New challenges
NEW IDEAS

REALDOLMEN
a Gfi Group company
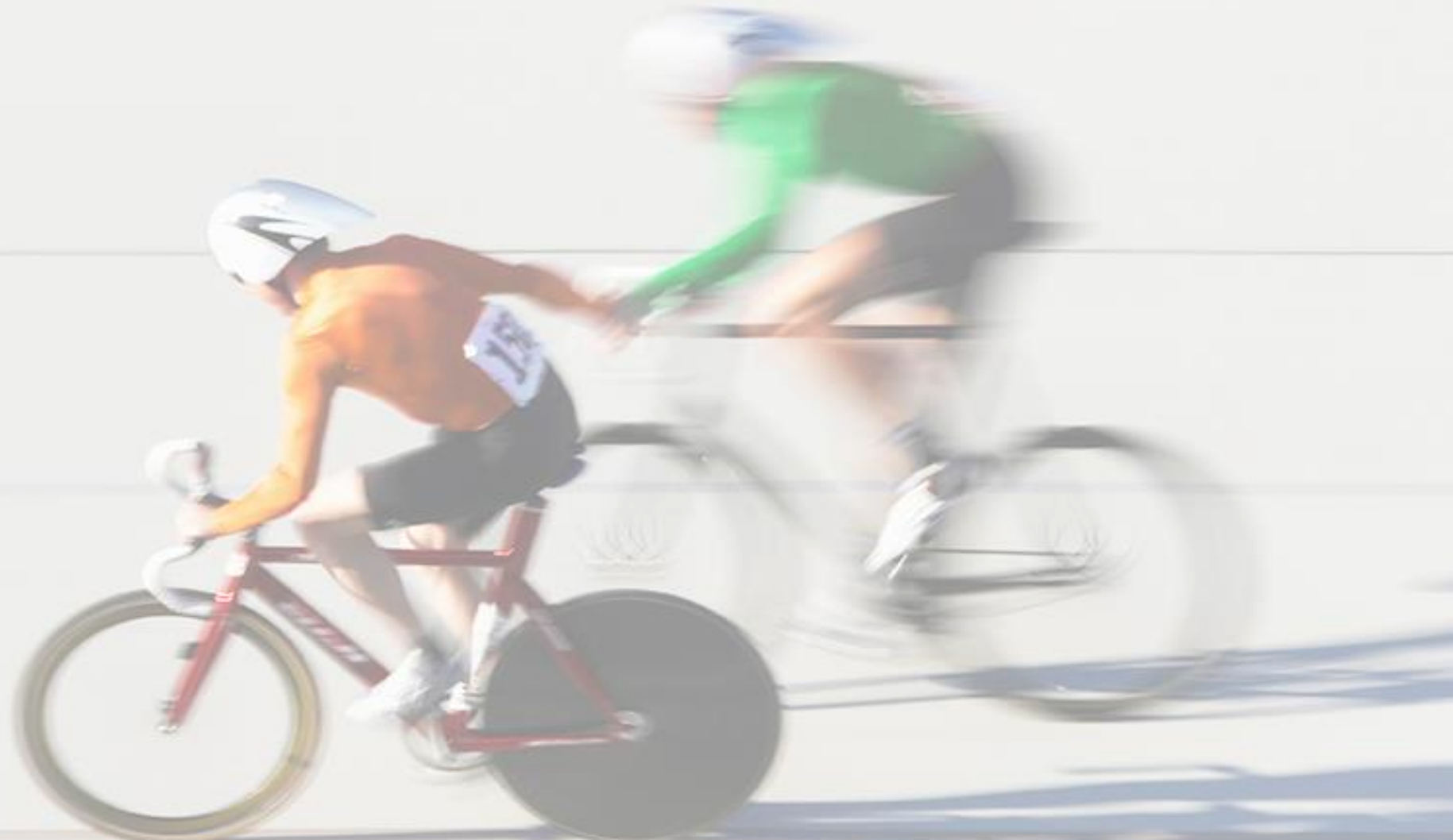
YOUNES EL AMRI – AZURE CONSULTANT

Azure Files with Sync

MIGRATE YOUR LOCAL FILESERVER TO THE CLOUD

How long?

Up to 1hr

What's the agenda?

Quick Intro Azure Files

Live demo

Q&A

REALDOLMEN
a Gfi Group company

4 MAJOR CHALLENGES IN A CLASSIC ON-PREMISE FILESERVER:

MULTI-SITE
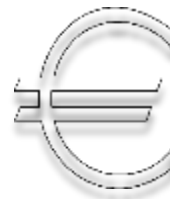Making data available very quickly across multiple locations entails the necessary complexity.

INACTIVE DATA
takes up the majority of your storage capacity on your file and backup server.

AVAILABILITY
Usually at least one fileserver is needed per site, but what if it fails?

PRICE
Storage for file servers, its backup(s) and maintenance is not cheap.

SESSION OBJECTIVES

- ❏ Simplify file share management by leveraging cloud
- ❏ Leverage snapshots and backup to protect your data
- ❏ Use Azure Files Sync to utilize cloud and reduce costs
- ❏ Retain on premises access and performance with Sync

What is Azure Storage?

