ADASTRA

Azure Landing Zone Overview

Kevin Harmer

Adastra Overview

Solutions & Service

MODERN ARCHITECTURE

Enterprise Architecture
Cloud Architecture
Cloud Computing
Data Lake
Data Engineering
Managed Services

DATA MANAGEMENT

Data Governance
Data Quality
Master Data Mgmt
Reference Data Mgmt
Meta Data Mgmt
Data Lineage
Privacy & Security
Cybersecurity

ANALYTICS

Business Intelligence
Visualization
Machine Learning
Artificial Intelligence
Natural Language Processing
RPA & IPA
Simulation & Optimization

APPLICATION DEVELOPMENT

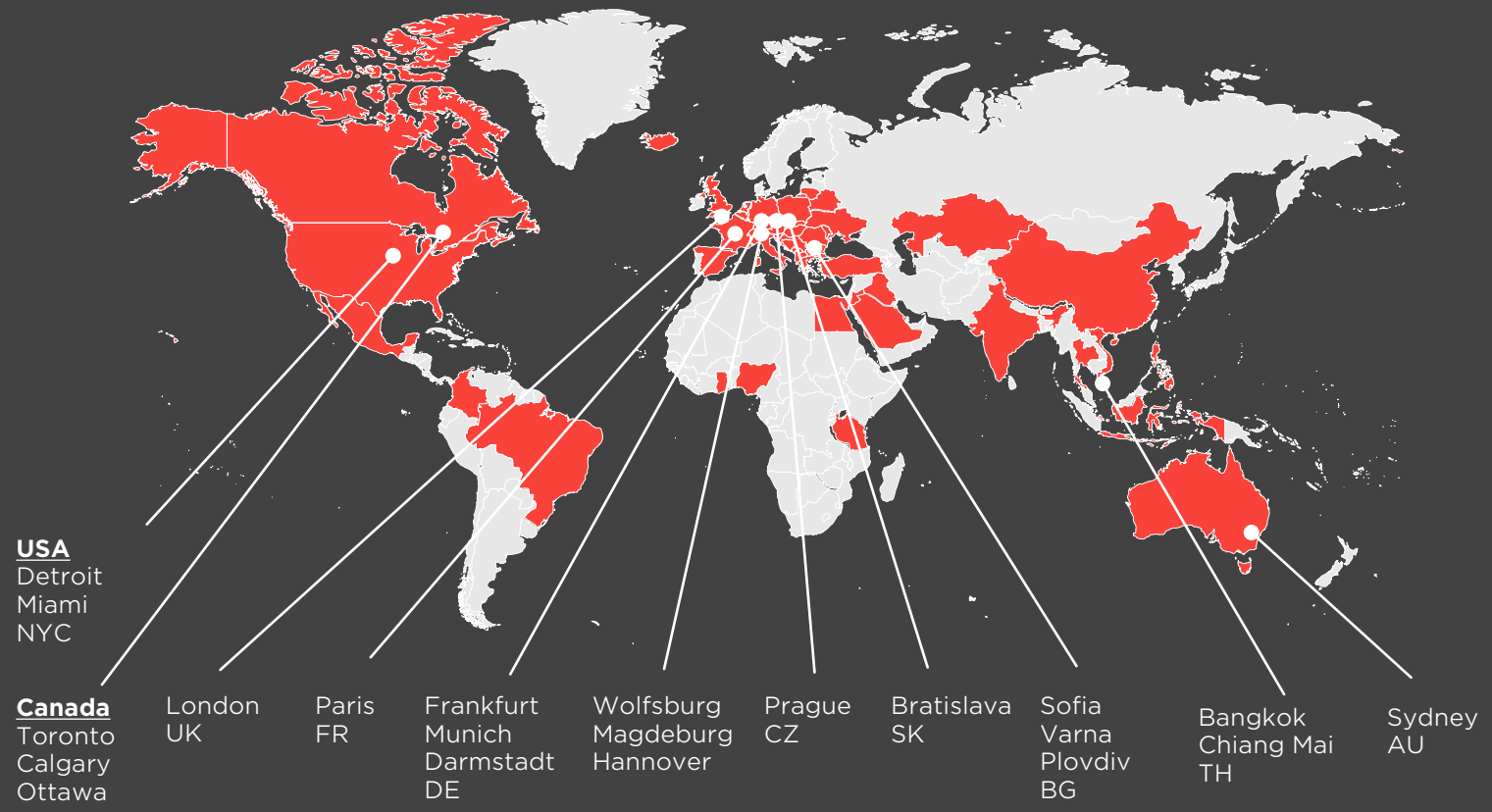
Software Factory
Mobile Apps
UX/UI
Solution Development

Adastra delivers **industry-leading** solutions & services across the **data & digital** spectrum.

ADASTRA GROUP WORLDWIDE

2,000+ PROFESSIONALS

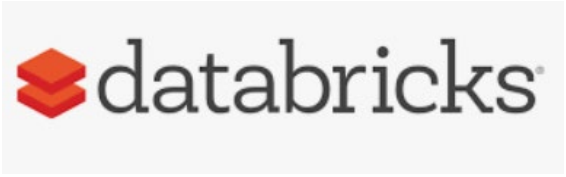
23 OFFICES GLOBALLY



Adastra Success Stories

Adastra has successfully architected / implemented Azure Modernization solutions for > 150 organizations in the last 24 months. Select clients:

Adastra Key Partnerships



Adastra: #1 Modernization Partner in Canada

Microsoft Canada ranks Adastra as their #1 Modernization Partner

2021 Canadian Partner Winner for Three Awards: Analytics Impact, AI Impact, and Data Platform Modernization
2021 Global Partner Finalist for One Award: Analytics Impact

ABILITY TO SCALE

With over 2500 GLOBAL staff, 500 CDN staff, and 250 Azure and Power Platform specialists, Adastra is ready to scale

COMPLETE STACK DELIVERY

Azure Infrastructure, Azure AppDev, Azure BizApps (O365 / D365), Azure BI Analytics, Azure Big Data, Azure Data Science, and Power Platform

PROVEN SUCCESS

Adastra has the best record in Canada, successfully driving customer Azure adoption / ROI, for over 150 organizations in the last two yrs

AGILE AND RESPONSIVE

Adastra's agility enables us to react / deliver for SMB customers, while also having breadth / depth for Enterprise customers

BESTSHORE DELIVERY

Adastra's bestshore delivery model ensures top global experts can be applied to any project, provides offshore economies of scale for heavy lift tasks, with global teams working in partnership with our on location experts. Adastra offers global 24 / 7 delivery and support, through our NA, EUR, and ASIA teams.

Adastra Microsoft Partnership

Adastra: Go-To Partner for Data & AI

Microsoft IMPACT Award Recipient:

- 2021 Analytics Impact Award
- 2021 AI Impact Award
- 2021 Data Platform Modernization Award
- 2020 / 2019 Commercial Partner of the Year
- 2019 Manufacturing Innovation Impact Award

Azure Migration Partner

Advanced Specialization for Analytics

Advanced Specialization for Windows / SQL Server Migration to Azure

Lead Canadian Partner for Synapse Migration / Implementation

Product Team Collaboration for Azure Synapse / Azure Purview / Azure Databricks

Adastra Azure Specializations

AZURE FOUNDATION

cloud adoption framework, well architected framework, tenant design, resource naming, service tag approach, network architecture, governance design, tco analysis, hybrid network implementation, devops integration, azure foundation implementation, iac automation, ...

AZURE APP / MIGRATION

app / data assessment, app / data decisioning (lift / shift vs modernize), app / data architecture, api architecture, microservices architecture, app/ data security design, migration roadmap, migration execution, iac pipelines, devops integration, ...

AZURE SECURITY

security assessment, identity strategy, role based access, secrets management, encryption, data loss protection, api management, private zone configuration /w zoning, siem / soar integration, policy enforcement, security implementation ...

AZURE ANALYTICS

analytics assessment, analytics architecture, analytics roadmap, data zoning, enterprise model design (kimball, inmon, data vault), ETL data pipelines, persona enablement, citizen report development, trusted data as a service, ...

AZURE BIG DATA

big data assessment, data lake design, Hadoop integration, PySpark data engineering, ELT pipelines, spark delta lake, spark streaming, serverless compute, devops integration, ...

AZURE AI / ML

advanced analytics assessment, cognitive service integration, r&d model training / testing, mlops implementation, ai / ml pipelines, data science workbench automation, devops integration, ...

POWER PLATFORM

citizen development assessment, power platform governance, roles / responsibilities, environment strategy, CoE kit, canvas / model apps, power automate flows, power automate rpa, power platform dataverse, power bi datasets / reports, ...

AZURE DATA GOVERNANCE

data governance assessment, data catalog, data classification, data sensitivity, data use governance, data privacy, data lineage, master data management, data quality management, reference data management, ...

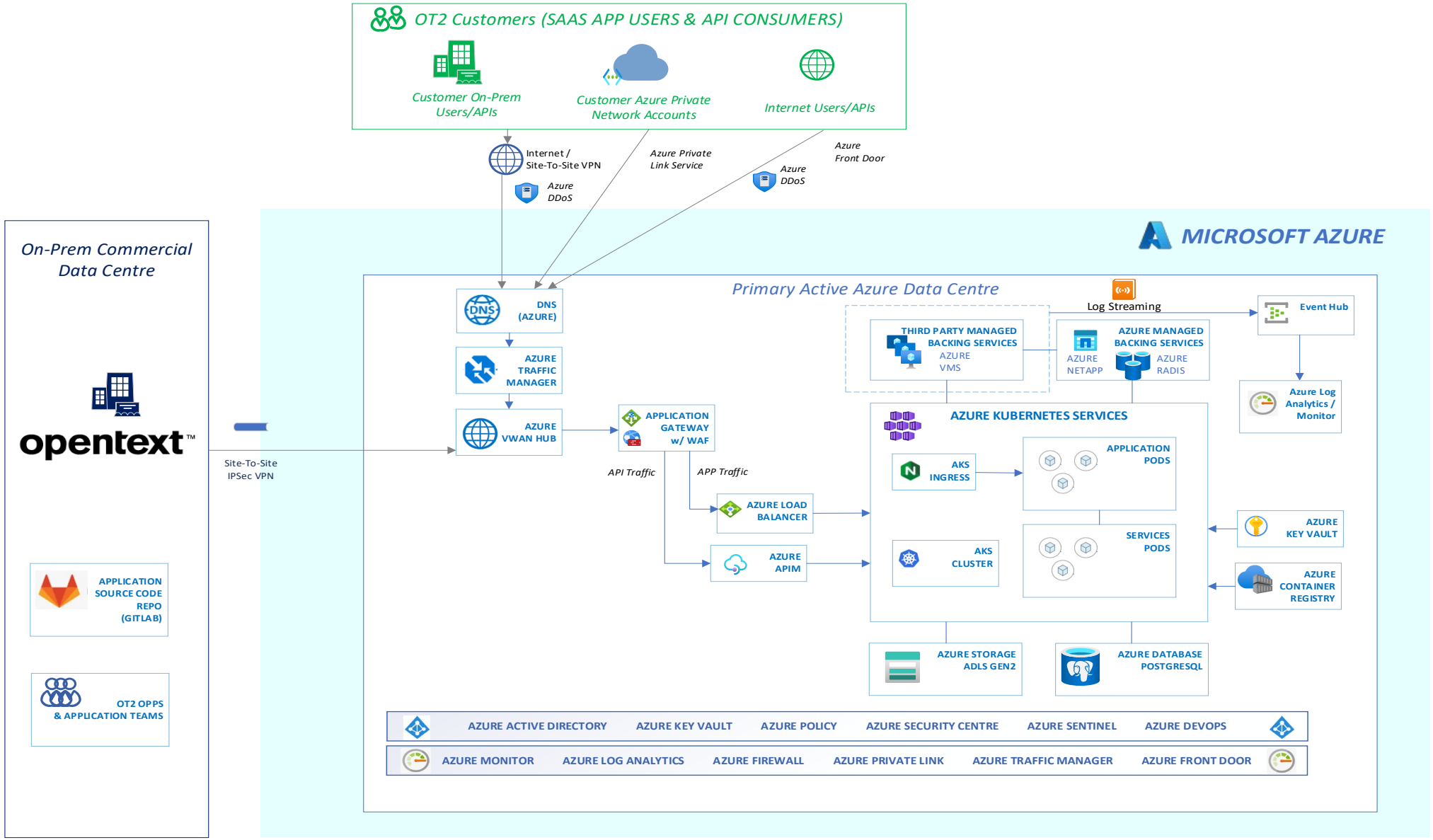
AZURE INTEGRATION PAAS

integration paas assessment, api management, logic workflows, service bus management, event grid distribution, peer to peer patterns, pubsub patterns, managed file transfers, iot telemetry streaming, iot edge device management, ...

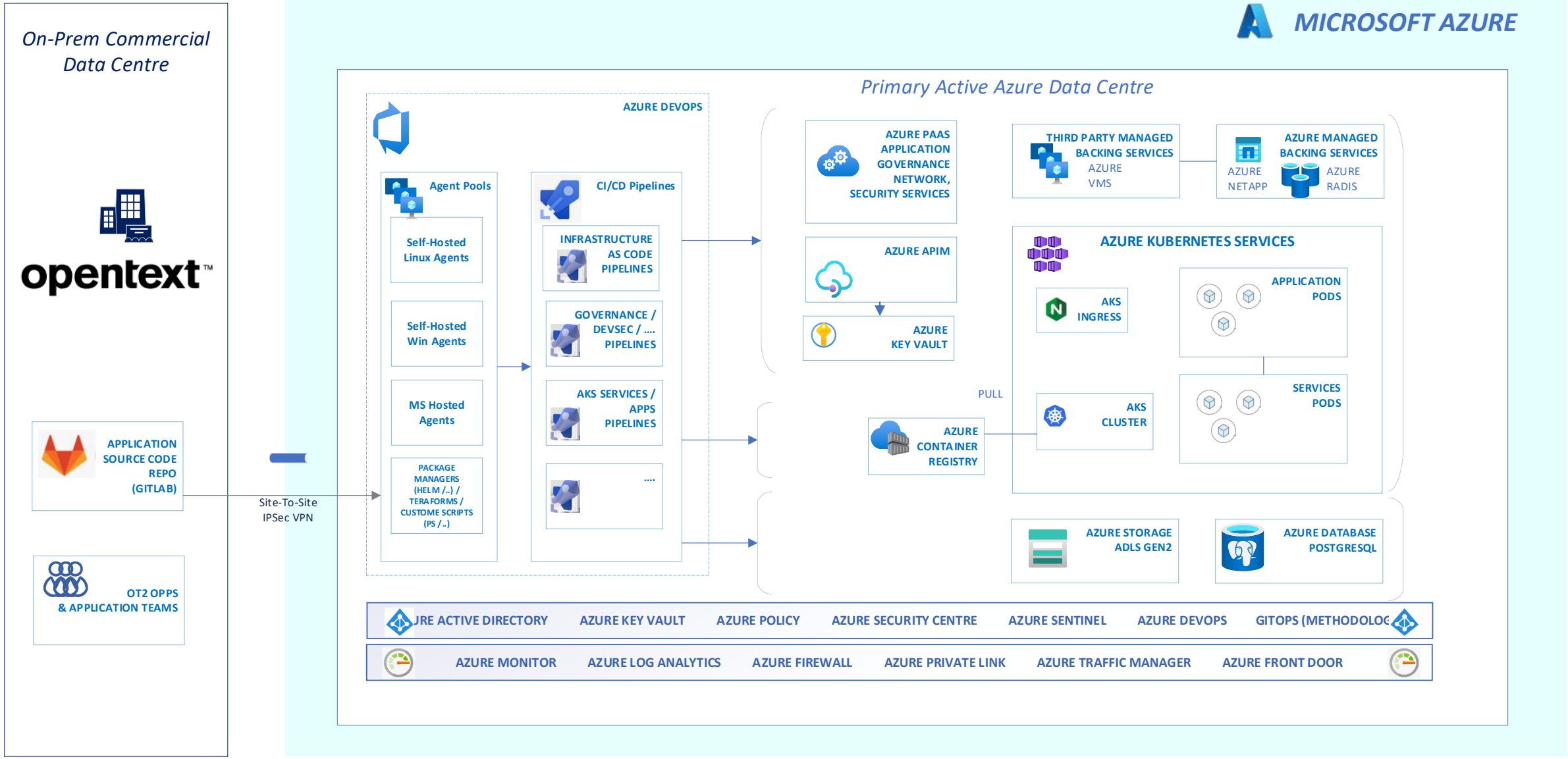
Adastra Managed Services

Adastra Azure Modernization Success Stories

Azure App Modernization @ OpenText (One Region)

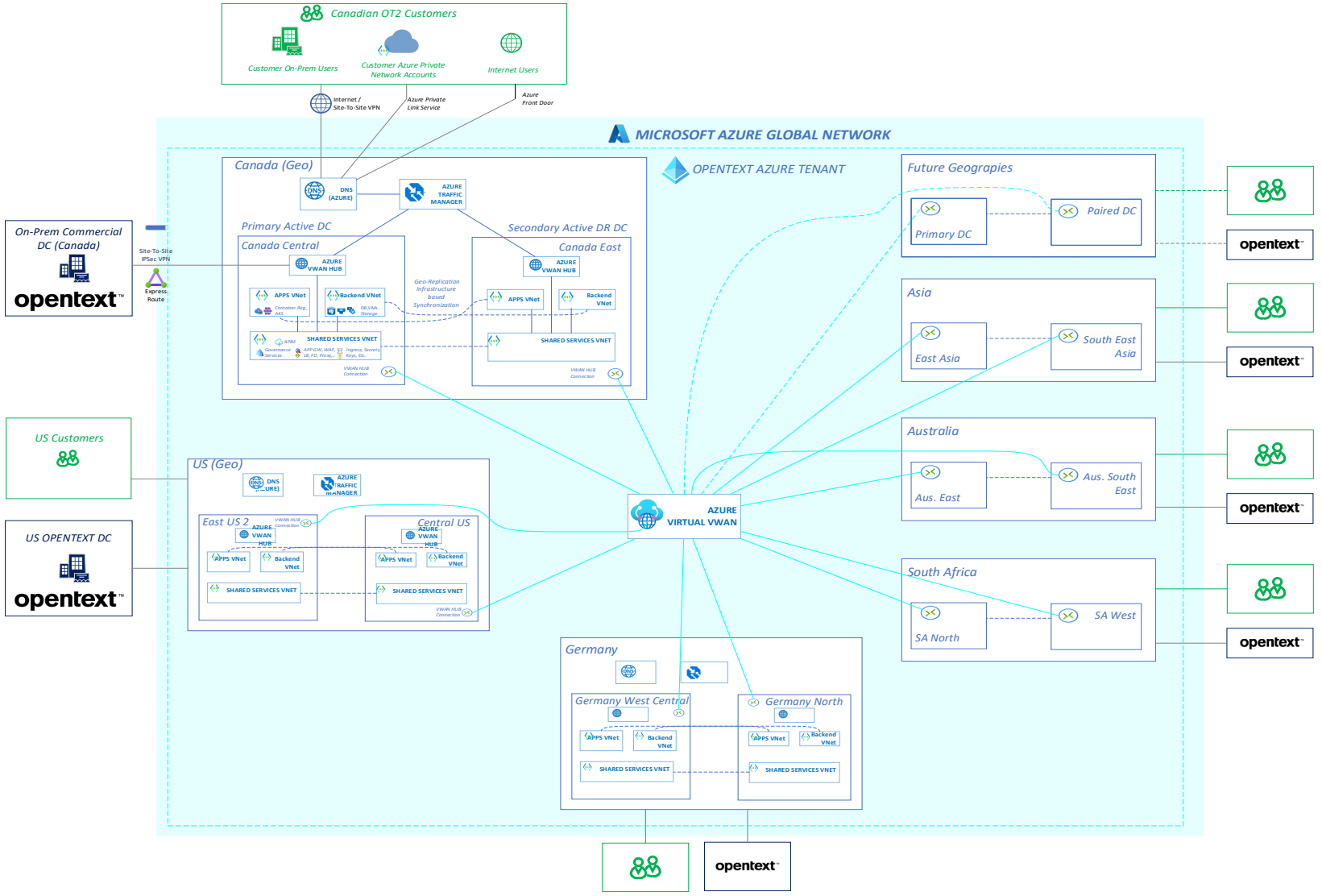


Azure App Modernization @ OpenText (CI/CD)



