Microsoft

Azure Spring Cloud

<Name>
<Title>

Agenda

Introduction
Spring apps development

Azure Spring Cloud overview
What it does and the benefits it provides

Next steps
How you can get started with Azure Spring Cloud

What is Spring?
The best Java application development framework

Productive
Accomplish practically any Java development task
Simple, fully comprehensive and modular
Deployable / testable / portable
Clear and well documented with great online guides

Popular
More than 50% of Java developers use Spring Boot (JVM Mag) There's over 3m visits to Spring Initializr every year
Permissive Open Source License (Apache 2.0)
Vibrant, passionate & committed community

Trusted
World's #1 IoC / Dependency Injection Framework
Proven in production since 2004
enterprise distribution & commercial support available

spring by Pivotal

Spring: the source for modern java

Your App

Spring Boot
Build Anything

Spring Cloud
Coordinate Anything

Spring Cloud Data Flow
Connect Everything

Spring Boot
BUILD ANYTHING

Spring Boot is designed to get you up and running as quickly as possible, with minimal upfront configuration of Spring. Spring Boot takes an opinionated view of building production-ready applications.

Spring Cloud
COORDINATE ANYTHING

Built directly on Spring Boot's innovative approach to enterprise Java, Spring Cloud simplifies distributed, microservice-style architecture by implementing proven patterns to bring resilience, reliability, and coordination to your microservices.

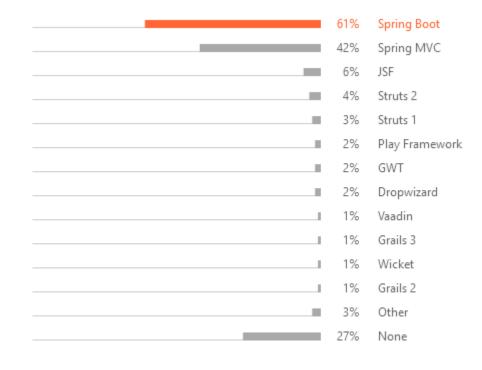### Spring Cloud Data Flow
CONNECT ANYTHING

Connect the Enterprise to the Internet of Anything—mobile devices, sensors, wearables, automobiles, and more. Spring Cloud Data Flow provides a unified service for creating composable data microservices that address streaming and ETL-based data processing patterns.

Spring

61%

Spring Boot has the largest share of Java among application development frameworks

Nov 2018	Nov 2019
52.5 Million+ downloads per month	95 Million+ downloads per month

61%	Spring Boot
42%	Spring MVC
6%	JSF
4%	Struts 2
3%	Struts 1
2%	Play Framework
2%	GWT
2%	Dropwizard
1%	Vaadin
1%	Grails 3
1%	Wicket
1%	Grails 2
3%	Other
27%	None

Spring Boot has become the most popular Java web framework, adding 14% since last year.
https://www.jetbrains.com/lp/devecosystem-2020/java/

Spring-based microservices development

Spring Boot
Build anything

designed to get you up and running as quickly as possible, with minimal upfront configuration of Spring

Spring Cloud
Coordinate anything
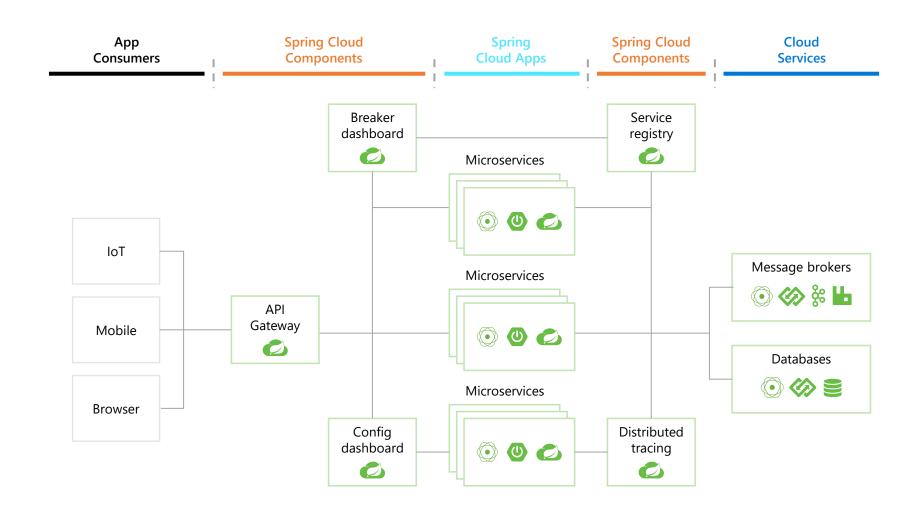
provides a set of tools that makes communication between microservices easier

