Veeam
IT JUST WORKS!

Advanced tips & tricks from Veeam

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@Veeam @RickVanover

Cisco Preferred Solution Partner

Hewlett Packard Enterprise

Microsoft Partner
Gold Application Development
Gold Datacenter

NetApp
Alliance Partner

vmware PARTNER TECHNOLOGY ALLIANCE

EMC²

Technical Tips and Tricks

Details we'll cover in this presentation:

- Backup tips in relationship to the vCenter infrastructure
- A "How-To" for a software-defined backup strategy
- Storage considerations for backup
- Infrastructure component design
- New storage system tips (VSAN & VVOL)
- Advanced option considerations

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vCenter and the art of Backups

vCenter database health and performance are critical to backups happening in a timely and successful manner.

- There are a lot of queries back and forth to the managed object reference; which is powered by the vCenter DB
- This is the #1 reason backups randomly fail

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Tips and Tricks

- Don’t reboot vCenter during backups (or restart vpxd)
- The database maintenance plans as well as occasional manual tasks are critical to vCenter DB health
- **Don’t** install Veeam (or other significant applications) on the vCenter Server operating system
- Consider *the number* of backup jobs in place. Causes Veeam DB growth and increases CPU/Memory usage (don’t do one job per VM).

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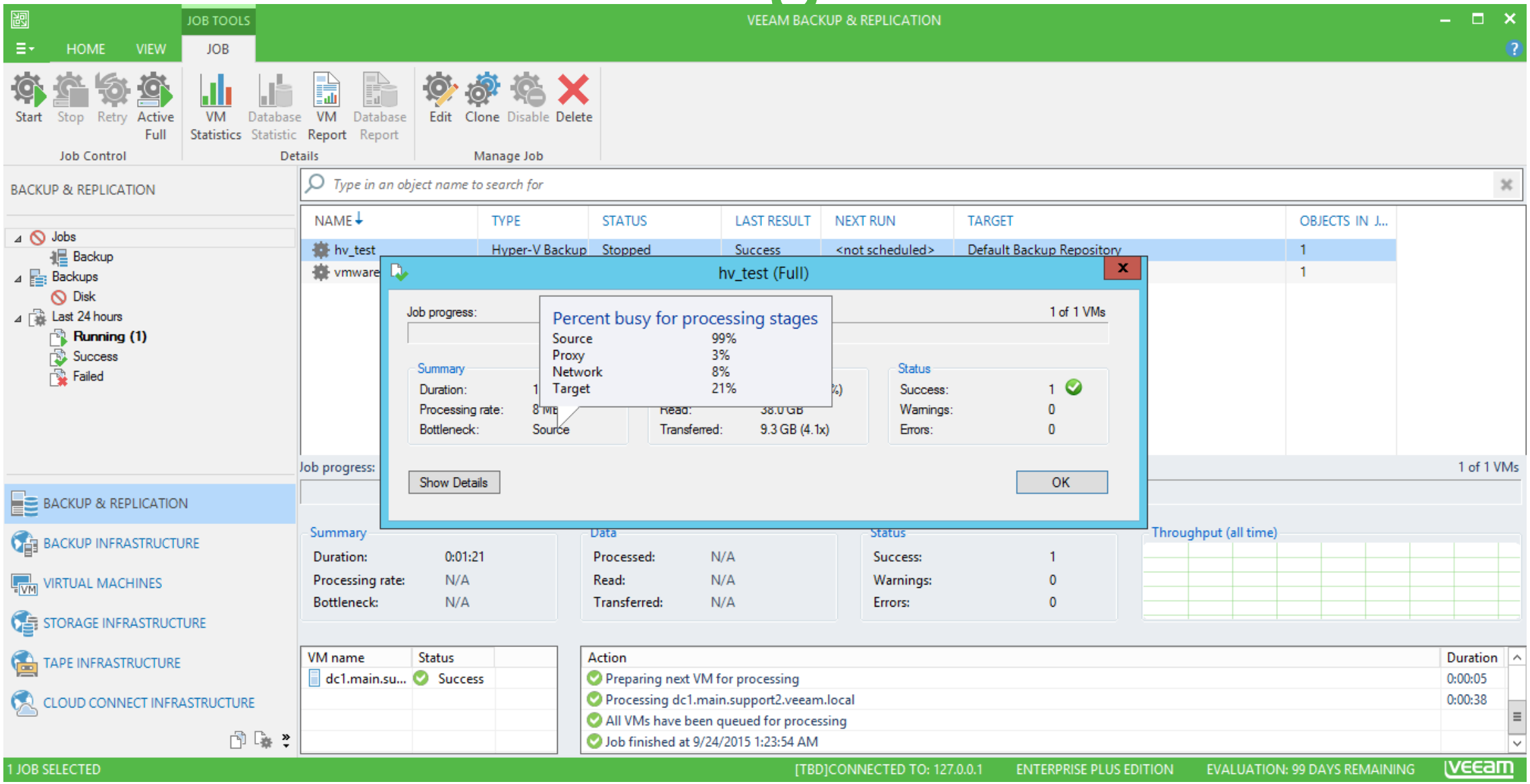
Favorite view of good information



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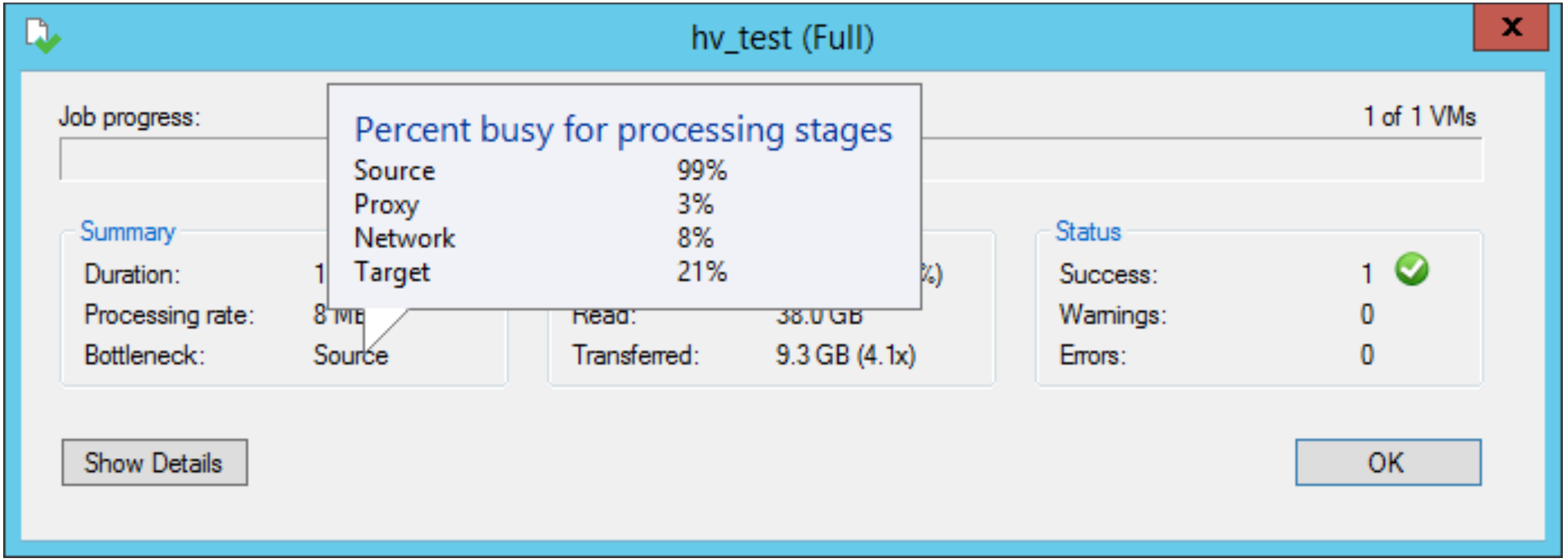

