How to Manage Microservices Configuration

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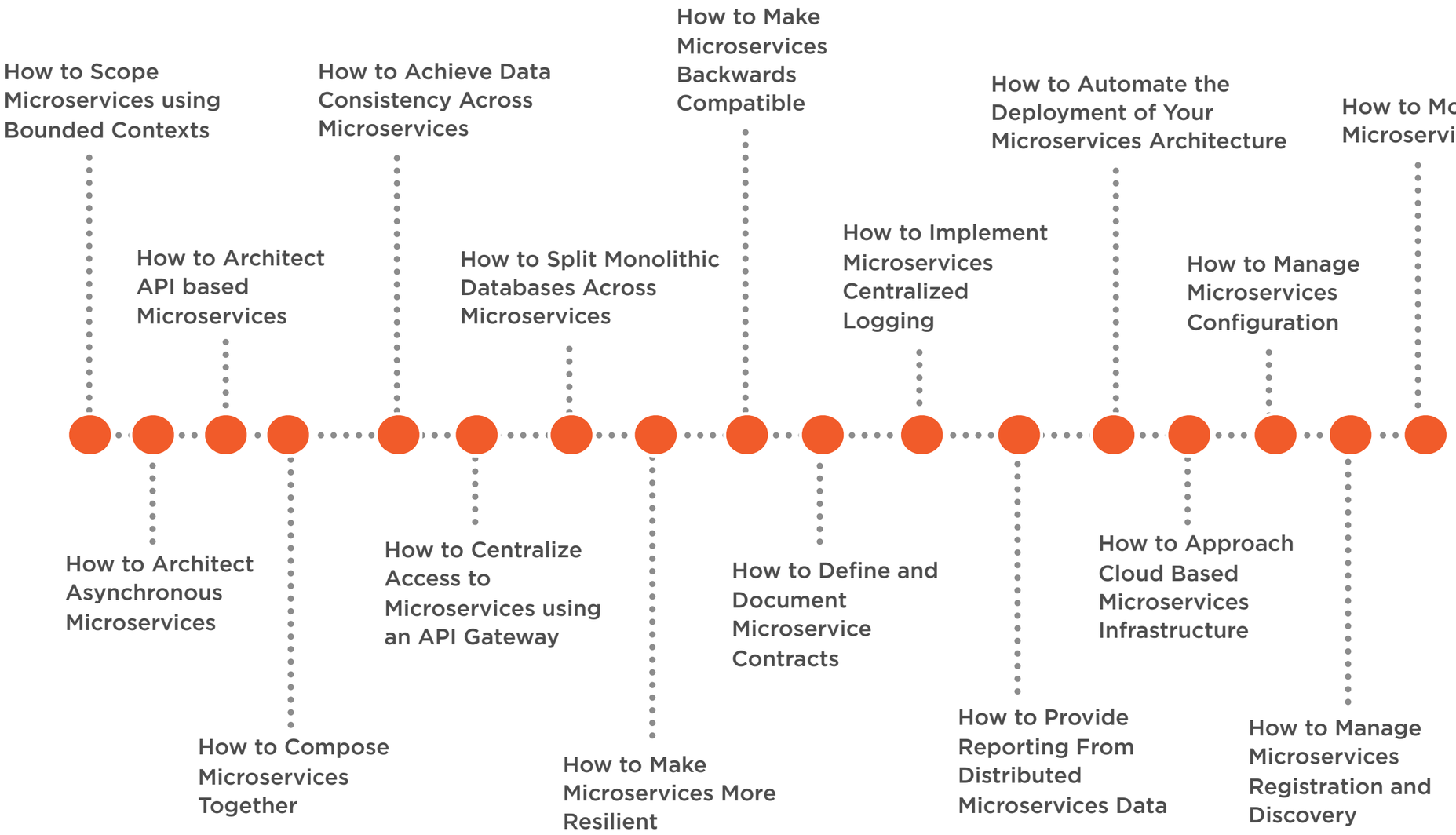
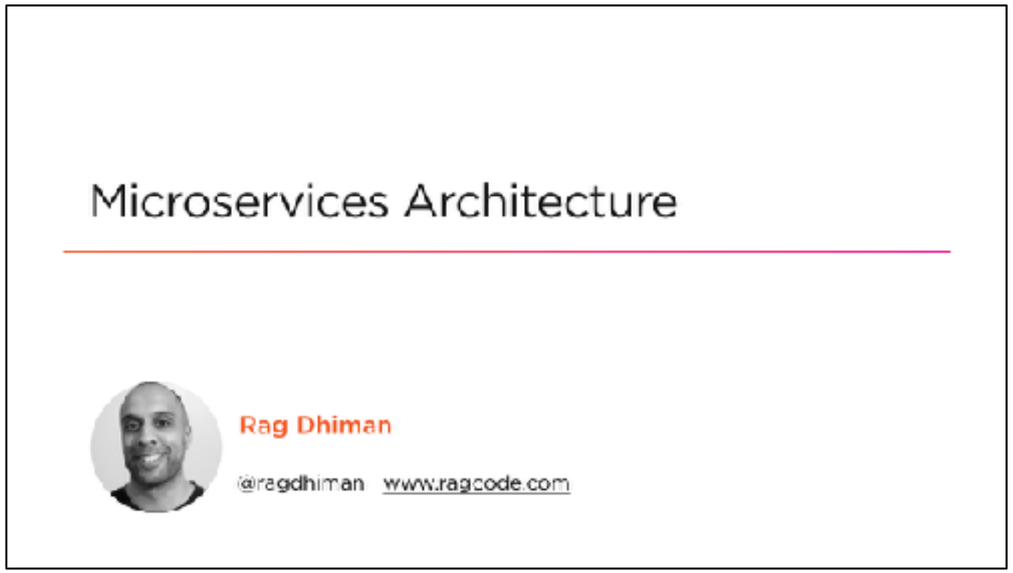
Microservices Architectural Design Patterns Playbook



