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Quest Capacity Manager for SQL Server
Getting Started Guide
Preface

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About This Guide
Additional Information
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About This Guide

This guide describes how to get started using Quest Capacity Manager for SQL Server quickly. It contains an overview of the main features and a description of how to launch, navigate, and use Quest Capacity Manager for SQL Server. This guide is intended for use by Microsoft SQL Server DBAs.

Additional Information

In addition to this guide, there are a number of options available for quickly finding the information you need, including:

- Online help
- Release Notes

Online Help

There are several ways to access online help topics.

<table>
<thead>
<tr>
<th>To...</th>
<th>Do This...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display the table of contents for help topics</td>
<td>Select **Help</td>
</tr>
<tr>
<td>Search for a specific help topic</td>
<td>Select the Search tab in an open Help window.</td>
</tr>
<tr>
<td>Display the index for help topics</td>
<td>Select **Help</td>
</tr>
<tr>
<td>Display help for a specific window or dialog</td>
<td>In the window or dialog, do one of the following:</td>
</tr>
<tr>
<td></td>
<td>• Click <strong>Help</strong></td>
</tr>
<tr>
<td></td>
<td>• Press <strong>F1</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Not all windows and dialogs are linked to specific help topics.</td>
</tr>
</tbody>
</table>
Release Notes

For late-breaking information about Quest Capacity Manager for SQL Server, refer to the Release Notes included with your installation media.

About Quest Software, Inc.

Quest Software, Inc. delivers innovative products that help organizations get more performance and productivity from their applications, databases and infrastructure. Through a deep expertise in IT operations and a continued focus on what works best, Quest helps more than 18,000 customers worldwide meet higher expectations for enterprise IT. Quest Software lets organizations deliver, manage and control complex database environments through award-winning products for Oracle, SQL Server, IBM DB2, Sybase, and MySQL. Quest Software can be found in offices around the globe and at www.quest.com.

Accessibility

Quest Software is committed to providing products and solutions that are accessible to all people regardless of their capabilities. Section 508 compliance details are available by product in the Voluntary Product Accessibility Templates (VPATs) published on our web site at: http://www.quest.com/public_sector/section_508.asp.

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Contact Quest Support

Quest Support is available to customers who have purchased a commercial or trial version of Quest software and have a valid maintenance contract. Quest Support provides around the clock coverage with SupportLink, our web self-service. Visit SupportLink at: http://support.quest.com

With SupportLink, you can do the following:

- Quickly find thousands of solutions (Knowledgebase articles/documents).
- Download patches and upgrades.
- Seek help from a Support engineer.
- Log and update your case, and check its status.

View the Global Support Guide for a detailed explanation of support programs, online services, contact information, and policy and procedures. The guide is available at: http://support.quest.com/pdfs/Global Support Guide.pdf
Introduction

Contents

Quest Capacity Manager for SQL Server Overview
Quest Capacity Manager for SQL Server Overview

Quest Capacity Manager for SQL Server is a standalone product that uses SQL Server Agent for data collection.

Quest Capacity Manager for SQL Server locates the problems associated with managing disk space by:

- Providing trend analysis of current disk use.
- Forecasting future disk space requirements.
- Notifying you on status of monitored objects (instances, databases, content databases, site collections) according to set thresholds and options (Statuses & Alerting options).
- Providing wizards to guide you through the steps to alleviate your disk space management problems.
- Providing partitions management and reporting tool (Manage Partitions) that helps you monitor and manage partitions.
- Providing a Manage SharePoint Capacity tool that helps you monitor configuration and content databases for your SharePoint applications.
- Providing a job management tool (Manage Jobs) that helps you control, monitor, and manage Capacity Manager jobs as well as all other jobs on your system.
- Providing a Capacity Planner tool that helps you estimate and plan consolidation of databases.

Key Features

Quest Capacity Manager for SQL Server helps you collect data, analyze trends in database growth and fragmentation, forecast future database requirements, partition tables and indexes, and implement tasks to resolve database capacity problems and make your databases run more efficiently. Wizards guide you quickly through the steps to use a specific feature and implement a Quest Capacity Manager for SQL Server task.

The Manage Capacity tool makes trending and forecasting easy and helps you plan for the use, storage, CPU, memory, and I/O consumption of your data, while minimizing outages and downtime. Reports, charts, and graphs provide a view of resource consumption and storage requirements. You can easily see which objects are growing most rapidly or using the most CPU, memory, and input/output resources. You can
reclaim unused disk space from databases and allocate disk space to databases in need of extra storage. Finally, table partitioning is fully supported, including rolling partitions and switching partitions in/out.

Capacity Manage fully supports table and index partitioning. The Manage Partitions tool helps you analyze and manage partitioned objects, monitor partitioned data growth and detect largest, most fragmented or fastest growing and fragmenting partitions.

It also provides a job management tool (Manage Jobs) that helps you control, monitor and manage Capacity Manager jobs as well as all other jobs on your system on a daily calendar. You can create, alter, or delete SQL Server jobs or you can reschedule jobs quickly by dragging and dropping jobs to another day.

The Manage SharePoint Capacity tool helps you analyze current and future disk use for SharePoint applications and set up jobs to collect data and monitor disk capacity.

The Capacity Planner tool to calculate effect of consolidation for several databases.

**Note** Use the Wizards menu to access wizards to guide you through a process to perform the tasks described in the table.

The following table describes the key Quest Capacity Manager for SQL Server features.

<table>
<thead>
<tr>
<th>Use this Feature...</th>
<th>To...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage a Repository</td>
<td>Create a new repository, select an existing repository, migrate data from an existing repository or file, and change the repository password.</td>
</tr>
<tr>
<td>Define Objects for Monitoring</td>
<td>Define the objects you want to monitor and collect data for capacity, database maps, fragmentation, and performance capacity reports.</td>
</tr>
<tr>
<td>Specify Capacity Manager Options</td>
<td>Specify forecast, charts, export options, set up ROI calculator, configure statuses calculation and alert generation, set thresholds, and set job management options.</td>
</tr>
<tr>
<td>Reorganize Heaps</td>
<td>Reorganize one or more heaps (tables without a clustered index) in selected databases.</td>
</tr>
</tbody>
</table>
### Use this Feature... | To...
--- | ---
Reorganize Indexes | Detect indexes with a high fragmentation level and reorganize them.
Shrink Databases | Examine the current space allocation and the amount of free space, reallocate space, and shrink the size of the database.
Relocate Objects | Move objects from one filegroup to another to use space more efficiently.
Analyze Database Fragmentation | Set up jobs to run at specified times to monitor fragmentation and notify responsible persons.

### Manage Capacity
Analyze current and future disk use, set up jobs to monitor disk capacity, and solve disk space management problems

### Manage Partitions
Analyze and manage partitioned objects, monitor partitioned data growth and detect largest, most fragmented or fastest growing and fragmenting partitions.

### Partitioning
Partition or unpartition tables and indexes, set up a sliding window scenario. (Available for SQL Server 2005 Enterprise or Developer Editions only.)

### Manage SharePoint Capacity
Analyze current and future disk use for SharePoint applications and set up jobs to collect data and monitor disk capacity.

### Manage Jobs
Control, monitor, and manage either all SQL Server jobs or Capacity Manager’s jobs only.
Components

The Quest Capacity Manager system consists of the following components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Console</td>
<td>The console is the core of the Quest Capacity Manager for SQL Server product. The workstation where the console is installed must have the ability to connect to all monitored SQL Servers and to the repository database (if installed). You can operate the console with a repository (recommended) or without a repository. Use the Create Repository wizard in the console to create a repository database and login (‘qcm_agentlogin’) with access to the repository.</td>
</tr>
<tr>
<td>Monitored servers</td>
<td>Using SQL Server agent, a SQL Server job collects data from the monitored server and writes directly to the repository. See Collecting Data and Monitoring Objects for a description of the data collection process.</td>
</tr>
</tbody>
</table>
The diagram shows the relationship between the console, repository and monitored servers.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repository</td>
<td>The repository serves as a database to store data collected from monitored instances.</td>
</tr>
<tr>
<td></td>
<td>If you do not create a repository database, only online reports are available. You can perform all reorganization and partitioning management tasks without a repository.</td>
</tr>
<tr>
<td></td>
<td>If you create a repository (recommended), reports about capacity, fragmentation, performance, and database maps are available. The repository SQL Server must be configured to support SQL Server authentication. All monitored servers must be able to connect to the repository server.</td>
</tr>
</tbody>
</table>
Start to Use

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Analyze Trends and Forecasts
Solve Capacity Problems
Shrink Database
Reorganize Indexes
Reorganize Heaps
Relocate Objects
Partition a Table or Index
Sliding Window Scenario
Access Quest Capacity Manager for SQL Server

You can launch Quest Capacity Manager for SQL Server from Microsoft Windows or from the Quest Database Management Solutions window.

To launch from Microsoft Windows

- Select Start | Programs | Quest Software | Quest Capacity Manager for SQL Server | Quest Capacity Manager for SQL Server.

To launch from the Quest Database Management Solutions window

1. Select Start | Programs | Quest Software | Quest Central | Quest Database Management Solutions.

2. From the Tasks section of the window, select a Quest Capacity Manager for SQL Server's task.

   From the Tools section of the window, select Quest Capacity Manager for SQL Server.

Note

- If the Quest Capacity Manager for SQL Server tasks or icon does not appear, use the View menu to set preferences. Make sure the Show only installed products option is NOT selected.
• If the Quest Capacity Manager for SQL Server tasks or icon appear shaded and you select it, you are prompted to respond whether you want to download Quest Capacity Manager for SQL Server

Get Started

Quest Capacity Manager for SQL Server tools open to the Welcome to Quest Capacity Manager for SQL Server window. It outlines the tasks you need to perform to get started using Quest Capacity Manager for SQL Server in several easy steps.

For Manage Capacity or Manage Partitions tools:
  • Register a New Server
  • Create Repository
  • Define Objects for Monitoring

For Manage SharePoint Capacity tool:
  • Register SharePoint Configuration Database
• Create Repository
• Define Schedules for Monitoring

For Capacity Planner tool:
• Create Consolidation Project
• Create Repository and Define Objects for Monitoring

Click the tasks listed under each step to open wizards or dialogs to perform Quest Capacity Manager for SQL Server tasks.

**Step 1 - Register New Server or Create Consolidation Project**

The first step in running Quest Capacity Manager for SQL Server is to register servers, server groups, consolidation databases and make them known to Quest Capacity Manager for SQL Server. You can identify a new server or server group or import information about servers that were previously set up for other programs. If using Capacity Planner, the first step is to create consolidation project.

