DELL EMC AVAMAR

Deduplication Backup Software and System

ESSENTIALS

- Cloud backup and disaster recovery
- Reduces network bandwidth for backup up to 99%
- Reduces backup times up to 50%
- Global deduplication reduces total backup storage up to 30x
- Always perform a daily full backup in a fraction of the time
- Single-step recovery from image backups
- GLR of Microsoft Hyper-V, Exchange and SharePoint backups
- Complete integration with Data Domain Systems for optimal protection storage
- Data is deduplicated at the client, compressed and encrypted before transfer across the network

Companies are redefining their backup and recovery solutions to meet the needs of exponential data growth, regulatory compliance, increased service-level agreements, and shrinking backup windows. IT faces additional challenges brought on by accelerated virtualization, converged infrastructure, and cloud. There is a growing need to improve data protection for the cloud, across the enterprise, including remote offices and cloud.

Dell EMC® Avamar® software and system provides flexible deployment options for fast, daily full backups and is part of the Data Protection Suite Family.

- Disaster recovery to the cloud
- Virtualized and physical environments
- Enterprise applications
- NAS systems
- Remote offices
- Desktops/laptops

Avamar provides tight integration with Dell EMC® Data Domain® systems and uses a multi-streaming approach with Dell EMC Data Domain Boost™ software – resulting in faster, more efficient backups.

- Reduce network bandwidth usage up to 99%
- Reduce backup storage up to 30x
- Reduce backup times up to 50%

Management is simple through a centralized web-based management and at-a-glance dashboard view, allowing you to protect hundreds of offices worldwide from a single console.

Cloud Data Protection

Data Domain Cloud DR (DD CDR) allows enterprises to copy backed-up VMs from their on-prem Data Domain and Avamar environments to the public cloud (AWS) and to orchestrate DR testing to prepare for potential disaster scenarios, failover to cloud in the event of a disaster and failback of cloud workloads following a disaster scenario. Extension of the existing data protection from the customers' premises to the cloud provides a familiar user experience, thus requiring minimal education and training. Additional benefits of the Data Domain Cloud DR include minimal cloud footprint (no additional compute is required during ongoing protection, and minimal compute is required in case of test or recovery), and orchestrated recovery and failback of workloads.

Never Backup the Same Data Twice

Avamar divides backup data into variable-length sub-file segments, compresses and applies a unique hash identifier to each segment during the backup process. Avamar then determines if a segment has been previously backed up and only backs up the unique segments. Avamar will never backup the same data twice.

Highly Efficient Data Deduplication

Avamar employs the most efficient client-side deduplication on the market. Variable-length deduplication significantly reduces backup time by only storing unique segments while maintaining daily full backups for immediate, single-step image restore. Deduplication dramatically reduces the amount of data sent and stored - eliminating backup bottlenecks and reducing storage costs.

Variable-length deduplication is a key feature in eliminating redundant data at a sub-file level. This method of deduplication is more efficient that traditional fixed-length deduplication. With deduplication using fixed-length segments, even small changes to a dataset will trigger a backup of the entire file.

Recoverability

You can take advantage of a one-step recovery from image level backups. Instant access to VMs backed up to Data Domain further simplifies and optimizes the recovery of your VMs. With instant access, the VM is mounted on a Data Domain and vMotion orchestrates the recovery back to production storage. In addition, application consistency ensures you can protect your applications with no downtime.

Scalability and Reliability

When deploying Avamar with Data Domain as the backup target, you will reduce the costs involved with backing up and replicating data for disaster recovery. Data Domain Replicator software provides automated, policy-based, network-efficient, and encrypted replication for disaster recovery and multi-site data protection.

Dell EMC Avamar Data Store combines Dell EMC certified hardware and Avamar deduplication backup and recovery software in a fully integrated, scalable, pre-packaged solution. In addition, it eliminates single points of failure by employing patented redundant array of independent nodes (RAIN) technology to provide high availability across nodes in the Avamar Data Store. System and data integrity are verified daily to ensure recoverability.

Optimized Protection for Virtual Infrastructure

Avamar is optimized for virtualized environments, supporting guest and image-level backups of VMware® vSphere and Microsoft® Hyper-V. Avamar Virtual Edition (AVE) delivers a software-only data protection appliance, ideal for virtual environments.

VMware

Avamar takes advantage of VMware Changed Block Tracking (CBT) for both faster backups and restores. For image backup, Avamar maximizes throughput by using intelligent load balancing across multiple proxy VMs. Avamar provides simple image File Level Recovery or complete VM images to the original VM, an alternate VM or a new VM. For VM images stored on a Data Domain Systems, a VM can be instantly accessed, and while running be vMotioned back to the production environment.

