



Webinar: ExaGrid - Immutable Backup Storage



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About ExaGrid



Company Highlights

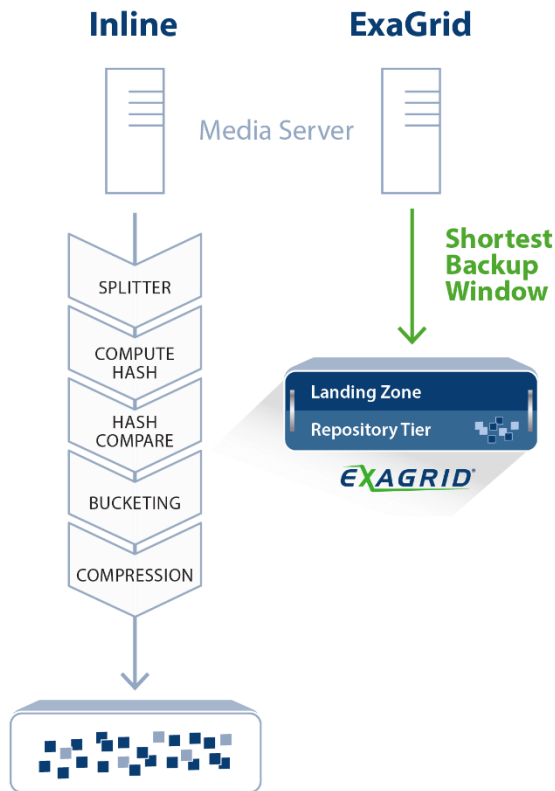
- 100% focused on backup storage
- Shipping for over 15 years
- Largest independent vendor in the space
- Only Tiered Backup Storage approach
- High Net Promoter Score of +81
- Winner of the most industry awards

Large customer base

- Over 4,000 customers - worldwide
- Appliances certified in over 132 countries
- Installed in 80+ countries
- In-theater customer support worldwide
- 300+ published customer success stories



Fastest Backups & Shortest Backup Window



Disk-cache Landing Zone

- Write backups directly to disk
- Avoid compute-intensive deduplication
- Adaptive Deduplication

Benefits

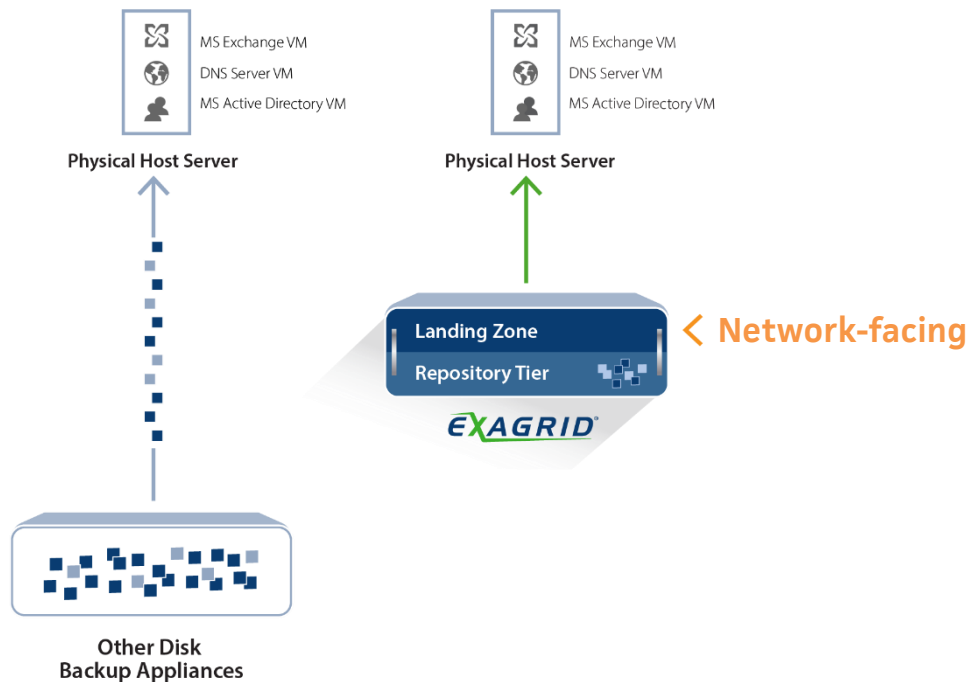
- No inline processes to slow backups
- Fastest backups
- Shortest possible backup window
- Strong offsite RPO

