

EMC RepliStor: Disaster Recovery and Data Migration Solution for VMware Environments

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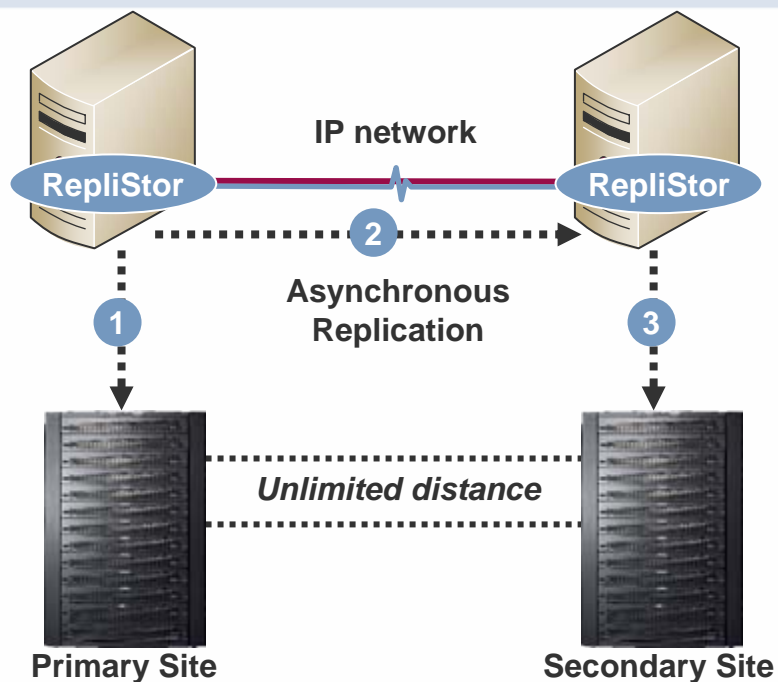
Agenda

- RepliStor product overview
- Business solutions with RepliStor
- RepliStor integration with Microsoft VSS
- RepliStor feature highlights
- Using RepliStor in virtual environments
- RepliStor & VMware success story with Praetorian Financial Group
- Questions & Answers



EMC RepliStor Overview

- Server-based file-level replication for Windows environments
- Asynchronous, real-time replication over unlimited distances
 - Local & Wide Area Networks
- Replicates
 - Open and closed files
 - Directories
 - Registry Keys
 - Deltas after full synchronization
- Centralize management GUI
- Easy to use
 - Configuration wizards
 - Sync, scheduling & security options



- 1 RepliStor observes data written to storage
- 2 RepliStor replicates changes to target
- 3 RepliStor writes changes at secondary site

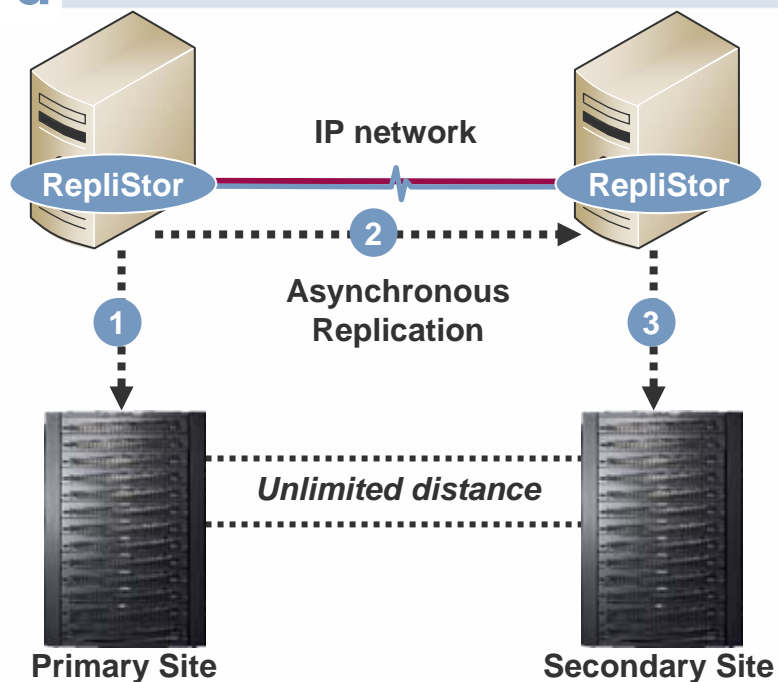


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EMC RepliStor Overview Cont'd

- Integrated with MS Volume Shadow Copy Service (VSS)
 - Exchange 2003
 - SQL Server 2005
 - Windows File System
- Microsoft Windows Operating Systems
 - Windows 2000, 2003, XP
 - Storage Server
 - Small Business Server
 - Windows guest operating systems on VMware ESX Server and VMware Server
- Cluster aware
- Supports heterogeneous storage



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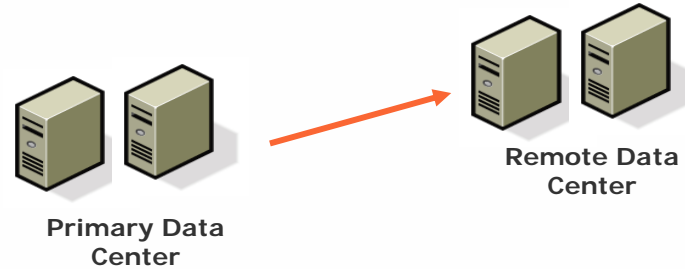
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RepliStor Business Solutions for Windows Environments

