Microsoft Azure Backup

Mike Prachar
Director of Cloud Technologies
mikep@biggreenit.com

BigGreen IT
Revealing the Cloud

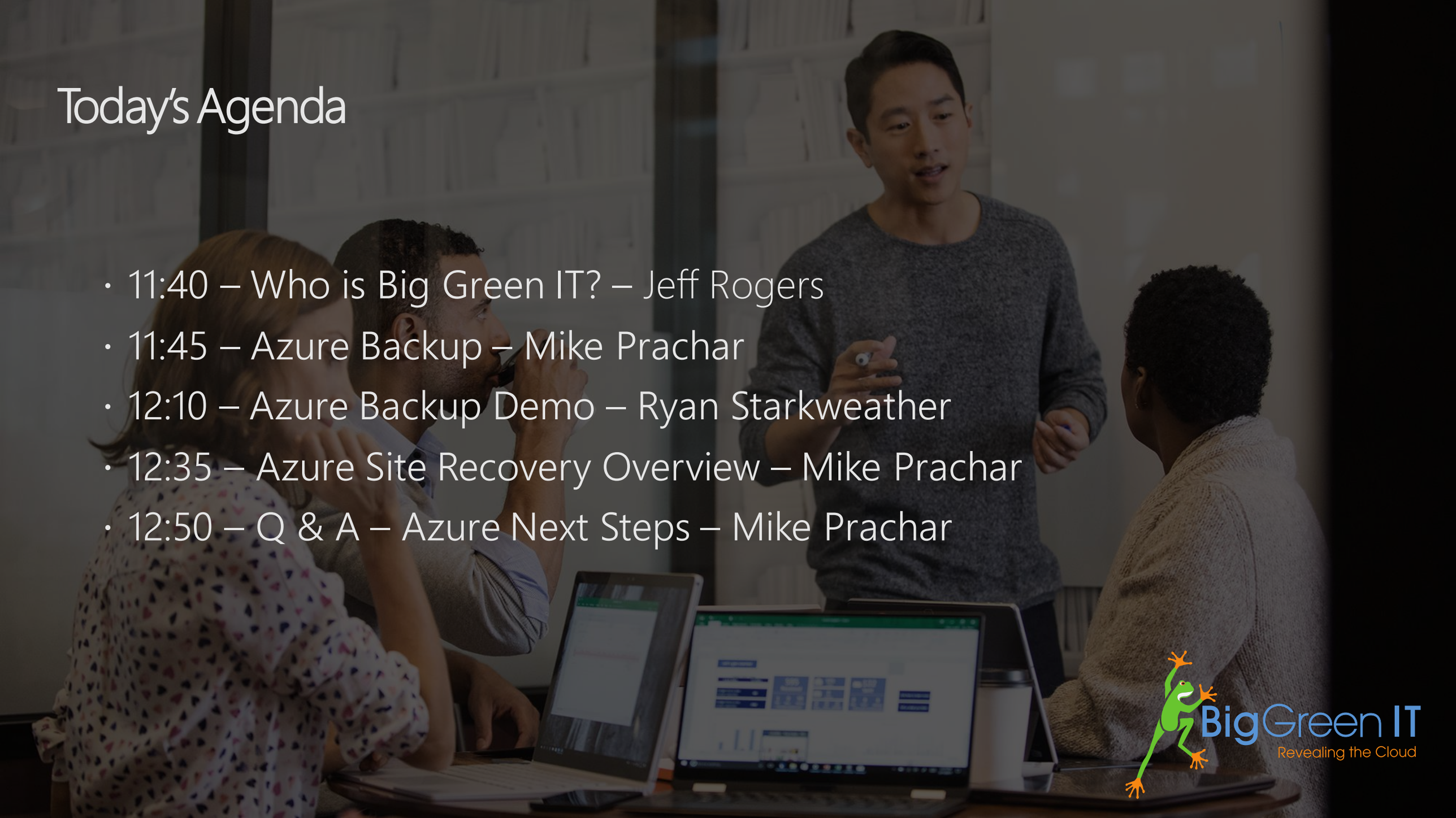
Microsoft Partner

Microsoft

Gold Cloud Platform
Gold Data Platform
Gold Windows and Devices
Silver Cloud Productivity
Silver Small and Midmarket Cloud Solutions

Today's Agenda

- 11:40 – Who is Big Green IT? – Jeff Rogers
- 11:45 – Azure Backup – Mike Prachar
- 12:10 – Azure Backup Demo – Ryan Starkweather
- 12:35 – Azure Site Recovery Overview – Mike Prachar
- 12:50 – Q & A – Azure Next Steps – Mike Prachar



BigGreen IT
Revealing the Cloud

Who is BigGreen IT?

- Quote from StudioWC
  - "I had no idea our transition would be so smooth! Big Green IT was responsive and prompt every step of the way. The nicest team I've ever worked with!"
- Headquartered in Rocklin, CA (Sacramento) with offices in San Diego & Los Angeles
- 2017 Sacramento Business Journal - #1 Fastest Growing Company
- 2017 & 2018 Sacramento Business Journal - Best Place to Work
- Microsoft Gold Platform Partner
- Microsoft Tier 1 Azure and Office 365 Managed Partner
- Microsoft Data Center Optimization (DCO) Partner

- Some of our Microsoft Cloud Clients:

– Summit Funding	1,200 users	Rideout Health	3,400 users
– Red Hawk (Rancheria)	340 users	Tremont Lymon	220 users
– Rego Consulting	150 users	APM	1,400 users
– In-Shape Clubs	1,300 users	ProSearch Strategies	230 Users
– EJ Gallo	7,000 users	Many others in the 20-100 user range	

Gold
Microsoft Partner
Cloud Platform

Microsoft

Azure regions

Azure has more global regions than any other cloud provider—offering the scale needed to bring applications closer to users around the world, preserving data residency, and offering comprehensive compliance and resiliency options for customers.

Azure is "*The World's Computer*"

54 regions worldwide

140 available in 140 countries

* Two Azure Government Secret region locations undisclosed

https://azure.microsoft.com/en-us/global-infrastructure/regions/

Azure: Trusted

Global


ISO 27001


ISO 27018


ISO 27017


ISO 22301


SOC 1 Type 2


SOC 2 Type 2


SOC 3


CSA STAR Self-Assessment


CSA STAR Certification


CSA STAR Attestation

Regional


Argentina PDPA


EU Model Clauses


UK G-Cloud


China DJCP


China GB 18030


China TRUCS


Singapore MTCS


Australia IRAP/CCSL


New Zealand GCIO


Japan My Number Act


ENISA IAF


Japan CS Mark Gold


Spain ENS


Spain DPA


India MeitY


Canada Privacy Laws


Privacy Shield


Germany IT Grundschutz workbook

Industry


PCI DSS Level 1


CDSA


MPAA


FACT UK


Shared Assessments


FISC Japan


HIPAA/ HITECH Act


HITRUST


GxP 21 CFR Part 11


MARS-E


IG Toolkit UK


FERPA

GLBA

FFIEC

Us Gov

Moderate JAB P-ATO

High JAB P-ATO

DoD DISA SRG Level 2

DoD DISA SRG Level 4

DoD DISA SRG Level 5

SP 800-171

FIPS 140-2

Section 508 VPAT

ITAR

CJIS

IRS 1075

https://aka.ms/AzureCompliance

Microsoft Azure Backup

Mike Prachar

Director of Cloud Technologies

mikep@biggreenit.com

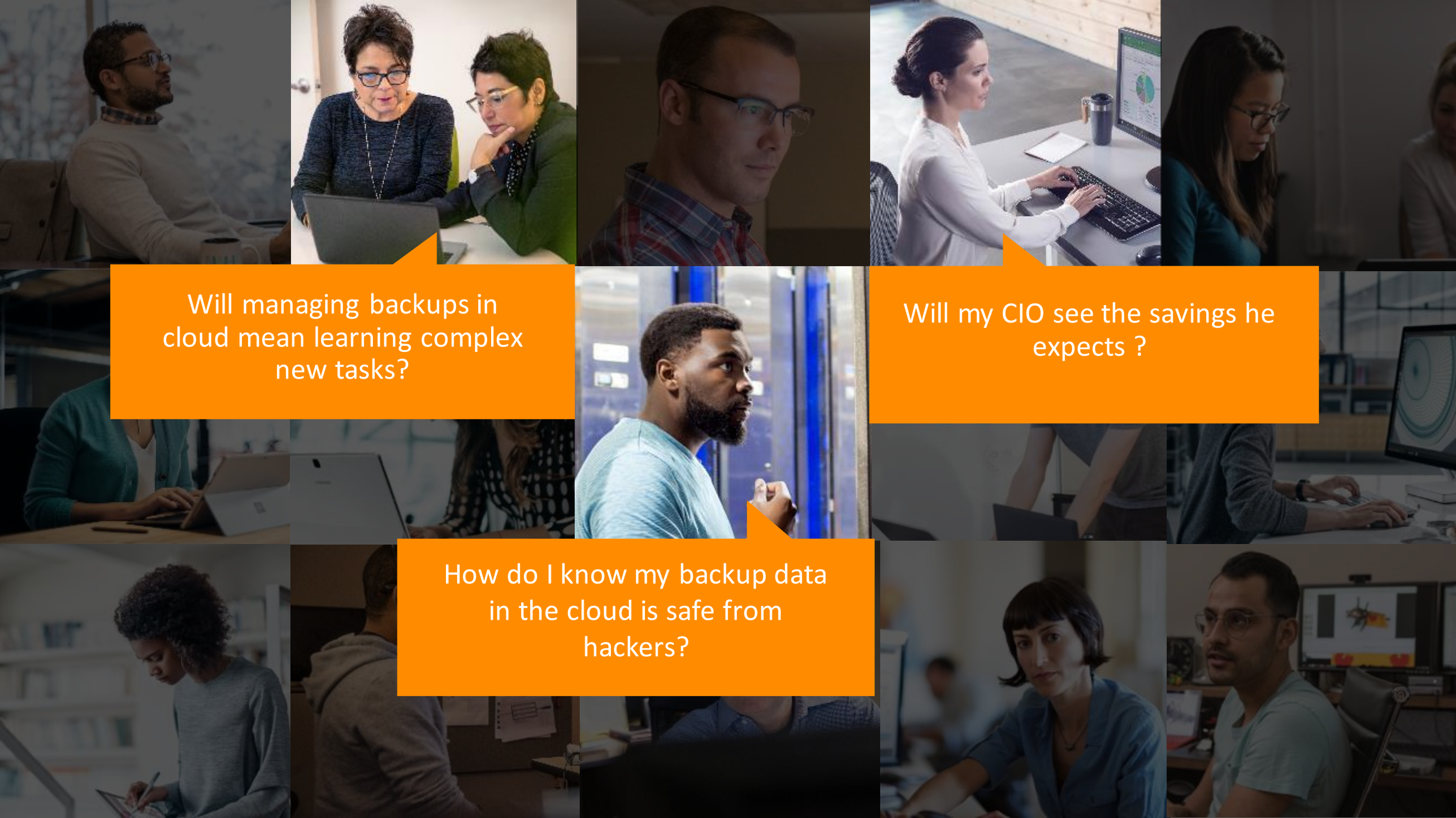
BigGreen IT

Revealing the Cloud

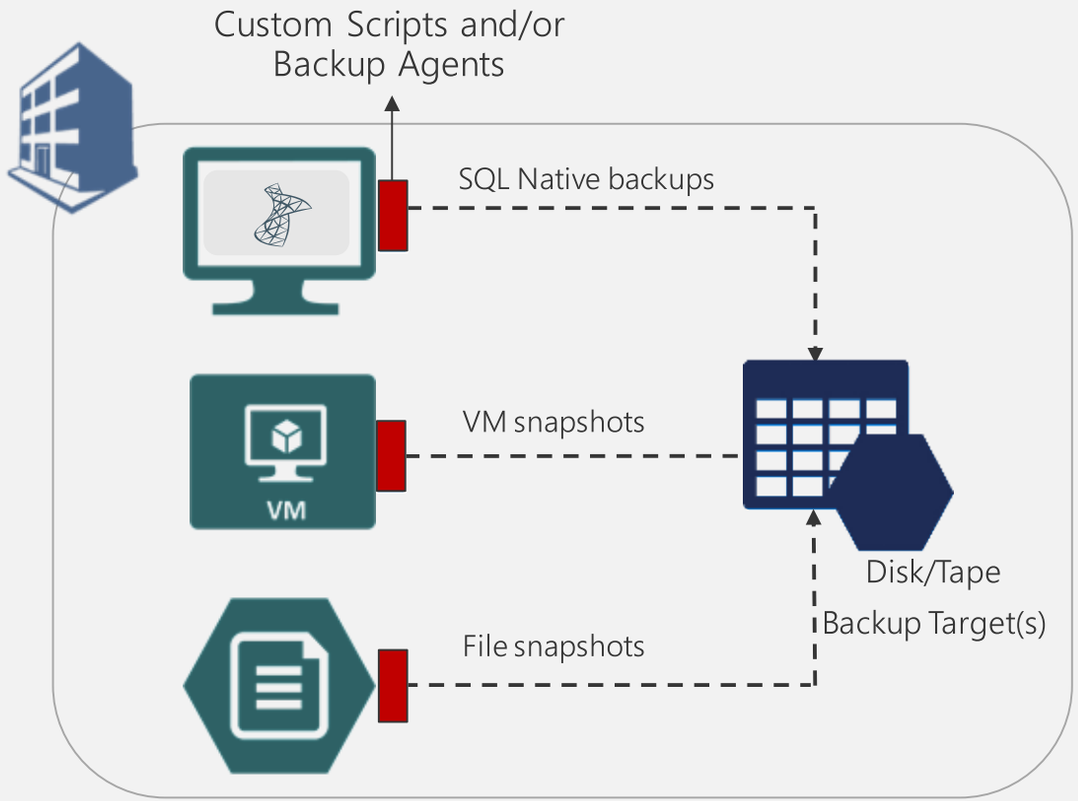
Microsoft Partner

Microsoft

Gold Cloud Platform
Gold Data Platform
Gold Windows and Devices
Silver Cloud Productivity
Silver Small and Midmarket Cloud Solutions

