

Symantec™ System Recovery 2011 User's Guide

Linux Edition



Symantec System Recovery 2011 for Linux User's Guide

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Introducing Symantec™ System Recovery for Linux

This chapter includes the following topics:

- [About Symantec System Recovery 2011 Linux Edition](#)

About Symantec System Recovery 2011 Linux Edition

Symantec System Recovery 2011 Linux Edition lets you recover from system loss or disasters in minutes, not hours, or days. It provides fast, easy to use system restoration to help you meet your recovery time objectives. Symantec System Recovery 2011 Linux Edition lets you capture recovery points of all the partitions and volumes on a live Linux system. The recovery points can include partitions and volumes containing the operating system (OS), applications, system settings, configurations, files, and data.

When you experience a problem with your computer, you can restore a file system partition or an entire drive. This recovery process returns your computer to a previous, functional state with the operating system, applications, and data files intact.

Using Symantec System Recovery 2011 Linux Edition you can do the following:

- Perform backups (create recovery points) of partitions and volumes on your Linux system.
- Restore volumes and partitions using the recovery points you have created.
- Create a Symantec Recovery Disk CD that you can use to recover your computer if it does not start.
- Mount recovery points so you can restore individual files and folders.

Installing Symantec System Recovery for Linux

This chapter includes the following topics:

- [Before you install](#)
- [Installing Symantec System Recovery 2011 Linux Edition](#)
- [Uninstalling Symantec System Recovery 2011 Linux Edition](#)

Before you install

Installation procedures might vary depending on your work environment and the type of Linux you use. This chapter focuses on installing Symantec System Recovery 2011 Linux Edition from a download.

Before you install Symantec System Recovery 2011 Linux Edition, ensure that your computer meets the system requirements. Review the Readme file for any known issues.

System requirements

The following table lists the system requirements for Symantec System Recovery 2011 Linux Edition to function properly.

Table 2-1 Minimum system requirements

Component	Minimum requirements
Operating system	<p>The following Linux operating systems are supported:</p> <ul style="list-style-type: none"> ■ SUSE Linux Enterprise Server 11 and 11 SP1 (x86) 32-bit ■ SUSE Linux Enterprise Server 11 and 11 SP1 (x86_64 not ia64) 64-bit ■ SUSE Linux Enterprise Server 10, 10 SP1, 10 SP2, and 10 SP3 (x86) 32-bit ■ SUSE Linux Enterprise Server 10, 10 SP1, 10 SP2, and 10 SP3 (x86_64 not ia64) 64-bit ■ Red Hat Enterprise Linux 5.0, 5.1, 5.2, 5.3, 5.4, and 5.5 (x86) 32-bit ■ Red Hat Enterprise Linux 5.0, 5.1, 5.2, 5.3, 5.4, and 5.5 (x86_64 not ia64) 64-bit ■ Red Hat Enterprise Linux 6.0 (x86) 32-bit ■ Red Hat Enterprise Linux 6.0 (x86_64 not ia64) 64-bit <p>Note: SUSE Linux Enterprise Desktop and Red Hat Enterprise Linux Desktop are not supported. Also, Symantec System Recovery for Linux is a 32-bit application and won't function if you've not installed 32-bit runtime environment including libraries.</p> <p>All standard kernel versions are supported for the Linux distributions that are listed.</p> <p>The binary drivers are already included for all standard kernels that are supported for the listed Linux distributions.</p> <p>For custom kernels (recompiled kernels), the installer builds and installs the custom snap driver for the running custom kernel during installation. The system must have the custom kernel headers installed.</p>
RAM	<p>The following are the memory requirements for SUSE Linux, Red Hat Linux, and the Symantec Recovery Disk:</p> <ul style="list-style-type: none"> ■ SUSE Linux: 1 GB ■ Red Hat Linux: 1 GB

Table 2-1 Minimum system requirements (*continued*)

Component	Minimum requirements
Available hard disk space	<p>The Symantec System Recovery 2011 Linux Edition installation requires 50 MB of free disk space. To install and use the option for extracting and creating a Symantec Recovery Disk, you should have at least 200 MB of disk space.</p> <p>You should have sufficient hard disk space on a local hard disk or network server for storing recovery points.</p> <p>Be aware that the file sizes of resulting recovery points depends on the amount of data that you intend to back up.</p>
CD-ROM or DVD-ROM drive	The drive can be any speed, but it must be capable of being used as the startup drive from the BIOS.
Software	<p>Other required software:</p> <ul style="list-style-type: none"> ■ The mount.v2i option uses Lib fuse (32-bit version). Currently, only Fuse 2.7.x is supported. Other versions of Fuse are not supported, but may work. ■ createSRD uses the squashfs-tools package on RHEL for creating RHEL Symantec Recovery Disks. You must install the required squashfs-tools package on RHEL 5.x and squashfs-tools and genisoimage packages on RHEL 6.0.

