Azure For Game Developers

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Agenda

- Azure Game Development VM

- Azure PlayFab

- Serverless + advanced custom backend offerings

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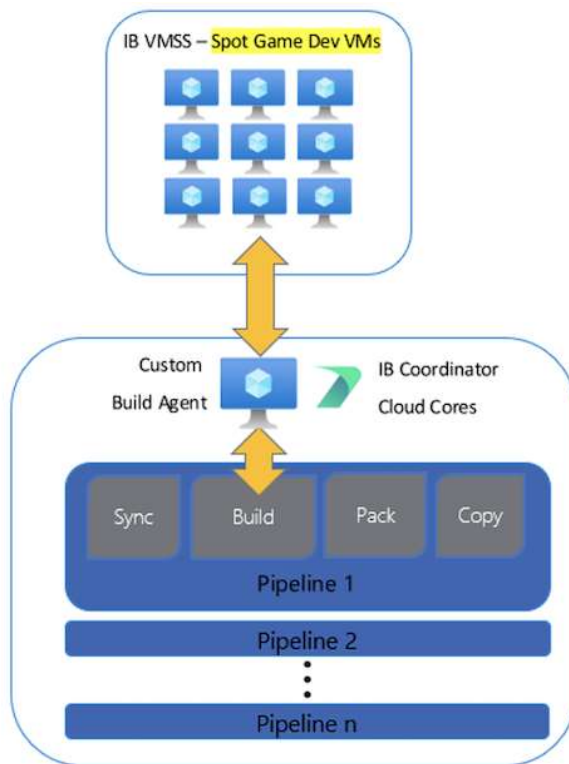Azure Game Development VM

What is Azure Game Development VM

- High-performance virtual machine in Azure (Win10/WS2019)