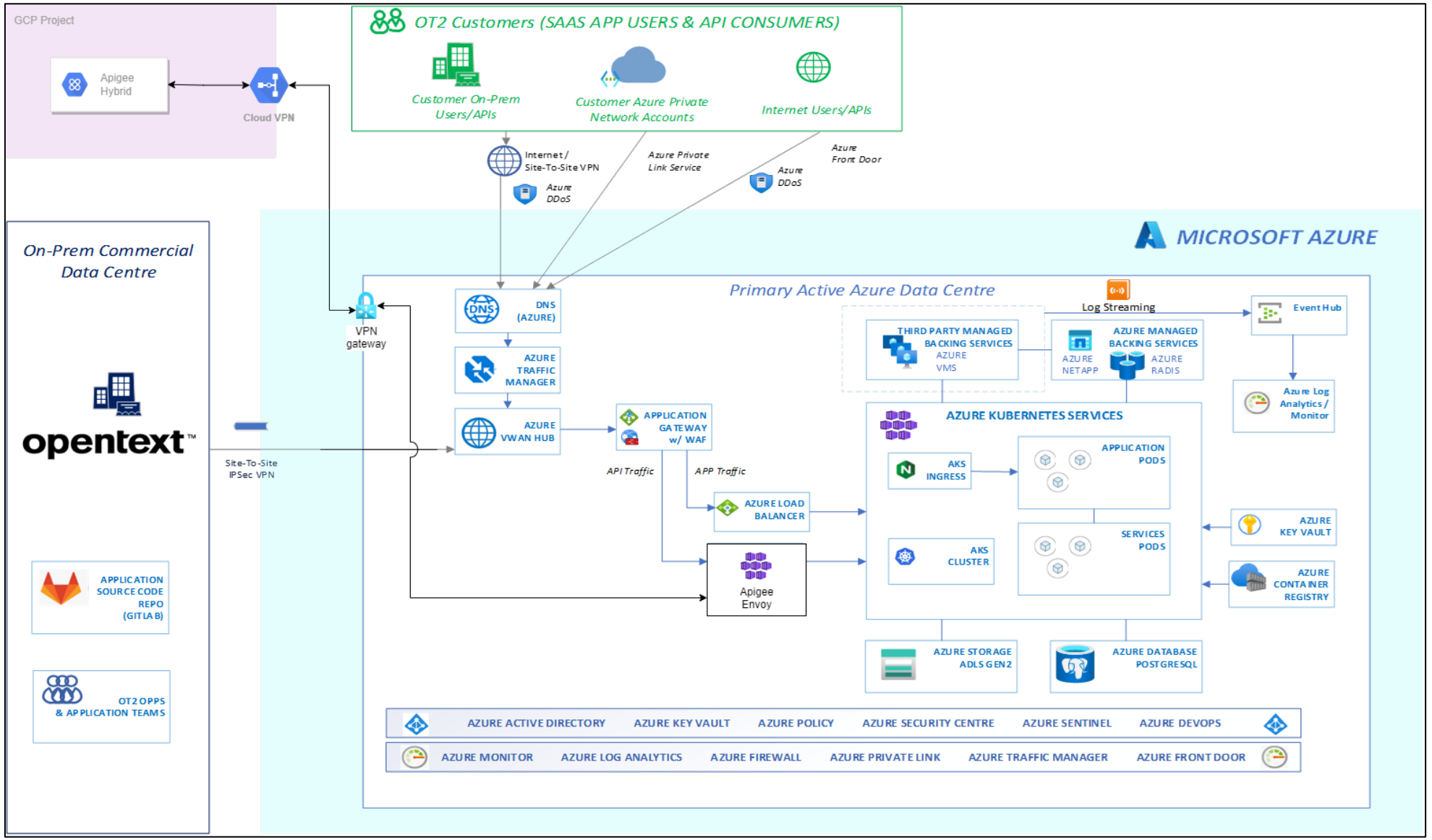
Azure App Modernization @ OpenText (Global)

OPENTEXT OT2 GLOBAL AZURE REFERENCE ARCHITECTURE



- Azure Zone redundancy is native for services such as storage, AKS, etc.
- For non-native zone redundancy services, it will be designed & implemented.
- Data Center redundancy will cover major data center level outages.

Azure / GCP Hybrid API @ OpenText



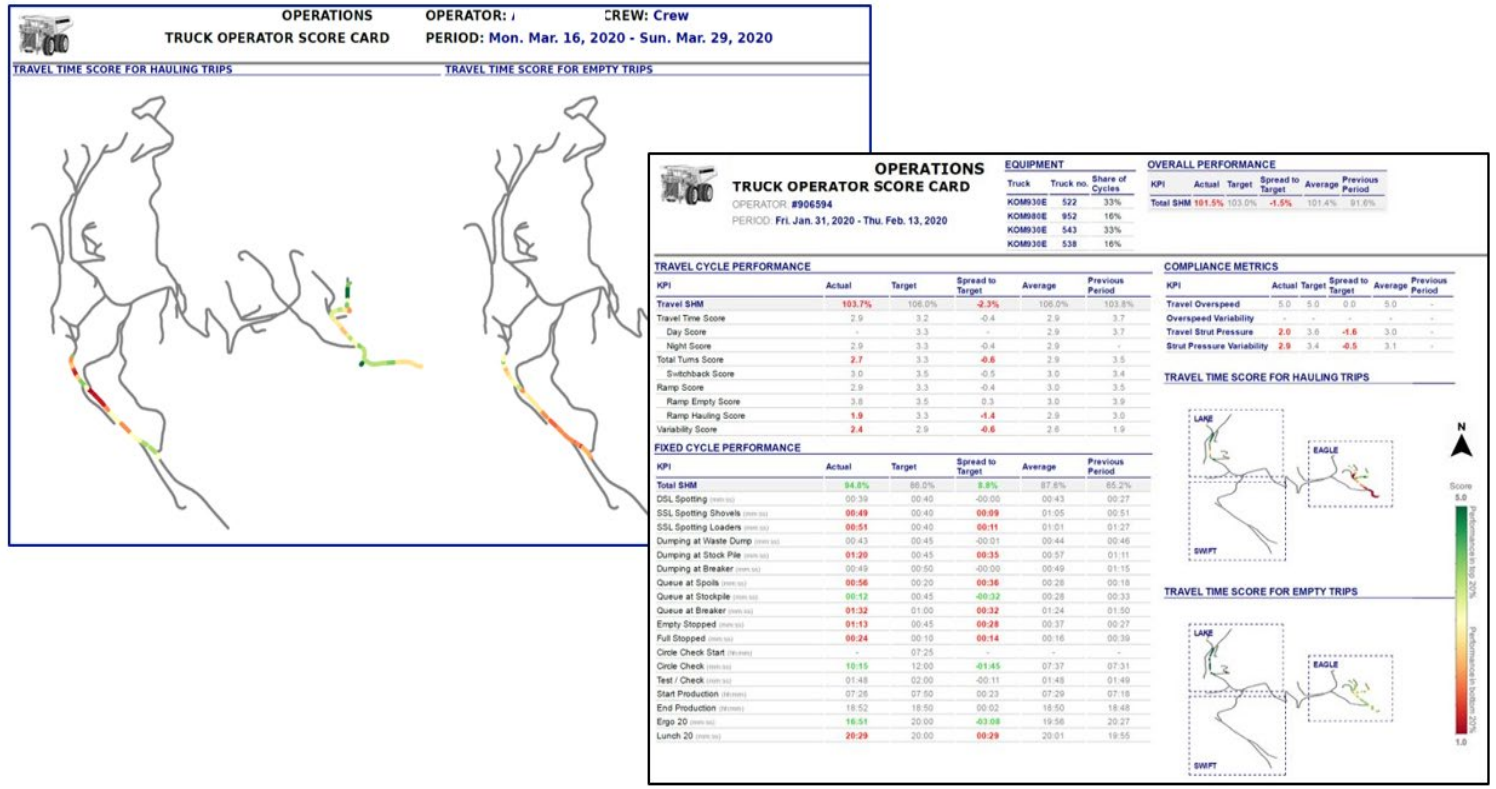
Azure App Modernization @ Teck Resources

Use Case: Migrate 20 analytic applications, from GCP to Azure, to position applications for ISV offering (with the mining company as “customer one”), in a net new Azure tenant.

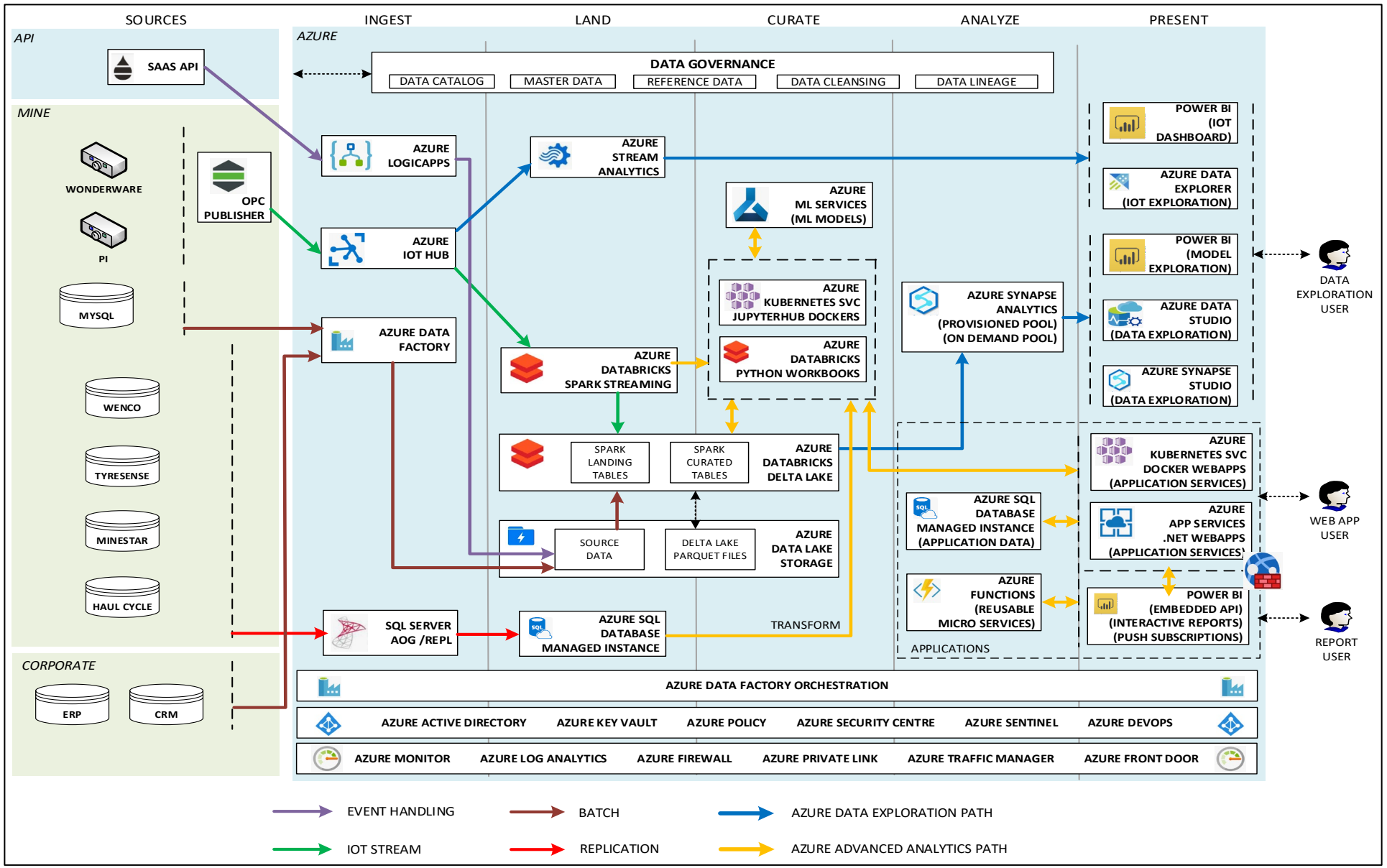
Problem: Lack of security and b2b capability in GCP made it the wrong platform for ISV positioning, requiring migration to Azure. Also, “R&D” type solutions had to be elevated to an operational level, to be ready to scale and deliver SLA goals.

Solution: Design new Azure ISV tenant, supporting internal and external customers, with the right identity, resource, dlp, bc / dr, change management, infra as code, endpoint, and monitoring configuration. Migrate 500TB data lake, ingestion pipelines, analytics, and applications, to Azure, refactoring for best practices, operations and support. Enable the mining ISV organization to develop and manage service delivery with a world class solution development ecosystem.

Outcome: Successfully migrated solution is delivering $150M / year of internal value, and is being sold / adopted by external customers with projected 3 year value of $500M / year.



Azure App Modernization @ Teck Resources



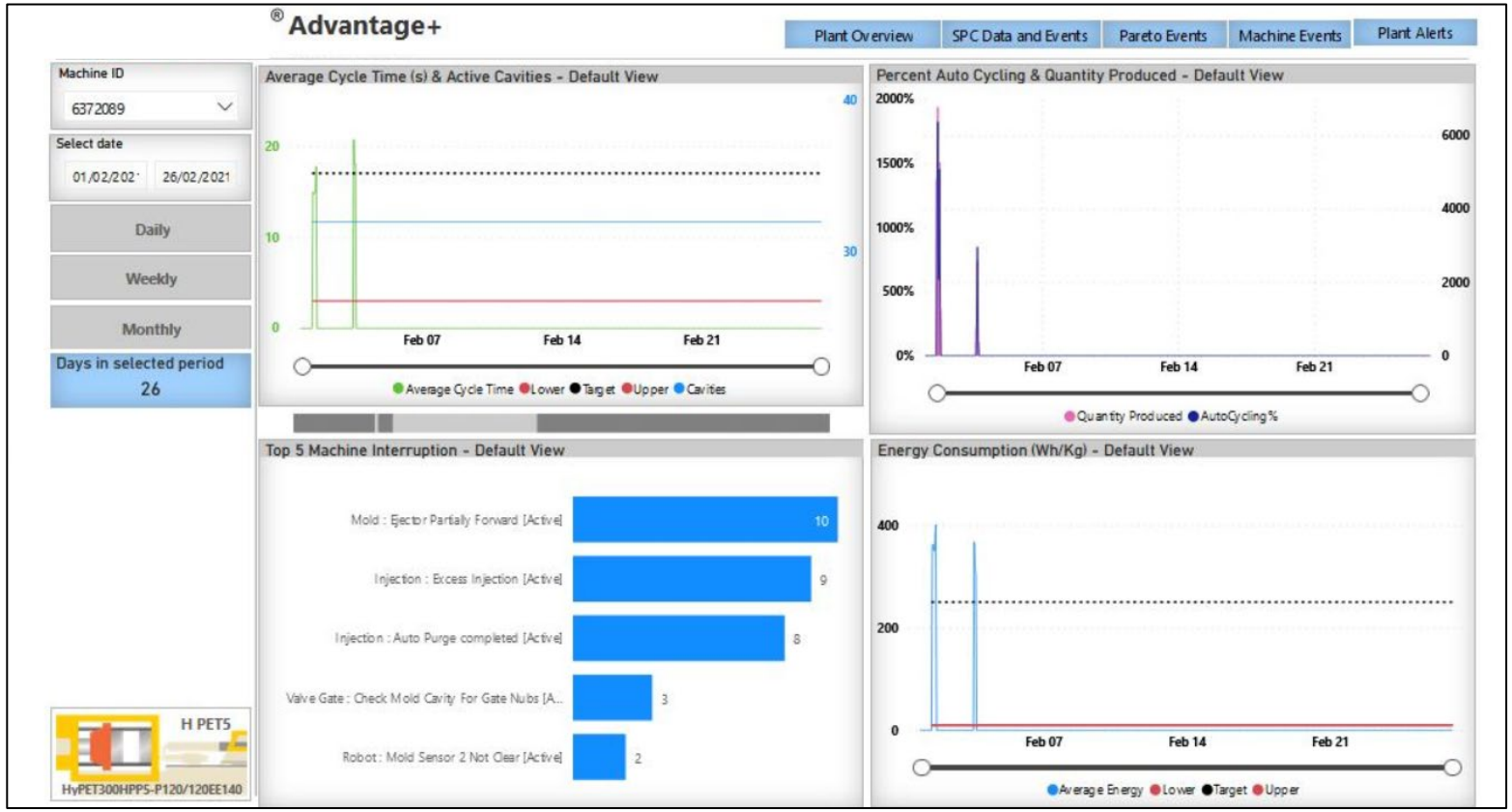
Azure App Modernization @ Husky

Use Case: Deliver new reporting and advanced analytic capabilities to customers, through a centralized managed service environment, to drive new customer services and revenue, in a net new tenant.

