



## Converging System and Data Protection

How Symantec Backup Exec™ System Recovery (formerly Symantec LiveState™ Recovery) and Symantec Backup Exec™ provide combined support for information integrity

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## **Introduction**

Information drives your business. Everything about your company—product development, sales, relationship management, marketing, competitive analysis, investor relations, finance, human resources, and so on—is managed through the information unique to your business. The success and viability of your business hinge on your ability to safeguard that information and keep it available throughout your enterprise at all times; in other words, to protect the integrity of your vital business information.

Disaster recovery plays a vital role in keeping information safe and available. However, the exponential growth rate of data volumes, shrinking backup windows, the demand for more effective change management, and the need for fast, reliable recovery create stiff challenges for disaster recovery efforts. Today's solutions must offer both best-of-breed data protection and best-of-breed system recovery.

An essential part of such a solution is granular data protection. Businesses can't afford to waste valuable time and resources restoring a complete data volume or database when all a user needs is a single file or email message. Likewise, with system downtime costing anywhere between \$14,000 and \$6,450,000 per hour (Source: Contingency Planning Research), extended downtime can mean the end of a business. To protect your financial viability, you need to be able perform data restoration and bare metal system recoveries more efficiently and much faster than ever before.

Symantec provides a balanced approach to information availability and security in which data and systems are kept protected, yet remain accessible wherever, whenever, and to whomever your business needs dictate. From resilience against threats to efficient restoration of normal operations, Symantec can help keep your business up, running, and growing no matter what happens.

### **Two products, one solution**

To enable you to converge your critical information integrity processes (information availability and information security), Symantec has brought together leading data protection and Windows® system recovery solutions: Symantec Backup Exec™ and Symantec Backup Exec System Recovery (formerly LiveState Recovery). Together, these solutions combine the benefits of disk-to-disk-to-tape protection with those of rapid, reliable system and data recovery.

### **Symantec Backup Exec: Continuous data protection**

Offering industry-leading products for both disk-based and tape-based data protection, Backup Exec (formerly from Veritas) has become the gold standard in providing comprehensive—yet granular—data protection in a cost-effective, simple, and flexible manner. It helps ensure that your data is always protected and always available by providing truly continuous data protection.

Whether your data is stored on desktops, laptops, file servers, email servers, or database servers, Backup Exec provides comprehensive, cost-effective backup and recovery.

With centralized, scalable administration, Backup Exec provides a complete family of high-performance agents and options that allow you to protect data in Microsoft® Exchange, SQL, SharePoint® Portal Server, and other database applications, and to provide continuous protection for Windows file servers (new with Backup Exec version 10d).

Through an intuitive interface, the Backup Exec Suite greatly simplifies the installation and management of backup and remote servers. Backup Exec reduces overall administration costs by providing the first web-based end user restores, allowing users to retrieve their own files without contacting IT. Centralized administration provides scalable management of distributed servers. Backup Exec features easy-to-use wizards that simplify data protection and recovery procedures for any level user and any size network.

### **Backup Exec System Recovery (formerly LiveState Recovery):**

#### **Versatile system recovery**

As important as data recovery is, it isn't sufficient to help your business resume operations if there has been physical corruption of a system or application. This could be a simple hardware failure, or it could be a disaster such as a fire or flood. Manually rebuilding systems from bare metal can take hours or even days.

Backup Exec System Recovery combines the speed and reliability of disk-based, bare-metal Windows system recovery with revolutionary technologies for hardware-independent restoration and lights-out operation. Backup Exec System Recovery allows organizations to perform a full

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system recovery in minutes, and to create real-time system recovery points without disrupting accessibility. It dramatically minimizes downtime for critical IT services, and enables you to remotely restore unattended servers in distributed locations—or even blade servers—from a Windows desktop, laptop, or Pocket PC.