- GPU support – 4 SKU series, all with pre-installed NVIDIA GRID drivers

- Pre-installed tooling

  - Visual Studio Code, Git, Unreal Engine, Helix Core, Blender and others

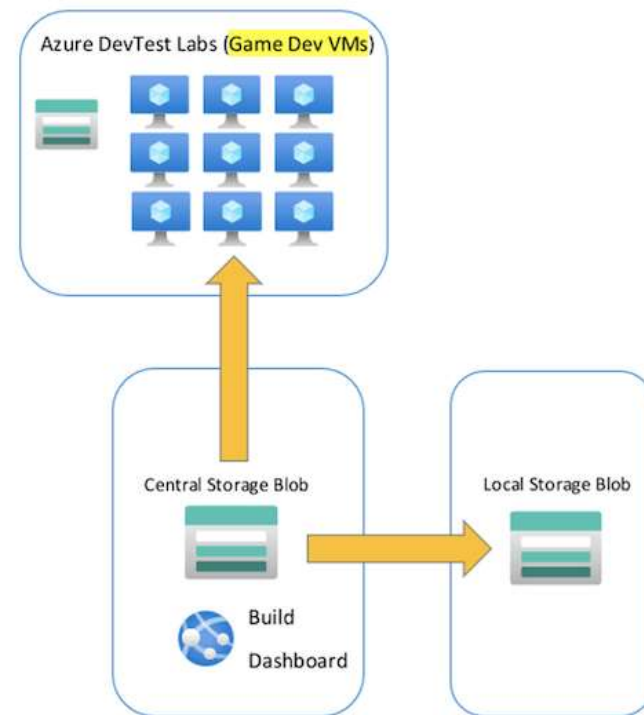# Azure Game Development VM – dev. workstation
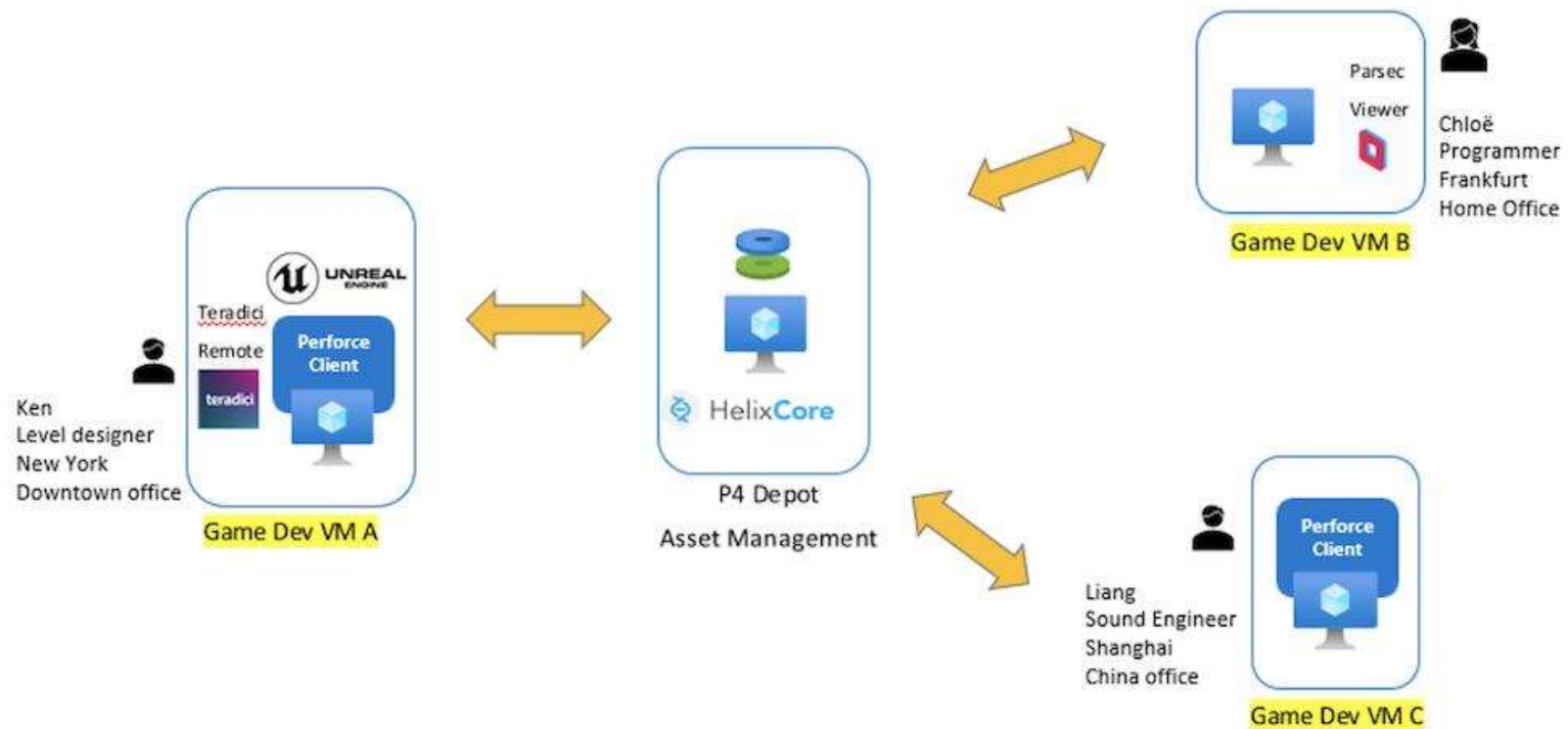
Azure Game Development VM – build/test server

Build server

Test server

Azure Game Development VM - sizes

- ## Ray-tracing required
  - SKUs: *NCasT4_v3-series* (Nvidia Tesla T4) or *NVadsA10 v5-series* (Nvidia A10)

  Example *NCasT4_v3-series*:

Size	vCPU	Memory GiB	Temp storage (SSD) GiB	GPU	GPU memory (GiB)	Max data disks
Standard_NC4as_T4_v3	4	28	180	1	16	8
Standard_NC8as_T4_v3	8	56	360	1	16	16
Standard_NC64as_T4_v3	16	110	360	1	16	32
Standard_NC16as_T4_v3	64	440	2880	4	64	32