You can import servers from the SQL Server Enterprise Manager, SQL Server Management Studio, Quest Central for SQL Server 5.x or later, an XML or text file.
### Task Description

#### Import registered servers

To import registered servers and server groups from an external application

1. Do one of the following:
   - From the Welcome window, select **Import Registered Servers**.
   - Select **Wizards | Import Registered Servers Wizard**.
   - On the toolbar, click **Import Registered Servers**.
   - On the Browser panel, right-click **Microsoft SQL Servers** and select **Import Registered Servers** from the right-click menu.

2. In the **Import Registered Servers wizard**, select the servers and server groups you want to import.

*To import servers from an XML file*

   - Select **File | Import | Configuration**.

*Note* This feature can be used to import SharePoint configuration databases registrations also.

*To import registered servers from a text file*

   - Select **File | Import | Import Registered Servers from Text File (CSV)**.

*Note* The text file format should be:

   - *instance name; username; password; alias; description*

   Entries may be separated by tabs or by commas, semicolons, or pound/hash symbols ( ; #). If the user name, password, or both are omitted, Quest Capacity Manager for SQL Server uses Windows authentication for the current server.
## Getting Started Guide

### Register a new SQL Server

1. From the Welcome window, select **Register a new SQL Server** to open the Connect to SQL Server dialog.
2. Enter the name of an existing server and specify login information.
3. If desired, click **Advanced** and enter an alias name for the SQL Server and a description.

### Register SharePoint Configuration Database

1. From the Welcome window, select **Register SharePoint Configuration Database** to open the SharePoint Configuration Database dialog.
2. Enter the name of an existing server and specify login information.
3. Select a configuration database from the list.
4. If desired, click **Advanced** and enter an alias name for the SharePoint configuration database and a description.
To create a consolidation project

1. From the Welcome window, select **Create Consolidation Project** to launch the Create Consolidation Project wizard to define source and target SQL Server instances for consolidation.

2. On the Welcome panel, click **Next**.

3. On the Project Properties panel, enter a name of the project and description.

4. On the Target Server panel, select a SQL Server where to consolidate databases:
   - Select **Select already registered SQL Server** to use information about a real SQL Server to estimate consolidation and select a SQL Server instance.
   - or
   - Choose **New virtual SQL Server** to set target server parameters manually.

5. If you selected a New virtual SQL Server, enter the following informations:
   - A name of the target server.
   - The maximum amount of RAM that the target server is allowed to use. (Default is 512 MB.)
   - A number of CPUs on the target server. (Default is 0.)
   - Click **Add Drive**, enter drive letter and free space available (in MB) to add a virtual hard drive.

6. On the Source Servers and Databases panel, select one or more databases to consolidate.

7. On the Completion panel, click **Finish**.
Step 2 - Create Repository

The second step in running Quest Capacity Manager for SQL Server is to create a repository. Although a repository is optional, to make full use of Quest Capacity Manager for SQL Server’s features, it is highly recommended that you create a repository to store collected data for use in analysis, reports, and graphs.

The following task shown on the Welcome panel can help you create a Quest Capacity Manager for SQL Server repository.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
</table>
| Create Repository     | From the Welcome panel, select Create Repository to launch the Create/Select Repository wizard where you can create a new repository or select an existing repository. This wizard also helps you select a location for the data and log files.  
   **Note** You can also select Create/Select Repository from the Wizards menu.  
   On the Select Authentication Type panel of the wizard, you can select an authentication type (SQL Server or Windows) for access to the repository. If you choose SQL Server authentication (recommended), define the access login (qcm_agentlogin) password. |

In addition, you can migrate data from a legacy repository to Quest Capacity Manager for SQL Server. The legacy repository must be a legacy Quest Capacity Manager 1.5-1.6 repository.

To migrate repository information to a Quest Capacity Manager for SQL Server repository

1. From the Wizard menu, select Migrate data from Legacy Repository.
2. On the Welcome panel, click Next.
3. On the Select Source Repository Database panel:
   - Select the source repository that contains the data you want to migrate to a Quest Capacity Manager for SQL Server for SQL Server repository.
- Specify the instance, type of authentication (Windows or SQL Server authentication). If you choose SQL Server authentication, specify the Login and Password.
- Select the source database in the selected instance.

4 On the Summary panel, select one of more of the following and click Next:

- **Migrate the old collection plan** to copy data collection settings (Collect Data Wizard) to the new repository.
  
  **Caution** The current data collection plan will be overridden.

- **Register monitored servers after migration** to add previously monitored SQL Server (the SQL Server for which there are data collected in the source repository) to the Browser tree. Already registered SQL Server are not added repeatedly.

  **Tip** If desired, click Script to preview SQL Statements before execution.

5 On the Execute Script panel, click Next.

6 When the wizard finishes, On the Completion panel, click Finish.

### Step 3 - Define Objects for Monitoring

The final important step in running Quest Capacity Manager for SQL Server is to define the objects to monitor and collect data for use in database maps and fragmentation reports.

The following task shown on the Welcome panel can help you define objects on which to collect data.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
</table>
| Define Objects for Monitoring | From the Welcome window, select Define Objects for Monitoring to launch the Collect Data wizard to define the objects to monitor and create a job to collect data on those objects. This wizard also helps you schedule a collect data job and helps you identify those responsible persons to notify when the job runs.  
  **Note** You can also select Collect Data from the Wizards menu. |
After you complete the steps described above, from the Tools menu, select these tools to get started using more Quest Capacity Manager for SQL Server features:

**Manage Capacity** - Analyze current and future disk use, set up jobs to solve disk space management problems.

**Manage Jobs** - Control, monitor, and manage either all SQL Server jobs or Capacity Manager’s jobs only.

**Report Schedule** - Set options for sending reports.

**Options** - Set Quest Capacity Manager for SQL Server options and thresholds to trigger actions or notifications.

### Monitor Objects

In order to monitor objects, you need to define instance, database, and objects or SharePoint configuration and content databases to monitor and collect data to use in capacity, database maps, performance, and fragmentation reports.

Use the Collect Data wizard to guide you through the process of setting up a job to collect data, define a schedule, and notify specified persons. Collection jobs require a repository to store collected data for reports. The repository must be configured to support SQL Server authentication. All monitored servers must be able to connect to the repository server. Some wizards can create jobs on a server. These jobs perform scheduled or delayed operations such as shrink database or reorganize indexes.

### Data Collection Process

The SQL Server Agent Job ‘qcm_CollectDataJob_2.0_<unique schedule value>’ starts on a user-scheduled basis and launches the ‘usp_questcapacitymanager’ stored procedure, which performs data collection and loads data into the Repository.

First, the procedure connects to the Repository and loads a list of objects which require data collection. It also retrieves information about the type of data to collect for these objects.

Next, the procedure collects and accumulates data in separate temporary tables for each data type and then sends it into the repository. (Collection example: collect data about capacity for each listed object; send it to the repository; clear temporary tables; collect data about fragmentation for each listed object; send it to the repository; clear temporary tables etc.) This algorithm keeps the size of tempdb at an acceptable level and
minimizes the number of connect-disconnect operations that occur between the monitored instance and the repository. You can preview the script for this procedure at the end of the Collect Data wizard.

Finally, after data collection completes, the ‘usp_questcapacitymanagerhistory’ procedure loads the collected information into the repository.

**Note** If you choose NT Auth for the repository, you need to manually configure monitored instances as described below. All agents on monitored instances should be run under domain accounts. These accounts should have permission to read and write to the Quest Capacity Manager for SQL Server repository database. If they do not have such permission, Collect Data Jobs (and corresponding procedures) cannot be created on monitored instances. When there are incorrect access settings to the repository for the accounts used to run SQL Server Agents on monitored servers, SQL Server throws an exception (no access, authentication failed etc). This error displays in the Summary step on the wizard.

**Tip** To make authentication configuration easier, use SQL Server Authentication.

You can create un-encrypted stored procedures on monitored servers. To enable this option, start the console with the /NOENCRYPT key and create/choose objects on monitored servers:

```
Quest.DBAadmin.MsSql.SpaceManagement.Console.exe /NOENCRYPT
```

**Caution** This operation reduces security on your SQL Server. Do not use this option for production systems.

**Using the Collect Data Wizard**

This wizard helps you define instance database objects and SharePoint databases to monitor and collect data to be used in capacity, database maps, fragmentation and performance reports.

To collect data, you must have a repository in which to store the data (refer to Collecting Data and Monitoring Objects) and you must collect at least two snapshots (some objects require three snapshots) to have enough information to view reports.

To access the Collect Data wizard

- Access the wizard by doing one of the following:
  - From the **Wizard** menu, select **Collect Data Wizard**.
• On the toolbar, click **Collect Data**.

• From the Microsoft SQL Servers Welcome panel, select **Define objects for monitoring**.

• From any tab where there is a message that collect data is not available, select **Collect Data Wizard**.

• Right-click an instance, database, table, view, or index, and select **Collect Data**.

Follow the instructions on each panel of the wizard.

*To monitor objects and collect data using the Collect Data wizard*

1. On the Welcome panel, click **Next**.
   - **Tip** If desired, select **Do not show this step next time** to skip the Welcome panel for future use of the wizard.

2. On the Select Resources for Monitoring panel, select resources you want to monitor:

<table>
<thead>
<tr>
<th>Disk Capacity, Database Map, Fragmentation and Instance Performance</th>
<th>Select one this option to collect data for Disk Capacity, Database Map, Fragmentation and Instance Performance reports.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SharePoint Databases Capacity</td>
<td>Select one this option to collect data for SharePoint Capacity reports.</td>
</tr>
</tbody>
</table>

3. On the Collect Capacity Data panel, select one or more objects on which you want to collect data and click ... to modify the default schedule settings. This opens the Job Schedule Properties dialog where you can schedule the job to run daily, weekly, or monthly at a set day and time and for a set period of time.
   - **Tip** Click **Check All/Uncheck All** to select or deselect all the options on this panel.

4. Click **Advanced** to configure details of data collection. This opens the Advanced Collect Capacity Data Options dialog where you can select the following:

<p>| Objects | Select one or more objects on which you want to collect data. |</p>
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disk Capacity</td>
<td>Select this option to collect data for Disk Capacity reports. These reports display the current amount of free space and change of free/used space for an object and also forecasts of capacity trends.</td>
</tr>
<tr>
<td>Fragmentation</td>
<td>Select this option to collect data for Fragmentation reports. These reports display current values and changes in fragmentation (index pages and index extents out of order) for objects over time and also displays forecasts of future changes.</td>
</tr>
<tr>
<td>Map</td>
<td>Select this option to collect data for Map reports. These reports display layout and fragmentation of objects inside the database using color to make analysis easy.</td>
</tr>
<tr>
<td>Note</td>
<td><strong>Note</strong> Database Map feature is supported for databases with the size less than 300 GB only.</td>
</tr>
<tr>
<td>Performance Capacity</td>
<td>Select this option to collect data for Instance Performance Capacity. These reports display summary information about current CPU and memory usage and can help you plan for the future capacity needs of your system.</td>
</tr>
</tbody>
</table>
Use FAST option | Select this option to omit collecting extent fragmentation data for the selected object. This uses less CPU.