Common Impediments

High effort required to manage cloud infrastructure for Spring boot applications

Application lifecycle is **difficult to manage**
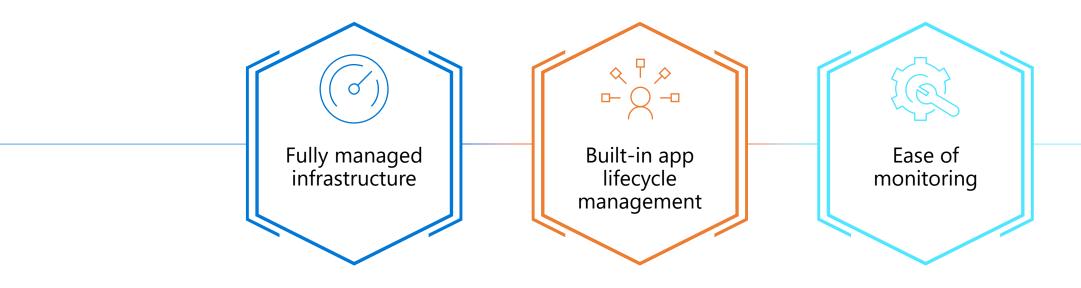
Painful to troubleshoot application issues

Azure Spring Cloud
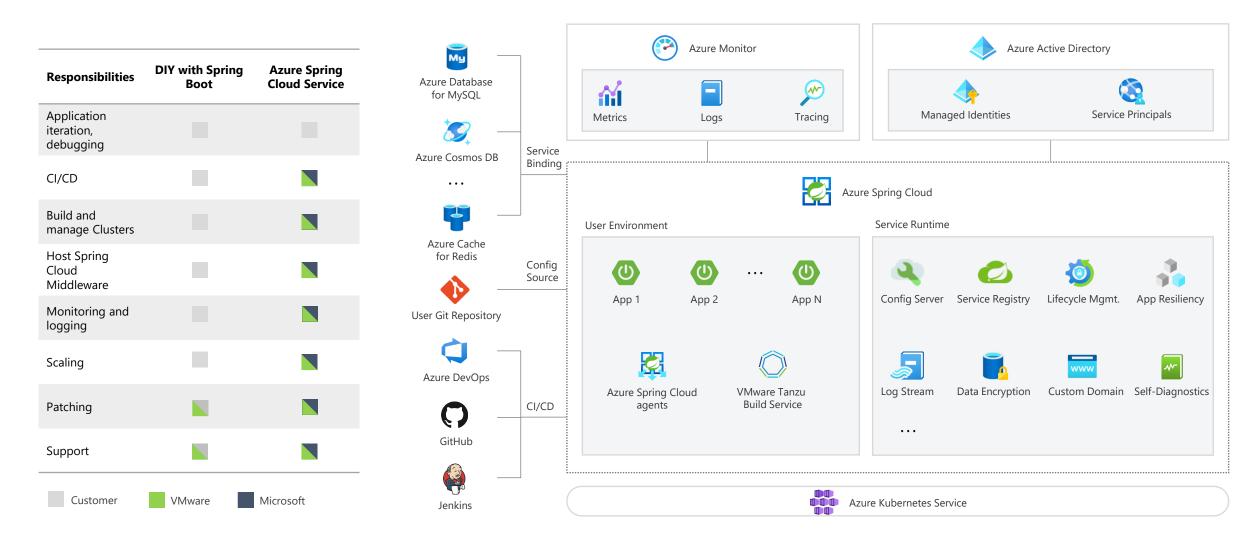
A fully managed service for Spring Boot microservices - Now General Available! 99.9% SLA

More choices and full integration into Azure's ecosystem and services

Fully managed
infrastructure

Built-in app
lifecycle
management

Ease of
monitoring

Enterprise ready

Simplify your cloud development for Spring applications

Responsibilities	DIY with Spring Boot	Azure Spring Cloud Service
Application iteration, debugging		
CI/CD		
Build and manage Clusters		
Host Spring Cloud Middleware		
Monitoring and logging		
Scaling		
Patching		
Support		

◻ Customer   ◻ VMware   ◻ Microsoft

Azure Database for MySQL

Azure Cosmos DB

...

