



Microsoft Partners Data Center Experience

Azure Digital & App Innovation

June 23, 2022



Agenda

- The team!
- The world of apps through Azure PaaS services
- Azure App Services
- Azure API Management
- Containers on Azure
- DevOps
- QnA session

The A-Team



Hassan Raza

Cloud Solution Architect

Photographer, love music & F1, a foodie and a super Geek!

@hassan14_pk
<https://www.linkedin.com/in/mhrhap/>
muraza@microsoft.com



Divi Mishra

Cloud Solution Architect

Love chocolates, bread, travelling and snowboarding!

Feel free to reach out to me on
LinkedIn or
divimishra@microsoft.com



Francis Simy Nazareth

Sr. Cloud Solution Architect

Fitness freak & short story writer.
Chess/Travel/good food

Please reach me at
fnazaret@microsoft.com or on
LinkedIn



Ibtissem Ghanemi

Cloud Solution Architect

Algerian girl living in Qatar for 4 months love my cat, movies, Superheroes and travelling

Please reach me at
ibghanem@microsoft.com or on
LinkedIn

Azure Qatar Developer Group



[https://forms.office.com/
r/85S8VmncdR](https://forms.office.com/r/85S8VmncdR)

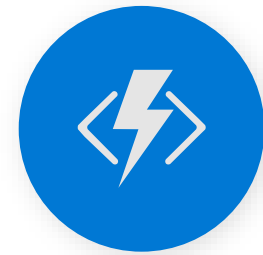
Azure a turn-key platform for Application Modernization



Containers



Apps (Web\API)



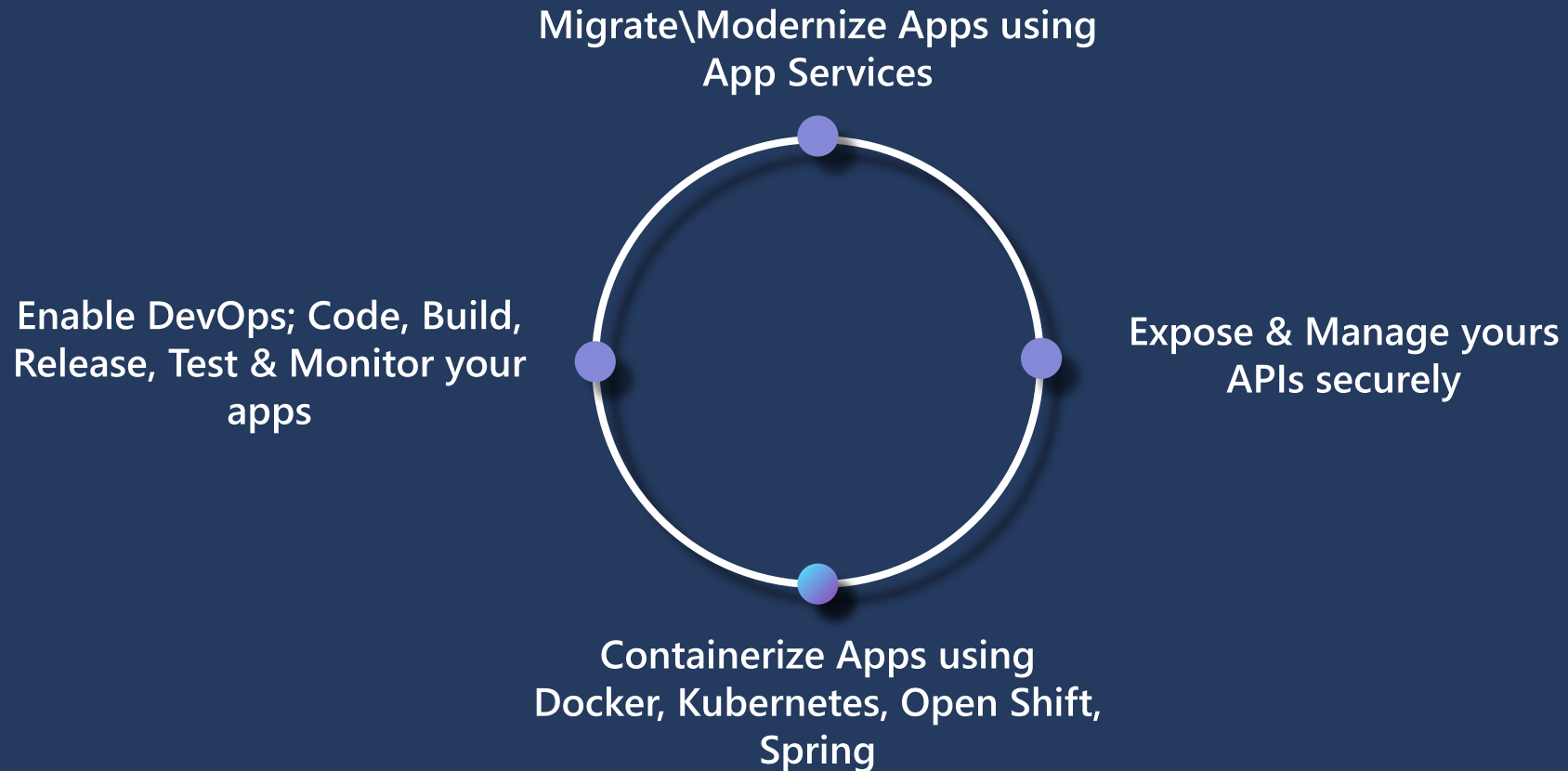
Serverless

Infrastructure
abstraction

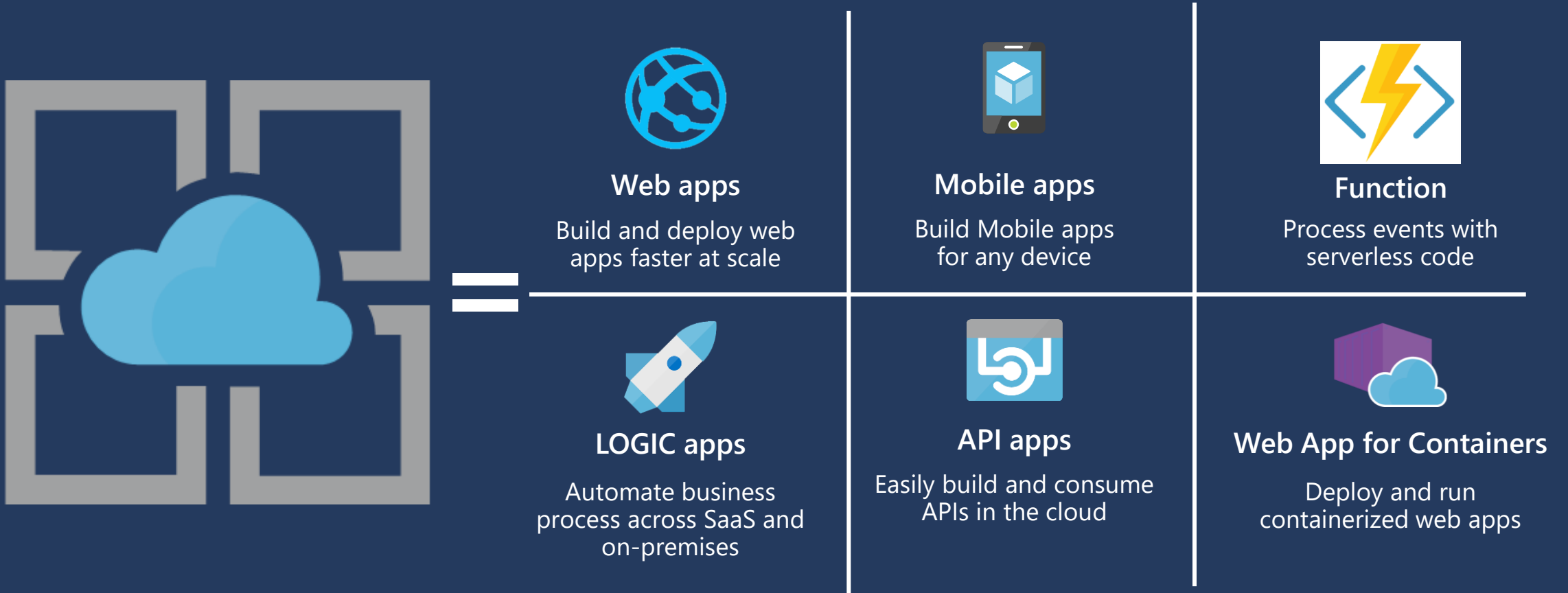
< Control

Productivity >

Innovate your Apps with Azure (Anywhere\Everywhere)