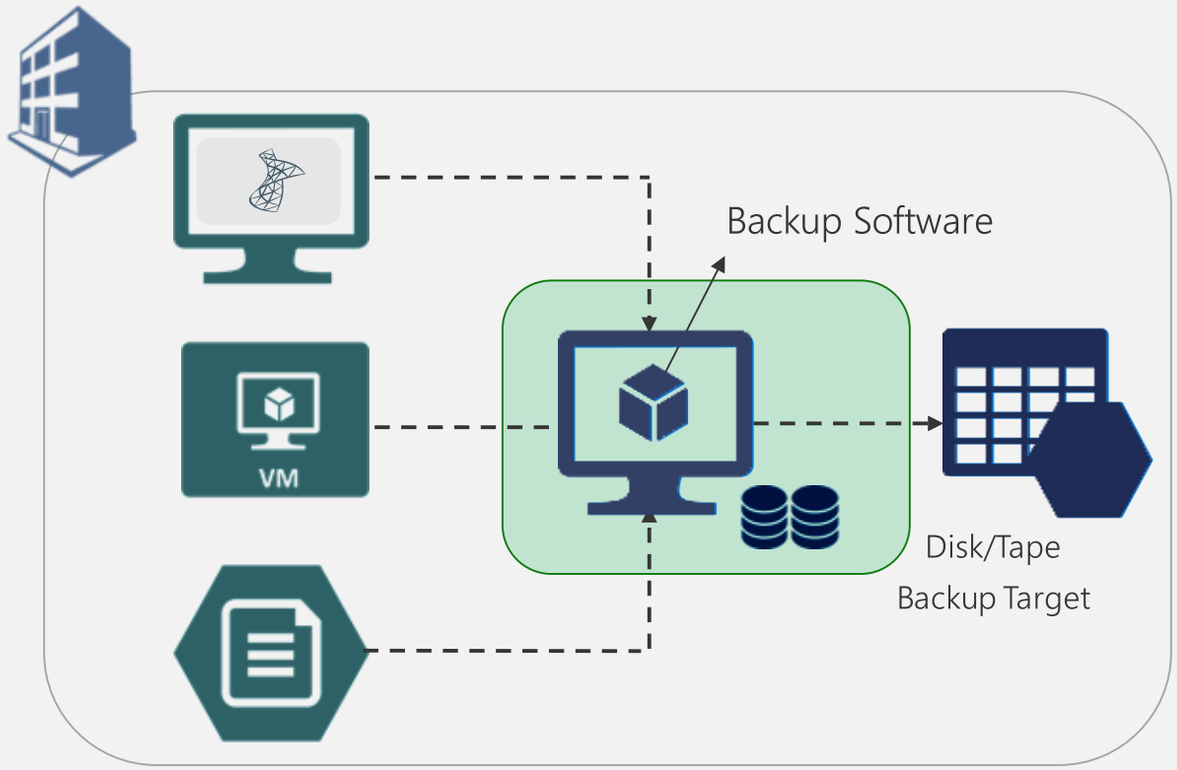

Will managing backups in cloud mean learning complex new tasks?
Will my CIO see the savings he expects ?
How do I know my backup data in the cloud is safe from hackers?

Conventional backup approaches



Need to manage Infrastructure

No Central Management



Need to manage Infrastructure

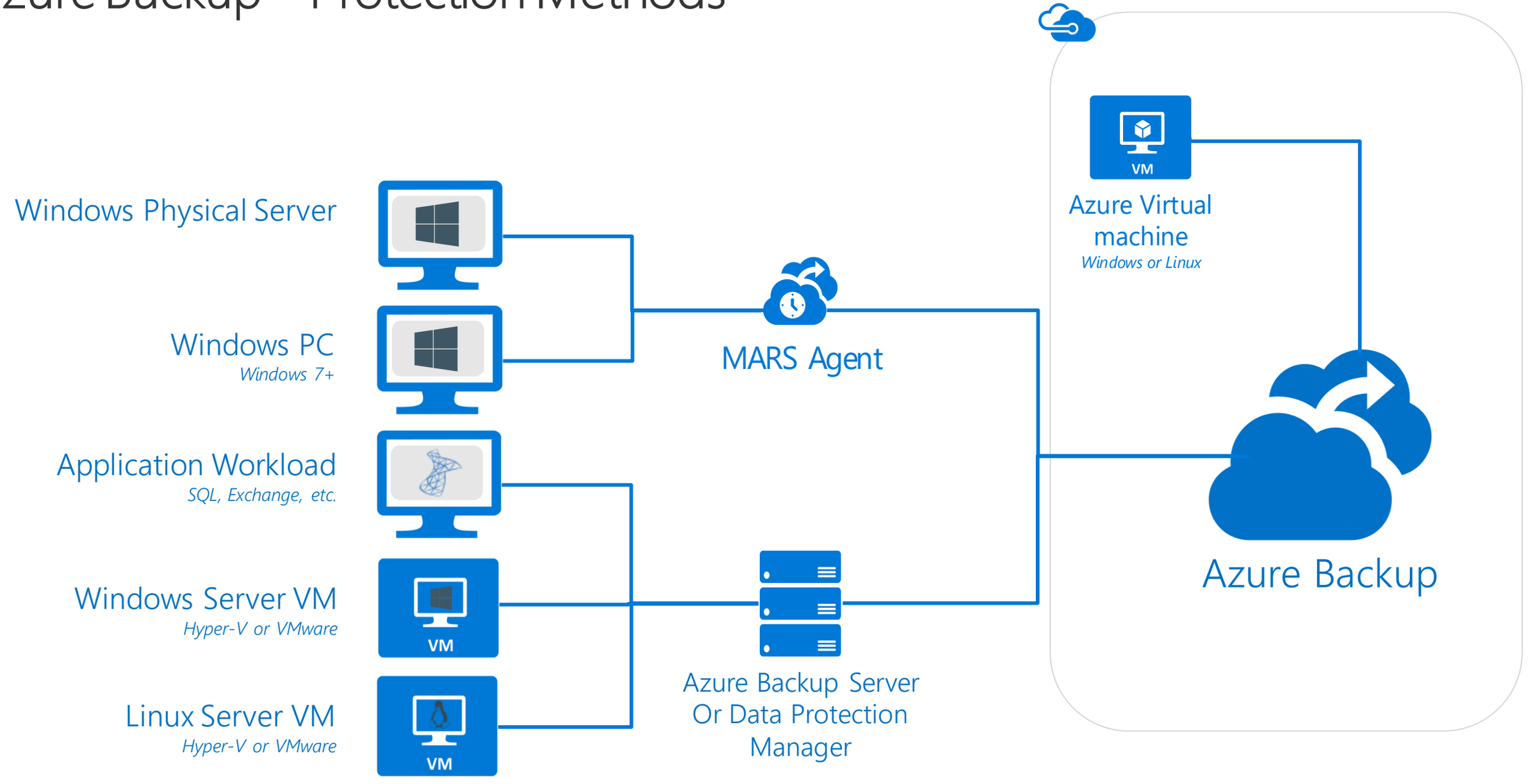
Some Central Management

Azure Backup Architecture - Components

- Recovery Services Vaults (RSV)
- Azure Recovery Services Agent (MARS)
- Azure Backup Server (MABS)

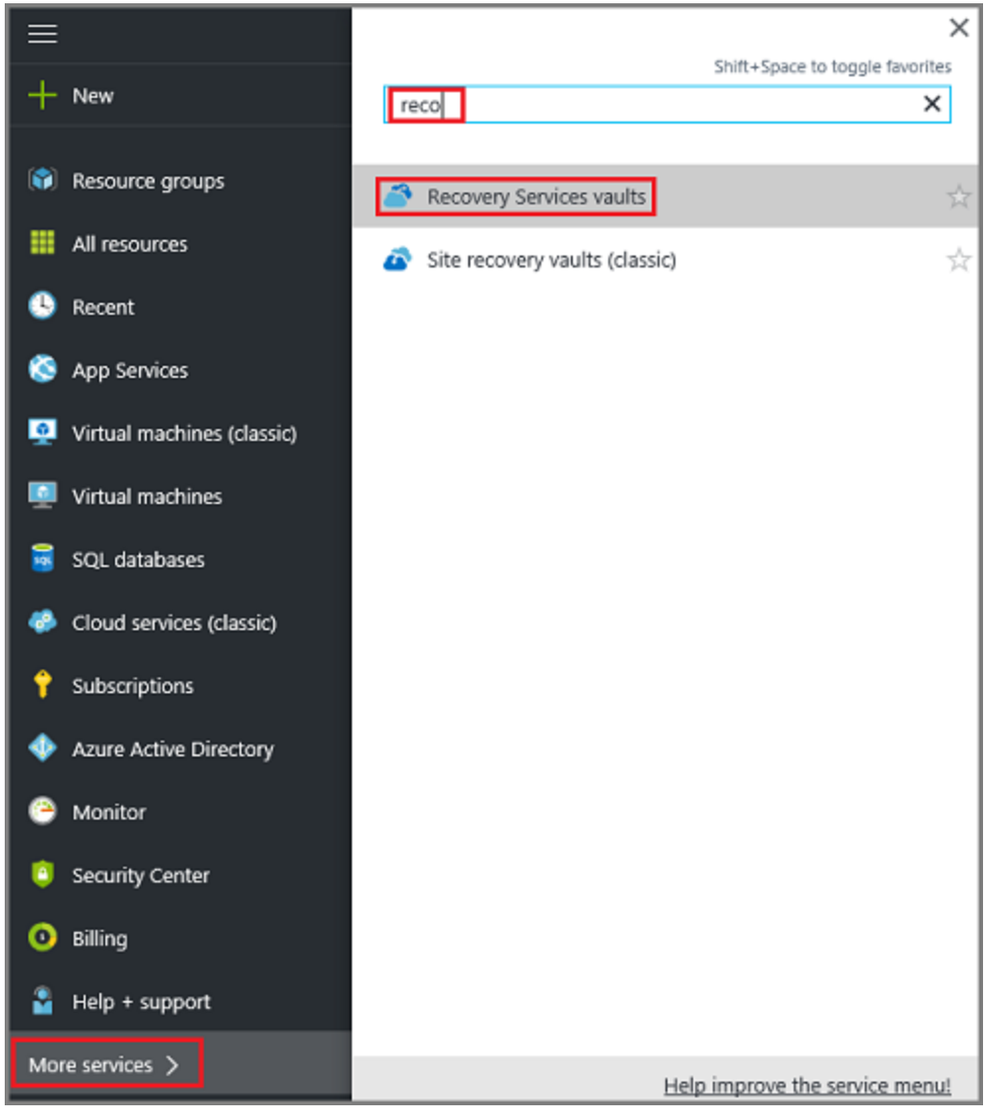
https://docs.microsoft.com/en-us/azure/backup/backup-introduction-to-azure-backup

Azure Backup – Protection Methods



Recovery Services Vaults

- A Recovery Services vault is your storage account for backups
- The data is typically copies of your data, or configuration information for virtual machines (VMs), workloads, servers, or workstations under protection
- Recovery Services vaults support System Center DPM, Windows Server, Azure Backup Server, etc.
- Limits: 1,000 VMs per vault, 500 vaults per subscription per region, 2 PB per vault



Azure Backup (MARS) agent

- An agent you deploy onto a target OS
- Back up files and folders on physical or virtual OS (VMs can be on-premises or in Azure)
- No separate backup server required
- Limits:
  - Backup up to 3 times per day
  - Not application aware; file, folder, and volume-level restore only

Azure Backup Server (MABS)

- Can be installed as a service on an existing server
- Inherits much of the workload backup functionality from Data Protection Manager (DPM) except:
  - No tape support
  - No System Center license needed
  - Requires an Azure Subscription

Azure Backup Server (MABS)

