



Storage Manager FastBack for Microsoft Exchange Installation and User's Guide



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Note:

Before using this information and the product it supports, read the information in "Notices" on page 51.

This edition applies to version 6, release 1, modification 0, of IBM Tivoli Storage Manager FastBack for Microsoft Exchange (product number 5724-U94) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Preface

This publication documents how to install, configure, and use IBM® Tivoli® Storage Manager FastBack™ for Microsoft Exchange Version 6.1.0.0

Who should read this guide

This publication is intended for a system administrator who is installing and configuring Tivoli Storage Manager FastBack for Microsoft Exchange.

Publications

Tivoli Storage Manager FastBack for Microsoft Exchange publications and other related publications are available online.

You can search all publications in the Tivoli Storage Manager FastBack for Microsoft Exchange Information Center: <http://publib.boulder.ibm.com/infocenter/tivihelp/v1r1/index.jsp?topic=/com.ibm.tsm.fb.msex.doc/welcome.htm>

You can download PDF versions of publications from the Tivoli Storage Manager FastBack Information Center or from the IBM Publications Center at <http://www.ibm.com/shop/publications/order/>.

Support information

You can get support information for IBM products from a variety of sources.

Getting technical training

Information about Tivoli technical training courses is available online.

Go to <http://www.ibm.com/software/tivoli/education/>.

Searching knowledge bases

If you have a problem with Tivoli Storage Manager FastBack for Microsoft Exchange, there are several knowledge bases that you can search.

You can begin with the Tivoli Storage Manager for Microsoft Exchange Information Center at the following Web site: <http://publib.boulder.ibm.com/infocenter/tivihelp/v1r1/topic/com.ibm.tsm.fb.msex.doc/welcome.htm>. From this Web site, you can search all Tivoli Storage Manager publications.

Searching the Internet

If you cannot find an answer to your question in the Tivoli Storage Manager information center, search the Internet for the latest, most complete information that might help you resolve your problem.

To search multiple Internet resources, go to the support Web site for Tivoli Storage Manager for Microsoft Exchange at <http://www.ibm.com/software/tivoli/support/storage-mgr-fastback-exchange>. From there, you can search a variety of resources including:

- IBM technotes

- IBM downloads
- IBM Redbooks®

If you still cannot find the solution to the problem, you can search forums and newsgroups on the Internet for the latest information that might help you resolve your problem. To share your experiences and learn from others in the user community, go to the Tivoli Storage Manager wiki at <http://www.ibm.com/developerworks/wikis/display/tivolistoragemanager/Home>.

Finding product fixes

A product fix to resolve your problem might be available from the IBM Software Support Web site.

You can determine what fixes are available by checking the Web site:

1. Go to the Tivoli Storage Manager FastBack for Bare Machine Recovery Support Web site at <http://www.ibm.com/software/tivoli/support/storage-mgr-fastback-exchange>.
2. Click the **Download**.
3. Click **Fixes by version**.

Getting e-mail notifications of product fixes

You can get notifications about fixes and other news about IBM products.

To receive weekly e-mail notifications about fixes and other news about IBM products, follow these steps:

1. From the support page for any IBM product, click **My notifications** in the upper-right corner of the page.
2. If you have already registered, skip to the next step. If you have not registered, click **register now** to establish your user ID and password.
3. Sign in to **My notifications**.
4. On the My notifications page, click **Subscribe**.
5. Select a product family and check the appropriate boxes for the type of information you want.
6. Click **Submit**.

Contacting IBM Software Support

You can contact IBM Software Support if you have an active IBM software maintenance contract and if you are authorized to submit problems to IBM.

Before you contact IBM Software support, follow these steps:

1. "Setting up a software maintenance contract"
2. "Determine the business impact" on page vii
3. "Describe problems and gather background information" on page vii

Then see "Submit the problem to IBM Software Support" on page viii for information on contacting IBM Software Support.

Setting up a software maintenance contract

Set up a software maintenance contract. The type of contract that you need depends on the type of product you have.

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus®, and Rational® products, as well as IBM DB2® and IBM WebSphere®

products that run on Windows® or UNIX® operating systems), enroll in IBM Passport Advantage® in one of the following ways:

- **Online:** Go to the Passport Advantage Web page at <http://www.ibm.com/software/lotus/passportadvantage/>, and click **How to enroll**, and follow the instructions.
- **By phone:** For the phone number to call in your country, go to the IBM Software Support Handbook Web page at <http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html> and click **Contacts**.
- For server software products, you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for server software products, go to the IBM Technical support advantage Web page at <http://www.ibm.com/servers/>.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States. For a list of telephone numbers of people who provide support for your location, go to the Software Support Handbook page at <http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html>.

Determine the business impact

When you report a problem to IBM, you are asked to supply a severity level. Use the following criteria to understand and assess the business impact of the problem that you are reporting:

Severity 1

The problem has a *critical* business impact. You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.

Severity 2

The problem has a *significant* business impact. The program is usable, but it is severely limited.

Severity 3

The problem has *some* business impact. The program is usable, but less significant features (not critical to operations) are unavailable.

Severity 4

The problem has *minimal* business impact. The problem causes little impact on operations, or a reasonable circumvention to the problem was implemented.

Describe problems and gather background information

When explaining a problem to IBM, it is helpful to be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently.

To save time, know the answers to these questions:

- Which software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can the problem be recreated? If so, what steps led to the failure?
- Have any changes been made to the system? For example, hardware, operating system, networking software, and so on.

- Are you currently using a workaround for the problem? If so, be prepared to explain the workaround when you report the problem.

Submit the problem to IBM Software Support

You can submit your problem to IBM Software Support online or by phone.

Online

Click **Submit and track problems** on the IBM Software Support site at <http://www.ibm.com/software/support/probsub.html>. Type your information into the appropriate problem submission form.

By phone

For the phone number to call in your country, go to the contacts page of the *IBM Software Support Handbook* at <http://techsupport.services.ibm.com/guides/contacts.html>.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. If a workaround is possible, IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the Software Support Web site at <http://www.ibm.com/software/tivoli/support/storage-mgr-fastback-exchange>, so that other users who experience the same problem can benefit from the same resolution.

Conventions used in this information

This information uses the Microsoft Windows conventions for specifying environment variables and for directory notation.

Documentation changes

Documentation changes were made in support of the information center refresh for IBM Tivoli Storage Manager FastBack for Microsoft Exchange, Version 6.1.0.0. Updates to information were made based on enhancements and new features, in addition to changes made to fix defects and to respond to problem reports.

Chapter 1. New for Tivoli Storage Manager FastBack for Microsoft Exchange version 6.1

Tivoli Storage Manager FastBack for Microsoft® Exchange release 6.1.0.0 contains several new features. This section summarizes those changes.

These items are new in Tivoli Storage Manager FastBack for Microsoft Exchange version 6.1:

- Support for Windows 2008
- Full support for Exchange 2007 Public Folders
- Use of Microsoft APIs for recovery
- Restores no longer create duplicate messages in 6.1
- Added the ability to search the message body, and subject line

The following table outlines the differences between Tivoli Storage Manager FastBack for Microsoft Exchange version 5.5. and version 6.1:

Table 1. Feature differences between Tivoli Storage Manager FastBack for Microsoft Exchange version 5.5 and 6.1.

Feature	Version 5.5.x	Version 6.1
Operating system	<ul style="list-style-type: none">• Windows XP• Windows 2003	<ul style="list-style-type: none">• Windows 2003• Windows 2008
Exchange support	<ul style="list-style-type: none">• Exchange 2000• Exchange 2003• Exchange 2007	<ul style="list-style-type: none">• Exchange 2003• Exchange 2007
Prerequisite	<ul style="list-style-type: none">• Outlook is required• No Exchange required	<ul style="list-style-type: none">• Exchange is required• No Outlook• Requires MAPI download from Microsoft
Public folder support	As-is. Limited support for Exchange 2007 public folders	Support for Exchange 2007 public folders using a separate recovery server
Personal Folders (.pst) files	Supports Unicode and > 2 GB	Must be non-unicode and < 2 GB
Corrupt .edb files	Limited support	Support using Microsoft utilities
Roll-forward recovery using transaction log	Not supported.	Integrated support using eseutil

Chapter 2. Tivoli Storage Manager FastBack for Microsoft Exchange

Tivoli Storage Manager FastBack for Microsoft Exchange includes a Windows based interface that enables you to view, save, and restore Microsoft Exchange database components. You can perform individual mailbox recovery and item-level recovery operations in Microsoft Exchange Server 2003 or Microsoft Exchange Server 2007 environments.

You can use Tivoli Storage Manager FastBack for Microsoft Exchange to view and save individual messages and message components, and to restore individual messages, folders, and sub-folders to a selected target. Messages can refer to e-mail, contact lists, tasks, journal entries, and calendar events.

Folders and individual messages can be restored to an active Exchange mailbox, to an Outlook Personal Folders file (.pst), or to another mailbox address using Simple Mail Transfer Protocol (SMTP).

With Tivoli Storage Manager FastBack for Microsoft Exchange 6.1, you can restore e-mail messages to any mailbox or mail folder in the Exchange domain.

Tivoli Storage Manager FastBack for Microsoft Exchange 6.1 can also restore items from public folder databases.

Chapter 3. Planning

Before you install Tivoli Storage Manager FastBack for Microsoft Exchange, ensure that your system meets all software, hardware, and operating system requirements.

Related reference

“Software, security and operating system requirements”

“Hardware requirements” on page 6

“Local Continuous Replication” on page 9

“Working with Cluster Continuous Replication and Single Copy Clusters” on page 9

Software, security and operating system requirements

Before installing Tivoli Storage Manager FastBack for Microsoft Exchange and before any data can be restored, the system must meet the software, security, and operating system requirements.