AZURE STORAGE SERVICES

IaaS

Storage Virtual machines Networking

PaaS

Existing frameworks Web and mobile Microservices Serverless Compute

Disks

Persistent disks for Azure IaaS VMs

Standard Storage Disks: Magnetic disk based, low IOPS, moderate latency

Premium Storage Disks: SSD based, high IOPS, low latency

Managed Disks

Files

Fully Managed File Shares in the Cloud

SMB and REST access

"Lift and shift" legacy apps

Blobs

Highly scalable, REST based cloud object store

Block Blobs: Sequential I/O, Hot, Cool and Archive Tiers

Page Blobs: Random-write pattern data

Append Blobs

Tables

Massive auto-scaling NoSQL store

Dynamic scaling based on load

Scale to PBs of table data

Fast key/value lookups

Queues

Reliable queues at scale for cloud services

Decouple and scale components Message visibility timeout and update message to protect against unreliable dequeuers

Built on a unified Distributed Storage System

Durability, Encryption at Rest, Strongly Consistent Replication, Fault Tolerance, Auto Load-Balancing

AZURE ZONE REDUNDANT STORAGE (ZRS) & STORAGE REDUNDANCY

REQUEST

ZONE 1

DC4

DC1

REPLICA 2

ZONE 2

DC5

DC2

REPLICA 1

ZONE 3

DC6

DC3
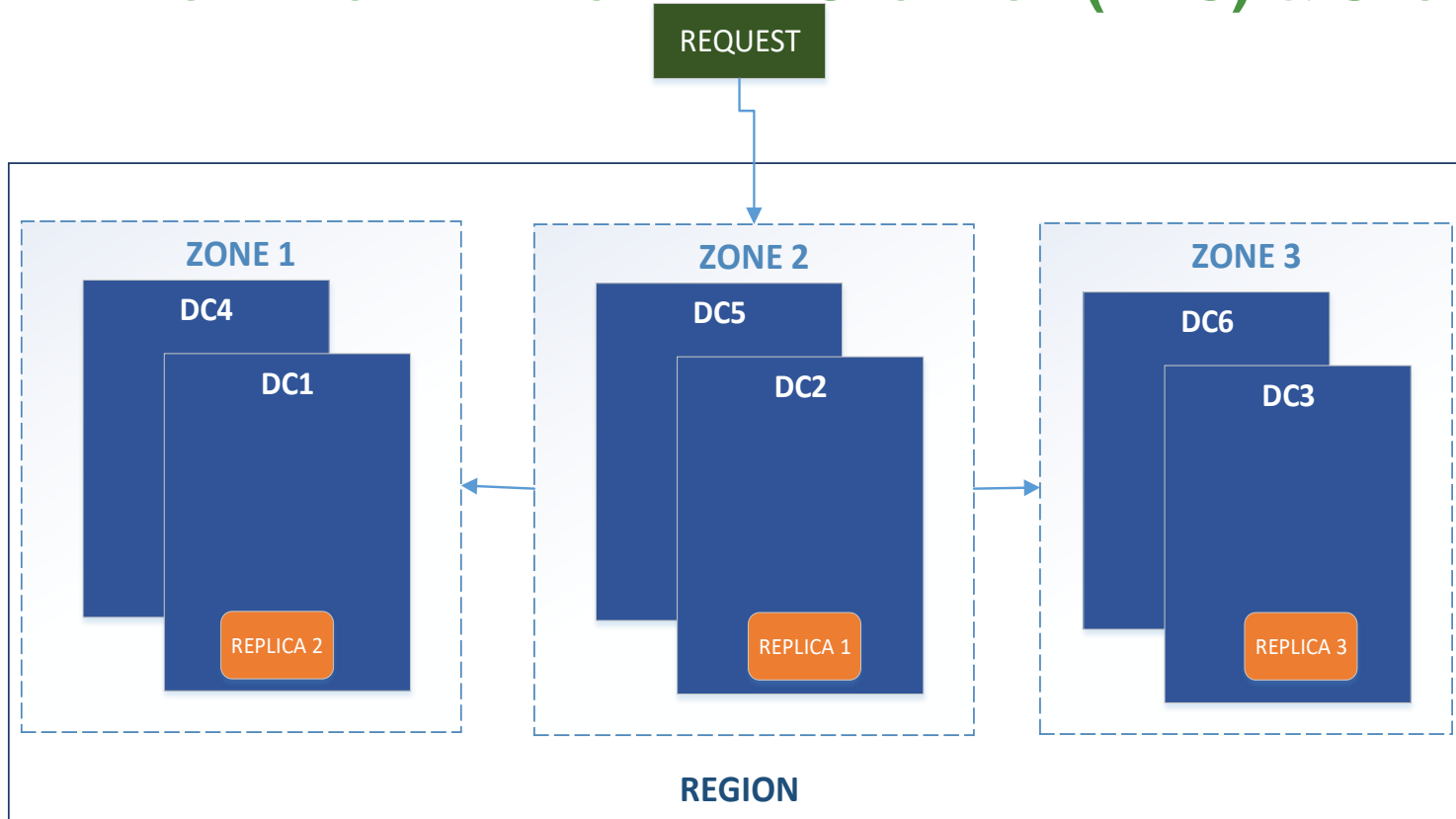
REPLICA 3

REGION

✓ Read / write resilience to single cluster/ datacenter unavailability

✓ Support for Blob, Table, File, Queue Storage

Synchronous data replication across Azure Availability Zones within region

LRS
Local-redundant storage

Lowest cost storage

ZRS
Zone-redundant storage

Resilience to datacenter outage

GRS
Geo-redundant storage

Resilience to regional outage

GZRS
Geo-zone-redundant storage
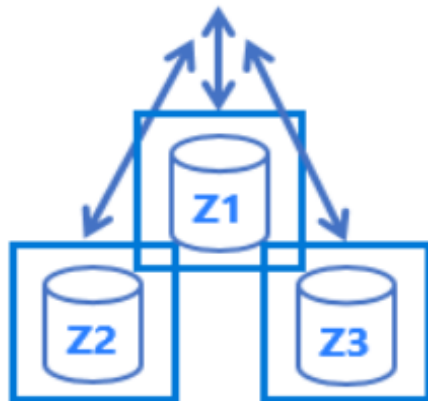
GRS + Read accessible secondary