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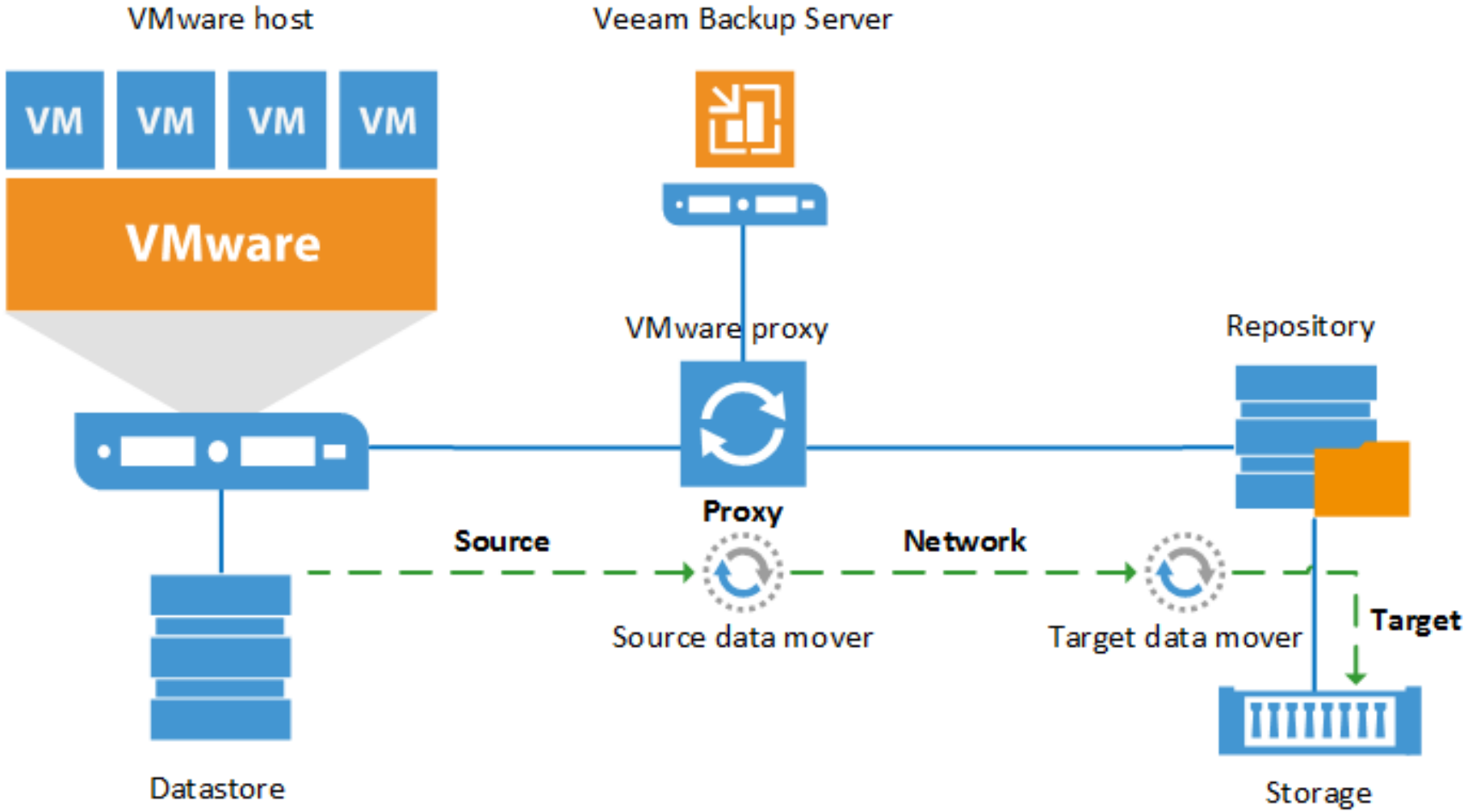
Components: 18.000 meter view



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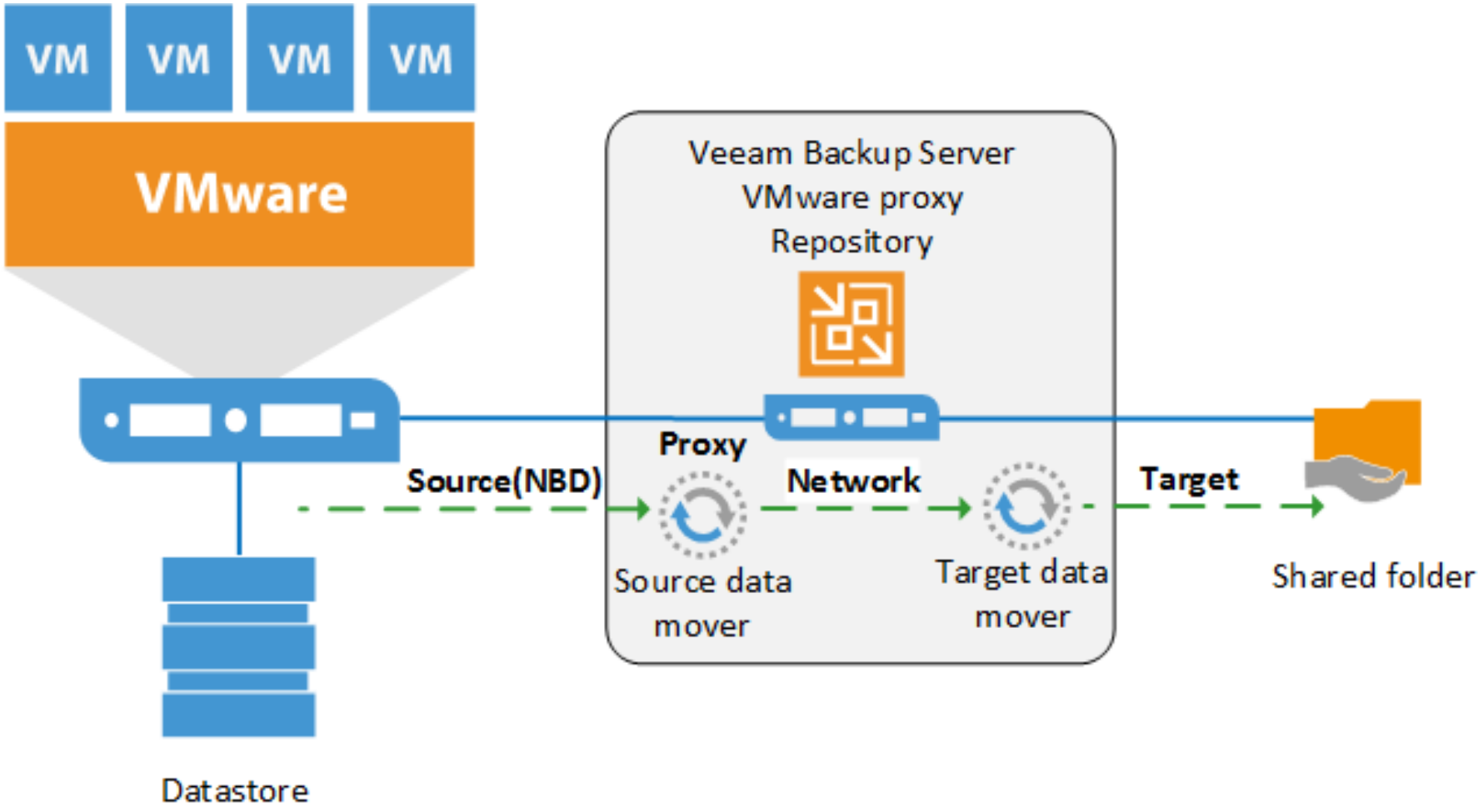
Components: Optionally All-In-1



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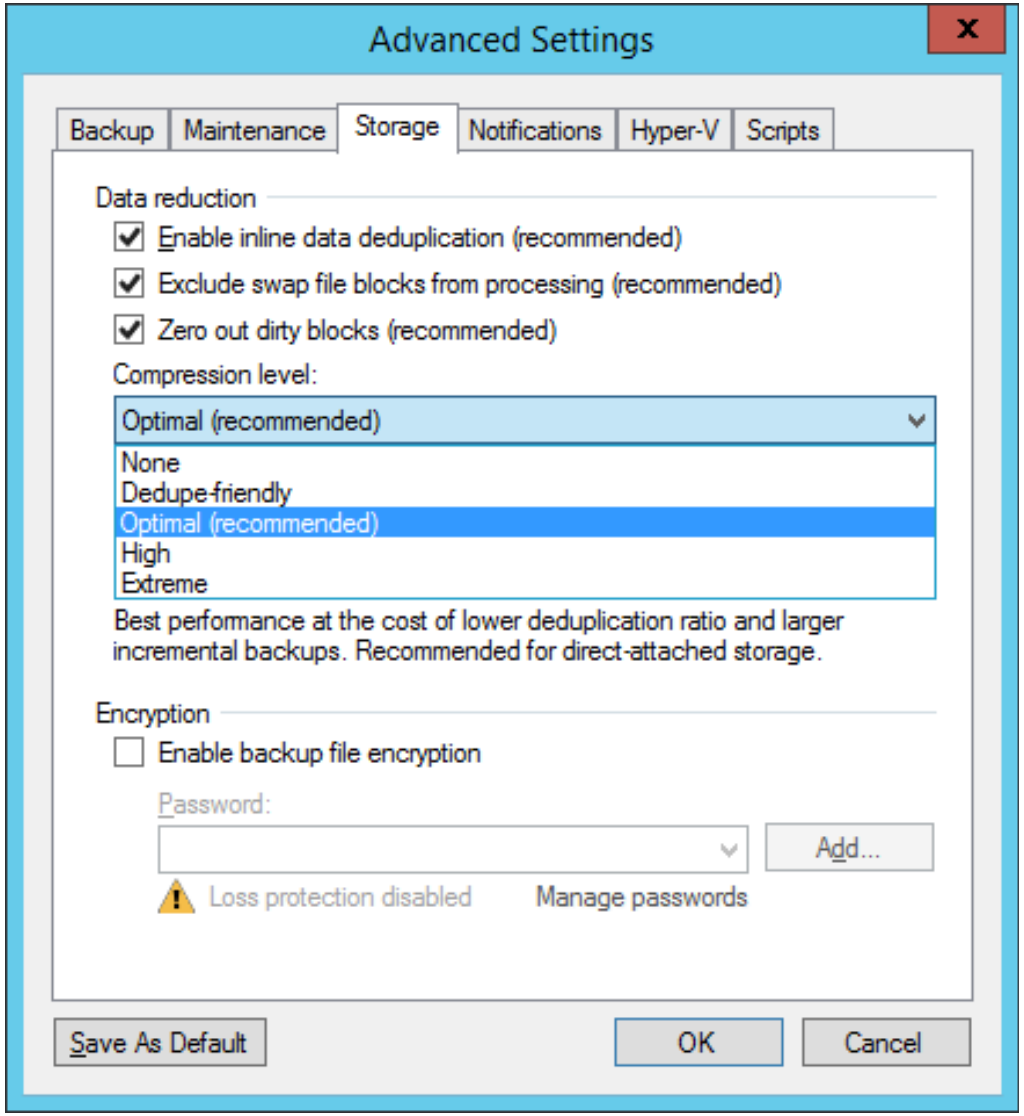
When bottleneck says Proxy…

Take a look at the job settings, they may have been made a bit too optimistic for the resources in place.



