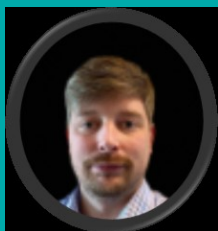




Informatici Olomouckéh - Workshop



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5.5.2022, Drahonín

Dnešní agenda

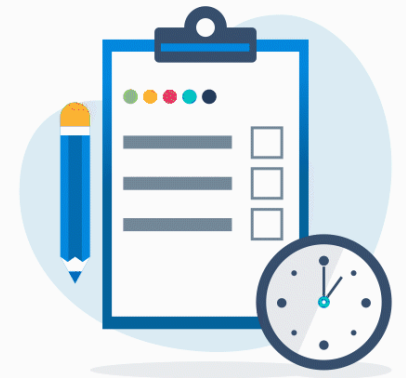
1. Zálohování Office 365 do AWS/AZURE via Veeam Backup

Boris Mittelman, Veeam Software, 25 min

2. Use Case: Disaster Recovery Plan – Cloudová řešení

Vojtěch Šimíček, ALEF NULA, 20 min

3. Diskuze



veeAM

WHY...HOW....WHERE???

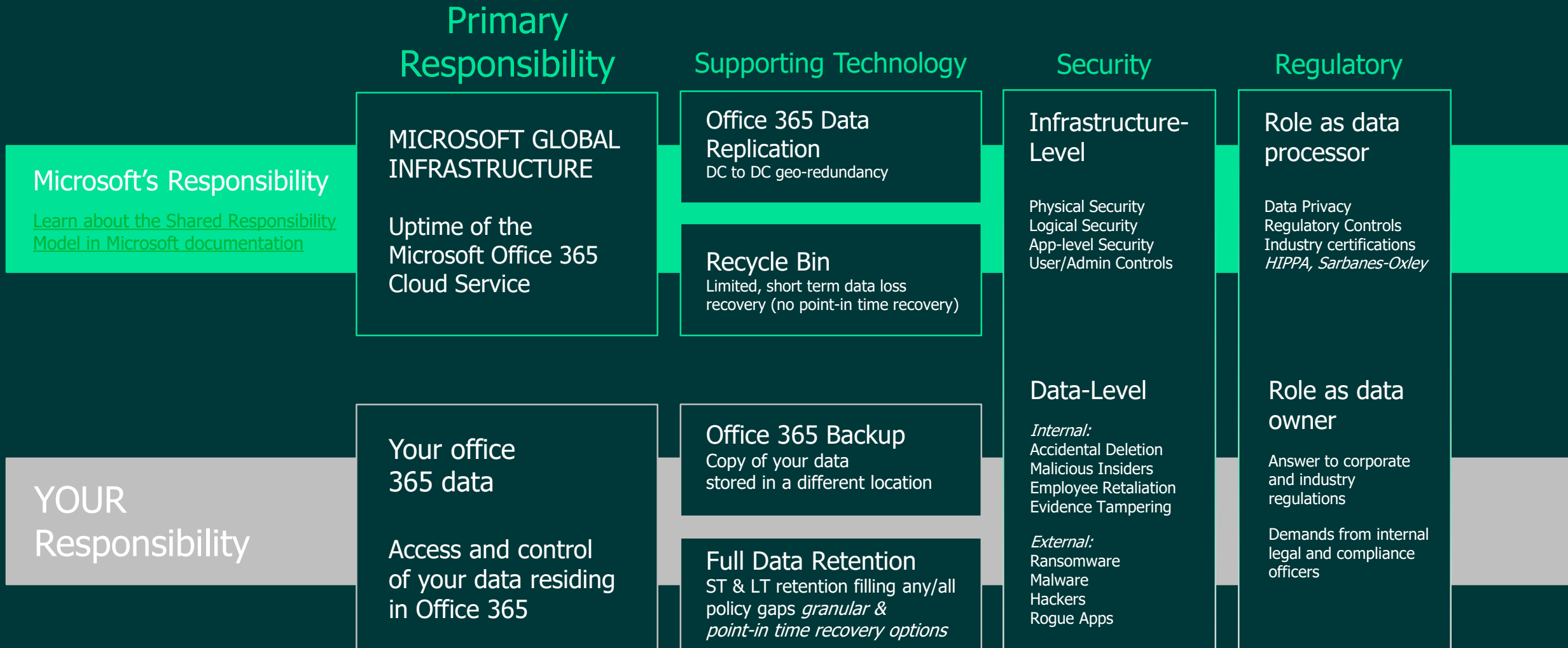
Backup *Microsoft 365*



Summary

- Cloud Shared Responsibility Model
- Key Reasons for Microsoft 365 data protection
- Rules How to protect Microsoft 365 data
- Where? Backup copy and low-cost object storage

Microsoft 365 Shared Responsibility Model



There are 7 reasons WHY you need Microsoft 365 backup



Accidental
deletion



Retention policy
confusion/gaps



Internal security
threats

Malicious
insiders/departing
employees



External security
threats

Ransomware/
rogue apps



Legal
and compliance
requirements



Managing hybrid
deployments
and migrations

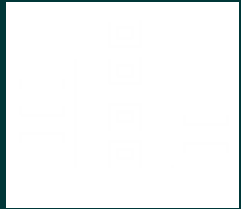


Teams
data structure

Read the Special Report on the 7 Reasons at:
<https://go.veeam.com/wp-why-backup-office-365-data>

1. Deployment and storage flexibility

Your backup deployment **should be able to run in on-premises, private and public cloud environments**. In general, the prerequisites and how your solution components work for each environment should be very similar.



