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The Lord of the Keys

Tus secretos a salvo con Azure Key Vault

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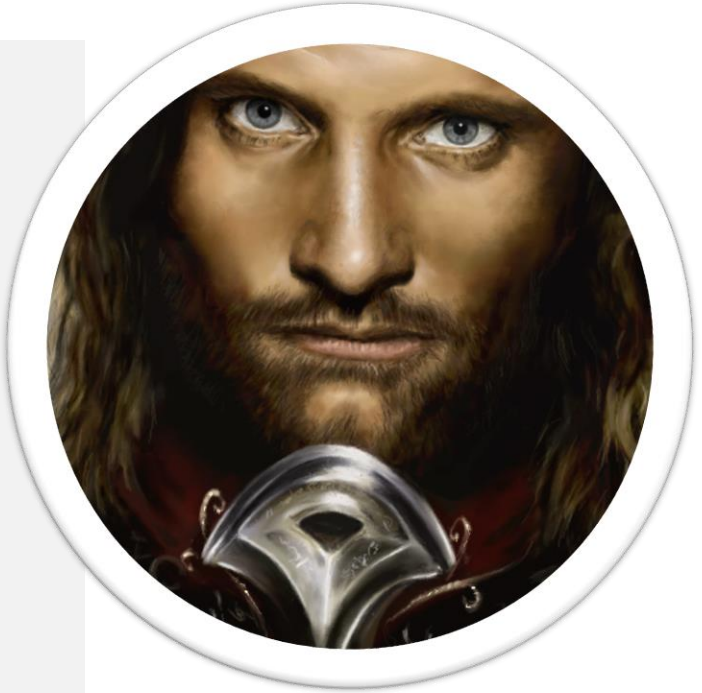

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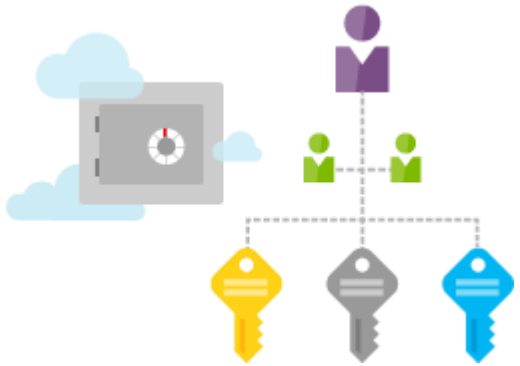
Agenda

- What is Azure Key Vault?
- Terminology
- Key Vault within Azure object model
- What is HSM?
- Types of keys
- Anchored in AD – your org is in control
- Demo time

What is Azure Key Vault?

An Azure resource provider that lets you

1. Store & manage SECRETS (app config), and release them at runtime to authorized apps & users.
2. Store & manage KEYS, and perform cryptographic operations on behalf of authorized apps & users.



Terminology

Secret

What: Any sequence of bytes under 25KB. E.g. SQL connection string, Storage account key.

How used: Authorized users/apps write and *read back* the secret value.

Key

What: A cryptographic key. RSA 2048

How used: *A key cannot be read back*. Caller must ask the service to decryp/sign with the key