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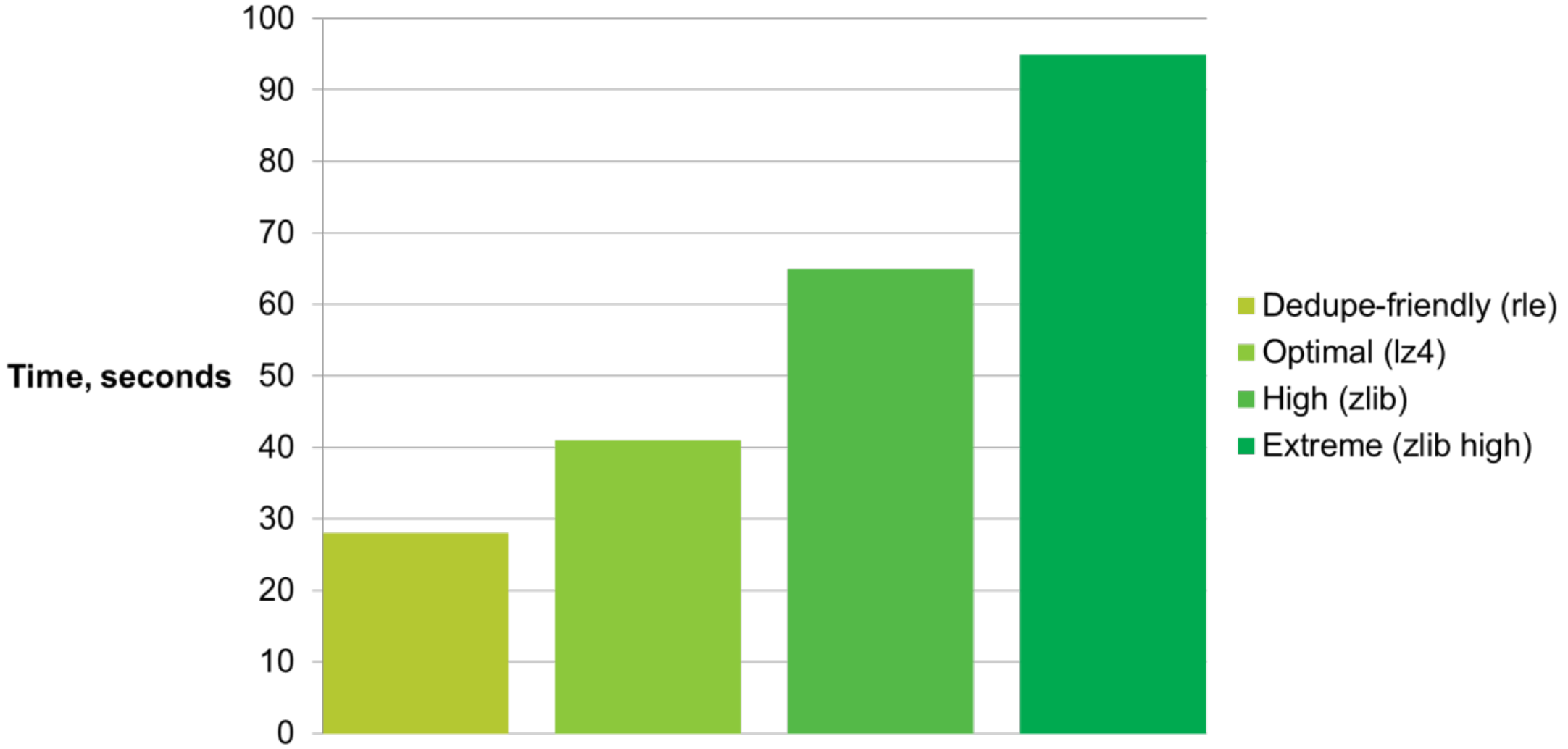
Compression level comparison



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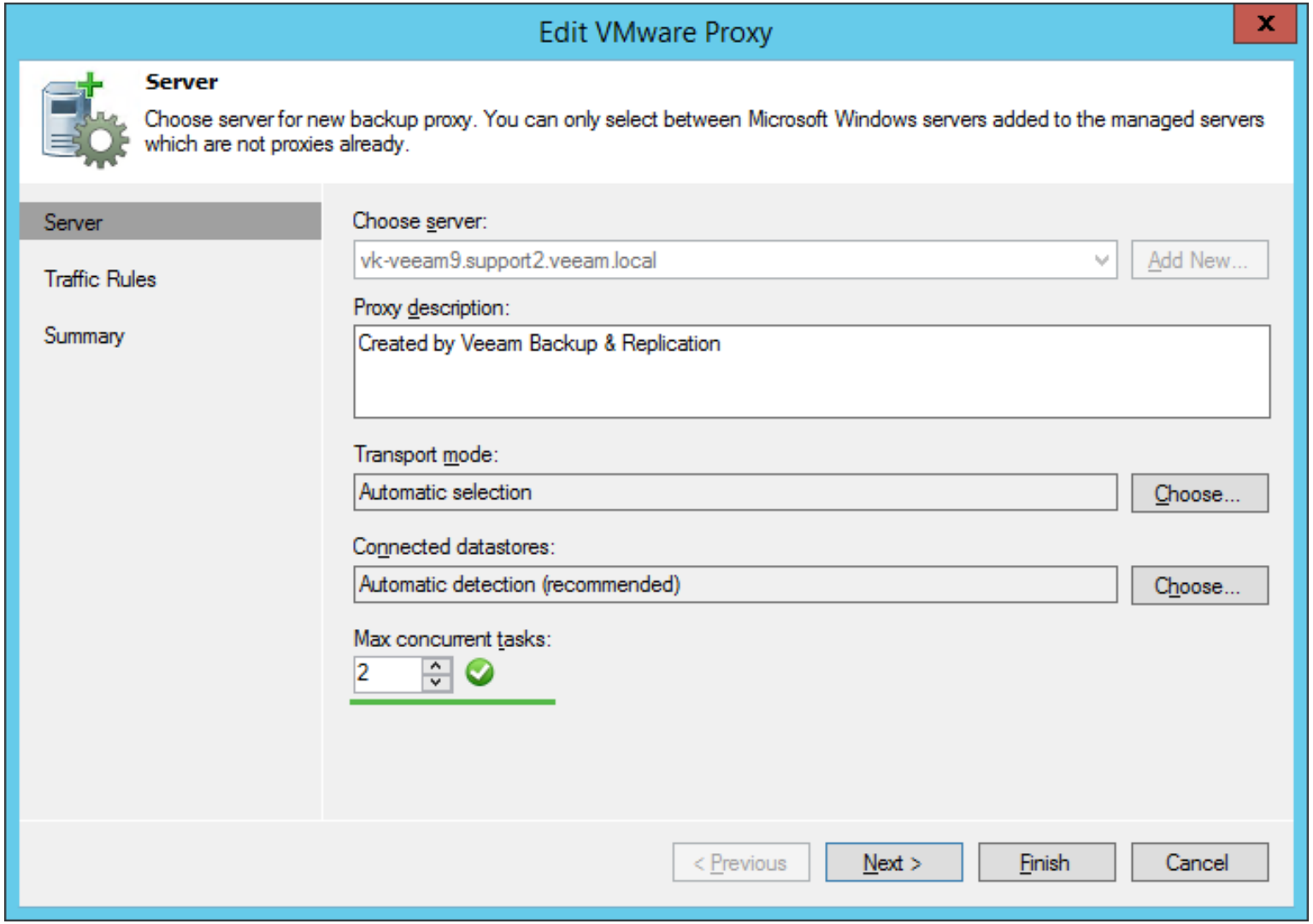
Additional tweak: Concurrency

1 core per job, don't over-assign the capabilities of the proxies!