Installing Fuse

The Fuse driver and libfuse (32-bit) must be installed before you use the Symantec System Recovery 2011 Linux Edition recovery point mount utility. On SUSE Linux and RHEL 6.0, the Fuse driver is installed by default, but, the Fuse library (libfuse) must be installed. On Red Hat 5.x Linux, both, the Fuse driver and the Fuse library must be installed.

You can install the Fuse driver and libfuse from the RPM repository. You can also install Fuse from a downloaded .tar file.

To download and install the Fuse .tar file

- 1 Log on as root.
- 2 Download Fuse 2.7.x from <http://fuse.sourceforge.net>.
- 3 Extract the .tar.gz file.
- 4 Change the directory to the Fuse extracted folder.

- 5 Run the following commands in the order indicated.

```
./configure CFLAGS=-m32
```

```
make
```

```
make install
```

- 6 Check `/etc/ld.so.conf` using a text editor (for example, run `vi /etc/ld.so.conf`). Look for a line containing `'/usr/local/lib'`. If it is missing, you must add it.

- 7 Run `ldconfig` command

```
ldconfig
```

SUSE requires only the installation of the `libfuse rpm` libraries. Red Hat requires both the `libfuse rpm` library and the `fuse` module.

Installing 32-bit compatible libraries for RHEL 6.0

On RHEL 6.0 64-bit operating system, the 32-bit compatible libraries are not installed by default. Symantec System Recovery for Linux is a 32-bit application and cannot function without the 32-bit compatible libraries.

The following RPMs must be installed for Symantec System Recovery for Linux to function:

- `glibc-2.12-1.7.e16.i686.rpm`
- `glib2-2.22.5-5.e16.i686.rpm`
- `nss-softokn-freebl-3.12.7-1.1.e16.i686.rpm`
- `libselinux-2.0.94-2.e16.i686.rpm`
- `gamin-0.1.10-9.e16.i686.rpm`
- `libstdc++-4.4.4-13.e16.i686.rpm`
- `libgcc-4.4.4-13.e16.i686.rpm`
- `libxml2-2.7.6-1.e16.i686.rpm`
- `zlib-1.2.3-25.e16.i686.rpm`

These RPMs are available on the RHEL 6.0 installation media.

About supported file systems and removable media

Symantec System Recovery 2011 Linux Edition supports the following file systems and removable media:

Supported file systems	<p>Symantec System Recovery 2011 Linux Edition supports the following file systems:</p> <ul style="list-style-type: none">■ ReiserFS version 3■ EXT2■ EXT3■ FAT16 with 2-GB limit■ FAT32 <p>Note: Symantec System Recovery 2011 Linux Edition only supports the listed file systems. Other file systems such as XFS, EXT4, JFS, NSS, and Reiser4 are not supported.</p>
Removable media	<p>Backing up is not supported to some types of removable media in Symantec System Recovery 2011 Linux Edition. You must save recovery points to a local mount point.</p>

When you delay licensing

If you choose to delay installation of the license key, all features in Symantec System Recovery 2011 Linux Edition remain enabled during a 60-day trial period.

Symantec Recovery Disk (SRD), a component of Symantec System Recovery 2011 Linux Edition, is available with no trial period. However, you need a valid license key to use the Back Up feature in SRD. If you have created the SRD on a computer having licensed version of Symantec System Recovery 2011 Linux Edition, the SRD is automatically licensed. In such cases, you can perform cold backups using the SRD without the need of adding a license key.

You can purchase a license key and activate the software at any time (even after the trial period expires) without the need to reinstall. To activate Symantec System Recovery 2011 Linux Edition before or after the trial period, you can use the following command:

```
#symsr -addlicense <license key>
```

Installing Symantec System Recovery 2011 Linux Edition

Before you begin, you should review the requirements and scenarios for installing Symantec System Recovery 2011 Linux Edition.

Root privileges are required to install the `Symantec_System_Recovery.bin`.