1 Data Protection for Disaster Recovery

SQL, Exchange, Oracle, Windows file system

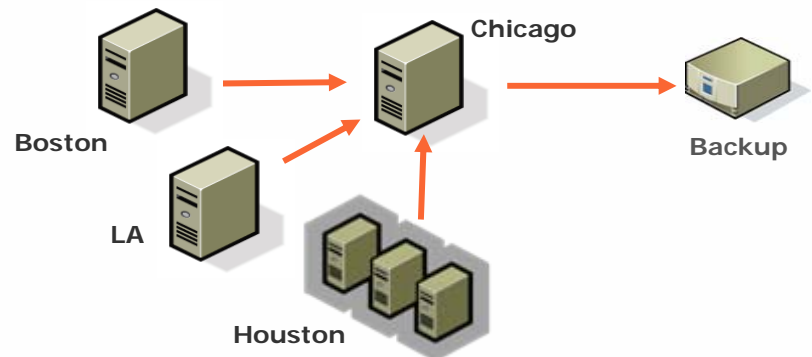
Recover in minutes



2 Branch Office Data Consolidation

Backup all data in one place

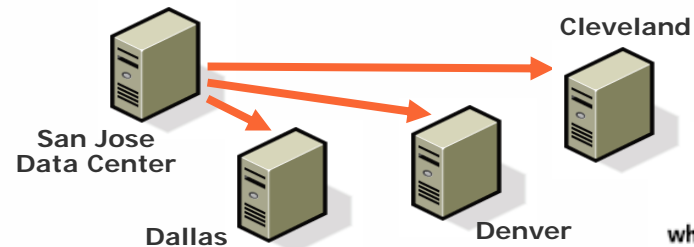
Lowers costs, simplifies



3 Data Distribution

Move data from one server to many

I.e. web servers for load balancing



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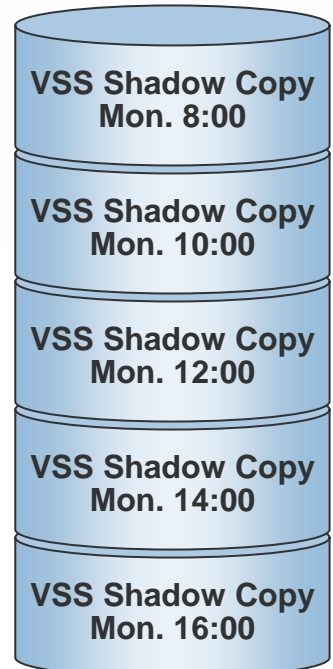
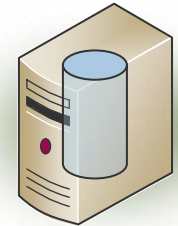
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Disaster Recovery for Exchange 2003, SQL Server 2005 & Windows File System with VSS Integration

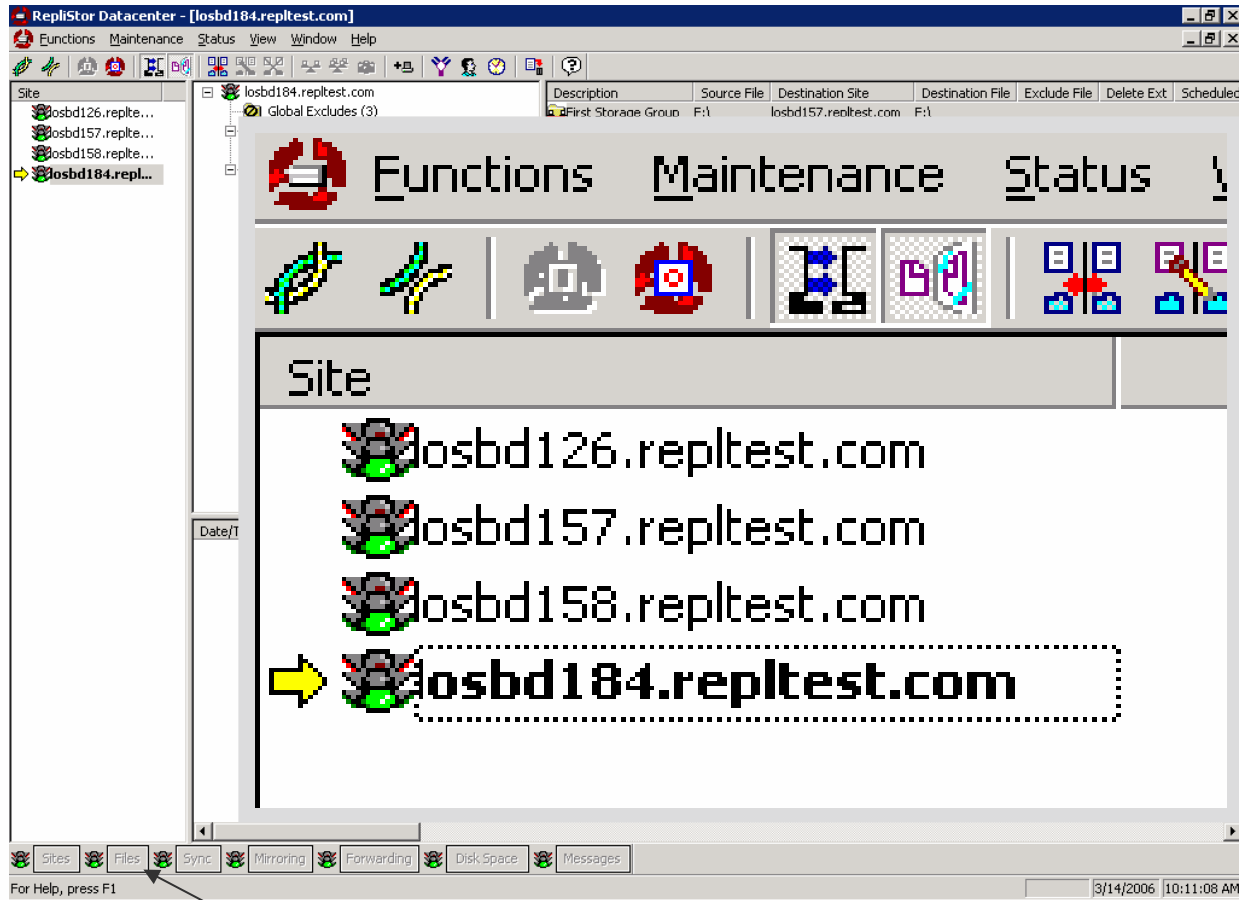
- Support for Microsoft Volume Shadow Copy Service (VSS)
 - ▶ Remote application consistent snapshots for multiple recovery points
 - ▶ VSS Shadow Copies maintained on target server
 - ▶ Recover from VSS Shadow Copy if real-time replica is unrecoverable
 - ▶ VSS management within RepliStor