For SQL Server 2000, Quest Capacity Manager for SQL Server uses the DBCC SHOWCONTIG command to collect fragmentation data.

For SQL Server 2005:

- If **Use DMV for collecting fragmentation data** and **Use FAST option** are not selected, Quest Capacity Manager for SQL Server uses DBCC SHOWCONTIG command.
- If **Use DMV for collecting fragmentation data** is not selected and **Use FAST option** is selected, Quest Capacity Manager for SQL Server uses DBCC SHOWCONTIG with FAST command.
- If **Use DMV for collecting fragmentation data** is selected and **Use FAST option** is not selected, Quest Capacity Manager for SQL Server uses `sys.dm_db_index_physical_stats` with SAMPLED option selected command.
- If **Use DMV for collecting fragmentation data** and **Use FAST option** are selected, Quest Capacity Manager for SQL Server uses `sys.dm_db_index_physical_stats` with LIMITED option selected command.

Use DBCC UPDATEUSAGE command | Select this option to launch the DBCC UPDATEUSAGE T-SQL command before collecting data about objects for Capacity reports. Quest Capacity Manager for SQL Server uses `sp_spaceused` system stored procedure to collect information about space usage. However, when using `sp_spaceused` to collect information about databases upgraded to SQL Server 2005, the report may contain inaccuracies in pages and row counts. It is recommended to run DBCC UPDATEUSAGE command to correct inaccuracies in space usage reports generated by `sp_spaceused` system stored procedure.
5 For SQL Server 2005, you can select the following:

<table>
<thead>
<tr>
<th>Check All/Uncheck All</th>
<th>Click one of these buttons to select or deselect all the options on this panel.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove/Remove All</td>
<td>Select objects in list and click <strong>Remove</strong> to remove those objects from the list or click <strong>Remove All</strong> to remove all objects.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitor partitions separately</th>
<th>Select this option to collect data about object partitions when collecting data for Capacity and Fragmentation reports for SQL Server 2005 instances. If you select this option, Quest Capacity Manager for SQL Server uses <code>sys.dm_db_index_physical_stats</code> to collect information about partitions even if you do not select the <strong>Use DMV for collecting fragmentation data</strong> option.</th>
</tr>
</thead>
</table>
| Use DMV for collecting fragmentation data | Select this option to use the `sys.dm_db_index_physical_stats` dynamic management view (DMV) to collect data for Fragmentation reports. This DMV returns fragmentation of each partition. Object fragmentation is calculated as an average fragmentation of all partitions in the object.  
**Note** Scan Density information is not collected.  
**Note** For indexes, extent fragmentation data is not collected even if you select the use FAST option.  
**Note** For heaps, logical fragmentation data is not collected even if you select the use FAST option.  
Clear this option to use DBCC SHOWCONTIG command to collect object fragmentation data. |

6 Click **Next** to continue.

7 On the Collect SharePoint Data panel, select one or more objects on which you want to collect data and click ... to modify the default schedule settings. This
opens the Job Schedule Properties dialog where you can schedule the job to run daily, weekly, or monthly at a set day and time and for a set period of time.

**Tip** Click Register to open Register SharePoint Configuration Database dialog and create a new SharePoint registration.

**Tip** Click Search to search for configuration databases.

8 On the Summary panel, click **Script** to open the Preview Script panel and review the SQL statements the wizard generated to run the job.

9 On the Execute Script panel, click **Next**.

If other Collect Data jobs and stored procedures exist for the instance, the Review Jobs Status panel displays with a list of those jobs. Do one of the following:

- Click **Continue** to replace the existing jobs schedule and stored procedure with that of the present job.
- Click **Skip** to keep the schedule and stored procedure of the listed instances.
- Click **Cancel** to exit without creating any new jobs or stored procedures.

10 On the Completion panel, click **Finish**.

**Collect Data Wizard Actions**

When you select objects for data collection in the Collect Data wizard, Quest Capacity Manager for SQL Server creates the following objects on the monitored instance:

- **SQL Server Agent Job ‘qcm_CollectDataJob_2.0_<unique schedule value>’** - You can specify a periodic schedule of when to take snapshots. The job launches a stored procedure to collect a series of snapshots.
- Two stored procedures in ‘msdb’ database: ‘usp_questcapacitymanager’ and ‘usp_questcapacitymanagerhistory’ - Both these procedures are encrypted to protect repository access credentials.
  - The first procedure collects data about selected objects and sends the data to the repository.
  - The second procedure writes job execution results (e.g., success or failure to the repository). The console uses this information to show the list of jobs and their execution history.
The ‘qcm_CollectDataJob_2.0_<unique schedule value>’ job calls
usp_questcapacitymanager on the scheduled basis specified in the job.

**Note** If there is a job created by an older version of Quest Capacity Manager for SQL Server, the
console suggests that you delete the old job.

Quest Capacity Manager for SQL Server uses the @@-prefix to collect information on
Capacity, Fragmentation, Database Maps, CPU, Memory and IO. It uses temporary
tables to store collected data on the monitored server. Quest Capacity Manager for SQL
Server creates these tables during the data collection process (in the ‘tempdb’ database)
and deletes the tables when it loads the collected data into the repository.

**Note** Quest Capacity Manager for SQL Server does not make any modifications to user
databases.

### Analyze Trends and Forecasts

Once you have collected data (also referred to as snapshots), you can view the data in
chart, graph, and report summary forms. You need at least two snapshots to have
enough data for graphs and forecasts (some require two or more). The charts and graphs
help you see which instances, databases, files, transactions logs, and indexes are using
the most disk space, growing the largest, becoming the most fragmented, or running out
of space and can forecast when space will run out. Quest Capacity Manager for SQL
Server’s ROI (Return on Investment) calculator shows you exactly how much money
your site can save by reducing databases to the recommended sizes based on forecasts
of future growth requirements.

*To view charts and graphs*

1. In the Browser window, right-click a **Group, Instance, Database, Specific
   Database, Table, View, or Index** to view detailed information about the selected
   object in the right panel.

2. Click the **Group-Free Space tab, Instance-Overview, Capacity, or Performance
   tab, Specific Database-Overview, File Groups, Database Maps, Capacity, or
   Fragmentation tab, or a Specific Table/View/Index- Overview, Capacity, or
   Fragmentation tab** to display charts and graphs for the selected object.
To view detailed information

1. In the Browser window, right-click a node such as **Group, Instance, Databases, Repository** to see detailed information about the selection displayed in the right panel.

2. Click a List tab in the right panel to view a list of objects and double-click a specific object in the list to drilldown to see more detailed information.

To view ROI (return on investment)

1. In the Browser window, click **Databases**.

2. Select the ROI Calculator tab.

   The tab shows the current allocated size for each database versus the recommended size and shows how you can save disk space and money by changing the database size to the recommended size.

   By changing options, you can adjust the ROI calculation according to what your company pays for disk space.

To change options

1. Select **Tools | Options**.

   or

   From the toolbar, select **Options**.

2. On the Options dialog, select the appropriate tab (Forecast, Thresholds, Statuses&Alerting, Charts, Export Settings, ROI Calculator, Job Management).

3. Change options as desired.

After analyzing the graphs, maps, and detailed information, use the wizards to set up jobs to shrink databases, relocate objects, and reorganize heaps and indexes.

### Analyze Fragmentation

Because disks, databases, and indexes do not store data in sequential order and because data is stored, removed, replaced and manipulated innumerable times every day, gaps develop between data entries. These gaps lead to fragmentation which slow down data input/output and slow processing. Quest Capacity Manager for SQL Server can help you discover fragmentation problems and provide tools to address these problems to help you keep your databases running efficiently.

In order to analyze fragmentation you need to:
• Define thresholds to identify when a database is too fragmented.
• Select databases to analyze.
• Schedule data collection.
• Specify the persons to notify when a database becomes too fragmented.

The **Analyze Fragmentation** wizard helps you set up jobs to run at specified times to monitor fragmentation and notify responsible persons.

**Note**  
Only SQL Servers 2000 or higher are supported.

To access the Analyze Fragmentation wizard

• Do one of the following:
  • From the **Wizard** menu, select **Analyze Fragmentation**.
  • From the toolbar, click **Analyze Fragmentation**.

Follow the instructions on each panel of the wizard.

To analyze fragmentation using the Analyze Fragmentation wizard

1. On the Welcome panel, click **Next**.
   
   **Tip**  
   If desired, select **Do not show this step next time** to skip the Welcome panel for future use of the wizard.

2. On the Select Databases panel, select the databases you want to analyze for fragmentation.

3. Select the **Use FAST option** to omit collecting extent fragmentation data for the selected databases. This uses less CPU.

4. Click **Add** to select additional instances to search for databases to analyze. This opens the Add Databases to Analyze Fragmentation Job dialog.

5. On the Define Thresholds panel, define the threshold limits to signal notification.

6. On the Review Schedule for Analyze Fragmentation Jobs, select a job and click **Change** to change or set the schedule for the job. You can run an Analyze Fragmentation job immediately, daily, weekly, monthly, or on a set day and time.

7. On the Set Notifications panel, select the names of persons to notify and enter or select their email addresses from the address book.

8. On the Summary panel, click **Script** to open the Preview Script panel and review the SQL statements the wizard generated to run the job.
On the Completion panel, click Finish.

Solve Capacity Problems

Quest Capacity Manager for SQL Server wizards help you set up jobs to run immediately or at a later time to perform tasks that will alleviate your database capacity problems and notify responsible persons when the job runs.

To access and run a wizard

- Do one of the following:
  - From the Wizard menu, select the wizard.
  - On the toolbar, click the icon that represents the wizard.

<table>
<thead>
<tr>
<th>Run this wizard</th>
<th>To...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrink Database</td>
<td>Examine the current space allocation and the amount of free space, reallocate space, and shrink the size of the database.</td>
</tr>
<tr>
<td>Reorganize Indexes</td>
<td>Detect indexes with a high fragmentation level and reorganize them.</td>
</tr>
<tr>
<td>Reorganize Heaps</td>
<td>Reorganize one or more heaps (tables without a clustered index) in selected databases.</td>
</tr>
<tr>
<td>Relocate Objects</td>
<td>Move objects from one filegroup to another to use space more efficiently.</td>
</tr>
</tbody>
</table>

Shrink Database

The Shrink Database wizard shrinks selected objects on an instance. The wizard allows you to shrink objects immediately or on a scheduled basis (for instance, once a week).