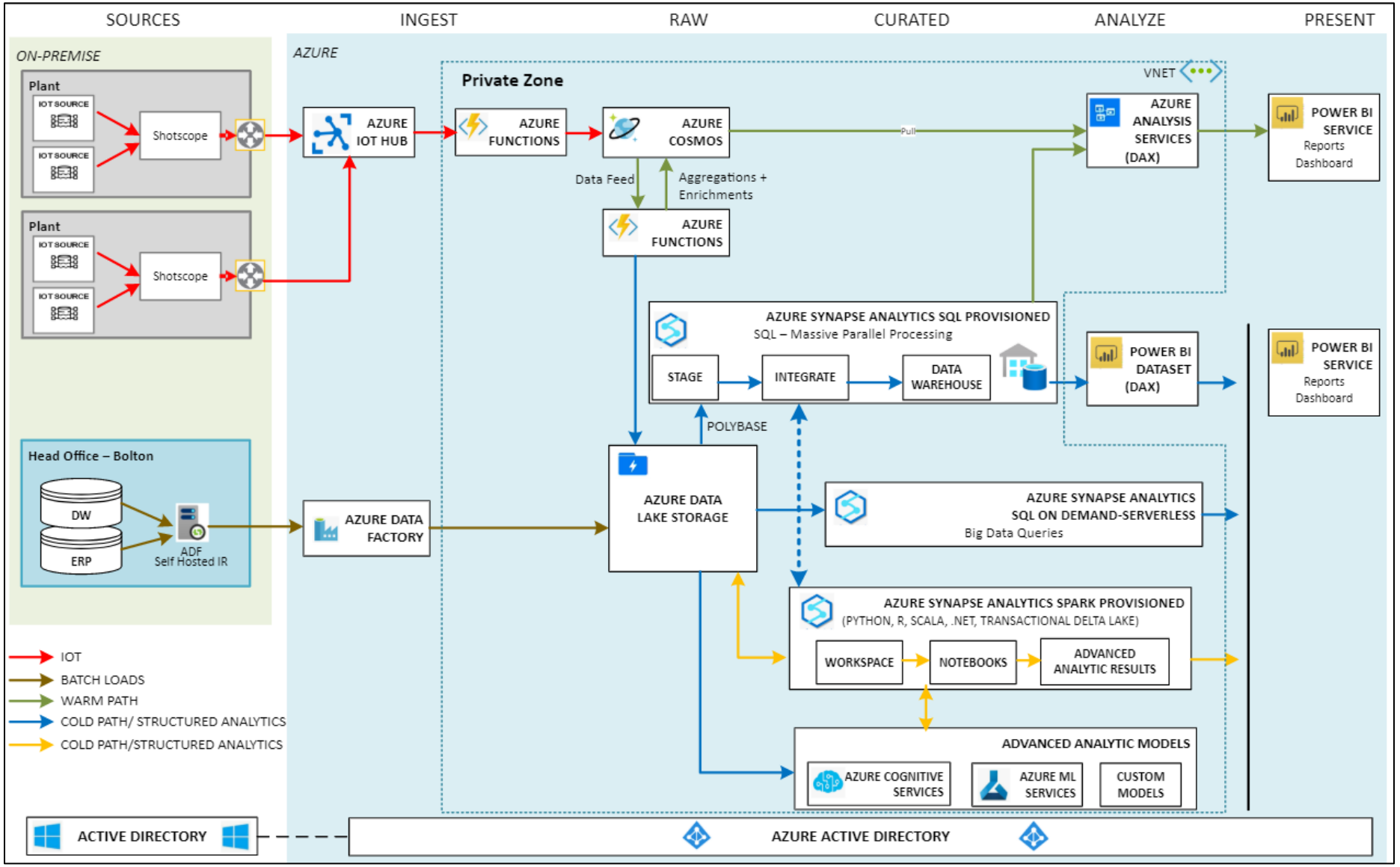
Problem: Existing 300+ customers required a locally installed and managed reporting / analytic solution. Local deployment caused significant overhead, higher support costs, slow new capability integration, and limited capabilities for customers.

Solution: Created a centralized analytics platform, collecting real time telemetry data from 300+ plants, to support both live (warm) and historical (cold) path analytics. Introduced new advanced analytic capabilities to customers, and provided a better user experience.

Outcome: Customer satisfaction improved significantly. Customer productivity increased by leveraging analytic data, enabling proactive maintenance and more efficient equipment use. New analytic services became a differentiator for the manufacturer.



Azure App Modernization @ Husky



Adastra Modernization Assessment Offer

Landing Zone Assessment Offer

- **Discover current data center, infrastructure, network and app/data landscape**
  - Collaborative discovery session(s) with customer SME's
  - Optionally, create Microsoft Assessment as a Service report (scan systems / report migration estimates)
- **Define future state cloud goals and perform a gap analysis between current / future state**
- **Design future state Azure landing zone architecture aligned to goals**
  - Tenant / management group / resource / tagging design
  - Hybrid network design (express route / vwan / s2s tunnel / apim / app gateway / vnet / hub and spoke / …)
  - Layered network protection design (zoning / gateways / firewalls / nsg / asg / ddos protection / private link / …)
  - Infrastructure as code design (arm templates / azure blueprints / terraform / …)
  - Devops design (environments, work mgmt, code / artefact repos, build / release pipelines, testing / gating, …)
  - Cloud security design (zero trust, identity, rbac, policy enforcement, exposure monitoring, siem / soar, secrets mgmt, …)
  - Data security design (data classification, data use governance, data sharing governance, data privacy, …)
  - Cloud governance design (event monitoring / auditing, cost management, alert workflows, …)
- **Size and price Azure future state subscription pricing /w cost management strategies**
- **Provide Azure costing and ongoing support structure / costing for 5 year Azure state**
- **Define detailed plan and implementation proposal for Landing Zone setup**
- **Define approach / roadmap for Data Use Case implementation (post Landing Zone)**
- **Identify customer resource dependencies and pre-req steps to initiate Landing Zone**

Landing Zone Assessment Deliverables / Cost

Task	W1	W2	W3	W4
Azure Landing Zone Assessment	→			

- 1 x Azure Principle Architect
- 1 x Azure Network Architect
- 1 x Azure Security Architect

- **Cost: $50k**

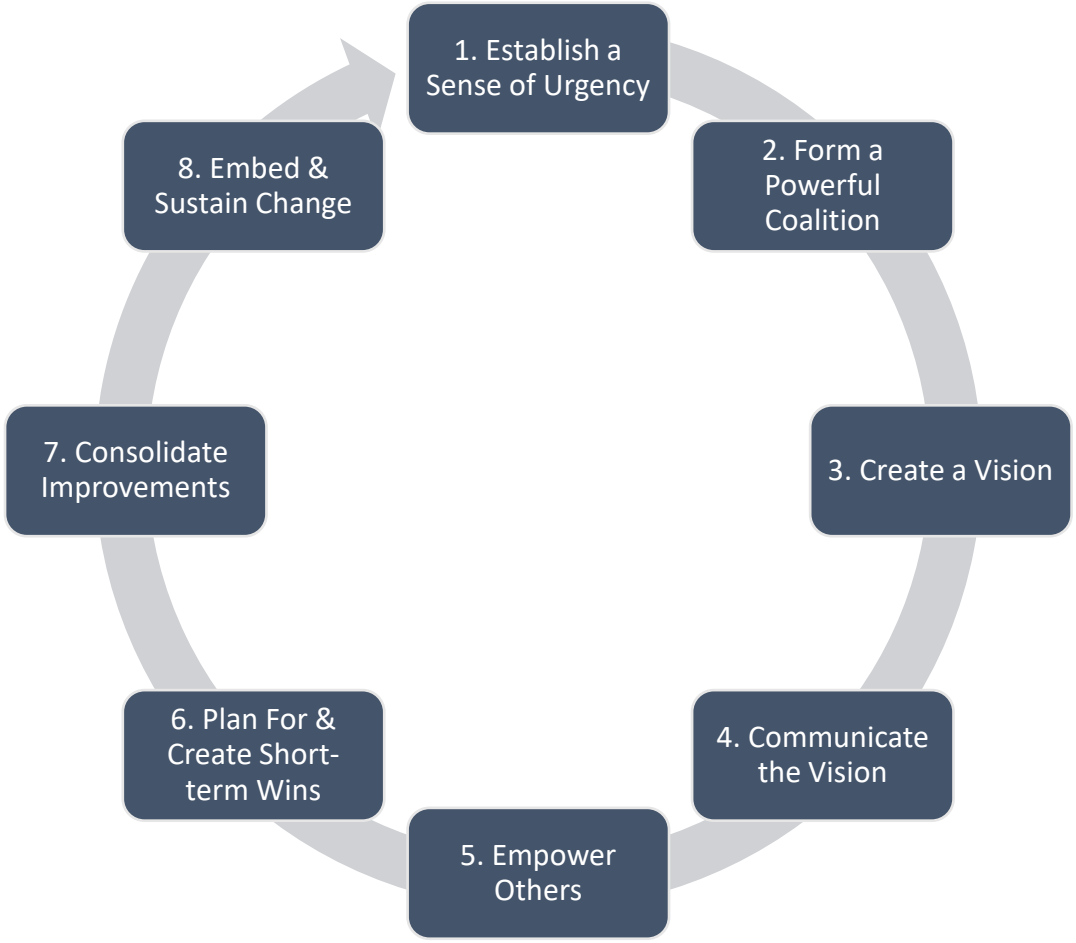
- **Discovery findings, future state goals, and gap analysis report**
- **Tool reports summarizing migration scope for servers / databases / applications (optional)**
- **Tenant design specification**
- **Network design specification**
- **Devops design specification including Infrastructure as Code approach**
- **Security design specification including identity, access, risk monitoring / mitigation**
- **Cloud governance specification including cost management / cost alerting**
- **TCO report for cloud modernization covering Azure run costs, Azure implementation costs, and ongoing Azure support costs**
- **Cost reduction techniques (Microsoft funding and Adastra discount options)**
- **Detailed implementation plan and getting started steps**
- **Roadmap for data use case onboarding**

Adastra Azure Modernization Approach

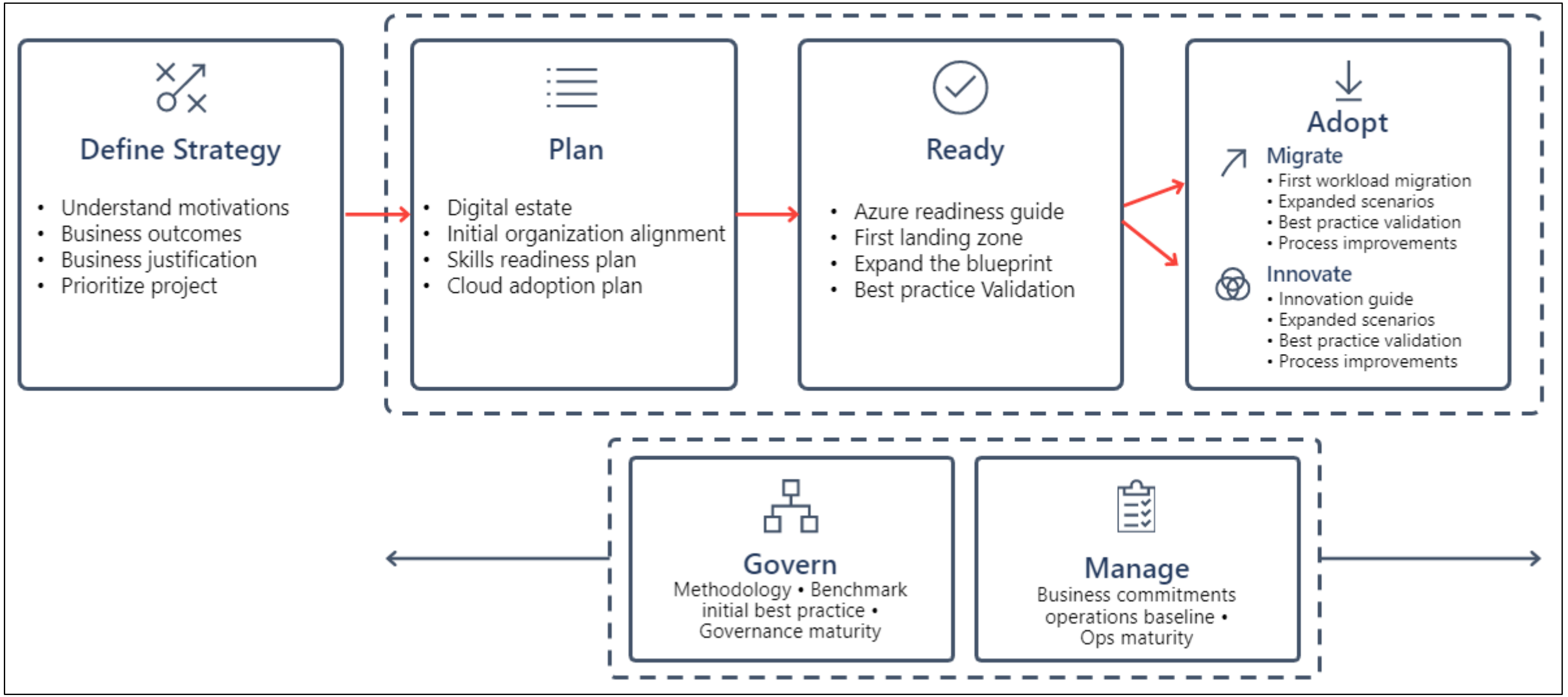
Drive Differentiating Change

Successful cloud modernization requires organizations create awareness, build a compelling case for change, engage stakeholders, and establish end user readiness.

Adastra's Organizational Change Management (OCM) methodology is founded on key principles, developed through best practice research, practical, on the ground application in a range of environments and maturity level.



Design /w Azure Cloud Adoption Framework



Verify /w Azure Well Architected Framework

Recommendations for your workload

Export to CSV

Actionable items to consider implementing to improve your workload across the five pillars of the Microsoft Azure Well-Architected Framework

Your overall results

EXCELLENT

You're all set. You meet the criteria necessary and are ready for successful cloud enablement.

Critical 0-33 | Moderate 33-67 | Excellent 67-100

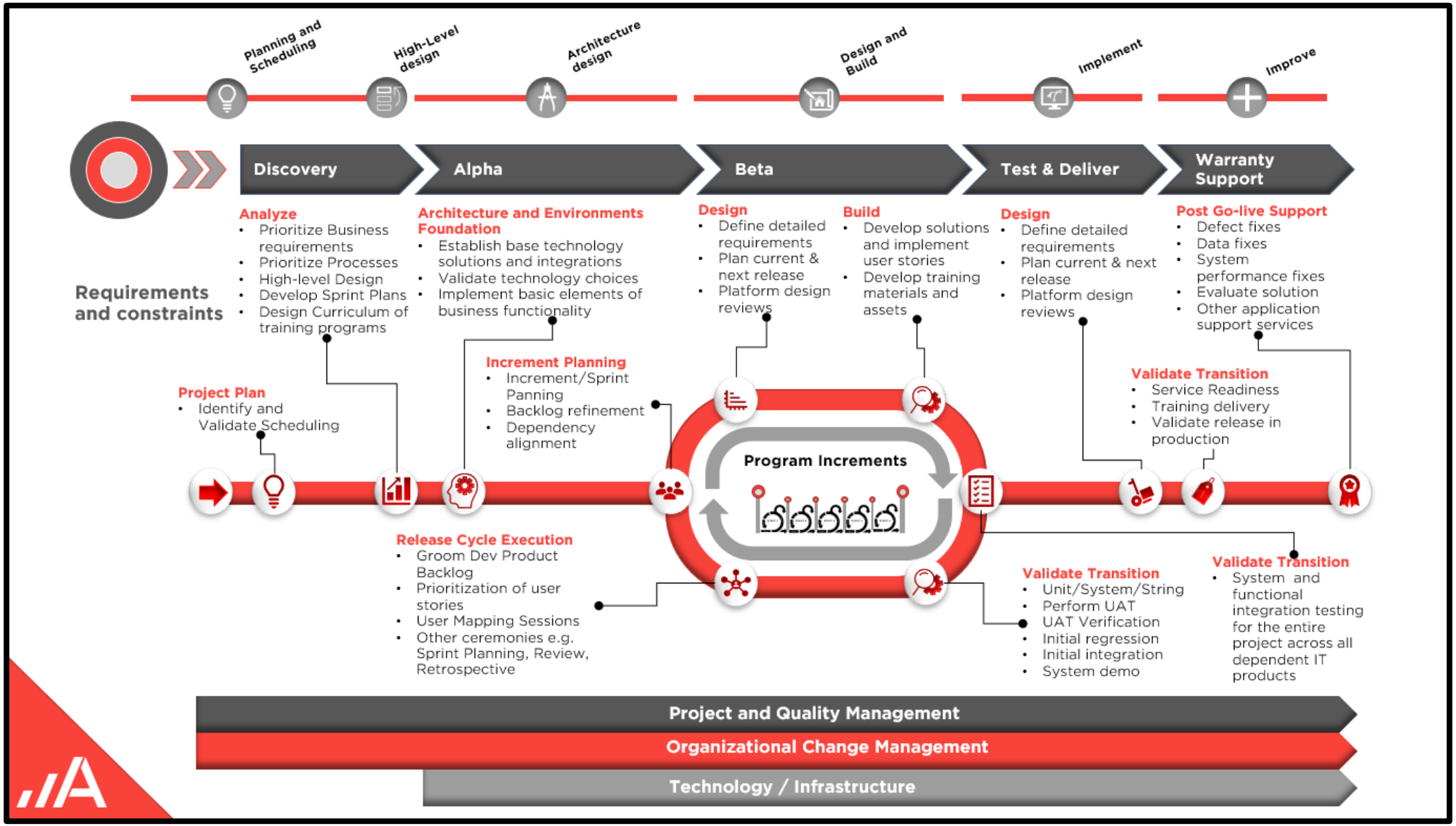
Your result:
85/100

Categories that influenced your results

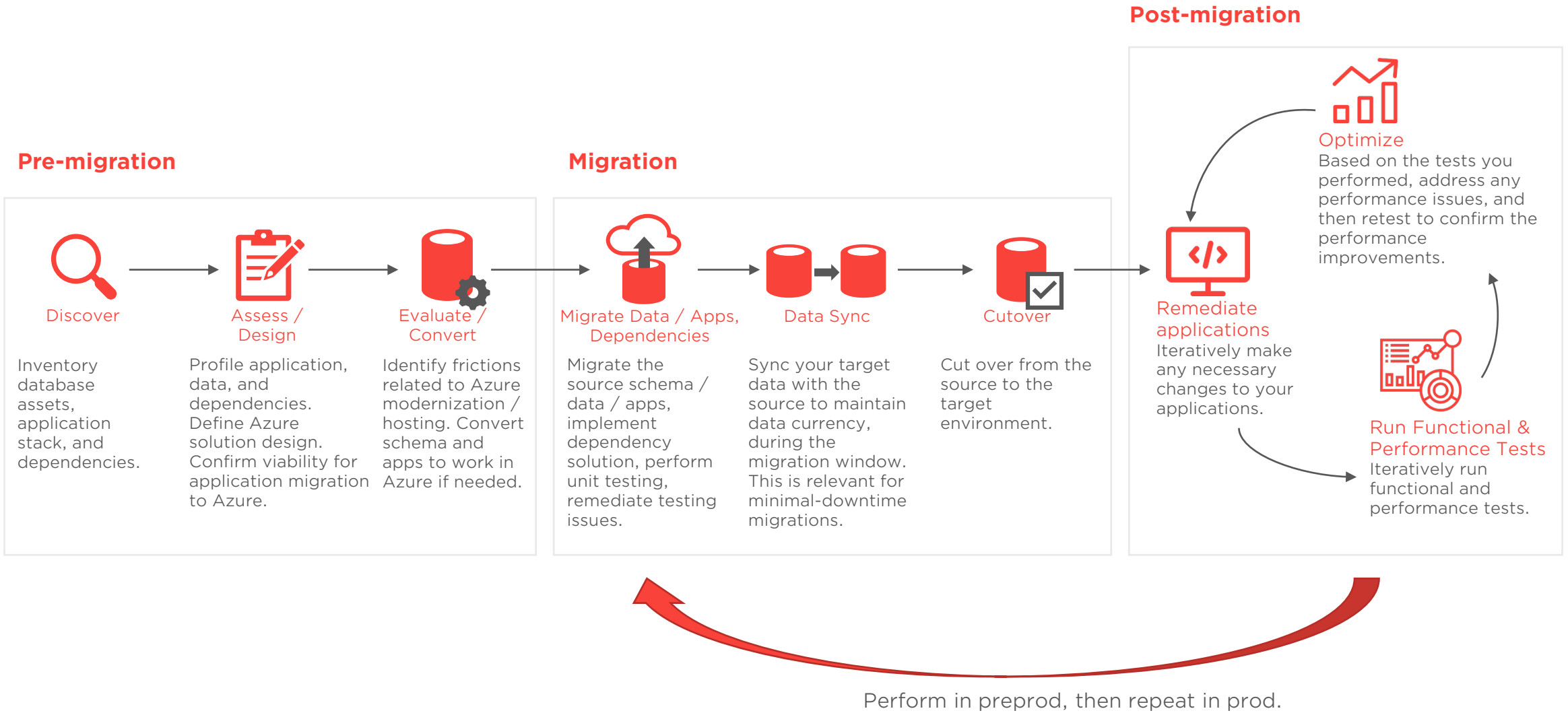
Reliability	EXCELLENT
Security	EXCELLENT
Cost Optimization	EXCELLENT
Operational Excellence	EXCELLENT
Performance Efficiency	EXCELLENT

You can find out how to improve on individual categories by reviewing the recommendations below in the report.

