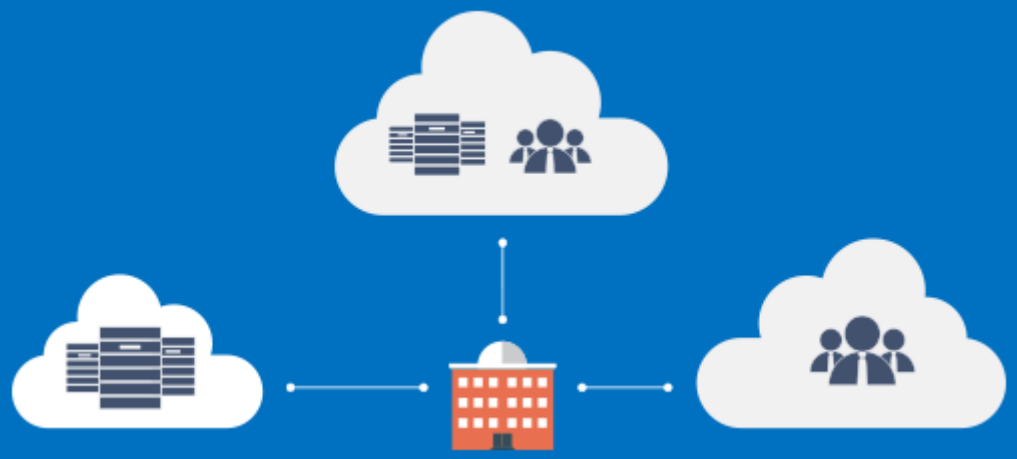
Microsoft Azure

WinWire Technologies

Building Hybrid Cloud Applications with Azure and Azure Stack

Agenda

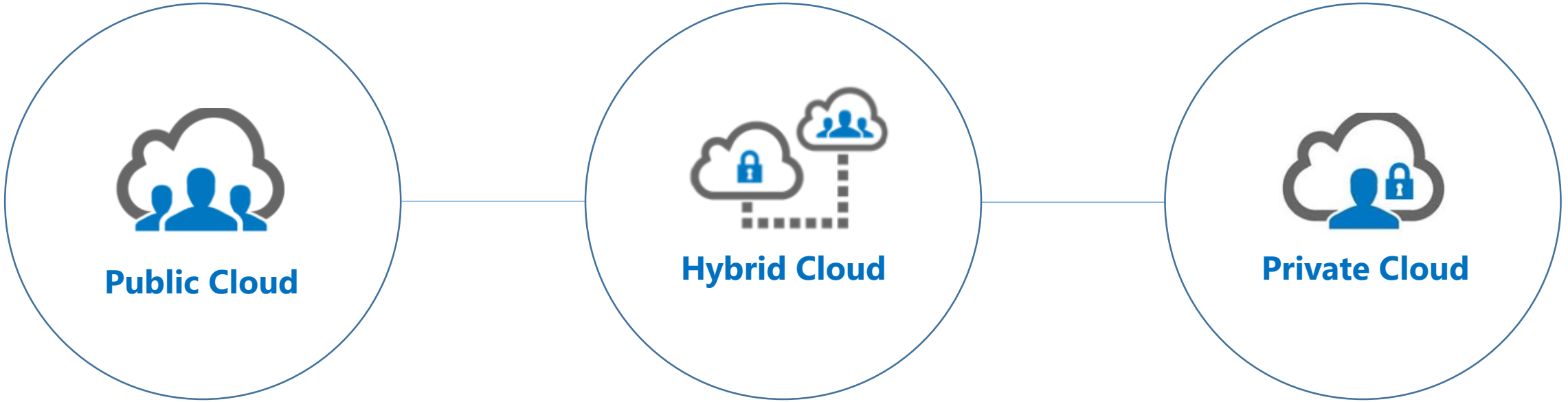
WinWire Technologies



1. Hybrid Cloud
2. Azure Stack
3. Data Migration
4. Hybrid Identity
5. Hybrid CI/CD
6. Q & A

Evolution of Cloud Computing

WinWire Technologies



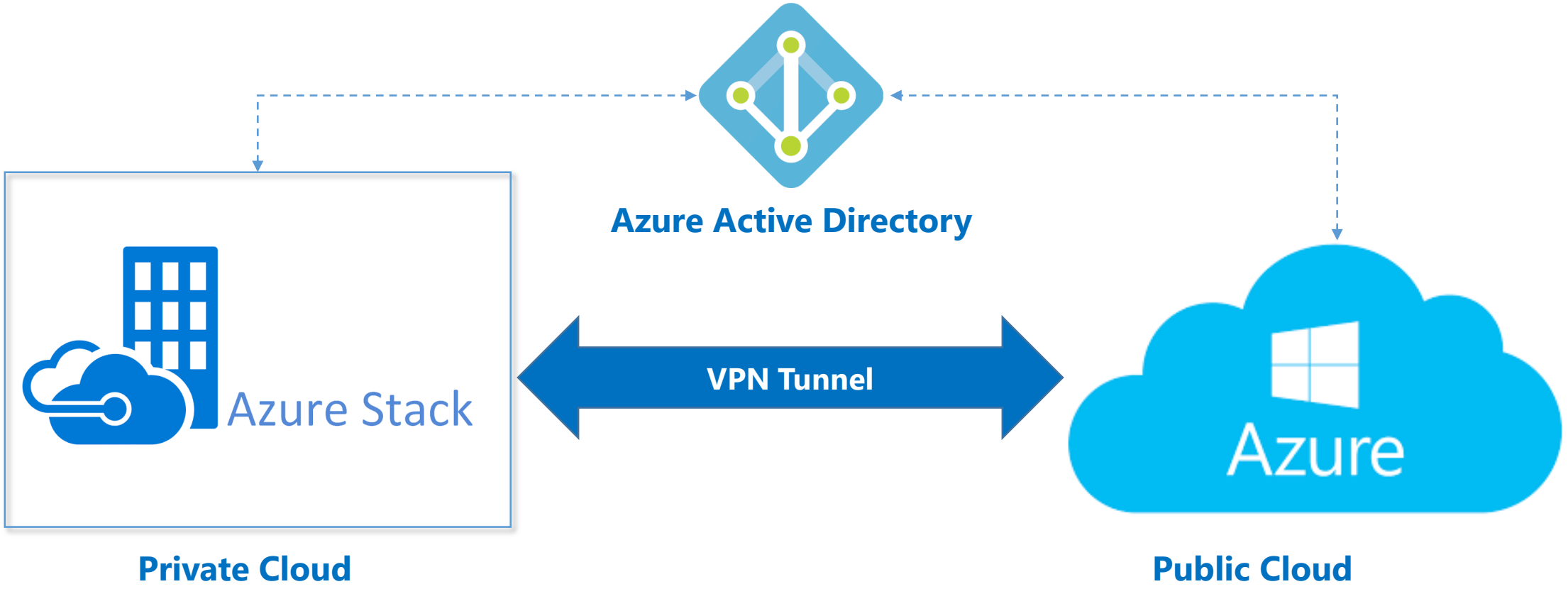
- **Advantages**
  - Cost-effective
  - Zero maintenance
  - Scalability, reliability
- **Disadvantages**
  - Compliance
  - Data security
  - Latency

- **Advantages**
  - Compliance
  - Data security
  - Performance
- **Disadvantages**
  - Capital cost
  - Under utilization
  - IT overheads

Hybrid Cloud

WinWire Technologies

A computing environment that **combines two or more clouds** by allowing data and applications to be **shared** between them, and lets the on-premise infrastructure **scale seamlessly** on-demand, keeping business-critical data **secure**