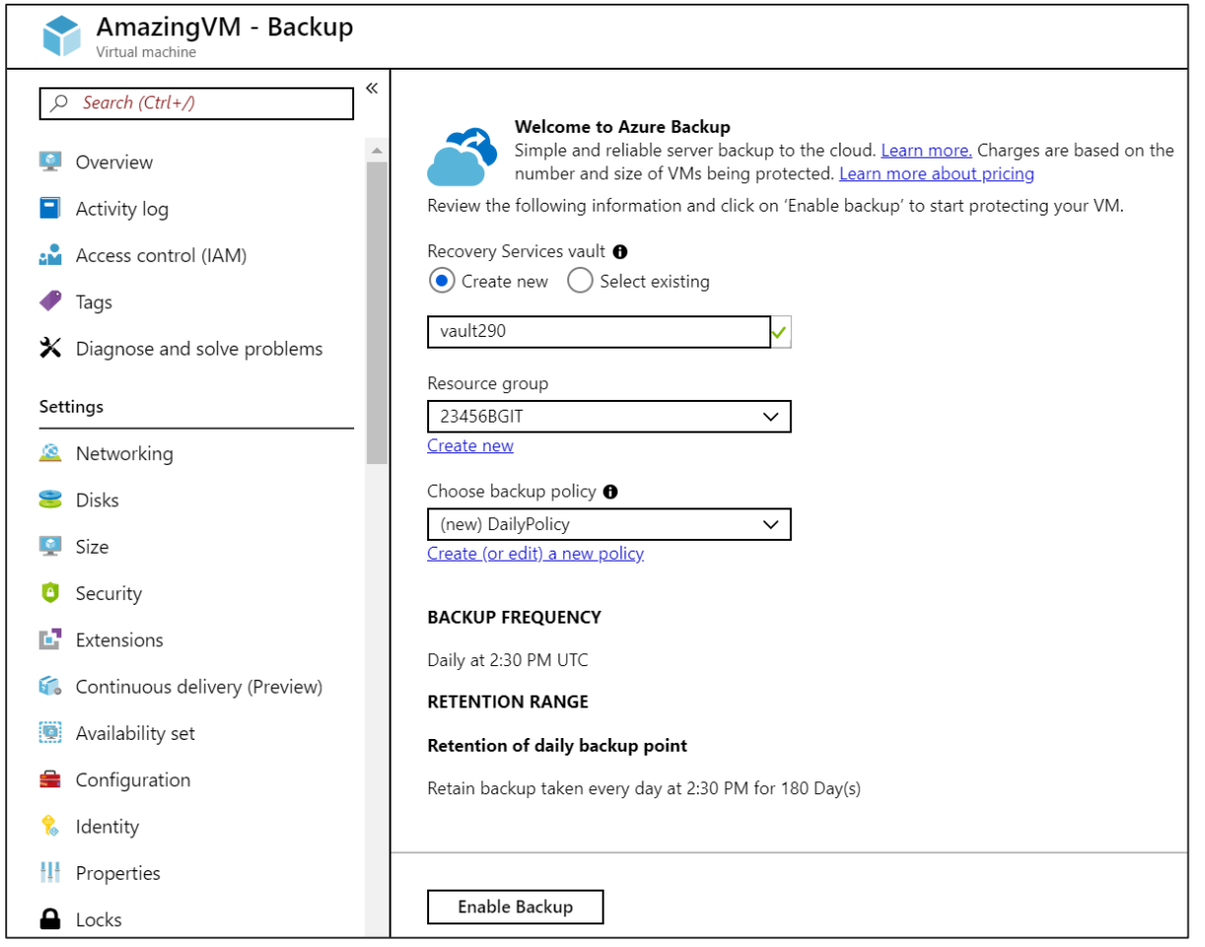
- Enhanced Capabilities:
  - Application-aware snapshots (VSS)
  - Full flexibility for when to take backups
  - Recovery granularity (all)
  - Back up and restore VMware and Hyper-V VMs
  - Linux support on Hyper-V and VMware VMs
  - Disk to Disk to Cloud
  - Full On-premise backup

Backup Method Comparison

Component	Benefits	Limits	What is protected?	Where are backups stored?
Azure Backup Agent (MARS)	• Back up files and folders on physical or virtual Windows OS (VMs can be on-premises or in Azure) • No separate backup server required	• Backup up to 3 times per day • Not application aware; file, folder, and volume-level restore only • No support for Linux	• Files • Folders	• Recovery Services vault
Azure Backup Server (MABS)	• App aware snapshots (VSS) • Full flexibility for when to take backups • Recovery granularity (all) • Can use Recovery Services vault • Linux support on Hyper-V and VMware VMs • Back up and restore VMware VMs • Does not require a System Center license	• Cannot back up Oracle workloads • Always requires an active Azure subscription • No support for tape backup	• Files • Folders • Volumes • VMs • Applications • Workloads	• Recovery Services vault • Locally attached disk

Azure IaaS VM Backup

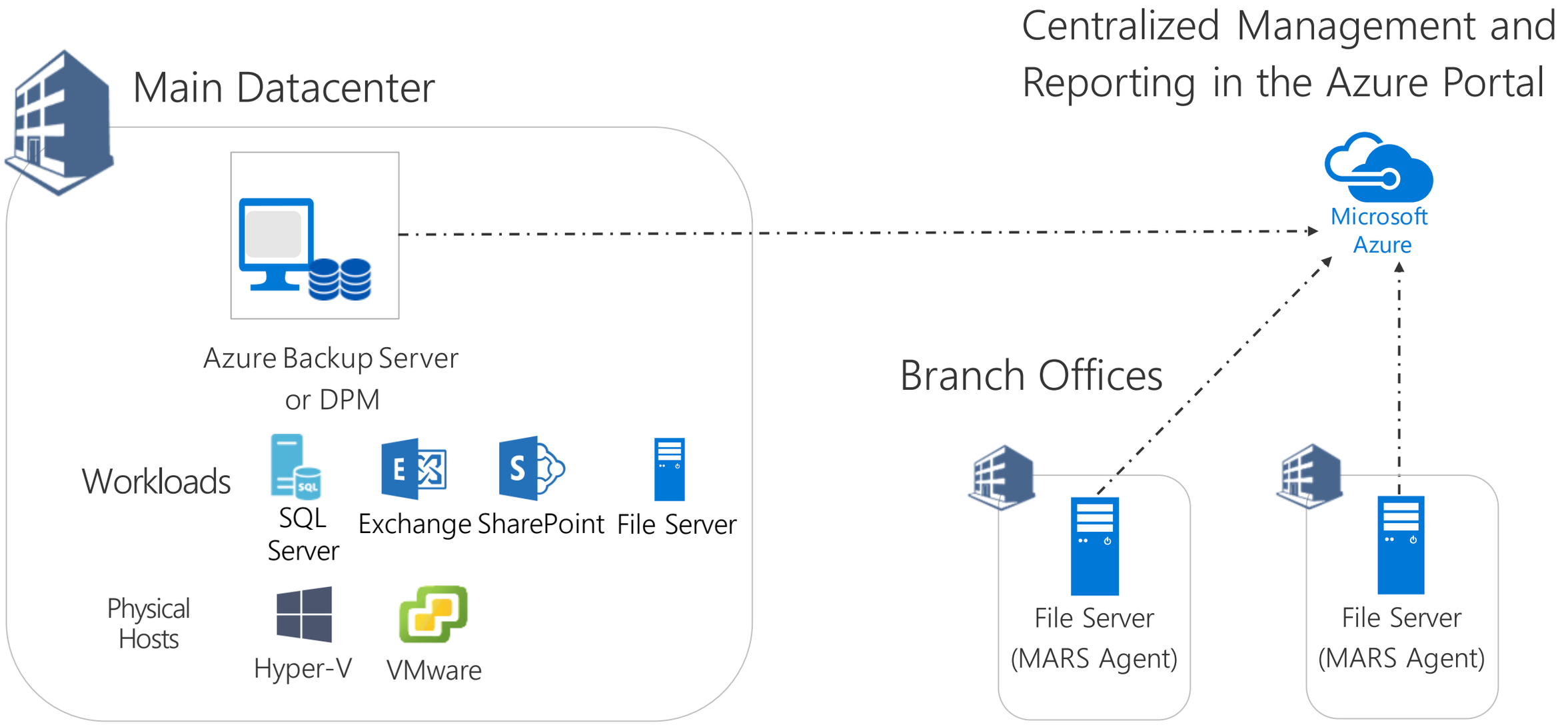
- Built right into the portal – easy setup
- Application-aware snapshots (VSS)
- Native backups for Windows/Linux
- No specific agent installation required
- Fabric-level backup with no backup infrastructure needed
- Limits
  - Backs up VMs once per day (Use Snapshots for more granularity)
  - Cannot back up on-premises infrastructure



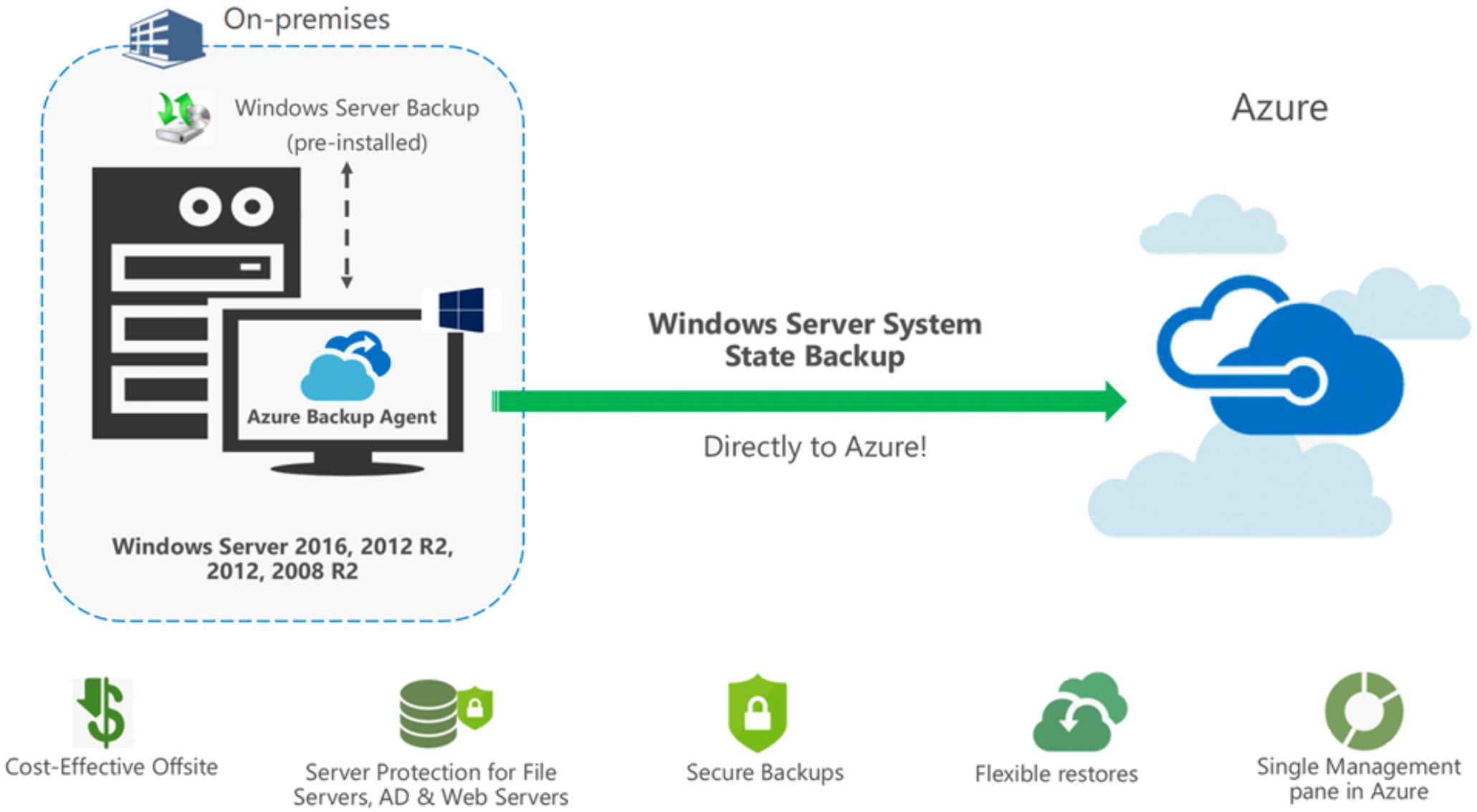
Deployment Scenarios

Component	Can be deployed in Azure?	Can be deployed on-prem?	Target Storage
Azure Backup (MARS) agent	Yes	Yes	RSV
Azure Backup Server	Yes	Yes	RSV Local Disk
Azure IaaS VM Backup	Yes	No	RSV

