

THE BENEFITS OF CONTINUOUS DATA PROTECTION

SYMANTEC Backup Exec™ 10d Continuous Protection Server

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	3
Current Situation.....	3
The New Opportunity.....	3
The Solution – Symantec Backup Exec 10d	3
UNDERSTANDING TRADITIONAL AND CONTINUOUS DATA PROTECTION.....	4
TRADITIONAL TAPE BACKUPS.....	4
Key Benefits.....	4
Key Drawbacks.....	4
Recovery.....	4
DISK-BASED BACKUPS	5
Key Benefits.....	5
Key Drawbacks.....	5
Recovery.....	5
CONTINUOUS DISK-BASED BACKUPS.....	6
Key Benefits.....	6
Key Drawbacks.....	7
Recovery.....	7
CONTINUOUS PROTECTION SERVER: KEY BENEFITS.....	8
ELIMINATE BACKUP WINDOWS.....	8
DELIVERS INDUSTRY’S FIRST WEB-BASED FILE RETRIEVAL.....	8
PROVIDES COMPLETE PROTECTION. JUST ADD DATA.....	9
FEATURES/BENEFITS HIGHLIGHTS	9
Provides Continuous Data Protection.....	9
Provides Web-Based File Retrieval.....	9
Provides a Total Solution.....	9
Does Not Require Active Directory or SQL	9
Provides Bandwidth Throttling.....	10
Provides Snapshot Management and Grooming	10
Automatically Recovers From Network Outages.....	10
Built on Proven Technology.....	10
CONTINUOUS PROTECTION SERVER (CPS) KEY COMPONENTS.....	10
Backup Group.....	10
Business Servers.....	10
Protection Server.....	10
Continuous Management Service	10
Continuous Protection Agent.....	11
Administration Console.....	11
Web Restore Server Component	11
Backup Exec Retrieve	11
Indexing Component.....	11
Backup Exec SmartLink.....	11
Remote Agent for Windows Servers (Remote Agent).....	11
VERITAS Update.....	11
CONTINUOUS PROTECTION SERVER USE MODEL	12
SUMMARY	14

EXECUTIVE SUMMARY

Current Situation

Today's Windows-based organizations face a number of ongoing challenges when it comes to data protection. First, data volumes continue to grow at nearly 40% to 50% each year, making it increasingly difficult for administrators to back up mission critical data in acceptable time frames (or within available backup windows). In addition, the need for instant, on-demand data recovery is becoming increasingly vital for business operations. While traditional tape backups have proven effective over the years, today's dynamic business climate demands faster, more efficient backups and on-demand recovery.

KEY BENEFITS:

- Eliminates Backup Windows
- Delivers Industry's First Web-based File Retrieval
- Provides Complete Protection. Just Add Data.

The New Opportunity

Disk-based data protection, specifically continuous data protection, provides the opportunity address these issues in a revolutionary way that would:

- Eliminating the need for backups windows
- Allow end users to recover their own data without contacting IT
- Deliver a complete, integrated disk-to-disk-to-tape solution

For any organization looking to manage data growth, improve reliability, and speed data recovery, continuous data protection provides the avenue to address the challenges in a method that will improve overall data protection without weighing down IT in costly, high administration solutions.

The Solution – Symantec Backup Exec 10d

Symantec introduces the Backup Exec Continuous Protection Server 10d, a new innovation to Backup Exec *for Windows Servers* specifically designed for disk. Backup Exec Continuous Protection Server 10d revolutionizes backups by eliminating backup windows, improving backup reliability, and introducing the industry's first web-based end user file retrieval. It integrates with Backup Exec *for Windows Servers* to deliver a truly complete Disk-to-Disk-to-Tape solution.

The benefits of this type of solution will not only improve the overall level of data protection, but reduce the administration and complexity associated with traditional data protection practices. Continuous data protection eliminates the need for full, incremental, or differential backups currently in place – protecting data immediately and continuously by backing it up to disk. And that will help reduce complexity of current methods as well as helping reduce the cost of media currently used.

Because data is continuously protected to disk, it can not only be recovered quickly, but also opens the opportunity to enable end-users to restore their own files – without contacting IT. That further improves service levels without increase IT headcount or costs of administration.

