory prompt. Then press **Enter**.

    Note: After you specify the base install directory, /Quest/QSA/$ORACLE_SID is added to the directory path.

13. To begin the agent installation or upgrade, enter *Y* at the **Proceed** prompt.
14. From the Quest Server Agent Parameters window, specify agent parameter values for the target database. You must enter values for **WORKDIR** (used for FastCopy) and **LW_TABLESPACE** (used for live reorganizations; required even if LiveReorg is not licensed). Respond to prompts as follows:
    a. At the **Do you wish to modify any of these parameters** prompt, enter *Y*.
    b. At the **Please enter the ID number of the parameter** prompt, enter the ID number of the parameter you want to modify.
    c. At the parameter prompt, enter or modify the parameter value.

d. Repeat steps a through c for each parameter you want to set.

e. At the **Do you wish to modify any of these parameters** prompt, enter *N* when you are finished.

f. At the **Do you wish to save the parameter changes you've made** prompt, enter *Y* to save all new values. (To revert to previous values, enter *N*.) The "Parameters Updated" message displays.

15. When the "Completed" message displays, Quest Server Agent installation is finished.

To instruct QSA to restart automatically after a server restart

If you want the Server Agent to start automatically each time the server is started, perform the following steps:

1. Log in to UNIX or Linux as **root**.
2. Change to the agent installation directory using the following command:

```
# cd /$ORACLE_HOME/Quest/QSA/SID/inst
```

3. Run the following root.sh script:

```
# ./root.sh
```

Manually Install Server Agent on Windows

Use the following procedure to manually install QSA on Windows servers.

To install (or upgrade) QSA manually on Windows servers

1. Use one of the following methods to navigate to the Space Manager client application directory:
   - In Windows Explorer, navigate to: C:\Program Files\Quest Software\Space Manager <version number>
2. Open the QuestServerAgent folder in the application directory and select the Quest Server Agent executable file appropriate for your Windows environment:
   - For a 32-bit Windows environment, use **QSA_*version_build*-Win32.exe**.
   - For a 64-bit Windows environment, use **QSA_*version_build*-Win64.exe**.
3. Use binary mode to copy the appropriate executable to the server. Copy the file to an empty directory on your server.
4. Run the executable and extract these files to a temporary directory.

   Note: Make sure the temporary directory is empty before you extract the files.

5. Edit the **qsaparms.bat** file. See the example in the following section, "Sample qsaparms.bat file."

   Note: The **qsaparms.bat** file contains brief instructions on what you should change.

6. Execute **Install.bat**.

   Note: For best results, use the command window to execute this file. This will allow you to see progress and error messages.

7. After you install the QSA server and verify that it is working, completely remove the installation files from the temporary directory.

Sample qsaparms.bat file

Some brief instructions (notes) are contained in the qsaparms.bat file. The following are descriptions for a few key parameters.

- **QSA_BASE_DIR**—Use this parameter to specify a new or existing installation base directory. "Quest" is the default.
- **TABLE_SPACE**—Use this parameter to specify the Server Agent installation tablespace. It must already exist. Usually it is the same tablespace that is used for server objects.
- **LW_TBLSPC**—Use this parameter to specify the tablespace for objects created by QSA during a live reorganization.

