2019 Global Azure BOOTCAMP

PUG Pune User Group

Deploying ASP.NET Core Apps on Azure Kubernetes

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Kubernetes

- **Kubernetes (K8s) is an open-source system for automating deployment, scaling, and management of containerized applications.**
- **It groups containers that make up an application into logical units for easy management and discovery.**

Kubernetes

- Need
  - The modern application’s architecture is preferring to use Microservices based architecture.
  - With **microservices**, the entire application is decentralized and decoupled into services that act as separate entities.
  - Unlike the monolithic architecture wherein a failure in the code affects more than one service or function, there is minimal impact of a failure using **microservices**.
  - Microservices are deployed in Docker Containers.

Kubernetes

- Need
  - *Microservices structure an application into several modular services.*
  - *Docker is an open source platform that’s used to build, ship and run distributed services.*
  - *Kubernetes is an open source orchestration platform for automating deployment, scaling and the operations of application containers across clusters of hosts.*
  -

Kubernetes

- Containers
- Only the required libraries get installed in their respective containers.
- Custom containers can be built easily.
- Containers are more lightweight compared to virtual machines (VMs).
- The container platform is used in a concise way to build Docker (which is one of the container standards; it is actually a static library and is a daemon running inside the Linux OS).
- Containers make our applications portable.
- Containers can be easily shipped, built and deployed.

Kubernetes

- **What is Kubernetes and why should one use it?**
- Kubernetes is an open source orchestrator for deploying containerized applications (microservices).
- It is a platform for creating, deploying and managing various distributed applications of different sizes and shapes.
- Container APIs with benefits like:
  - Velocity → a number of things can be shipped quickly
  - Scaling → favours scaling with decoupled architecture through load balancers
  - Abstract → applications built and deployed on top of Kubernetes can be ported across different environments.
  - Efficiency → the developer's test environment can be cheaply and quickly created via Kubernetes clusters

Kubernetes

- ASP.NET Core
  - The new Unified story for modern web applications.
  - Single Pipeline for, WebForms, MVC and WEB API
  - Cross-Platform
  - Cloud Enabled
  - Lightweight
  - Middleware based
  - Suitable for Microservices

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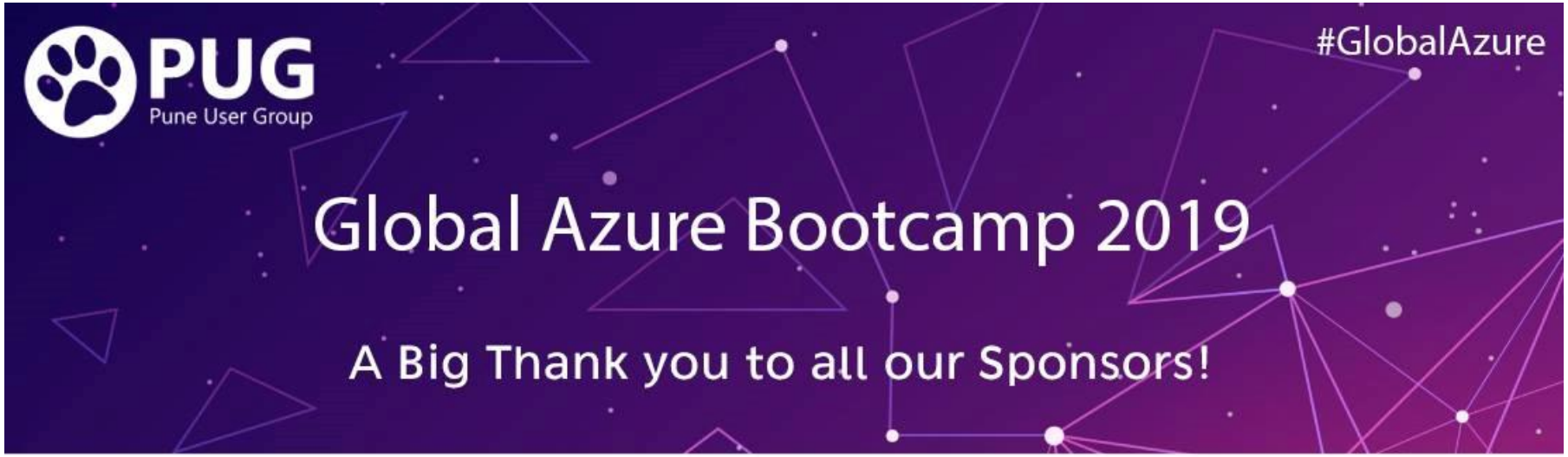

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