Building a Future-Ready Cloud Foundation

Azure Well-Architected Framework

ArchitectNow

ArchitectNow – Innovation Engineers

- Founded in 2009 in St. Louis, now a fully virtual company
- Employees across 14 U.S. states
- Microsoft Partner providing Microsoft Azure, Office 365, and Dynamics 365 solutions
- Specializing in customized Cloud-based solutions and support for SMBs
- Expertise in Microsoft Azure, Office 365, and Dynamics 365
- Focus on delivering value, streamlining processes, and driving innovation through technology
- Active organizers and speakers for local community tech meetups and conferences
- Presenters and speakers at national and regional industry events, sharing insights on Cloud and AI

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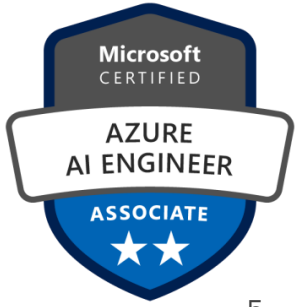
Credentials: CTO @ ArchitectNow | Azure MVP | Speaker | Organizer



Today's Conversation

Introduction

Understanding the Gray Area

Overview of Azure Services

Azure Well-Architected Framework

Conclusion

Q&A Session

Why This Talk

- Prevent Costly Outages to protect revenue and reputation.
- Safeguard data to maintain customer trust and compliance.
- Streamline operations so teams can innovate faster.
- Ensure performance to meet your current needs and take advantage of market opportunities.
- Eliminate Wasted spend to boost ROI.

Without Well-Architected Framework

- Outages
- Breaches
- Waste

With Well-Architected Framework

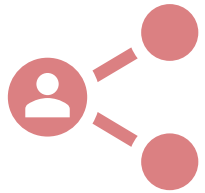
- Continuity
- Trust
- Efficiency

Cloud Adoption Framework vs Well- Architected Framework

- CAF: Strategic roadmap for Cloud Transformation
- WAF: Technical guidelines for workload quality
- Both drive business results at different zoom levels

Defining a “Workload”

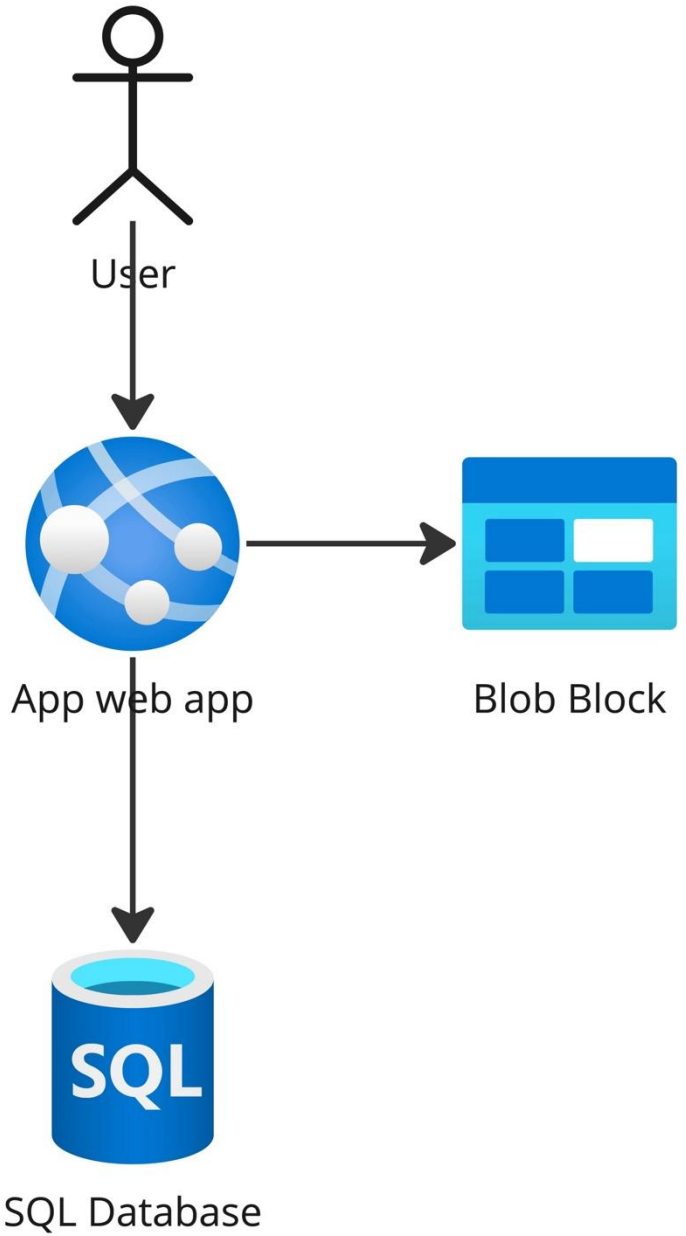
A workload is a business solution running in the cloud