To install Symantec System Recovery 2011 Linux Edition

- 1 Log on to your computer as the root user.
- 2 Copy the `Symantec_System_Recovery.bin` file from the download or the product CD to a folder on your Linux computer.
- 3 Make the `Symantec_System_Recovery.bin` file an executable by changing to the directory where you copied it and entering the following command at the Linux console:

```
chmod +x Symantec_System_Recovery.bin
```

- 4 Start the installation process by entering the following command at the Linux terminal:

```
./Symantec_System_Recovery.bin
```

Note: The command that you specified assumes that you are currently in the same directory where the `Symantec_System_Recovery.bin` file is located. If that is not the case, you must either change to that folder or specify the proper path to it.

- 5 Page through the license agreement and accept it by entering a `y` or `yes` at the prompt.
- 6 If you want to install the utility for creating a Symantec Recovery Disk CD, type a `y` or `yes` at the install Symantec Recovery Disk creation utility prompt.

`createSRD` is a command line utility for creating a Symantec Recovery Disk CD. A Symantec Recovery Disk CD is not included with Symantec System Recovery 2011 Linux Edition. You must create the CD manually using the `createSRD` utility.

See [“Creating a Symantec Recovery Disk for Linux”](#) on page 28.

- 7 If you want to install the utility for mounting a recovery point, type a `y` or `yes` at the install recovery point mount utility prompt.

Symantec System Recovery 2011 Linux Edition includes command line utilities for mounting or unmounting a recovery point so you can restore individual files and folders.

Note: If you choose not to install the utilities you can run the installation process later. The installation program automatically detects that Symantec System Recovery 2011 Linux Edition is installed and prompts you to install the utilities that are not installed.

Uninstalling Symantec System Recovery 2011 Linux Edition

After installing Symantec System Recovery 2011 Linux Edition, you can uninstall it if needed.

To uninstall Symantec System Recovery 2011 Linux Edition

- 1 Log on to your computer as the root user.
- 2 Uninstall Symantec System Recovery 2011 Linux Edition by entering the following command at the Linux terminal:

```
symsr-uninstall
```

Note: Reinstalling Symantec System Recovery 2011 Linux Edition prompts you to install over a previous installation. Uninstalling the product is not required before reinstalling it.

Backing up a Linux computer

This chapter includes the following topics:

- [About backing up a Linux computer](#)
- [Performing a backup](#)

About backing up a Linux computer

When you perform a backup on a Linux computer, Symantec System Recovery 2011 Linux Edition takes a snapshot of an entire partition or volume, capturing all information that is stored on it for later retrieval. All of your files, folders, desktop settings, programs, and your operating system are captured into a recovery point. You can then use that recovery point to restore an individual partition or your entire computer by restoring all volumes on the system individually.

In addition to backing up your computer after installing Symantec System Recovery 2011 Linux Edition, you can also perform a backup by booting into Symantec Recovery Disk. This type of backup is sometimes referred to as a cold backup or offline backup. It lets you create recovery points of partitions and volumes without booting to Linux from your hard drive.

The steps for performing a backup using Symantec Recovery Disk are the same as performing a backup from within Symantec System Recovery 2011 Linux Edition.

See [“About Symantec Recovery Disk”](#) on page 27.

Performing a backup

To perform a backup using Symantec System Recovery 2011 Linux Edition

- 1 At the Linux server, log on as user root or a user with administrative privileges.
- 2 Enter the following command in a terminal window:

```
symsr -b volume_name options -d destinationrecoverypoint_name
```

Replace *volume_name* with the name and path of the volume block device or mount point.

Replace *options* with the options you want to use with the backup.

See [symsr](#) on page 36. for a list of the options available with the Symantec System Recovery 2011 Linux Edition command line utility.

Replace *destination* with the location where the recovery point is created.

Replace *recoverypoint_name* with the name you want to assign to the recovery point.

For example, if you want to create a recovery point named `system_000.v2i` of the `/dev/sda1` volume in the same directory where the command is executed and using default options, you enter the following command:

```
symsr -b /dev/sda1 -d system_000.v2i
```

Note: Some characters have special meanings and should not be used in recovery point file names and passwords. These characters include colons (:), back slashes (\), question marks (?), ampersand (&), asterix (*), and caret(^).

Note: When you back up volumes with unsupported file systems, SmartSector copying is disabled (SmartSector backs up only those sectors on the volume that contain data).

Restoring a Linux computer

This chapter includes the following topics:

- [About recovering a Linux computer](#)
- [Starting a Linux-based computer using Symantec Recovery Disk](#)
- [Recovering a Linux computer](#)
- [Mounting and unmounting a recovery point for restoring files and folders](#)

About recovering a Linux computer

If Linux fails to start or does not run normally, you can recover your computer using Symantec Recovery Disk and an available recovery point.