Solution Delivery Approach



Application Migration Process



Azure Application Decisioning

Managed PaaS

Web: Azure App Service

Data: Azure SQL Database

Identity: Azure AD

LB: Yes (Azure Application Gateway)

HA/DR: Yes (Azure Traffic Manager)

Auto Scale: Yes (Native)

CI/CD Integrated: Manual

Implementation: Simple

Recommendation: Use for .NET / PHP / JAVA / PYTH Custom Web Applications with no O/S dependencies

Container PaaS

Web: Azure Kubernetes Service (IIS)

Data: Azure Kubernetes Service (SQL)

Identity: Azure AD

LB: Yes (AKS Controller)

HA/DR: Yes (Docker Repl and ATM)

Auto Scale: Yes (Native)

CI/CD Integrated: Implicit

Implementation: Complex

Recommendation: Use for any Custom Web Applications and COTS Web Applications approved for Docker / Kubernetes

IaaS

Web: Azure Windows VM (IIS)

Data: Azure Windows VM (SQL)

Identity: AD Domain Service

LB: Yes (Azure Load Balancer)

HA/DR: Yes (ASR / ARV)

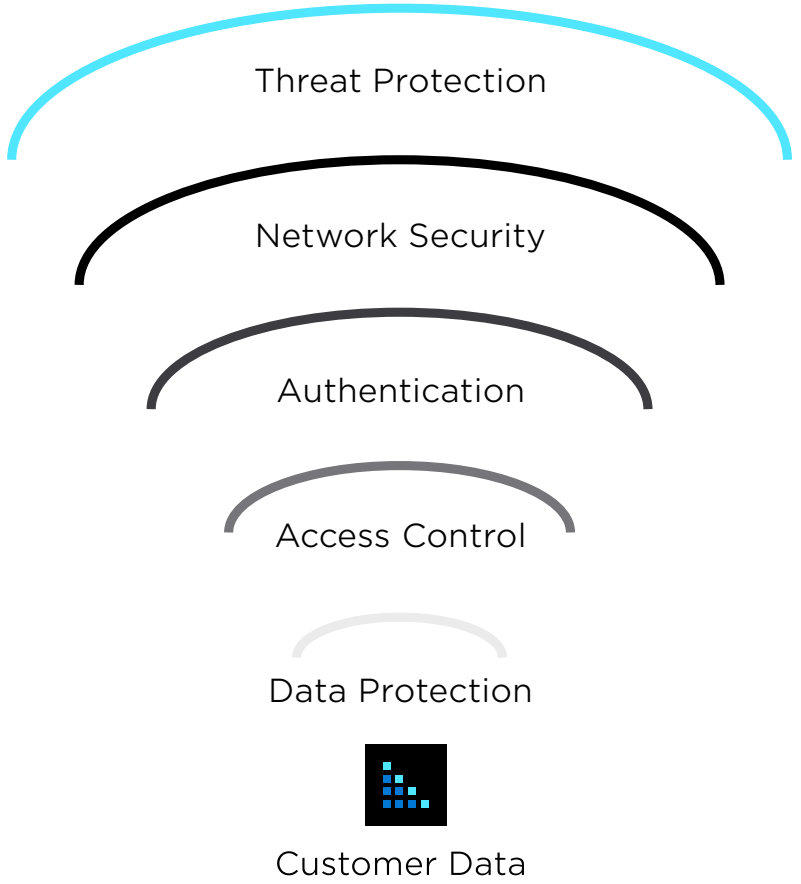
Auto Scale: Yes (Scale Sets)

CI/CD Integrated: Manual

Implementation: Complex

Recommendation: Use for COTS Web Applications not approved for Docker / Kubernetes

Azure Data Security Layers



Multiple levels of security between the user and data.

Azure Service Security

Role	Service	Details
Secret Key	Azure Key Vault	Store all secrets (credentials, certificates, …) in a secure vault, and call from vault in processes.
Monitoring / Reporting	Azure Monitor Azure Log Analytics	Log Analytics covers event and performance monitoring and response.
SIEM / SOAR	Azure Sentinel	ML driven security incident / response detection and resolution.
Policy	Azure Policy	Applies Azure service policies across a subscription / management group.
Exposure Detection	Azure Security Centre	Azure Security Centre provides the Azure centric view.
Endpoint Management	Azure Application Gateway Azure API Management Azure Private Link	←Route external connections to internal resources. ←Secure endpoint routing for external / internal connections. ←Provision private endpoints for Azure PaaS services.
Traffic Management	Azure Front Door Azure Traffic Manager	←HTTP connection routing to regional / failover resources. ←DNS connection routing routing to regional / failover resources.

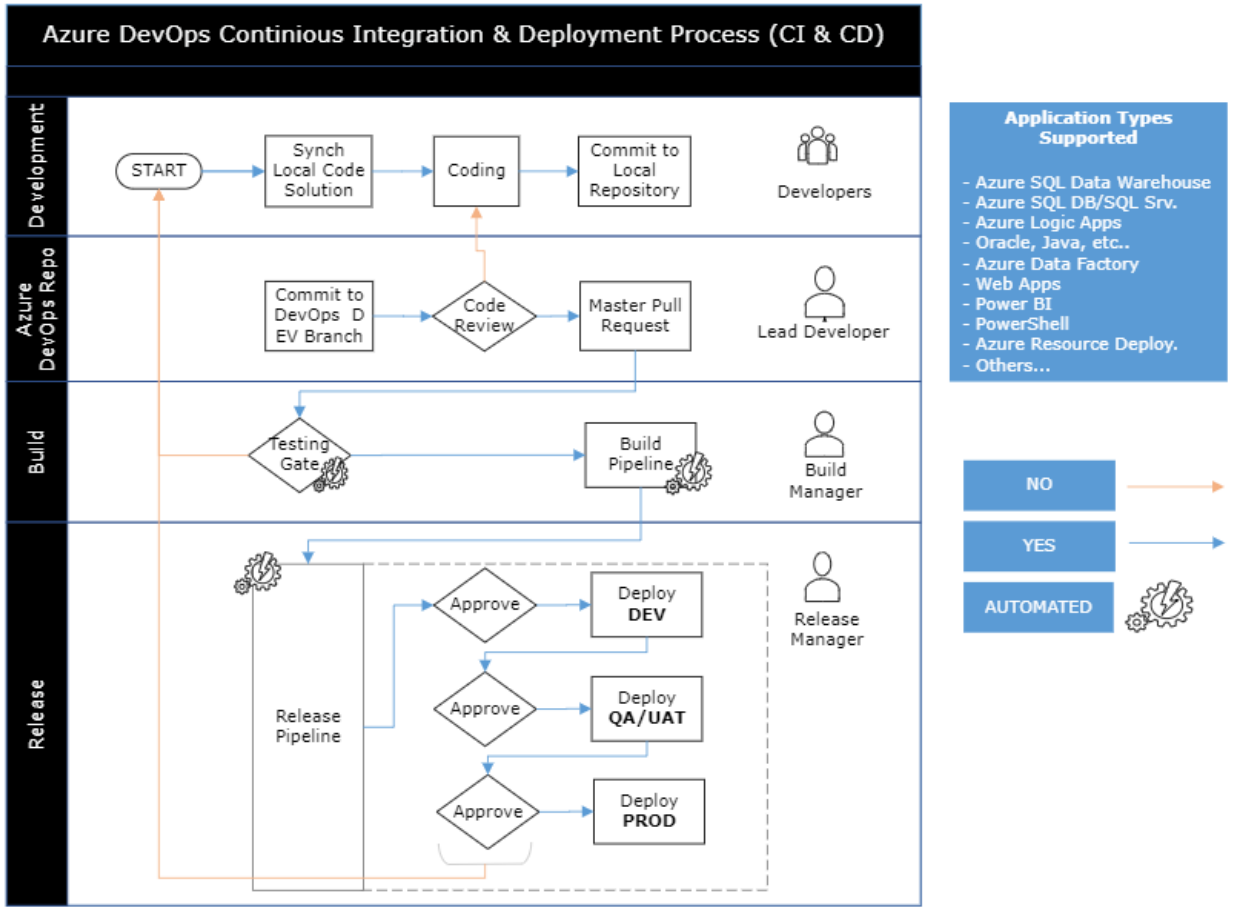
Azure Data Security

Resources	Encryption at Rest	Encryption in Transit	Field Level Encryption	Access Control
Azure SQL Database	✓	✓	Masking / Encryption Supported	Database, Object, Row, Column
Azure Data Lake Storage	✓	✓	Not Applicable	Folder, File
Power BI	✓	✓	Not Supported	Dataset, Table, Column, Row
Azure Data Pipelines	✓	✓	Masking / Encryption Supported	Dataset, Table, Column, Row
Azure Synapse SQL Runtime	✓	✓	Masking Supported, Encryption Supported Soon	Database, Object, Row, Column
Azure Synapse Spark Runtime	✓	✓	Masking / Encryption Supported	Database, Object, Row, Column

Azure DevOps CI / CD

Azure DevOps CI / CD Process

- Developers check-in code in DevOps development branch
- Code review by Lead/Peers
- Pull request to move code to Master branch
- Automatically triggers build & test processes once pull request is complete
- Automatically triggers release pipeline to deploy code in multiple target environments through gating approvals
- Azure DevOps maintains logs of all build, tests, release/deploy tasks
- Pipelines are executed through Releases in DevOps



GDPR Compliance

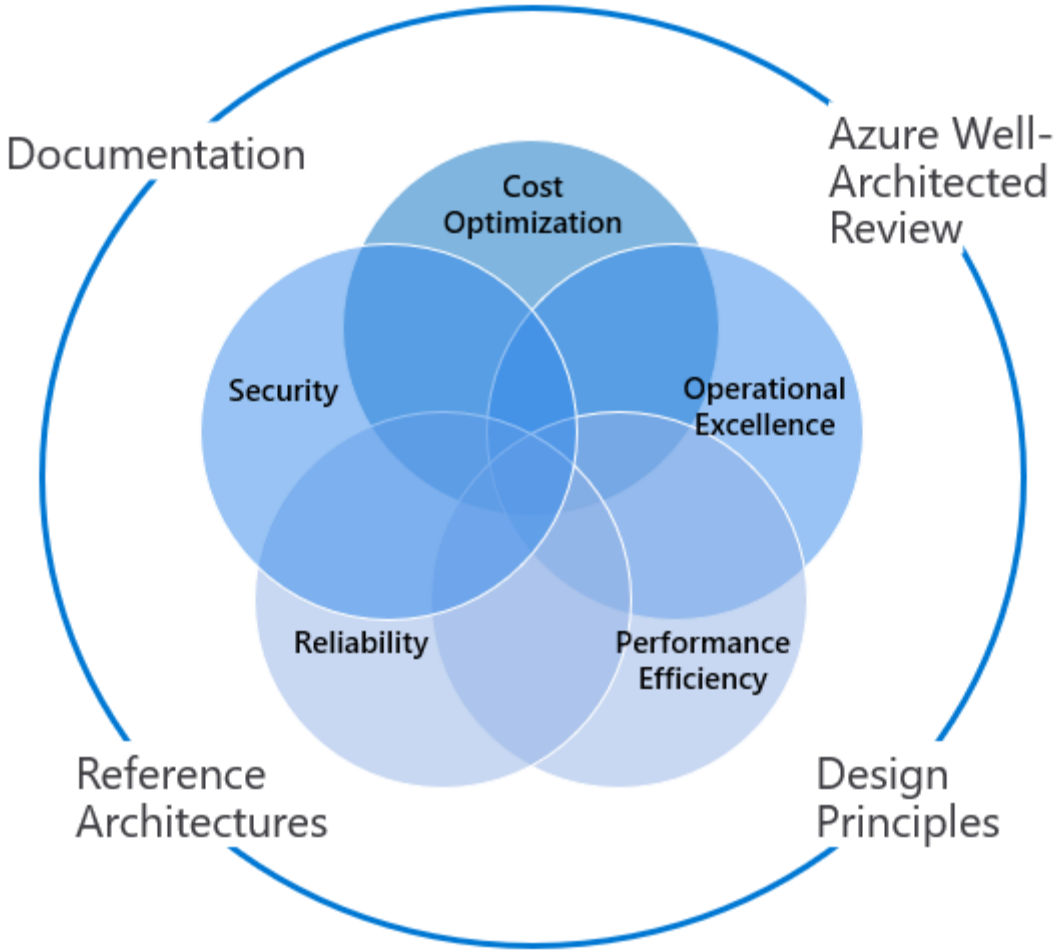
- Azure provides a robust set of security and data management capability that enables GDPR compliance.

- As standard practice, Adastra implements these security and data management services for our customers, to position our Azure solutions for compliance, and to enable successful compliance auditing

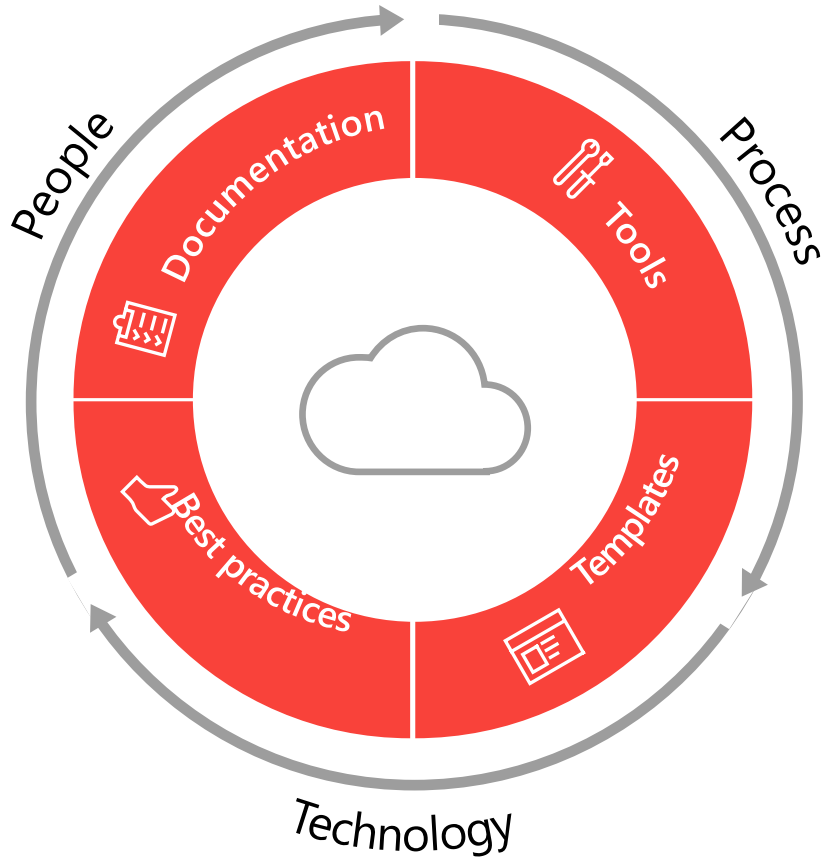
- Capabilities Adastra will enable to ensure future GDPR compliance @ Volaris:
  - Enable Azure Data Subject Request capability to align to GDPR “right to be forgotten” requirements
    - Azure Data Subject Requests for the GDPR and CCPA - Microsoft GDPR | Microsoft Docs
  - Implement Azure Security Center to activate unified security management and advanced thread protection
    - Azure Security Center | Microsoft Azure
  - Configure Azure Policy to ensure types of data stay within their required regions
    - Azure Policy Cloud and Compliance Management | Microsoft Azure
  - Follow Azure GDPR Blueprint best practices to ensure architecture and configuration is compliant
    - AzureGDPR/Azure Security and Compliance Blueprint - GDPR IaaS WebApp Overview.md at master · sukykaur/AzureGDPR · GitHub
  - Leverage MS Cloud Compliance Center to evaluate current risk and prepare for GDPR audits
    - Home - Microsoft 365 compliance
  - Adopt Azure Information Protection to scan, label, and protect sensitive data
    - Azure Information Protection | Microsoft Azure