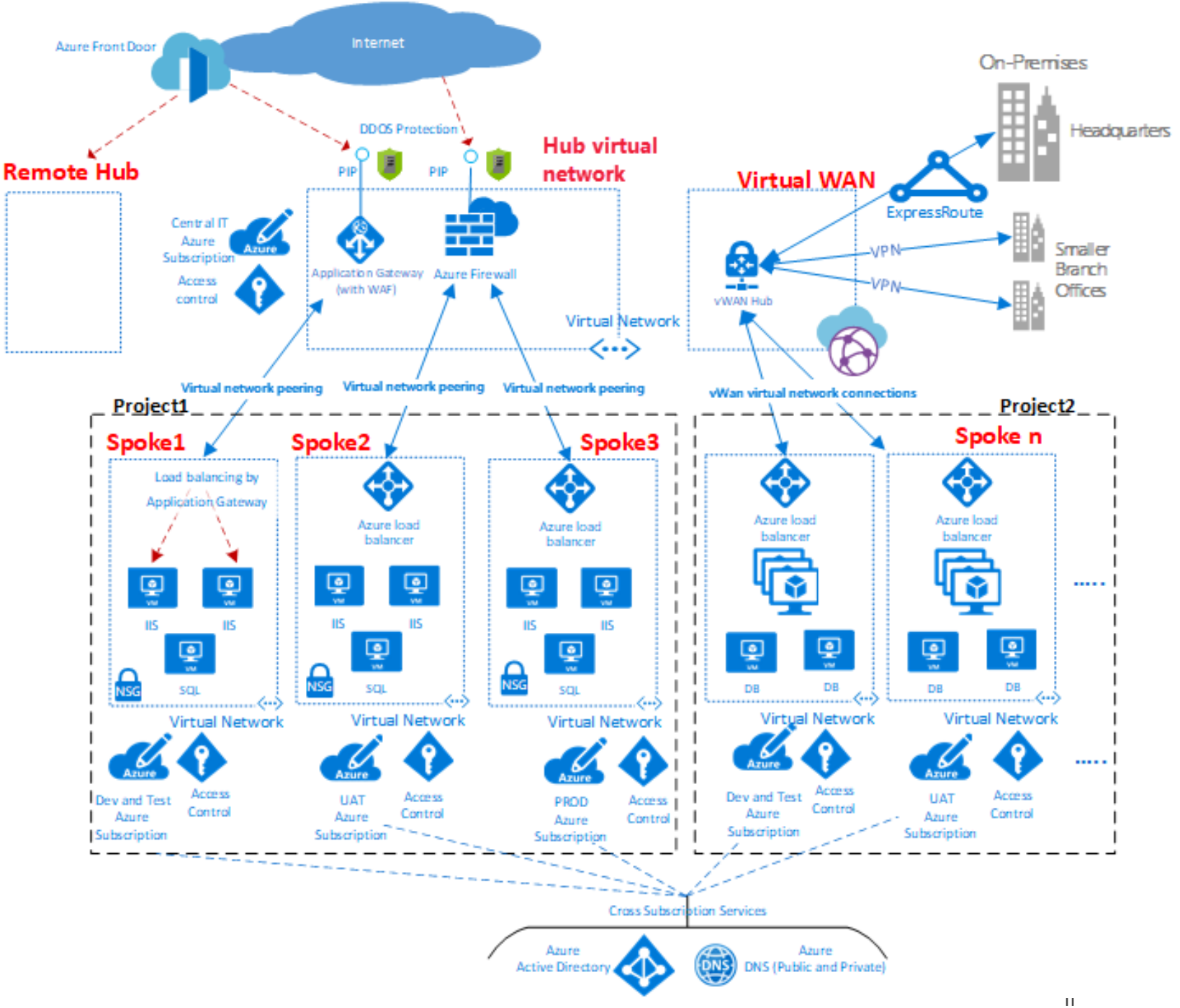
This can be an app, a service, process, or platform

Focus on the business value, not it’s tech. A Domain

A Typical Proof Of Concept Architecture



Enterprise Ready: The Overwhelming Leap



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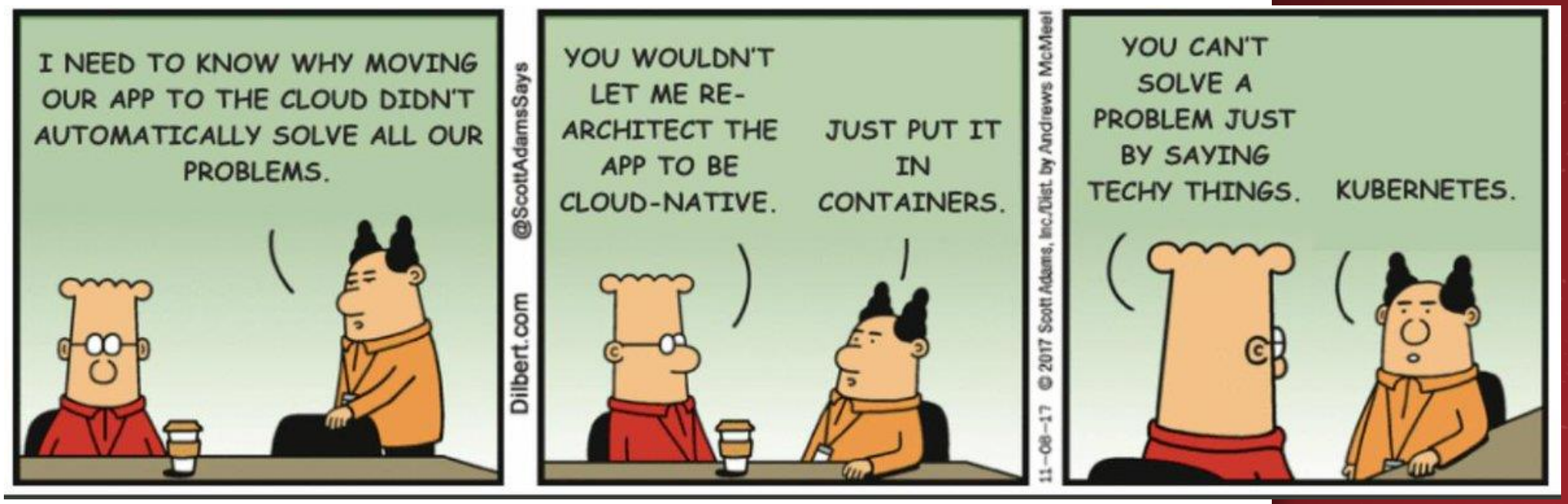
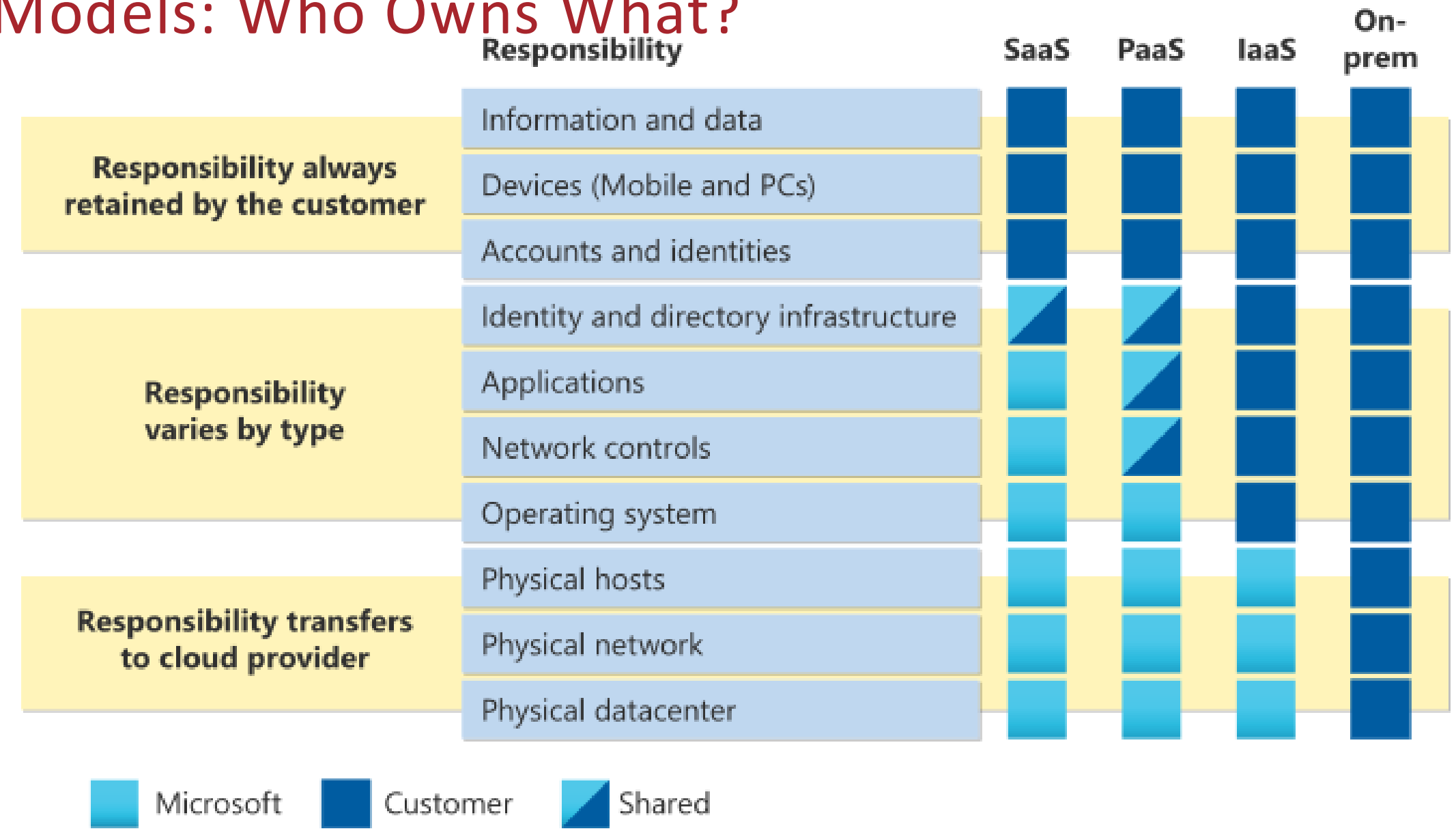
Understanding the Gray Area

