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# Improving Efficiency of Client Recovery: Symantec Backup Exec™ System Recovery and Intel® vPro™ Technology-Based Clients

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## Introduction

Ensuring the integrity and availability of client devices is an essential part of IT operations. The variety of client operating system (OS) platforms, service pack levels, third-party applications, configuration information, and local data requires individualized backups for each client. Effectively managing client device backup and recovery is especially challenging when multiple physical sites are involved. Today, the advanced backup and recovery services provided by Symantec Backup Exec™ System Recovery (BESR), coupled with innovative remote management services enabled by Intel® vPro™ technology enabled management platforms, allow for more efficient operations than previously possible. Intel vPro technology brings advanced hardware-based remote management, networking and security features to the enterprise.

This white paper discusses several key aspects of combining these services:

- Business drivers in client recovery operations
- Optimal backup and recovery with Intel vPro technology-based clients
- How this combination works through the use of an example scenario
- Benefits of Symantec Backup Exec System Recovery and Intel vPro technology-based clients

Leveraging the features of both technologies can significantly improve the efficiency of backup and recovery operations over operations performed using only one solution.

## Business Drivers in Client Recovery Operations

Client devices can fail for a host of reasons: corrupt files, bugs in OSs, infection by malicious software, and hardware failures, to name a few. Regardless of the underlying cause, the first priority is usually to get the device operating again as soon as possible. To recover a device, you must understand the cause of the failure, address the cause, and restore the device to a known reliable, secure state. Often, the most costly parts of this procedure are associated with desk-side visits and lost productivity.

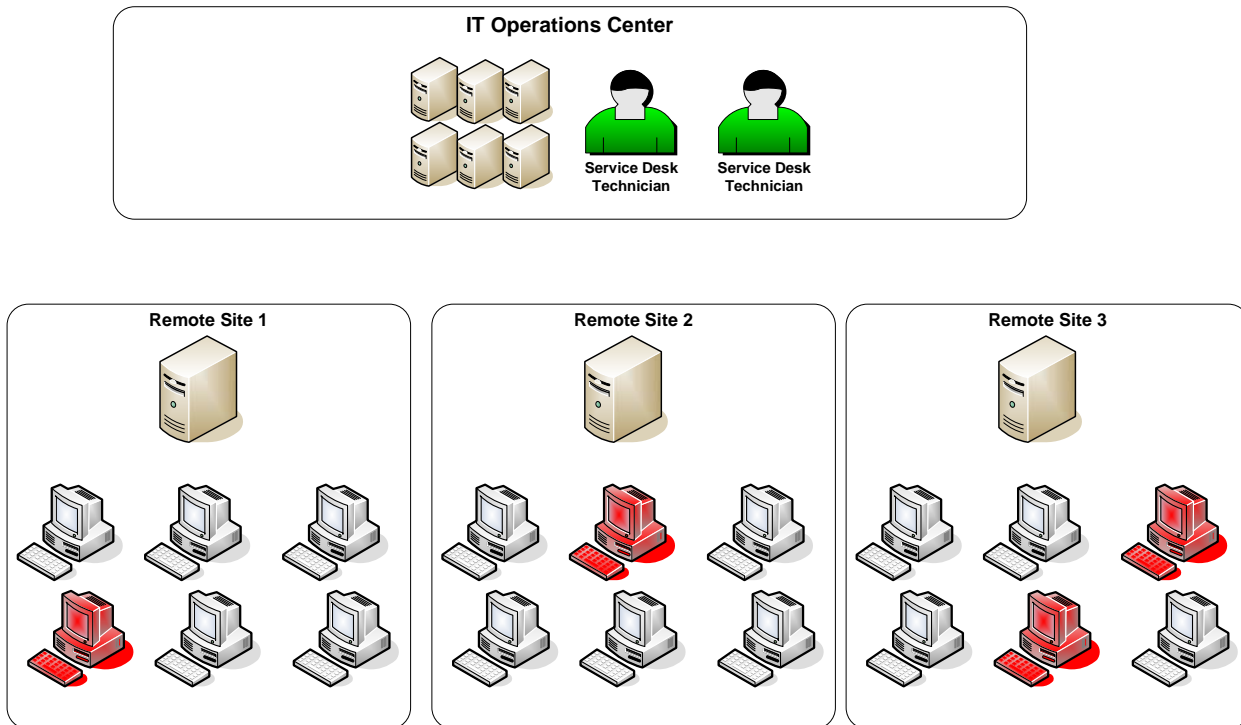
### Desk-Side Visits and Lost Productivity