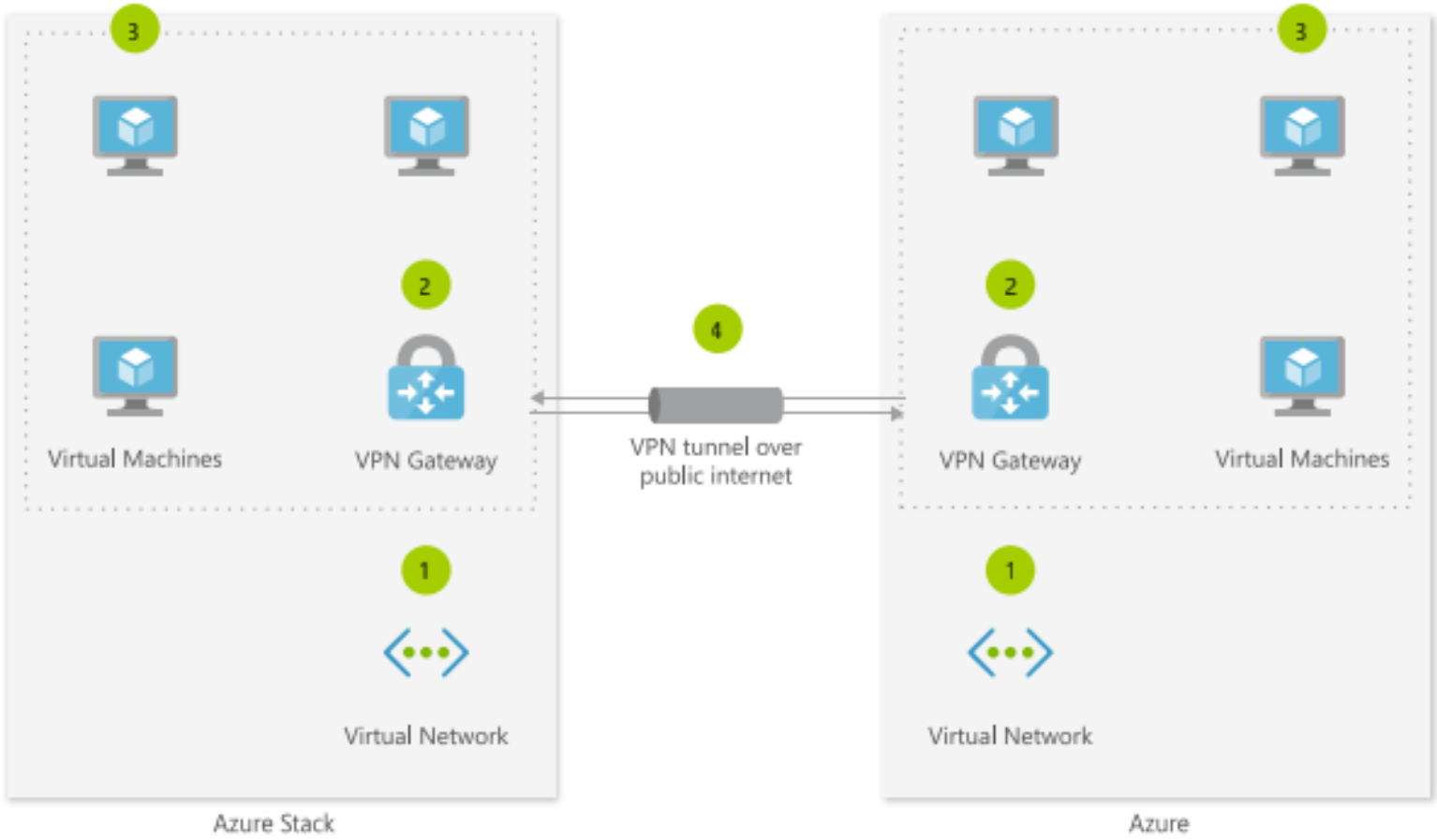


Azure Stack

Azure Stack

WinWire Technologies

An extension of Azure to consistently run hybrid applications on-premises, a hybrid cloud platform that lets you use Azure services from your company's or service provider's datacenter



Azure Stack: Key Terms

WinWire Technologies

Operator

- Configures Azure Stack by managing offers, plans, services, quotas, and pricing to provide resources for their tenant users
