



# EMC AVAMAR

... a reason for Cloud

Deduplication backup software

Replication for Disaster Recovery

*Bogdan Stefanescu (Bogs)  
EMC Data Protection Solutions  
bogdan.stefanescu@emc.com*

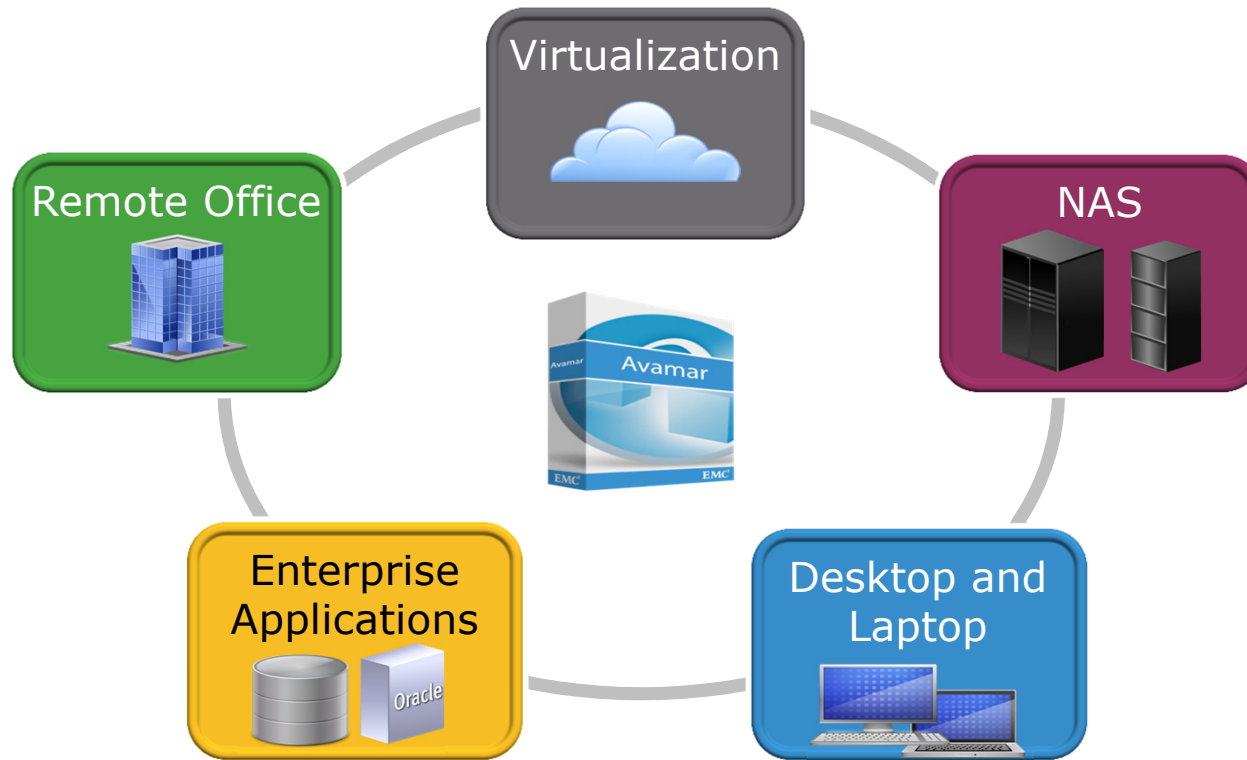
EMC<sup>2</sup>

# BUSINESS DRIVERS



# SOLVE BACKUP PROBLEM AREAS

UNIQUELY SUITED FOR THE MOST CHALLENGING BACKUP ENVIRONMENTS



# EMC AVAMAR

## DEDUPLICATION BACKUP SOFTWARE AND SYSTEM



- Reduces backup time and network load
  - Variable-length deduplication
- Daily full backups and one-step recovery
- Optimized for virtual environments
- High availability and reliability
- Full list of supported operating systems and enterprise applications
- Integrated with EMC Data Domain Systems