Azure App Service - One integrated offering



Azure App Service

Enterprise-grade apps



Global data center footprint



Hybrid support



AAD integrated



Secure + compliant

Fully managed platform



Built-in auto scale and load balancing



High availability with auto-patching



Reduced operations costs



Backup and recovery

High productivity development



.NET, Java, PHP, Node, Ruby, and Python



Staging and deployment



Testing in production



App gallery marketplace

Azure App Services Everywhere



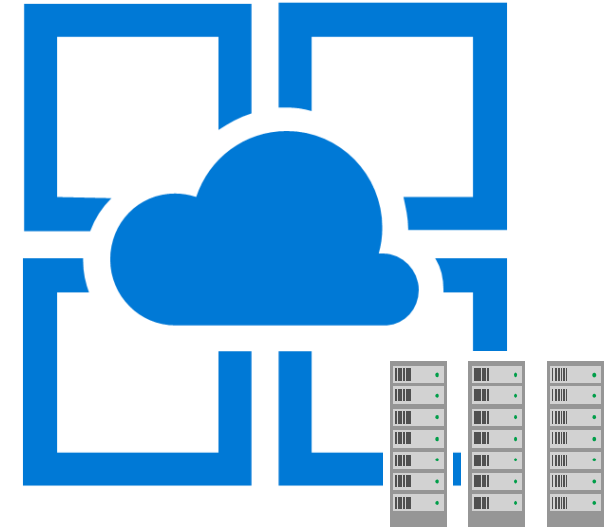
AZURE APP SERVICE (MULTI-TENANT)

Get your Web, API, or Mobile App created in seconds in the cloud. We provide the infrastructure; you provide your application code.



APP SERVICE ENVIRONMENT

Run your apps in virtual network at high scale. Manage all the resources behind your public endpoint creating an isolated environment specifically for your organization.



APP SERVICE (Stack\Arc)

Leverage cloud innovations in edge environments. App Service on Azure Stack brings the power of Azure App Service to your own edge devices.

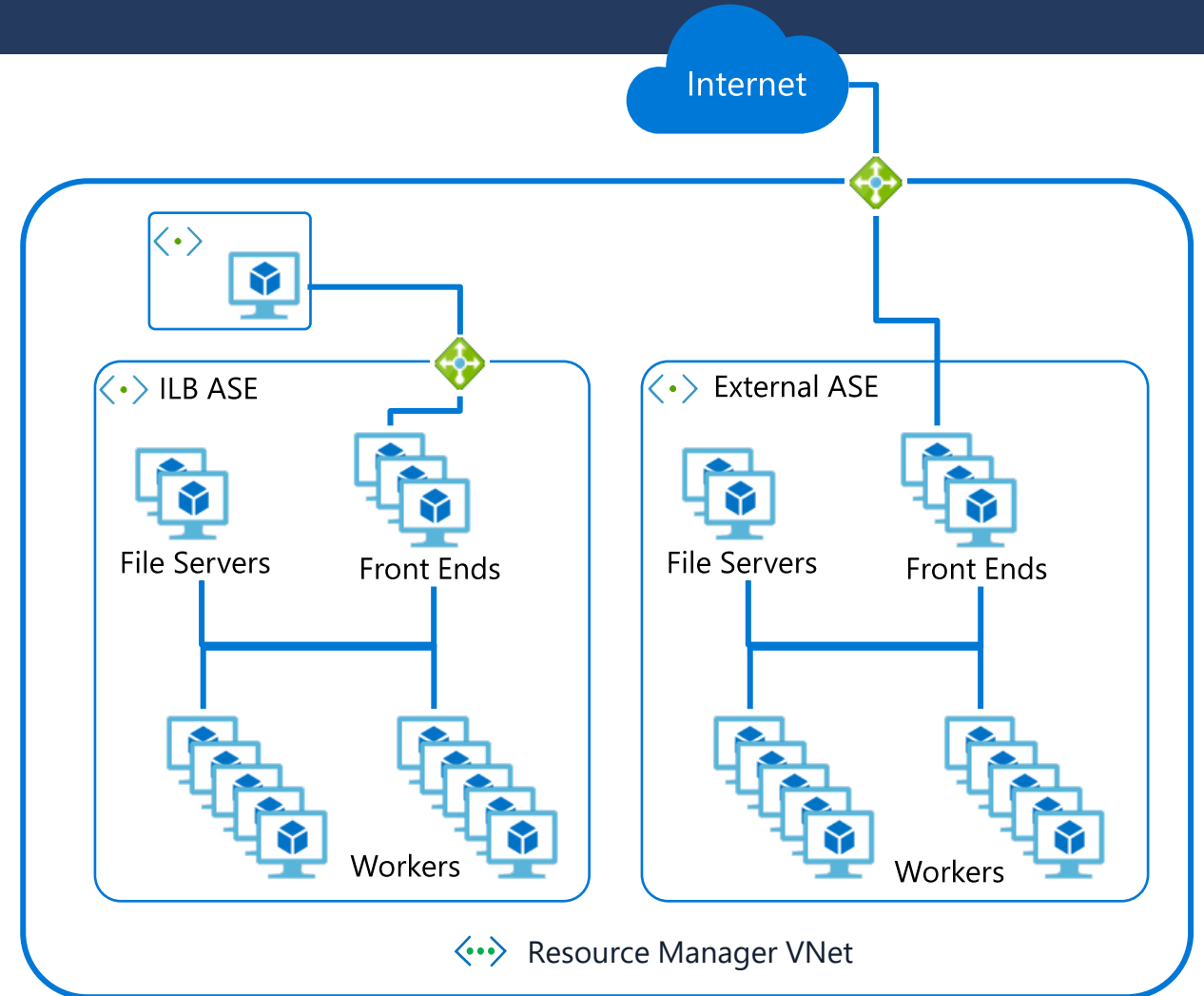
App Service Environment

Single-tenant deployment of the App Service in your VNet

HTTP/S terminates at Front Ends.
Customer workloads run on the workers.

Can:

- scale App Service plans up to 100 instances
- hold up to 201 ASP instances
- be deployed with a VNet address or a public address



