FalconStor®
Defining Data Protection, Again.™

Solution Brief

Unified Backup & DR for VMware Environments

Highlights

FalconStor CDP provides comprehensive data protection and recovery for VMware environments:

- Certified VMware vCenter Site Recovery Manager storage solution
- Uniform data protection for physical & virtual server environments
- Minimizes replication bandwidth requirements & costs
- Automates error-prone backup & recovery operations
- Unified backup & disaster recovery (DR) solution
- Near-zero recovery time & recovery point objectives (RTO/RPO)
- Eliminates vendor lock-in to reduce hardware costs
- Space-efficient backups
- Supports Microsoft Windows & Linux application servers

www.falconstor.com/vmware

As organizations migrate more critical business applications onto virtual servers, their underlying physical infrastructure and data protection methodologies become increasingly critical. In addition, these organizations face unique challenges.

As a market-leading server virtualization solution, VMware vSphere enables server consolidation, availability, and hardware independence. Deployments often involve virtual server densities of between eight and12 virtual machines per VMware ESX/ESXi host, each optimized to utilize every available host resource. However, the system-intensive task of running traditional backup jobs, sequentially or simultaneously, can exceed available host resources and disrupt application operations, even with less-invasive incremental backups.

Organizations investing in VMware vSphere can leverage the data protection capabilities and application awareness of FalconStor® Continuous Data Protector (CDP) technology to protect and maximize their infrastructures. The FalconStor CDP solution enables flexible, affordable, automated, and dependable backup and near-instant disaster recovery (DR) for any VMware vSphere environment. It provides application-aware data protection for all resident business applications. In addition to local data protection and recovery, FalconStor CDP provides automated DR for both virtual and physical servers, utilizing heterogeneous storage from any vendor. With its broad set of backup and recovery functions, FalconStor CDP presents a non-disruptive alternative to traditional backup.

FAST BACKUP WITH NEAR-INSTANT RECOVERY

Unlike traditional tape backup solutions, with slow and unreliable recovery procedures, FalconStor CDP enables continuous, network-based data protection with no impact on systems, applications, or virtual machines. It also provides near-instant access to backup volumes. The unique solution architecture of FalconStor CDP, including its integration with VMware technology, eliminates the traditional issues and logistical complexities of tape backup.

Most mission-critical virtualized applications leverage clustered VMware ESX/ESXi hosts and some form of shared storage. While VMware vSphere and VMware vCenter enable application and virtual server availability, backup of data volumes at particular points in time remains an essential aspect of data integrity and recoverability. For this reason, FalconStor CDP utilizes secondary disk storage, accessed via any networking protocol (iSCSI or Fibre Channel [FC]), populated with server write data in either continuous or periodic mode. Under this paradigm, backup is performed on storage volumes isolated from the business application and storage data path.

In addition to a complete backup volume, FalconStor CDP can create up to 1,000 space-efficient snapshots for flexible point-in-time recovery of files, database objects, or entire virtual servers. As these backup volumes are disk-based and in-network, recovery times can be as short as five minutes for files and 10 minutes for servers.

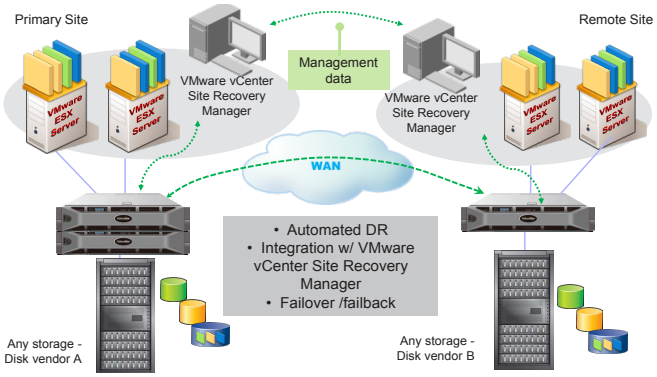
APPLICATION-SPECIFIC DATA PROTECTION

When it comes to recovery, organizations need to ensure the speed, accuracy, and integrity of data. FalconStor CDP addresses these needs through its unique architecture (disk based and in-network) and extensive library of application-specific snapshot agents. Snapshot agents ensure that all backup and recovery volumes are transactionally consistent. This makes data recovery significantly faster and easier than traditional crash-consistent recovery methods, which require locating the transaction log and manually re-populating any corrupted or missing transactions.

UNIFORM BACKUP OF SYSTEM & SAN VOLUMES

Large environments deploy virtual machines (VMs) on clustered VMware ESX/ESXi hosts to leverage VMware application availability offerings such as vSphere High Availability (HA) and Fault Tolerance (FT). Each VM is represented by VMDK files that contain the guest operating system and business application, which seldom change. However each virtual server's data volume, commonly provisioned by shared or SAN storage, has a much higher change rate.

FalconStor CDP offers consolidated disk-based backup of all VMs and their associated data volumes, easily supporting different backup or data retention policies per host or VM.



FalconStor CDP provides local and remote recovery for mixed virtual & physical environments

Businesses with compliance or regulatory requirements for long-term tape backup can utilize the HyperTrac™ Backup Accelerator, a complementary product that automates the selection and mounting of FalconStor CDP snapshot volumes for physical tape creation. The resulting inventory of space-efficient disk-based snapshots and automated tape creation enables organizations to reduce the frequency of tape backups and consolidate all tape operations.

AUTOMATED DR

Recovery of IT operations between data centers provides protection and resiliency against natural or manmade disasters. However, few DR solutions truly address all of the complexities and dependencies of today's heterogeneous IT environments.

VMware vCenter Site Recovery Manager enables automated DR for VMware virtual server environments. As a certified VMware vCenter Site Recovery Manager storage solution, FalconStor CDP supports both failover and failback operations. In addition, FalconStor CDP expands DR automation to encompass physical and virtual server applications while enabling replication between data centers, supporting SAN storage from any vendor at any location. This heterogeneous DR capability helps to lower the DR implementation costs of VMware Site Recovery Manager, allowing customers to leverage existing or mixed storage at any data center.

WAN-OPTIMIZED REPLICATION

The monthly cost of bandwidth is an often overlooked yet significant component of the overall cost of DR solutions. FalconStor CDP includes remote replication as a standard feature, enabling both one-to-one and many-to-one replication. In addition, WAN-optimized replication enabled with patented MicroScan™ technology greatly reduces the volume of replicated data traffic, significantly lowering bandwidth requirements and associated monthly costs.

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