



Symantec Backup Exec™ System Recovery Server Edition (formerly Symantec LiveState™ Recovery)

Rapidly restore Windows systems anytime,
from anywhere, to virtually any device

Symantec Backup Exec System Recovery Server Edition (formerly Symantec LiveState Recovery)

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Symantec Backup Exec System Recovery Server Edition (formerly Symantec LiveState Recovery)

Executive summary

Symantec Backup Exec™ System Recovery Server Edition (formerly LiveState Recovery) combines the speed and reliability of disk-based, bare-metal Microsoft® Windows® system recovery with innovative technologies for hardware-independent restoration and lights-out operation. The result is unparalleled freedom to restore systems anytime, from anywhere, to virtually any device.

Administrators can now dramatically minimize downtime by rapidly recovering entire systems to dissimilar hardware platforms or even to virtual environments. When disaster strikes, you can quickly restore failed systems to a specified point-in-time without taking hours to manually rebuild and restore systems. You can also remotely restore unattended servers (including blade servers) in distributed locations from a Windows desktop, laptop or Pocket PC.

Today's server environments

In a typical server environment, you'll find the main servers, drive arrays (which may or may not be directly attached to their respective servers), and disk-based and tape-based backup servers.

(See Figure 1.)

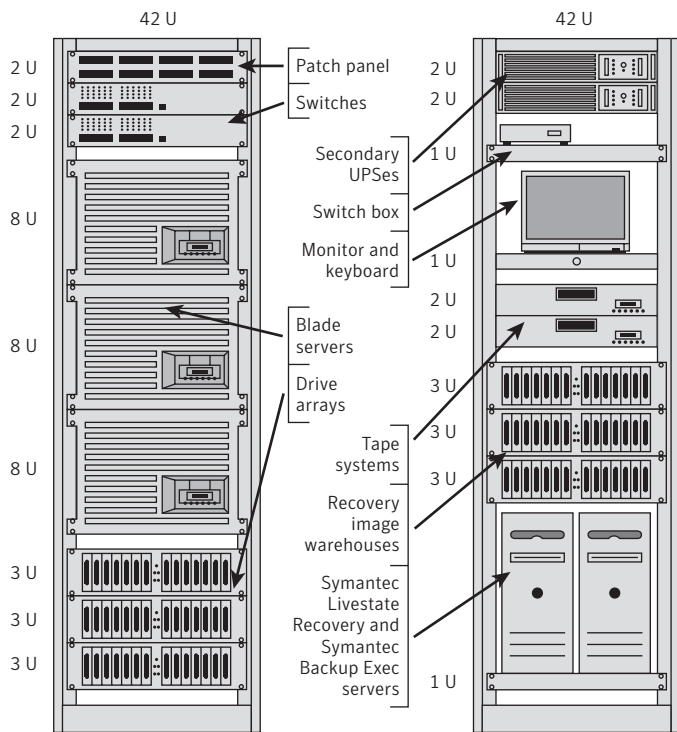


Figure 1. Typical server room configuration

Server storage devices hold organizational applications (and operating systems) in some partitions, and documents in others. Figure 2 shows the eight most common IT assets.

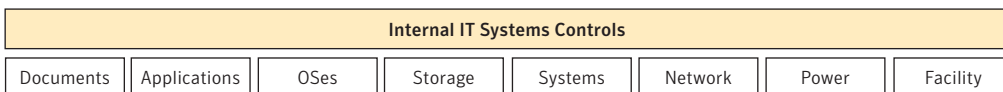


Figure 2. IT assets

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Each of those assets is subject to specific vulnerabilities and threats. End users can easily overwrite or delete important documents. Applications need updating. Operating systems need to be patched. Malicious code can penetrate your defenses and attack your data, applications, and operating systems. It can even get backed up if you don't find it before the next backup cycle. Storage systems have a limited lifetime before they wear out and have to be replaced. A hard drive fails, or hardware needs upgrading, and you don't have the same hardware to restore it to. Your whole facility can be shut down due to a biohazard or natural disaster. An important user (whose work needs to be backed up frequently) is added to the network without your being notified.