Azure Storage Durability Options

Single Region

LRS

ZRS

Dual Region

Typically >300mi

Async

Primary   Secondary

GRS/RA-GRS

- 3 copies of data with-in a data centre, in a single region
- At least 99.999999999 (11 9's) of durability
- Protect against rack/drive failures

- 3 copies of data across 3 different Zones
- At least 99.9999999999 (12 9's) of durability
- Protect against DC/Zone failures
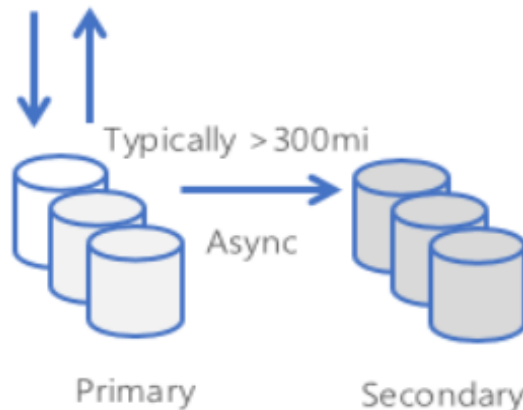
- 6 copies of data- 3 in the primary GEO and other 3 in the secondary paired GEO
- At least 99.99999999999999 16 9's of durability
- Protect against regional failures

What is Azure Files?

AZURE FILES

✓ Lift and Shift
✓ Variety of clients/protocols
    SMB 2.1, 3.0, REST
    Windows, Linux, Mac OS
    Azure and on premises access
✓ Secure
    Encryption at rest
    Secure communication over SMB (TCP/445)
✓ Sync
    Multi-site access
✓ Performance
    100K IOPS on Premium shares