On-premises deployments



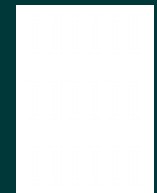
BaaS and MSP deployments



Public cloud



Object storage

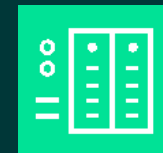


SAN (Storage area network)

DAS (Directly attached storage)



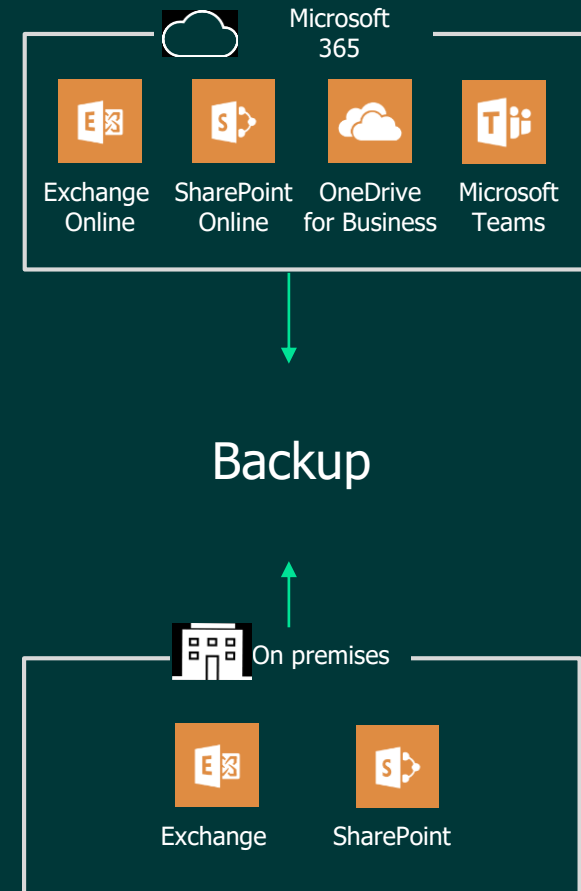
SMB (Server Message Block 3.0)



2. Take a hybrid approach to backups

Rather than backing up Microsoft 365 separately from your on-premises applications, **it's better to use a single backup application that can simultaneously protect both environments.**

- It can be difficult to predict what type of event might trigger the need for data recovery
- It is important for a backup application to give you the maximum degree of flexibility
- Taking a hybrid approach to backup can help to enhance flexibility. For instance, restoring an on-premises mailbox to Microsoft 365, or vice versa.



3. Control scope and SLA of backup

RPO

Recovery point objective

RTO

Recovery time objective

Make sure you can select to **back up an entire organization or specify users, groups, sites, teams and organizations**. And select objects to exclude that you do not want to backup.

Scope example

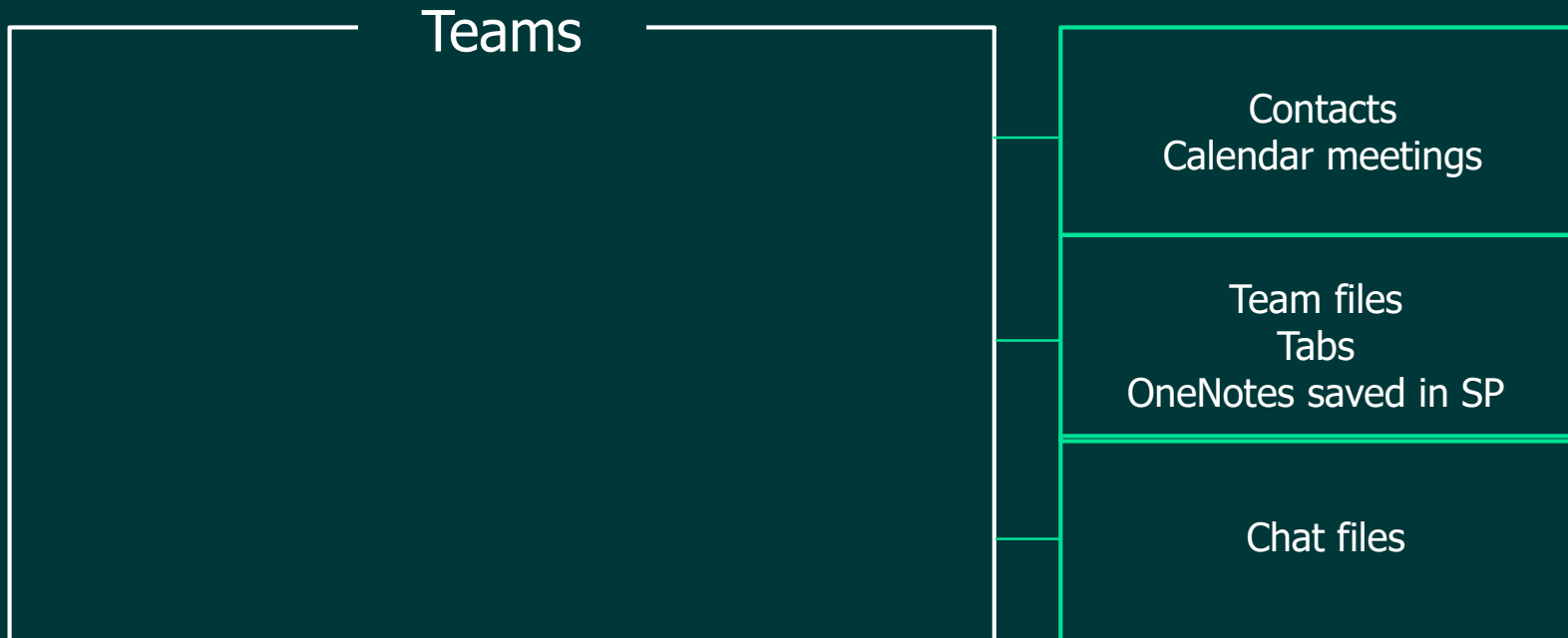
- Add entire Organization applications
- Add Teams, users, sites
- Dynamically add with Microsoft 365 Groups