- ## Ray-tracing not required - *NVV3-series* SKUs

Link: https://learn.microsoft.com/en-us/gaming/azure/game-dev-virtual-machine/choosing-gpu-sku

Azure Game Development VM – how to provision

1. Go to Azure Portal

2. Raise support request for quota increase
   - Limited availability due to high demand for GPU

3. Create a *Azure Game Development Virtual Machine* resource from Azure Marketplace

4. Select VM size, OS, password and other details

Azure Game Development VM – benefits

- Quick spin up # of machines you need
  - IaaC support (Bicep/ARM/Terraform)

- Pay-as-you-go – flexible billing per minutes

- Enables remote work

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Azure PlayFab

What is Azure PlayFab

· A complete backend solution for live games

· Managed platform – Backend as a service

· Simplifies the task of launching a game

· For all studio, from small to large

· Cross-platform, SDKs (API)

· Enables LiveOps

· Flexible to customize

· Game Manager
  · https://developer.playfab.com

Azure PlayFab – *LiveOps* concept

- *"Keep your players coming back for more"*

- Treat a game as live service
- Iterate, experiment, track data, analyze, improve the game
- Keep user engaged
  - Adding new content
  - In-game commerce
  - Personalized offers

Azure PlayFab – benefits

- Removes needs of building, managing and running low latency multiplayer servers
- Quick start, backend is ready in seconds
- Accelerate growth with economy services
- Easy content experimentation for deepen player engagement
- Flexible pay-as-you-go pricing model

PlayFab is free to start.   Then, when your title passes 100K users, pick the right plan.

Free to Start

✓ Development Mode, Up to 10 Titles with up to 100k users per title.

✓ Try out Multiplayer Server* hosting with up to 750 free compute hours.

✓ Includes up to 10k total minutes of PlayFab Party* Connectivity and Voice.

✓ First 150k Requests Free up to 1 MBs.

$0/month
before your title passes 100K users

GET STARTED

Pay-as-you-go

✓ Unlimited live titles & player accounts.

✓ No monthly minimum.

✓ Pay only for the services you use. No limits to service usage.

✓ Access to PlayFab Forum support.

Based on usage
just pay-as-you-go

GET STARTED

Standard Plan

✓ Unlimited live titles & player accounts.

✓ Included monthly meters valued at $400 USD, then pay-as-you-go on live titles.

✓ Gold Support. Access to support ticket submission.

$99/month
then pay-as-you-go

GET STARTED

Premium Plan

✓ Everything included in Standard Plan.

✓ Included monthly meters valued at $8,000 USD, then pay-as-you-go on live titles.

✓ Platinum Support. Access to support ticket submission with emergency escalations.

$1,999/month
then pay-as-you-go

GET STARTED

* All usage beyond trial amounts will be charged the pay-as-you-go tier

Are your titles growing? Contact us to learn more about our Enterprise Plan starting at $10k per month.   Contact Us >

Link: https://playfab.com/pricing/

Game Manager intro
DEMO

Azure PlayFab – Available SDKs

Supported Languages

- C#
- Java (Android Studio)
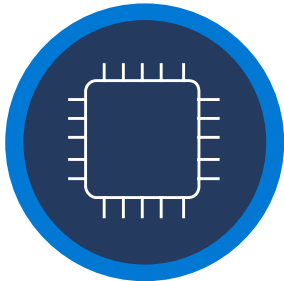- Objective-C
- C++ (PlayFab Cpp)

Game Engines/Frameworks

- Unity3D
- Unreal Engine
- Lua
- Cocos2D
- Phaser.io (Javascript)

- **Scripting support**: ActionScript, JavaScript, Node.js, PHP, Python

Azure PlayFab – key features

Multiplayer services

LiveOps

Data & Analytics

PlayFab - *Multiplayer* area

Cross Network Identity & Data

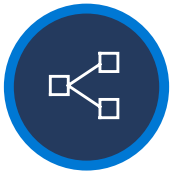Authentication, player data, matchmaking & lobby