Azure Cache for Redis

User Git Repository

Azure DevOps

GitHub

Jenkins

Service Binding

Config Source

CI/CD

Azure Monitor

Metrics   Logs   Tracing

Azure Active Directory

Managed Identities   Service Principals

Azure Spring Cloud

User Environment

App 1   App 2   ...   App N

Azure Spring Cloud agents   VMware Tanzu Build Service

Service Runtime

Config Server   Service Registry   Lifecycle Mgmt.   App Resiliency

Log Stream   Data Encryption   Custom Domain   Self-Diagnostics

...

Azure Kubernetes Service

Simplify your cloud development for Spring applications

Responsibilities	DIY with Spring Boot	Azure Spring Cloud Service
Application iteration, debugging	Customer	Customer
CI/CD	Customer	VMware/Microsoft
Build and manage Clusters	Customer	VMware/Microsoft
Host Spring Cloud Middleware	Customer	VMware/Microsoft
Monitoring and logging	Customer	VMware/Microsoft
Scaling	Customer	VMware/Microsoft
Patching	VMware/Customer	VMware/Microsoft
Support	VMware/Customer	VMware/Microsoft

Customer   VMware   Microsoft

Azure Database for MySQL

Azure Cosmos DB

...

Azure Cache for Redis

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Azure DevOps

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Jenkins

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Config Source

CI/CD

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Azure Spring Cloud

Microsoft + VMware
Super Charge Your Spring Boot Apps
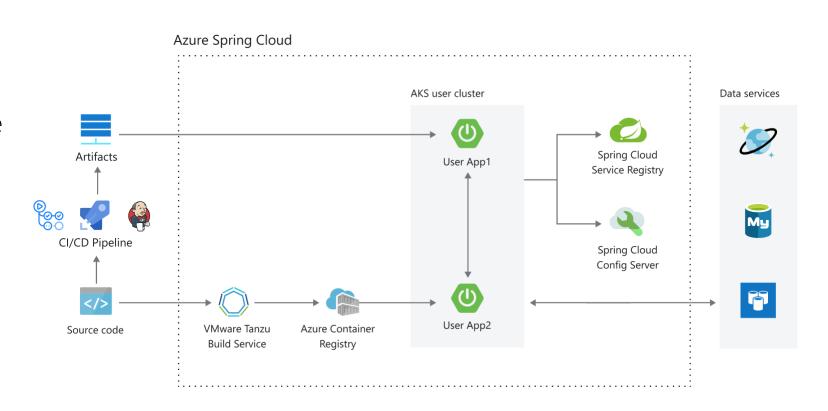
Azure Kubernetes Service

Built-in application lifecycle management

Simple app lifecycle management

Easily deploy source code or build artifacts

Automatically wire your app with Spring Cloud infrastructure

Integrated CI/CD pipeline for deployment

Azure Spring Cloud

Artifacts

CI/CD Pipeline

Source code

VMware Tanzu Build Service

Azure Container Registry

AKS user cluster

User App1

User App2

Spring Cloud Service Registry

Spring Cloud Config Server

Data services

Ease of monitoring
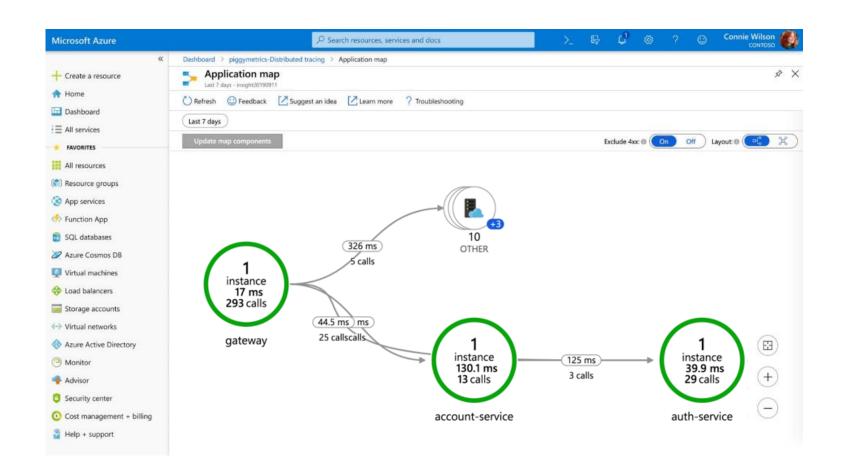
Gain insights with Azure Monitor