Note: If you can start Linux and the partition that you want to restore is not the system partition, you can restore the partition from within Linux.

Symantec Recovery Disk lets you run a recovery environment that provides temporary access to Symantec System Recovery 2011 Linux Edition recovery features.

Note: The usage of RHEL 5.x Symantec Recovery Disk for recovering the system image of a computer in a network using cifs results in an error. This is because the cifs module is not loaded by default. You must manually load the cifs.ko by performing 'insmod /modules/cifs.ko'.

Starting a Linux-based computer using Symantec Recovery Disk

The Symantec Recovery Disk CD lets you start a computer that can no longer run the Linux operating system. The Symantec Recovery Disk CD is not included with Symantec System Recovery 2011 Linux Edition. You must create the Symantec Recovery Disk CD using the createSRD utility after installing Symantec System Recovery 2011 Linux Edition.

See [“Creating a Symantec Recovery Disk for Linux”](#) on page 28.

When you start your computer using the Symantec Recovery Disk CD, the recovery process follows the recovery environment process of the rescue disk that you used to create Symantec Recovery Disk.

To start a Linux-based computer using Symantec Recovery Disk

- 1 If you store your recovery points on a USB device, attach the device now (for example, an external hard drive).

Note: You should attach the device before you restart the computer. Otherwise, the recovery environment might not detect it.

- 2 Insert the Symantec Recovery Disk CD that you created previously into the media drive of the computer.
- 3 Restart the computer.

If you cannot start the computer from the CD, you might need to change the startup and BIOS settings on your computer.

- 4 Do one of the following:
 - Activate your network from within the Red Hat or SUSE rescue environment.
 - Activate your network using the `ifup` command.

Recovering a Linux computer

You can restore your computer (all volumes and partitions on your computer) using the recover feature of Symantec System Recovery 2011 Linux Edition. If you have a recovery point for the partitions or volumes that you want to recover, you can fully recover your computer or another hard drive back to the state it was in when the recovery point was created.

Restoring a system volume might require booting to and performing the recovery from the Symantec Recovery Disk.

Note: If you restore a volume or partition that LVM (Linux Volume Manager) or software RAID managed, before you start the recovery process you must use `lvmttools` or the RAID tools that are present on the recovery disk to set up LVM or software RAID.

To recover a computer

- 1 If the computer won't boot, start it using Symantec Recovery Disk. If the computer will boot, log on at a terminal window as user `root` or as a user with administrative privileges .

See [“Starting a Linux-based computer using Symantec Recovery Disk”](#) on page 22.

- 2 If the recovery point is stored on a remote NFS or CIFS share, configure your network settings and mount the remote NFS or CIFS share.
- 3 Enter the following command at the server console:

```
symsr -r recoverypoint_nameoptions -d destination
```

Replace *recoverypoint_name* with the name of the recovery point you want to restore. Recovery points have a `.v2i` file name extension.

Replace *options* with the options you want to use with the restore.

Replace *destination* with the location where the recovery point is restored. The destination must be a partition or a volume device.

For example, if you want to restore a recovery point named `system_000.v2i` (the system partition) from the `/tmp/path/to` directory back to its original location (`/dev/sda1`), you enter the following command:

```
symsr -r /tmp/path/to/system_000.v2i -d /dev/sda1 -active
```

Note: The `-active` option is only used with Symantec System Recovery 2011 Linux Edition during a restoration of a system volume. Using the `-active` option allows the system to boot from a restored volume. Also, in order for a system to boot correctly from a restored system volume, you might be required to fix the Grub boot loader using the `grub-install` tool. You might also need to update the `/etc/fstab`.

About restoring to empty disk segments

Symantec System Recovery 2011 Linux Edition lets you restore to an MBR (Master Boot Record) partition, GPT and LVM devices, Software RAID, or to free space on the disk. If you restore to free disk space (an empty disk segment), an MBR partition (on an MBR disk) or a GPT entry (on a GPT disk) is created regardless of the partition type that the recovery point was created from.