Microservices Architectural Design Patterns Playbook



Overview

Introduction

Deployment Servers

Externalized Configuration Pattern

Configuration Management Tools

Containers

Introduction

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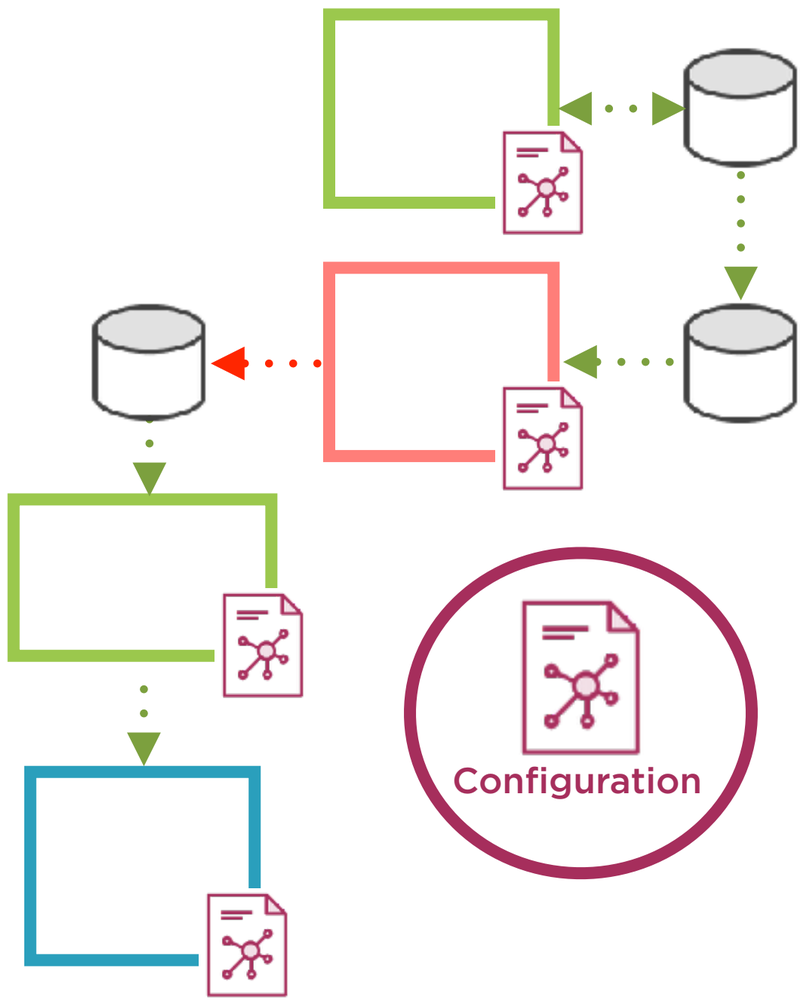


What is microservices configuration?