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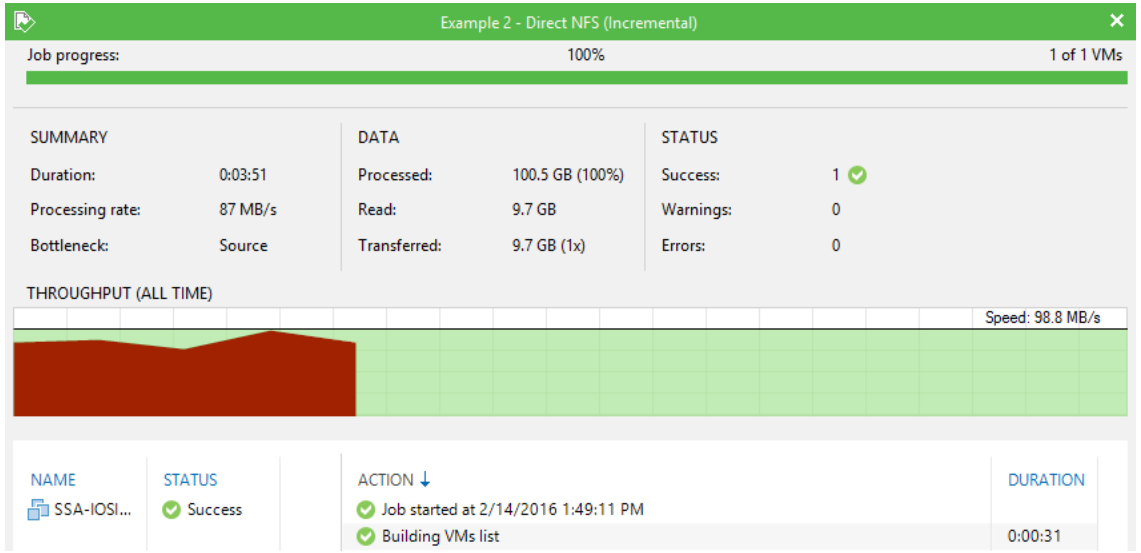
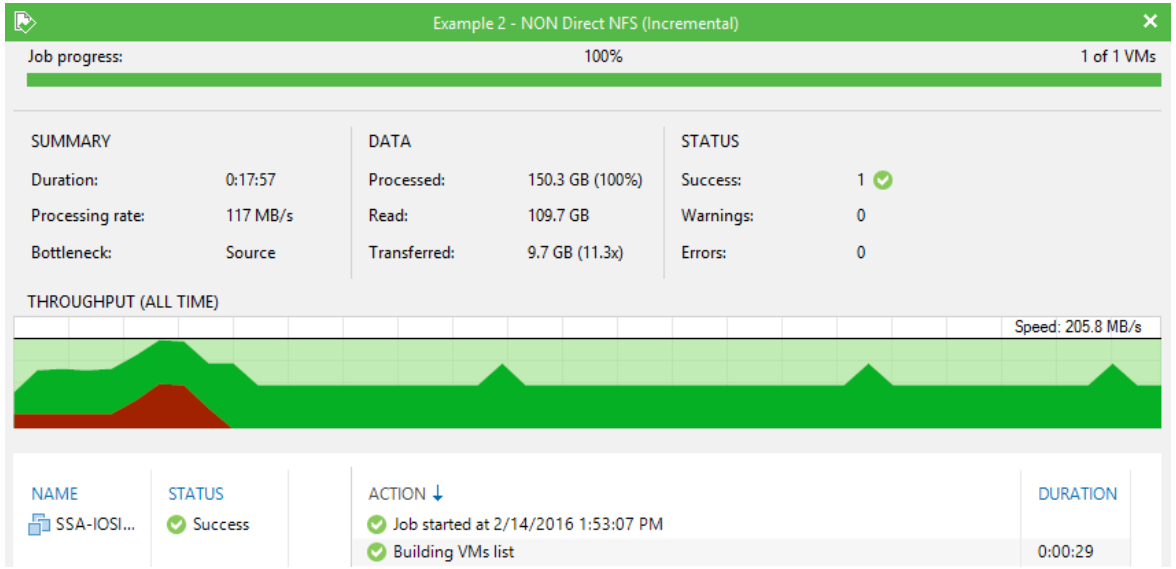
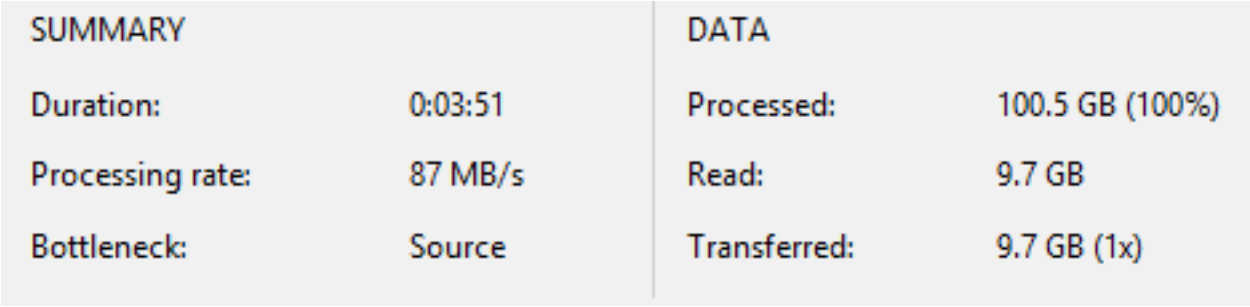
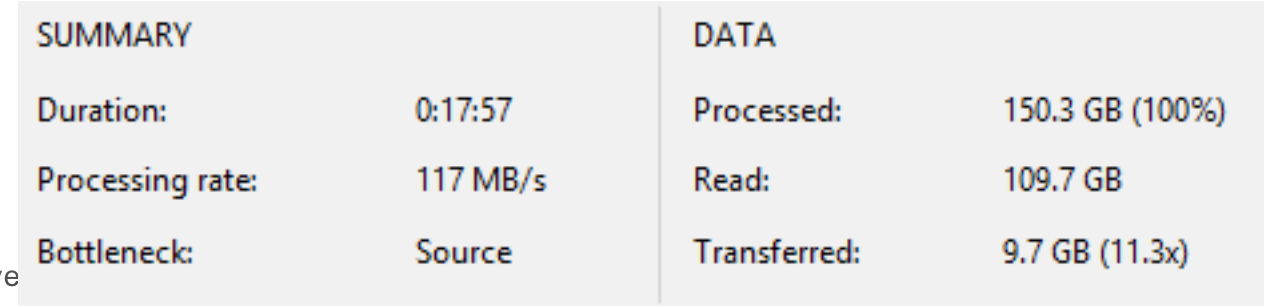
Storage Goodness!

Direct NFS in v9 is very underrated!









Hypervisor-converged storage

More opportunities for convergence in your data center!

Best example here is VMware Virtual SAN or VSAN. VSAN 6.2 is now available with vSphere 6 Update 2, cool new features:

- Erasure coding
- Deduplication and compression
- IOPs limits for objects (like VMs)
- ROBO and stretch cluster support and more

Read Cormac's blog: http://vee.am/vsan62

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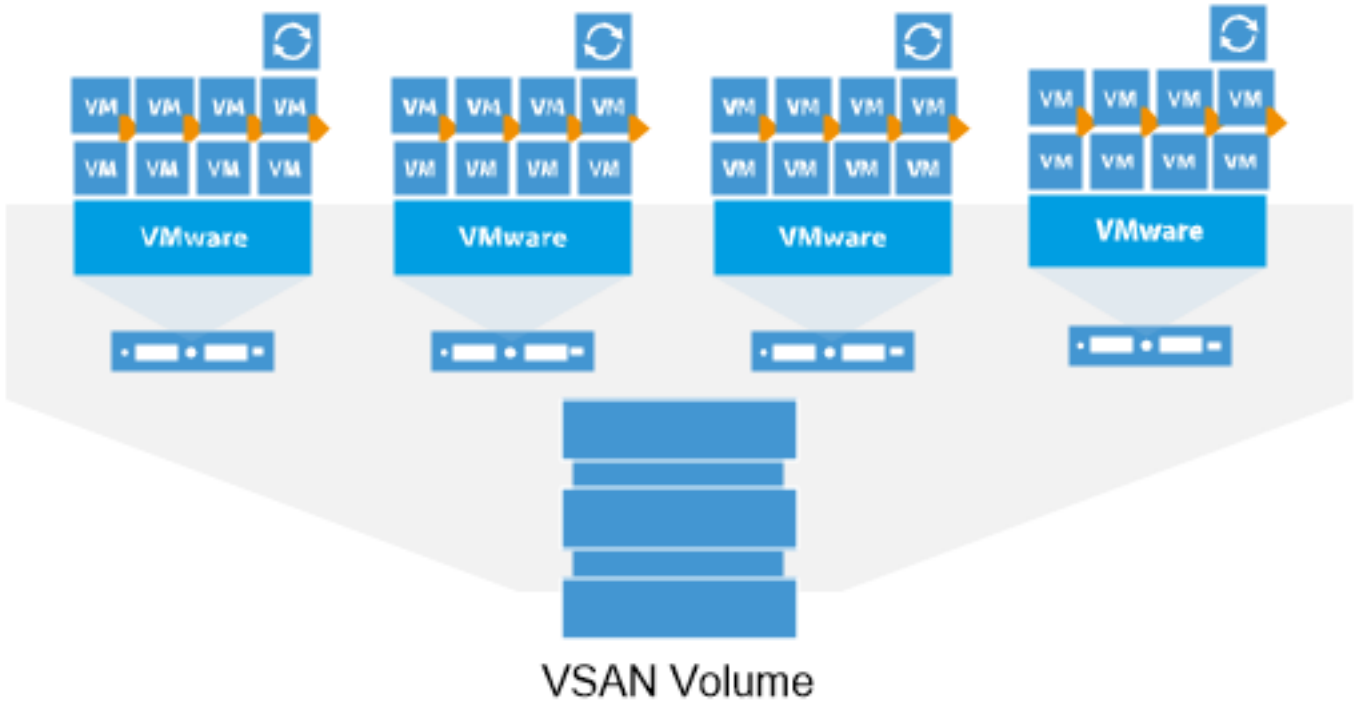
What about availability?

Ensure FULL backup and restore support when it comes to protecting VMs on VSAN. Veeam is VSAN aware:

- Proxy on each host
- Queries VSAN data
- Moves data from best node



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Specifically for VVOL and VSAN

The Storage Policy-Based Management association is critical when it comes to backup and restore.

Otherwise, why use the new frameworks if you can't ensure their service levels on restore.

Free tip: Veeam Quick Migration can be used to migrate *to* VSAN and VVOL storage resources, consider that for your migration plan.

