Azure File Sync

Your Cloud Fileserver

GREGOR REIMLING

Gregor Reimling

IT Consultant & Cloud Architect

Since October Microsoft MVP for Azure ☺

Azure, Windows Server, Hyper-V

Working @sepago GmbH

✉ info@reimling.eu

🐦 @GregorReimling | @AzureBonn

Ⓦ www.reimling.eu   🌞 www.neutralien.com
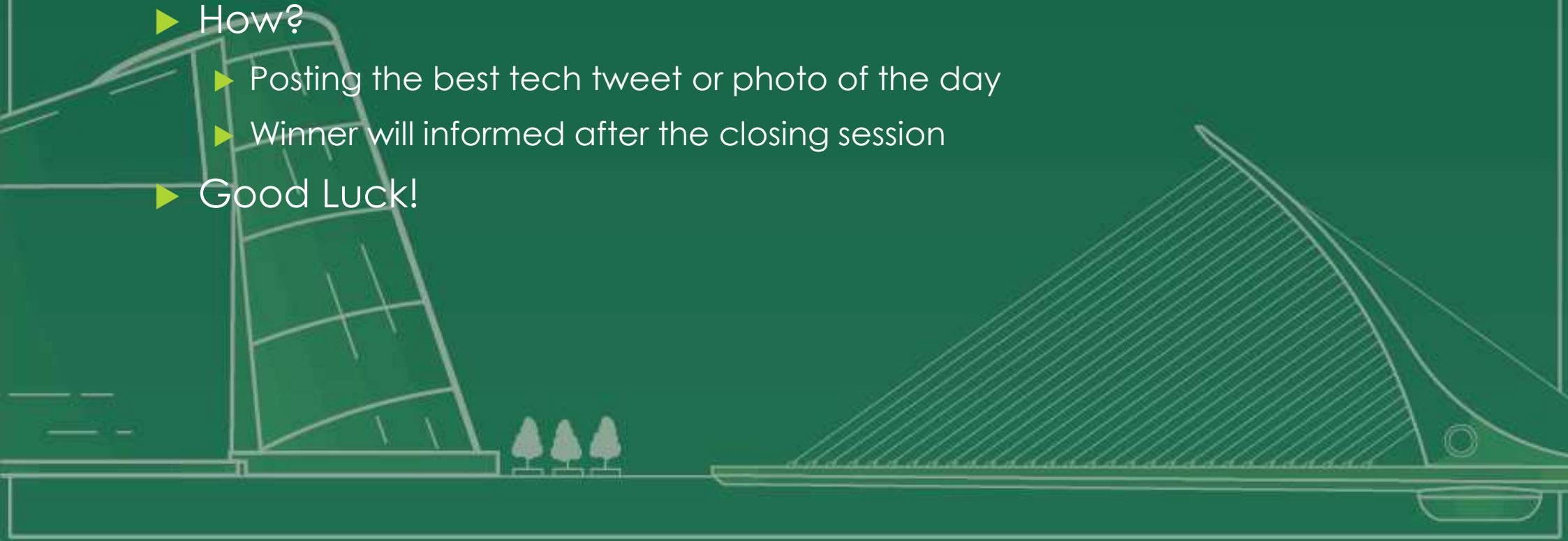
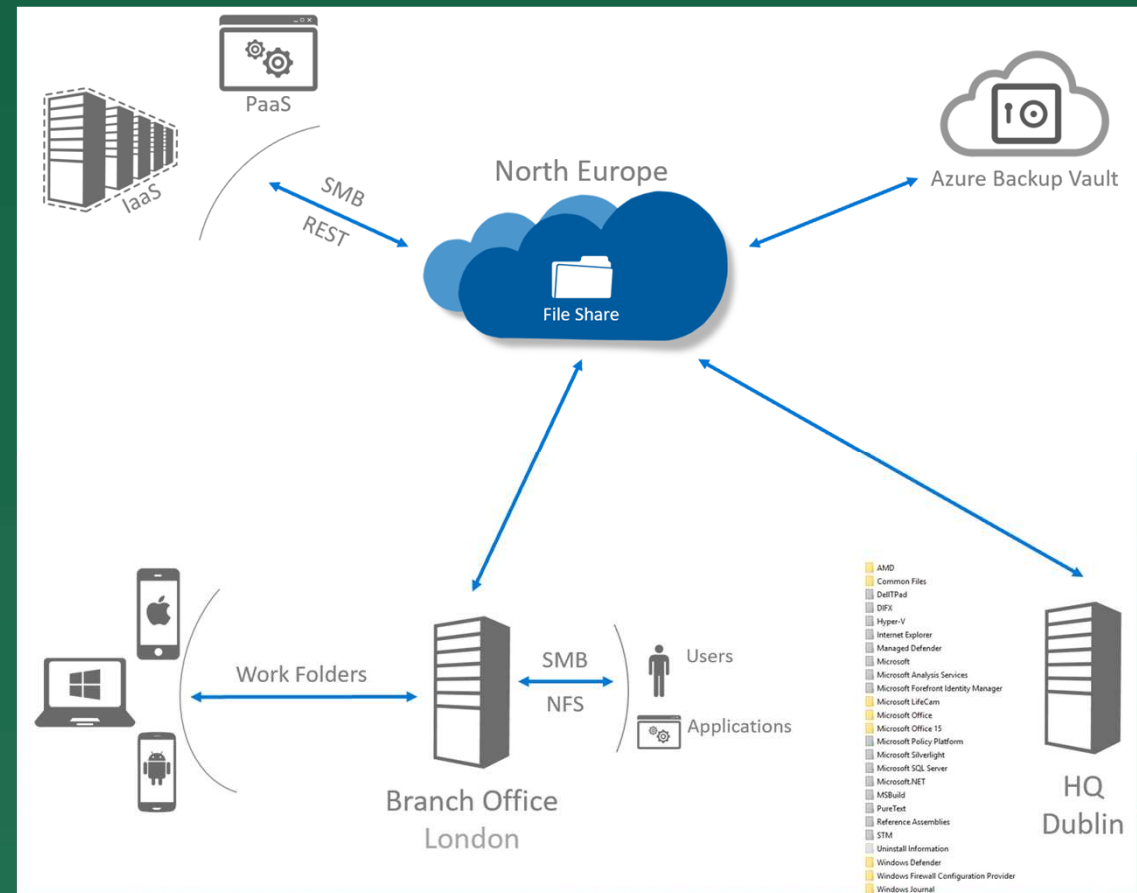**MVP** Microsoft® Most Valuable Professional

Azure Meetup BONN

Cloud Camp Twitter Competition

▶ You have to chance to win an brand new Surface Go

▶ How?