- Manage capacity and respond to alerts

User/Tenant

- Consumes services that the Operator offers
- Users can provision, monitor, and manage services that they have subscribed to, such as web apps, storage, and virtual machines

Deployment Options

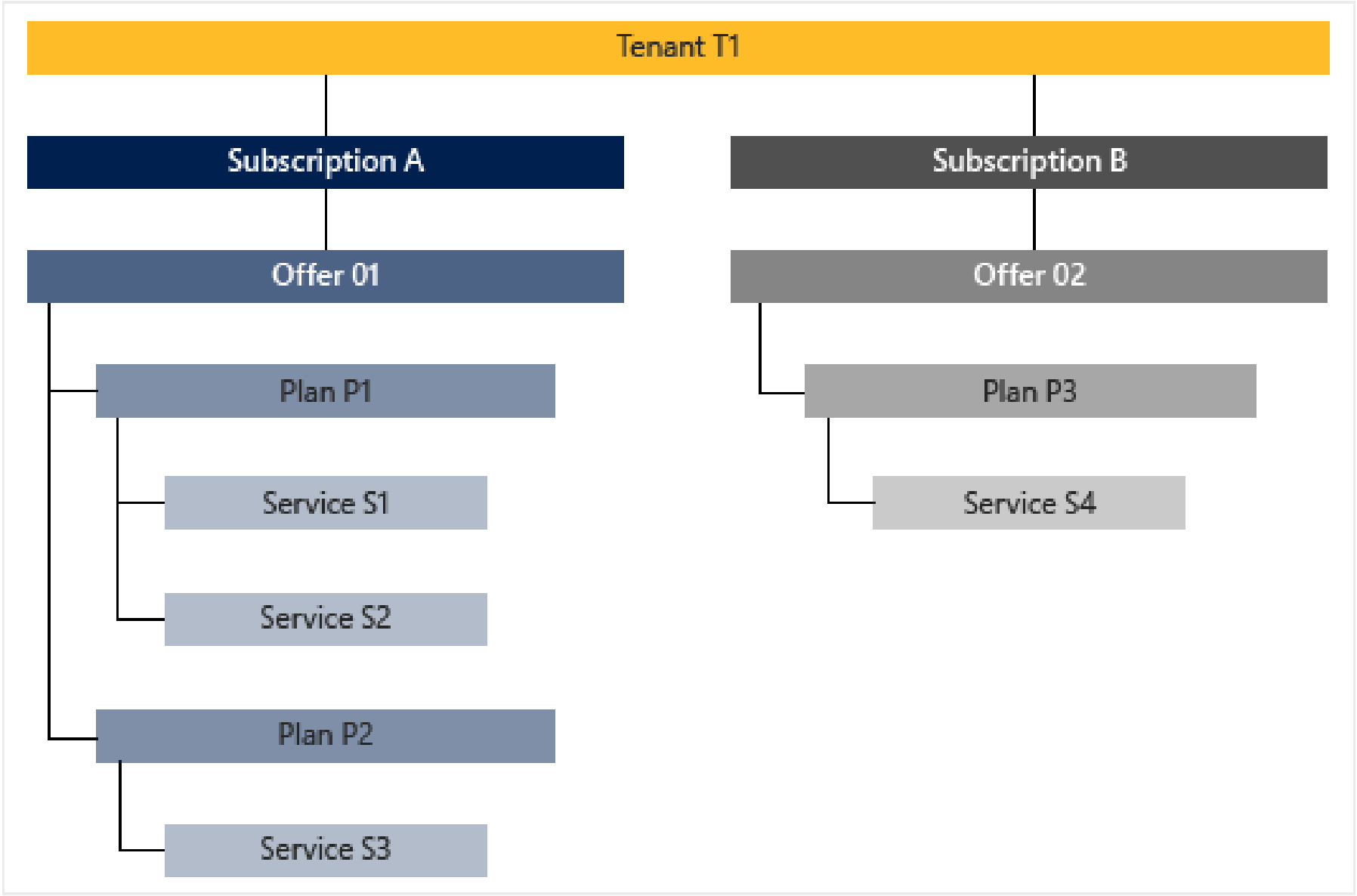
- *Azure Stack Development Kit*
- *Integrated Systems*