EMC<sup>2</sup>

# DEDUPLICATION IS THE ENABLER

MOVE AND STORE LESS DATA

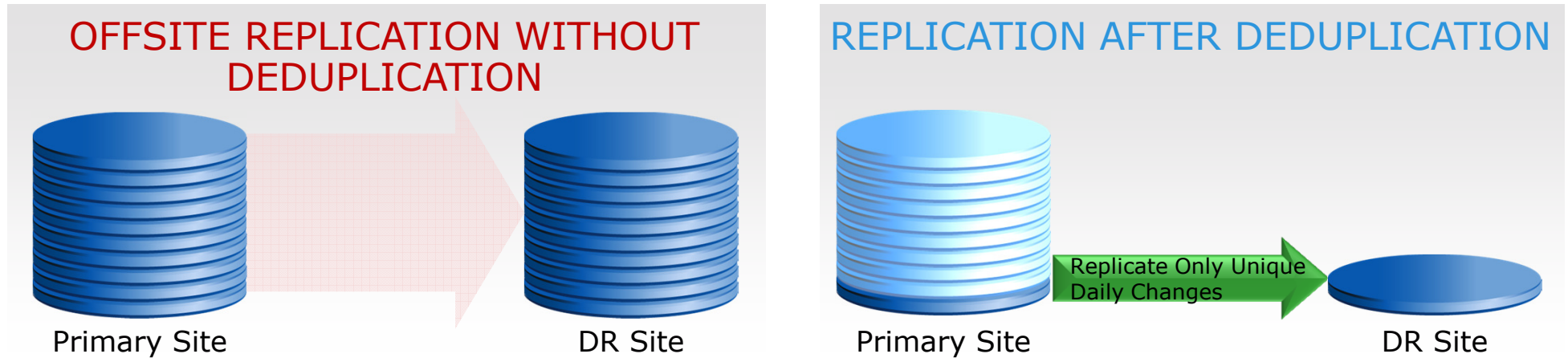


1. Divides data into variable-length sub-file segments
2. Determines if segments are **unique** or **duplicate**
3. Backs up only unique data
4. Sends data compressed and encrypted



# REPLICATE SMARTER USING EXISTING NETWORKS

AVAMAR 99% EFFICIENCY REDUCES OR ELIMINATES NEED FOR TAPE



Maximize efficiency, drives down costs for business continuity and disaster recovery protection



# SHORTEN BACKUP/RECOVERY TIMES

AVAMAR SHRINKS BACKUPS AND SPEEDS DATA RECOVERY

## TRADITIONAL BACKUP



### Backup

Traditional backup  
Weekly full  
Daily incremental



### Restore

Traditional backup  
Weekly full  
Daily incremental

- ✗ Long backup cycles
- ✗ Laborious restore process

## AVAMAR BACKUP



### Backup

Daily full



### Restore

Single-step

- ✓ Up to 90% reduction backup time
- ✓ Simple, one-step recovery

Meet strict SLAs for RTO and RPO

# FLEXIBLE DEPLOYMENT OPTIONS

## Avamar Data Store

Single Node

### Remote Offices

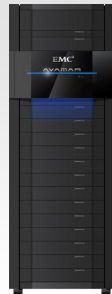
- Sized for distributed office workloads
- Centralize via replication (required)
- Fast backup, one-step, local recovery



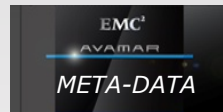
## Avamar Data Store Scalable RAIN Grids

### Enterprise Environments

- Scalable nodes
- RAIN and high availability
- Up to 124 TB



## Avamar Data Store + Data Domain System



## Avamar Virtual Edition

Virtual Appliance

### VMware & Microsoft

- Avamar server, in a virtual machine
- Guest and image backups
- Fast, changed-block recovery



## Avamar Business Edition

### Mid-Market Environments

- Single node, sized for small data centers
- Optional replication for DR/centralization
- Lowest \$/TB Avamar solution