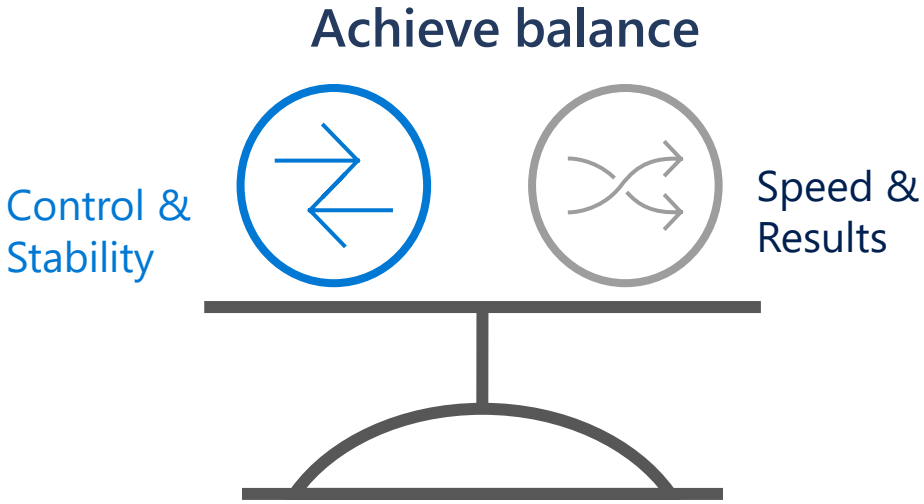
Adastra Landing Zone Approach

Azure Well-Architected Framework & CAF



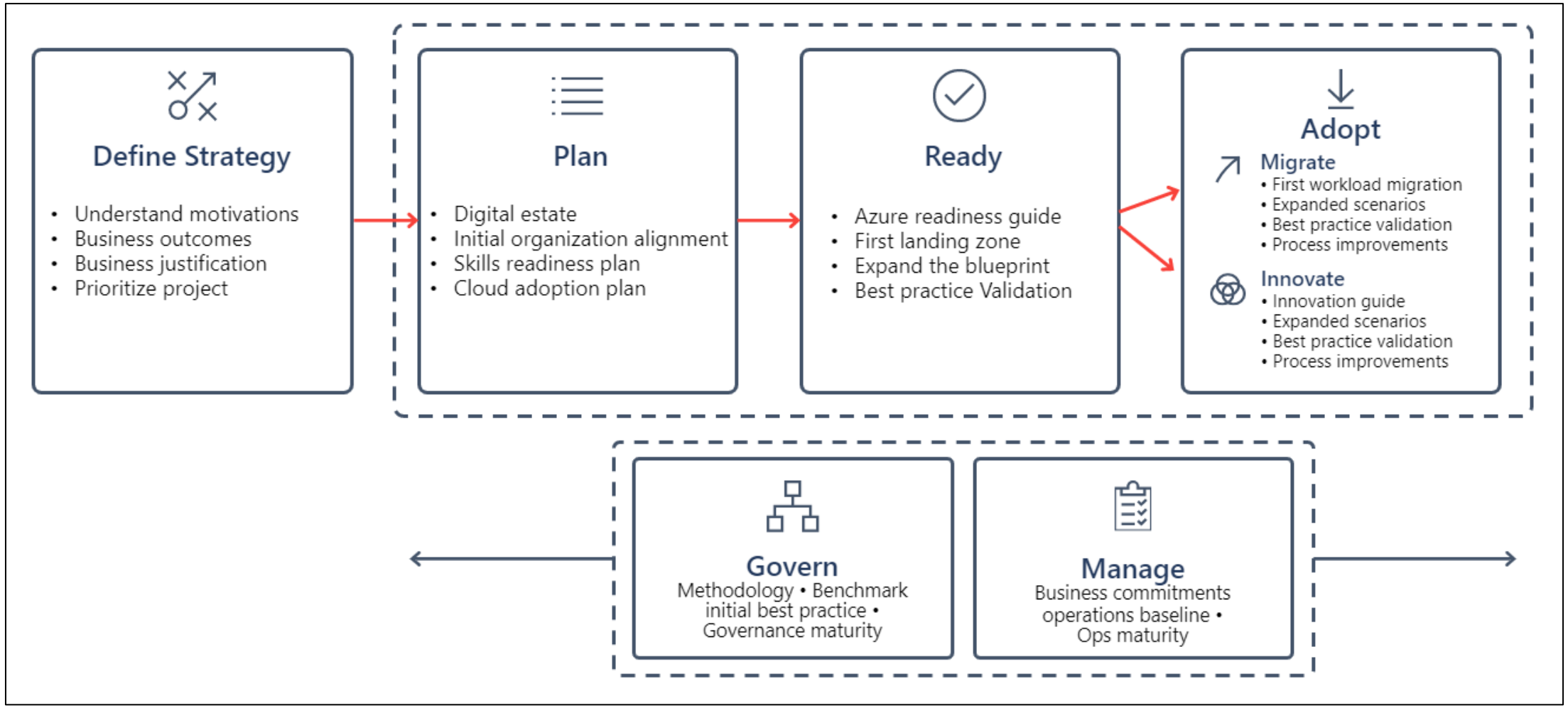
Microsoft Cloud Adoption Framework for Azure





Align business, people and technology strategy to achieve business goals with actionable, efficient, and comprehensive guidance to deliver fast results with control and stability.

Cloud Adoption Framework



Cloud Governance

This demonstrates the interactions between business risk, policy and compliance, monitor and enforce to create a governance strategy. Followed by the Five Disciplines of Cloud Governance to realize your strategy.

Business Risks

Document evolving business risks and the business tolerance for risk, based on data classification and application criticality

Policy & Compliance

Convert Risk decisions into policy statements to establish cloud adoption boundaries

Process

Establish processes to monitor violations and adherence to corporate policies

Disciplines of Cloud Governance

Cost Management
Evaluate & Monitor costs, limit IT Spend, scale to meet need, create cost accountability

Security Baseline
Ensure compliance with IT security requirements by applying a security baseline to all adoption efforts

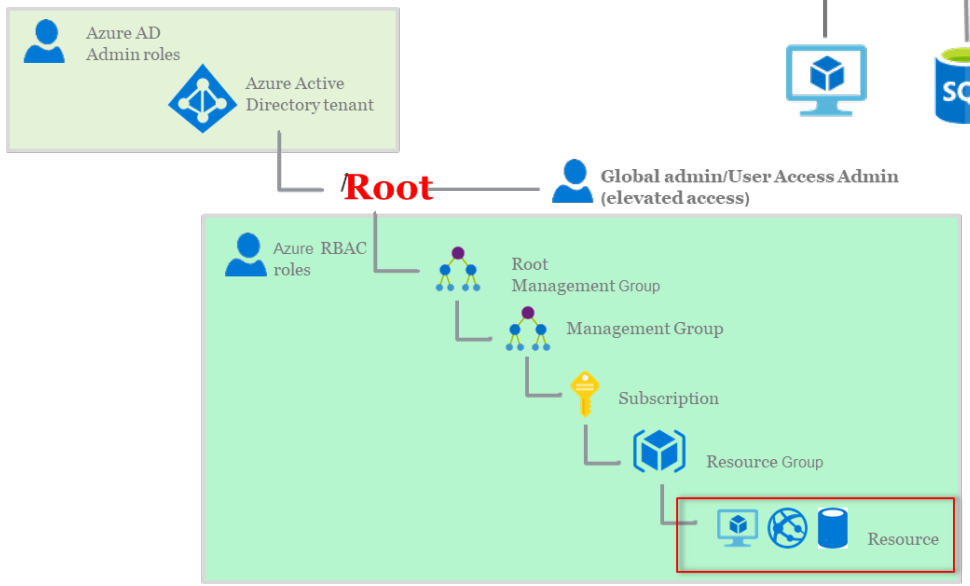
Resource Consistency
Ensure consistency in resource configuration, Enforce practices for on-boarding, recovery, and discoverability

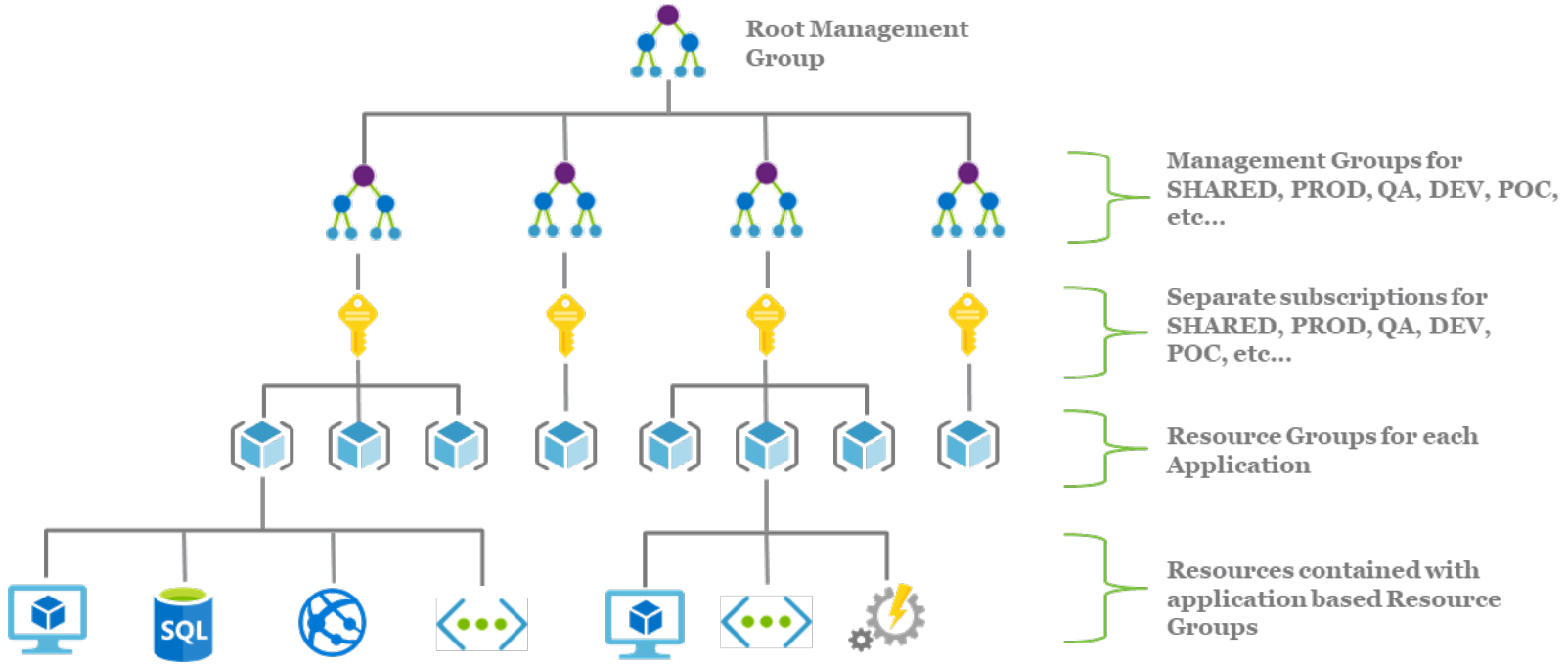
Identity Baseline
Ensure the baseline for identity and access are enforced by consistently applying role definitions and assignments

Deployment Acceleration
Accelerate deployment through centralization, consistency, and standardization across deployment templates

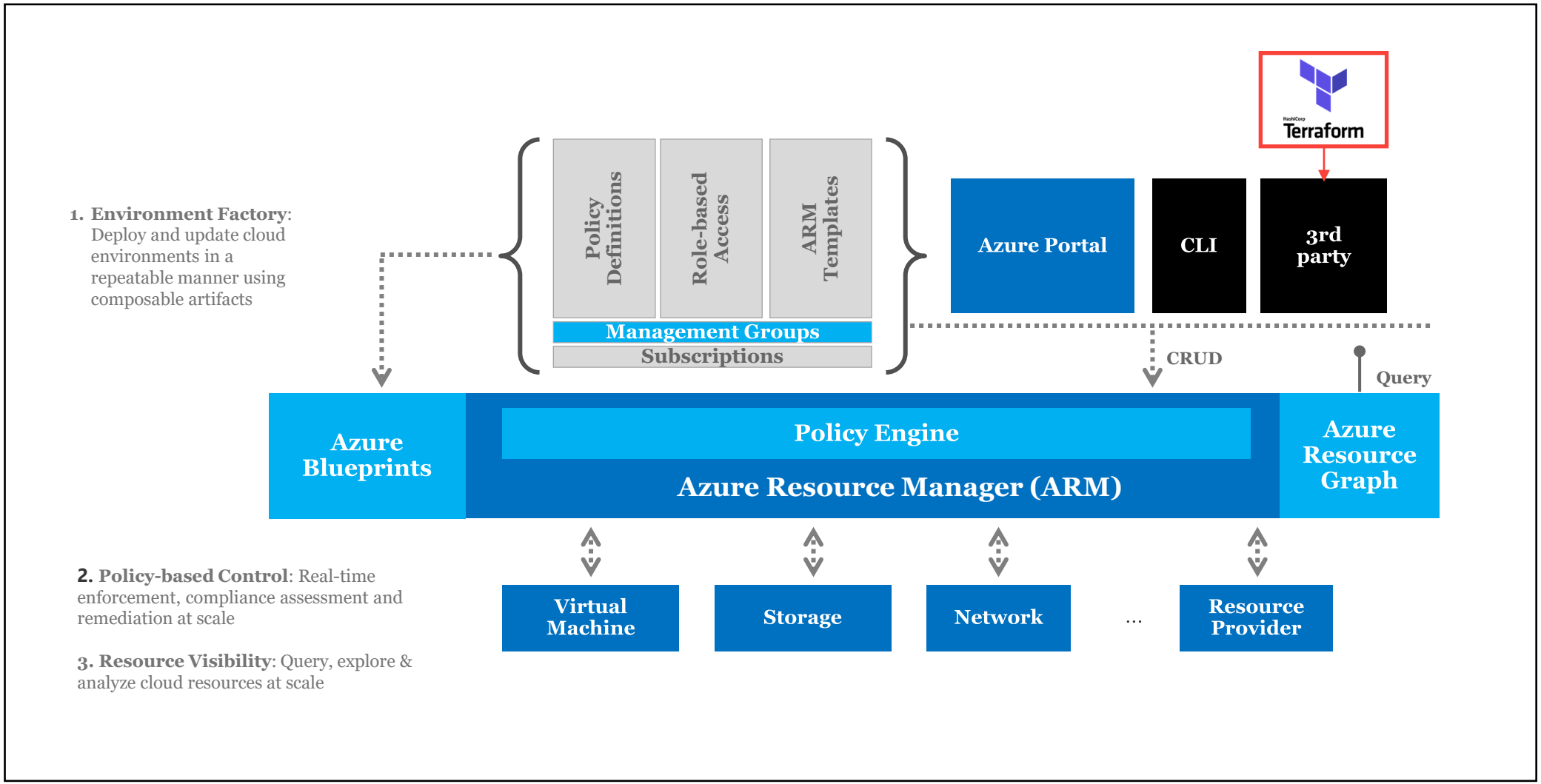
Foundation Step: Azure Landing Zone

1. Creation of Naming standards
2. Creation of subscriptions
3. Setup of Azure DevOps project
4. Build out of Azure foundation
    1. Management Group
    2. Accounts
    3. Vnets
    4. Subnets
    5. VNet Peering

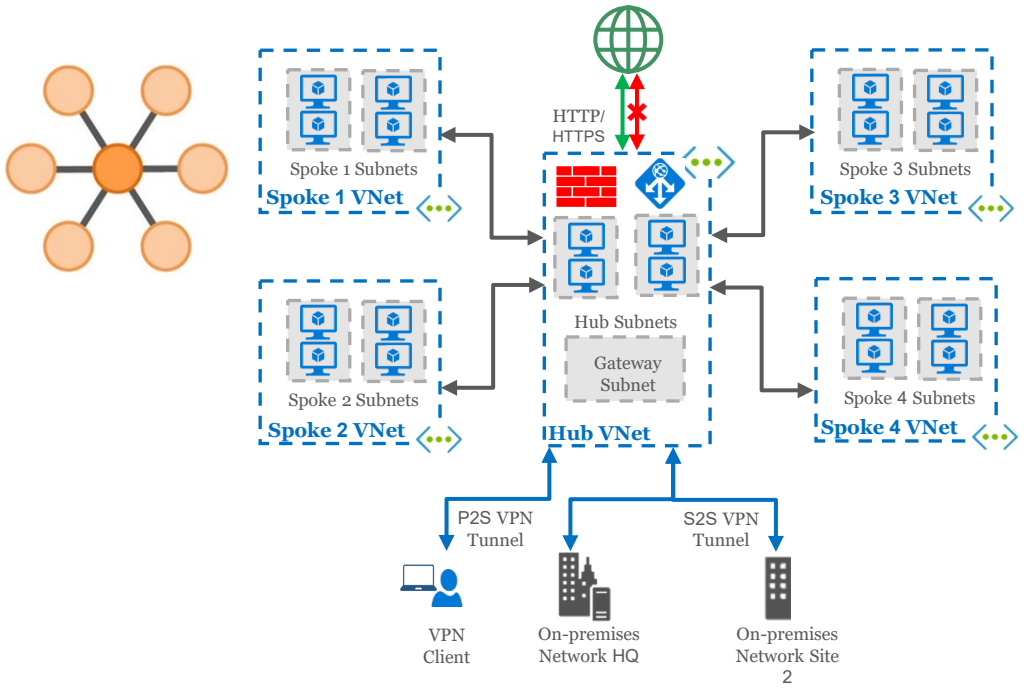




Foundation Step: Azure Governance Design



Foundation Step: Azure VNET Integration

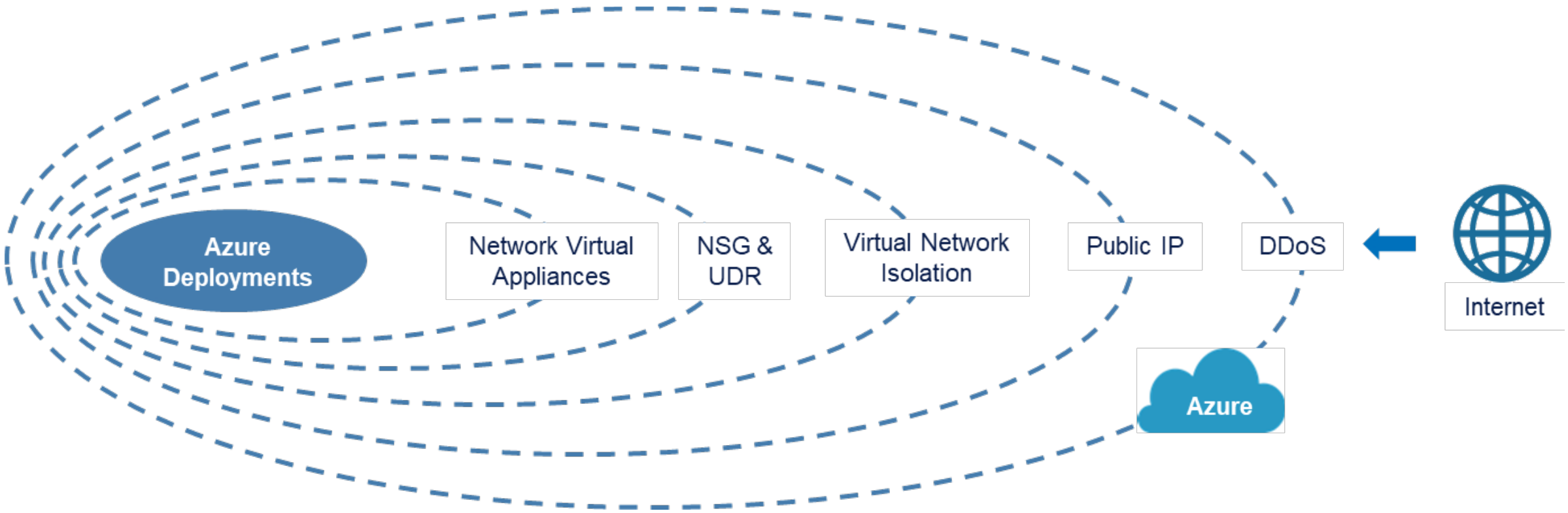


Virtual network peering enables the seamless connecting of Azure virtual networks. Once peered, the virtual networks appear as one, for connectivity purposes. The traffic between virtual machines in the peered virtual networks is routed through the Microsoft backbone infrastructure, much like traffic is routed between virtual machines in the same virtual network, through private IP addresses only