Azure Stack: Hardware Partners

WinWire Technologies

Azure Stack – Service Delivery Model

WinWire Technologies



Azure vs Azure Stack

WinWire Technologies

Area	Azure	Azure Stack
Operated by	Microsoft	Organization or Service Provider
Supported by	Microsoft	Organization or Service Provider
Available services	Azure services per region	Subset of Azure services, also dependent on service provider
Region	Region of your choice	Only one region
URLs	https://portal.azure.com https://management.azure.com	https://portal.local.azurestack.external https://management.local.azurestack.external
Resource Types, API versions, PowerShell	Latest versions	Specific versions

Data Migration

Azure SQL Database Managed Instance

WinWire Technologies

New deployment model of Azure SQL Database that **brings together** the benefits of Microsoft's on-premises and cloud data platform

1

Allows existing SQL Server customers to lift and shift their on-premises applications to the cloud with minimal application and database changes

2

Provides near 100% compatibility with the latest SQL Server on-premises (Enterprise Edition) Database Engine

3

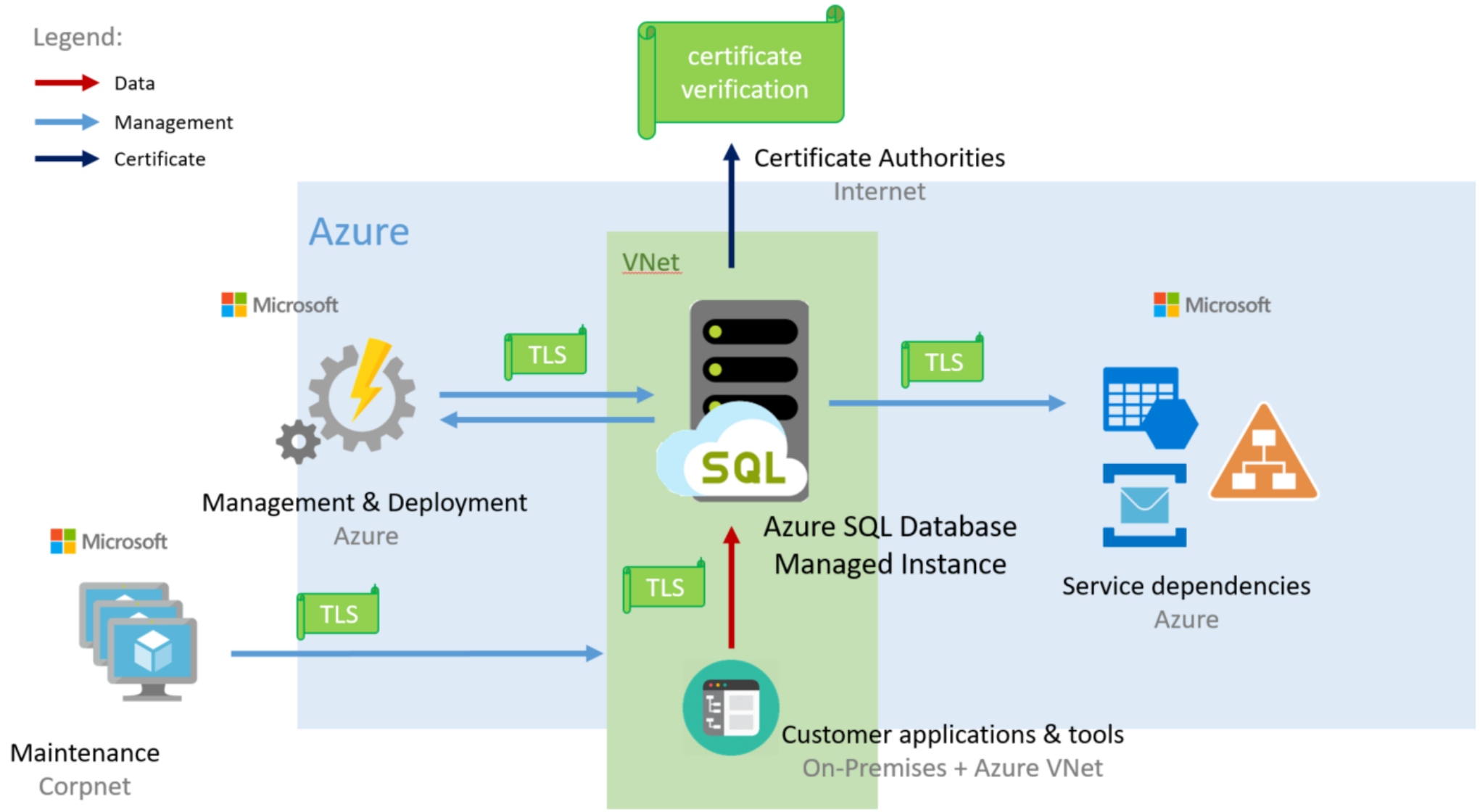
Addresses common security concerns via native virtual network implementation

4

Reduces management overhead and costs thanks to PaaS features

Managed Instance: Connectivity Architecture

WinWire Technologies



Managed Instance: Key Benefits

WinWire Technologies

PaaS Benefits	Business Continuity	Security	Management
• No hardware purchasing/management, quick provisioning • Scalability • Automated patches, upgrades	• 99.99% uptime SLA • High availability • Backup & restore	• Isolated environment • Azure AD authentication, SSO • SQL auditing	• ARM API • Azure portal • Data Migration Service

Managed Instance: Limitations

WinWire Technologies

Resource limits – compute, memory, storage, IOPS, etc.

- Instance level
- Region level

Availability

- Available only in certain regions

Supported subscription types

- Enterprise Agreement (EA)
- Pay-as-you-go
- Cloud Service Provider (CSP)
- Enterprise Dev/Test
- Pay-As-You-Go Dev/Test

** Limitations are temporary, will be overcome in future*

** More Managed Instances can be requested in a region by sending a support request to extend the quota using Azure portal*

Hybrid Identity

Azure AD Connect

WinWire Technologies

Integrates the on-premises active directory and Azure Active Directory

Creates a single user identity for authentication and authorization to all organizational resources – on-premises and on the cloud

Example: One identity for on-premises apps, Office 365, Azure and SaaS applications integrated with Azure AD