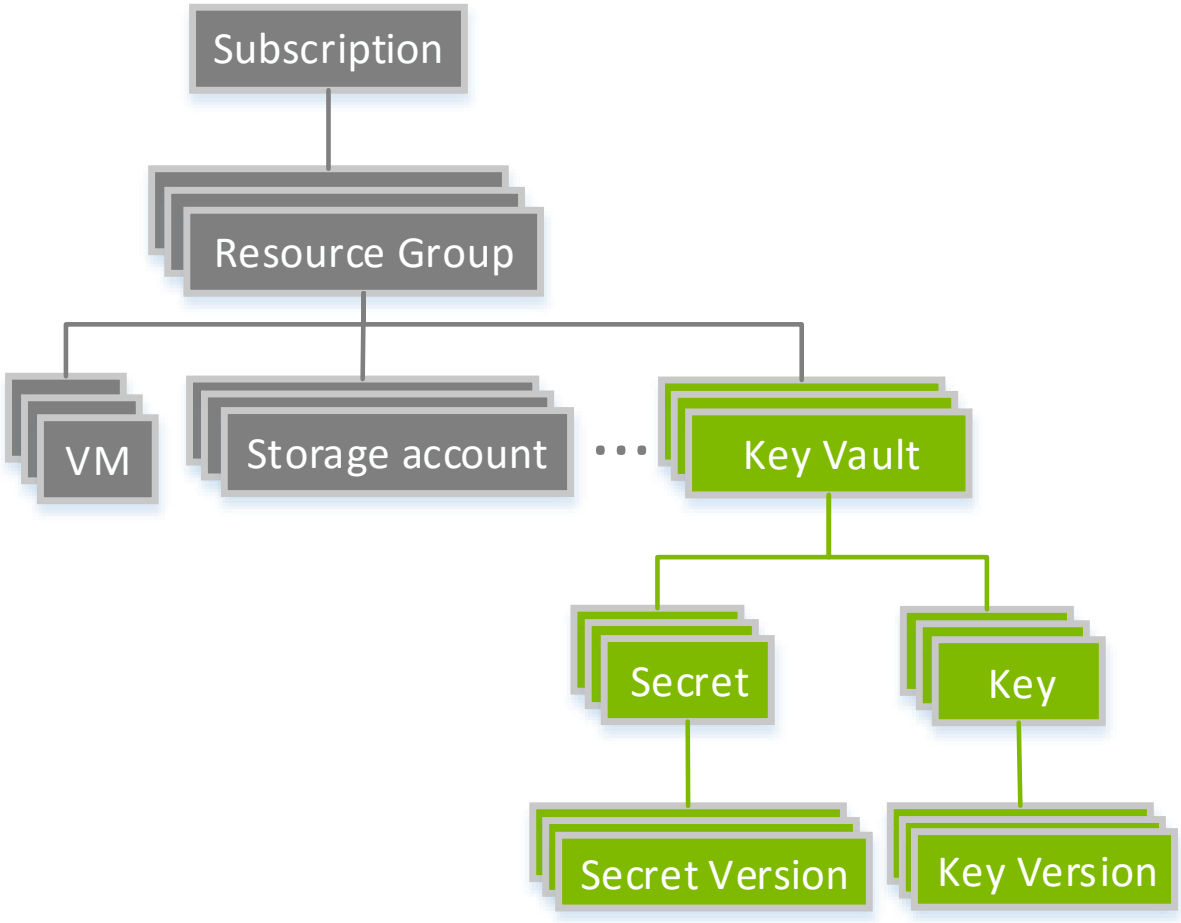
Key Vault

Container for related keys and secrets that are managed together.

Unit of access control, unit of billing.

An Azure resource, like a storage account

Key Vault within Azure object model



What is HSM?

Hardware Security Module (HSM)

- Physical computing device that safeguards and manages digital keys for strong authentication and provides cryptoprocessing
- Plug-in card or an external device that attaches directly to a computer or network server

Types of keys

HSM-protected key

- Operations on this key are performed inside HSMs (Thales nShield, FIPS 140-2 Level 2).

