



EMC RepliStor for Microsoft Windows
Version 6.1

INSTALLATION GUIDE

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REV A01

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As part of an effort to improve and enhance the performance and capabilities of its product line, EMC from time to time releases revisions of its hardware and software. Therefore, some functions described in this EMC RepliStor for Microsoft Windows Version 6.1 Installation Guide may not be supported by all revisions of the software or hardware currently in use. For the most up-to-date information on product features, refer to your product release notes.

This EMC RepliStor for Microsoft Windows Version 6.1 Installation Guide provides information on how to install the EMC RepliStor software.

Refer to the EMC RepliStor for Microsoft Windows Version 6.1 Administrator's Guide for information on how to configure and manage the EMC RepliStor software after installing it.

Post-release information is contained in the Release Notes for this product. This document is available online at the Legato website (www.legato.com). Refer to the website periodically to view the latest Release Notes.

If a product does not function properly or does not function as described in this EMC RepliStor for Microsoft Windows Version 6.1 Installation Guide, please contact your EMC representative.

Audience

This information in this guide is intended for use by system administrators responsible for installing software and maintaining the servers and clients on a network.

Organization

Here is an overview of where information is located in this guide.

Chapter 1, *Installing RepliStor*, provides information about installing EMC RepliStor.

Chapter 2, *Configuring RepliStor with Microsoft Cluster Server*, describes how to install RepliStor software in a Microsoft Cluster Server (MSCS) environment.

Chapter 3, *Installation and Configuration*, provides information about installing and configuring the RepliStor Remote Install Utility.

Related Documentation

The following documents, available on the EMC Legato website at <http://web1.legato.com/cgi-bin/catalog?sf=Releases>, provide additional information about the RepliStor software:

- ◆ *EMC RepliStor for Microsoft Windows Version 6.1 Administrator's Guide*, P/N 300-002-464 Rev A01
- ◆ *EMC RepliStor for Microsoft Windows Version 6.1 Release Notes*, P/N 300-002-461 Rev A01

An extensive archive of product documentation is available at <http://web1.legato.com/cgi-bin/catalog?sf=Releases>. Most of the documents are in Adobe Acrobat Portable Document Format (PDF), and can be viewed by downloading and installing the Adobe Acrobat Reader. The Reader is available in the `/viewers/acroread` directory on the Legato Documentation Suite CD-ROM, or directly from Adobe at www.adobe.com.

Conventions Used in This Guide

EMC uses the following conventions for notes, cautions, warnings, and danger notices.

A note presents information that is important, but not hazard-related.

Typographical Conventions

EMC uses the following type style conventions in this guide:

AVANT GARDE	Keystrokes
Palatino, bold	<ul style="list-style-type: none"> ◆ Dialog box, button, icon, and menu items in text ◆ Selections you can make from the user interface, including buttons, icons, options, and field names
<i>Palatino, italic</i>	<ul style="list-style-type: none"> ◆ New terms or unique word usage in text ◆ Command line arguments when used in text ◆ Book titles
<i>Courier, italic</i>	Arguments used in examples of command line syntax.
Courier	<p>System prompts and displays and specific filenames or complete paths. For example:</p> <pre>working root directory [/user/emc]: c:\Program Files\EMC\Symapi\db</pre>
Courier, bold	<ul style="list-style-type: none"> ◆ User entry. For example: sympoll -p ◆ Options in command line syntax

Where to Get Help

Legato offers a variety of methods; including electronic, telephone, and fax support to obtain company, product, and technical information. For questions about technical support, call your local sales office or service provider.

General Information

The Legato website provides most of the information you might need. Technical bulletins and binary patches are also accessible on

the Legato FTP site. For specific sales or training needs, e-mail or call Legato at the following telephone numbers.

EMC Legato Service or Resource	Technical Bulletins	Binary Patches	Company and Product Information	Training Programs
www.legato.com	Yes	Yes	Yes	Yes
ftp.legato.com	Yes	Yes		
Legato Sales (650) 210-7000 Option 1 sales@legato.com			Yes	
Legato Education Services (650) 842-9357 training@legato.com				Yes

Technical Support

The www.legato.com/support website provides contact information, software patches, technical documentation, and information about available support programs.

You can contact technical support at:

Worldwide Toll Free: 877-534-2867^a

Worldwide: +1-905-315-4788

- a. For international dialing, excluding Canada and Guam, enter your AT&T Direct Access Number first, wait for the prompt, then dial 877-534-2867.

You can also email technical support at support@legato.com.

Customers with an active support agreement have access to Legato's integrated product knowledge base. Help with Legato software issues is also available through Legato Technical Support.

Customers without an active support agreement can contact Legato Technical Support services for per-update/per-incident support or Support Sales and Renewals to purchase annual software update subscriptions. You can contact Support Sales and Renewals by using one of the following contact methods:

Contact Method	Americas and Asia	Pacific Europe, Middle East, Africa
Phone Number	(650) 812-6000, option 2	+31 23 554-8870
E-mail	supportsales@legato.com	supportsalesEMEA@legato.com

Licensing and Registration

To license and register this product, go to the Legato licensing website. To change contact information, transfer licenses, or for questions about licensing, use one of the following contact methods:

Licensing and Registration	Contact
EMC Legato licensing website	http://legato.com/support/licensing
Telephone number	(650) 812 6000 (option 3, option 2) ^a +31 23 554 8881 ^b
Fax number	(650) 745-1477 ^a +31 23 554 8808 ^b
E-mail	licensing@legato.com ^a licensingemea@legato.com ^b

a. Contact information for the Americas, Asia, and the Pacific.

b. Contact information for Europe, the Middle East, and Africa.

Your Comments

Comments and suggestions about software features, the installation procedure, and documentation are always welcome. Please send suggestions and comments to feedback@legato.com. Receipt of all e-mail correspondence is confirmed. Although every request cannot be responded to personally, all comments and suggestions are considered during product design.

Help improve the documentation by completing a brief survey. Visit the Legato website at www.legato.com, navigate to the documentation page, and click on the survey link.

Installing RepliStor

This chapter provides information about installing EMC RepliStor software. For information on starting and configuring the RepliStor software after installation, refer to the *EMC RepliStor for Microsoft Windows Version 6.1 Administrator's Guide*.

This chapter includes the following sections:

- ◆ System Requirements 1-2
- ◆ Microsoft Windows Storage Server Support..... 1-6
- ◆ Before You Install 1-6
- ◆ Installing RepliStor Software..... 1-8
- ◆ RepliStor and Windows XP 1-11
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System Requirements

This section discusses the system requirements the source and target servers must meet in order to run EMC® RepliStor® software.

Before installing RepliStor software, you must have administrative privileges on the system where you are installing the product. If you are installing in a domain, the account must be in the Domain Admins group. You can install RepliStor software over a network if you have administrative privileges on both the source and target machines.

Operating System and Server Requirements

Before installing RepliStor software, you must meet the following operating system and server requirements:

- ◆ Operating systems:
 - Windows 2000 (Service Pack 4 is recommended)
 - Windows Server 2003
 - Windows Server 2003 64-bit Itanium Edition
 - Windows Server 2003 64-bit x64 Edition (AMD Opteron and Intel EM64T)
 - Windows Powered Network-Attached Storage (NAS) 2000
 - Windows Storage Server 2003
 - Windows XP Service Pack 2
- ◆ Server hardware certified by Microsoft for the version of Windows that you are running

For a list of servers certified by Microsoft, refer to the Microsoft Windows Compatible Products page on the Microsoft website at <http://www.microsoft.com/windows/compatible/>, or contact a Legato® Sales representative.

Software Requirements

RepliStor software requires Windows Installer 2.0 or higher. If your system has an earlier version, you must obtain Windows Installer 2.0 or higher from the Microsoft website. Windows 2000 Service Pack 4 and higher includes the Windows Installer 2.0 standard.