Software and environment requirements

Ensure that you and your system meet or exceed these requirements:

- Microsoft .NET Framework 3.0 or later is installed
- All 2007 Exchange users must download the latest Exchange and Messaging Application Programming Interface (MAPI) updates from Microsoft.
- Tivoli Storage Manager FastBack for Microsoft Exchange requires read-write access to the .edb file.
- When restoring public folders, a separate recovery server is required.
- If you are using a separate recovery server, the recovery server must be in the same domain as the production server.
- Tivoli Storage Manager FastBack for Microsoft Exchange must be run on the production Exchange server or another Exchange server within the same domain.
- The administrative user performing restore operations must have an Exchange mailbox, and that mailbox must be active and accessible.

General requirements

Ensure that your system meets or exceeds these requirements:

- Microsoft Outlook is *not* installed
- Microsoft Exchange Server 2003 or 2007 is installed
- For Exchange Server 2007 systems, Service Pack 1 Rollup 4 (or later), Collaboration Data Objects (CDO) MAPI 1.2.1 package version 6.5.8069.0 (or later).
- For Exchange Server 2003 systems, Service Pack 2 (or later).

Supported databases

These databases are supported:

- Microsoft Exchange 2003

- Microsoft Exchange 2007

Supported operating systems

One of the following operating systems is required (32-bit X86 and 64-bit X64 architectures):

- Windows Server 2003 Standard Edition, SP 2, or later
- Windows Server 2003 Enterprise Server SP 2, or later
- Windows Server 2008 Standard Edition, SP 2, or later
- Windows Server 2008 Enterprise Server SP 2, or later

Security requirements

Tivoli Storage Manager FastBack for Microsoft Exchange requires a user ID that is a member of the local Administrators group for the machine on which the Exchange server is running.

Microsoft Exchange 2003

If you are using Microsoft Exchange 2003, the user ID must be associated with the Exchange Administrator role.

Microsoft Exchange 2007

If you are using Microsoft Exchange 2007, the user ID must also have Exchange Organization Administrators permissions. By default, these permissions are automatically added to the local Administrators group.

Minimum software and operating system requirements

Table 2. Minimum software and operating system requirements for restore operations

Operating System	Exchange Server
Microsoft Windows 2003 (32-bit)	Exchange Server 2003
Microsoft Windows 2003 (x64)	Exchange Server 2007
Microsoft Windows 2008 (x64)	Exchange Server 2007

Related concepts

Chapter 3, “Planning,” on page 5

Chapter 4, “Working with Tivoli Storage Manager FastBack for Microsoft Exchange in a high-availability environment,” on page 9

Hardware requirements

Before installing Tivoli Storage Manager FastBack for Microsoft Exchange ensure that your system meets all the minimum architecture, hardware, disk space, and RAM requirements.

Ensure that your system meets or exceeds the following recommended hardware values:

- Intel® Pentium® or compatible processor 1 GHz or higher (2 GHz or higher recommended)
- 1 GB RAM (2 GB RAM recommended)
- Disk space: At least 300 MB free hard disk space
- LAN Connectivity: 1 NIC, 100 Mbps (1 Gbps recommended)

Related concepts

Chapter 3, "Planning," on page 5

Chapter 4, "Working with Tivoli Storage Manager FastBack for Microsoft Exchange in a high-availability environment," on page 9

Chapter 4. Working with Tivoli Storage Manager FastBack for Microsoft Exchange in a high-availability environment

Tivoli Storage Manager FastBack for Microsoft Exchange there are three types of high-availability solutions that you can use: Local Continuous Replication (LCR), Cluster Continuous Replication (CCR), and Single Copy Clusters (SCC).

Related reference

“Software, security and operating system requirements” on page 5

“Hardware requirements” on page 6

“Local Continuous Replication”

“Working with Cluster Continuous Replication and Single Copy Clusters”

Local Continuous Replication

You can use Tivoli Storage Manager FastBack for Microsoft Exchange with Local Continuous Replication.

You can use Tivoli Storage Manager FastBack for Microsoft Exchange to restore a backup of the main production volume or LCR replica. The backup can come from multiple sources: an Exchange Server 2007 volume backup, a FastBack snapshot, Tivoli Continuous Data Protection for Files, or an Exchange database (.edb file).

Related concepts

Chapter 3, “Planning,” on page 5

Chapter 4, “Working with Tivoli Storage Manager FastBack for Microsoft Exchange in a high-availability environment”

Working with Cluster Continuous Replication and Single Copy Clusters

You can use Tivoli Storage Manager FastBack for Microsoft Exchange with Cluster Continuous Replication (CCR), and Single Copy Clusters (SCC).

For CCR environments, you can perform a FastBack backup of data from both the active and passive nodes. For SCC environments, backup is supported only from the active node. You can use Tivoli Storage Manager FastBack for Microsoft Exchange to restore a backup of a clustered Exchange database. The backup can come from multiple sources: an Exchange Server 2007 backup, a FastBack snapshot, Tivoli Continuous Data Protection for Files, or an Exchange database (.edb file).

Although backups can be performed on both the active and passive nodes of a CCR environment, restore operations can only be performed when Tivoli Storage Manager FastBack for Microsoft Exchange resides on the active node of a CCR or SCC environment.

Related concepts

Chapter 3, “Planning,” on page 5

Chapter 4, “Working with Tivoli Storage Manager FastBack for Microsoft Exchange in a high-availability environment”

Chapter 5. Installing

Before beginning the installation, verify that all software, hardware, and operating system requirements are met.

After completing the prerequisite installation tasks, which includes uninstalling any previous version of Tivoli Storage Manager FastBack for Microsoft Exchange, start the installation program and complete the installation wizard.

Related tasks

“Installing and activating the language packs” on page 12

Installing Tivoli Storage Manager FastBack for Microsoft Exchange

These instructions guide you through the installation of Tivoli Storage Manager FastBack for Microsoft Exchange.

- Ensure that you have uninstalled any previous Tivoli Storage Manager FastBack for Microsoft Exchange versions. To do this, open the **Control Panel** on your Windows workstation and select the **Add/Remove Programs** item.

Installation considerations:

- Install Tivoli Storage Manager FastBack for Microsoft Exchange with a user ID that is a member of the local Administrators group for the system on which the Exchange server is running. If you are using Microsoft Exchange 2007, the user ID must also have Exchange Organization Administrators permissions. If you are using Microsoft Exchange 2003, the user ID must be associated with the Exchange Administrator role.
- The user ID must have an active Exchange mailbox on the system.
- The default installation directory is Program Files\Tivoli\TSM\FBExchange. You can override the default installation directory and specify a different installation directory, but do not override the FBExchange subdirectory. However, for best results, install all Tivoli products into the same base directory. The base directory is Program Files\Tivoli\TSM.
- If an earlier version of Tivoli Storage Manager FastBack for Microsoft Exchange exists on the system you are installing the product on, it must be removed before installing version 6.1.

Complete these steps to install Tivoli Storage Manager FastBack for Microsoft Exchange:

1. Insert the Tivoli Storage Manager FastBack for Microsoft Exchange product DVD into the DVD drive and click **Run** from the Start menu.
 2. Navigate to the appropriate directory (where *x* is your DVD drive letter):
 - (32-bit): `x:\FBExchange\x32\client`
 - (x64): `x:\FBExchange\x64\client`
 3. Click the setup.exe file and click **OK**. Follow the installation instructions.
 4. Click **Finish** to complete the installation.
- If you plan to use the product in a language other than English, see “Installing and activating the language packs” on page 12 for additional installation tasks.

- If you are installing Tivoli Storage Manager FastBack for Microsoft Exchange in a Microsoft Cluster Server or Veritas Cluster server environment, repeat the installation procedure on all nodes of your cluster.

Related reference

 <http://publib.boulder.ibm.com/infocenter/tsminfo/v6/index.jsp>

Installing and activating the language packs

Each language pack contains language-specific information for the Tivoli Storage Manager FastBack for Microsoft Exchange GUI, command-line output, and messages.

Related concepts

Chapter 5, “Installing,” on page 11

Installing the language packs

To view the Tivoli Storage Manager FastBack for Microsoft Exchange GUI, command-line output, and messages in a language other than English, install the language pack provided on the product DVD.

Follow these steps to install the language pack:

1. Insert the Tivoli Storage Manager FastBack for Microsoft Exchange product DVD into the drive and click **Run** from the Start menu.
2. Navigate to the appropriate directory (where x is your DVD drive letter):
 - (32-bit): `x:\FBExchange\x32\languages\lang`
 - (x64): `x:\FBExchange\x64\languages\lang`

The *lang* directory represents the three-letter country code associated with that language.

3. Select *setup.exe* and click **OK**. Follow the installation instructions contained in the prompt windows.
4. Click **Finish** to complete the installation.

Silent installation

You can install Tivoli Storage Manager FastBack for Microsoft Exchange using the silent installation method. Silent installations run without any intervention so that you do not have to monitor the installation or provide input to dialog boxes.

Silent installations are especially useful when you want to install Tivoli Storage Manager FastBack for Microsoft Exchange on multiple computers with identical hardware. For example, a company might have 25 Exchange Servers across 25 different sites. To ensure a consistent configuration, you might choose to produce a silent installation package and make it available to the 25 sites by creating and sending out 25 DVDs or by placing the silent installation package on a server.

You can run a silent installation on Windows 2003 and Windows 2008 systems using one of these methods:

Setup Program

Use the **setup** command with the command-line and special silent installation options.

Microsoft Installer (MSI)

Use **msiexec.exe** to install the MSI package.

Tivoli Storage Manager FastBack for Microsoft Exchange must be installed from a command line with administrator privileges.

Begin your installation as an administrator using these steps.