- Exchange & SQL Wizard

- ▶ Easy VSS setup & configuration
- ▶ Auto-discovery of application
- ▶ Prompts user for failover parameters
- ▶ Prompt user for VSS parameters and creates appropriate specifications



Centralized Management from any RepliStor Client



RepliStor
Monitoring Traffic
Lights

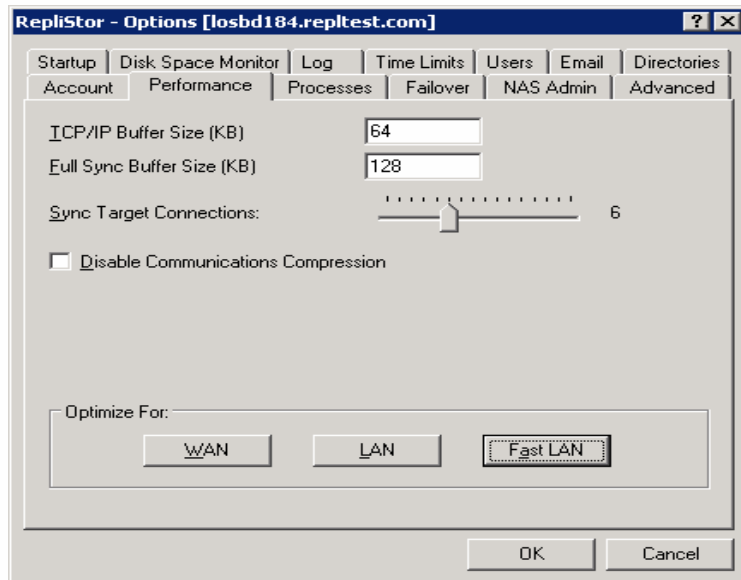
- Green
- Yellow
- Red

Monitoring Traffic Lights for overall site health

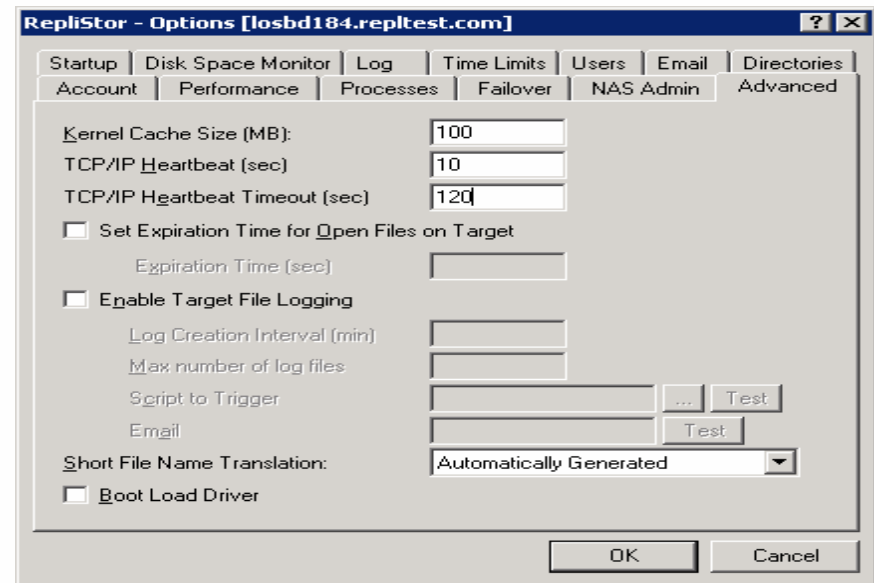
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Configurable Performance Parameters



Network Settings
- Preconfigured for WAN,
LAN or FAST LAN



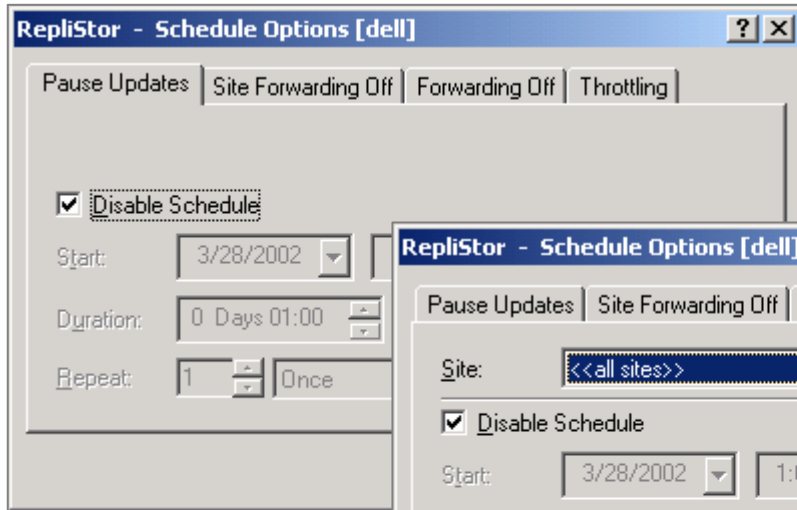
Memory tuning

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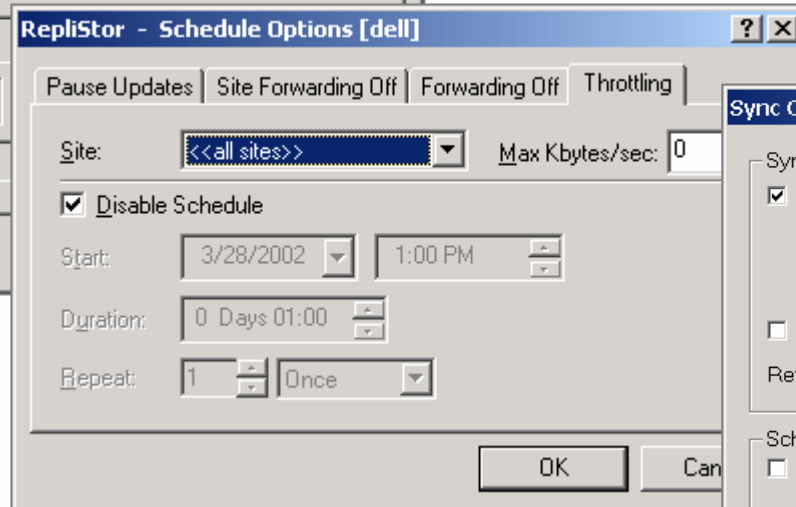
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RepliStor Provides Flexible Scheduling Options

