

# SMI-S Agent for Tape on Linux Systems Installation Guide



# SMI-S Agent for Tape on Linux Systems Installation Guide

e using this information and the product it supports, read the information in the <b>Notices</b> sections.					

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## About this guide

This publication provides installation instructions for the IBM® System Storage® SMI-S Agent for Tape on Linux systems.

### Who should use this guide

This publication is for system administrators and system and application programmers, or whoever is responsible for installing the SMI-S Agent for Tape Libraries on Linux systems.

### Conventions used in this guide

This guide uses bold, italic, and other typographic styles to highlight various types of information in the text. See Table 1 for a list of conventions.

Table 1. Conventions used in this guide

bold	Denotes a command, user ID, password, or labels on buttons.				
italics	Denotes titles of other manuals or books.				
monospace	Denotes a Web address that needs to be typed in. Also denotes an example.				
screen	Used to show the screen output you should see.				
Note	Introduces special considerations about the current topic.				
(>) greater than and (<) less than	Shows the optional and substitution parameters in the description of commands. The explanation of the optional or substitution parameters are included following the word "Where."				

#### **Related Information**

Refer to the following publications and sources for additional information about the IBM SMI-S Agent for Tape and related IBM tape storage products. To ensure that you have the latest publications, visit the web at:

http://www.ibm.com/servers/storage/support/software/smisagent

### Publications about the 3584 Tape Library

The 3584 Tape Library is now the IBM System Storage TS3500 Tape Library.

- IBM System Storage TS3500 Tape Library Operator Guide, GA32-0560
- *IBM System Storage TS3500 Tape Library Maintenance Information* (part number 23R6441; provided with the 3584 Tape Library)
- IBM System Storage TS3500 Tape Library SCSI Reference, GA32-0561

#### **Other Sources**

- For a list of compatible software, operating systems, and servers for Ultrium Tape Drives, visit the web at http://www.ibm.com/storage/lto. Under 3584 Tape Library, select Product details. Select LTO compatibility. Under Compatibility information, select Independent Software Vendor Matrix (ISV) for LTO. Select Download interoperability matrix.
- For a list of compatible software, operating systems, and servers for 3592 Tape Drives, visit the web at http://www.ibm.com/servers/storage/tape/drives. Under TS1120 Tape Drive or 3592 Tape Drive, select Product details. Select Resource library. Select Compatibility information. Under Compatibility information, select Independent Software Vendor Matrix (ISV) for TS1120 Tape Drive or Independent Software Vendor Matrix (ISV) for 3592 Tape Drive. The 3592 Tape Drive is also known as the TS1120 Tape Drive.
- IBM 3953 Tape System Introduction and Planning Guide, GA32-0557, GA32-0557
- IBM 3953 L05 Library Manager Model Operator Guide, GA32-0558, GA32-0558
- *IBM 3953 Tape Frame Model F05 Maintenance Information L05* (part number 23R6439; provided with the 3593 Tape System)
- IBM TotalStorage Enterprise Silo Compatible Tape Frame 3592 Introduction, Planning, and User's Guide Model C20, GA32-0463
- IBM System Storage TS1120 Tape Drive and Controller Operator Guide, GA32-0556
- IBM System Storage TS1120 Tape Drive and Controller Introduction and Planning Guide, GA32-0555
- IBM System Storage TS1120 Tape Drive SCSI Reference, GA32-0466
- IBM System Storage TS3000 System Console (TSSC) Maintenance Information, part number 23R6513
- IBM System Storage SMI-S Agent for Tape on Linux Systems Installation Guide, GC35-0512
- IBM TotalStorage LTO Ultrium Tape Drive SCSI Reference, GA32-0450
- @server Safety Notices, G229-9054. This publication is available at http://www.ibm.com/servers/resourcelink. To access, register for a userid and password, then select Library in the navigation area.
- IBM Ultrium Device Drivers Installation and User's Guide, GA32-0430
- IBM Ultrium Tape Device Drivers Programming Reference, GC35-0483
- IBM TotalStorage and System Storage Tape Device Drivers Installation and User's Guide, GC35-0154
- IBM TotalStorage and System Storage Tape Device Drivers Programming Reference, GC35-0346
- *Implementing IBM Tape in Linux and Windows*, SG24-6268. This book is available on the web at http://www.redbooks.ibm.com/redpieces/pdfs/sg246268.pdf.
- *Implementing IBM Tape in Unix Systems*, SG24-6502. This book is available on the web at http://www.redbooks.ibm.com/redbooks/pdfs/sg246502.pdf.
- The IBM TotalStorage Tape Libraries Guide for Open Systems, SG24-5946
- The LTO Ultrium Primer for IBM eServer iSeries Customers, REDP-3580. This book is available on the web at www.redbooks.ibm.com. Search on REDP-3580.
- *IBM TotalStorage 3584 Tape Library Performance*, a white paper that is available from your IBM Representative.
- To access installation instructions for customer-setup units (CSUs) from the web, go to http://www-03.ibm.com/servers/storage/tape/resource-library.html#publications, then select Publications. Under the Publications category, select 3584 Tape Library.