Exclude scope example

- Exclude Sites, Teams, Users
- Dynamically exclude with Microsoft 365 groups

4. Adopt a backup solution built for Teams

Teams acts as an abstraction layer that brings data together from many Microsoft applications, including:



Backup solutions with Teams APIs allow:



Backup Teams configurations (i.e., settings, members, team structure)

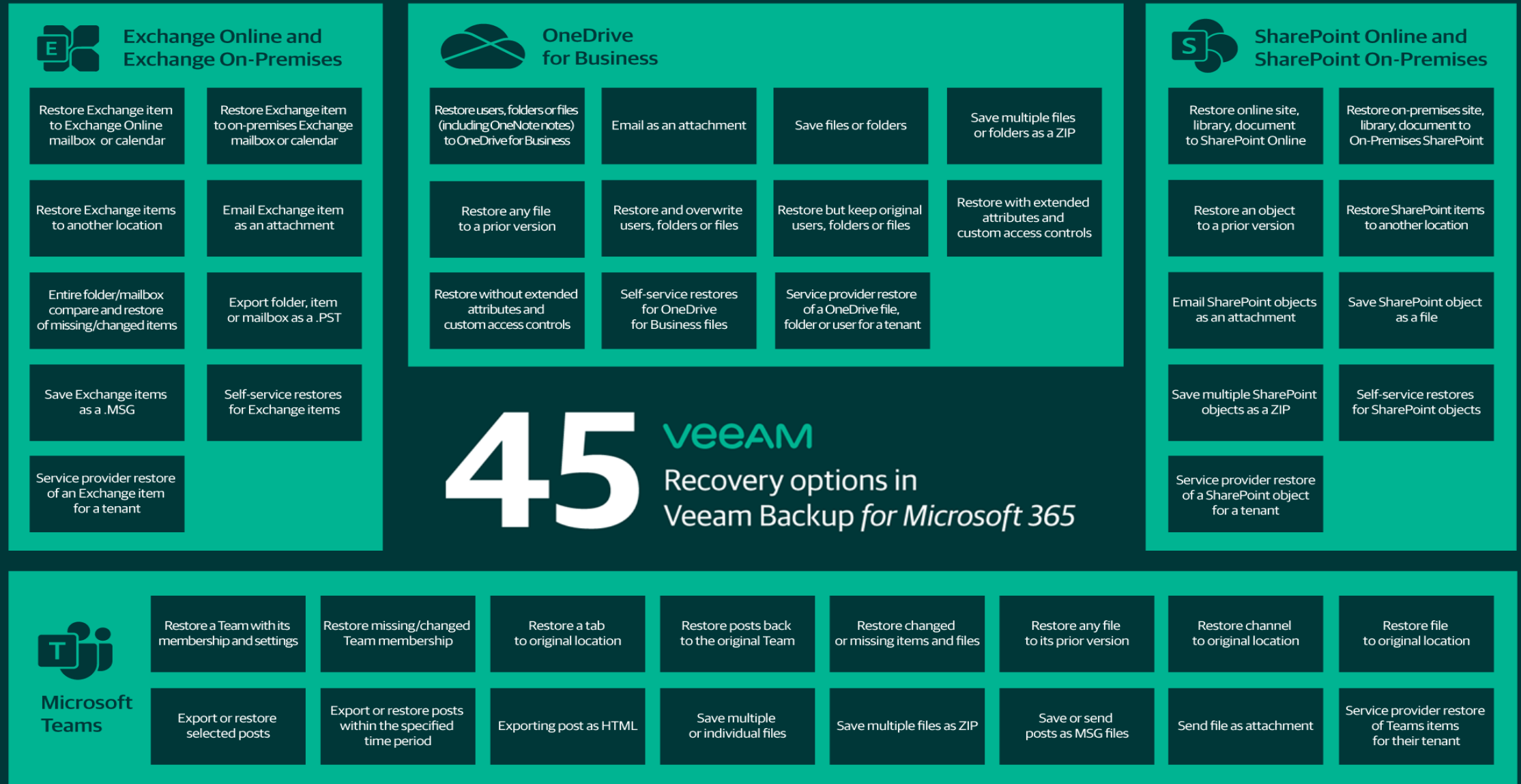


Restore with granularity, including teams, channels and tabs



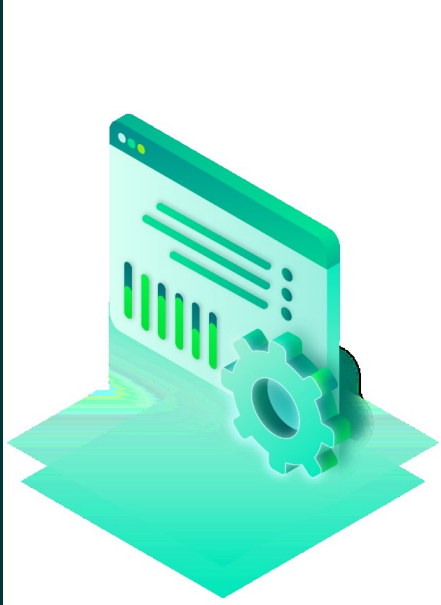
Allow for restore efficiency (i.e., automation)

5. Recovery options are important



Self-service restore portal