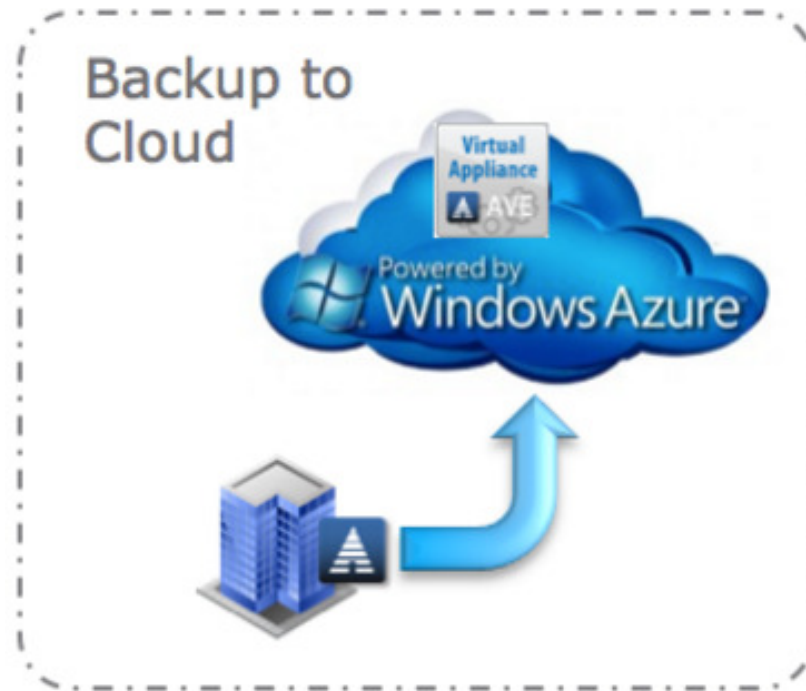




INSTEAD IT MAY BE “CLOUDIER” ...  
BUT IT’S ALL CLEAR AZURE SKIES  
WITH THE NEW AVAMAR VIRTUAL EDITION

EMC is pleased to announce the **Avamar Virtual Edition (AVE)** – deduplication backup software and virtual appliance designed for **Microsoft Azure** and **Hyper-V** environments.

# BACKUP TO AZURE



# REPLICATE BACKUP DATA TO AZURE FOR DISASTER RECOVERY



# PROTECT VIRTUAL MACHINES FROM AZURE



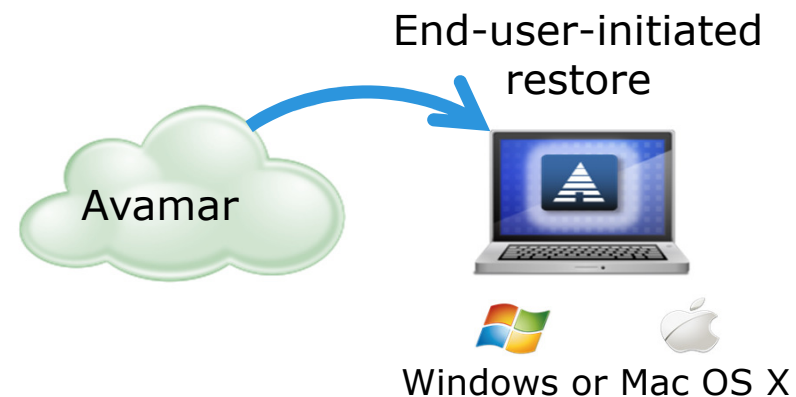
# MICROSOFT HYPER-V PROTECTION



- Guest-level backup and recovery
  - Provides application consistency
- Image backup and recovery
  - Complete protection of virtual machines
  - Recover VMs to alternate Hyper-V servers
  - Granular Level Recovery (GLR) for faster restores
  - Avamar Virtual Edition for Hyper-V and Azure

# AVAMAR FOR DESKTOP/LAPTOP BACKUP

A SINGLE, SCALABLE SOLUTION FROM EDGE TO DATA CENTER



- Convenient, nondisruptive backups
- End-user self-service recovery
- Document-level search engine
- Multi-language support
- Cross-platform restore
- Redirected restore to tablets
- No “per-client” fees

# Recover in One Step

Actions Tools Navigation Help

Select for Backup Select for Restore

By Date By File/Folder

Backup History

Backup(s) for month: April

Number	Name	Time (EDT)	Plug-in	Retention	Size	Server
1131	Everyday FS-SPFS - BSG6924...	23:04:16	Windows File S...	DW	30,108,272,...	Avamar
1119	Everyday FS-SPFS - BSG6924...	23:04:11	Windows File S...	D	30,105,563,...	Avamar
1118	Everyday-SP-BSG69240-136...	22:20:00	Windows Shar...	D	61,171,081,...	Avamar