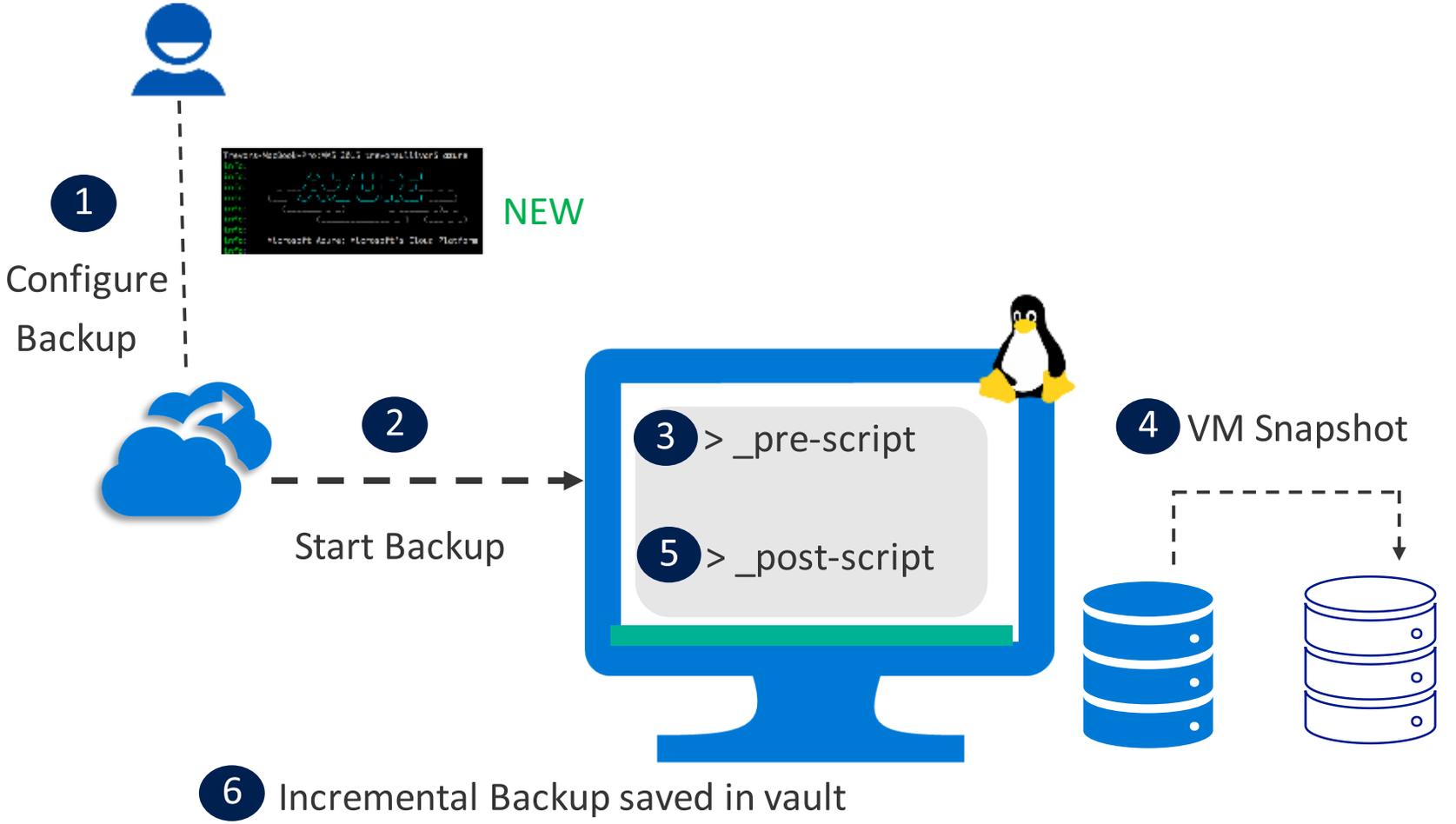
Multi-location deployment model



Windows Server System State Backup



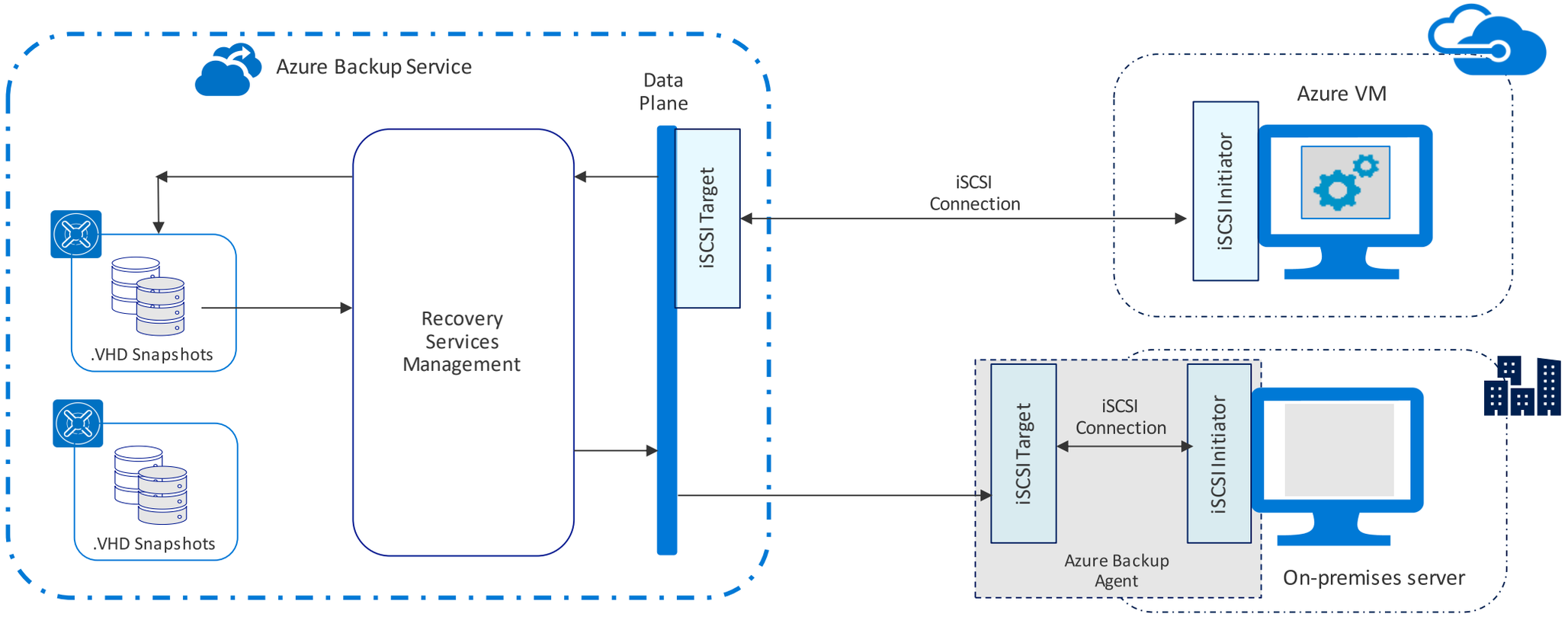
Linux application-consistent backup



App consistent backup

Open support platform

Azure Backup – Instant Restore (Restore-as-a-Service)

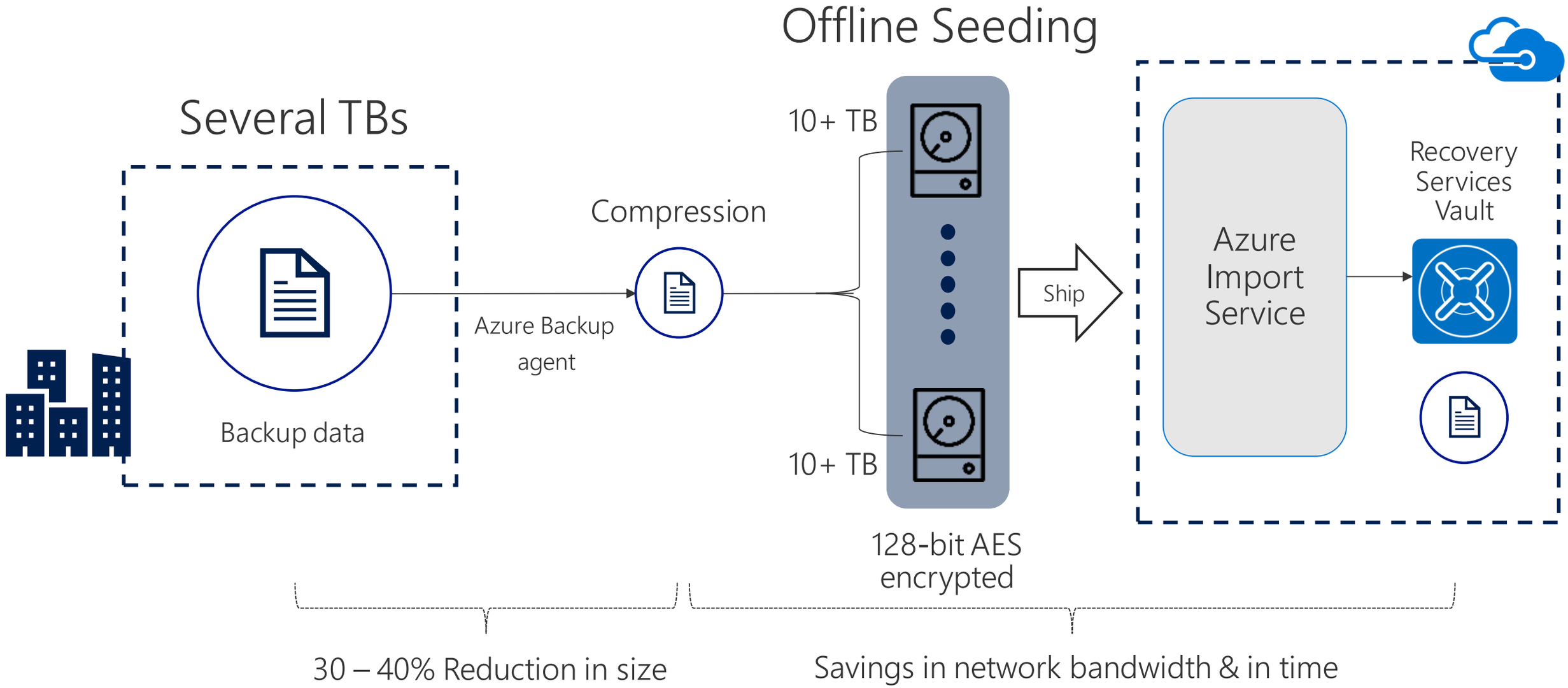


No infrastructure

Inspect before Restore

Consistent

Azure Backup – Seeding Data With Your Own Drives



Azure Data Box Family

Transfer via Shipping

Data Box Disk

- Import/Export
  - Ship standard hard drives to Azure Datacenter for import
  - Capacity: Drive dependent
  - Internal 2.5 inch SSD and 2.5" or 3.5" SATA II or III
  - Availability: Currently Available
- Disk Rental
  - USB3 external drives
  - Capacity: 4TB/8TB
  - Availability: Preview Mid CY18

Data Box

- Copy data onto Data Box then return it to Azure Datacenter for import
- Capacity: ~100 TB
- < 50 lbs – uses standard shipping
- Ruggedized, tamper and water resistant
- SMB Interface
- Large Fleet Size
- Automated Ordering & Managed Service in Azure
- Availability: Currently in Preview, GA Q3 CY18

Data Box Heavy

- Works just like data box but PB capacity.
- Capacity: ~1 PB
- ~500 pounds – ships via freight shipping
- Ruggedized, tamper and water resistant
- SMB Interface
- Automated Ordering & Managed Service in Azure
- Availability: Preview Q3 CY18

Transfer via Network

Data Box Edge

- Copy files over your local network to Data Box Edge and it will upload them to any Azure Datacenter
- 10 TB local SSD storage
- 1U chassis
- SMB or NFS Interface
- Virtual Machine version available
- Edge compute functionality for IoT, Data, Media, etc
- Availability: Preview Q3 CY18

Azure Backup – Seeding Data With Data Box

Other media import options available via partners (tape, etc.)

Data Box Disk

PREVIEW

Microsoft sends you SSD disks for the duration of the service.

40 TB

- 35 TB usable capacity
- Up to 5 disks per order
- Supports Azure blobs
- Copy data to 1 storage account
- USB 3.1/SATA interface

$55 Per order
+$5/Day/Drive
After 3 Days

Data Box

Microsoft sends you a transfer device for the duration of the service.

100 TB

- 80 TB usable capacity
- 10 day use at no extra cost
- Supports Azure blobs, files
- Copy data across 10 storage accounts
- 1x1/10 Gbps RJ45, 2x10 Gbps SFP+ interface

$345 Per order
+$15/Day
After 10 Days

Data Box Heavy

PREVIEW

Microsoft sends you a freight device for the duration of the service.

1000 TB

- 800 TB usable capacity
- 20 day use at no extra cost
- Supports Azure blobs, files
- Copy data across 10 storage accounts
- 2x1 Gbps, 4x40 Gbps interface

$3,500 Per order
+$50/Day
After 20 Days

Send your own disks

Send your own disks for data transfer.