Party Chat & Accessibility Features

Text/P2P low latency voice chat, Speech to text transcription, real-time translation, encryption

Multiplayer Servers

Dynamic scaling of server cores, Azure network, DDoS protection

Leaderboard and Statistics

Permanent/time-limited leaderboard, scheduled reset, rewards for rank, cheat prevention

PlayFab - Multiplayer / Cross Network Identity&Data

- Link accounts of one player between platforms
  - Windows, Xbox, Steam, PlayStation™ Network, Nintendo, Facebook, iOS, Android, and more

- Player data management
  - Share player info and game state across devices

- Matchmaking
  - Powered by Xbox Live's SmartMatch to help players find opponents

My Game

Development ∨   3 / 100K

BUILD

Title Overview

Players
Multiplayer
Groups
Automation
Add-ons

ENGAGE

Economy
Leaderboards
Content

ANALYZE

Dashboards
Data
Experiments

Players   Segments   Shared Group Data

Overview

3586FE7B41C03FE3

Players > 3586FE7B41C03FE3

Run Cloud Script   Export Player   Delete master player   Delete title

About Mas

Overview   Cloud Script   PlayStream   Purchases   Statistics   Friends   Logins   Virtual Currency   Bans   Data Explorer (basic)   Characters   Inventory   Inventory (V2)   Player Data (Title)   Player Data (Publisher)   Segments

Objects   Files   Policy   Groups

⊞ Title player account

Display	Contact email	Details

Display

Player ID (title)
A200BDF21F0FE93B

Display name

Avatar image URL
http://website.com/avatar.jpg

Contact email

Contact email

🔒 Unlock

Language
-- Select a language --   ∨

Details

First login
9/20/2022 10:28:41 AM

Last login
9/22/2022 2:26:06 PM

𝄞 Master player account

Attributes of this player which span all titles in the studio.

Display

Player ID
3586FE7B41C03FE3

PlayFab login

PlayFab username
[no username]

PlayFab login email

🔒 Unlock

☐ Change password

☐ Send password reset email

Details

Created
9/20/2022 10:28:41 AM

Identities

Link New Account

Custom
GettingStartedGuide

Unlink

 IOS Device
123

Unlink

PlayFab - Multiplayer / Multiplayer Servers

- Server infrastructure optimized for hosting multiplayer games built on Azure
- Dynamic scalling
- Windows or Linux servers
- DDoS protection

- Game Server SDKs (GSDKs), available for Unity, C++, C#, Java, Unreal Engine and *Go*

Link: https://learn.microsoft.com/en-us/gaming/playfab/features/multiplayer/servers/server-sdks

Azure PlayFab – key features

Multiplayer services
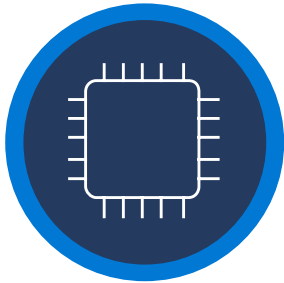
LiveOps

Data & Analytics

PlayFab – *LiveOps* area

Engagement & Retention
Daily reports, dashboards, tracking players

Real-time User Segmentation
Target groups of players on specific parameters

Communication Tools
Push notifications, emails, message-of-the-day popups

Content Management
Title Data, Item Catalog, A/B Testing

Stores and Sales Management
Personalized store offers, virtual economy, promo codes, User Generated Content

Automation
Fraud Prevention for purchases, CloudScript, Task Scheduling

PlayFab – LiveOps / Automation / CloudScript

- Serverless compute on demand in any programming language
- Powered by Azure Functions
- Usage
  - Reactive Rule to event (with conditions)