UNDERSTANDING TRADITIONAL AND CONTINUOUS DATA PROTECTION

As you look for the appropriate data protection strategy for your organization, it is important to understand the differences in traditional tape-based, traditional disk-based, and continuous disk-based data protection offerings.

TRADITIONAL TAPE BACKUPS

Key Benefits

Traditionally, tape backups have proven to be an effective and inexpensive means for data protection and recovery. Key benefits of traditional tape backups include:

- Inexpensive medium to store data
- Portable format that can easily be moved off-site
- Familiar for administrators, who know and understand tape backups

Key Drawbacks

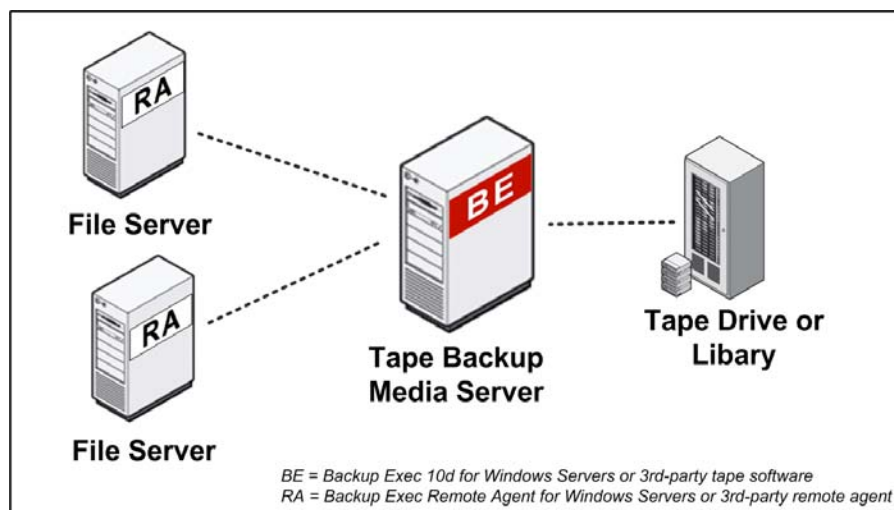
As beneficial as tape backups can be, there are three key challenges with tape. First is reliability. Industry reports indicate that tape can fail in 17% to 40% of the time. The second is complexity. Tape lacks the flexibility and simplicity that many organizations require today in a data protection solution. Lastly is speed. As data volumes continue to escalate, tape backups are taking longer and longer. A few notable drawbacks to tape backups include:

- High impact on production server (backups must occur during off-peak hours)
- Only a limited number of servers can be backed up at one time
- Once-a-day backups only capture a single point of recovery
- Increasingly complex management (incrementals, differentials, multi-vendor solutions, etc.)
- Reliability

Recovery

In addition, the recovery process can be a time-consuming, bottlenecked process that makes it difficult to get the right file to the right person at the right time. After all, the point of protecting data is ensuring its recovery when needed. Here are a few key drawbacks to tape recovery.

- Recovery process can be lengthy and cumbersome
- Only trained administrators can recover data



Traditional Tape Backup Architecture

Backup Process

- 1 Backup software is installed on a media server. Remote Agents are installed on file servers.
- 2 A full backup of each file server is performed at scheduled time once a week.
- 3 Incremental backups of each file server are performed daily, during off-peak hours.

Recovery Process

- 1 Users submit file restore request to administrators
- 2 Administrators find the tape, mount it, allocate the file from point of the last backup and restore to user (may take hours or days to recover single file).

DISK-BASED BACKUPS

Key Benefits

Disk-based backups have provided several key benefits that could not be realized with tape. For one, backups can be faster and more efficient while recovery time improves dramatically. Additionally, disk provides a traditionally more reliable format for initial data protection. Benefits include:

- Faster, more efficient backups
- More reliable backups
- Faster and easier recovery
- Simultaneous backup jobs (or multistreaming) for improved performance
- Disk-based data can still be backed up to tape for long-term archival and off-site storage