Fast Restores, VM Boots in Seconds to Minutes



 **Inline Deduplication**
Hours Later

 **ExaGrid**
Up and Running in Seconds



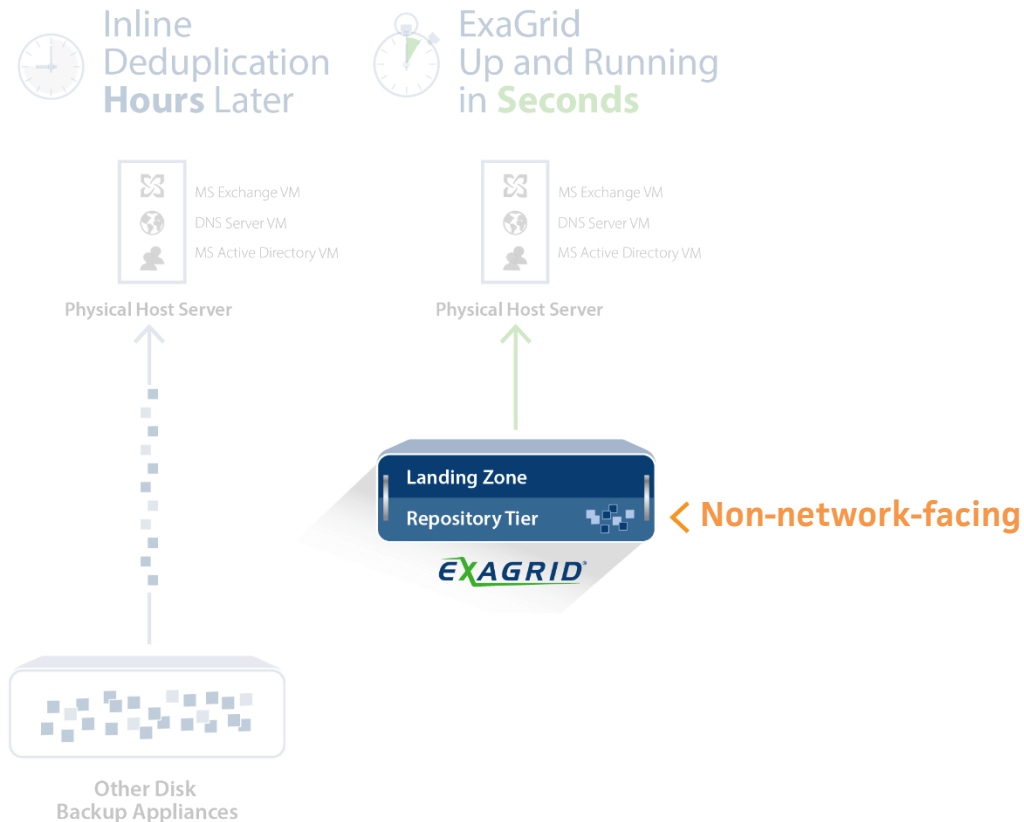
Disk-cache Landing Zone

- Most recent backups are in unduplicated form
- Eliminates data rehydration

Benefits

- Restores as fast as disk
- Tape copies as fast as disk
- VM boots in seconds to minutes

Non-network-facing Retention Tier



Second Repository Tier

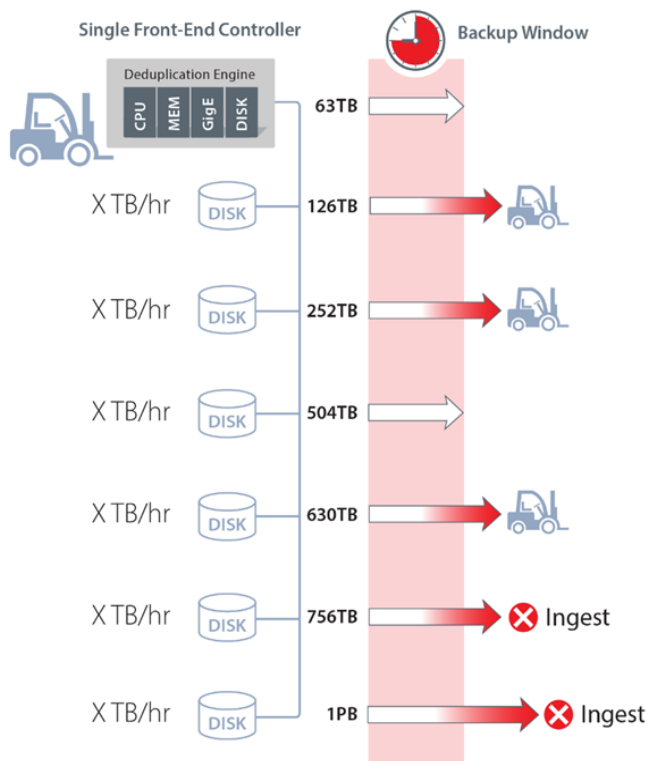
- Long-term retention
- Deduplicated data

Benefits

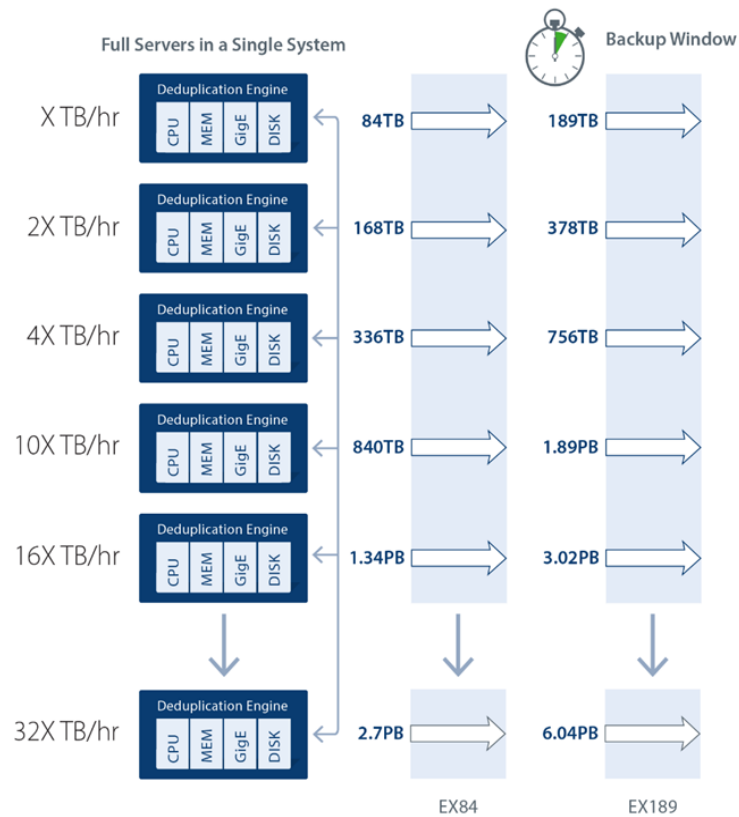
- Low-cost long-term storage
- Ready for ransomware recovery
- Non-network-facing tier
- Immutable objects
- Delayed deletes
- Alert on deletes over set threshold