Software-protected key

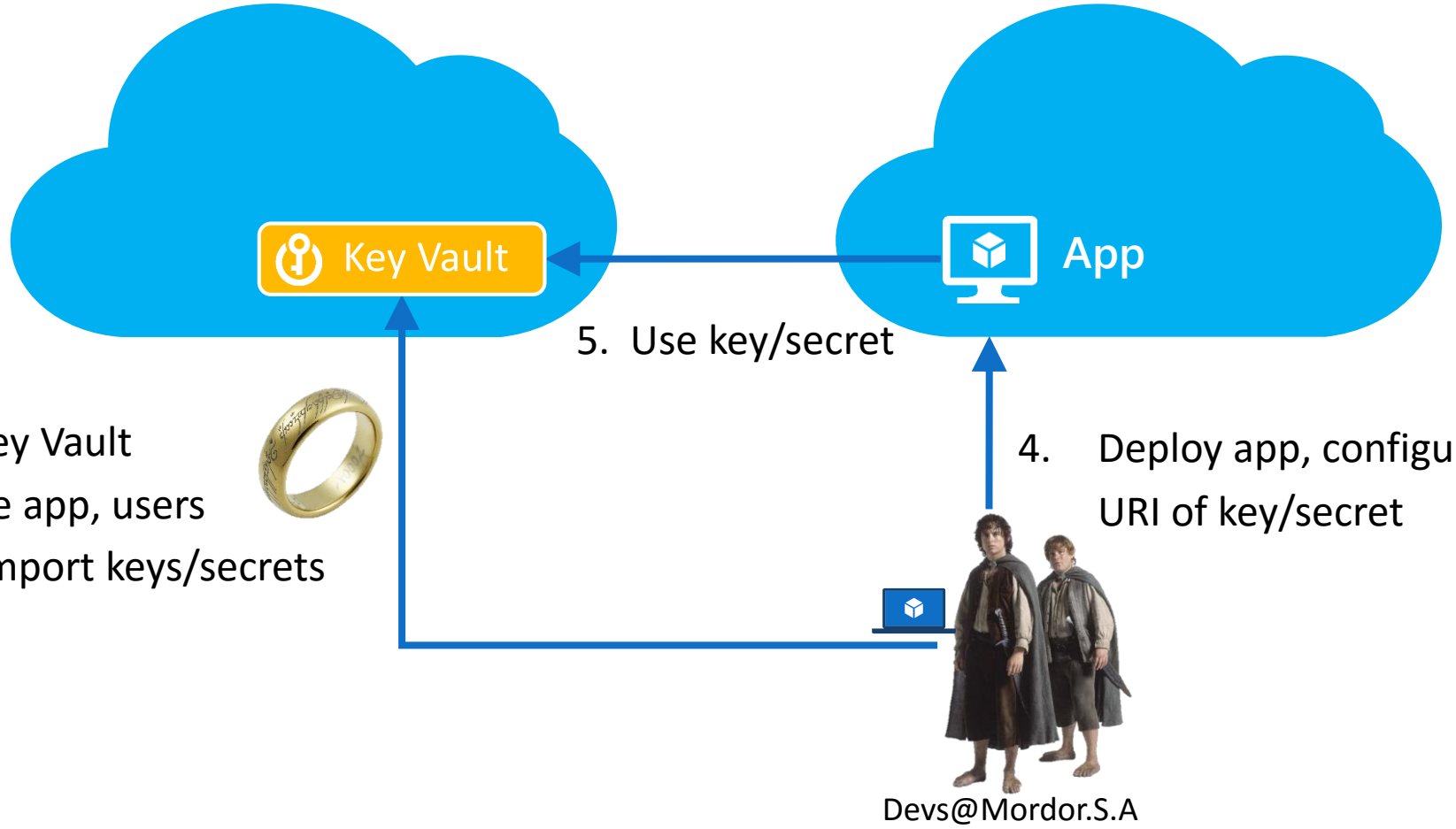
- Operations on this key are performed in VMs on Azure (FIPS 140-2 Level 1 pending).
- When stored, they are encrypted with a key chain that terminates in HSMs.