- Parameters to effect behavior
- Endpoint information
- Connection strings
- Authentication information
- Sever configuration

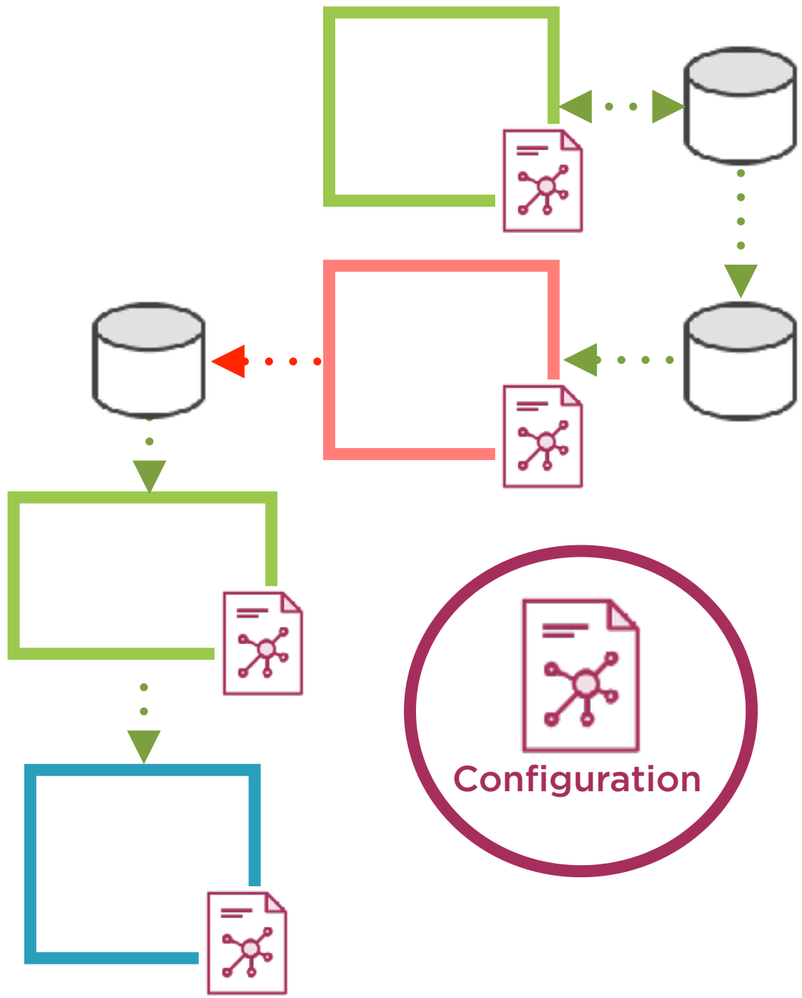
Whats changed from the monolith?