    Event type *

    | Type to search or create... | ∨ |

    com.playfab.player_updated_membership

    com.playfab.player_profile_sync

    com.playfab.player_set_profile_property

    com.playfab.player_tag_added

    com.playfab.player_tag_removed

    com.playfab.player_updated_contact_email

    com.playfab.player_verified_contact_email

    com.playfab.sent_push_notification

  - Scheduled Tasks (CRON)

My Game

Development ∨   3/100K

BUILD

Cloud Script   **Rewarded Ads**   **Rules**   **Scheduled Tasks**

New Rule
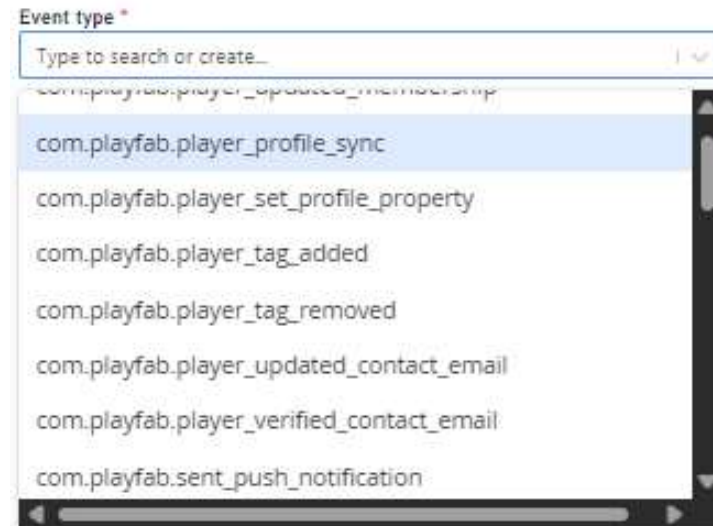
Title Overview

BUILD

Players
Multiplayer
Groups
Automation
Add-ons

ENGAGE

Economy
Leaderboards
Content

ANALYZE

Dashboards
Data
Experiments

Name *

when user joins lobby

Event type *

com.playfab.player_joined_lobby | ∨

Custom namespaces must start with "custom." or "title.EE61E."

Learn about built-in PlayStream events

CONDITIONS

ServerPort ∨   numeric value ∨   is   ∨   9999   ✕

+ Add condition

+ Add group

ACTIONS

Type

Execute Azure Function   ∨

☐ Publish results as PlayStream Event

Cloud Script Azure Function

my azure function for joining lobby   ∨

Arguments (JSON)

Cloud Script Azure Functions triggered from PlayStream actions are limited to 1 second of CPU time.

Remove action

+ Add action

Save action   Cancel

Content management - Title data
DEMO

Azure PlayFab – key features

Multiplayer services
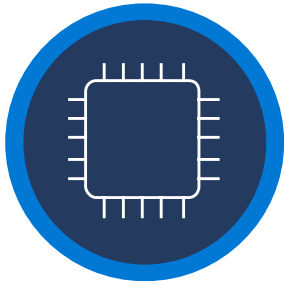
LiveOps

Data & Analytics

PlayFab – *Data & Analytics* area

Real-time Data

Monitor events fired by the game in real time

Reports & Dashboards

Daily/Monthly performance by daily reports

Actions with triggers

Set up actions based responding to events

Data Management & Compliance

Descriptive text in sentence form with some details, **highlighted text** or callouts.

PlayFab – IAM role

DEMO

3

Custom & more complex deployments

Servers

Containers

Serverless

Data

Operations

Serverless matchmaking

Functions
Event Hubs
Redis
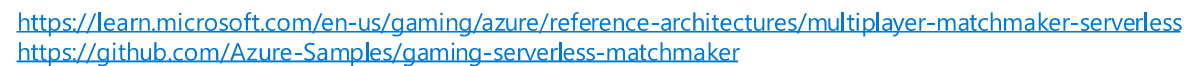
Large scale global leaderborads