Challenges in moving from PoC to enterprise-level

Benefits of establishing an intermediate architecture



Cloud Models: Who Owns What?



Overview of Azure Services

App Service

- Offers scalability and support for multiple languages and frameworks

Azure SQL Database

- Provides a managed relational database service
- Automated backups and high availability

Blob Storage

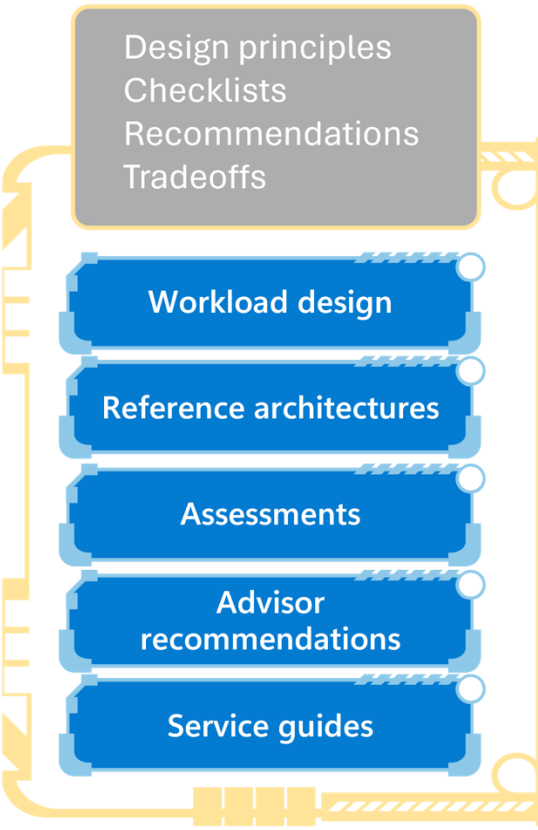
- Provides a software solution for handling blob (images, files, etc)
- Automated backups and high availability

Virtual Network (VNet)

Private Endpoints

Well Architected Framework

- **Reliability** – Business Continuity & Resilience
- **Security** – Protect Trust and Data
- **Cost Optimization** – Maximize ROI
- **Operation Excellence** – Agility & Efficiency in Operations
- **Performance Efficiency** – Fast, Scalable Delivery