While all those potential problems are threatening your servers, IT personnel are usually too busy with other emergencies to spot incipient server issues. That's why it's important to have a fast, reliable system restoration solution in place.

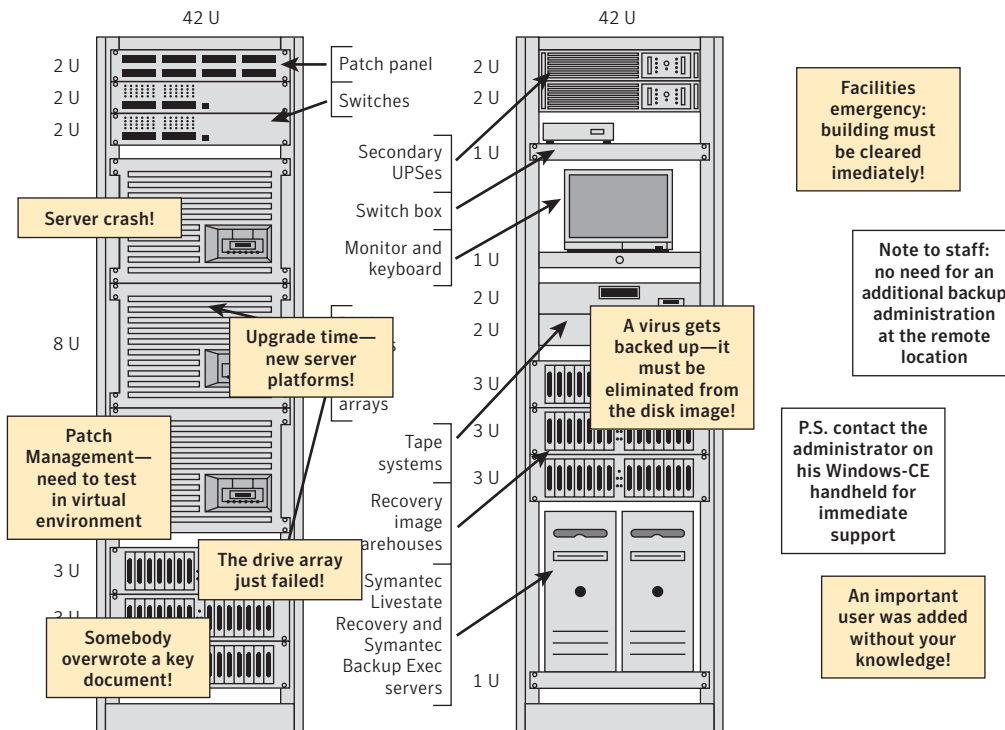


Figure 3. Common threats and vulnerabilities

To combat today's threats and vulnerabilities, system recovery software has to be much smarter than it used to be.

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Unparalleled freedom in system restoration

Backup Exec System Recovery Server Edition changes the way organizations look at system recovery by allowing them to restore systems quickly, easily, and reliably—without the need to maintain duplicate hardware environments or reinstall operating systems. In the case of remote systems, it even eliminates the need for hands-on interaction at the system being restored. Administrators can now restore systems anytime, from anywhere, to virtually any device.

Backup Exec System Recovery enables organizations to meet stricter recovery time objectives (RTOs) and improve IT service levels agreements (SLAs). Administrators can perform bare-metal restorations in minutes, even if the restoration is to dissimilar hardware. And they can roll back failed systems to an exact point-in-time stable state, eliminating the hours of downtime usually experienced with traditional recovery methods.

A Symantec Backup Exec System Recovery Desktop Edition and Windows Small Business Server Edition are also available.

Backup Exec System Recovery: Rapid, reliable bare-metal restoration

Backup Exec System Recovery delivers a rapid, reliable approach to bare-metal recovery of critical systems, whether the problem has been caused by operating system corruption, catastrophic failures, viruses, worms, user errors, or complete hardware failure.