1 TB onwards

- Send up to 10 disks per order
- Supports SATA/SSD disks
- Supports Azure blobs, files
- Copy data to 1 storage account
- SATA II/III interface

$80 import fee per drive

Azure Data Box Types

Data Box Disk

Data Box

Data Box Heavy

Azure Backup Security

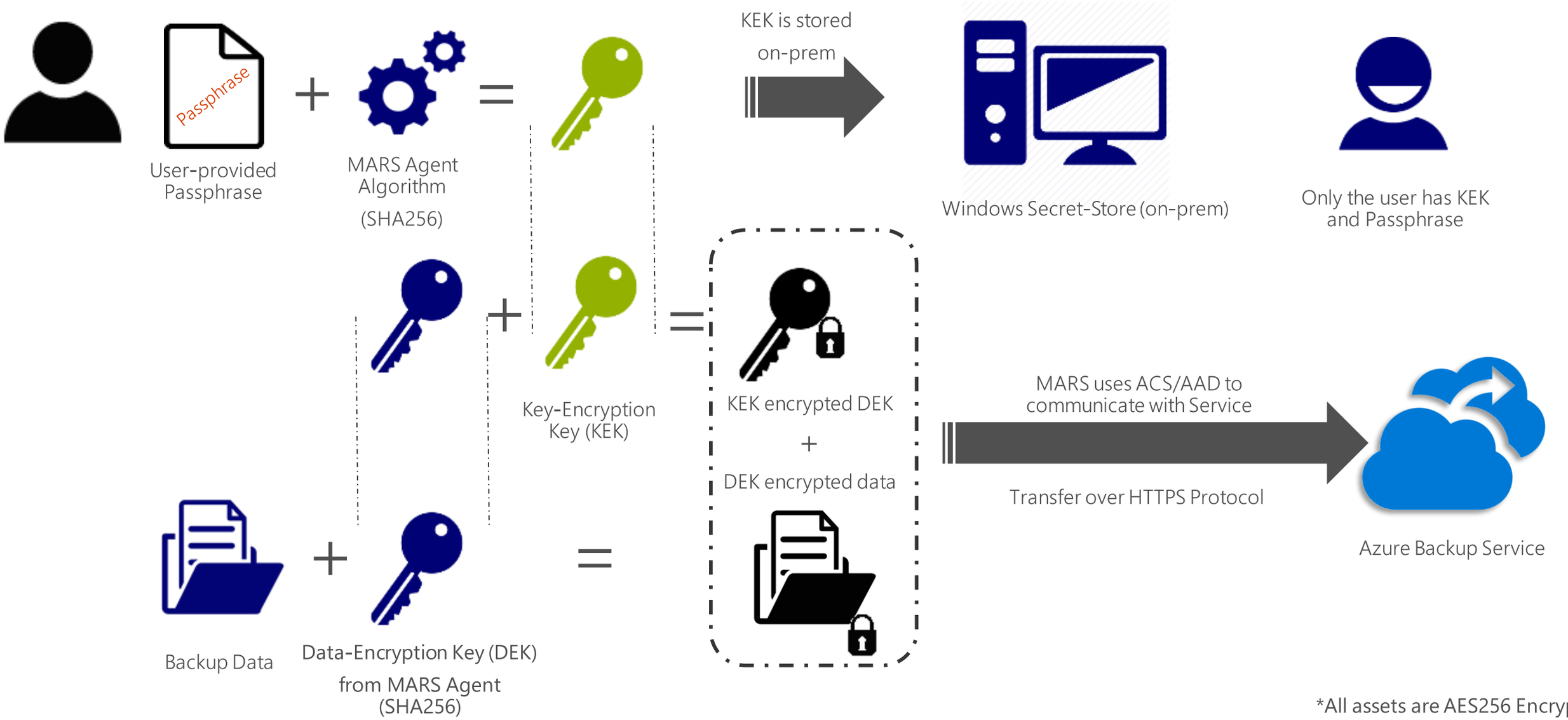
BigGreen IT
Revealing the Cloud

Microsoft Partner

Microsoft

Gold Cloud Platform
Gold Data Platform
Gold Windows and Devices
Silver Cloud Productivity
Silver Small and Midmarket Cloud Solutions

Azure Backup Encryption



*All assets are AES256 Encrypted

Ransomware protection - Enhanced Security for Backups included

Protect

- Security PIN for multiple layers of authentication
- Support for Azure Disk Encryption (ADE) VMs
- Hybrid Backup encryption and Storage side encryption (SSE)
- RBAC for restricted access to key operations

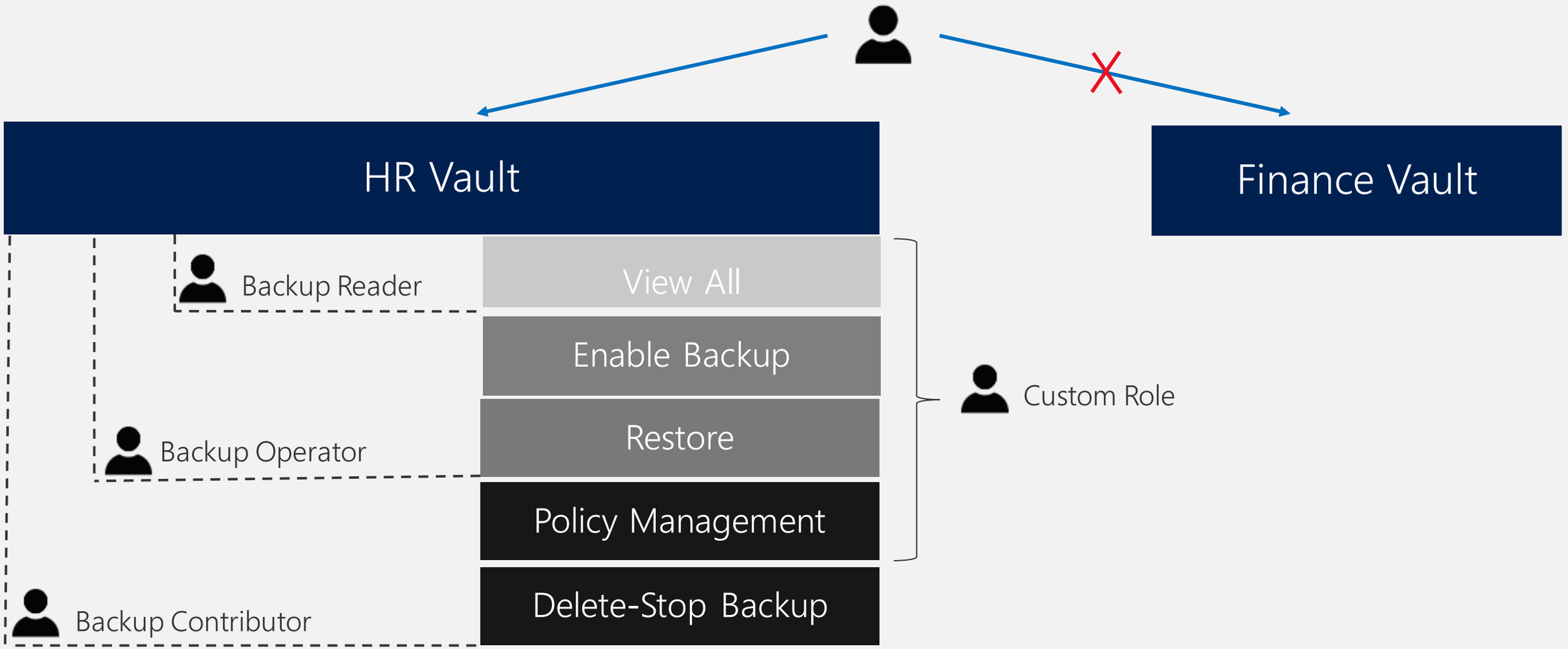
Alert

- Portal based alerts for critical operations like re-encrypting data using passphrase
- Email notifications for operations impacting availability of backup data like delete backups

Recover

- Store deleted data on cloud for additional 14 days
- Recover using alternate server in case original server is unavailable

Isolation and Access Control



Monitoring & Reporting

BigGreen IT
Revealing the Cloud

Microsoft Partner

Microsoft

Gold Cloud Platform
Gold Data Platform
Gold Windows and Devices
Silver Cloud Productivity
Silver Small and Midmarket Cloud Solutions

Monitoring and Reporting

What's my storage consumption

Is my backup healthy?

Can I see trends in my system?

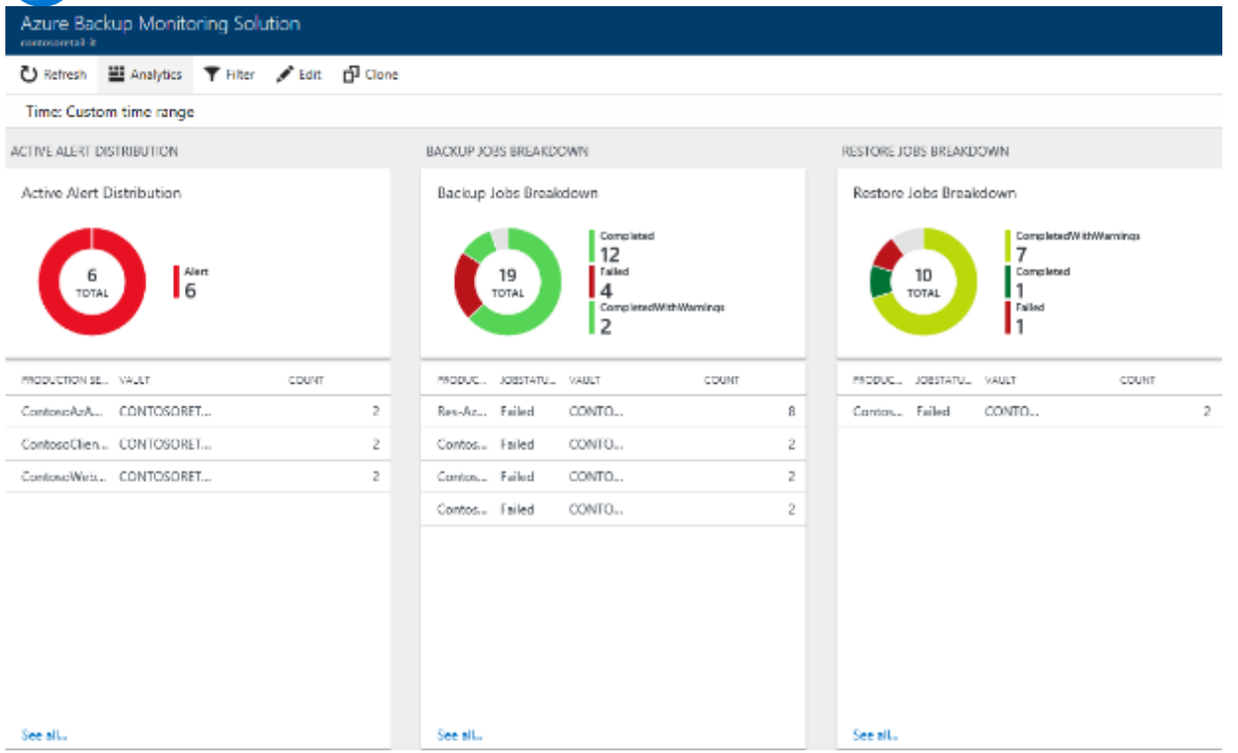
Azure Backup Monitoring with Log Analytics

Azure VM Backup

Azure Backup Agent Backup

Data Model

Log Analytics



No infrastructure

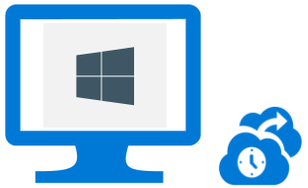
Enterprise Wide

Custom Queries (KQL)