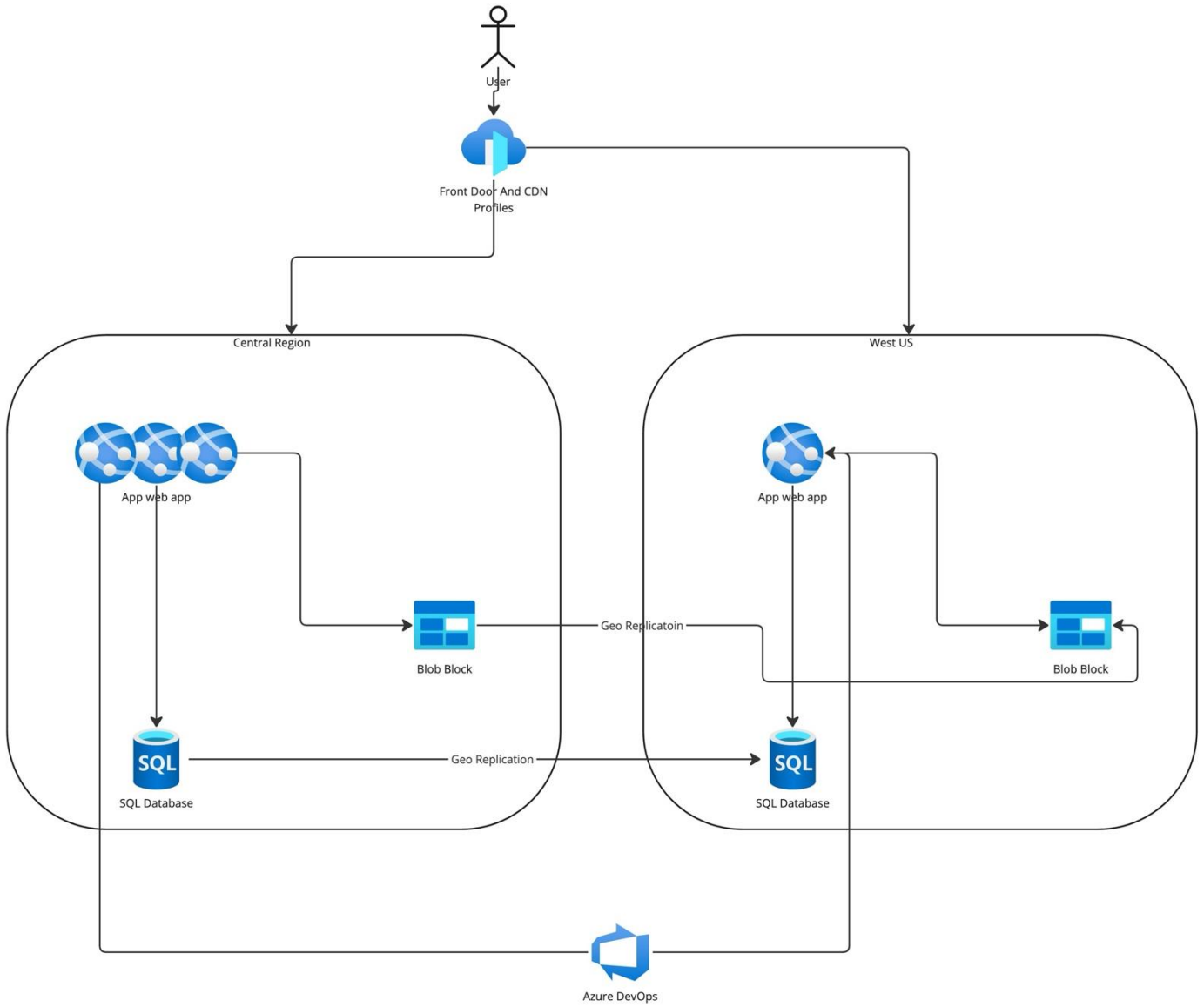


Azure Well-Architected Framework: Reliability

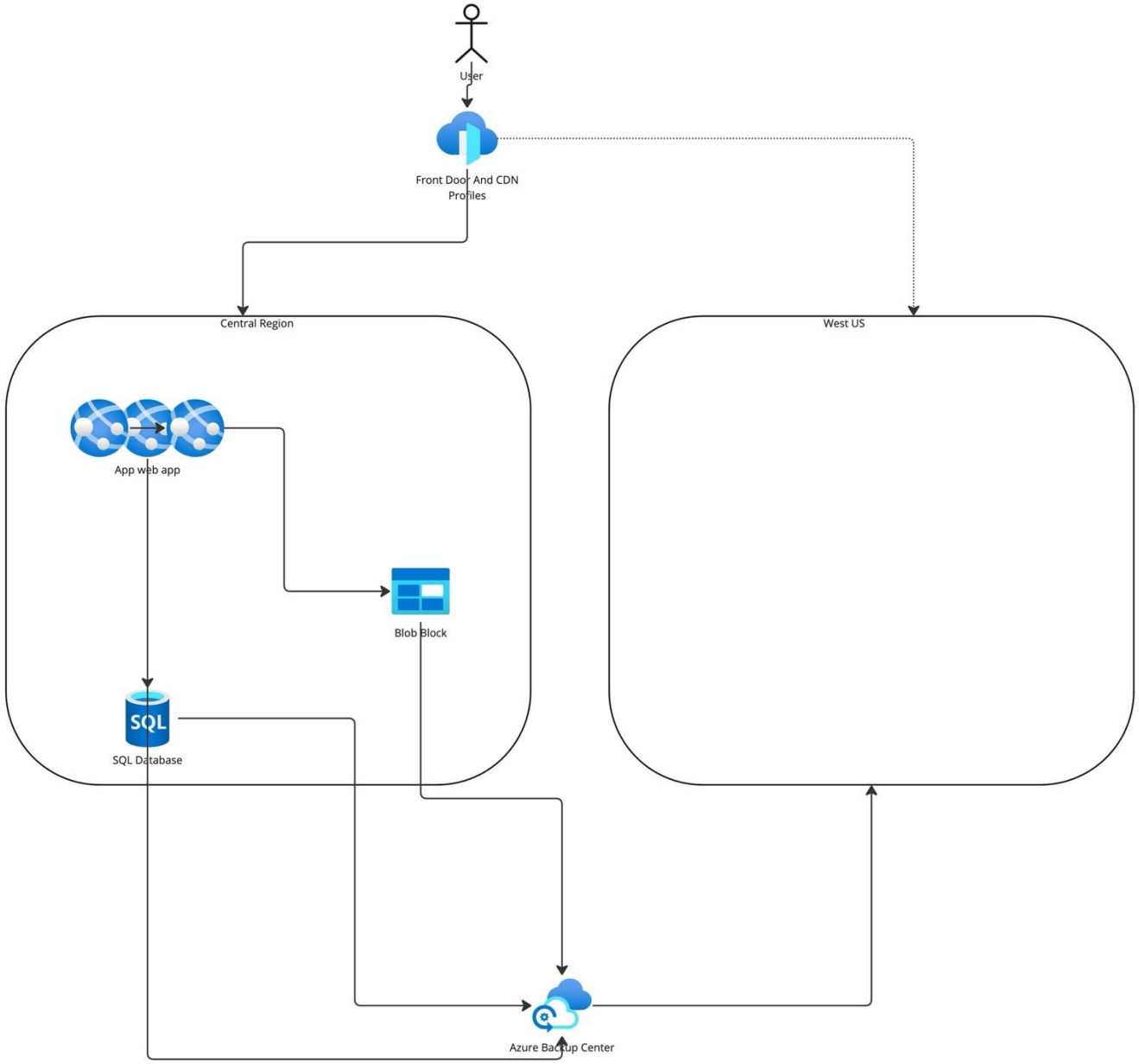
Reliability ensures that your application can recover from failures and continue to function.