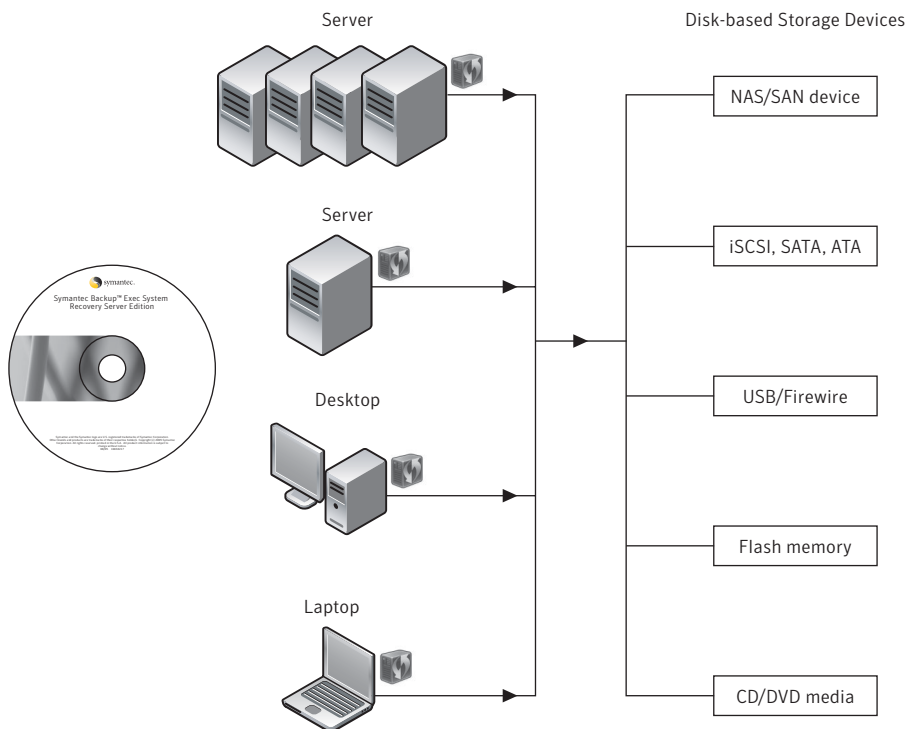


Figure 4. Supported media

Backup Exec System Recovery can store recovery points on almost any type of disk medium. The Symantec Recovery Disk (SRD) makes it easy to connect to storage media and rapidly recover Windows servers, desktops, and laptops.

No interruption of day-to-day work

Using hot snapshot technology, Backup Exec System Recovery captures and encapsulates all server files and configurations in one easy-to-manage recovery point. You can create full or incremental recovery points throughout the day—without interrupting user productivity or application usage.

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One-step recovery

When a system fails, Backup Exec System Recovery can restore it completely, eliminating the need for administrators to reinstall, reconfigure, and repatch operating systems, applications, system settings or personalities. This comprehensive, one-step restoration greatly improves recovery speeds, enhancing system availability and helping organizations comply with government regulations regarding risk management and information integrity.

Event-driven recovery points

The automatic recovery points in Backup Exec System Recovery aren't limited to time-based backups as is the case with many other recovery tools. Backup Exec System Recovery can automatically create system recovery points when events occur that could threaten a server's stability. This capability greatly enhances the organization's automation of change management efforts. Such change management events include

- Application installation (using the setup.exe, MSIEXEC, or install.exe commands)
- Storage changes (triggered at a defined change in megabytes)
- User logons and logoffs

Because many of those events take place during normal business hours, it's important to have a recovery solution that can capture full or incremental recovery points in real time, without affecting user productivity. With Backup Exec System Recovery, backups on high-end systems can reach up to 3 gigabytes per minute (with the appropriate infrastructure) without disruptions to live system performance.

Central alerts

In case anything goes wrong with the backup process, Backup Exec System Recovery can send you alerts. Using SNMP services, Backup Exec System Recovery alerts can be translated into SNMP traps, assigning a unique object ID for each type (information, warning, error) that will be sent to the IP address as defined in the SNMP MIB and service structure.