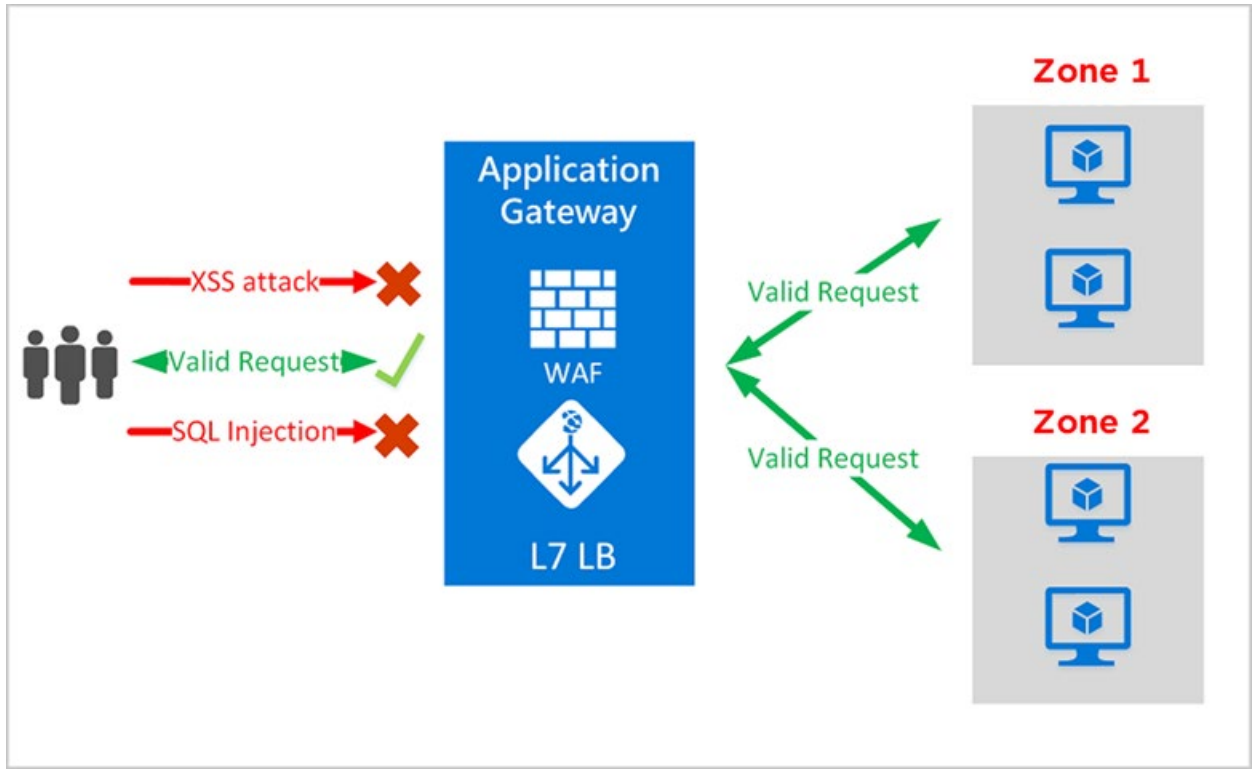
Azure Supports:

- **VNet peering** - connecting VNets within the same Azure region
- **Global VNet peering** - connecting VNets across Azure regions

Azure Network Security Layers



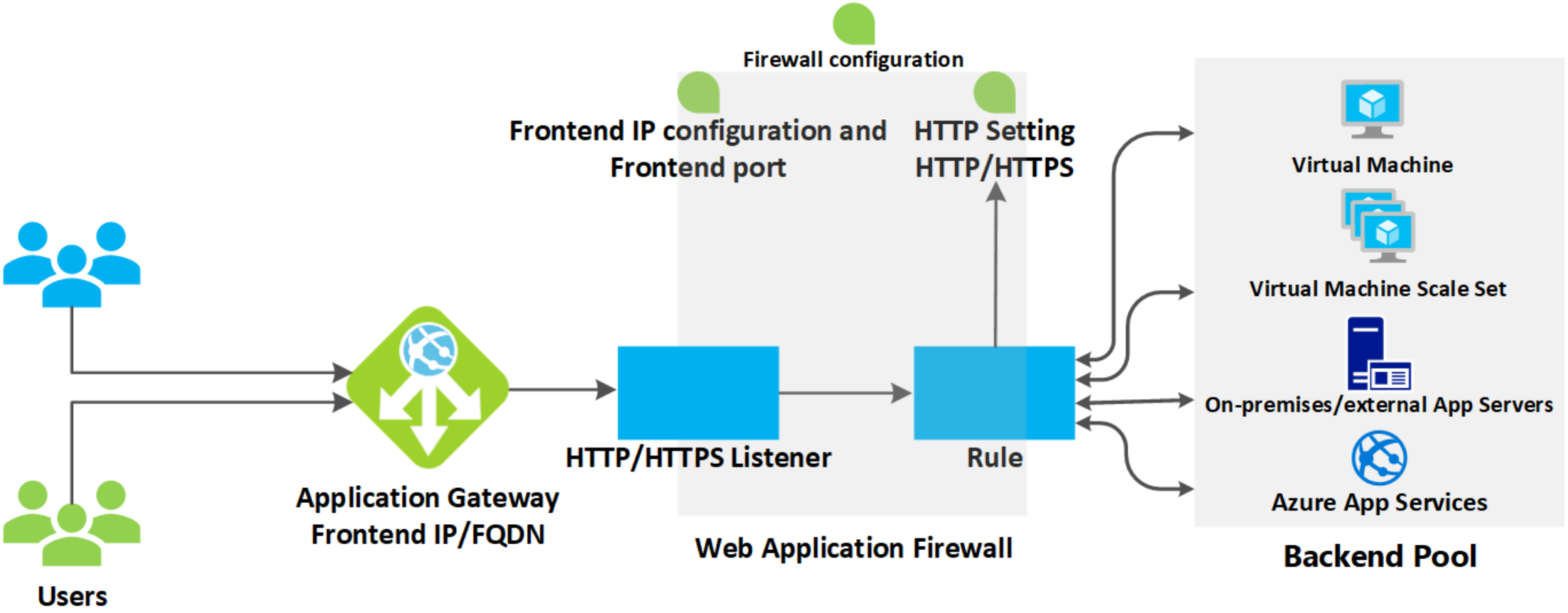
Application Gateway + WAF



Application Gateway includes the following features:

1. WAF on Application Gateway is based on Core Rule Set (CRS) 3.1, 3.0, or 2.2.9 from the Open Web Application Security Project (OWASP).
2. Secure Sockets Layer (SSL/TLS) termination
3. Autoscaling
4. Zone redundancy
5. Static VIP
6. Ingress Controller for AKS
7. URL-based routing
8. Multiple-site hosting
9. Redirection
10. Session affinity
11. Websocket and HTTP/2 traffic
12. Connection draining
13. Custom error pages
14. Rewrite HTTP headers and URL
15. Sizing

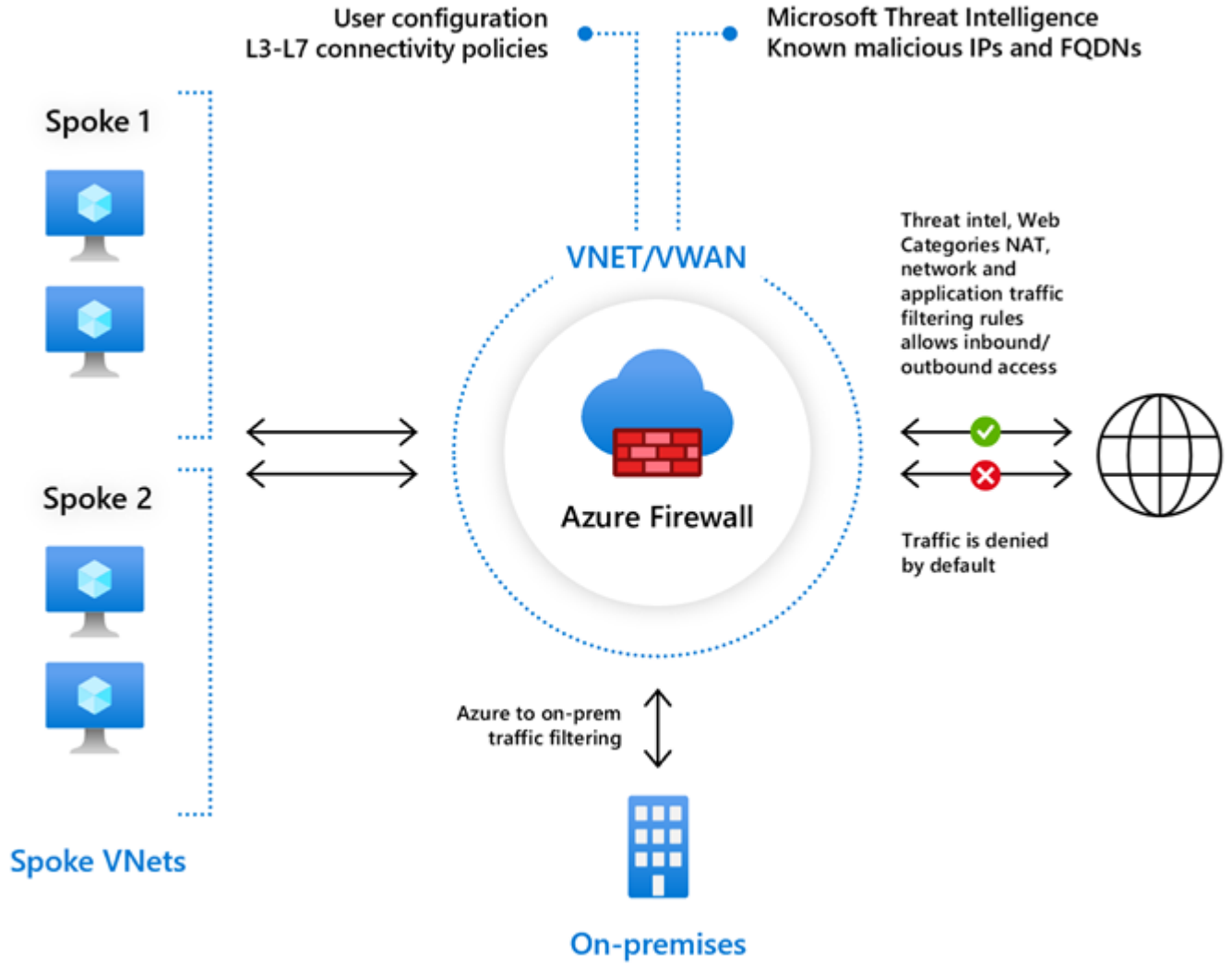
How an Application Gateway Works



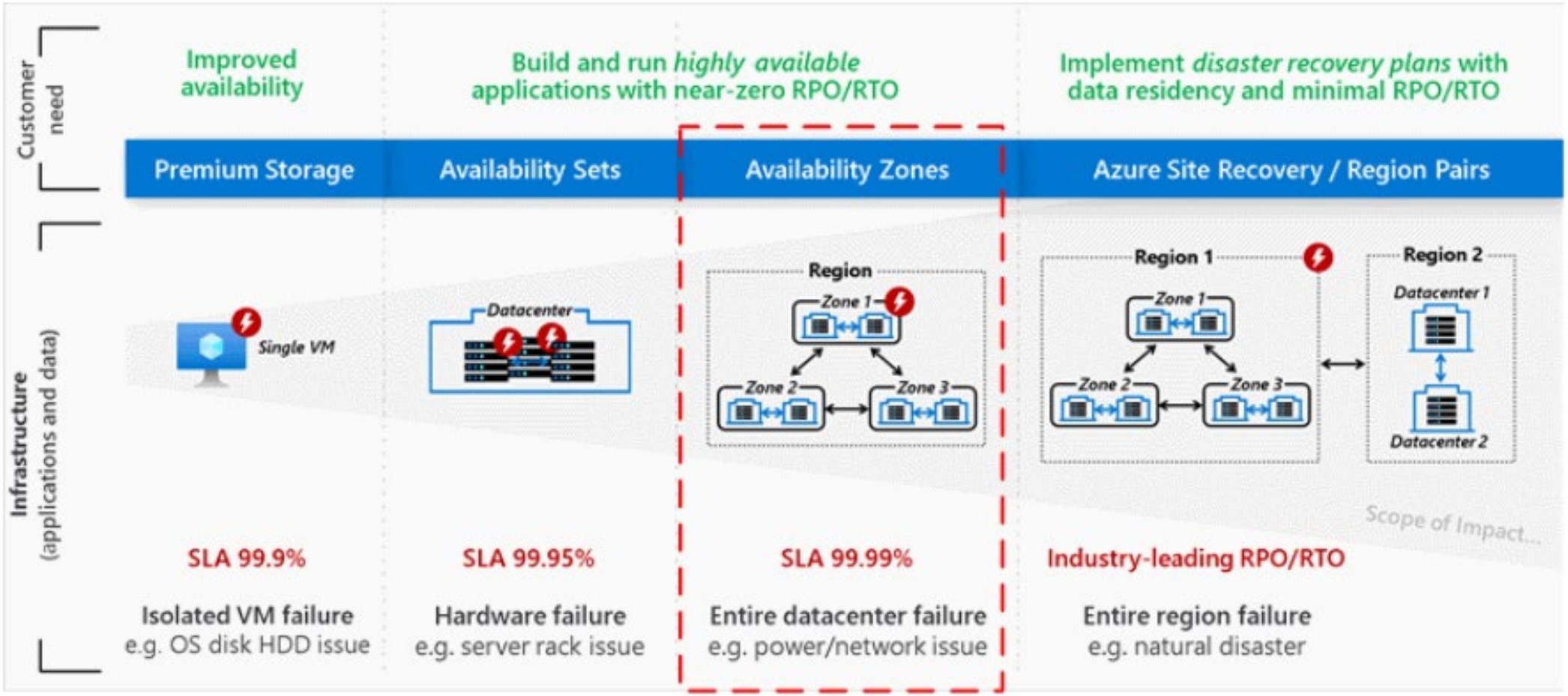
ADASTRA

Azure Firewall

Azure Firewall Standard provides L3-L7 filtering and threat intelligence feeds directly from Microsoft Cyber Security. Threat intelligence-based filtering can alert and deny traffic from/to known malicious IP addresses and domains which are updated in real time to protect against new and emerging attacks.



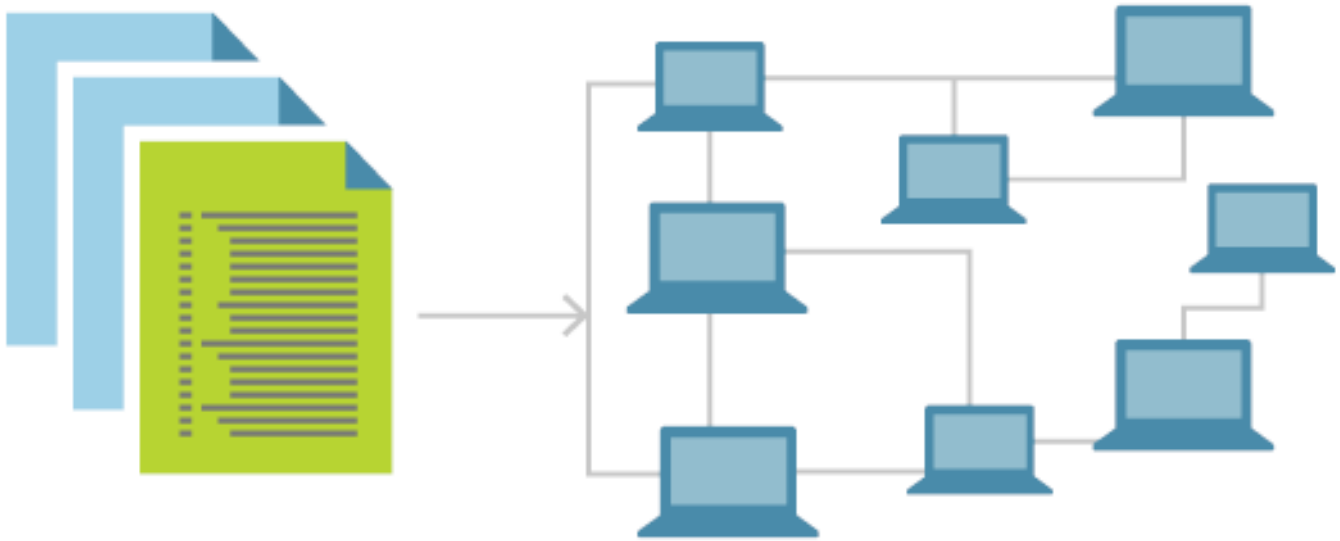
Azure High Availability



https://docs.microsoft.com/en-us/azure/architecture/high-availability/building-solutions-for-high-availability

Infrastructure as Code (IaC)

Infrastructure as Code (IaC) is the process of managing and provisioning computing infrastructure (processes, bare-metal servers, virtual servers, etc.) and their configuration through machine-processable definition files, rather than physical hardware configuration or the use of interactive configuration tools.



Azure DevOps

Azure Boards

Deliver value to your users faster using proven agile tools to plan, track, and discuss work across your teams.

Azure Pipelines

Build, test, and deploy with CI/CD that works with any language, platform, and cloud. Connect to GitHub or any other Git provider and deploy continuously.

Azure Repos

Get unlimited, cloud-hosted private Git repos and collaborate to build better code with pull requests and advanced file management.