    ▶ Posting the best tech tweet or photo of the day

    ▶ Winner will informed after the closing session

▶ Good Luck!

Azure File Sync – Agenda

- ▶ General
- ▶ Functions
- ▶ Demo & Configuration
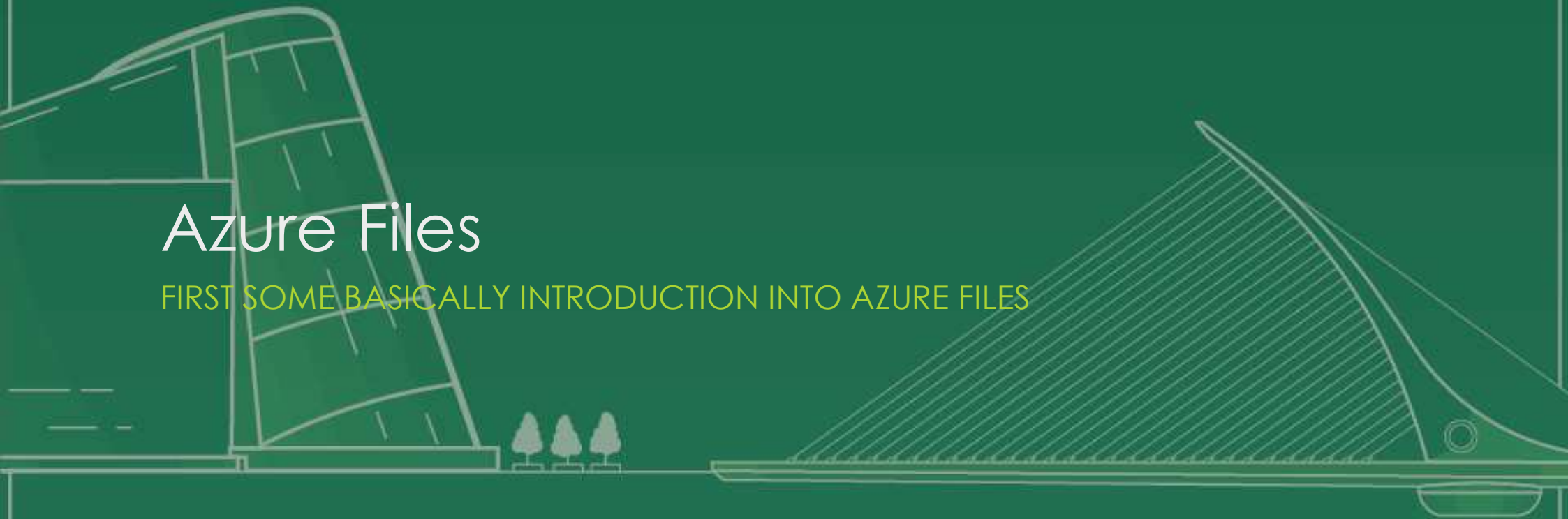- ▶ Migration & Backup
- ▶ Conclusion
- ▶ Links