This integration allows administrators to tie the backup monitoring and reporting process into industry-standard applications such as Neon's LANsurveyor for small and medium-sized networks, or HP's OpenView™ for large-scale networks.

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Improved flexibility, ease of use, and performance

Additional enhancements in Backup Exec System Recovery include:

- Enhanced support for recovering Windows Domain Controllers
- Network bandwidth throttling
- Ability to perform an unattended PXE-boot of the recovery environment (may require additional professional services)
- Automatic recovery point naming

Restore Anyware capability: Hardware-independent restoration

The Symantec Backup Exec System Recovery Restore Anyware capability reduces recovery time and saves significant hardware investment by eliminating the need to recover systems to the identical hardware platform where recovery points were created. It provides the advantages of replica sites without the need to maintain replica sites.

When an older system fails, must be returned on lease, or needs to be repurposed for another role, Restore Anyware makes the migration a simple process. The exact configuration of the existing system can be replicated on new hardware, without the need to reinstall and reconfigure operating systems, applications, system settings, and data.

The architecture of the Restore Anyware capability also supports multiple parallel backups and restores, further accelerating the time to restore. Administrators can even perform system restorations even if there is no hardware available, by temporarily restoring recovery points to virtual environments in VMWare. Restore Anyware also provides an accurate test bed for change management without impacting production systems.

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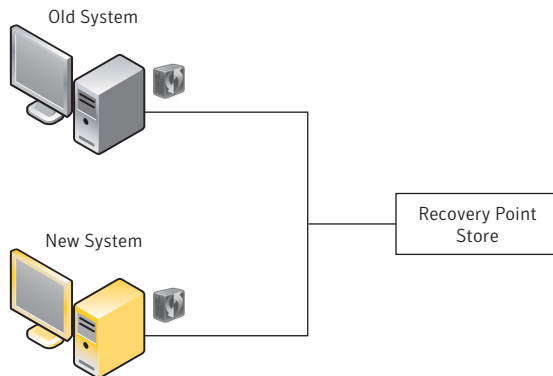


Figure 5. Hardware independence

With the Restore Anyware capability, a recovery point can easily be restored to dissimilar hardware.

Fast, predictable recovery

With a traditional bare-metal restore to dissimilar hardware, manual collection and maintenance of the media and configuration files for such a boot environment can be daunting at best. Each server has a potentially unique configuration, and records of the configuration must be up to date in order to perform an exact restoration. While system environment variables do not form large datasets, they can and do exceed the capabilities of most ad hoc manual management techniques.

The Symantec Recovery Disk already contains the drivers necessary to restore on dissimilar hardware. In the event that drivers are needed that are not on the CD, the user is prompted to provide them during the Restore Anyware process.

Restore Anyware not only greatly reduces recovery time, but also makes recovery predictable and consistent, because there is no need to address all the variables in a traditional component-by-component recovery. In addition, the Restore Anyware capability helps organizations save significant hardware investments by eliminating the need to maintain duplicate hardware environments for recovery purposes.

Easy mass restoration

In any mass restore operation following a lost facility, new computers are either rented or quick-shipped to the recovery site. Prior to Backup Exec System Recovery, a multistep restoration and personalization process had to take place to bring back not only the organization's common operating environment, but also specific setups, configurations, fonts, templates, and user settings.

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The Restore Anywhere capability permits one-step restoration of all information that was captured in the most recent recovery point image for each computer. There is no need for multistep restoration even when changing computer types, such as from a notebook to a desktop, or a single-processor server to a multiprocessor server. And only a single reboot is required after the restoration is complete.

Conversion between physical and virtual systems

There are multiple reasons to convert physical systems to virtual systems. In some cases, hardware can be used more efficiently by hosting multiple virtual server environments on a single physical server. When disaster strikes, there may not be enough hardware to restore each system to its own device. Additionally, virtual systems can be used as a test bed for change management to make sure that changes will not have a negative impact on production physical systems.

For these reasons and more, the Restore Anywhere capability includes a limited VMware license and a conversion tool to enable physical to virtual conversions and vice versa.