View aggregated logs, System and JVM Metrics

Distributed tracing

Stream logs in real-time

Threshold Alerting

Demo

Deploy Spring Cloud app to Azure without worrying about:

Infrastructure and scaling

Spring Cloud middleware – config, registry, tracing and gateway, or

Monitoring

Client

API Gateway

| | Rest API | | Rest API | | Rest API |
Statistics Service | Account Service | Notification Service

Config Service

Statistics DB | Account DB | Notification DB

Auth Service

Service Discovery

Home >

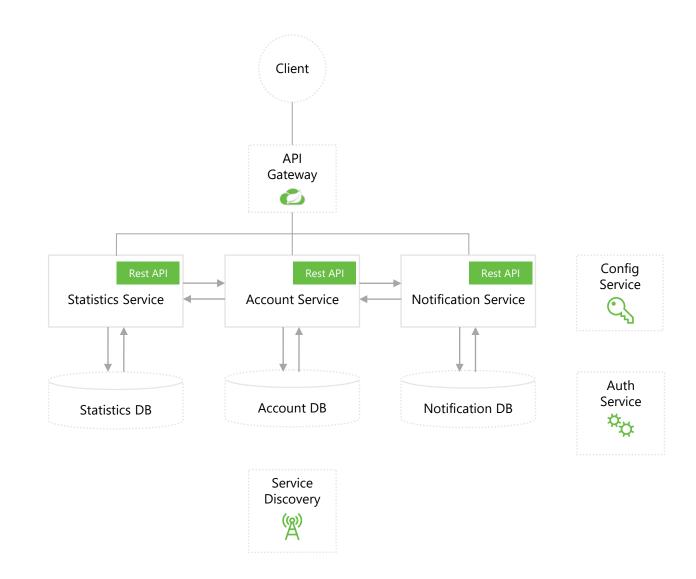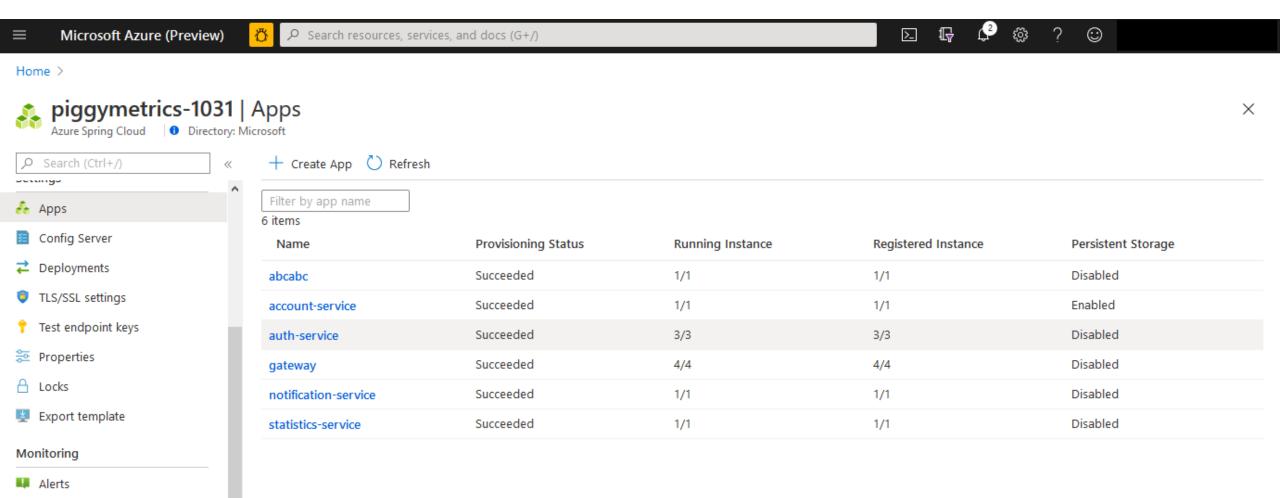# piggymetrics-1031 | Apps