Parameters that require editing are in **bold**.

```
rem ****************************************
rem qsaparms.bat: QSA manual installation
rem script parameter file
rem
rem ****************************************
rem ****************************************
rem START USER CONFIGURABLE SECTION
rem ****************************************
rem ****************************************
rem ****************************************
rem set the values for the following variables
rem any default values have been pre-assigned
rem ****************************************
rem
rem QSA_GUI when set to YES will cause the
rem installer to not pause
rem
set QSA_GUI=NO
rem
rem NOTE: Setting qsagetparms to NO,
rem will cause this script to ignore
rem parms contained in the database
rem and will use what is defined here
rem for upgrades and uninstalls.
rem
rem set qsagetparms=NO
rem ********************
set qsagetparms=YES
rem ********************
rem
rem ************************
rem ************************
rem Set qsaparms value to
rem YES after you have
rem finished editing this
rem script.
rem ************************
rem ************************
rem
set qsaparms=NO
rem
rem ************************
rem ************************
rem Set qsaforce value to
rem YES if the install
rem fails because the platform
rem is not correct. qsaforce
rem will prevent the platform
rem validation from executing.
rem ***************************
rem ***************************
rem
```

```
set qsaforce=NO
rem
rem
rem
rem Oracle SID
rem ***************
set ORACLE_SID=orcl
rem ***************
rem
rem Oracle HOME
rem **********************
set ORACLE_HOME=C:\Oracle
rem **********************
rem
rem Oracle USER (SpaceManager Oracle User)
rem ******************
set ORACLE_USER=quest
rem ******************
rem
rem Oracle user's PASSWORD
rem ********************
set ORACLE_PASS=quest
rem ********************
rem
rem QSA Windows user (this user does not need to exist)
rem ****************
set QSA_USER=QSA_DBA
rem ****************
rem
rem QSA Installation Base Directory
rem ********************
set QSA_BASE_DIR=\Quest
rem ********************
rem
rem QSA Base Installation Drive
rem ******************
set QSA_BASE_DRIVE=C:
rem ******************
rem
rem QSA Installation Tablespace
rem ******************
set TABLE_SPACE=TOOLS
rem ******************
rem
rem QSA Work Directory Parameter
rem **********************
set QSA_WORK_DIR=C:\temp
rem **********************
rem
rem QSA LW Tablespace Parameter
rem ***************
set LW_TBLSPC=TOOLS
rem ***************
rem
rem ** NOTE **
rem if you want to changes storage parameters
rem see "qsastor.bat"
rem
rem do not change anything bellow this line
rem
rem ****************************************
rem ****************************************
rem END OF USER CONFIGURABLE SECTION
rem ****************************************
rem ****************************************
set TABLE_EXISTS=%ORACLE_USER%
```

```
rem ** the version of quest script required **
set QSA_SCRIPT_VERS=none
rem ** QSA versions **
set QSA_VERSION=none
set QSA_BASE_VERSION=none
```

Manually Uninstall Server Agent from UNIX or Linux

Use the following procedure to manually uninstall QSA from Oracle databases on UNIX and Linux servers.

To manually uninstall QSA from UNIX or Linux

1. From your database server, log in to UNIX or Linux under the operating-system account that installed QSA.
2. Use the following command to change to the agent install directory for the target database (the command displays the default install directory):

   ```
   # cd /$ORACLE_HOME/Quest/QSA/$ORACLE_SID/inst
   ```

3. Use the following command and cases to run the manual uninstall script:

   ```
   # ./Uninstall.sh
   ```

4. At the **ORACLE_SID** prompt, enter the SID for the target database.
5. At the **ORACLE_HOME** prompt, press **Enter** to accept the path to the Oracle home directory for the target database. This is entered automatically after you enter the SID.
6. At the **Oracle login name** prompt, enter the user name of the DBA that installed the agent.
7. At the **Oracle password** prompt, enter the password of the DBA.
8. In the Ready to Uninstall window, enter *Y* at the **Proceed** prompt to remove the agent.
9. If you did not uninstall the agent as **root**, log in to UNIX or Linux as **root** and use the following command to run the ROOT_UNINSTALL.SH script ($ORACLE_SID is the SID for the target database):

   ```
   # /tmp/root_uninstall.sh $ORACLE_SID
   ```

Manually Uninstall Server Agent from Windows

If you installed QSA manually on a Windows server, you must also use the manual uninstall procedure to uninstall the agent.

To manually uninstall QSA from Windows

1. Locate the uninstall batch file (**uninstall.bat**).

   Note: During the manual installation process, the uninstall files are copied to the Server Agent installation directory (\inst).

2. Run **uninstall.bat**.

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- Engage in community discussions
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