AFS - General

- ▶ AzureFileSync = AFS
- ▶ Synchronize Fileserver between Company Boundaries
- ▶ General Availability since July 2018
- ▶ Fileserver need Agent for syncing
  - ▶ Agent registered Fileserver in Azure
  - ▶ Monitoring and Syncing
  - ▶ Transparent for User
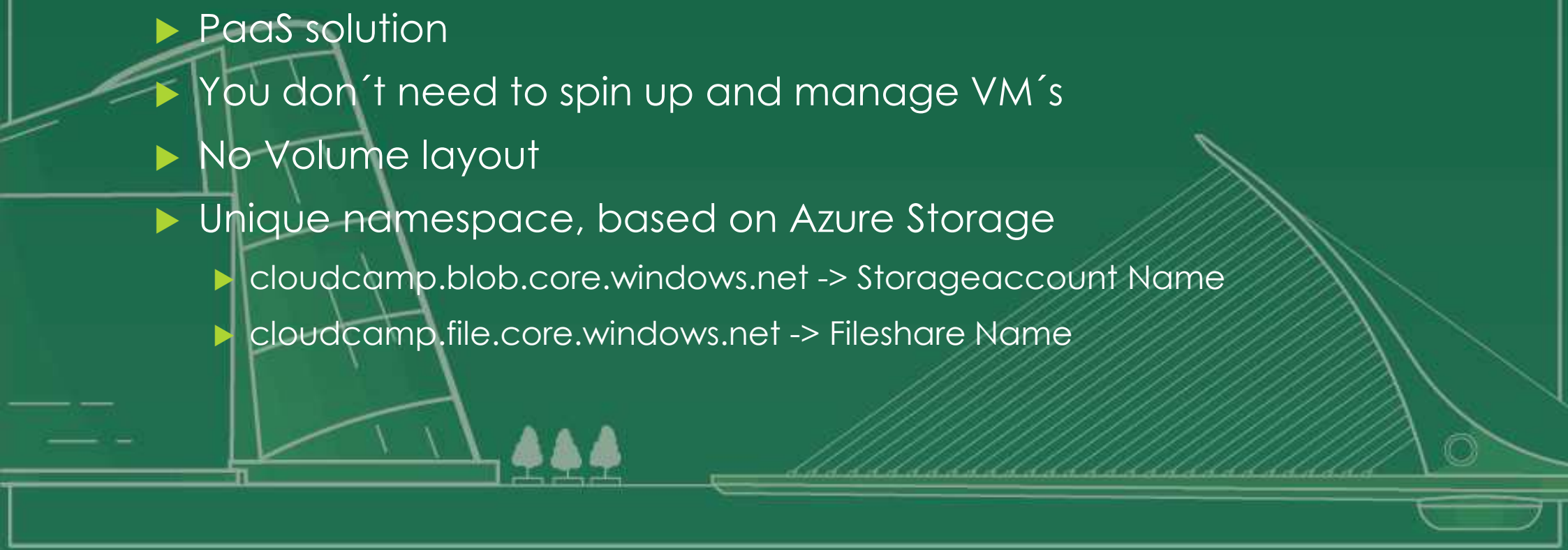- ▶ Files will be synced to an Azure Fileshare
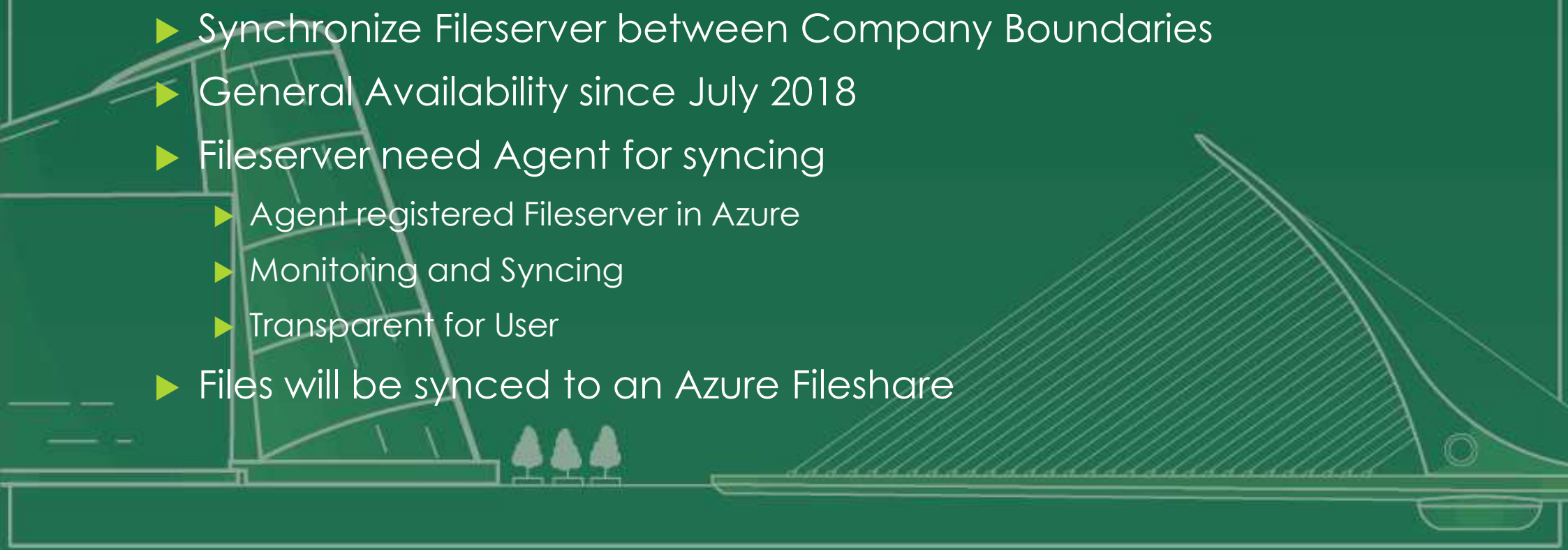
Azure Files

Azure Files

▶ Hosted SMB 3.1 Share for you on Azure

▶ PaaS solution

▶ You don´t need to spin up and manage VM´s

▶ No Volume layout

▶ Unique namespace, based on Azure Storage

  ▶ cloudcamp.blob.core.windows.net -> Storageaccount Name
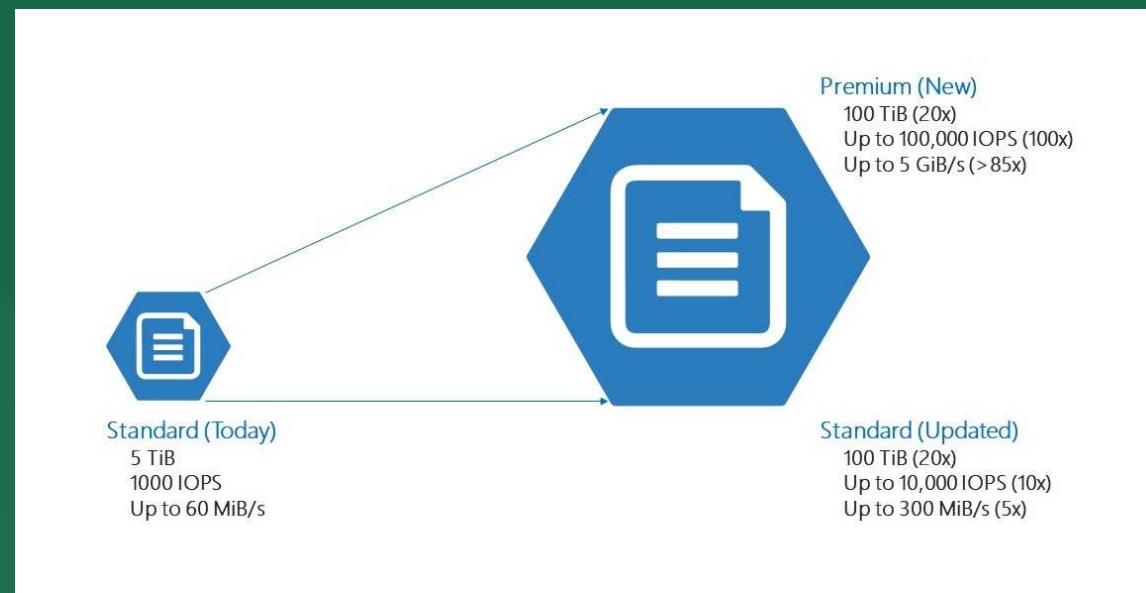
  ▶ cloudcamp.file.core.windows.net -> Fileshare Name

Azure Files – MSIgnite Announcements

- ▶ Standard
  - ▶ 5TB -> 100TB Fileshare
  - ▶ 1000 -> up to 10000 IOPS
  - ▶ 60MB/sec -> up to 300MB/sec
- ▶ Premium (new model)
  - ▶ Up to 100.000 IOPS*
  - ▶ Up to 5GB/sec*
  - ▶ Based on the fileshare size

Premium (New)
100 TiB (20x)
Up to 100,000 IOPS (100x)
Up to 5 GiB/s (>85x)