App Service Environment v3

Simplified Deployment

No Stamp Fee

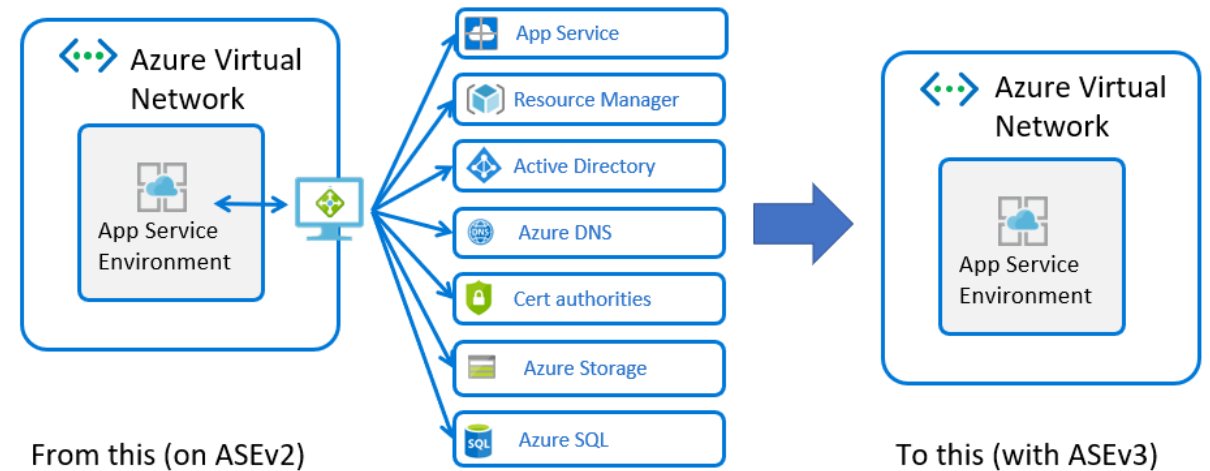
Upgrade path from v2 to v3

VMSS Based

Zone redundant

Deployable on dedicated hardware

Faster provisioning

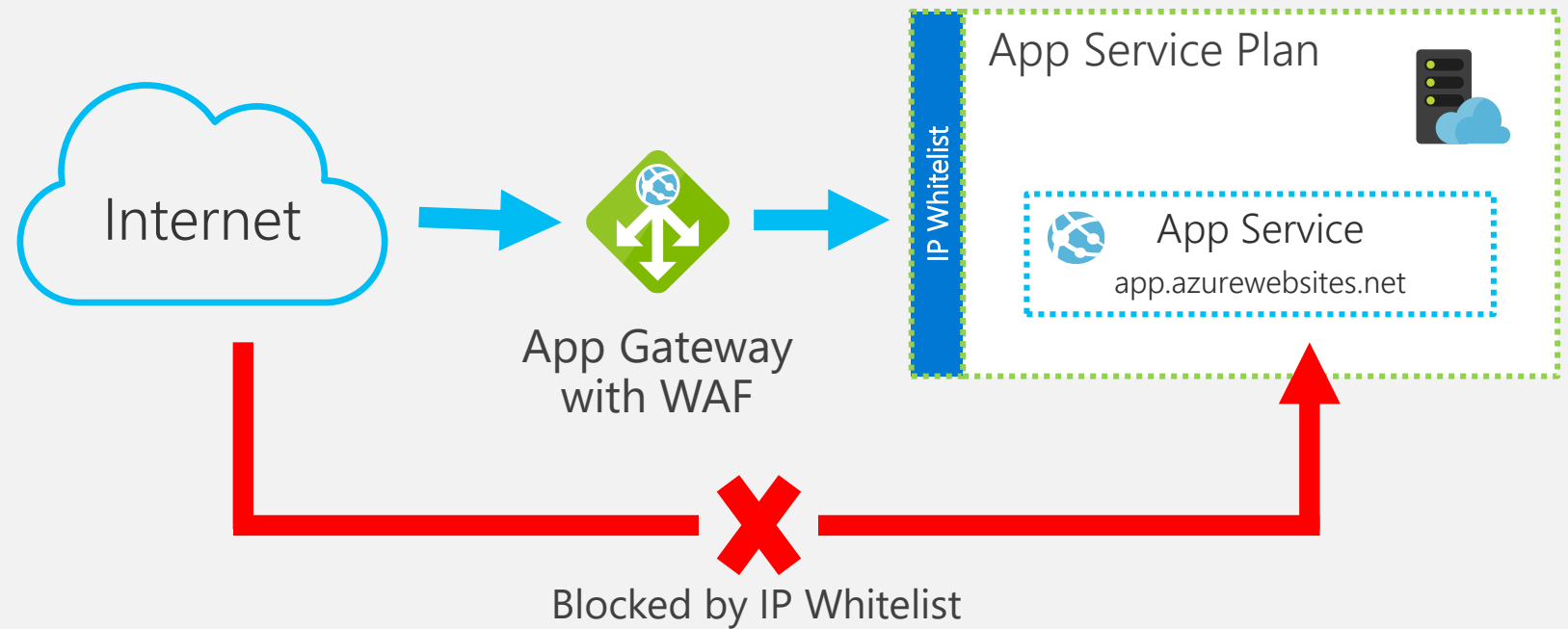




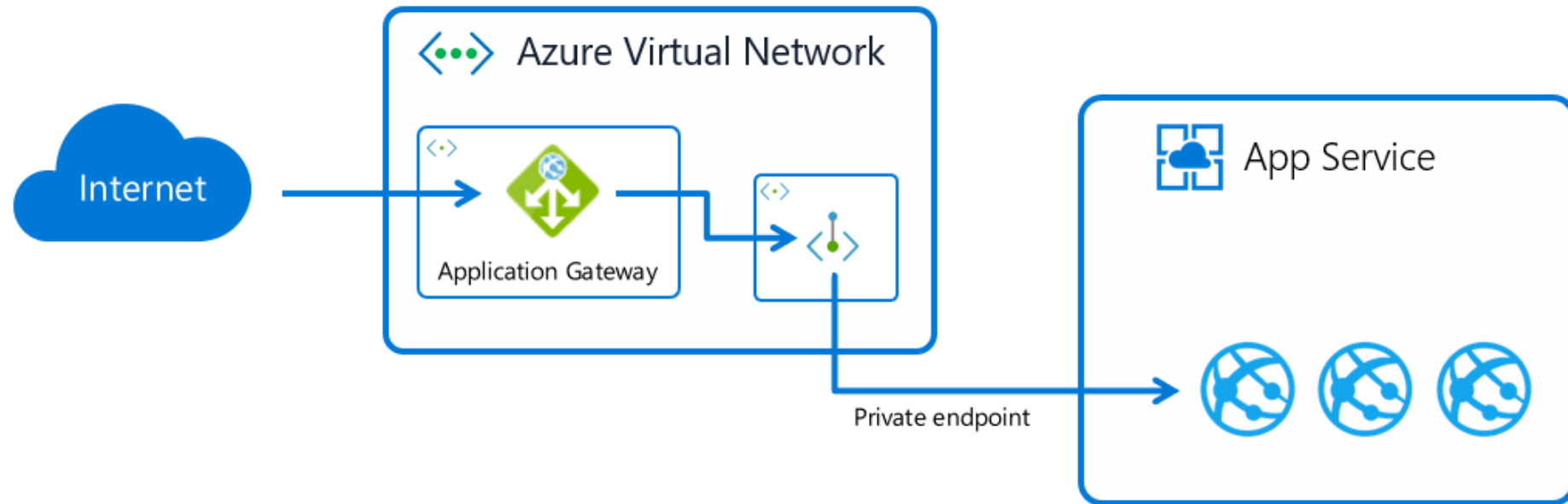
App Service

- ✓ Protects web apps from vulnerabilities and attacks
- ✓ Can protect multiple apps
- ✓ Custom WAF policies
- ✓ TLS/SSL termination
- ✓ App Service protected by IP whitelisting

App Service behind App Gateway & WAF



Secure your app service with a private endpoint



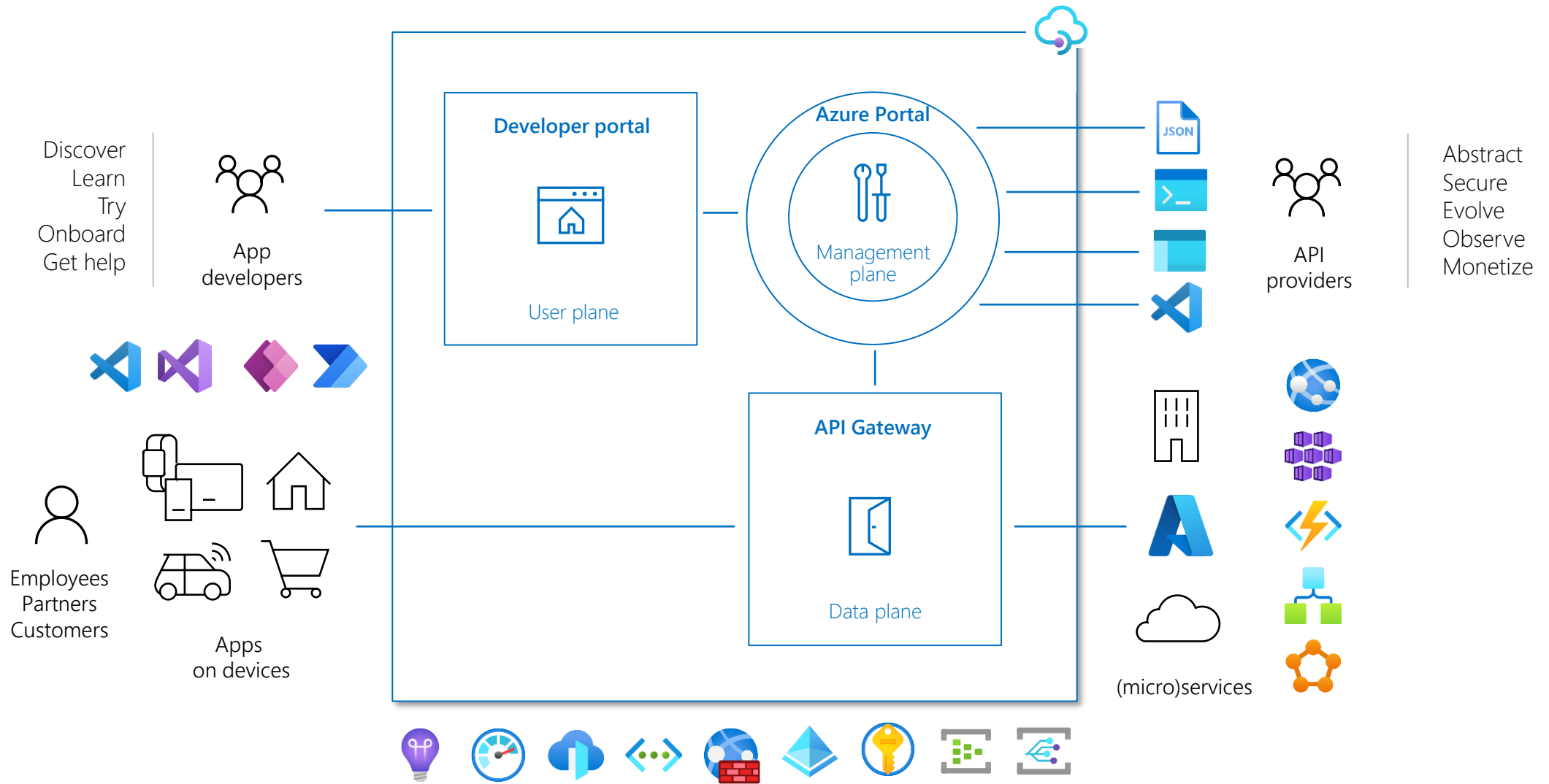
Best Practices (Qatar Ref Architecture and et al)

