



## The Big Picture

- Global data de-duplication across sites and servers
- Fast, efficient backup for remote offices, data center LANs, and VMware environments
- Enables daily full backups across existing networks
- Up to 300x reduction in required daily bandwidth and storage
- Data encrypted in flight and at rest
- Up to 10x faster backups
- Recoverability verified daily—no surprises
- Centralized Web-based management
- Simple one-step recovery

Exponential data growth, regulatory compliance, strict service-level agreements, and shrinking backup windows are forcing enterprise organizations to rethink their data protection methods. And with up to 60 percent of all enterprise data residing at remote offices, IT managers face a new set of challenges.

EMC® Avamar® software solves the challenges associated with traditional backup, enabling fast, reliable backup and recovery for remote offices, data center LANs, and VMware® environments. Avamar utilizes patented global data de-duplication technology to identify redundant data segments at the source, reducing daily backup data by up to 300x—before transfer across the network. This allows companies to utilize existing WAN bandwidth for backup and disaster recovery of remote offices. Data can be encrypted for added security, and centralized management makes protecting hundreds of remote sites easy and efficient. Avamar backs up data to disk and can integrate with existing tape and backup software environments.

**“The [EMC] Avamar remote office solution enabled us to reduce administrative support requirements by 80 percent, reduce backup windows by 90 percent, and recover lost files and servers in minutes rather than hours.”**

Mike DePhillip  
 Backup Administrator  
 Virginia DMV

## Traditional data protection challenges

One of the key drivers impacting backup performance is the amount of data that must be protected within the available backup window. Traditional solutions are inefficient because they back up everything—including duplicate data files and sub-file data segments that exist across thousands of servers, desktops, notebooks, and offices worldwide. When combined with traditional daily incremental and weekly full backup schedules, the impact of duplicate data is staggering—companies often move more than 200 percent of their primary data every week.

As a result, meeting short backup windows can be very difficult due to the sheer volume of data that must cross already congested networks, backup servers, and infrastructure. The impact is especially severe at remote offices since limited network bandwidth makes centralized, automated WAN-based backup nearly impossible. Instead, firms rely upon non-technical staff, failure-prone tape-based hardware, and ad hoc manual processes that often result in unreliable remote office data protection.

## STORAGE



Backup & Archiving  
Avamar Axion 3.5

Morgan Stanley  
CIO Award



**EMC Avamar is the leading provider of enterprise data protection software that allows corporations to efficiently move, store, and leverage information for business value. EMC Avamar provides scalable solutions for global corporations, from medium-sized businesses to large, multi-national enterprises.**

By backing up duplicate data, traditional solutions also increase costs due to the extra storage capacity required. This is exacerbated by the need to retain data for many months or years in support of archive or regulatory compliance objectives. In addition, traditional backup often involves the shipment of physical tapes offsite, including unencrypted tapes, which can result in exposure of confidential information, theft, or data loss.

### Efficient backup and recovery

EMC Avamar software enables fast, efficient, and reliable data protection by reducing the size of backup data at the source—before it is transferred across the network. Unlike traditional solutions, Avamar identifies redundant sub-file data segments within and across servers, desktops, notebooks, and offices worldwide. Avamar's patented global data de-duplication technology ensures that backup data segments are stored only once on a global basis. This effectively reduces the amount of data moved and stored daily by up to 300x, enabling daily full backups and rapid restores.

As a result, companies can finally utilize existing LAN/WAN bandwidth to protect critical data at even the most remote offices. In addition to automatically scheduled backups, Avamar verifies the recoverability of all backup data—so there are no surprises. And backup data is encrypted during transit across the WAN and at rest for security.

### Flexible solutions and centralized management

For smaller remote offices, Avamar software agents can be deployed on the systems to be protected. This allows data to be backed up directly over existing WAN connections to a central Avamar server at the data center. To protect larger remote offices and data centers, data can be backed up to a local Avamar server and then replicated to another Avamar server located at the data center or remote site. Unlike traditional solutions, Avamar provides daily full backups that can be quickly recovered in just one-step—eliminating the hassle of restoring full and subsequent incremental backups to reach the desired recovery point. In addition, centralized Web-based management makes it easy and efficient to protect hundreds of offices worldwide from a single location by using existing network bandwidth.

### Scalability and high availability

Avamar utilizes a grid architecture that enables linear performance increases by simply adding storage nodes. Each incremental node increases CPU, memory, I/O and disk capacity for the entire grid. When additional storage is added, data is automatically load-balanced for optimal performance. High availability is delivered by patented redundant array of independent nodes (RAIN) technology, which provides fault tolerance across storage nodes and eliminates single points of failure. In addition, Avamar system integrity is verified twice daily via internal system checkpoints.

### Leverage and tape integration

Unlike traditional backup software, Avamar provides file system access to backup data through the Avamar File System (AvFS). This allows administrators to perform direct restores of individual data files or volumes without the need to install Avamar agents on target systems.

Avamar's Tape Output option provides the ability to archive backup data stored within an Avamar server to tape.

Feature Checklist	Avamar Backup	Traditional Backup
De-duplicates data at the source—before transfer across the network	•	
Up to 300x reduction in required WAN bandwidth and backup storage globally	•	
Enables daily full backups across the WAN	•	
Up to 10x faster backups	•	
Data encrypted in flight	•	
Recoverability verified daily—no surprises	•	
Centralized Web-based management	•	
Simple one-step recovery	•	
Grid architecture for scalability	•	
RAIN for high availability	•	
Backup data can be leveraged (search, etc.)	•	
Integrates with tape and backup software	•	•
Eliminates need to ship tapes offsite	•	
Lowers remote office administration costs	•	

## Take the Next Step

To learn how an EMC Avamar solution can make your backup and recovery processes more efficient and cost effective, contact your local EMC sales representative or authorized value-added reseller, call us at 1-866-464-7381, or visit our website at [www.EMC.com/solutions/bura](http://www.EMC.com/solutions/bura).



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## Specifications

### Applications

Microsoft Exchange  
Microsoft SQL Server  
Oracle  
DB2  
NDMP for NetApp filers  
VMware

### Hardware

A certified Intel x86 server running Red Hat Enterprise Linux

### Operating Systems

Windows  
Solaris  
AIX  
HP-UX  
Linux  
Mac OS X

### Platforms Supported

Please contact EMC for further details regarding certified hardware platforms.