Recovery point virus protection

Most organizations have unknowingly backed up a computer or volume that had an active virus. With Backup Exec System Recovery, scripted virus checking, virus removal, and recovery point recreation can be added to the recovery point creation process. By integrating Backup Exec System Recovery with a scriptable antivirus application such as Symantec AntiVirus™, you can ensure that your recovery points are tested for malicious code of any type.

If malicious code is found, you can use the included VMWare GSX Server to convert the recovery point image to a VMware images (VMDK file), make the necessary repairs, then save the corrected image back out as a Backup Exec System Recovery image. By running the test (and fixing any problems) on the recovery point, you remove the overhead burden caused by an in-depth scan from the active production server, onto the recovery point warehouse where it won't cause a business slowdown.

LightsOut Restore Capability: Cost-effective remote recovery

The Symantec Backup Exec System Recovery LightsOut Restore capability eliminates the need for remote onsite IT support by allowing recovery of systems in a remote location or a locked environment (where physical access is not possible, or where blade servers are being used).

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The Backup Exec System Recovery LightsOut Restore capability builds on the functionality of the Symantec Recovery Disk (SRD) by installing it on the hard drive of each server. A remote administrator can then boot a server using a standard lights-out controller to access the recovery environment, all remotely. (LightsOut requires an out-of-band controller/baseboard management controller, such as an HP RiLO or Dell DRAC.)

When it's installed, LightsOut Restore offers the option of automatically loading the pcAnywhere™ thin host that's built into the recovery environment. This enables a remote administrator to conduct bare-metal restorations simply by connecting via a secure remotely controlled interface.

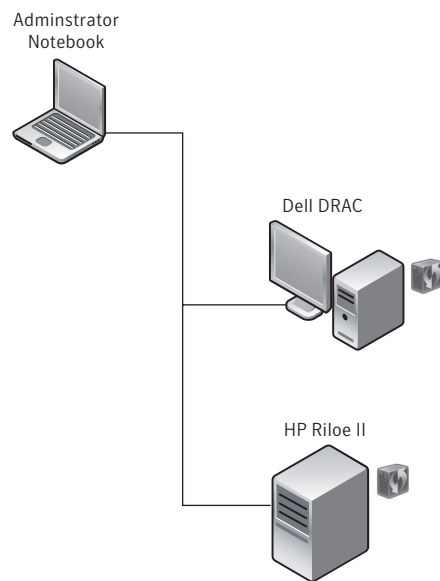


Figure 6. Remote bare-metal restoration

The LightsOut Restore capability enables server administrators to perform bare-metal server restorations remotely.

For example, if a new patch or application causes system corruption, an administrator can perform a bare metal restore without being physically at the server. The system can easily be rolled back to a previous recovery point.

LightsOut Restore is also useful for performing local recoveries, because you don't have to locate the product CD that includes the Symantec Recovery Disk (SRD); you can simply use the recovery environment that is already on the server. Additional options are available for delivering the SRD to remote systems. With Symantec professional services, the SRD can even be delivered via a PXE package.

Conclusion: Powerful System Recovery

Backup Exec System Recovery Server Edition provides powerful system recovery capabilities to organizations of any size. It allows bare-metal restorations to be performed in minutes. The Restore Anywhere capability reduces recovery time and saves significant hardware investment by eliminating the need to recover systems to the identical hardware platform where recovery points were created. Additionally, the LightsOut Restore capability eliminates the need for remote onsite IT support. In short, this powerful solution gives today's administrator unprecedented power in meeting ambitious recovery time objectives and service level agreements.