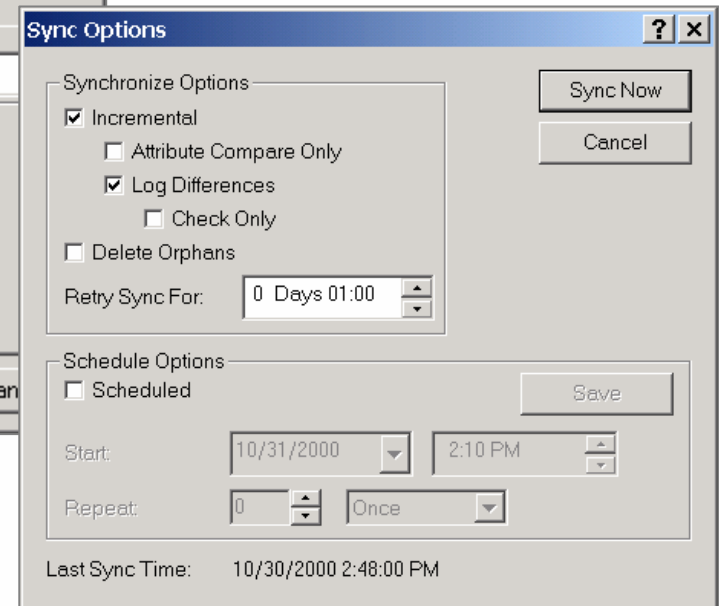
You Determine When and How Replication Will Occur



Pause Updates



Throttling
- Control bandwidth allocation



Synchronization

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RepliStor Provides Flexible Security Options

Secure Data Transmission

The image displays three overlapping 'Site Properties' dialog boxes, each showing a different security option selected in the 'Security' dropdown menu. The first dialog shows 'Connection' selected, the second shows 'Digitally Signed', and the third shows 'Encrypted'. Each dialog includes fields for Site, Description, Account, Domain, Password, and Confirm Password, along with checkboxes for 'Use IP Address' and 'Use Service Control Manager'. The 'Security' dropdown menu is highlighted with a red box in each dialog.

Connection

- Authenticates all server-to-server and client-to-server connections
- Default security level at installation

Digital Signature

- Guards against tampering
- Messages are signed with 16-byte signature
- Detects altered, out-of sequence and replayed messages

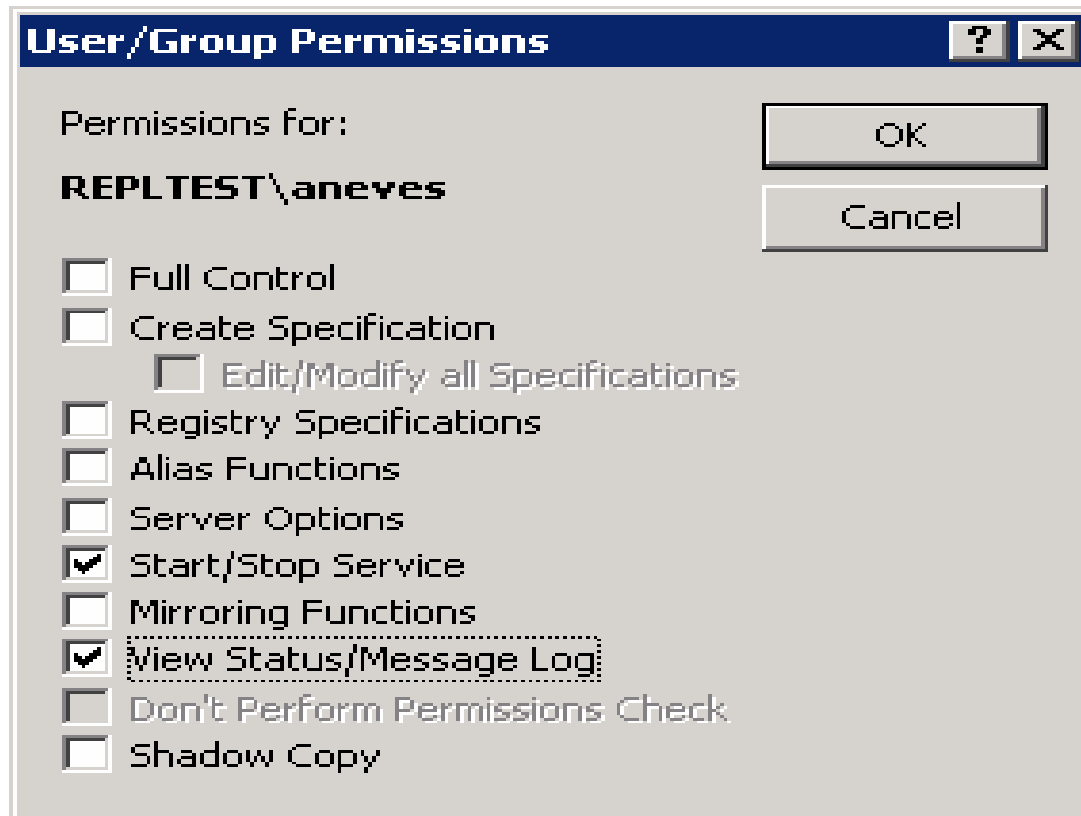
Encryption

- Highest security level
- Same functions as Connection & Digital Signature
- Adds privacy

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User Rights & Role Assignment