Fixed-Length Backup Window

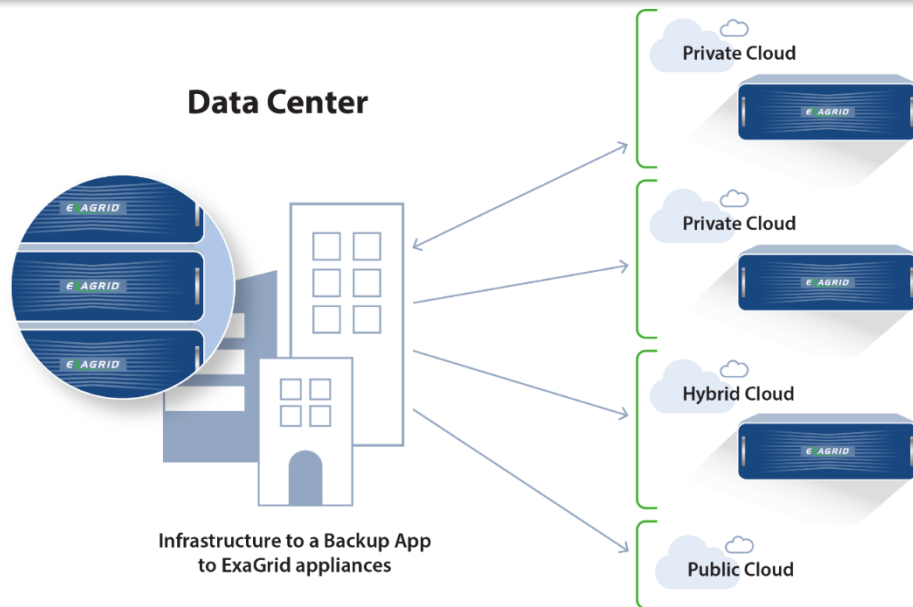
Scale-Up Architecture



ExaGrid Scale-Out Architecture



DR Scenarios



- ExaGrid DR appliances in a customer's 2nd data center
- ExaGrid DR appliances in a 3rd party hosting/colo facility
- ExaGrid DR appliances in a 3rd party cloud provider
- Pay by the GB/mo. – OPEX expense
- Amazon AWS
- Microsoft Azure

- **Adaptive**

Deduplication deduplicates and replicates in parallel

- **50:1 WAN**

bandwidth efficiency

- **Bandwidth throttle**

and WAN encryption for data replication

- **Configure the**

disaster recovery site to all repository to save cost

Retention Time-Lock for Ransomware Recovery



Assume

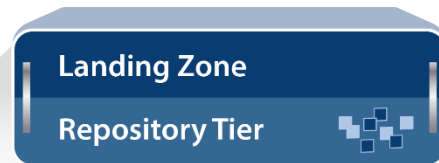
- Primary data is encrypted
- Backup application or backup storage is hacked
- All backup data is deleted

Net

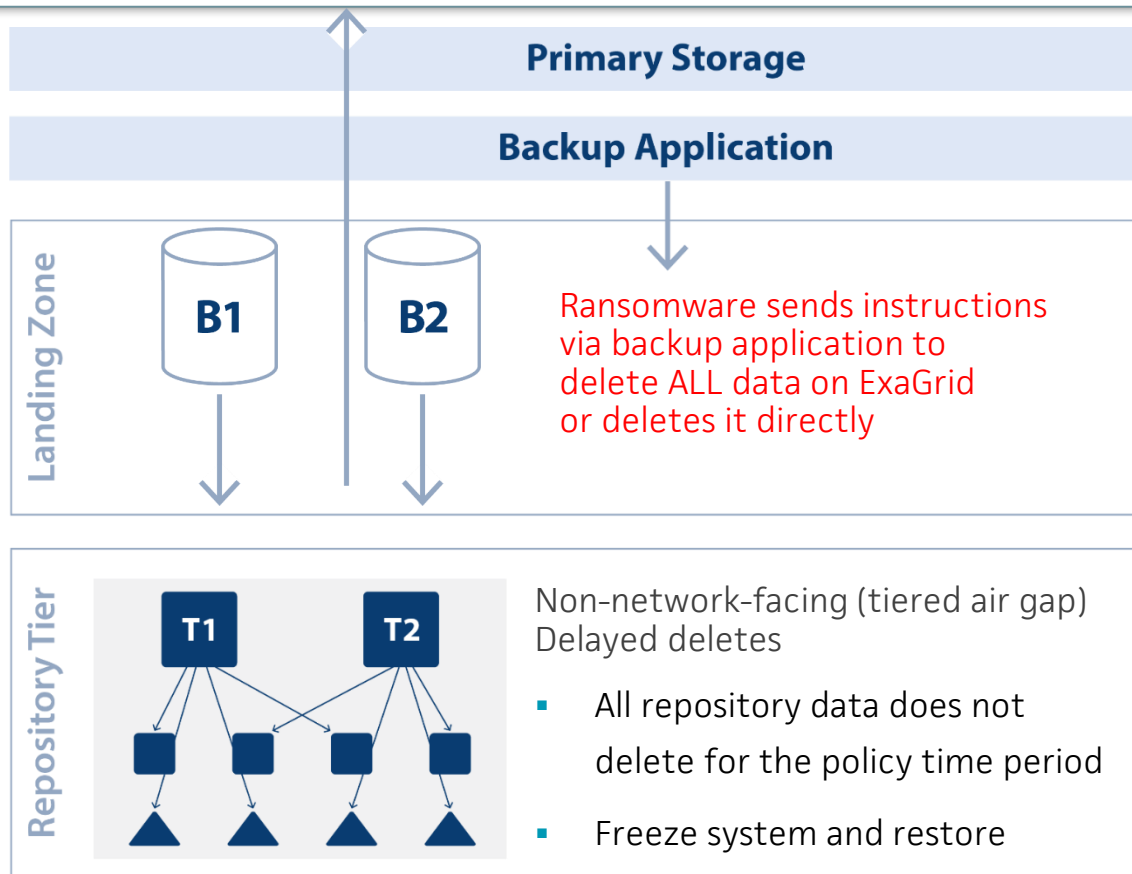
- For disk or any deduplication appliance (Dell, HPE, Veritas, etc.)
- All backup data and retention is gone