DiskXtender 2000 -- Version 5.60.049 patch 4 or later is required.

Communication Requirements

RepliStor software supports the TCP/IP protocol. The Windows systems you use must be able to communicate with each other. To verify communication, use File Manager or Windows Explorer to establish a network connection from one machine to another.

Disk Space Requirements

The information in this section should be considered as guidelines only. These recommendations depend on several variables. For example, the amount of storage on the source and target may be significantly greater if you are replicating data that changes quickly or if the links are relatively slow. In addition, if you are using scheduled forwarding or throttling you may actually need more space than the original amount replicated. This scenario could occur if you accumulate changes all day, and then turn forwarding back on at night. Take your data storage needs into consideration before choosing a reserve size.

EMC recommends the following disk space for program, documentation, and log files:

- ◆ **Program files** — The following platforms require the disk space shown for program files:
 - Intel 32-bit version: 18 MB
 - Itanium (ia64): 36 MB
 - Opteron (x64): 27 MB
- ◆ **Log files** — Allocate space for the following types of log files:
 - **Kernel cache** — The kernel cache is a fixed amount of shared memory used for queuing data going from the source to the target. When you install the RepliStor software, it looks at the physical memory and preconfigures an appropriate setting for the system. The kernel cache size defaults to 5 percent of physical memory. However, you can modify this parameter, if needed, in the RepliStor **Options** dialog box (on the **Advanced** tab).

It is important to size this memory segment correctly. If it is too small, output from memory operations may overflow to disk (that is, OC\$nnnnn files in the RepliStor data directory), hurting performance. If the memory segment is too large, it reduces the amount of memory available to other applications.

For information on how to size the kernel cache appropriately, refer to the *Sizing the Kernel Cache* on page 5-3 of the *EMC RepliStor for Microsoft Windows Version 6.1 Administrator's Guide*.

- **Message log** — The message log holds 1,000 messages by default; it typically requires approximately 3 MB.
- **Blocked files (target only)** — The blocked files log holds all the file operations that are queued to all blocked files. This file can grow to any size depending on what is in queue.
- **OC\$nnnnn files (source only)** — The OC\$nnnnn log holds all the file operations that are queued to be sent to the target if the kernel cache overflows. The most common reason the kernel cache overflows is when a target site is blocked and the file operations cannot be forwarded.

RepliStor Software Use of Windows Active Directory

When installing RepliStor software, you can optionally register it in Active Directory. This has the following benefits:

- ◆ There is a common site list for all RepliStor installations in the domain. If any server makes a change to the site list, *all* servers see that change immediately.
- ◆ There is a common users list for all installations in the domain (on the **Users** tab in the **Options** dialog box).
- ◆ The site list is available immediately. Manually adding a site is only necessary if the site is outside the domain.

In order to register RepliStor software in Active Directory, the user performing the installation must be in the Domain Admins group. Once RepliStor software is installed, a domain administrator can assign administrative rights to any other user or group.

RepliStor software uses the base Active Directory schema and does not extend the schema. The only portion of Active Directory that RepliStor software modifies is:

DC=domain

 CN=System

 CN=Legato

 CN=RepliStor

Under the RepliStor entry is an entry for each installed RepliStor server, as well as entries for each external RepliStor server (as added into the Site List). Use the following information to determine the additional disk space the system requires to replicate RepliStor Active Directory updates:

- ◆ Each RepliStor installation typically requires less than 1 KB of additional space in Active Directory, although this depends on the number of characters entered in the text fields in the **Site Properties** dialog box (for example, **Description**, **Site Name**, **Account**, **Password**).
- ◆ All attributes that RepliStor software uses in Active Directory are sent during both full and partial Active Directory replications.
- ◆ RepliStor Active Directory updates are confined to user-initiated events, such as installing and removing RepliStor software, and modifying site properties.

Compatibility with Other Releases of RepliStor Software

RepliStor Version 6.1 is compatible with versions 4.0, 4.1, 4.2, 5.0, 5.1, 5.2, 5.3, and 6.0; however, you won't be able to modify information under the **Users** tab of the **Options** dialog box in earlier versions. In addition, if you are running version 4.2 or later with aliases defined for Super Automatic Switchover (Super ASO), all systems must be running RepliStor Version 4.2 or higher.

Microsoft Windows Storage Server Support

RepliStor Version 6.1 supports Microsoft Windows Powered Network-Attached Storage (NAS), including Windows Storage Server 2003. Built on the Windows Server 2003 operating system, Windows Storage Server 2003 is a dedicated file and print server that supports heterogeneous file serving, as well as backup and replication of stored data.

For information about obtaining a license key to run RepliStor on Windows Storage Server, refer to *Obtaining a License Key* on page 1-7.

To install RepliStor software on a system running Windows Powered NAS, you must use Terminal Services or Remote Desktop. For information about these features, refer to the Microsoft Windows documentation.

Before You Install

Be aware that RepliStor software must be installed as a service that runs under the System account or an authenticated account in the Administrators group (or Domain Admins, if installed in a domain). It cannot run under a user's account because of Windows operating system limitations. Specifically, RepliStor software needs to communicate with the RepliStor kernel mode driver. Only System or Administrator users are allowed to perform this function.

For information on securing remote servers, refer to *Setting Up Secure Access to Remote Servers* on page 1-21.

During installation, RepliStor software prompts you for the following information:

- ◆ The pathname to install RepliStor programs. The recommended path is:
`%SystemDrive%\Program Files\Legato RepliStor`
- ◆ The pathname to store RepliStor data and script files. The default paths to data and script files are:
`%SystemDrive%\Documents and Settings\
All Users\Application Data\Legato RepliStor Data`
and
`%SystemDrive%\Documents and Settings\
All Users\Application Data\Legato RepliStor Scripts`

To change the program directories after installing RepliStor software, you must reinstall it. To change the location of the data directory after installing RepliStor software, you must change it on the **Directories** tab in the **Options** dialog box (select **Options** from the Maintenance menu).

Obtaining a License Key

When you first install RepliStor software, you can select **Request Evaluation License** for a trial version. Before you install a non-evaluation copy of RepliStor, however, you must obtain a license key from Legato for each computer on which the product will run. When you obtain a license key, you automatically register the software and activate support for RepliStor software.

If you are installing RepliStor from a CD-ROM, you must contact Legato and give them the serial number listed on the software package to obtain a license key.

For additional information, refer to *Licensing and Registration* on page xiii.

Table 1-1 lists the information that you must provide if you register the product and request a license key via e-mail.

Table 1-1 RepliStor Registration Information

Information	Description
Serial number	The number located on the sticker on the back of the RepliStor product media.
E-Mail	Your e-mail address. Legato sends a confirmation of registration and the license key to this address.
Main contact	Main contact for the product at your site.
Company	Name of your company.
Address	Complete street address, including suite, apartment, and mailstop.
City	Name of your city.
State	Name of your state or province.
ZIP Code	Your zip code.
Country	Name of your country.
Phone	Phone number where you can be reached during the day.
Customer ID	Your Legato Customer ID number (starts with 432*****).

Installing RepliStor Software

This section provides instructions for installing RepliStor software from a CD-ROM, a single file web distribution, and from the command line by using the `msiexec` command.

How to Install RepliStor Software from a CD-ROM

To install RepliStor software from a CD-ROM:

1. Start Windows.

The user ID to log on to Windows must have administrative privileges, or Domain Admins if you are installing in a domain.

2. Insert the RepliStor CD-ROM into the CD-ROM drive. If the RepliStor Setup Wizard doesn't start automatically, click the `RepliStor.msi` file.
3. Follow the prompts in the Windows Installer program to install the program.