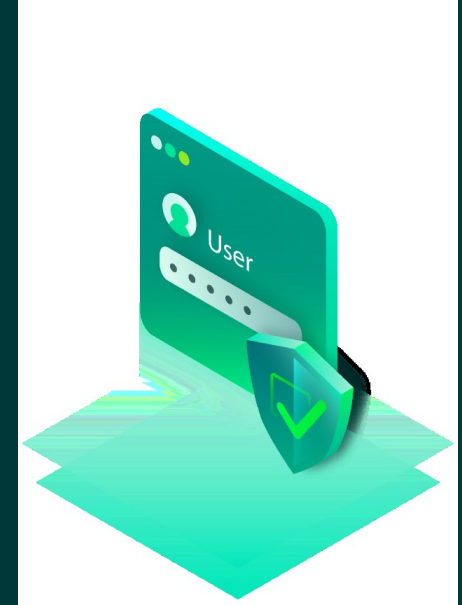
Don't waste time on non-critical restores. Let your users take care of it!



Automation and scalability
for enterprise organizations and
service providers



Time savings
from handling restores and having to
build and maintain your own portal



Enhanced security
with multi-factor authentication
(MFA) access to restore data

Backup copy to low-cost object storage

V6 adds **NEW backup copy** to Amazon S3 Glacier, Glacier Deep Archive and Azure Archive, enhancing cloud object storage integrations, which already include AWS S3, Azure Blob, IBM Cloud, Wasabi and other S3-compatible providers