1. Click **Start** → **All Programs** → **Accessories** → **Command Prompt**.
2. Right-click the **Command Prompt** icon to display the properties.
3. Click **Run as administrator**.
4. Click **Continue** in the permission window.
5. Start the installation in the command-prompt window.

Related tasks

“Installing with the setup program (setup.exe)” on page 15

Related information

“Creating a batch file” on page 16

Disabling the User Account Control feature

You must disable the User Account Control (UAC) feature, and restart your system before installing Tivoli Storage Manager FastBack for Microsoft Exchange.

Complete these steps to disable the UAC feature:

1. Click **Start** → **Start Search** enter **MSCONFIG** and click **OK**.
2. Click the **Tools** tab, scroll down and click **Disable UAC**.
3. Click **Launch**, and close the window after the command completes.
4. Close the System Configuration Utility window and restart the system to apply the changes.

Enable UAC again by selecting the Enable UAC line and then clicking the **Launch** button.

Silent installation options

You can use these options when performing a silent installation of Tivoli Storage Manager FastBack for Microsoft Exchange.

The following table describes the options that can be used with both silent installation methods.

Table 3. Silent installation options

Option	Description
<i>/i</i>	Specifies the program is to install the product.
<i>/l*v</i>	Specifies verbose logging.
<i>/qn</i>	Runs the installation without running the external user interface sequence.
<i>/s</i>	Specifies silent mode.

Table 3. Silent installation options (continued)

Option	Description
<i>/v</i>	Specifies the setup program to pass the parameter string to the call it makes to the msiexec.exe file. <ul style="list-style-type: none"> Place a backslash (\) in front of any quotation marks (" ") that reside within existing quotation marks. Do not include a space between the <i>/v</i> command-line option and its arguments. Enter multiple parameters with the <i>/v</i> command-line option, separated with a space. You can create a log file by specifying the directory and file name at the end of the command. The directory must exist when you start a silent installation.
<i>/x</i>	Specifies that the program is to uninstall the product.
<i>addlocal</i>	Specifies the features to install.
<i>allusers</i>	Specifies which users can use the installation package.
<i>installdir</i>	Specifies the directory where Tivoli Storage Manager FastBack for Microsoft Exchange is to be installed.
<i>reboot</i>	Specifies whether to prompt the user to reboot the system after a silent installation. <p><i>Force</i> Always prompts you to reboot after a silent installation.</p> <p><i>Suppress</i> Suppress prompt to reboot after a silent installation.</p> <p><i>ReallySuppress</i> Suppress all reboot and prompts you to restart after a silent installation.</p>
<i>rebootyesno</i>	Specifies whether to reboot the system after a silent installation. Specify <i>Yes</i> to reboot the system after a silent installation. Specify <i>No</i> to not restart the system after a silent installation.
<i>transforms</i>	Specifies the language in which to run the installation.

The following feature is used in this procedure and is case sensitive.

Table 4. Silent installation features (base packages only)

Feature	Description
Client	Base package files

The following features are used in this procedure and are case sensitive.

Table 5. Silent installation features (language packages only)

Feature	Description
LanguageFiles	Language-specific files

The following transforms are used in this procedure.

Table 6. Silent installation transforms

Transform	Language
1028.mst	CHT Chinese (Traditional)
1031.mst	DEU German
1033.mst	ENG English
1034.mst	ESP Spanish
1036.mst	FRA French
1040.mst	ITA Italian
1041.mst	JPN Japanese
1042.mst	KOR Korean
1046.mst	PTB Portuguese
2052.mst	CHS Chinese (Simplified)

Creating a silent installation package

You can create a silent installation package using these command examples.

After you choose a location for your installation package, you can create a DVD, or place the package in a staging directory on a file server. If you are placing the package on a file server, you can use a staging directory or you can build the package directly on the file server.

The following example uses `c:\fbepkg` as a staging directory. You should have a minimum of 14 MB of free space in the staging directory.

Use these commands to create the package.

Command	Description
<code>mkdir c:\fbepkg</code>	Create a staging directory for the silent install package
<code>dvd /d c:\fbepkg</code>	Go to the staging directory
<code>xcopy g:*.* . /s</code>	Copy the Tivoli Storage Manager FastBack for Microsoft Exchange DVD distribution files to the staging directory
<code>copy c:\setup.bat</code>	Replace the existing setup.bat file with the one that was created in the previous step

To verify the accuracy, test the silent installation package before deploying it. After testing is complete, place the package on a DVD, or make it available from a shared directory.

Related tasks

“Installing with the setup program (setup.exe)”

Related information

“Creating a batch file” on page 16

Installing with the setup program (setup.exe)

You can silently install Tivoli Storage Manager FastBack for Microsoft Exchange with a setup.exe file.

- Tivoli Storage Manager FastBack for Microsoft Exchange must be installed with a user ID that is a member of the local Administrators group for the system on which the Exchange server is running.
- If you are using Microsoft Exchange 2007, the user ID must also have Exchange Organization Administrators permissions.
- If you are using Microsoft Exchange 2003, the user ID must be associated with the Exchange Administrator role.

You must substitute the appropriate feature when installing a language other than English. See “Silent installation” on page 12.

Run the following command to silently install Tivoli Storage Manager FastBack for Microsoft Exchange to the default installation directory:

```
setup /s /v/qn
```

This example silently installs Tivoli Storage Manager FastBack for Microsoft Exchange to a directory other than the default installation directory and includes custom features:

```
setup /s /v"INSTALLDIR="c:\program files\tivoli\tsm\"
ADDLOCAL="Client\"
TRANSFORMS=1033.mst /qn /l*v "c:\temp\log.txt"
```

Note:

- You must place a backslash (\) before each quotation mark that is within an outer set of quotation marks (").
- You must place quotation marks (") around a directory path that contains spaces, and arguments that specify multiple features.
 - Although quotation marks are needed around the complete argument, you must still place a backslash before each internal quotation mark.
- All features listed in a custom installation must be listed after the *addlocal* option.

Related concepts

“Silent installation” on page 12

“Creating a silent installation package” on page 15

Creating a batch file

You can create a batch file to begin a silent installation with specified parameters.

This is a sample script (c:\setup.bat) to demonstrate a silent installation:

```
@echo off
rem =====
rem sample silent install script
rem
rem setup /s /v"INSTALLDIR="X:\Desired Install Path\" /qn"
rem =====
rem code could be added after the
rem installation completes to
rem customize the dsm.opt files
rem if desired
rem =====
```

Related concepts

“Silent installation” on page 12

“Creating a silent installation package” on page 15

Installing with MSI (msiexec.exe file)

An example of silently installing Tivoli Storage Manager FastBack for Microsoft Exchange with an msiexec.exe file is provided.

- Install Tivoli Storage Manager FastBack for Microsoft Exchange with a user ID that is a member of the local Administrators group for the system on which the Exchange server is running.
- If you are using Microsoft Exchange 2007, the user ID must also have Exchange Organization Administrators permissions.
- If you are using Microsoft Exchange 2003, the user ID must be associated with the Exchange Administrator role.

You must substitute the appropriate .msi package filename and language package feature when installing a language other than English. See “Silent installation” on page 12.

This example silently installs Tivoli Storage Manager FastBack for Microsoft Exchange to a directory other than the default installation directory and includes custom features:

```
msiexec /i  
"IBM Tivoli Storage Manager FastBack for Microsoft Exchange.msi"  
RebootYesNo="No" Reboot="Suppress" ALLUSERS=1  
INSTALLDIR="c:\program files\tivoli\tsm"  
ADDLOCAL="Client"  
TRANSFORMS=1033.mst /qn /l*v "c:\temp\log.txt"
```

Note:

- You must place quotation marks (") around a directory path that contains spaces, and arguments that specify multiple features.
 - Although quotation marks are needed around the complete argument, you must still place a backslash before each internal quotation mark.
- All features listed in a custom installation must be specified after the *addlocal* option.

Installation problems: capturing a log of the installation

If a silent installation fails, gather the installation details to assist the IBM Support Center when evaluating the situation. You can create a detailed log file of the failed installation that can facilitate analysis of your situation.

Gather these installation details for the IBM Support Center:

- Operating system level
- Service pack
- Hardware description
- Installation package (from the DVD or downloaded) and level
- Any Windows event log that is relevant to the failed installation
- Windows services that were active during the failed installation (for example, antivirus software)
- Whether you are logged on to the local system console (not through a terminal server)

- Whether you are logged on as a local administrator, rather than a domain administrator (Tivoli does not support cross-domain installs)

You can create a detailed log file (setup.log) of the failed installation. Run the setup program (setup.exe) using the following command:

```
setup /v"l*v setup.log"
```

Related information

“Creating the package on a DVD or a server”

“Playing back the silent installation package”

“Setup error messages”

Creating the package on a DVD or a server

You can create a silent installation package containing Tivoli Storage Manager FastBack for Microsoft Exchange code and a batch file for a silent installation package. The installation package can then be made available in different ways including creating a DVD or placing the package in a shared directory on a server.

Related concepts

“Installation problems: capturing a log of the installation” on page 17

Related information

“Setup error messages”

Playing back the silent installation package

After the silent installation package is available on DVD or from a shared directory, you can run it from another system. No visual cues exist to inform you when the installation has finished, although this information can be added in the batch file.

Allow enough time for the unattended setup to complete.

From a silent installation package on DVD: If autostart is enabled, the silent installation begins as soon as the DVD is inserted into the drive. If autostart is not enabled, the silent installation can be run by running the setup.bat file from the root of the DVD.

```
dvd /d g:\
setup.bat
```

From a distribution directory: If the silent installation package was placed in a shared directory called fbepkg located at \\machine1\d\$, another computer can run the command: net use x \\machine1\d\$ to share the drive as drive x. The following command can then be issued:

```
dvd /d x:\fbepkg
setup.bat
```

The silent installation begins.