Standard (Today)
5 TiB
1000 IOPS
Up to 60 MiB/s

Standard (Updated)
100 TiB (20x)
Up to 10,000 IOPS (10x)
Up to 300 MiB/s (5x)

https://azure.microsoft.com/en-us/blog/a-new-era-for-azure-files-bigger-faster-better/

Azure Files – How it works

SMB or NFS

REST
Port 443

File Sync

Virtual Machines

SMB 2.1, 3.0
or REST

SMB 3.0
Port 445

Clients

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

\\cloudcamp.file.core.windows.net\data

REST
Port 443
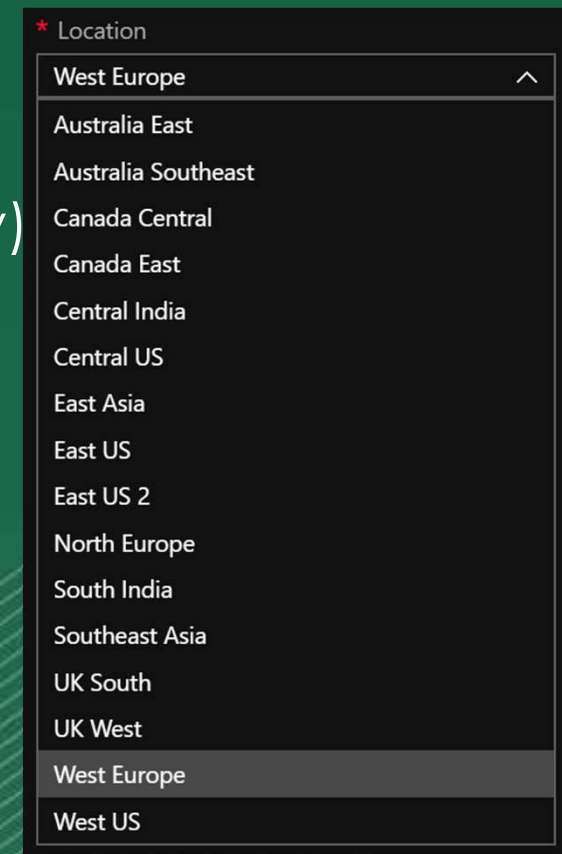
Clients

On-premises

Azure

https://www.youtube.com/watch?v=GMzh2M66E9o

AFS - Limitations

- Max. Size of Azure Fileshare 5TB (100TB coming Nov)
  - Using more than one Fileshare possible (max. 500TB)
- Servers can only registered in one AFS group
- Filesystem only NTFS – No ReFS is supported
- Data duplication possible -> without Cloud Tiering

* Location

West Europe	^
Australia East	
Australia Southeast	
Canada Central	
Canada East	
Central India	
Central US	
East Asia	
East US	
East US 2	
North Europe	
South India	
Southeast Asia	
UK South	
UK West	
West Europe	
West US	

AFS - Requirements

▶ WS2012R2 GUI + PowerShell 5.1

▶ WS2016 GUI

▶ Internet Connection (HTTPS)

▶ Dedicated Storage account (Recommended)

▶ Azure Fileshare

▶ Fileserver needed Powershell Module AzureRM

▶ Agent Installation

▶ Availability regions

⚠ Pre-requisites are missing

Retry server registration after performing the following actions:

Install the latest AzureRM PowerShell module by following the documentation: https://go.microsoft.com/fwlink/?linkid=856959.

AFS - Components

- **Storage Sync Service**
- **Sync Group**
- **Registered Server**
  - Associate with Sync Group (1:1)
- **Cloud Endpoint**
  - Azure Fileshare
- **Server Endpoint**
  - Serverpath
- **Azure File Sync Service Agent**

Update Rollup for Azure File Sync Agent (General Availability) – September 2018 (KB4457484)

Update Rollup for Azure File Sync Agent (General Availability) – September 2018 (KB4457484)

AFS – Cloud Tiering

- Bring your Fileserver in caching mode
- Sync agent build a heatmap of local files
- Hottest data will be stored locally
- Cold data only available in the Cloud
- Transparent for the User
- Local file have an pointer to the cloud file
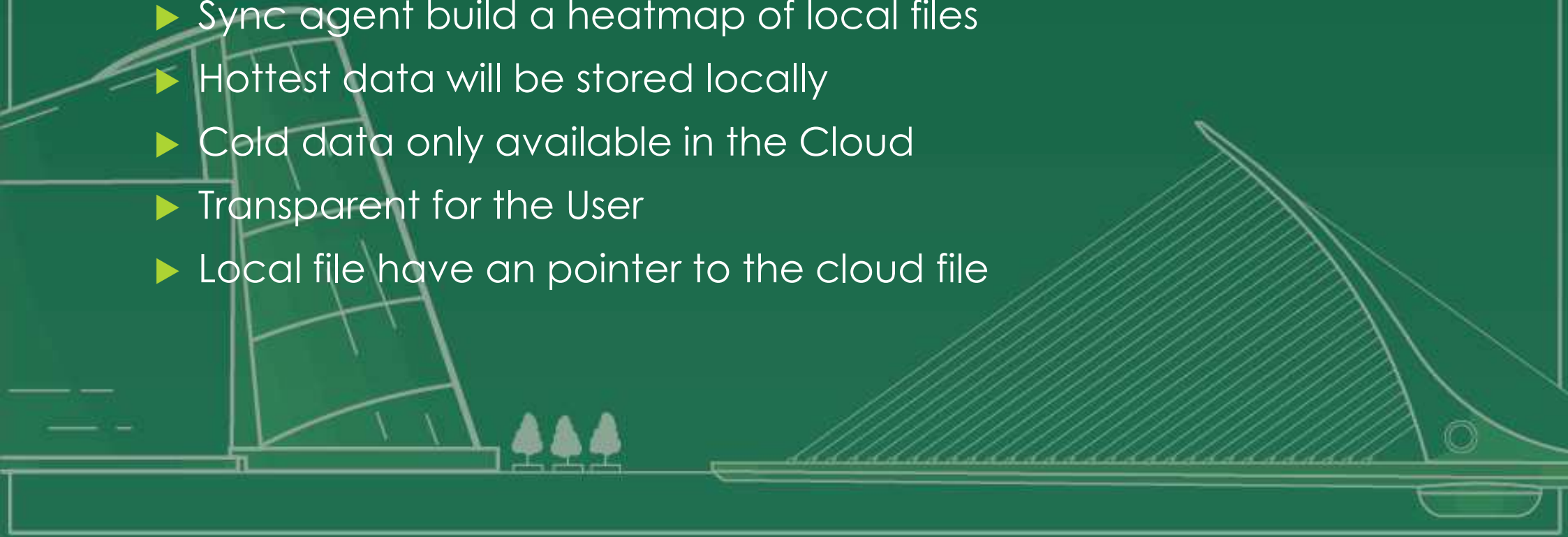
AFS – Preparation steps