- IBM LTO Ultrium Cartridge Label Specification (Revision 2). This document is available on the web at http://www.ibm.com/servers/storage/media/1to/3584/. Under Additional resources, select LTO Ultrium media. Under Learn more, select LTO label specifications. Under Abstract, select the .pdf file to access the document.
- Label Specification for IBM 3592 Cartridges when used in IBM Libraries. This document is available on the web at www.storage.ibm.com/media/ tapecartridges/index.html. Under Enterprise storage media, select 3592 tape cartridges. Under Related information, select Barcode Label Specification for use with 3592 Tape Media. Under Content, select the .pdf file to access the document. You can also contact your IBM Marketing Representative for this specification.

## **Ordering IBM publications**

This section tells you how to order copies of IBM publications and how to set up a profile to receive notifications about new or changed publications.

### **IBM** publications center

The publications center is a worldwide central repository for IBM product publications and marketing material.

The IBM publications center offers customized search functions to help you find the publications that you need. Some publications are available for you to view or download free of charge. You can also order publications. The publications center displays prices in your local currency. You can access the IBM publications center through the following Web site:

http://www.ibm.com/shop/publications/order

### **Publications notification system**

The IBM publications center Web site offers you a notification system for IBM publications.

If you register, you can create your own profile of publications that interest you. The publications notification system sends you a daily e-mail that contains information about new or revised publications that are based on your profile.

If you want to subscribe, you can access the publications notification system from the IBM publications center at the following Web site:

http://www.ibm.com/shop/publications/order

### How to send your comments

Your feedback is important to help us provide the highest quality information. If you have any comments about this information or any other SMI-S Agent for Tape documentation, you can submit them in the following ways:

• e-mail

Submit your comments electronically to the following e-mail address: starpubs@us.ibm.com

Be sure to include the name and order number of the book and, if applicable, the specific location of the text you are commenting on, such as a page number or table number.

Mail

Fill out the Readers' Comments form (RCF) at the back of this book. Return it by mail or give it to an IBM representative. If the RCF has been removed, you can address your comments to:

International Business Machines Corporation RCF Processing Department Department 61C 9032 South Rita Road TUCSON AZ 85775-4401

# Chapter 1. Preparing to install the IBM System Storage SMI-S Agent for Tape on Linux systems

This topic provides a high-level overview of the procedures for installing the IBM TotalStorage<sup>®</sup> SMI-S Agent for Tape on a Linux<sup>®</sup> operating system in both interactive and silent mode and the procedures for removing the IBM TotalStorage SMI-S Agent for Tape on a Linux operating system.

The IBM SMI-S Agent for Tape provides an interface that enables management applications to exploit tape library devices in a standardized way.

#### **Prerequisites**

All software required to run the IBM SMI-S Agent for Tape is contained on the CD-ROM.