Backup Exec System Recovery changes the way organizations look at system recovery by eliminating the need to recover systems to the identical hardware platform where recovery points were originally created. Because you no longer have to maintain identical hardware environments, you can save significantly on your hardware investments. When your older hardware environments fail or need to be replaced, you can restore those systems to newer and more updated hardware without having to reinstall and reconfigure operating systems, applications, and system settings. Backup Exec System Recovery gives you unparalleled freedom to restore Windows systems anytime, from anywhere, to virtually any device.

### **Combining Backup Exec and Backup Exec System Recovery (formerly LiveState Recovery)**

Every business must deal with its own unique information protection and disaster recovery challenges. However, organizations of all sizes face similar issues when it comes to keeping data and systems protected and available. For example, a small business with only a few servers relies on them to keep its employees connected to the applications, printers, and data they share. If a server goes down, access to those shared resources is lost until the server can be brought back online. Similarly, larger organizations rely on their mission-critical servers to run e-commerce, development, and shared resources 24x7.

The combination of Backup Exec and Backup Exec System Recovery delivers leading Windows data protection and system recovery. By deploying both products, departments or organizations of any size can realize immediate benefits in shorter backup times, faster system recovery, and reduced data loss. As your business grows and its requirements change, you can cost-effectively upgrade, add options, and extend the capabilities of these versatile products.

### **Simplified management**

Both Backup Exec and Backup Exec System Recovery provide intuitive, feature-rich management interfaces that allow you to automate the capture of Windows system recovery points and the backup of user and application data for a single server.

With the Backup Exec Continuous Protection Server, administrators can schedule how frequently data recovery points should be created. You can also retain specific recovery points for different time periods. For example, you may want to retain hourly recovery points for a one-week period, daily recovery points for prior weeks, and perhaps weekly or monthly recovery points for even older data. You can even automate the disk-to-tape staging process, scheduling the movement of disk-based backups to tape for long-term retention and disaster recovery.

Unlike most other disaster recovery solutions, Backup Exec and Backup Exec System Recovery do not disrupt data access or application usage, allowing you to schedule backups and recovery points periodically throughout the day. This helps ensure that you always have a recent snapshot of your system and data available.

Both Backup Exec and Backup Exec System Recovery can be fully automated, and each product can call functions of the other through scripting interfaces for integration between the two solutions. For example, using Backup Exec System Recovery, not only can you schedule system recovery points for your Windows server, you can also direct that upon completion, Backup Exec will capture user and application data from that server. Alternatively, you can use Backup Exec to schedule your data backups, and have Backup Exec System Recovery issue a request to Backup Exec to capture system recovery points onto tape. Regardless of which method you choose, Symantec products eliminate the need to separately manage the protection of your Windows server and of your user and application data.

### **Flexible protection options**

Not only do Backup Exec and Backup Exec System Recovery provide best-in-class disk-based backup and recovery, they also let you take advantage of the long-term archival and offsite storage benefits offered by tape backup. That gives you the flexibility to choose a protection scheme that best fits your needs and requirements, including:

- Disk-to-tape
- Disk-to-disk
- Disk-to-disk-to-tape

### **Disk-to-tape backup**

Many servers are configured with a two-volume structure. In a small server environment, that means Windows system files are typically stored on the server's "C" drive, while users shares and data are usually stored on its "D" drive.

According to the schedule you set, Backup Exec System Recovery will use its hot snapshot technology to capture and encapsulate all server system files and configurations on the "C" drive in one easy-to-manage recovery point image, then store it directly on the backup server. The recovery point image preserves the entire operating state of the system, including open files, hidden files, encrypted files, the operating system, service packs, system settings, registry information, and any other data it finds on the system volume. As your server's system files change throughout the day, Backup Exec System Recovery can automatically track and protect those changes by creating full or incremental point-in-time recovery points of your system volume—without interrupting user productivity.

Upon completion of a recovery point capture, Backup Exec can initiate a backup of all the user data residing on the data volume and store it to tape. It can also back up the system recovery point images created by Backup Exec System Recovery and store those to tape as well.

