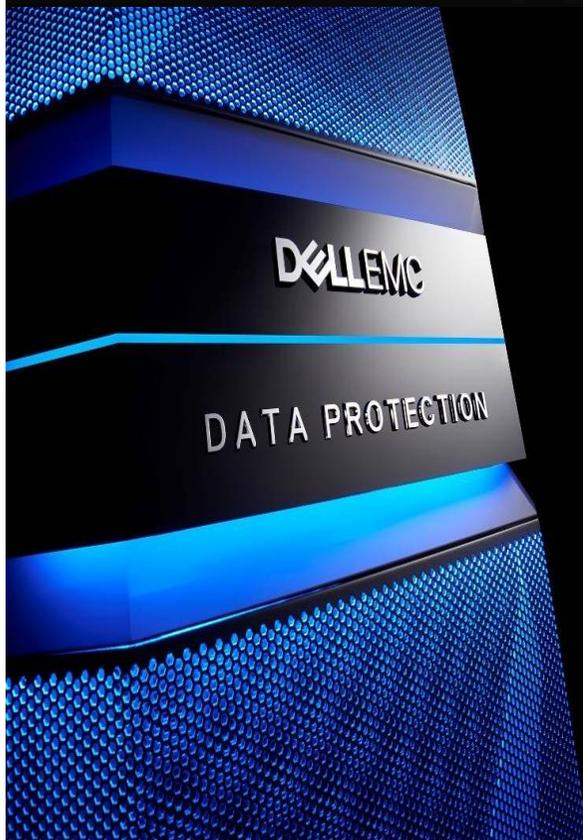


# Avamar 7.5

## Co nowego?



**DELLEMC**

*Daniel.Olkowski@dell.com*

# What is new in Avamar 7.5?

## Agenda

- VMware enhancements
- Disaster Recovery in the Cloud
- Avamar in the cloud
- CloudTier
- OpenStack
- Client changes
- Security enhancements

Avamar 7.5

**VMware**  
enhancements

# VMware User File Level Recovery

The image shows a VMware vSphere Client window on the left and a web browser window on the right. The vSphere Client displays a tree view of connections, with 'wguest-01' highlighted under the 'Clients' folder. The configuration panel for 'wguest-01' is visible, showing details for Display, Connection, and Protocol. The web browser window shows the EMC Data Protection Restore Client interface, with the URL 'https://ave-03.vlab.local:8543/flr/#/' highlighted in red. The interface includes a 'User' button, a 'User' input field, a 'Password' input field, and a 'Login' button. A 'Certificate error' message is visible in the browser's address bar.

**VMware vSphere Client Configuration:**

Section	Property	Value
Display	Name	wguest-01
	Description	
	Icon	mRemoteNG
Panel	Panel	General
Connection	Hostname/IP	wguest-01
	Username	administrator
	Password	.....
	Domain	vlab.local
Protocol	Protocol	RDP
	Port	3389

**EMC Data Protection Restore Client Interface:**

URL: <https://ave-03.vlab.local:8543/flr/#/>

EMC Data Protection Restore Client

User Admin

User	User
Password	Password

Version 7.2.0-401  
Copyright (c) 2015 EMC Corporation. All rights Reserved

Login

# VMware User File Level Recovery

The screenshot shows a web browser window with the URL `https://ave-03.vlab.local:8543/flr/#/restore`. The browser's address bar shows a "Certificate error" warning. The page title is "EMC Data Protection Restore Client".

On the left side, there is a navigation menu with three items, each with a checkmark icon:

- Select Backups
- Select items to restore
- Restore Options

The main content area is titled "Select the backup(s) to restore from". It features a dropdown menu currently set to "All Backups". Below this, a list of backup timestamps is displayed:

- 2017/07/25 01:21 AM
- 2017/07/25 12:50 AM** (highlighted with a red box)
- 2015/10/26 08:31 PM
- 2015/10/23 11:27 AM
- 2015/10/23 10:41 AM
- 2015/10/20 04:00 PM

Below the list, it indicates "1 Selected Items:" and shows the selected backup: "2017/07/25 12:50 AM".

At the bottom right of the interface, there are three buttons: "Cancel", "Back", and "Next". The "Next" button is highlighted with a red box and has a mouse cursor over it.

# VMware User File Level Recovery

The screenshot shows the EMC Data Protection Restore Client web interface. The browser address bar displays `https://ave-03.vlab.local:8543/flr/#/restore` with a 'Certificate error' warning. The page title is 'EMC Data Protection Restore Client'. On the left sidebar, three steps are listed: 'Select Backups' (checked), 'Select items to restore' (checked), and 'Restore Options' (checked). The main area is titled 'Select items to restore' and shows a file explorer view. The path is `2017/07/25 12:50 AM > [Disk#1] > Scripts > KMS-2012R2.xml`. The file `KMS-2012R2.xml` is selected. The 'Scripts' folder is also highlighted. At the bottom right, the 'Next' button is highlighted with a red box and a mouse cursor.

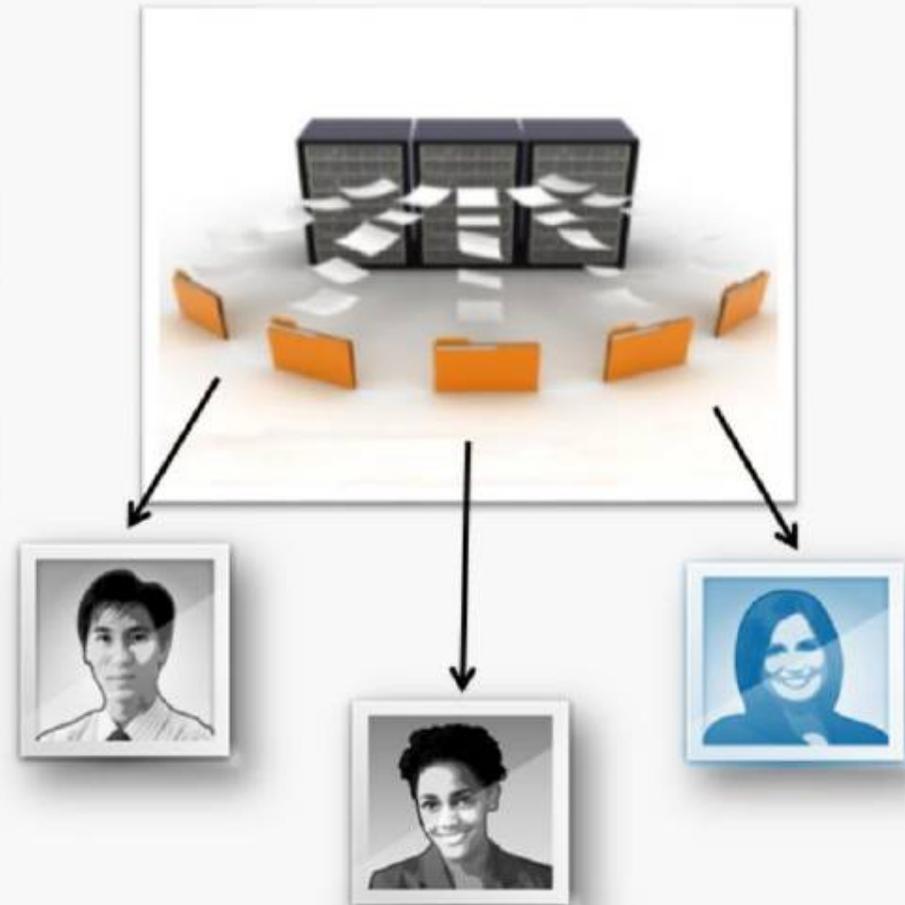
## VMware File Level Recovery

Self-service recovery from VM image backups

Permission-based end user File Level Recovery

Flexible recovery options

- Recover to the existing or new location
- Recovery multiple files, single files or folders



# VMware Protection Enhancements



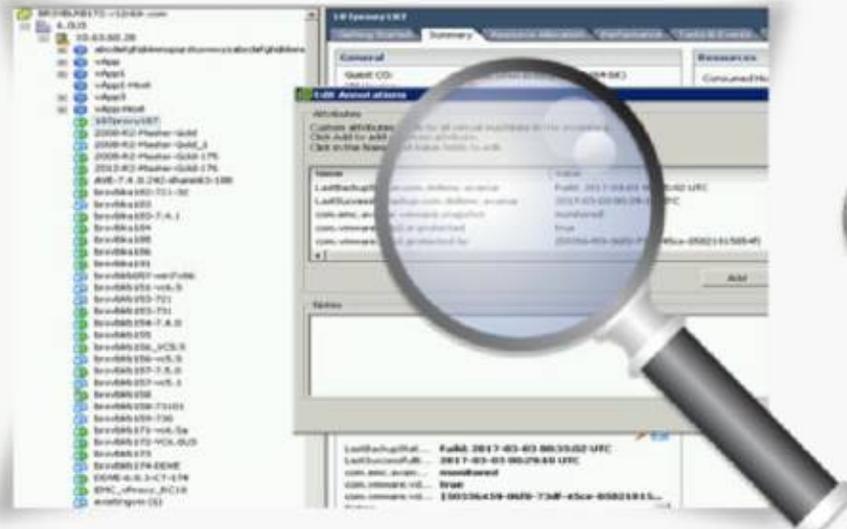
## Image Backup - Data Exclusion

- Exclude specific files and folders from the backup based on file name or file extension



## Image Backup - Last Backup Annotation

- Display last backup date/time regardless of completion state *and* last successful backup



Key	Value
BackupStatus-com.dell EMC.avamar	Failed: 2017-03-03 00:35:02 UTC
LastSuccessfulBackup-com.dell EMC.avamar	2017-03-03 00:29:10 UTC
com.emc.avamar.vmware.snapshot	monitored
com.vmware.vdp2.is-protected	true
com.vmware.vdp2.protected-by	50356459-06f0-73df-45ce-05821...

# FLR Browse Scalability Enhancement

- Redesigned interactive UI component

- Scalability supports browsing of 20,000 files

- Increased browsing performance

The screenshot displays a 'Select items to restore' dialog box. On the left, a tree view shows a folder list including 'C:', '\$Recycle Bin', '\$WINDOWS-BT', '12', 'ACLTest', 'New', 'folder.doc', '子目录', 'Ophone\_2000', 'PerfLogs', 'Program Files', 'Program Files (x86)', 'ProgramData', 'Recovery', 'System', 'Users', 'Windows', and '子目录'. A yellow callout bubble labeled 'Folder list' points to this tree. On the right, a table titled 'C:\New\子目录' shows a list of files. A search box at the top right contains 'A10'. The table has columns for 'Name', 'Date Modified', and 'Size'. The files listed are 'A10.tmp', 'A100.tmp', 'A1000.tmp', 'A10000.tmp', 'A10001.tmp', 'A10002.tmp', and 'A10003.tmp', all with a size of 12.0 KB. A yellow callout bubble labeled 'Browse page preview' points to the table. Below the table, it shows '1 - 1,000 / 1,111 (Filtered from 21,457 total entries)'. At the bottom right, there are 'Cancel', 'Back', 'Next', and 'Filter' buttons.

Name	Date Modified	Size
A10.tmp	2016-12-21 17:15:40	12.0 KB
A100.tmp	2016-12-21 17:15:40	12.0 KB
A1000.tmp	2016-12-21 17:15:40	12.0 KB
A10000.tmp	2016-12-21 17:10:41	12.0 KB
A10001.tmp	2016-12-21 17:10:41	12.0 KB
A10002.tmp	2016-12-21 17:10:41	12.0 KB
A10003.tmp	2016-12-21 17:15:41	12.0 KB

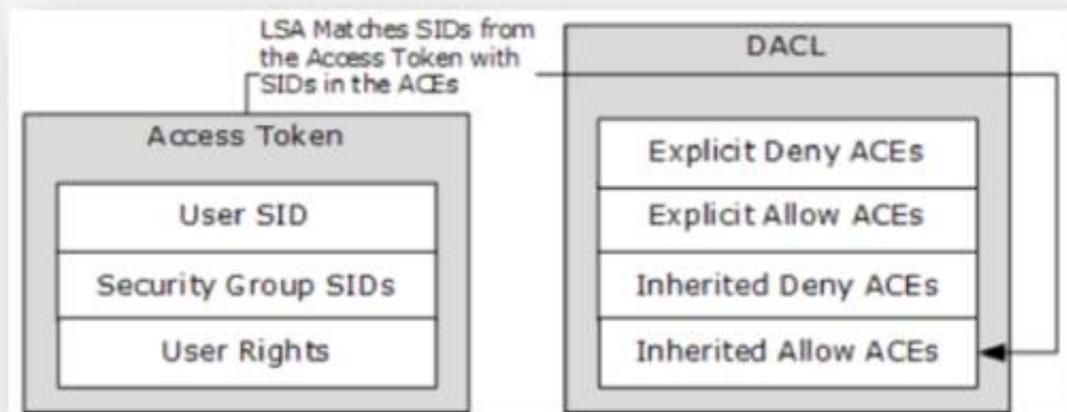
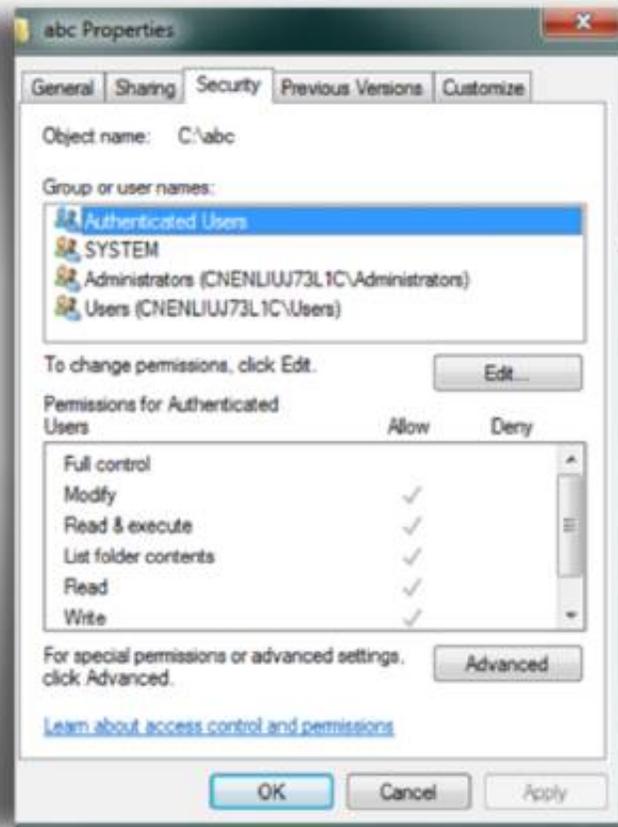
## FLR True End User Recovery: Overview