- ✓ Use Premium v3 service tier
- ✓ Enable Zone Redundancy, always.
- ✓ Disable ARR Affinity, make your apps stateless (store sessions in Redis).
- ✓ Avoid using one App Service Plan for multiple Apps (Noisy Neighbor).
- ✓ Use ASE for private apps which are not to be on Shared Infrastructure.
- ✓ ASE v1\v2 are being retired, only ASE v3 to be created, upgrade Path (v2 to v3 exists).
- ✓ To connect to backend services, use Anti Instantiation Pattern.
- ✓ Enable Auto-Heal and Always ON.
- ✓ Do not forget to enable Auto-Scale (Scale out on Metrics OR Time).
- ✓ Not all apps should scale-out (CRON, stateful, web jobs apps).
- ✓ Disable FTP access, security is paramount.
- ✓ Enable CDN via Azure Front door or Azure CDN for Akamai (Gulf users only).
- ✓ Enable web content caching, for your Apps on the Servers in your App Service Plan.
- ✓ Use Cache set-aside pattern to enable Content\Data caching using Redis.
- ✓ Enable Application Insights for Observability (monitor your code, not just server metrics)

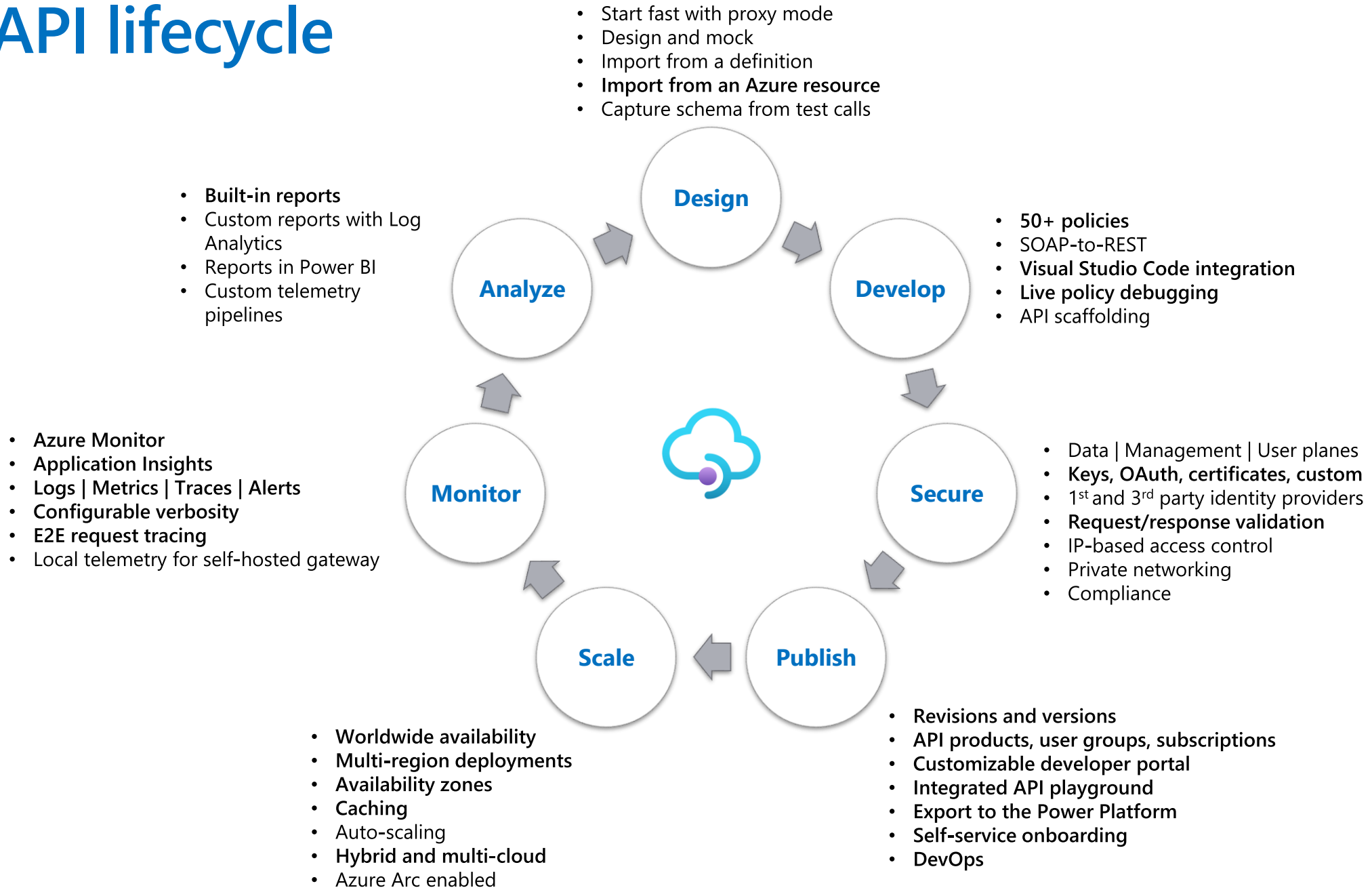
Azure API Management

Divi Mishra

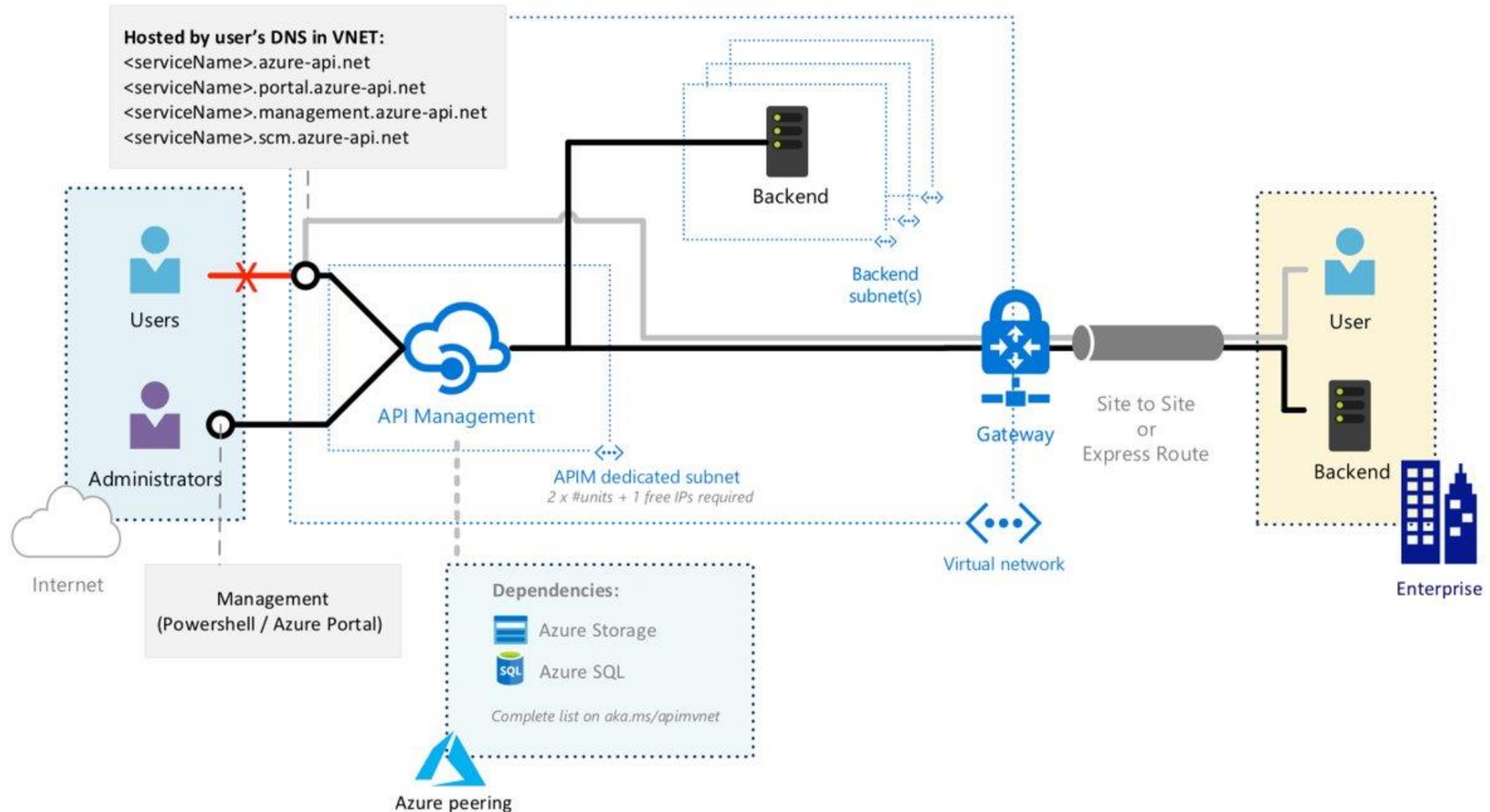
3 components of Azure API Management



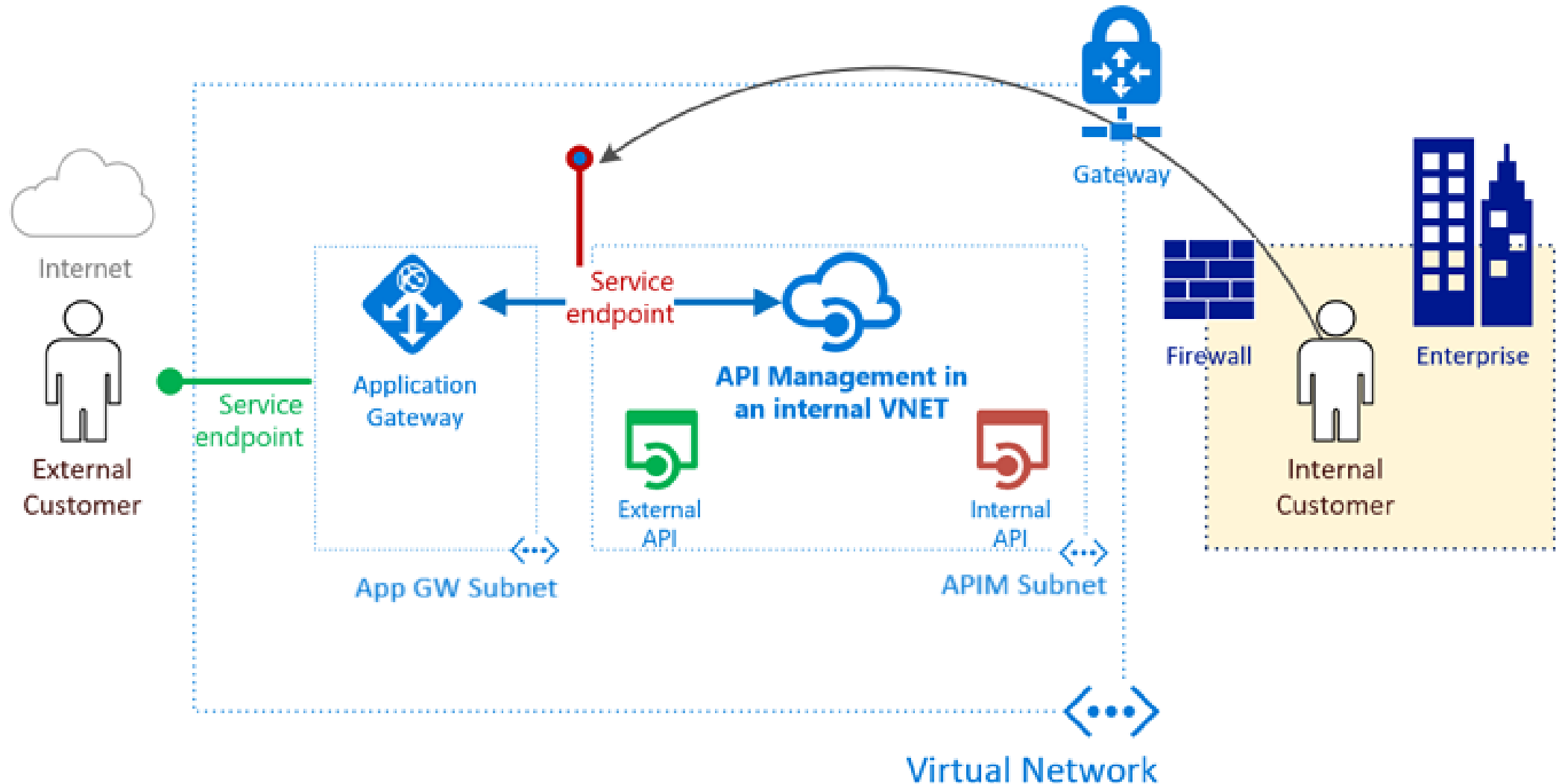
Full API lifecycle



Internal virtual network mode



Integrate with Azure Application Gateway



Azure Qatar Reference Architecture v2.0 Checklist

- ✓ Dev/Test: Use the **Developer** tier
- ✓ Production: Use the **Premium** tier for enabling VNET integration
- ✓ Change the default HTTP header "Ocp-Apim-Subscription-Key" to a different header value
- ✓ To access credentials at runtime, use Named Values with Azure Key Vault integration
- ✓ Use OAuth 2.0 security schemes wherever possible