Desk-side visits may not seem to be a significant cost; after all, how much can it cost to have someone walk down the hall? The problem is that simple scenarios rarely reflect the reality of IT operations. A desk-side visit may require a service desk technician to

- Travel to remote offices
- Make multiple visits, first to determine the underlying cause of the problem and then to return with parts to correct the problem. This is especially problematic for mobile users who are not routinely in the office.
- Escalate the problem and consult with other technicians once diagnostic information is gathered

To make matters worse, two or three of these factors may occur in a single incident, compounding the cost of the recovery operation.

Downtime and lost productivity are additional costs associated with recovery operations. In fact, some studies find that while recovery operations constitute 10% of operation support issues, they constitute 53% of management costs. Many of us are so dependent on our PCs that as soon as they are down, our productivity drops; we simply need constant access to information and applications to get our work done. The longer we have to wait for a service desk technician, the less work is completed. The more time support staff spends in transit, the less time they have to diagnose and correct problems. This contributes to lower end user productivity and pressure to increase staff support size, especially in cases in which Service Level Agreements (SLAs) must be met.



**Figure 1: The number of requests for remote support can outpace service desk resources if one or more desk-side visits are needed to resolve every issue.**

## Realizing Efficiencies of Backup and Recovery Operations

Efficiencies can be realized through a combination of backup schedule optimization and recovery time reduction. Ideally, backups of client devices are done frequently enough that the chance of lost work is minimized and storage and network bandwidth are not taxed. One way to do so is to customize incremental backups according to particular needs of individuals and organizational roles. For example, an analyst that regularly develops and works with complex spreadsheets may require incremental backups multiple times during the day; meanwhile, others who work primarily with database applications would need only nightly backups because much of the data they work with is stored on centralized servers. Managing such customized backup operations would be highly inefficient without Symantec Backup Exec System Recovery, which provides the tools necessary to implement this type of policy-based backup schedule efficiently.

The key to efficient recovery operations is also two-fold: eliminating desk-side visits and restoring a user's computer to operational state as soon as possible. Desk-side visits are time consuming and, as noted earlier, costly. To restore PCs rapidly, technicians need detailed information about the cause of the failure and the ability to respond remotely to those causes. Fortunately, for users of Intel vPro technology, these capabilities are built-in to their hardware.

## Enabling Optimal Backup and Recovery with vPro Clients

Intel vPro technology improves device management with hardware- and firmware-based capabilities for

- Discovering assets on your network, even if devices are powered down. Intel vPro technology-based clients store both hardware and software information in non-volatile memory and is accessible to remote management consoles, such as the Altiris Client Management Suite.
- Diagnosing failures and reporting on the state of device from a remote location.
- Repairing problems with OSs even if the OS is unavailable. Intel vPro technology does not depend on the OS for network services, so devices can be repaired remotely even without a functioning OS.
- Protecting devices with advanced security measures.

The remote management capabilities of Intel vPro technology expand on the range of services provided by earlier remote management protocols and methods. Remote diagnostics and reporting help with the first step in the recovery process: identifying and understanding the cause of a failure. The second step in the process, addressing the cause, is supported by a number of AMT features, particularly IDE Redirect (IDE-R).

The features of Intel® Active Management Technology (Intel® AMT) are enabled through the Altiris Notification Server (NS). Notification Server is the backbone to the BESR solution; Through NS, Intel vPro technology or Intel AMT features are unlocked and available. NS is the platform from which IDE-Redirect is launched through a plug-in solution called Real Time System Manager (RTSM). The Notification Server is a premier management tool and through it tasks such as IDE-R can be administered in a one to one manner or in a one-to-many manner by applying tasks to a collection of computers.