The recommended operating systems and hardware requirements are listed below:

- IBM xSeries<sup>®</sup> with at least one Intel<sup>®</sup> Pentium<sup>®</sup> 4 processor and a minimum of 512 MB of RAM
- 32-bit system

• SuSE Linux Enterprise Server 9 or RedHat Advanced Server 3

#### Preparing for Installation

Note: It is strongly recommended that during the installation process not to interrupt the program by abnormal methods (CTRL-C, closing the behind windows, shut-down the power source or something like this) because an interruption, otherwise then through the application windows Cancel button, can cause unpredictable effects in the system.

Perform the following steps to prepare the SMI-S Agent for Tape installation on Linux systems:

- 1. Log on as a user with root authority.
- 2. Create a mount point or choose an existing mount point. To create a mount point called /cdrom, type the following command:
  - # mkdir /cdrom
- 3. Mount the SMI-S Agent for Tape CD at the desired mount point. For example, to mount a compact disc inserted in a CD-ROM drive known as /dev/cd0 at mount point /cdrom, type the following command:
  - # mount -o ro /dev/cd0 /cdrom
- 4. Choose the destination paths for the SMI-S Agent for Tape components and be sure you have enough space available on the chosen destination.
  - The installation program (installer) provides a default installation location ("/opt/IBM/smis/tapeagent") for the component. You can override this by using the installer browse function. When you click Next, the installer analyzes the available space for the location you provide. If there is not enough space, you will not be able to proceed to the next panel in the installation process.
- 5. Change the current directory to the mount point for the CD-ROM drive.

For example, if the CD-ROM was mounted at the **/cdrom**, type the following command:

# cd /cdrom

- 6. Check for a **README** file located in the **doc** directory of the SMI-S Agent for Tape compact disc. This **README** can provide additional information that supersedes information in this guide.
- 7. You can also find this installation guide on the SMI-S Agent for Tape Libraries compact disc under the file name SMI-S/doc/install\_guide.pdf.

# Chapter 2. Installing IBM System Storage SMI-S Agent for Tape in interactive mode

This section includes the steps to install the SMI-S agent in your Linux environment using the graphical mode.

Follow the instructions below to install IBM System Storage SMI-S Agent for Tape Libraries (SMI-S Agent for Tape) on a Linux system in interactive mod.

#### **Prerequisites**

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All software required to run the IBM SMI-S Agent for Tape is contained on the CD-ROM.

The recommended operating systems and hardware requirements are listed below:

- IBM xSeries with at least one Intel Pentium 4 processor and a minimum of 512 MB of RAM
- 32-bit system
- SuSE Linux Enterprise Server 9 or RedHat Advanced Server 3

Perform the following steps to install the SMI-S Agent for Tape Libraries in interactive mode:

- 1. Log on as a user with root authority.
- 2. Create a mount point or choose an existing mount point. To create a mount point called /cdrom, type the following command:
  - # mkdir /cdrom
- 3. Mount the SMI-S Agent for Tape CD at the desired mount point. For example, to mount a compact disc inserted in a CD-ROM drive known as /dev/cd0 at mount point /cdrom, type the following command:
  - # mount -o ro /dev/cd0 /cdrom
- 4. Choose the destination paths for the SMI-S Agent for Tape components and be sure you have enough space available on the chosen destination.
  - The installation program (installer) provides a default installation location ("/opt/IBM/smis/tapeagent") for the component. You can override this by using the installer browse function. When you click Next, the installer analyzes the available space for the location you provide. If there is not enough space, you will not be able to proceed to the next panel in the installation process.
- 5. Launch the IBM Total Storage SMI-S Agent for Tape launchpad by issuing the following command:
  - # /cdrom/SMI-S/<platform>/launchpad\_linux
    where <platform> is the platform you are installing on
- 6. The following options are displayed when the LaunchPad window opens (see Figure 1 on page 4).

#### Readme file

Offers any last minute product information that did not make it into this installation guide.

#### Installation guide

Offers instructions on how to install IBM System Storage SMI-S Agent for Tape Libraries (a softcopy of this document).

#### SMI-S Agent for Tape Web site

Offers information from the product Web site.

#### Installation wizard

Starts the IBM System Storage SMI-S Agent for Tape installation program.