You can use this wizard to shrink instances, databases, repository databases, filegroups, files, and combinations of these objects:

- **Shrink an Instance** - (from Instance node context menu or Tasks tab), Quest Capacity Manager for SQL Server creates a script that executes a DBCC
SHRINKDATABASE command to shrink all selected databases that reside on this Instance. When you select a shrink execution, Quest Capacity Manager for SQL Server creates one SQL Server Agent Job for the whole Instance.

• **Shrink a database** - (from Database node context menu or Tasks tab) Quest Capacity Manager for SQL Server creates a script that executes a DBCC SHRINKDATABASE command to shrink only the selected database or repository database. When you select a scheduled execution, Quest Capacity Manager for SQL Server creates a separate SQL Server Agent Job for each database.

• **Shrink files** - Quest Capacity Manager for SQL Server creates a script that executes a DBCC SHRINKFILE command to shrink the selected files. When you select a scheduled execution, Quest Capacity Manager for SQL Server creates a separate SQL Server Agent Job for each database that contains the selected files.

• **Shrink filegroups** - Quest Capacity Manager for SQL Server creates a script that executes a DBCC SHRINKFILE command to shrink all the files in the selected filegroup. When you select a scheduled execution, Quest Capacity Manager for SQL Server creates a separate SQL Server Agent Job for each database that contains the selected filegroup.

When the shrink process finishes, Quest Capacity Manager for SQL Server executes a DBCC UPDATEUSAGE command to update information about the size of objects.

Use the Shrink Database wizard to guide you through the process.
To shrink a database (or other object) using the Shrink Database wizard

1. On the Welcome panel, click Next.
   Tip If desired, select Do not show this step next time to skip the Welcome panel for future use of the wizard.

2. On the Select Databases panel:
   - Select one or more databases or data files to shrink.
   - In the Option column, click the button on the right to change the current option.
   - Select Move pages to the beginning of file before shrinking to relocate pages. This may affect performance and takes longer than if you do not select this option.
   - Select or use the arrows next to Maximum amount of free space in files after shrinking to specify the percent of free space to keep after shrinking.

3. On the Check Objects panel, review your selections and click Back to return to previous panels and change the settings.

4. On the Schedule Job panel:
   - Select Immediately to run the job now.
     Note The wizard does not create a SQL Server job.
   - Select Schedule to create a SQL Server job to run at a specified time, then click Change to modify the date and time to run the job.
   - Select the notification method (Email, Net send, Page) and from the lists, select the operators to notify and provider.

5. On the Summary panel, click Script to open the Preview Script panel and review the SQL statements the wizard generated to run the job.

6. On the Completion panel, click Finish.

Reorganize Indexes

Indexes are pointers to table data and are used to find and retrieve specific rows of data quickly. They can occupy separate space from their associated table. Although indexes require some overhead, they improve performance and provide faster access to data.

In order to reorganize indexes you need to:
• Define thresholds to identify when an index needs to be reorganized.
• Specify how to collect the index fragmentation information.
• Name the database whose indexes you want to reorganize.
• Schedule the reorganization job.
• Specify the persons to notify when the job runs.

Use the Reorganize Indexes wizard to guide you through the process to set thresholds and schedule a reorganize index job.

You can also reorganize indexes automatically. This option helps you set thresholds to trigger an index reorganization job whenever an index exceeds the thresholds.

To reorganize objects using the Reorganize Indexes wizard

1 On the Welcome panel, click Next.
   Tip If desired, select Do not show this step next time to skip the Welcome panel for future use of the wizard.

2 On the Select Database panel, select a database that contains the indexes you want to evaluate for fragmentation and reorganization.

3 On the Select Information Source panel, select the source from which to retrieve index fragmentation information.
   • Select the Online from the SQL instance option to retrieve actual data using DBCC SHOWCONTIG and select Use FAST option to omit collecting extent fragmentation data (this saves CPU).
   • Select the Offline from repository snapshot option to retrieve stored data (this takes less time than online retrieval) and enter a Snapshot date.

4 On the Define Thresholds panel, select thresholds to trigger index reorganization process:

<table>
<thead>
<tr>
<th>Reorganize</th>
<th>Enter a threshold value or use the arrows to select a value for when to reorganize indexes or heaps:</th>
</tr>
</thead>
</table>
| Reorganize indexes using DEFRAG when logical fragmentation % exceeds | When fragmentation exceed this threshold (default is 10%), Capacity Manager uses the following commands to reorganize indexes:  
• SQL Server 2000 - DBCC INDEXDEFRAG  
• SQL Server 2005 - ALTER INDEX .. REORGANIZE |
|---|---|
| Reorganize indexes using REINDEX when logical fragmentation % exceeds | When fragmentation exceed this threshold (default is 30%), Capacity Manager uses the following commands to reorganize indexes:  
• SQL Server 2000 - DBCC DBREINDEX  
• SQL Server 2005 - ALTER INDEX .. REBUILD |
| Reorganize heaps using CREATE/DROP INDEX when extent fragmentation % exceeds | When fragmentation exceed this threshold (default is 30%), Capacity Manager uses the CREATE/DROP INDEX command to reorganize indexes. |
| Fill Factor | Select one of the following database types:  
• OLTP  
• Data Warehouse  
• Default  
• Custom - Enter a value or use the arrows to select a value for the Custom fill factor. |
| Options | Enter a threshold value or use the arrows to select a value for when to reorganize indexes: |
| Reorganize indexes when number of index pages exceeds | Because the Reorganize Heaps and Reorganize Indexes wizards are not effective for objects with less than 2000 pages, the default number of pages is set to 2000. |
| Advanced Options | Enter a threshold value or use the arrows to select a value for when to reorganize indexes: |
5 On the Select Objects panel, select the objects you want to reorganize and define the reorganization methods to use.

- Click **Show Legend** to see what the symbols in front of the object names mean. The symbol indicates the type of object to reorganize.
- Click **Hide Legend** to hide the legend from view.
- Right-click an object to view details (filegroup, number of pages, percent of logical fragmentation, scan density, etc.) about the object.
- Select one or more of the **Defrag**, **Reindex**, **Update Statistics** checkboxes to specify the type of reorganization to perform.

6 On the Check Disk Space panel, review the required and estimated space and the estimated time it will take. The checkmarks in the **Space check** column indicate that the wizard found enough temporary space to perform the reorganization for the object in the Name column.

If there is not enough space available to perform the operation, exit and use another wizard to help create more disk space, or exit Quest Capacity Manager for SQL Server and cleanup the disk.

7 On the Schedule Job panel, schedule the job, specify provider and persons to notify when job completes, and choose when to delete the job automatically.

8 On the Summary panel, click **Script** to open the Preview Script panel and review the SQL statements the wizard generated to run the job.

9 On the Completion panel, click **Finish**.

When complete, the wizard displays a message indicating whether you completed the wizard successfully or not.
Reorganize Heaps

A Heap is a term used to describe a table without a clustered index. Reorganizing heaps increases their scan density for better performance during table scans. It also reduces fragmentation. By reorganizing a heap you can use disk space more efficiently.

In order to reorganize heaps you need to:

• Specify the database whose heaps you want to reorganize.
• Define when you want the reorganize heap job to start.
• Specify who to notify when the job finishes.

Use the Reorganize Heaps wizard to guide you through the process.

**Note** The Reorganize Heaps wizard is not effective for objects with less than 2000 pages.

*To reorganize heaps using the Reorganize Heaps wizard*

1. On the Welcome panel, click **Next**.
   
   **Tip** If desired, select **Do not show this step next time** to skip the Welcome panel for future use of the wizard.

2. On the Select Database panel, select a database that contains the heaps you want to reorganize.

3. On the Select Heaps panel, select the heaps you want to reorganize.
   
   • Use the filter options to condense the list:
   • Use the arrows or drag and drop tables from the Heaps list to the Heaps to Reorganize list.

4. On the Schedule Job panel, schedule the job, specify provider and persons to notify when job completes, and choose when to delete the job automatically.

5. On the Summary panel, click **Script** to open the Preview Script panel and review the SQL statements the wizard generated to run the job.

6. On the Completion panel, click **Finish**.
   
   When complete, the wizard displays a message indicating whether you completed the wizard successfully or not.
Relocate Objects

In order to relocate objects from one filegroup to another within a database you need to:

- Make sure there are at least two filegroups in the current database.
- Define objects (tables, indexes, indexed views) to move.
- Specify when to run the relocation job.
- Specify the persons to notify.

Use the Relocate Objects wizard to guide you through the process.

**Note** If you select an object and then select Relocate Objects, this pre-fills the Select Objects panel of the wizard with information for the selected object.

**To relocate objects using the Relocate Objects wizard**

1. On the Welcome panel, click **Next**.
   
   **Tip** If desired, select **Do not show this step next time** to skip the Welcome panel for future use of the wizard.

2. On the Select Objects panel, select the objects you want to relocate to another filegroup. The database must have at least two filegroups to relocate objects.
   
   - Use the filter options to condense the list of objects from which to choose.
   - Use the arrows or drag and drop to move objects from one filegroup to another.

   **Note** If the size of the object is greater than the size of the filegroup, the wizard expands the destination filegroup.

3. On the Check Objects panel, review your selections and click **Back** to return to previous panels and change the settings.

4. On the Schedule Job panel, schedule the job, specify provider and persons to notify when job completes, and choose when to delete the job automatically.

5. On the Summary panel, click **Script** to open the Preview Script panel and review the SQL statements the wizard generated to run the job.

6. On the Execute Script panel, click **Next** to run the script.

7. On the Completion panel, click **Finish**.
Partition a Table or Index

**Note**  Partitioning is only supported for SQL Server 2005 Enterprise or Developer Editions.

Partitions separate data across multiple nodes (partitions). The partitioning of tables and indexes improves the performance and manageability of very large databases.

Partitions can be located on one or more disks and in one or more filegroups for greater efficiency. Because partitioning adds complexity and administrative overhead, you may not want to use partitions if your table or index is small, does not require much maintenance, and performs acceptably as is.

The release of SQL Server 2005 introduced some new table-based partitioning features to simplify the implementation and management of partitions for both tables and indexes.