How to Install RepliStor Software from a Single File Web Distribution

You can install RepliStor software from a single file obtained from the web. If you obtain RepliStor software over the Internet, it is packaged as a single, compressed file named `rep<vvbbb>.msi`, where `vvbbb` is the version and build number. To install the RepliStor software, you execute the file and follow the RepliStor Setup Wizard prompts.

How to Install RepliStor Software Using the `msiexec` Command

Use the `msiexec` command with the `replistor.msi` installer database to specify non-standard options, uninstall the RepliStor software, or perform an administrative install.

Table 1-2 on page 1-9 lists the properties you can specify in the `msiexec` command.

Table 1-2 Command Properties

Property	Default	Description
INSTALLDIR	%SystemDrive%\ Program Files\Legato RepliStor	Specifies the directory where RepliStor software is installed.
DATADIR	%SystemDrive%\Documents and Settings\All Users \Application Data\RepliStor	Specifies the directory where RepliStor software places its data files.
TCPIPPORT	7144	Specifies the TCP/IP port used for RepliStor software.
CONTROL_TCPIPPORT	7145	Specifies the TCP/IP port used for control service.
LICENSE_KEY		Specifies a license key in uppercase, with no spaces and no hyphen between the two parts.
ACCOUNT	LocalSystem	Specifies whether to run the program under either a: LocalSystem account (with Administrator privileges). Administrator account (if the system is part of an Active Directory domain). If you specify Administrator, you must also specify the ACCOUNT_NAME, DOMAIN, and PASSWORD properties.
DEFAULT_SECURITY	Connection	Defines the default communication encryption level to use when new sites are added as follows: Connection authenticates all server/client-to-server communications. Integrity adds a digital signature to each message. Encrypted encrypts all messages and adds a digital signature.
ACCOUNT_NAME		Specifies credentials if ACCOUNT is defined as Administrator.
DOMAIN		Specifies credentials if ACCOUNT is defined as Administrator.
PASSWORD		Specifies credentials if ACCOUNT is defined as Administrator.

Table 1-2 Command Properties (continued)

Property	Default	Description
SERVICE_MANUAL_START		Starts RepliStor services manually instead of automatically. Specify 1 for a manual start.
NO_ACTIVE_DIR		Prevents RepliStor software from registering in Active Directory. Specify 1 to prevent Active Directory from being registered.
SCRIPT_DIR	%SystemDrive\ Documents and Settings\ All Users\Application Data\ RepliStor Scripts	Retains the default setting, as all user scripts should be placed in this directory. This directory is created during installation if it does not exist. This directory is not removed during uninstall.
FIREWALL_REGISTER	If the firewall is present and if it is currently enabled, it will register RepliStor with the firewall by default.	Specify 1 to register with the firewall, 0 to prevent it from being registered.

Table 1-3 shows only the parameters that are useful for a RepliStor installation. For more information on additional `msiexec` options, refer to the Microsoft Windows Installer documentation.

Table 1-3 The `msiexec` Command Parameters

Parameter	Description
<code>/a replistor.msi</code>	Specifies administrative setup. Use to create an uncompressed setup image on a central file server so other computers on the network can install the product from that image.
<code>/i replistor.msi</code>	Installs the product.
<code>/q[n b r f]</code>	Sets the user interface level with the following flags: <code>q</code> or <code>qn</code> creates no interface <code>qb</code> creates a basic interface, allowing you to view progress and cancel The following settings display the License Key dialog box (if you do not provide one with the <code>LICENSE_KEY</code> property) and the Installation Complete dialog box: <code>qr</code> displays a reduced interface <code>qf</code> displays a full interface <code>qn+</code> displays no interface <code>qb+</code> creates a basic interface
<code>/x replistor.msi</code>	Removes the product.

Table 1-3 The msixec Command Parameters (continued)

Parameter	Description
PROPERTY=value	Specifies values for the command. Surround properties that contain spaces with quotes (" "). For a list of properties you can specify, refer to Table 1-2 on page 1-9.
/l*v <file>	Create a complete log of the install to <file>. This is useful if an install is unsuccessful.

Example: Using the msixec Command

The following example shows the command and parameters to enter for an unattended installation that allows you to view the installation's progress, and cancel and override the default installation and data directories. (Note that the command wraps in the example, but should be entered on a single line.) Once you are in the folder that contains the `setup.exe` file, type:

```
msiexec /i replistor.msi /qb INSTALLDIR="f:\Legato
  RepliStor" DATADIR="f:\RepliStor Data"
```

The following example shows how to specify an administrative installation:

```
msiexec /a replistor.msi
```

RepliStor and Windows XP

RepliStor Version 6.1 supports Microsoft Windows XP Service Pack 2. When you are installing RepliStor on a system running Windows XP, RepliStor is automatically registered as an application for the firewall. When you use the RepliStor Setup Wizard to install RepliStor on a Windows XP system, there is a **Register RepliStor with the Windows Firewall** checkbox that is checked by default at the bottom of the **Replistor Parameters** dialog box (Figure 1-1 on page 1-12). If you leave this box checked, the RepliStor service and the RepliStor control service are automatically registered with the firewall.



Figure 1-1 Registering RepliStor with the Windows Firewall on Windows XP SP2 Systems

RepliStor and Exchange

On Windows 2003 systems, you can use RepliStor to create and manage Exchange Server 2003 shadow copy backups via the Volume Shadow Copy Service (VSS) framework provided by Microsoft.

Shadow copy backups of the Exchange Server 2003 database are created on the target system in case of source system failure. These shadow copies allow you to obtain a consistent, restartable copy of the Exchange database on the target side. If you want to perform a recovery, take the copy from the target and either use it locally or copy it back to the source server and start it. The shadow copy types supported on the target include CLARiiON SnapView snapshots, Windows system shadow copies, and custom scripts.

For more information on shadow copies, refer to Chapter 3, *Configuring, Taking, and Managing Shadow Copies*, in the *EMC RepliStor for Microsoft Windows Version 6.1 Administrator's Guide*.

Before creating Exchange shadow copies, you must install the RepliStor Exchange Support utility, as described in the next section.

The RepliStor Exchange Support utility allows you to set Exchange parameters to facilitate creating and managing Exchange Server 2003 shadow copy backups.

Installing the RepliStor Exchange Support Utility

The installation of RepliStor Exchange Support is required if you are going to take Exchange Server 2003 shadow copy backups.

The RepliStor Exchange Support utility performs the following tasks during the install process:

- ◆ Validates that RepliStor Version 6.1 or later is installed.
- ◆ Validates that Exchange 2003 is installed.
- ◆ Installs the latest Exchange 2003 .d11 into the RepliStor directory.
- ◆ Prompts the user for failover parameters.
- ◆ Prompts the users for VSS parameters.
- ◆ Performs any configuration required.
- ◆ (Optionally) configures your system for failover.

RepliStor Exchange Support can be configured to set up failover. In a failover configuration, you must validate that the source and target paths are identical. This is a requirement for RepliStor Exchange Support to provide failover functionality.

In summary, You may use Exchange Support to take shadow copies, provide failover, or both.



CAUTION

EMC recommends you move all Exchange data off the C:\drive. When VSS shadow copies are taken, if I/O is frozen on the system disk, it is not clear how the system will respond. In addition, you should have a minimum of two drives to separate logs and database; this is a Microsoft best practice recommendation.

To install RepliStor Exchange from a CD-ROM:

1. Start Windows.

The user ID to log on to Windows must have administrative privileges, or Domain Admins if you are installing in a domain.

2. Insert the RepliStor Exchange Support CD-ROM into the CD-ROM drive. If the RepliStor Setup Wizard doesn't start automatically, click the `RepliStor.msi` file.
3. Follow the prompts in the Windows Installer program to install the program.

The RepliStor Exchange Support Wizard welcome screen displays as shown in Figure 1-2.