Exagrid

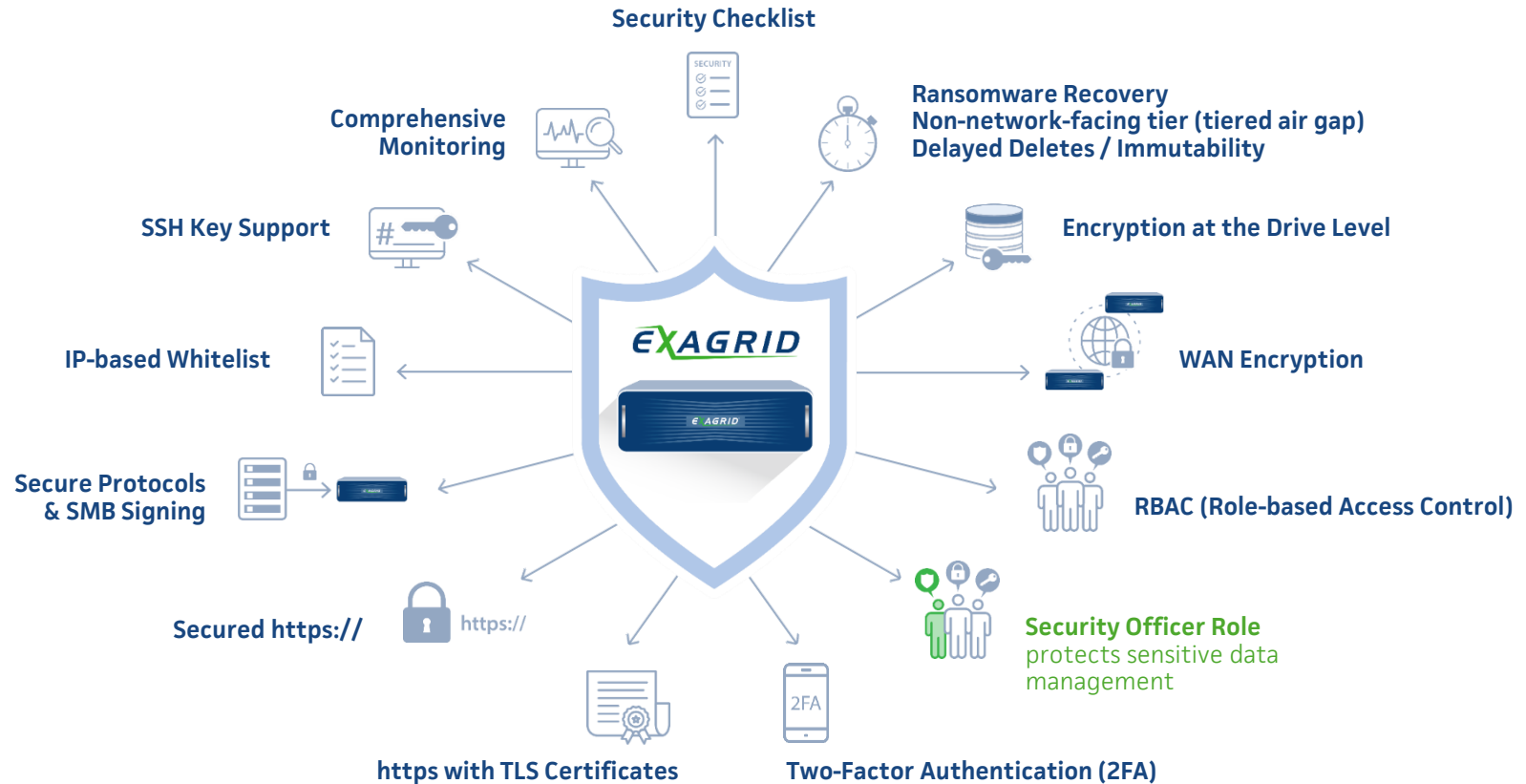
- Landing Zone tier is deleted
- The non-network-facing retention tier (tiered air gap) is 100% unaffected
 - Controlled only by ExaGrid
 - Delayed delete policy (example: 10 days, in addition to long-term retention)
 - All data is ready for restore



Deletion Protection of Backup Data on ExaGrid



Comprehensive Security



Personal Touch - Maintenance & Support



Assigned Level 2 Customer Support Engineer

- Subject matter experts in backup applications
- In-theater worldwide support available in many local languages

Customer Installable and Serviceable

- Self-installable with phone support and WebEx
- Typical installation is 30 mins – 3 hours
- Self-serviceable hardware replacements, next business day delivery

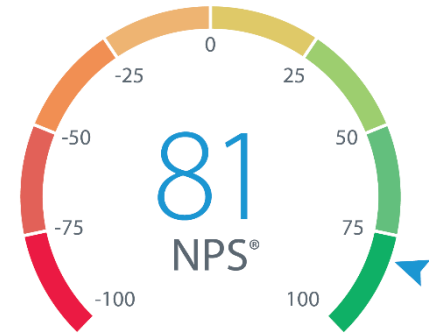
All Releases Provided

- Point and full releases – includes all new features
- No license fees to track or renew

Health Status Monitoring

- ExaGrid monitors and notifies

No hidden costs – all included in support program.

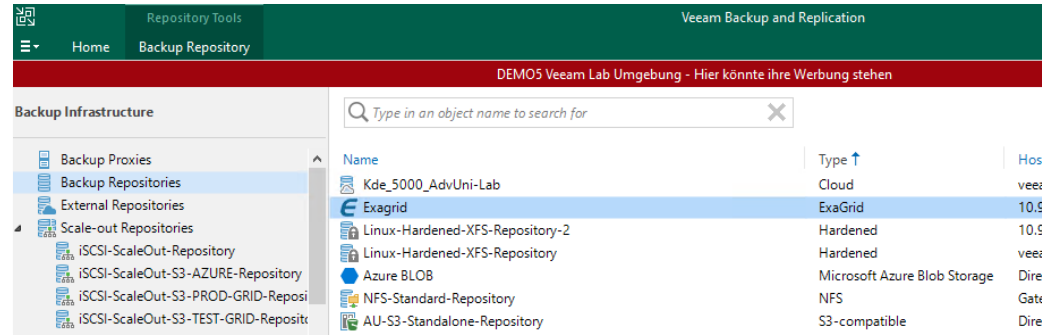
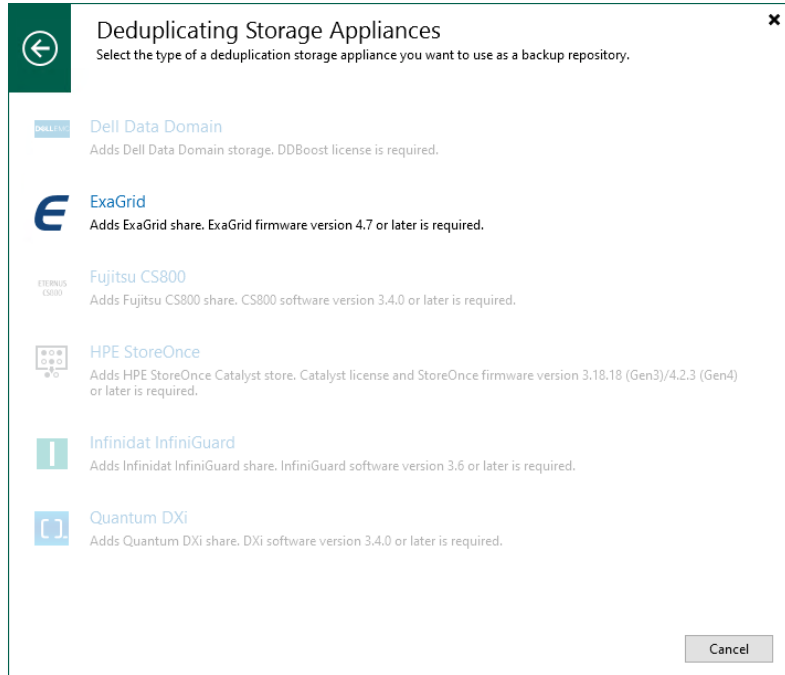