- Many interconnected services
- Configuration to connect everything

Continuous integration and delivery

- Automation of testing and deployment
- Staging and deployment environments

Solutions



Deployment servers

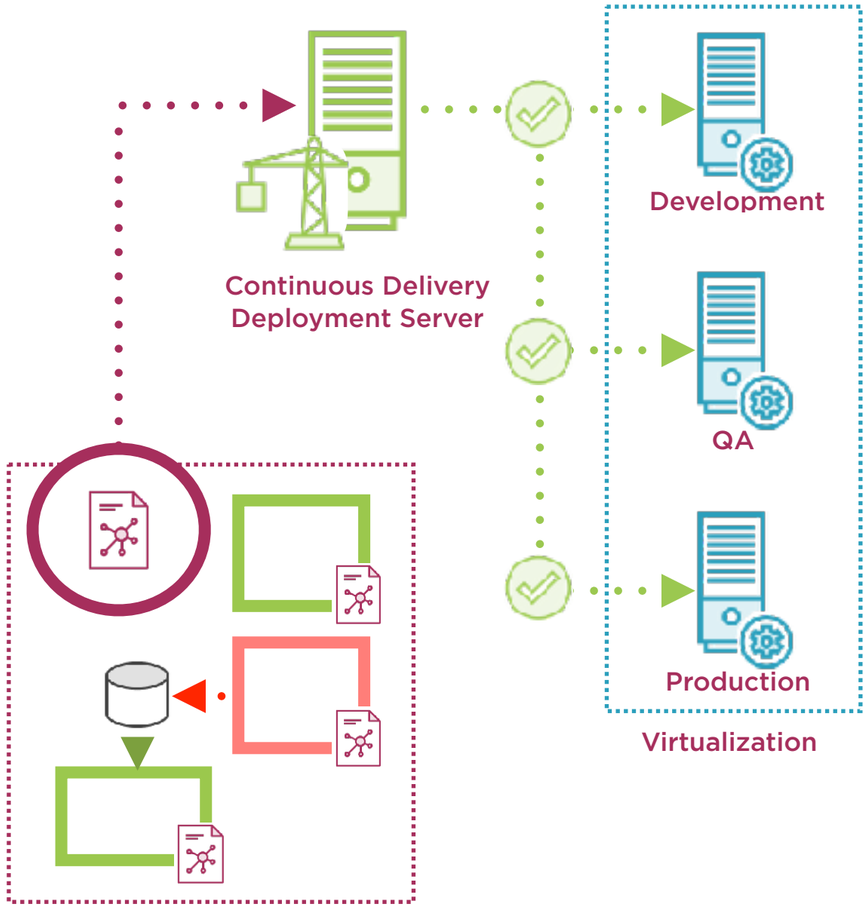
Externalized configuration pattern

Configuration management tools

Containers

Deployment Servers

Deployment Servers



Continuous delivery: deployment servers

Central configuration that overrides config

- On deployment
- Different for each environment

Configuration values as variables

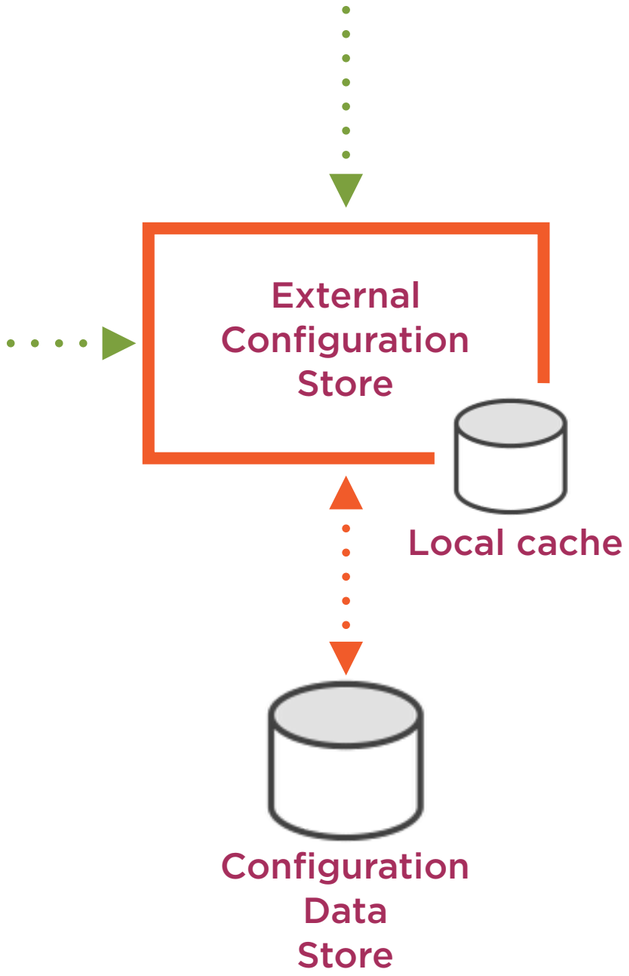
- Key, value pairs
- Substituted in your app configuration files
- Available in deployment scripts