- Design for **Business Continuity:** eliminate single points of failure so operations aren't interrupted
- **Resilient Systems:** Automatic failover and backups ensure we meet uptime commitments even during incidents.
- **Rapid Recovery**: Develop the capability to restore service quikcly
- **Tradeoffs**

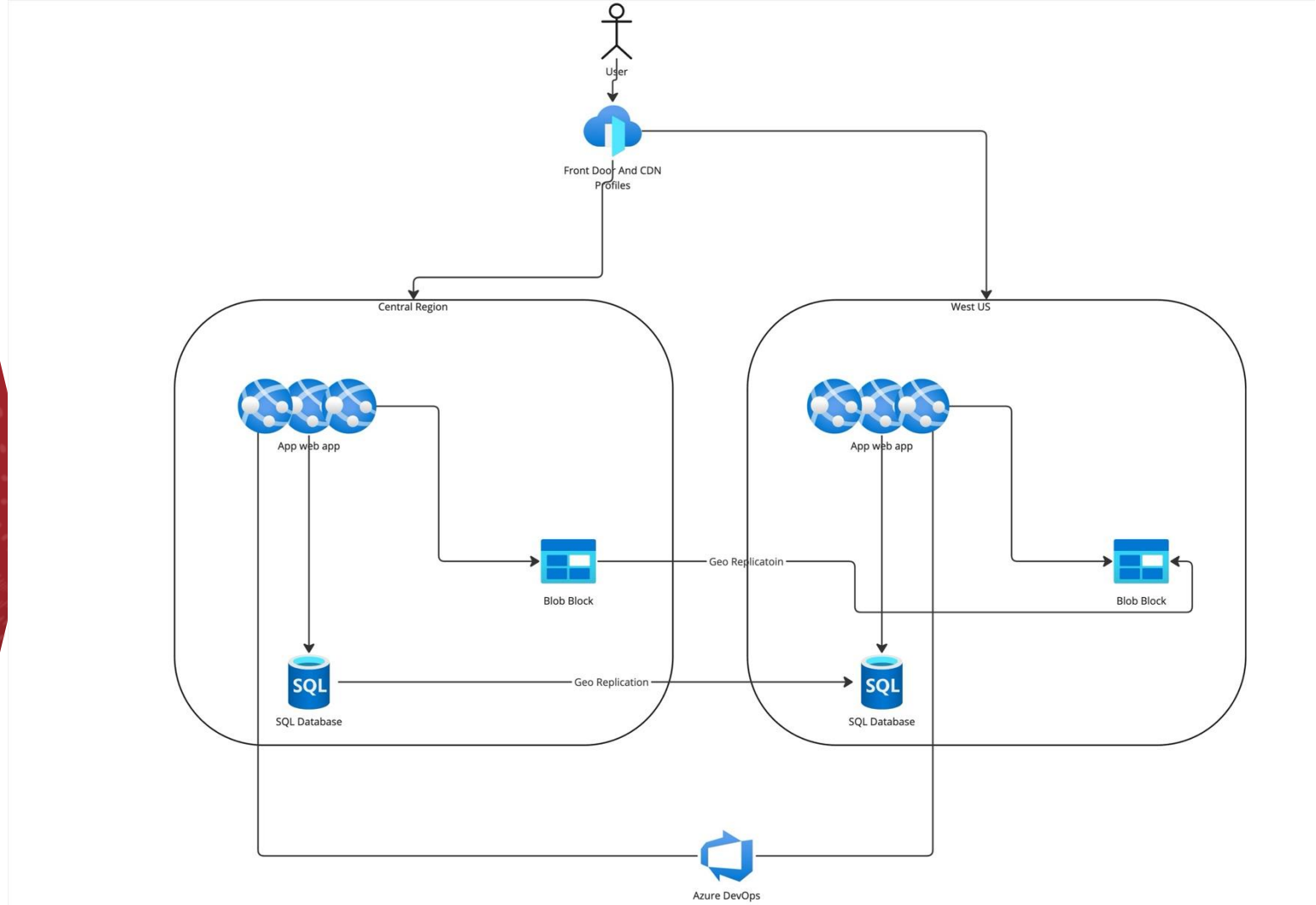
Active - Passive



Active - Standby



Active - Active



Questions

How much downtime can our business realistically tolerate, and are our systems architected to meet these Requirements? (RPO an RTO)

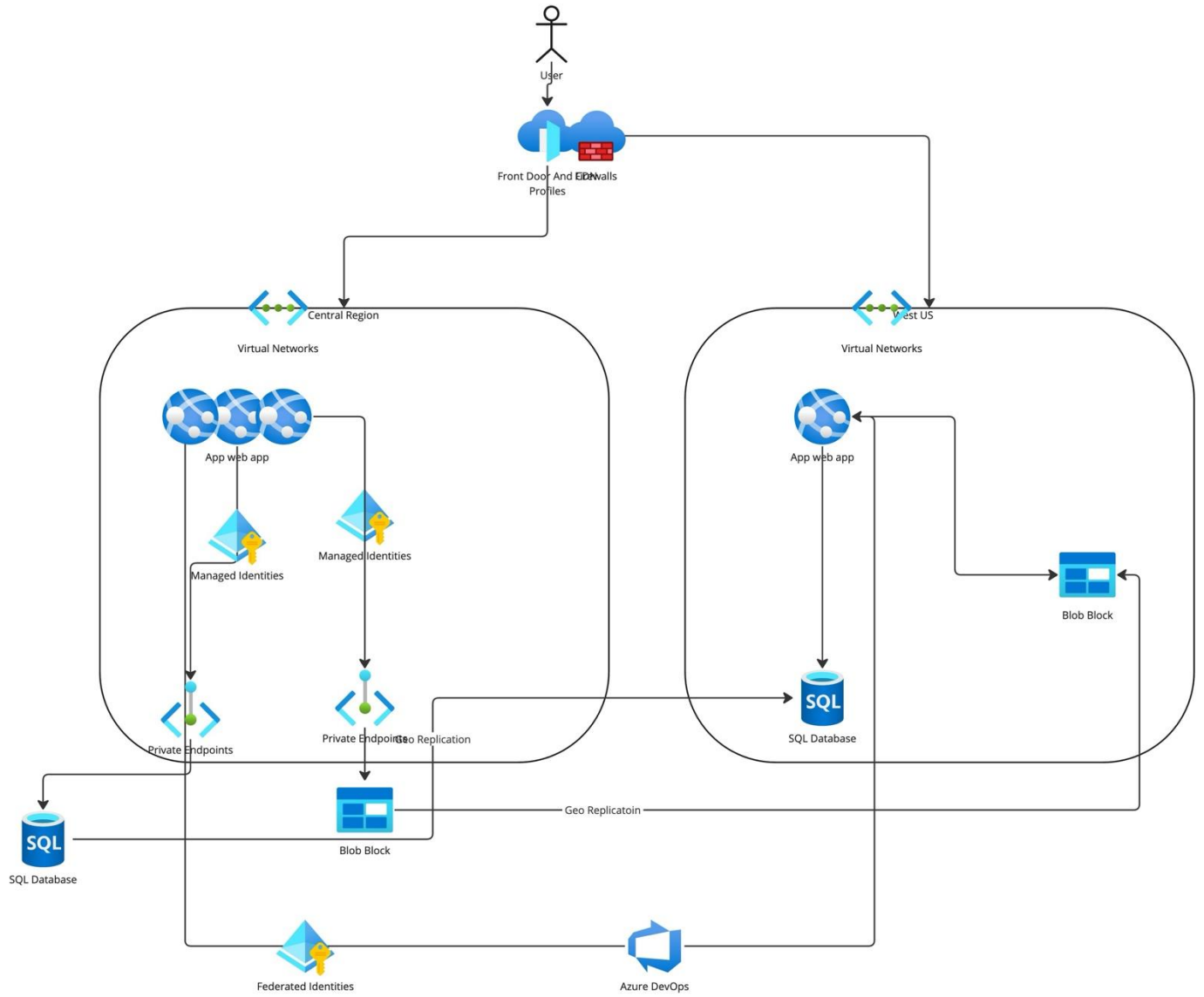
Do we have redundant plans (backups, failovers) for our most critical applications, and when was the last time we tested this?