IDE-R enables support personnel to remotely change the boot device of a failed PC. Instead of using the local hard drive or optical disk drive, IDE-R allows a device to boot from any network-accessible drive or ISO image. This has a number of advantages, including allowing systems administrators to

- Quickly recover from a failed patch by using IDE-R to remotely boot to recovery media and restore a backup made prior to applying the patch. Perform restore operations over the network
- Enable more customized control over remote booting than provided by other protocols, such as PXE

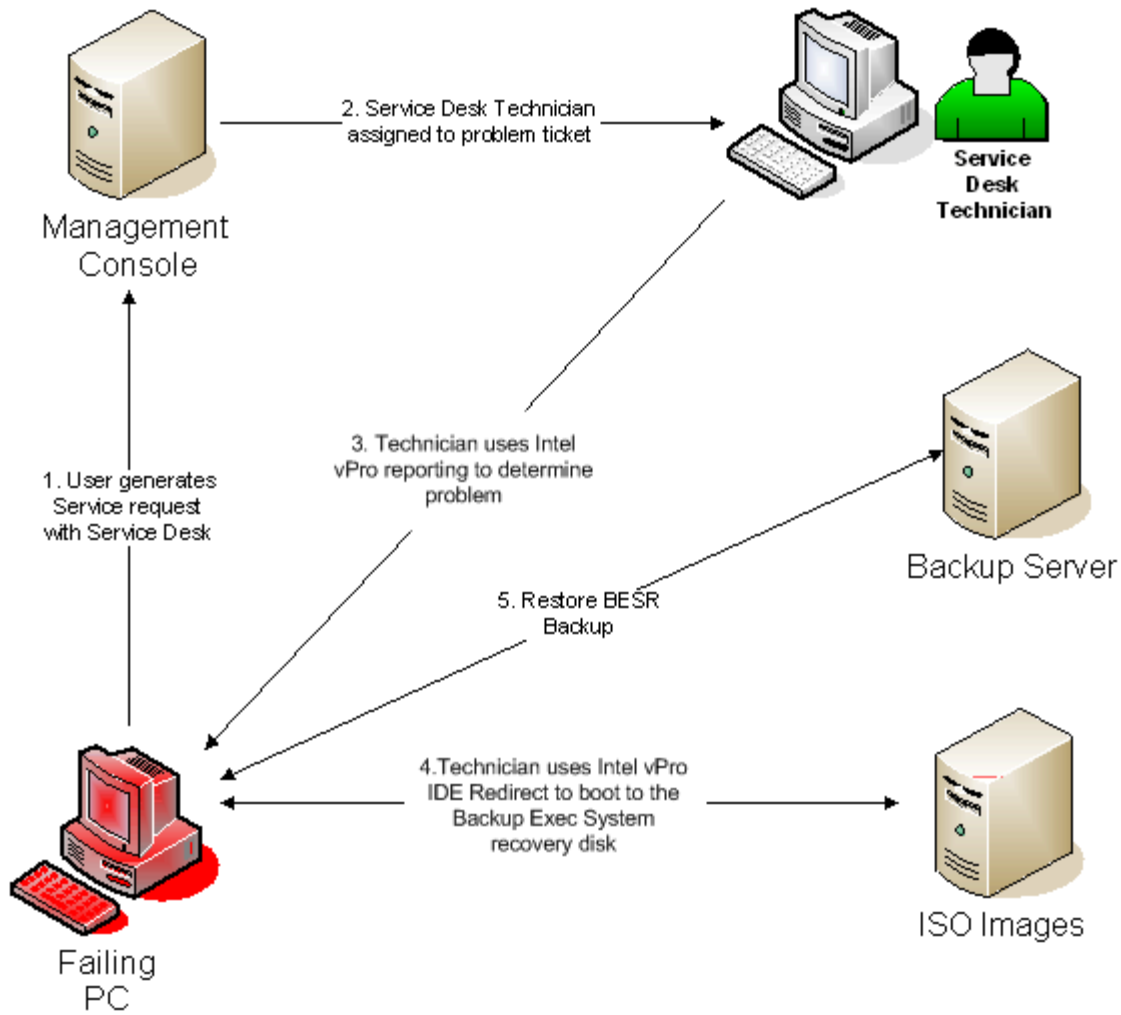
From an efficiency perspective, IDE-R's key contribution is that it eliminates desk-side visits. Let's consider how Symantec Backup Exec System Recovery and Intel vPro technology capabilities can work together to optimize backup and recovery operations.