**FLR User can now be non-admin users**

**Previous FLR UI was only accessible in Backup VM**

**FLR UI will detect end user's SID & Group ID in AD and Local Machine**

# NTFS Access Right Evaluation Process



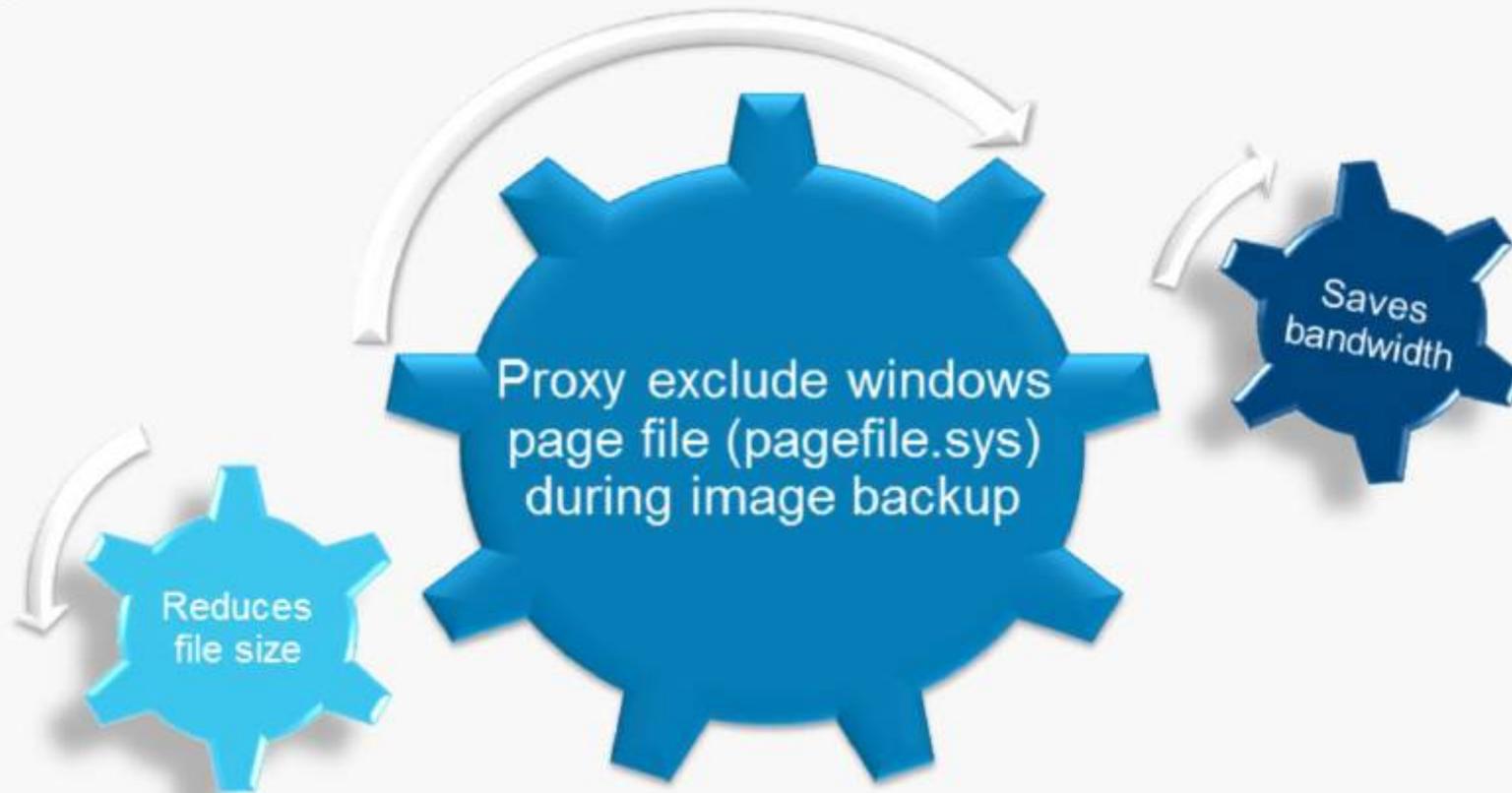
# Avamar 7.5

Excluding pagesys file  
from  
VMware image backup

Name	Ext	Size
[\$Recycle.Bin]		<DIR>
[BIN]		<DIR>
[Daniel]		<DIR>
[Data_50MB]		<DIR>
[Data1_23GB]		<DIR>
[Documents and Settings]		<LNK>
[PerfLogs]		<DIR>
[Program Files]		<DIR>
[Program Files (x86)]		<DIR>
[ProgramData]		<DIR>
[Recovery]		<DIR>
[System Volume Information]		<DIR>
[Temp]		<DIR>
[Users]		<DIR>
[Wazne]		<DIR>
[Windows]		<DIR>
.rnd		1,024
cscli	log	762,174
pagefile	sys	12,884,434,944
File1	txt	4,706,111

Almost 13GB on pure file system Windows

## Application Awareness Data Exclusion: Overview



## Application Awareness Data Exclusion:



### Why exclude page file during backup?

- Page file is useless for a backup and restore
- Page file wastes customer's storage for a backup



### How is this exclusion performed?

- Proxy identifies data blocks of pagefile.sys
- Proxy to skip read these data blocks from VMDK
- Proxy sends the duplicated data pattern instead of the original data blocks to avtar during a backup
- The data pattern will be marked as duplicate on the client side by Avamar. Avamar will send reduced data to storage, then the overall data sent (bandwidth) and the storage usage will be greatly reduced

Pagefiles from different Windows servers  
do not cross de-duplicates.

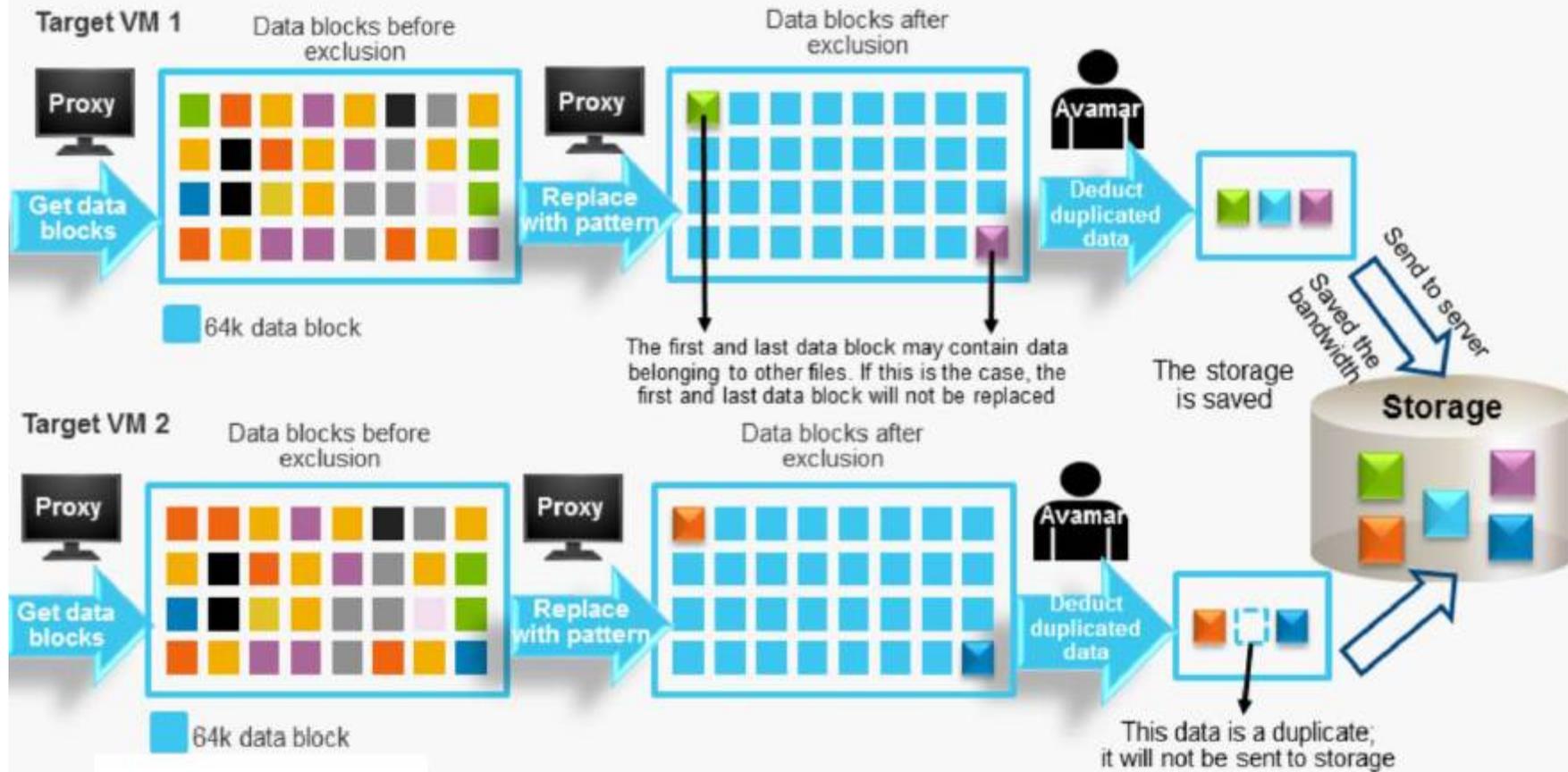
We waste a lot of space on Data Domain.

Contrary

Operating systems on different VMs cross de-duplicates.

We do not waste a lot of space on Data Domain.

# Data Exclusion: How it works



### System Information

- System State  System State
- Scheduler State: Running
- Maintenance Activities State: Running
- License Expiration: 2017-08-24 19:24:38 CEST
- Data Protected: 0 bytes
- Data Protected in last 24 hours: 0 bytes

### Activities

Backup Jobs Period: Last 24 hours

All Failures	0		
Pending	0	Succeeded with Exception	0
Running	0	Succeeded	0

Replication Jobs Period: Last 24 hours

Failed	0		
Pending	0	Succeeded with Exception	0
Running	0	Succeeded	0

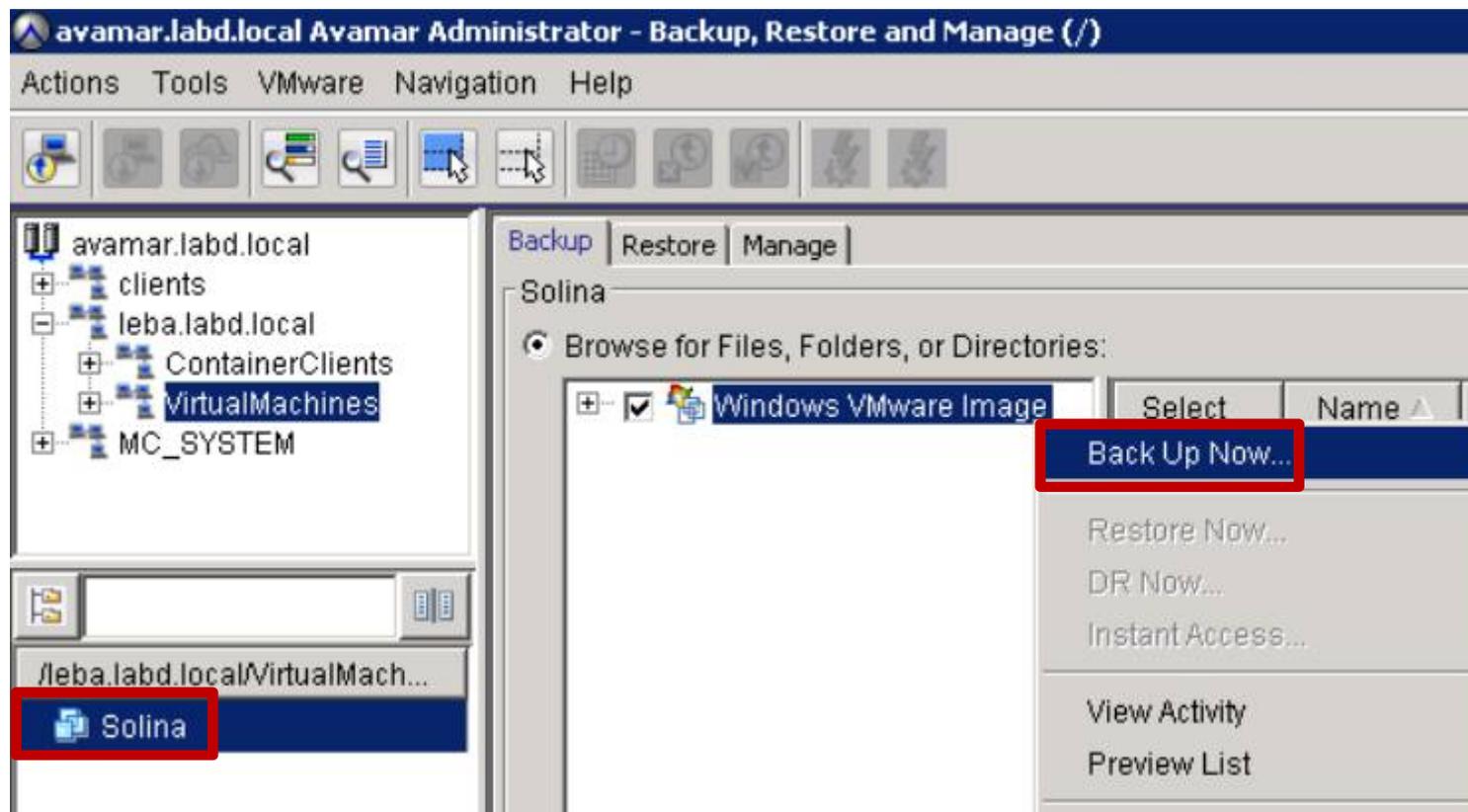
### Capacity

Legend: 0-75% used 75-90% used >90% used Available

Host	Utilization	Total	Used	Available	Forecast
avamar.labd.local	0.7%	447.2 GiB	0.2 GiB (0.0%)	447.0 GiB	Insufficient data
ddb.labd.local		447.2 GiB	0.2 GiB (0.0%)	447.0 GiB	Insufficient data

### Critical Events

0	ERRORS	0	WARNINGS
---	--------	---	----------



**On Demand Backup Options**

Backup from Client: Solina  
Backup to Server: avamar.labd.local

**Items Marked for Backup**

Plug-in	Target
Windows VMware Image	All virtual disks

**Retention Policy Settings**

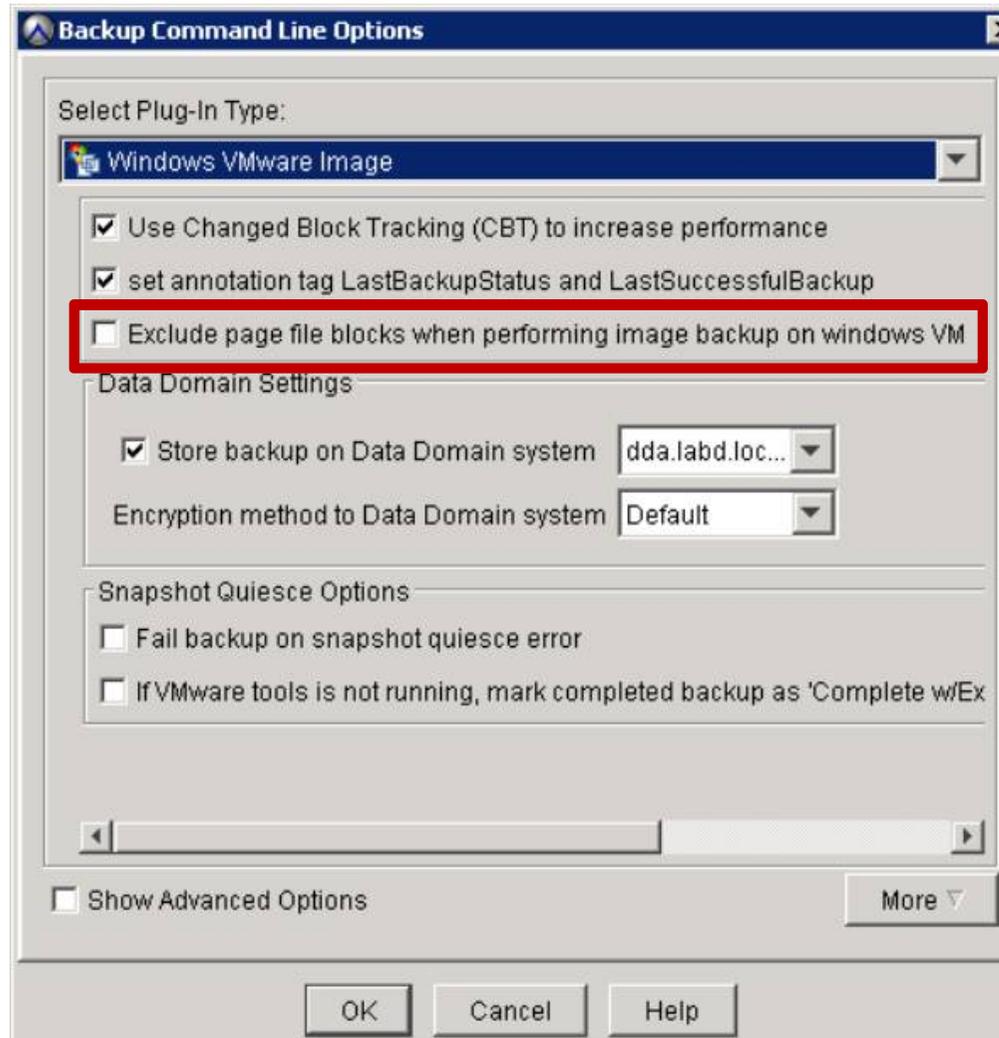
Retention period

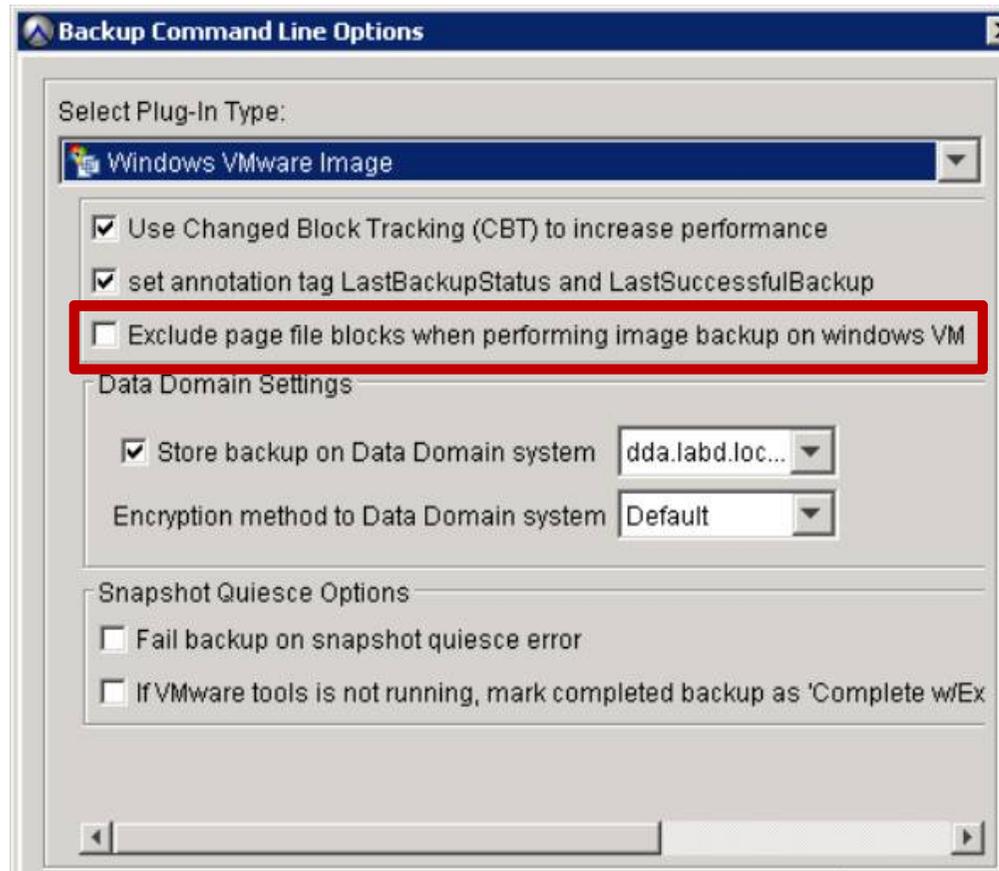
End date

No end date

Avarnar encryption method

Optionally select a proxy to perform backup:





This feature is shipped together with the AVE 7.5. No additional component install is needed. However, before a backup job can be performed, you need to enable this feature by selecting the data exclusion checkbox.