If a major outage occurred, who gets alerted and how quickly can you recover?

Azure Well-Architected Framework: Security

- Embrace **Zero Trust**
- **Safeguard access and data** – ensure. Only the right people can access information, and that our sensitive data is locked down.
- Continuous Threat Monitoring
- Compliance & Governance
- Ongoing process, not a one-time thing
- Encryption?
- Secure your SDLC
  - NO SECRETS IN REPOS
- Identity Management
  - Managed Identities, Federated, etc

Security


User
Front Door And CDN Profiles
Firewalls
Central Region
Virtual Networks
App web app
Managed Identities
Managed Identities
Private Endpoints
Private Endpoints
Geo Replication
SQL Database
Blob Block
Geo Replicatoin
Blob Block
SQL Database
Federated Identities
Azure DevOps
Virtual Networks
App web app
Blob Block
SQL Database

Questions

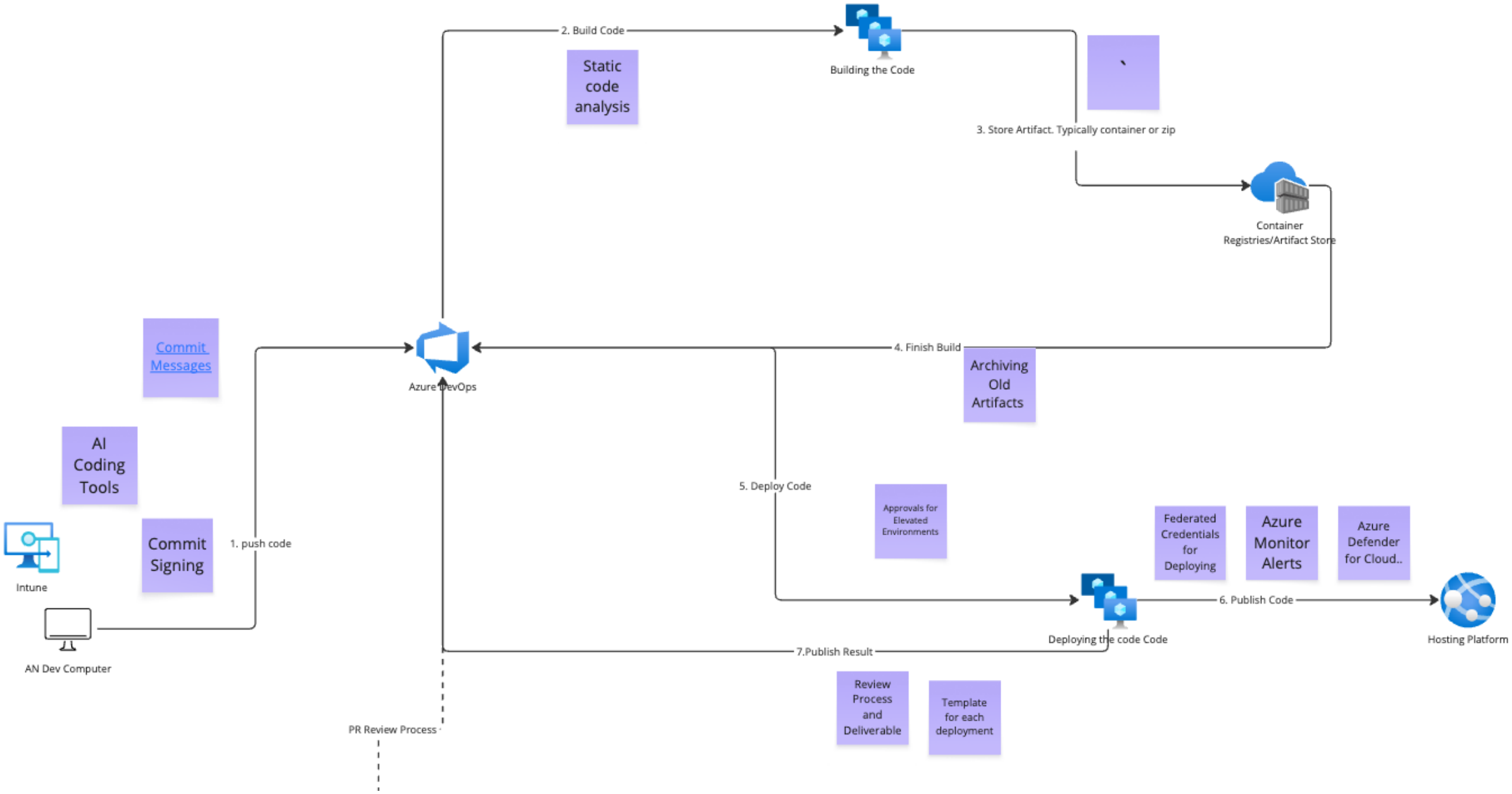
What is our plan if a breach does occur? Do we have an incident response strategy outside of just IT?