## How Intel vPro Technology Works

Consider a midsized company or a division within a larger corporation with a centralized backup and recovery operation and service desk supporting all office locations. On a day-to-day basis, systems administrators will need to do three things. First, ensure client backups are running correctly. Second, implement new or revise existing backup policies based on individual needs and roles. Finally, recover files and entire hard drives as needed. The following example scenario highlights this idea:

1. Systems administrators use Symantec Backup Exec System Recovery to schedule backups. Employees in the executive, director, and analyst roles have hourly incremental backups performed; others have nightly incremental backups scheduled.
2. Systems administrators also use Altiris Management Console to monitor the overall status of client devices on the network. An alert from the console points to a PC at a remote location indicating an unusual number of errors are being logged.
3. A service desk technician is assigned to investigate the remote PC's errors. She uses remote diagnostics and reporting provided by Intel vPro technology to assess the state of hardware components and collect information about the installed OS.
4. After some analysis, the technician determines the hardware is functioning properly and the cause of the problem is a failed software patch applied to the OS earlier that day.
5. The technician decides the fastest way to correct the problem is to restore the OS to the latest backup prior to the patch installation. However, she cannot use the local OS during the restore operation, so she boots to a remote OS.
6. Using IDE-R provided by Intel vPro technology, the technician boots the remote PC using an ISO image of a recovery CD stored on a network device. This operation can be performed out of band, so there is no need for an OS-level IP stack; Intel vPro technology has the networking functionality needed to access a network-addressable device.
7. Once booted into recovery mode, the technician uses Backup Exec System Recovery to restore the previous nights' backup and return the PC to normal operation.

The entire operation, from scheduling backups and detecting problems on a remote PC to rebooting with a stable version of the OS and restoring the last known good backup is performed remotely (see Figure 2). No desktop visit is required. No travel time for service support personnel is required. No extended downtime of the professional who uses that PC is required. The device is operational in a fraction of the time that would have been required if the full range of remote management, analysis, and restoration service were not available.



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**Figure 2: Remote diagnostics and recovery are enabled by Intel® vPro™ technology and Symantec Backup Exec System Recovery.**

## Benefits of Symantec Backup Exec System Recovery and Intel vPro Technology-Based Clients

As the example scenario highlights, combining the remote management and diagnostic services provided by Symantec Backup Exec System Recovery and Intel vPro technology enables significant efficiencies in recovery operations, starting with reduced service desk costs and faster time to recovery. The combination also allows for flexible recovery operations and enables time-saving responses to a wide array of common incidents. Restoring a system is not restricted to the original hardware; in fact, if hardware failures prevent full recovery, BESR backups can restore the user's system to dissimilar hardware. This provides even greater savings to the business because it is not locked into a single hardware platform. If an older machine fails, users can rapidly move to new hardware, alleviating the need to maintain identical configurations or to resort to time-consuming migration operations. All these operations can occur without a single desk-side visit. Together, the combined technologies of Symantec Backup Exec System Recovery and Intel vPro technology put in place a scalable, flexible backup and recovery infrastructure that supports growing, increasingly complex enterprises.

## About Symantec

Symantec is a global leader in providing security, storage and systems management solutions to help businesses and consumers secure and manage their information.

Headquartered in Cupertino, Calif., Symantec has operations in 40 countries. More information is available at [www.symantec.com](http://www.symantec.com).

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