Related concepts

“Installation problems: capturing a log of the installation” on page 17

Related information

“Setup error messages”

Setup error messages

The setup.exe program might produce error messages if it cannot start properly. In most cases, these messages occur only if a severe error occurs. When you get an error message, it appears in a message box.

Every error message has a number. These are system error messages and there is no way to suppress them in your script.

If you encounter an error, you can go to the installation program support Web site and use the search facility to obtain more information about the error.

Related concepts

“Installation problems: capturing a log of the installation” on page 17

Related information

“Creating the package on a DVD or a server” on page 18

“Playing back the silent installation package” on page 18

Starting Tivoli Storage Manager FastBack for Microsoft Exchange

After you have completed the installation, you must start Tivoli Storage Manager FastBack for Microsoft Exchange before restoring data.

To start Tivoli Storage Manager FastBack for Microsoft Exchange, from the Windows Start menu, click **Programs** → **Tivoli Storage Manager** → **FastBack for Microsoft Exchange**.

Chapter 6. Configuring

Before using Tivoli Storage Manager FastBack for Microsoft Exchange, you must configure your system to perform restore operations.

Related tasks

“Disabling IPv6 on an Exchange server running Windows 2008”

“Configuring the system for mailbox-level and item-level restore operations”

Disabling IPv6 on an Exchange server running Windows 2008

Earlier versions of Exchange Server 2007 and MAPI are not compatible with IPv6. On Windows Server 2008 systems, IPv6 is enabled by default. Therefore, you must disable IPv6 before you can run Tivoli Storage Manager FastBack for Microsoft Exchange. Use one of these methods to disable IPv6 on your Exchange Server.

Related concepts

Chapter 6, “Configuring”

Disabling IPv6 on LAN interfaces, connections and tunnel interfaces, but not the loopback interface

1. Click **Start** → **Run** and enter `regedit`.
2. Using the Registry Editor locate the following registry key:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters\DisabledComponents
3. Right-click the **Parameters** key, click **New**, and then click **DWORD**.
4. Add the following registry value: `0xFFFFFFFF`
5. Restart the computer for this registry value to take effect.

Disabling IPv6 on LAN interfaces, connections, and tunnel, loopback interfaces

1. Click **Start** → **Control Panel** → **Network Connections**.
2. Right-click the connection to modify the properties.
3. In the list under **This connection uses the following items**, clear the check box next to the **Internet Protocol version 6 (TCP/IPv6)** component.

Configuring the system for mailbox-level and item-level restore operations

To use Tivoli Storage Manager FastBack for Microsoft Exchange, there are additional configuration requirements that you must complete before restoring data.

Exchange Server 2003 requirement

Exchange Server 2003 includes the Microsoft Exchange Server Messaging Application Programming Interface (MAPI) libraries.

Exchange Server 2007 requirement

Exchange Server 2007 does not include the Microsoft Exchange Server MAPI libraries and Collaboration Data Objects 1.2.1 as a base product installation.

If the system is running Exchange Server 2007, install the latest Microsoft Exchange Server MAPI Client and Collaboration Data Objects 1.2.1 package on the Exchange Server that you intend to use to perform the mailbox-restore operations.

Recovering deleted or relocated mailboxes

If you are recovering a mailbox that has been deleted, you must first recreate the user and mailbox with the same alias name and display name before running Tivoli Storage Manager FastBack for Microsoft Exchange.

If you are recovering a mailbox that has been deleted or has been relocated to a different server, storage group, or database since the .edb file was created, the operation might take up to 15 minutes to complete. You will be prompted whether or not you wish to continue with the operation.

Restriction: Do not install Microsoft Outlook on any Exchange Server 2003 or Exchange Server 2007 system that is used to perform Tivoli Storage Manager FastBack for Microsoft Exchange mailbox-restore tasks.

Related concepts

Chapter 6, "Configuring," on page 21

Chapter 7. Using Tivoli Storage Manager FastBack for Microsoft Exchange

Use these tasks as a guide to performing Tivoli Storage Manager FastBack for Microsoft Exchange operations.

Getting started

Tivoli Storage Manager FastBack for Microsoft Exchange helps you recover critical Microsoft Exchange data at an individual-item level, without impacting your production Microsoft Exchange server environment. This example outlines a restore scenario that includes opening an exchange database, and restoring e-mail messages to a target folder using Direct Exchange Restore.

Before you can restore any data, ensure that your system meets the following prerequisites:

- Log on to Windows with a user ID that has these permissions, and also has an active Exchange mailbox on the system:
 - Local administrator privileges
 - Exchange Organization Administrators permissions, if you are using Exchange 2007
 - Exchange Administrator role, if you are using Exchange 2003
 - If you are using FastBack Mount, mount the appropriate Microsoft Exchange database (.edb file) as a virtual volume with read-write access. This database contains the mailbox, or mailbox data that you want to restore.
 - Determine the restore destination. This location is where you will put the data after it has been restored. Mailboxes, folders, and individual messages can be restored to an Exchange server, an Outlook Personal Folders (.pst file), or to another mailbox address using Simple Mail Transfer Protocol (SMTP). However, this scenario depicts restoring messages using the Direct Exchange Restore operation.
1. In the Tivoli Storage Manager FastBack for Microsoft Exchange window click **File** → **Open .edb file**.
 2. Use the navigation tree to locate the mailbox or folders.
 3. From the List view, highlight the messages that you want to restore.
 4. Connect to your restore destination (an active mailbox, or .pst file).
 5. From the Tivoli Storage Manager FastBack for Microsoft Exchange menu, click **Direct Exchange Restore** → **Restore Messages**.
 6. In the **Select the target folder** window, select the folder where you want to restore the messages.
 7. Status messages are displayed during the restore. After the restore is complete, Click **Close**, or to save the progress log click **Save Details**.

Tip: You can also use the right-click, or drag-and-drop methods to restore data:

- Right-click method: Select the items that you want to restore, right-click and select **Restore Folder**, **Restore Messages**, or **Restore Mailbox**, and select the target folder.
- Drag-and-drop method: Select the items that you want to restore, and drag-and-drop them to the target folder.

Related tasks

“Opening a Microsoft Exchange database” on page 27

“Restoring mailboxes using Direct Exchange Restore” on page 34

“Restoring folders using Direct Exchange Restore” on page 33

“Restoring messages using Direct Exchange Restore” on page 32

“Restoring e-mail messages and folders using SMTP” on page 35

User interface overview

The Tivoli Storage Manager FastBack for Microsoft Exchange interface is divided into several sections. Use the **View** menu to hide or display some of these sections.

The following table describes the Tivoli Storage Manager FastBack for Microsoft Exchange user interface.

Table 7. User interface elements for Tivoli Storage Manager FastBack for Microsoft Exchange

User interface element	Description
Navigation tree	This section organizes the mailboxes in the open .edb file. Each mailbox contains corresponding subfolders. For example, Inbox, Sent Items, Calendar, and Tasks.
List view	There are two sections that display details of a selected item. <ul style="list-style-type: none">• One section is to the right of the navigation tree and displays the selected folder items of the .edb file.• The other section is in the bottom right and displays the selected folder item of the restore destination (from an active mailbox or .pst file). Two icons provide additional information about each item. <ul style="list-style-type: none">• One icon indicates the type of object (for example, e-mail or calendar).• The other icon indicates whether there are attachments associated with the item.
Preview pane	This section is positioned below the List view, and is used to preview the contents of messages. The contents of the selected item are displayed in the List view section. You can view or hide the message text in the preview pane by dragging the pane borders to adjust them. The Preview pane can also be hidden by clearing the display option in the menu. Restriction: You can only display the contents of messages in .edb files, but not the contents of an active mailbox.
Mailbox access pane	This section, located below the navigation tree, displays the user's mailbox folder tree, or the folders for the .pst file that was opened.
Mailbox view	This section, located next to the mailbox access pane, displays the selected folder items of the mailbox.

Related tasks

“Getting started” on page 23

Menu reference

The Tivoli Storage Manager FastBack for Microsoft Exchange interface contains **File**, **Edit**, **View**, **Direct Exchange Restore**, **SMTP Restore**, **Tools**, and **Help** menu options.

The following menus are available as a part of the Tivoli Storage Manager FastBack for Microsoft Exchange user interface.

Table 8. Tivoli Storage Manager FastBack for Microsoft Exchange menus

Menu title	Description
File	Use this menu to open and close .edb files.
Edit	Use this menu to copy text from the preview pane to other applications.
View	Use this menu to hide or display specific window sections such as e-mail contents, and deleted status.
Direct Exchange Restore	Use this menu to: <ul style="list-style-type: none"> • open a mailbox or .pst file • restore messages, folders, and mailboxes using Direct Exchange Restore options • mark restored items as read • close a session • refresh a mailbox
SMTP Restore	Use this menu to restore messages and folders using SMTP options.
Tools	Use this menu to save or search for an e-mail message.
Help	Use this menu to view online help and version information about Tivoli Storage Manager FastBack for Microsoft Exchange.

Related tasks

“Getting started” on page 23

Icon reference

These icons are used by the Tivoli Storage Manager FastBack for Microsoft Exchange user interface.

The following tables describe icons that are available as a part of the Tivoli Storage Manager FastBack for Microsoft Exchange user interface.

Table 9. Tivoli Storage Manager FastBack for Microsoft Exchange toolbar icons

Toolbar icons	Description
	This icon opens the *.edb file. The *.edb file contains the objects that you want to restore.
	This icon closes the *.edb file.
	This icon opens a specific mailbox, and represents the Direct Exchange Restore target.
	This icon opens a *.pst file.
	This icon restores a selected message using SMTP to a specified e-mail address.