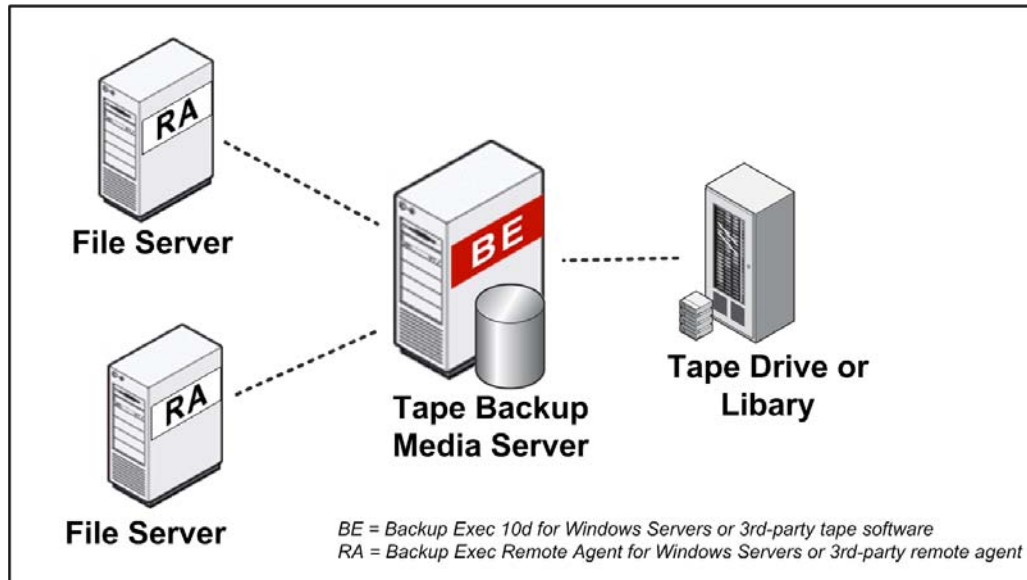
Key Drawbacks

While Disk-based backups significantly enhance data protection and recovery, it still has some drawbacks similar to tape backups.

- Potential impact on production servers (still needs backup window)
- Data backed up to disk, but often using tape emulation (sequentially), but not continuously.
- Still complex to manage (incrementals, differentials, etc.)
- Data backed up in backup format, therefore IT administration still required for restores

Recovery

Because the backup is sitting on disk, it is much faster to restore. There is no need to locate the tape, load it, and then reload the data. It is faster and more efficient.



Disk-based Backup Architecture

Backup Process

- ❶ Backup software is installed on a media server. Remote Agents are installed on file servers.
- ❷ A full backup of each file server is performed once a week.
- ❸ Incremental backups of each file server are performed daily, during off-peak hours.
- ❹ Backups can be migrated to tape for long term data protection or disaster recovery purposes.

Recovery Process

- ❶ Users submit file restore request to administrators
- ❷ Administrators quickly restore the file from disk the point of the last backup

CONTINUOUS DISK-BASED BACKUPS

Key Benefits

The Continuous Data Protection (CDP) revolutionizes data protection by bringing the core benefits of disk-based data protection (faster backups, near-instant restore) while eliminating some of the key pain points of current backups. These key benefits include:

- Data is always protected
- Only captures changed portion of files (block-level changes)
- Simplifies backups. Eliminates incrementals, fulls, etc.
- Can backup multiple file servers simultaneously
- No impact on Business Servers (no backup windows)
- Leverages tape backups for long-term archival and off-site storage purposes
- Files in native format, enabling end user recovery

