Microservices and Azure Service Fabric

Chris Hanson
Rahul Marathe
Chris Santaniello
Kyle Wilson
News Update

Topic: Microservices and Azure Service Fabric
  • MicrosoServices Introduction
  • Azure Service Fabric Introduction

Tool & Tip of the Week

Questions From the Field
Latest Azure News – from Azure Blog

- Azure Site Recovery:
  - Now Supports Ubuntu
  - Now Supports disks up to 4TB
  - Windows Server 2016 and Storage Spaces
- StorSimple 8000 Series in New Azure Portal
- Project Olympus to support Intel Xeon Scalable Processors
- Network Enhancements for Windows and Linux
- Azure Stack is ready to order!
- Managed Applications
Why a microservices approach?

- Continually evolving applications
- Faster delivery of features and capabilities
- Build and operate a service at scale
Monolithic application approach

- A monolith app contains domain specific functionality and is normally divided by functional layers such as web, business and data.
- Scales by cloning the app on multiple servers/VMs/Containers

Microservices application approach

- A microservice application separates functionality into separate smaller services.
- Scales out by deploying each service independently creating instances of these services across servers/VMs/containers
A microservice...

- Does one thing well
- Is developed by a small cross-functional team
- Can be built with task-appropriate languages/frameworks
- Communicates over well-defined interfaces/protocols
- Is a mix of independent code and configuration (& optionally state)
Microservices

Build Applications with many Programming Frameworks and Languages

Microservices Platform

Deploy and Manage Applications to many Environments
Microservices Platform requirements

- Orchestration / Scheduling
  - Automated deployments
  - Rolling upgrades
  - Resource Balancing

- Health Monitoring

- Service Discovery
Service Fabric 101

Cluster supports 1,000s of nodes is self repairing, and scales-up or down
Services Built With Service Fabric

- Azure SQL Database
- Skype for Business
- Intune
- Power BI
Application type

- Declarative template for creating an application
- Based on a set of service types
- Used for packaging, deployment, and versioning
Types of microservices from a Service Fabric perspective

- **Stateless microservice**
  - Has either no state or it can be retrieved from an external store
  - There can be N instances
  - e.g. web frontends, protocol gateways, Azure Cloud Services etc.

- **Stateful microservice**
  - Maintain hard, authoritative state
  - N consistent copies achieved through replication and local persistence
  - e.g. database, documents, workflow, user profile, shopping cart etc.
Demo: Creating a Service Fabric cluster via the portal
Demo: Building your first microservice with Service Fabric
Service Fabric cluster with microservices

App1

App2
Tool & Tips

• Tool – Cloudberry Explorer for Azure ([CloudBerry Lab Azure Storage Explorer](https://www.cloudberrylab.com/products/azure-storage-explorer))
  Handy FTP like tool for viewing storage accounts and blobs in Azure. It is similar to the Azure Storage Explorer but focuses only on blob storage management and as a results is very easy to use.

• Tip – there is a series of labs called “Container Camp” that are published on GitHub and they step you through using the Azure CLI and ARM to deploy containers through VMs in Azure ([https://github.com/tripdubroot/ContainerCamp](https://github.com/tripdubroot/ContainerCamp))

  [Note these labs are bring your own Azure subscription 😊 ]

• Bonus Tip – Check out the [Azure Service Fabric session](https://build.microsoft.com/) from Build in May, great updates on the service, scale & roadmap in that session.
Questions Heard In The Field

• How is Azure going to comply with the EU General Data Protection Regulations (GDPR)? Microsoft is committed to being GDPR compliant and we have added a GDPR "hub" to our trust center. There is an Azure specific section for this hub.

• I provide services to a public sector agency/state or locality. How do I learn about leveraging Azure Government? Can I get an Azure Gov subscription?
  • Azure Government Overview & Datasheet (PDF)
  • Azure Government Compliance Blueprint
  • How To Buy - Note that only a US federal, state, local, tribal entity, or partner that serves these entities, is eligible for Azure Government. Microsoft has a strict validation program to determine eligibility before organizations can move their workloads to the Azure Government cloud.
  • Request an Azure Government Trial

[Important Note: Azure Government can only be purchased under a volume license agreement and the prices for Azure Government services vary from the Azure Commercial offerings]