
Foundational Patterns

Foundational patterns describe a number of fundamental principles that containerized applications must comply with in order to become good cloud-native citizens. Adhering to these principles will help ensure your applications are suitable for automation in cloud-native platforms such as Kubernetes.

The patterns described in the following chapters represent the foundational building blocks of distributed container-based Kubernetes-native applications:

- **Chapter 2, *Predictable Demands***, explains why every container should declare its resource profile and stay confined to the indicated resource requirements.
- **Chapter 3, *Declarative Deployment***, shows the different application deployment strategies that can be performed in a declarative way.
- **Chapter 4, *Health Probe***, dictates that every container should implement specific APIs to help the platform observe and manage the application in the healthiest way possible.
- **Chapter 5, *Managed Lifecycle***, describes why a container should have a way to read the events coming from the platform and conform by reacting to those events.
- **Chapter 6, *Automated Placement***, introduces a pattern for distributing containers in a Kubernetes multinode cluster.