Acronis® Recovery
for MS SQL Server

User's Guide

Table of Contents

Chapter 1. Introducing Acronis Recovery for MS SQL Server

This chapter provides general information about Acronis Recovery for MS SQL Server, its features and advantages. You will learn about supported databases, operating systems and platforms.

1.1 What is Acronis Recovery for MS SQL Server

Acronis Recovery for MS SQL Server offers a fast and reliable disaster recovery solution to protect your Microsoft SQL Server database. Acronis Recovery for MS SQL Server provides proven database backup technology that will drastically reduce disaster recovery time so you can be running again in minutes instead of hours.

One-step Recovery and Automated Recovery to Point-of-Failure reduce downtime and assist your organization in improving your Recovery Time Objective (RTO). Rolling Snapshot enables near-instantaneous recovery in cases of human error or logical data corruption.

Acronis Recovery for MS SQL Server is an excellent complement to the award-winning Acronis True Image suite of disaster recovery and system migration products that use patented disk-imaging technology. Together they deliver comprehensive server system backup and restore plus full Microsoft SQL Server database protection — a winning disaster recovery plan combination.

Smaller, more manageable archives

Award-winning Acronis technology provides superior image file optimization. Customizable compression rates reduce the amount of data to store and transfer, leading to direct cost savings in storage and labor.

Faster Disaster Recovery

One-step Recovery and Automated Recovery to the Point-of-Failure make recovery faster and help organizations meet superior Recovery Time Objective (RTO). Rolling Snapshot can recover immediately in case of human error or logical data corruption.

Encryption for Security

Protect companies' most valuable data with industry-standard encryption.

Centralized Management

The Acronis Recovery for MS SQL Server Management Console automatically detects all database servers on the network. The servers are displayed clearly with status information, making it easy to manage enterprise-wide installations.

Easy Administration

Intuitive wizard-driven GUI allows even non-DBAs to confidently configure and implement professional backup strategies. Acronis Recovery for MS SQL Server even lets you import an existing Microsoft SQL Server Maintenance Plan in just a few clicks.

1.2 Why Acronis Recovery for MS SQL Server

Comprehensive recovery requires more than just data backup. Your Microsoft SQL Server database contains tables, logs, and other components that structure the data. Using Acronis Recovery for MS SQL Server, a cohesive and intuitive backup solution, is critical to ensure a secure live database backup that can be quickly recovered.

Recovery is now made easy with automated system restore to point-of-failure. No need to walk through menus to get your system back online. This one-step process will return your database to the last known good state just before failure. Erroneous transactions will no longer cost you minutes or hours in recovery.

This powerful product includes an intuitive wizard-driven GUI that guides you through the scheduling process and reduces the possibility for errors. The Acronis Recovery for MS SQL Server Assistant creates a Disaster Recovery Plan for your environment, delivering step-by-step instructions for recovery. Anyone, whether an experienced DBA or not, can schedule backup jobs and restore a system rapidly. Acronis even provides FTP capability for storing your backup on any FTP server, worldwide.

1.3 Features

With Acronis Recovery for MS SQL Server you get the following features:

Tuning Backup Strategy with Acronis Recovery for MS SQL Server Assistant

Acronis Recovery for MS SQL Server Assistant provides an intuitive GUI for easy creation and implementation of a backup strategy, even without DBA experience.

Recovery to a Selected Point-in-Time

Transaction Logs Backup combined with intuitive simple GUI allows databases to be restored to a selected point-in-time, for example, just before an erroneous transaction.

Automated recovery to point-of-failure

Automated recovery to point-of-failure allows easy one-step recovery to a point just before failure or disaster with no loss of data.

Disaster Recovery Plan

Disaster Recovery Plan automatically creates and e-mails Disaster Recovery Plans with step-by-step instructions on recovering databases. The guided process makes it possible for staff to restore databases quickly, even without DBA skills.

Importing a preexisting Microsoft SQL Server Maintenance Plan

Configure your backup strategy in seconds by importing a preexisting Microsoft SQL Server Maintenance Plan.

Rolling snapshot creation

Automatically created snapshots allow the database to be recovered in seconds - in cases of data corruption or human error - by simply discarding changes (for Microsoft SQL Server 2005 Enterprise Edition only).

Encryption

Protect backups with strong industry-standard encryption technology. AES (Advanced Encryption Standard) is available with three key lengths – 128, 192 and 256 bits to balance performance and protection as desired.

Compression

Create backups up to 10 times smaller than the original uncompressed format. Three compression levels let you optimize for faster performance, smaller size, or a balance of both.

Bandwidth Throttling

Control bandwidth usage to keep the backup process transparent to network users.

Notifications

Configure notification via e-mail and SNMP.

Automated recovery staging

Every restore scenario can be executed in one step. There is no need to manually restore from different archives keeping in mind the database state.

Hot Backup

Backup can be performed while the database is online and serving clients allowing 24/7 availability.

Restore to Another Microsoft SQL Server Version

Allows migration to another Microsoft SQL Server version by simply restoring the database to a newer Microsoft SQL Server Installation.

Scheduling complete backup strategy

Schedule the complete backup strategy, including Full, Differential and backup of Transaction Logs in one action.

Software Development Kit (shipped separately)

Acronis Recovery for MS SQL Server is shipped with SDK allowing customers to tailor backups and restores in line with their processes and regulations.

1.4 Key Features

Storage Locations:

- Local HDD
- Acronis Backup Server
- Centralized storage repository
- Network shares
- SAN, NAS
- FTP

- Tapes, Autoloaders, Tape Libraries

Backup Modes:

- Full
- Differential
- Transaction Logs

Backup Features:

- Tune backup strategy with Acronis Recovery for MS SQL Server Assistant
- Backup several databases at once
- Backup files/filegroups
- Rolling snapshots on Microsoft SQL Server 2005 Enterprise
- Protect backups with industry-standard encryption
- Backup system databases
- Verify backup
- Keep many versions of archives
- Online backup

Restore Features

- Recovery from backup history
- Recovery to point-in-time
- Automated Recovery to point-of-failure
- One-step recovery
- Automated recovery staging

Scheduling Features

- Scheduled backup and restore jobs
- Intuitive easy-to-use GUI – does not require DBA skills
- Advanced backup strategy support
- Import existing Microsoft SQL Server maintenance plans

Enterprise Features

- Centralized management
- Notifications
- Reporting
- SDK
- Bandwidth throttling
- Disaster Recovery Plan
- Remote agent installation

1.5 Supported Microsoft SQL Server versions

- Microsoft SQL Server 7.0 (SP4+)
- Microsoft SQL Server 2000 (SP3a+, both 32-bit and 64-bit versions)
- Microsoft SQL Server 2000 Desktop Engine Release A
- Microsoft SQL Server 2005 (both 32-bit and 64-bit versions)
- Microsoft SQL Server 2005 Express
- Microsoft SQL Server 2008
- Microsoft SQL Server 2008 Express
- Microsoft SQL Server 2008 R2

Please note that Acronis Recovery for MS SQL Server is not a cluster-aware product.

1.6 Supported Platforms

- x86
- x64

1.7 Supported Operating Systems

- Windows 2000 (SP4+)
- Windows XP (SP1+)
- Windows Vista
- Windows Server 2003 (both 32-bit and 64-bit versions)
- Windows 7
- Windows Server 2008
- Windows Server 2008 R2

1.8 License Policy

Acronis Recovery for MS SQL Server licensing is based on the number of servers on which Acronis Recovery for MS SQL Server Agent is to be installed. You will need a unique serial number to install every single Acronis Recovery for MS SQL Server Agent.

Acronis Recovery for MS SQL Server is provided with three types of licenses:

Permanent – allows you to use the fully functional product without any time limitations (permanent serial number is required)

Trial - allows you to use the fully functional product for 14 days (trial serial number is required)

Registered – used for customers, registered on the Acronis web site. It also allows working with the fully functional product for 14 days (no serial number is required)

Obtaining Permanent Serial Numbers

Obtaining a permanent serial number depends on the way you purchase Acronis Recovery for MS SQL Server:

- you will find it in a CD box if you buy a licensed Acronis Recovery for MS SQL Server CD

- you can receive it after registering on the Acronis web site in case you download the product (also during installation of the product)

Trial Serial Numbers

Acronis allows you to have a trial serial number to be able to use Acronis Recovery for MS SQL Server for 14 days without buying the product. You may obtain the trial serial number in one of the following ways:

- in a CD box

- contacting Acronis sales representatives. See

  http://www.acronis.com/enterprise/download/sn/ADBSQL/

If you downloaded a trial version of Acronis Recovery for MS SQL Server from our web site and want to buy a permanent license to continue using the product, please contact our sales representatives. In this case you will not have to download the product again, but only enter a registered serial number during the installation.

> Note, the Management Console should be connected to Acronis Recovery for MS SQL Server, otherwise the Registration menu item will not be presented in the Help menu.

The number of Acronis Recovery for MS SQL Server Management Console installations is not limited.

1.9 Technical Support

As part of a purchased annual Support charge you are entitled to Technical Support as follows: to the extent that electronic services are available, you may electronically access at no additional charge, Support services for the Software, which Acronis shall endeavor to make available twenty four (24) hours a day, seven (7) days per week. Such electronic services may include, but are not limited to: user forums; software-specific information; hints and tips; bug fix retrieval via the internet; software maintenance and demonstration code retrieval via a WAN-accessible FTP server; and access to a problem resolution database via Acronis customer support system.

Support shall consist of supplying telephone or other electronic support to you in order to help you locate and, on its own, correct problems with the Software and supplying patches, updates and other changes that Acronis, at its sole discretion, makes or adds to the Software and which Acronis makes generally available, without additional charge, to other licensees of the Software that are enrolled in Support. Upon mutual agreement by both parties, Acronis shall: (i) supply code corrections to you to correct Software malfunctions in order to bring such Software into substantial conformity with the published operating specifications for the most current version of the Software unless your unauthorized modifications prohibit or hamper such corrections or cause the malfunction; or (ii) supply code corrections to correct insubstantial problems at the next general release of the Software.

More information about contacting Acronis Technical Support is available at the following link: http://www.acronis.com/enterprise/support/.

Chapter 2. Understanding Acronis Recovery for MS SQL Server

This chapter provides common information about working with Acronis Recovery for MS SQL Server.

2.1 Components

Acronis Recovery for MS SQL Server includes the following components:

- Management Tools including Acronis Recovery for MS SQL Server Management Console;

- Acronis Recovery for MS SQL Server Agent;

- SDK (shipped separately).

2.1.1 Acronis Recovery for MS SQL Server Management Console

Acronis Recovery for MS SQL Server Management Console is a tool for managing data backup/restore on the local network from a single location. Using it you can install agents remotely, schedule tasks, recover data remotely, set backup/restore options on remote database servers, and import a preexisting maintenance plan.

2.1.2 Acronis Recovery for MS SQL Server Agent

The Acronis Recovery for MS SQL Server Agent is installed on the computers on which you want to backup/restore a Microsoft SQL Server database.

2.2 Components Integration

Acronis Recovery for MS SQL Server Management Console is installed on the computer from which you plan to manage operation processes on remote database servers.

After issuing a backup or restore command from the Management Console, Acronis Recovery for MS SQL Server sends a request to the Acronis Recovery for MS SQL Server Agent to retrieve the required instance or database from Microsoft SQL Server and sends it to Acronis Recovery for MS SQL Server, which backs up the selected data.

Below are diagrams describing interaction between Management Console, Agent and SDK.
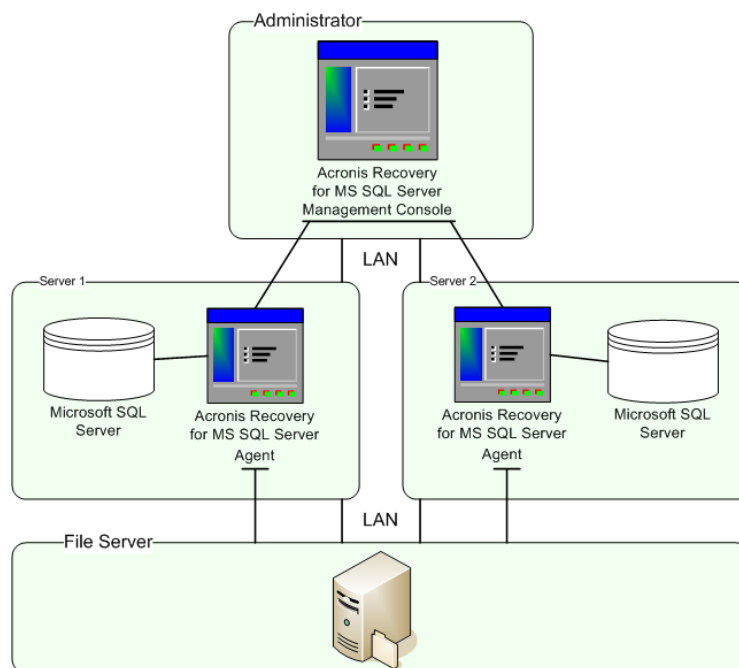
Figure 1. Integration between Acronis Recovery for MS SQL Server and Acronis Recovery for MS SQL Server Agents
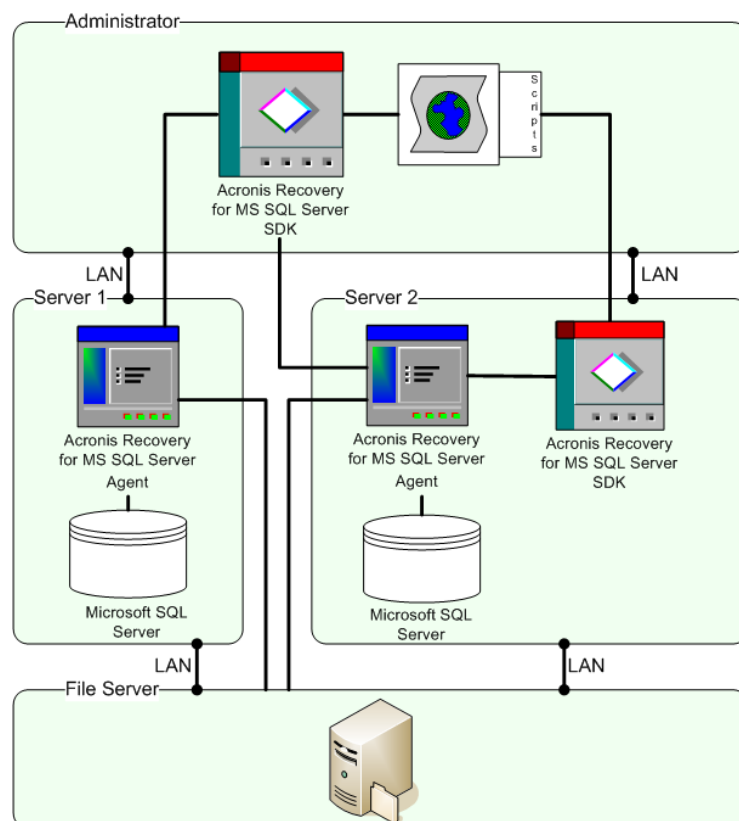
Figure 2. Integration between Acronis Recovery for MS SQL Server SDK and Acronis Recovery for MS SQL Server Agents

Chapter 3. Installation of Acronis Recovery for MS SQL Server

From this chapter you will learn how to install Acronis Recovery for MS SQL Server components both locally and remotely.

3.1 Minimum System Requirements

Acronis Recovery for MS SQL Server requires the following hardware:

- Pentium processor or higher
- 512 MB RAM
- Mouse (recommended)

3.2 Security Policy

3.2.1   Credentials

Acronis Recovery for MS SQL Server obtains access to networked computers using two types of credentials.

Credentials with Guest Rights – used for access to configuration and status data on each computer. The credentials you provide during Acronis Recovery for MS SQL Server installation will be applied to all networked computers. This is convenient for domain administrators, who can create a domain user account with guest rights and remote access right to every computer. In a workgroup, it would also make sense to create identical accounts with guest rights on each computer accessed by Acronis Recovery for MS SQL Server.

If you do not wish to create a uniform account, provide guest credentials for each computer after the installation and initial network discovery via **Manage Computer -> Set Credentials**.

You can combine both methods, for example, set a uniform account for domain members and set individual accounts for members of a workgroup.

Administrator Credentials – used for performing migration, deployment or other tasks which require such rights. These are entered during creation of tasks.

Naturally, you are free to use administrator credentials for both purposes. This will work, but make sure it conforms to the security policy set in your network.

3.2.2   Firewall Settings

Acronis Recovery for MS SQL Server uses the following ports for remote operation:

- server (Acronis Recovery for MS SQL Server Agents) UDP port: 9876

- server (Acronis Recovery for MS SQL Server Agents) TCP port: 9876, if busy choose a port at random

- client (Acronis Recovery for MS SQL Server) UDP port: 9877, if busy choose a port at random

You might have to set the appropriate firewall access options. Options for the Windows Firewall, included in Windows XP Service Pack 2, Windows 2003 Server and later Windows versions, are set automatically during installation of Acronis Recovery for MS SQL Server components. However, make sure that the option **File and Printer Sharing in the Control panel -> Windows Firewall -> Exceptions** is enabled on the remote computer before the remote operation starts.

3.3 General Rules of Installation

Acronis Recovery for MS SQL Server components and their features can be installed in multiple configurations, in terms of distributing the components and features among the networked computers.

3.3.1 Installing Acronis Recovery for MS SQL Server Components

There are two ways to install Acronis Recovery for MS SQL Server components – local and remote.

To install Acronis Recovery for MS SQL Server Management Console and Acronis Recovery for MS SQL Server Agent locally:

- run the Acronis Recovery for MS SQL Server setup file;

- in the Install Menu, select the program to install: Acronis Recovery for MS SQL Server Management Tools or Acronis Recovery for MS SQL Server Agent;

- follow the install wizard instructions on the screen.

Figure 3. Install menu

It is recommended that you install Acronis Recovery for MS SQL Server Management Console first. This will allow you to install Acronis Recovery for MS SQL Server Agent remotely from

the Management Console to any networked computer (for information about the remote installation see *Installing Acronis Recovery for MS SQL Server Agent Remotely* (p. 16))

	It is strongly recommended to manually stop CDP process before starting the installation of the product to be able to update all required components. Otherwise you may need to reboot the server after installation completion.

In addition, Acronis Recovery for MS SQL Server supports the Microsoft Installer utility (msiexec.exe) and its commands, so that you can install Acronis Recovery for MS SQL Server components from a command line. MSI installation command and options are listed in *Appendix B.* (p. 90).

3.3.2 Installing Acronis Recovery for MS SQL Server Agent Remotely

To install Acronis Recovery for MS SQL Server Agent remotely on a database server, you need Acronis Recovery for MS SQL Server Management Console installed on the local computer. The remote system must meet the requirements described in 3.1 "Minimum System Requirements".

Run Acronis Recovery for MS SQL Server and click **Install Acronis Recovery for MS SQL Server Agent** in the **Pick a Tool** pane.

1. Specify the location of installation files of the Acronis Component you want to install.

   - Select from the registered components (by default)

   - Search removable media for the required installation files

   - Search for the installer in the following location
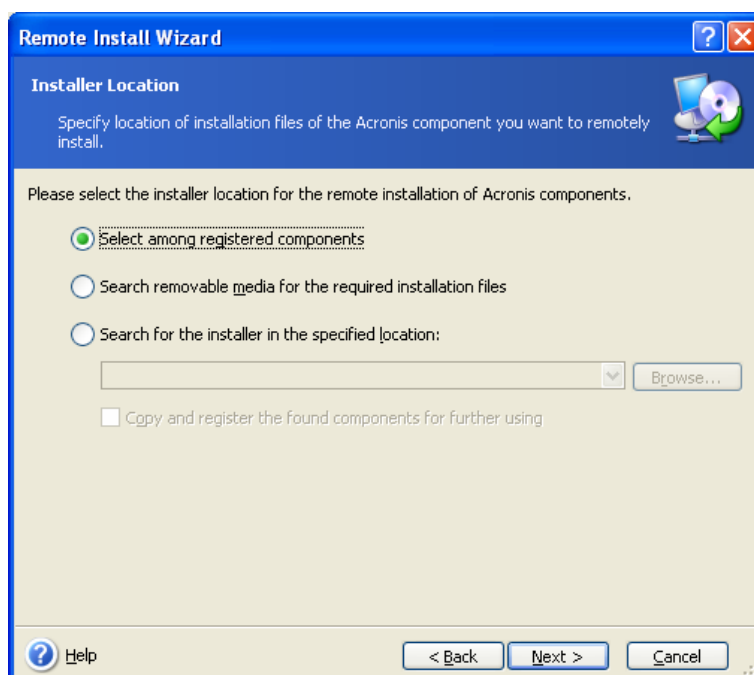
Figure 4. Installer location window

Click **Next** to continue.