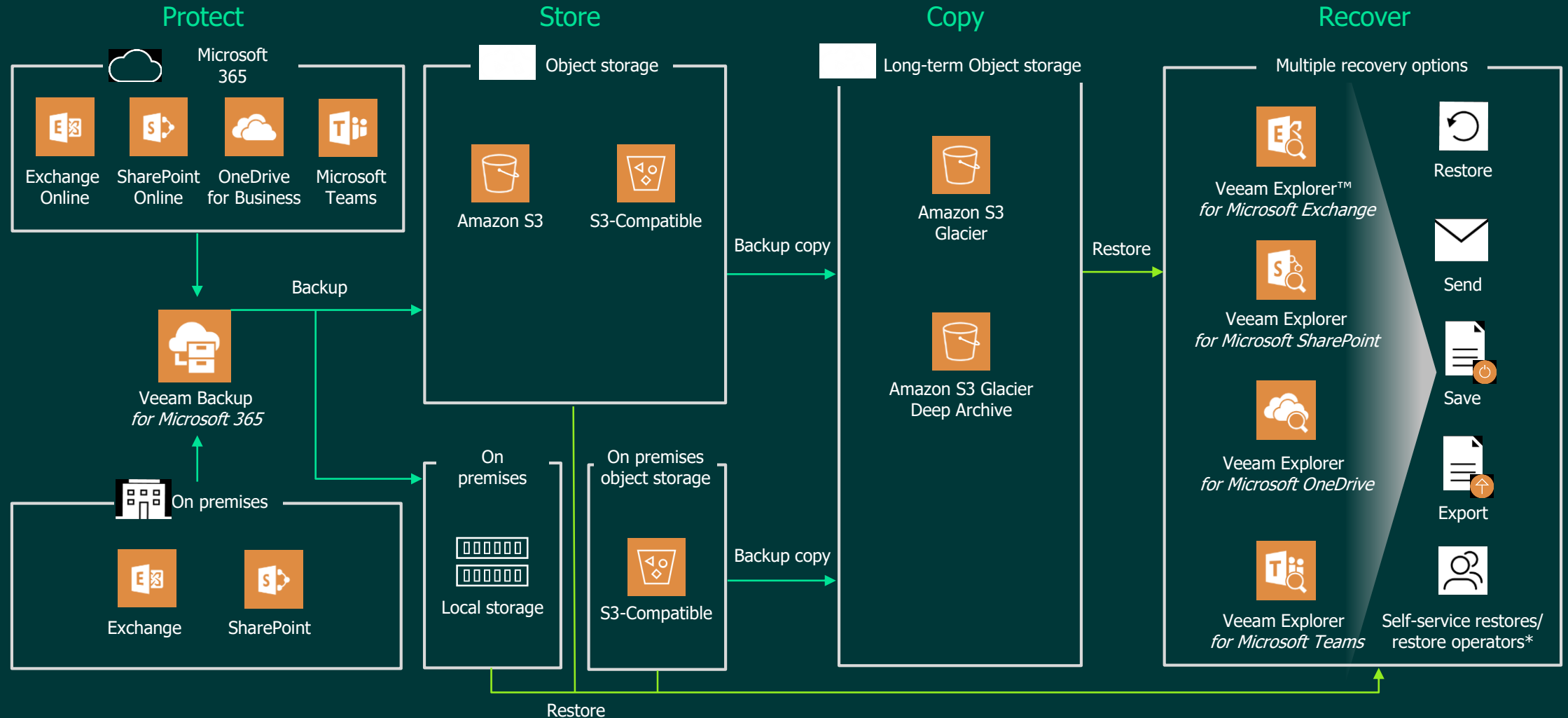
Quickly create a backup copy directly from object storage and leverage lower cost, long-term object storage



Store your backup copy with an alternative cloud provider than your primary to avoid cloud lock-in



NEW Veeam Backup *for Microsoft 365* v6



*Microsoft 365 organizations are only supported for Self-Service Restore Portal



 Microsoft 365

Open Q&A

veeam



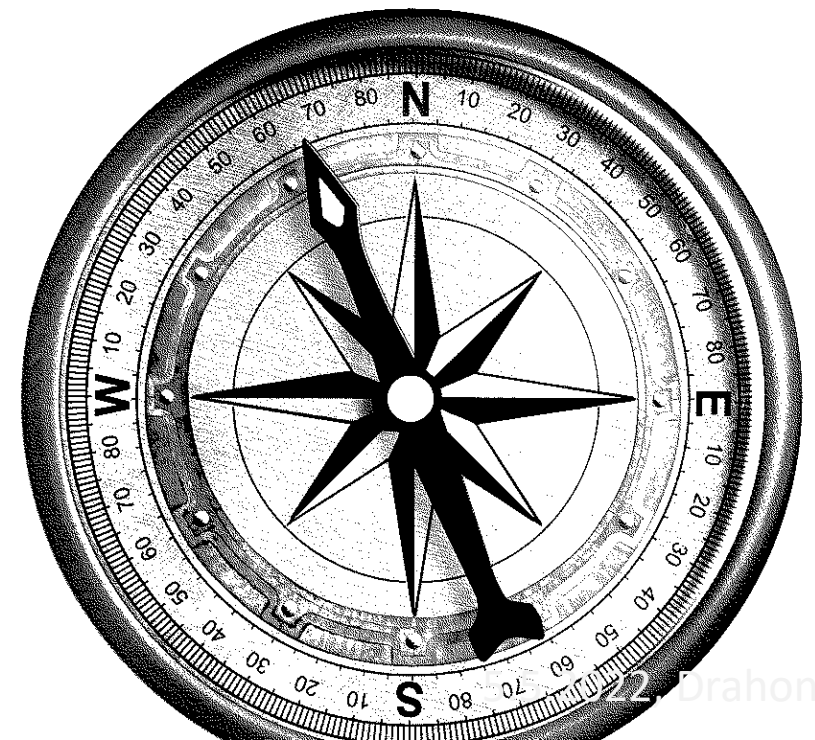
Disaster Recovery Plan – Cloudová řešení

Use case: aneb jak to v Alefu děláme..