Anchored in AD – your org is in control

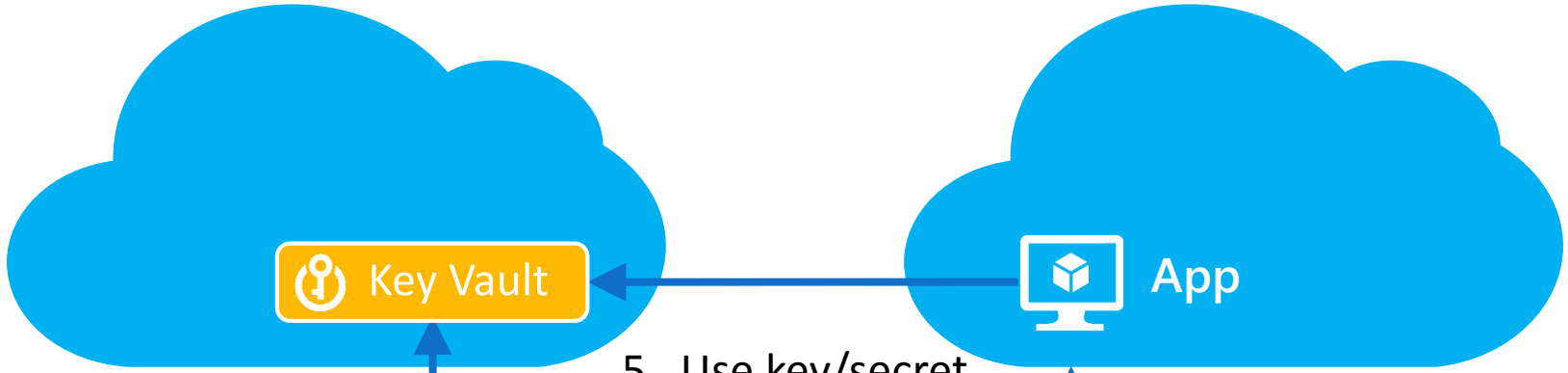
Authentication is via Azure AD tokens

Authorization is via ACL on key vault

Phase 1: Developer builds/tests application



Phase 2: App moves into pilot / pre-prod



5. Use key/secret

1. Create Key Vault
2. Authorize app, users
3. Create/import keys/secrets

Admin@Mordor.S.A.

4. Deploy app, configured with URI of key/secret

Devs@Mordor.S.A.

Phase 3: App moves into production

1. Create Key Vault
2. Authorize app, users
3. Create/import keys/secrets

6. Manage keys/secrets

Admin@Mordor.S.A.

7. Monitor logs

4. Deploy app, configured with URI of key/secret

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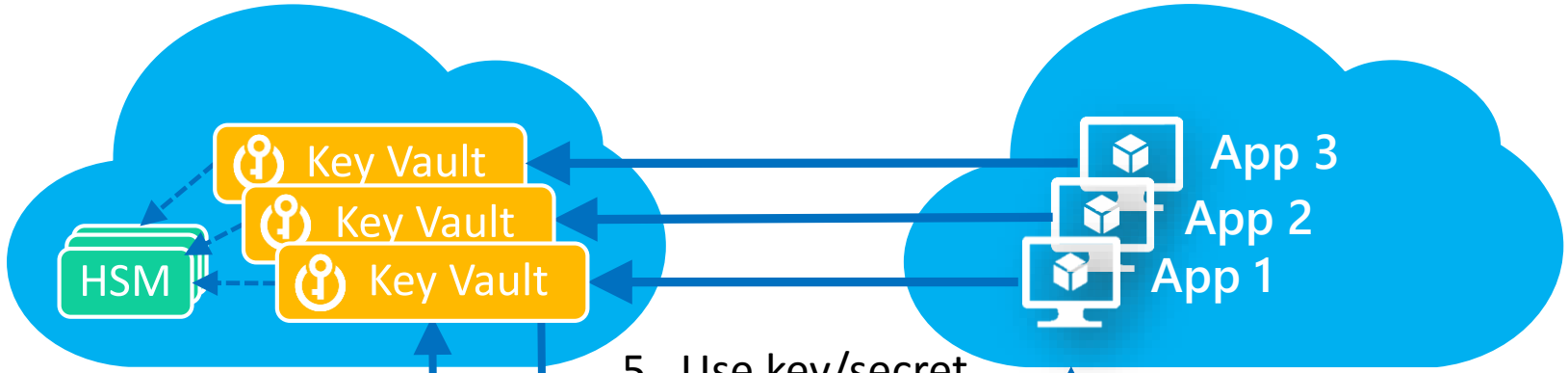
Phase 4: Scale, deploy more apps in minutes