2. Select the program you want to install on the remote computer from the list and click **Next**.
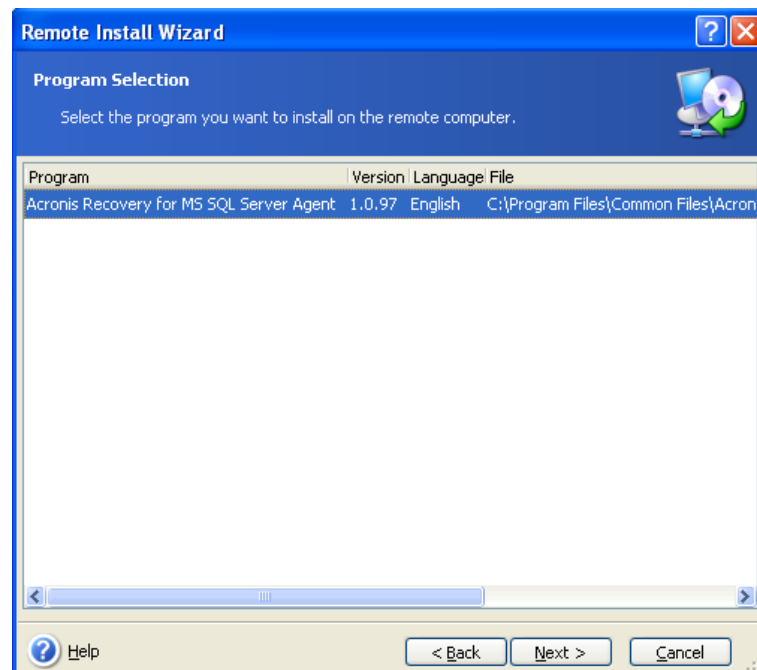
Figure 5. Program selection window

3. Enter a serial number for the selected product. For information about obtaining a serial number, see *License Policy* (p. 6). The **Next** button will not be active until you enter a serial number.
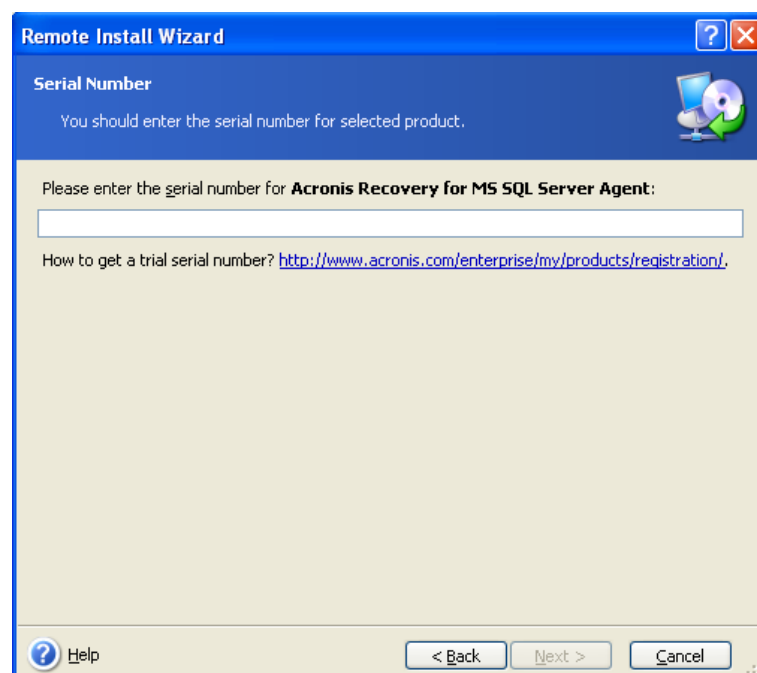
Figure 6. Entering serial number

4. Select the computer in the **Computer** field: enter a computer name manually or click **Browse…** and select the required computer from the tree. Enter a **User name** and **password** into the corresponding fields to access the selected computer. By checking the **Save password** you can save the password for future connections.
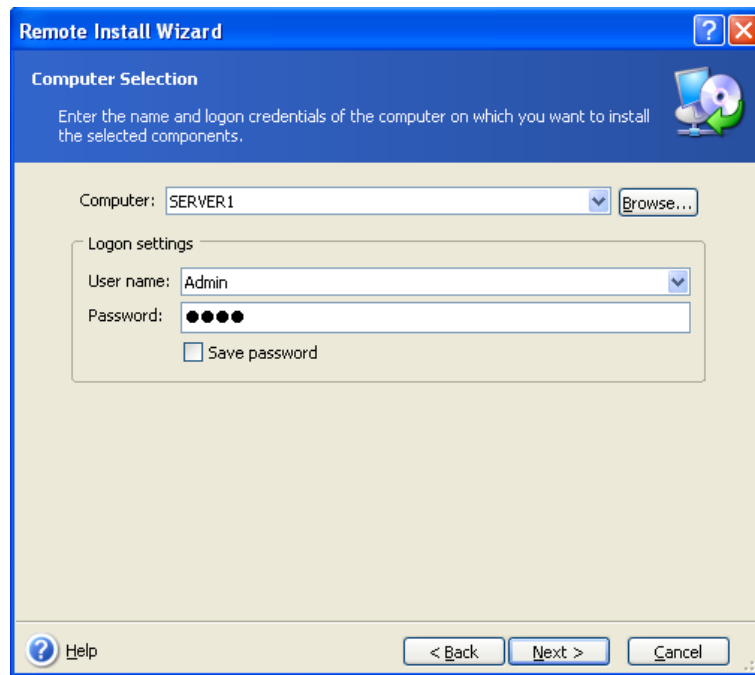
Figure 7. Computer selection window

5. The summary page displays all operations, which will be performed. Click **Proceed** to install Acronis Recovery for MS SQL Server Agent on the remote computer.
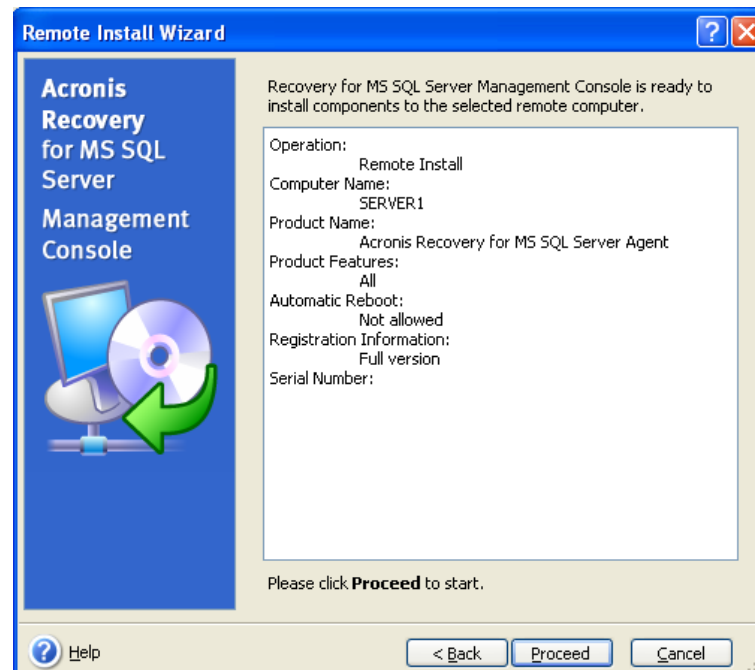
Figure 8. Summary page

By connecting to a remote computer with Acronis Recovery for MS SQL Server Agent installed, you can set up backup and recovery tasks, browse logs, import existing maintenance plans for Microsoft SQL Server databases.

3.3.3 Extracting Acronis Recovery for MS SQL Server Components

For installing Acronis Recovery for MS SQL Server from the command line, you will need to extract the *.msi file prior to starting the installation process. Here are the steps for extracting the file:

- run the Acronis Recovery for MS SQL Server setup file;

- in the Install Menu, right-click on the component name and select Extract;

- select a location for the setup file and click Save.
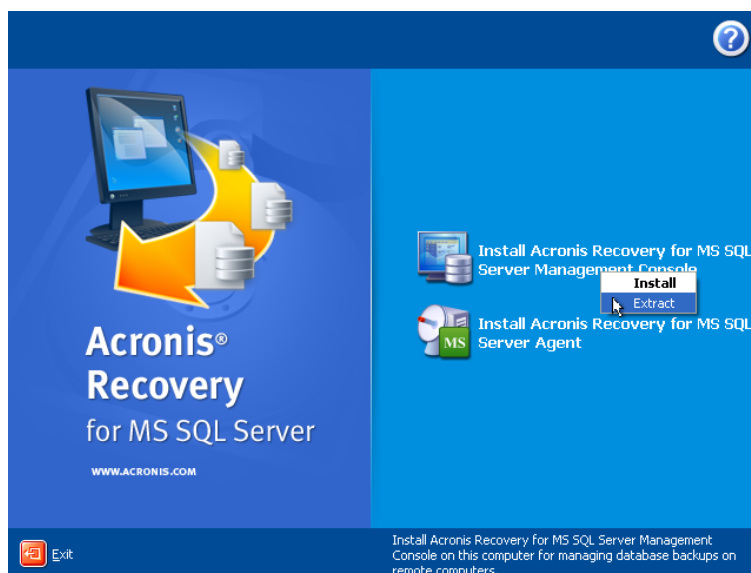
Figure 9. Install menu

3.3.4 Removing Acronis Recovery for MS SQL Server Components

You can remove any Acronis Recovery for MS SQL Server component separately by selecting **Control panel -> Add or Remove Programs -> <component name> -> Remove.**

Component names are: Acronis Recovery for MS SQL Server and Acronis Recovery for MS SQL Server Agent.

Follow instructions on the screen. You may need to reboot your computer to complete the uninstallation.

Chapter 4. Getting started with Acronis Recovery for MS SQL Server

This chapter will help you to start working with Acronis Recovery for MS SQL Server, and will guide you through connecting to a remote server, and remote installation of Acronis Recovery for MS SQL Server Agent.

4.1 Running Acronis Recovery for MS SQL Server Management Console

To run Acronis Recovery for MS SQL Server Management Console, select **Start -> Programs -> Acronis Recovery for MS SQL Server Management Console -> Acronis Recovery for MS SQL Server Management Console.**

4.2 Acronis Recovery for MS SQL Server Workspace

Acronis Recovery for MS SQL Server workspace includes the Acronis Recovery for MS SQL Server Management Console window - the primary tool for managing data backup/restore on local and remote computers where Acronis Recovery for MS SQL Server Agent is installed.

The workspace consists of the main area with operation icons, as well as the menu, the toolbar, and the common tasks bar. On the left there is a sidebar, featuring the **Computers** or **Help** panels.

> Note, the content of the main window depends on whether Acronis Recovery for MS SQL Server Management Console is disconnected or connected to a remote server.

4.2.1 Main Area

The main area of Acronis Recovery for MS SQL Server workspace contains **Task** and **Tools** groups.

Before you connect to a database server where Acronis Recovery for MS SQL Server Agent is installed, main program window will contain operation icons that allow you to navigate and manage computers.

The **Pick a Task** group contains one operation:

Connect to a Remote Computer – connect to a remote server where Acronis Recovery for MS SQL Server Agent is already installed
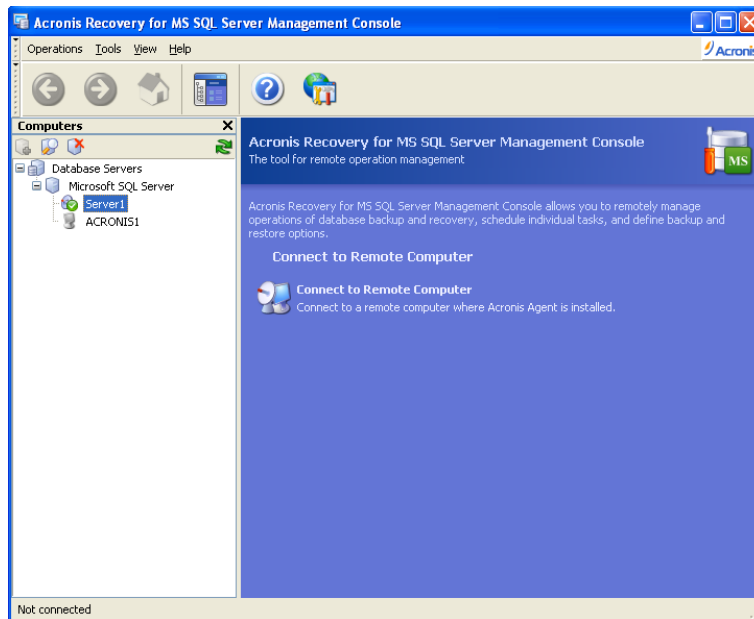
Figure 10. Main area

If you select a server in the **Computers** pane, on which Acronis Recovery for MS SQL Server Agent is not installed, Acronis Recovery for MS SQL Server workspace will contain two operation icons in the Pick a Tool group:

Add Servers – add a database server to the group

Install Acronis Agents – install Acronis Agents on remote computers
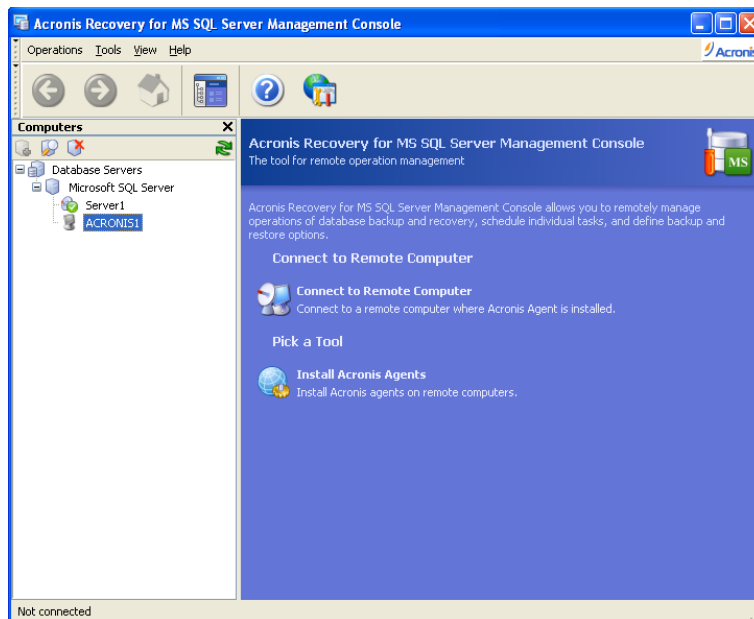
Figure 11. Install Acronis Agents

As soon as you are connected to a database server where Acronis Recovery for MS SQL Server Agent is installed, your workspace shows operations you can execute on this server, such as backup or restore, managing tasks, etc.

In this case the main area contains operation icons divided into two groups.

The **Pick a Task** group contains the following operations:

Backup – create a database backup archive

Restore – restore databases from a previously created archive

Backup Location Clean-up - clean database backup locations

Disaster Recovery Plan – generate step-by-step instructions on how to restore your databases in case of any kind of failure

The **Pick a Tool** group contains the following items:

Manage Tasks – manage tasks scheduled on a computer

Logs – open the Log Viewer window

Import Maintenance Plan – set backup options by importing a preexisting backup strategy
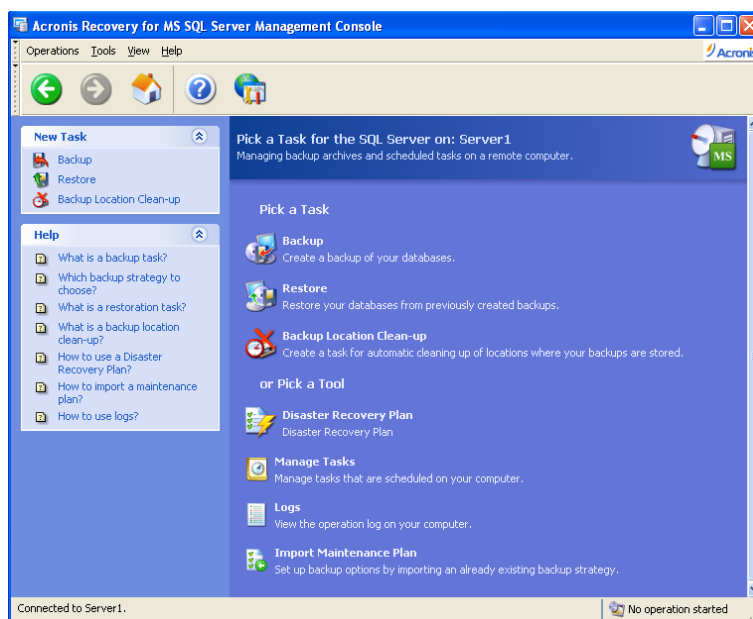
Figure 12. Tasks window

4.2.2   Computers Pane

The Computers pane is located on the left side of the main program window and contains computers (with their databases servers displayed), discovered by the system or added manually.

Acronis Recovery for MS SQL Server Management Console allows you to connect to a remote computer where Acronis Recovery for MS SQL Server Agent is already installed, or to install Acronis Recovery for MS SQL Server Agent remotely.

At the top of the Computers pane there is a toolbar with the following buttons:

- **Add server** - opens the Add Server window, where you can specify a server to be added to the tree

- **Discover servers** - automatically finds servers on the network and adds them to the tree

- **Delete server** - removes the selected server from the tree

4.2.3   Program Menu

The program menu bar features the **Tasks, Tools, View** and **Help** items.

The **Operations** menu contains two available operations:

- **Backup** - create a database backup archive
- **Restore** - restore databases from a previously created archive

Backup Location Clean-up - clean database backup locations

Disaster Recovery Plan – generate step-by-step instructions on how to restore your databases in case of any kind of failure

The **Tools** menu contains three available operations:

Manage Tasks – manage tasks scheduled on a computer

Logs – open the Log Viewer window

Import Maintenance Plan – set backup options by importing a preexisting backup strategy

Options – open a window for editing default backup/restore options, setting text appearance (fonts), configuring notifications etc

The **View** menu contains items for managing the look of the program window:

Status Bar – enables/disables the status bar

4.2.4   Help Menu

The **Help** menu is used to invoke help and obtain information about Acronis Recovery for MS SQL Server.

To view the Help panel, disable the Computers Tree option in the View menu.

4.2.5   Status Bar

At the bottom of the main window, there is a status bar divided into two parts. The left side briefly describes the selected operation; the right side indicates operation progress and results. If you double-click on the operation results, you will see the logs window.

4.3 Navigation

At the top on the **Computers** pane there are four buttons; clicking them allows you to add new servers to the tree manually, to start the discovering process, to delete a server from a tree if needed, or to refresh the Computers Tree.

Computers with Acronis Recovery for MS SQL Server Agent already installed are marked with a green icon.

Select the required server from a tree to perform the required operation (connecting, installing Acronis Recovery for MS SQL Server Agent remotely).

To hide the **Computers** pane and view Help topics, click on the **Show** or **Hide** button from the menu.
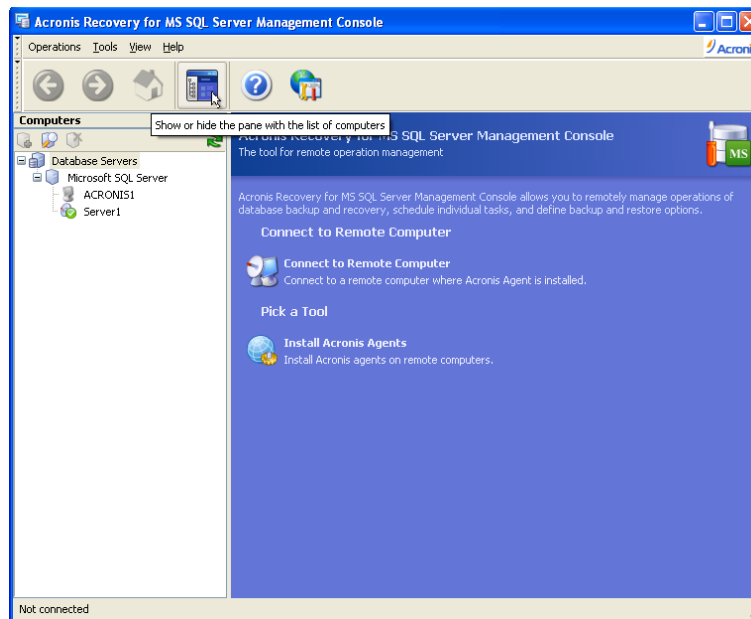
Figure 13. The Computers pane

4.4 Management

Acronis Recovery for MS SQL Server Management Console allows installation Acronis Recovery for MS SQL Server components on remote computers. To perform any of these operations you will need administrator rights on the target machine.

To connect to the server click **Connect to a Remote Server** in the **Pick a Task** pane (see *Connecting to a Remote Database Server (p. 26)*). In case Acronis Recovery for MS SQL Server Agent is not installed on a server, click **Install Acronis Agents** in the **Pick a Tool** pane (see *Installation of Acronis Recovery for MS SQL Server (p. 14)*).

To add a new server to the tree pane, click **Add Servers** in the **Pick a Tool** pane (see *Adding Servers (p. 25)*).

4.5 Discovering Servers

The purpose of discovering servers is to find servers on the network automatically and add them to the list in the Computers pane. The first time the program is executed, the list in the Computers pane list is empty and you will be prompted to discover servers. In order to be able to create backup and recovery operations on servers, you should launch the search or add servers to the list manually.

To discover servers click on the **Discover Computers** icon from the Computers pane on the left. You will be asked if you want to search for database servers on the network. Click **YES** to do it immediately, or **NO** to do it later. Discovery will update the current status of all computers already included in the list.

If, for any reason, a server cannot be found with this tool, you can add it manually to the tree (see *Adding Servers (p. 25)*).
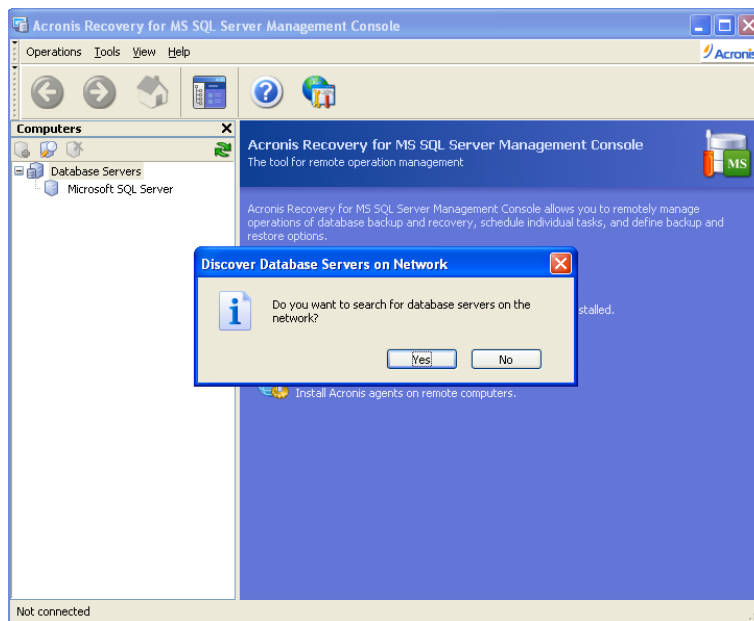
Figure 14. Discovering servers

4.6 Adding Servers

If, for any reason, a server cannot be found with the Discover Computers tool, you can add it to the tree manually.

You can apply any discovery operation later as required. The operation will add newly connected servers to the list in the Computers pane. At the same time, discovery will update the current status of all computers already included in the list.

You can start an **Add Computer** dialog to add servers to the tree of the Computers pane in several ways:

- Click on the **Add Servers** icon in the main area
- Click on the **Add Servers** button in the Computers pane toolbar

1. Enter the server name or IP address manually in a **Server** field or choose it from the drop-down list. You can also click **Browse** to view all available computers and select one you want to add.
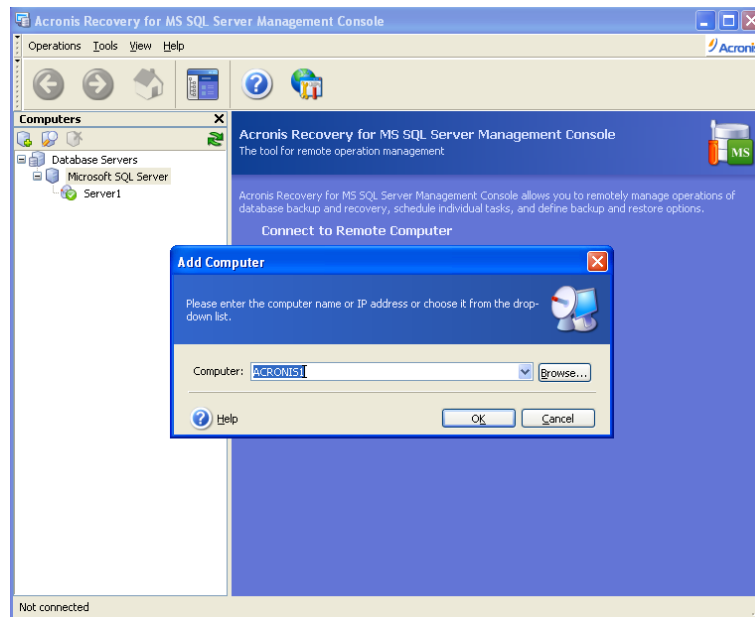
Figure 15. Adding servers

2. Click **OK** to add the server to the tree.

4.7 Connecting to a Remote Database Server

In order to perform any operation on a remote database server, you must first connect to it. Once connected, you can manage tasks: set up backup/restore options on remote database servers and schedule backup, restore and backup location clean-up tasks.

To establish a remote connection, select a server in the Computers pane and click **Connect to a Remote Computer** in the right pane. If you have connected to this server before, Acronis Recovery for MS SQL Server will use credentials for accessing the computer automatically. Otherwise a dialog window will be opened:

- In the **Computer** field, enter the name or the IP address of the computer or select a computer from the drop-down list, by clicking the **Browse...** button

- To provide credentials for accessing the computer, click the **Options** button

- Specify username and password on the server you want to connect to, in the corresponding fields

- Select the **Save Password** check box if you want to save the password

- In case the console cannot connect to a remote host, select **Clear credentials cache before connect** parameter and try again.