# Backup with Exclusion Feature Example

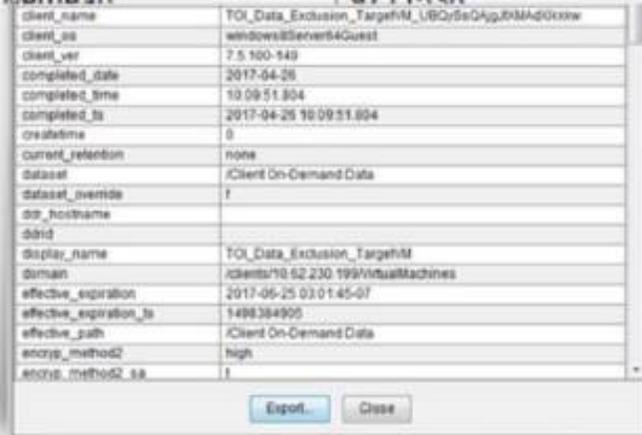
Backup *without* exclusion



Backup Statistics window showing backup\_label: MOO-149320090024 and backup\_number: 5.

Property	Value
backup_label	MOO-149320090024
backup_number	5

bytes_modified	5378323761
bytes_modified not sent	1260344685
<b>bytes_modified_sent</b>	<b>4117979076</b>
bytes_new	4117979076
bytes_overhead	9711530



Backup Statistics window details showing client\_name: TOI\_Data\_Exclusion\_TargetM\_UBO/SsOAgp,6MAd0kxw and other properties.

client_name	TOI_Data_Exclusion_TargetM_UBO/SsOAgp,6MAd0kxw
client_os	windowsServer4Guest
client_ver	7.5.100-149
completed_date	2017-04-26
completed_time	10:09:51.804
completed_ts	2017-04-26 10:09:51.804
create_time	0
current_relation	none
dataset	/Client On-Demand Data
dataset_override	1
ds_hostname	
dsid	
display_name	TOI_Data_Exclusion_TargetM
domain	clients/10.62.230.199/VirtualMachines
effective_expiration	2017-06-25 03:01:45-07
effective_expiration_ts	1498384905
effective_path	/Client On-Demand Data
encrypt_method2	high
encrypt_method2_sa	1

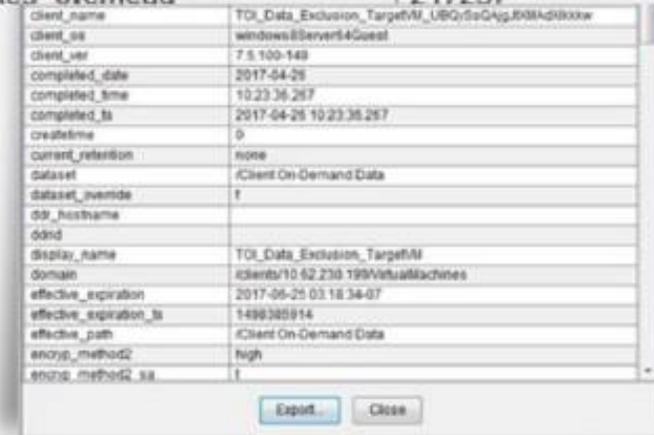
Backup *with* exclusion



Backup Statistics window showing backup\_label: MOO-1493201810151 and backup\_number: 7.

Property	Value
backup_label	MOO-1493201810151
backup_number	7

bytes_modified	5341866761
bytes_modified not sent	5337821801
<b>bytes_modified_sent</b>	<b>4044960</b>
bytes_new	4044960
bytes_overhead	217237



Backup Statistics window details showing client\_name: TOI\_Data\_Exclusion\_TargetM\_UBO/SsOAgp,6MAd0kxw and other properties.

client_name	TOI_Data_Exclusion_TargetM_UBO/SsOAgp,6MAd0kxw
client_os	windowsServer4Guest
client_ver	7.5.100-149
completed_date	2017-04-26
completed_time	10:23:36.267
completed_ts	2017-04-26 10:23:36.267
create_time	0
current_relation	none
dataset	/Client On-Demand Data
dataset_override	1
ds_hostname	
dsid	
display_name	TOI_Data_Exclusion_TargetM
domain	clients/10.62.230.199/VirtualMachines
effective_expiration	2017-06-25 03:18:34-07
effective_expiration_ts	1498385914
effective_path	/Client On-Demand Data
encrypt_method2	high
encrypt_method2_sa	1

"bytes\_modified\_sent" of backup without exclusion is much bigger than backup with exclusion

## Excluding pagefile Saving

Data sent from VM image backup <b>with</b> pagefile [GB]	Data sent from VM image backup <b>without</b> pagefile [GB]
4,1	0,004

## Excluding pagefile Saving

- 1000 times less data sent during the backup
- Smaller network required
- Much less usage of backup storage (Data Domain)
- Much smaller costs

## Excluding pagefile Saving

- Faster backup

## Troubleshooting: Verify Data Exclusion Is Enabled

Does the exclusion actually happen?

### 1. Check work order flag in activity window

```
<catalog>
  <flag type="pulldown" pidnum="3016" value="NA" name="MSEI_post_action_type" />
  <flag type="pulldown" pidnum="1001" value="high" name="ddr-encrypt-strength" />
  <flag type="pulldown" value="0" name="ddr-index" />
  <flag type="boolean" pidnum="3016" value="true" name="exclude_page_file" />
  <flag type="boolean" pidnum="3016" value="false" name="fail_on_quiesce_error" />
  <flag type="checkbox" pidnum="3016" value="true" name="guest_MSSQL_NT_auth" />
  <flag type="integer" pidnum="3016" value="5" name="run_after_script_max_in_min" />
  <flag type="integer" pidnum="3016" value="5" name="run_before_script_max_in_min" />
  <flag type="boolean" pidnum="3016" value="true" name="set_annotation_BackupStatus" />
  <flag type="integer" pidnum="3016" value="-1" name="snapshot_delete_retry_max" />
  <flag type="boolean" pidnum="3016" value="true" name="utilize_changed_block_list" />
</catalog>
```

By checking the activity log, you can verify whether the data exclusion feature has been enabled. There are several points to check the activity log. The first item to check is the work order to see if the *exclude\_page\_file* is enabled. In this screenshot, this value is set to *true*, so the feature is enabled.

Avamar 7.5

Data Domain Cloud  
Disaster Recovery

# Introducing Disaster Recovery to the Cloud



EXTEND  
TO CLOUD

- Disaster recovery from on-prem Data Domain to Amazon S3
- Fully automated failover for recovering workloads in the cloud
- Minimal footprint and compute cycles required
- Eliminate data center costs for disaster recovery



Dell EMC

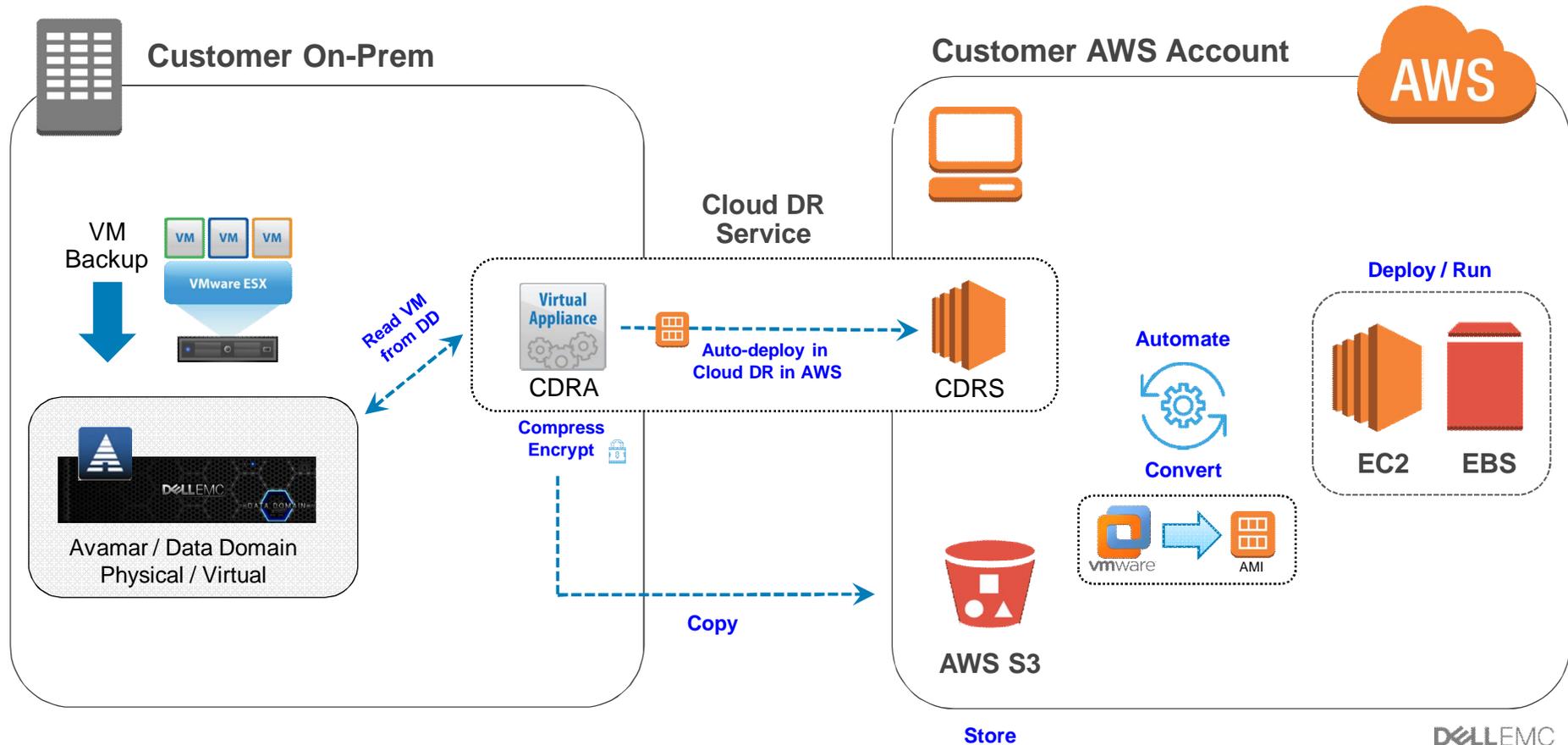
# Data Domain Cloud Disaster Recovery



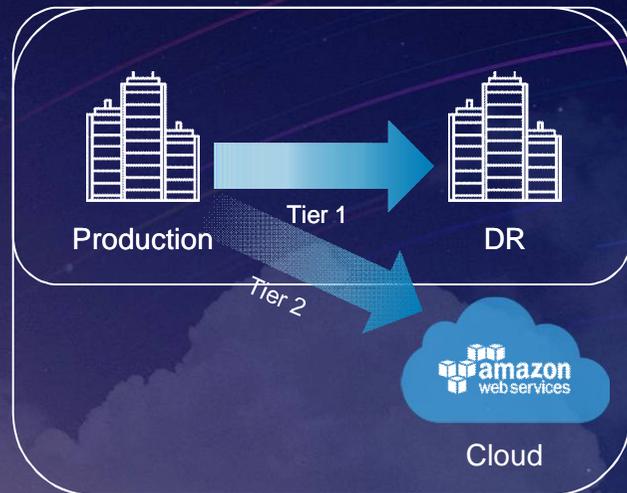
Disaster Recovery of on-prem VMware VM's from Avamar/Data Domain to AWS EC2 instances

- > Protect directly from on-prem into S3
- > Leverage existing on-prem Dell EMC data protection environment
- > Simple operation from existing GUI

# Data Domain Cloud DR Architecture



# Adding Cloud DR to Traditional DR



## > Traditional Disaster Recovery

- Existing physical DR locations
  - expertise, processes, infrastructure
- Mission critical applications

## > Cloud Disaster Recovery

- Enable crash consistent DR to Tier-2 applications
- Add a 2<sup>nd</sup> DR site in the cloud
- Accelerate recovery operations / tests
- Minimize ongoing cost

## 3 Reasons for Choosing Data Domain Cloud DR

1

2

3

- Leverage existing data protection infrastructure
  - No new configurations
- Lower footprint in the cloud / lower cost
  - Minimal compute running 24/7
- Dell EMC as trusted partner and world's largest data protection company

# Protection solutions throughout your cloud journey



**PRIVATE  
CLOUD**



**EXTEND  
TO CLOUD**



**IN CLOUD  
PROTECTION**



**AS A  
SERVICE**



PRIVATE  
CLOUD



EXTEND  
TO CLOUD



IN CLOUD  
PROTECTION



AS A  
SERVICE

**150+ PB**

*cloud data is managed by Dell EMC Data Protection technology*

**2x closest competitor**

“Data Protection are the most common use cases among organizations currently leveraging cloud infrastructure services”



### Top “Cloud Infrastructure” Use Cases



Source: ESG Research Report, *Data Protection Cloud Strategies*, December 2016

# Avamar 7.5

Avamar in the Cloud

# Avamar Virtual Edition Server in the cloud



## **Avamar Virtual Edition for Amazon Web Services**

The Avamar Virtual Edition (AVE) is now available for Amazon Web Services (AWS). Support for AVE with Data Domain Virtual Edition (DDVE) is also supported for the AWS and Azure versions of AVE.

