# Running Containers on Azure Service Fabric

**Mark Heath**
MICROSOFT AZURE MVP

@mark_heath https://markheath.net

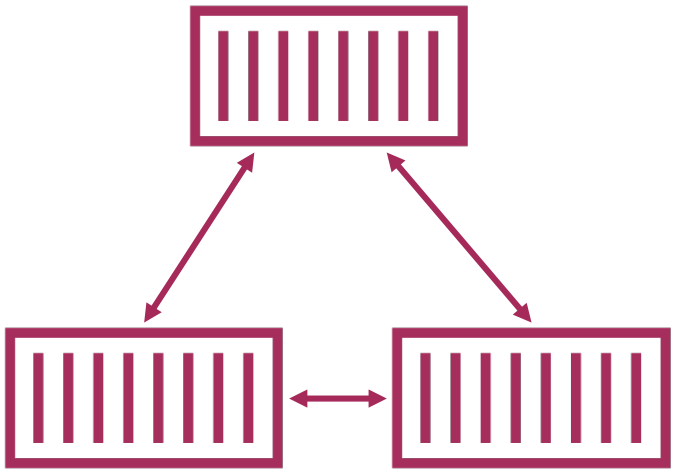
Azure Container Instances (ACI)

Azure Web App for Containers

Azure Service Fabric

Azure Kubernetes Service (AKS)