Quest Capacity Manager for SQL Server takes it a step further by introducing Partitioning wizards that guide you through the process of creating, altering (merging and splitting), converting partitioned tables and indexes to unpartitioned tables and indexes, switching partitions from one table to another, and creating sliding window scenarios to improve data transmission and management of aged data.
Partition Table Wizards

<table>
<thead>
<tr>
<th>Use this Wizard...</th>
<th>To...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Partitioned Table</td>
<td>Create a partitioned table, set boundaries for the partitions, and specify the location for each table partition file.</td>
</tr>
<tr>
<td>Create Partitioned Table (Advanced)</td>
<td>Create a partitioned table and set additional options (specify an existing partition function and scheme).</td>
</tr>
<tr>
<td>Alter Partitioned Table</td>
<td>Change the properties of one or more existing table partitions (merge or split partitions).</td>
</tr>
<tr>
<td>Switch Partition</td>
<td>Switches partitions from one table to another.</td>
</tr>
<tr>
<td>Sliding Window Scenario</td>
<td>Manage aged data by partitioning a large table and creating an archive using the sliding window scenario to handle data and archive old data automatically.</td>
</tr>
<tr>
<td>Make Table Unpartitioned</td>
<td>Select a partitioned table, merge all the partitions into one and make the table an unpartitioned table.</td>
</tr>
</tbody>
</table>

Partition Index Wizards

<table>
<thead>
<tr>
<th>Use this wizard...</th>
<th>To...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Partitioned Index</td>
<td>Create a partitioned index, set boundaries for the partitions, and specify the location for each index partition file.</td>
</tr>
<tr>
<td>Create Partitioned Index (Advanced)</td>
<td>Create a partitioned index and set additional options (specify an existing partition function and scheme).</td>
</tr>
<tr>
<td>Alter Partitioned Index</td>
<td>Change the properties of one or more index partitions (merge or split partitions).</td>
</tr>
<tr>
<td>Make Index Unpartitioned</td>
<td>Select a partitioned index, merge all the partitions into one and make the index an unpartitioned index.</td>
</tr>
</tbody>
</table>
Using the Create Partition Wizards

Partitioning a table or index arranges the data into smaller more manageable pieces. The CPU can perform operations on more than one partition simultaneously, which improves performance. A very large database performs best if the partitions use multiple disks, separate filegroups, and preferably multiple CPUs.

The Create Partitioned Table and Create Partitioned Index wizards help you to:

- Separate a large table or index into two or more partitions.
- Select a column to use as a Partition Key.
- Create filegroups and files.
- Map data to a filegroup.
- Set boundaries for each partition.

These simple wizards create the partitions in as few steps as possible. They create a new function and scheme and define left-boundary conditions. If you want to use an existing function or scheme, define right-boundary conditions, or select other advanced options, use the more complex Create Partitioned Table Wizard (Adv) or Create Partitioned Index Wizard (Adv).

To access the Create Partition wizards

1. Access the Create Partitioned Table or Create Partitioned Index wizard by selecting an unpartitioned table or index from the Browser panel in Manage Partitions tool.
2. On the right panel, select the Partitioned Table or Partitioned Index tab.
3. From the Actions section, click Create Partitioned Table Wizard or Create Partitioned Index Wizard.

Follow the instructions on each panel of the wizard.

To create a partitioned table or index from an unpartitioned table or index

1. On the Welcome panel, click Next.
   Tip If desired, select Do not show this step next time to skip the Welcome panel for future use of the wizard.
2. On the Select Partition Key and Number of Partitions panel:
   - Select a column to use to define the data on which to key the partition. The column may be unique and it must be a column in an existing clustered index.
if there is a clustered index. The data type of the key column determines the data type of the partition function that separates the data into partitions.

• Enter or use the arrows to select the number of partitions (2 is minimum). The number of partitions you select determines the recommended number of filegroups. Although you can use the same filegroup for several partitions, the best-practice is to use a separate filegroup for each partition.

3 On the Map Partitions panel, select or create a filegroup for each partition and specify boundaries. To start, the PRIMARY filegroup is selected for each partition.

4 Do one of the following:
   • Click the arrow next to a filegroup name and select a filegroup from the list.
   • Click the arrow next to a filegroup name and select <New filegroup> to open the Create New Filegroup dialog. See the “To create a new Filegroup and file for a partition” procedure for instructions.

5 On the Schedule Job and Notifications panel, schedule the job and specify persons to notify when job completes.

6 On the Preview Script panel, review the generated SQL script.

7 On the Estimate Space panel, review the required and available space for each operation.

8 On the Execute Script panel, click Next to run the script.

9 On the Completion panel, click Finish.

When the wizard completes successfully, the partitioned table or index displays in the Browser window and its icon changes to the Partitioned Table or Index icon.

To create a new Filegroup and file for a partition

1 On the Create New Filegroup dialog, enter a name for the filegroup.

2 Click Add to open the File Properties dialog.

3 Enter a File Name, Location (disk drive and folder location), Starting file size (Default is 1MB), specify a file growth factor, and select unrestricted or set a limit for file size.

4 Click OK to create the file and close the File Properties dialog.

5 Click OK to create the filegroup and close the Create New Filegroup dialog.

Repeat for each partition.
6 Click anywhere on the dialog after you enter the last boundary.

**Using the Switch Partition Wizard**

Switching a partition from one table to another eliminates the time-consuming process of running a delete operation and eliminates blocking access to the partition during the process. When you switch out a table partition to a non-partitioned table in the same filegroup, SQL Server accomplishes this task with a metadata change, which is extremely fast.

This operation is only successful under certain conditions. The production table and the target table must meet certain criteria for switching partitions regarding each object. See Criteria for Switching Partitions in the online help system for details.

**To access the Switch Partition wizard**

- Access the Switch Partition wizard by doing one of the following:
  - Select a partitioned or unpartitioned table from the Browser panel in Manage Partitions tool, then on the right panel, select the Partitioned Table tab and in the Actions section, click **Switch Partition Wizard**.
  - Right-click a partitioned or unpartitioned table on the Browser panel, then select **Partition | Switch Partition** from the pop-up menu.

  Follow the instructions on each panel of the Switch Partition wizard.

**To switch a partition to another table using the wizard**

1 On the Welcome panel, click **Next**.

   **Tip** If desired, select **Do not show this step next time** to skip the Welcome panel for future use of the wizard.

2 On the Select Partition panel, select the partition you want to switch out.

   **Note** This panel only opens when you select a partitioned table.

3 On the Specify Destination panel, select one of the following:

   - **Create destination table** - Select this option to create a new destination table. In the **Table Name** field, enter a name for the new table.
   - **Select an existing table** - Select this option and choose a table that contains the same fields, column names, and types of data, in the same order as the production table. In the **Table Name** field, select an existing table from the list. See the Criteria for Switching Partitions topic in the online help.

4 On the Preview Script panel, review the generated SQL script.
5 On the Execute Script panel, click Next to run the script.
6 On the Completion panel, click Finish.

To view the archive table

1 Navigate to the partitioned table node in the Browser panel in Manage Partitions tool.
2 Select the archive table you created.
3 Click the Partitioned Table tab in the Display area.
4 View the details for the archive table, its partition function and scheme, and a diagram of its partition boundaries.

Split a Partition

This process splits a partition into two or more partitions and helps you to assign each partition to a filegroup.

To split a partition

1 Select a partitioned table or index from the Browser panel in Manage Partitions tool.
2 Select the Partitioned Table or Partitioned Index tab.
3 Click Split to open the Partition Properties dialog.
4 Specify the number of partitions to split the selected partition into (at least two).
5 Click the arrow next to a filegroup to assign the partition to that filegroup and select a Filegroup from the list or select <New filegroup> to create a new filegroup and file.
6 Click the appropriate Boundary column and enter or use the arrows to adjust the boundaries for each new partition.
7 If the OK button is not active, click anywhere on the dialog to activate it.
8 Click OK to close the dialog.
   The diagram on the tab shows you what the partitions will look like.
9 Click Apply to split the partitions and assign them to the specified filegroups or click Cancel to exit without making any changes.
   Repeat steps 3 through 9 to split additional partitions.
Merge a Partition

This process merges two partitions into one. If you want to merge all the partitions into one and create an unpartitioned table or index from a partitioned table or index, use one of the Make Table or Index Unpartitioned wizards.

To merge two partitions into one

1. Select a partitioned table or index from the Browser panel in Manage Partitions tool.
2. Select the Partitioned Table or Partitioned Index tab.
3. In the Partitions section, select the two adjacent partitions you want to merge into one.
4. Click Merge.
5. Read the message that tells you which filegroup the data will reside in after the merge and click OK.
6. Click Apply to merge the selected partitions into one or click Cancel to exit without making any changes.

Repeat Steps 3-6 to merge another set of two partitions.

Note If you merge all the partitions into one, the object does not automatically become unpartitioned. Use either the Make Table Unpartitioned wizard or Make Index Unpartitioned wizard to make the object unpartitioned.

Sliding Window Scenario

The Sliding Window Scenario in Quest Capacity Manager for SQL Server provides a way to handle data aging effectively. With regulations requiring companies to keep old data online for immediate access, it is increasingly important to handle aged data and still maintain quick access to existing data and load new data fast. The sliding window scenario uses SQL Server 2005 table partitioning features to automatically add new partitions to a large table without moving data. It eliminates the need to manually archive aged data and to delete table partitions.

Because active data is queried much more often than aged data, the sliding window scenario rolls new data into the production table and switches aged partitions out. The main benefit is that queries can be performed on the new data while the aged data is
being archived. SQL Server 2005 supports the sliding window scenario with its Transact-SQL statements. Partition switching is a very fast metadata operation.

This scenario applies to large tables without partitions where periodic large loads occur (a typical example is a billing system). You can further enhance the scenario’s features by storing data in different filegroups or in filegroups on different disks.

The following diagram shows how the sliding window scenario works. When new data arrives in the production table, the oldest data is automatically switched out to an archive.

Use the Sliding Window Scenario wizard to help you partition a production table, set up an archive, set the necessary parameters to implement a sliding window scenario, and set the time frames for when to move data to the archive.

Refer to the Example of a Sliding Window Scenario in the online help to follow the process.

**Note**  Make sure the tables you select meet these criteria:

- Select an unpartitioned table for the production table and for the archive table. To use a partitioned table, launch the Make Table Unpartitioned wizard to make the table unpartitioned.
- Select a column with a `datetime` field you can use as the partition key. The selected column must also be included in the clustered index if there is one.
- If you choose an existing table for the archive, it must be an unpartitioned table located in the same database and with the same structure as the production table.
To create a sliding window scenario

1. On the Create or Select Archive Table panel, select one of the following options:
   - **Create an archive table** - select this option to create an archive table with the same structure as the production table and store it in the same database as the production table. In the **Table Name** field, enter a name for the archive table.
   - **Select an existing archive table** - select this option and choose a non-partitioned table that resides in the same database and contains the same fields, column names, and types of data, in the same order as the production table. In the **Table Name** field, select an existing table from the list.