Cosmos DB
Functions
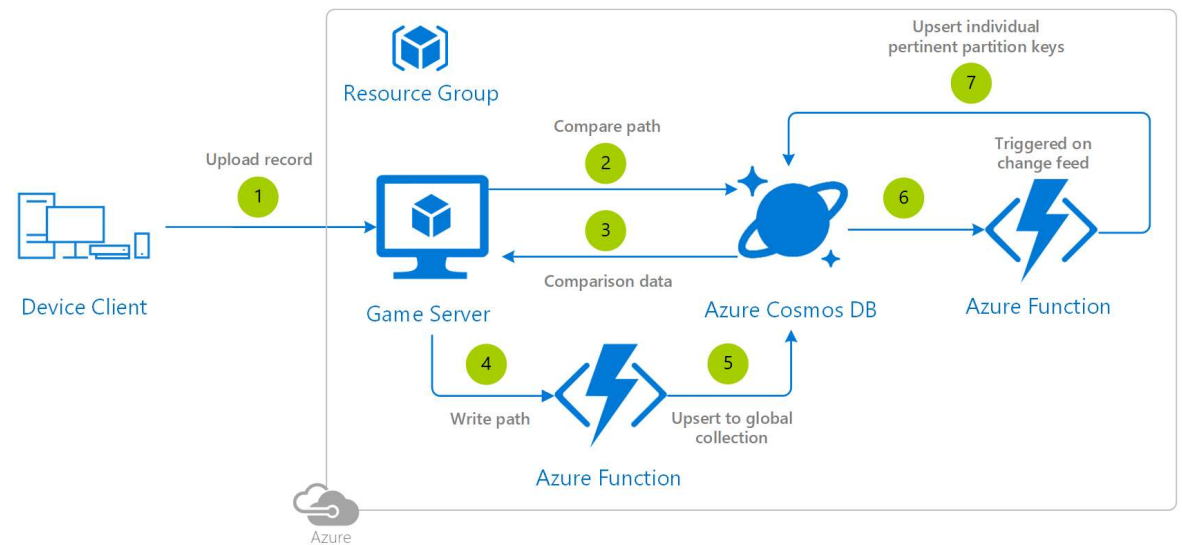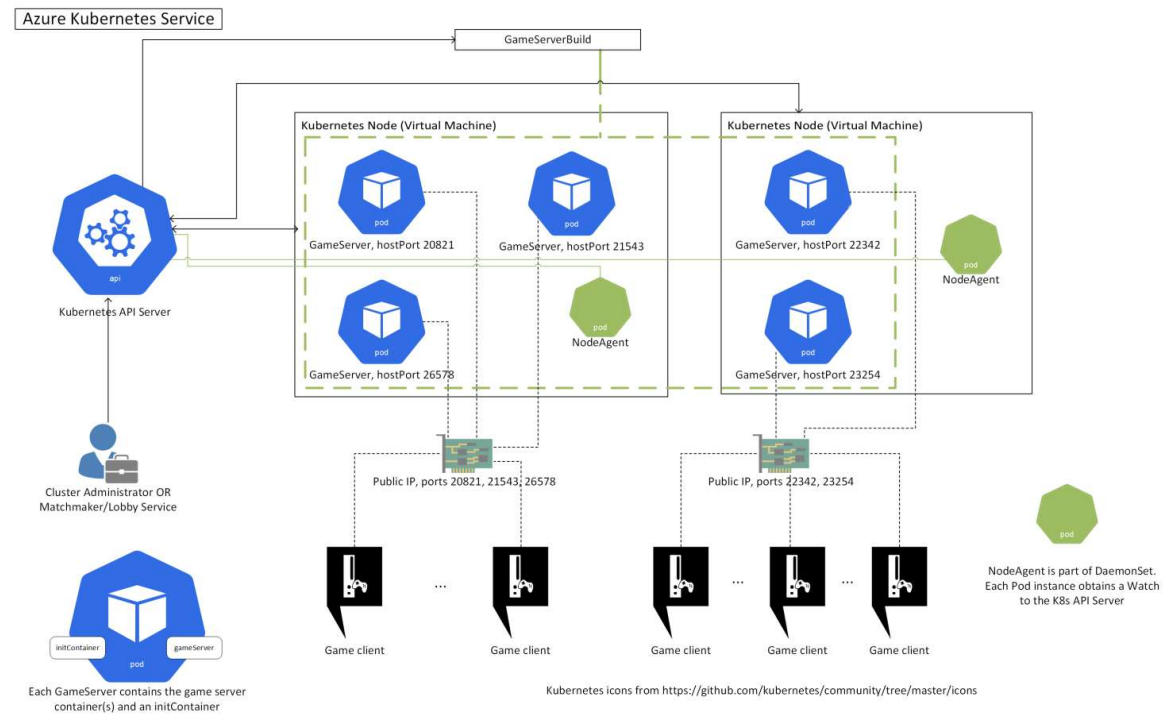
Simple VM