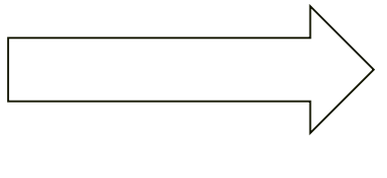
ITSM Integration

Azure Backup Reports with Power BI

Azure VM Backup



Azure Backup Agent Backup



Azure Storage

Data Model
&
Cubes

Power BI Reports

No infrastructure

Enterprise Wide

Custom Reports

Access Control

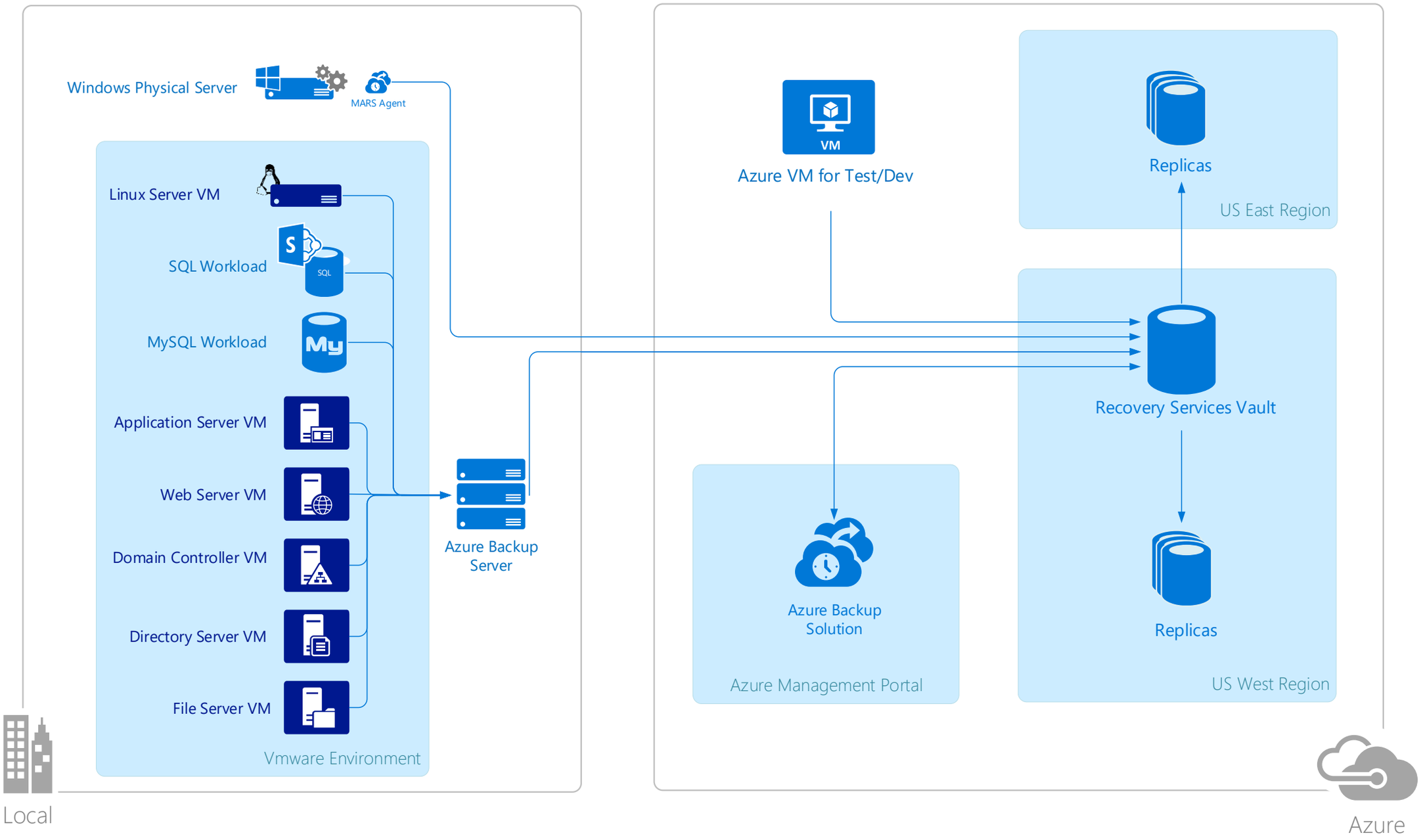
Azure Backup Pricing

Azure Backup

Instance < or = 50 GB	$5 + storage consumed
Instance is > 50 but < or = 500 GB	$10 + storage consumed
Instance > 500 GB	$10 for each 500 GB increment + storage consumed

- Storage starts at $0.0224 per GB Locally Redundant, $0.0448 for Geo Redundant
  - Big Green IT can provide detailed pricing estimates based on number of recovery points and desired retention policies
- Free Restores: No data egress charges
- Azure BYOD Import/Export service: $80 Per Drive
- Log Analytics: Free 500MB/Day 7-day Retention
  - Or: $2.30 per GB of data, customizable retention period
- Power BI: Free up to 1GB total storage, $10 per user up to 10 GB total storage

Azure Backup Sample Diagram



Demo Azure Backup

Ryan Starkweather

Microsoft Partner

Microsoft

Gold Cloud Platform
Gold Data Platform
Gold Windows and Devices
Silver Cloud Productivity
Silver Small and Midmarket Cloud Solutions

BigGreen IT
Revealing the Cloud


Azure
Your vision. Your cloud.
BigGreen IT
Revealing the Cloud
Gold
Microsoft
Partner
Microsoft
Microsoft

Azure Site Recovery
Overview

Mike Prachar

Director of Cloud Technologies

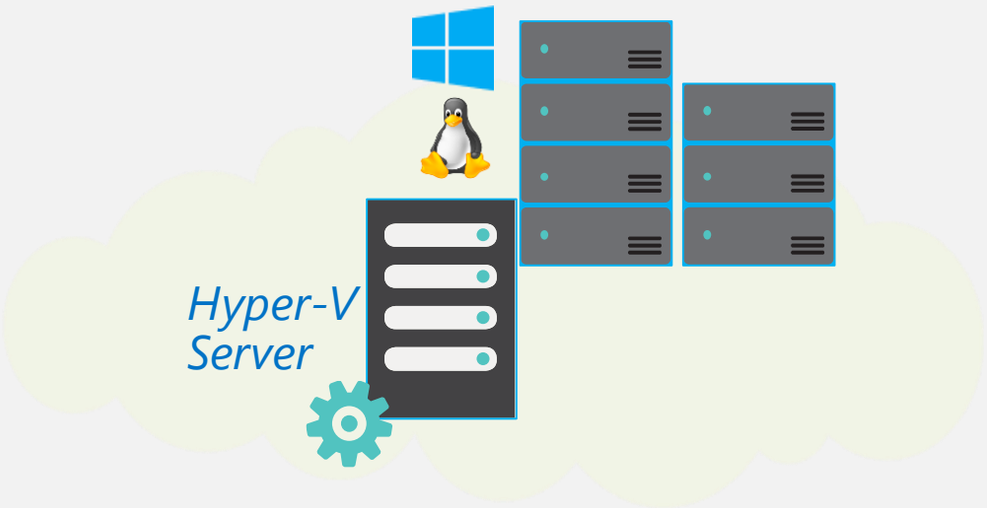
mikep@biggreenit.com

Microsoft Partner

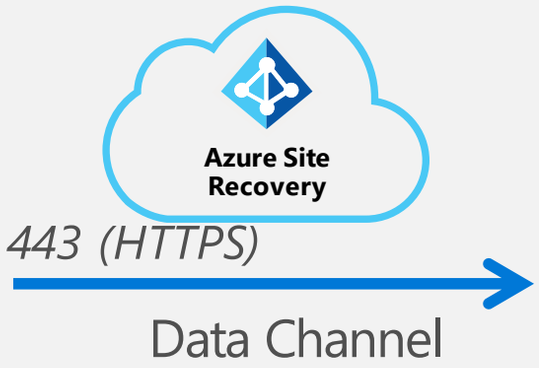
Microsoft

Gold Cloud Platform
Gold Data Platform
Gold Windows and Devices
Silver Cloud Productivity
Silver Small and Midmarket Cloud Solutions

Disaster Recovery for Hyper-V



Source: Hyper-V

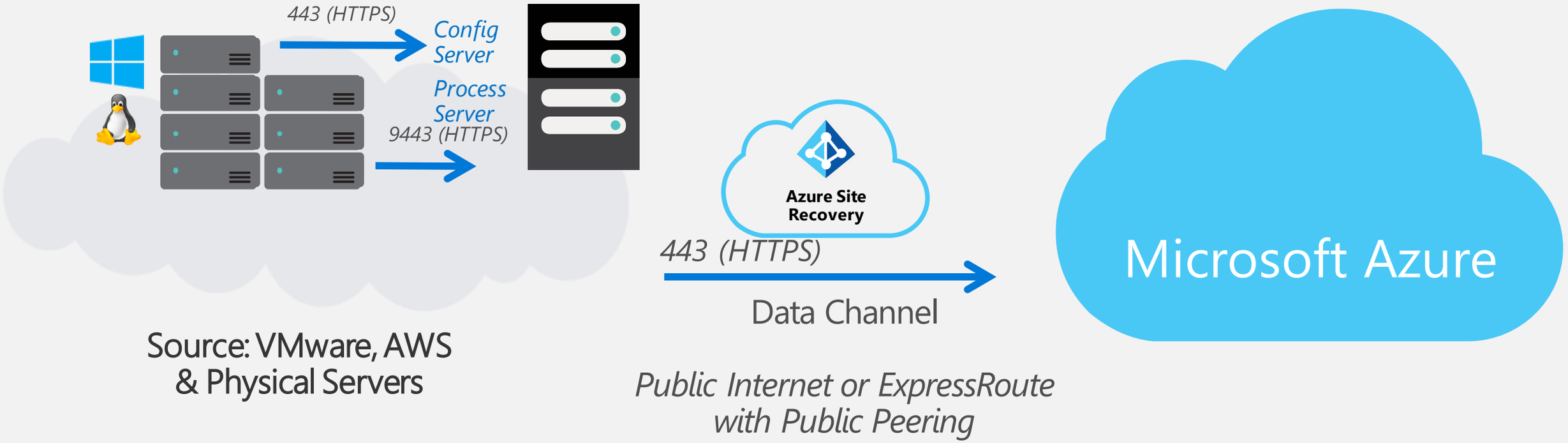


Public Internet or ExpressRoute with Public Peering

Microsoft Azure Recovery Services Agent
Replicates data to Azure

Documentation: https://aka.ms/asr_hyperv
Videos: https://aka.ms/asr_videos

Disaster Recovery for VMware, Physical & AWS



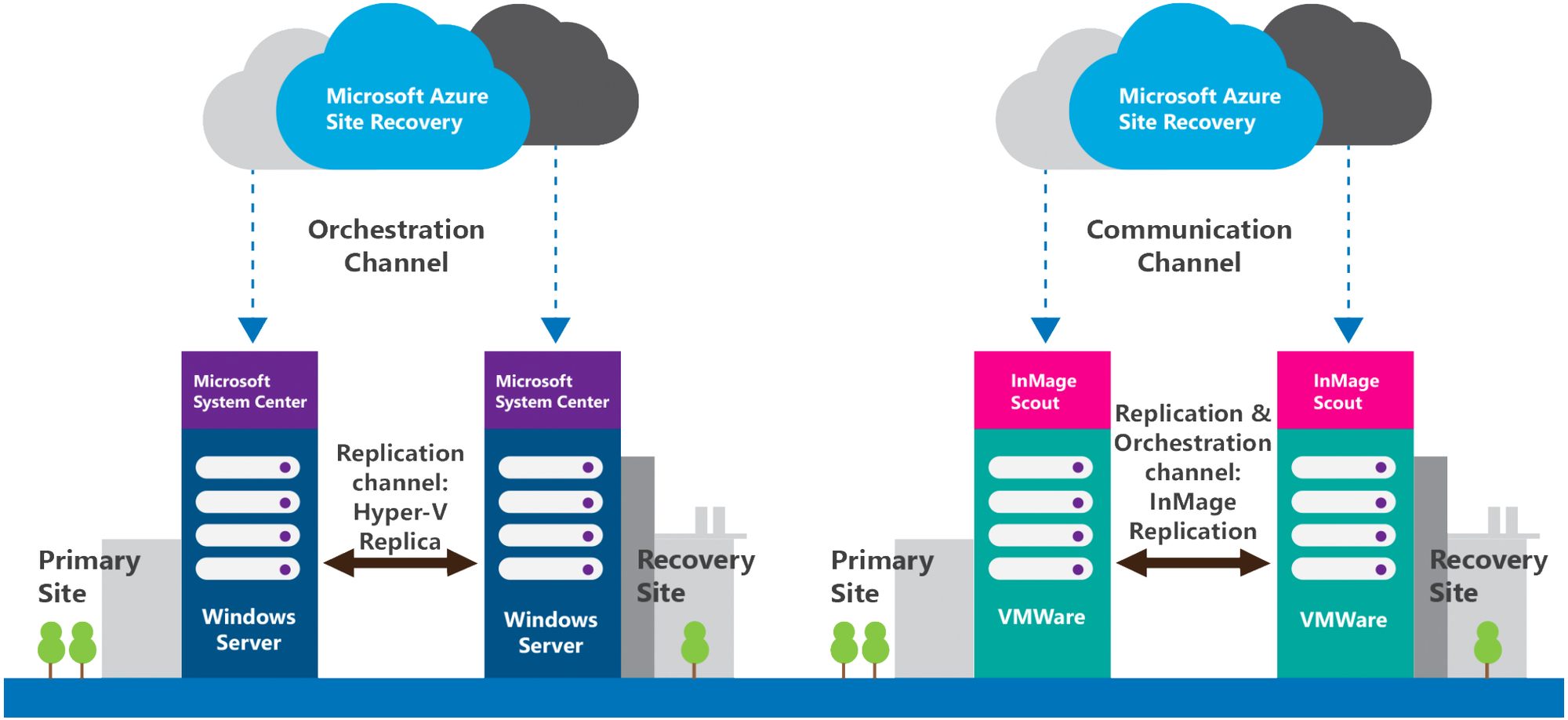
Process Server
Used for caching, compression, and encryption