Avamar has tight integration into VMware and enables self-service data protection. vAdmins run backups and recoveries without ever leaving vSphere. Avamar integration with vRealize Automation (vRA) and vCloud Director (vCD) provide data protection services for public cloud, private cloud, hybrid cloud and born-in-the-cloud. The vRA Data Protection Extension embeds data protection directly into the blueprints. These blueprints ensure that data protection is always applied during the VM provisioning process. In addition, vAdmins manage data protection from within the vRA UI. The vCD Data Protection Extension embeds backup services right into vCloud Director and can be shared and distributed in a multi-tenant model.

Microsoft

Avamar provides fast, efficient data protection of your Microsoft private and hosted clouds, including Hyper-V and Azure. It is simple to protect your mission critical applications by leveraging the interfaces that you already use when managing your applications. Application admins are empowered to centrally manage the data protection of their Microsoft applications. Backup administrators are responsible for assigning the appropriate data protection policies using Microsoft System Center Virtual Machine Manager. Policies are enforced when the virtual machines are provisioned.

Avamar will protect each VM via an image based backup method. By understanding the virtual hard disk format, the backup application will scan the VM files directly in the Hyper-V file system, processing the data more efficiently than an agent-based method. Cluster Shared Volumes (CSV) allows multiple nodes to have access to all disks within the clusters. With Avamar, you can designate multiple proxy node systems for your backup. This brings performance benefits by allowing any host within the cluster to perform a backup.

OpenStack KVM

Avamar takes advantage of Changed Block Tracking (CBT) for both faster backups and restores of KVM instances. The OpenStack Data Protection Extension is integrated with Keystone authentication and deduplication occurs on every instance and volume. You take advantage of the multiple benefits delivered by Avamar when protecting your KVM instances.

Highly Efficient Backup of NAS and High Density File Systems

Avamar provides fast, reliable NAS system backup and recovery via the Avamar NDMP Accelerator node. With this approach, 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, and building them into a daily full backup view. This dramatically reduces backup times and the impact on NAS resources, and allows an easier and faster recovery. Avamar eliminates backup bottlenecks and provides the freedom to consolidate storage and optimize NAS systems—without limiting the number and size of files or volumes—to meet the backup window. With automated multi-streaming, Avamar can protect large scale-out NAS systems, including Dell EMC Isilon, by delivering increased throughput to protection storage.

Avamar's Fast Incremental architecture provides an efficient solution to protect high-density file systems (HDFS). The traditional file-based backup approach for protecting HDFS cause bottlenecks by scanning/reading the entire file system during a backup. Linux Fast Incremental is aware of changes made to a file system, eliminating the need to perform a file-scan during the backup and eliminating the bottlenecks of traditional file-based backups.

Fast Desktop/Laptop Backup

Avamar delivers efficient data protection for desktop/laptop by providing data deduplication, open-file backup, and CPU throttling. Avamar leverages existing network links, and since it operates in the background, it is not disruptive to end-users. Data is automatically backed up when a user is attached to the network during normal backup windows. Avamar enables self-service backup and recovery. End users can initiate an on-demand backup and quickly recover their own data anywhere, anytime, via an intuitive interface and integrated search engine. The recovery is always just one-step.

Extended Retention

Avamar helps companies meet compliance regulations that require extended retention of data by sending backup data to a media access node, which then places the data

on a VTL or tape. Data is stored in the original format maintaining all permissions and attributes, which supports offsite restores for eDiscovery. In addition, long term retention to the cloud is made possible with integration into Data Domain Cloud Tier.

Centralized Management and Contol

Multisystem Management enables centralized management of hundreds of Avamar servers from a single console. Backup and Recovery Manager provides control and monitoring for Avamar, NetWorker and Data Domain systems from your tablet. It requires no license and is installed by any customer leveraging the Data Protection Suite Family.

Flexible Deployment Options

Avamar provides flexibility in solution deployments depending upon your specific use case and recovery requirements.

Software-only deployment

Dell EMC Avamar Virtual Edition (AVE) is the industry's first deduplication virtual appliance for backup and recovery—consisting of customer installable Avamar software deployed as a virtual appliance. AVE enables the deployment of a complete Avamar server on an existing VMware ESX server or Microsoft Hyper-V server. The AVE can scale up to 16 TB when configured with Data Domain Virtual Edition as the storage system. Since all aspects of the backup and recovery process are encapsulated and virtualized, control and management are streamlined, reducing demands on your IT staff.

Avamar Virtual Edition has the added benefit of cost-effective Avamar virtual-to-virtual, or Avamar virtual-to-physical server replication to meet your disaster recovery objectives.

Remote Office

Avamar lightweight software agents can be deployed on servers with no additional remote hardware required. This enables data within a remote office to be backed up directly over an existing WAN link to a Data Domain system or Avamar Data Store residing within the data center, eliminating the need for local tape backups and offsite tape shipment risks.

Mid-market Environments

For mid-market environments, Dell EMC Avamar Business Edition provides a competitively priced, conveniently sized, turnkey deduplicated backup solution.