Having provided all the necessary information for connection, click OK to establish connection.

	If Acronis Recovery for MS SQL Server Management Console cannot connect to the remote computer, which was not rebooted after installing Acronis Recovery for MS SQL Server Agent, connection may be established with explicit credentials.

As soon as you connect to a database server, you can manage tasks as if it were a local computer.
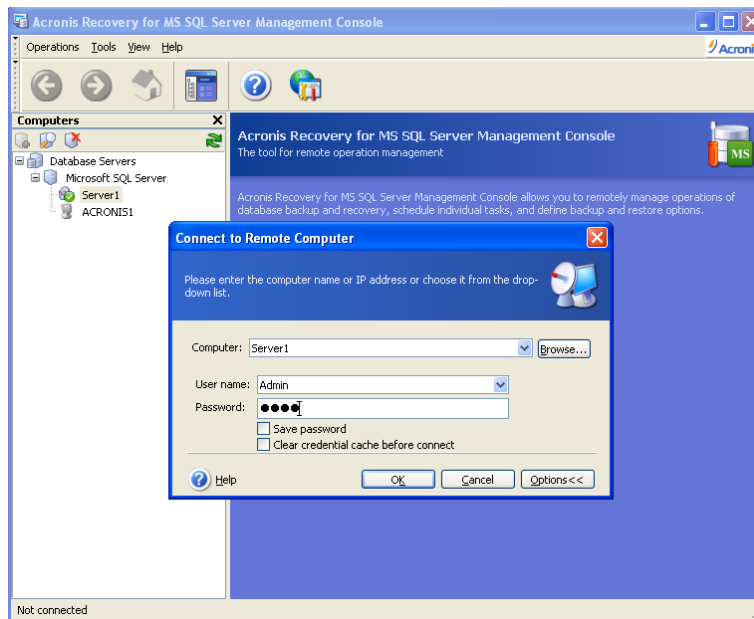
Figure 16. Connecting to a Remote Database Server

4.8 Remote Installation of Acronis Recovery for MS SQL Server Agent

The remote installation of Acronis Recovery for MS SQL Server Agent is described in detail in *Installing Acronis Recovery for MS SQL Server Agent Remotely* (p. 16).

Copyright © Acronis, Inc., 2000-2010

Chapter 5. Creating Backup Archives

This chapter provides general information about backup methods, describes how to backup Microsoft SQL Server databases, and which options can be set using Acronis Recovery for MS SQL Server.

5.1 General Information

Backup is crucial to maintaining timely and consistent record of your databases for recovery in case of failure. Acronis Recovery for MS SQL Server offers an easy and flexible process for creating of backup archives.

5.1.1   What is a backup?

The concept of backing up data is based on copying it to a safe place to restore when necessary. With an active database you need to backup and protect more than just your database files and data. Databases include many components, such as transaction logs, that must be backed up as well to ensure a fully functioning database upon restoration.

Acronis Recovery for MS SQL Server is a tool that backs up the necessary tables, data, and user-defined objects, but treats the database not just as a combination of files. When the backup procedure starts, Acronis Recovery for MS SQL Server finishes all the active transactions, makes a snapshot of the database and resumes the transactions immediately. The database idle state is minimal; and the backup will be written to the archive location while the database is online.

> Using this process to back up the database ensures that the restored copy will be operational as is. Since the copy is made according to the snapshot, no transactions made after the start of the process will be included into the current backup.

Acronis Recovery for MS SQL Server backs up transaction logs separately. *See Backup Methods* (p. 28) for detailed information.

5.1.2   Backup Methods

Acronis Recovery for MS SQL Server can create full, differential and Transaction Log backups for comprehensive protection of your data from hardware failure, user errors or even natural disaster.

A **full backup** contains all data at the moment of backup creation – a complete database or instance. You can recover the entire database by restoring the database from a full database backup to a chosen location. Enough of the transaction log is included in the backup to let you recover the database to the time when the backup finished. When the database is recovered, uncommitted transactions are rolled back. The restored database matches the

state of the original database when the backup finished, minus any uncommitted transactions.

For a small database that can be backed up quickly, it is convenient to use only full database backups. However, as the database becomes larger, full backups take more time to finish and require more storage space. Therefore, for a large database, you might want to supplement full database backups with differential backups.

A full backup can form a base for further differential backup or can be used as a standalone archive.

A **differential backup** creates an independent file, containing all changes made against the initial full archive.

A standalone full backup may be an optimal solution if you often roll back the database to the initial state. In this case, you do not need to re-create the initial full backup, so the backup time is not crucial, and the restore time will be minimal.

Alternatively, if you are interested in saving the last data state to be able to restore it in case of a database failure, consider the differential backup. It is particularly effective if your data changes tend to be small in comparison to the full data volume.

The transaction log records all transactions and database modifications made by each transaction. The transaction log is a crucial component of the database and, if there is a system failure, the transaction log might be required to bring your database back to a consistent state.

If you are backing up filegroups, the transaction logs will be backed up along with the full backup. Backing up transaction logs prevents data loss after the last backup and lets you restore the database state to an arbitrary point in time in order to undo the harmful changes.

To choose the appropriate backup method (or methods), you have to identify the requirements for the availability of your data in order to choose the appropriate backup strategy. Your overall backup strategy defines the type and frequency of backups as well as the type and capacity of the hardware required for the archive location. See *Which Backup Strategy to Choose?* (p. 29) for our recommendations.

5.1.3   Which Backup Strategy to Choose?

Follow the recommendations below to define the best backup strategy for your organization:

- Database activity is low to medium:
  - Full backup once a week
  - Differential backup once a day
  - Transaction Logs backup every two to four hours
- Database size is small to medium, but activity is high:
  - Full backup twice a week
  - Differential backup twice a day
  - Transaction Logs backup every hour
- Database size is large and activity is high, recovery model is Full or Bulk-Logged:
  - Full backup once a week
  - Differential backup once a day

- Transaction Logs backup every twenty minutes
- Database size is large and activity is high, recovery model is Simple:
  - Full backup once a week
  - Differential backup twice a day

For advice on creating the best strategy you can also rely upon Acronis Recovery for MS SQL Server Assistant while working with the **Create Backup** wizard. See *Using Acronis Recovery for MS SQL Server Assistant* (p. 39) for detailed information.

We recommend that you do not to use several third-party backup tools simultaneously since backup operations may conflict or affect the operation of your databases. Instead, combine different backup methods to protect your data with Acronis Recovery for MS SQL Server.

5.1.4   Recovery Models

There are three database recovery models: Full, Simple and Bulk-logged. In most cases databases use the simple or full recovery models.

Full Recovery Model

Full recovery model requires backing up logs, which allows you to restore to the point in time just before the data was corrupted and prevent data loss.

The disadvantage of this recovery model is that it requires storage space and makes restoration slower and complicated.

Simple Recovery Model

The Simple recovery model does not store transaction logs, so you can recover your databases only to the point in time when the last backup was created. Therefore, it is recommend that you create backups (full or differential, in accordance with the backup strategy you defined) often enough to prevent significant data loss. For critical databases it is better to use the full recovery model.

Bulk-logged Recovery Model

Bulk-logged recovery model uses transaction logs for non-bulk operations fully logged and bulk operations minimally logged. Data may be lost when restoring from bulk operations (e.g. SELECT INTO).

The bulk-logged recovery model requires log backups. It is an adjunct of the full recovery model and provides recovery to the end of any backup (but not to any point-in-time). In case the log was damaged or bulk-logged operations occurred after the latest log backup, data changes will be lost. This is the least secure recovery model.

5.1.5   Backup Levels

Acronis Recovery for MS SQL Server backs up databases as well as separate filegroups.

You can choose to back up databases by separate filegroups when the database size and performance requirements make it not practical to create full database backups. In this case, each time the task is being executed, only one filegroup will be backed up.

As with instances and databases, you can create full and differential backups for filegroups as well, but this is available for Microsoft SQL Server 2000 only.

5.1.6   Disaster Recovery Plan

With Acronis Recovery for MS SQL Server you can create a Disaster Recovery Plan. This plan provides all the necessary information about the server and databases in the form of step-by-step instructions restoring the entire database in case of failure, disaster or data corruption.

With the Disaster Recovery Plan any person, even non-DBAs, will be able to restore the system in the shortest possible time. This plan helps to reduce issues during the recovery of databases.

It is recommended to update and test the disaster recovery plan from time to time to be sure that the company's staff is able to recover lost or corrupted data efficiently.

See *Disaster Recovery Plan* (p. 54) to learn how Acronis Recovery for MS SQL Server can help you to generate the disaster recovery plan.

5.1.7   Transaction Log Truncation

Log truncation frees space in the log file for reuse by the transaction log. It occurs automatically before each backup process except in the following cases:

- under the simple recovery model;
- when you perform the transaction log backup;
- when you perform a differential backup of a filegroup;
- when Rolling Snapshots are enabled.

5.1.8   Backing up to Tape Libraries and Tape Drives

Acronis Recovery for MS SQL Server supports tape libraries, autoloaders and SCSI tape drives as storage devices.

Backing up to Tape Libraries and Autoloaders

A tape library is a high-capacity storage device consisting of one or more tape drives and a loader, which automatically selects and loads multiple tape cartridges, using barcode identification. Tape libraries with only one drive and loader are known as autoloaders.

Tape libraries are widely used as an efficient repository for long-term stored archival data. Once the tape library is full, old data is progressively overwritten by new data. With tape library support, Acronis Recovery for MS SQL Server can store several backup chains from different machines. Please review Acronis True Image Echo Enterprise Server User's Guide on how to backup to a tape drive in the network (section *3.8.3 "Setting up Backup to a Tape or a Tape Library in the Local Network"* of the Echo User's Guide).

Backing up to Tape Drives

SCSI tape drives are accessible both remotely using the Acronis ® Backup Server (shipped with Acronis True Image Echo Enterprise Server) and locally when it is connected to the computer that is being backed up.

The tape drive, connected to a computer being backed up, will appear in the list of backup destination devices along with other available drives. For instructions on how to enable backup to a tape drive connected to a remote computer, see Acronis True Image Echo Enterprise Server documentation for instructions on how to enable backup to a tape drive in the local network (*section 3.8.3 "Setting up Backup to a Tape or a Tape Library in the Local Network"* of the User's Guide).

Copyright © Acronis, Inc., 2000-2010

Backup and restore on a tape drive proceed in the same way as with other devices with the following exceptions.

1. You do not have to provide filenames for backups.

2. As soon as the tape is full and the Acronis Recovery for MS SQL Server Management Console is connected to the computer, a dialog window with a request to insert a new cartridge will appear.

3. If the tape already contains data, but is not full, new contents will be appended.

You may experience short pauses that are required to rewind the tape.

> A low-quality or old tape, as well as dirt on the magnetic head, may lead to pauses that can last up to several minutes.

Acronis Recovery for MS SQL Server can backup to remote tape drives when using Acronis Backup Server (shipped with Acronis True Image Echo Enterprise Server).

5.2 Backup

To restore lost data or roll back a database to a certain state, you must first create a database backup file. The **Create Backup** wizard allows you to schedule the creation of archives and set the required options.

To launch the wizard, click on the backup operation icon in the main workspace.

> You can use *<Alt>+<N>* to go to the next page and *<Alt>+<B>* to go to the previous page of any Acronis Recovery for MS SQL Server wizard.

5.2.1 Defining a Backup Strategy

In the first step of the **Create Backup** wizard you will define the backup strategy. Acronis Recovery for MS SQL Server provides three ways to define the strategy:

- Use Acronis Recovery for MS SQL Server Assistant
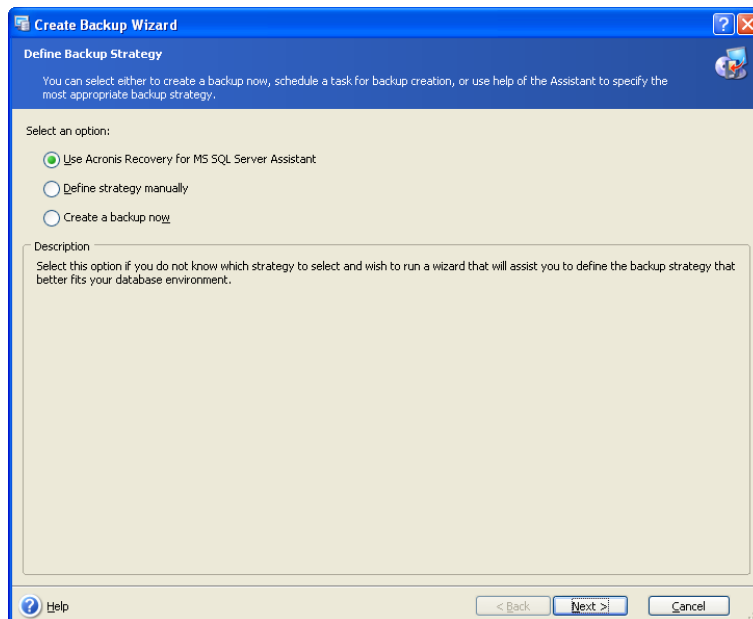- Define strategy manually
- Create a backup now

Figure 17. Defining a backup strategy

If you are not sure which backup strategy to choose, **use Schedule a backup task with Acronis Recovery for MS SQL Server Assistant** (selected by default). See *Using Acronis Recovery for MS SQL Server Assistant* (p. 39) for details.

If you know which backup method to use for your data, select the **Schedule a backup task manually** option. In this case you will have to define backup methods and schedule parameters for backup tasks.

To immediately run a backup task once select the Create a Backup Now option. In this case you a full backup will be created.

For more information about backup methods see *Backup Methods* (p. 28).

> Note, when backing up filegroups, transaction logs are always backed up independently so that they are consistent with the database after recovery.

5.2.2   Specifying a Task Execution Account

In this step of the **Create a Backup** wizard you specify an account that is valid for the computer housing databases you want to backup – task execution account. These credentials will be used during each task execution for connecting to the server and by default for connecting to the Microsoft SQL Server (if you do not specify another account for Microsoft SQL Server while selecting the source to backup).

Thus, the task would run as if it was started by the specified user.

Enter the user name and password, then click **Next**. Note, the domain name must also be specified if the user is a member of a domain (DOMAIN\Username).
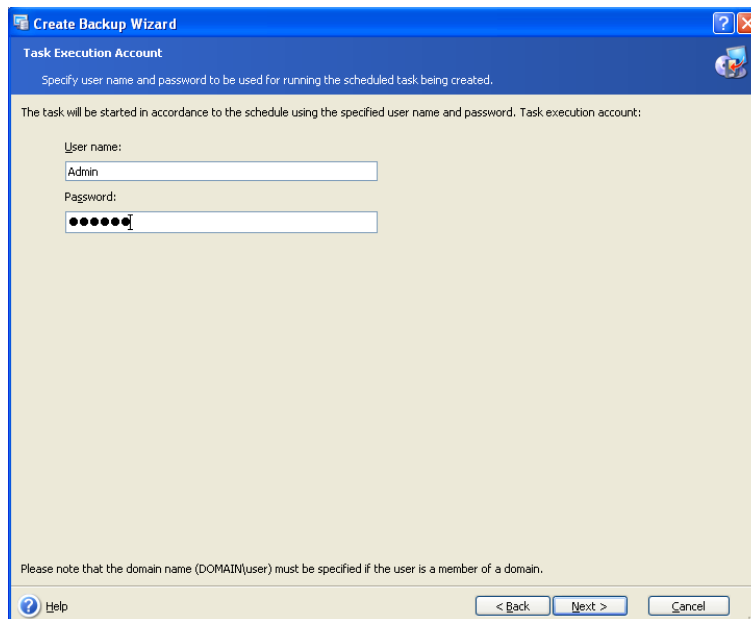
Figure 18. Specifying a task execution account

5.2.3   Selecting Objects to Back Up

In the left pane of the window select a server with Microsoft SQL Server installed and specify Microsoft SQL Server instances or specific databases to back up. In case an instance is selected, all associated databases will also be selected.

Information on the selected item is displayed in the right pane of the window: server name, installed operating system and the number of Microsoft SQL Server instances.

In this step you can change the credentials for connecting to the server by clicking the **Change** link (see *Specifying Credentials* (p. 37) for details).

Selecting Instances to Back Up

When selecting an instance to back up Acronis will automatically backup all of the databases associated with this instance, including system databases.

	A list of instances can be obtained, with the connected user's privileges that cannot be changed.

The right pane will display instance name, Microsoft SQL Server version, amount of databases and their total size.
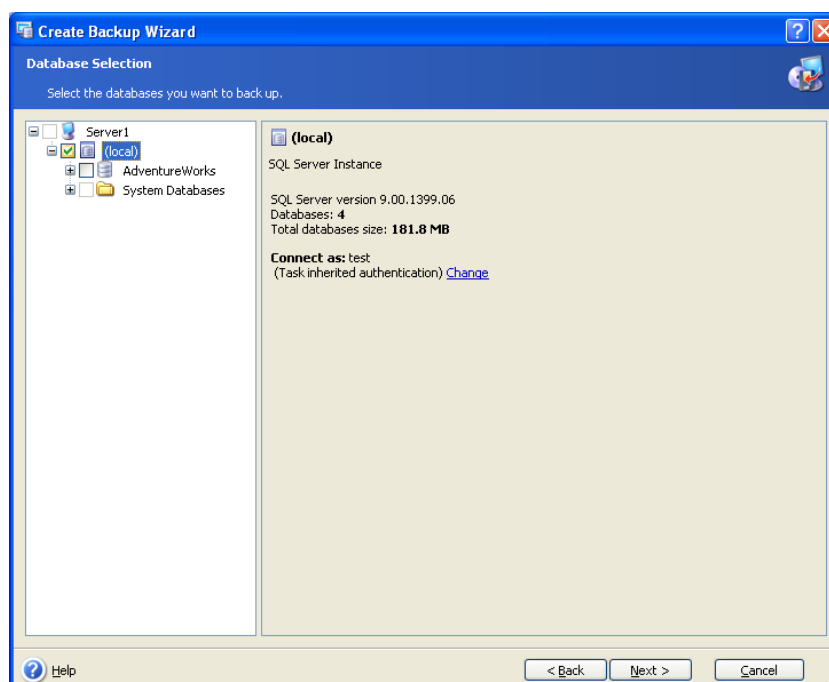

Figure 19. Selecting objects to back up

You can also use the **Change** link to change the credentials for connecting to the Microsoft SQL Server (see *Specifying Credentials* (p. 37) for details).

Selecting Databases to Back Up

Select the specific database you want to back up. The right pane will display database name, size, recovery model and status.

If the selected database is so large, that creating a backup archive may take several hours, and performance requirements make it unsuitable to create a full database backup, it makes sense to back it up in parts – by one filegroup at a time. For example, if your database consists of several filegroups, on the first task run, the first filegroup will be backed up, on the second run – the second filegroup, and so on. Thus, each time this backup task is executed, only one filegroup will be backed up, which will appreciably decrease the operation's duration and will not influence on your company's database work.

Note, you can back up filegroups only while creating a full or differential backup.

To backup a database by separate filegroups, select the **Back up only one subsequent filegroup** each time the task starts check box (by default this check box is disabled and all filegroups of the selected database will be backed up each time this task is executed).

Also you can change the credentials for connecting to the Microsoft SQL Server by clicking the **Change** link (see *Specifying Credentials* (p. 37) for details).

Setting rolling snapshots options

Acronis Recovery for MS SQL Server supports Rolling Snapshot (for Microsoft SQL Server 2005 Enterprise Edition only). Rolling Snapshots make allow for near-instantaneous recovery of Microsoft SQL Server 2005 databases in cases of human error or logical data corruption.

To set options, click the **Set Rolling Snapshots Options** link.

In the opened window choose when the rolling snapshot will be made:

- **Full backup is created** - Rolling Snapshots will be created immediately after creation of the full backup

- **Differential backup is created** - Rolling Snapshots will be created immediately after creation of the differential backup

- **Transaction log backup is created** - Rolling Snapshots will be created immediately after the creation of the transaction log

[note icon]	Please be aware that it is not possible to create Rolling Snapshots of the master and model system databases.
[note icon]	When Rolling snapshots are enabled, transaction logs will not be truncated.

Type the desired snapshot name prefix in the **Name prefix** field.

In the **Maximum number of snapshots** field, you can set the number of Rolling Snapshots. For example if you maintain 8 snapshots the earliest snapshot will be deleted automatically after the ninth snapshot is created.

Having defined the Rolling Snapshot creation options, click **OK** to save your settings.
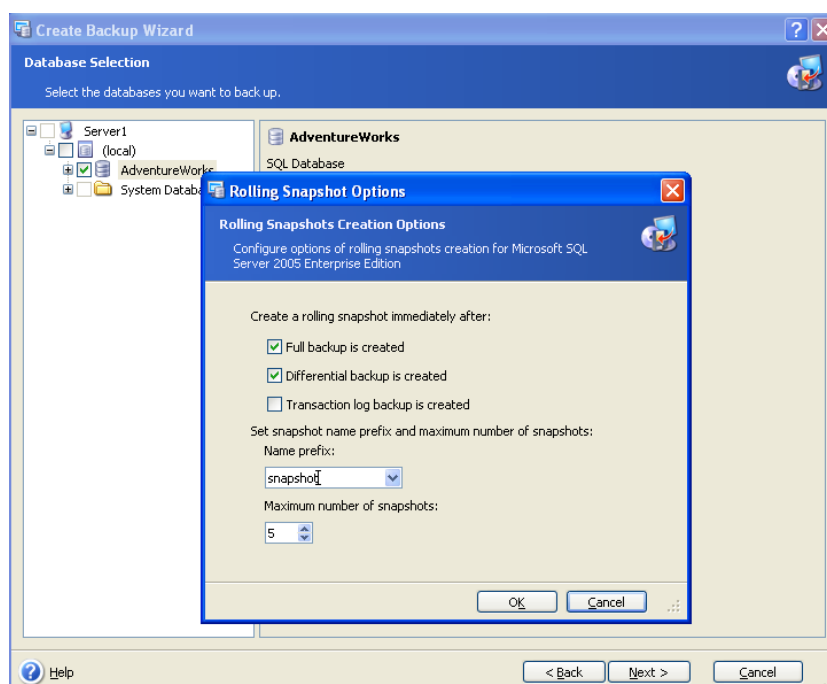

Figure 20. Rolling snapshots options

Selecting System Databases to Back Up

Microsoft SQL Server maintains a set of system databases that are essential for the operation of a server instance. You are encouraged to backup all system databases after every significant change:

- **master** – records all the system-level information for a Microsoft SQL Server instance

- **model** – used as the template for all databases created on the Microsoft SQL Server instance

- **msdb** – used by Microsoft SQL Server Agent for scheduling notifications and tasks, recording operations

System databases can be restored from a backup created within the Microsoft SQL Server version, which the server instance is currently running.

After selecting the appropriate object for back up, click **Next** to continue.

5.2.4 Specifying Credentials

In the first step of this wizard you specified the default task execution account (see *Defining a Backup Strategy* (p. 32)) so the backup task would run as it was executed by the specified user.

If you want to change the credentials for access Microsoft SQL Server, click the **Change** link while selecting the source to backup.

There are two choices:

- Use Windows Authentication

- Use Microsoft SQL Server Authentication

Enter user name and password, then click **OK**.