Table 10. Tivoli Storage Manager FastBack for Microsoft Exchange tree and message icons

Tree and message icons	Description
	Calendar
	Contacts
	Journal
	Tasks
	Mailbox
	E-mail inbox
	Deleted items
	Sent items
	Outbox
	Attachment (Displays in the e-mail preview pane)

Related tasks

“Getting started” on page 23

Deleted or relocated mailboxes

You can use Tivoli Storage Manager FastBack for Microsoft Exchange to restore deleted or relocated mailboxes.

Deleted mailboxes

- Before you can restore a mailbox that has been deleted since the last backup of the .edb file was taken, you must first recreate the user and mailbox with the same display name and alias.
- When you select the previously deleted mailbox, Tivoli Storage Manager FastBack for Microsoft Exchange displays a warning message that the operation might take up to 15 minutes to complete. Click **Yes** to continue.
- You cannot connect to the newly created mailbox using Direct Exchange Restore or Outlook while the mailbox is open. You must first close Tivoli Storage Manager FastBack for Microsoft Exchange, before you can connect to the newly created mailbox again.

Relocated mailboxes

- To restore a mailbox that has been relocated since the last backup of the .edb file was taken, select the relocated mailbox.
- Click **Yes** in the warning message window that is displayed indicating that the operation might take up to 15 minutes to complete.

- All other mailboxes in that .edb file are unavailable until you close and reopen the .edb file.

Opening a Microsoft Exchange database

The Microsoft Exchange database (.edb file) serves as the main repository for the mailbox data saved by Microsoft Exchange, and is associated with either a mailbox database or a public folder database. Each .edb file can contain multiple mailboxes or public folders. Before you can restore a mailbox or a public folder, you must open the .edb file associated with that mailbox or public folder.

- Locate the .edb file that you want to open. If you are using FastBack Mount, mount the volume on an unused drive letter in read-write mode, and then locate the .edb file to be opened. Mount the .edb file in a subdirectory of the root drive. The .edb file must not be located in the root directory. If required, use FastBack Mount to mount the snapshot backup of the .edb file to a subdirectory.
- If you are using FastBack Mount, mount the volume with read-write access, by clearing the check box **Mount virtual volume as read only**. Tivoli Storage Manager FastBack for Microsoft Exchange requires read-write access to the .edb file.
- The Exchange transaction logs must also be available. If you are using FastBack Mount, and your log files reside on a different volume than your .edb file, mount the log volume on an unused drive letter so you can apply the transaction logs to the .edb file.

Note: If the log files are not available, Tivoli Storage Manager FastBack for Microsoft Exchange can still be used, but there is a delay when opening the .edb file. Additionally, there will be many write-operations to the disk while Tivoli Storage Manager FastBack for Microsoft Exchange is preparing the .edb file. For larger .edb files, you might have to copy the file from the FastBack Mount volume to a regular volume first.

- You should also make the checkpoint file directory (also known as the system file directory) available to Tivoli Storage Manager FastBack for Microsoft Exchange. If the checkpoint file is not available, Tivoli Storage Manager FastBack for Microsoft Exchange can still be used, but there is a delay when opening the .edb file.
- In an Exchange cluster environment, run Tivoli Storage Manager FastBack for Microsoft Exchange from the active node of the cluster. You cannot open an .edb file from a passive node.
- You cannot open a mailbox database at the same time another system running Tivoli Storage Manager FastBack for Microsoft Exchange has that same mailbox database opened. Only one instance of Tivoli Storage Manager FastBack for Microsoft Exchange can open the same mailbox database at a time. For example, user1 is using Tivoli Storage Manager FastBack for Microsoft Exchange to restore mailbox 1 from mailbox database 1, user2 cannot use Tivoli Storage Manager FastBack for Microsoft Exchange to restore mailbox 2 from mailbox database 1 until the first user is finished.

To open an .edb file, complete the following steps:

1. In the Tivoli Storage Manager FastBack for Microsoft Exchange main window, click **File** → **Open .edb file**, or click the **Open .edb file** icon ().
2. From the Open .edb file window, choose the type of .edb file that you want to open and restore. There are two options:

Mailbox Restore

Choose this option to restore messages or folders from a mailbox. If you select this option, you must select the applicable database from the **Mailbox Database to Restore** list.

Public Folder Restore

Choose this option to restore messages from a public folder.

3. In the **EDB File Location** field, type the path to locate the .edb file that you want to open, or click **Browse** to navigate to the location. The location containing the Exchange database file is the backup volume you mounted before beginning this task.
4. Required: Type the path to locate the transaction log files that you want to apply, or click **Browse** to navigate to the location. If you specify the transaction log directory, Tivoli Storage Manager FastBack for Microsoft Exchange applies the transactions from those logs to the .edb file before using it.
5. Required: Enter the path to locate the checkpoint file directory. The location containing the Exchange checkpoint files is the backup volume you mounted before beginning this task. If the checkpoint file is not available, there is a delay when opening the .edb file.

Important: Specify the log and checkpoint file directories if they are available. If you do not specify the log directory, there is a delay when the .edb file opens, and if your .edb file is located on a FastBack-Mount drive, you might encounter an out-of-memory condition for FastBack Mount. If this happens, copy the .edb file to a regular drive (not a FastBack-Mount drive) and repeat the operation.

6. Click **OK**.
7. If you are running Microsoft Exchange 2003, when prompted, you must manually create the Recovery Storage Group if it does not exist, and add the database.

Important:

- When the Tivoli Storage Manager FastBack for Microsoft Exchange message window opens indicating that you must create the recovery storage group and add the mailbox database to recover, do not click **OK** until after you have created the recovery storage group and the database.
 - Do not mount the database until Tivoli Storage Manager FastBack for Microsoft Exchange prompts you to do so.
 - If you have an existing recovery storage group, it is recommended you create a new one before using Tivoli Storage Manager FastBack for Microsoft Exchange to open an Exchange database.
- a. To start the Exchange System Manager, select **Start** → **All Programs** → **Microsoft Exchange** → **System Manager**.
 - b. Navigate to the Exchange server that Tivoli Storage Manager FastBack for Microsoft Exchange is installed on.
 - c. Right-click the Exchange server and select **New** → **Recovery Storage Group**.
 - d. From the Recovery Storage Group properties window, click **OK**.
 - e. Locate the recovery storage group that you just created, right-click and select **Add Database to Recover**.
 - f. From the search results, select the mailbox database to recover and click **OK**.
 - g. From the database properties window, select the **Database** tab.

- h. Ensure that there is a check mark in the This database can be overwritten by a restore check box and click **OK**.
- i. Now you can click **OK** to close the first message window that indicated you must create the recovery storage group and add the mailbox database to recover.
- j. Tivoli Storage Manager FastBack for Microsoft Exchange displays a second message indicating that you must mount the mailbox database you created.
- k. Return to Exchange System Manager, right-click the database that you added, and select **Mount Store**.
- l. Click **Yes** in the subsequent warning window to mount the mailbox database in the recovery storage group.
- m. Click **OK** in the message window indicating that the store was successfully mounted.
- n. Click **OK** in the second Tivoli Storage Manager FastBack for Microsoft Exchange message window to close the message window.

Related tasks

- “Restoring mailboxes using Direct Exchange Restore” on page 34
- “Restoring folders using Direct Exchange Restore” on page 33
- “Restoring messages using Direct Exchange Restore” on page 32
- “Restoring e-mail messages and folders using SMTP” on page 35

Opening a mailbox

You can open an active mailbox on an Exchange server and restore the contents to this target mailbox. You can restore to multiple active mailboxes, but you must first close and disconnect one session before opening and connecting to a different active mailbox.

To open an active mailbox on an Exchange server, complete these steps:

1. From the Tivoli Storage Manager FastBack for Microsoft Exchange main window, click **Direct Exchange Restore** → **open Mailbox**, or click the **open mailbox** icon from the toolbar.
2. Type the alias name of the mailbox that you want to open and click **OK**.

Related tasks

- “Saving selected e-mail” on page 31
- “Viewing and saving selected attachments” on page 31

Creating a folder

You can create folders to store e-mail messages, contacts, calendar events, journal entries, notes, or other items in an opened active mailbox or in a Personal Folders (.pst) file.

To create a folder, complete these steps:

1. From the directory where you want to create the folder or subfolder, right-click the directory and click **New Folder**.
2. Type a name for the folder, and click **OK**.

Related tasks

“Saving selected e-mail” on page 31

“Viewing and saving selected attachments” on page 31

Opening or creating a Personal Folders file

Personal Folders files (.pst files) are used to store local copies of data such as messages, calendar events, contacts, journal entries, notes, and other items. The folder or subfolder associated with the .pst file is displayed in the folder list, located in the bottom-left pane.

Related tasks

“Restoring mailboxes using Direct Exchange Restore” on page 34

“Restoring folders using Direct Exchange Restore” on page 33

“Restoring messages using Direct Exchange Restore” on page 32

“Restoring e-mail messages and folders using SMTP” on page 35

Opening an existing .pst file

To open an existing .pst file that has been saved in the Outlook 1997-2002 format, complete these steps:

Restrictions:

- The .pst file you specify cannot be password protected. If the .pst file is password protected, remove the password protection or select a new or different .pst file that is not password protected.
- All .pst files must be non-Unicode and must be less than 2 GB in size. If you need to restore a mailbox that is larger than 2 GB in size, restore the data to several smaller .pst files.

1. In the Tivoli Storage Manager FastBack for Microsoft Exchange main window

click **Direct Exchange Restore** → **open PST file**, or click the **open .pst** () icon from the toolbar.