The proactive management tools in Backup Exec make it easy to ensure the reliability of your tape backups. For example, Job Test Run checks available tape capacity, the credentials for systems being backed up, and other criteria to identify potential problems that can cause job failures. Other reliability features that assist in maintaining data integrity with high-speed

verification include Cyclical Redundancy Check (CRC), Data Verify, and Database Consistency Checking. Through its self-healing capabilities, Backup Exec lets you set thresholds to fail jobs that have stalled, and recovers those jobs using customizable error-handling rules. The rules allow you to specify the number of times that stalled, failed, or recovered jobs are retried, as well as the interval between retries.

Backup Exec also maintains an easy-to-navigate catalog of everything you have written to tape. So if you ever experience a data loss, your data can be recovered easily. If you encounter operating system problems such as file corruption or system conflicts, you can easily restore the system from the recovery points stored on your backup server, bringing the failed server to the last known stable operating system state in a manner of minutes. Both user data and system recovery points can easily be restored from tape as well.

### **Disk-to-disk backup**

Similar to disk-to-tape recovery, a disk-to-disk backup and recovery scheme typically requires the use of a backup server. However, by combining Symantec products, not only can the captured system recovery points of your servers be stored directly on the backup server's disk storage, so can the data backed up by Symantec Backup Exec. By taking advantage of the disk-to-disk backup capabilities in Backup Exec and Backup Exec System Recovery, you can leverage the speed of disk-to-disk technology for fast backups and restores of your user data and systems.

Disk-to-disk backup allows you to run multiple backup jobs concurrently to disk-based targets, further enhancing backup throughput.

With the Continuous Protection Server and Continuous Protection Agent for file servers available with Symantec Backup Exec, you need only perform one initial full backup. From then on, Backup Exec automatically backs up only incremental changes to user data as it is modified. Backups are created on a schedule of your choice, such as hourly, daily or weekly. Continuous Data Protection greatly simplifies the management of the backup schedules for user data while ensuring that vital files are protected.

### **Disk-to-disk-to-tape backup**

Another option is combining Backup Exec and Backup Exec System Recovery to obtain the fast backup and recovery benefits of disk-to-disk technology as well as the long-term archival and offsite storage benefits of tape. As described in the disk-to-disk scenario above, you can use the disk-based data backups of Backup Exec and the system recovery points of Backup Exec System Recovery for near-line recovery of systems or data. You can add another level of redundancy and reliability by also backing up those recovery points and data images to tape.

Whether you have a few servers or dozens, by implementing a Symantec disk-to-disk-to-tape backup and restore strategy, you can significantly improve your first line of defense. You'll also be able to take advantage of the following multistage backup benefits:

- Fast disk backup of both data and systems to combat shrinking backup windows
- Full and incremental hot backups to disk of system information, applications, and user data
- Long term tape archival
- Offsite storage
- Streaming to tape without image multiplexing
- Faster restores of both data and systems from disk based images
- No tape device latency and non-multiplexed images
- Ability to stage backups on disk for a defined period of time before moving them to tape
- Higher backup and recovery reliability

### **Scaling to meet business growth**

As your business grows, the features and capabilities of Backup Exec and Backup Exec System Recovery can scale to meet its growing disaster recovery needs.

An increase in the size of your business usually results not only in more data and more network user shares, but also in the addition of shared applications. Both factors generally require an increase in the number of servers you maintain.

For example, your organization might have one server dedicated to hosting a Microsoft Exchange server, another to host an Oracle® database, a third to run a custom application for managing your customers and serve as a repository for your users' shared data, a fourth to act as your domain controller, and a fifth one dedicated to storing data backups and system recovery points. In such a complex server environment, Backup Exec and Backup Exec System Recovery give you the same quick, simple, and reliable backup and restore functionality you might have thought was only possible in smaller environments.

With a larger IT landscape, you face even greater challenges in your efforts to protect the integrity and availability of your data and systems. Backup Exec and Backup Exec System Recovery combine to answer the questions: How do I back up my critical business applications if I can't afford to take them offline? What do I do if the hardware for my domain controller fails and no one can authenticate to the network? How do I leverage my multiple servers to achieve higher levels of reliability and redundancy, and to enhance my ability to rapidly restore systems and data?