The domain name must also be specified if the user is a member of a domain (DOMAIN\Username).
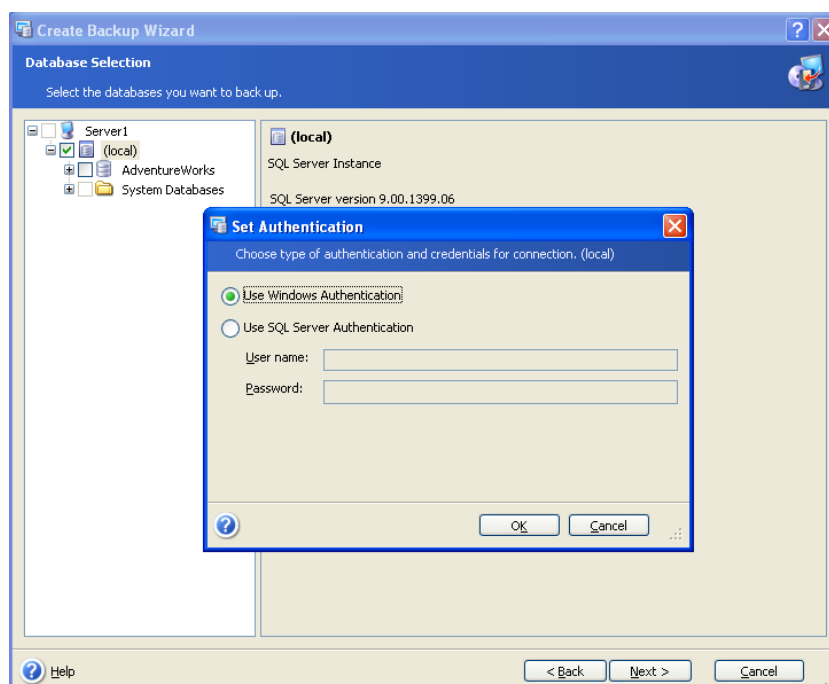
Figure 21. Specifying credentials

5.2.5 Selecting a Backup Archive Location

The further you store the backup archive from the original location, the safer it will be in case of data damage. For example, saving the archive to another hard disk will protect your data if the primary disk is damaged. Data saved to a network disk or backup server will survive even if all your local hard disks are down.

Copyright © Acronis, Inc., 2000-2010

We recommend you to store the archives of each task in a separate location to avoid confusion during recovery.

Acronis Recovery for MS SQL Server supports the following places and media for backup destinations:

- Acronis Backup Server (shipped with Acronis True Image Echo™ Enterprise Server, when installed on a networked computer it automatically manages backup archives and retention policies for the specified location and ensures optimal usage of storage space. Outdated archives will automatically be deleted as specified in the retention policies set by the administrator. In addition, Acronis Backup Server facilitates the creation and execution of group backup tasks.);

- Local HDD;

- Network shares, SAN, NAS;

- FTP;

- Tape drives, Autoloaders, Tape libraries.

Select the desired archive location from the folders tree or specify a backup location in the **Folder** field.

|	
	Unsupported Acronis Backup Server versions will not be displayed in the Acronis Backup Servers list. To provide compatibility with Acronis Recovery for MS SQL Server, install the up-to-date version from: http://www.acronis.com/enterprise/download/ATIBS.
	Mapped network drives are not displayed in the **Folders** tree.
	Acronis Recovery for MS SQL Server guarantees integrity of a backup chain only in a separate archive. Thus, creation of a new archive will start a new chain of backups. Acronis Recovery for MS SQL Server behavior does not depend on what you want to back up (the entire database or only a separate filegroup). Transaction logs are truncated before creating such a chain to decrease the archive size and duration of the backup operation.
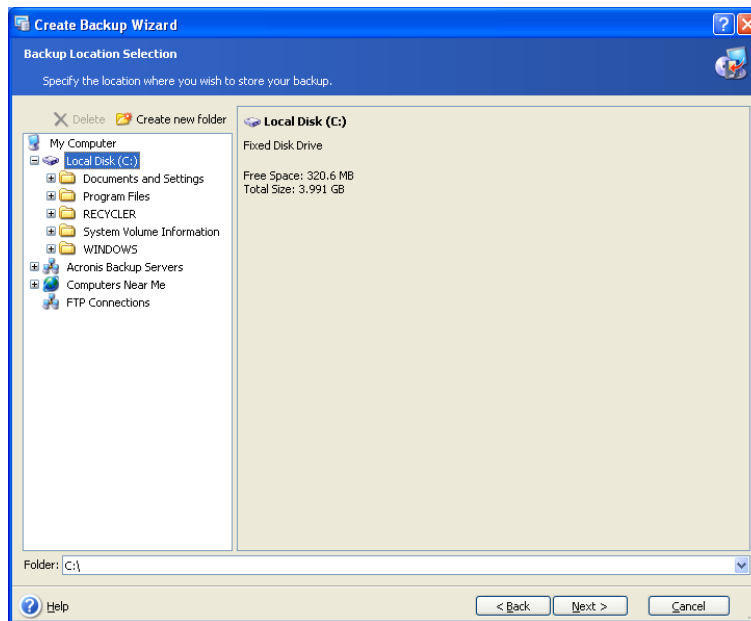
Figure 22. Selecting a backup archive location

Acronis Recovery for MS SQL Server allows you to clean storage places to avoid storing out of date archives. See *Backup Location Clean-up* (p. 60) for details.

5.2.6   Using Acronis Recovery for MS SQL Server Assistant

Acronis Recovery for MS SQL Server Assistant will help you with define backup strategy and creation parameters. Answer a few questions and Acronis Recovery for MS SQL Server Assistant will choose and schedule the appropriate backup method for protecting your company's databases from loss or damage (see a *Table of backup strategies* (p. 43).

Performance

Decide what is most important to your operation – a strategy that requires less storage space or faster data recovery.

Select an option:

- **Quick backup and smaller backup archives** - backups are created fast and occupy less space. However, recovery requires more time and you cannot restore data to a point-in-time. This option is set by default.

- **Medium backup and recovery speed with average archive size** - backups require an average amount of disk space and backup speed is normal. No restoration to a point-in-time.

- **Quick recovery but backups require more storage space** - backups will take more time to be created and occupy more disk space in comparison to a quick backup. Recovery is faster and there is an opportunity to restore data to any previous point-in-time.

Copyright © Acronis, Inc., 2000-2010
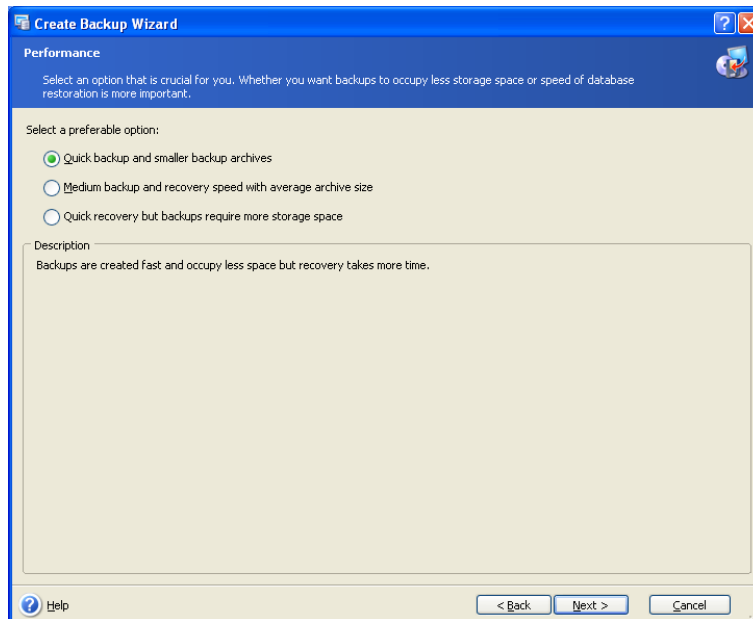
Figure 23. Performance window

Click **Next** to continue.

Acceptable Data Loss

At this step specify a period of time when data changes significantly. This will help Acronis Recovery for MS SQL Server Assistant define the schedule for backup creation – how often to run the backup operation and which backup method to choose.

Select one of the following options:

- **10 Minutes** – significant changes at least every ten minutes (selected by default)

- **Hour** – select this option if you want to backup the selected data hourly

- **Day** - select this option if you want to backup the selected data daily

Figure 24. Acceptable Data Loss option window

Click **Next** to continue.

Server Load During a Week

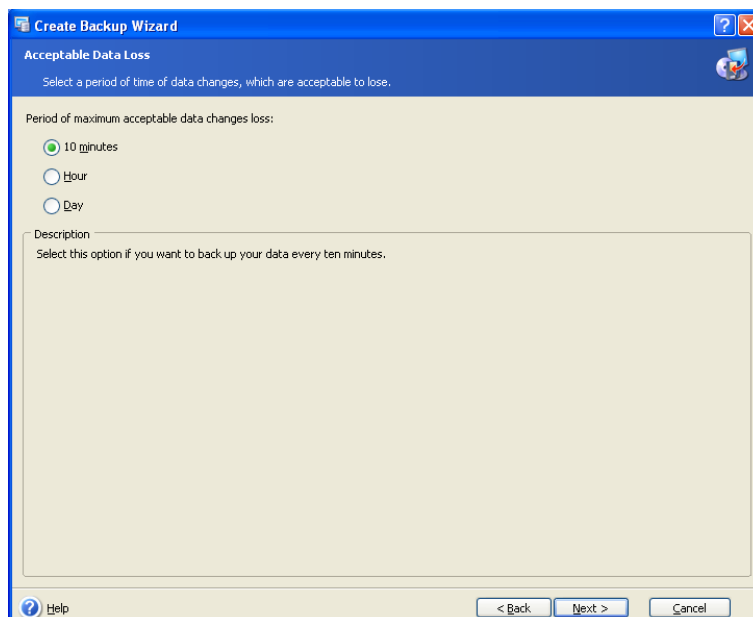Specify the workload distribution on the database server during a week. The Assistant will use this information to define a backup schedule according to your company's server's load. The load information is used to determine when and what type of backups to create to avoid data loss (backup creation frequency), as well as when to execute the operation.

In the table there are three rows representing three levels of load (High, Medium and Low), and seven columns representing seven days of the week.

By default the most widely used pattern is specified (selected cells are highlighted in blue). To change the value for a certain day, click the appropriate cell.

Figure 25. Server Load During a Week window

Click **Next** to continue.

Server Load During a Day

Specify workload distribution on the database server throughout the day. As in the previous step, this information will help to define a backup schedule according to your company's server's load.

In the table there are three rows representing three levels of load (High, Medium and Low), and twenty four columns representing 24 hours of the day.

By default the most widely used pattern is specified (selected cells are highlighted in blue). To change the value of a particular hour click, the appropriate cell.

Figure 26. Server Load During a Day window

Initial Task Starting

Specify a time for applying the selected scheme:

- **Now** – select this option to execute the scheduled task immediately after you finish the wizard

- **On the specified date and time** – the selected scheme will be applied at the specified date. Note, that if there is no full backup when the first differential or transaction log backup is to be performed, a full backup will be performed independently of the actual date on which it is scheduled, so you may consider setting this date on the day of the week, when load of your server is not high

Click **Next** to view (and change if necessary) the schedule for backup tasks, created by Acronis Recovery for MS SQL Server Assistant (see *Setting Backup Scheduling Parameters* (p. 44)).
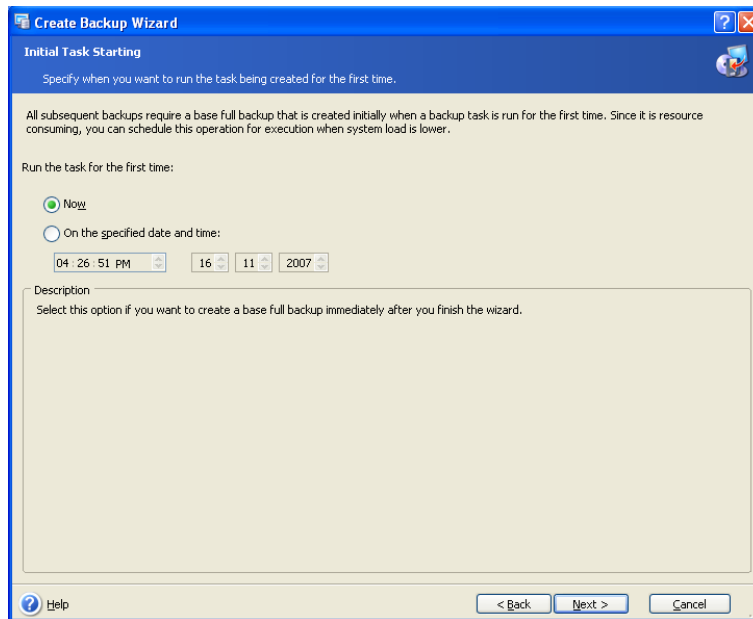
Figure 27. Initial Task Starting window

Table of Backup Strategies

The table below describes different backup strategies according to your requirements for storage space and speed. The final strategy created by Acronis Recovery for MS SQL Server Assistant will be displayed in a Schedule page (see *Setting Backup Scheduling Parameters* (p. 44) for details).

Data change rate	Backup Method	Performance		
		Quick backup and smaller archive size	*Medium archive size and speed*	*Quick recovery and large archive size*
10 minutes	*Full*	Month	Week	Day
	Differential	Day	Day	x
	Transaction logs	10 minutes	10 minutes	10 minutes
Hour	*Full*	Month	Week	Day
	Differential	Day	Day	x
	Transaction logs	1 hour	1 hour	1 hour
Day	*Full*	Month	Week	Day
	Differential	Day	Day	x
	Transaction logs	12 hours	12 hours	12 hours

Figure 28. Table of backup strategies

5.2.7 Setting Backup Scheduling Parameters

If you used Acronis Recovery for MS SQL Server Assistant, Acronis Recovery for MS SQL Server will offer the appropriate schedule for the choices you made. Click **Edit** to change existing schedule settings.

If you decided to define the backup strategy manually, you have to set a schedule for each backup method. See *Scheduling Tasks* (p. 75) for detailed information.

Click **Add** to add new schedule settings for the appropriate method (full, differential or transaction logs). Clicking **Delete** will allow you to delete the existing schedule settings.

All the settings you made are displayed in the **Result** field at the bottom of the window. To save your settings, click **OK**.

To quit task scheduling without saving, click **Cancel**.

Note, Acronis Recovery for MS SQL Server allows you to set multiple schedules for one task. For example, you should not only backup your data once a week, but also on the last day of each month. You can specify Weekly and Monthly parameters to have the necessary operation scheduled.
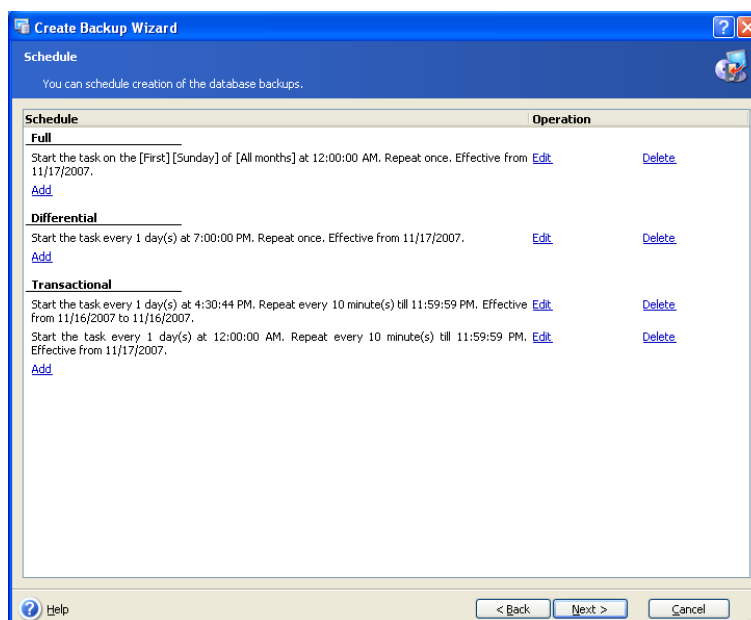
Figure 29. Setting backup scheduling parameters

5.2.8 Backup Options

Select the backup options (pre/post commands, compression level etc.). You may **Use default options** (see *Setting Default Backup Options* (p. 46) for detailed information about backup options) or **Set the options manually**. If you set the options manually, the settings will only be applied to the current backup task.
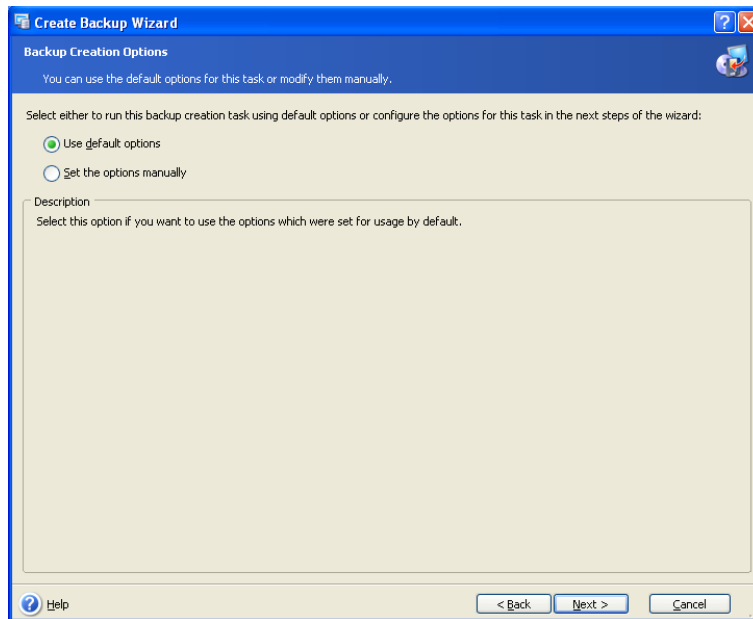
Figure 30. Backup Options window

5.2.9   Specifying a Task Name and Providing Comments

On the **Task Name and Archive Comments** wizard page, you can provide a name and comments for the backup task.

Enter a task name in the **Task Name** field to identify and organize tasks by operation (edit, delete, etc.).

You may provide comments for the archives you create. The backup file size and creation date are automatically appended to the description, so you do not need to enter this information.
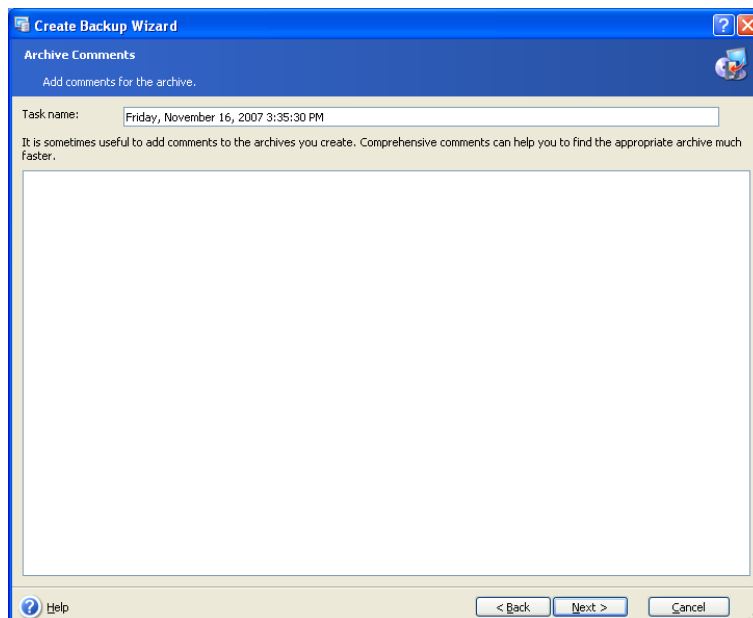
Figure 31. Specifying a task name and providing comments

5.2.10 Backup Summary

The final stage of the backup is the summary window, which displays the list of operations to be performed.

Click **Finish** to save the created schedule or start the backup creation task immediately. You will be redirected to the Task List automatically, where you can view and edit created tasks.
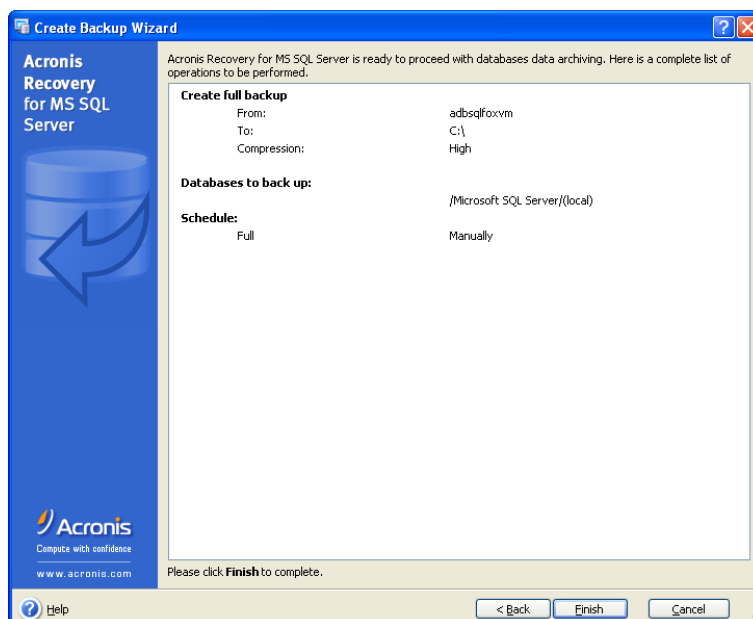
Figure 32. Backup Summary

5.3 Setting Default Backup Options

Acronis Recovery for MS SQL Server lets you set the backup options you want to use as default for future tasks.

To edit the default backup options, select **Tools -> Options** from the main program menu.

You will also still be able to edit the backup options while creating a backup task.
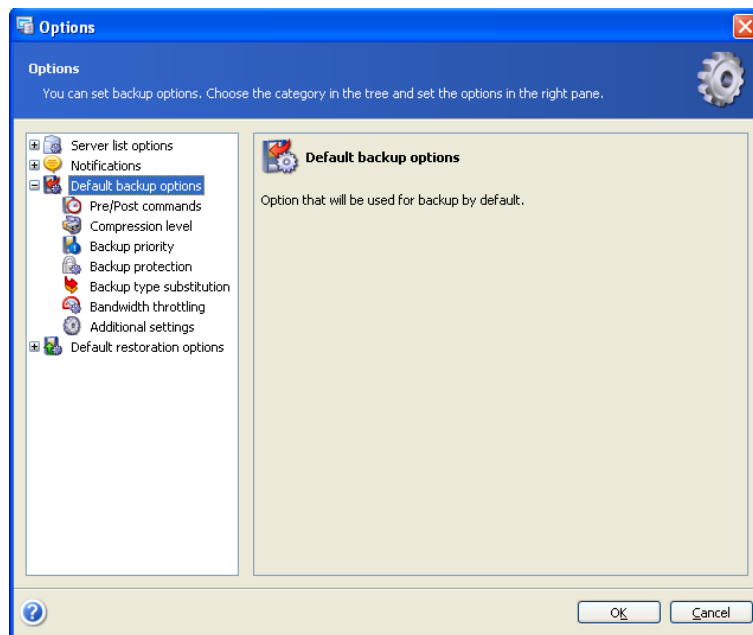
Figure 33. Setting default backup options

5.3.1 Pre/Post Commands

You can specify commands (or even batch files) that will be automatically executed before and after the backup procedure. For example, you may want to start/stop certain Windows processes, or check your data before starting the backup operation.

You can use commands set by default, as well as specify your own commands.

Select **Use commands**, type commands manually or click **Edit** to configure the command:

- Select commands to be executed before the backup process starts in the **Before backup process** field. To create a new command or select a new batch file click the **Edit** button.

