

Accelerating Dell PowerEdge Server Migration with Symantec Backup Exec System Recovery

This article discusses some of the ways system administrators can use Symantec® Backup Exec™ System Recovery software for migration and deployment of new hardware into IT environments with previous-generation system architectures.

BY CHARLES BUTLER AND RICHARD GOODWIN

Related Categories:

Backup

Backup, recovery, and archiving (BURA)

Business continuity

Disaster recovery

Storage software

Symantec

Visit www.dell.com/powersolutions for the complete category index.

The explosive growth of computing requirements across enterprises that use Microsoft® Windows® operating systems has increased hardware and processing demands on systems deployed to meet these requirements. Often the best way for administrators to cope with these demands is to have an ongoing process of migrating to and deploying the latest technology to relieve the strain placed on previous-generation system architectures. Although obtaining a new system that incorporates the most advanced hardware is a simple process, the actual deployment and integration with existing architecture pose a more complex problem: the difficult and time-consuming process of migrating the OS and software environment to the new hardware.

Symantec Backup Exec System Recovery Server Edition—with its Restore Anyware™ feature—allows administrators to quickly and easily create a complete system image and deploy it on a new system with dissimilar hardware.

Traditional server migration

To understand the power of Symantec Backup Exec System Recovery, administrators should first understand the tedious process of traditional server migration. This process requires backing up system data, configuring the new system hardware (including all new hardware drivers and peripheral device support), installing and updating the OS, installing and updating applications, and finally restoring the backup data from the old system onto the new system:

1. **Backing up system data.** Most environments include some method for data protection using either disk or tape as backup targets. Backups are run based on an optimal schedule to help protect system and application data. Administrators should close all applications running on the system and create a full backup (system image) of the system

to be replaced immediately before that system is taken offline to help ensure that the most current data on the system is migrated.

2. **Configuring the new system hardware.** This process typically involves customizing system BIOS settings and creating and initializing RAID configurations. In addition, the administrator must ensure that the appropriate low-level drivers, such as mass storage controllers, are available and working properly, and must be prepared with all the requisite high-level drivers to support the various hardware components needed by the OS.
3. **Installing and updating the OS.** This process is typically time-consuming, because administrators must locate and install the required OS updates and the latest versions of hardware drivers. Following a successful OS installation, administrators should configure the various system-specific configurations such as networking and security details.
4. **Installing and updating applications.** Following the OS installation, administrators must reload any system-specific software and install all applicable software updates. In addition, they must configure all of the custom application-specific settings, assuming the necessary records have been kept of all the configuration settings needed by each application on the previous system.
5. **Restoring the backup data.** The final step is restoring system and application data using traditional backup and recovery software. This process first involves cataloging the backup data sets contained on either disk or tape. Once cataloging is complete, administrators can restore the system data onto the new hardware. The new system is then ready for testing and subsequent deployment in production.

Figure 1 lists estimated protection and recovery times for a typical Windows-based server with a 25 GB system and application volume. As indicated by the times in the “Traditional backup and migration” column, this multistep process can easily consume more than six hours, even in a best-case scenario. Depending on the complexity of the system configuration and application roster, this time could be extended by hours or even days.

The second column lists estimated protection and recovery times using Symantec Backup Exec System Recovery instead of the traditional process. Performing system migration with Symantec Backup Exec System Recovery can save significant time, which can correlate to improved system uptime and business continuity.

Symantec Backup Exec System Recovery server migration

Symantec Backup Exec System Recovery combines the speed and reliability of disk-based, bare-metal Windows system recovery with innovative technologies for hardware-independent restoration. The

result is the ability to perform seamless system migrations with a relatively simple process. The “Usage scenarios for Symantec Backup Exec System Recovery” sidebar in this article provides some examples of how administrators can use Symantec Backup Exec System Recovery.

The Symantec Backup Exec System Recovery Restore Anyware feature introduces an image-based system recovery capability for dissimilar hardware. The Restore Anyware feature helps make system migration to a completely different hardware platform simple and reliable. For example, administrators can restore an OS from a single-processor system onto a multiprocessor system and from SCSI storage onto Serial ATA or Serial Attached SCSI storage. In addition to these potential hardware differences, the Restore Anyware feature enables recovery to different hardware abstraction layers, chipsets, and kernel models.

Symantec Backup Exec System Recovery migration process

Before beginning the system migration process, administrators must gather any storage drivers required for the new system. The Symantec Recovery Disk contains a boot environment and the necessary drivers to allow administrators to perform system restores during the system migration process. The Symantec Recovery Disk also enables administrators to load drivers during the restore process if they are not already contained on this disk. Once the drivers are available, administrators can begin the system migration process.