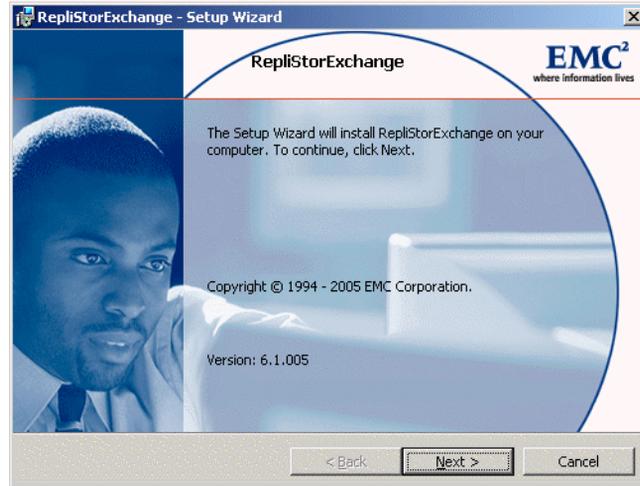


Figure 1-2 Introduction Window

4. Click **Next** and the **License Agreement** window displays as shown in Figure 1-3.

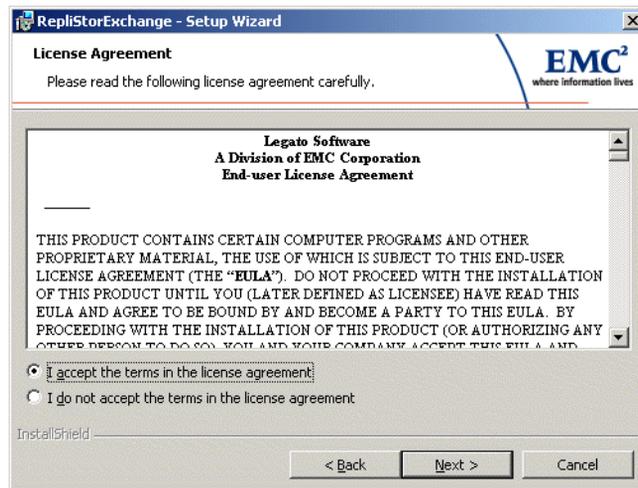


Figure 1-3 License Agreement Window

- After accepting the license conditions, click **Next**, and the **Exchange Parameters - Alias** window displays as shown in Figure 1-4.

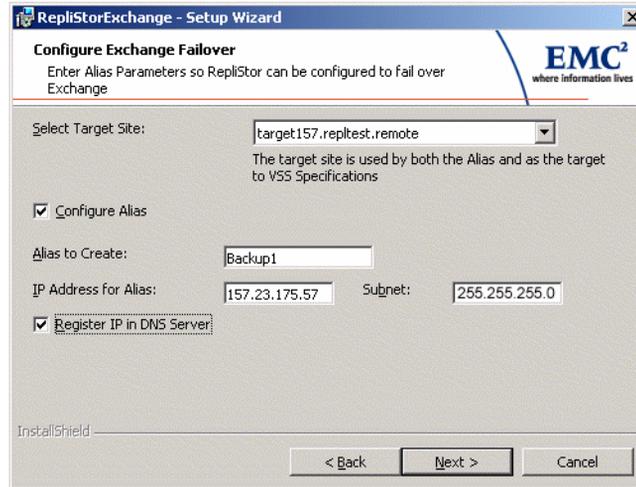


Figure 1-4 Exchange Parameters - Alias Window

This window (Figure 1-4) allows you to set alias parameters on your Exchange system so that RepliStor can be configured correctly to create and manage Exchange shadow copy backups. The configurable alias parameters are described below.

- ◆ **Select Target Site** — This option allows you to select the target site to which you want to replicate the files. This list is pre-filled from the RepliStor site list.
- ◆ **Configure Alias** — Check this option to configure RepliStor for Exchange failover to the target site.
- ◆ **Alias to Create** — Enter the alias name that will be created. The alias name should be unique on the network.
- ◆ **IP Address for Alias** — Enter the optional IP address to be associated with the alias.
- ◆ **Subnet:** — Enter the appropriate subnet.
- ◆ **Register IP in DNS Server** — If this option is checked, the alias will be registered in the DNS server when it is activated. This option requires a dynamic DNS server.

- After you set the alias Exchange parameters, click **Next**. The **Exchange Parameters - VSS** window displays as shown in Figure 1-5.

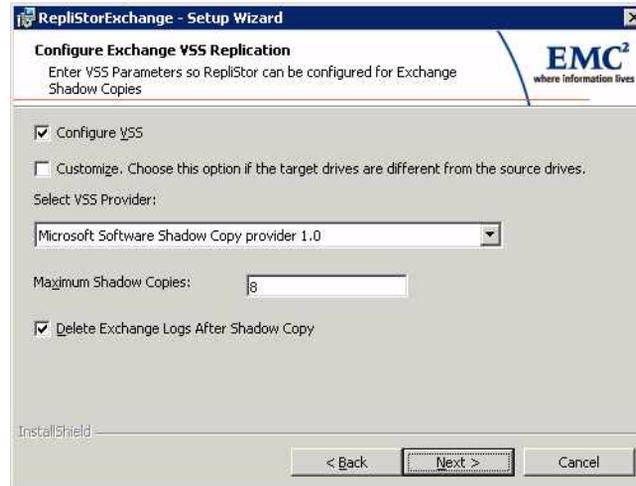


Figure 1-5 Exchange Parameters - VSS Window

This window allows you to set VSS parameters on your Exchange system so that RepliStor can be configured correctly to create and manage Exchange shadow copy backups. The configurable VSS parameters are described below.

- Configure VSS** — Check this option to configure RepliStor for VSS shadow copies. When checked, RepliStor will configure the VSS parameters in the specifications created. It will also create a script file for each storage group that will run the `eseutil.exe` utility on the shadow copy that was taken.
- Customize** — If this is *not* checked, the specifications created will assume that the source and target paths are the same. You should check this option when you want the target path to be different than the source path for a specification.

For example, if you are not configuring failover, you may want to have the target system be the target for several source Exchange servers. In that case, you may want the target path to be different from the source path. Selecting this checkbox will cause the RepliStor Exchange Support Setup Wizard to prompt you for the target path for each specification. It will

show you the storage group and the source path. The **Target Path** field will show the source path by default. You can then modify that path.

- **Select VSS Provider**—The target system is contacted and a list of all VSS providers on that system is presented to the user. This option allows you to select the VSS provider to use when taking a shadow copy on the target such as CLARiiON® SnapView™ shadow copies or Windows system shadow copies.

RepliStor does not support reverting shadow copies made using the CLARiiON provider.

- **Maximum Shadow Copies** — This option determines the maximum number of shadow copies you want to keep on the target prior to creating the shadow copy on the target. Old shadow copies are automatically deleted if the total number of shadow copy sets exceeds the user-defined maximum.

For example, if you enter 5 maximum shadow copies, this means that RepliStor will delete all shadow copies on the target except for the latest five before taking the target shadow copy. If you enter zero in this field, this means that you want all shadow copies deleted on the target before executing the current shadow copy.

- **Delete Exchange Logs after Shadow Copy**—If checked, Exchange logs are deleted after a successful shadow copy and RepliStor performs a *full* backup of the Exchange shadow copy; if unchecked, RepliStor will perform a *copy* backup of the Exchange shadow copy. In a full backup, all files (regardless of whether they have been marked as backed up), are saved. The backup history of each file is updated to show that it was backed up.

In a copy backup, files are copied to a backup medium regardless of the state of each file's backup history, and the backup history is not updated.

- After you set the VSS Exchange parameters, click **Next**. The **Ready to Install the Program** window displays (Figure 1-6).