For example, suppose you have a 40 GB hard disk (/dev/sda) that is partitioned as follows:

```
/dev/sda1=20GB
```

```
Free Space=20GB
```

To restore a recovery point named backup01.v2i to free space, you use the following command:

```
symsr -r backup01.v2i -d /dev/sda -seg 1
```

After the recovery is complete, the disk has the following partitions with the restored volume on the /dev/sda2 partition:

```
/dev/sda1
```

```
/dev/sda2
```

Mounting and unmounting a recovery point for restoring files and folders

Symantec System Recovery 2011 Linux Edition creates partition or volume-level recovery points. If you want to restore individual files, folders, and documents, you must first mount the recovery point that includes those files and folders. The recovery point mount utility is included with Symantec System Recovery 2011 Linux Edition and can be used to mount recovery points. After mounting a recovery point using the mount utility, you can restore individual files, folders, and documents.

While mounting a recovery point, you may experience the following error:

```
'mount.v2i: error while loading shared libraries: libfuse.so.2: cannot open shared object file: No such file or directory'
```

In such cases, you should follow the FUSE installation steps before you attempt to mount the recovery point again.

See [“Installing Fuse”](#) on page 13.

To mount a recovery point using the mount utility

- 1 Open a terminal window (command-line terminal) on the Linux server and log on as a user with mount privileges.
- 2 Create an empty directory where you want the recovery point mounted.
- 3 Enter the following command in a Linux terminal window:

```
mount -t v2i sda1recoverypoint.v2i /mnt/image
```

Replace *sda1recoverypoint.v2i* with the name of the recovery point.

Replace */mnt/image* with the path to the empty directory you created. The recovery point is mounted here.

Note: If the recovery point is password protected, you must also use the password option and specify the password. For example, if a password were required for the *sda1recoverypoint.v2i* specified, you would enter the following command and replace *password* with the name of the required password:

```
mount -t v2i sda1recoverypoint.v2i /mnt/image -o password=password
```

System will prompt for a password if you attempt to mount a password-protected recovery point without specifying one.

To unmount a recovery point

- 1 Open a terminal window (command-line terminal) on the Linux server and log on as a user with mount privileges.
- 2 Enter the following command in a Linux terminal window:

```
umount /mnt/image
```

Replace */mnt/image* with the path to where the recovery point is mounted.

Creating a Symantec Recovery Disk

This chapter includes the following topics:

- [About Symantec Recovery Disk](#)
- [Creating a Symantec Recovery Disk for Linux](#)

About Symantec Recovery Disk

Symantec Recovery Disk lets you start a computer that can no longer run the Linux operating system. Symantec Recovery Disk is not included with Symantec System Recovery 2011 Linux Edition. You must create the Symantec Recovery Disk CD using the createSRD utility after installing Symantec System Recovery 2011 Linux Edition. createSRD builds a recovery environment based on the rescue environment of your Linux distribution. In the recovery environment, you can access the recovery features of Symantec System Recovery 2011 Linux Edition.

The createSRD utility creates an ISO file which you can burn to a CD or DVD to create a Symantec Recovery Disk CD. The createSRD utility does not include any CD or DVD burning functionality.

Note: The usage of RHEL 5.x Symantec Recovery Disk for recovering the system image of a computer in a network using cifs results in an error. This is because the cifs module is not loaded by default. You must manually load the cifs.ko by performing 'insmod /modules/cifs.ko'.

See [“Creating a Symantec Recovery Disk for Linux”](#) on page 28.

Creating a Symantec Recovery Disk for Linux

To create a Symantec Recovery Disk for Linux you must have a Red Hat Enterprise Linux (RHEL) boot CD/DVD or ISO or a SUSE Linux Enterprise Server (SLES) CD/DVD or ISO.

Note: The ISO must match the distribution and version of Linux that you currently have installed and running.

To create a Symantec Recovery Disk for Linux CD using a Red Hat Enterprise Linux boot CD/DVD iso file

- 1 Open a terminal window (command-line terminal) on the Linux server and log on as a user with administrative privileges.
- 2 Enter the following command at the Linux server console:

```
createSRD --iso=/mnt/backup/rhel-5.2-server-i386-dvd.iso -t RHEL5  
-d /mnt/backup/customSRD.iso
```

Replace */mnt/backup/rhel-5.2-server-i386-dvd.iso* with the path and name of the source ISO file you use to create the Symantec Recovery Disk.

Replace */mnt/backup/customSRD.iso* with the path and name of the Symantec Recovery Disk ISO file that you want to create.

To create a Symantec Recovery Disk using a SUSE Linux Enterprise Server CD/DVD in the drive

- 1 Open a terminal window (command-line terminal) on the Linux server and log on as a user with administrative privileges.
- 2 Enter the following command at the Linux server console:

```
createSRD --iso=/media/SLES10SP_001/ -t SLES10 -d  
/mnt/backup/customSRD.iso
```

Replace */media/SLES10SP_001/* with the path to where the CD is mounted.