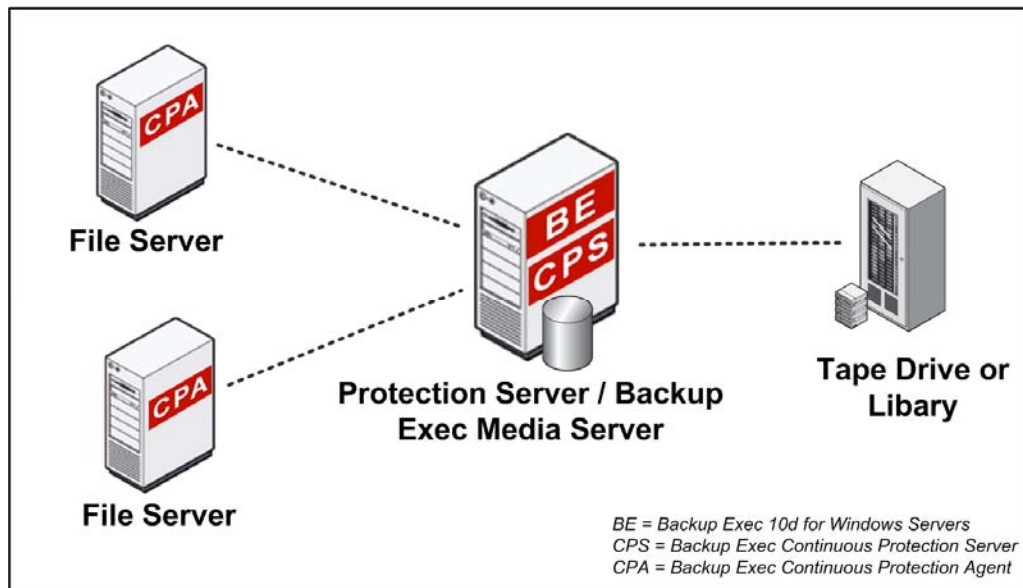
Key Drawbacks

- May not provide tape based backup (Tape still needed for long term data protection or off-site storage)
- May not integrate into current backup solution

Recovery

Instant, flexible and granular recovery is a central focal point for continuous disk-based protection. Continuous Protection Server will significantly help reduce IT administration while improving service levels and end-user productivity by enabling end-users to find and retrieve files without contacting IT. Key benefits include:

- Provides instantaneous recovery
- Enables end-users to retrieve their own files
- Enables recovery of files from multiple point-in-time



Backup Exec 10d Continuous Protection Architecture

Backup Process

- 1 Users save files to file servers (Business Server).
- 2 Continuous Protection Agent streams file changes to Backup Exec Continuous Protection Server.
- 3 VSS Snapshots provide versioning and granular point-in-time recovery of files.
- 4 Backup Exec media server provides backup to tape for longer term retention or off-site storage.

Recovery Process

- 1 Administrators or end-users can retrieve previous versions of files using simple, web-based recovery.

CONTINUOUS PROTECTION SERVER: KEY BENEFITS

ELIMINATE BACKUP WINDOWS

Backup Exec 10d introduces the Backup Exec Continuous Protection Server 10d to help ensure your data is always protected and always available. As a continuous disk-based data protection solution, the Continuous Protection Server monitors whenever a change is made to a file, and makes sure change is captured and protected. Backup Exec only captures granular or block-level changes, not the whole file, reducing impact on network performance. Not only is the most recent data protected, multiple versions of files are captured and available for recovery or retrieval.

Backup Exec 10d continuous data protection helps eliminate the ever shrinking backup window faced by organizations, because data is protected whenever a file changes - continuously. This means no more complex full, incremental, or differential backups of business critical data on file servers – simplifying management, reducing costs, and reducing complexity.

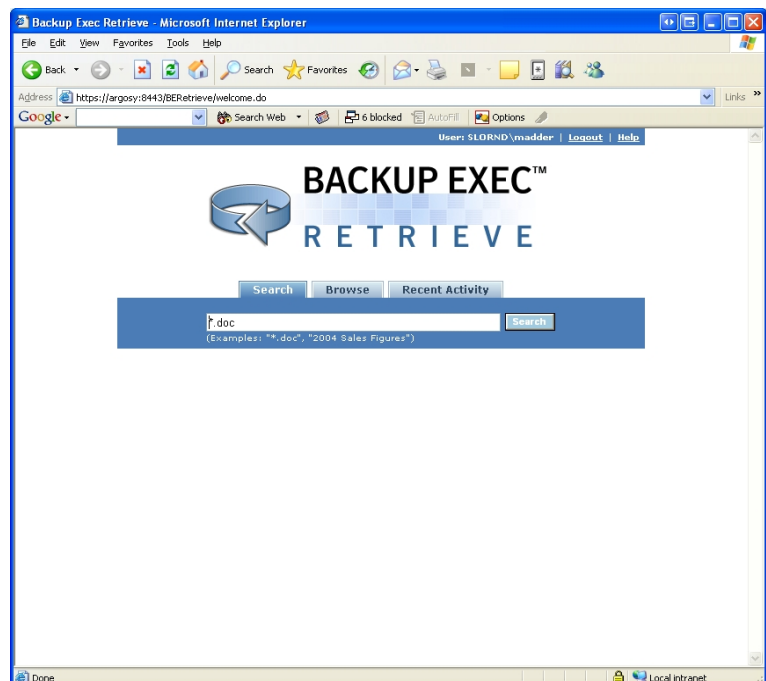
- Data protected immediately and continuously
- No impact on the production Business Server
- Only changed data protected
- Continuously protect multiple servers simultaneously