#### Configuring the SMI-S Agent

Offers information about configuring IBM System Storage SMI-S Agent for Tape Libraries.

#### **MOF** Documentation

Offers HTML documentation of the CIM classes implemented by this agent.

**Exit** Exits the Launchpad program.

You can select the desired option to see information about the product or to launch the product installation wizard.

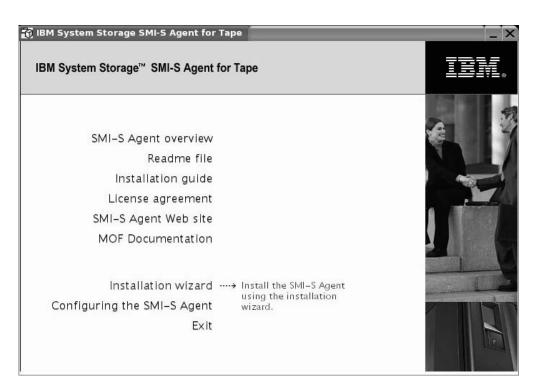


Figure 1. LaunchPad window

7. Click the **Readme file** from the LaunchPad window or see the **README.txt** file located in the /cdrom/SMI-S/doc directory on the IBM System Storage

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- SMI-S Agent for Tape Libraries CD to check for information that might supersede the information in this guide.
- 8. Click **Installation wizard** from the LaunchPad window to start the installation of IBM System Storage SMI-S Agent for Tape.

**Note:** The LaunchPad window remains open behind the installation wizard so that you can access product information during the installation process. Click **Exit** if you want to close the LaunchPad.

9. There will be a slight delay while the software loads on your system. After the software loads, a window opens to display the following message:

- 10. The SMI-S Agent for Tape installation program makes some system checks (operating system to be Linux, SuSE, Enterprise Server 9 or RedHat Advanced Server 3). If one of these conditions is not met the program displays an error message and exits.
- 11. The **Welcome** window opens suggesting what documentation you should review prior to installation (see Figure 2. Click **Next** to continue, or click **Cancel** to exit the installation.

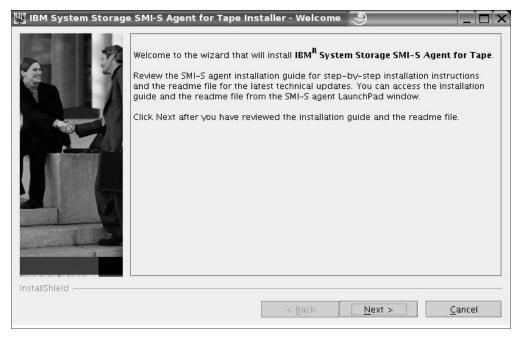


Figure 2. Welcome

12. Read the license agreement information when the License Agreement window opens (see Figure 3 on page 6). Select I accept the terms of the license agreement, then click Next to accept the license agreement. Otherwise, select I do not accept the terms of the license agreement and click Cancel to exit the installation.

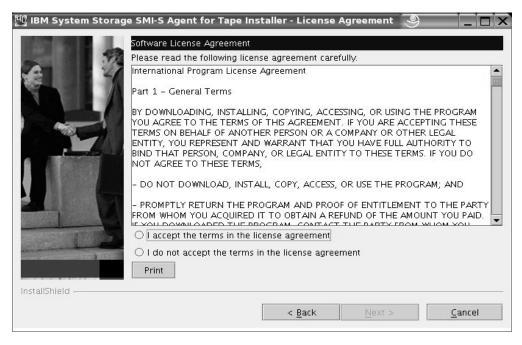


Figure 3. License Agreement

- **13**. The **Destination Directory** window opens (see Figure 4). This window displays a field for the destination path. Select one of the following options:
  - Click **Next** to accept the default directory.
  - Click **Browse** to select a different directory for the installation and then click **Next** to continue the installation process.
  - Click **Cancel** to exit the installation process.