Replace */mnt/backup/customSRD.iso* with the path and name of the Symantec Recovery Disk ISO file that you want to create.

To create a Symantec Recovery Disk using a SUSE Linux Enterprise Server CD/DVD mounted in the */media* directory

- 1 Open a terminal window (command-line terminal) on the Linux server and log on as a user with administrative privileges.
- 2 Enter the following command at the Linux server console:

```
createSRD -i /media/SLES10 -d /mnt/backup/customSRD.iso -t SLES10
```

Replace */mnt/backup/customSRD.iso* with the path and name of the Symantec Recovery Disk ISO file that you want to create.

Features not supported in Symantec System Recovery for Linux

This chapter includes the following topics:

- [Windows product features not supported in this release](#)

Windows product features not supported in this release

This release of Symantec System Recovery 2011 Linux Edition includes functionality to back up and restore Linux computers, partitions, or volumes. Also included is functionality for creating a Symantec Recovery Disk and for mounting recovery points.

Many features in the Symantec System Recovery 2011 for Windows are not included in Symantec System Recovery 2011 Linux Edition. The following list identifies the features that Symantec System Recovery 2011 for Windows supports, but are not included in Symantec System Recovery 2011 Linux Edition.

- Backup and Restore of Windows system volumes from Linux.
- Backing up to and restoring from CD and DVD.
- Backing up to non-mounted network locations including ftp, sftp, and windows shares--CIFS.
- GUI management tool -- No GUI management tool is currently included with Symantec System Recovery 2011 Linux Edition. All functions are performed using command line utilities.

- Backup job scheduling.
- Creating incremental recovery points.
- Offsite Copy.
- Backing up individual files and folders.
- System tray icons and alerts.
- Restore Anyware.
- Virtualization support including physical to virtual conversion.
- Symantec System Recovery 2011 Management Solution for Convert to Virtual tasks.
- Symantec System Recovery 2011 Management Solution for remote recovery of drives or one or more computers using LightsOut Restore.
- Symantec System Recovery 2011 Management Solution for deleting recovery points.
- Converting to and restoring from vmdk.

Symantec System Recovery for Linux Utilities

This appendix includes the following topics:

- [createSRD](#)
- [symsr](#)
- [mount.v2i](#)

createSRD

createSRD – Create a Symantec Recovery Disk

DESCRIPTION

createSRD is a command line utility for creating a Symantec Recovery Disk (SRD). Symantec Recovery Disk lets you start a computer that can no longer run the Linux operating system. When you boot your computer using the Symantec Recovery Disk CD, a scaled-down version of Linux runs a recovery environment. In the recovery environment, you can access the recovery features of Symantec System Recovery.

OPTIONS

- h, --help**
Show this help message and exit.
- i FILE or DIR, --iso=FILE or DIR**
CD ISO file or directory where the CD is mounted. You use this ISO file or directory to create a Symantec Recovery Disk.
- d FILE, --destination=FILE**
The output ISO file that the script creates.
- t type, --disk-type=type**
Type of Linux install ISO to customize (SLES10, RHEL5, or RIP).
- m, --manual-modifications**
Pause after all files are extracted to allow for manual modifications.
- temp-dir=DIR**
Temporary directory that is used for creating the new ISO file. The default is /tmp/<iso_name>.
- v --verbose**
Print extra status messages to stdout.

EXAMPLES

createSRD uses POSIX-style options. This is different than the symshr utilities, which always uses a single '-' even if the option contains multiple characters. Single-letter parameters may be specified as a group in POSIX tar -xvf, but cannot be in the symshr utilities.

The following are usage examples for the createSRD utility.

```
createSRD --iso=/mnt/backup/rhel-5.2-server-i386-dvd.iso -t RHEL5 -d  
/mnt/backup/customSRD.iso
```

Create an SRD from a Red Hat Enterprise Linux (RHEL) boot CD/DVD iso.

Note: In the example, if you use a supported iso, you can omit the -t option.

```
createSRD --iso=/media/SLES10SP_001/ -t SLES10 -d  
/mnt/backup/customSRD.iso
```

Create a Symantec Recovery Disk from a SUSE Linux Enterprise Server (SLES) CD/DVD in the drive.

```
createSRD -i /media/SLES10 -d srd.iso -t SLES10
```

Create a Symantec Recovery Disk from a SUSE Linux Enterprise Server (SLES) CD/DVD mounted in the /media/ directory.