Are we up to date with all required compliances, and who is accountable for ensuring this?

If we were targeted tomorrow, do we have confidence our most critical data and service are protected? How do you know that?

Azure Well-Architected Framework: Operational Excellence

- **Automation & Process Efficiency** – Automate routine tasks and deployments to reduce human error and free up team time for innovation.
  - Automate routine tasks with Azure Automation
- **Proactive Monitoring** – Have end-to-end observability so we catch issues *before* they impact customers, enabling a faster response.
  - Use tools like Azure Monitor and Azure Alerts
- **Continuous Improvement Culture** – Learn from incidents with post-mortems and refine processes, so we're always getting better at delivering reliable services.
- This can boil down to DevOps


2. Build Code
Static code analysis
Building the Code
3. Store Artifact. Typically container or zip
Container Registries/Artifact Store
Commit Messages
Azure DevOps
4. Finish Build
Archiving Old Artifacts
AI Coding Tools
5. Deploy Code
Approvals for Elevated Environments
Federated Credentials for Deploying
Azure Monitor Alerts
Azure Defender for Cloud..
Intune
Commit Signing
1. push code
6. Publish Code
Hosting Platform
Deploying the code Code
AN Dev Computer
7.Publish Result
Review Process and Deliverable
Template for each deployment
PR Review Process

Questions

If a critical system issue happened right now, do we have confidence in our monitoring and on-call processes to detect it and address it before customers notice?

Where are our biggest operational bottlenecks or sources of human error today, and how can we automate or streamline those?

Do our development and IT teams have a culture of continuous improvement – for example, doing blameless post-mortems after incidents and investing in better tooling – and do we as leaders support that?

Azure Well-Architected Framework: Performance Efficiency

Right-sizing & Innovation – Use the right technology for the job (and scale it appropriately) so we can launch new features (like AI-driven services) without infrastructure holding us back.

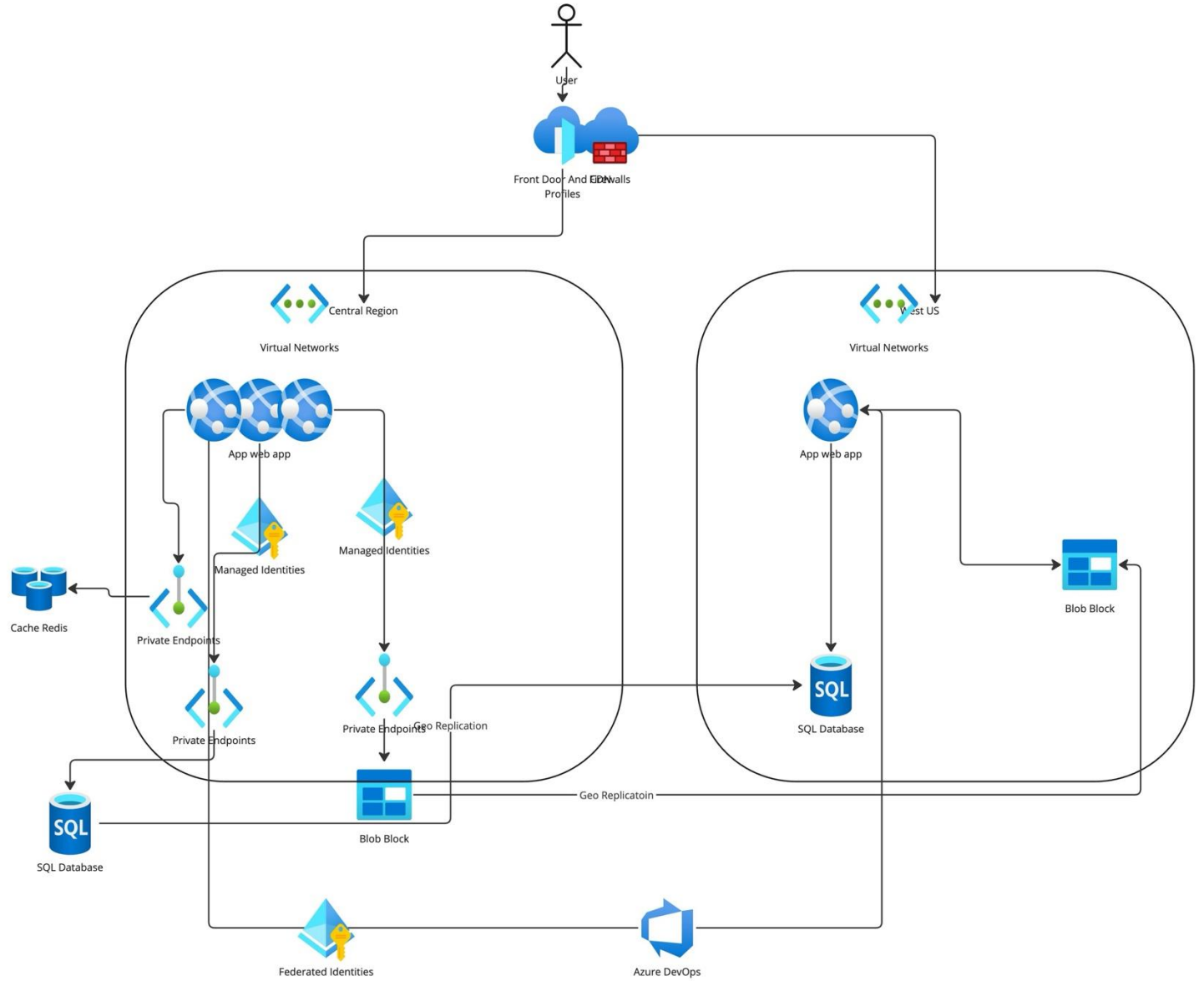
- Using resources effectively to meet system performance requirements

Scalability – Ensure our systems handle growth and peak demand smoothly

- Auto-scaling and load balancing to ensure application performs well under varying loads

Optimized Performance – Continually refine systems so that user experiences are fast and frictionless, which drives customer satisfaction and sales.

Let’s cache some stuff!



Questions

Do we have insights into how our applications perform under peak loads, and have we identified any chokepoints that could cause slowdowns or crashes during a big event?