Configuration Server
Used for centralized management

Mobility Service
Captures all data writes from memory

Documentation: http://aka.ms/asr_vmware
Videos: https://aka.ms/asr_videos

On-premises to On-premises with Azure Site Recovery

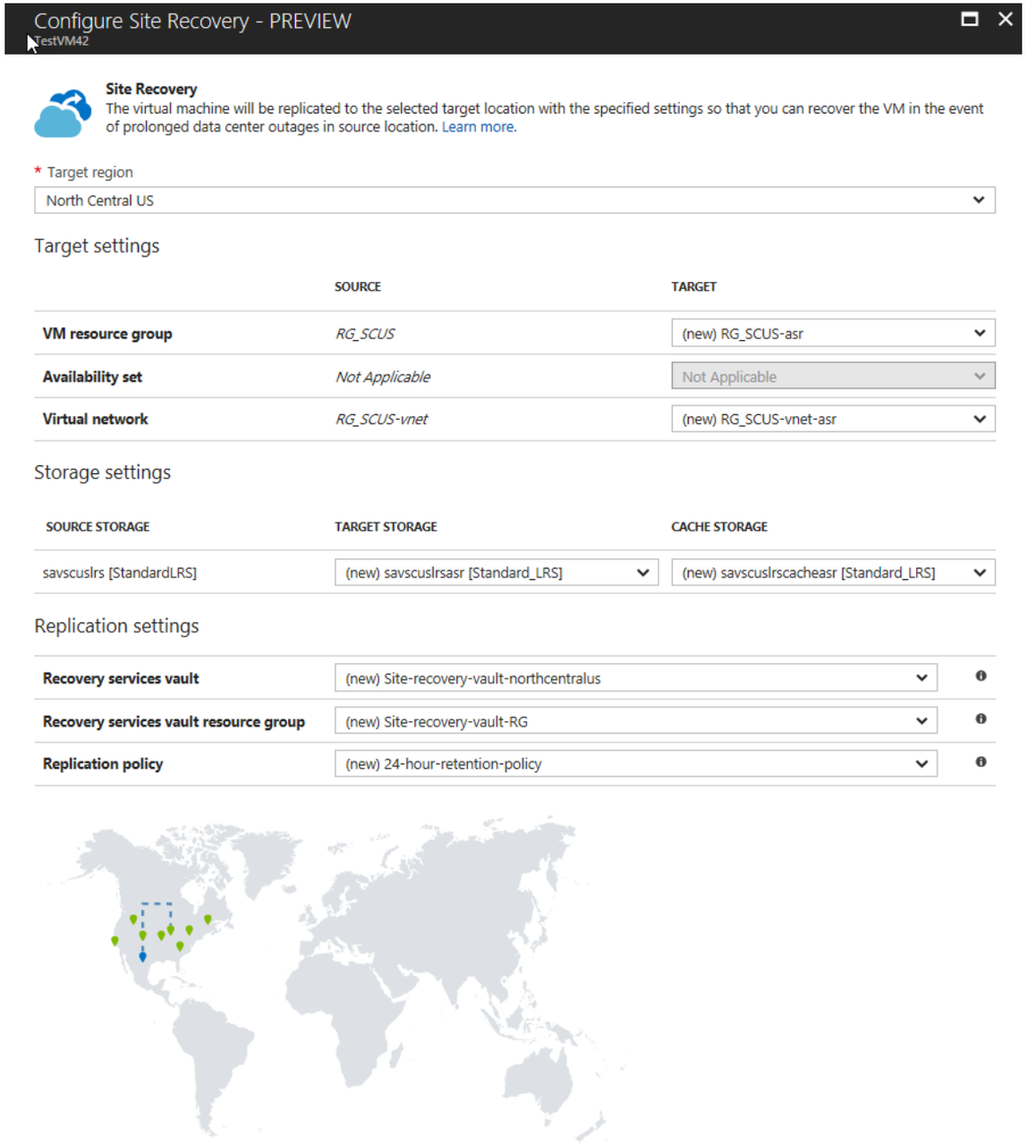


Key features include:

- Use customer's replication site
- Automated VM protection and replication
- Remote health monitoring
- Customizable recovery plans
- No-impact recovery plan testing
- Orchestrated recovery of tiered applications
- Support for heterogeneous environments

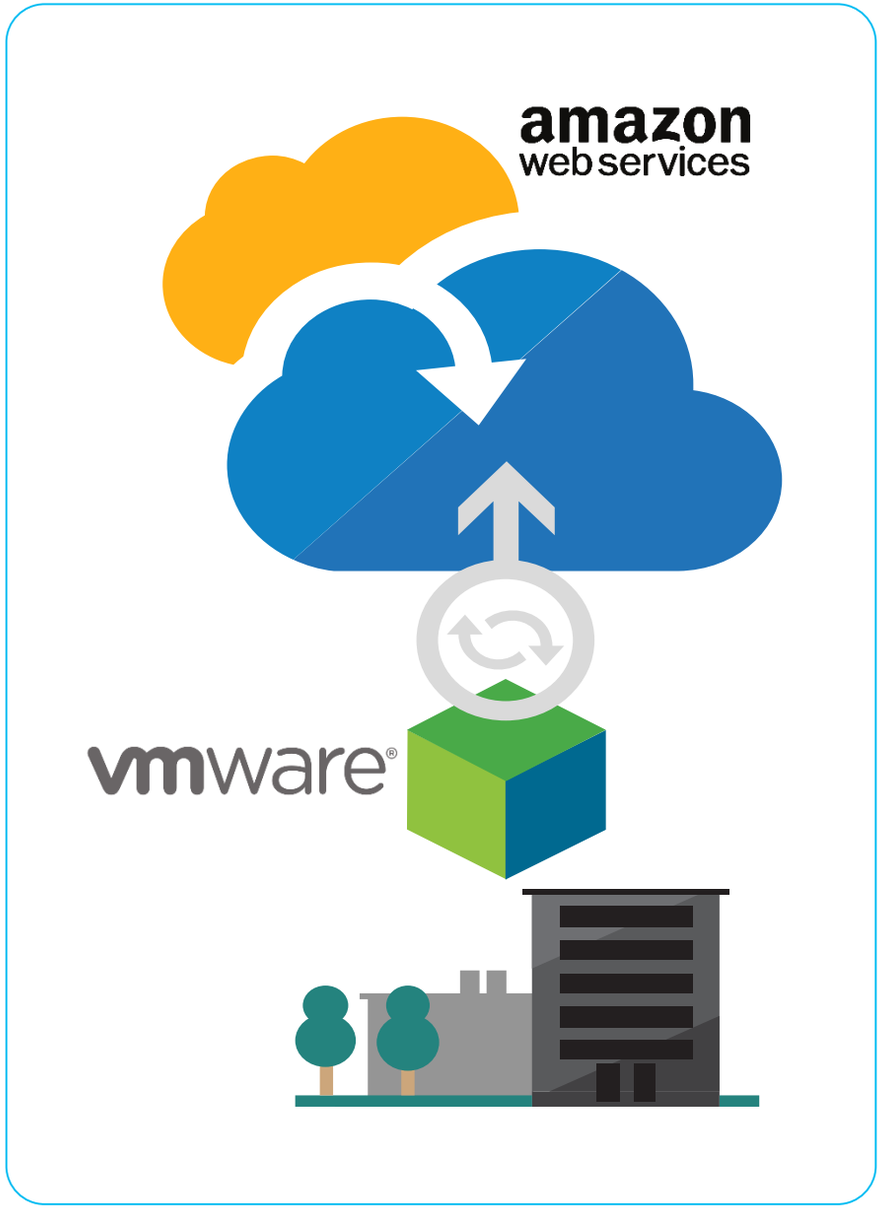
Azure to Azure disaster recovery

- Same failover experience and features of on-premises to Azure replication
- Setup and test disaster recovery in 3 steps



Another Benefit - Easy Azure Migrations

- Free for the first 31 days per OS instance
- ASR is a great way to migrate from AWS and other sources

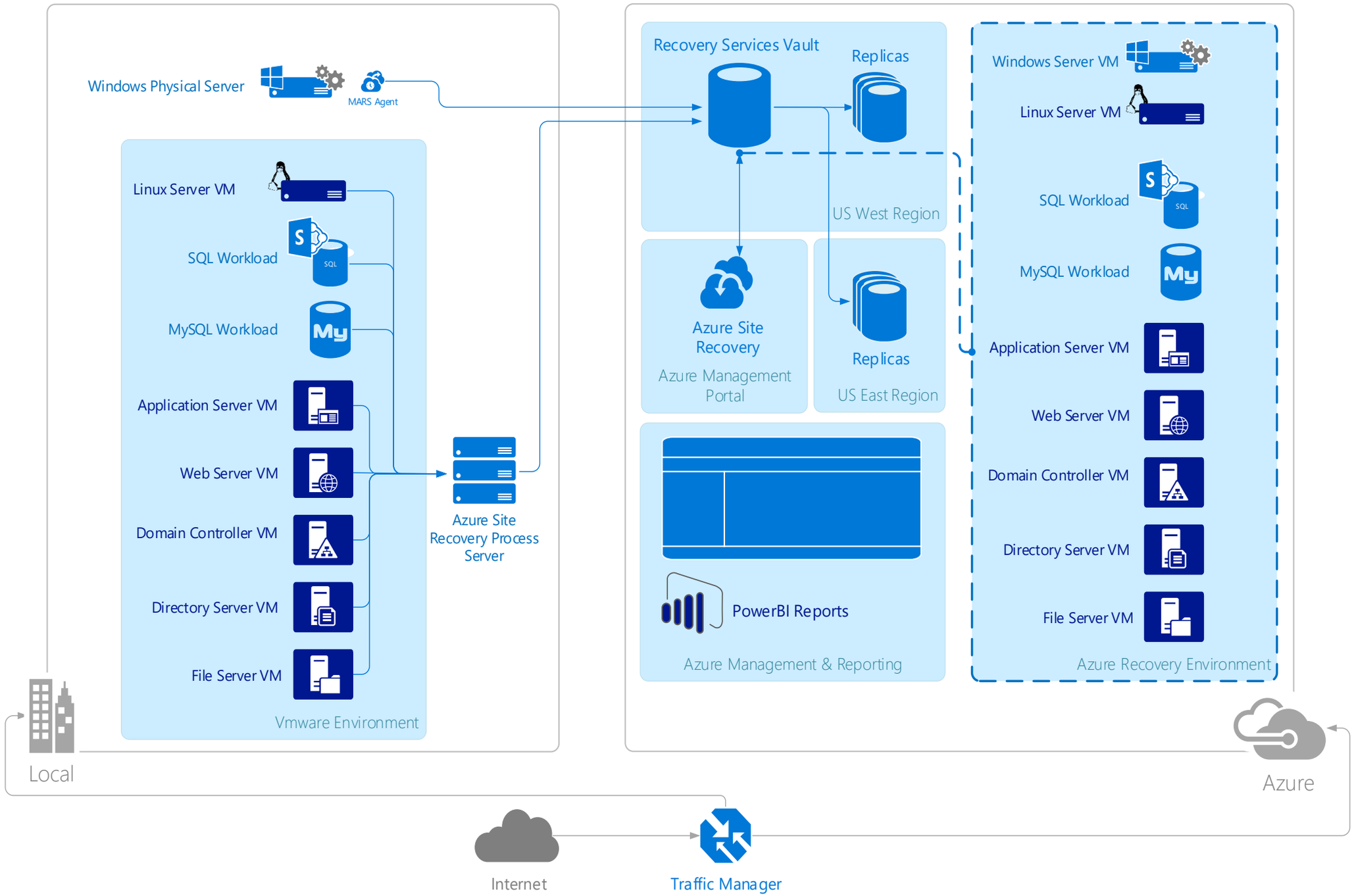


Azure Site Recovery Pricing

Azure Site Recovery to customer owned sites	$16/month per protected instance
Azure Site Recovery to Azure	$25/month per protected instance
Every instance is free for the first 31 days	

- Storage starts at $0.0224 per GB Locally Redundant, $0.0448 for Geo Redundant
- Compute charges only apply to protected instances while in failover

Azure Site Recovery Sample Diagram



BigGreen IT
Revealing the Cloud

Backup Assessment

How prepared is your business for a disaster or data loss catastrophe?
Many companies are unsure if they are prepared and don't have a solid backup strategy... or worse yet, they use an antiquated backup solution and "hope" it is working. Having the right backup and recovery strategy can ensure a full recovery and a path back to business-as-usual, without significant cost or downtime. This assessment will evaluate current storage/backup environment and provide you with recommendations to modernize your data protection, keeping your company data safe.

$3,495.00

What We Do

Big Green IT Certified Engineers collect current storage and backup data. We then review the results where we also discuss priorities and recovery objectives. The final deliverable is documentation of the Assessment, a review of best practices, and recommendations of backup options. This is a 3-4 day engagement.

How We Do It

Big Green IT uses a combination of Microsoft, VEEAM and Big Green IT tools running on a virtual machine for 7-10 days to collect data on storage, change rates, throughput and other key attributes. During the consultation, our engineer will collect information on RPO/RTO and retention requirements.

Deliverables

At the end of this engagement you will receive

- A complete data report including: all storage provisioned, data consumed, and change rates.
- A summary of RPO/RTO and retention plans for each data set.
- Recommendations for Cloud, On-Premise and Hybrid solutions specific to your environment.