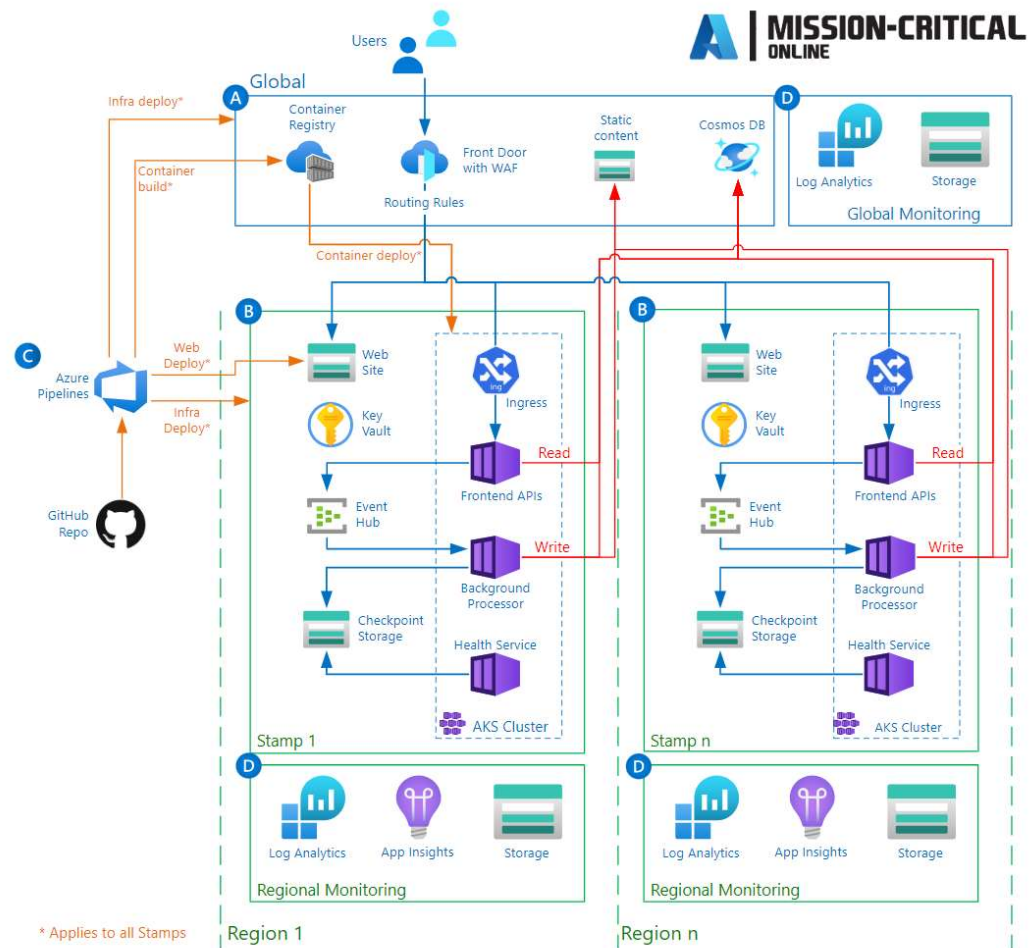Virtual Machines
Disks
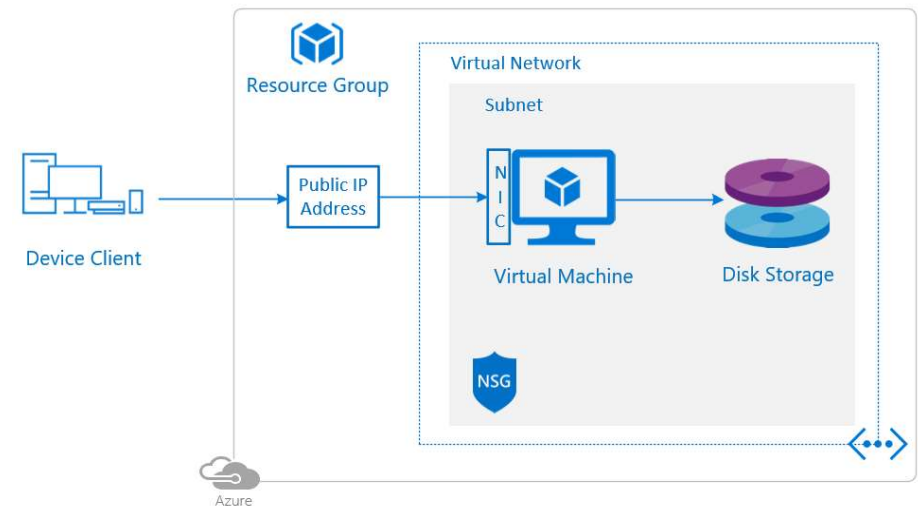
Simple container