Azure Spring Cloud | 🛈 Directory: Microsoft

✕

Search (Ctrl+/) «

Settings

🔧 **Apps**

📋 Config Server

⇄ Deployments

🛡 TLS/SSL settings

🔑 Test endpoint keys

⚙ Properties

🔒 Locks

⬇ Export template

Monitoring

🔔 Alerts

📊 Metrics

+ Create App   ↻ Refresh

Filter by app name	

6 items

Name	Provisioning Status	Running Instance	Registered Instance	Persistent Storage
abcabc	Succeeded	1/1	1/1	Disabled
account-service	Succeeded	1/1	1/1	Enabled
auth-service	Succeeded	3/3	3/3	Disabled
gateway	Succeeded	4/4	4/4	Disabled
notification-service	Succeeded	1/1	1/1	Disabled
statistics-service	Succeeded	1/1	1/1	Disabled

🔧 piggymetrics-1031 | Diagnose and solve problems

Azure Spring Cloud | ℹ️ Directory: Microsoft

Settings

- 🗺️ Overview
- 📄 Activity log
- 👤 Access control (IAM)
- 🏷️ Tags
- 🔧 Diagnose and solve problems

Settings

- 🔷 Apps
- 📋 Config Server
- ⇄ Deployments
- 🛡️ TLS/SSL settings
- 🔑 Test endpoint keys
- 📊 Properties
- 🔒 Locks
- 💻 Export template

🔍 Search for common problems, tools and more

Common problems

Explore the most common problems for your resource. Select Troubleshoot to run an automated troubleshooter, follow do-it-yourself troubleshooting steps, or range of troubleshooting tools.

✅ No health related issues found.   View resource health dashboard

My application cannot start

Troubleshoot

My application crashes or throws an unexpected error

Troubleshoot

My application experiences high CPU usage or high memory usage

Troubleshoot

I encountered a problem in creating Azure Spring Cloud service ins...

Troubleshoot

I cannot deploy a JAR package

Troubleshoot

I cannot deploy a source package

Troubleshoot

Home >

piggymetrics-1031 | Logs

Azure Spring Cloud | ⓘ Directory: Microsoft

Search (Ctrl+/)

Example queries

◉ Show ☷ Queries | Documentation ⧉ ✕

Settings

Resource Type ⌄

Resource Type : **Azure Spring Cloud** ✕   ⊕ Add filter

🔹 Apps

📋 Config Server

⇄ Deployments

🛡 TLS/SSL settings

💡 Test endpoint keys

⚙ Properties

🔒 Locks

⬇ Export template

Monitoring

🔔 Alerts

📊 Metrics

📋 Diagnostic settings

📊 Logs

🔍 Distributed tracing

Support + troubleshooting

👤 New support request

★ **Favorites**

All Queries

Azure Spring Cloud

AZURE SPRING CLOUD ─────────────

Show the application logs which contain th... ☆

Show the application logs which contain the "error" or "exception" terms in the last hour.

Resource Type: Azure Spring Cloud   +2

Run   Load to editor

Example query

Show the error and exception number of ea...

Show a pie chart of the number of the logs containing the "error" or "exception" terms in the...

Run

Example query

Show the config server logs

Filter the config server logs with the log level.