Demo: Creating an Azure APIM instance

Demo: Importing an API

Demo: Designing an *API* with Policies

Demo: API Products and Subscriptions

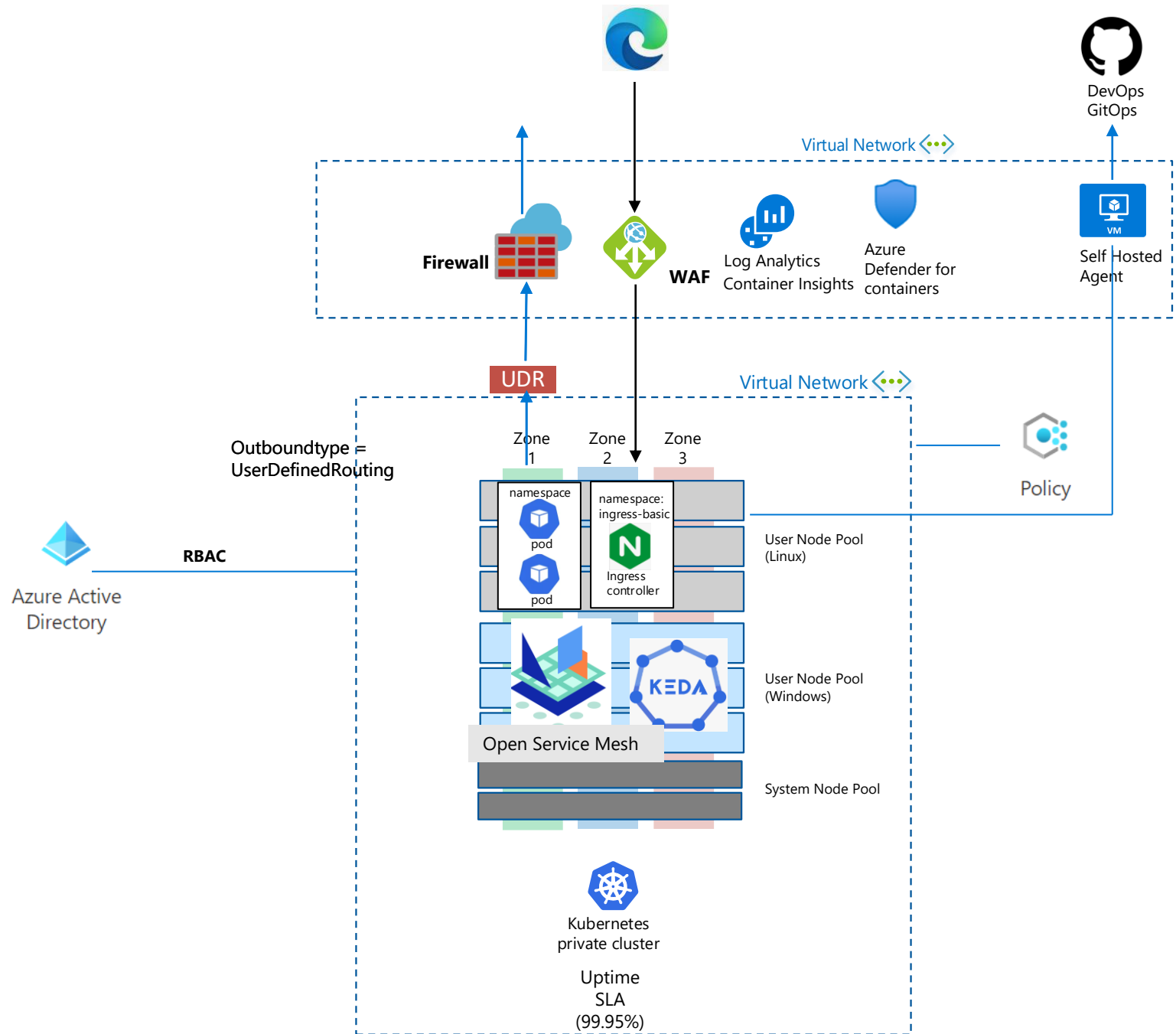
Demo: Developer Portal, Monitoring, Networking, etc.



Containers on Azure

Francis Nazareth

AKS Deployment Guidance



Azure RedHat OpenShift Deployment Guidance

Create Azure Red Hat OpenShift ...

Basics Authentication Networking Tags Review + create

Configure virtual networks

Virtual network * ⓘ

(new) aro-vnet



[Create new](#)

Master subnet *

(new) masterSubnet (172.28.0.0/25)



Worker subnet *

(new) workerSubnet (172.28.1.0/24)



API server visibility * ⓘ



Private



Public

Ingress visibility * ⓘ



Private



Public












Azure Container Apps Demo

Azure services



Resources

Recent Favorite

Name	Type	Last Viewed
 nodeapp	Container App	52 minutes ago
 pythonapp	Container App	52 minutes ago
 env-containerapp	Container Apps Environment	an hour ago
 mycontainerapp	Container App	an hour ago
 fn-containerapp	Container App	16 hours ago
 rg-containerapps	Resource group	a day ago
 rg.container-apps	Resource group	a day ago
 vnet-containerapps	Virtual network	a day ago
 vnet-qradar	Virtual network	2 days ago
 rg.qradar	Resource group	2 days ago
 fnmysql57we01	Azure Database for MySQL flexible server	2 days ago
 fnmysqlwe03	Azure Database for MySQL flexible server	2 days ago

[See all](#)







Navigate



Home >


Container Apps Environments ...


Microsoft (microsoft.onmicrosoft.com)


 Manage view   Refresh  Export to CSV  Open query |  Assign tags

Filter for any field...

Subscription equals **all (from active filter)**








Resource group equals **all** 

Location equals **all** 

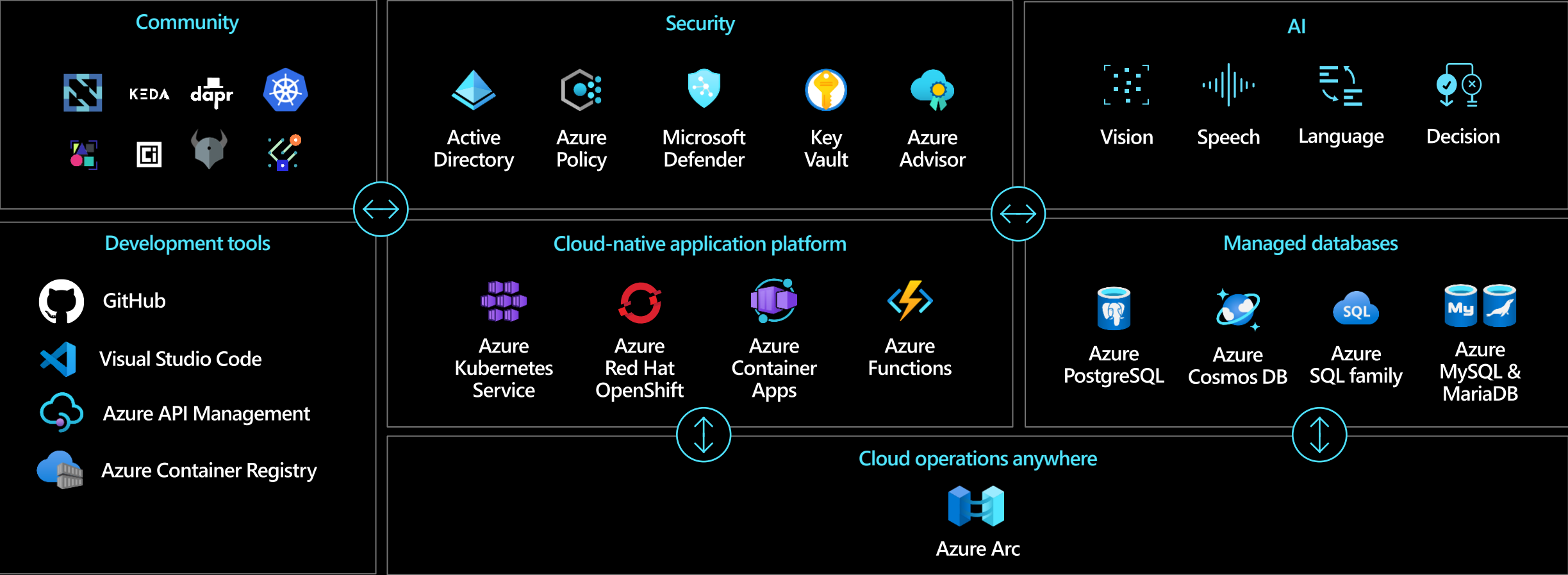
 Add filter

No grouping 

List view 

<input type="checkbox"/> Name 	Type 	Resource group 	Location 	Subscription 	
<input type="checkbox"/>  demoenv	Container Apps Environment	rg-containerapps	West Europe	Francis-Internal	...
<input type="checkbox"/>  env-containerapp	Container Apps Environment	rg-containerapps	West Europe	Francis-Internal	...
<input type="checkbox"/>  env1	Container Apps Environment	rg-containerapps	West Europe	Francis-Internal	...
<input type="checkbox"/>  fn-containerappenv	Container Apps Environment	rg-containerapps	West Europe	Francis-Internal	...