Application

Client

SMB:
Port 445 outbound

Virtual machine

Azure Files
\\<account>.file.windows.net\<share>

On Premises

Azure
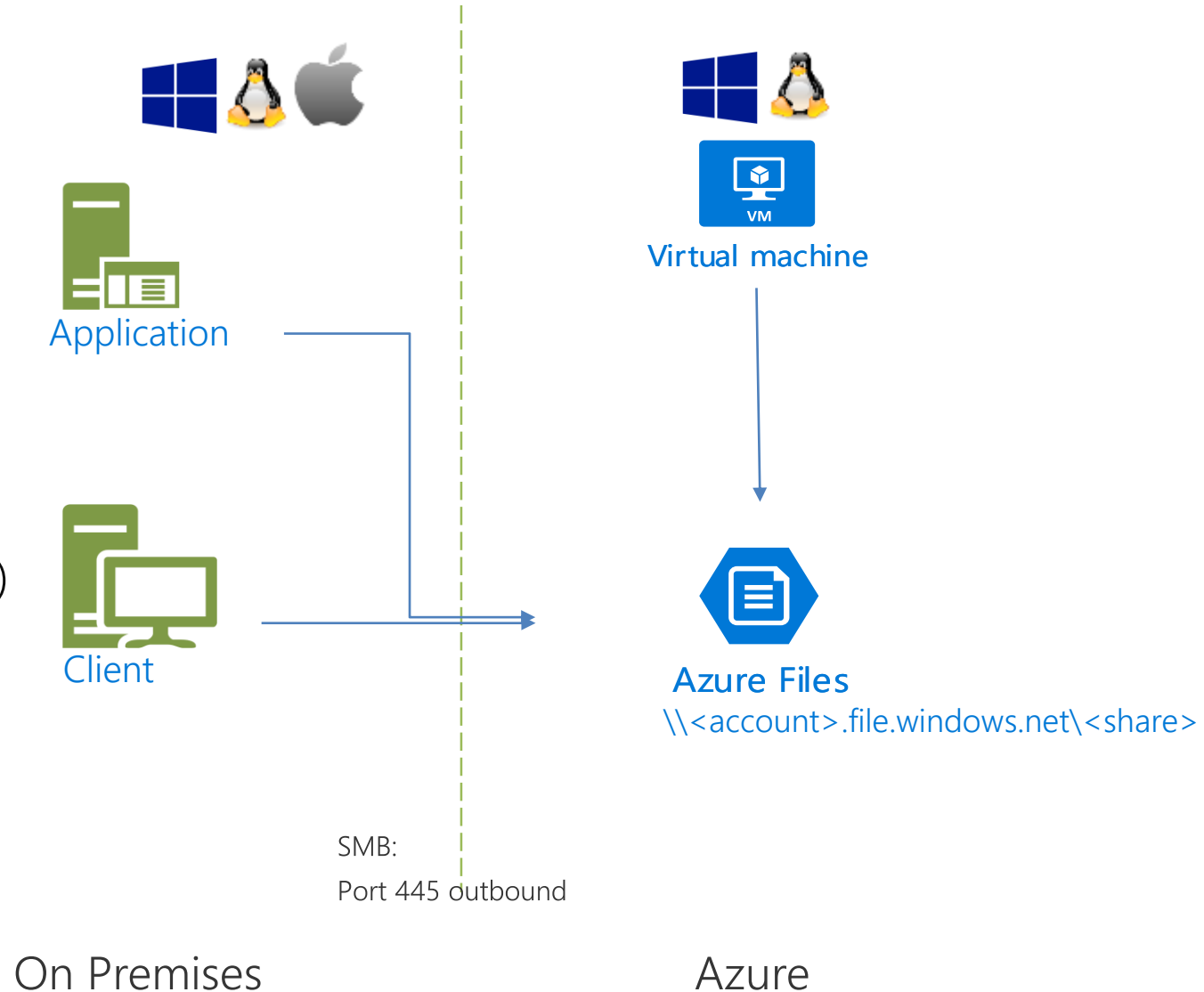
TOP SCENARIOS

Multi-site sync	Keep data available across multiple locations
User profiles VDI	Save your WVD user profiles on a central share (supports FSLogix Profile Container)
Hot / Cool File Shares	Hot file shares for most general-purpose workloads, Cool file shares is useful for data to be stored for long term access without compromising instant access.
Integrated cloud backup	Point-in-time recovery and retention policies without redundant data transfer (incremental snapshots and backup policies). Restore files or complete shares
Performance Shares	100K IOPS with a target egress rate of 6 GiB/s and ingress rate of 4 GiB/s for 100 TiB premium shares

TOP SCENARIOS

Lift & Shift	Lift & Shift share management
Direct cloud access	SMB access on TCP 445 or REST access
Secure delegated access	Secure delegated access to resources in your storage account, without compromising the security of your data, with shared access signatures (SAS)
Highly available FTP	99,99+ (redundancy) for maximum uptime & availability
Scale-In/Out Storage	Pay as you need storage, scale in & out as needed.
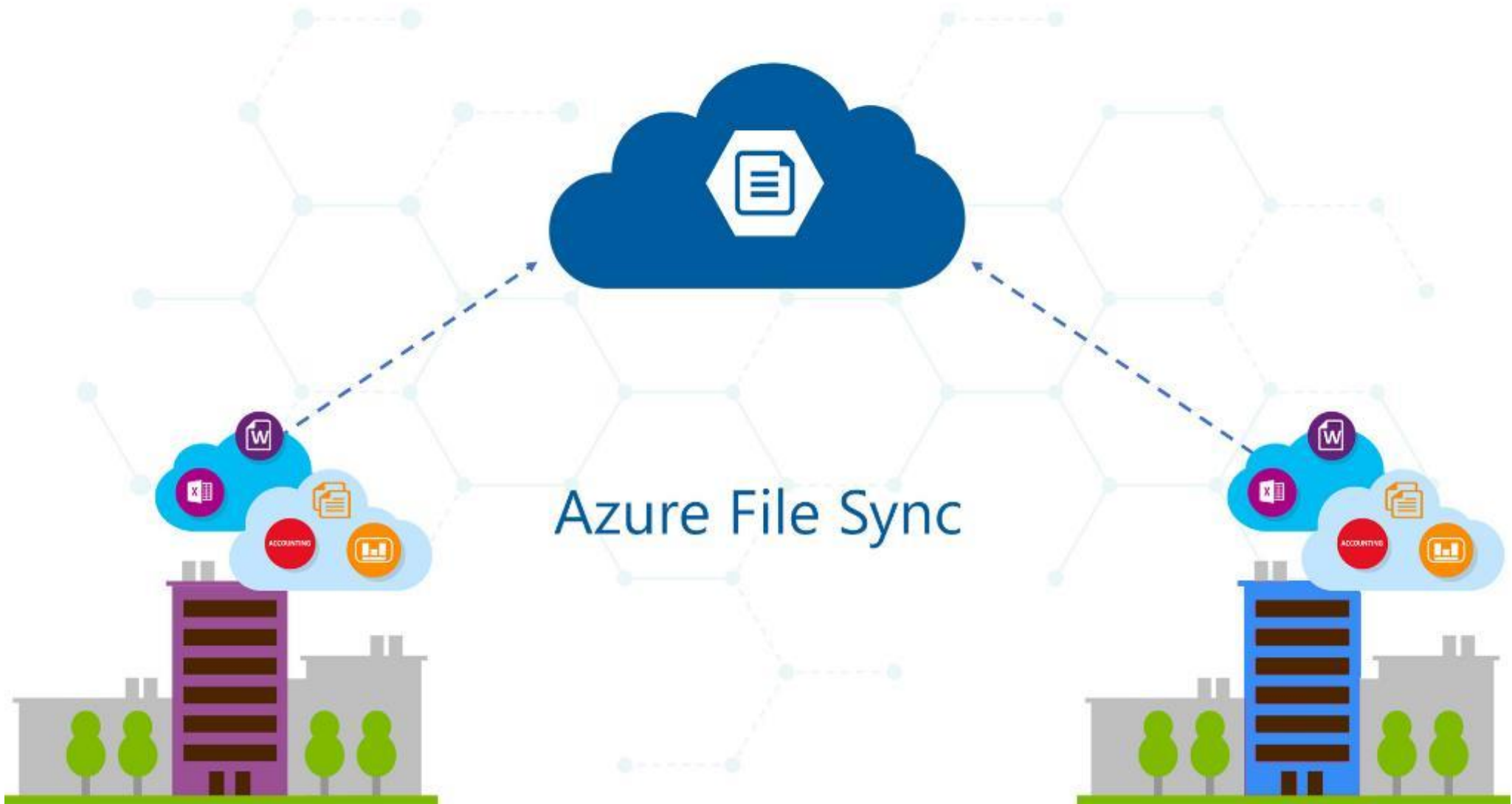
Azure File Sync

Features

Cloud tiering	Turn a server into a lightweight, performance cache for Azure Files with the Azure File Sync Agent
Identity	Retain your Share names & Access Control Lists, authenticate from Active Directory on premises or use Azure Active Directory
Anti-Ransomware	Snapshots & backup policies restore your files, folders and complete shares
Disaster Recovery	Up and running, as fast as logging into the Azure File Sync Agent on a new server.

