

EMC Avamar

Revolutionizing Backup and Recovery

EMC Avamar is backup and recovery software with integrated global, source data de-duplication technology. Avamar significantly reduces the cost and complexity associated with the backup and recovery of ROBO, virtual server

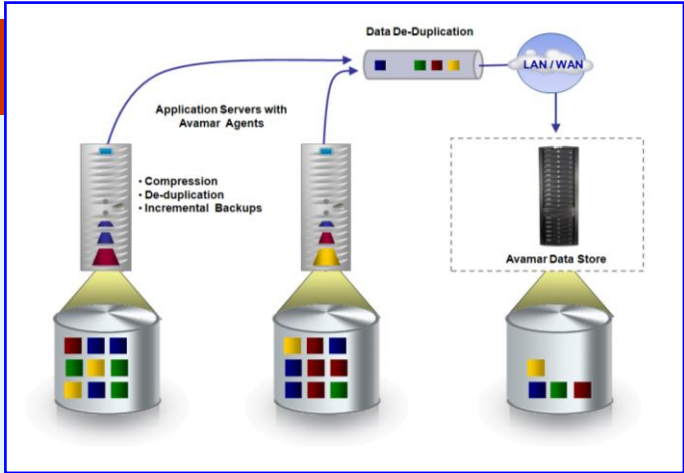
environments, and datacenter LAN servers. The Avamar agents work with Avamar software running within a centrally managed Avamar data repository (server) to eliminate duplicate data on a global scale throughout the organization.

A logical full/ incremental forever backup policy—combined with source-based global data de-duplication, compression and encryption—provides fast and efficient backup and recovery.

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The Product

Avamar offers deployment flexibility to meet the needs of enterprise organizations. For smaller remote offices, only Avamar agents are required (no extra hardware), while larger offices or those requiring faster recovery can deploy a local Avamar server. EMC offers several methods to deploy an Avamar server, including the Avamar Data Store, which provides a turnkey pre-configured solution consisting of Avamar software running on EMC hardware.



An Avamar Data Store single-node configuration is available in 1 TB or 2TB capacities to store de-duplicated data (which, under a typical backup schedule, could require tens of terabytes of traditional cumulative disk or tape storage, depending on the backup method and retention period). For larger implementations, a scalable Avamar Data Store multi-node configuration with self-healing redundancy can be used to retain the equivalent of petabytes of daily full backups. Avamar can also be deployed on industry standard EMC certified servers.

And for VMware environments, Avamar Virtual Edition enables a complete Avamar server to be deployed as a virtual appliance by running as a Guest on an existing ESX server and leveraging existing disk storage.

Why This Matters

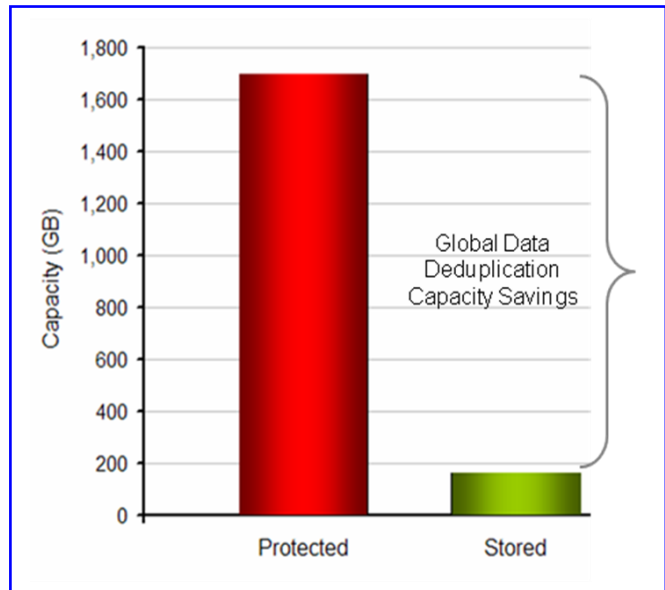
Information critical to the success and efficiency of an organization is not just found in corporate data centers, it also resides at remote and branch offices. Protecting remote offices using traditional backup methods can be costly and risky—especially when performed by non-technical local staff at remote offices. Replicating data over a WAN instead of shipping tapes can be cost prohibitive because of the significant amount of data that needs to be transferred across the network.