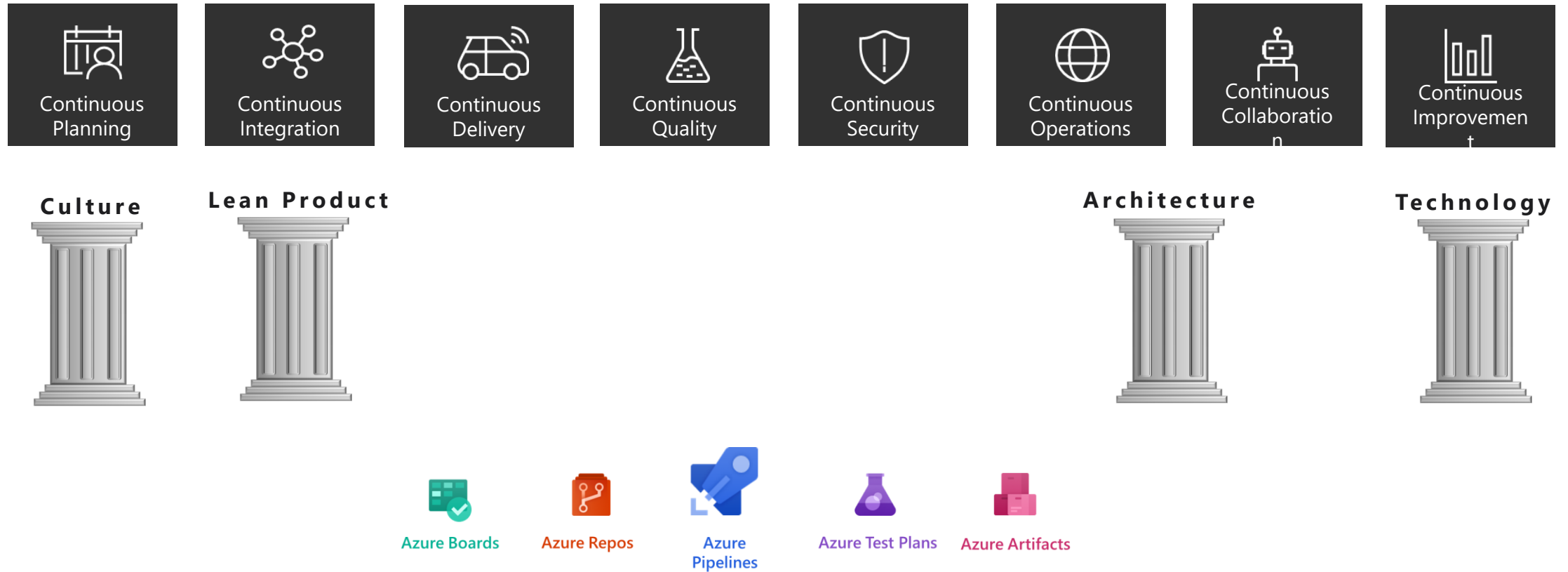
Cloud-native on Azure



Azure DevOps

Ibtissem Ghanemi

DevOps Taxonomy



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>

Continuous Integration Practices



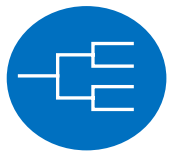
Multi-Repo



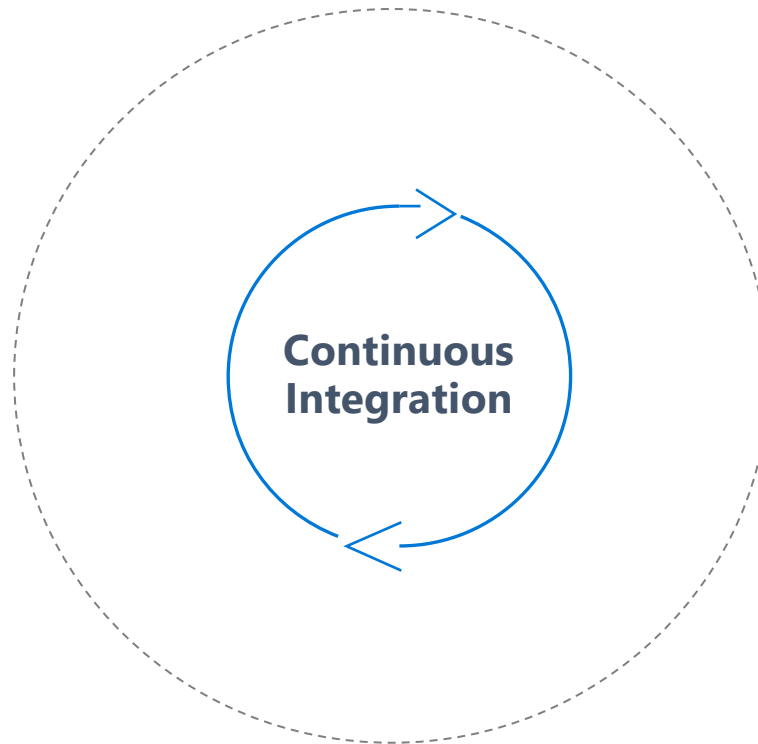
Trunk Based Branching



Branch Policies



Parallel Builds



Culture & Collaboration



Unit Testing



Pull Requests



Security Scanning



Continuous Delivery Practices



Automated Builds



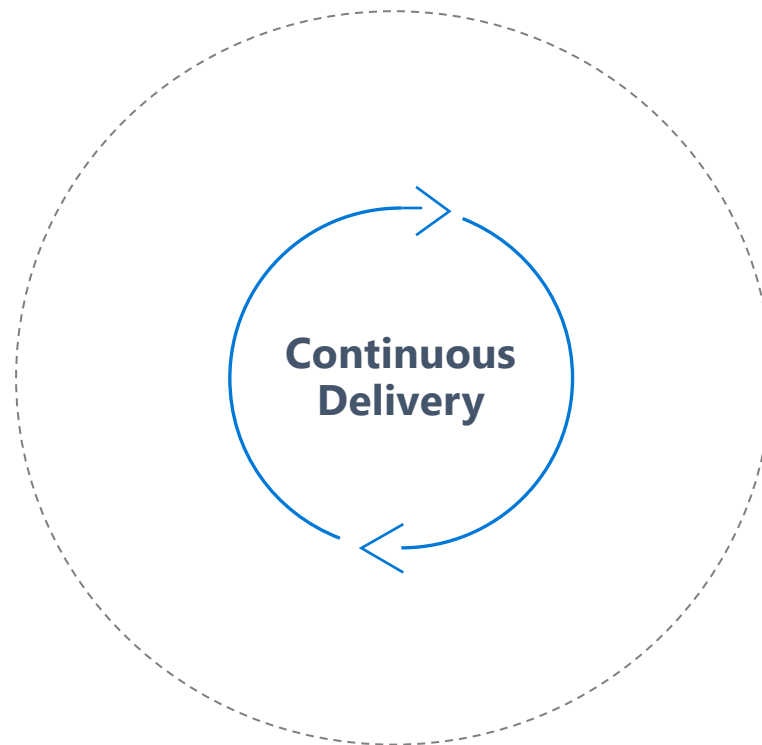
Build Once



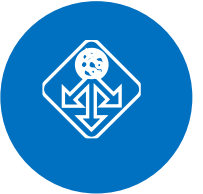
Trunk Always Prod Ready



Fix Immediately



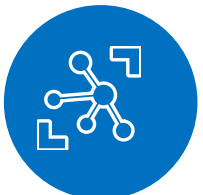
Everything in Source Control



Feature Flags



