Architecting Apps for Azure

Memi Lavi
www.memilavi.com

Architecting Apps for Azure

- Architecting for the cloud is different than classic Software Architecture
- Two main differences:
  - Use existing services
  - Consider cost

Use Existing Services

- Azure contains hundreds of services
- Whenever possible – use them
- Usually:
  - Managed
  - Reliable and Scalable
  - Cost effective

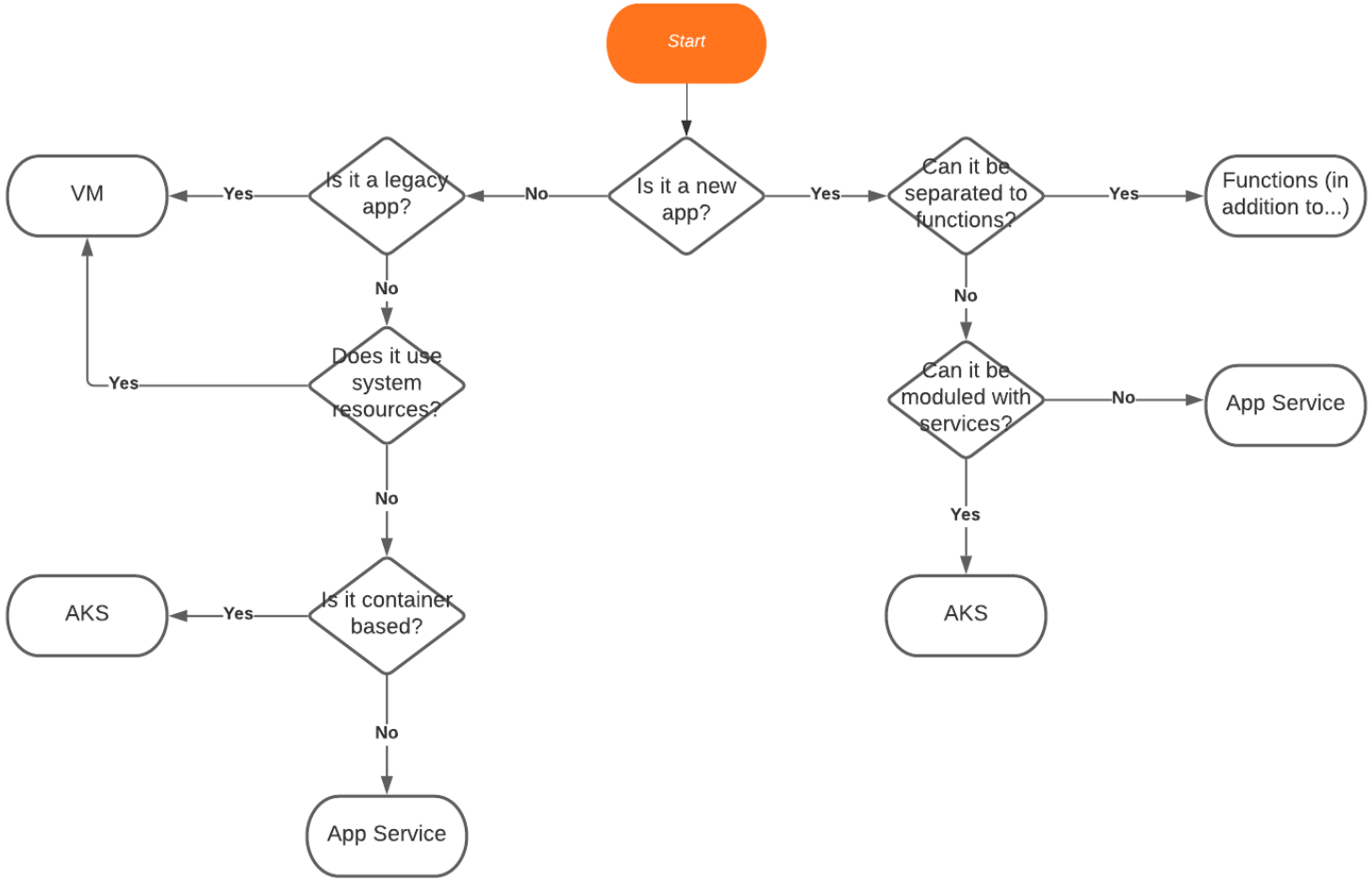
Consider Cost

- Cloud Architecture is cost oriented
- Always factor in the cost of the cloud service
- You'll sometimes go for limited service due to cost reasons
  - eg. Storage Queue vs Service Bus

Cloud Architecture

- In this section we'll review the various services we used and explain how to select the right one
- We'll discuss:
  - Compute
  - Data
  - Messaging
  - And some more…

Choosing Compute Platform



Choosing Data Platform

Data Type	Used For…	Examples	Options in Azure
Relational	Structured data	Items in store, demographic data	Azure SQL, MySQL, PostgreSQL
NoSQL	Semi-structured data	Reviews, Log records, when flexibility is required	Cosmos DB (with SQL, Mongo, Azure Table API)
Graph	Data representing relationships	Family tree	Cosmos DB (with Gremlin API)
Blob	Files, videos, docs	Items' photos	Azure Blob Storage

Choosing Messaging Platform

Service	Used For…	Guarantees Order	Max Msg Size	And also…
Storage Queue	Dead simple queueing	Yes	64KB	Extremely simple, no additional cost
Event Grid	Event driven architectures	No	1MB	Great integration with other services
Service Bus	Advanced queueing solutions	Yes	256KB	Advanced messaging features, durable
Event Hubs	Big data streaming	Yes	1MB	Low latency, designed for heavy load

Implementing Security

- Extremely important in the cloud
- Use the best practices discussed in the Security section
- Mainly:
  - Restrict access to VMs and App Services
  - Use NSG
  - Use encryption in data stores
  - Use strong authentication

Logging and Monitoring

- Azure offers various logging and monitoring tools
- Utilize alerts to notify on any exceptional situation
- Create dashboards to visualize the system state
- Use Application Insight to gain insights into your app

Azure Architecture Center

- Central hub for all-things Azure architecture
- How-tos, documents, design guidelines, case studies
- Fresh content, updated regularly

Azure Architecture Center

Guidance for architecting solutions on Azure using established patterns and practices.

ARCHITECTURE

Browse Azure architectures

CONCEPT

Explore cloud best practices

HOW-TO GUIDE

Assess, optimize, and review your workload

WHAT'S NEW

See what's new

Architecting Applications on Azure

Best practices and patterns for building applications on Microsoft Azure

https://docs.microsoft.com/en-us/azure/architecture