SEE ALSO

Man page for symshr.

symsr

symsr – Backup or restore a computer.

DESCRIPTION

symsr is a command line utility for backing up and restoring a Linux computer or for adding a product license key. The symsr utility captures a recovery point of the entire live Linux system without affecting the productivity. This includes the operating system, applications, system settings, configurations, and files. The recovery point can be saved to various media or disk storage devices, including a SAN, a NAS, and Direct Attached Storage. When systems fail, you can quickly restore them without the need for manual, lengthy, and error-prone processes.

Using the symsr command line utility involves specifying an action and the options that are associated with that action.

ACTIONS

The actions are a group of choices that are used with the symsr command line utility. Only one action can be specified at a time when running symsr. Different options exist for each action. The actions are listed below:

-addlicense <license key>

Adds a license key to Symantec System Recovery 2011 Linux Edition.

-b, -backup <device>

Performs a backup of the specified device and creates a recovery point at the specified location.

-r, -restore <file>

Restores the specified file to the specified location.

Note: You cannot restore a recovery point to a destination that is smaller than the size of the volume that was backed up.

-list

Lists the partition and the file system type on the machine.

-vrp, -verify-recovery-point <file>

Verifies the integrity of the specified recovery point.

Note: You cannot verify the integrity of the underlying file system in the recovery point.

OPTIONS

-?, -help

Show the help message and exit.

-active, -set-active

Sets the restored partition on the destination server to active.

-cmp, -compress, -compression <level>

The compression level you want to apply to the recovery point. Valid compression levels include None, Standard, Medium, and High. If you do not specify a compression level, the default is Standard.

-d, -dest, -destination <file>

The file or folder where the recovery point is created, or the device where the recovery point is to be restored. If you do not specify a destination, the default is the current directory. A destination is required for performing a recovery.

-desc, -description <description>

Use this option to provide a description of the recovery point.

-encryption, -use-aes-encryption <level>

Use this option to encrypt a recovery point. Encryption levels include high (256-bit), medium (192-bit), and standard (128-bit).

Each encryption level requires a different length password. Password lengths include at least 32 characters for high, at least 16 characters for medium, and at least eight characters for standard.

The default is no encryption if no encryption level is specified.

-force-unmount

This option attempts to remove any mount points from the destination before a restore. If this option is not specified, the restore fails and an error message displays indicating that you should remove mount points and retry the restore.

-ignore-bad-sectors

This option lets you run a backup even if there are bad sectors on the hard disk. Although most drives do not have bad sectors, the potential for problems increases during the lifetime of the hard disk. If you have an older hard drive, you should use this option.

-mnt, -mount-point <path>

The mount point you want to add to the volume after it is restored (not persistent). <path> must be a valid path.

-nombr, -do-not-restore-mbr

Do not restore the master boot record that is contained in the recovery point. This option is used only with the Restore action.

-p, -pwd, -password <password>

Use this option to specify a password for the recovery point file when creating a backup or to supply a password for a password-protected recovery point when restoring.

-prefix, -file-prefix <string>

Lets you specify a prefix for the recovery point file name. The prefix is used when the destination is not specified or is a directory.

-raw, -raw-image

This option instructs Symantec System Recovery 2011 Linux Edition to not use SmartSector copy. Instead, the entire volume is captured even if there is no data in some sectors of the volume.

-reboot, -reboot-on-success

Reboot the computer when the restore is complete.

-seg, -segment <number>

You can specify an empty section of the disk to restore the recovery point to (a zero-based index). The number must not be a negative number.

-span, -split, -span-size <number>

Use this option to divide the recovery point file into separate chunks. The number is the chunk size in x 500 MB, and cannot be negative.

-v, -version

Provides the information about the product name, version, and the license status.

-verify

Verify the recovery point after it is created or before it is restored.

EXAMPLES

The following are usage examples for the symsr command-line utility.

```
symsr -b /dev/sda1 -d sda1backup.v2i
```

Create a recovery point named `sda1backup.v2i` for volume `sda1` using default options and storage. The recovery point is created in the same folder where the command is run.

```
symsr -b /boot -d sda1backup.v2i
```

Create a recovery point named `sda1backup.v2i` for the mount point `/boot`. The recovery point is created in the same folder where the command is run.

```
symsr -b /dev/mapper/vg0-lv0 -d lvmbackup.v2i
```

Create a recovery point of an LVM volume. The recovery point is created in the same folder where the command is run.

```
symsr -b /dev/sda1 or , symsr -b /boot
```