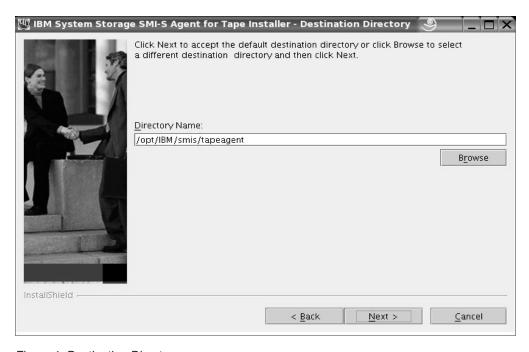


Figure 4. Destination Directory

14. The Server Communication Configuration window opens (see Figure 5). Update the default port assignments and the default communication protocol for SMI-S Object Manager server by typing the unique port numbers and choosing the desired communication protocol for the product that have been registered on your system.

You must enter the communication parameters for the SMI-S Object Manager server:

- Communication Protocol the communication protocol that the server will use;
- HTTP Port is the port number that SMI-S Object Manager server will use for HTTP transport. (The port number must be a port that is not being used by another process on the system.)
- HTTPS Port is the port that SMI-S Object Manager server will use for secure HTTP transport (HTTPS). (The port number must be a port that is not being used by another process on the system.)

These values must not conflict with existing ports assignments on the system. Click **Next** to continue, click **Back** to go back or click **Cancel** to exit the installation.

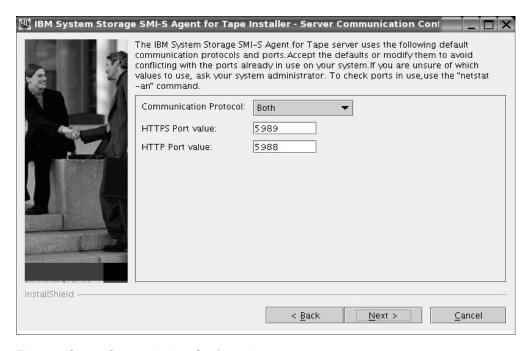


Figure 5. Server Communication Configuration

15. The Install Preview window opens (see Figure 6 on page 8). You can see a review of all the parameters you selected in the previous windows.
Click Install to begin the product installation, click Back to go back or click Cancel to exit the installation wizard.



Figure 6. Install Preview

**16**. The **Installation Progress** window opens (see Figure 7). Wait for the SMI-S Agent for Tape product applications to be installed by the installation wizard.

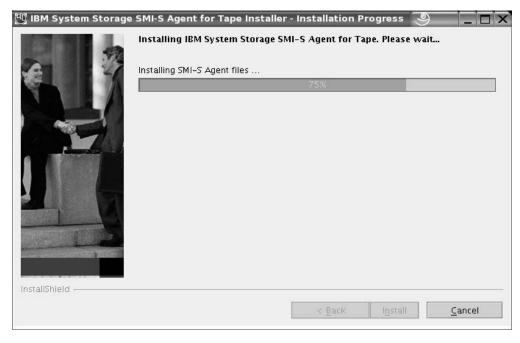


Figure 7. Installation Progress

17. The **Finish** window opens (see Figure 8 on page 9). Before proceeding, you might want to review the log file for any possible error messages. The log file is located in **xxx/logs/install.log**, where xxx is the destination directory where the SMI-S Agent for Tape was installed. The **install.log** file contains a trace of the installation actions.

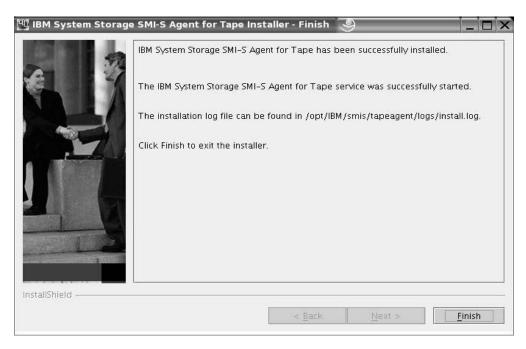


Figure 8. Finish

Click Finish to exit the installation wizard.