Authentication Models

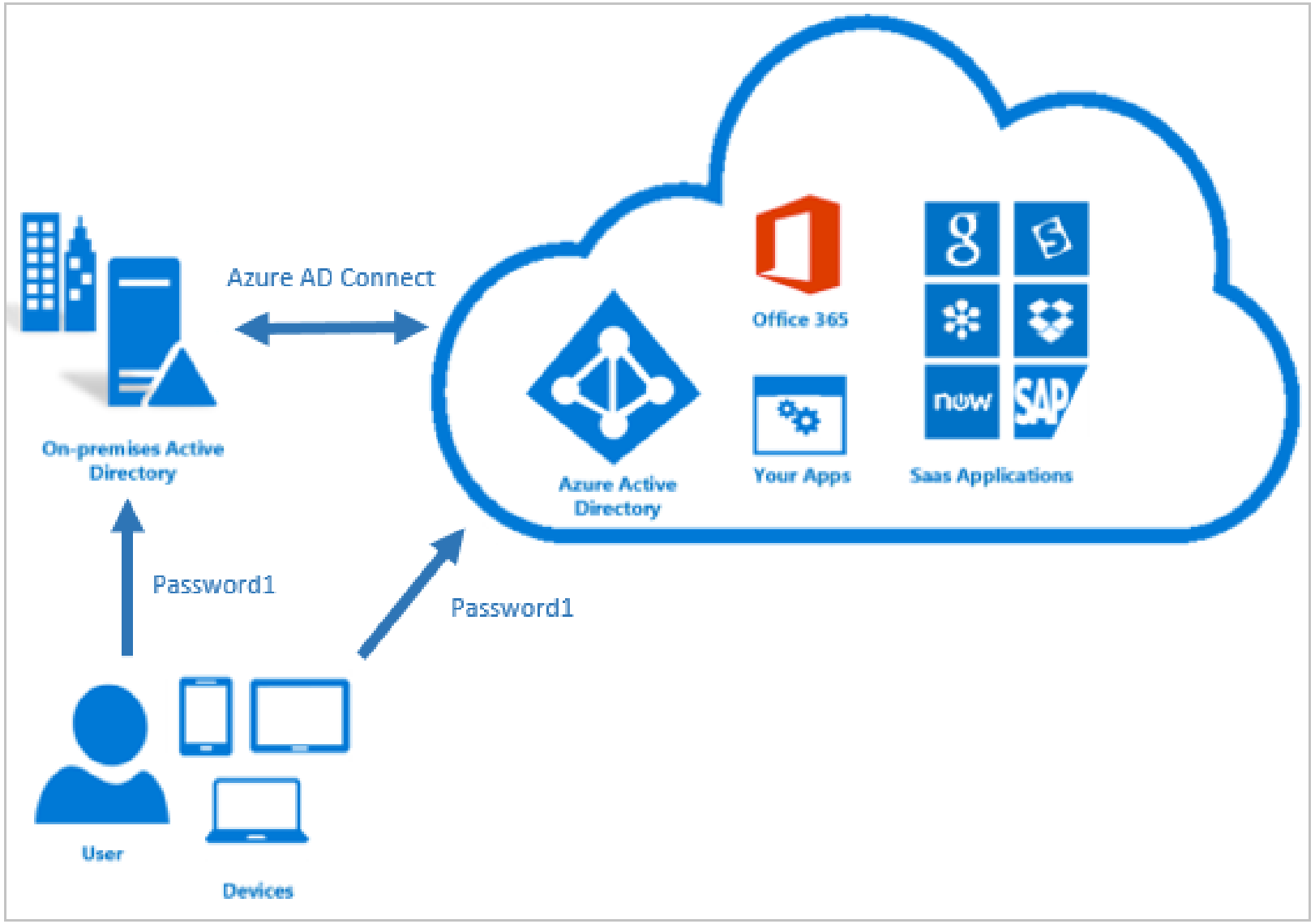
Password hash synchronization + Seamless SSO