Create a recovery point of volume `sda1` with the default file name. This creates the recovery point in the current folder using the name `volume_name_NNN.v2i`.

```
symsr -b /dev/sda1 -d machinename_volumename or , symsr -b /boot -d  
machinename_volumename
```

Create a recovery point of volume `sda1` with the supplied file name. This creates the recovery point in the current folder using the name `machinename_volumename_NNN.v2i`.

```
symsr -b /dev/sda1 -create-machine-folder or , symsr -b /boot  
-create-machine-folder
```

Create a folder using the computer name and place the recovery point of volume `sda1` in that folder.

```
symsr -b /dev/sda1 -d /machine_subfolder/machinename_volumename or  
, symsr -b /boot -d /machine_subfolder/machinename_volumename
```

Create a recovery point of volume `sda1` in the specified computer subfolder with the specified file name. This creates the recovery point in the specified computer subfolder using the name `machinename_volumename_NNN.v2i`.

```
symsr -b /boot -d /mnt/backup/sda1backup.v2i -ignore-bad-sector
```

Create a recovery point that skips over the bad sectors on the hard disk.

```
symsr -b /boot -d /mnt/backup/sda1backup.v2i -p recoverypointpassword
```

Create a recovery point with password protection.

```
symsr -b /boot -d /mnt/backup/sda1backup.v2i -cmp high
```

Create a recovery point with high compression.

```
symsr -b /boot -d /mnt/backup/sda1backup.v2i -desc "This backup was  
taken on July 25 2009 at 10:00AM"
```

Create a recovery point with an embedded recovery point description.

```
symsr -b /boot -d /mnt/backup/sda1backup.v2i -span 2
```

Create a recovery point that spans multiple files that are each 1000 MB. The chunk size is x 500 MB.

```
symsr -b / -d /mnt/backup -use-aes-encryption high -password  
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

Create a recovery point using AES-256 encryption. For high AES encryption, the password length must be at least thirty-two characters.

```
symsr -r system_000.v2i -d /dev/sda1
```

Restore the system partition back to its original location (/dev/sda1).

```
symsr -r system_000.v2i -d /dev/sda -segment 0
```

Restore the system partition back to its original location (/dev/sda1) on a new or empty disk.

```
symsr -r lvm2_000.v2i -d /dev/mapper/vg0-lv1
```

Restore an LVM device back to its original location (/dev/mapper/vg0-lv1).

```
symsr -v
```

See the information about the product name, version, and the license status.

```
symsr -vrp system_000.v2i
```

Verifies the integrity of the recovery point.

```
symsr -vrp system_000_s01.v2i
```

Verifies the integrity of the spanned recovery point and the recovery point chain.

Note: Some characters have special meanings and should not be used in recovery point file names and passwords. These characters include colons (:), back slashes (\), question marks (?), ampersand (&), asterix (*), and caret(^).

SEE ALSO

Man page for createSRD.

Man page for mount.v2i.

mount.v2i

`mount.v2i` – Mount a recovery point file for restoring files and folders. Used as:
`mount -t v2i <recoverypoint> <mountpoint> [-o options]`

DESCRIPTION

`mount.v2i` mounts a recovery point. It is usually invoked indirectly by the `mount(8)` command when using the `-t v2i` option. This command requires the FUSE driver and the 32-bit FUSE shared library (`libfuse.so.2`).

`mount -t v2i` is a command line utility for mounting a recovery point file on a Linux computer so you can restore files and folders.

Using the `mount -t v2i` command line utility involves specifying the image file name, the location where the recovery point will be mounted, and any desired options. You must use the `-o` flag when specifying options.

Use `umount` command to unmount a `.v2i` file that is mounted using the `mount -t v2i` command.

OPTION

`password=<password>`

If the recovery point is assigned a password, use this option to supply the password when mounting or unmounting the file.

If a password is not supplied for the password-protected recovery point, it prompts you for the password.

EXAMPLES

The following are usage examples for mounting a recovery point using `mount -t v2i` and unmounting a recovery point using `umount`.

```
mount -t v2i image.v2i /mnt/image
```

Mount a recovery point in the `/mnt/image` directory. Replace `image.v2i` with the name of the recovery point.

```
mount -t v2i image.v2i /mnt/image -o password=password
```

Mount a password-protected recovery point in the `/mnt/image` directory. Replace `image.v2i` with the name of the recovery point and `password` with the password.

```
umount /mnt/image
```

Unmount a recovery point in the `/mnt/image` directory.

SEE ALSO

Man page for createSRD.

Man page for symsr.