- 18. The product once installed, you should perform the configuration tasks. You can access the instructions for the configuration tasks from the LaunchPad window, by clicking the "Configuring the SMI-S Agent" item.
- 19. After reviewing the configuration tasks, you can close the LaunchPad window, clicking the Exit item.

# Chapter 3. Installing IBM System Storage SMI-S Agent for Tape on Linux system in silent mode

This topic describes the procedures to install IBM System Storage SMI-S Agent for Tape on Linux system in silent mode.

#### Steps

Perform the following steps to install the SMI-S Agent for Tape Libraries in silent mode:

- 1. Log on to your Linux system as a user with root authority.
- 2. Before launching the installation program, check the software and hardware prerequisites.
- 3. Insert the SMI-S Agent for Tape CD and mount it as aforementioned in Chapter 2, "Installing IBM System Storage SMI-S Agent for Tape in interactive mode," on page 3.
- 4. Change the current directory to the mount point for the CD-ROM drive. For example, if the CD-ROM was mounted at the /cdrom, type the following command:

# cd /cdrom

- 5. Read the **README.txt** file located in the doc directory on the SMI-S Agent for Tape Libraries CD to check for information that might supersede the information in this guide.
- 6. Where *<platform>* is the platform you are installing on, copy the template response file from the */cdrom/SMI-S/<platform>* directory of the product CD to a location on your system in order to modify it according to your installation parameters. The response file contains all the installation parameters which values can be modified during an interactive installation.
- 7. Modify your copy of the response file as described below:
  - a. Open the response file using a text editor.
  - b. Read the License Agreement and License Information files. If you agree with the terms stated, uncomment the -G option.
  - c. Replace the parameters values with the appropriate values for each uncommented option. A correct set of options and values that must be specified for a product silent installation is shown in the example of the response file below.
  - d. For the ports values, you must pay attention that the entered ports values are free (are not used by other applications on your system. Use the command "netstat -an" to verify the ports in use on your system.
  - e. Save the changes made to the response/options file.
- 8. Launch the following command, in the same Command Prompt window in which you changed the current directory to /cdrom/SMI-S/LINUX of the CD, to start the SMI-S Agent for Tape installation program in silent mode:
  - #./setup.linux -options <responsefile-path>/<responsefile>
    where,
  - <responsefile-path> is the path where the response file was created before;

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<responsefile-path> - is the relative name of the response file that you created
and modified before.

Below is displayed an example of a template response file with the specific parameters.

```
# InstallShield Options File Template
# Wizard name: Install
# Wizard source: setup.jar
# Created on: Tue Feb 22 11:11:46 PST 2005
# Created by: InstallShield Options File Generator
# This file can be used to create an options file (i.e., response file) for the
# wizard "Install". Options files are used with "-options" on the command line
# to modify wizard settings.
# The settings that can be specified for the wizard are listed below. To use
# this template, follow these steps:
    1. Enable a setting below by removing leading '###' characters from the
    line (search for '###' to find settings you can change).
    2. Specify a value for a setting by replacing the characters '<value>'.
    Read each setting's documentation for information on how to specify its
    value.
    3. Save the changes to the file.
    4. To use the options file with the wizard, specify -options <file-name>
    as a command line argument to the wizard, where <file-name> is the name
    of this options file.
   -silent
# IBM System Storage SMI-S Agent for Tape Libraries License Acceptance
# License Agreement verification. You should uncomment this and set it to
# true only after you have read the product License Agreement. The default
# value is false. The License Agreement can be found on the installation media.
# For instance, the following two files should be review for English speaking
# users:
   <CD ROOT>/SMI-S/LINUX/license/LI en
   <CD ROOT>/SMI-S/LINUX/license/LA en
# Where <CD_ROOT> is the root of the CD image, or the root of the unpackaged
# installation media.
### -G licenseAccepted=true
# IBM System Storage SMI-S Agent for Tape Libraries Install Location
# The install location of the product. Specify a valid directory into which the
# product should be installed. If the directory contains spaces, enclose it in
# double-quotes. For example, to install the product to /opt/IBM/smis/tapeagent
# use
```

```
-P installLocation="/opt/IBM/smis/tapeagent"
### -P installLocation=<value>
 User Input Field - communicationProtocol
# The communication protocol type to be used when installing the product. Legal
# values are: "both" - for HTTPS and HTTP communication, "HTTPS" - for HTTPS
# communication, "HTTP" - for HTTP communication.
### -W serverCommunicationConfig.communicationProtocol="<value>"
User Input Field - httpsPort
# The port number used by the CIM Object Manager server for HTTPS transport.
# This value must not conflict with existing port assignments on the system.
### -W serverCommunicationConfig.httpsPort="<value>"
# User Input Field - httpPort
# The port number used by the CIM Object Manager server for HTTP transport. This
# value must not conflict with existing port assignments on the system.
### -W serverCommunicationConfig.httpPort="<value>"
```

