Solution Overview

The EMC® Avamar™ deduplication backup software and system, along with its integration with EMC Data Domain, provides a next-generation global data deduplication solution for VMware View® Business Process Desktop™ implementations. This addresses the challenges associated with traditional backup in the evolving next-generation datacenter by enabling fast, efficient protection for end-user computing environments, VMware environments, remote offices, and datacenter LAN/NAS servers.

Unlike traditional backup solutions, Avamar identifies redundant data segments at the client—before they are transferred across the network. By moving only new, unique sub-file data segments, Avamar delivers fast daily full backups while reducing the required daily network bandwidth by up to 99 percent. This capability allows companies to utilize existing network bandwidth for backup and disaster recovery of remote offices and datacenters, despite slow or congested networks and infrastructure. Data can be encrypted both in flight and at rest for added security, and centralized management makes protecting hundreds of remote offices easy and efficient.

Architecture and Design

The following diagram highlights the typical VMware® View™ solution utilizing EMC Avamar for user-level and infrastructure backup and recovery. This approach for protecting the View desktop solution involves leveraging EMC Avamar’s broad support for and combination of guest- and image-level backup.

With EMC’s Guest Agents, Avamar clients can be deployed in the View desktop templates providing end-user, self-service backup and recovery with minimal involvement from the IT helpdesk. Similarly, with Avamar’s broad support for application-consistent database backups, plug-ins are deployed to protect the View infrastructure databases such as the View Composer Server database and vCenter™ Server database.

Here is a summarized list of the various components and how Avamar can address protecting these components:

- **View Connection Server and View Transfer Server**
  - Avamar VADP Virtual Machine Image Backup
  - Windows File-Level Recovery from Virtual Machine Image Backup
- **VMware vCenter Server and View Composer Server**
  - Avamar VADP Virtual Machine Image Backup
  - Avamar Client Plug-in for Oracle or Avamar Plug-in for SQL
- **VMware View Persona and VMware ThinApp™**
  - Avamar NDMP Backup with Accelerator Node

**Note:** Image backups are used under the assumption that View infrastructure servers are also virtualized. Physical servers can also be protected using the respective base OS Guest Plug-Ins.
“Avamar is also very flexible because it provides umbrella coverage for our entire environment—including our virtual machines and virtual desktops.”

– Louie Smith, Systems Administrator, Scentsy, Inc.

Together with the implementation of application-specific plug-ins, Avamar’s tight integration with VMware vStorage APIs for Data Protection (VADP) brings powerful image-based backup and recovery for those View infrastructure components which are essential to end-user access to backend end-user virtual machines. Components such as the View Composer Server and the View Connection Server can be quickly and easily protected on a nightly basis for quick uptime and faster disaster recovery.

Figure 1: Avamar Deployment for Business Process Desktop Backup and Recovery

Validation Result

Scentsy, Inc., a rapidly growing, party-plan company offering scented wickless candles and other fragrance products, has enjoyed a three-year revenue growth rate from 2007 to 2010 of nearly 3,000 percent. The Meridian, Idaho–based fragrance company ranked number 85 on Inc. Magazine’s 2011 Inc. 500 list of fastest-growing private companies in the U.S.

With this explosive growth, Scentsy faced challenges in scaling its IT infrastructure quickly and efficiently. The company adopted VMware virtualization to enable rapid growth, and undertook a storage transformation to compensate for future performance and scalability demands.

Using EMC Avamar, Scentsy enjoys fast, daily full and image-based backups across its infrastructure, including hundreds of virtual desktops and virtual servers. With Avamar, Scentsy has achieved a deduplication rate of 350 percent, which provides significant savings in network bandwidth and backup disk storage.

CHALLENGES

• 2,904 percent three-year revenue growth rate from 2007 to 2010
• Storage and backup solution not keeping up with rapidly increasing virtual desktop and virtual server demands

KEY BENEFITS

• Fast, daily full backups of hundreds of systems, including virtual servers and virtual desktop systems
• Deduplication significantly reduces backup network and storage needs
• Efficient, one-step recovery
Design Components

EMC Avamar Data Store – EMC® Avamar® Data Store is the easiest and fastest way to deploy a physical Avamar server. It combines EMC-certified hardware and EMC Avamar deduplication backup and recovery software in a fully integrated, scalable, purpose-built backup appliance. It eliminates the hassles and complexity of working with multiple vendors for hardware, software, and support. As a turnkey solution, the Avamar Data Store significantly reduces on-site setup time, while providing a single point of contact for purchasing, deployment, and service.

EMC Avamar Client Software/Plug-Ins – Leading Fortune 500 companies rely on EMC Avamar for fast, daily full backups of physical and virtual servers in their datacenter environments. Deploying Avamar client software and plug-ins to end-user View desktops delivers the same enterprise-class backup and recovery capabilities, while enabling end users to recover their own data without IT staff intervention. Easy to install and manage, Avamar’s client software and plug-ins scale across your entire organization to simplify management, and integrated data deduplication leverages existing network links while significantly reducing backup storage costs.

EMC Avamar NDMP Accelerator – Avamar delivers an industry-leading, innovative solution for NAS backup, recovery, and disaster recovery. Unlike traditional methods, Avamar’s integrated deduplication reduces the size of backup data before it is transferred across the network and stored to disk. As a result, Avamar provides fast, daily full backups via existing network links—without the need for a dedicated, high-speed NDMP backup network.

With an Avamar NDMP Accelerator node, a level-0 backup is performed only once, during the initial full backup. Subsequent daily full backups are achieved by requesting only level-1 incremental dumps, enabling Avamar to dramatically reduce backup times and the impact on NAS resources and networks. Avamar eliminates backup bottlenecks and provides the freedom to consolidate storage and optimize NAS systems—without the hassle of limiting the number and size of files or volumes due to backup performance limitations.