Step 1

Perform an assessment and analysis of your on-premise and cloud environments to gain a mutual understanding of current backup storage, infrastructure and practice. Review RPOs & RTOs

Step 2

Provide our list of recommendations & best practices for implementing a modern strategy.

Step 3

Deliver a roadmap for data backup best practices.

Start Your Assessment.

Chuck Ray
(916) 787-3223
sales@biggreenit.com

Gold
Microsoft Partner
Microsoft

3/26/2019

Microsoft Licensing Options

- Bundles vs. A la Carte - Mix and Match!
- Enterprise vs. Business Bundles
- Open Volume
- Enterprise Agreements (EAs)
- Migrate SA Benefits from EA to MPSA
- Non-Profit
- Government/Education
- Cloud Service Provider (CSP)

Big Green IT can handle *ALL* of your Microsoft Licensing!

Questions?

- **LinkedIn: https://www.linkedin.com/in/mikeprachar/**
- **Twitter: @mprachar**
- **Big Green IT Backup Assessment**
- **Microsoft Licensing**
- **IAMCP (International Association of Microsoft Channel Partners)**

Microsoft Partner

Microsoft

Gold Cloud Platform
Gold Data Platform
Gold Windows and Devices
Silver Cloud Productivity
Silver Small and Midmarket Cloud Solutions

Azure from 35,000 ft.

Have you looked at Azure recently?

Investment – Microsoft has invested over $10 *Billion* per year on new data centers over the past 3 years

Many ways to leverage Azure:

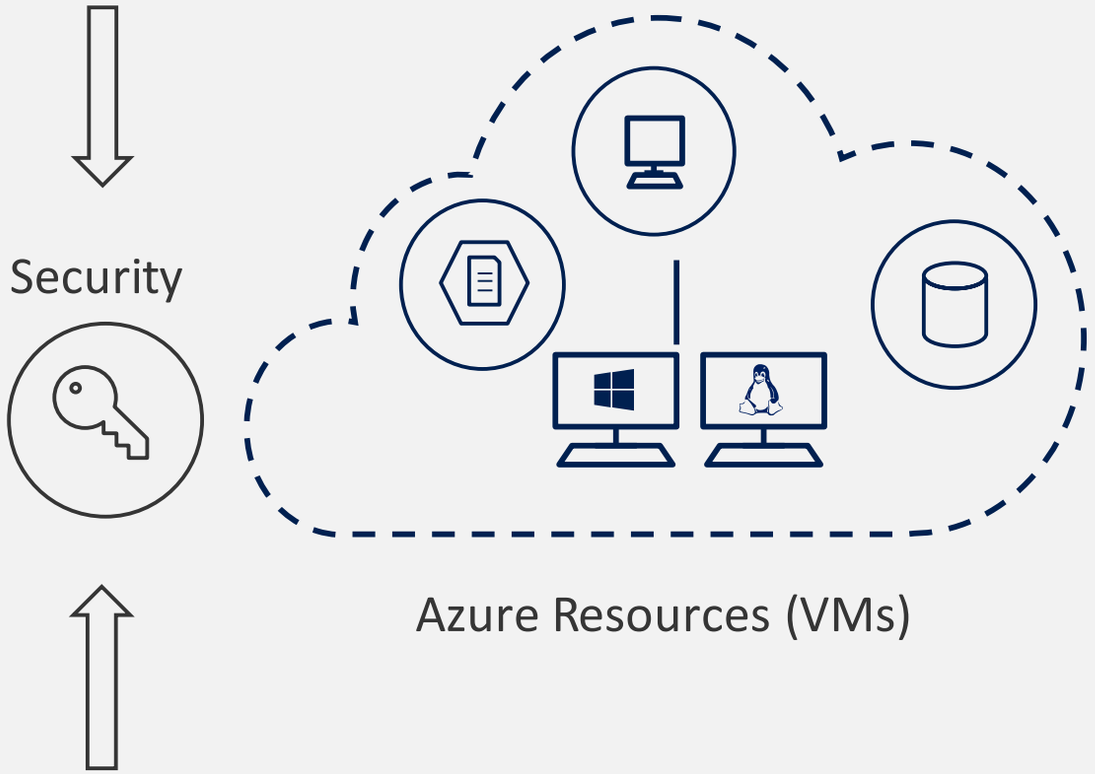
Dev/Test, Bursting, DR, and All-in Production,

The Opex vs CapEx conversation

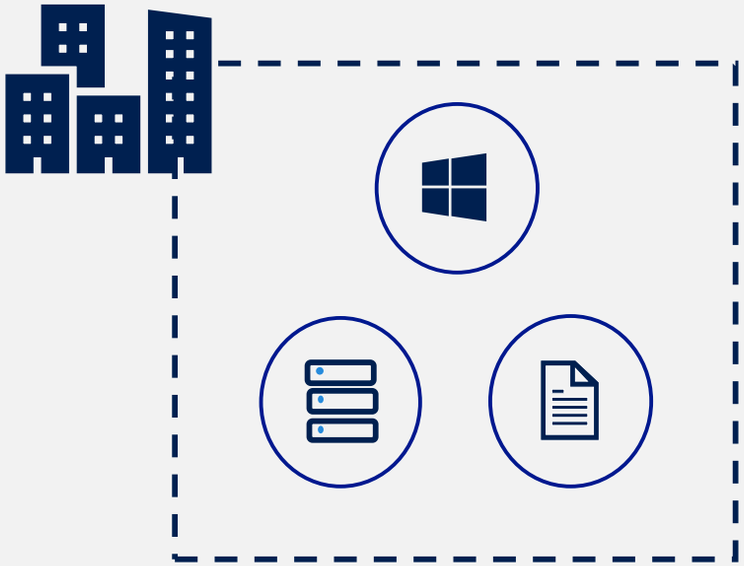
The growing Azure ecosystem:

AzureStack, Nimble Cloud Volumes, Rubrik, etc.

Single solution across the entire deployment



Azure Resources (VMs)



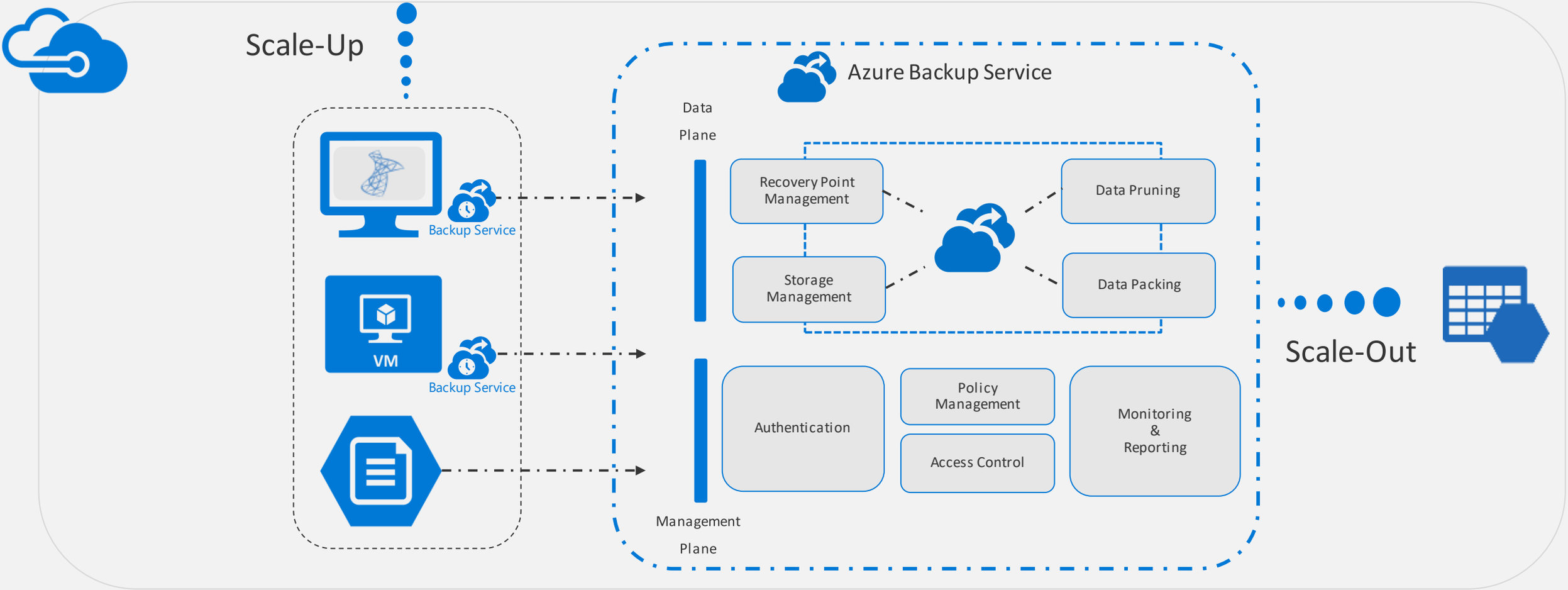
Hybrid Resources:

Backup Agent (MARS) - Windows

Backup Server or DPM – Hyper-V & Vmware VMs (Windows & Linux) Workloads

Central Management

Azure Backup – Architecture matters



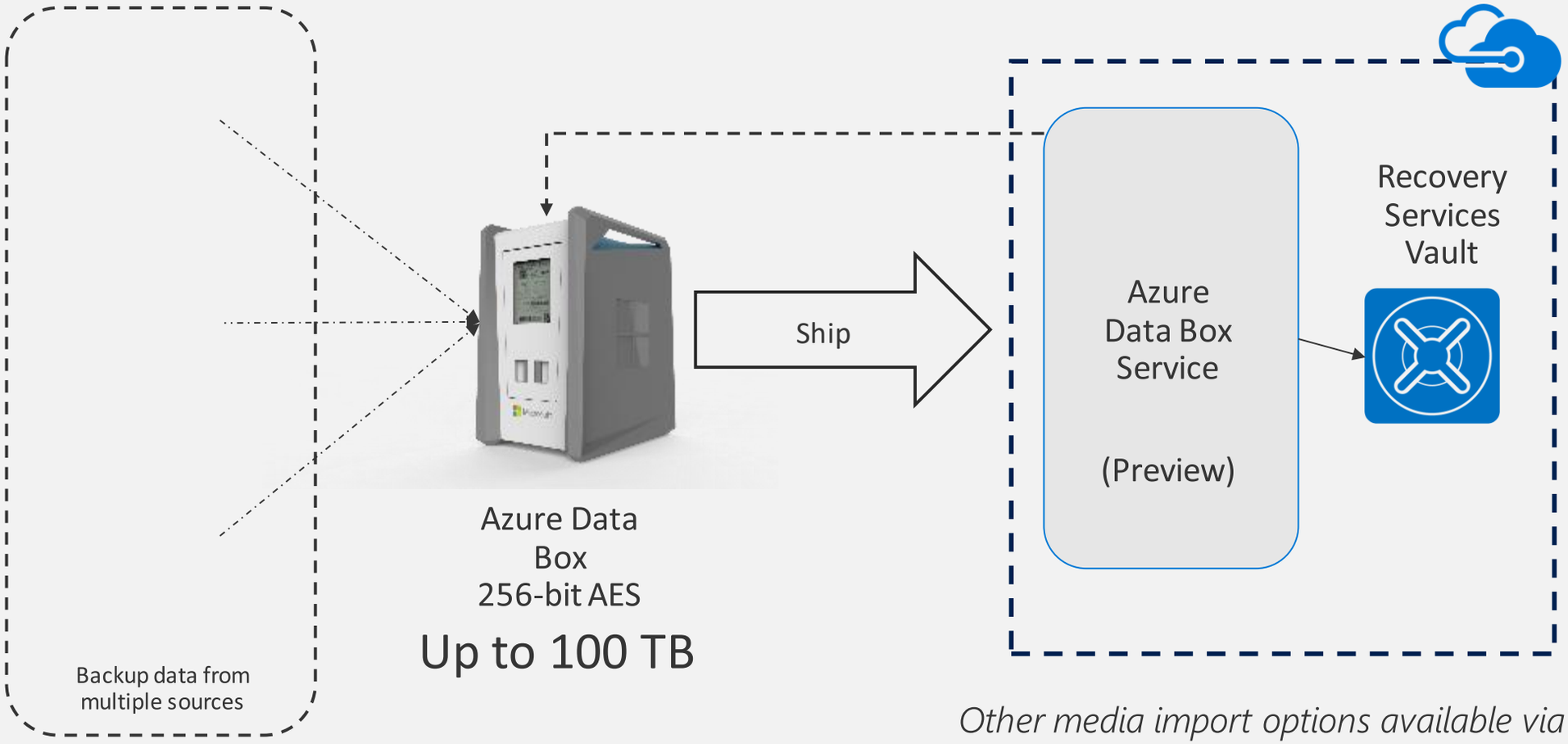
No infrastructure

Enterprise scale

Extensible

Central management

Azure Backup – Sending even larger amounts of data efficiently



Other media import options available via partners (tape, etc.)

No procuring of disks

Parallel transfers

Safe and secure