Application Services

Containers, ACI and AKS
App Service

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Pets and Cattle

- As we move from VMs to application services the idea of pets and cattle becomes more important

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Containers

- VMs virtualize the hardware
- Containers virtualize the operating system
- Uses numerous OS capabilities like namespaces, cgroups, layers (union file system)
- Typically a container runs a primary process, and they share a lifecycle
- Created from an immutable image

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Container Support

- Docker brought containers to the masses
  - Management, registry and container runtime (are many options)
- Hyper-V Containers (isolated kernel)
- Azure Container Registry
  - Provides private repositories
  - Can be geo-replicated (with Premium SKU)
  - Place close to deployment to reduce latency, increase reliability
  - Can also run jobs to build the container image

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Azure Container Instances

- Linux or Windows "Container as a Service"
- Built from standard or custom images
- Public or private (Linux)
- Very useful for burst scenarios or very basic scenarios
- Can integrate with AKS via Virtual Kubelet

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Azure Kubernetes Service

- We often need more than one, isolated container
- Complete orchestration is required, Kubernetes
- AKS provides a free, managed Kubernetes environment for clusters
- You only pay for worker nodes which can auto-scale

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AKS Special Features

- Multiple node pools
- ACI for burst via virtual kubelet
- User node pools can use spot instances
- Stop/Start AKS cluster
- Auto-healing
- Managed identity use

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App Service Plan

- The "original" PaaS
- Hosting of web apps (including API)
- Wide range of runtimes and languages supported
- Includes Windows and Linux (including containerized)
- Have a certain number of nodes with auto scale for standard and above in a plan
- Multiple applications can deploy to same plan (sharing resource)

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App Service Plan Special Features

- Can scale up and out
- Deployment slots
- Network control via service endpoint
- Virtual Network integration (in and out)
- App Service Environment (ASE) dedicated deployment INTO your vnet

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Azure Functions

- Serverless compute (but can run within App Service Plan resources)
- Event driven such as HTTP, schedule, event grid, blob creation
- Binds to additional inputs and outputs
- Wide support of runtimes
- 1 million executions FREE!

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Logic Apps

- Graphical based orchestration of business logic
- Serverless and pay only when running
- Integration Service Environment available for dedicated and isolated environment
- Initiated via a trigger (such as some event)
- Logic app has many connectors and templates to get started

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Questions?

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