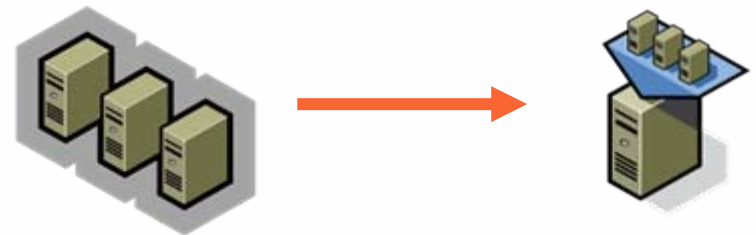


You're in control of who has access to RepliStor within your organization

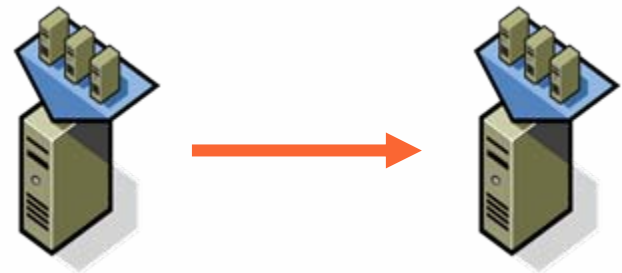
RepliStor works in Virtual Environments

- RepliStor replicates Windows data from physical machines to virtual
- Also replicates Windows data from virtual machine to virtual machine
- No distance limitations
- Physical & Virtual licensing options

Physical to Virtual



Virtual to Virtual



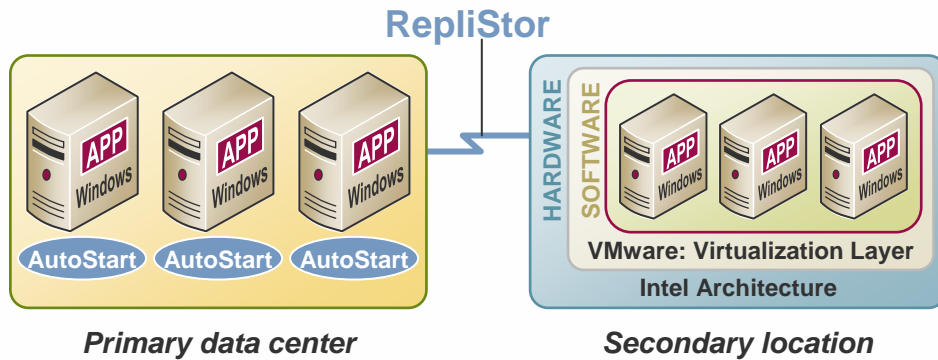
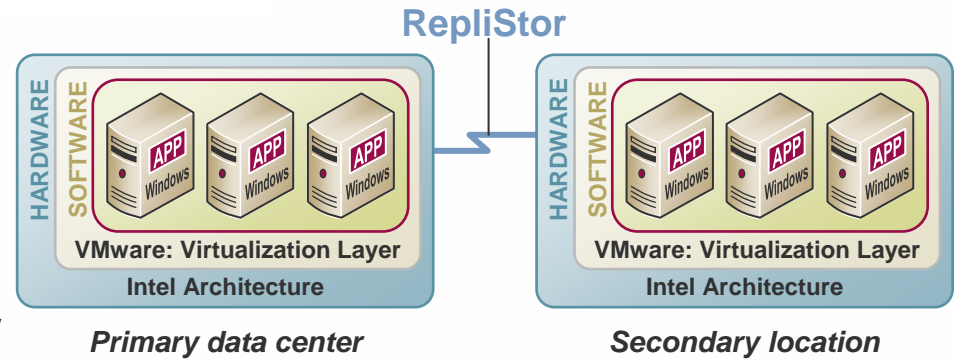
RepliStor & ESX Server – Enabling Cost-effective Solutions

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RepliStor Use Cases with VMware

- Data Protection for Disaster Recovery
- Branch Office Consolidation
- Data Distribution

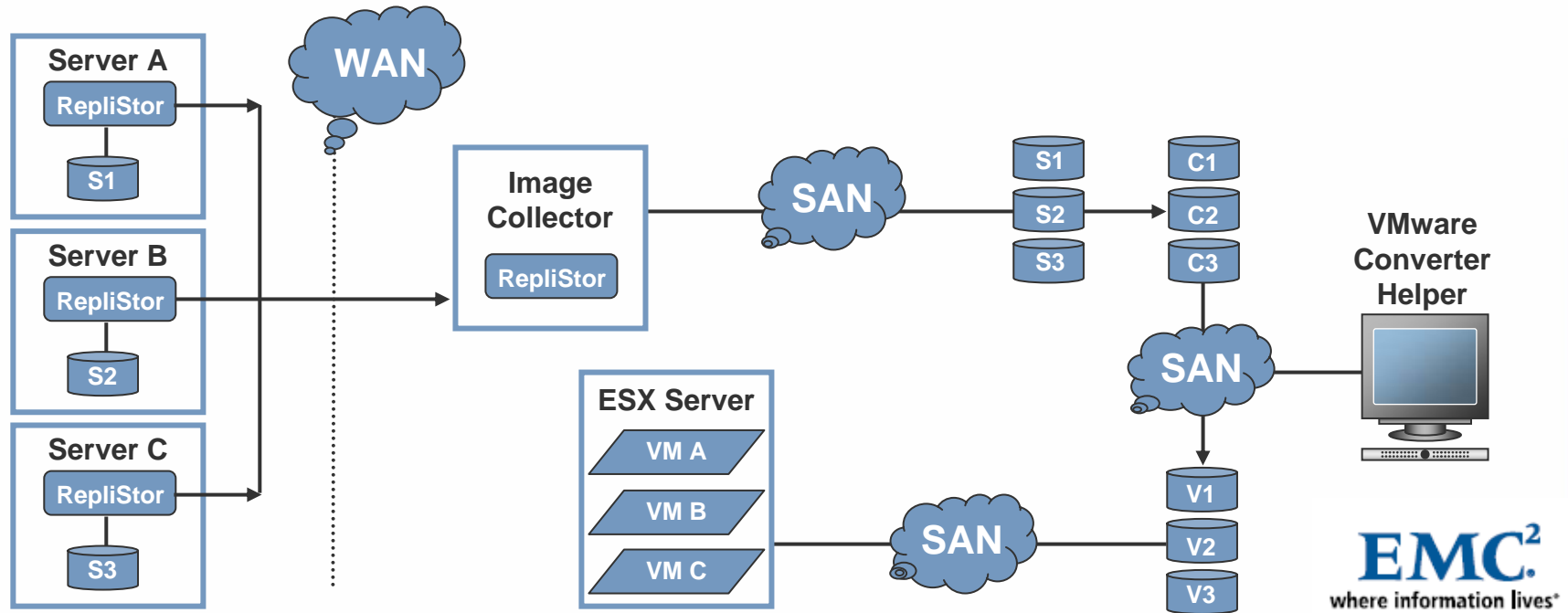


What about migrating or consolidating physical servers to VMware virtual servers?