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Appendix: New and enhanced features

Backup Exec System Recovery Server Edition, Desktop Edition, and Windows Small Business Server Edition

Feature	Description	Benefit
Network Bandwidth Throttling	IT Administrators can set, on a per machine basis, a threshold on how much data to communicate across the network when creating recovery points and storing them to network locations. With network bandwidth throttling, administrators can generate multiple recovery points to network locations simultaneously, without overloading the network or the networked location (such as a NAS box). When there are bandwidth constraints or bottlenecks, they can easily create recovery points to networked locations using this feature.	Reduces network traffic when systems are creating a recovery point to a network storage device.
Windows Domain Controller restoration to synchronize with other domain controllers	This feature allows a domain controller image to be restored in such a way that it allows the copy of the Active Directory to be updated by the other controllers in the domain. At image creation, the Active Directory token data is included in the image within a file. At restoration, the Active Directory token data is restored to the registry. Users are also instructed within documentation to enter the Active Directory Recovery Environment option if they are doing an authoritative restoration to the Active Directory.	Provides quick, painless restoration of domain controllers and trusted systems.
Generation of SNMP Traps	Using Windows SNMP services, Backup Exec System Recovery alerts can be translated into SNMP traps that will be sent to the IP address as defined in the Windows SNMP service. A unique Object ID is defined for each of the major alert types: Error, Warning, and Information.	Administrators can use existing network management consoles to discover recovery point status.
Image naming	By default, image names include the name of the machine on which they were created.	Makes it easier to determine recovery points for specific machines when several are backed up to the same location.
PXE-boot recovery disk with additional professional services	Because the product recovery disk is built on WinPE 2005 (v1.6), Symantec's professional services organization can provide the ability to configure systems to boot over the network through the recovery environment. (Professional services are sold separately.)	Allows unattended remote bare metal restoration.
Enhanced Tray Icon	Right-clicking the tray icon provides quick and easy access to product features. Administrators can also now configure the icon (hide/unhide, or only show errors).	Visual symbol provides immediate evidence of device protection and fast access to the most commonly used features.

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Symantec Backup Exec System Recovery Restore Anyware Capability

Feature	Description	Benefit
Dissimilar hardware restoration	Combines volume-based hot imaging with the ability to restore to different hardware platforms (including to a dissimilar storage controller, kernel, and hardware abstraction layer) on the fly. Allows users to migrate or repurpose hardware environments in minutes. A legacy machine whose capacity is constantly being overtaxed could have its image swapped with an underutilized high-powered server within a matter of minutes.	Reduces recovery times and saves significant hardware investments.
Convert system recovery images into virtual machines and back again	Using the included 90-day trial version of VMWare GSX Server, users can convert virtual volume images from Backup Exec System Recovery into VMDK files and back again. Organizations can restore Backup Exec System Recovery images to virtual environments to replace physical environments or to test restoration options. They can also make changes to the image or scan it for viruses, then save the corrected image out to a file format that Backup Exec System Recovery can use to restore it to a physical system.	Provides greater flexibility to administrators in managing their recovery environments. Improves change management processes by allowing administrators to convert an image into a virtual environment so that they can test patches, application installations, and so on before applying them to live systems.

Symantec Backup Exec System Recovery LightsOut Restore Capability (Server solutions only)

Feature	Description	Benefit
Unattended remote restorations	Places Symantec Recovery Disk into a subdirectory on the boot volume. Includes an option to permanently define an IP address and determine whether the pcAnywhere thin host is turned on or off by default (thin host included, Remote software sold separately). Adds the option to boot from this location to the boot environment (boot.ini). Administrators can use an independent access method to change the boot order, and can define whether the system should be restored through the command-line, or remotely via the included pcAnywhere thin host. With this feature installed, administrators can also add additional drivers directly to the Symantec Recovery Disk files located in the boot volume subdirectory.	Eliminates the need for travel or onsite assistance to remote devices or headless servers in data centers by leveraging baseboard management controllers on standard servers (such as the Dell Remote Access Card or the HP Integrated Lights-Out option). With the ability to modify the Symantec Recovery Disk environment, this option offers more flexibility for easily recovering systems with the latest hardware devices (NIC cards, storage controllers, and so on), and eliminates the need to build a new recovery CD.

About Symantec

Symantec is the world leader in providing solutions to help individuals and enterprises assure the security, availability, and integrity of their information.

Headquartered in Cupertino, Calif., Symantec has operations in more than 40 countries.

More information is available at www.symantec.com.

For specific country offices and contact numbers, please visit our Web site. For product information in the U.S., call toll-free 1 (800) 745 6054.

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