Run

Example query

Packaging Tiers and Pricing

	BASIC	STANDARD
	FOR TIRE KICKING AND INDIVIDUAL DEV/TEST	FOR GENERAL PURPOSE PRODUCTION WORKLOADS
Base price	$427/month or $0.585/hr	$1,204/month or $1.65/hr
Included vCPU and Memory	5 vCPU, 10 GB	16 vCPU, 32 GB
Additional vCPU price	$0.062/hour	$0.00825/hour
Additional memory price	$0.00699/hour	$0.0783/hour
Max App instance size	1 vCPU, 2 GB	4 vCPU, 8 GB
Max App instances	25	500
SLA	–	✔
Highly available Spring Cloud runtime	–	✔
Custom domains / SSL	–	✔
VNET integration	–	✔
Blue/Green Deployment	–	✔
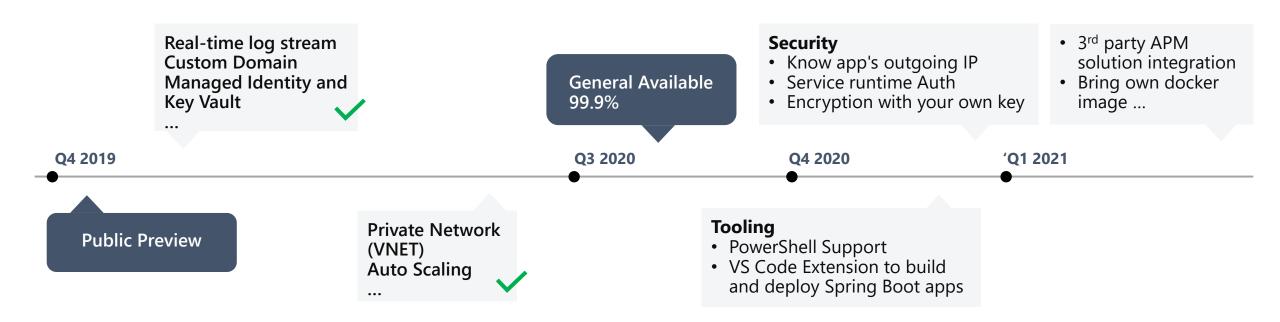
Example:
20 vCPU and **40 GB** memory on Standard Tier

Base unit: $1204

16 vCPU
32 GB

+

vCPU Overage: 4*$56.3   **= $1,481**

4 vCPU

+

Memory Overage: 8*$5.94

8 GB

- Azure Free Credit programs can be applied to this service ($200 credit will cover approximately half a month of Basic Tier)
- Though above price is estimated for one month. All meters are charged by seconds based on actual usage.
- For each service instance, Azure Spring Cloud charges for one 'vCPU and memory group duration' which includes some vCPUs and Memory. When you exceed either, or both, of the capacities included in the 'vCPU and memory group duration', you will be billed for the actual additional usage based on the total 'Overage Memory Duration' and 'Overage vCPU Duration'.

Azure Spring Cloud Roadmap

Real-time log stream
Custom Domain
Managed Identity and Key Vault
...
✓

General Available 99.9%

Security
- Know app's outgoing IP
- Service runtime Auth
- Encryption with your own key

- 3rd party APM solution integration
- Bring own docker image ...

Q4 2019

Q3 2020

Q4 2020

'Q1 2021

Public Preview

Private Network (VNET)
Auto Scaling
...
✓

Tooling
- PowerShell Support
- VS Code Extension to build and deploy Spring Boot apps

West Europe, East US
Southeast Asia, West US 2

East US2, Central US, Australia East,
UK South, North Europe, South Central US

China East 2, West US, UAE North
Canada Central, Brazil South

Azure

Azure Spring Starters

Spring Cloud

App Configuration

Event Hubs

Service Bus

Storage

Redis

Functions

Spring Data

SQL Database

MySQL

PostgreSQL

Maria DB

Cosmos DB
- SQL
- MongoDB
- Cassandra
- Gremlin

Spring Security

Active Directory (AAD)

AAD B2C

Microsoft 365

Microsoft Account

Key Vault

Spring Resource

Storage

Spring Messaging

Service Bus

R2DBC

SQL Database
PostgreSQL
MySQL

Spring Cache

Redis Cache

Micrometer

Monitor (includes

Log Analytics)

https://spring.io/projects/spring-cloud-azure

Learn More

Try Azure Spring Cloud
- https://aka.ms/get-started-with-azure-spring-cloud
- https://azure.microsoft.com/services/spring-cloud/

Use Azure Spring starters to interact with Azure services
- https://docs.microsoft.com/azure/developer/java/spring-framework/

Learn Azure Spring Cloud with self-paced workshops
- https://docs.microsoft.com/learn/modules/azure-spring-cloud-workshop/
- https://github.com/microsoft/azure-spring-cloud-training

Give us your feedback
- https://aka.ms/springazure

Microsoft Azure

Thank you