ESG Lab has confirmed that EMC Avamar source-based global data de-duplication significantly reduces the amount of data sent over the WAN, enabling fast, daily full backups for remote office data. Backups are centrally managed from a corporate data center using the intuitive Avamar Management console and data can be encrypted for security. Centrally Avamar technology can also be used to solve a number of data center challenges including the resource efficient backup and recovery of virtual server data.

ESG Lab Validation Highlights

ESG Lab performed hands-on evaluation and testing of Avamar at EMC's Hopkinton, Massachusetts facilities. The following is a summary of the results:

- Daily full backups of data residing at a simulated ROBO were performed over a WAN connection and managed from a centralized location with Avamar.
- Configuring and executing backups and restores were extremely easy and intuitive.
- ESG Lab verified that the combination of data de-duplication at the source and globally, compression and incremental forever algorithms can reduce the amount of backup data transferred across the network by up to 500x daily, compared to a traditional daily full backups to disk.
- Based on hands on testing and conversations with customers, ESG Lab is confident that Avamar can be used to reduce backup storage by up to 50x over time.
- Avamar integration with VMware Consolidated Backup drastically reduced virtual server resource overhead (CPU, network and disk) while providing dramatic capacity savings due to the high degree of common data in virtual machines. Capacity was reduced by a factor of more than 10 to 1 for a first full backup of 280 virtual machines.



- ESG Lab has confirmed that lightweight Avamar agents deployed within VM Guests enabled fast, daily full backups that could not be easily accomplished using traditional backup methods.

- EMC NetWorker backup and recovery software was configured in three easy steps to take advantage of Avamar source-based global data deduplication technology.

Issues to Consider

While integration with EMC NetWorker backup software can be used to provide the resource and performance benefits of Avamar global data de-duplication while preserving existing policies and the familiar look and feel of the NetWorker user interface, this level of integration is not supported with non-EMC backup software solutions (e.g., Veritas NetBackup, CommVault Simpana, HP Data Protector, CA ARCserve).

ESG Lab recently heard from a happy Avamar customer who said that, "Even though my nightly backup jobs finish up to ten times faster than full weekly backups to tape, I'd like to see multiple backup jobs on the same server processed in parallel instead of one at a time". Currently if one server has multiple logical drives to backup, then Avamar processes the drives in sequence instead of parallel. EMC has confirmed that this capability is available today through scripting and will be incorporated in a future product release.

ESG Lab's View

ESG believes that Avamar has revolutionized the way that backup and recovery is done. Lightweight Avamar agent software running on application servers eliminates redundant data at the source, before it is sent over a local or wide area network. Compressing and encrypting the data before it is forwarded to a global data store, Avamar drastically reduces the disk capacity and network bandwidth needed to do fast and efficient backup and recovery operations.

ESG Lab was impressed by Avamar's newly introduced integration with VMware Consolidated Backup (VCB). Disk-based snapshots accessed from a VMware proxy server eliminate the backup window and resource problems that can plague legacy backup methods in virtual server environments. Similar levels of storage and resource savings can be achieved with the Avamar ESX Guest and Service Console backup methods. For organizations that have standardized on EMC NetWorker backup software, the latest release of EMC Avamar provides a new and powerful hybrid approach. A single NetWorker agent within an application server can be used to provide the network and capacity savings of Avamar with the familiar look and feel of NetWorker. Avamar adoption has been growing rapidly—especially within enterprises looking for a hands-off, WAN-efficient solution for the protection of remote and branch office data.

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