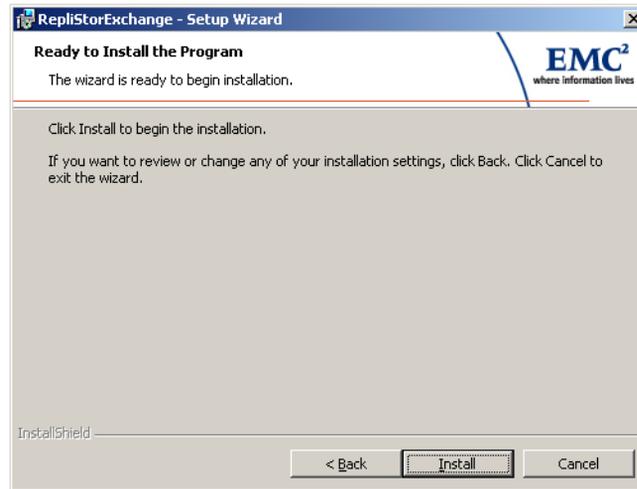


Figure 1-6 Ready to Install the Program Window

- Click **Install**, and the Setup Wizard then installs RepliStor Exchange Support as shown in Figure 1-7.

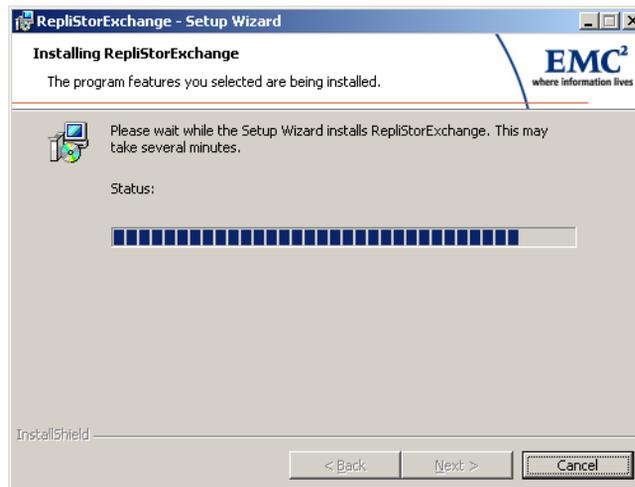


Figure 1-7 Installing RepliStor Exchange Support

- Click **Next** and the **Setup Wizard Completed** window displays as shown in Figure 1-8. You have successfully installed RepliStor Exchange Support on your system.

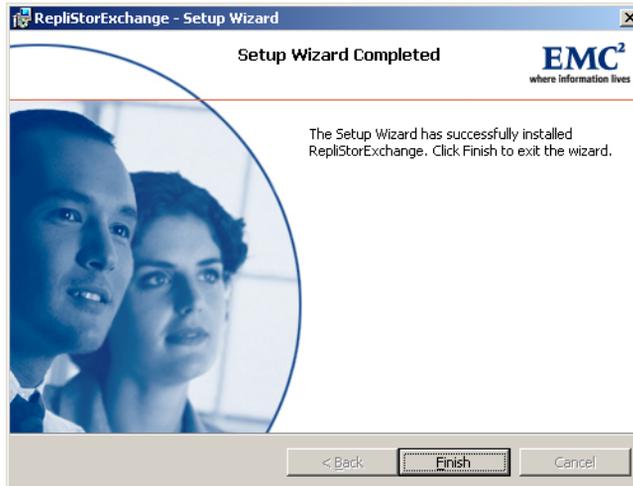


Figure 1-8 Setup Complete Window

Considerations When Using Failover

When using failover there are certain things to consider. Once the Exchange Installer completes you should:

- Manually activate the alias from the Alias Maintenance dialog in the RepliStor client.
- In the Add Computer Alias dialog, verify the services list as, by default, all Exchange services are added to the Services tab. The services used will vary depending on your Exchange configuration. For example not all Exchange implementation use POP3 or Site Replication Services. In addition any prerequisite services should be added to insure they are started, for example SMTP.

Setting Up Secure Access to Remote Servers

The following section describes how to set up access on the RepliStor servers after installing the product.

In order to attach to a remote RepliStor site, you *must* have an account on the remote system in the Windows Administrator group.

If the remote system is in your domain and you are logged into that domain, then you automatically have a valid account on the remote system. This is because Windows maintains one database of users for the entire domain. However, verify that your account is in the Administrator group on the remote system.

It is possible, though unlikely, for a user to create a program and run it under the System account, thus gaining access to a remote RepliStor server that is thought to be secure. To prevent this situation from occurring, there are two options to run RepliStor software more securely.

The preferred option is to check **Accept Only Kerberos Connections** in the **Users** tab of the **Options** dialog box (Figure 1-9).



Figure 1-9 RepliStor Options Dialog Box: Users Tab

To select this option in the **Users** tab of the **Options** dialog box, do the following:

1. Start the RepliStor client.
2. In the **Client** window, select **Options** from the **Maintenance** menu.
3. In the **Options** dialog box, click the **Users** tab.
4. Select **Accept Only Kerberos Connections**, as shown in Figure 1-9 on page 1-21.

The **Accept Only Kerberos Connections** option can only be used if all RepliStor servers are within the same Active Directory domain, and none of the server names have aliases (that is, use a name in RepliStor to access a server that is not the actual server name). Using Kerberos, there is no need to run the server from an Administrator account. The default System account is secure. If the above conditions cannot be met, then you may want to use the second option, **Disallow System Account**.

To use the **Disallow System Account** option, make sure that the RepliStor server is not running under the System account, but is running under an authenticated account in the Administrator group. To use this option to prevent a server running in the System account from accessing a remote server, follow steps 1 through 3 listed above, and then select **Disallow System Account (Authenticated Access Only)**.

By default, only administrators can manage a RepliStor installation; however, you can give administrative privileges to additional users and groups on the **Users** tab in the **Options** dialog box. For example, you can create a RepliStor Administrators group and grant administrative privileges to all users in this group.

You can change the account that the service runs under using Windows **Administrative Tools**. Then you can set the RepliStor Registry key so that it is readable only by users in the Administrators group.

Verifying RepliStor Software Installation

Select **Start, Programs, RepliStor** from the Windows desktop to start the product and verify that it has installed correctly.

Upgrading RepliStor Software

This section describes how to upgrade EMC Legato RepliStor, Versions 5.0, 5.1, 5.2, 5.3, and 6.0 for Microsoft Windows.

The RepliStor Version 6.1 installation program determines if Versions 5.0, 5.1, 5.2, or 5.3 reside on the system before installing. If any of these versions are running, the setup program prompts you to reboot the system during installation. Installation will resume after the system reboots.

You can install RepliStor Version 6.1 over RepliStor Version 6.0 without the requirement for a system reboot. However, the Volume Shadow Copy Service (VSS)-compliant shadow copy functionality is only supported in RepliStor Version 6.1 on Windows 2003 platforms.

You need a new license key when upgrading from a previous RepliStor version (other than Version 6.0) to RepliStor Version 6.1.

Removing RepliStor Software

To completely remove all RepliStor executables, data files, and Windows Registry entries from a target or source system:

1. From the Windows **Control Panel**, double-click **Add/Remove Programs**.
2. From the list of programs, select **RepliStor**, and then click **Remove**.
3. Follow the **Uninstall** dialog box prompts.

If RepliStor software was run since the last system boot, you are prompted to reboot to complete the uninstall.

The RepliStor `Scripts` directory is not removed if it is not empty. Any files added to the data directory after installation are not removed (for example, log files).

Reboot Requirements

RepliStor uses a file system filter driver. Because of a Windows limitation, a reboot is required to stop a filter driver in order for it to be upgraded or uninstalled. This is a Windows limitation, not a RepliStor limitation. Windows allows drivers to be installed and started, but you cannot stop a filter driver without risking a blue screen.