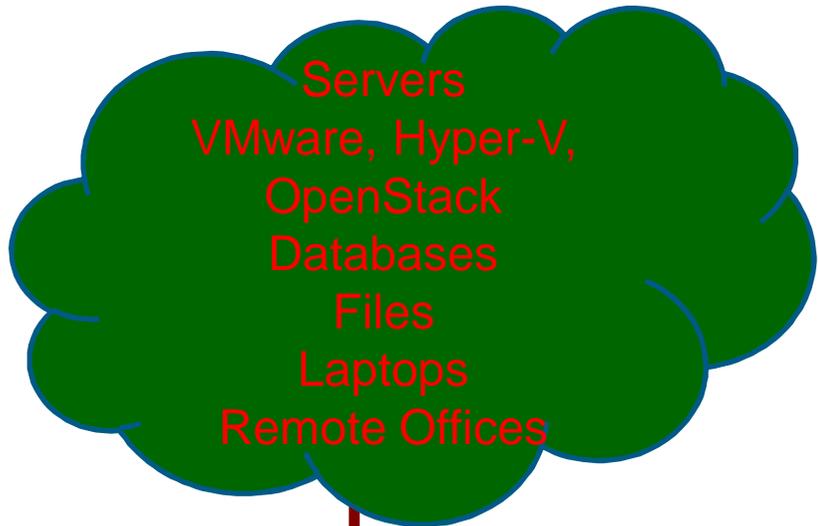
### **Data Domain integration**

- DDOS 6.1
- Data Domain Cloud Tier DR support

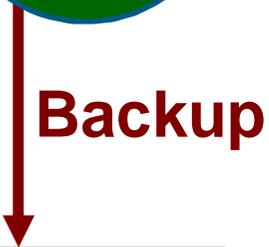
Avamar 7.5

**CloudTier**

Data Domain  
Long Term Backup to S3 storage



Servers  
VMware, Hyper-V,  
OpenStack  
Databases  
Files  
Laptops  
Remote Offices



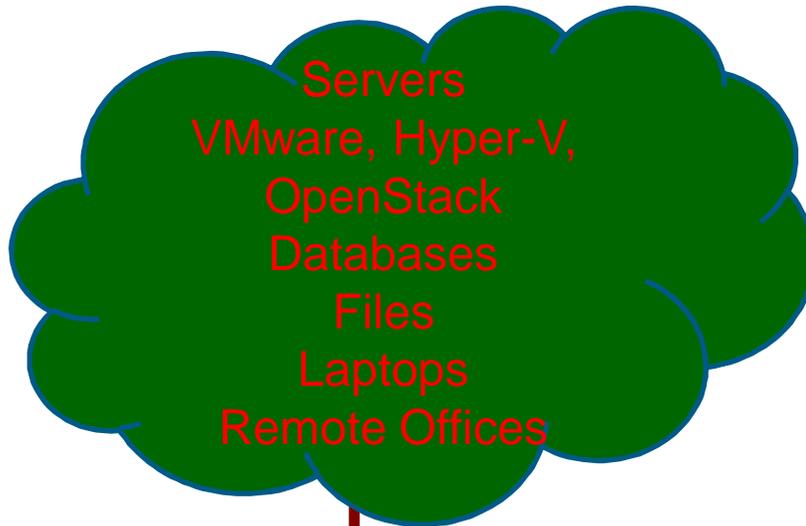
Backup



Avamar  
Server



Data Domain



**Backup**



**Data Domain**



A  
S

**Performance**

Starting backups from  
Data Domain with SSD  
disks speed

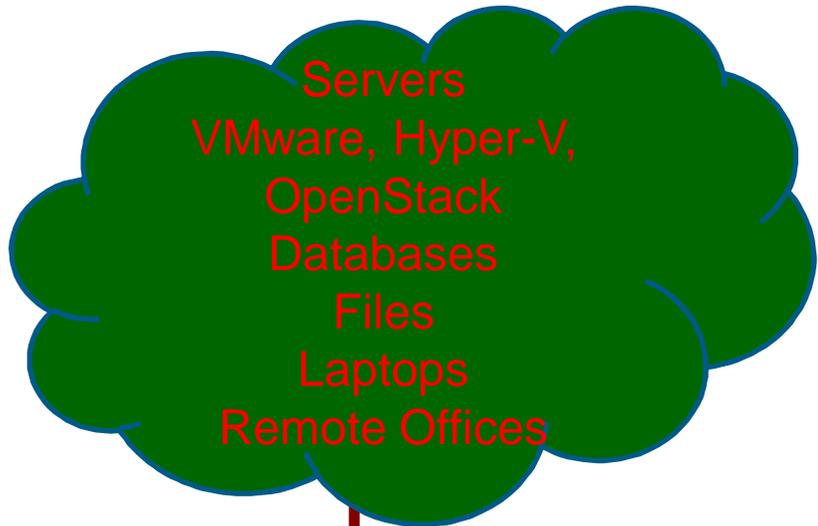
**Flexibility**

**Disaster Recovery**

...

# Long Term Backup

## S3 storage



**Avamar  
Server**

**Backup**



**Data Domain**



**Long Term  
Backups**

**S3 Storage  
Local / Remote**



Dedicated for Long Term backups

Security

Automation

Management from Avamar

Avamar Disaster Recovery from S3 storage

Smaller cost than tape

## Cloud Tier Disaster Recovery



Leverages the DD's  
Cloud Tier DR



Recover Avamar itself  
and backups from  
Cloud Tier

# Configure Avamar to Support Cloud Tier DR



10.62.229.79 Avamar Administrator (v)

Actions Tools VMware Navigation Help

Policy Backup & Restore **Data Movement Policy** Activity

**System Information**

- System State: ✘
- Scheduler State: ✔ Running
- Maintenance Activities State: ✔ Running
- License Expiration: ✔ 2017-05-06 12:20:43 CST
- Data Protected: 128.2 MB
- Data Protected in last 24 hours: 128.2 MB

**Capacity**

Legend: ■ 0-75

10.62.229.79

Utilization: 0.7%

**Activities** **Critical Events**

dd Data Domain

10.62.229.79

Total Capacity (post-comp size)
Server Utilization (post-comp use%)
Bytes Protected
File System Available (post-comp avail)



New Tier Group

**Steps**

- General
- Source
- Destination
- Expiration
- Schedule
- Overview

**General**

Tier group name

Tier2Cloud

Disabled

Help Cancel <- Back Next -> Finish

# Recover Long Term Retention from Cloud

Avamar with Cloud Tier enabled



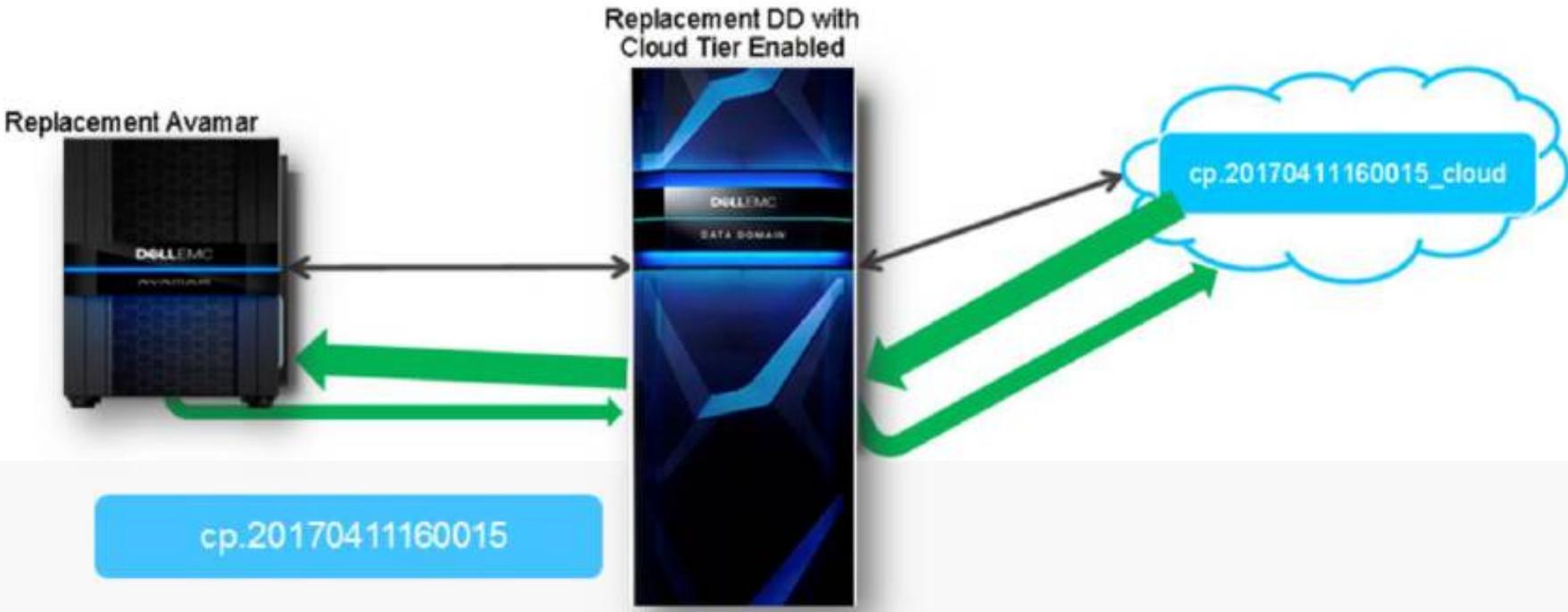
Replacement DD with  
Cloud Tier Enabled



Long Term Retention  
Backups

avamar-lsu/cur/<cid>/<bid>/container.1.csdf	Cloud
avamar-lsu/cur/<cid>/<bid>/container.1.csdf.trace	Cloud
avamar-lsu/cur/<cid>/<bid>/ddr_files.xml (Recovered)	Local
avamar-lsu/cur/<cid>/<bid>/v2_ddr_files.xml	Cloud

# Recover Checkpoint from Cloud



## Compatibility



## Data Domain DR Solution

Cloud Disaster Recovery Solution saves VM backups to the Cloud

Recover directly in Cloud



Cloud Disaster Recovery Solution provides a way to save VM backups to the Cloud and recover them directly in the cloud even when the on-premises environment is destroyed.

Avamar 7.5

**Recovery applications**  
from  
Hyper-V Image Backup

# GLR (Granular Level Recovery)

Recovery single applications elements from Hyper-V backups

- Exchange
- SharePoint
- SQL
- ...

# Procedure :

- ❖ Take a backup of the Guest VMs using Avamar Hyper-V plugin. In case of SharePoint application, take backup of both front-end and back-end nodes.
- ❖ Start the process of GLR recovery of the VM with the respective MS Application.
- ❖ Browse into the backup of the particular VM using Hyper-V GLR option. This mounts the backed-up VM disk on the node where the GLR plug-in is being run. (default location of mount is C:\Program Files\avs\var ).  
Note: Do not close or refresh this "browse" until the entire procedure has been completed.
- ❖ Go to the node where Itempoint has been configured and run it. The source location path should be the location of the database INSIDE the mounted disk created by Hyper-V GLR. Browse it to locate the table/file you want to restore.
- ❖ Under the target location, give the path of the database where you want the data to be restored. Run the restore by copying the data from the source and pasting at the target.
- ❖ The data would be restored successfully.

avamar.labd.local Avamar Administrator (/)

Actions Tools VMware Navigation Help

Policy **Backup & Restore** Data Movement Policy Activity Administration Server

### System Information

- System State: ✓
- Scheduler State: Running
- Maintenance Activities State: Suspended
- License Expiration: 2017-08-24 19:24:38 CEST
- Data Protected: 0 bytes
- Data Protected in last 24 hours: 0 bytes

### Capacity

Legend: ■ 0-75% used ■ 75-90% used ■ >90% used ■ Available

avamar.labd.local

Utilization: 0.0%

### Activities

#### Backup Jobs

Period: Last 24 hours

All Failures	0		
Pending	0	Succeeded with Exception	0
Running	0	Succeeded	0

#### Replication Jobs

Period: Last 24 hours

Failed	0		
Pending	0	Succeeded with Exception	0
Running	0	Succeeded	0

### Critical Events

0 ERRORS	0 WARNINGS
----------	------------

## Restore: GLR – Select GLR client

The screenshot shows a backup management interface with the following components:

- Left Panel:** A tree view showing a folder structure with 'clients' highlighted. Below it, the client path '/clients/hv-124-56.automation.hyper' is selected and highlighted with a red box.
- Top Panel:** A navigation bar with 'Backup', 'Restore' (highlighted with a red box), and 'Manage' tabs.
- Backup History:** A calendar view for June 2015. The date '30' is selected. To the right, a table lists backup entries for June 30:

Number	Name
4	MOD-1435694335781#0
2	MOD-1435681559127#0

The entry '4 MOD-1435694335781#0' is highlighted with a red box.
- Bottom Panel:** A window titled 'Contents of Backup named MOD-1435694335781#0' is open. It contains a 'Select Destination Client' dialog box with the following options:
  - Restore everything to its original location
  - Restore everything to a different location (highlighted with a red box)The 'Restore Destination Client' section has a 'Client' field containing '/clients/hv-124-56.automation.hyper-v.com' and a 'Browse...' button. At the bottom of the dialog are 'OK', 'Cancel', and 'Help' buttons. Red arrows point from the dialog's title bar to the 'Restore' tab and the selected backup entry, and from the selected radio button to the client field.

## Restore: GLR : Mounting

The screenshot displays a software interface for restoring a backup. At the top, a calendar grid shows the date 30 selected. Below the calendar, the contents of a backup named 'MOD-1435694335781#0' are listed, including a folder 'hv-124-56 vm-W2012 Win2012x64/'. A 'Browse Progress' dialog box is open in the foreground, indicating that the contents of the backup at the specified path are being retrieved and the virtual machine mount is in progress. A 'Cancel' button is visible at the bottom of the dialog.

31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4
5	6		8	9	10	11

MOD-1435694335781#0

Contents of Backup named MOD-1435694335781#0

hv-124-56 vm-W2012 Win2012x64/

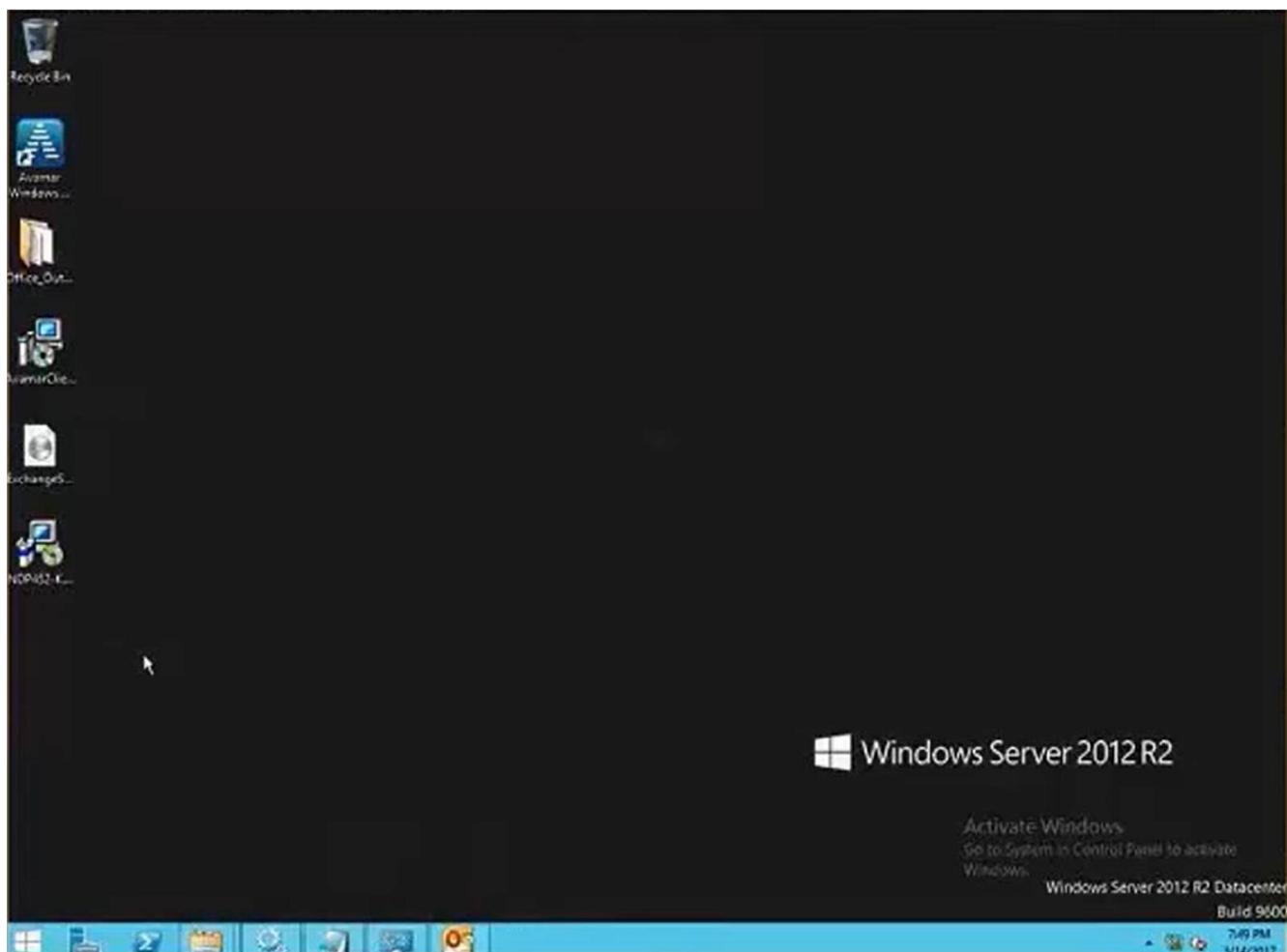
Select Nam

hv-124-56 vm-W2012

**Browse Progress**

Retrieving contents of backup at path 'hv-124-56 vm-W2012 Win2012x64'.  
Virtual Machine mount is in Progress

Cancel



Apps by name ▾

Tools			EMC ItemPoint
Directory Administrative...	Fallover Cluster Manager	System Configuration	EMC ItemPoint for Microsoft Exc...
Directory Domains and Tr...	Internet Information Services (IIS...	System Information	Microsoft Exchange Server 2016
Directory Module for Win...	Internet Information Services (IIS...	Task Scheduler	Exchange Administrative Center
Directory Sites and Services	iSCSI Initiator	Windows Firewall with Advanced...	Exchange Management Shell
Directory Users and Com...	Local Security Policy	Windows Memory Diagnostic	Exchange Server Help
Edit	Microsoft Azure Services	Windows PowerShell (x86)	Exchange Toolbox
Feature-Aware Updating	OOBC Data Sources (32-bit)	Windows PowerShell ISE	Microsoft Office
Frontend Services	OOBC Data Sources (64-bit)	Windows PowerShell ISE (x86)	Digital Certificate for VBA Projects
User Management	Performance Monitor	EMC Avamar	Microsoft Access 2010
Format and Optimize Drives	Resource Monitor	Backup User Configuration Tool	Microsoft Clip Organizer
Cleanup	Security Configuration Wizard	client	Microsoft Excel 2010
Guided Lockdown Manager	Server Manager	Cluster Configuration Tool	Microsoft InfoPath Designer 2010
Viewer	Services		Microsoft InfoPath Filler 2010 (in...