Create Storageaccount & Fileshare → Creating Storage Sync Service (Azure File Sync) → Creating Syncgroup (will also create an Cloud Endpoint) → Install-Module AzureRM On the Fileserver

Installing Azure File Sync Agent → Registering Server on Cloudendpoint → Create Serverendpoint (Select Path for syncing) → After finishing register additional servers
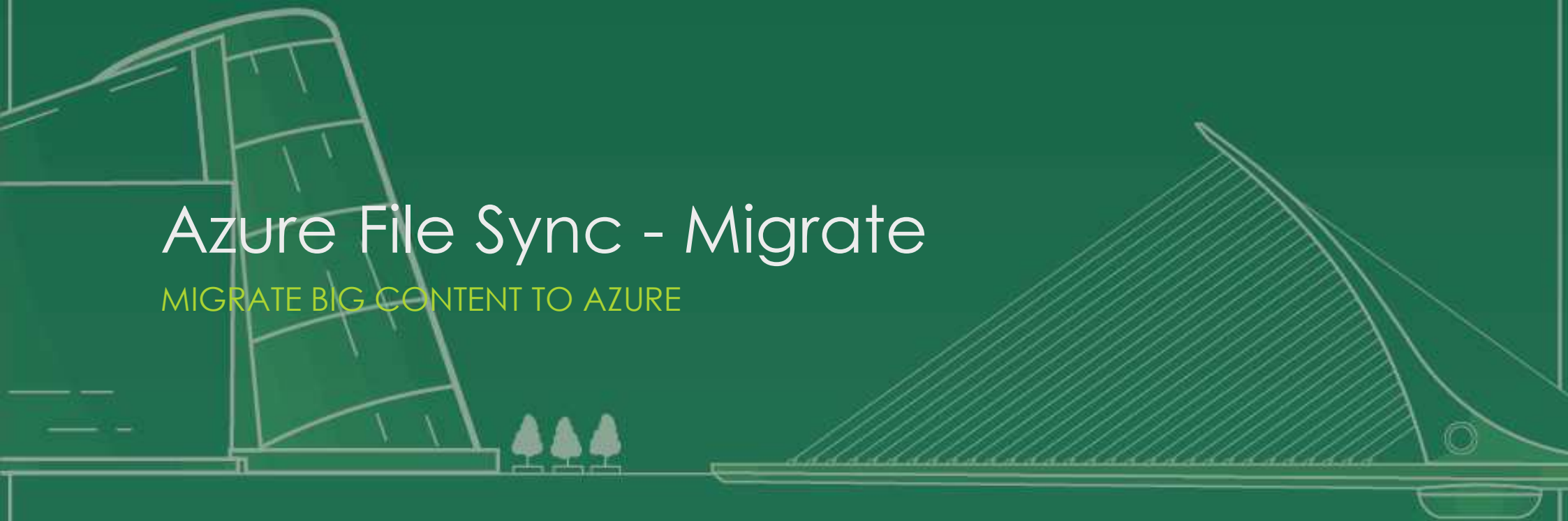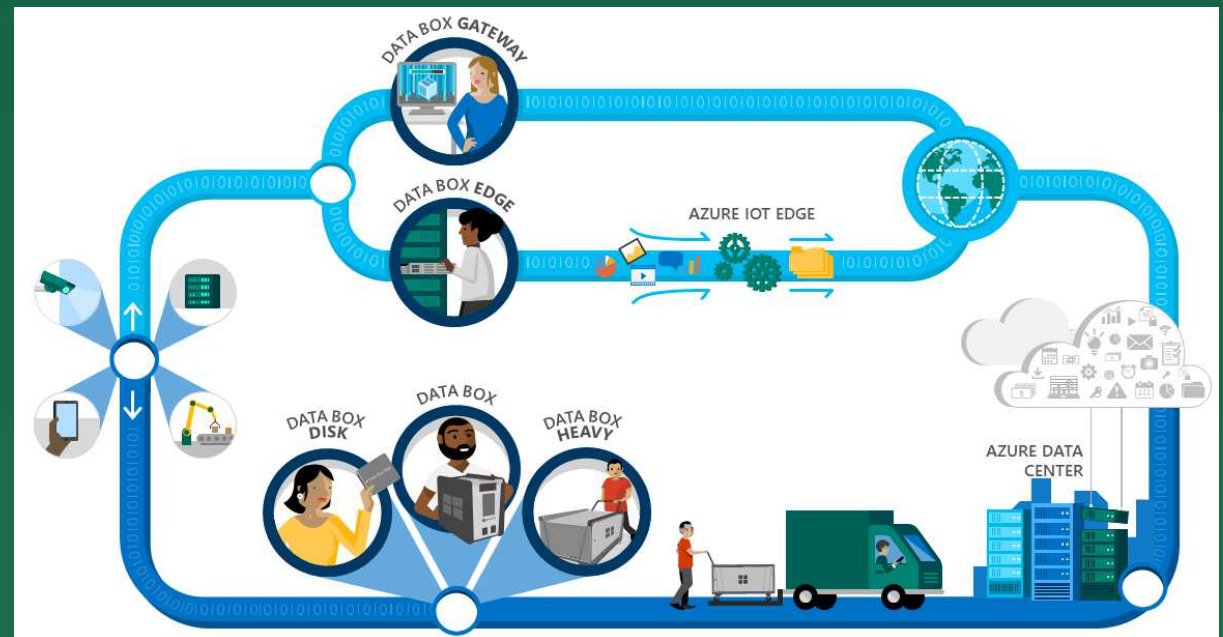
Done! ☺