Microsoft has introduced a new framework for filter drivers called Filter Manager. Using the Filter Manager, it is now possible to stop a driver. This means that an upgrade or uninstall can be performed without a reboot. RepliStor Version 6.1 supports the Filter Manager, but RepliStor can only use the Filter Manager if it exists in the operating system on which RepliStor is being installed on. At the time of this writing, the systems that include Filter Manager are Windows XP Service Pack 2, Server 2003 Service Pack 1, and Windows 2000 Service Pack 4 with Update Rollup 1. For more information on Update Rollup 1, refer to:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=c0a2ca36-1179-431c-80e6-60a494d3823d&DisplayLang=en>

For all upgrades or uninstalls for RepliStor Version 5.3 and earlier, a reboot will be required even if the system being installed does have the Filter Manager. An upgrade or uninstall of RepliStor Version 6.x.x will not require a reboot if the Filter Manager is used.

Version 5.60.049 patch 4 or later of DiskXtender[®] 2000 is required when installed with RepliStor Version 6.1.

This chapter describes how to install RepliStor software in a Microsoft Cluster Server (MSCS) environment.

This chapter includes the following sections:

- ◆ Overview2-2
- ◆ System Requirements for the MSCS Environment2-2
- ◆ Installing RepliStor Software in an MSCS Environment.....2-3
- ◆ MSCS Scenario.....2-5
- ◆ Removing RepliStor Software from an MSCS Environment2-7

Overview

RepliStor software can replicate data to one or more local or remote target systems, as well as replicate files, folders, and shares out of an MSCS environment to a single system or to another MSCS. These target systems can be a Windows 2000 or later server, or an MSCS as a target cluster. For detailed information on how to install and configure MSCS, refer to the Microsoft documentation.

This chapter describes using RepliStor software where each source or target specification is defined as a resource in a resource group managed by MSCS. This allows you to replicate data continuously within one MSCS resource group.

System Requirements for the MSCS Environment

Before installing RepliStor software in an MSCS environment, you must meet the following requirements:

- ◆ Microsoft Windows Server 2003 Enterprise Edition or Datacenter Edition, Microsoft Windows 2000 Advanced Server or Datacenter Server must be installed on both nodes of the cluster.
- ◆ All hardware in the MSCS environment must comply with the Microsoft Compatibility List, available on the Microsoft website at <http://www.microsoft.com/whdc/hcl/search.aspx>.
- ◆ RepliStor software must be installed on both nodes of the cluster with two unique RepliStor Version 6.1 license keys.

Installing RepliStor Software in an MSCS Environment

You must install RepliStor on each node in the cluster, and MSCS must be running. To install RepliStor software in an MSCS environment operating on two nodes:

1. Insert the RepliStor CD into the CD-ROM drive. The **RepliStor Setup Wizard** starts automatically.
2. Follow the installation program prompts. If this is an upgrade, you will be prompted to reboot. The installation will continue after rebooting.



CAUTION

If you are upgrading, make sure to delete the RepliStor resources in MSCS before upgrading. The resources are added after the upgrade is complete.

The RepliStor **Setup Wizard** dialog box opens, as shown in Figure 2-1. When installing on a machine attached to a cluster, an additional checkbox entitled **Register RepliStor as a MS Cluster Resource in cluster <clustername>** appears at the bottom of the dialog box.

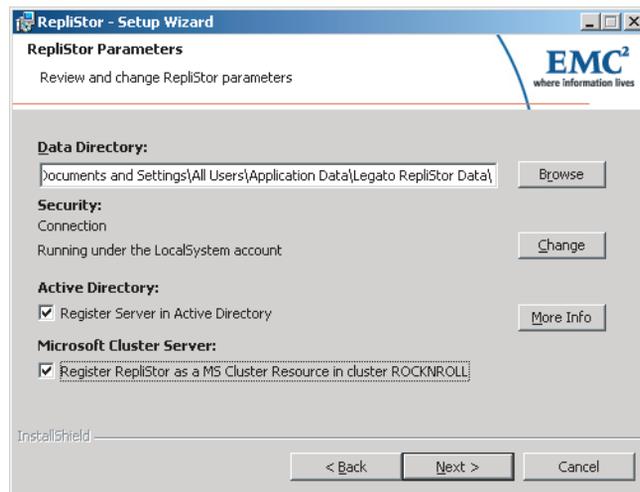


Figure 2-1 RepliStor Setup Wizard Dialog

3. Install the RepliStor program and data directories locally on both nodes of the cluster (this is done by default).

When installing RepliStor into a Microsoft cluster, it must be installed in the same directory path on each node. If all nodes are not installed on the same path, Cluster Server may not be able to use RepliStor resources on all nodes.

4. Select **Register RepliStor As A MS Cluster Resource In Cluster *cluster_name***, and then click **Next**.

If the **Microsoft Cluster Server** checkbox appears, then you are installing RepliStor software on a node in an MSCS environment. If you clear the checkbox, you will not be able to create RepliStor resources within MSCS.

5. Follow the prompts to install the program. If you are installing RepliStor software into the MSCS environment for the first time, you do not need to reboot the system.

For specific information regarding specifications and RepliStor resources, refer to the section *MSCS Scenario* on page 2-5.

MSCS Scenario

RepliStor software supports data protection in an MSCS environment in what is called an *active/active* configuration. The active/active configuration is an MSCS environment where RepliStor software is actively present on both nodes of the two-node cluster. Any RepliStor specification that is defined as a resource in Cluster Administrator becomes active on the second node if the resource group that includes a RepliStor specification fails. Figure 2-2 illustrates the active/active configuration of RepliStor software within a cluster.

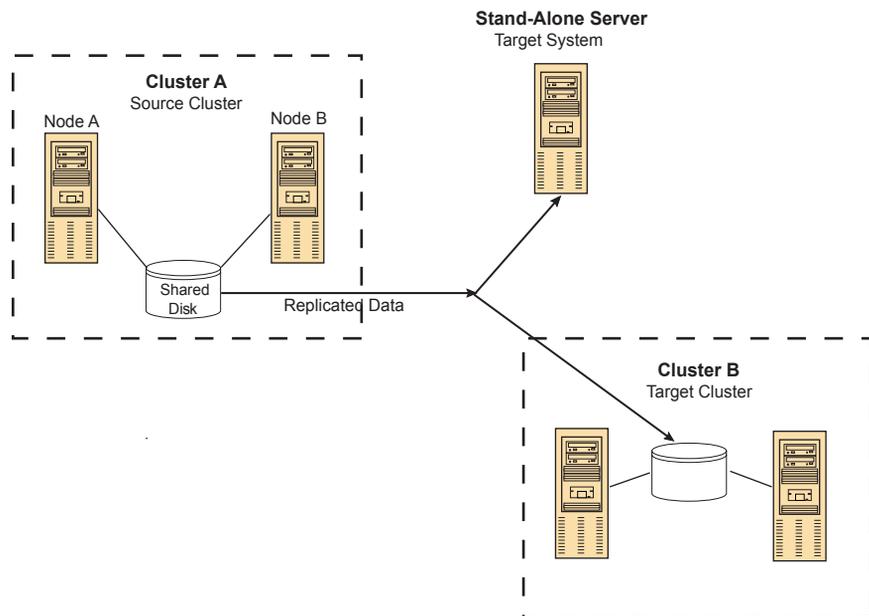


Figure 2-2 RepliStor in an Active/Active Configuration within Microsoft Cluster Server

Within the source cluster, install RepliStor software on both nodes in the cluster and do the following:

- ◆ Create specifications to replicate data from the shared disk to a target system or cluster. This should be done before creating the resource. In addition, these specifications should be created on the node that currently has ownership of the shared disk that will be the source system within the specification.

As an example, if you want RepliStor software to protect SQL Server data, you must create a specification to mirror the SQL Server data, and then add a RepliStor resource to the SQL Server cluster group in MSCS that specifies the specification. Also, make sure that the RepliStor resource has the disk where the data resides set as a dependent.