Azure Test Plans

Test and ship with confidence using manual and exploratory testing tools.

Azure Artifacts

Create, host, and share packages with your team, and add artifacts to your CI/CD pipelines with a single click.

https://azure.com/devops

Cloud Operation Model

A comprehensive set of capabilities needed to successfully operate cloud-based environments

DevOps and Infrastructure Automation

- Release Management
- Continuous Integration
- Continuous Deployment
- App Version Support

ITIL Service Management/ServiceNow*

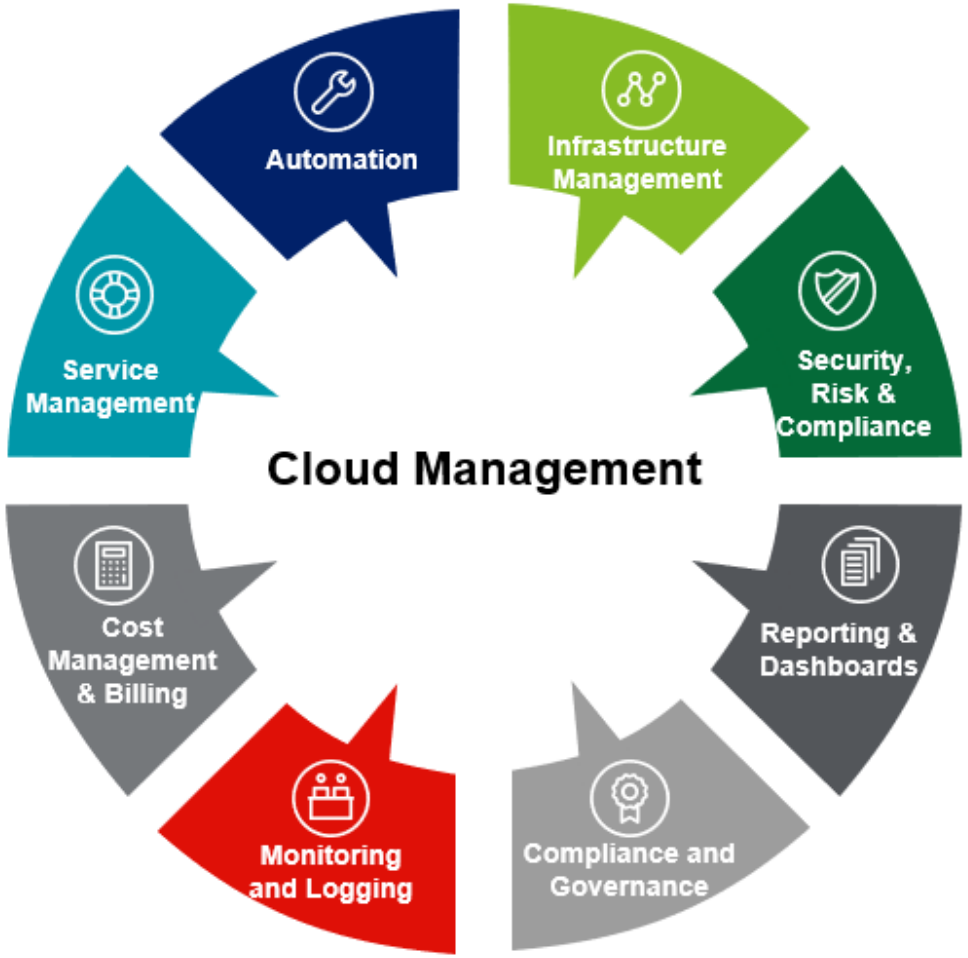
- Triage & Escalation
- Automated Monitoring, Ticketing & Alerting
- Change & Configuration Management
- Incident and Problem Management
- Event Management

Cost Management & Billing

- Account Management
- Consolidated billing
- Cost allocation & optimization

Monitoring and Logging

- Centralized log aggregation across platforms
- Infrastructure capacity performance and Network health Monitoring
- Security event and incident monitoring through SIEM solution



Infrastructure Management

- Infrastructure Provisioning
- Site-to-Site VPN Connection management; IP and routing configuration
- OS Image/Patch Management
- Backup Management & Disaster Recovery
- Client Compartmentalization

Security, Risk & Compliance

- Identity & Access Management
- Vulnerability Management
- Data Protection, Encryption & Privacy
- Security Monitoring
- Infra. Security Hardening
- Antivirus management

Reporting & Dashboards

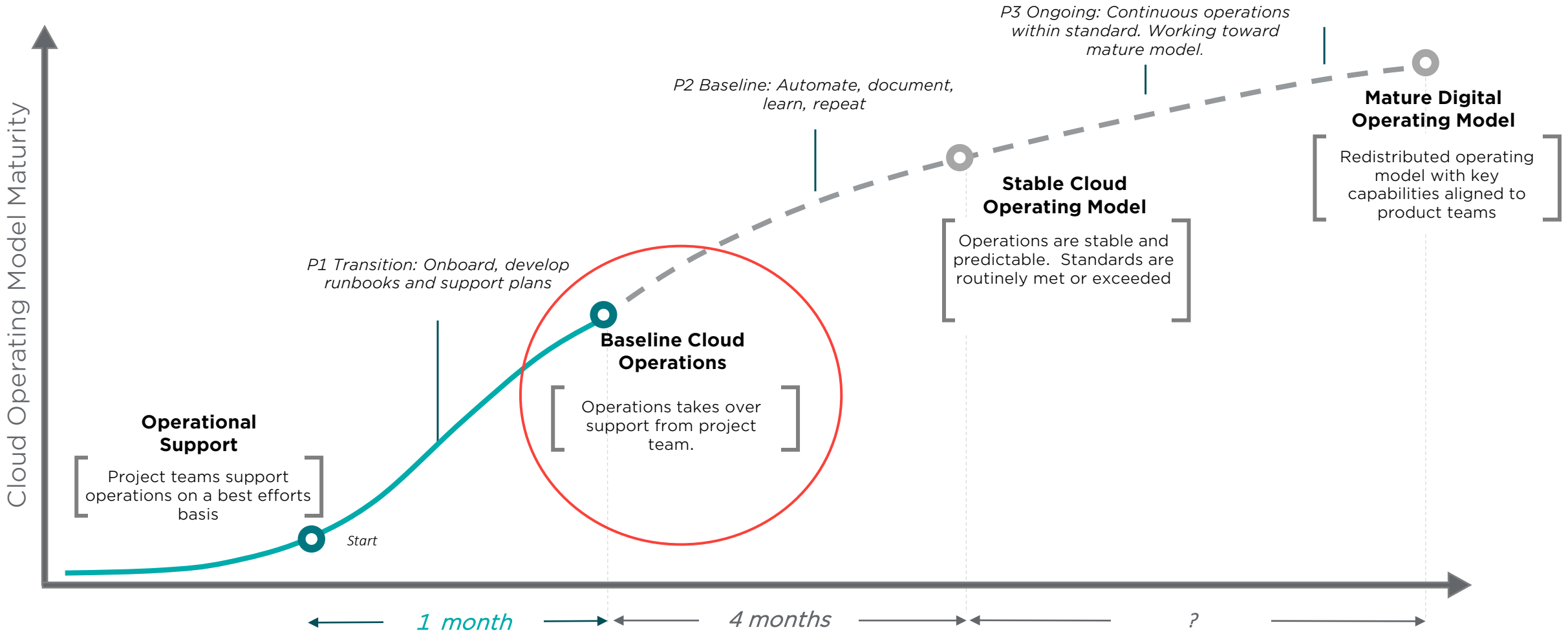
- Service Management Reports
- Consumption & Billing Reports
- Account Health Check Reports
- Security & Compliance Reports

Compliance and Governance

- Integrated Controls Framework
- SOC2, PIPEDA, ISO 27001, PCI Compliance certification roadmap
- Policy based resources provisioning
- Tagging and Quota management

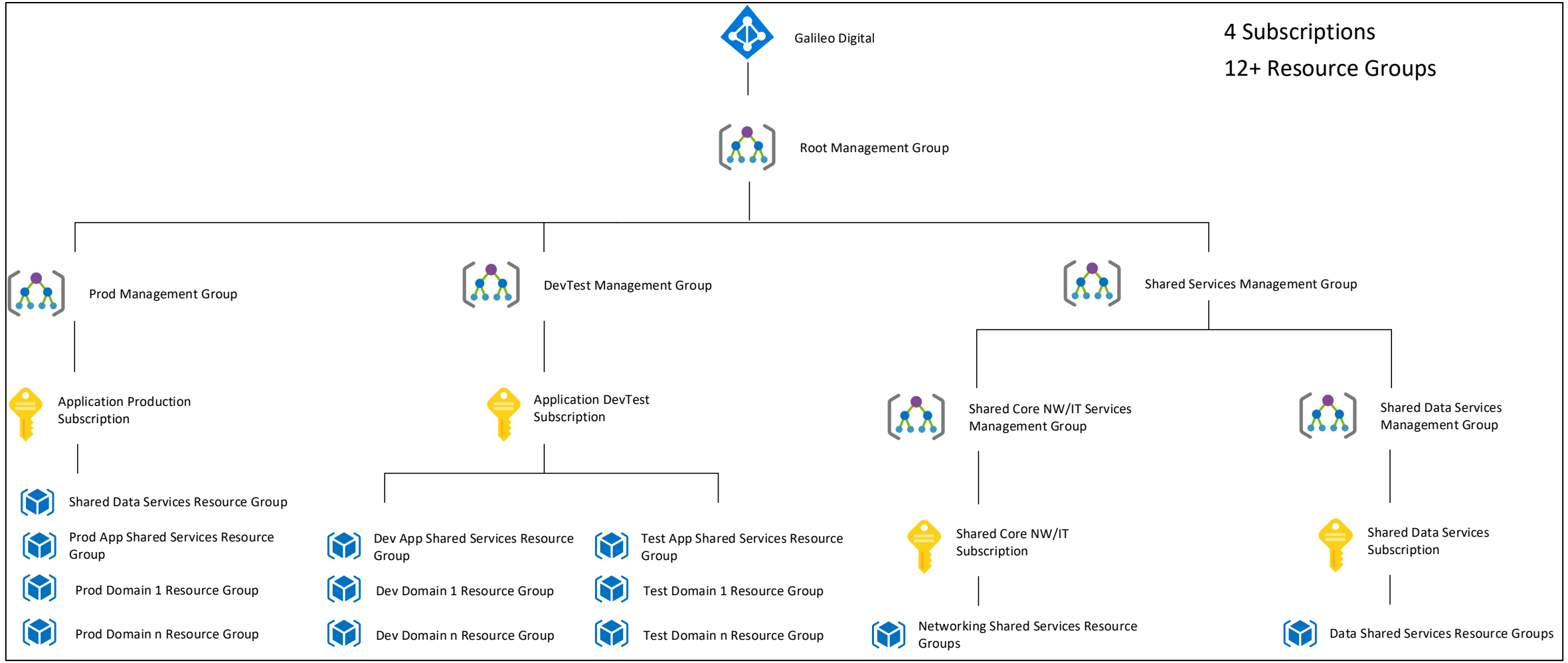
Cloud Operating Model Journey

The journey to achieve target state maturity will require tangible changes to organization culture and skillsets, ways of working, and also service delivery and operations to achieve long term success