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Use case: Výchozí situace

- **Zákazník:** Středně velká společnost s 500 IT uživateli, působnost v CEE
- **IT systémy:** Primární provoz ve veřejném DC v Praze (via On-Premise)
- **Aplikace:** 100 +, 12-15 kritických
- **Požadavek** na vysokou efektivitu a OPEX financování
- Zvolena spolupráce s **ALEF**em via **AWS**

Project Goals



Identify

Identify Assets & support systems for DR plan

Prepare

Prepare Disaster Recovery options in AWS

Design

Provide High-Level Design of AWS environment

Provide

Provide cost estimation in AWS environment

Calculate

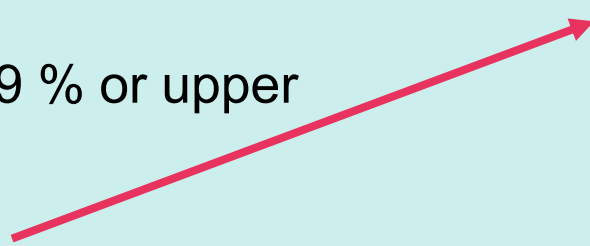
Prepare resources for compare with On-Premise option (5Y TCO)

Initial situation in Company – Key Applications

- 12 key applications
- List of critical support actives (Web ARAT)

Název podpůrného aktiva	Základní popis podpůrného aktiva	typ aktiva	Kritičnost (Dostupnost)
Active Directory	Systém/ aplikace pro řízení přístupu	technologie	Kritický
Navision	Hlavní ekonomický systém + HR	technologie	Kritický
Exchange	Mailový server Microsoft	kritický systém	Kritický
Aplikace na ukládání hesel - PASS EC (Thycotic)	Hesla a přístupy ke klientům, který mají SLA. Server pro techniky	technologie	Kritický
Aplikace na ukládání hesel - PASS BackOffice (Thycotic)	Hesla a přístupy k systémům, které používají pracovníci Backoffice.	technologie	Kritický
Iron porty	Vstupní brány do exchange - technologie Ironport Cisco	technologie	Kritický
iTOP	Aplikace pro evidenci provozní dokumentace	technologie	Kritický
Infrastruktura DC Nagano - O2	hosting kritických business serverů	technologie	Kritický
DC Dataforce	ukládání záloh dat z lokálních disků koncových stanic -	dodavatel	Kritický
Microsoft Office365 -	hybridní Exchange, Azure AD, úložiště dokumentů SHPO, OneDrive	dodavatel	Kritický

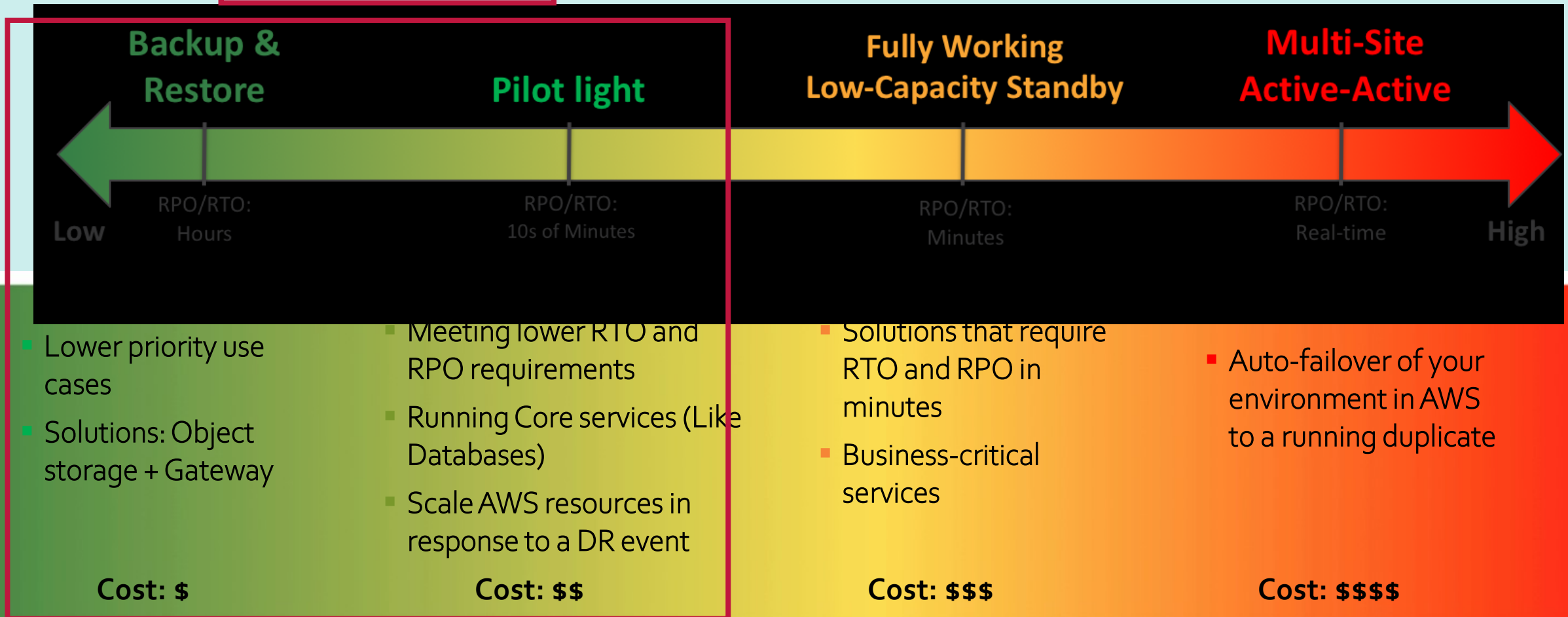
Requirements for DR environment

- **Reachability** the APPs from whole Group
- **RPO**: ~ 2 hours (Depends on Backup tool)
- **RTO**: 8 hours fix (rather 4 hours)
- **SLA** for services: 99,9 % or upper
- List of VM: see Excel 
- **Security level**: The same as in the On-Premise