RepliStor Use Cases with VMware

Server Consolidation / Migration – Servers with DAS Storage

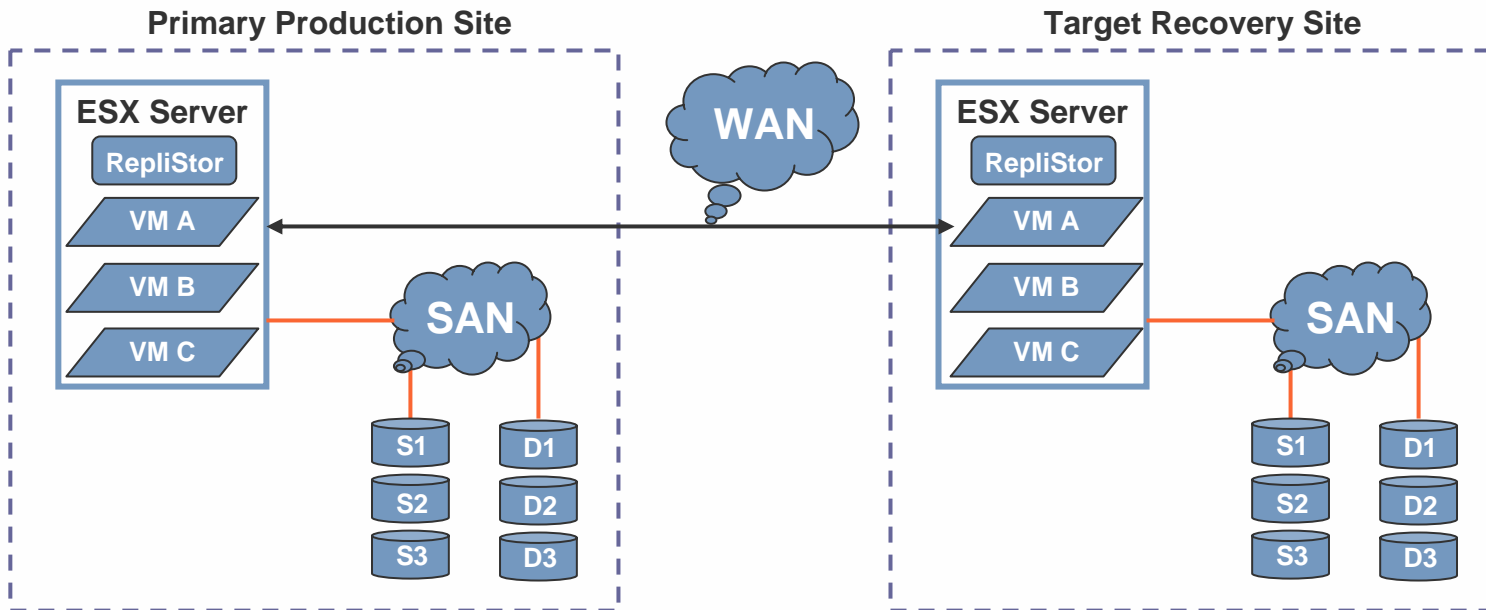
- RepliStor & VMware Converter
- RepliStor captures & replicates an entire server to a target location
- VMware Converter creates the virtual machines



RepliStor Use Cases with VMware

Disaster Recovery for Virtual Environments

- RepliStor captures & replicates system disks and/or data to a target location
- Primary and target are replicated real-time for limited data loss
- In the event of a disaster, the target location resumes operations using the real-time replica for limited downtime and data loss
- RepliStor essentially provides “bare metal recovery” for your virtual environment



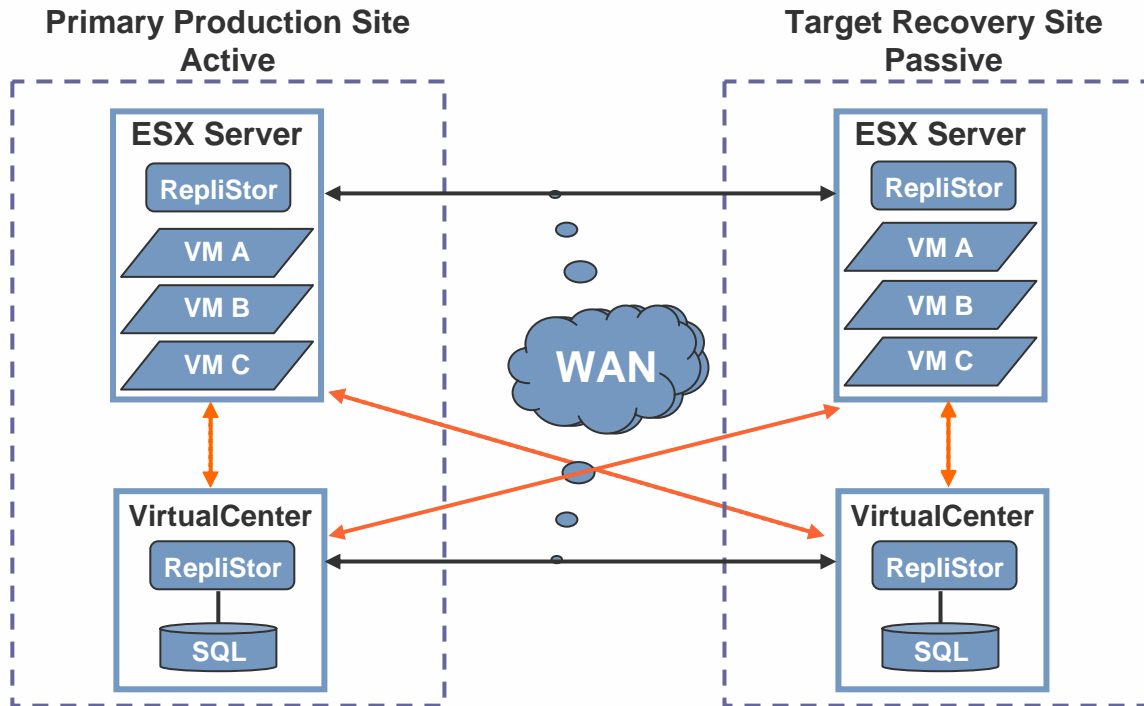
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Replicating VirtualCenter with RepliStor