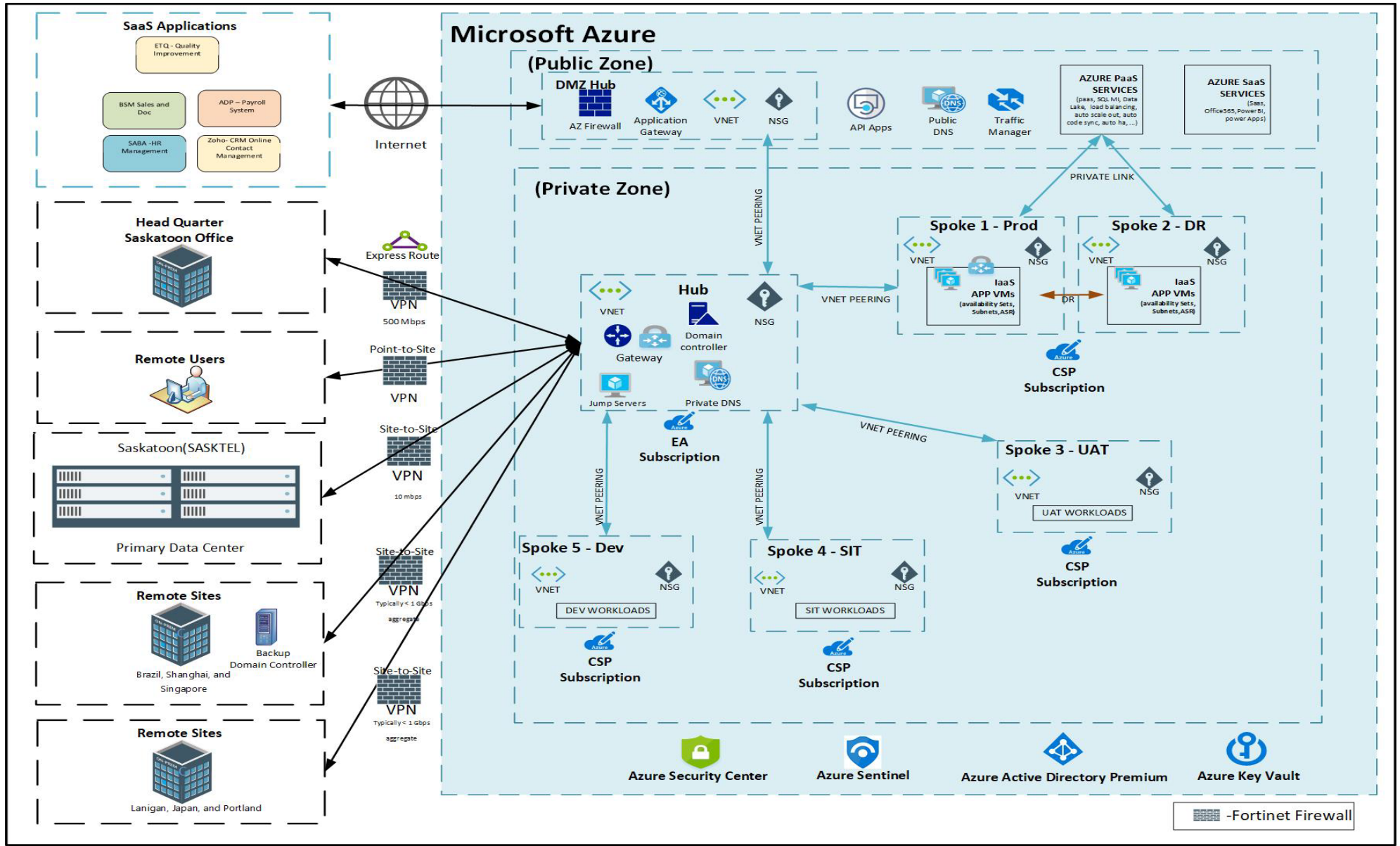


Adastra Landing Zones Design Examples

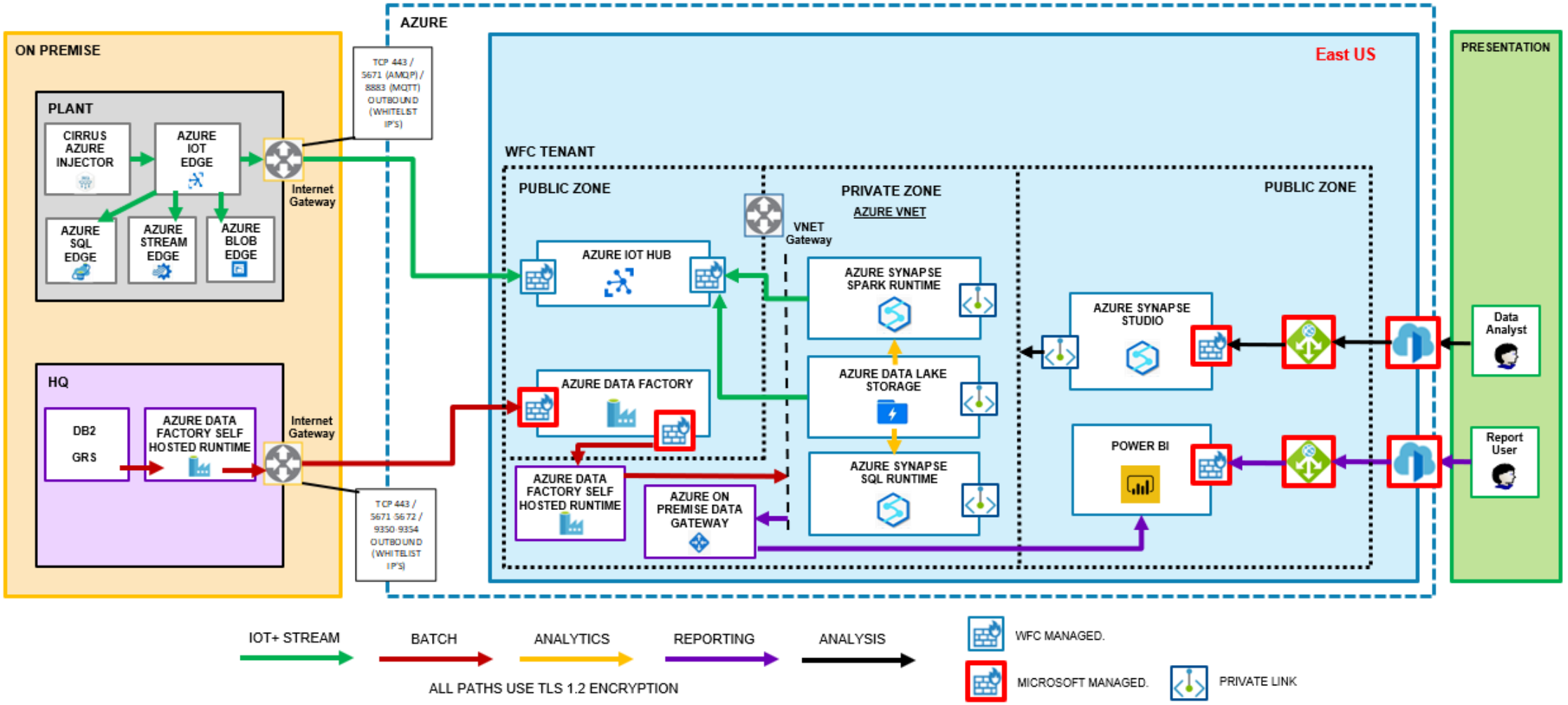
Enterprise Landing Zone: Tenant Design



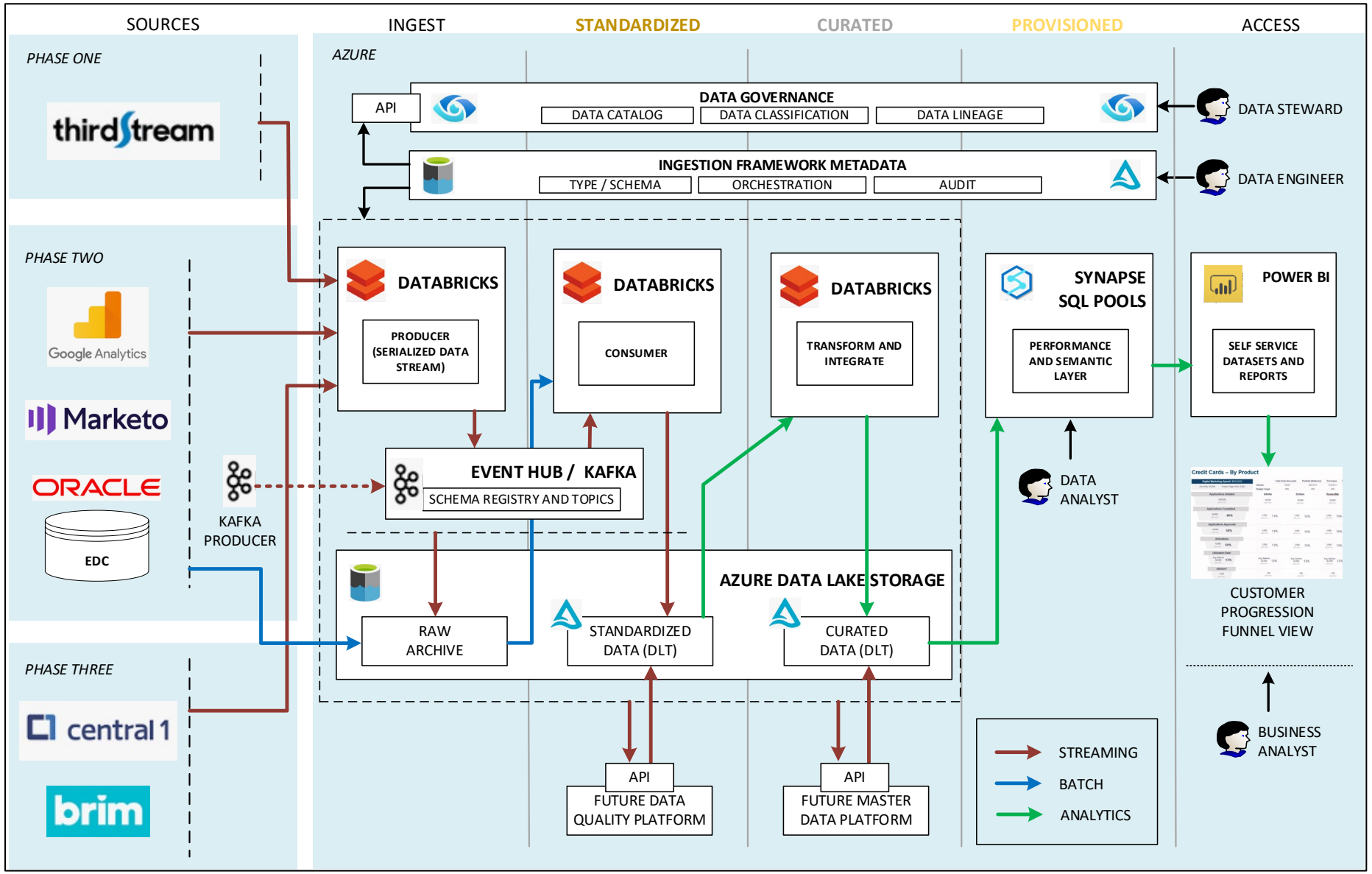
Enterprise Landing Zone: Network Architecture



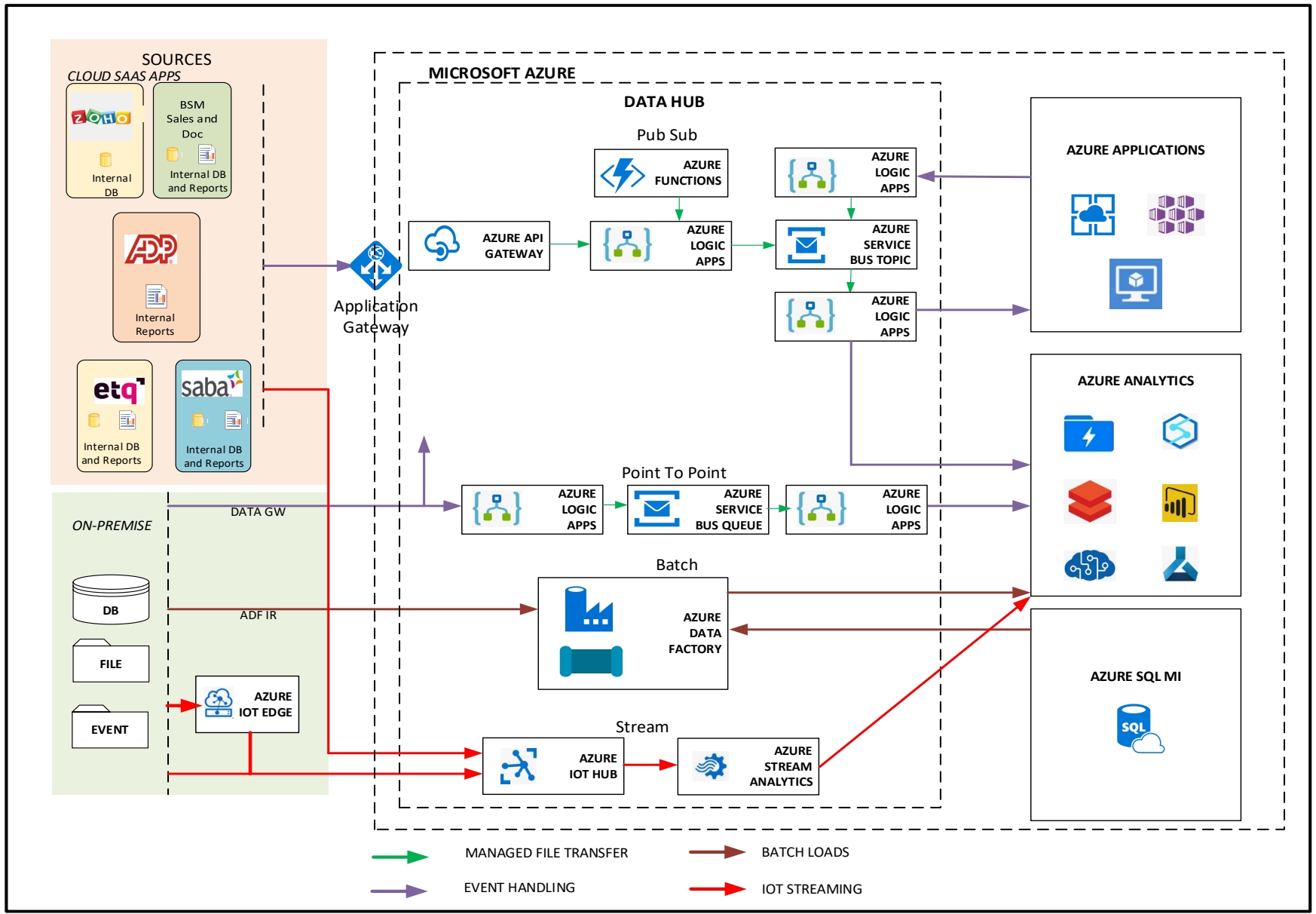
Data Landing Zone: Network Design



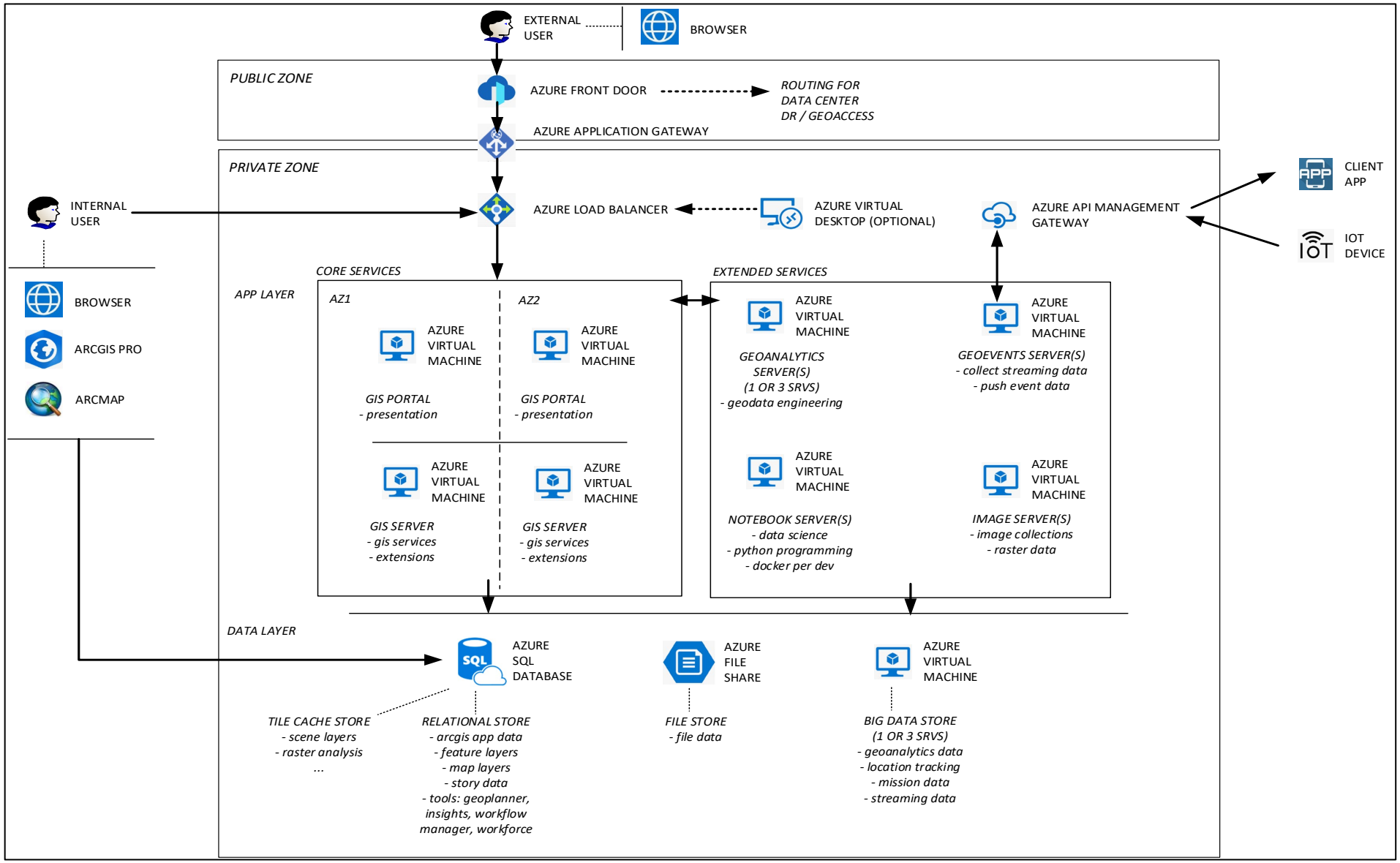
Data Landing Zone: Spark Architecture



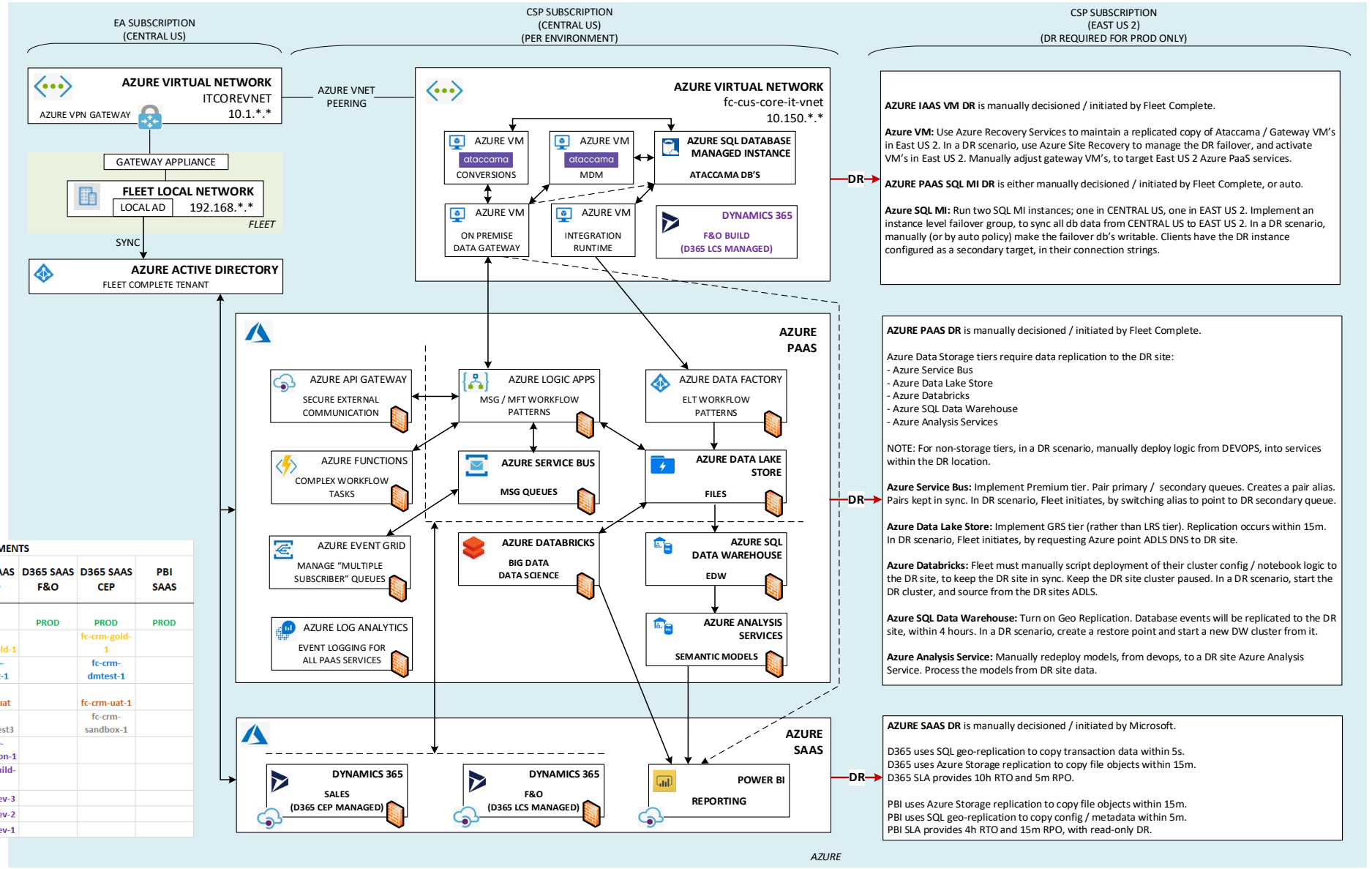
Data Hub Architecture



Application Architecture



Service Architecture with DR



AZURE IAAS VM DR is manually decisioned / initiated by Fleet Complete.

Azure VM: Use Azure Recovery Services to maintain a replicated copy of Ataccama / Gateway VM's in East US 2. In a DR scenario, use Azure Site Recovery to manage the DR failover, and activate VM's in East US 2. Manually adjust gateway VM's, to target East US 2 Azure PaaS services.

AZURE PAAS SQL MI DR is either manually decisioned / initiated by Fleet Complete, or auto.

Azure SQL MI: Run two SQL MI instances; one in CENTRAL US, one in EAST US 2. Implement an instance level failover group, to sync all db data from CENTRAL US to EAST US 2. In a DR scenario, manually (or by auto policy) make the failover db's writable. Clients have the DR instance configured as a secondary target, in their connection strings.

AZURE PAAS DR is manually decisioned / initiated by Fleet Complete.

Azure Data Storage tiers require data replication to the DR site:
- Azure Service Bus
- Azure Data Lake Store
- Azure Databricks
- Azure SQL Data Warehouse
- Azure Analysis Services

NOTE: For non-storage tiers, in a DR scenario, manually deploy logic from DEVOPS, into services within the DR location.

Azure Service Bus: Implement Premium tier. Pair primary / secondary queues. Creates a pair alias. Pairs kept in sync. In DR scenario, Fleet initiates, by switching alias to point to DR secondary queue.

Azure Data Lake Store: Implement GRS tier (rather than LRS tier). Replication occurs within 15m. In DR scenario, Fleet initiates, by requesting Azure point ADLS DNS to DR site.

Azure Databricks: Fleet must manually script deployment of their cluster config / notebook logic to the DR site, to keep the DR site in sync. Keep the DR site cluster paused. In a DR scenario, start the DR cluster, and source from the DR sites ADLS.

Azure SQL Data Warehouse: Turn on Geo Replication. Database events will be replicated to the DR site, within 4 hours. In a DR scenario, create a restore point and start a new DW cluster from it.

Azure Analysis Service: Manually redeploy models, from devops, to a DR site Azure Analysis Service. Process the models from DR site data.

AZURE SAAS DR is manually decisioned / initiated by Microsoft.

D365 uses SQL geo-replication to copy transaction data within 5s.
D365 uses Azure Storage replication to copy file objects within 15m.
D365 SLA provides 10h RTO and 5m RPO.

PBI uses Azure Storage replication to copy file objects within 15m.
PBI uses SQL geo-replication to copy config / metadata within 5m.
PBI SLA provides 4h RTO and 15m RPO, with read-only DR.

ENVIRONMENTS

TYPE	AZURE PAAS	ATACCAMA IAAS	D365 IAAS F&O	D365 SAAS F&O	D365 SAAS CEP	PBI SAAS
PROD	FC-CUS-PRD-INT-RG	FC-CUS-PRD-INT-RG		PROD	PROD	PROD
PREPROD	FC-CUS-GLD-INT-RG	FC-CUS-GLD-INT-RG	fc-fno-gold-1		fc-crm-gold-1	
DM	FC-CUS-DM-INT-RG	FC-CUS-DM-INT-RG	fc-fno-dmtest-1		fc-crm-dmtest-1	
UAT	FC-CUS-UAT-INT-RG	FC-CUS-UAT-INT-RG	fc-fno-uat		fc-crm-uat-1	
SIT	FC-CUS-SIT-INT-RG	FC-CUS-SIT-INT-RG	fc-fno-test3		fc-crm-sandbox-1	
DEV	FC-CUS-DEV-INT-RG	FC-CUS-QA-INT-RG	fc-fno-integration-1			
		FC-CUS-DEV-INT-RG	fc-fno-build-2			
			fc-fno-dev-3			
			fc-fno-dev-2			
			fc-fno-dev-1			

ADASTRA

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