Customers give ExaGrid
NPS score of +81

EXAGRID[®]

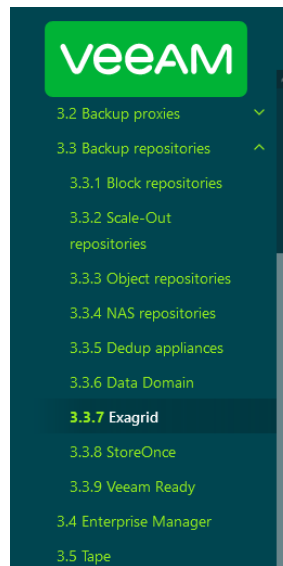


Veeam Integration



Exagrid Best-Practices

- Forward Incremental
- Compression auf Dedupe-friendly
- Veeam Verschlüsselung deaktivieren
- Synthetic Fulls nutzen
- Active Fulls bei Bedarf / z.B. monatlich
- Für längere Retention GFS
- Per VM File Chains nutzen (Default ab v12)



Search Veeam Backup & Replication Best Practice Guide

Build / Backup repositories / Exagrid

Repository Settings

To optimize Veeam backups on the ExaGrid Site, it's essential to establish a configuration that enables Veeam to fully leverage all available resources on the ExaGrid Site.

When setting up a repository for optimal backup results to an ExaGrid Site:

- One share and one repository for each ExaGrid appliance in the ExaGrid Site
- For ExaGrid Version 6.2 and later, and Veeam Version 12 and later, enable the **Limit maximum concurrent tasks** setting of 10
- Select advanced settings as on the screenshot:

Edit Backup Repository

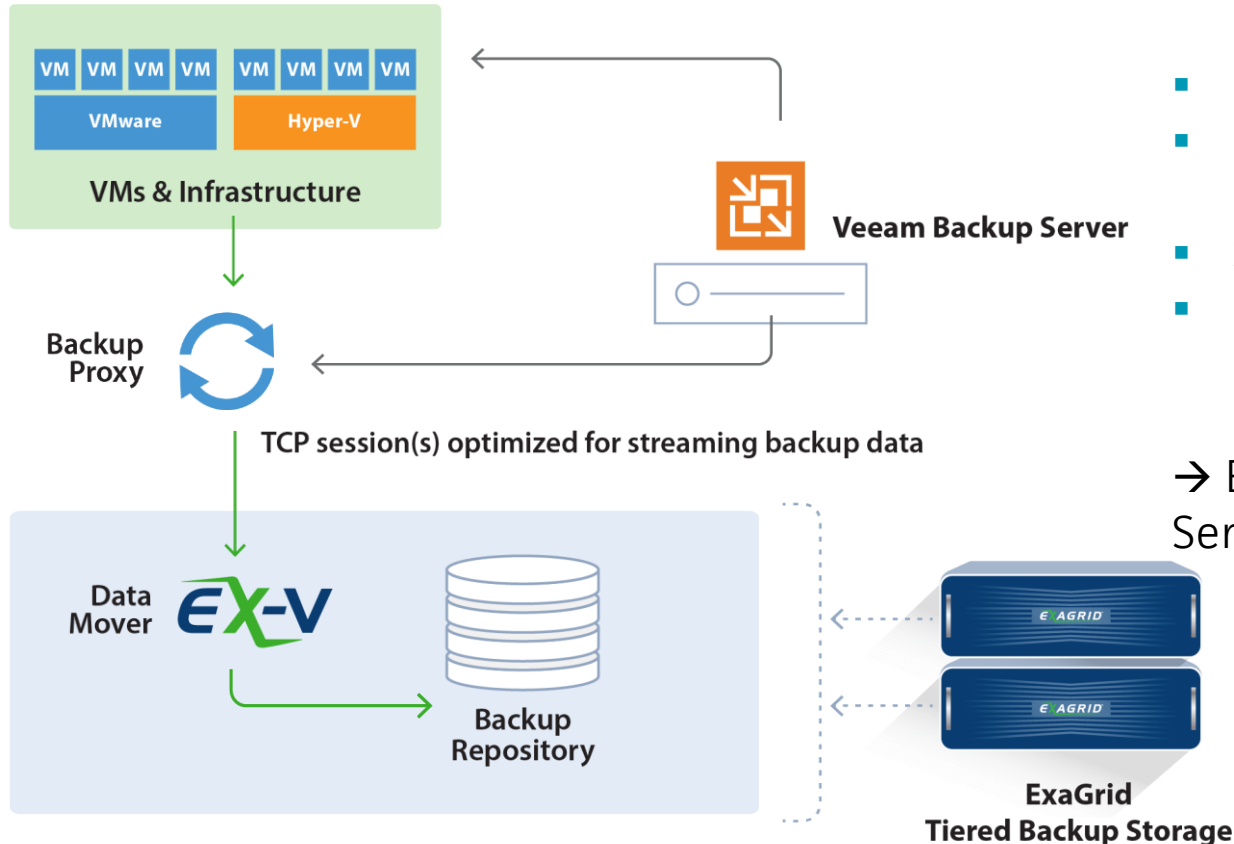


Repository

Type in path to the folder where backup files should be stored

https://bp.veeam.com/vbr/3_Build_structures/B_Veeam_Components/B_backup_repositories/exagrid.html
https://www.exagrid.com/wp-content/uploads/ExaGrid-Veeam_DS.pdf
<https://www.exagrid.com/exagrid-products/product-architecture/veeam-kbxxxxx/>