2. On the Select Partition Key panel, select a **datetime** column to use as a key for partitioning the production table.

3. On the Specify Parameters panel, specify **Start date, Period, Unit** and **Number of periods** per sliding window.

   **Example:**

   If your requirements are:
   - Store data in the production table for the last 2 years only.
   - Copy data older than 2 years to the archive table every month.

   Then set parameters as follows:

<table>
<thead>
<tr>
<th>Period</th>
<th>1</th>
<th>Enter the amount of time each period represents.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Months</td>
<td>Select the unit for the period (Days, Weeks, Months).</td>
</tr>
<tr>
<td>Number of periods</td>
<td>24</td>
<td>Enter the number of periods of data to store in the production table. For two years, enter 24. The wizard creates n+1 partitions. For this example, it creates 25 partitions.</td>
</tr>
<tr>
<td>Sliding window size</td>
<td>24 Months</td>
<td>Displays the value calculated for the sliding window size based on the period and number of periods. In this example, the window size is 24 months.</td>
</tr>
</tbody>
</table>
On the Map Partitions panel, specify filegroups for the archive table partitions.

**Note** The scenario uses filegroups cyclically 2nd, 3rd, …, last one, 2nd, 3rd etc. The 1st filegroup is reserved for service purposes. The wizard creates one more filegroup than the number of periods.

Initially, the PRIMARY filegroup is selected for each partition. For each filegroup, do one of the following:

- Click a filegroup and select a filegroup name from the list.
- Click a filegroup and click `<New filegroup>` to open the Create New Filegroup dialog and create a new filegroup.

**Tip** The best practice is to select several different filegroups for the partitions. For greater performance efficiency, select filegroups on various disks.

On the Organize Archive panel, specify actions for the archive table. Choose one of the following:

- **Merge switched partition with old one.** Select this option to switch out each partition from the production table into the archive table and merge it with the first archive table partition.
  
  **Note** If you store the switched out partition in a filegroup other than the first archive table partition (most cases), data moves from one filegroup to another. When there are large amounts of data in the partitions, this operation generates a high load on the database server and increases requirements for free space in the destination filegroup (filegroup used for the first archive table partition).

- **Add a new partition.** Select this option to switch out each partition from the production table and into the archive table. When selected, data from the switched out partition does not move, but the number of partitions in the archive table increases.

On the Preview Script panel, review the generated SQL script.
7 On the Execute Script panel, click **Next** to run the script.

**Note** For large partitions, script execution may consume significant time.

8 On the Completion panel, click **Finish**. The Summary shows you the status of the job, the name of the archive table, and the parameters.

**Sliding Window Wizard Actions**

The wizard does the following:

- Partitions the production table into N+1 partitions, where N is the number of periods you specify on the Specify Parameters panel.
- Partitions the archive table into two partitions.
- Generates a job and schedules it to execute once every period.

The job does the following:

- Adds a new (right-most) partition to both production and archive tables. The size of the partition equals size of the Sliding Window.
- Switches the second production table partition into the newly added partition of the archive table.
- Merges the first and the second production table partitions.

**Note** If you selected the **Merge switched partition with old one** option, the wizard merges the archive table partitions and actually moves the data to the first archive table partition, which may take time.

When you create a Sliding Window Scenario, Quest Capacity Manager for SQL Server creates a `usp_questcapacitymanagersliding` procedure in the `msdb` database.
Manage SharePoint Capacity

Contents

Manage SharePoint Capacity Tool
SharePoint Registrations
SharePoint Group
Configuration Database
Content Database
Site
Manage SharePoint Capacity Tool

The Manage SharePoint Capacity tool helps you analyze current and future disk use for SharePoint applications and set up jobs to collect data and monitor disk capacity.

You can use the Manage Capacity tool to analyze current and future disk use, set up jobs to collect data, monitor disk capacity, and solve disk space management problems, or the Manage Jobs tool to control, monitor, and manage your SQL Server jobs.

The Manage SharePoint Capacity tool makes trending and forecasting easy and helps you plan for the use and storage of your SharePoint sites. Reports, charts, and graphs provide a view of resource consumption and storage requirements. You can easily see which sites are growing most rapidly, which documents are the largest or have many versions, or even which users consume most of space.

SharePoint Registrations

SharePoint registrations are major components of Manage SharePoint Capacity tool. SharePoint Registrations are at the top-level of the hierarchical tree in the Browser panel (left-panel of Quest Capacity Manager for SQL Server window) in the Manage SharePoint Capacity tool window. Before you can use Manage SharePoint Capacity, you need to make your SharePoint databases known to the system by registering the configuration databases that contain settings for the content databases and SharePoint sites you want to monitor. You should also set up a repository to store data collected by Quest Capacity Manager for SQL Server jobs.

You can organize registrations into groups similar to the way you organize files into folders. A group is a set of SharePoint Registrations that you can reference with a single name. Groups make handling a large number of registrations more manageable.

Quest Capacity Manager for SQL Server helps you perform the following tasks:

- Add a SharePoint registrations group
- Rename a SharePoint registrations group
- Delete a SharePoint registrations group
- Register SharePoint configuration databases
- Edit SharePoint registrations
- Delete SharePoint registrations
To manage a SharePoint registration

1 Right-click SharePoint Registrations in the Browser panel.
2 Select one of the server options:
   - New SharePoint Group
   - New SharePoint Config Database Registration

Note You can use the File menu to import SharePoint configuration database information from an XML file.

SharePoint Group

A group is a set of SharePoint configuration databases that you can reference with a single name. Groups make handling a large number of configuration databases more manageable. You can organize configuration databases into groups similar to the way you organize files into folders.

Use the Dashboard tab to view names, status and a description of all the SharePoint configuration databases in each group and view information about configuration databases that have a selected status.

To add a new group

1 Use one of these methods to access the SharePoint Group dialog:
   - On the Browser panel, right-click SharePoint Registrations and select New SharePoint Group.
   - On the Browser panel, right-click a registration group and select New SharePoint Group.

2 On the SharePoint Group dialog, enter the name of a new registration group in the Name field.
3 Click OK.
   The new group appears in the Browser panel under the SharePoint Registrations node or group node.
4 Do one of the following to populate the group with registrations:
   - Drag and drop registrations listed in the tree to the new group.
• Right-click the new group and select **New SharePoint Config Database Registration** to add a new registration to the group.

**Tip** You can also use the SharePoint Group dialog to rename a group.

### To delete a group

1. On the Browser panel, select a group.
2. Do one of the following:
   • From the right-click menu, select **Delete**.
   • Press **Delete**.
3. Click **Yes** to confirm that you want to delete the group.

Quest Capacity Manager for SQL Server deletes the group and all the registrations in the group.

### Configuration Database

A Microsoft SharePoint configuration database stores configuration and site mapping information for your SharePoint portal. It contains data on your server computer, virtual servers, and server farms. You can monitor configuration database capacity using Manage SharePoint tool. In the Browser (left-panel of the Quest Capacity Manager for SQL Server window), click a configuration database to display Detail Information in the right panel. Select a tab to view specific information about the selected configuration database.

**Note** Quest Capacity Manager for SQL Server cannot provide information about the configuration database unless it is known and registered. If you get a message that the configuration database does not exist or access is denied, make sure the configuration database is registered.

Use the Reports tab to view, print or refresh an Overview, SharePoint Capacity, or Documents Capacity report for configuration databases.

### To manage a configuration database

1. On the Browser panel, right-click a configuration database.
2. From the right-click menu, select one of the options:
   • **New SharePoint Config Database Registration**
• Edit SharePoint Config Database Registration
• Delete SharePoint Config Database Registration
• Use Custom Credentials for SharePoint Content Databases
• Collect Data
• Refresh

To register configuration databases

1 Do one of the following:
   • Register configuration databases manually by selecting SharePoint Registrations from the Browser panel and then choosing **New SharePoint Config Database Registration**.
   • Select **File | Import | Configuration** from the Quest Capacity Manager for SQL Server console to import a configuration that was previously exported from the console.

2 Enter information in the following fields of the Register SharePoint Configuration Database dialog:

<table>
<thead>
<tr>
<th>From already registered instance in Manage Capacity area</th>
<th>Select this option to register a SharePoint configuration database from an already registered SQL Server instance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Server</td>
<td>Select a SQL Server from the list of registered instances.</td>
</tr>
<tr>
<td>From new instance</td>
<td>Select this option to register a SharePoint configuration database on a SQL Server instance that is not registered in Quest Capacity Manager for SQL Server.</td>
</tr>
<tr>
<td>SQL Server</td>
<td>Enter name of a SQL Server or click the browse button to see a report describing the SQL Servers currently active on the network. The report lists the name of each server, its TCP/IP address, and a brief description.</td>
</tr>
<tr>
<td>Connect using</td>
<td>Specify the authentication type.</td>
</tr>
</tbody>
</table>
3 [Optional] Click Advanced to open additional entry fields:

- **Alias**: Enter another name for the SharePoint configuration database.
- **Description**: Enter a description or comment.

4 Click OK to register the new configuration database.

**Note** You can use the File menu to import configuration database information from an XML file.

**To search for configuration databases**

1 On the Browser panel, click SharePoint Registrations.
2 From the Welcome window, select Search for Configuration Databases.
3 On the Search for SharePoint Configuration Databases dialog, select SQL Server instances where to search for configuration databases.
4 Click Search.
5 Select the configuration database and click Register.
6 Click Close.

**To delete a configuration database registration**

1 On the Browser panel, select a configuration database.
2. From the right-click menu, select **Delete SharePoint Config Database Registration**.

3. Click **Yes** to confirm that you want to delete the configuration database registration and its data from the repository.

   Quest Capacity Manager for SQL Server deletes the configuration database registration, the database name and its sites and content databases from the Browser panel, and the configuration database's data from the repository.

### Content Database

A Microsoft SharePoint content database stores content of SharePoint sites. You can monitor content database capacity using Manage SharePoint tool. In the Browser (left-panel of the Quest Capacity Manager for SQL Server window), expand a configuration database node and click a content database to display Detail Information in the right panel. Select a tab to view specific information about the selected content database.

**Note**  
Quest Capacity Manager for SQL Server cannot provide information about the content database unless its configuration database is known and registered. If you get a message that the content database does not exist or access is denied, make sure the configuration database is registered and you use correct database connection settings (Use Custom Credentials for SharePoint Content Databases) for each content database.

Use the Reports tab to view, print, or refresh an Overview, Content Database Capacity, or Documents Capacity report for content databases.