2. Navigate to the location containing the .pst file that you want to open, select the file name and click **OK**.

Creating a .pst file

To create a .pst file, complete these steps:

Restrictions:

- The .pst file you specify cannot be password protected. If the .pst file is password protected, remove the password protection or select a new or different .pst file that is not password protected.
- All .pst files must be non-Unicode and must be less than 2 GB in size. If you need to restore a mailbox that is larger than 2 GB in size, restore the data to several smaller .pst files.

1. In the Tivoli Storage Manager FastBack for Microsoft Exchange main window

click **Direct Exchange Restore** → **open PST file**, or click the **open .pst** () icon from the toolbar.

2. Navigate to where you want to create the .pst file.
3. Specify a new file name, and click **Open**.

Creating a folder

You can create folders to store e-mail messages, contacts, calendar events, journal entries, notes, or other items in an opened active mailbox or in a Personal Folders (.pst) file.

To create a folder, complete these steps:

1. From the directory where you want to create the folder or subfolder, right-click the directory and click **New Folder**.
2. Type a name for the folder, and click **OK**.

Related tasks

“Saving selected e-mail”

“Viewing and saving selected attachments”

Saving selected e-mail

You can select and save e-mail and attachments to any location. E-mail without attachments is saved as HTML (.htm files) or Rich Text Format (.rtf files), and e-mail with attachments is saved as Outlook Express Electronic Mail (.eml files).

To save selected e-mail, complete these steps:

In the List view section, right-click the e-mail that you want to save and click **Save e-mail**.

- If the e-mail includes an attachment, a window is displayed indicating that you must Click **Yes** to save the attachment, click **No** to save the e-mail without saving the attachment, or click **Cancel** to close the window without saving the e-mail or the attachment.
 1. If you clicked yes to save the attachment, specify a file name with an extension type of .eml, and click **Save**. If you clicked no to save the e-mail without saving the attachment, specify a file name with an extension type of .htm, and click **Save**.
- If the e-mail does not include an attachment, specify a file name with an extension type of .htm or .rtf, and click **Save**.

Related tasks

“Opening a mailbox” on page 29

“Viewing and saving selected attachments”

Viewing and saving selected attachments

You can view and save attachments from the preview pane.

To view and save attachments, complete these steps:

1. From the preview pane, select the message with an attachment that you want



- to view and save. The **Attach** () icon is enabled.
2. Click the **Attach** icon to view the name of the attachment.
3. Click the name of the attachment to open the attachment management window. The attachment management window provides open and save options.
4. To view the attachment, click **Open**.
5. To save the attachment, click **Save** and enter the path where you want the attachment saved.

Related tasks

“Opening a mailbox” on page 29

“Saving selected e-mail” on page 31

Defining the restore destination

You can restore data to two types of destinations: mailboxes and .pst files.

From the **Direct Exchange Restore** menu, choose the destination type: **Open Mailbox** or **Open .pst file**.

- If you select **Open Mailbox**, complete the Opening a mailbox task.
- If you select **Open .pst file**, complete the Opening a Personal Folders file task.

You can open the folders and view the list of existing messages.

- To see any changes that might have been made outside Tivoli Storage Manager FastBack for Microsoft Exchange, you can refresh the currently selected mailbox by clicking the F5 key, or by clicking **Direct Exchange Restore** → **Refresh Mailbox** to view the changes made without having to close the session and reopen another.
- To close the currently open destination target, click **Direct Exchange Restore** → **Close Session**.

Related tasks

“Opening a mailbox” on page 29

“Opening or creating a Personal Folders file” on page 30

Restoring data using Direct Exchange Restore

You can restore messages, folders, or mailboxes using Tivoli Storage Manager FastBack for Microsoft Exchange Direct Exchange Restore, in one of three ways. You can use the main menu; you can select the item and right-click, or you can drag-and-drop the selected item to the destination target.

Related tasks

“Opening a Microsoft Exchange database” on page 27

“Getting started” on page 23

Restoring messages using Direct Exchange Restore

You can restore messages to a specified folder within a mailbox, or to a specified Personal Folders file, also known as a .pst file.

Restriction:

- When restoring data to a .pst file, the .pst file is saved in Outlook 1997-2002 format. The file must be less than 2 GB in size. To restore a mailbox that is larger than 2 GB, split up the restore into several smaller .pst files.

Open the destination target and choose one of these methods to restore messages using Direct Exchange Restore:

- Restore messages from the main menu
- Restore messages by right-clicking them
- Restore messages by dragging and dropping them from one folder to another

Restoring messages using the main menu method

1. From the list view on the right, select the messages that you want to restore.
2. From the Tivoli Storage Manager FastBack for Microsoft Exchange menu, click **Direct Exchange Restore** → **Restore Messages**.
3. In the **Select the target folder** window, select the folder where you want to restore the messages. The target folders displayed in the window are from the lower-navigation pane.
4. Status messages are displayed during the restore. After the restore is complete, click **Close**. To save the progress log click **Save Details**.

Restoring messages using the right-click method

1. From the list view on the right, select the messages that you want to restore.
2. Right-click the message and click **Restore Messages to Exchange**.
3. In the **Select the target folder** window, select the folder where you want to restore the messages. The target folders displayed in the window are from the lower-navigation pane.
4. Status messages are displayed during the restore. After the restore is complete, click **Close**. To save the progress log click **Save Details**.

Restoring messages using the drag-and-drop method

1. From the list view on the right, select the messages that you want to restore.
2. In the lower-navigation pane, select the target folder.
3. Drag-and-drop the messages to the target folder in the lower pane.

Restoring folders using Direct Exchange Restore

You can restore a folder to another folder within a mailbox, to another mailbox, or to a specified Personal Folders file, also known as a .pst file.

Restriction:

- When restoring data to a .pst file, the .pst file is saved in Outlook 1997-2002 format. The file must be less than 2 GB in size. To restore a mailbox that is larger than 2 GB, split up the restore into several smaller .pst files.

Open the destination target and choose one of these methods to restore a folder using Direct Exchange Restore:

- Restore folder from the main menu
- Restore folder by right-clicking them
- Restore folder by dragging and dropping them from one folder to another

Restoring folders using the main menu method

1. From the source navigation tree, select the folder that you want to restore.
2. From the Tivoli Storage Manager FastBack for Microsoft Exchange menu, click **Direct Exchange Restore** → **Restore Folder**.
3. In the **Select the target folder** window, select the folder where you want to restore the folder. The target folders displayed in the window are from the lower-navigation pane.
4. Status messages are displayed during the restore. After the restore is complete, click **Close**. To save the progress log, click **Save Details**.

Restoring folders using the right-click method

1. From the source navigation tree, select the folder that you want to restore.
2. Right-click the folder and click **Restore Folder to Exchange**.
3. In the **Select the target folder** window, select the folder where you want to restore the folder. The target folders displayed in the window are from the lower-navigation pane.
4. Status messages are displayed during the restore. After the restore is complete, click **Close**. To save the progress log, click **Save Details**.

Restoring folders using the drag-and-drop method

1. From the source navigation tree, select the folder that you want to restore.
2. In the lower-navigation pane, select the target folder.
3. Drag-and-drop the folder to the target folder in the lower pane.

Restoring mailboxes using Direct Exchange Restore

You can restore a mailbox to another mailbox, a folder, or to a specified Personal Folders file also known as a .pst file.

Restriction:

- When restoring data to a .pst file, the .pst file is saved in Outlook 1997-2002 format. The file must be less than 2 GB in size. To restore a mailbox that is larger than 2 GB, split up the restore into several smaller .pst files.

Open the destination target, and choose one of these methods to restore a mailbox using Direct Exchange Restore:

- Restore mailboxes from the main menu
- Restore mailboxes by right-clicking them
- Restore mailboxes by dragging and dropping them from one mailbox to another

Restoring mailboxes using the main menu method

1. From the source navigation tree, select the mailbox that you want to restore.
2. From the Tivoli Storage Manager FastBack for Microsoft Exchange menu, select **Direct Exchange Restore** → **Restore Mailbox**.
3. In the **Select the target folder** window, select the target folder where you want to restore the mailbox. The target folders displayed in the window are from the lower-navigation pane.
4. Status messages are displayed during the restore. After the restore is complete, click **Close**. To save the progress log, click **Save Details**.

Restoring mailboxes using the right-click method

1. From the source navigation tree, select the mailbox that you want to restore.
2. Right-click the mailbox and click **Restore Mailbox to Exchange**.
3. In the **Select the target folder** window, select the target folder where you want to restore the mailbox. The target folders displayed in the window are from the lower-navigation pane.
4. Status messages are displayed during the restore. After the restore is complete, click **Close**. To save the progress log, click **Save Details**.

Restoring mailboxes using the drag-and-drop method

1. From the source navigation tree, select the mailbox that you want to restore.
2. In the lower-navigation pane, select the target folder.
3. Drag-and-drop the mailbox to the destination target in the lower pane.

Restoring e-mail messages and folders using SMTP

You can restore e-mail messages and folders using Simple Mail Transfer Protocol (SMTP). When restoring data using SMTP, the messages are sent to the e-mail address of the specified recipient.

Restrictions:

- You must have an available SMTP server to use this protocol to restore messages.
- Encrypted messages and Unicode content cannot be restored using SMTP. Use Direct Exchange Restore to restore encrypted and Unicode content.
- Other types of data such as contact types, journal entries, and calendar events cannot be restored using SMTP. You must restore them using the Restore to mailbox or .pst function.