DELIVERS INDUSTRY'S FIRST WEB-BASED FILE RETRIEVAL

Backup Exec 10d helps reduce overall administration costs with the introduction of Backup Exec Retrieve – a simple, web interface that enables end users to retrieve previous versions of files without contacting IT. By empowering end users with the ability to retrieve their own files, IT resources are freed up to focus on other business critical needs in the organization. As simple as any web-based search engine, retrieving lost, corrupted or overwritten data is as easy as searching for and downloading a file from the Internet. No backup tape to locate, load, or data to restore to find the correct file needed.

Best of all, there is no client software or agents to install individual desktops and laptops. Users only need a standard web browser, making data retrieval easier than ever.

- Simple, Web Search Engine-Like Experience
- For System Administrators or End-Users
- No special software needed– just use a standard browser



A simple, web interface allows users to retrieve previous versions of files without contacting IT.

PROVIDES COMPLETE PROTECTION. JUST ADD DATA.

Built on the tried, trusted, and proven Backup Exec technology, Backup Exec 10d for Windows Servers delivers continuous disk-based data protection combined with traditional data protection to provide comprehensive disk-to-disk-to-tape solution, protecting business critical files, databases, and applications.

Centralized administration provides scalable management of distributed backup and remote servers. An intuitive interface and wizards simplify data protection and recovery procedures for any level user and any size network. Sophisticated database and groupware agents provide on-line protection and granular recovery. Even entry level system recovery is integrated into the Backup Exec solution. Backup Exec 10d delivers comprehensive disk and tape based solution from a single vendor.

- Comprehensive Disk-to-Disk-to-Tape Data Protection
- From Applications to File Servers to Workstations
- Integrated management via Backup Exec SmartLink

Backup Exec Continuous Protection Server software is built on that same proven Backup Exec technology. IT Administrators can view job status and alerts regarding continuous protection jobs from the Backup Exec console.

While productivity and resources continue to be a major focus for organizations of all sizes, the Backup Exec SmartLink integration helps simplify management for many tasks – letting IT manage more with less.

FEATURES/BENEFITS HIGHLIGHTS

Provides Continuous Data Protection

Backup Exec 10d provides real-time protection of files on the instant that they are changed or created. After the initial copy of the file is protected, only the changed portion of files is protected – at the block-level – by the Continuous Protection Server. This means IT and end users can retrieve the current version of a file, as well as previous versions of files.

Provides Web-Based File Retrieval

Backup Exec 10d introduces Backup Exec Retrieve, a simple “Google-like” web-based file retrieval that lets user retrieve their own files – *without* IT intervention. Searching is simple because files are indexed by name and type. No other data protection solution offers this simplicity or functionality. Because it uses a standard web browser to enable users to retrieve lost, overwritten, or corrupted files, there is no software to deploy or update on the individual workstations. Retrieving a file, or its previous versions, is just like clicking a link to download a file from the internet, including previous versions of files. It is simple to deploy, easy to use, and helps improve service levels without addition administration overhead.

Provides a Total Solution

Equipped with the all new Backup Exec Continuous Protection Server, Backup Exec 10d is the only solution to combine continuous disk-based data protection with tape-based data protection management; providing comprehensive disk-to-disk-to-tape functionality. Backup Exec SmartLink technology simplifies disk-to-disk-to-tape management by enabling administrators to monitor continuous protection jobs from the Backup Exec administration console.