PaaS

IaaS

SMB

REST

West Europe

File Share

East US

File Share

Azure Backup Vault

CLOUD DISASTER RECOVERY

Work Folders

SMB

NFS

Users

Applications

Branch Office

HQ Server

Branch Office

AMD
Common Files
DellTPad
DIFX
Hyper-V
Internet Explorer
Managed Defender
Microsoft
Microsoft Analysis Services
Microsoft Forefront Identity Manager
Microsoft LifeCam
Microsoft Office
Microsoft Office 15
Microsoft Policy Platform
Microsoft Silverlight
Microsoft SQL Server
Microsoft.NET
MSBuild
PureText
Reference Assemblies
STMicroelectronics
Uninstall Information
Windows Defender
Windows Firewall Configuration Provider
Windows Journal

BACKUPS & SNAPSHOTS

FILE SHARE BACKUPS

- Configure backup policies (Backups based on snapshots)
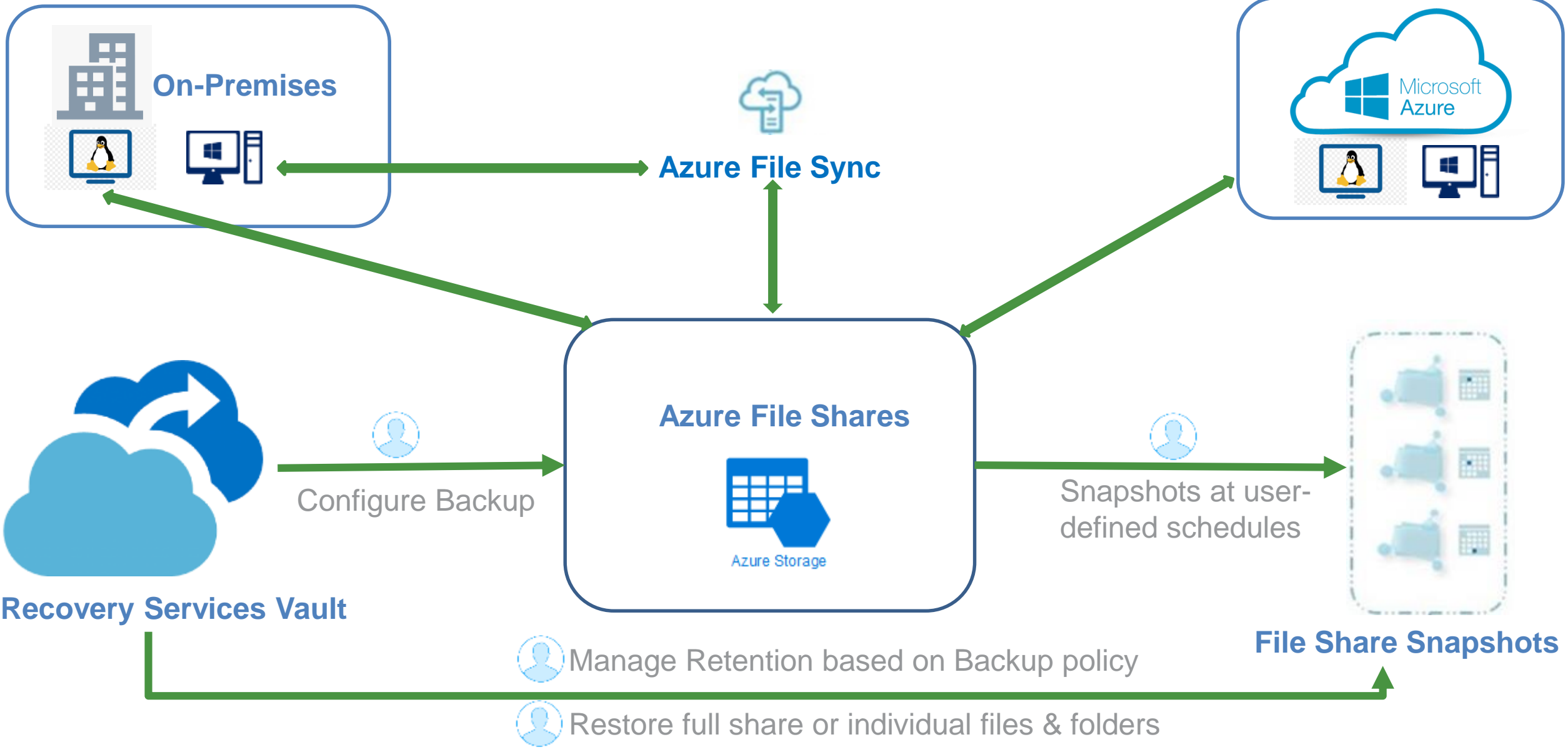- Retention up to 120 days
- Restore shares or individual files
- Pay per storage account backed up

FILE SHARE SNAPSHOTS

- Protect against accidental deletion or application errors
- Pay for incremental data stored
- Create, list, view, or restore using Portal, PowerShell, CLI or REST API