Disaster Recovery for VirtualCenter

- RepliStor captures & replicates to the target location the VirtualCenter SQL data containing management information for all the ESX virtual machines
- Primary and target are replicated real-time for limited data loss
- Active / Passive configuration for VirtualCenter



Using RepliStor

If the primary site goes down ...

- ESX Server virtual machines will failover to the target site either manually or automatically
- VirtualCenter requires manual failover to take over management of the virtual machines

If VirtualCenter at primary site goes down...

- The target VirtualCenter will manage the virtual machines after a manual failover is initiated

EMC RepliStor & VMware Success Story

Izzy Abdur-Rasheed

VP of Infrastructure & Operations

Praetorian Financial Group



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Praetorian Implementation: EMC RepliStor & VMware

Who is Praetorian?

- Leader in Specialty Insurance Business
- Headquartered in New York City
- Branch offices located in
 - Itasca, Illinois
 - Brentwood, Tennessee
 - Overland Park, Kansas
 - Omaha, Nebraska



Praetorian Implementation: EMC RepliStor & VMware

Business Challenges

- Time To Deploy New Services Was Lengthy
- Solutions Were Not Scalable
- Limited In - House Expertise
- Need For Disaster Recovery Solution
- Enhance Security
- Data Center Space / Cost
- Operational Costs



Praetorian Implementation: EMC RepliStor & VMware

Business Requirements

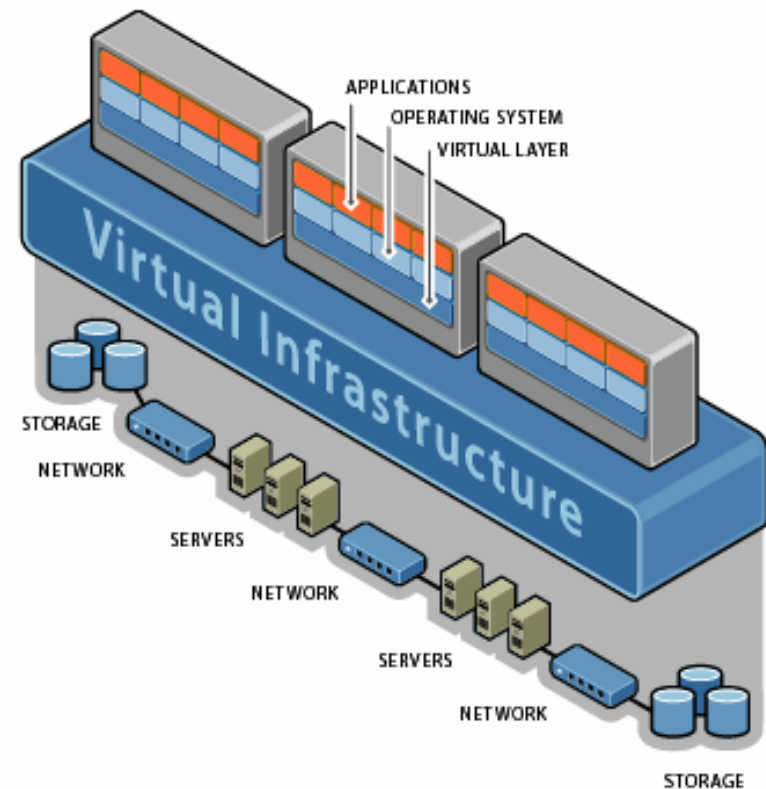
- Reduced Hardware Annual Maintenance Cost
- Reduced Annual Licensing Cost
- Scalable & Economic Architecture (on demand computing)
- Enterprise Network – Enterprise Strategy
- High Availability Service Level Agreements
- Server Visualization
- Portability
- Enterprise Access Strategy
- Continuous Improvement



Praetorian Implementation: EMC RepliStor & VMware

Technology Selections

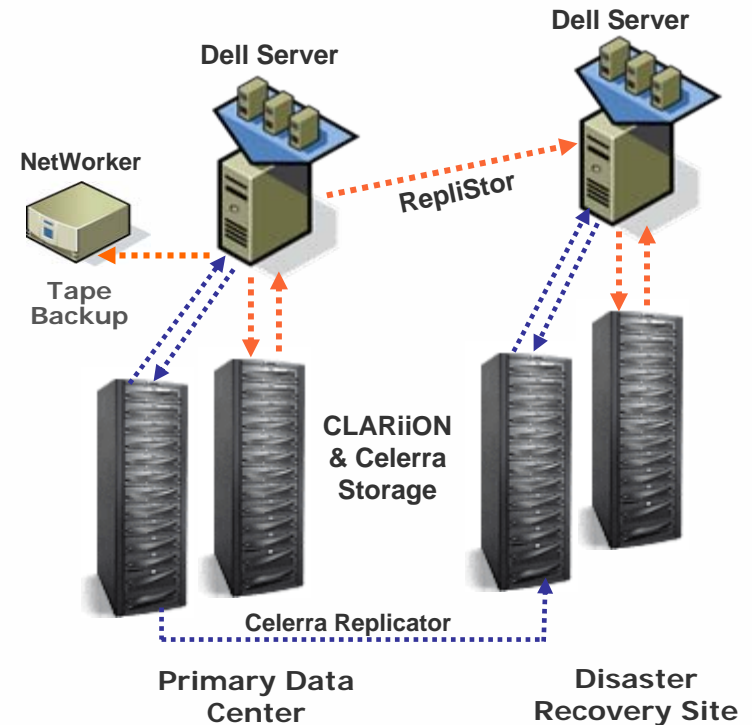
- VMware ESX Server Platform
 - ▶ Server Consolidation
 - ▶ Rapid Server Provisioning
 - ▶ Server Virtualization
- EMC RepliStor for virtual machine disaster recovery
- Standardized on EMC CLARiiON & Celerra Storage
- EMC NetWorker for backup and retention
- Applications
 - ▶ Citrix
 - ▶ Oracle Financials
 - ▶ Crystal Reports
 - ▶ MS Office
 - ▶ Custom Client Server Apps
 - ▶ Other legacy applications
 - ▶ Web Servers