To restore e-mail messages or folders, complete these steps:

1. Select the messages or a folder and click **SMTP Restore**.
2. In the SMTP properties window, specify the server name, host name, or IP address of the SMTP server, in the **Host Name / Address** field. For example: outgoing_smtop_server.net
3. Specify a port number in the **Port Number** field, or use the default port number 25.
4. Specify the senders e-mail address in the **Sender Address** field. For example: administrator@yourcompany.com. The e-mail address for the sender is needed because some SMTP servers require a valid sender e-mail address to authenticate the user and accept the e-mail.
5. Specify the user name or alias of the person receiving the message in the **Name** field. For example, if the recipients e-mail address is administrator@yourcompany.com, the e-mail name is administrator.
6. Specify the domain name of the recipient in the **Domain** field and click **OK**. The domain name is the last part of the recipients e-mail address, following the @ symbol. For example, if your recipients e-mail address is administrator@yourcompany.com, the domain name would be yourcompany.com

Searching messages

You can use the options on the **Find** tab to search a mailbox database for information contained within the body or subject line of the message.

To search for an item in the database, complete the following steps:

1. In the **Looking for** list, select the type of item you want to locate. For example, you can search for messages, journal entries, and contacts. The items you search for are limited to the types of information stored in the mailbox.
2. Select mailboxes and folders to search by clicking **Browse**. The mailboxes and folders that you select are listed in the **Search in** field.

3. In the **Search for words** field, type words that you want to locate. For example, you can type *Urgent*.
4. From the **In** list, select where to search for the text you typed in the previous step. For example, you can search the Subject line of e-mail messages. The scope of the search can be restricted to specific parts of the item you want to locate. For example, if you are looking for messages, you can look for messages with Urgent text in the Subject only field.
5. Click **Find**. The results are displayed in the window. To interrupt the search, click **Stop**.
6. Search for additional items by clicking **New Search**.

Searching messages using advanced search options

Notes:

- For advanced search options, click **More**.
- You can hide the advanced search options by clicking **Less**
- Substrings searches are allowed in the **Sent to**, and the **From** fields, and are case sensitive.
- You cannot use wildcard characters such as asterisk (*) or percent (%) in your search.

To run an advanced search, complete the following steps:

1. In the **From** field, type the complete or partial name that you want to search for.
2. In the **Sent to** field, type the complete or partial name that you want to search for.
3. To search for a specific time an item was created, changed, received, or sent, select **Time**. To complete the **Time** search options, complete the following steps:
 - a. For the **Start Date**, type the date or use the calendar tool to select a date. The default is the current date. The format for the date is *MM/DD/YYYY* where *MM* represents the month, *DD* represents the day, and *YYYY* represents the year.
 - b. For the **End Date**, type the date or use the calendar tool to select a date. The default is the current date. The format for the date is *MM/DD/YYYY* where *MM* represents the month, *DD* represents the day, and *YYYY* represents the year.
4. To search for a specific item size, select **Size** and complete the following steps:
 - a. Specify a search for items either greater than or less than a particular size.
 - b. Specify the size. Enter the size as an integer.
 - c. Select the unit for measurement. You can select one of the following options: KBytes or MBytes
5. Click **Find**. Results are displayed in the main window. To interrupt the search, click **Stop**.

Restoring public folders

Restoring public folders using Tivoli Storage Manager FastBack for Microsoft Exchange requires a separate recovery server. A server can only have one public folder database, and because a production server already has a public folder database, a separate server is required to create a recovery public folder database.

- Before restoring data, mount a previous backup of the volume containing the .edb file that you want to restore, and map the volume to an empty drive letter. If the .edb file is in the root directory of the volume, move it to a subdirectory of your choice before continuing.
- To run Tivoli Storage Manager FastBack for Microsoft Exchange, the user must have an active Exchange mailbox, and that mailbox must be online and accessible.
- To restore public folders, the user must also have access to their own public folder database, and it must be online.

Before using Tivoli Storage Manager FastBack for Microsoft Exchange to restore public folders for the first time, you must complete the following task on the separate recovery server:

1. Create a new storage group.
2. In the new storage group, create a new mailbox database.
3. In the new mailbox database, create a new user and mailbox. For the user and mailbox, use the following security requirements:
 - Tivoli Storage Manager FastBack for Microsoft Exchange requires a user ID that is a member of the local Administrators group for the machine on which the Exchange server is running.
 - (Microsoft Exchange 2003 only) If you are using Microsoft Exchange 2003, the user ID must be associated with the Exchange Administrator role.
 - (Microsoft Exchange 2007 only) If you are using Microsoft Exchange 2007, the user ID must also have Exchange Organization Administrators permissions. By default, these permissions are automatically added to the local Administrators group.
4. Log on with the new user ID.
5. Start the public folder recovery process.

During the public folder recovery process, Tivoli Storage Manager FastBack for Microsoft Exchange changes the default public folder database to this new mailbox database. This change is temporary. When you exit and close Tivoli Storage Manager FastBack for Microsoft Exchange, the default public folder database is used and the new mailbox database is no longer used for the public folder recovery process.

Public folders can be restored to a mailbox on an Exchange server, to an Outlook Personal Folders file (.pst file), or to another mailbox address using Simple Mail Transfer Protocol (SMTP). You can restore an entire folder or individual messages.

To restore a public folder, complete these steps:

1. Log on with the user ID and password created in 3.
2. In the Tivoli Storage Manager FastBack for Microsoft Exchange main window, click **File** → **Open .edb file**, or click the **Open .edb file** icon ().
3. Click **Public Folder Restore**
4. Open the destination target and restore your data using one of these methods:
 - Restoring e-mail messages and folders using SMTP
 - Restoring messages using Direct Exchange Restore
 - Restoring folders using Direct Exchange Restore

Related tasks

“Restoring folders using Direct Exchange Restore” on page 33

“Restoring messages using Direct Exchange Restore” on page 32

“Restoring e-mail messages and folders using SMTP” on page 35

Chapter 8. Troubleshooting

Information on how to resolve errors that might occur during Tivoli Storage Manager FastBack for Microsoft Exchange operations, and what information you will need to provide IBM technical support if necessary is provided.

Related reference

“Resolving MAPI and Exchange database problems” on page 40

“Locating and gathering log files”

Locating and gathering log files

Log files are used by IBM technical support to diagnose problems affecting Tivoli Storage Manager FastBack for Microsoft Exchange.

By default, tracing is not enabled. To enable tracing, on the Tivoli Storage Manager FastBack for Microsoft Exchange system, complete the following steps:

1. Open a command prompt window.
2. Navigate to the directory where Tivoli Storage Manager FastBack for Microsoft Exchange is installed. The default path to the installation directory: C:\Program Files\Tivoli\TSM\fbexchange
3. Enter the following command:
`FastBackExchange.exe -t`

When you run this command, the ExchangeRestore.log file is created in the same directory as the executable. All tracing and logging information is written to this file.

Before contacting IBM technical support, gather these log files and other pertinent information about your Tivoli Storage Manager FastBack for Microsoft Exchange system, and configuration settings:

- The ExchangeRestore.log file
- The application and System event logs
- The version of Microsoft Windows you are running, including the service pack level
- The Microsoft Exchange version and service pack or rollup level you have
- What Microsoft .NET Framework version you are running
- If you are running Microsoft Exchange 2007, what CDO or MAPI download level you have

Locate and gather these log files so you can provide them to IBM technical support if necessary:

- Application event log file
- System event log file
- ExchangeRestore.log file (The default directory for the ExchangeRestore.log file is C:\Program Files\Tivoli\TSM\fbexchange.)

Resolving MAPI and Exchange database problems

Before you can restore data using Tivoli Storage Manager FastBack for Microsoft Exchange you must be able to connect to, and open, the applicable Exchange database (.edb file). There are multiple operating system, software, and application level requirements that must be met before you can successfully restore data.

Problem: Mailbox not accessible using MAPI (MAPI_E_FAILONEPROVIDER)

There are multiple possibilities for this message and multiple resolutions as well. If you see this message it means that Tivoli Storage Manager FastBack for Microsoft Exchange cannot access the mailbox for some reason. Here are a few of the possibilities and their solutions:

Mailbox does not exist

Resolution: Create the necessary mailbox.

Mailbox has never been sent to or logged in to

Resolution: Ensure that the mailbox is active by logging in to it or by sending at least one message to the mailbox.

Mailbox database is not mounted

Resolution: Verify that the mailbox is mounted, and mount it if it isn't already mounted.

Insufficient privilege to access mailbox

Resolution: Ensure that the administrative ID that you are using to restore data has the correct privileges, and has an active mailbox on the system. Microsoft Exchange 2003 requires Exchange Administrators and Local Administrators permissions, and Microsoft Exchange 2007 requires Exchange Organization Administrators, Local Administrators.

Exchange server where mailbox database is located is not available or down

Resolution: Verify that access to Exchange Server using Exchange Management Console (Exchange 2007) or Exchange System Manager (Exchange 2003).

Microsoft Information Store service is not running

Resolution: Verify that Microsoft Exchange Information Store service is running through computer management Services. Start the service if it is not running.

Microsoft Exchange System Attendant service is not running

Resolution: Verify that Microsoft Exchange System Attendant service is running through computer management Services. Start the service if it is not running.

MAPI Library Initialization Failure (MAPI_E_CALL_FAILED)

Initialization of MAPI libraries fails is typically indicative of a problem with the MAPI CDO 1.2.1 installation.

Resolution

If installed, uninstall MAPI CDO 1.2.1 installation and reinstall from <http://www.microsoft.com/downloads>.

MAPI Problems after Outlook is installed on Exchange Server

Exchange and Outlook MAPI implementations are incompatible and Outlook should never be installed on an Exchange Server running Tivoli Storage Manager FastBack for Microsoft Exchange. If this occurs, the following procedure might reconcile the issue:

1. Uninstall Outlook from the Exchange server.
2. Reinstall the MAPI CDO 1.2.1 package.
 - a. Bring up the MFCMAPI and select the Profile menu.
 - b. Select **Show Profiles**.
 - c. Delete all profiles that begin with TSMPROFILE
 - d. Exit MFCMAPI

MAPI PST Service Not Found (MAPI_E_NOT_FOUND)

This is typically due to a missing MSPST MS service or sections in the MAPISVC.INF file.