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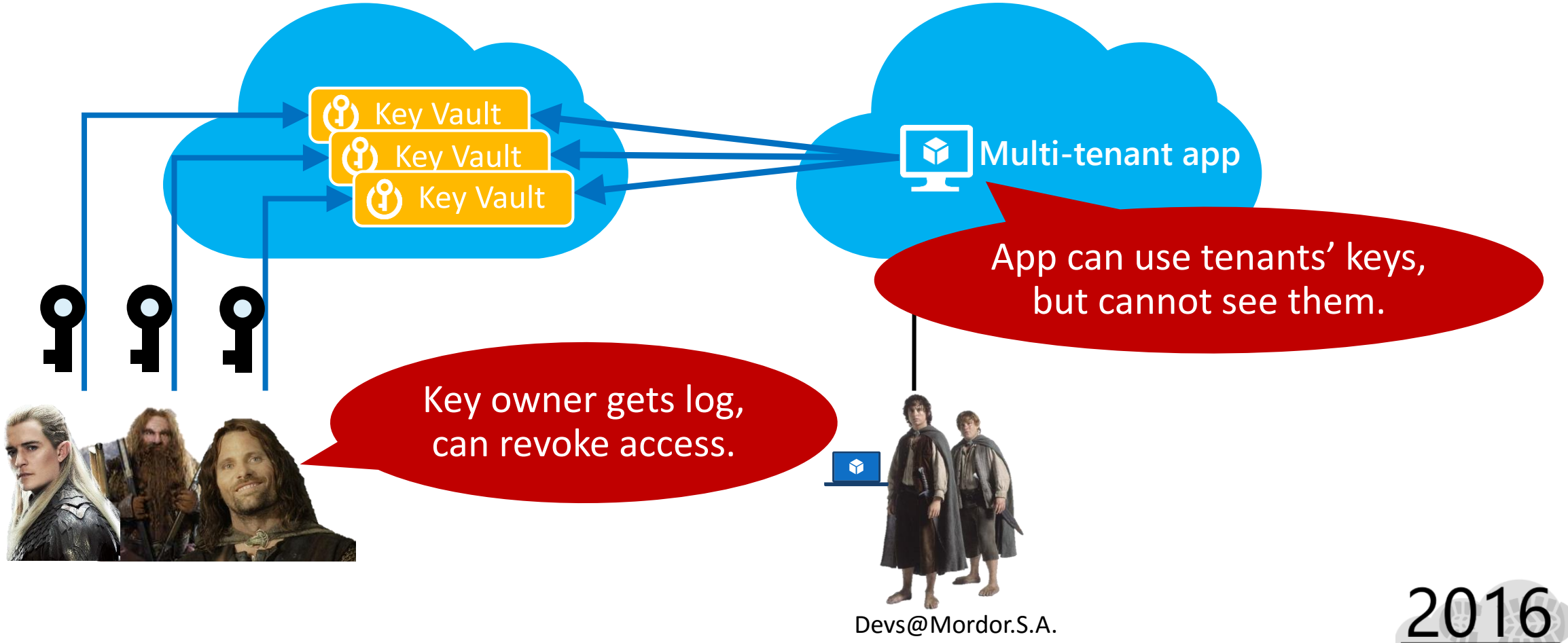
Multi-tenant app offers customer-managed keys