On-Premises

Azure File Sync

Microsoft Azure

Azure File Shares

Azure Storage

Recovery Services Vault

Configure Backup

Snapshots at user-defined schedules

File Share Snapshots

Manage Retention based on Backup policy

Restore full share or individual files & folders

Simple Configuration

Zero Infrastructure

Flexible Backup Policy

File and Folder Level Restores

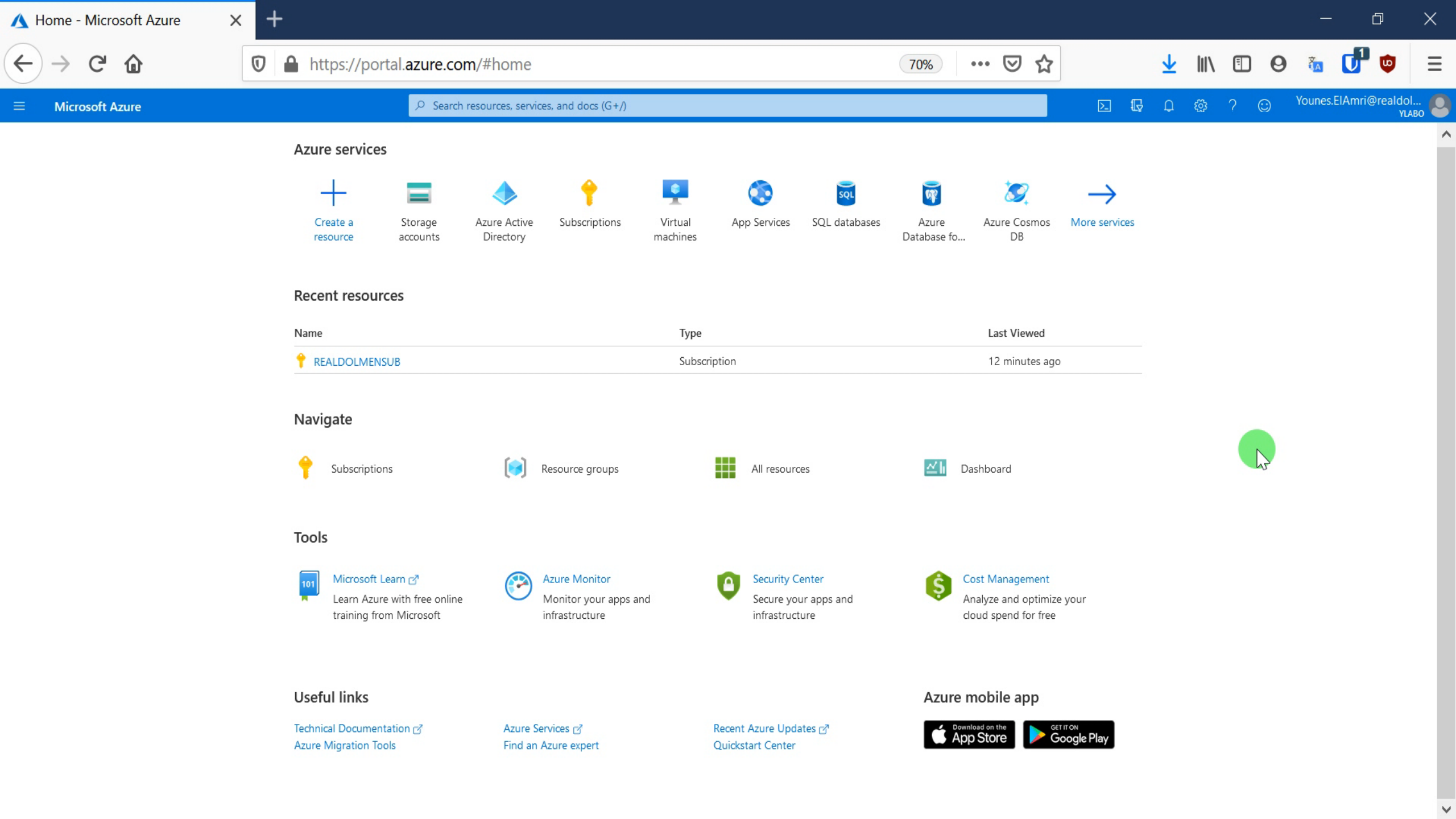Sync-Aware Restores

Accidental-Delete Protection

DEMO

1. Create storage account

2. Create Azure File Share

3. Direct SMB access

4. File Share with Azure File Sync Agent

5. Create a snapshot

6. Create a backup (policy)

7. Restore file from snapshot

8. Recovery Services – File recovery

9. Recovery Services – Full share recovery

REALDOLMEN
a Gfi Group company

CREATE A STORAGE ACCOUNT

https://portal.azure.com/#home

70%

Microsoft Azure

Search resources, services, and docs (G+/)

Younes.ElAmri@realdol...
YLABO

Azure services

Create a resource	Storage accounts	Azure Active Directory	Subscriptions	Virtual machines	App Services	SQL databases	Azure Database fo...	Azure Cosmos DB	More services

Recent resources

Name	Type	Last Viewed
REALDOLMENSUB	Subscription	12 minutes ago

Navigate

Subscriptions

Resource groups

All resources

Dashboard

Tools

Microsoft Learn ⧉
Learn Azure with free online training from Microsoft

Azure Monitor
Monitor your apps and infrastructure

Security Center
Secure your apps and infrastructure

Cost Management
Analyze and optimize your cloud spend for free

Useful links

Technical Documentation ⧉
Azure Migration Tools

Azure Services ⧉
Find an Azure expert

Recent Azure Updates ⧉
Quickstart Center

Azure mobile app

Download on the App Store

GET IT ON Google Play

CREATE AZURE FILE SHARE

https://portal.azure.com/#@ylabo.onmicrosoft.com/resource/subscriptions/2a9e7d9   70%