DEMO Time

AZURE FILE SYNC
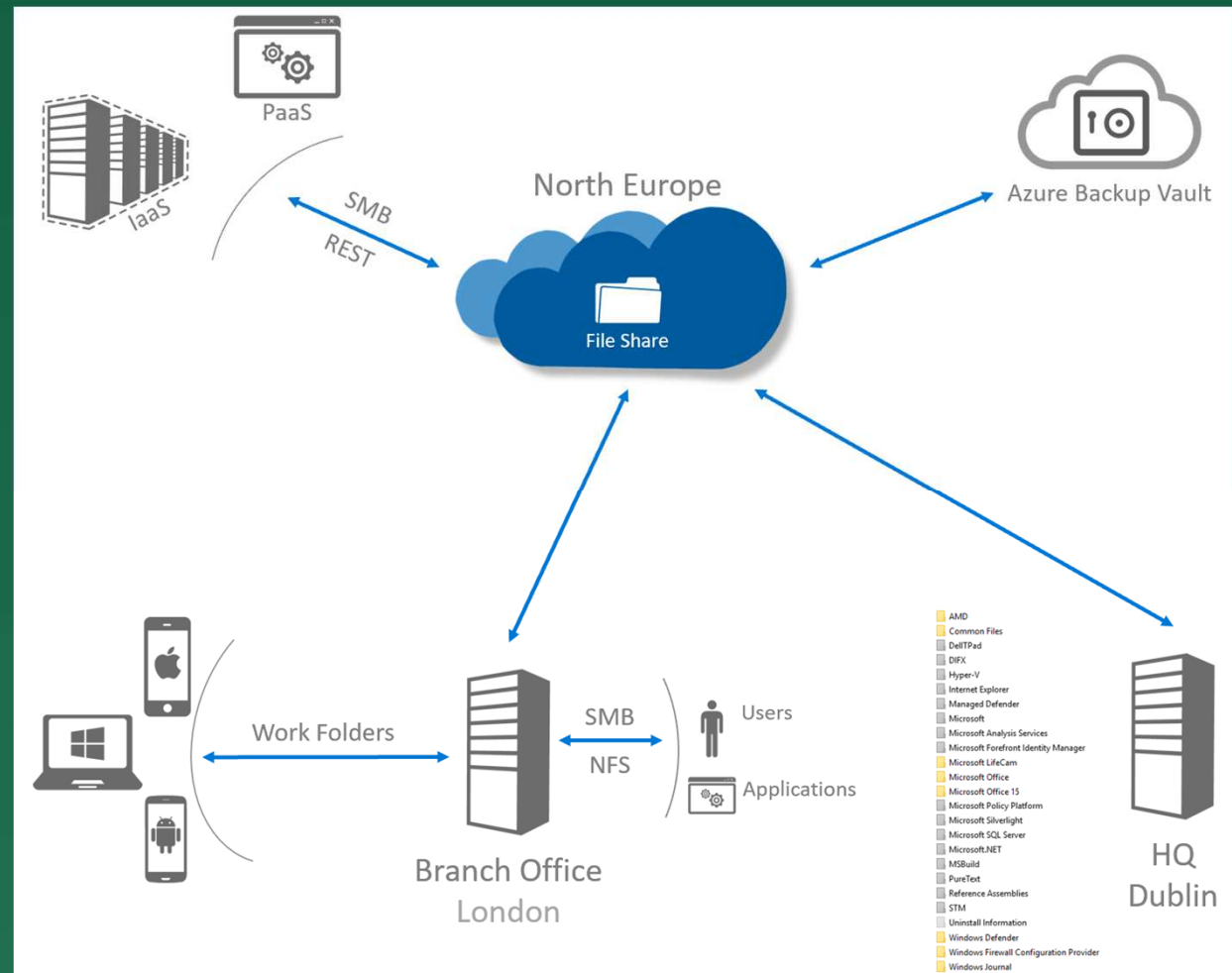
Azure File Sync - Migrate
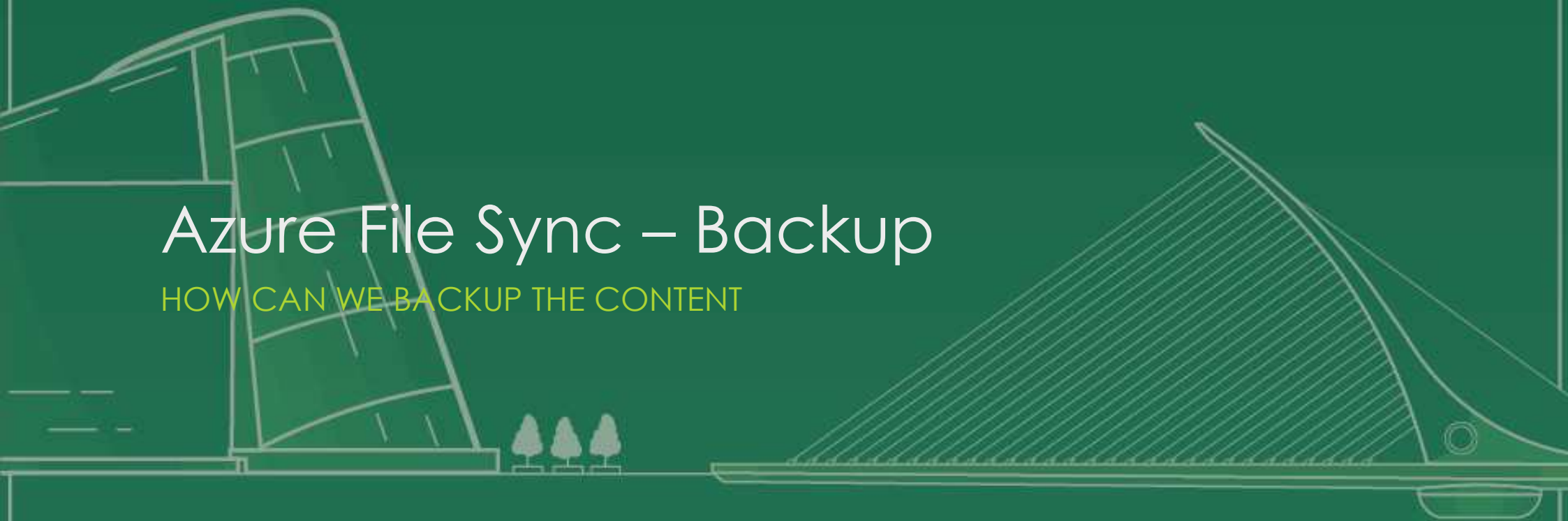
MIGRATE BIG CONTENT TO AZURE