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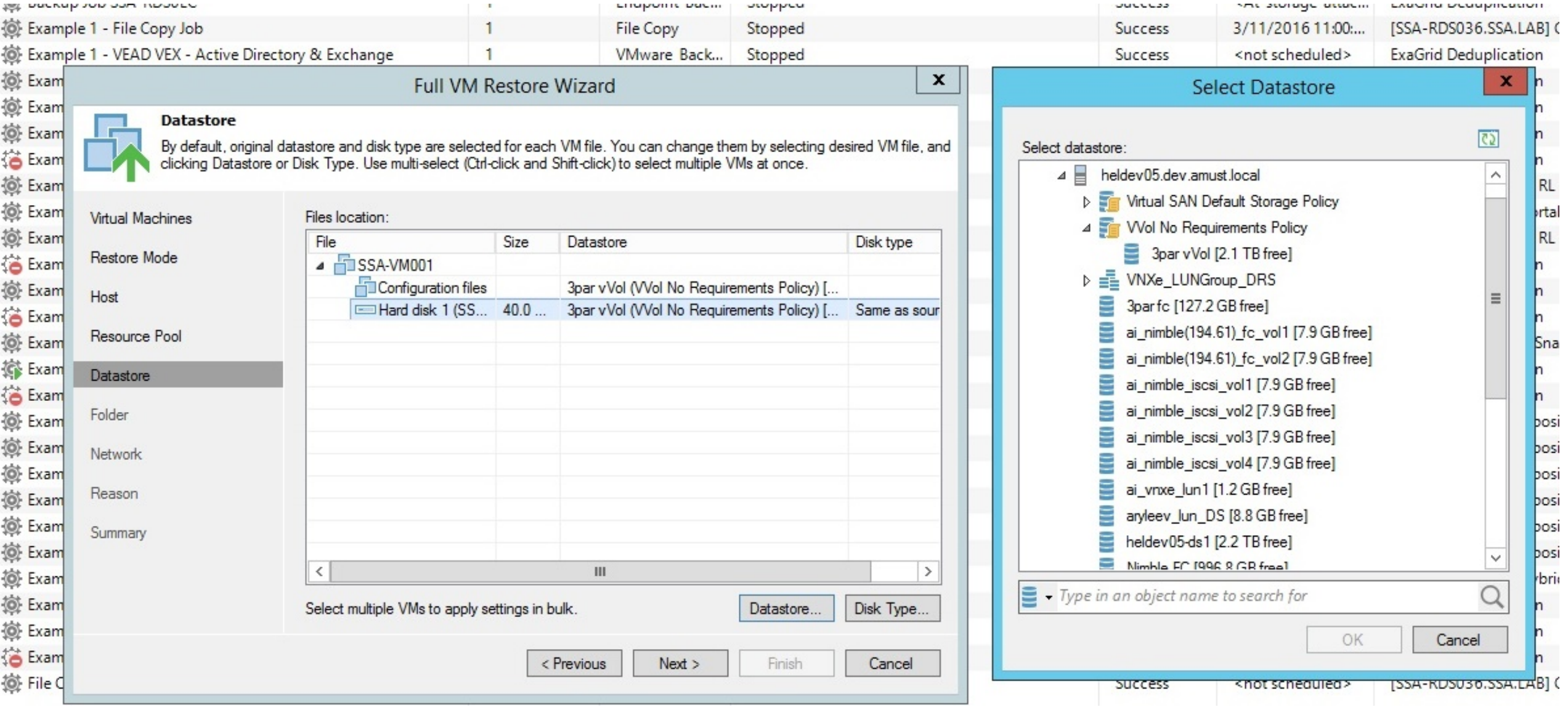
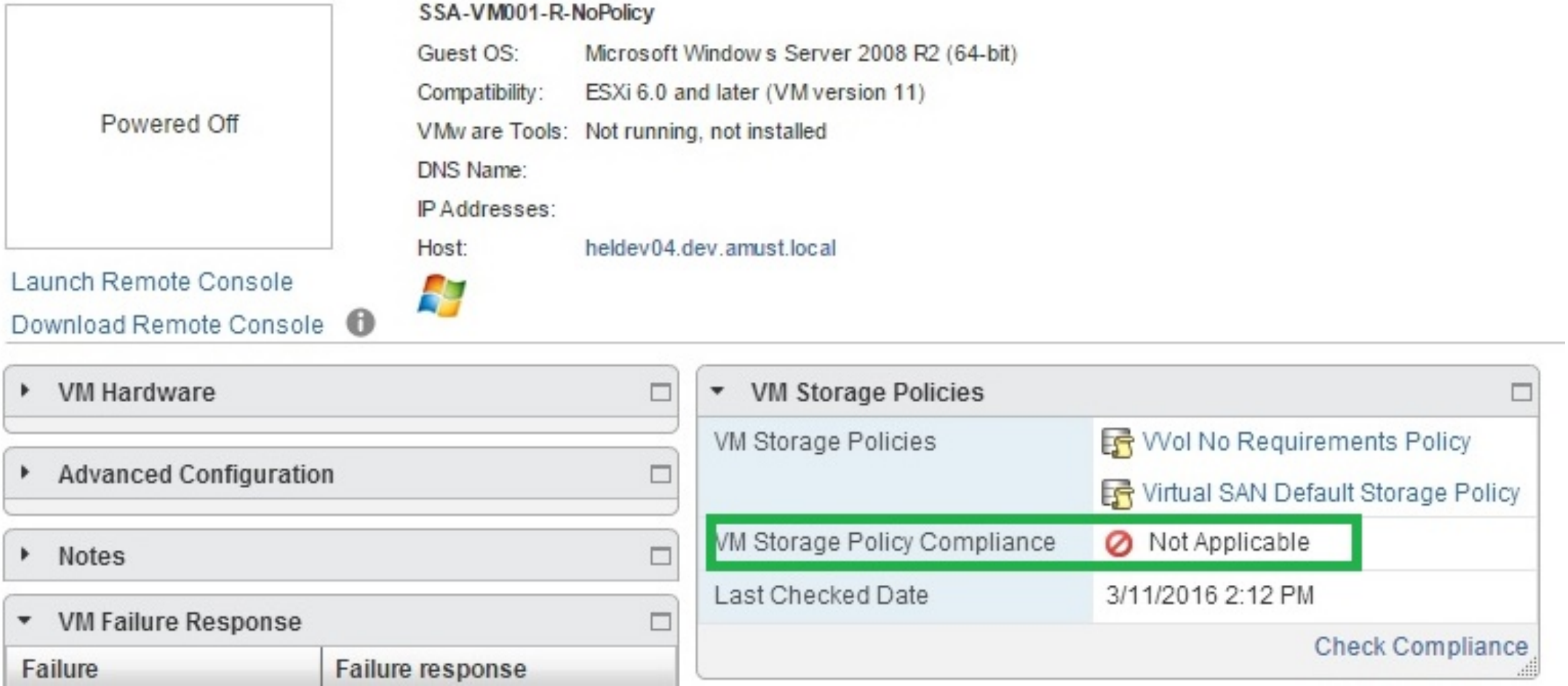
SPBM Association on restore

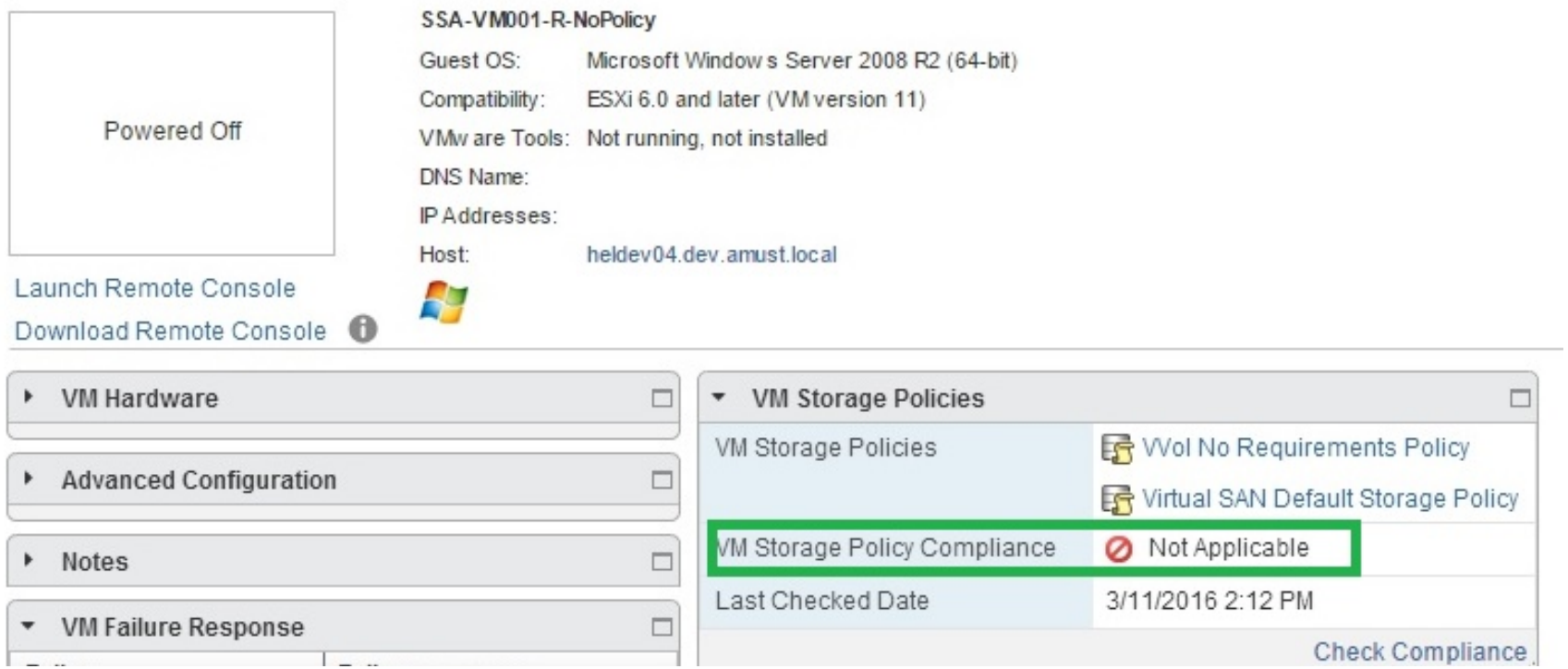


SPBM done **wrong**



More advanced VMware storage

If using next generation storage technologies (VVOLs and VSAN) ensure that Storage Policy-Based Management is supported upon restore. This is NOT what you want to see:



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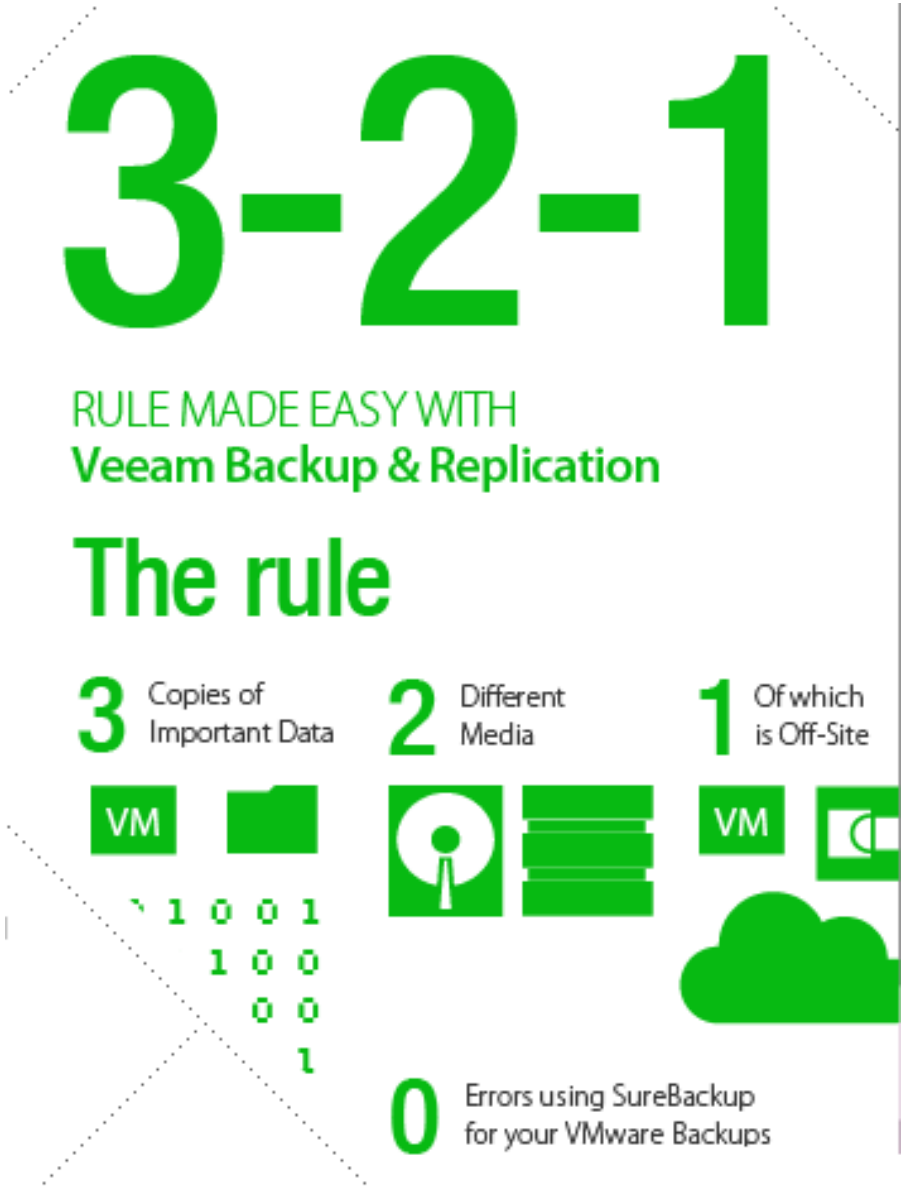
Don’t skip the 3-2-1 Rule

Hyper-convergence is awesome, but our responsibilities don’t go away!

3 Different copies of data
2 Different media
1 of which is off-site



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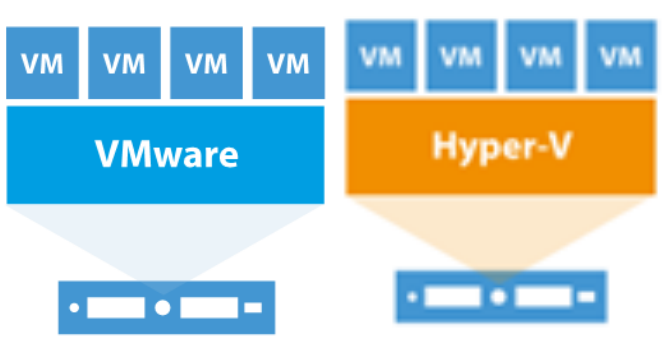
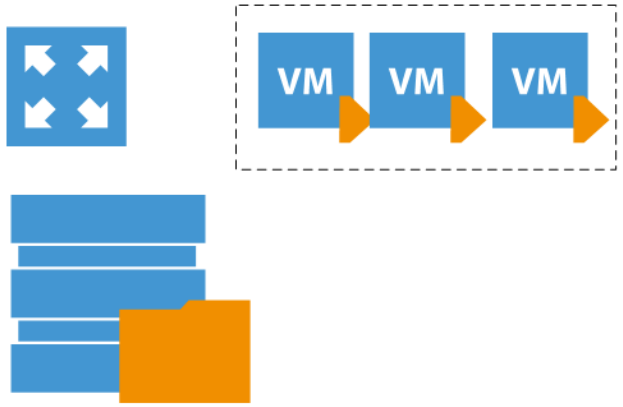
3 Different copies of data

Running workloads “count” as one copy.

The other two are where you need to think a bit:

-Backups
-Replicas
-Tape
-Cloud
-Storage snapshots





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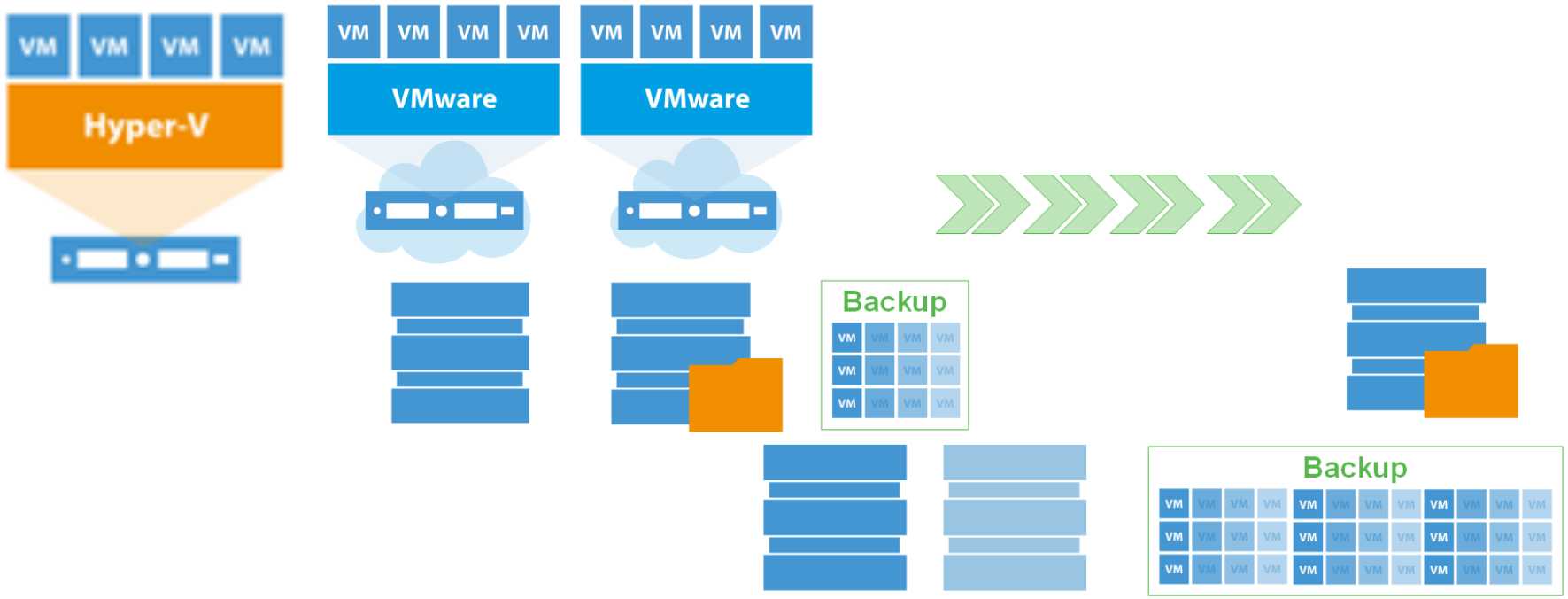
The 3-2-1 Rule Rocks

The 3-2-1 Rule can address nearly any failure scenario.