APP	vCPU	Memory (MB)	Provisioned Space (GB)
Terminal SRV (Navision)	12	32 768	256 025
SQL001 (Navision)	8	65 536	2 400 259
Exchange	8	32 768	6 849 589
Cisco vESA	4	8 192	512 001
Domain Controller	2	8 192	81 938
Thycotic BackOffice int	1	4 096	61 446
Thycotic EC	2	6 144	61 462
Cisco ISE	8	32 768	614 401
Firewall F5	4	16 384	97 281
HW VPN koncentrator, S2S VPN			
CISCO vWSA	12	24 576	1 803 676
iTOP APP	1	1 024	20 494
SubTotal	62	232 448	12 758 572

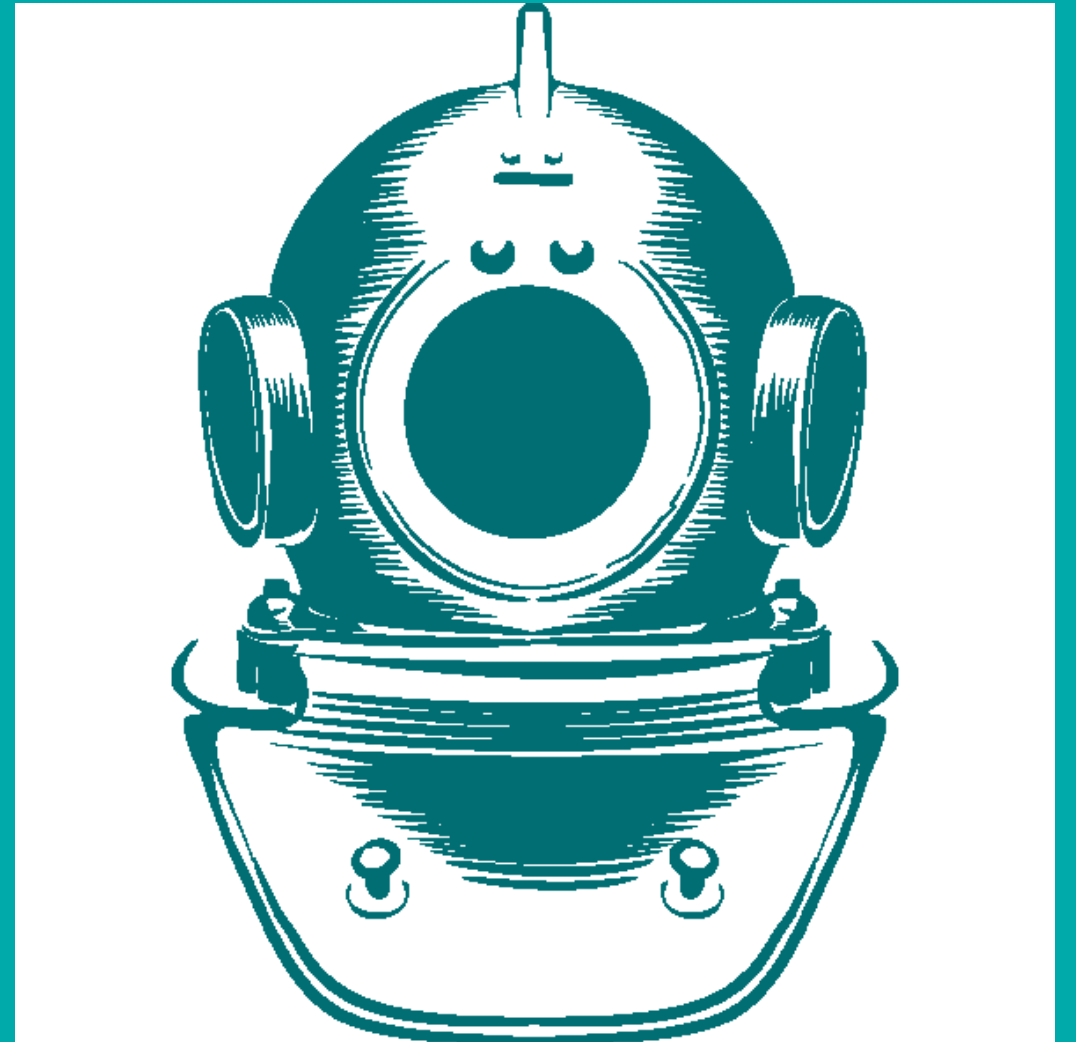
Disaster Recovery options

Chosen option



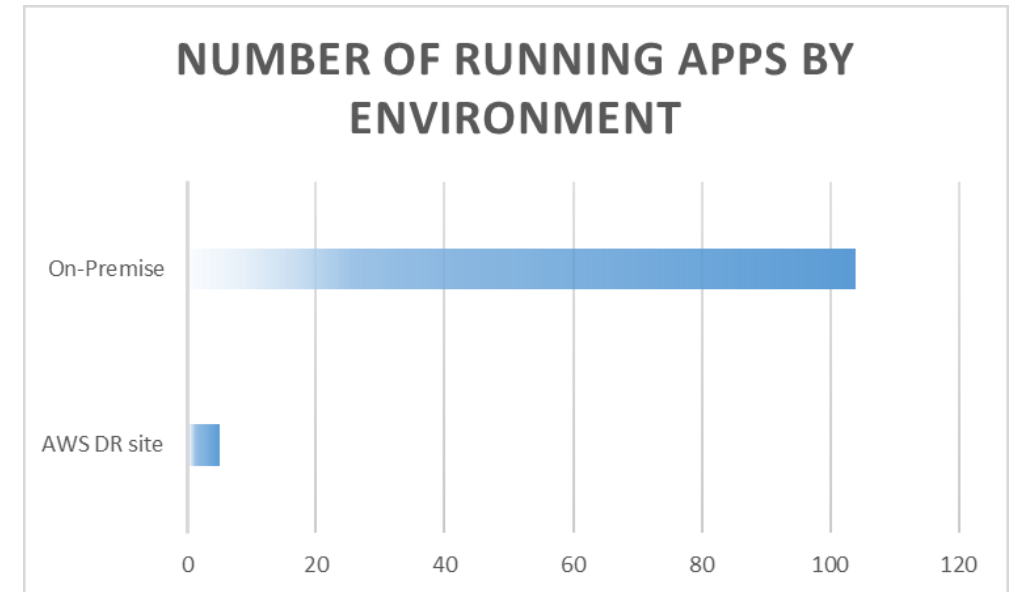


AWS DR Cloud Environment cost estimation



DR site - Operation modes

- 2 possible scenarios of DR site
 - **A) Noting runs in DR - „sleep mode“**
 - Scheduled updating configurations
 - Planned DR site full test
 - Drill tests
 - **B) Full DR operation**
 - DR plan activated (All servers running fulltime)



Cost estimate of AWS DR - Full DR operation

- 12 key Apps
 - Above 12 TB of block data on SSD
 - 102 vCPU +
 - 304 GB RAM
- = 14 000 USD/month...

Still exist another Solution...

Compute+Storage	\$	12 998,89
Data Traffic	\$	899,91
S3 Storage	\$	149,59
VPC costs	\$	14,44
GRAND TOTAL (USD/Month)	\$	14 062,83

DR site in „sleep mode“

- No servers are running
- Backups are stored in Low cost object storage (AWS S3-IA)
- All systems and servers must be turned On-Demand (manually/automatically)
- Configurations of Support systems are updated by every week
- Lower OPEX of DR Solution
- Cost 1,58 % of Full operation mode

Compute+Storage	\$	72,74
Data Traffic	\$	0,81
S3 Storage	\$	149,59
GRAND TOTAL (USD/Month)	\$	223,14

AWS Environment TCO 5Y calculation options

TCO calculation

A) DR plan not activated all the time