Contents of Backup named Everyday FS-SPFS - BSG69240 Environment-13665996

C:/\_backup/config/

Select	Name	Date	Size	Type	User	Group
<input type="checkbox"/>	Export	2012-06-12 ...	0		Administrators	Domain Users
<input type="checkbox"/>	schema	2013-02-28 ...	193,047		Administrators	Domain Users
<input checked="" type="checkbox"/>	administration.config	2012-06-12 ...	18,258		Administrators	Domain Users
<input checked="" type="checkbox"/>	applicationHost.config	2013-02-27 ...	401,498		Administrators	Domain Users
<input checked="" type="checkbox"/>	redirection.config	2013-06-17 ...	490		Administrators	Domain Users

Context menu for redirection.config:

- Back Up Now...
- Restore Now...
- View Activity
- Preview List
- Select All
- Unselect All
- Refresh





# EMC CLOUDBOOST

...FOR LONG TERM RETENTION  
OF BACKUP SETS IN THE CLOUD





# NEED LONG TERM RETENTION?

EMC TURNS A NECESSARY EVIL INTO COMPETITIVE ADVANTAGE



- *Who:* Any organization with LTR requirements
- *What:* Low cost, high performance, zero risk LTR
- *How:* **EMC NetWorker, EMC Avamar and Veritas NetBackup with CloudBoost**

# WHAT DOES CLOUDBOOST ENABLE?

- Simplified LTR of backups with...
  - Lower CAPEX
  - Increased agility
  - Zero risk (unlike tape)... for any retention requirements
- Seamlessly clone backups to cloud for LTR while keeping operational backups on-premises using your current protection software solution



# CLOUDBOOST BENEFITS

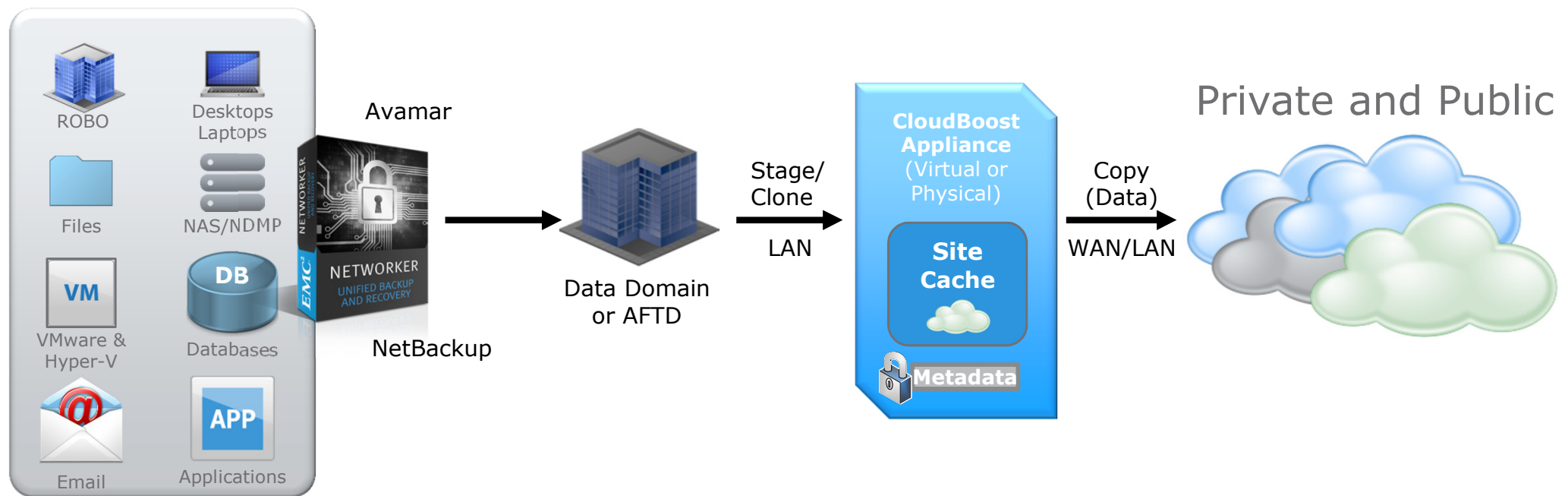
## LONG TERM RETENTION DONE RIGHT



- Secure, efficient tiering of backup data to public or private cloud storage for LTR
- Eliminates risky tape, reduces CAPEX
- Tape-like costs with online performance