- Select the command to be executed after the backup process ends in the **After backup process** field. To create a new command or select a new batch file click the **Edit** button.
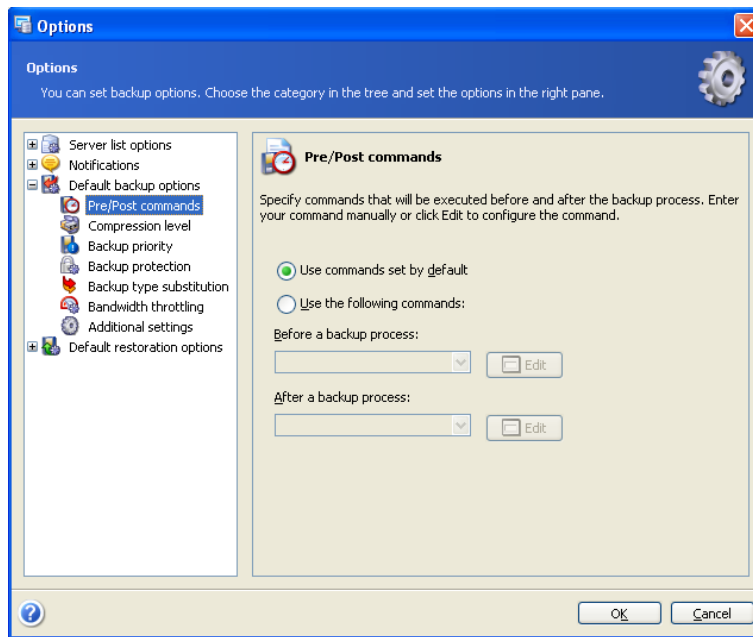
Figure 34. Pre/Post commands

5.3.2   Compression Level

Select the compression level for the backup. With higher compression ratios the archive file size will be smaller but the backup process may take longer.

You can choose one of the compression levels for a backup archive:

- **None** - the data will be copied without any compression

- **Normal** - the recommended data compression level (set by default)

- **High** - higher archive compression level

- **Maximum** - maximum backup archive compression

- **Ultimate** – ultimate level of compression

Generally, it is recommended to use the default **Normal** compression level. You might want to select **Maximum** compression so the backup archive occupies less storage space.
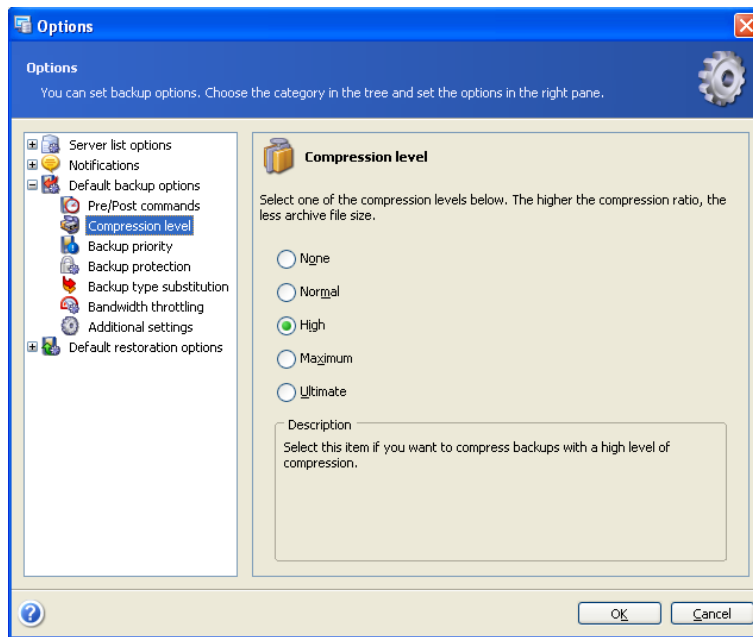
Figure 35. Compression level

5.3.3   Backup Priority

You can set up the backup process priority:

- **Low** - the backup process will run slower, but it will not influence other processes running on your computer

- **Normal** - the backup process will run with normal priority

- **High** - the backup process will run faster, but it may influence other processes running on your computer

Changing the priority of a backup process can make it run faster or slower, but it can also adversely affect the performance of other programs running simultaneously. The priority of any process running in the system determines the amount of CPU usage and system resources allocated to that process. Decreasing the backup priority will free more resources for other CPU tasks.
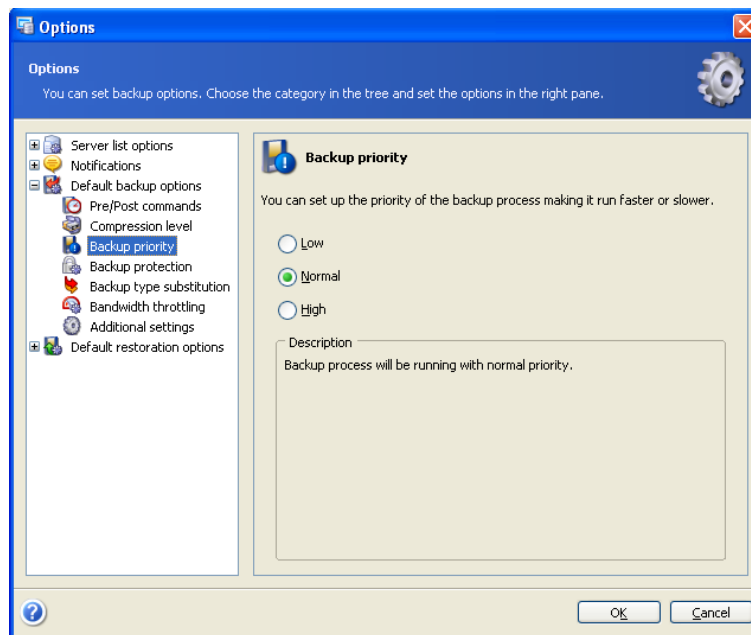
Figure 36. Backup priority

5.3.4 Backup Protection

Password

The preset is **No Password**.

You can password protect your archives so that they will be inaccessible to others. Enter a password in the text field and confirm it. The password is case sensitive.

Please keep in mind that in the **Restore Data** wizard, Acronis Recovery for MS SQL Server will ask for a password after you select a folder within the archive location. Only those archives that were protected with the password you typed in or non password-protected archives will be displayed. It is best practice to use the same password for backup archives in the same folder within the archive location.

Encryption

After setting a password, you can choose to encrypt the backup with an industry-standard AES cryptographic algorithm for advanced security.

To set up backup encryption, select one of the following encryption types:

- **None** – backups will not be encrypted
- **AES 128** – the quickest encryption method available (set by default)
- **AES 192** – encryption will take longer than 128-bit, but is more secure
- **AES 256** – requires the most amount of time to cipher, but it is also the most secure setting available
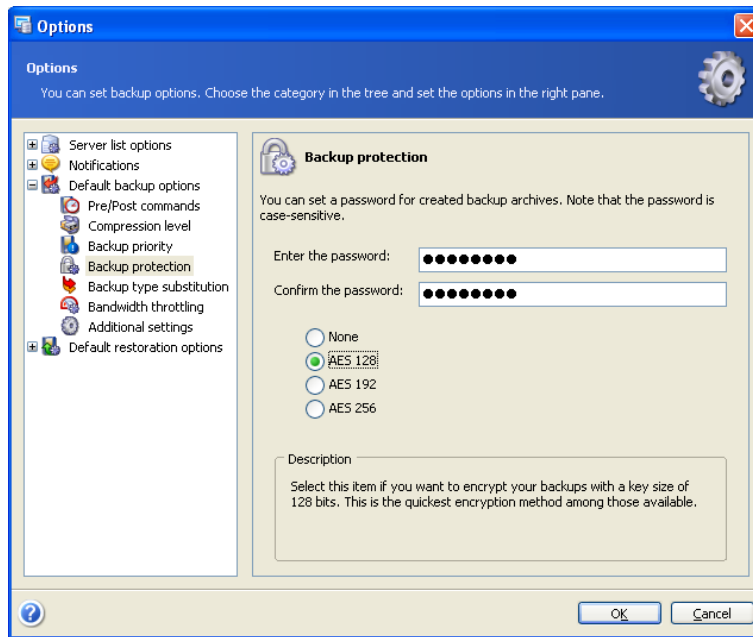
Figure 37. Backup protection

5.3.5 Backup Type Substitution

A full backup of the database is required before creating differential or transaction log backups. If for some reason a full backup does not exist, you will need to create a full backup independently of the backup strategy you have configured.

You can specify the behavior of Acronis Recovery for MS SQL Server when creating differential backup or backing up transaction logs of databases with the Simple recovery model:

Create a differential backup if transaction log backup creation is impossible; **Create a full backup if a differential backup creation fails** – will create a differential backup for a database with the Simple recovery model (a transaction log backup cannot be created for such databases). A full backup will be created if the differential backup process one fails.

If creation of the selected backup type fails, skip the backup process – the backup process will be terminated if the selected backup process fails.
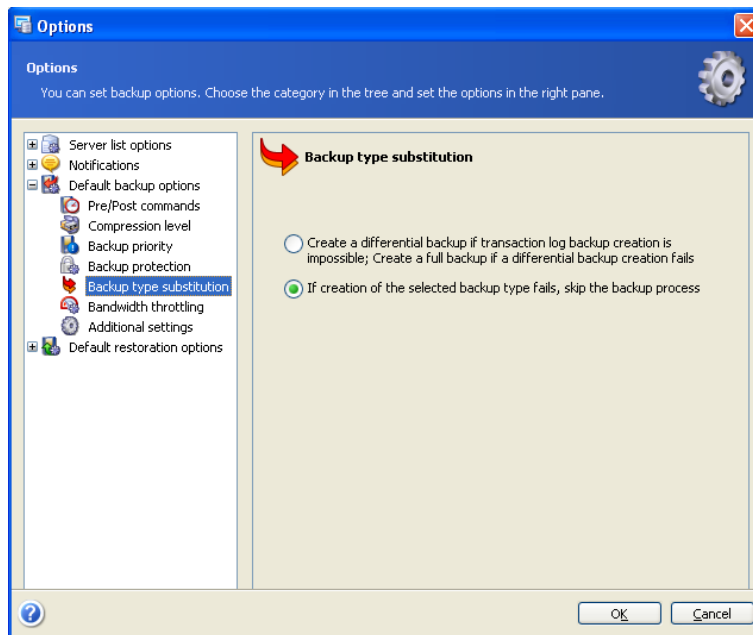
Figure 38. Backup type substitution

	Note, if you use the Acronis Recovery for MS SQL Server Assistant to define the backup strategy, the **Create differential backup if transaction log backup creation is impossible. Create a full backup if a differential backup creation fails** option is selected by default.

5.3.6   Bandwidth Throttling

You can limit the bandwidth used by the backup process so that network resources will be available for other processes.

To set the desired data transfer speed, check the Enable bandwidth throttling parameter. Select a maximum bandwidth value from the drop-down list or enter a value manually.
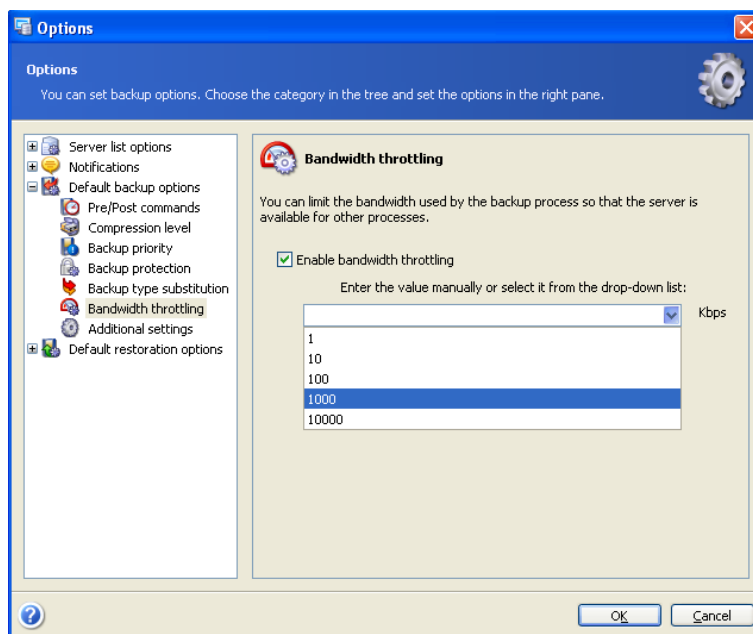
Figure 39. Bandwidth throttling

5.3.7   Additional Settings

Validate backup archive once it has been created

When enabled, the program will verify the integrity of the archive immediately after it's created.

	To validate archive data integrity you must have all of the backups in the series (full, differential and transaction log backups) available in the same location. If any of the successive backups are missing validation will not be possible.
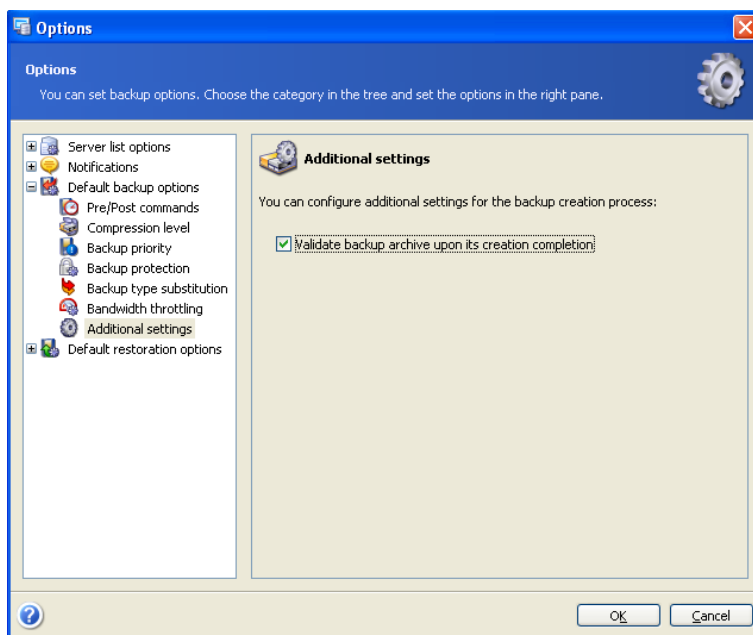
Figure 40. Additional settings

Chapter 6. Disaster Recovery Plan

It is extremely important for all organizations and users to have detailed instructions describing the process for recovering data quickly and efficiently in case of disaster – a Disaster Recovery Plan. This plan should contain all of the required information to guide someone through the recovery process. When creating a Disaster Recovery Plan, be sure to include scenarios and procedures for different kinds of disaster situations (loss of the database server, data corruption, complete loss of database etc).

The Disaster Recovery Plan should include step-by-step instructions for every possible type of disaster, as well as the server's hardware and software configuration.

With the **Create Disaster Recovery Plan** wizard, you can generate and view a Disaster Recovery Plan for your database server immediately, or schedule to receive it via e-mail after each update.

6.1 Viewing a Disaster Recovery Plan Immediately

Launch the **Disaster Recovery Plan Creation** wizard by clicking on the Disaster Recovery Plan operation icon in the main workspace.

1. In the first step of the wizard, choose the **View the Disaster Recovery Plan for the selected database** option to generate and view the Disaster Recovery Plan for the selected databases immediately
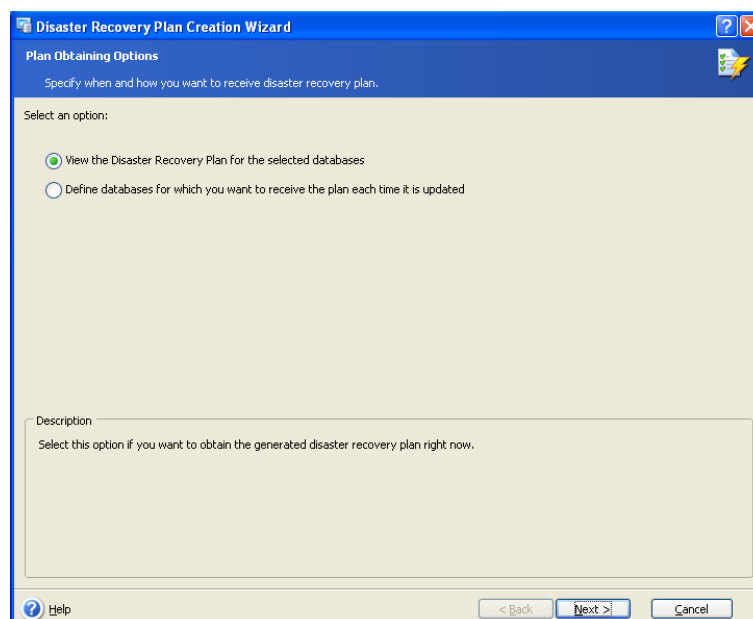
Figure 41. Disaster recovery plan options

2. Select the databases you want to obtain the Disaster Recovery Plan for

---
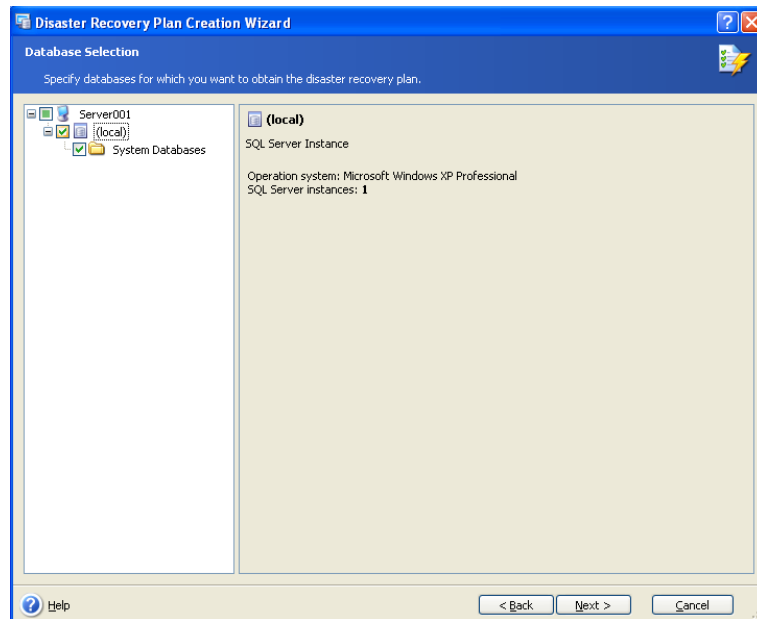
Figure 42. Selecting databases

3. Choose whether you want to receive the Disaster Recovery Plan by e-mail or to view it in HTML format

4. If in the previous step you selected to receive the Disaster Recovery Plan by e-mail, you will need to specify the e-mail parameters

   Specify the e-mail account that will be used for sending the Disaster Recovery Plan. Provide the e-mail address to which the plan will be sent and the outgoing SMTP server name. You can specify several e-mail addresses separating them by commas

   A Username and a password may also be needed if the SMTP server requires authentication.

   You can check if the settings are correct by clicking the **Send test E-Mail message** button

5. The final stage of the **Disaster Recovery Plan Creation** wizard is the summary window, which display the list of operations to be performed.

   Click **Finish** to obtain the Disaster Recovery Plan immediately.

   In the latter case an e-mail will be sent to the address you specified or a HTML version of the Disaster Recovery Plan will be opened in your web browser after you click **Finish**.

6.2 Scheduling Receipt of the Disaster Recovery Plan

Launch the **Disaster Recovery Plan Creation** wizard by clicking on the Disaster Recovery Plan operation icon in the main workspace.

1. In the first step of the wizard, use the **Define databases for which you want to receive the plan each time it is updated** option to choose which databases to generate the Disaster Recovery Plan for each time any changes occur. The updated version of the plan will automatically be sent to e-mail addresses you specify.
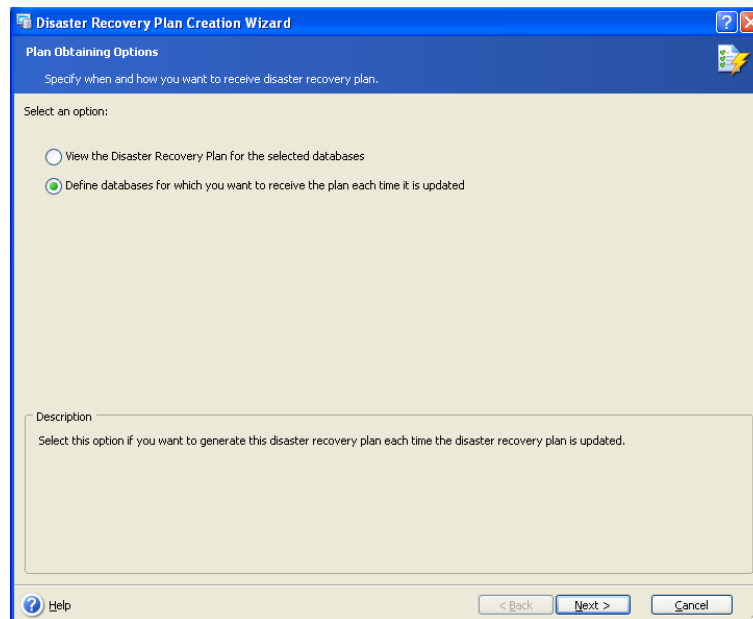
Figure 43. Disaster recovery plan options

2. Select the databases for which you want to obtain the Disaster Recovery Plan.

3. Specify the e-mail account that will be used for sending the Disaster Recovery Plan. Provide the e-mail address to which the plan will be sent and the outgoing SMTP server name. You can specify several e-mail addresses separating them with commas.

   A Username and a password may also be needed if the SMTP server requires authentication.

   You can check if the settings are correct by clicking the **Send test E-Mail message** button.
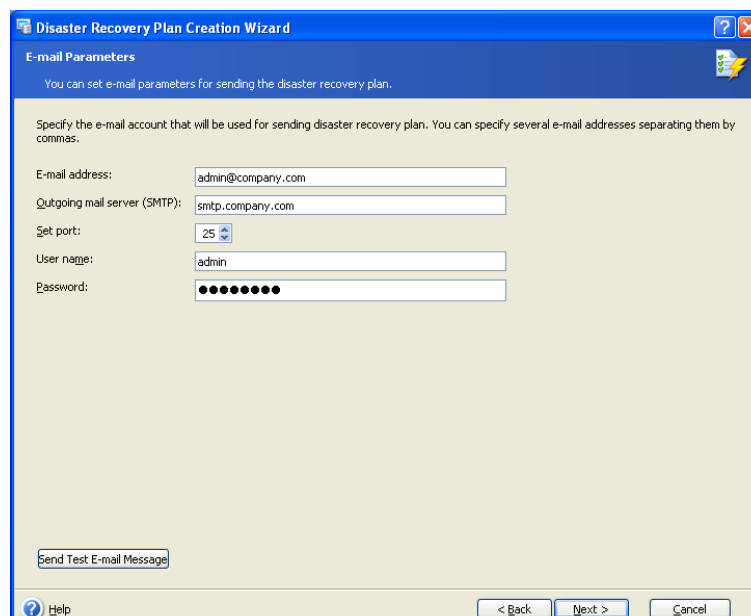
Figure 44. E-mail parameters

4. The final stage of the **Disaster Recovery Plan Creation** wizard is the summary window which displays the list of operations to be performed.

Click **Finish** to schedule receipt of the Disaster Recovery Plan after each update.

6.3 Summary

Thus, in case of disaster, you only need to take the most recent version of the Disaster Recovery Plan and follow the instructions to restore your databases.