Container Apps
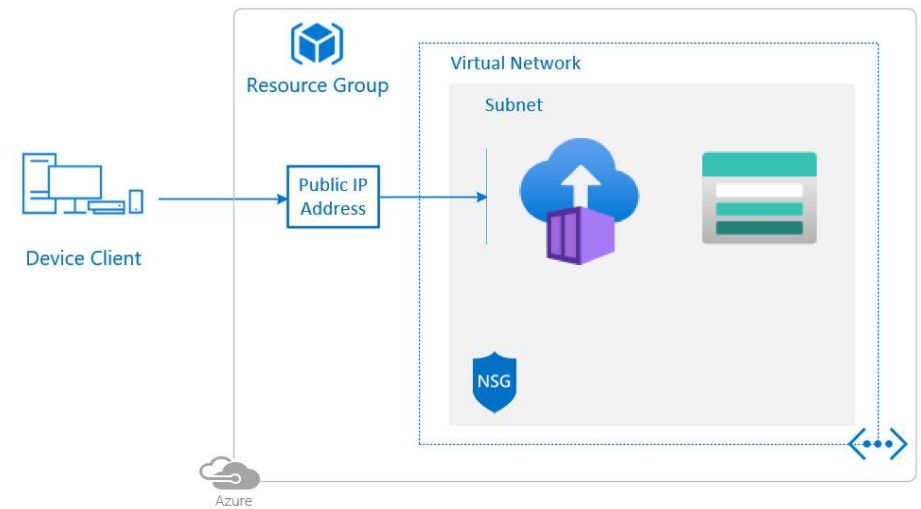
Kubernetes & Thundernetes

Azure Kubernetes Service

https://learn.microsoft.com/gaming/azure/reference-architectures/multiplayer-synchronous-aks
https://playfab.github.io/thundernetes/

Mission-critical backends

Q&A

TODO: Presentation resources

More templates

Overview of templates on Brand Central

Product-specific PowerPoint templates

PowerPoint presentation event templates

Past event slides archive

Microsoft Story deck

Toolkit for building your own template

Training

Brand Central presentations overview page

Accessibility tips and best practices

Hello

Firstname Lastname
Title

About: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Firstname Lastname
Title

About: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.