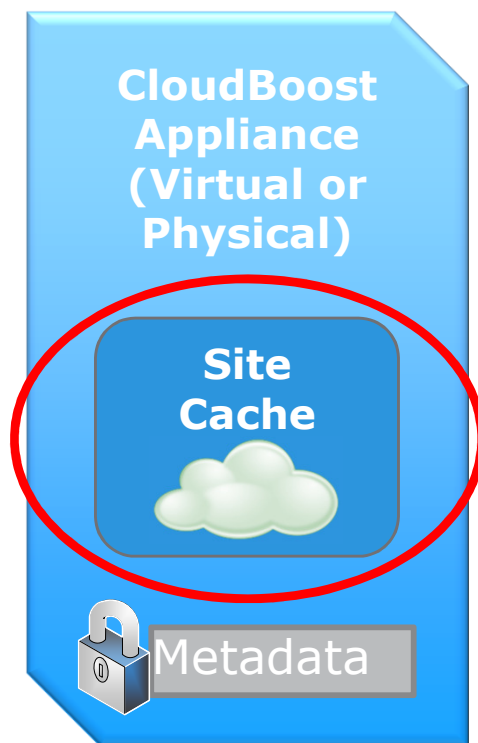
# NETWORKER WITH CLOUDBOOST

SECURE, EFFICIENT CLOUD-ENABLEMENT FOR LTR OF BACKUP DATA



# HIGHLIGHT: CLOUDBOOST SITE CACHE

ENHANCED PERFORMANCE AND ACCESSIBILITY



## Benefits

- 2TB or 6TB (virtual), 10TB or 32TB (physical)
- Speeds LTR backup & restore
- Strong data consistency is preserved
- Cached objects accessible when cloud storage is not
- Firewall friendly
- Automatic state change (read-write to read-only) when needed

Site Cache not recommended with

- High bandwidth/low latency to cloud

# HIGHLIGHT: EMC CLOUD PORTAL

## CENTRALIZED MANAGEMENT SLASHES ADMIN OVERHEAD

The screenshot displays the EMC Cloud Portal interface. The top navigation bar includes the EMC logo and the user name 'Mag Tenant Admin'. The left sidebar contains navigation options: Storage Management, CloudBoost, Register an Appliance, Events History, and support links (Help, About Cloud Portal). The main content area is titled 'Register an Appliance' and contains a form with a 'Claim code' input field and a 'Register' button. Below the form is a table with the following data:

Claim Code	Status	Appliance
93367EF	Registered	tol-demo-1.magnetics.com

The bottom portion of the screenshot shows a detailed view of the appliance configuration. The left sidebar is the same as above. The main content area is divided into two columns. The left column lists configuration items: IP Address (10.50.21.71), Cloud Profile (ECS TOI), Site Cache (Enabled (Default)), Certificate (Self signed (Default)), NTP Servers (time.apple.com), and Backups (Every 24 hours). The right column lists: Log Level (INFO), Version (3.4.0-SNAPSHOT with a 'Choose Upgrade' button), SKU (cloudboost-virtual), and Serial Number (d9b7700-f775-425d-ac4e-08d86e92b1bc). Below this is a 'History' section showing a deployment on July 8th 2015 at 8:45 am, labeled 'Deployed v3.4.0-SNAPSHOT'. At the bottom, there is a 'Storage Use History' chart showing 'dup' (blue) and 'raw' (green) data points over time from 7:00am to 8:50am.

- Hosted and managed by EMC
- Management-as-a-Service for CloudBoost administration
  - Register and configure appliances
  - Cloud Profile creation
  - Authentication
  - Event notification
  - Reporting, Upgrade
  - CloudBoost Disaster Recovery
  - And more...
- Manage and monitor multiple CloudBoost appliances from a single pane of glass

# CLOUDBOOST BENEFITS

LONG TERM RETENTION WITH CLOUD ECONOMICS & AGILITY PLUS ENTERPRISE CONTROL



## PERFORMANCE

Up to 32TB Site Cache speeds LTR operations and many restores as well

Dedup, compression, WAN optimization boost performance & cut bandwidth and cloud consumption