Chapter 7. Import a Maintenance Plan

With Acronis Recovery for MS SQL Server, you are able to import an existing Microsoft SQL Server Maintenance Plan for a database and convert it into an Acronis Recovery for MS SQL Server task. Later on, you can work with the imported task, as with the regular Acronis backup task i.e.: launch the task, edit the tasks' options and schedule the task execution parameters.

Launch the **Import Maintenance Plan** wizard by clicking on the icon in the main area.

7.1 Specifying a Task Execution Account

In the first step of the **Import Maintenance Plans** wizard, specify an account that is valid on the computer where the databases you want to backup are located – a task execution account. These credentials will be used during each task execution for connecting to the server and, by default, for connecting to the Microsoft SQL Server (if you do not specify another account for Microsoft SQL Server while selecting the source to backup).

Thus, the task will run as it was started by the specified user.

Enter the Username and password, then click **Next**. The domain name must be specified if the user is a member of a domain (DOMAIN\Username).

Figure 45. Task execution account window

7.2 Selecting a Maintenance Plan

Select the database maintenance plan you want to import from the tree in the left pane. Information about the selected maintenance plan will be displayed in the right pane. Select a job from the tree. The associated schedule and objects will be shown on the right.

To disable a Microsoft SQL Server, task after importing the maintenance plan, select the **Disable SQL task after import** checkbox. The Microsoft SQL Server maintenance plan will be deleted after importing.

Click **Next** to continue.

7.3 Import Summary

In the final step, the import summary is displayed. Up to this point, you can click **Back** to make changes in the created task. If you click **Cancel**, no maintenance plan will be imported. Clicking **Proceed** will launch the task execution – importing the SQL Maintenance Plan and converting it to an Acronis task.

Chapter 8. Backup Location Clean-up

Sooner or later the backups you create will fill up the assigned storage space. Acronis Recovery for MS SQL Server allows you to clean up backup locations by specifying how long to store the archive and/or the maximum number of full backups to store. By default, these options are disabled.

Launch the **Backup Location Clean-up** wizard by clicking on the icon in the main program window.

8.1 Specifying a Task Execution Account

In the first step of the **Backup Location Clean-up** wizard, you have to specify a local or domain account which is valid on the computer where the archives are stored – a task execution account. The specified account must have rights and permissions to manage files in the backup location you want to clean up.

Enter the Username and password then click **Next**. The domain name must be specified if the user is a member of a domain (DOMAIN\Username).
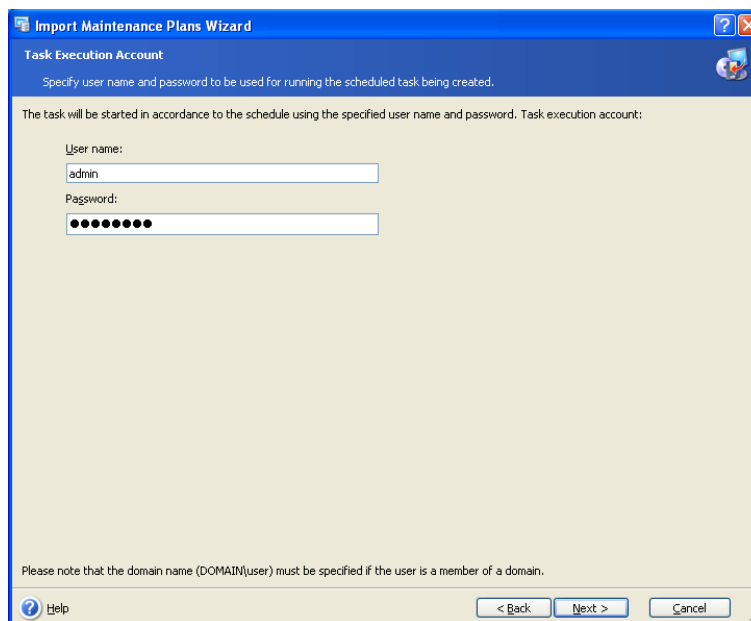
8.2 Selecting the Backup Archive Location

Select the backup location you want to clean from the tree, or manually specify the path to it in the **Path** field below the tree. You can also select Acronis backup locations (such as Acronis Backup Server).

The following resources may also be selected for backup locations:

- Entire disk or disk folder;

- Network share, SAN, NAS;

- FTP;

- Acronis Backup Server.

Click **Next** to provide a password, if one is required, for archives in the selected backup location.
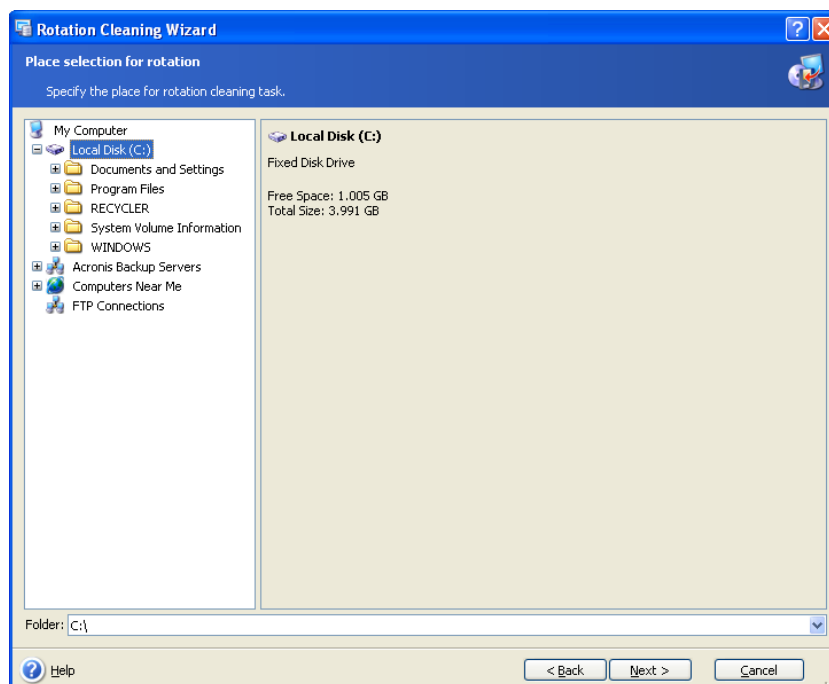
Figure 46. Selecting a backup location

8.3 Providing a Password

If there are any password-protected backup archives in the location you have selected (see *Selecting the Backup Archive Location* (p. 60)), you will need to enter the password to clean up the archive location.
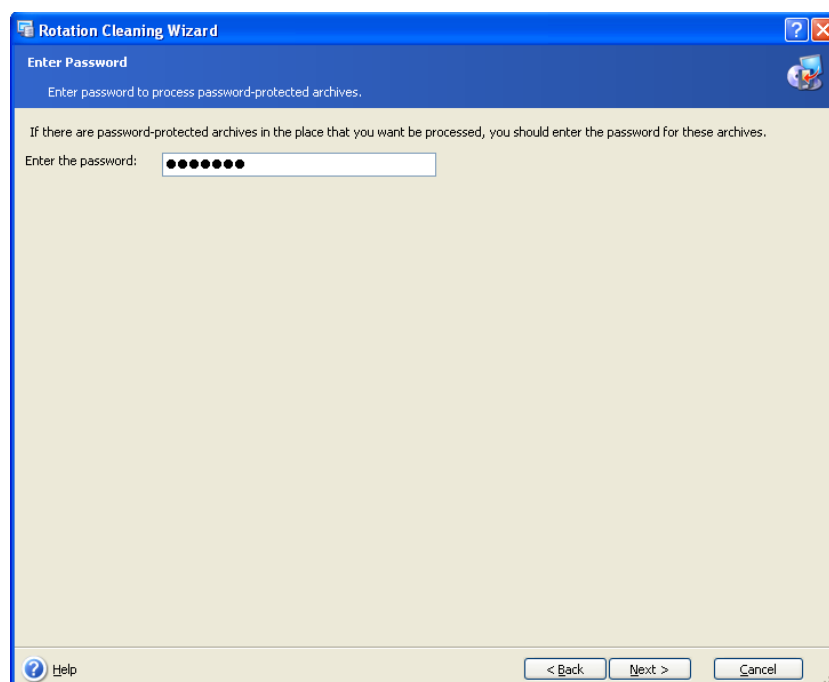
Figure 47. Providing a password

Click **Next** to continue.

8.4 Specifying Cleaning Options

Specify the maximum lifetime of an archive and the maximum number of full backups to store.

Select the **Consider maximum archive's life** check box and type or select a number of days to store archives in the Days box.

Select the **Consider maximum full backup** check box and type or select the maximum number of full backup archives to store.
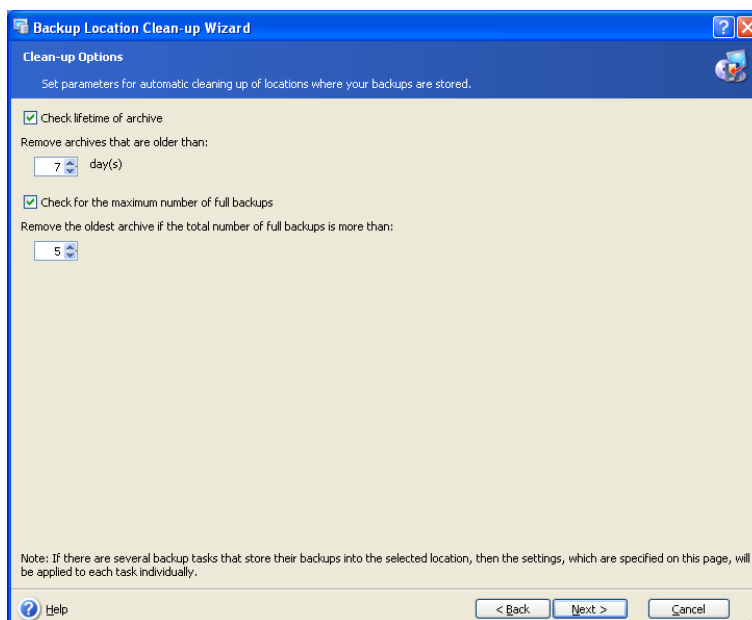
Figure 48. Clean-up Options window

8.5 Schedule Cleaning

Acronis Recovery for MS SQL Server allows you to schedule backup location clean-up. Specify the schedule that would be the best for your needs (see *Scheduling Tasks* (p. 75) for detailed information).
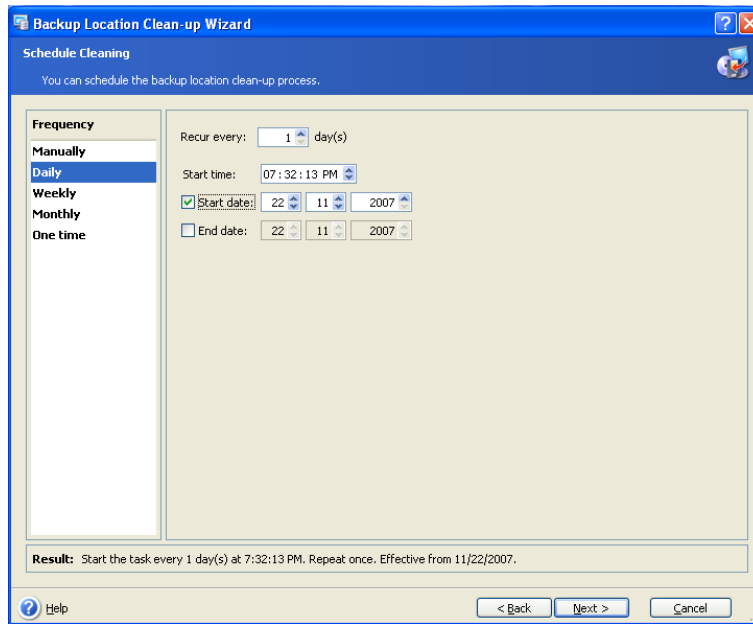
Figure 49. Schedule Cleaning window

8.6 Backup Location Clean-up Summary

The final stage of the backup location clean-up is the summary window, where the list of operations which will be performed is displayed.

Click **Finish** to save the created schedule or start the backup location clean-up task immediately.
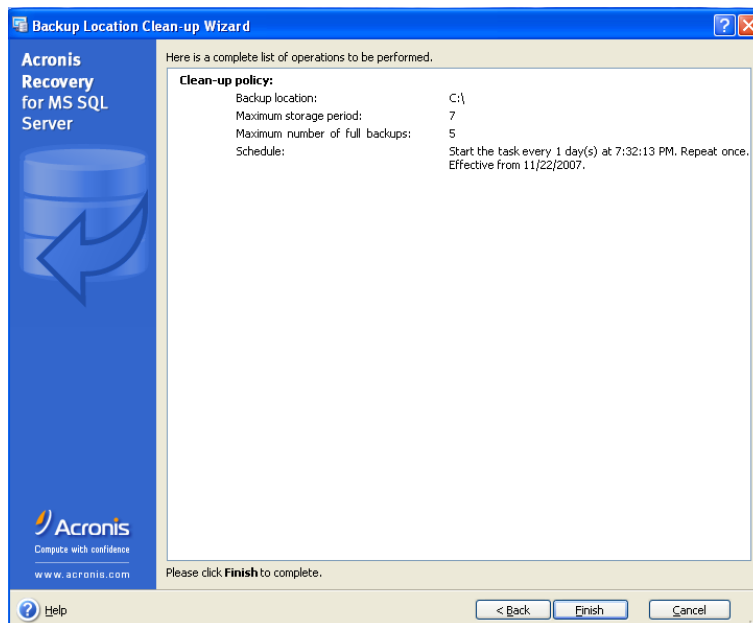
Figure 50. Clean-up summary

Copyright © Acronis, Inc., 2000-2010

Chapter 9. Restoring the Backup Data

Launch the **Restore Data** wizard by clicking on the restore operation icon in the main workspace.

9.1 Restore

9.1.1 Restoration Time Selection

In the first step of the **Restore Data** wizard you will select when to run the restoration process. There are two choices:

- **Now** – select this option to execute the restore operation immediately after you finish the wizard

- **On schedule** – select this option to schedule the operation
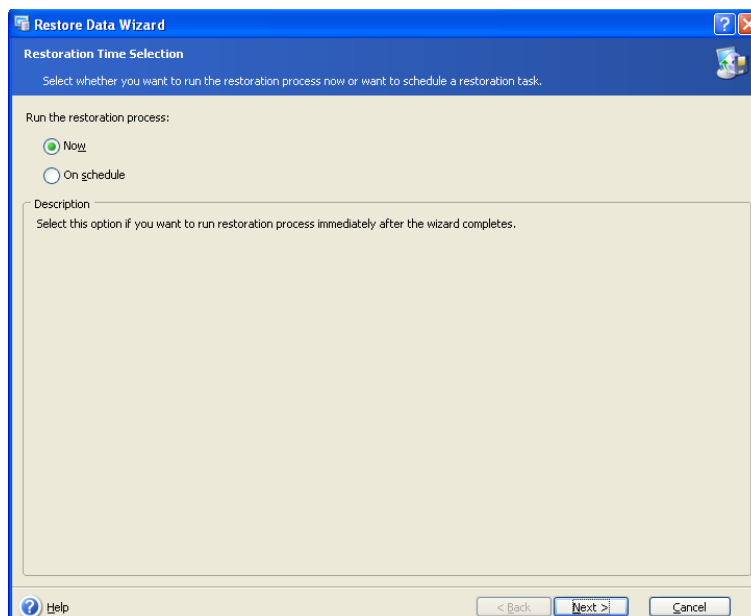
Figure 51. Restoration Time Selection window

9.1.2 Specifying a Task Execution Account

In this step of the **Restore Data** wizard, specify an account that is valid on the computer where the databases you want to restore are located– a task execution account. These credentials will be used during each task execution for connecting to the server and, by default, for connecting to the Microsoft SQL Server (if you do not specify another account for Microsoft SQL Server while selecting the source to backup).

Thus, the task will run as if it was started by the specified user.

Enter the Username and password then click **Next**. The domain name must be specified if the user is a member of a domain (DOMAIN\Username).

9.1.3 Selecting a Database Backup Location

Select the appropriate backup location in the tree or specify the path to it manually in the **Path** field below the tree. Acronis Recovery for MS SQL Server stores up to ten locations for the last archives created in a special folder – **Recent Backup Locations** - so you can easily locate the appropriate archive.

You can also select specific Acronis backup locations (such as Acronis Backup Server).

The following resources may also be selected as backup locations:

- entire disk or disk folder;

- network share, SAN, NAS;

- FTP;

- Acronis Backup Server;

- tapes, Autoloaders, Tape Libraries.

The number of archives in the selected folder is displayed in the right pane.
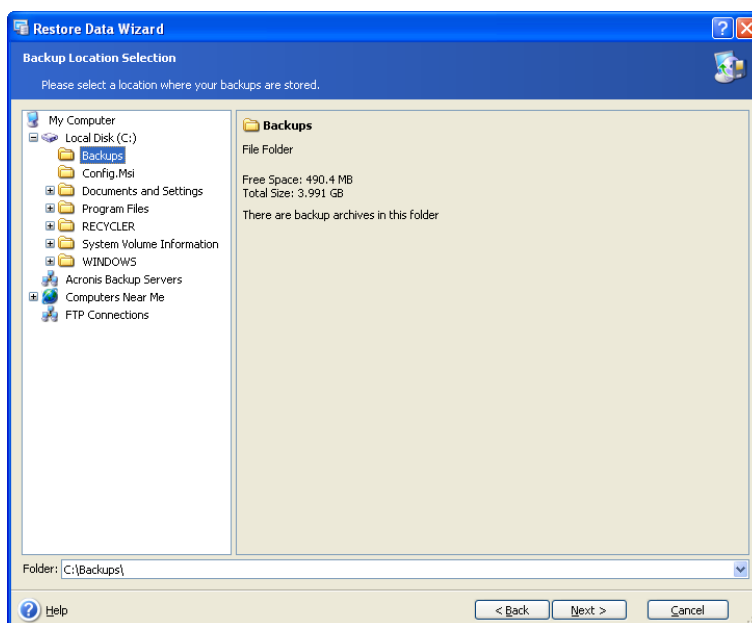
Figure 52. Selecting a database backup location

Click **Next** to continue.

9.1.4 Selecting a Backup Task

If several backup tasks use the same location to store archives, you have to select the task you want to restore from.

Click **Next** to continue.

9.1.5 Providing a Password

If there are any password-protected backup archives in the location you have selected (see *Selecting a Database Backup Location* (p. 65)), you will need to enter the password to restore your data from archives.

Click **Next** to continue.

9.1.6 Restore Point Selection

Specify to which state you want to restore your data.

Acronis Recovery for MS SQL Server offers four ways for restoring your data:

- **to the point of failure** – the data will be restored to the state at the point of failure. Note, this type of restoration is possible only for databases that are using the full or bulk-logged recovery models (i.e. you need backed up transaction logs). Acronis Recovery for MS SQL Server will restore databases from Full, Differential and Transaction Logs backups (if any), and then will apply Active Log if it exists and was not corrupted during the failure. Keep in mind, that restoring to the point of failure can take a long time.
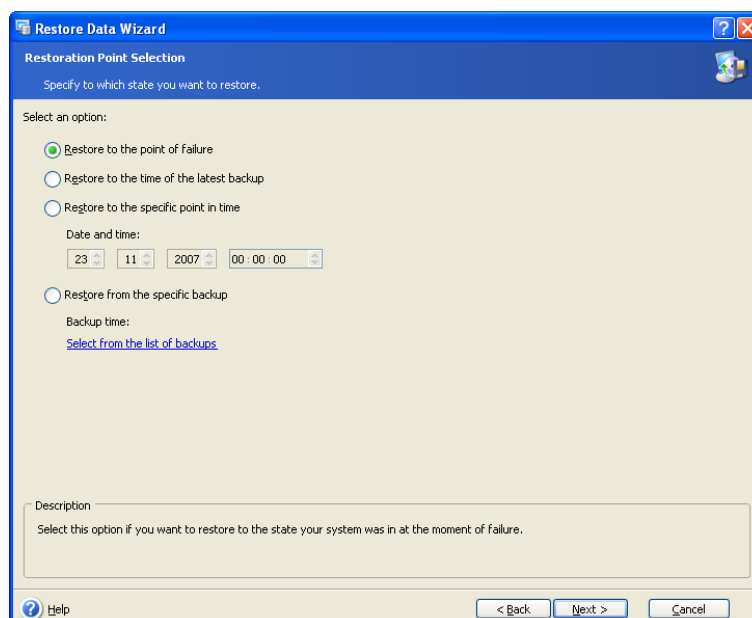
Figure 53. Restore point selection

- **to the time of the latest backup** – choosing this option will restore your data to the state when the last backup was created. Acronis Recovery for MS SQL Server will restore databases from Full, Differential and Transaction Logs backups (if any), but will not apply Active Log. So restoration to the latest backup will be faster, than restoration to the point of failure.

- **to the specific point in time** – Acronis Recovery for MS SQL Server allows you to specify a date and time to restore your data from. As with restoring to the point of failure, Acronis Recovery for MS SQL Server will restore databases from full, differential and transaction log backups (if any).

- **from the selected backup** – select this option to choose a backup from which to restore. A list of backups will be available by clicking on the Select from the list of backups link. Choose the backup you want to restore from and click OK. As with restoring to the time of the latest backup, Acronis Recovery for MS SQL

Server will restore databases from Full, Differential and Transaction Logs backups (if any), but will not apply Active Log.
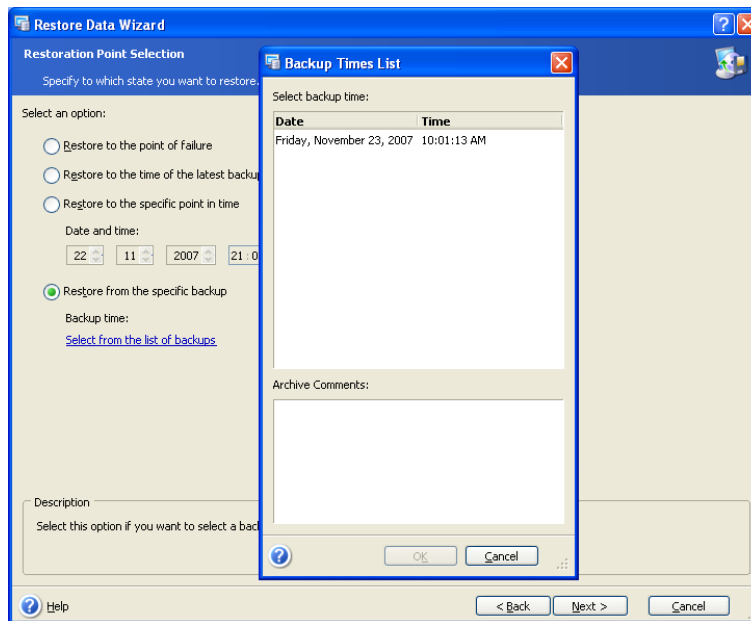
Figure 54. Backup times list

After selecting the appropriate option click **Next** to continue.

9.1.7   Content Selection

Acronis Recovery for MS SQL Server allows restoring instances, single databases and filegroups. Select a database server from the tree in the left pane.

Restoring Instances

Choose an instance to restore. Information about this instance will be displayed on the right.

To change the type of authentication (Windows or Microsoft SQL Server), click **Change**. See *Specifying Credentials* (p. 37) for detailed information.