Resolution

Add the missing sections by completing these steps.

1. Bring up MFCMAPI and select the **Profile** menu.
2. Select **Add services to MAPISVC.INF**.
3. Select the check box for **PST**, and click **OK**.

The MAPI Spooler could not be started

This is typically indicative of a missing or damaged file in the mapisp32.exe. This can happen when a file is removed or renamed by an anti-virus program.

Resolution

Uninstall and reinstall the MAPI CDO 1.2.1 package.

Problem: Failure to load .edb file due to existing recovery storage group

Opening of an Exchange .edb file from a backup snapshot fails because Tivoli Storage Manager FastBack for Microsoft Exchange attempts to create an Exchange 2007 recovery storage group and one already exists.

Resolution

Remove existing recovery storage group and repeat the open .edb operation.

Problem: FBSX7039E Unexpected error during the mounting of database: < my edb file > Received the following error message from the Exchange Server Message API: Method failed with unexpected error code 19.

Attempt to load an .edb file fails with FBSX7039E Unexpected error code 19. This typically means the .edb file is in write-protect mode. This failure also results in the Tivoli Storage Manager FastBack for Microsoft Exchange creating a recovery storage group that does not get deleted, which results in a subsequent attempt to open an .edb to fail.

Resolution

Unmount and remount the .edb file and ensure that the .edb file is

mounted to a subdirectory that you have write-access to, and that the read-only check box is not checked (is using FastBack mount).

Problem: Some calendar dates show <StartDate>

When using a Microsoft Exchange 2003 mailbox, some calendar dates might not be displayed. Instead of displaying the date, the following text is displayed: <StartDate>.

Resolution

There is no workaround or resolution to this problem. It is a limitation when using a Microsoft Exchange 2003 mailbox.

Problem: A Microsoft Exchange 2003 mailbox name includes the following characters: ()

The (and) characters are not supported characters when naming a Microsoft Exchange 2003 mailbox.

Resolution

Change the mailbox name to not include the following characters: ()

Related concepts

Chapter 8, "Troubleshooting," on page 39

Chapter 9. Uninstalling Tivoli Storage Manager FastBack for Microsoft Exchange

You must uninstall any previous versions of Tivoli Storage Manager FastBack for Microsoft Exchange before you can install version 6.1.

To uninstall Tivoli Storage Manager FastBack for Microsoft Exchange, click **Start** → **Control Panel** → **Add or Remove Programs** → **Change or Remove Programs**, and click the Tivoli Storage Manager FastBack for Microsoft Exchange application.

You cannot rollback from Tivoli Storage Manager FastBack for Microsoft Exchange 6.1 to version 5.5.x.

Chapter 10. Glossary

access permission

A privilege that permits the access or use of an object.

Administrative Command Line

The command line interface used to access Tivoli Storage Manager FastBack functions. Most of the commands available through the graphical interface of FastBack Manager can also be used in the Administrative Command Line. The Administrative Command Line can also send commands directly to FastBack Mount.

application quiescing

An offline back up of applications, for example a backup of a supported Microsoft Exchange server or SQL server. When you use application quiescing to back up an application, the server operations are disrupted. Services and applications that run on the server are shut down during the application quiescing backup. The Volume Shadow Copy service is a type of application quiescing. IBM also provides application quiescing.

Bare Machine Recovery

A solution that you can use to recover entire systems to a comparable server, to a new server with different hardware, or to a virtual machine (VMware or Microsoft Virtual Server).

basic disk

A disk initialized for basic storage that can hold primary partitions, extended partitions, and logical drives.

Central Control Station

A Java-based graphical user interface that provides you with a graphical user interface to view status files stored for the Tivoli Storage Manager FastBack Disaster Recovery Server database.

circular logging

A transaction logging method based on a fixed amount of disk space. If the disk space allocated for transaction logs is filled, the application overwrites the oldest transactions.

client group

Identify the volumes that are backed up. In addition to volumes, client groups can back up SQL and Exchange databases. The SQL and Exchange databases that are backed up can span across multiple disk volumes.

Cluster Continuous Replication (CCR)

A type of clustering that provides high availability for Microsoft Exchange 2007 software. CCR is like LCR where two copies of the Microsoft Exchange storage group are made.

Both CCR and LCR log changes in a primary copy of the database and transaction log files. For CCR, the database and transaction log files are copied to a secondary server that serves as a passive node in the two-node cluster. During the setup for CCR, database files are copied to the secondary server. After the setup is complete, only transaction logs are sent to the secondary server.

consistent snapshot

A snapshot that is compatible with the previous snapshot. The algorithm

used to record the data synchronizes the recording of data with checkpoints and messages to ensure the snapshot is coherent with the previous snapshots.

content aware snapshot

Identifies only the used areas of volumes during full and incremental snapshots. Deleted files are not backed up.

Continuous Data Protection

A tool that records all activity between snapshots, permitting the restoration of a system to a point in time.

Continuous Data Protection range

The time between two snapshots.

data volume

A discrete unit of storage on disk, tape, or other recording medium that supports data.

destination volume

The disk on which data will be restored.

differential snapshot

Synonym for *incremental delta block*.

disaster recovery

The process of restoring a database after a partial or complete site failure that was caused by a catastrophic event such as an earthquake or fire. Typically, disaster recovery requires a full database backup at another location.

dynamic disk

A disk that provides support for volumes spanning multiple disks. Dynamic disks use a hidden database to track information about dynamic volumes on the disk and other dynamic disks.

FastBack Manager

A Java-based graphical user interface application that provides administration and management operations. For example, FastBack Manager supports snapshot configuration, scheduling, monitoring, and volume-level and disk-level restoration. The FastBack Manager accesses the FastBack Server through the LAN.

FastBack Mount

An application that enables the mounting of any snapshot volume from the repository. You can view the snapshot locally, with read-only access, and on the server.

FastBack Client

This application tracks block-level changes with copy-on-write technology for the protected systems. The client provides block-level, incremental snapshots of New Technology File Systems (NTFS) and supports a continuous data protection option.

FastBack Disaster Recovery Server

For disaster recovery, this server supports the copy of snapshots from FastBack Manager to a central location.

FastBack Server

This server is a repository used to track snapshots. The server also manages the transfer of data.

FastBack Watchdog

A service that monitors the status of the backup server. The service determines if the server is down. If the status is down, the service sends an email to the system administrator about the server status.

full snapshot

A type of snapshot. Creates a complete image of the volume.

incremental delta block

A type of snapshot. A record of the differences between the aggregation of all incremental snapshots in a chain, and the actual data on the disk.

incremental snapshot

A type of snapshot. Instead of taking a complete image of the volume, the incremental snapshot records only the data that has changed since the full snapshot was completed.

Instant Restore

The capability that enables applications to be up and running within minutes following any data loss, while full data recovery is performed in the background.

integrity

The quality of data that exists as long as destruction, alteration, loss of consistency, or loss of data are prevented.

job schedule

An object that contains entries for jobs to be submitted at a specified time and date. These job schedule entries can also be used to schedule recurring jobs.

local continuous replication (LCR)

A type of clustering that provides high availability for Microsoft Exchange 2007 software. LCR provides protection for mailbox data, but the copy of data should not replace regular database backups. A LCR copy is a near-time copy of the production database.

log volume

An abstract representation of disk space that is used for storage. There are two types of log volumes: permanent and archival. Permanent volumes can be stored on file or disk devices. Archival volumes can only be stored on file devices. Internal log server data and log file groups must be stored on permanent volumes. Log archive groups must be stored on archival volumes.

master database

The database that contains application data tables.

mounted volume

A removable area of storage on a hard disk attached to an empty folder. Mounted volumes should have an assigned drive letter.

network share

A location on a computer network, typically allowing multiple computer users on the same network to have a centralized space on which to store files.

quiesce

To end a process or shut down a system after allowing normal completion of active operations.

quiescent backup

An offline backup. Requires interrupting the operation of the server. Services and applications associated with the server are also shut down during the backup.

quiescing parameter

The option to take the object offline.

quorum disk

A managed disk (MDisk) that contains a reserved area used exclusively for cluster management. The quorum disk is accessed in the event that it is necessary to determine which half of the cluster will continue to read and write data.

repository disk

A storage device used as a persistent storage area for data and other application resources.

repository pool

A division of a persistent storage area for data and other application resources.

service group

A collection of resources of different types for a given application or task. Veritas Cluster Server manages resources in the form of service groups.

snapshot

A record of backup data at a certain point in time.

snapshot chains

Series of snapshots of the same volume in the same policy.

snapshot policy

Links client groups to a job schedule. A snapshot policy also specifies the number of snapshots that can be retained and identifies snapshot priority.

storage group

The user-defined partition of a database.

storage pool

A named set of storage volumes that is the destination that is used to store client data.

target volume

A discrete unit of storage on disk, tape, or other data recording medium marked to support some form of identifier and parameter list, such as a volume label or input/output control.

transaction logging

A logging method where the database server maintains a record of each change made to the database during a transaction.

virtual machine

An instance of a data-processing system that appears to be at the exclusive disposal of a single user, but whose functions are accomplished by sharing the resources of a physical data-processing system.

virtual volume

An archive file on a target server that represents a sequential media volume on a source server.

volume

A discrete unit of storage on disk, tape or other data recording medium that supports some form of identifier and parameter list, such as a volume label or input/output control.

volume management

A piece of code that provides a layer of physical abstraction, data protection, and performance.

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