Azure Data Box

- GA since MS Ignite 2018
- For offline data transfer
- Different sizes available
  - 40TB, 100TB, 1PB

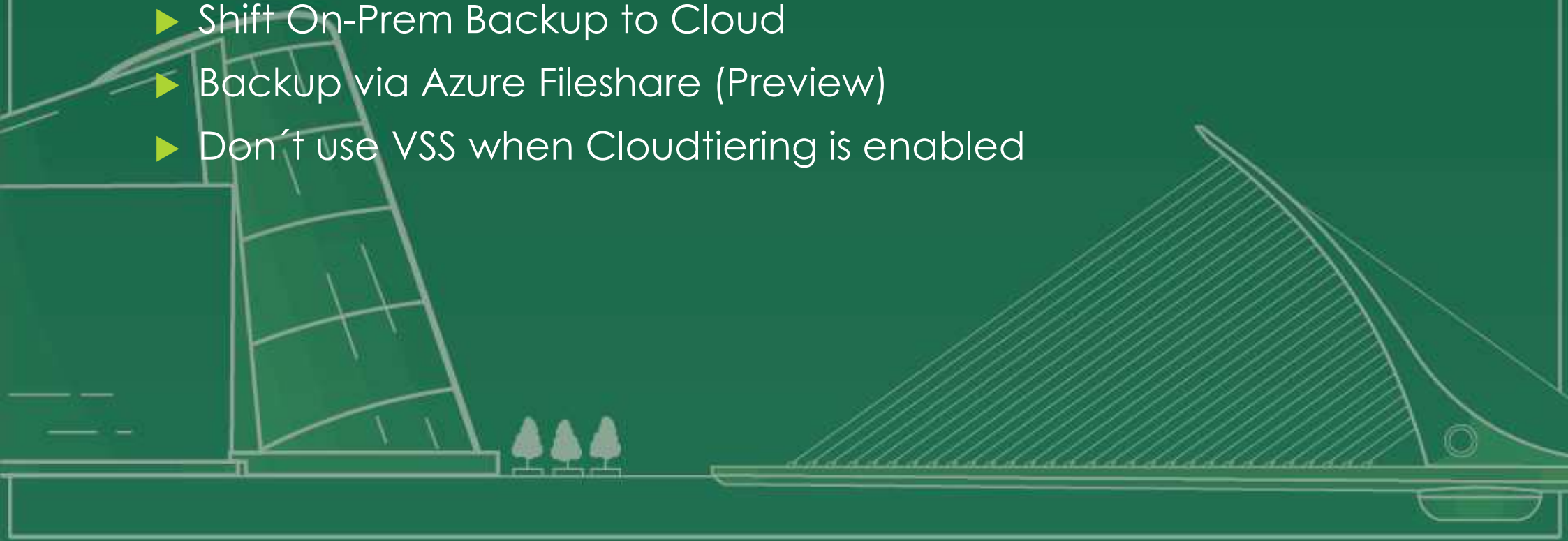https://azure.microsoft.com/en-us/blog/expanding-the-azure-data-box-family/

Azure File Sync – Backup

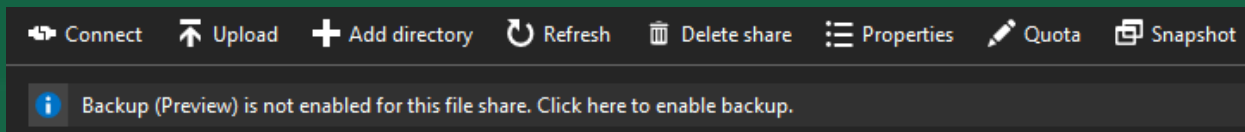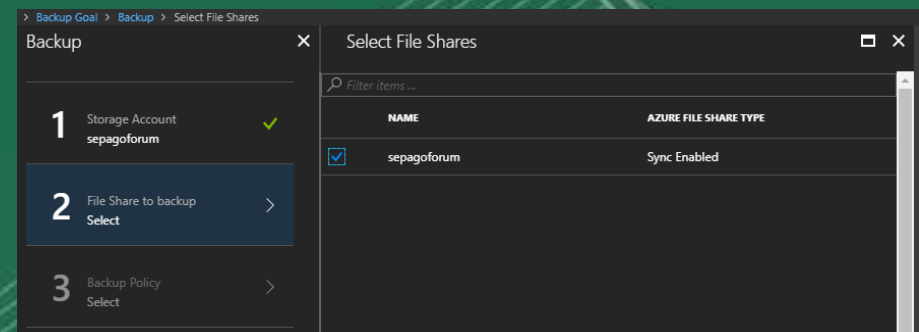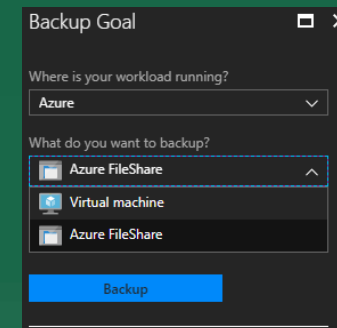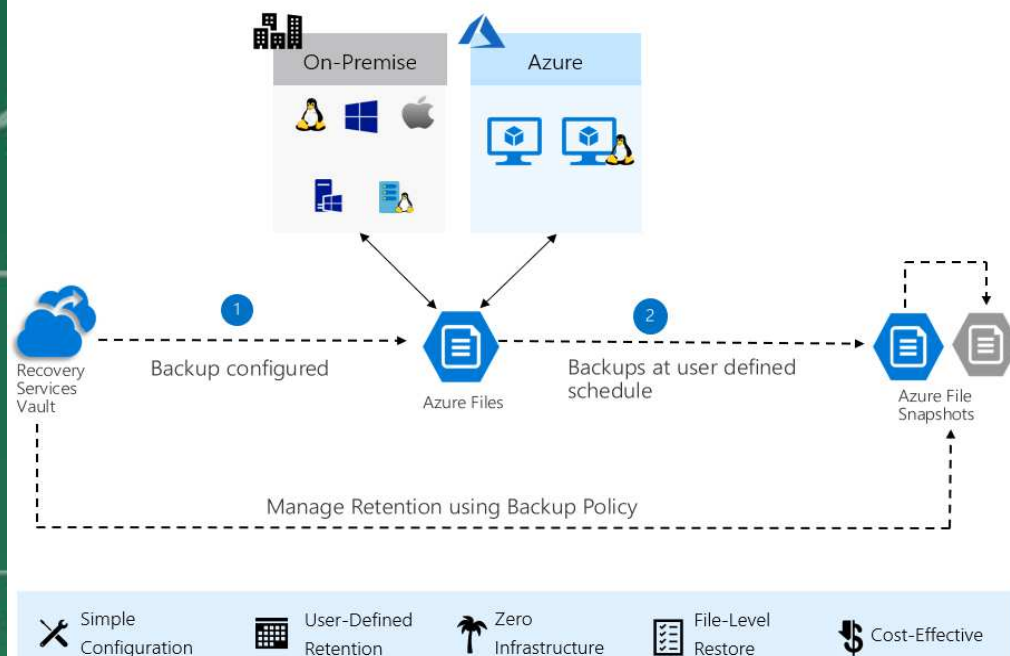HOW CAN WE BACKUP THE CONTENT