How are we ensuring a fast user experience for our customers globally? (e.g., using content delivery networks, efficient code, scalable cloud services) – and who monitors that performance day-to-day?

As we look to adopt AI and data-intensive applications, can our current infrastructure support them efficiently, or do we need to invest in upgrades (like GPUs, scaling strategies, etc.) to stay ahead?

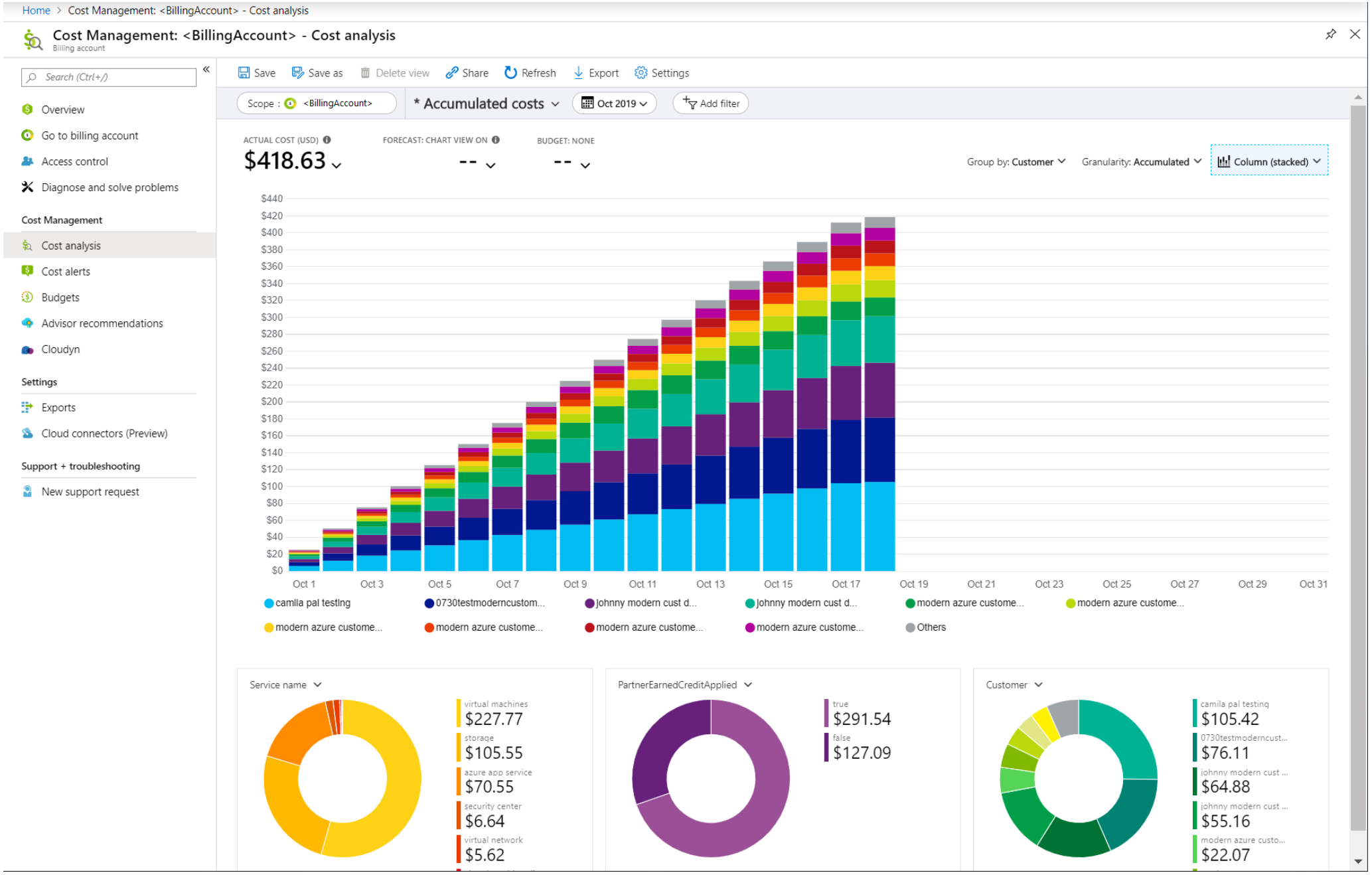
Azure Well-Architected Framework: Cost Optimization

Cost Optimization

- **Eliminate Waste** – Identify and shut down resources we don't need (idle servers, over-provisioned systems) to stop paying for unused capacity.
- **Budget Alignment** – Continuously align cloud spending with business value. We invest in what drives results, and trim what doesn't.
- **Financial Governance** – Establish clear policies and accountability for cloud costs to avoid surprises.

Example Application

- Choose appropriate service tiers
- Implement auto-scaling to avoid over-provisioning
- Leverage cost-effective storage solutions
- Cost should in the planning stages


Home > Cost Management: <BillingAccount> - Cost analysis
Cost Management: <BillingAccount> - Cost analysis
Billing account
Search (Ctrl+/)
Overview
Go to billing account
Access control
Diagnose and solve problems
Cost Management
Cost analysis
Cost alerts
Budgets
Advisor recommendations
Cloudyn
Settings
Exports
Cloud connectors (Preview)
Support + troubleshooting
New support request
Save
Save as
Delete view
Share
Refresh
Export
Settings
Scope : <BillingAccount>
* Accumulated costs
Oct 2019
Add filter
ACTUAL COST (USD)
$418.63
FORECAST: CHART VIEW ON
--
BUDGET: NONE
--
Group by: Customer
Granularity: Accumulated
Column (stacked)
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Others
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azure app service
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security center
$6.64
virtual network
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PartnerEarnedCreditApplied
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Customer
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Questions

Do we have clear visibility into where our cloud dollars are going, and which workloads or projects provide the highest return on that investment?

What governance do we have in place to prevent cloud overspend? For instance, do teams have budgets or cost targets, and do we review those regularly at the leadership level?

Where can we reinvest savings?

Conclusion

We have now taken a simple POC and talked about the design decisions for a well architect app.

Next Steps:

- Initiate an Azure-Well-Architected Review
- Prioritize an AI readiness architecture assessment
- Strengthen Cloud governance practices

Pillars:

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

Resources

- Azure Well Architected Framework
- Cloud Adoption Framework
- Azure Architecture Center
- Azure Specific Service Guides

Q&A Session

Open floor for questions and discussion

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