It also doesn't require any specific technology.



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What is offline storage anymore?

Attributes such as:

- Out of band communication
- Protocol reliance
- Traversal of authentication mechanisms
- Consider also some physical access controls
- Rickatron special: The 3-2-1 (+1+1) Rule
- One offline
- One with access control

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Right for today: vSphere Tags

What are policies, and why you need them?

Datacenters are becoming complex
Many VMs = many different protection needs
A multitude of jobs are hard to maintain
Some VMs may be left unprotected

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Transition from jobs to policies

1

Define a "Desired State"

2

Create Rules to reach the Desired State

3

Have task to apply rules and correct drift

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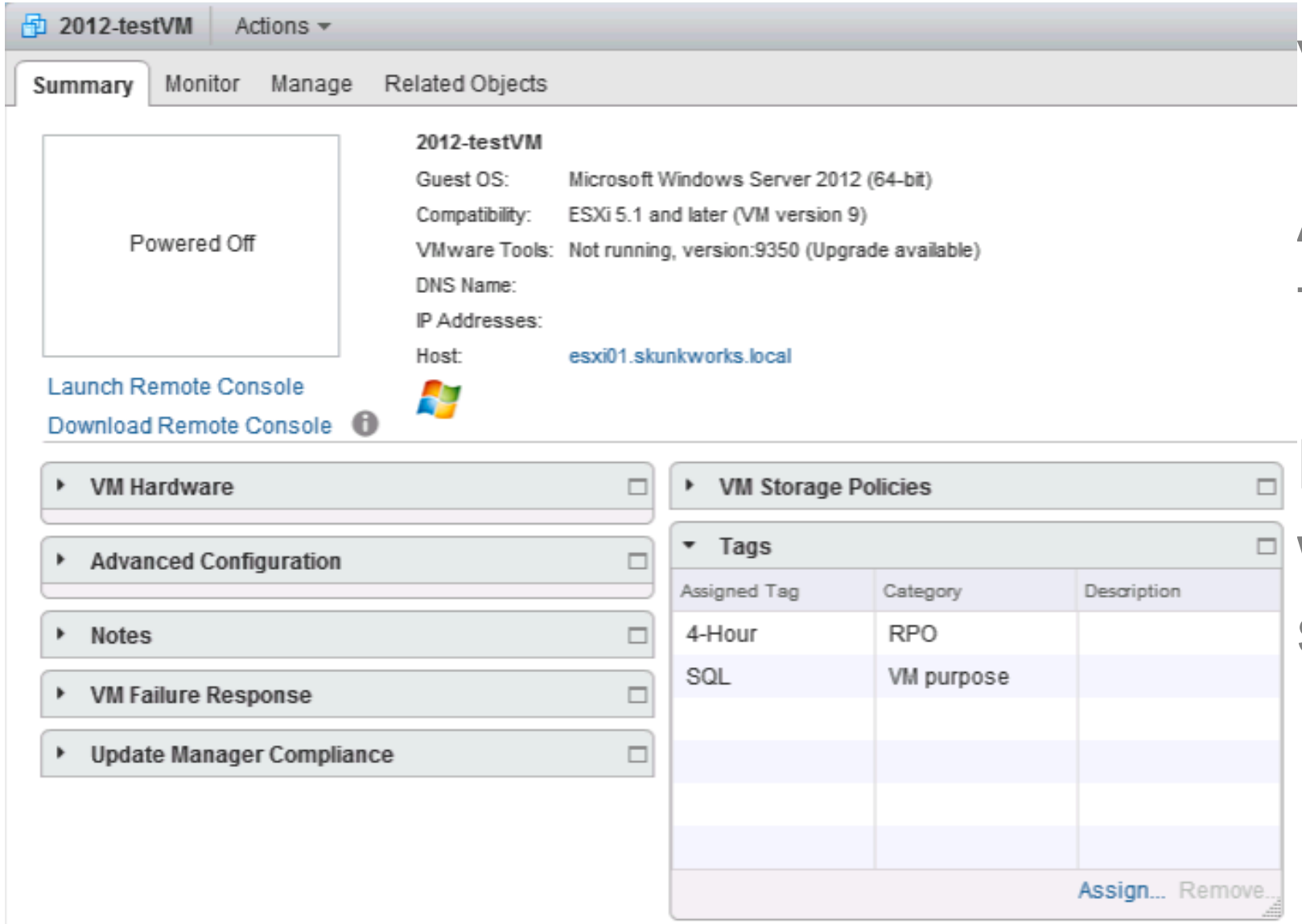
Desired State - How



vSphere tags

A VM can have multiple tags

Native property of the workload, not the backup software

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Rules - What

Use the tags to say what the rules are

Tags

Items

Tags | Categories

Categories: All Categories | Filter

Tag Name	Category	Description
Encryption NO	Backup Encryption	
Encryption YES	Backup Encryption	
Linux VM	VM purpose	
RPO 12 Hours	RPO	Backup is executed every 12 Hours
RPO 24 Hours	RPO	Backup is executed every 24 hours
RPO 4 Hours	RPO	Backup is executed every 4 hours
RPO No Backup	RPO	No backup needed for this VM
SQL	VM purpose	

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The “No-Backup” Tag

RPO No Backup	RPO	No backup needed for this VM

As users apply policies themselves, admins need to be sure a VM doesn’t need a backup because the user decided so, and not because it was forgotten

A quick report can show VMs with no RPO tags

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Rules - How

Policies in the backend are consumed by JOBS (or tasks, or schedules, or batch…)

Jobs are difficult to maintain at scale if they deal with single VMs or groups

The environment is highly changing, instead of changing jobs frequently, let's have them adjust automatically

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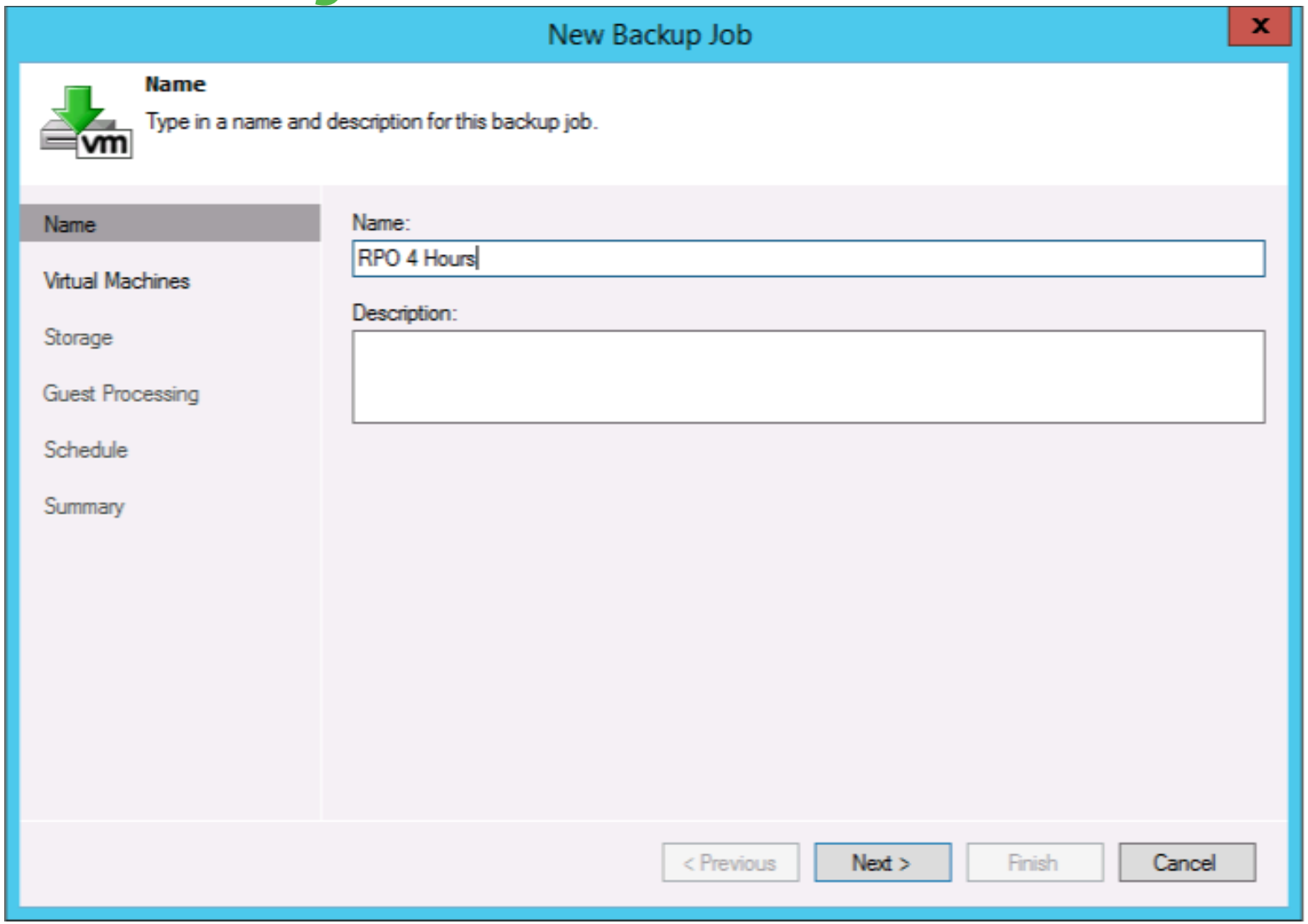
Tag-based jobs in Veeam