In the drop-down list, specify the instance you want to restore from.
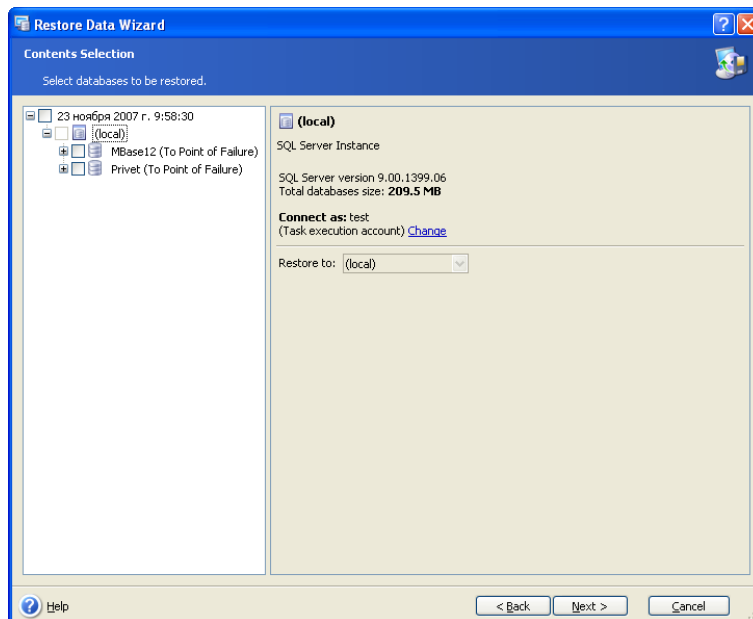
Figure 55. Contents selection

Restoring Databases

Choose the database to restore. You can set all the recovery parameters as described above in the **Restoring instances** section. Additionally, you may customize the location, where database files will be restored, and setting the database state after restoring.

> Note, you can restore a database from rolling snapshots. Remove the database snapshots using Microsoft SQL Server Management Studio then begin the restore operation.

Select **Use the customizable file paths** to restore the database to a new location. Click **Customize file path...** to change settings. Default paths are displayed in the respective fields.

If you define a file name (including the full path) that already exists, old files will be overwritten. If you do not define the full path, the files will be added to the default data directory of the current instance.

Note, existing paths for data and log files will be used as default.

Also, Acronis Recovery for MS SQL Server allows you to specify paths for separate files.
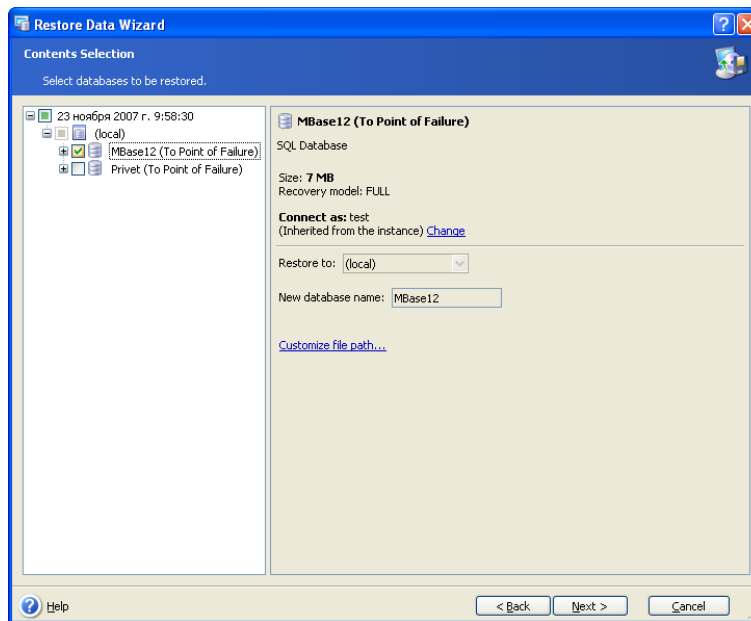
Figure 56. Contents selection

Click **OK** to continue.

Restoring System Databases

System databases can only be restored from a backup created in the Microsoft SQL Server version that the server instance is currently running.

The master database must be accessible to run a Microsoft SQL Server instance and to restore databases.

If the master database is not accessible, you have to restore the database from a full backup and rebuild it.

It is necessary to restore the model and msdb databases if:

- the master database must be rebuilt;

- the model and msdb databases are corrupted;

- the model database was modified (it has been deleted and re-created after rebuilding the master database).

Selecting Filegroups to Restore

By default, filegroups of the selected database will be selected for restore. If you do not want to restore specific filegroups, uncheck them in the tree in the left pane. Also if all filegroups are selected, the entire database will be restored.

	Please, keep in mind, restoring separate filegroups over an existing database is possible only if you selected restoring **to the point of failure**. Other types of filegroups restoration are valid only for newly created databases (automatically created during the restoration process).

To view the information about filegroups in the right pane, select them from the tree.
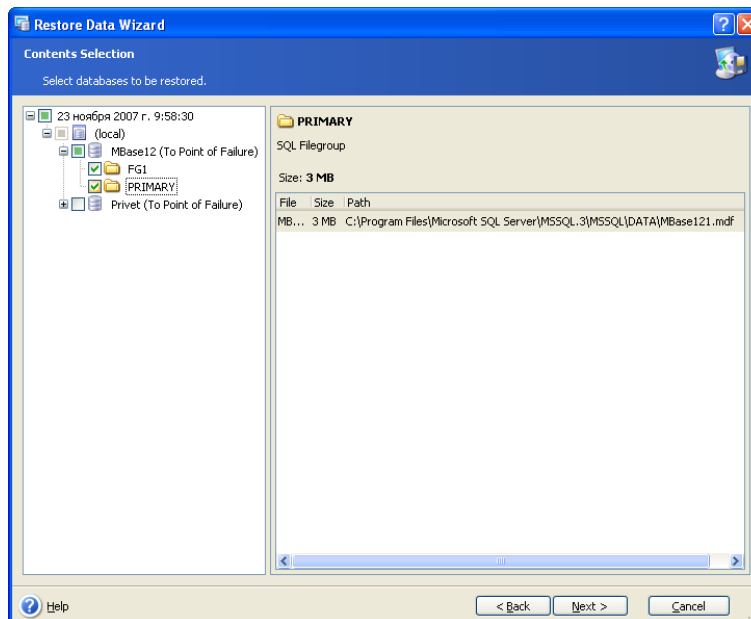
Figure 57. Contents selection

	If the filegroup restore completes with an error message about the database checksum validation failure (824), the database is not consistent after restoring. You should restore the entire database.

After defining all the required parameters click **Next** to continue.

9.1.8 Restore Options

Select the options for the restoration process (Pre/Post commands, restoration process priority etc.). You can **Use default options** (See *Setting Default Restore Options* (p. 71) for more information.) or **Set the options manually**. If the latter is the case, the settings will be applied only to the current restore task.
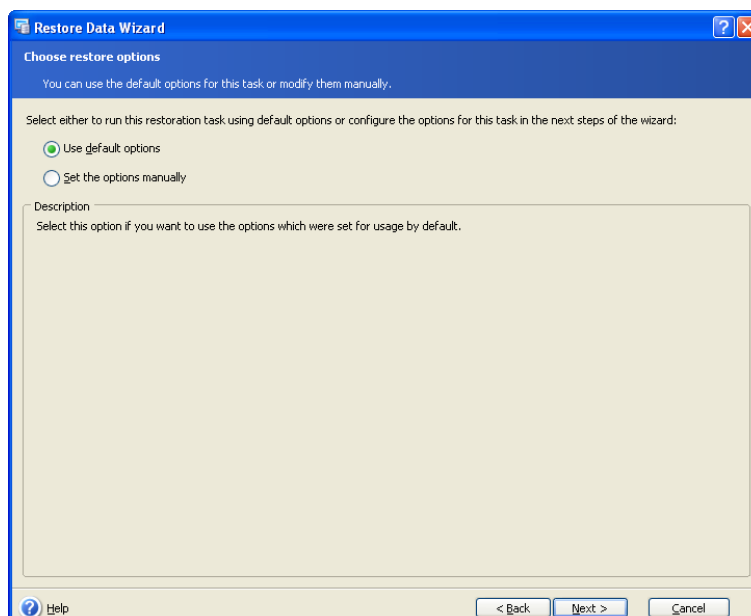
Figure 58. Choosing restore options

9.1.9 Selecting Start Parameters

You can run a restore task manually or specify the frequency (Daily, Weekly or Monthly). See *Scheduling Tasks* (p. 75) for detailed information.

9.1.10 Restore Summary

In the final step, the restoration summary is displayed. Up to this point, you can click **Back** to make changes in the created task. If you click **Cancel**, no databases will be restored.
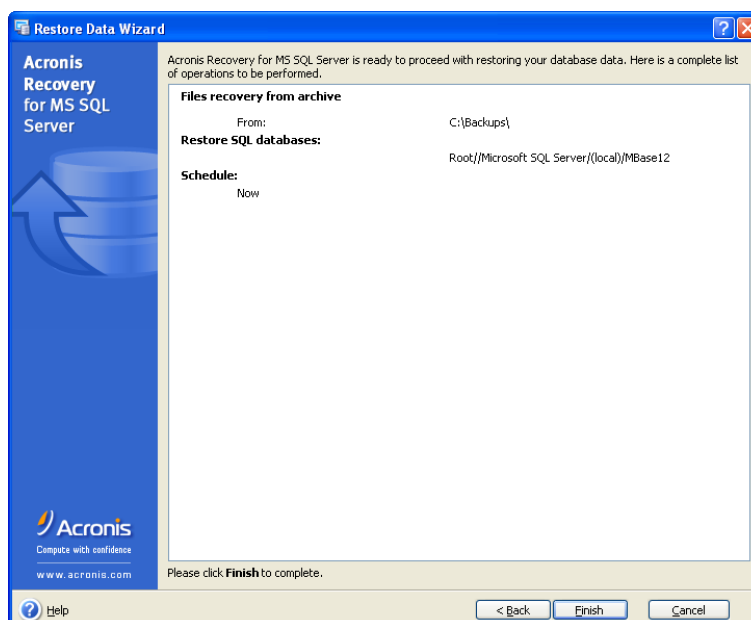
Figure 59. Restore summary

Click **Finish** to save the schedule or start the restore task immediately.

9.2 Setting Default Restore Options

To view or edit the default restore options, select **Tools -> Options -> Default Restoration Options** from the main program menu.

You can also edit restore options while creating a restore task.
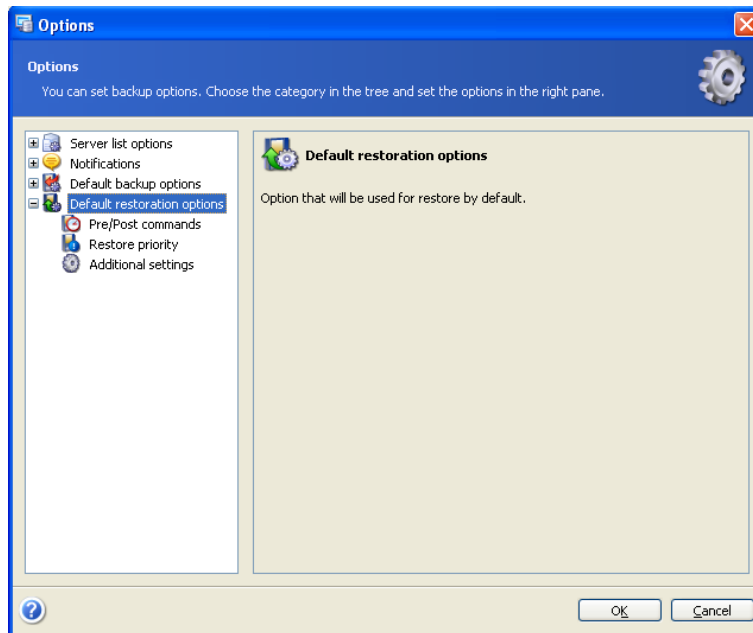
Figure 60. Setting default restore options

9.2.1 Pre/Post Commands

You can specify commands or batch files to be automatically executed before and after the restore procedure. Click Edit to open the Edit Command window and input the command, its arguments and the working directory, or browse folders to find a batch file. Interactive commands (commands that require user input) are not supported.
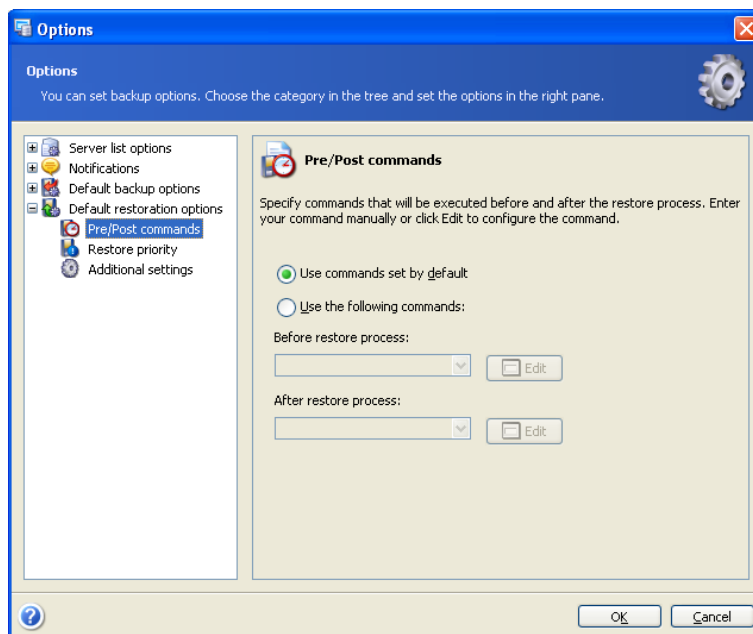
Figure 61. Pre/Post Commands window

9.2.2 Restoration Priority

You can set up the restore process priority:

- **Low** - the restore process will run slower, but it will not influence other processes running on your computer

- **Normal** - set by default. The restore process will run with normal priority
- **High** - the restore process will run faster, but it may influence other processes running on your computer

Changing the restore process priority may have an adverse effect on the performance of other programs running simultaneously. The priority of any process running in the system determines the amount of CPU usage and system resources allocated to that process.
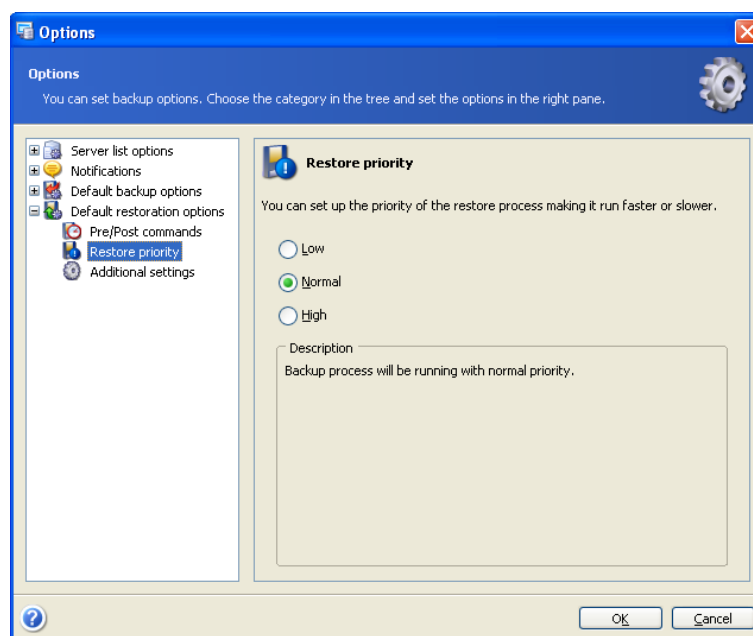
Figure 62. Restoration Priority window

9.2.3   Additional Settings

Backup archive validation

Before data is restored from the archive, Acronis Recovery for MS SQL Server can check its integrity. If you suspect that the archive might have been corrupted, select **Validate backup archive before restoration.**

Databases overwriting mode

This option allows you to keep useful data changes made since the restored backup was completed. If you are to rename a database or change the default instance, the restored database can overwrite the existing one. So, you can select the Overwrite existing databases option to give the archived database unconditional priority over the database on the hard disk.

By default this option is selected.

Disconnecting before restoration

Selecting the **Disconnect from database before restoration** option allows you to minimize the number of active connections to the server before executing the restore operation.

Copyright © Acronis, Inc., 2000-2010
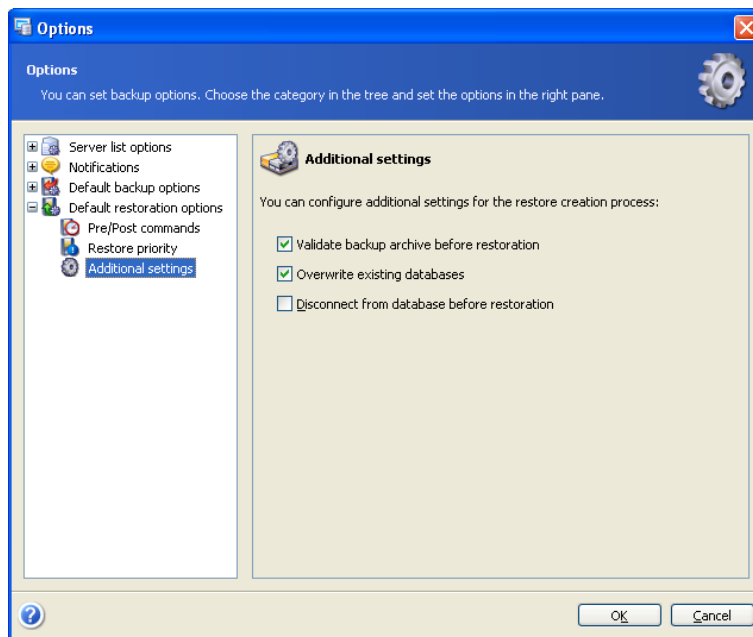
Figure 63. Additional settings

Chapter 10.   Scheduling Tasks

10.1 What is a task?

A task is a job you execute for a database that includes the type of operation (backup, restore, etc.), parameters of the operation (what to backup, what to restore, etc.) and a schedule (optional). Each time you want to perform an operation with specific parameters, you should create a task. Once the task is created, you can execute it manually at any time or run it on a scheduled basis (if provided). You can also schedule independent or redundant tasks for the same database or instances.

10.2 Setting Schedule Parameters

You can run a task manually or specify the frequency (Daily, Weekly or Monthly).

Manually – this option allows you to create a task without specifying the exact schedule of its execution. The created task appears in the task management list and may be run at any time.
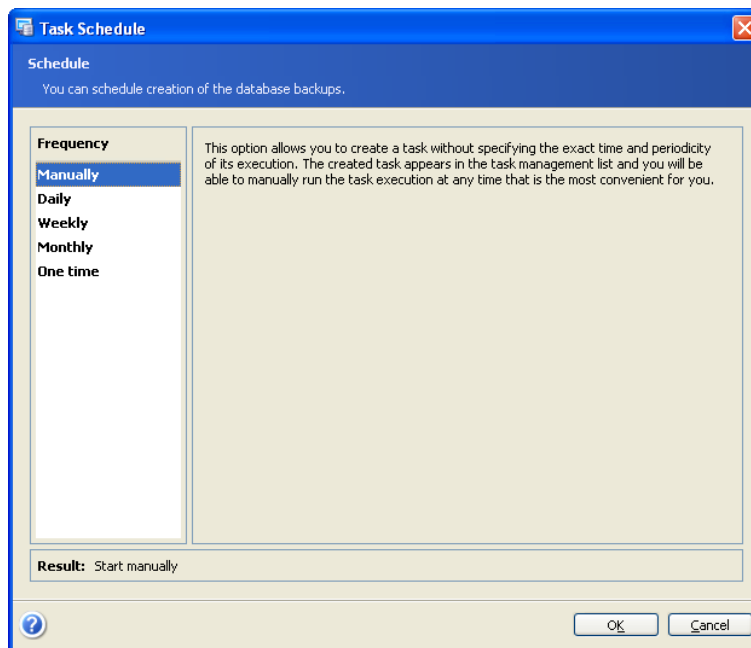
Figure 64. Setting schedule parameters

Daily - the task will be executed daily at the specified time. You can set the following parameters:

Parameter	Description
Recur every (...)	The task execution frequency

days	
Start time	Time for starting the task. The current time is set by default
Repeat	Task execution frequency: **Once** for a single execution and **Every (…)** for periodic executions throughout the day (in minutes or hours)
End time	Time when the schedule will be disabled
Start date	Select this check box to specify the date to enable this schedule
End date	Select this check box to specify the date when this schedule will be disabled

Figure 65. Setting daily schedule

Weekly - the task will be executed on a weekly basis at the specified time and days. You can set the following parameters:

Parameter	Description
Recur every (...) weeks	The task execution frequency. Select individual days of the week, all days or only workdays.
Start time	Time for starting the task. The current time is set by default
Repeat	Task execution frequency: **Once** for a single execution and **Every (…)** for periodic executions during the day (in hours)
End time	Time when the schedule will be disabled
Start date	Select this check box to specify the date to enable this schedule
End date	Select this check box to specify the date when this schedule will be disabled

Figure 66. Setting weekly schedule

Monthly - the task will be executed monthly at the specified time and day. You can set the following parameters:

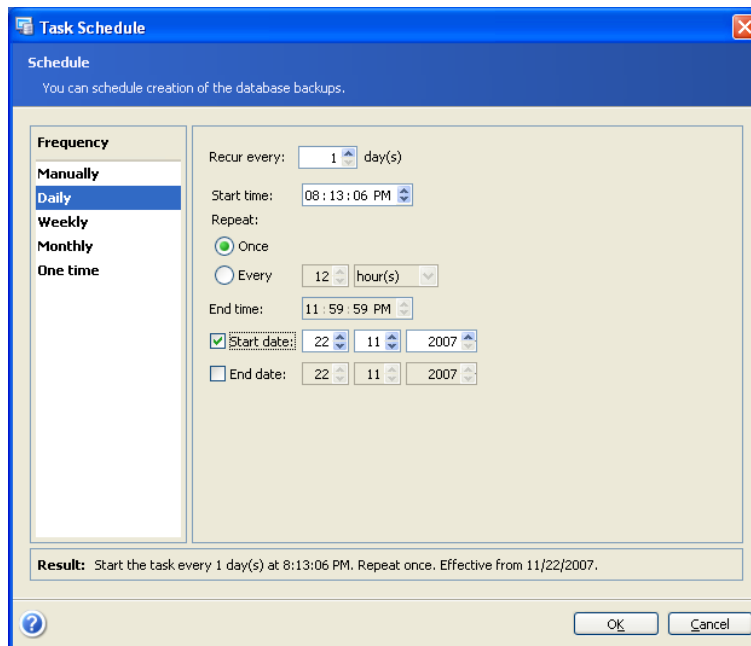| Parameter	Description
Months	Select months for the task execution from the drop-down list. Then choose one of the following parameters: **Days** - choose this parameter to specify days of the selected months for task execution. Choose the dates from the drop-down list. Also you can select **Last** (to execute the task on the last day of the chosen months) or **All** days. For example, if you have selected "15" and "Last", the task will be executed on every 15th and every last day of the selected months. **On** - choose this parameter to select a week number of the month (also **Last** or **All)** and the day of the week (as well as **All days** and **All Workdays**) for task execution. For example, if you have selected "First" and "Monday", the task will be executed on the first Monday of the selected months.
Start time	Time for starting the task. The current time is set by default
Repeat	Task execution frequency: **Once** for a single execution and **Every (…)** for periodic executions during the day (in hours)
End time	Time when this schedule will be disabled
Start date	Select this check box to specify the date to enable this schedule
End date	Select this check box to specify the date when this schedule will be disabled

Figure 67. Setting monthly schedule

One time - the task will be executed once at the specified time and day. You can set the **Start time** parameter: specify the date and time to start the operation. Current time is set by default.
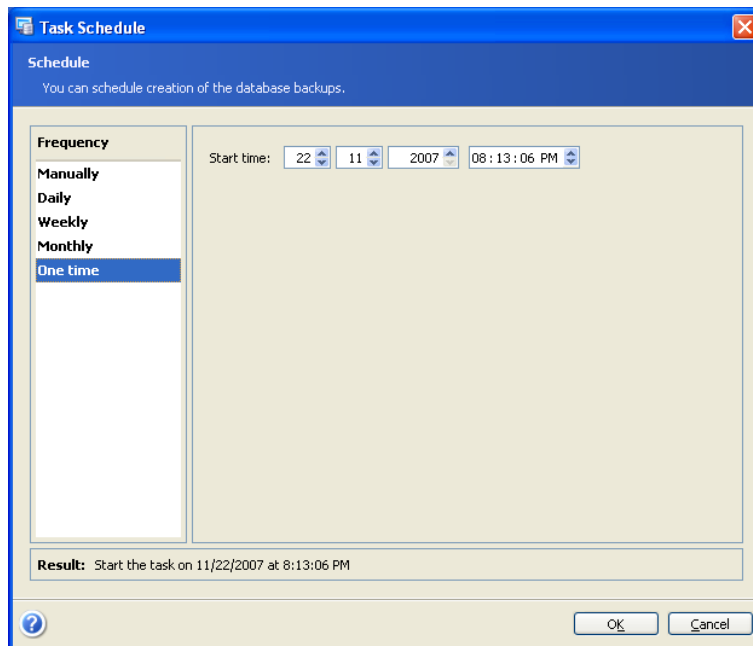
Figure 68. Setting one time task execution

All the settings you made are displayed in the **Result** field at the bottom of the window.