- ◆ Create a RepliStor resource that defines the specification as a resource in MSCS so it can then be managed by Cluster Administrator. This allows the Cluster Server to move the specification from node to node (disabling the specification in RepliStor software on one node and enabling it on the other node) so that RepliStor software constantly mirrors changes out of the cluster.
- ◆ Create as many RepliStor resources as necessary if more than one RepliStor specification is required to replicate the data.
- ◆ If you are replicating to a resource group in a Microsoft cluster, make sure the target site is the virtual computer name associated with the resource group, or its IP address.

If either the node or a resource (for example, an application or a service) within the resource group that a RepliStor specification is associated with fails, Cluster Server fails over the resource group to the second node. RepliStor software then continues to replicate data.

Removing RepliStor Software from an MSCS Environment

The following sections provide instructions for removing or upgrading RepliStor software in an MSCS environment.

How to Remove the RepliStor Resource from the Cluster Administrator

First remove all instances of RepliStor resources from the cluster resource groups:

1. From the Windows desktop, select **Start, Settings, Control Panel, Administrative Tools, Cluster Administrator**.

The **Cluster Administrator** window opens, as shown in Figure 2-3.

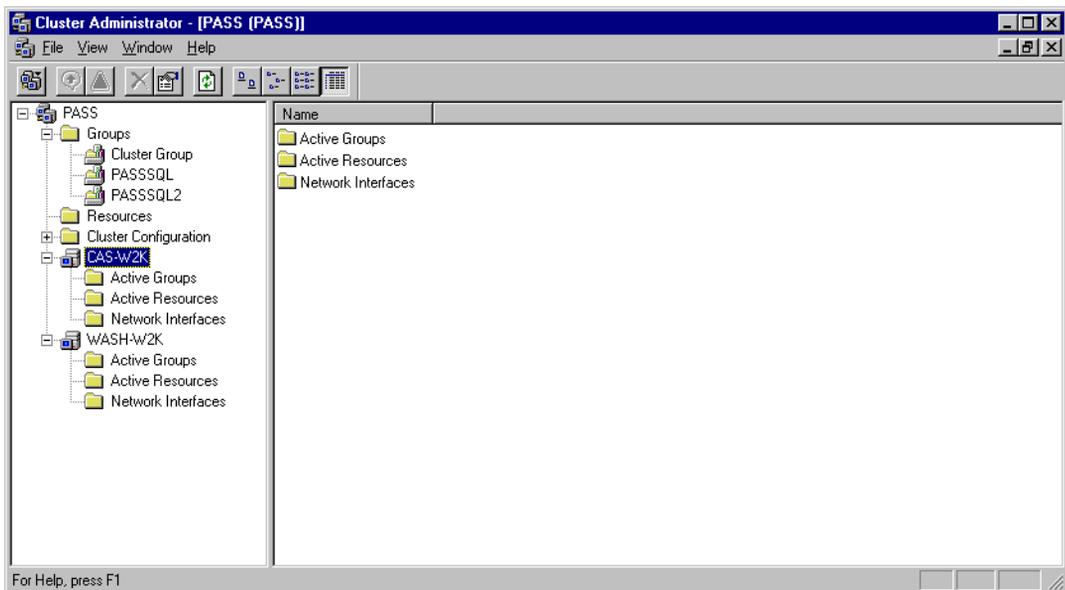


Figure 2-3 Cluster Administration Window

2. In the left pane of the **Cluster Administrator** window, select **Groups**.
3. Select the cluster group where you added RepliStor resources, for example, **SQL Server**.
4. In the right pane of the **Cluster Administrator** window, select the RepliStor resource.
5. From the **File** menu, select **Delete**, and then click **OK**.

After you have removed all instances of the RepliStor resources from the cluster, you can then remove RepliStor software from each server in the cluster. Remove the product on both nodes using the procedures described in *Removing RepliStor Software* on page 1-23.

This chapter provides information about installing and configuring the RepliStor Remote Install Utility. For information on starting and configuring the RepliStor software after installation, refer to the *EMC RepliStor for Microsoft Windows Version 6.1 Administrator's Guide*.

This chapter includes the following sections:

- ◆ Overview 3-2
- ◆ System Requirements 3-2
- ◆ Command Line Syntax 3-4
- ◆ Considerations 3-6
- ◆ Examples 3-7
- ◆ Troubleshooting 3-9

Overview

The RepliStor Remote Install Utility is a command line utility that can be used in script files to perform a remote install, upgrade, or uninstall of RepliStor. With this utility, it is possible to create a batch file that will install RepliStor on any number of remote servers.

The basic procedure is as follows:

1. Perform an *Administrative* install of RepliStor on the remote computer (not using delegation) or a file server that is accessible by all remote servers (delegation).
2. Run the RepliStor Remote Install Utility specifying the remote server on which to RepliStor is to be installed and the *Administrative* install of RepliStor. This will direct Windows Installer on the remote server to perform the install using the setup files specified.

System Requirements

The RepliStor Remote Install Utility requires Windows Management Instrumentation (WMI) on the remote and local servers, and Windows Installer Version 1.1 or higher. This requirement is satisfied by Windows 2000 (and later) servers.

This utility uses the WIN32_Product WMI class, which is installed by default on Windows 2000 but is an optional component on Windows Server 2003.

To install the WIN32_Product WMI class on Windows Server 2003:

1. From the Windows **Control Panel**, select **Add or Remove Programs**, and then click **Add/Remove Windows Components** on the left.
2. Select **Management and Monitoring Tools**, and then click **Details**.
3. Select the **WMI Windows Installer Provider** checkbox, and then click **OK**.

The `sysocmgr` utility can also be used to install this component.

Specifying the Setup Files Using UNC Path (Delegation)

If the setup files are on a file server that is different from the server where RepliStor is to be installed, additional restrictions apply. In this situation, the setup files are specified by a UNC path, for example: `\\server\share\path\replistor.msi`.

The following conditions must be met:

- ◆ All servers must be in a Windows 2000 (or later) Active Directory domain.
- ◆ All remote computers must have the **Trust computer for delegation** flag set. This is set on the domain controller using **Active Directory Users and Computers**.
- ◆ The user performing the remote install must have **Account is Trusted for delegation** set, and must not have **Account is sensitive and cannot be delegated** set.
- ◆ When running setup, the `/d` parameter must be specified in order to use the **Delegation** option.

Registering the RepliStor Node in Active Directory

If the Active Directory server is on a node other than the one where RepliStor is to be installed, and if Active Directory registration is required, the **Delegation** option must be specified.

Command Line Syntax

This section provides information about the RepliStor Remote Installation Utility arguments.

Syntax

```

reinstall <options> [<properties>]
  <options>:
    /i <path to setup files>- Install
    /d                       - Delegate (required if <path> is UNC)
    /x                       - Uninstall
    /m                       - Set remote setup to Manual Start
    /mr                      - Set remote setup to Manual Start, Reboot
    /mrf                    - Manual Start, reboot, force close
    [/r <remote server>]    - Remote server
    [/l <log file>]         - Create Install/Uninstall log
    [/o]                    - Send Install/Uninstall log to standard out
    [/p]                    - Display progress
    [/u <domain>\<user>]    - Connect using specified 'domain\user'
    [/a <password>]        - if /u specified, use password to connect
    [/y]                    - Answer 'Y' to any reboot prompts
    [/c <path to msi>]     - Copy installer package to target before install
  <properties>            - any number of install properties of the form:
                          PROPERTY=value

```

Install parameters are described in Table 3-1.