Go to System in Co...  
Windows.

**Data Wizard**

**Source Selection**

Please select the type of source you want to open and its location. If you do not want to open a source at this time, click Skip and select your target.

Select Source:

- EDS Mailbox (.edb)**
- Outlook Data File (\*.pst)
- Exchange Analysis Store (\*.cas)

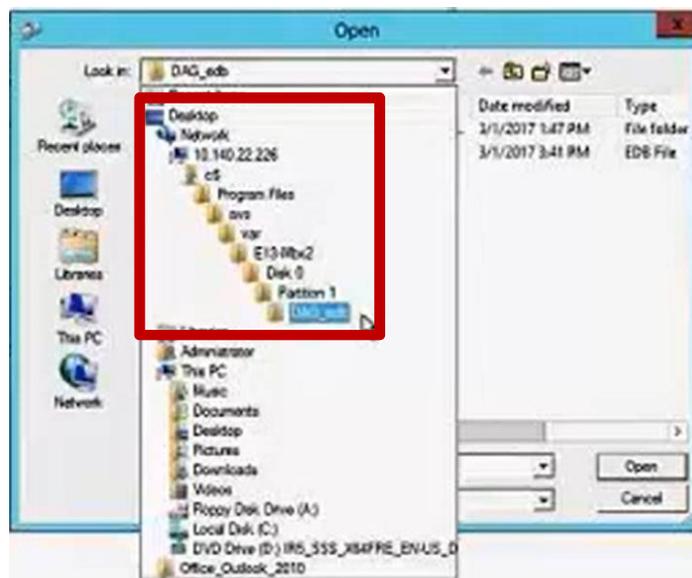
EDS Path (\*.edb)  
\\10.140.22.226\c\$\Program Files\av\var\E13-Mailbox... **Browse...**

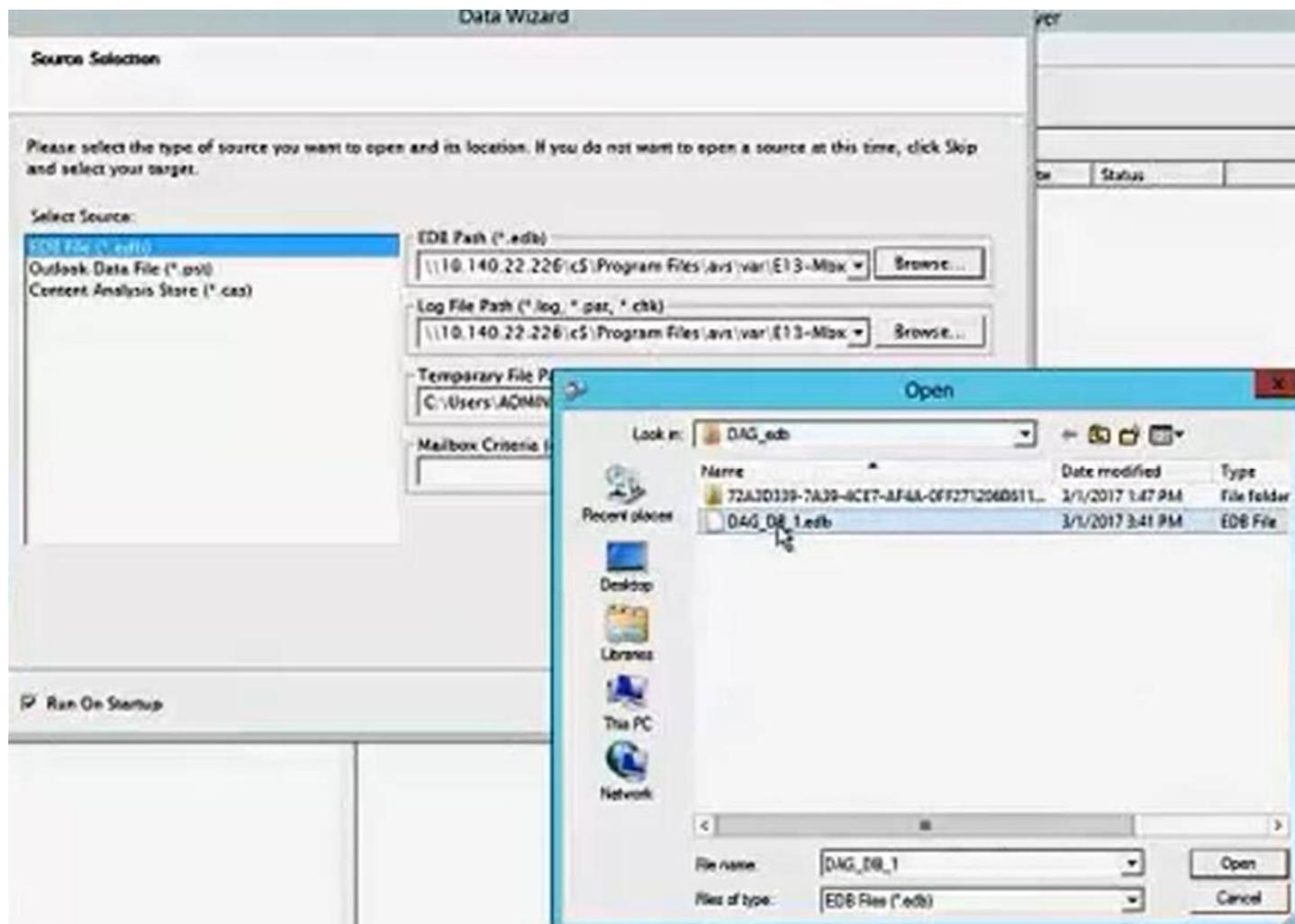
Log File Path (\*.log, \*.pat, \*.chk)  
\\10.140.22.226\c\$\Program Files\av\var\E13-Mailbox... Browse...

Temporary File Path (\*.idx, \*.dat, \*.log)  
C:\Users\ADMINI~1\AppData\Local\Temp\2\EMC... Browse...

Mailbox Criteria (optional)  
▼

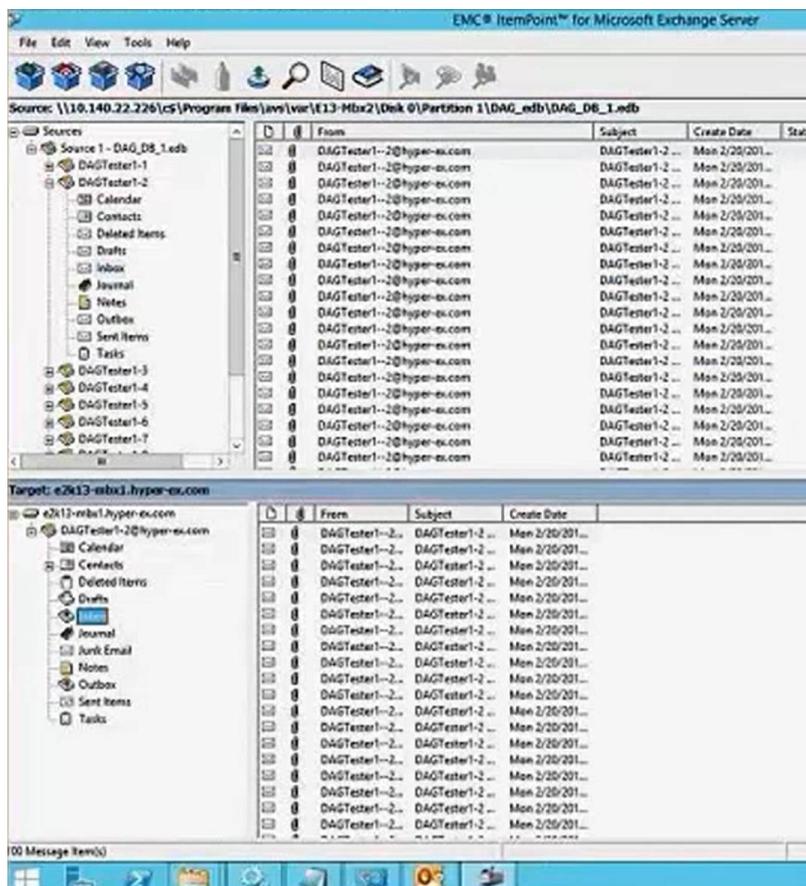
Run On Startup











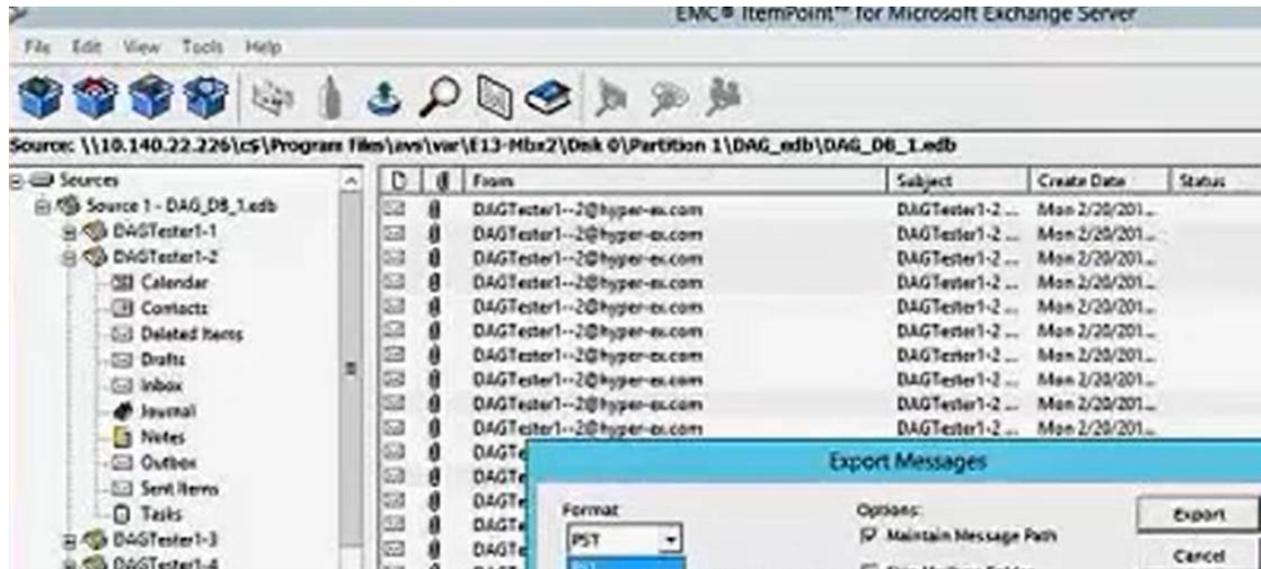












Exchange  
SharePoint  
SQL

...

Avamar 7.5

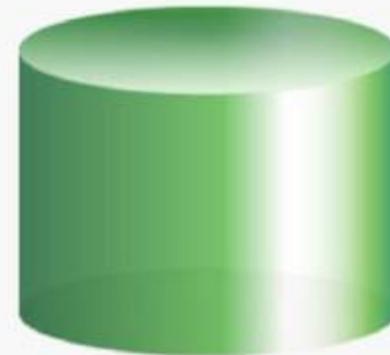
**OpenStack**  
enhancements

## OpenStack Enhancements



### Change Block Tracking

- Multi threaded concurrent KVM instance backup
- Improved performance and efficiency

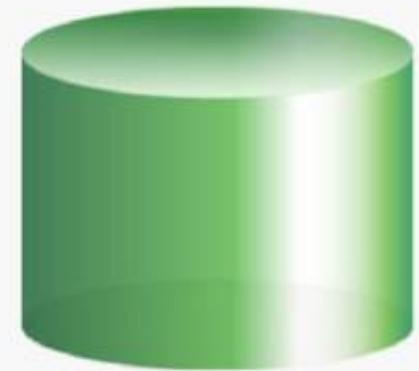


## OpenStack Enhancements

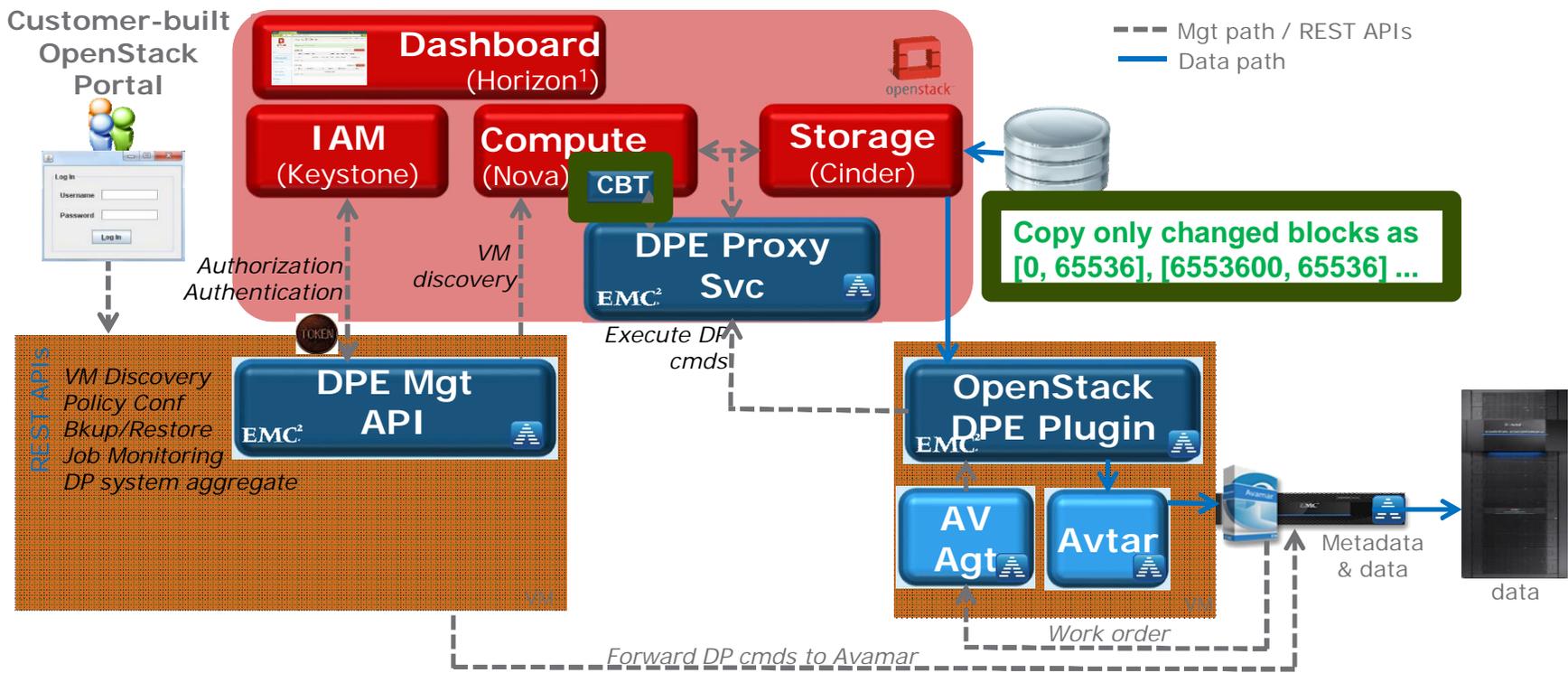


### Change Block Tracking

- Multi threaded concurrent KVM instance backup
- Improved performance and efficiency