Pass-through authentication + Seamless SSO

Federation with AD FS

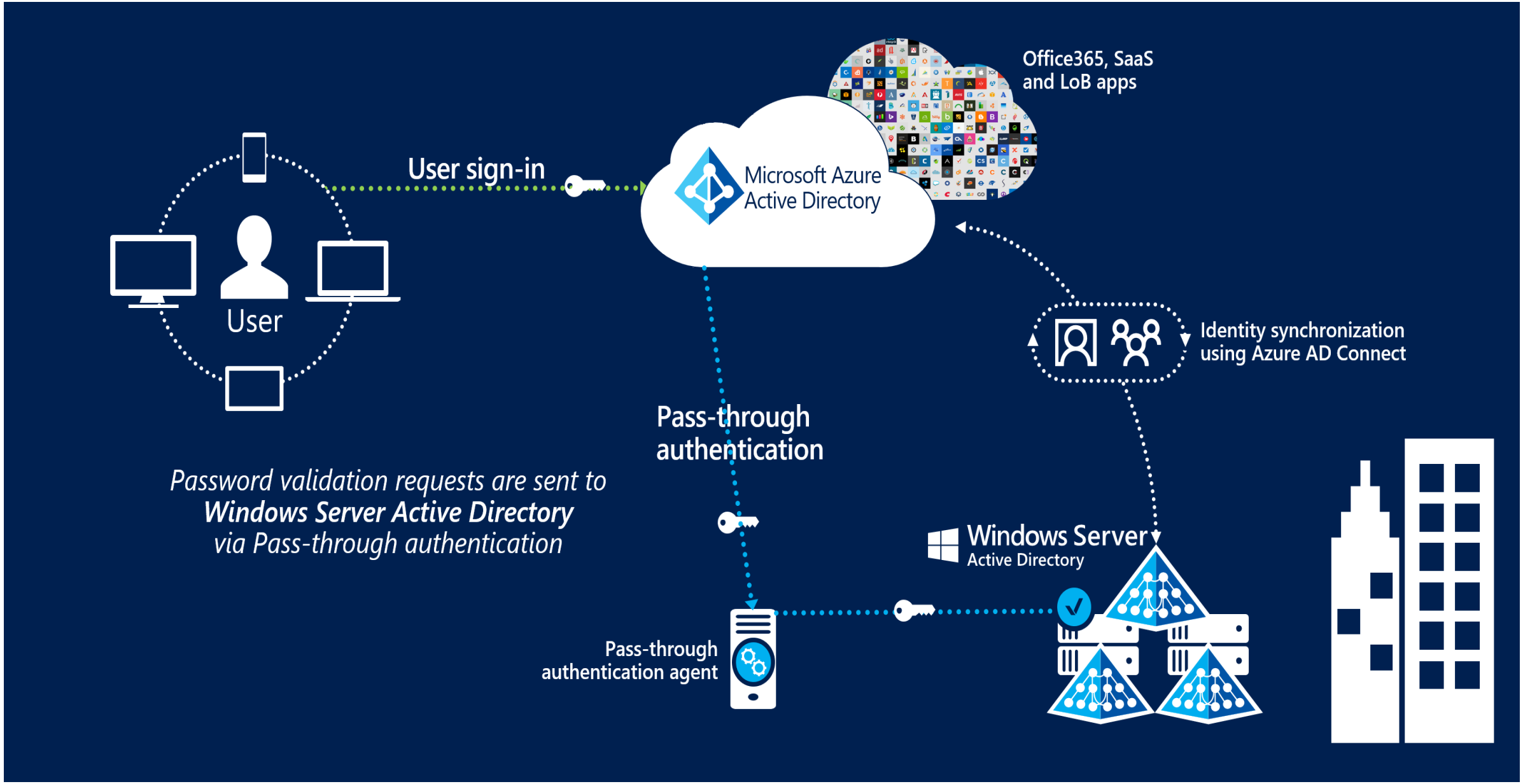
Password hash synchronization

WinWire Technologies

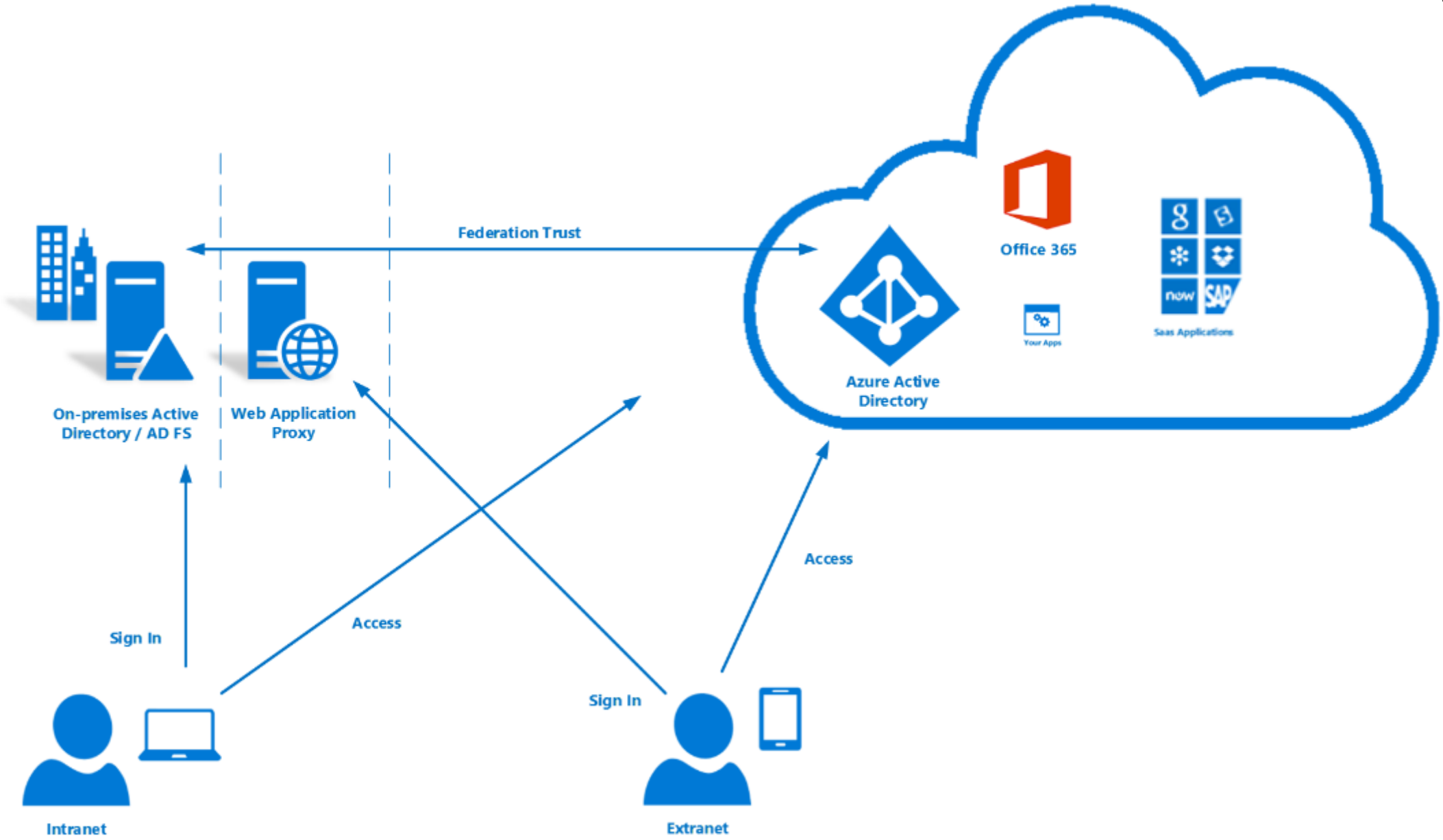


Pass-through authentication

WinWire Technologies



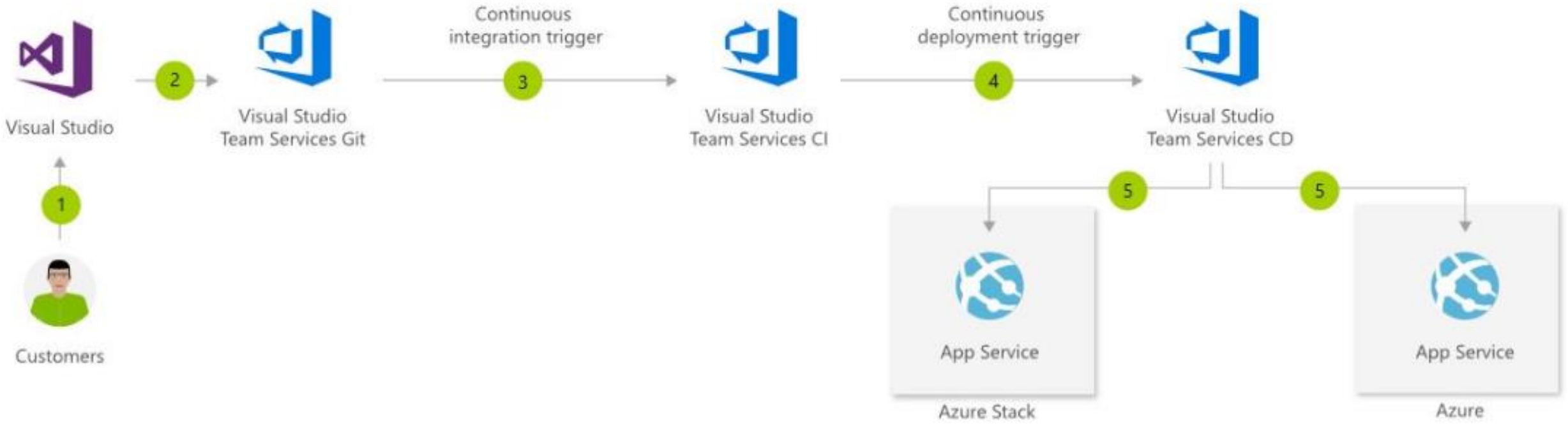
Federation with AD FS



Hybrid CI/CD

Hybrid CI/CD

WinWire Technologies



Deploying to Azure & Azure Stack

WinWire Technologies

- Prepare private Azure Pipelines Agent
  - ✓ Create Service Principal
  - ✓ Create access key
  - ✓ Grant service principal rights to deploy
  - ✓ Add a PAT to access Azure DevOps Services
  - ✓ Install Azure DevOps Services build agent
- Create Azure Stack endpoint
- Develop your build
- Create a release

Hybrid CI/CD: Key Benefits

WinWire Technologies

1. Continuity, security, reliability
2. Consolidates your build pipes across your on-premises environment and the public cloud
3. Change deployment locations without changing your application
4. Consistent set of development tools across your on-premises Azure Stack environment and the Azure public cloud
5. Apps and services deployed in Azure or Azure Stack are interchangeable and the same code can run in either location
6. Take advantage of on-premises and public cloud features and capabilities

Azure Hybrid Benefit

WinWire Technologies

Cost	Migration	Standard Edition License	Security
• AWS is 5 times more expensive than Azure for Windows Server and SQL Server	• Migrate your SQL Server workloads to Azure with your on-premises licenses	• You can use the benefit with Windows Server Datacenter and Standard edition licenses covered with Software Assurance or Windows Server Subscriptions	• Receive free extended security updates when you migrate your Windows Server and SQL Server 2008 and 2008 R2 workloads to Azure virtual machines

WinWire Technologies

Q & A

- Website: www.winwire.com
- Email: marketing@winwire.com
- Blog: https://www.winwire.com/blog/
- Twitter: @winwire