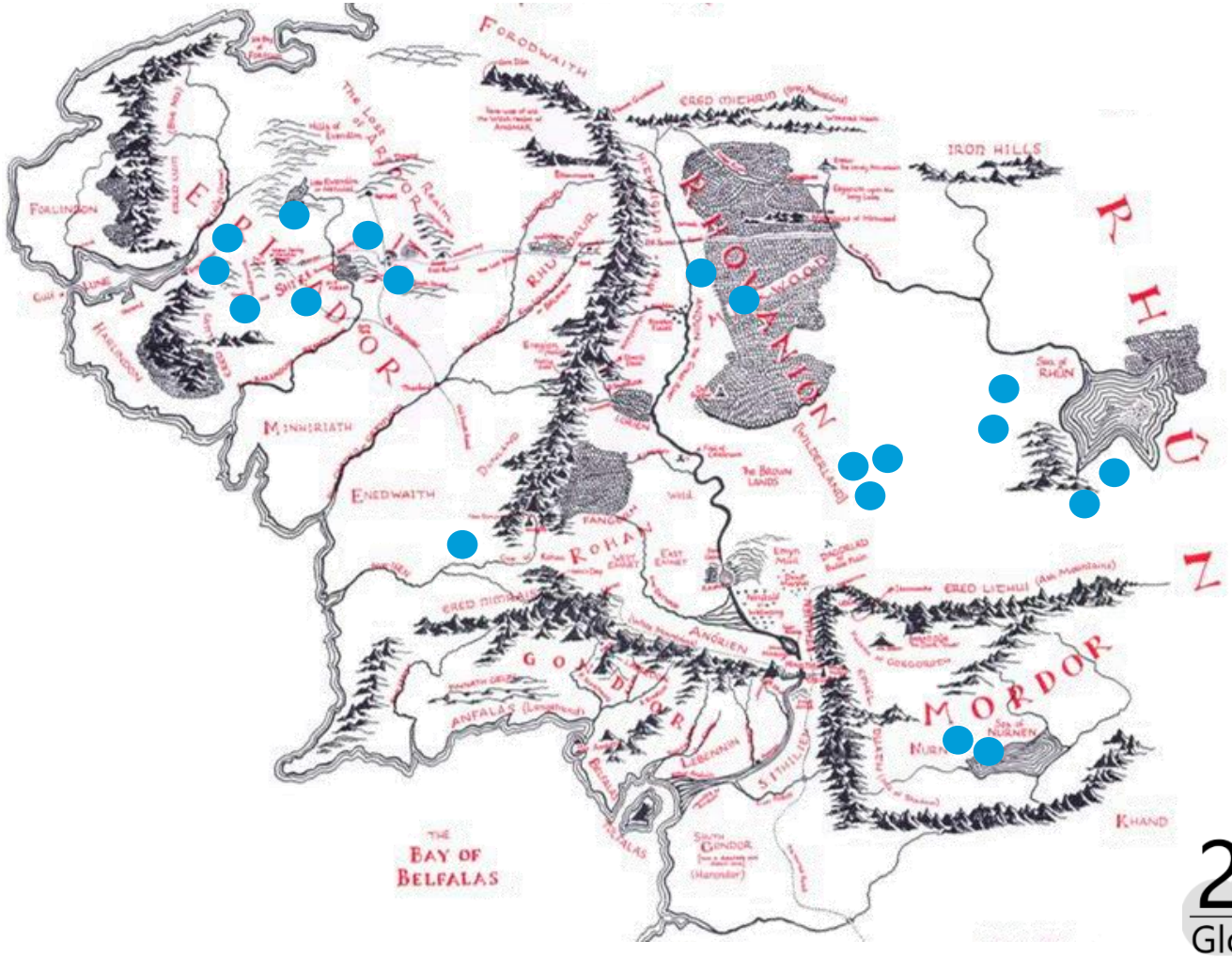


Key Vault Status

Generally Available

Apps offering BYOK via Key Vault:

- Azure RMS*
- SQL Server Transparent Data Encryption
- Azure Storage client SDK
- Azure VM certificate management
- Azure disk encryption – announced
- Office 365 Advanced Encryption – announced
- CloudLink SecureVM
- Brocade Virtual Traffic Manager – Enterprise edition
- Ascertia



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