Praetorian Implementation: EMC RepliStor & VMware

Disaster Recovery Solution

- **RepliStor** provides continuous real-time replication of **VMware virtual machine** guest OS system disk from primary data center to disaster recovery site
- Production & DR site using **CLARiiON and Celerra** storage for all data
- **Dell servers** located at DR site in warm stand-by mode ready to recover stored virtual machine guest OS system disks from **CLARiiON storage**
- Providing additional protection, **NetWorker** is used for backup and record retention for all data and virtual machines



Praetorian Implementation: EMC RepliStor & VMware

Business Benefits

- Significant reduction of Total Cost of Ownership (TCO) in operations and data center infrastructure of approximately 50%
- Centralized management of all IT resources
- Rapid server provisioning - minutes to build and deploy as opposed to days or weeks
- Portability - VMware server images can work on different hardware without alteration
- Significant reduction in recovery time from hardware or site failure



Praetorian Implementation: EMC RepliStor & VMware

Key Successes

- 600% acceleration of ROI, realized in 1/6th the time
 - ~ 4 months versus 2 years

- Extreme Cost Containment
 - Initial rollout – 52 physical servers down to 9 ESX hosts
 - Today – 91 virtual servers running on 9 ESX hosts

- Capable to support 250 users in virtual machines with multiple applications including:
 - Citrix, Business Applications, MS Office, Custom Client Server Apps and other legacy applications

- Providing high availability at lower cost



Questions?

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Thank you!

To learn more about EMC RepliStor visit our booth at the show

Or online www.software.emc.com

Data Sheet




EMC RepliStor and VMware Software: Providing Reliable, Cost-Effective Data Protection and Backup Consolidation

EMC RepliStor and VMware software reduce costs and complexity

EMC® RepliStor® and VMware software provide a reliable, simplified, and cost-effective data protection and backup consolidation solution for Microsoft Windows environments.

Virtualizing all or part of your server environment with VMware software improves the utilization and efficiency of your hardware and software resources, reducing total IT expenditures. Adding RepliStor to physical or virtual environments enables enhanced data protection and allows for branch-office backup consolidation by replicating Windows data at remote sites to central data centers—regardless of distance.

For businesses searching for an affordable data protection and backup consolidation strategy, RepliStor and VMware software provide the answer.

Protect your business-critical data and applications in virtual environments

RepliStor protects Windows operating systems running in virtual machines on VMware® Server, GSX Server, or ESX Server. RepliStor and VMware work together in both physical-to-virtual and virtual-to-virtual environments.

In a physical-to-virtual environment, RepliStor replicates data from physical servers to virtual machines running Windows operating systems in a VMware virtualized environment, protecting data, providing application availability, and ensuring Exchange 2003 and SQL Server 2005 recoverability through out-of-the-box integration with Microsoft's Volume Shadow Copy Service. Through virtualization, VMware software significantly reduces IT costs by eliminating the need for a one-to-one mapping of production and recovery site servers. The combination of RepliStor and VMware software provides a very compelling solution for customers looking for a cost-effective disaster recovery solution.

Physical-to-virtual replication for Windows servers



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White Paper

EMC RepliStor and VMware Software: Providing High Availability, Disaster Recovery, and Data Consolidation in Virtual Environments

Applied Technology

Abstract

This paper focuses on high availability, migration or consolidation, and disaster recovery solutions for Microsoft Windows environments using EMC® RepliStor® and VMware. This document provides an overview of each of these use cases and presents a simple solution that addresses each task.

June 2006

Basic Customer Focus on Business Continuity




Praetorian Financial Group

Ensuring against disaster with a recovery management solution from EMC

BUSINESS VALUE HIGHLIGHTS

SOLUTION SNAPSHOT

- Software: VMware® ESX Server, EMC RepliStor®, EMC NetWorker™
- Primary Applications: Citrix, Crystal Reports, Microsoft Exchange 2003, Active Directory, Web services, insurance processing applications
- Storage Infrastructure: EMC CLARION®
- Processing Environment: Windows Server 2003
- Overall EMC Environment: In addition to the EMC recovery management solution, Praetorian relies on other EMC storage, such as EMC CLARION® network-attached storage for file serving, and EMC software, including EMC PowerPath®, EMC SnapView™, and EMC VisualSBEM™

Profile: The Praetorian Financial Group is a leader in specialty insurance, focusing on offering "non-covered" short and mid-tail coverage, specialty lines, niche business, and unique programs for customer and affinity groups. With headquarters in New York City, Praetorian has branch offices in Miami, Tennessee, Kansas and Nebraska, and has partnered with leading specialty insurance general agents throughout the 50 states.

Challenge: Praetorian needed a more flexible and cost-effective infrastructure to provide central IT services for multiple business units across the country, with a solid recovery management strategy to protect critical data and comply with insurance regulations.

Business Value: EMC designed and deployed a new centralized and virtualized IT infrastructure, using EMC CLARION storage, EMC RepliStor, EMC NetWorker, VMware software and EMC SANs to:

- Replicate Windows-based virtual machines in real time to achieve near-continuous protection for all critical business applications
- Compress backup recovery times of weeks to a recovery time objective of 24 hours and recovery point objective of 24 minutes for all core business applications
- Eliminate the backups at individual offices with centralized and automated backup of 12 terabytes of data
- Consolidate more 50 physical servers to nine physical servers running 60 virtual machines, contributing to an ROI of nearly 100 percent in just four months and a more secure infrastructure

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