**To manage a content database, do one of the following:**

- On the Browser panel, right-click a content database and choose **Refresh** to update data in charts.
- On the Browser panel, right-click a configuration database and choose **Use Custom Credentials for SharePoint Content Databases** to specify database connection settings for a content database.

If content databases have different locations, you may need specify custom access credentials.

**To register content databases**

1. Right-click a configuration database and choose **Use Custom Credentials for Content Databases**.
2 In the Register SharePoint Content Servers dialog, set credentials for a server:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Server</td>
<td>Displays a name of a SQL Server where the content databases is located.</td>
</tr>
<tr>
<td>Windows authentication</td>
<td>Select this option to use Windows authentication to connect to the server.</td>
</tr>
<tr>
<td>SQL Server authentication</td>
<td>Select this option to use SQL Server authentication to connect to the server.</td>
</tr>
<tr>
<td>Login name</td>
<td>Enter the login name to use for SQL Server authentication.</td>
</tr>
<tr>
<td>Password</td>
<td>Enter the password to use for SQL Server authentication.</td>
</tr>
</tbody>
</table>

3 Click **OK** to save custom credentials.

**Site**

Site is a group of related Web pages interconnected through hyperlinks that is hosted by an HTTP server on the World Wide Web or an intranet. SharePoint Web sites are organized into site collections (a set of web sites that have the same owner and share administration settings). Each site collection is a top-level Web site and can have a multiple subsites, and each subsite can have multiple subsites.

**Note**

Quest Capacity Manager for SQL Server cannot provide information about the site unless its configuration database is known and registered. If you get a message that the site does not exist or access is denied, make sure the configuration database is registered and you use correct database connection settings (Use Custom Credentials for SharePoint Content Databases) for the content database.

Use the reports tab to view, print, or refresh an Overview, SharePoint Capacity, or Documents Capacity report for sites.

**To manage a site**

1 On the Browser panel, right-click a site and choose **Refresh** to update data in charts.
Manage Jobs

Contents

Manage Jobs Tool
Create/Edit a Job
Define a Job
Delete a Job
Describe Job Steps
Schedule a Job
Define an Alert
Set End-of-Job Actions
View Job History
Manage Jobs Tool

The Manage Jobs tool displays information about Capacity Manager jobs as well as all other SQL Server jobs on your system. You can control, monitor, and manage either all SQL Server jobs or Capacity Manager’s jobs only. Use the Manage Capacity tool to analyze current and future disk use, set up jobs to collect data, monitor disk capacity, and solve disk space management problems and then use the Manage Jobs tool to manage your Capacity Manager jobs as well as other SQL Server jobs on your system.

The Manage Jobs tool helps you manage the load on your system and avoid having too many jobs running at the same time, on the same day, or in the same week, and improves the efficiency of your system. You can create, alter, or delete any job. It enables you to reschedule jobs quickly by dragging and dropping jobs to another time slot, a different day, week, or month.

You can display SQL Server jobs in two views: Calendar and List.

- The calendar view displays jobs according to their schedules and execution history.
- The List view displays a list of jobs for each selected instance.

Manage Jobs Calendar Tab

The Calendar tab displays information about the schedule of when your systems jobs run. The grid on the Calendar tab displays the jobs scheduled for the selected day.

To access this tab

1. From the Browser tree, select an instance.
2. Make sure the Manage Jobs window is active. If not, do one of the following:
   - Select the Manage Jobs tab.
   - From the menu bar, select Tools | Manage Jobs.
3. Select the Calendar tab.
4. Use the filter to view information about all the jobs on the server or only Capacity Manager jobs.
5. Click Refresh to make sure the information is up-to-date.
6. Use the Calendar or the Navigation tool to select the day whose schedule you want to view.
7. Right-click a row to change various options for the selected job.
8 From the menu, select one of these options:

From this tab, you can perform many tasks:

- Filter to display Capacity Manager or all jobs
- Refresh job information
- View details for a specific job
- Create a job
- Edit a job
- Delete a job
- Zoom in
- Zoom out
- Zoom to full day
- Go to Today
- Page up
- Page down

**Manage Jobs List Tab**

The List tab displays information about all the jobs for a selected server and lets you create, modify, or delete jobs.

*To access the List tab*

1. From the Browser tree, select an instance.
2. Make sure the Manage Jobs window is active. If not, do one of the following:
   - Select the Manage Jobs tab.
   - From the menu bar, select **Tools | Manage Job**.
3. Select the List tab.
The grid on the List tab displays the following information for each SQL Server job on your system:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Name</td>
<td>Displays the name of the job.</td>
</tr>
<tr>
<td>Description</td>
<td>Displays the owner's description or comments about the job.</td>
</tr>
<tr>
<td>Schedule</td>
<td>Displays the schedule and indicates if the job runs only once, runs on a regular basis, or starts automatically.</td>
</tr>
<tr>
<td>Enabled</td>
<td>Displays a check mark to indicate that the job is active. A blank indicates the job is inactive. Right-click the row and select Enable Job or Disable Job.</td>
</tr>
<tr>
<td>Owner</td>
<td>Displays the name or schema of the owner.</td>
</tr>
<tr>
<td>Created</td>
<td>Displays the date and time the job was first created.</td>
</tr>
<tr>
<td>Next Run Date</td>
<td>Displays the date the job is scheduled to run next.</td>
</tr>
<tr>
<td>Last Run Date</td>
<td>Displays the most recent date the job ran.</td>
</tr>
<tr>
<td>Last Modified</td>
<td>Displays the date and time the job options were last changed.</td>
</tr>
</tbody>
</table>

To use the features on the List tab

1. Use the filter to view information about all the jobs on the server or only Capacity Manager jobs.
2. Click **Refresh** to make sure the information is up-to-date.
3. Click a column heading to sort the information in the grid in ascending or descending order based on the selected column.
4. Right-click a row to change various options for the selected job.
5 From the right-click menu, select one of these options:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Job</td>
<td>Open the New Job dialog where you can create a new job.</td>
</tr>
<tr>
<td>Copy Job</td>
<td>Select and copy a job to another server.</td>
</tr>
<tr>
<td>Move Job</td>
<td>Select and move a job to another server.</td>
</tr>
<tr>
<td>Edit Job</td>
<td>Open the Job Properties dialog where you can edit job parameters.</td>
</tr>
<tr>
<td>Delete Job</td>
<td>Delete a selected job and confirm the deletion.</td>
</tr>
<tr>
<td>Enable Job</td>
<td>Activate a disabled job.</td>
</tr>
<tr>
<td>Disable Job</td>
<td>De-activate an enabled job.</td>
</tr>
<tr>
<td>Start Job</td>
<td>Run the selected job immediately.</td>
</tr>
<tr>
<td>Stop Job</td>
<td>Stop a currently-running job.</td>
</tr>
<tr>
<td>Expand All</td>
<td>Expand a collapsed list of jobs.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Click the plus (+) in front of a server name to expand the list of</td>
</tr>
<tr>
<td></td>
<td>jobs on the server.</td>
</tr>
<tr>
<td>Collapse All</td>
<td>Collapse an expanded list of jobs.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Click the minus (-) in front of a server name to collapse the list</td>
</tr>
<tr>
<td></td>
<td>of jobs on the server.</td>
</tr>
</tbody>
</table>

6 If desired, select the Calendar tab to schedule a job.
Create/Edit a Job

Two of the Manage Jobs dialogs help you create or edit a job.

- The New Job dialog helps you create a SQL Server job for a selected instance.
- The Job Properties dialog helps you edit an existing job.

These dialogs help you define a job, set a schedule, input SQL Server commands, define alerts, and specify actions to take and persons to notify when the job finishes.

Although you do not have to make entries on the dialogs for all the tasks, at a minimum, you need to name the job and input at least one step. If you do not input a second step, the last step action is set to Quit on success. If you do not input a schedule, the job runs once at the time that corresponds to where you right-clicked to open the New Job dialog. If the job fails at that time, it is noted in the Windows Application event log.

To create or edit a job

1. From the Manage Jobs Browser tree, select an instance. The selected instance name displays in the bar of the New Job or Job Properties dialog.
2. Do one of the following:
   - On the List tab, right-click anywhere on the grid and select New Job.
   - On the Calendar tab, right-click an empty time slot and select Create New Job.
   - On either tab, right-click on an existing job and select Edit Job.
3. Select the Define Job task to create or edit a job.
4. Select the Describe Job Steps task to enter SQL Server commands for each step of the job. You must enter at least one step to create a job.
5. Select the Set Schedules task to run the job more than once or at a specific time.
6. Select the Define Alerts task to specify conditions that trigger an alert.
7. Select the Set End-of-Job Actions task to specify the actions to perform when the job completes.
8. For an existing job, select the View Job History task to view the past history for the job.
9. When you finish making entries for the various tasks, click OK to apply the settings to the job. The new or edited job displays on the Calendar in the time slot when it runs next and on the List tab.
Define a Job

The Define Job task in the New Job or Job Properties dialog displays current information about a job and lets you enter new information or modify existing job information. At a minimum, this dialog must have an entry for **Job Name**.

All of the fields described in the table are not available for new jobs. The shaded rows indicate additional fields that are available to view or modify for existing jobs.

To define a job

1. From the New Job dialog or the Job Properties dialog, select the Define Job task.
2. View, modify, or enter values in the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job name</td>
<td>View, modify, or enter the name of a job.</td>
</tr>
<tr>
<td>Owner</td>
<td>From the list, select an owner.</td>
</tr>
<tr>
<td>Category</td>
<td>From the list, select a job category.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the job. If you leave this field blank, in the job list, the job displays with &quot;No description available.&quot;</td>
</tr>
<tr>
<td>Enable job</td>
<td>Select this option to activate the job. Clear this option to put the job on the calendar in an inactive state.</td>
</tr>
<tr>
<td>Source</td>
<td>View or modify the name of the SQL Server where the job runs.</td>
</tr>
<tr>
<td>Created</td>
<td>View the date and time the job was first created.</td>
</tr>
<tr>
<td>Last modified</td>
<td>View the date and time the job was last modified.</td>
</tr>
<tr>
<td>Last executed</td>
<td>View the date and time the job ran.</td>
</tr>
<tr>
<td>Status</td>
<td>Displays the progress of making the changes.</td>
</tr>
</tbody>
</table>
3 In the left-panel, use the Describe Job Steps task to make sure that at least one step is defined.

4 Select another task or click OK to record your changes to all the Job tasks and close the New Job or Job Properties dialog.

Delete a Job

*To delete a job*

1 On the Calendar or List tab, right-click a job.

2 From the menu, select **Delete Job**.

3 Confirm that you want to delete the job.

Capacity Manager deletes the job, its properties, and schedule.
Describe Job Steps

The Describe Job Steps task displays the current steps for a job and lets you enter new steps, insert additional steps, modify or delete existing steps. You must enter at least one step to create a valid job. If you do not input a second step, the last step action is set to Quit on success.