### **Additional layers of protection**

With multiple servers in your environment, you have the ability to create greater levels of redundancy to protect your system information and data. You can store recovery points and data backups for one server on different servers. You can even set up a media server as a dedicated repository for all of your data backups and system recovery points.

A dedicated Backup Exec media server simplifies implementation of a disk-to-disk-to-tape scenario, where for near-term archival, you store your data backups and system recovery points on the media server's disk storage system (SANs, NAS, or RAID devices). Then, you can schedule Backup Exec to move those data backups and system recovery points to tape for long-term archival.

You can also protect the operating state of your media server by using Backup Exec System Recovery to capture recovery points for the server's system files. You can add an extra layer of redundancy by storing the recovery points for the media server on a separate server. With all these different layers of redundancy, you can quickly restore any of your user data or system information from disk or tape.

### **Protecting business-critical applications**

Protecting the critical applications running on your servers has two main elements: protecting your applications' system information, and protecting the ever-changing user data in your applications' data stores.

As mentioned before, when Backup Exec System Recovery captures recovery points for your server's system volume, it preserves a precise image of that volume. That image can include your applications' in-use executables, hidden files, encrypted files, configuration information, registry entries, and any other application-related information stored on the system volume. You can capture the recovery points for your applications' system information as often as every hour. If your system should fail, Backup Exec System Recovery makes it easy to return application system files to their exact working state in minutes.

Backup Exec can protect the information in your application data stores. It enables you to back up that data without adversely affecting application performance or user productivity. If a problem occurs, Backup Exec can quickly restore the data to its last known good state. Backup Exec also lets you perform granular recovery of application data. That can dramatically reduce the recovery time when only a subset of the full data store is needed.

One of the biggest challenges IT personnel face is trying to back up an application's database while users are constantly updating or adding data. If you take the application offline to back it up during business hours, productivity comes to a halt because users can't get access to the services and information they need to do their jobs. The enormous size of most application databases often makes it impossible to back them up after hours without running into the start of the next business day. For 24x7 global businesses, the term "after hours" doesn't even exist. Also, after-hours backups don't provide frequent enough backups to reflect the most recent database changes if a failure occurs during the workday.

You can perform online or "hot" backups of your application database to keep backups current during the day, but many online backup solutions adversely affect application performance. Additionally, the complexity of their restoration processes make it difficult to bring an application that has failed back to a good working state in a timely manner.

To address the need for timely, online backups that don't degrade user productivity, Symantec offers a complete family of optional application agents for Symantec Backup Exec. These agents also allow you to restore application data stores quickly and easily. With the appropriate options installed, Backup Exec performs incremental backups on your application data the instant a change is made. So if you ever need to restore data, you'll always have the most recent changes protected and ready to use.

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Backup Exec offers online backup options for the following applications:

- **Microsoft Exchange Server.** Protects vital Exchange Server 5.5, 2000, and 2003 data while the application is online. This agent provides full or embedded objects, attributes, and all Microsoft Outlook® components. It can also perform mailbox and message-level backups of the Exchange server. Administrators can configure selective mailboxes for backup and recovery. The agent can automatically mount the Exchange database upon completion of a restore job, which ensures that a valid database is brought back online quickly.
- **Microsoft SharePoint Portal Server.** Safeguards a SharePoint Portal Server 2001 or 2003 corporate knowledgebase system with fast, reliable online data protection and recovery. This agent automates the protection of even more complex SharePoint Portal Server Farm configurations, while enabling recovery of individual servers and file groups in the Server Farm configuration.
- **Lotus Domino®.** Integrates comprehensive data protection of vital Lotus Domino 5.x and 6.x messaging and collaboration databases within daily backup activities.
- **Microsoft SQL Server.** Provides granular protection of SQL Server 7.0 and SQL Server 2000 applications on 32 and 64-bit systems, down to the individual database or file group.
- **Oracle on Windows Servers.** Integrates non-disruptive data protection for business-critical Oracle 10g, 9i, 8i, and 8.x databases. This agent can protect individual table spaces or a complete application/database backup, and safeguard archived redo logs and control files, without ever taking them offline.
- **SAP.** Provides SAP-certified data protection for business-critical SAP applications while the application is still online and in use.
- **Microsoft Data Protection Manager.** Provides online data protection for the application and its underlying SQL database.