Does Not Require Active Directory or SQL

Backup Exec Continuous Protection Server can run by itself on a stand alone server or on the same server with Backup Exec *for Windows Servers*. It does not require any other Microsoft servers or components to run. It does not require the protection server to be on the same domain as the file servers it backs up.

Provides Bandwidth Throttling

Administrators can manage and control network resource utilization by allocation the maximum of bandwidth continuous protection can use – for LANs or WANs. This helps administrators ensure data is continuously protected with minimal disruption to ongoing business activities, especially those looking to eliminate hardware, media and administration in remote offices, and centralize all data protection.

Provides Snapshot Management and Grooming

Backup Exec 10d provides snapshot management giving administrators increased flexibility and granularity in managing their point-in-time snapshots. Because Backup Exec 10d leverages the Microsoft Volume Shadow Copy Service for snapshots, there are a maximum of 64 snapshots that can be saved on the storage volume. However, Continuous Protection Server is unique as it enables administrators to define snapshot policies that determine the specific periods of time snapshots can be retained. Specifically, administrators can determine to hold on to each snapshot on hourly, daily, weekly, and monthly intervals, providing greater flexibility and maximizing the 64 snapshots available.

Automatically Recovers From Network Outages

Backup Exec Continuous Protection Server can automatically recover from a network outage which has interrupted continuous protection – this is especially useful for WAN connections and remote offices. In the event of a connectivity issue, changes will journal on the protected file server until connectivity with the protection server has been re-established. Upon re-connecting, the Continuous Protection Server will automatically resume continuous protection, without the need for manual re-synchronization and/or administrator intervention. This functionality is called “auto resume.”

Built on Proven Technology

Backup Exec 10d is built on trusted and proven technology, with over *ten years* of proven use by Windows customers. As an award winning technology, Backup Exec has been a leader in disk-based data protection for years, and protects millions of organizations today.

CONTINUOUS PROTECTION SERVER (CPS) KEY COMPONENTS

Backup Group

The Backup Group consists of *only* one Continuous Management Service, at least one Business Server, at least one Protection Server, the CPS Administration Console and optionally the Web Restore Server Component.

Business Servers

Business Servers store data that is routinely saved by end-users during the course of their daily operations. As data is saved to the Business Server, the data is backed up to a Protection Server. Business Servers must therefore reside in the same Backup Group as the Protection Server. A Continuous Protection Agent must be installed on each Business Server.

Protection Server

The Protection Server is the destination of the continuously protected Business Server. It is typically installed at a primary location or a central office. The Protection Server hosts the backup destinations where snapshots are taken and indexed, as well as the Web Restore Server Component that allows users to retrieve data via Backup Exec Retrieve. More than one Protection Server can be installed in the Backup Group.

Continuous Management Service

The Continuous Management Service (CMS) provides primary control of the CPS processes, retains configuration settings from the Administration Console, and manages the CPS system based on the settings. Only one CMS may be installed in a Backup Group, and it must be installed before any other CPS components. The CMS should be installed on a server appropriate for its use and have a fixed IP Address.

Continuous Protection Agent

A Continuous Protection Agent must be installed on all Business Servers and Protection Servers within the Backup Group. The Continuous Protection Agents are responsible for managing the collection of data during CPS backups and restores.

Administration Console

The Administration Console controls all aspects of CPS, including defining sources and destinations, creating backup and restore jobs, and defining backup and snapshot schedules. Additionally, the Administration Console is used to view and respond to alerts, monitor backup and restore jobs, and obtain product updates from Symantec.

Web Restore Server Component

The Web Restore Server Component is a feature of the Continuous Management Service that makes available versioned copies (snapshots) of files for end-user retrieval to their workstations without administrator assistance.

Backup Exec Retrieve

Backup Exec Retrieve is the web-based interface or gateway by which end-users access the Web Restore Server Component to retrieve files. Backup Exec Retrieve utilizes Internet browsers (Internet Explorer 6.0 or newer, and others). CPS software is not required on the end-user workstations.

Users can search by full or partial file name, browse to the location where their files are stored, view all versions of a file that were backed up, and select a copy of the file they need. When files are selected, a copy can be downloaded without assistance from system administrators.