# ARCHITECTURE



Avamar 7.5

Client Plugins

## Scenarios for Promotion

Log gap identified

Incremental/Differential backup attempted without a Full

Incremental/Differential attempted when Full is moved to cloud tier

Incremental/Differential backup of a recently restored DB

Copy Only backup on AlwaysOn configuration

Differential backup on Secondary node of AlwaysOn configuration

# SQL Plug-in Enhancement

## MC GUI

Status	Error Code
<input checked="" type="checkbox"/> Completed	



Status	Error Code
<input checked="" type="checkbox"/> Completed with Promotion	10033

Without 7.5 SQL plug-in

With 7.5 SQL plug-in

## Logs

2017-03-31 05:27:10 avsql Info <7271>: Final summary generated subwork 1, cancelled/aborted 0, snapview 1, exitcode 0

2017-03-31 02:49:50 avsql Info <42977>: Final summary generated subwork 3, cancelled/aborted 0, promoted to full 1, snapview 10, exitcode 536870945

# Activity Monitor

Actions Tools VMware Navigation Help



Activity Monitor | DR Activity Monitor | Activity Summary | Activity Report | Replication Report

Status Type Source Group Plug-in Client Domain Container DD  
 All Statuses All Types All Sources All Groups All Plugins All Clients All Domains All Containers All Systems

Session													
Status	Error Code	Start Time (PDT)	Elapsed	End Time (PDT)	Type	Client	Domain	Container	DD	Progress Bytes	New Bytes	Client	Cont
Failed	10007	2017-03-30 05:42	00h:00m:16s	2017-03-30 05:58						0	0%	scalesqln1.sdomain1.com	N/A
Completed		2017-03-30 23:31	00h:00m:40s	2017-03-30 23:31						9.4 MB	0.5%	inst1sq2012.sdomain1.com	N/A
Completed		2017-03-30 23:32	00h:01m:16s	2017-03-30 23:33						23.4 MB	0.1%	dabba2.sdomain1.com	N/A
Completed		2017-03-30 23:33	00h:01m:20s	2017-03-30 23:34	On-Demand Backup	DD - Lab3.drm.lab.emc.com				3.1 MB	0.8%	dabba2.sdomain1.com	N/A
Completed with Promotion	10033	2017-03-30 23:33	00h:00m:50s	2017-03-30 23:34	On-Demand Backup	DD - Lab3.drm.lab.emc.com				9.4 MB	0.4%	inst1sq2012.sdomain1.com	N/A
Completed		2017-03-31 00:03	00h:00m:47s	2017-03-31 00:03	On-Demand Backup	DD - Lab3.drm.lab.emc.com				1.2 MB	1.3%	inst1sq2012.sdomain1.com	N/A
Completed		2017-03-31 00:04	00h:00m:42s	2017-03-31 00:04	On-Demand Backup	Avamar				9.4 MB	1.4%	inst1sq2012.sdomain1.com	N/A
Completed		2017-03-31 00:06	00h:00m:51s	2017-03-31 00:07	Restore	DD - Lab3.drm.lab.emc.com				20.0 MB	53.8%	inst1sq2012.sdomain1.com	N/A
Completed with Promotion	10033	2017-03-31 00:07	00h:00m:46s	2017-03-31 00:08	On-Demand Backup	DD - Lab3.drm.lab.emc.com				9.4 MB	0.5%	inst1sq2012.sdomain1.com	N/A
Completed		2017-03-31 00:08	00h:01m:33s	2017-03-31 00:09	Restore	DD - Lab3.drm.lab.emc.com				26.6 MB	100%	dabba2.sdomain1.com	N/A
Completed with Promotion	10033	2017-03-31 00:10	00h:01m:20s	2017-03-31 00:11	On-Demand Backup	DD - Lab3.drm.lab.emc.com				23.4 MB	0.2%	dabba2.sdomain1.com	N/A
Completed with Promotion	10033	2017-03-31 00:15	00h:01m:05s	2017-03-31 00:17	On-Demand Backup	DD - Lab3.drm.lab.emc.com				23.4 MB	0.4%	dabba2.sdomain1.com	N/A

With 7.5 SQL plug-in

## Avamar Plug-in for IBM Lotus Domino



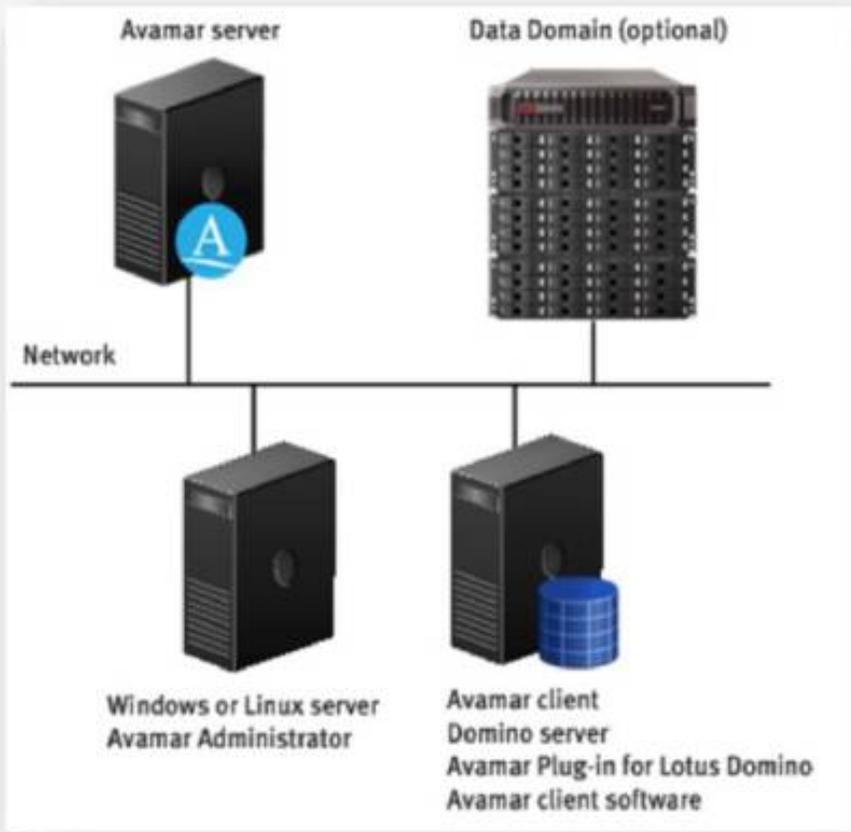
Works with the Domino server to back up Domino data to an Avamar server or a Dell EMC Data Domain system

Serves as a backup module and the Avamar server or Data Domain system as a storage device

Avamar Plug-in for Lotus Domino supports the Domino server in both stand-alone configurations and clustered configurations

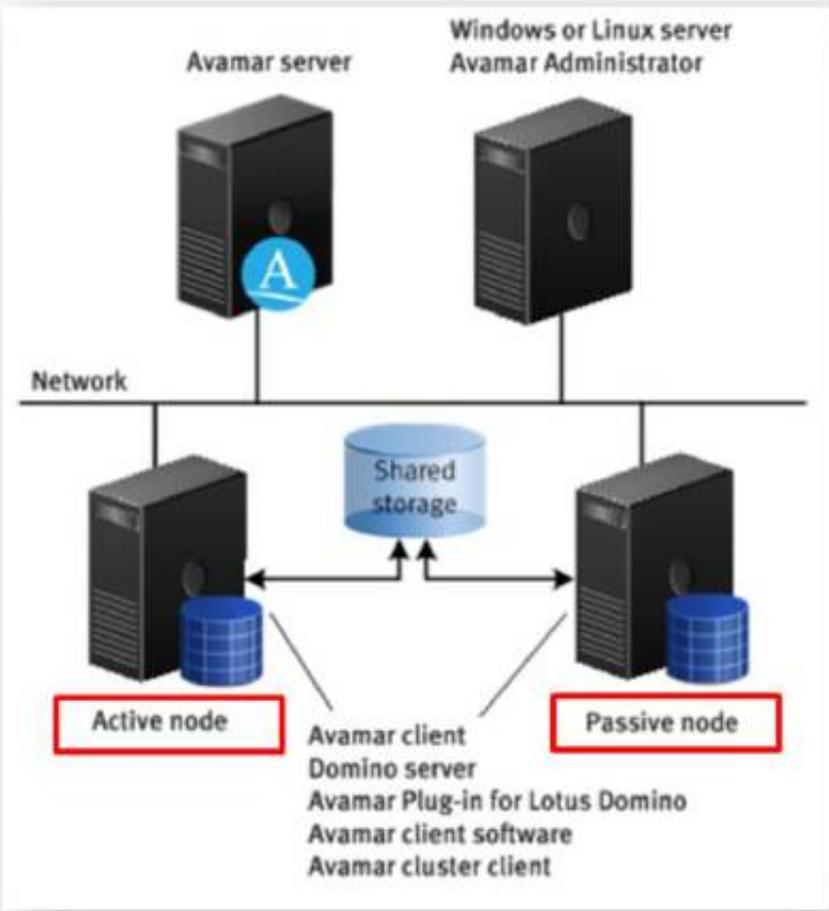
# Avamar Lotus Use Case: Standalone

Standalone Configuration

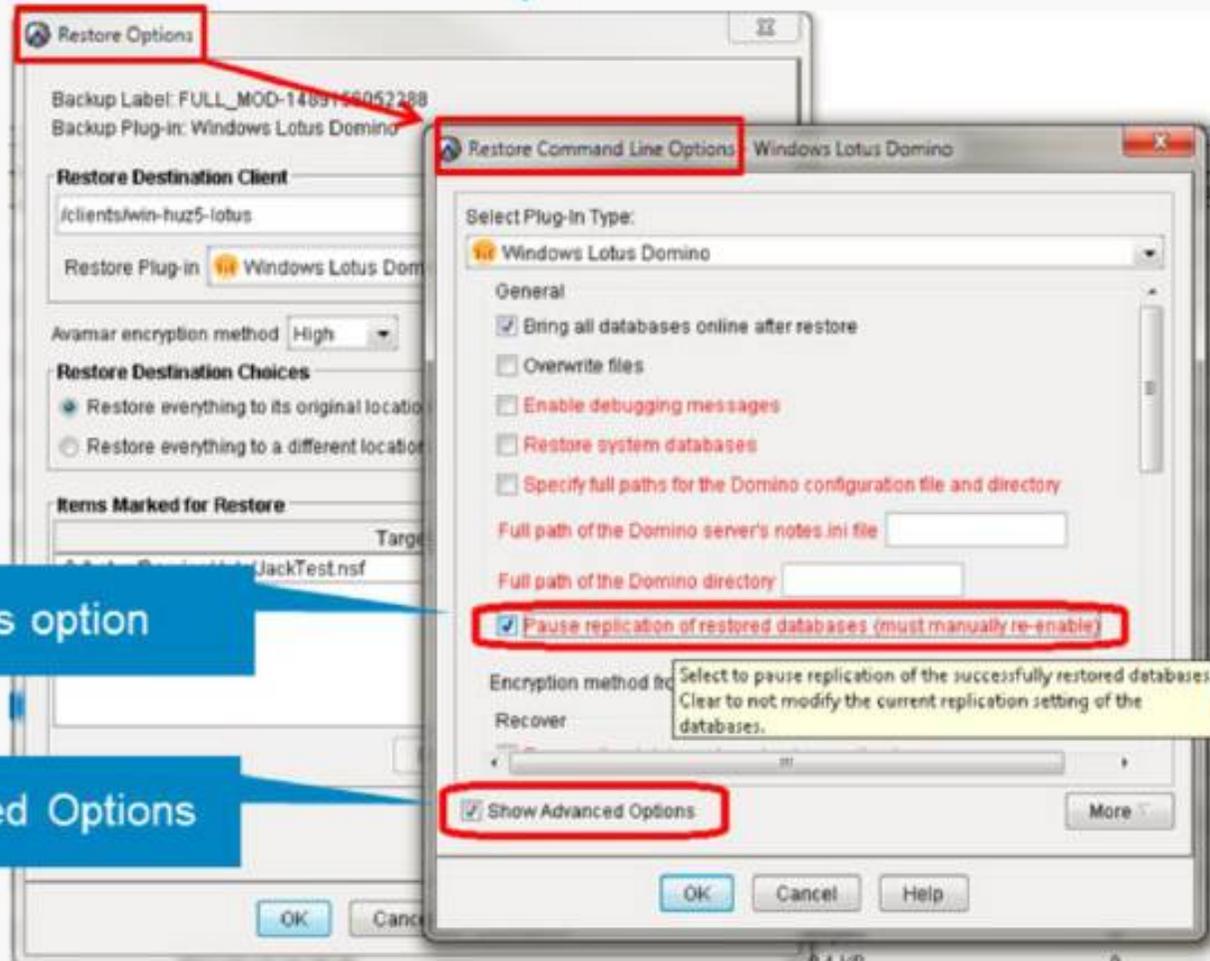


# Avamar Lotus Use Case: Cluster

Cluster Configuration



# Domino Administrator New Option



7.5 AvLotus option

Select Advanced Options

## Exchange

- Improved Exchange backup and restore performance

## Exchange

- The Exchange plug-in has been enhanced to intelligently discover relevant log files, and back up only those logs.
  - Improved Backup time.
  - Less storage space for each backup.
  - Improved GLR Browsing and restore time.

## Avtar Client Installation



Avamar 7.5

Security Enhancements

## Security enhancements

- Security
- 775 certificates
- LDAP-S Support
- Default to SHA-2 certificates
- Disable TLS 1.0/1.1