# Challenges of Microservices



**Deployment**

**Health monitoring**

**Scaling out to multiple instances**

**Service to service communication**

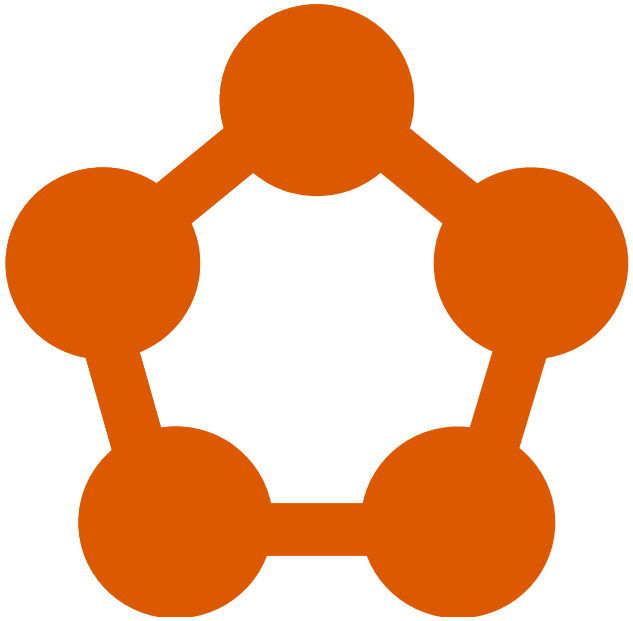
**Upgrades**

**Recover from hardware failures**

**Orchestrators can help us**

- Azure Service Fabric

# Azure Service Fabric



**An “application platform”**

- Scalable and reliable microservices

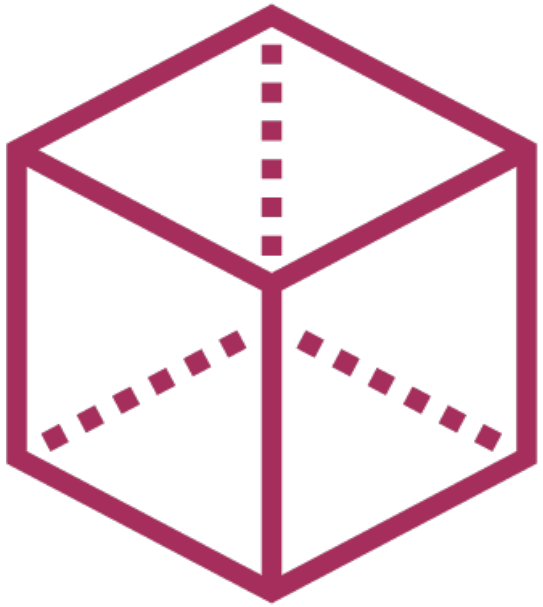
**Hosting options**

- On-premises or other cloud providers
- Development laptop
- Azure

**Cluster**

- Monitors service health

# Programming Models



**Stateful services**

- Co-locate compute and data
- Reliable collections

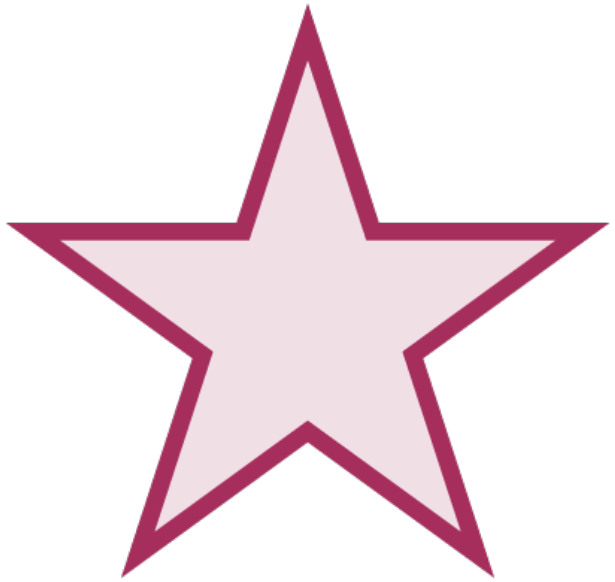
**Stateless services**

- Web APIs or executables
- Containers

**Linux and Windows containers**

- Constrain RAM and CPU allocation
- Docker Compose YAML support

# Service Fabric Benefits



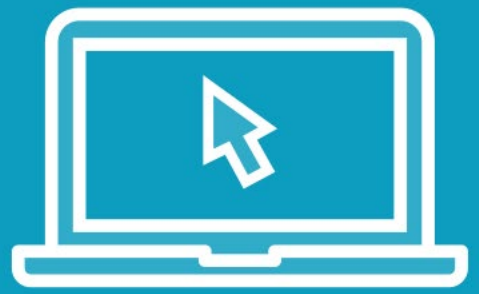
**Powers many key Azure services**

- e.g. Cortana, Skype, Cosmos DB & Power BI

**Why choose Service Fabric?**

- Microservices applications
- Windows containers
- Ability to deploy outside Azure
- Orchestration features

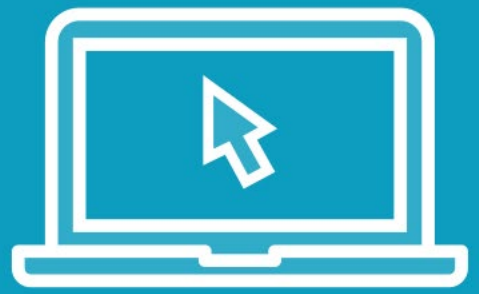
# Demo



**Setting up an Azure Service Fabric development environment**

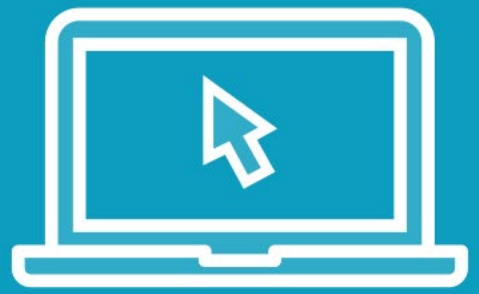
- Service Fabric tools

# Demo



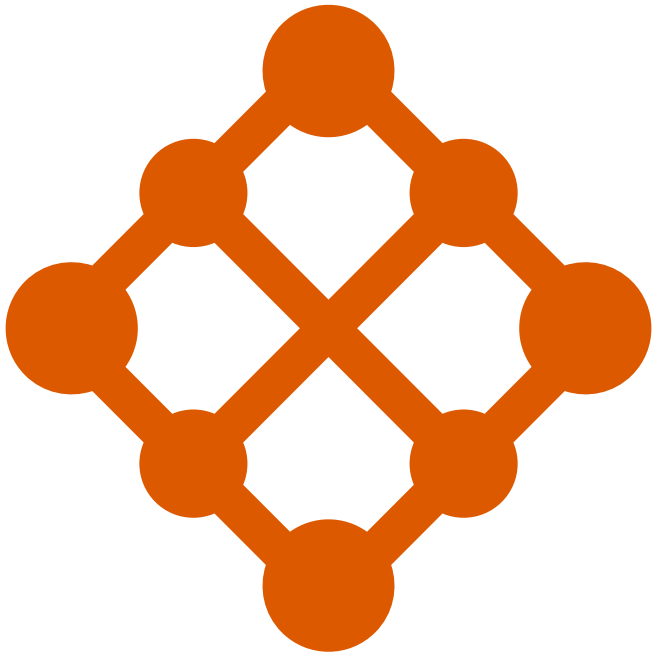
## Creating a Service Fabric cluster in the Azure portal

# Demo



## Deploy an application to a Service Fabric cluster

# Service Fabric Mesh

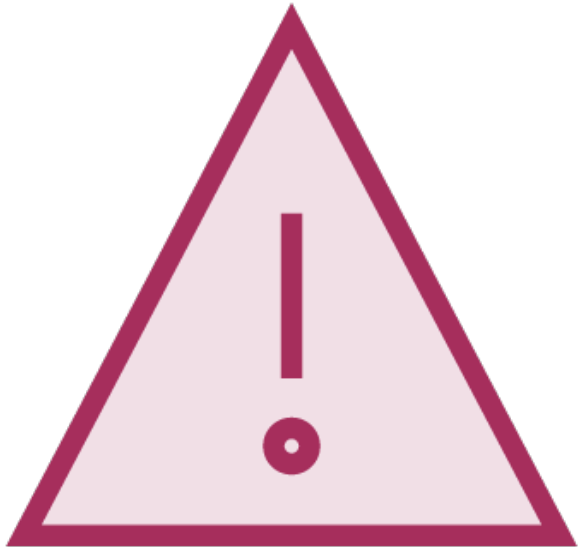


**Based on Service Fabric**

**Simplified deployment model**

- Container focused
- Serverless – no need to pre-provision infrastructure
- Just specify resources required per service
- Deployment model based on ARM
- YAML format also available