Veeam Data Mover

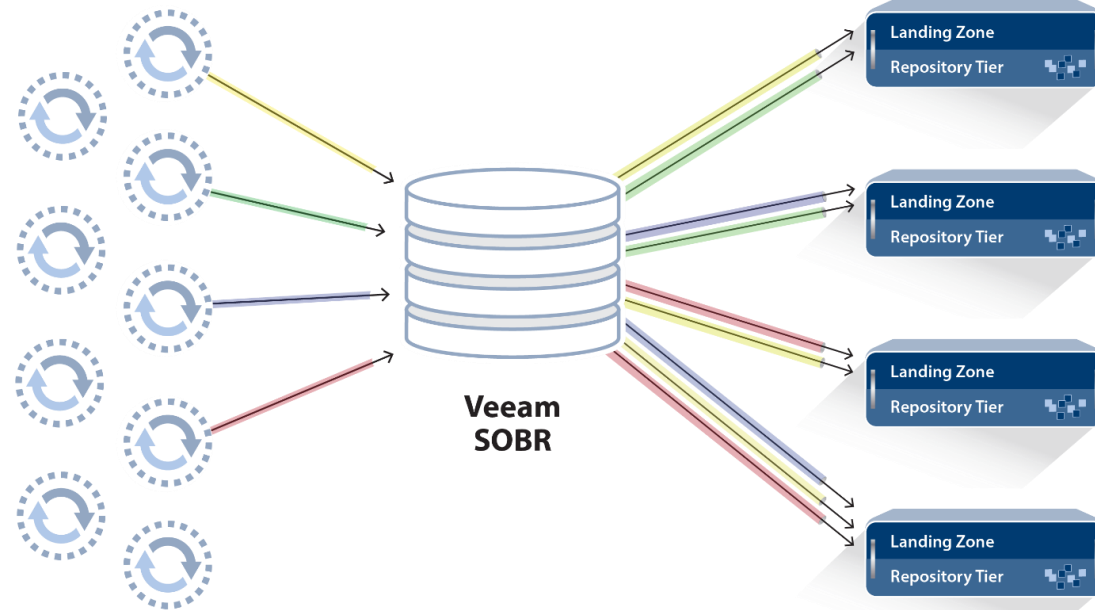


- Data Mover läuft auf Exagrid
- Native Veeam to Veeam Kommunikation
- Sichere Verbindung
- Bessere Performance / Instant Recovery

→ Exagrid kann ohne zusätzliche Server angesprochen werden

Scale-Out Backup Repository mit Exagrid

veeam



Single Backup Job

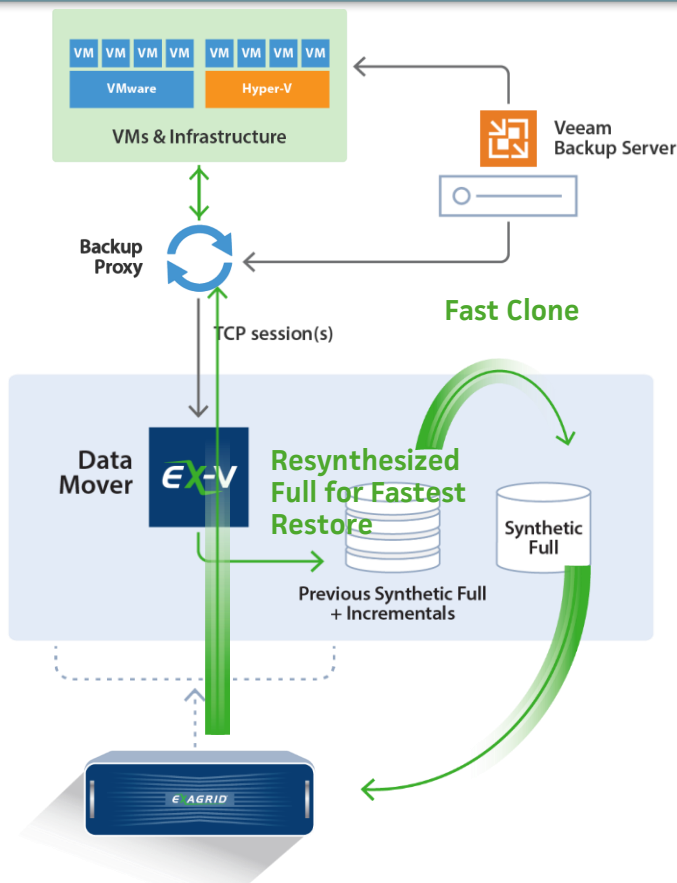
Protects Entire Environment

Scale-Out System

- Automatisches Load Balancing
- Einfache Skalierbarkeit
- Globales Dedup über Repositories hinweg

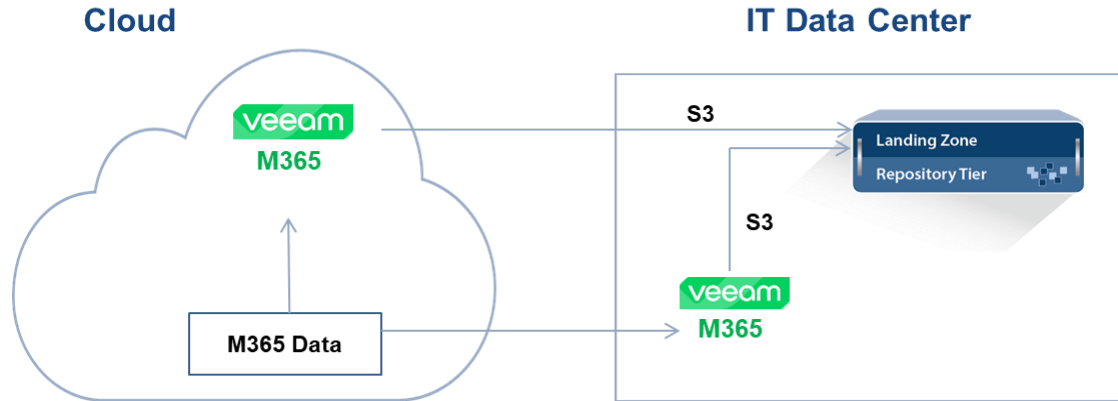
→ Mehr ExaGrid Systeme = mehr Kapazität + mehr Performance

Fast Clone



- Fast Clone ist bekannt von ReFS & XFS Filesystemen
- Ab Veeam v12 Supported für Exagrid
- In der Landing Zone liegen Daten im nativen Veeam Format
- Compute in der Exagrid übernimmt den Job, entlastet Backup Umgebung
- Resynthesize Vorgang sorgt dafür das bereits ausgelagerte Blöcke aus der Retention Zone „wiedergeholt“ werden → Restore Performance!