# AV 7.5 Internal Changes

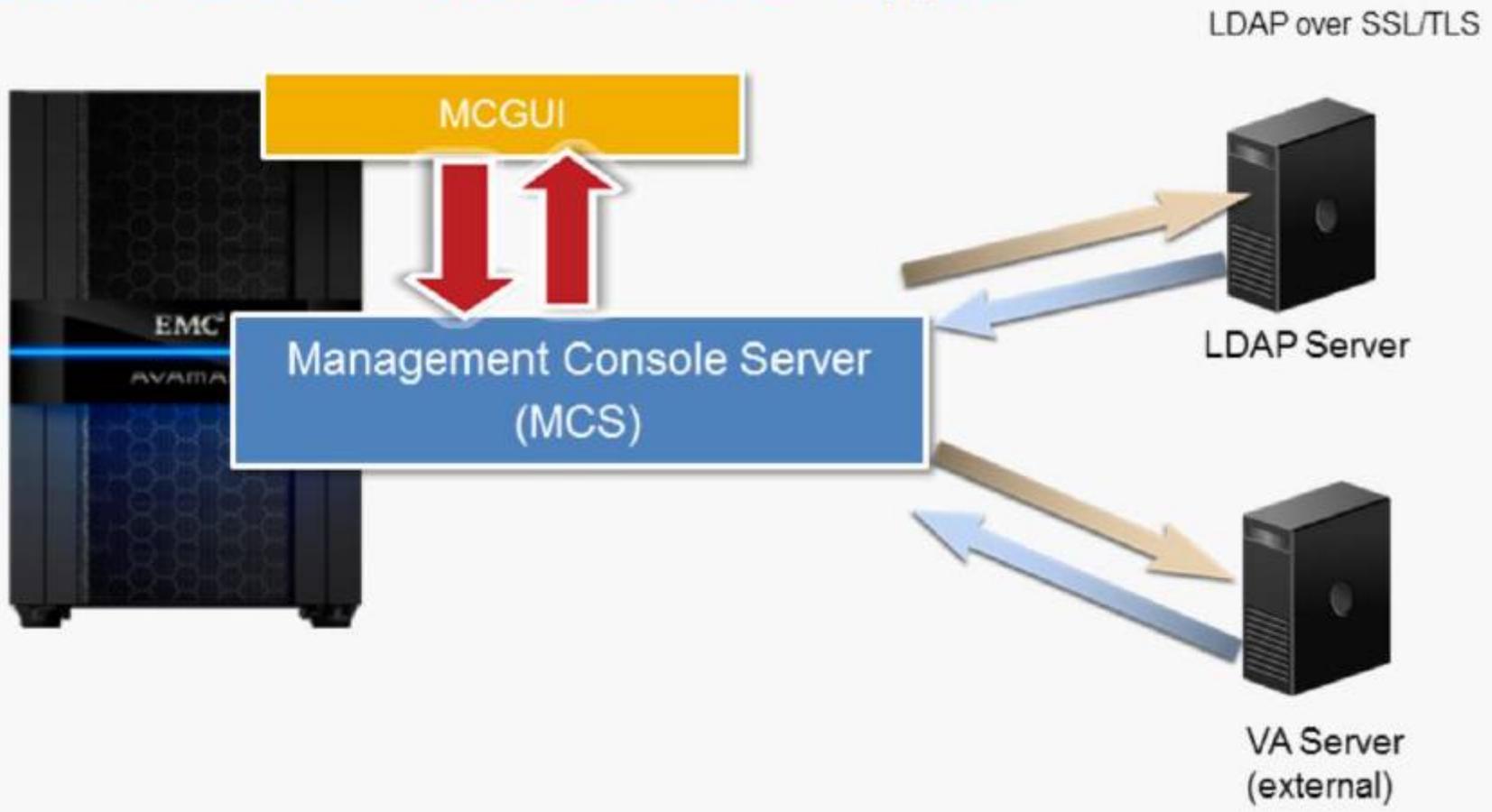
Certificate  
number 775

2017 Security  
Roll-up testing

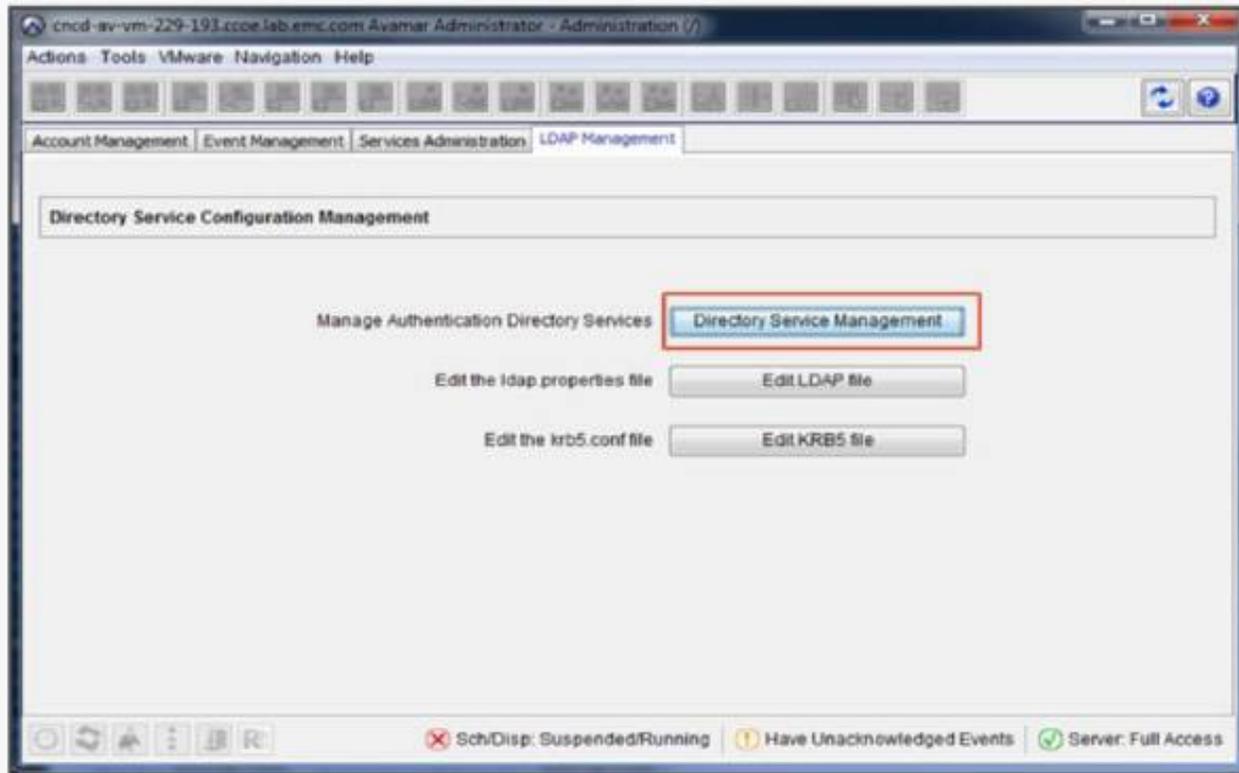
SHA-2  
Certificates

Performed  
quarterly

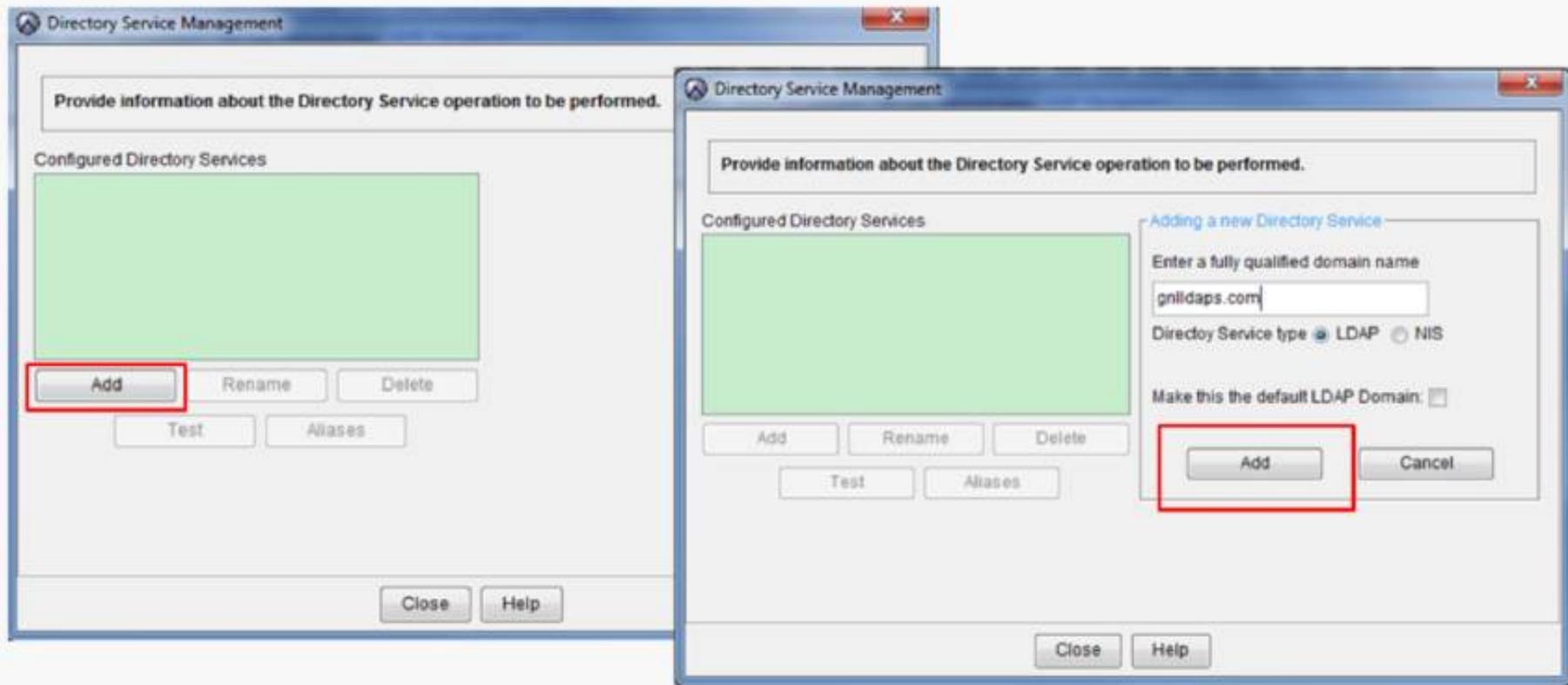
# Avamar 7.5 LDAP Over SSL/TLS Support



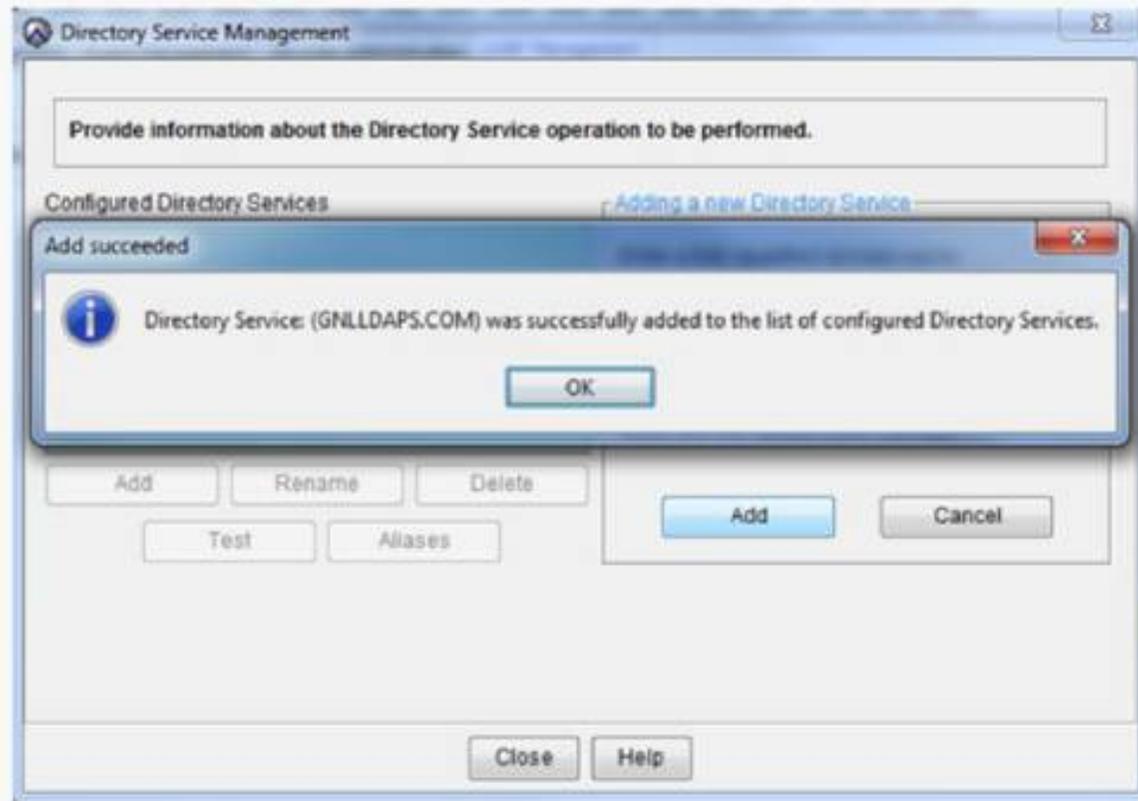
## Adding the Windows AD Domain to Avamar Directory Service



## Adding the Windows AD Domain to Avamar Directory Service



## Adding the LDAP to the Windows Domain



# Logging on to the Avamar Server

## Normal user login with Windows AD

10.62.229.193

ad\_avamar\_user\_01@ghidaps.com

Authorized users only.  
If you are not an authorized user,  
exit this screen.

LOGIN Options Help

Version 7.5.0-121  
©2001-2017 Dell EMC. All rights reserved.

DELL EMC

- Input the login user name like 'username@domain.com'.
- Click 'LOGIN' button to log into the Avamar system.

# Logging on to the Avamar Server

CAC User Login successfully for normal user login and CAC user login

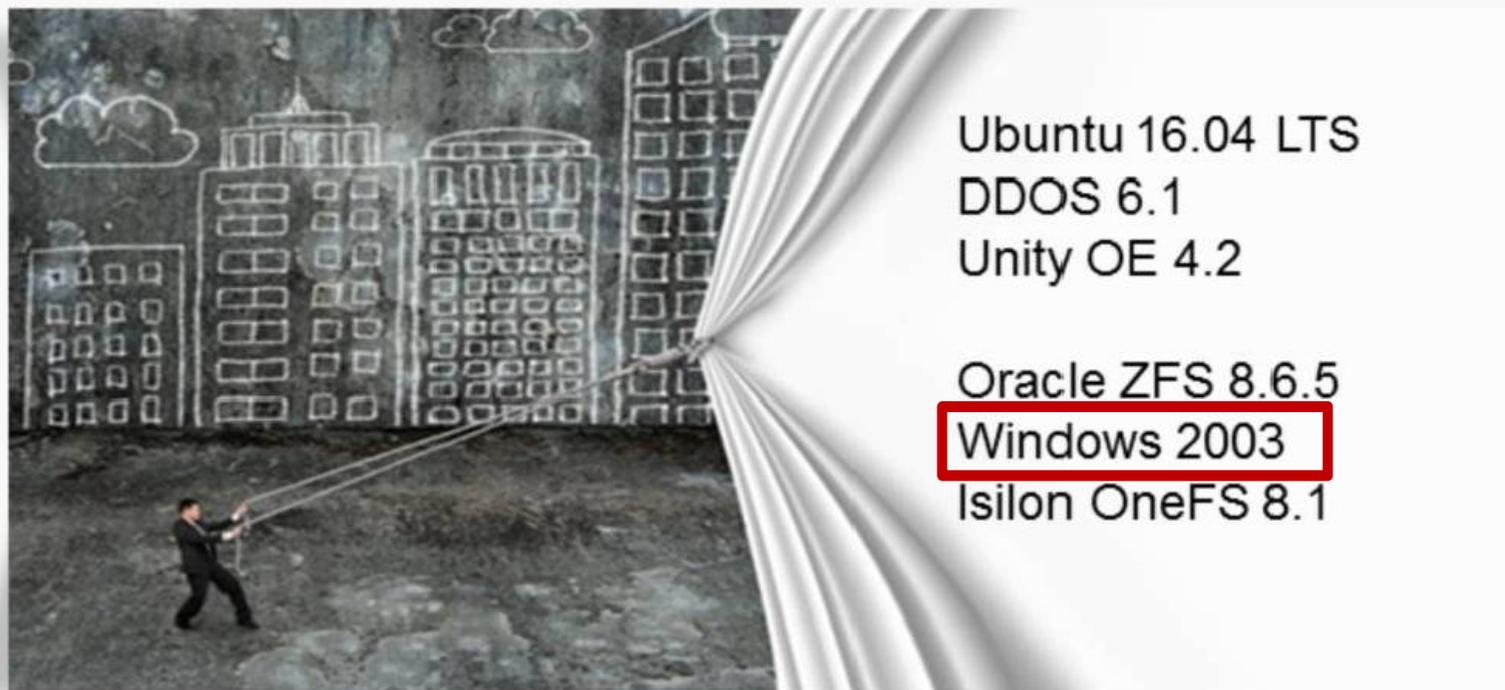
The screenshot displays the Avamar Administrator web interface. The browser address bar shows the URL: `cmd.av.vm.229-193.ccs.lab.emc.com Avamar Administrator US`. The interface includes a navigation menu with tabs for Policy, Backup & Restore, Data Movement Policy, Activity, Administration, and Server. The main content area is divided into several sections:

- System Information:** Shows System State as Suspended, Scheduler State as Suspended, Maintenance Activities State as Suspended, License Expiration as 2017-04-29 13:17:53 CST, Data Protected as 0 bytes, and Data Protected in last 24 hours as 0 bytes.
- Capacity:** Shows a legend for utilization levels (0-75% used, 75-90% used, 90% used, Available) and a bar chart for the server `cmd.av.vm.229-193.ccs.lab.emc.com` with Utilization at 0.0%.
- Activities:** Displays Backup Jobs and Replication Jobs for the Last 24 hours period. Backup Jobs summary: Pending 0, Running 0, All Failures 0, Succeeded with Exception 0, Succeeded 0. Replication Jobs summary: Pending 0, Running 0, Failed 0, Succeeded with Exception 0, Succeeded 0.
- Critical Events:** Shows 56 Critical events and 1 Warning event.

Avamar 7.5

Other

## Supported OS/OE and Applications



# Installation and Configuration of Avamar 7.5



EMC SolVe Desktop - Authorized as employee until January 26

Authorization Access Level Top 10 Service Topics Tools Options Help

EMC SolVe Desktop Contact EMC SolVe Support

### Avamar

- Avamar Documentation Links
- Avamar Install Audit Form
- Avamar Install and Upgrade Procedures
  - Avamar Installation Procedure**
  - Avamar Security Patch Installation Procedures
  - Avamar Software Download Links
  - Avamar Software Upgrade Procedures
  - Avamar Software Upgrade Requirements
  - Capacity Upgrade Procedures
- Avamar Service Procedures
- Extended Retention Procedures
- FCO's and TSE's
- Avamar Customer Procedures
- VCE Integrated Data Protection Logical Build Guide

Home Next

Top 10 Service Topics

Solve Desktop version 3.0.0.109  
Loaded keychain:  
Authorized as employee.