Indexing Component

The Indexing component maintains a directory for files that are available to end-user file retrieval using the Web Restore Server Component and Backup Exec Retrieve. The Indexing component is an optional feature and should be installed on any server that will be accessed by end-users for file retrieval using Backup Exec Retrieve. The Indexing component supports searches by file, file versions and recent activity.

Backup Exec SmartLink

This component simplifies management by enabling users to view the status of CPS jobs in the Backup Exec Administration Console.

Remote Agent for Windows Servers (Remote Agent)

CPS uses the Symantec Backup Exec Remote Agent for Windows Servers (Remote Agent) to access System State information for backup and restore. Remote Agent is an optional component and should be installed on any CPS Business Server that needs to have its System State protected. Remote Agent should also be installed on the Protection Server and Continuous Management Service if they will be protected by Symantec Backup Exec. Remote Agent is not required when CPS is installed on the Backup Exec Media Server because the Media Server already contains Remote Agent functionality.

VERITAS Update

VERITAS Update is an optional component that can be installed with the Administration Console. VERITAS Update notifies administrators when updates to installed Symantec products become available for download. VERITAS Update will connect to the VERITAS Update server via the internet.

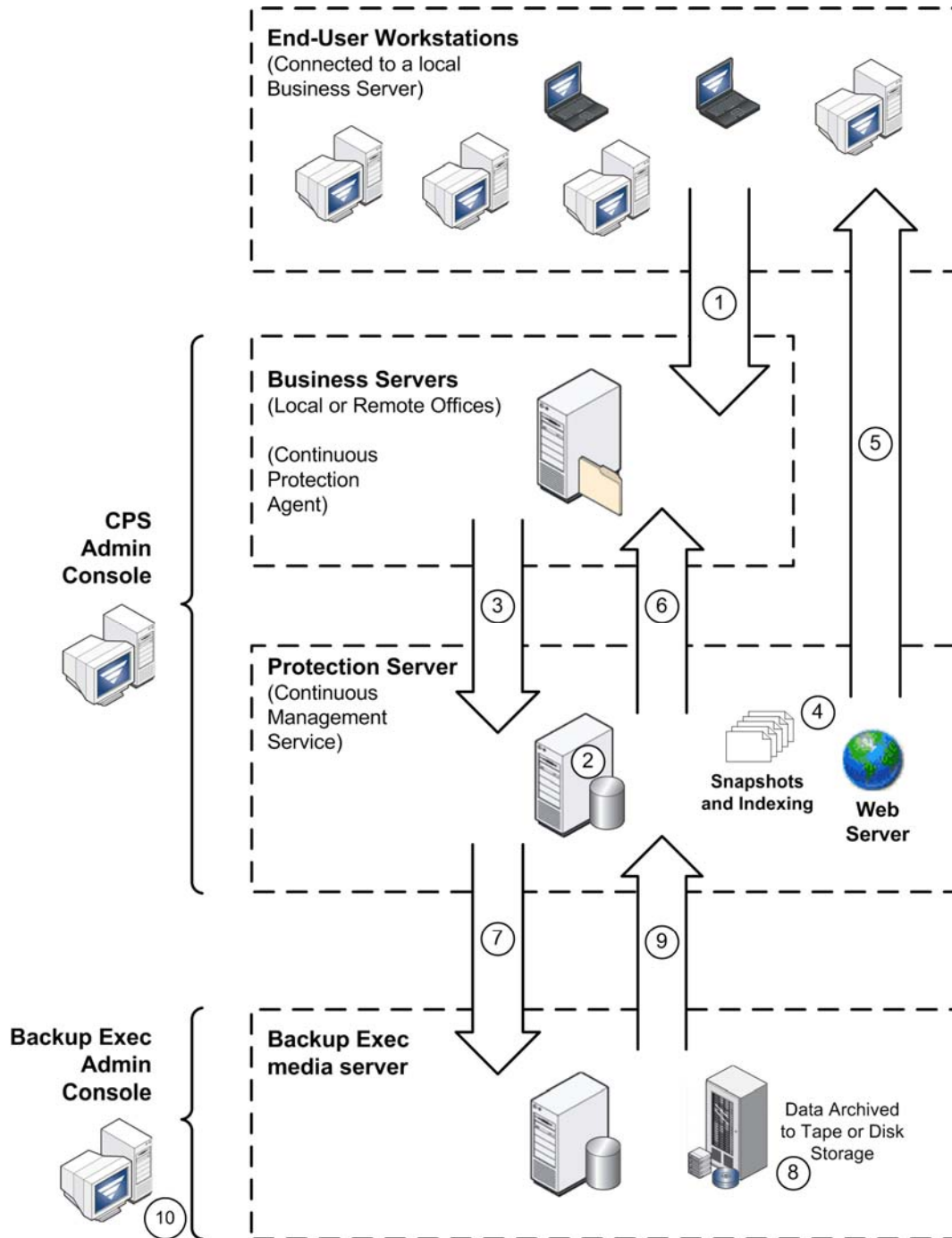
CONTINUOUS PROTECTION SERVER USE MODEL

Following is an idealized use model for running CPS.

1. End-users save files and folders to local file servers (Business Servers) as part of their normal daily work. Business Servers are interconnected and thus within a common Backup Group.
2. The CPS Backup Destination Wizard designates the Protection Server and directories where the data will be backed up. The backup destination designation includes scheduling of the data snapshots for file versioning and setting policies for snapshot retention.

Different servers can be designated as backup destinations based on your needs. For example, separate destinations can be created for financial data on a financial server in the accounting department, employee data on a server in human resources, and customer records on a server in the sales department.

3. CPS Backup Jobs are created to back up data from one or more Business Servers to a Protection Server using the Backup Job Wizard. When configuring jobs, you select the data to be backed up and the schedule for the backup job. CPS backup jobs can be scheduled to run at specific times (periodically) or as files incur any changes (continuously).
4. As soon as the data has been backed up to the Protection Server, scheduled snapshots can be made of the data. The data is then indexed and made available to the Web Restore Server Component.