## SCALABILITY

Each CloudBoost instance can manage 6PB of in-cloud data

Unlimited total capacity via scale-out of CloudBoost



## SECURITY

File chunking, encryption in-flight & at-rest, SSL/TLS

Keys persisted only on **your** premises



## FLEXIBILITY

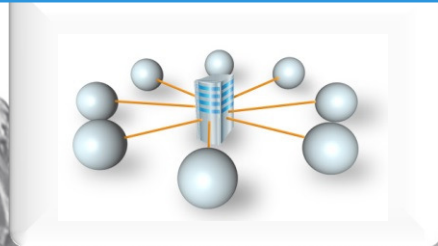
Cloud choice – public, private, hybrid

Consistent “on-prem” protection strategy

Physical and virtual form factors

# CLOUDBOOST BENEFITS (CONT.)

LONG TERM RETENTION WITH CLOUD ECONOMICS & AGILITY PLUS ENTERPRISE CONTROL



## **CENTRALIZED MANAGEMENT**

EMC Cloud Portal is secure and managed

Control and monitor multiple CloudBoost instances and cloud profiles from a single pane of glass



## **REMOTE SUPPORT**

Integrated with EMC Secure Remote Support (ESRS)

Register/unregister, Keepalive, Alerts, PhoneHome & more



## **AFFORDABILITY**

Competitively & affordably priced

Physical/virtual form factors & choice of Site  
Cache capacities

**EMC<sup>2</sup>**



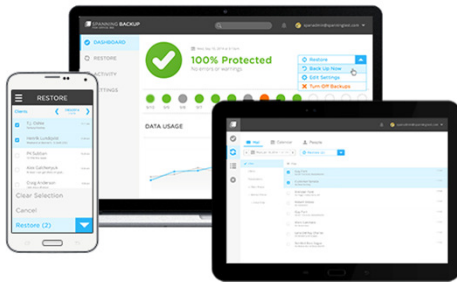
EMC<sup>2</sup>®

Why should you protect data out  
of your **SaaS** applications?

You are responsible for  
your data !

# SPANNING IS BORN-IN-THE-CLOUD BACKUP

## Spanning Backup for Office 365



- Automated backup and recovery for Office 365  
Mail, People and Calendars
- Granular, point-in-time backup & direct restore
  - Clear and complete status monitoring
  - Web, mobile and tablet interfaces empowering end users

# SourceOne Email Management for Microsoft Office 365

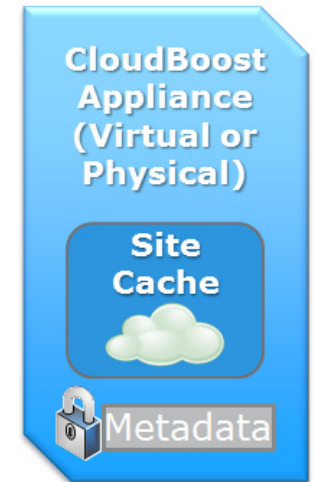
- Key Features
  - Archive emails sent to and received by all users in Office 365
  - Store the messages locally in the SourceOne archive for added security and compliance
  - Use SourceOne Discovery Manager for legal discovery and retention



The EMC logo, consisting of the letters "EMC" in white, with a superscript "2", set against a solid blue square background.

# CLOUDBOOST SPECS: VIRTUAL

- Packaged as an OVA
  - ESX 5 or later
- Requirements
  - RAM: 64GB (32GB with Site Cache disabled)
  - CPU: 16 vCPU (8 vCPU with Site Cache disabled)
  - Disk:
    - Default is 10GB, which must be resized prior to boot.
    - 1GB can support 2TB of logical data (e.g., 100GB of disk will support approx. 200TB of namespace capacity)



# CLOUDBOOST SPECS: PHYSICAL

## Chassis

- 2U rack mount chassis
- Redundant power supplies and cooling fans
- Hot swappable drives and power supplies
- Add 3U expansion DAE for 32TB local data cache

## Memory/Processors

- Up to 64GB RAM
- Intel Xeon E5-2600 series

## Disk

- 3.5" NL-SAS 3TB hot-swap drives
- 12 disks per base model
- 15 disks per DAE

## I/O

- One onboard 10Gb Ethernet port
- Two 6Gb/s SAS ports that connect to the DAE
- Mini-SAS with 4 ports of 6Gb/s to connect to DAE



# TAILOR CLOUDBOOST TO YOUR NEEDS

CloudBoost Appliance	Model Name	Site Cache (Usable)	Bundle
Virtual	100-2	2TB	Free with Data Protection Suite capacity license
Virtual	100-6	6TB	
Physical (Base)	100-10	10TB	
Physical (Base + Expansion)	100-30	32TB	
Physical (Upgrade 10TB to 32TB)			