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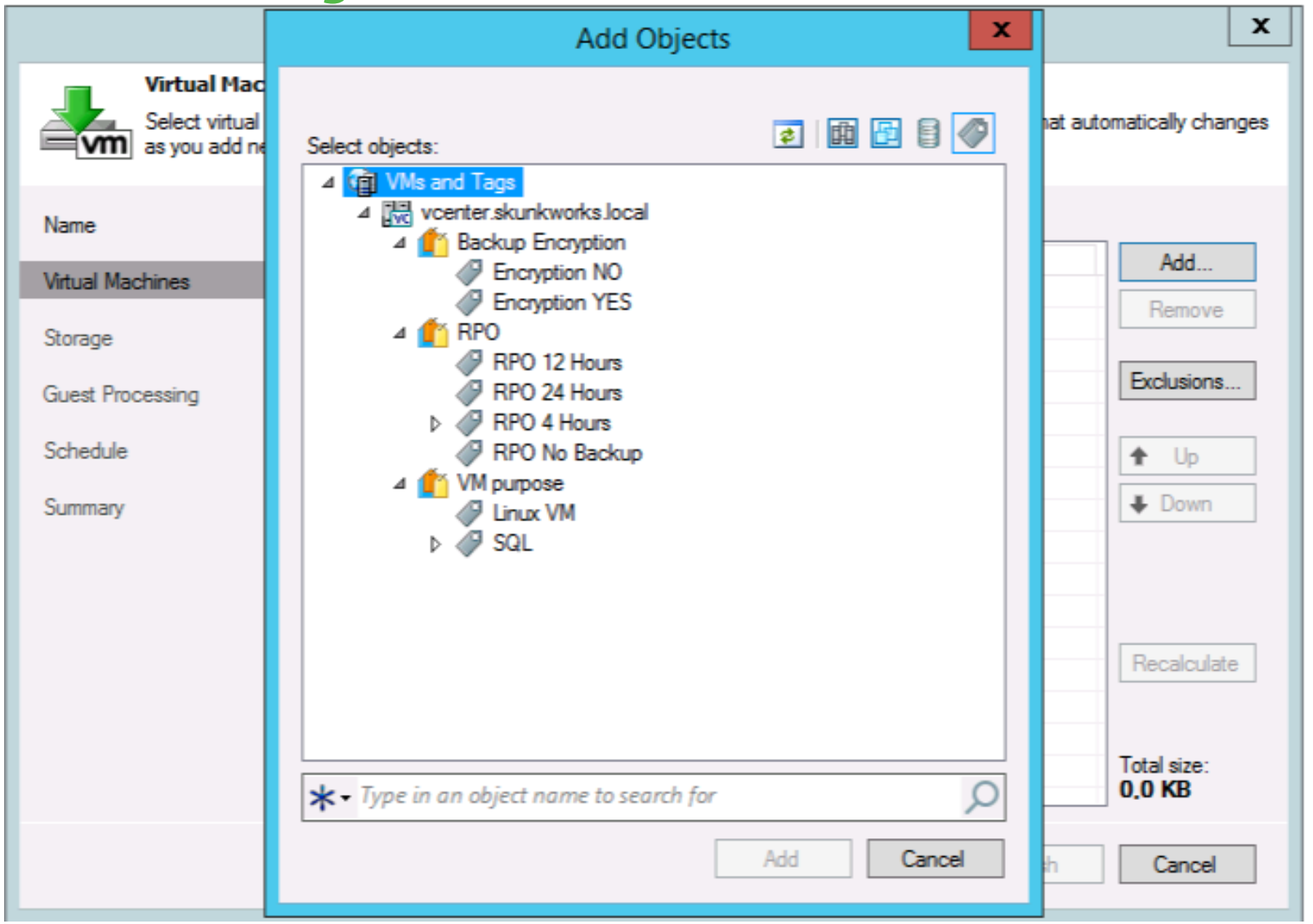
Tag-based jobs in Veeam



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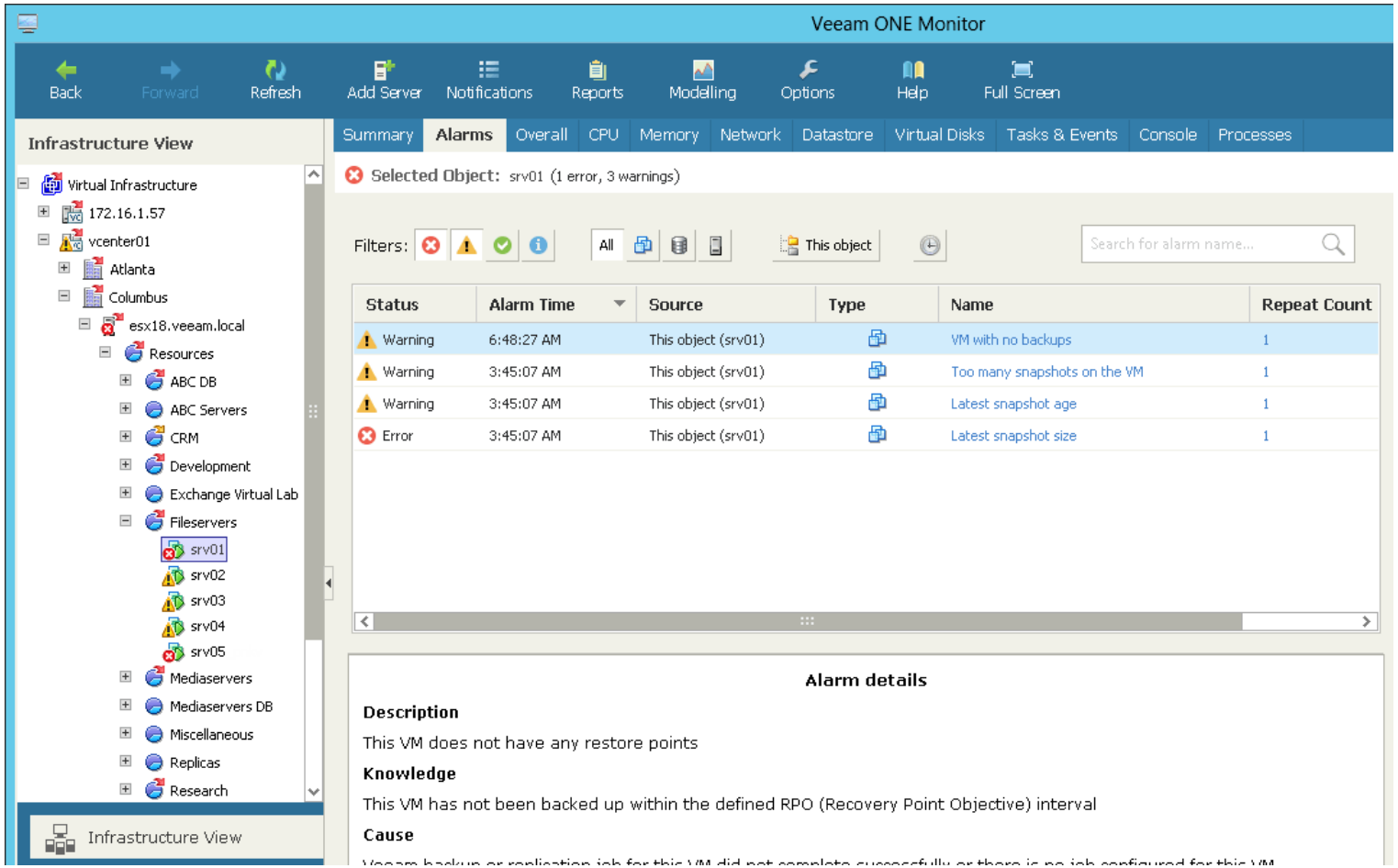
VM with no backup



Veeam ONE can identify VM with no backups

you can configure an alarm and assign a script that will either start a backup job or create it from scratch

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VM with no backup

Details

Protected VMs

Last Backup State	VMs	Location	Backup Type	Backup Job	Oldest Backup Date	Available Restore Points	Last Backup Date
⊟ Failed							
	srv04	vcenter01>esx18.veeam.local	Backup	Mediaserver Backup	27.10.2014	7	31.10.2014
⊟ Success							
	websrv01	vcenter01>esx18.veeam.local	Backup	IAS Backup	27.10.2014	8	04.11.2014
	websrv02	vcenter01>esx18.veeam.local	Backup	IAS Backup	27.10.2014	8	04.11.2014
⊟ Warning							
	k-db01	vcenter01>esx18.veeam.local	Backup	CRM Database Daily Backup	22.10.2014	14	03.11.2014

Unprotected VMs (VMware)

Location	VM Age	VMs	Creation Date	Last Backup Date	VM Size (GB)	Creator
⊟ vcenter01>esx18.veeam.local		33				
	⊟ Not defined					
		alba-01	Not defined	-	0	Not defined
		crm-frontend	Not defined	-	9	Not defined
		crm-services	Not defined	-	0	Not defined
		dc01	Not defined	-	0	Not defined
		Exchange_Virtual_Lab	Not defined	-	0	Not defined
		fileserver03	Not defined	03.10.2014	0	Not defined
		finance01	Not defined	-	0	Not defined
		hp_appliance01	Not defined	-	0	Not defined
		hp_appliance02	Not defined	-	0	Not defined
		mediaserver01	Not defined	-	0	Not defined
		mediaserver02	Not defined	-	0	Not defined
		mediaserver03	Not defined	-	0	Not defined

Veeam ONE can report all VMs with missing backups

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