To describe job steps

1. On the Describe Job Steps dialog, view, modify, or enter values in the following fields:

   | Job Steps grid | This grid displays information about the existing job steps, if any. |
   | Rearrange steps | Select a step and use the arrows to move the step up or down in the list. |
   | Begin with step | Select the step where you want to start the job. Use this option to start a job beginning at a step other than the first step. |
   | Add | Click **Add** to open the New Job Step dialog where you can create a new job step. The new step appears last in the Job Steps grid. |
   | Add Before | Select a job step and click **Add Before** to open the New Job Step dialog where you can create a new step and insert it before the selected step. |
   | Edit | Select a job step and click **Edit** to open the Job Step Properties dialog where you can change the step properties. |
   | Delete | Select a step and click **Delete** to remove the step from the grid. |

2. Click **OK**. If you selected to begin with a step other than the first step of the job, you are warned "The following job step(s) cannot be reached with the current logic flow."
From the New Job Step or Job Step Properties dialog you can:

- Add/Edit Step. At a minimum, you need to name and create one step to have a valid job.

- Add/Edit Step (Advanced). The Advanced options help you specify actions to take when the step completes.

## Schedule a Job

The Set Schedules task displays the current schedule for a job and lets you enter a new schedule, modify or delete an existing schedule. If you do not input a schedule or there is now schedule for an existing job, the job runs once at the time that corresponds to where you right-clicked to open the Job dialog.

### To use the Schedules page

1. From the New Job dialog or the Job Properties dialog, select the Set Schedule task.
2. Use this task to do the following:

<table>
<thead>
<tr>
<th>Schedule list</th>
<th>In the grid, view the <strong>Schedule ID</strong>, <strong>Schedule Name</strong>, <strong>Enabled</strong> <em>(Yes or No)</em>, and a <strong>Description</strong> of each schedule for the selected job.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add</td>
<td>Click <strong>Add</strong> to open the New Job Schedule dialog where you can create a new job schedule.</td>
</tr>
<tr>
<td>Edit</td>
<td>Select a schedule and click <strong>Edit</strong> to open the Job Schedule Properties dialog and modify the job schedule.</td>
</tr>
<tr>
<td>Delete</td>
<td>Select a schedule and click <strong>Delete</strong> to remove the schedule. <em>(There is no confirmation dialog.)</em></td>
</tr>
</tbody>
</table>

3. Select another task or click **OK** to record your changes to all the Job tasks and close the New Job or Job Properties dialog.
Define an Alert

The Define Alerts task displays the current alerts for a job and lets you enter a new alert, modify or delete an existing alert.

To define an alert

1 From the New Job dialog or the Job Properties dialog, select the Define Alerts task.

2 Use this task to do the following:

<table>
<thead>
<tr>
<th>Alerts list</th>
<th>In the grid, view the Alert Name, Enabled (Yes or No), and the Alert Type for each alert for the selected job.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add</td>
<td>Click Add to open the New Alert dialog where you can create a new alert.</td>
</tr>
<tr>
<td>Edit</td>
<td>Select an alert and click Edit to open the Alert Properties dialog where you can modify the alert.</td>
</tr>
<tr>
<td>Delete</td>
<td>Select an alert and click Delete to remove the alert. (There is no confirmation dialog.)</td>
</tr>
</tbody>
</table>

From the New Alert or Alert Properties dialog you can:

• Define Response Actions such as launching a job under certain conditions, notifying operators by email, Net send, or pager, and adding operators.

• Set Alert Options such as adding the alert error text and additional comments to the notification message, and setting the time interval between responses.

• View Alert History for an existing alert.

3 Select another task or click OK to record your changes to all the Job tasks and close the New Job or Job Properties dialog.
Set End-of-Job Actions

The Set End-of-Job Actions task displays the current actions for a job and lets you select the means of notification, the event that triggers the notification, and addition actions to perform.

To set end-of-job actions

1. From the New Job dialog or the Job Properties dialog, select the **Set End-of-Job Actions** task.

2. View, modify, or enter values in the following fields:

   | Notifications | Select one or more notification options. For each:
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>• Select an operator to notify from the list or click <strong>Browse</strong> to locate an operator.</td>
</tr>
<tr>
<td>Net Send</td>
<td>• Select an event from the list (<strong>When the job fails</strong>, <strong>When the job succeeds</strong>, <strong>When the job completes</strong>).</td>
</tr>
<tr>
<td>Pager</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other actions</th>
<th>Select one or more actions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write to the Windows event log</td>
<td>Select this option to write a message to the event log and select an event to trigger writing the message. Clear this option to not write a message to the event log.</td>
</tr>
</tbody>
</table>

   | Delete Job | Select this option to delete the job so that it does not run again and select an event from the list. Clear this option to keep the job. |

3. Select another task or click OK to record your changes to all the Job tasks and close the New Job or Job Properties dialog.
View Job History

This task tracks the past occurrences of a job and is only available for existing jobs.

To view job history

1. From the Job Properties dialog, select the View Job History task.
2. View Job History information in the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job name</td>
<td>Displays the name of the selected job.</td>
</tr>
<tr>
<td>Show History</td>
<td>Click Show History to display details for the job.</td>
</tr>
<tr>
<td>Job details</td>
<td>This grid displays job history details.</td>
</tr>
<tr>
<td>Status</td>
<td>Click the plus (+) to expand and view the status of each job step.</td>
</tr>
<tr>
<td>Step Name</td>
<td>Initially, displays &quot;(Job outcome)&quot; and overview details for the job. When you expand the Status, it displays the name of each job step and specific details about each step.</td>
</tr>
<tr>
<td>Ran</td>
<td>Displays the most recent date when the job ran.</td>
</tr>
<tr>
<td>Result</td>
<td>Indicates whether the job Succeeded or Failed.</td>
</tr>
<tr>
<td>Notified</td>
<td>Indicates whether any notifications were made.</td>
</tr>
<tr>
<td>Duration</td>
<td>Indicates the number of hours, minutes, and seconds the job ran.</td>
</tr>
<tr>
<td>Persons notified</td>
<td>Lists the persons notified at end-of-job</td>
</tr>
<tr>
<td>Comments</td>
<td>Displays comments about the job and indicates whether any of the notifications failed.</td>
</tr>
</tbody>
</table>

3. Select another task or click OK to record your changes to all the Job tasks and close the Job Properties dialog.
Capacity Planner

Contents

Capacity Planner Tool
Consolidation Project Group
Consolidation Project
Capacity Planner Tool

The Capacity Planner tool helps you simulate consolidation of several databases and analyze future resource consumption and storage requirements on a target server.

Capacity Planner uses data collected by the Manage Capacity tool to analyze current and future disk use for the databases in the consolidation.

Consolidation Project Group

A group is a set of consolidation projects that you can reference with a single name. Groups make handling a large number of projects more manageable. You can organize projects into groups similar to the way you organize files into folders.

Click a group in the Browser pane (left-panel of the Quest Capacity Manager for SQL Server window) to display Detail Information in the right pane.

Use the Projects List tab to view names and descriptions for the consolidation projects in a selected group.

To manage a group

1. Right-click Consolidation Project Group in the Browser pane.
2. Select one of the group options:
   • New Consolidation Project
   • New Project Group

To add a new group

1. Use one of these methods to access the Project Group dialog:
   • On the Browser panel, right-click Consolidation Planner and select New Project Group.
   • On the Browser panel, right-click a project group and select New Group.
2. On the Project Group dialog, enter the name of a new project group in the Name field.
3. Click OK.
4. To populate the group with projects, right-click the new group and select New Consolidation Project to add new project to the group.
Consolidation Planner helps estimate the efforts needed for consolidation of several databases from different servers to one server. It provides a complete estimation of consolidation with detailed information on resource consumption and storage requirements.

To simulate a consolidation of several databases on a single SQL Server instance, you need to create a consolidation project.

A project is a set of consolidation options stored in the Quest Capacity Manager for SQL Server repository, which includes:

- Target server, where you plan to consolidate databases.
- Source servers and databases, which you plan to move to the target.

For each project, Quest Capacity Manager for SQL Server provides the following reports:

- Consolidation Summary
- Overview
- Disk Capacity
- Performance Capacity

You can:

- Create consolidation projects.
- Edit consolidation project options.
- Delete consolidation projects.
- Refresh consolidation project reports.

Consolidation Planner creates reports using online data or data collected in the repository. For each project, you can also view the Manage Capacity reports for the databases involved in the consolidation.

To access Manage Capacity reports

1. On the Browser panel, expand the consolidation project node.
2. Select a database or server node.
Quest Capacity Manager for SQL Server presents Manage Capacity reports for the database or server.

Note Manage Capacity reports for a SQL Server instance include information on databases involved in the consolidation only.

To create or edit a consolidation project

1. Do one of the following to access the Create Consolidation Project wizard:
   - Right-click **Consolidation Planner** on the Browser panel and choose **New Consolidation Project**.
   - From the Welcome window, select **Create New Project**.

   The Create Consolidation Project wizard starts. Follow the instructions on each panel of the wizard.

2. On the Welcome panel, click **Next**.
   
   Tip If desired, select **Do not show this step next time** to skip the Welcome panel for future use of the wizard.

3. On the Project Properties panel, enter a name of the project and description.

4. On the Select Target panel, select a SQL Server where to consolidate databases.
   Do one of the following:
   - Select **Select already registered SQL Server** to use information about a real SQL Server to estimate consolidation and select a SQL Server instance.

5. Choose **New virtual SQL Server** to set target server parameters manually:

<table>
<thead>
<tr>
<th>New virtual SQL Server</th>
<th>Enter a name of the target server.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum SQL Server memory size</td>
<td>Enter the maximum amount of RAM that the target server is allowed to use. (Default is 512 MB.)</td>
</tr>
<tr>
<td>CPU count</td>
<td>Enter a number of CPUs on the target server. (Default is 0.)</td>
</tr>
<tr>
<td>Drives</td>
<td>Click <strong>Add Drive</strong>, enter drive letter and free space available (in MB) to add a virtual hard drive. Select a drive and click <strong>Remove Drive</strong> to remove the selected drive.</td>
</tr>
</tbody>
</table>
6 On the Select Source panel, select one or more databases to consolidate.  
   **Tip** Click Register New Instance to access the register a SQL Server instance.

7 Click **Finish**.

*To delete a consolidation project*

1 On the Browser panel, select a project.
2 From the right-click menu, select **Delete**.

---

**Caution** Quest Capacity Manager for SQL Server displays no prompt for this action.
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