Task	Traditional backup and migration (hours:minutes)	Symantec Backup Exec System Recovery backup and migration (hours:minutes)
Back up the system data with DAT 72 media	2:00	N/A
Create a recovery point	N/A	0:25
Configure the BIOS and RAID settings	0:10	0:10
Install the OS (from CD)	0:50	N/A
Update the OS	0:30	N/A
Install the applications (from CD)	0:15	N/A
Update the applications	0:15	N/A
Configure the system state and other unique settings or restore the recovery point	0:15	0:25
Restore the system data	2:00	N/A
Total	6:15	1:00

Figure 1. Estimated protection and recovery times for a typical Windows-based server with a 25 GB system and application volume

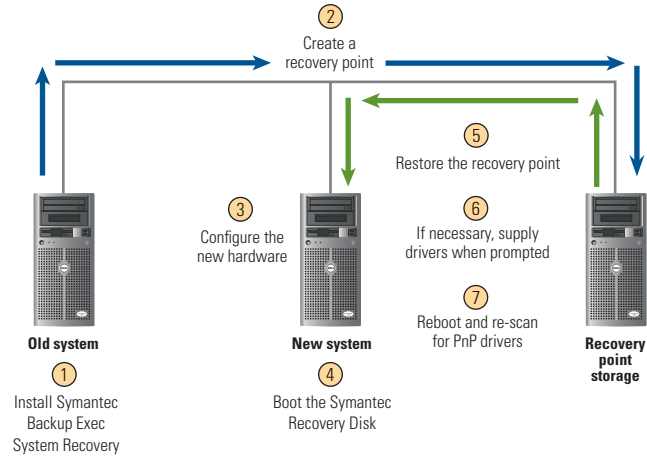


Figure 2. System migration process with Symantec Backup Exec System Recovery

Figure 2 illustrates the following steps for performing a system migration with Symantec Backup Exec System Recovery:

1. Install Symantec Backup Exec System Recovery on the old system from which the OS or data is being migrated.
2. Create a base recovery point of the old system and store it in a location that can be accessed by the new system, such as a network share.
3. Configure the new system hardware, such as the BIOS and RAID settings, if this has not already been completed.
4. Boot the new system into the Symantec Recovery Environment using the Symantec Recovery Disk.
5. Perform a recovery point restore using the recovery point created in step 2.
6. Supply storage drivers if prompted by the Restore Anyware retargeting procedure.
7. Upon reboot, allow Windows Plug and Play (PnP) to scan for additional devices and provide drivers if necessary.

Once these simple steps are completed, the new system is an exact replica of the previous system. This includes all OS components and application settings and the system state. By creating an exact replica, the amount of testing is minimized and the system can be rapidly deployed.


Symantec Backup Exec System Recovery helps simplify system migration by eliminating the software and OS reinstallation steps performed in the traditional system migration process. In addition, it is designed to preserve the unique system and software configuration settings of the environment being migrated. The disk-to-disk technology used in Symantec Backup Exec System Recovery also helps administrators to meet ambitious system migration time objectives.

USAGE SCENARIOS FOR SYMANTEC BACKUP EXEC SYSTEM RECOVERY

Symantec Backup Exec System Recovery is available in three versions: Server Edition, Windows Small Business Server Edition, and Desktop Edition. The powerful imaging technology utilized by Symantec Backup Exec System Recovery makes it a versatile tool that can be deployed in a variety of scenarios, including the following:

- **Dell™ PowerEdge™ server upgrades:** Administrators can perform migrations from previous-generation servers to the latest-generation technology.
- **Acquisition accounts:** Enterprises can easily migrate from Hewlett-Packard servers to Dell servers while minimizing the impact on resources.
- **Disaster recovery:** By protecting the OS and critical application and user data, Symantec Backup Exec System Recovery works with Symantec Backup Exec for Windows Servers to provide an end-to-end disaster recovery solution.
- **Windows upgrades:** Before applying OS upgrades, administrators can create a base recovery point that can be quickly restored if an OS environment fails after applying an update.

Advanced system protection and recovery

Symantec Backup Exec System Recovery is designed to offer advanced system protection by delivering a rapid, reliable approach to system recovery. It also provides a nonintrusive method for backing up mission-critical systems in organizations of any size. 

Charles Butler is a technical product manager in the Data and Systems Management Group at Symantec. He has a B.S. in Electrical and Computer Engineering from the University of Colorado at Boulder and an M.B.A. from St. Edward's University.

Richard Goodwin is a technical product manager for the Backup Exec series of products at Symantec, and is responsible for incorporating customer and partner requirements into current and future releases. His experience in the storage industry spans almost a decade with Dell, VERITAS, and Symantec.

FOR MORE INFORMATION

Symantec Backup Exec:
www.backupexec.com/besr