- 9. Wait for the SMI-S Agent for Tape installation program to install the product. This can take 5-10 minutes.
- 10. Before proceeding, you might want to review the log file for any possible error messages. The log file is located in xxx/logs/install.log, where xxx is the destination directory where the SMI-S Agent for Tape was installed. The **install.log** file contains a trace of the installation actions.
- 11. If you don't see any errors messages in the log file, the product installation was successfully completed.
- 12. The product once successfully installed, you should perform the configuration tasks.

## **Chapter 4. Configuring the SMI-S Agent**

The following table provides a summary description of the scripts used for configuring the IBM System Storage SMI-S Agent for Tape on a Linux operating system.

**Note:** Refer to the RELEASE\_NOTES.txt available in the distribution directory /cdrom/SMI-S for the latest information about configuring the SMI-S Agent.

Table 2. SMI-S Scripts

Script name	Descriptions
agentstatus.sh	Determines the operational status of the SMI-S Agent.
cimuser.sh	The SMI-S Agent maintains a list of authorized CIM users. This script allows an administrator to manage CIM users. Only existing Linux system users may be added as CIM users.  Note: CIM user HTTP authentication is disabled by default. See the release notes for details on enabling HTTP authentication.
mkcertificate.sh	The installer automatically runs this script to generate a 512 bit RSA private key. This is required when running in secure mode with SSL (Secure Socket Layer). mkcertificate.sh creates a certificate and two keys, one public key and one private key. When running unsecure, it is not required.
setdevice.sh	Adds or removes an IBM tape library to be managed by the SMI-S Agent. When the SMI-S Agent is first started after installation, the SMI-S Agent is not configured with library information. Set the library IP address using setdevice.sh. For 358x libraries, set the port and community using setdevice.sh.
setenv.sh	setenv.sh sets the environment variables so that the SMI-S Agent can find all the required library information to run properly.
startagent.sh	Starts the SMI-S Agent if it is not running.
stopagent.sh	Stops the SMI-S Agent if it is running.

Table 3. SMI-S Script Arguments

Script name	Arguments
agentstatus.sh	
cimuser.sh	cimuser add a user: -a -u username [ -w password ] modify password: -m -u username [ -w old password ] [ -n new password ] remove a user: -r -u username list all users: -l
mkcertificate.sh	

Table 3. SMI-S Script Arguments (continued)

Script name	Arguments			
setdevice.sh	SetDevice -a <add del="" list=""  =""> -t&lt;3494   3581   3582   3583   3584&gt;  [-l<ip alias=""  =""> [-p <port> [-c<community> [-s<snmpversion>]]]</snmpversion></community></port></ip></add>			
	Examples: SetDevice -aadd -t3584 -15.6.7.8 -p161 -cpublic -s2 SetDevice -aadd -t3583 -14.3.2.1 SetDevice -aadd -t3494 -lcimlib SetDevice -aadd -t3584 -14.3.2.1 SetDevice -aadd -t3584			
setenv.sh				
startagent.sh				
stopagent.sh				

# **Chapter 5. Removing IBM System Storage SMI-S Agent for Tape from an Linux system**

You can use these procedures to remove the IBM System Storage SMI-S Agent for Tape Libraries from your Linux system.