AFS – Backup

- ▶ Simple, central backup
- ▶ Shift On-Prem Backup to Cloud
- ▶ Backup via Azure Fileshare (Preview)
- ▶ Don´t use VSS when Cloudtiering is enabled

AFS – Backup

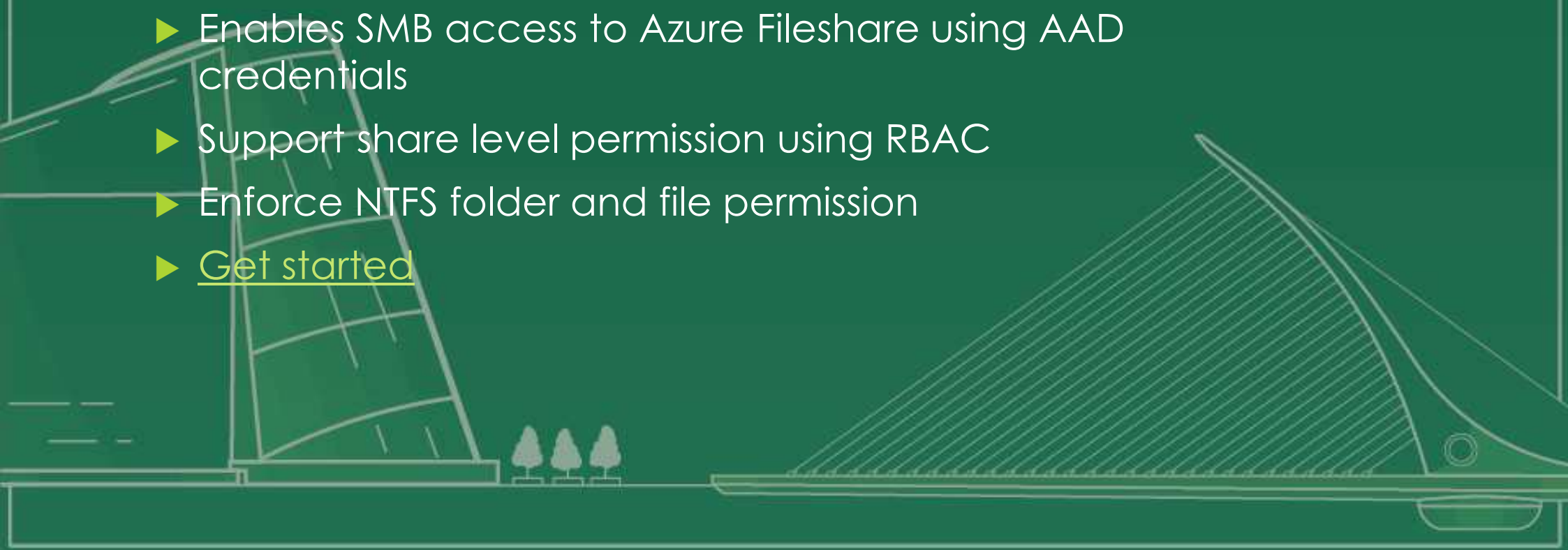# AFS – AzureAD Integration (Preview)

▶ Today only for AzureAD Domain Services (AAD DS)

▶ Enables SMB access to Azure Fileshare using AAD credentials

▶ Support share level permission using RBAC

▶ Enforce NTFS folder and file permission

▶ Get started

AFS – Need to know

- Troubleshooting
    - Don´t remove Server Endpoint and add them a new – can cause data lost
    - Did you enable Cloudtiering, then disable it first via Powershell
- Bandwith
    - It depends on fileshare size
    - Possible to set bandwidth limits
        - Import-Module "C:\Program Files\Azure\StorageSyncAgent\StorageSync.Management.ServerCmdlets.dll"
        - New-StorageSyncNetworkLimit -Day Monday, Wednesday, Friday -StartHour 9 -EndHour 17 -LimitKbps 10000

AFS – On-Prem Hardware Config

▶ DataOn Kepler 47

▶ 2 Node Storage Spaces Direct Cluster

▶ Built for Branch-offices

▶ Will be pre-configured with Azure File Sync

▶ More coming soon

* Image by DataOn

AFS – Conclusion

► Fast installing and stable syncronizing ☺

► Costs: 1 Server Free, 5$ each additional server ☺

► DRaaS for Fileservers ☺

► Supporting for DFS-R and SOFS ☺

► Easily migrate Backup ☺

► Fileshare Limit 100TB since MSIgnite ☺

► Can not change sync frequency 😐

► No support for ACLs in Azure Files (will be coming) 😐

► 1:1 binding between Server and Sync Group ☹

AFS - Links

- [Planning for an Azure File Sync deployment](#)
- [Manage registered servers with Azure File Sync](#)
- [Release notes for the Azure File Sync agent](#)
- [Introducing backup for Azure file shares](#)
- [Feedback for AzureFiles Product Group](#)
- [MS Ignite 2018 – A new era for Azure Files: Bigger, faster, better!](#)
- [MS Ignite 2018 – Azure Files in 2018: Bigger faster better! - BRK2379](#)
- [MS Ignite 2018 – Azure Files & Azure File Sync technical foundation THR2253](#)
- [Azure Pricing Calculator](#)

Q&A

Thank you!