Microsoft Azure   Search resources, services, and docs (G+/)   Younes.ElAmri@realdol...
                                                                                YLABO

Home > Storage accounts > yeastorageaccount

yeastorageaccount
Storage account

Search (Ctrl+/)

- Overview
- Activity log
- Tags
- Diagnose and solve problems
- Access Control (IAM)
- Data transfer
- Events
- Storage Explorer (preview)

Settings

- Access keys
- Geo-replication
- CORS
- Configuration
- Encryption
- Shared access signature
- Firewalls and virtual networks
- Private endpoint connections
- Advanced security
- Static website
- Properties
- Locks

Open in Explorer   → Move ∨   ↻ Refresh   🗑 Delete   ☺ Feedback

ⓘ Classic alerts in Azure Monitor is announced to retire in 2021, it is recommended that you upgrade your classic alert rules to retain alerting functionality with the new alerting platform. For more information, see Continue alerting with ARM storage accounts. ⧉

∧ Essentials

Resource group (change) : storageaccount-rg   Performance/Access tier : Standard/Hot
Status   : Primary: Available   Replication   : Locally-redundant storage (LRS)
Location   : West Europe   Account kind   : StorageV2 (general purpose v2)
Subscription (change) : REALDOLMENSUB
Subscription ID   : 2a9e7d93-f4ab-4d97-ad94-4d417dda1628

Tags (change)   : Click here to add tags

Containers
Scalable, cost-effective storage for unstructured data
Learn more

File shares
Serverless SMB file shares
Learn more

Tables
Tabular data storage
Learn more

Queues
Effectively scale apps according to traffic
Learn more

Tools and SDKs

Storage Explorer (preview)   PowerShell   Azure CLI   .NET   Java   Python   Node.js

Monitoring

Show data for last: 1 hour   6 hours   12 hours   1 day   7 days

Show data for: Account

DIRECT SMB ACCESS

Microsoft Azure

Search resources, services, and docs (G+/)

Younes.ElAmri@realIdol...
YLABO

Home > Storage accounts > yeastorageaccount

Storage accounts
ylabo

+ Add   ⚙ Manage view ∨   ⋯

Filter by name...

Name ↑↓
🟰 fsdemovmboot	⋯
🟰 yeastorageaccount	⋯

yeastorageaccount | File shares
Storage account

🔍 File ✕

«

+ File share   ↻ Refresh

🔲 Storage Explorer (preview)

Settings

🛡 Firewalls and virtual networks

File service

🗂 File shares

File share settings

Active Directory: Not configured   Soft delete: 14 days   Share capacity: 5 TiB

Search file shares by prefix (case-sensitive)

◯ Show deleted shares

Name	Modified	Tier	Quota
🗂 yeashare-cold	9/23/2020, 2:30:04 PM	Cool	2 TiB	⋯
🗂 yeashare-hot	9/23/2020, 2:29:51 PM	Hot	1 TiB	⋯

Page 1 of 1

FILE SHARE SYNCHRONIZATION WITH AZURE FILE SYNC AGENT

Microsoft Azure

Search resources, services, and docs (G+/)

Home > Storage accounts >

yeastorageaccount
Storage account

Search (Ctrl+/)	
Overview	
Activity log	
Tags	
Diagnose and solve problems	
Access Control (IAM)	
Data transfer	
Events	
Storage Explorer (preview)	

Settings

Access keys	
Geo-replication	
CORS	
Configuration	

⊞ Open in Explorer   → Move ∨   ⟳ Refresh | 🗑 Delete | ☺ Feedback

ℹ Classic alerts in Azure Monitor is announced to retire in 2021, it is recommended that you upgrade your classic alert rules to retain alerting functionality with the new alerting platform. For more information, see Continue alerting with ARM storage accounts. ⬀

∧ **Essentials**

Resource group (change)
storageaccount-rg

Status
Primary: Available

Location
West Europe

Subscription (change)
REALDOLMENSUB

Subscription ID
2a9e7d93-f4ab-4d97-ad94-4d417dda1628

Tags (change)
Click here to add tags

Performance/Access tier
Standard/Hot

Replication
Locally-redundant storage (LRS)

Account kind
StorageV2 (general purpose v2)

Containers   **File shares**   **Tables**

CREATE A SNAPSHOT

Microsoft Azure

Search resources, services, and docs (G+/)

Younes.ElAmri@realdol...
YLABO

yeashare-hot
File share

Search (Ctrl+/)

Connect   Upload   + Add directory   Refresh   Delete share   Change tier   Edit quota

Overview

Access Control (IAM)

Settings

Properties

Operations

Snapshots

Backup

Search files by prefix

Name	Type	Size
📁 .SystemShareInformation	Directory	
📁 myshare	Directory	
📄 CanYouSeeMe.txt	File	0 B
📄 manual-1.docx	File	1 MiB
📄 manual-2.docx	File	1 MiB
📄 manual-3.docx	File	1 MiB
📄 manual-4.docx	File	1 MiB
📄 manual-5.docx	File	1 MiB
📄 pic-1.jpg	File	1 MiB
📄 pic-2.jpg	File	1 MiB
📄 pic-3.jpg	File	1 MiB

CREATE A BACKUP (POLICY)

Microsoft Azure

Search resources, services, and docs (G+/)

Younes.ElAmri@realdol...
YLABO

Home > Storage accounts > yeastorageaccount >

yeashare-hot
File share

Search (Ctrl+/)

Connect | Upload | + Add directory | Refresh | Delete share | Change tier | Edit quota

Overview

Access Control (IAM)