The list of applications that Backup Exec supports for online backup continues to grow. Should you have applications that are not on the list, such as in-house or custom-developed applications, you can protect their database configurations by using Backup Exec System Recovery to momentarily freeze the database and take a snapshot of it. With this method, the database is only offline for a brief moment. The database is then quickly brought back online, and Backup Exec System Recovery writes the recovery points from the snapshot to disk without affecting application performance.

### **Restoring critical servers quickly**

When a critical server fails, you need get it back online immediately—even if you've had to replace a hard drive or the entire server. Backup Exec System Recovery enables you to perform bare-metal recoveries in a matter of minutes. Simply put the Backup Exec System Recovery CD in the server's drive, connect to the media server, and restore from the latest recovery points.

Backup Exec System Recovery even lets you restore system recovery points to dissimilar hardware. That means you no longer have to worry about making sure that the hardware on your new server matches the hardware of the old device. Just initiate the recovery process, and Backup Exec System Recovery automatically detects and installs the appropriate hardware drivers needed for that system.

### **Simplifying complex disaster recovery**

To further simplify disaster recovery efforts in larger, more complex environments, Symantec offers the complete Backup Exec Suite.

When you have twenty or more servers, you'll want to add even more layers of redundancy and management tools to simplify setup and configuration and improve the availability of your network resources. For instance, instead of having a single domain controller, Exchange server, or Oracle server, you should have several of each. Such an approach will ensure that if one of these critical servers goes down, your users will still have access to the applications and resources they need. Having one server fail may degrade performance, but it probably won't bring productivity to a halt. However, you'll still need the effective protection and rapid restore capabilities that Backup Exec and Backup Exec System Recovery can provide for your user data, application data, and system information.

In addition to having redundant domain controllers and application servers, to achieve the highest levels of data and system protection you'll also want to have redundant media servers for storing your data backups and system recovery points.

The Central Admin Server Option in Backup Exec facilitates your ability to synchronize and manage the data backups on your Backup Exec media servers. It provides a central point of administration and control for job processing, and load balancing, enabling you to:

- Manage data protection operations across multiple Backup Exec media servers.
- Store catalogs, device and media information, policies, jobs and selection lists for your entire Backup Exec environment.

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If you add the power of Replication Exec™ to your data protection efforts, you can take advantage of continuous protection of the application data in your remote offices while reducing costs and minimizing your IT workload. Replication Exec helps you eliminate the hassle and expense of tape-based backups at remote sites by copying data from remote office servers to a central location at your corporate office where you can reliably back up and store your data. Centralizing backups minimizes the costs associated with having to invest in hardware, media, and administration at each of your remote offices.

The tight integration of Replication Exec with Backup Exec lets you monitor company-wide data protection from one console. You can even leverage Replication Exec to replicate Windows system recovery points captured with Backup Exec System Recovery. This lets you copy the system recovery points stored on one media server to multiple media servers, providing additional layers of redundancy to protect your Windows systems.

### Conclusion

As the world leader in providing solutions to help individuals and organizations assure the security, availability, and integrity of their information, Symantec offers industry-leading protection and recovery solutions for your critical business systems and data.

By bringing together the best of both worlds with Backup Exec and Backup Exec System Recovery, Symantec enables you to enjoy the benefits of:

- Rapid disk-to-disk backup and recovery for your critical systems, applications, and user data
- Continuous data, systems, and application protection and availability from a single vendor
- Exceptional reliability levels for protecting and recovering systems and data
- Enables compliance by providing the ability to recover quickly
- Simplified protection and recovery of complex systems and data environments
- Multistage backups (disk-to-disk-to tape)

Backup Exec and Backup Exec System Recovery work together to help you keep your business up, running, and growing, no matter what happens.

## 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](http://www.symantec.com).

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