5. End-users retrieve specific files and folders from the Web Restore Server Component directly back to their workstations using Backup Exec Retrieve and their Internet browsers. Since the data was backed up with specified snapshots, users can select specific versions of their data to be restored.
6. In the event of a system failure at one or more Business Servers, the backed up data can be quickly restored from the Protection Server.
7. After the data is backed up to the Protection Server, you can back up the data to a Backup Exec media server and then saved to tape or disk for long-term archiving.
8. In the event of a system failure or data loss at a Protection Server, Backup Exec is able to quickly restore the data back to the Protection Server or directly back to a Business Server.
9. A CPS component, Backup Exec SmartLink, allows the status of CPS backup jobs to be viewed in the Backup Exec Job Logs and Alerts. This option allows administrators to determine the quality and completion of the CPS jobs prior to or during the Backup Exec backup job.



SUMMARY

While traditional tape backups have been the predominant method for data protection and recovery to date, the demands for faster, more reliable, and more efficient backups and on-demand recovery have never been greater. To help organizations adapt to escalating data growth and advancing business requirements, Symantec introduces Backup Exec 10d – designed for disk. Backup Exec 10d features the Backup Exec Continuous Protection Server 10d, a revolutionary new disk-based component that ensures critical business data is always protected and always available by using disk as the primary medium for data protection and recovery. Traditional tape backups and infrastructure can be leverage to provide secondary data protection for longer-term retention and off-site storage.

By providing continuous data protection the Continuous Protection Server helps eliminate backup windows and provides instantaneous recovery by introducing the industry’s first Web-based file retrieval – Backup Exec Retrieve. It integrates with Backup Exec *for Windows Servers* to provide a complete disk-to-disk-to-tape solution from a single source.

Backup Exec 10d – Core Components

Backup Exec *for Windows Servers*

- Gold standard for Windows data protection.
- Simple, high-performance tape backup software
- Secondary protection for archive and off-site storage

Backup Exec Continuous Protection Server 10d

- Provides continuous disk-based protection
- Primary medium for data protection and recovery
- Enables faster, more efficient backups and restores

Symantec Corporation

20330 Stevens Creek Blvd.
 Cupertino, CA 95014
 +1 408 517 8000 or 1 866-837-4827

For additional information about Symantec, its products, or the location of an office near you, please call our corporate headquarters or visit our Web site at www.backupexec.com.