Table 3-1 Remote Install Utility Parameters

Parameter	Description
<code>/i path_to_setup_files</code>	Full path to the <code>RepliStor.msi</code> file. This path is with respect to the remote computer. If this path is a UNC path (specifying a remote server) refer to <i>Specifying the Setup Files Using UNC Path (Delegation)</i> on page 3-3.
<code>/x</code>	Uninstall RepliStor.
<code>/m[r[f]]</code>	Set remote RepliStor setup to Manual start and optionally reboot. If <code>/mr</code> is specified, then reboot. If <code>/mrf</code> is specified, then reboot and force all processes to close immediately.
<code>/d</code>	Delegate. Required if the <code>path_to_setup_files</code> is a UNC path. Refer to <i>Specifying the Setup Files Using UNC Path (Delegation)</i> on page 3-3.
<code>/r remote_server</code>	Remote server name. If omitted the install occurs on the local computer.
<code>/l log_file</code>	Optional log file.
<code>/o</code>	Output logging information is sent to standard out.

Table 3-1 Remote Install Utility Parameters (continued)

Parameter	Description
<code>/p</code>	Show progress.
<code>/u domain\user</code>	Connect using the specified domain\user. Use this option if the remote computer is in a different domain or the current user does not have sufficient permissions to successfully perform the install.
<code>/a password</code>	If <code>/u</code> is specified, use this password when connecting.
<code>/y</code>	Answer <code>y</code> to any reboot prompts.
<code>/c path_to_msi</code>	Copy installer package to target before install. The path must point to a <code>ReplisTOR.msi</code> file relative to the local computer. If the package is a single file executable (such as <code>rep51360.exe</code>), you should perform an administrative install (for example, <code>rep51360/a</code>) to create the <code>ReplisTOR.msi</code> file and its associated files. This command will perform an <i>Administrative</i> install to the remote computer before the remote install is triggered. This can be used if the Delegate option is not to be used.
<code>properties</code>	Any number of installer parameters of the form: <code>PROPERTY=value</code> .

One of the following parameters must be specified:

- ◆ `/i path`
- ◆ `/x`
- ◆ `/m[r[f]]`

All other parameters are optional.

Return Value

If the installation was successful, it will return 0. If there was an error, it will return an error code.

Considerations

Several considerations must be taken into account before using the RepliStor Remote Install Utility:

- ◆ If RepliStor is running on the remote server (or has run since the last reboot) and `reinstall` is used to uninstall it, that remote server will be restarted automatically. The only way to prevent this is to run the `reinstall /mr /r server` command first. This will set the RepliStor services to manual start and it will then reboot the remote server. A subsequent uninstall will not require a reboot.
- ◆ If RepliStor is running on the remote server (or has run since the last reboot) and `reinstall` is used to upgrade to a newer version, it will refuse to perform the upgrade. In order to perform the upgrade, run the `reinstall /mr /r server` command first. This will set the RepliStor services to Manual start and it will then reboot the remote server. A subsequent upgrade will succeed.
- ◆ Installing without specifying a license key will succeed. The first time the service is run, a four-week evaluation key will be generated. If an evaluation key has already been generated on the server, it will not generate another. For this reason, if you need to uninstall RepliStor and you want to reinstall using the same evaluation key, write down the license key before uninstalling so that it can be re-entered during the reinstall.

Examples

The following examples assume that the setup files are on the CDROM drive at e:\ and that the target computer is called target.

A command line version of an Administrative setup is also shown.

Example: Install with Manual Start

Enter the following command:

```
repinstall /i c:\RepliStor501\replistor.msi /r target SERVICE_MANUAL_START=1
LICENSE_KEY=QOABCDEF1234567890ABCDE F /c e:\replistor.msi
```

Example: Install with Manual Start, but with Single File Package from the Web

Enter the following command:

```
start /wait rep50342a /a /s /v"/qb TARGETDIR=c:\RepliStor501"
repinstall /i c:\RepliStor501\replistor.msi /r target SERVICE_MANUAL_START=1
LICENSE_KEY=QOABCDEF1234567890ABCDE F /c c:\RepliStor501\replistor.msi
```

Example: Set RepliStor to Manual and Reboot to Prepare for an Upgrade

Enter the following command:

```
repinstall /mr /r target
```

Example: Using Delegation

Enter the following commands:

```
start /wait msiexec /a e:\replistor.msi /qb
TARGETDIR=\\server\setups\RepliStor501
repinstall /i \\server\setups\RepliStor501\replistor.msi /r target1 /d
LICENSE_KEY=QOABCDEF1234567890ABCDE1 /l c:\logs\target1.log
repinstall /i \\server\setups\RepliStor501\replistor.msi /r target2 /d
LICENSE_KEY=QOABCDEF1234567890ABCDE2 /l c:\logs\target2.log
repinstall /i \\server\setups\RepliStor501\replistor.msi /r target3 /d
LICENSE_KEY=QOABCDEF1234567890ABCDE3 /l c:\logs\target3.log
repinstall /i \\server\setups\RepliStor501\replistor.msi /r target4 /d
LICENSE_KEY=QOABCDEF1234567890ABCDE4 /l c:\logs\target4.log
repinstall /i \\server\setups\RepliStor501\replistor.msi /r target5 /d
LICENSE_KEY=QOABCDEF1234567890ABCDE5 /l c:\logs\target5.log
repinstall /i \\server\setups\RepliStor501\replistor.msi /r target6 /d
LICENSE_KEY=QOABCDEF1234567890ABCDE6 /l c:\logs\target6.log
repinstall /i \\server\setups\RepliStor501\replistor.msi /r target7 /d
LICENSE_KEY=QOABCDEF1234567890ABCDE7 /l c:\logs\target7.log
```

Example: Not using Delegation

Using delegation is potentially cleaner in that the install files don't have to be copied to each server, but there are security concerns and there may be complications. The following procedure does not require any modification to the security policy of the network. It assumes that the .msi files are available on the local server.

This example copies the setup package from `e:\` to `c:\RepliStorInstall` on each of the target computers. After it is copied to the target, it then runs the install on the package that was copied to the target.

```
repinstall /i c:\RepliStorInstall\replistor.msi /r target1 /c e:\replistor.msi
LICENSE_KEY=QOABCDEF1234567890ABCDE1
repinstall /i c:\RepliStorInstall\replistor.msi /r target2 /c e:\replistor.msi
LICENSE_KEY=QOABCDEF1234567890ABCDE2
repinstall /i c:\RepliStorInstall\replistor.msi /r target3 /c e:\replistor.msi
LICENSE_KEY=QOABCDEF1234567890ABCDE3
repinstall /i c:\RepliStorInstall\replistor.msi /r target4 /c e:\replistor.msi
LICENSE_KEY=QOABCDEF1234567890ABCDE4
repinstall /i c:\RepliStorInstall\replistor.msi /r target5 /c e:\replistor.msi
LICENSE_KEY=QOABCDEF1234567890ABCDE5
repinstall /i c:\RepliStorInstall\replistor.msi /r target6 /c e:\replistor.msi
LICENSE_KEY=QOABCDEF1234567890ABCDE6
```

Example: Uninstall

Enter the following command:

```
repinstall /x /r target
```

Troubleshooting

This section contains common error messages and some possible causes of the error messages.

Table 3-2 Possible Causes of Errors

Error	Possible Cause
A security package specific error occurred.	<p>This could happen if you are using Delegation (/d) and:</p> <ul style="list-style-type: none"> • The remote computer is not set to Trust computer for delegation. • The user running the install is not set for Account is Trusted for delegation. After setting this, you may need to log off and log back on. <hr/> <p>For more information, refer to <i>Specifying the Setup Files Using UNC Path (Delegation)</i> on page 3-3.</p> <hr/>
The specified class is not valid.	<p>The <code>WMI WIN32_Product</code> class is not installed on the remote computer. This is installed by default on Windows 2000, but is optional on Windows Server 2003.</p> <hr/> <p>For more information, refer to <i>System Requirements</i> on page 3-2.</p> <hr/>
The RPC server is unavailable.	<p>This can happen if a fully qualified DNS name is specified for the remote server name instead of the NETBIOS name.</p>

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