Settings

Properties

Operations

Snapshots

Backup

Search files by prefix

Name	Type	Size
📁 .SystemShareInformation	Directory	
📁 myshare	Directory	
📄 CanYouSeeMe.txt	File	0 B
📄 manual-1.docx	File	1 MiB
📄 manual-2.docx	File	1 MiB
📄 manual-3.docx	File	1 MiB
📄 manual-4.docx	File	1 MiB
📄 manual-5.docx	File	1 MiB
📄 pic-1.jpg	File	1 MiB
📄 pic-2.jpg	File	1 MiB
📄 pic-3.jpg	File	1 MiB

Recovery Services Vault

RECOVERY SERVICES – FILE RECOVERY

Microsoft Azure

🔍 Search resources, services, and docs (G+/)

vmadmin@ylabo.onmic...
YLABO

Home > Recovery Services vaults > yeareal-recoverysv > Backup Items (Azure Storage (Azure Files)) >

yeashare-hot
Backup Item

🔄 Backup now   ↻ Restore Share   ↻ File Recovery   ⟳ Resume backup   ⊘ Stop backup   🗑 Delete backup data

Essentials ⌃

Recovery services vault
yeareal-recoverysv

Subscription name
REALDOLMENSUB

Subscription ID
2a9e7d93-f4ab-4d97-ad94-4d417dda1628

Item type
Azure File Share

Storage Account
yeastorageaccount

Last backup status
Success

Last backup time
9/23/2020, 6:19:56 PM

Backup policy
DailyPolicy

Item State
Active (Last sync time: 9/23/2020, 6:20:26 PM)

🔍 Search resources, services, and docs (G+/)

vmadmin@ylabo.onmic...
YLABO

yeashare-hot
Backup Item

↩ Backup now ↻ Restore Share ↻ File Recovery ⟳ Resume backup ⊘ Stop backup 🗑 Delete backup data

Essentials ∧

Recovery services vault
yeareal-recoverysv

Subscription name
REALDOLMENSUB

Subscription ID
2a9e7d93-f4ab-4d97-ad94-4d417dda1628

Item type
Azure File Share

Storage Account
yeastorageaccount

Last backup status
Success

Last backup time
9/23/2020, 6:19:56 PM

Backup policy
DailyPolicy

Item State
Active (Last sync time: 9/23/2020, 6:20:26 PM)

https://portal.azure.com/#

DEMO TAKEAWAYS

✓ Leverage snapshots and backup to protect your data

✓ Simplify file share management by leveraging cloud

✓ Use Azure Files Sync to utilize cloud and reduce costs

✓ Retain on premises access and performance with Sync

PRICING

- Pricing elements:
  - ▶ Storage Tier (Hot, Cool, Premium)
  - ▶ Storage
  - ▶ Download traffic
  - ▶ Write operations
  - ▶ Read operations
  - ▶ Backup storage

Hot
- High storage cost
- Low access costs
- Good for storing the most recent data backup

Cool
- Lower storage cost
- Higher access costs
- Fee for early data deletion
- Good for older data backups

PRICING SIMULATION

Azure File Share 1TB

Azure File Share 1TB	Hot storage		Cool storage	
	LRS	ZRS	LRS	ZRS
1TB Hot LRS Storage	16,93 €	20,72 €	8,64 €	11,31 €
100K Write Operations	0,46 €	0,46 €	0,84 €	4,55 €
100K Read Operations	0,04 €	0,04 €	0,46 €	0,36 €
Download Traffic 50GB	3,30 €	3,30 €	3,30 €	3,30 €
Sync Server	4,22 €	4,22 €	4,22 €	4,22 €
Backup storage	16,93 €	20,72 €	8,64 €	11,31 €
Total / Month	**41,88 €**	**49,46 €**	**26,10 €**	**35,05 €**

Azure File Share 5TB

Azure File Share 5TB	Hot storage		Cool storage	
	LRS	ZRS	LRS	ZRS
5TB Hot LRS Storage	84,63 €	103,62 €	43,18 €	56,56 €
0,5 Mio Write Operations	2,28 €	4,55 €	2,28 €	4,55 €
0,5 Mio Read Operations	0,18 €	0,36 €	0,18 €	0,36 €
Download Traffic 250GB	17,97 €	17,97 €	17,97 €	17,97 €
Sync Server	4,22 €	4,22 €	4,22 €	4,22 €
Backup storage	84,63 €	103,62 €	43,18 €	56,56 €
Total / Month	**193,91 €**	**234,34 €**	**111,01 €**	**140,22 €**

What can RealDolmen do for you?

WHAT CAN REALDOLMEN DO FOR YOU?

- Azure Files Proof-of-Concept
  - 2 days
  - Scope:
    - Setup secure networking and hybrid identity
    - Setup Azure Files / Azure File Sync for small file share
    - Proof of <u>your</u> scenario (multi-site, disaster recovery, backup, …)

- Managed File Share: File share setup + Managed Services
  - Setup in production of
    Azure Files / File Sync, Multi-site share sync, Archive offloading, DFS to
    Azure Files migration, File sync automation, Backup, Cloud caching, …
  - Managed by Realdolmen:
    - Monitoring sync agent, file share, availability
    - Auditing (access, network)
    - Managed backup/restore of files/shares
    - Data security (threat protection & data delete prevention)

For more information:
Robin Simons
Focused Sales Hybrid Cloud
robin.simons@realdolmen.com
0499 35 92 20

Q&A

New challenges
NEW IDEAS

REALDOLMEN

HQ Realdolmen Huizingen

A. Vaucampslaan 42
1654 Huizingen
+32 2 801 55 55

www.realdolmen.com