Blue/Green Deploy

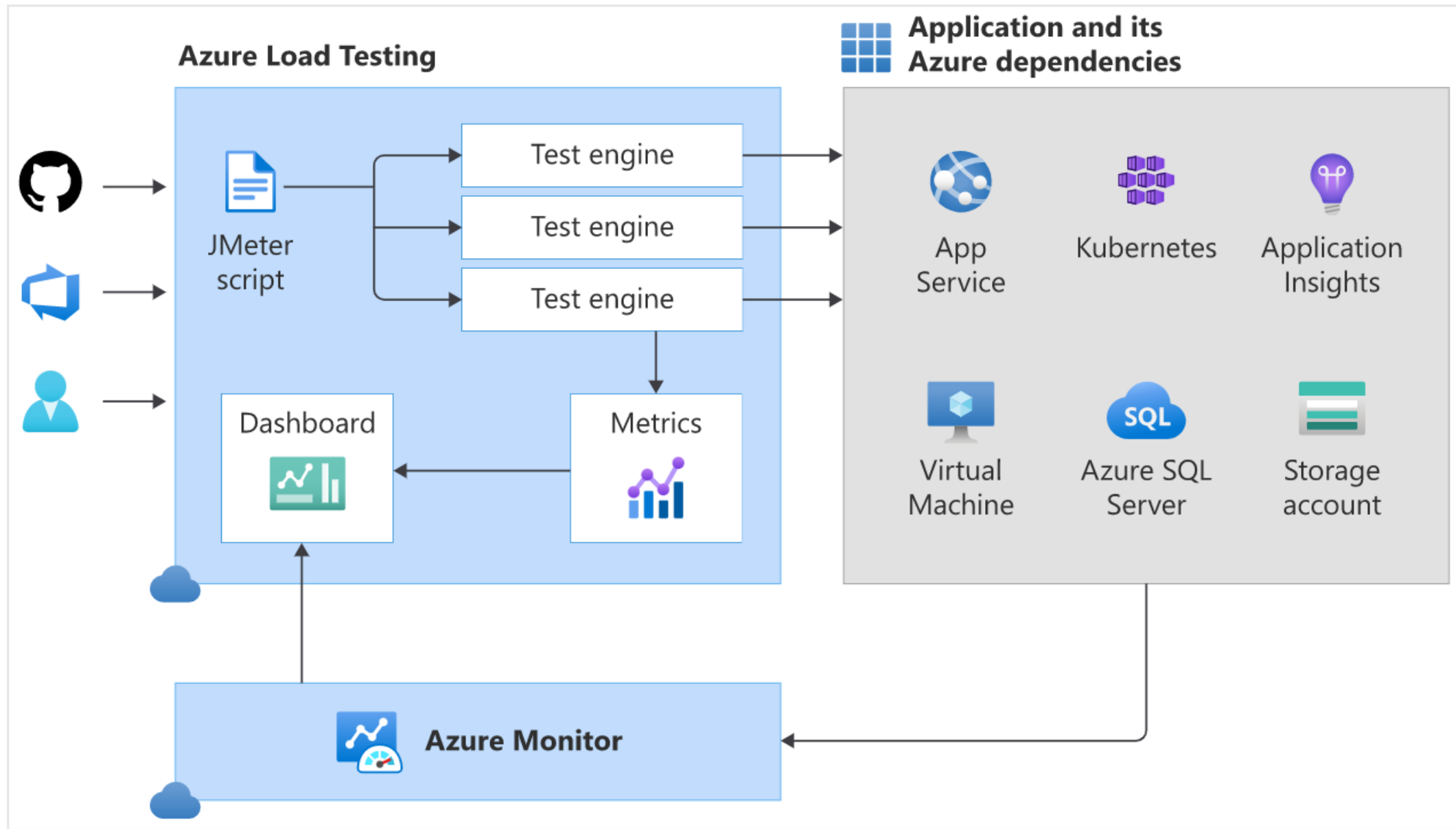


Canary Deployment

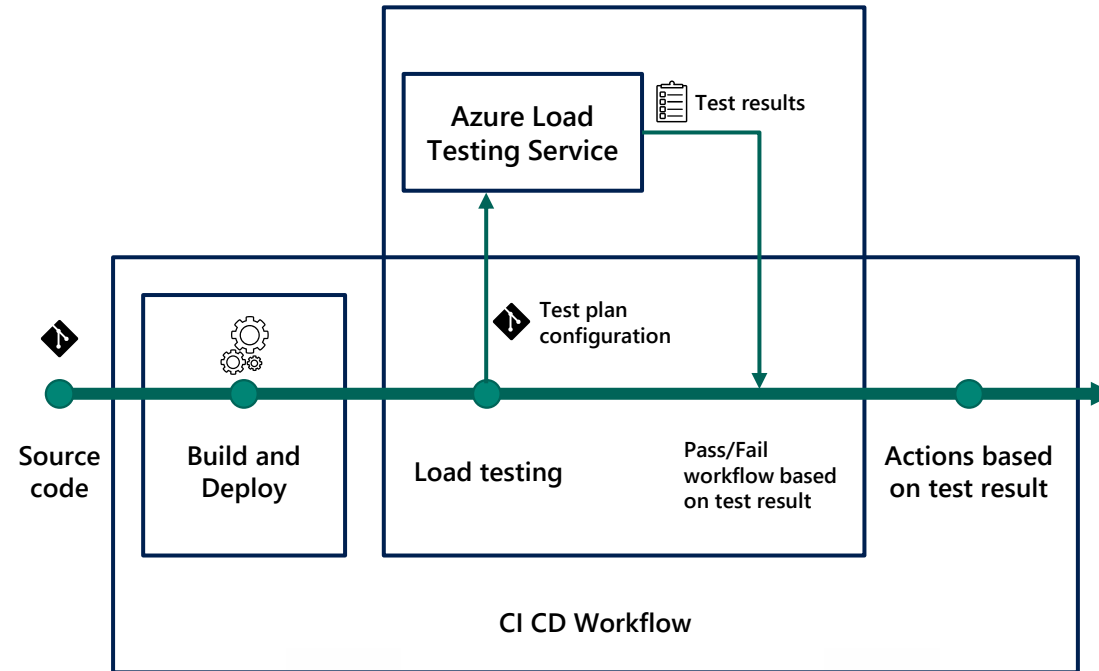


Azure load Testing

Ibtissem Ghanemi



Build load testing into your DevOps workflows



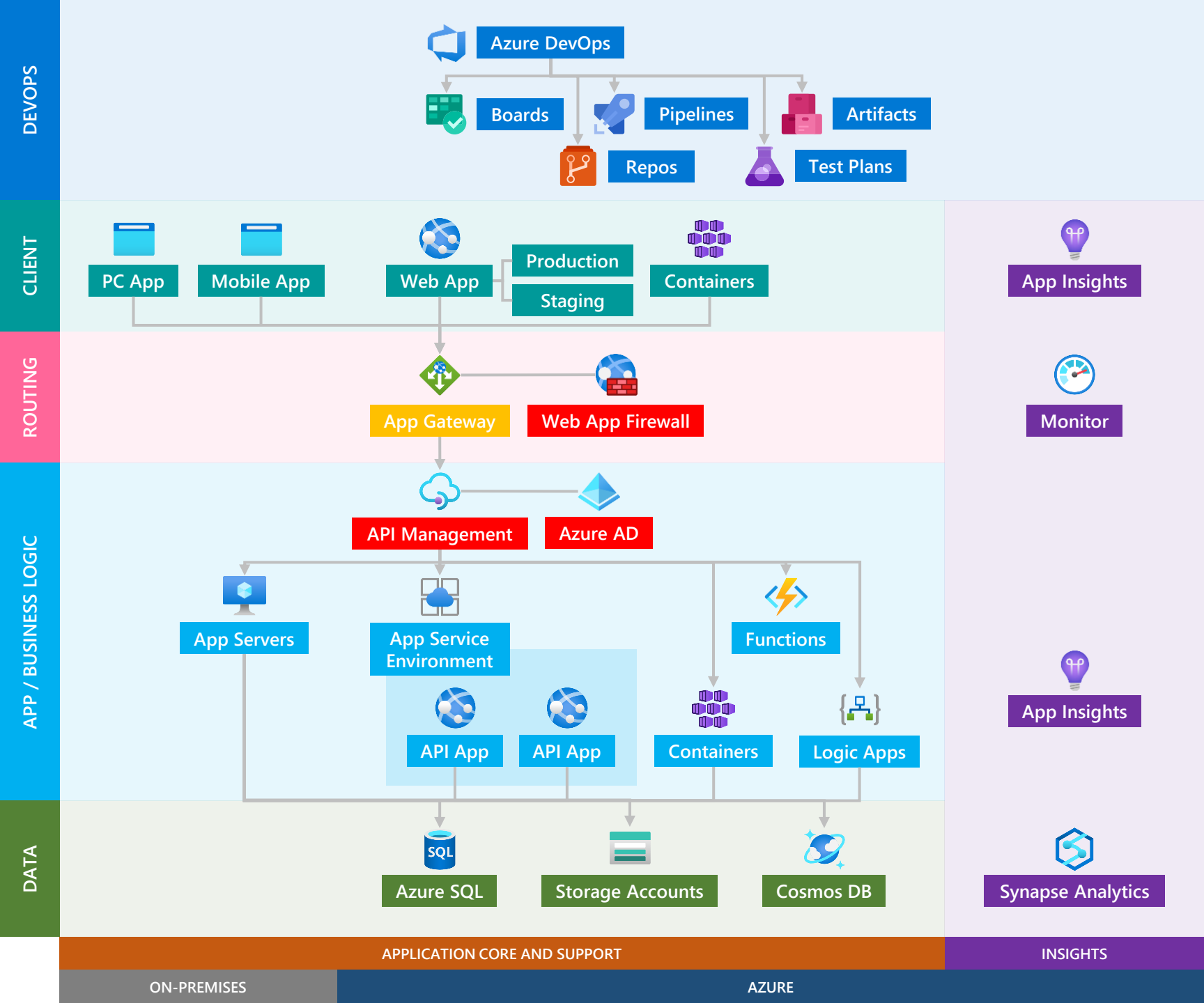
Shift load testing left to continually improve performance



Establish a performance baseline and set clear pass/fail criteria



Automatically export test results to GitHub with full context



Major components

- DevOps
- Client & Public Web App
- Networking & Routing
- App & Business Logic
- Data Services
- Operational Monitoring
- Authentication and Security

Find content for reading, learning and experimenting with
Azure PaaS services here!



Azure Qatar Developer Group