S3 für Veeam Backup for M365



- Ab ExaGrid Firmware 6.4.1 verfügbar
- Object Locking wird unterstützt
- sperrt Daten in der Landing Zone und dem Repository Tier
- Nutzbar mit Veeam for M365 und (Veeam Backup & Replication)

Non Veeam Workloads

Backup Applications



Applications Direct

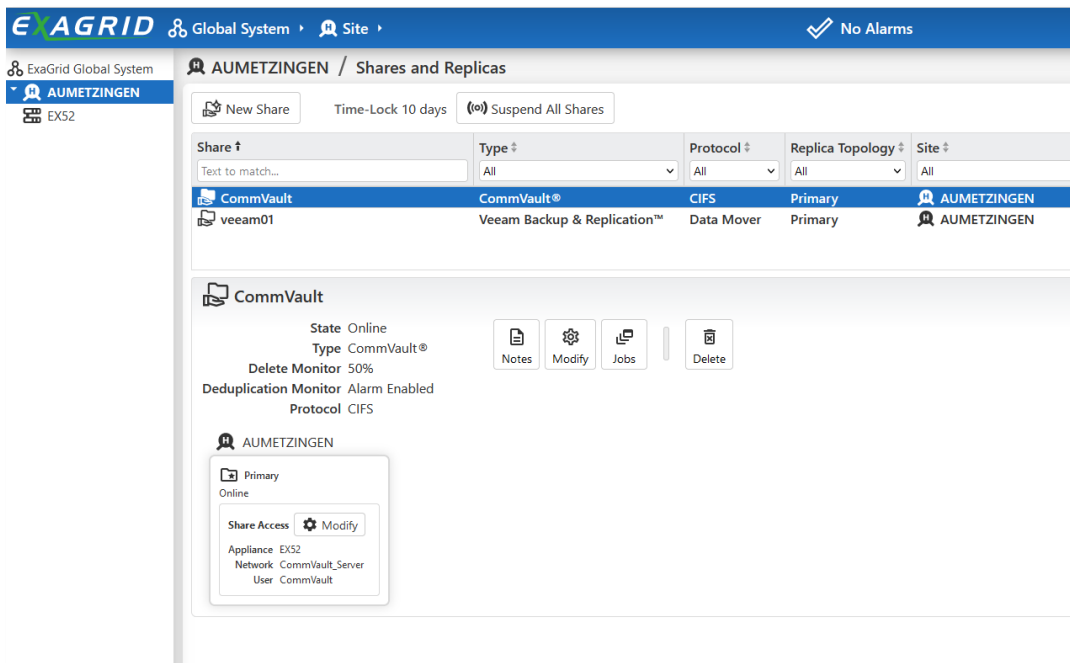


Linux/UNIX Direct TAR



Non Veeam Workloads

Was mach ich mit Datenbank Dumps oder Commvault Backups?



EXAGRID Global System ▶ Site ▶ No Alarms

ExaGrid Global System AUMETZINGEN / Shares and Replicas

New Share Time-Lock 10 days Suspend All Shares

Share ↑	Type ↓	Protocol ↓	Replica Topology ↓	Site ↓
CommVault	CommVault®	CIFS	Primary	AUMETZINGEN
veeam01	Veeam Backup & Replication™	Data Mover	Primary	AUMETZINGEN

CommVault

State Online
Type CommVault®
Delete Monitor 50%
Deduplication Monitor Alarm Enabled
Protocol CIFS

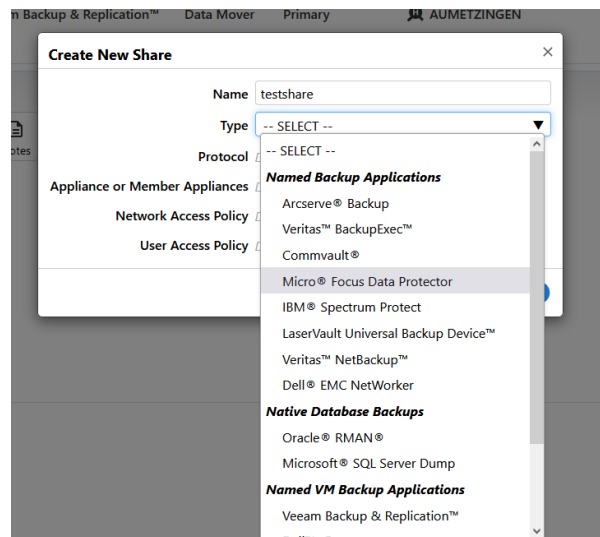
AUMETZINGEN

Primary
Online

Share Access Modify

Appliance EXS2
Network CommVault_Server
User CommVault

- File Shares über CIFS & NFS



Create New Share

Name testshare

Type -- SELECT --

Protocol -- SELECT --

Appliance or Member Appliances

Network Access Policy

User Access Policy

Named Backup Applications

- Arcserve® Backup
- Veritas™ BackupExec™
- Commvault®
- Micro® Focus Data Protector
- IBM® Spectrum Protect
- LaserVault Universal Backup Device™
- Veritas™ NetBackup™
- Dell® EMC NetWorker

Native Database Backups

- Oracle® RMAN®
- Microsoft® SQL Server Dump

Named VM Backup Applications

- Veeam Backup & Replication™

Non Veeam Workloads

Create New Share [X]

Name

Type

Protocol

Appliance

Delete Monitor

Deduplication Monitor ☒ Alarm on Poor Deduplication

Network Access Policy

User Access Policy

- Schutz über User Access Policies (User / Passwort und IP Whitelist)
- Schwellwerte mit „Delete Monitor“ gegen Massenhaftes Löschen
- Alarm bei schlechter Dedup Rate

Modify Network Access Policy [X]