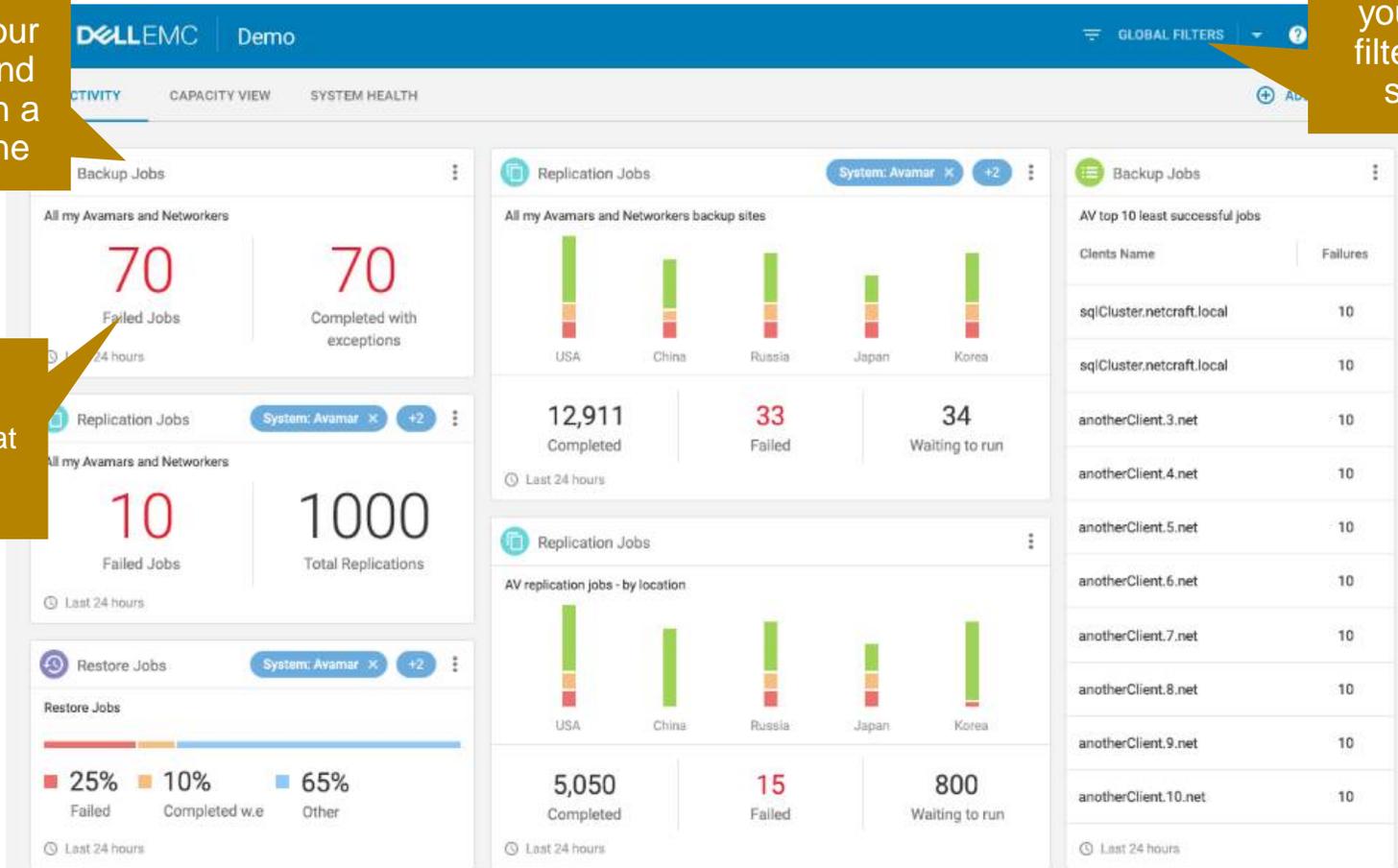
article #	470241	Product	Avamar
article Title	MCS GUI reports message 'RabbitMQ is misconfigured. The problem could not be corrected' after 7.2 create		

# Data Protection Central

View all your Avamar and NW jobs in a single pane

Configurable Widgets - only show KPIs that you want to see!

Customize your view – filter Av/NW systems



# Data Protection Central

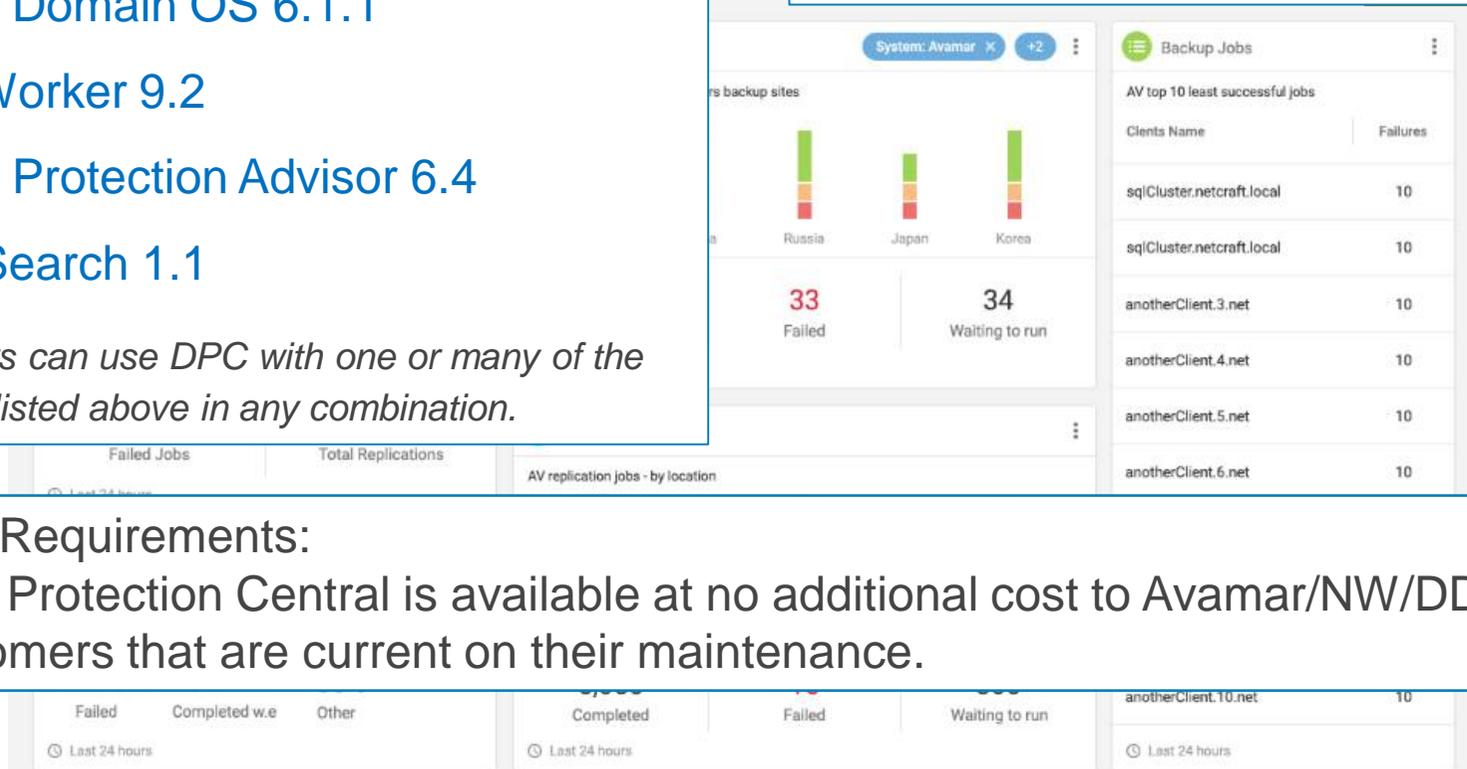
## Supported Products:

- Avamar 7.5
- Data Domain OS 6.1.1
- NetWorker 9.2
- Data Protection Advisor 6.4
- DP Search 1.1

*Customers can use DPC with one or many of the products listed above in any combination.*

## Environmental Requirements:

- VMware ESX v6.0 or greater



## License Requirements:

- Data Protection Central is available at no additional cost to Avamar/NW/DD customers that are current on their maintenance.

# Data Protection Central

The native element manager is a click away:

- Launch the Avamar MC, NW NMC or DD DDSM
- Session established via SSO
- Session launched in context of the system in focus



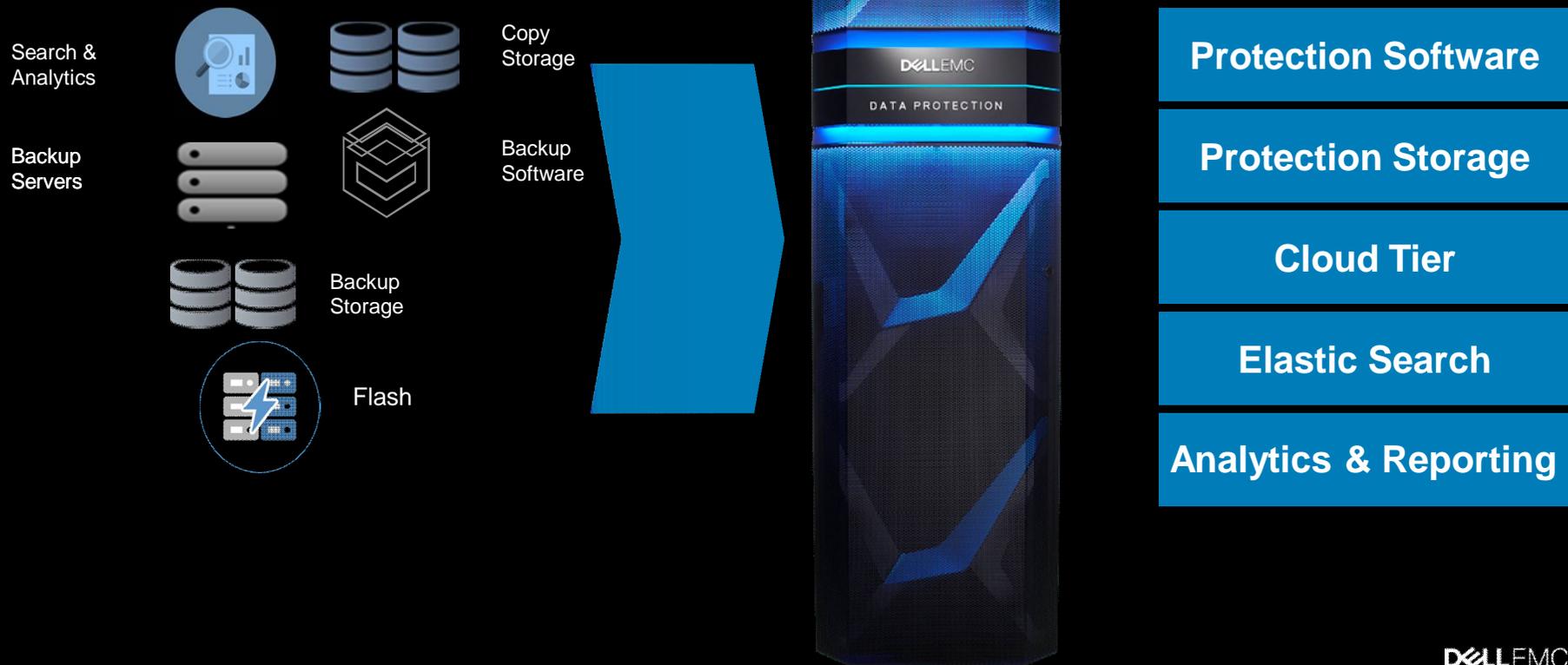
The screenshot shows the Avamar Administrator interface for a3dpn385.com. The interface is divided into several sections:

- System Information:** Shows System State (Running), Scheduler State (Running), and Maintenance Activities State (Running). Data Protected is 84.6 KB, and Data Protected in last 24 hours is 0 bytes.
- Capacity:** Shows capacity for three domains: a3dpn385.emc.com (3.0 TB total, 1.1% used), dataomain15.emc.com (43647.3 GiB total, 596.6 GiB used), and dataomain7.emc.com (21541.8 GiB total, 696.9 GiB used).
- Activities:** Shows Backup Jobs and Replication Jobs. Backup Jobs: Pending (0), Running (0), All Failures (0), Succeeded with Exception (0), Succeeded (1). Replication Jobs: Pending (0), Running (0), All Failures (0), Succeeded with Exception (0), Succeeded (3).
- Critical Events:** Shows 0 errors and 0 warnings.

IDPA

Integrated Data Protection Appliance

# Converged AND Comprehensive



I want to try Avamar 7.5

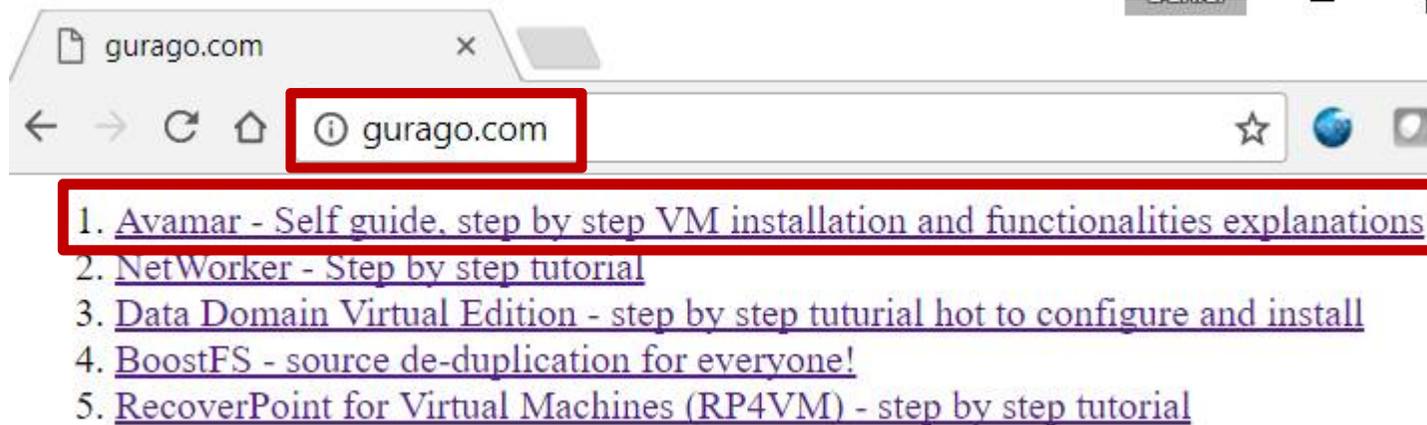
Where to find resources?

## Avamar – Additional Materials

- Avamar Proof of Concept package
  - <http://gurago.com/>  
1st link from the top
- Shows Avamar features and configuration screen by screen

# Avamar – Additional Materials

<http://gurago.com/>



# Avamar – Additional Materials

<http://backuprecoveryman.blogspot.com/2016/02/przeglad-materiaow-po-polsku.html#Avamar>



## Artykuły i filmy dotyczące **Avamara**

--

**Warsztaty z architektury i administracji: Avamar**, NetWorker, Data Domain, VDP

Terminy, szczegóły:

<https://www.linkedin.com/pulse/kalendarz-warsztat%C3%B3w-technologicznych-2017-data-domain-daniel?trk=prof-post>

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**Avamar 7.5 - co nowego:**

<http://backuprecoveryman.blogspot.ie/2017/07/avamar-75-co-nowego.html> (artykuł)

**Sesja o nowościach w Avamar 7.5 (28 lipca, piątek, 10:00, 30 min)**

<http://www.dellemc.com/pl-pl/events/webinar/index.htm?commid=270747>

--

**Samouczek: Jak zainstalować Avamara w swoim środowisku dla celów**

**testowych:**

<http://www.gurago.pl/>

# Ogłoszenia

# Całodniowe warsztaty technologiczne

- 12 września:
  - **Data Domain**
- 10 października:
  - **Avamar**
- 7 listopada:
  - **NetWorker**
- 12 grudnia:
  - **RecoverPoint for Virtual Machines**

# Całodniowe warsztaty technologiczne

- Miejsce
  - i-View Meetings, Mazowiecka 9, Warszawa
- Rejestracja:
  - <https://www.linkedin.com/pulse/kalendarz-warsztat%C3%B3w-technologicznych-2017-data-domain-daniel?trk=prof-post>

## Następna sesja

- 29 września, piątek, 10:00
- Temat:
  - **Nowości w NetWorker 9.2**

# Questions...



*Daniel.Olkowski@dell.com*