# Preview Alert!

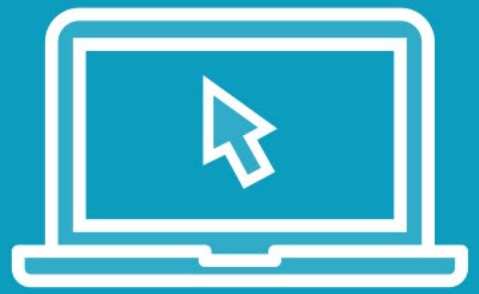


Deployment file formats may change

Command line syntax may change

Some features not yet available

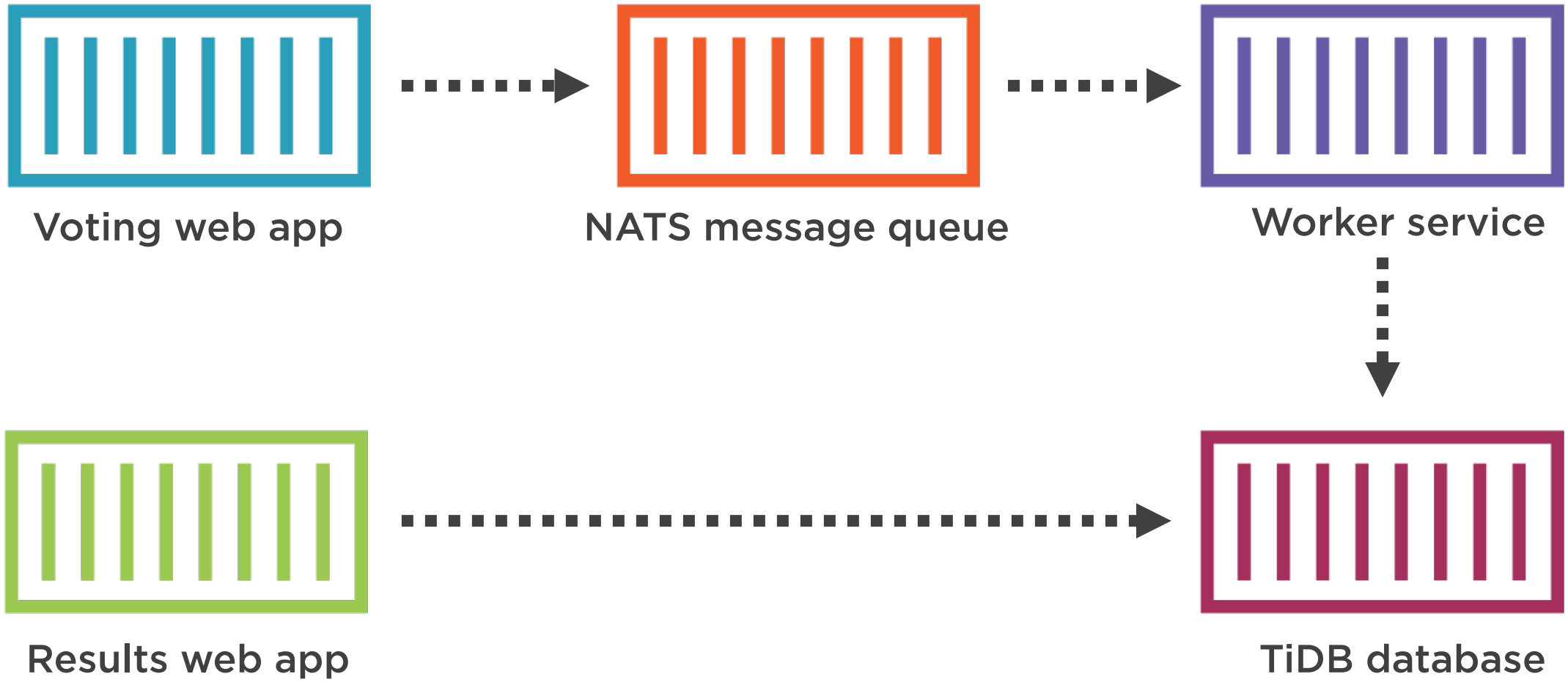
# Demo



**Deploy a containerized Windows application to Service Fabric Mesh**

- Azure CLI “mesh” extension
- Deploy an ARM template
- Scale a service to multiple instances

# Demo Voting Application




https://github.com/dockersamples/example-voting-app

# Summary

## Azure Service Fabric

- Powerful orchestration platform
- Windows and Linux container support
- Runs in many environments
- Define applications with manifest XML
- Service Fabric Explorer dashboard

## Azure Service Fabric Mesh

- Simplified deployment model
- ARM templates
- Azure CLI support
- Serverless

# Up next:
# Running Containers on Azure Kubernetes Service