To save your settings, click **OK**.

To quit task scheduling without saving, click **Cancel**.

Note, Acronis Recovery for MS SQL Server allows you to set multiple schedules for one task. For example, you can backup your data not only once a week, but also on the last day of each month. You can specify Weekly and Monthly parameters to have the necessary operation schedule.

Chapter 11.   Managing Tasks

To manage operations, click **Manage Tasks** in the **Pick a Tool** group or select the **Tools - > Manage tasks** menu item.

All the scheduled tasks appear in the Scheduled Tasks pane in the Manage Computer Tasks window of the Acronis Recovery for MS SQL Server Management Console. Information about the task name, credentials, the type of backup, its status (completed, scheduled), the task's schedule and the date and time when it was run last is displayed.

You can edit, start, and delete the scheduled tasks from these windows, as well as edit the scheduled set of tasks.

	Note, backup tasks may consist of three subtasks: full, differential and transaction log backups. You can manage these subtasks separately.
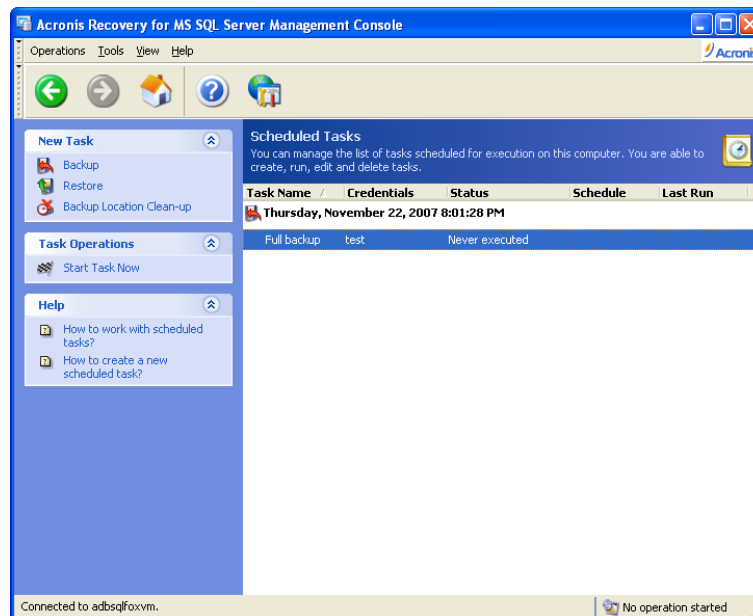
Figure 69. Scheduled tasks window

11.1 Editing a Task

To edit a task, select it in the Tasks window and click **Edit Task** on the left. Follow the wizard's instructions on the screen.

11.2 Deleting a Task

To delete an existing task, select it in the Tasks window and click **Delete Task** on the left. Follow the wizard's instructions on the screen.

11.3 Starting a Task

To begin executing an existing task immediately, select it in the Tasks window and click **Start Task Now** on the left.

11.4 Viewing a Disaster Recovery Plan

Click the **View Disaster Recovery Plan** link in the tasks pane. The plan is provided in HTML format. See details in *Disaster Recovery Plan* (p. 54).

Chapter 12.   Notifications

Acronis Recovery for MS SQL Server can notify you when a task is complete using an SNMP service or via e-mail.

By default all notifications are disabled.

12.1 E-mail Notifications

Specify the default e-mail account that will be used for notifications regarding the backup operation process. Provide the e-mail address to which notifications will be sent and the outgoing SMTP server name. A Username and a password may also be needed if the SMTP server requires authentication.

You can choose when you want to receive notifications:

- after successful completion of the operation;
- if the operation fails.
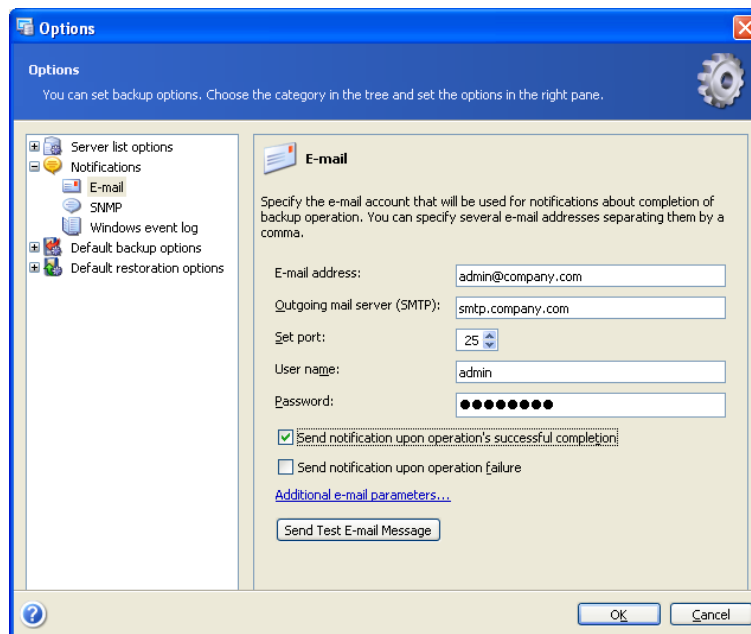
Figure 70. Setting e-mail notifications

Click the **Additional e-mail parameters…** link to specify the **From** and **Subject** fields for the notification e-mail.

You can check if the settings are correct by clicking the **Send Test E-mail Message** button.

12.2 SNMP

You can choose whether to send event log messages issued by Acronis Recovery for MS SQL Server to computers running SNMP (Simple Network Management Protocol) management applications.

To specify SNMP settings, check the Send Notification with SNMP parameter to enable SNMP notification.

In the **Community Name** field, enter the name of the SNMP community to which both the Host (the computer running the SNMP management application) and the computer running the task belong.

In the **Host Name** field, enter a name of the computer running the SNMP management application, to which notifications will be sent. If not specified, messages will be sent to all SNMP clients found in the local network.

Below in this window you can choose whether you want to get notifications:

- upon the operation's successful completion parameter;
- upon the operation failure parameter.
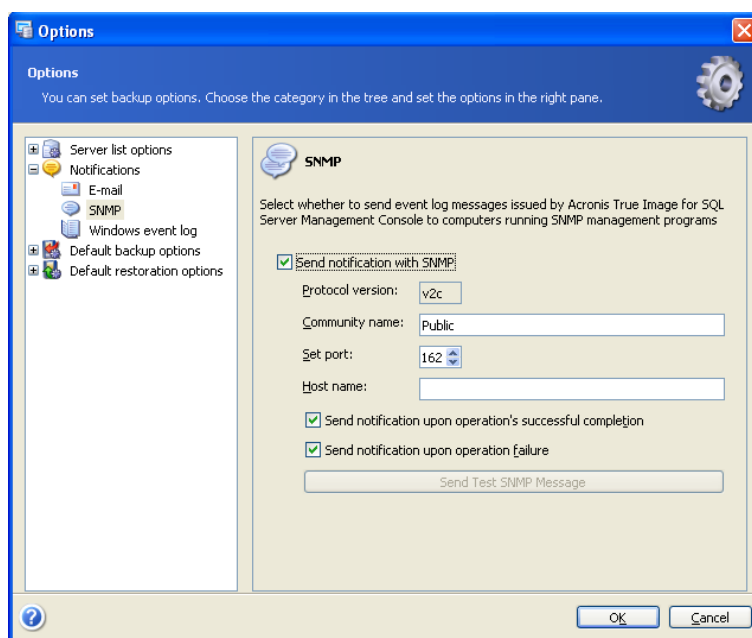
Figure 71. Setting SNMP notifications

You can check if the settings are correct by clicking the **Send test SNMP message** button.

12.3 Windows event log

You can save event messages to the Windows Event Log (to see this log, run eventvwr.exe or select Control Panel -> Administrative tools -> Event Viewer).

To save event messages to Windows Event Log select the **Save messages** option and choose one of the following from the drop-down list:

- **All events** - all events (information, warnings and error messages) will be recorded to the Windows Event Log
- **Warnings and errors** - warnings and error messages will be recorded to the Windows Event Log

- **Errors only** - only error messages will be recorded to the Windows Event Log
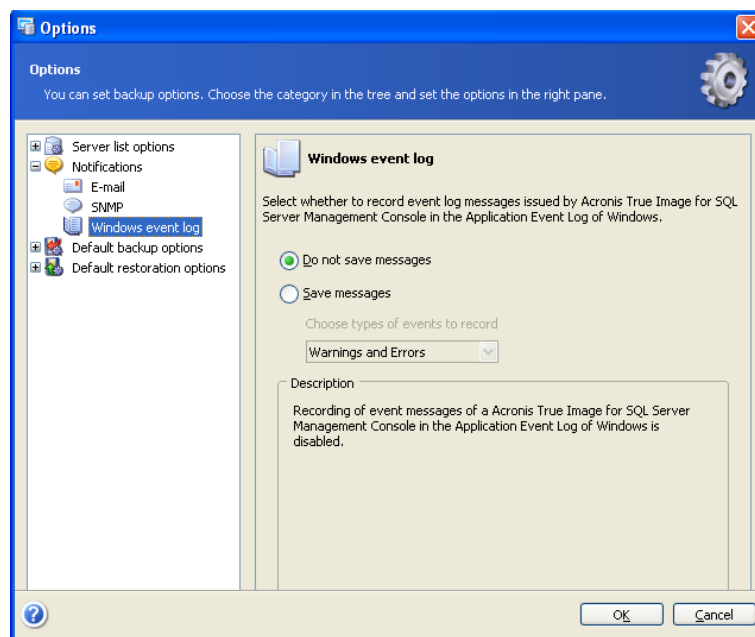
Figure 72. Windows event log option

Chapter 13.   Viewing Logs

Acronis Recovery for MS SQL Server working logs provide information about scheduled task results, including failure reasons, if any. To view logs, click the **Logs** item in the **Pick a Tool** group.

The log browsing window contains two panels: the left panel features the log list, and the right panel displays the selected log's contents. You can set up list parameters to only display messages of a particular type, display particular columns, or select a sorting order.

To the left, there are 3 message filter options:

- filter error messages;
- filter warnings;
- filter information messages.

To select columns to display, click the button and check columns to display.

To sort messages by a particular column, click its header (click again to reverse the order) or the button (the second from the right) and select the desired column.

You can also change column width by dragging its borders with the mouse.

Appendix A.   Acronis Recovery for MS SQL Server: Best Practices

This section provides instructions for best practices when using Acronis Recovery for MS SQL Server.

A.1   Protect your server from hardware failure, user errors and viruses

Scenario

The company is running several internet and intranet applications on several Windows 2000 servers using Microsoft SQL Server as the back end (using different instances). Since all transactions are stored in the database, any data loss is not acceptable. The database administrator must provide protection from hardware failure, user errors and virus attacks.

Acronis solution

Use the following components

- Acronis Recovery for MS SQL Server Agent (on all servers with databases)
- Acronis Recovery for MS SQL Server Management Console (on an administrator workstation, from which you plan to manage tasks)

To schedule periodic backup

1. Install Acronis Recovery for MS SQL Server Management Console on the database administrator workstation and Acronis Recovery for MS SQL Server Agents on the server where Microsoft SQL Server instances are located

For every Microsoft SQL Server instance perform the following actions:

2. Connect to the server from the Acronis Recovery for MS SQL Server Management Console using the appropriate credentials

3. Launch the **Create Backup** wizard and follow the instructions to create a backup task:

---

a. Select the whole Microsoft SQL Server instance (or all available instances) as a backup source

b. Select a backup destination

c. Select **Full, Differential and Transaction logs backups** type

d. Schedule full backups for every month, differential backups for every week and transaction log backup for every day

e. Use default settings for backup

f. Add the necessary comments for the task

g. Save the created task

To recover all data in case of hardware failure

For every damaged server perform the following actions:

1. Install and configure a new server. Install the necessary Microsoft SQL Server instances on the server.

2. Install Acronis Recovery for MS SQL Server Agent on the server

3. Connect to the server from Acronis Recovery for MS SQL Server Management Console using the appropriate credentials

4. Launch the **Restore Data** wizard and follow the instructions to restore the database:

   a. Select the backup archive location

   b. Select the **Restore to point of failure** option

   c. Select the whole Microsoft SQL Server instance (or several instances) to restore from, then specify the target instance for each instance.

   d. Start the restore operation

> All Microsoft SQL Server instances will be restored to the point of failure to avoid data loss.

To recover all data in case of a user mistake

For all servers perform the following actions:

1. Connect to the server from Acronis Recovery for MS SQL Server Management Console using the appropriate credentials

2. Launch the **Restore Data** wizard and follow instructions to restore the database:

   a. Select the backup archive location

---

b. Select the **Restore to point in time** option and specify the date and time manually, or select the backup from the list of backups.

c. Select the database to restore from the archive

d. Start the restore operation

> Only one database will be restored to the selected point in time.

To recover all data in case of a virus attack

For all servers perform the following actions:

1. Recover the server from viruses, reinstall the operating system or replace the server with a new one.

2. Connect to the server from Acronis Recovery for MS SQL Server Management Console using the appropriate credentials

3. Launch the **Restore Data** wizard and follow the instructions to restore the database:

a. Select a backup archive location

b. Select the **Restore to point in time** option and specify the date and time manually or select the required backup from the list of backups.

c. Select the whole Microsoft SQL Server instance (or several instances) to restore, and specify the target instance for each instance.

d. Start the restore operation

> All Microsoft SQL Server instances will be restored to the point in time.

A.2 Protect your server to guarantee minimal data loss

Scenario

The database administrator must organize the server backup creation so that in case of a server failure for any reason, the maximum data loss would not be more than 15 minutes.

Acronis solution

Connect to Acronis Recovery for MS SQL Server Management Console and create a backup task for Microsoft SQL Server with the following backup strategy: Full Backup (every week) + Differential backup (every day) + Transaction log backup (every 15 minutes).

To recover all data in case of failure, use the same procedure as described in the previous scenario (A.1).

A.3   Migrate to another Microsoft SQL Server version.

Scenario

The company needs to move a database to another server, where a newer Microsoft SQL Server version is installed. After the migration, the server must have a different name, and the old server must remain operational (to provide fast database rollback in case a contingency occurs).

Acronis solution

1. Install a new Microsoft SQL Server instance.

2. Set the old database to StandBy mode.

3. Create a backup of the old Microsoft SQL Server instance using a previously created task (running it from the Acronis Recovery for MS SQL Server Management Console) or create a new task (full backup).

4. Restore to a new Microsoft SQL Server instance.

5. Specify new settings for working with a new Microsoft SQL Server instance.

A.4   Backing up several databases

Scenario

The company uses only one Microsoft SQL Server instance for running several databases. All databases have different levels of importance concerning data loss: some of them need to be backed up every day, others require only weekly backups.

Acronis solution

The database administrator should create independent tasks for different databases. While creating a task, the database administrator specifies the appropriate schedule for each database.

A.5   Encrypting database archives for storage

Scenario

The company stores database backup archives off-site, hence they should be effectively protected (encrypted).

Acronis solution

While creating a backup task, the database administrator should set a password to protect the archive and encryption type (AES 128, 192 or 256) by specifying backup options.

While creating the restore task, the administrator has to provide the correct password to the archive in order to restore the data. The password should be kept in a safe place so that data may be restored if the company hires new administrators.

A.6　Using the Disaster Recovery Plan to restore databases

Scenario

The business owner wants to be sure that the databases can be restored at any time, even in case the database administrator is not available for any reason. For that purpose, a comprehensive Disaster Recovery Plan should be created, which will help a person without DBA knowledge restore damaged databases.

Acronis solution

While creating a backup task, the database administrator should specify a Disaster Recovery Plan option, so that it would be sent to the business owner's email. In case of a disaster, the staff can restore databases according to the instructions contained in the Disaster Recovery Plan.

A.7　Restore databases immediately using rolling snapshots (for Microsoft SQL Server 2005 Enterprise only)

Scenario

Database administrator must be able to restore databases in the shortest amount of time.

Acronis solution

While creating a backup task, the database administrator should specify the option **Create rolling snapshots immediately after differential backup is created** and set the required number of snapshots to store.

> To restore from a rolling snapshot the database administrator should use Microsoft SQL Server tools.

A.8　Manual backup (before crucial changes in databases)

Scenario

The company is preparing to make extensive changes to the databases. To avoid possible loss, the databases must be backed up.

Acronis solution

The database administrator can use previously created backup tasks and start them manually from the Acronis Recovery for MS SQL Server Management Console.

Another option is to start a new task for creating full backups. The administrator can specify it so that it will only be executed manually.

Appendix B.   Installing Acronis Recovery for MS SQL Server from command line

Acronis Recovery for MS SQL Server supports the Microsoft Installer utility (*msiexec.exe*) with all its commands. Here is the MSI installation command and options:

Install Options

>   `/i <Component.msi | ProductCode>`
>
>   Installs or configures a product. ProductCode is the serial number of your personal copy of Acronis Recovery for MS SQL Server Agent
>
>   **COMPONENT=[component]**
>
>   Specifies the component you want to install:
>
>   Agent_MSSQL - Acronis Recovery for MS SQL Server Agent
>
>   Tools_MSSQL - Acronis Recovery for MS SQL Server Management Tools
>
>   **USERNAME=[username] PASSWORD=[password]**
>
>   Specifies username and password for running Acronis Recovery for MS SQL Server Agent installation
>
>   `/e[path]`
>
>   Specifies a path to extract an .msi file to.
>
>   `/a <Component.msi | ProductCode>`
>
>   Applies the administrative installation option
>
>   `/x <Component.msi | ProductCode>`
>
>   Uninstalls the product

Example

msiexec /i C:\Agent_MSSQL.msi

Installs Acronis Recovery for MS SQL Server Agent.

Reinstall Options

/f[p|o|e|d|c|a|u|m|s|v] <Component.msi | ProductCode>

Reinstalls or upgrades the product

p – reinstalls only missing files

o – reinstalls the file if it is missing or it is an older version

e - reinstalls the file if it is missing or is the same or an older version

d - reinstalls the file if it is missing or a different version is present

c – verifies the checksum values, and reinstalls the file if it is missing or corrupt

a – reinstalls all files

u – rewrites all required registry entries from the Registry Table that go to the *HKEY_CURRENT_USER* or *HKEY_USERS* registry hive

m – rewrites all required registry entries from the Registry Table that go to the *HKEY_LOCAL_MACHINE* or *HKEY_CLASSES_ROOT* registry hive

s – reinstalls all shortcuts and re-caches all icons overwriting any existing shortcuts and icons

v - used to run from the source package and re-cache the local package.

This option ignores any property values you specify at the command line. The default value for this option is */fpecms*.

Example

msiexec /fpecms C:\Agent_MSSQL.msi

Reinstalls Acronis Recovery for MS SQL Server Agent.

Advertising Options

/j[u|m]

Advertises a component with the following options:

u – only for the current user

m – for all users of the computer

/g LanguageID – identifies the language

/t TransformList – applies transform to advertised component

This option ignores any property values you specify at the command line. To install the component with elevated privileges, use */jm*.

Example

msiexec /jm C:\Agent_MSSQL.msi

Advertises Acronis Recovery for MS SQL Server Agent for all users of the computer.

Logging Level Options

msiexec /L [i][w][e][a][r][u][c][m][p][v][+][!]*LogFile*.txt

/L - Specifies the path to the log file

i - Logs status messages

w - Logs nonfatal warnings

e - Logs all error messages

a - Logs startup of actions

r - Logs action-specific records

u - Logs user requests

c - Logs initial user interface parameters

m - Logs out-of-memory

p - Logs terminal properties

v - Logs verbose output. To use **v**, specify **/L*v**

+ - Appends to existing file

! - Flushes each line to the log

* - Logs all information except for the **v** option. This is a wildcard

LogFile.txt - Name and path of the text log file

To include the **v** option into a log file using the wildcard flag, specify */L*v* at the command line.

Example

msiexec /i C:\Agent_MSSQL.msi /Lime logs.txt

Installs Acronis Recovery for MS SQL Server Agent and creates log file *logs.txt* containing information about the status, out-of-memory and error messages.

Applying a Patch Options

/p PatchPackage

/p - Applies a patch

PatchPackage **-** Specific patch

Example

msiexec /p PatchPackage /a C:\Agent_MSSQL.msi

Applies a patch to an administrative installation component.

Options for Installing a Transform

msiexec /i *component* **TRANSFORMS**=*TransformList*

TRANSFORMS= - Property that is used to specify what transform (*.mst*) files should be applied to the component

TransformList **-** List of paths separated by semicolons

Options for Advertising Using a Transform

msiexec /j[u][m] *component* **/t** *TransformList*

User Interface Level Options

msiexec /q{n|b|r|f|n+|b+|b-}

/qn - Displays no user interface

/qb - Displays a basic user interface

/qr - Displays a reduced user interface with a modal dialog box displayed at the end of the installation

/qf - Displays the full user interface with a modal dialog box displayed at the end

/qn+ - Displays no user interface, except for a modal dialog box displayed at the end

/qb+ - Displays a basic user interface with a modal dialog box displayed at the end

/qb- - Displays a basic user interface with no modal dialog boxes

Note, *</qb+-* is not a supported user interface level. The modal box is not displayed if **the user cancels the installation.**

Example

msiexec /qb Agent_MSSQL.msi

Displays the basic user interface options during the Acronis Recovery for MS SQL Server Agent installation.

Copyright Information Displaying Options

msiexec {/?|/h}

Displays the Windows Installer version and copyright information.

Calling the system API DllRegisterServer Option

msiexec /y|z *module*

/y - Calls the system API DllRegisterServer to self-register modules passed on the command line

/z - Calls the system API DllUnRegisterServer to unregister modules passed on the command line

module **-** Specifies the file name of the module

These options are only used for registry information that cannot be added using the registry tables of the *.msi* file.