Policy Name

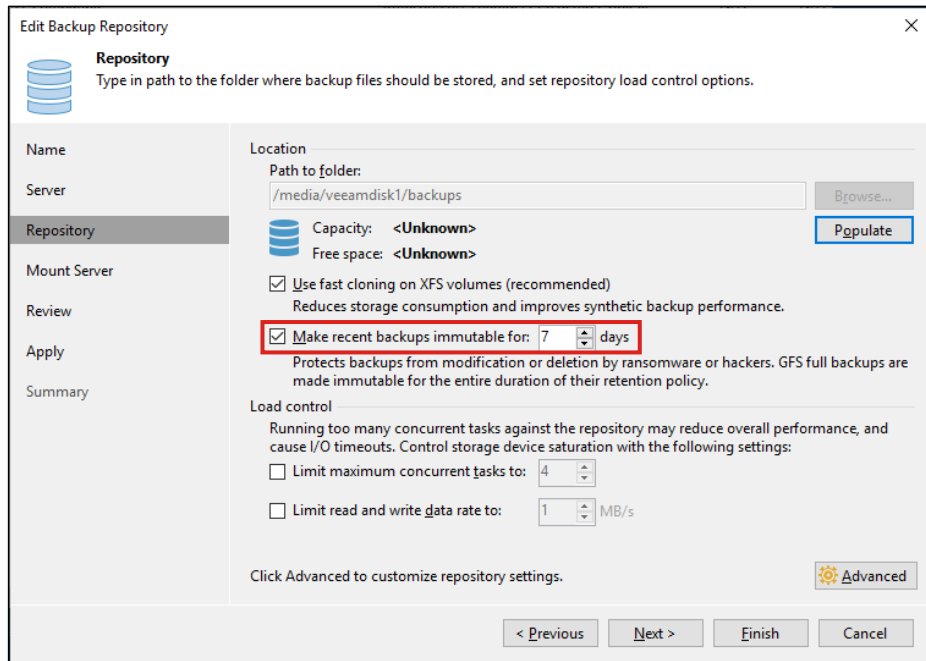
IP Address or Hostname

Type TBD: Input Required

Access List

10.91.81.250/255.255.255.255

Exagrid vs. Hardened Linux Repository



Edit Backup Repository

Repository
Type in path to the folder where backup files should be stored, and set repository load control options.

Name

Server

Repository

Mount Server

Review

Apply

Summary

Location

Path to folder:
/media/veeamdisk1/backups Browse...

Capacity: <Unknown> Populate

Free space: <Unknown>

☒ Use fast cloning on XFS volumes (recommended)
Reduces storage consumption and improves synthetic backup performance.

☒ Make recent backups immutable for: 7 days
Protects backups from modification or deletion by ransomware or hackers. GFS full backups are made immutable for the entire duration of their retention policy.

Load control

Running too many concurrent tasks against the repository may reduce overall performance, and cause I/O timeouts. Control storage device saturation with the following settings:

☐ Limit maximum concurrent tasks to: 4

☐ Limit read and write data rate to: 1 MB/s

Click Advanced to customize repository settings. Advanced

< Previous Next > Finish Cancel

- Sicheres Repository unter Linux
- Benötigt Block Storage
- Basierend auf XFS mit Extended Attributes (Immutable Bit)
- Dedizierte Hardware einplanen

→ Hardened Repository ist also ein Stück Veeam Rolle/Software auf einem Linux Hardware System des Kunden

Hardened Linux Repository:

- x86 Standard Hardware ist die günstigste Möglichkeit ein schnelles Repo zu bauen
- Weit verbreitet, baut auf Linux Standards auf, gut dokumentiert
- Es sind 2-3 Komponenten im Spiel. Linux OS, Hardware Server und ggf. externes Storage
- Hardening liegt in Kundenhand
- Kompatibilitätscheck der Komponenten in Kundenverantwortung
- Themen wie Hardware Monitoring, Updates und Hardware Hardening müssen bedacht werden
- Kann nur mit Veeam genutzt werden
- Kann nur von „einem“ Veeam Server genutzt werden / nicht Mandantenfähig

Exagrid:

- Lineare Performance durch Skalierung über Appliances „nicht einfach ein Shelf ranhängen“
- Sehr schnelle Inbetriebnahme
- Vorteile bei Deduplizierung (Scale-Out übergreifend und über Backup Jobs hinweg)
- Out of The Box Security & End-to-End Security (MFA, Verschlüsselung usw.)
- Immutable Backup durch Zonen Konzept
- Dedizierter Techniker bei Exagrid
- Universell auch außerhalb von Veeam nutzbar z.B. Share für Dumps
- Weitere Features wie Replication sind Verfügbar

Wieso AU & Exagrid ?

- AU war auf der Suche nach einer „**schnellen**“ Dedup Appliance
- Dedizierter Support Techniker Exagrid & AU Support
- Kein großer Konzern – Fokus auf diese eine Lösung
- „Hand Drauf Mentalität“

Was koscht's?

- Termin mit AU und/oder Thomas um Details zu klären
- Zu sichernde Datenmenge (Full Backup) anhand von Veeam oder RVTools
- Gewünschte Retention Zeit
- Sonstige Sizing Parameter ;)



Veeam Hardening Workshop

Der Veeam Hardening-Workshop enthält unter anderem:

Teil 1 – Vorstellung der Infrastruktur

- Aktuelle Veeam Umgebung und Version
- Aktuelles Backup-Konzept

Teil 2 – Präsentation

- Allgemeines – Veeam unabhängige Security Best Practices
- Veeam Hardening Optionen

Teil 3 – Kunde berichtet

- Aktuelle Probleme
- Verbesserungswünsche

Teil 4 – Check und Besprechung der Umgebung

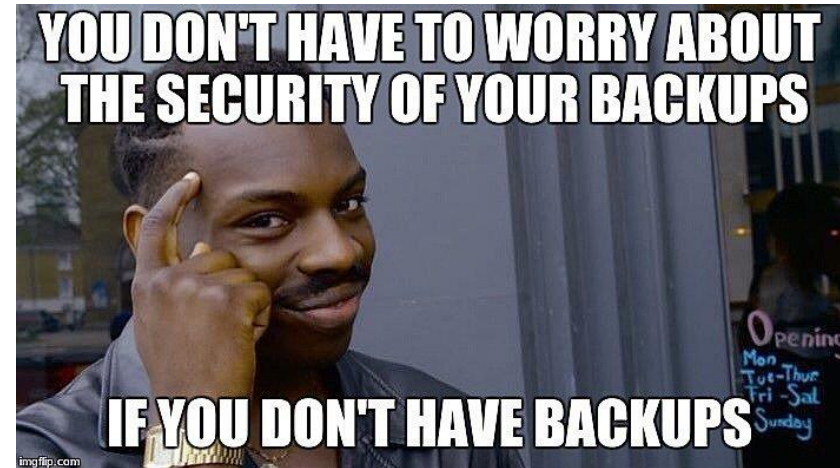
- Blick auf die Umgebung
- IST-Situation gegen die AU-Checkliste

Teil 5 – Outro

- Definition was wird umgesetzt/was nicht

Teil 6 – Dokumentation/Report der Findings

- Übergabe der Findings mit Handlungsempfehlungen an den Kunden



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Teil 3 –

- Aktuelle
- Verbesserungs

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3.000 €/netto pro
Workshop