Number of counted Years	CAPEX (NoN DR running) (price per Y)	Number of DR test per Year	Cost of DR tests	Number of DR running months (total)	TCO 5Y
5	\$ 2 677,7	2	\$ 8 647,76	0	\$ 22 036,44

B) DR plan activated once all the time (SHORT TIME)

Number of counted Years	CAPEX (NoN DR running) (price per Y)	Number of DR test per Year	Cost of DR tests	Number of DR running months (total)	TCO 5Y
5	\$ 2 677,7	2	\$ 8 647,76	1	\$ 36 099,28

C) DR plan activated once all the time (LONGER TIME)

Number of counted Years	CAPEX (NoN DR running) (price per Y)	Number of DR test per Year	Cost of DR tests	Number of DR running months (total)	TCO 5Y
5	\$ 2 677,7	2	\$ 8 647,76	3	\$ 64 224,95

Conclusion of AWS Cloud DR Solution

- **Pros**

- **Zero Up-Front payment for HW&SW appliances**
- **Minimal monthly fee for cover DR site keep alive**
- **High SLA for services (most services with SLA 99,9 % above)**
- **Build & Maintain of environment could be automated**
- **Minimalize mistakes in „panic situation“**
- **Possibility to move/change DR location to another AWS Region in CEE (Milan, Stockholm, etc.)**

- **Cons**

- **Expensive for run DR mode in longer time (has partly optional solution)**
- **Customer data will be in Public cloud (Compliance/Encryption options)**
- **Requires high-quality internet connection**
- **Automation tool would need to be updated by SE**

Usual Customer Next steps

- **Ask ALEF for consulation** 😊
- Provide Application Discovery
- Define Apps for Cloud DR
- Choose Migration & Modernization path
- Build selected DR environment in AWS

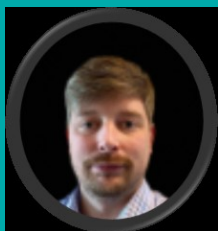


Questions & Ideas 😊





Thank you for attention



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