#### Steps

Perform the following steps to remove the IBM System Storage SMI-S Agent for Tape:

- 1. Log on as root to the system where the SMI-S Agent for Tape is installed.
- 2. Run the uninstallation program by typing the following command:
  - # <dest-path>/\_uninst/uninstaller> where,
  - <dest-path> is the path where SMI-S Agent for Tape software is installed. (The
    default value is /opt/IBM/smis/tapeagent.)
- 3. The SMI-S Agent for Tape Uninstaller **Welcome** window opens (see Figure 9). Click **Next** to continue or click **Cancel** to stop the removal of SMI-S Agent for Tape.

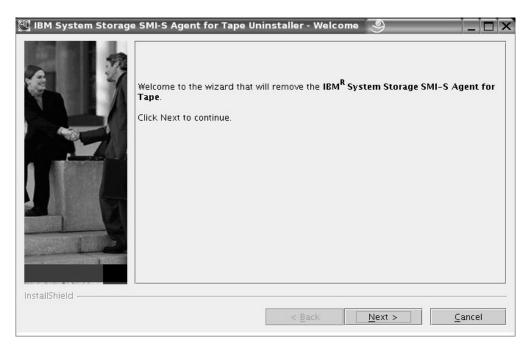


Figure 9. Uninstall Welcome

4. The **Uninstall Preview** window opens (see Figure 10 on page 18). The removal program displays a summary panel of the disk location of SMI-S Agent for Tape Libraries.

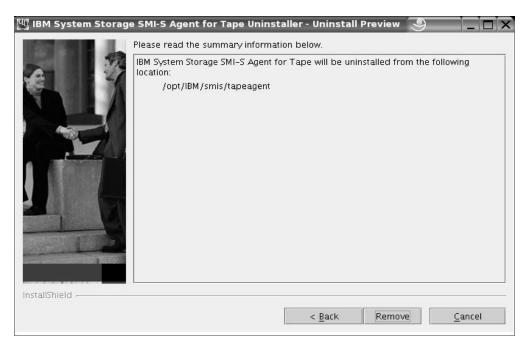


Figure 10. Uninstall Preview

Click **Remove** to continue or click **Cancel** to stop the removal of the SMI-S Agent for Tape. Click **Back** to return to the previous window.

5. The **Uninstall Progress** window opens (see Figure 11). Wait for the program to remove the SMI-S Agent for Tape.

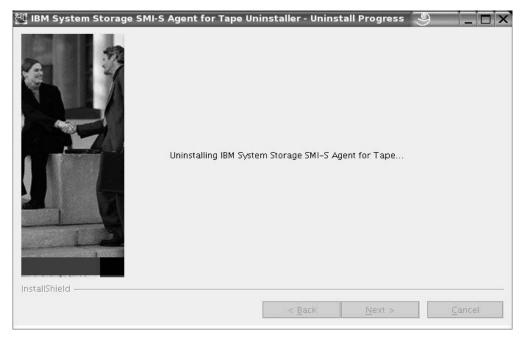


Figure 11. Uninstall Progress

6. The **Finish** window of the uninstallation wizard opens (see Figure 12 on page 19). This window indicates the result of the removal process (successful or failed). Click **Finish** to complete the removal process and exit the wizard.

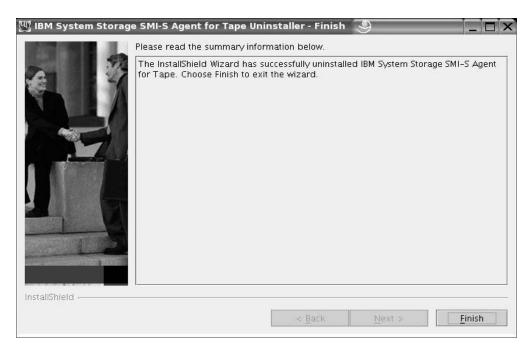


Figure 12. Uninstall Finish

### Result

If the Finish window for the Uninstaller program opens and the result of the removal process is successful, the SMI-S Agent for Tape Libraries was removed from your Linux system.

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