Intelligent configuration definitions

- Scope for variables
- Full deployment tool support
- Library sets

Externalized Configuration Pattern

Externalized Configuration Pattern



Central external configuration

- External storage
- Configuration store interface

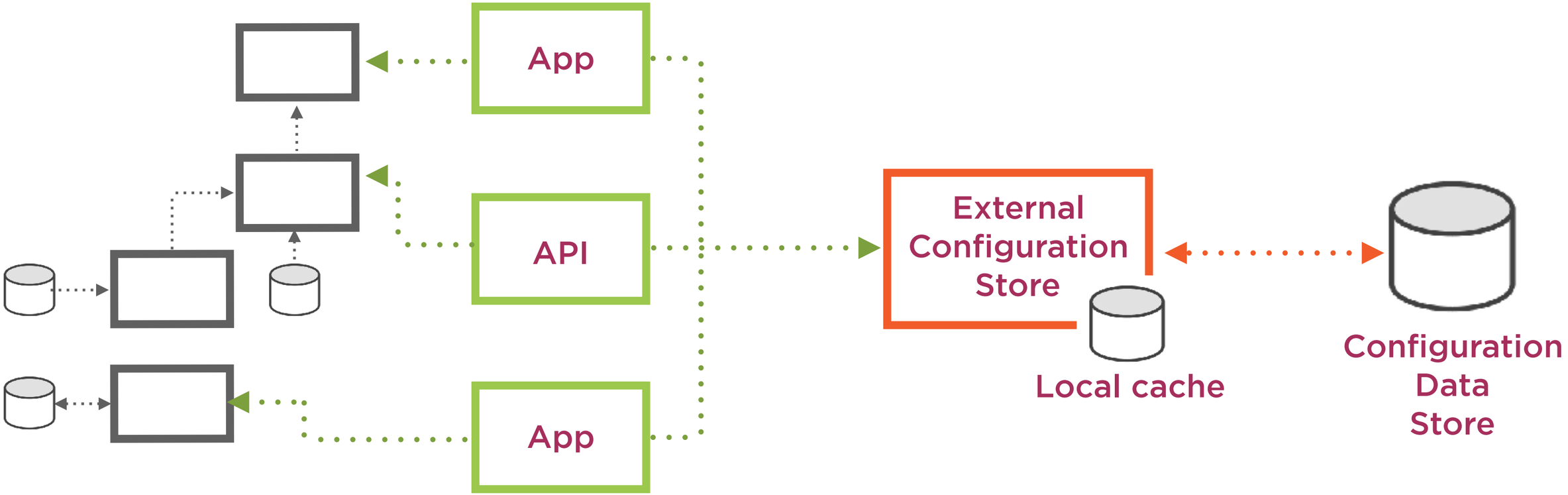
When to use

- Share configuration
- Zero downtime for configuration changes
- Easier management and control
- Flexibility to store multiple versions

Considerations

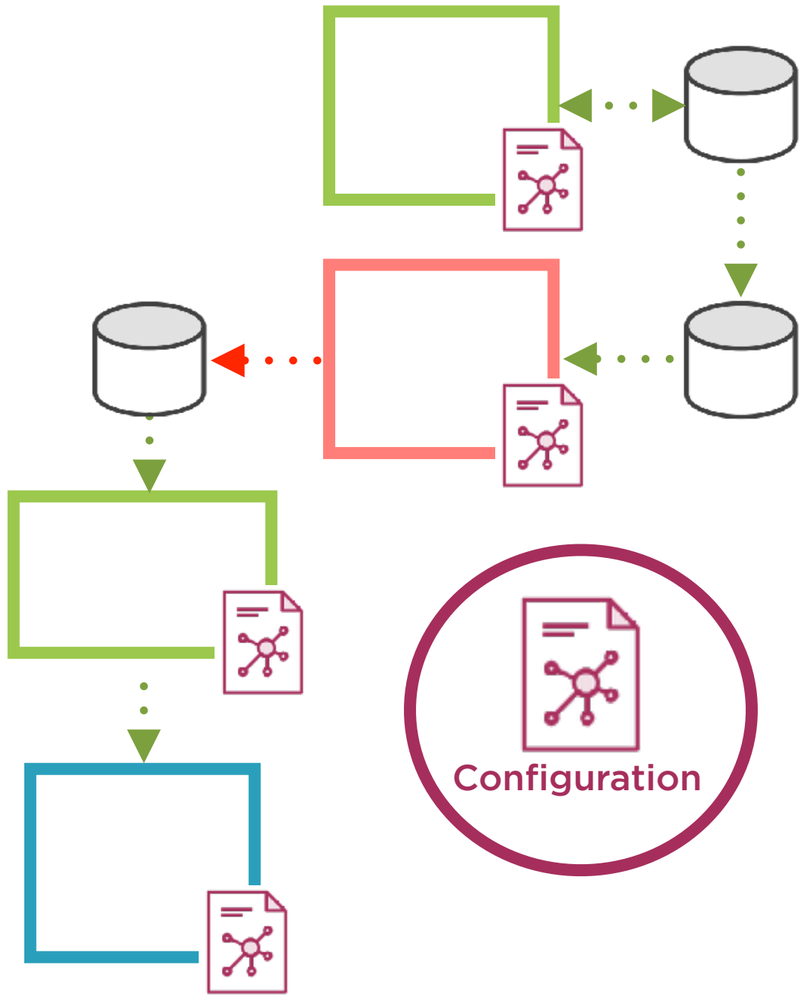
- Security and handling errors
- Format of the data
- Use of caching and caching expiration policy
- Manage and monitor changes

Externalized Configuration Pattern



Configuration Management Tools

Configuration Management Tools



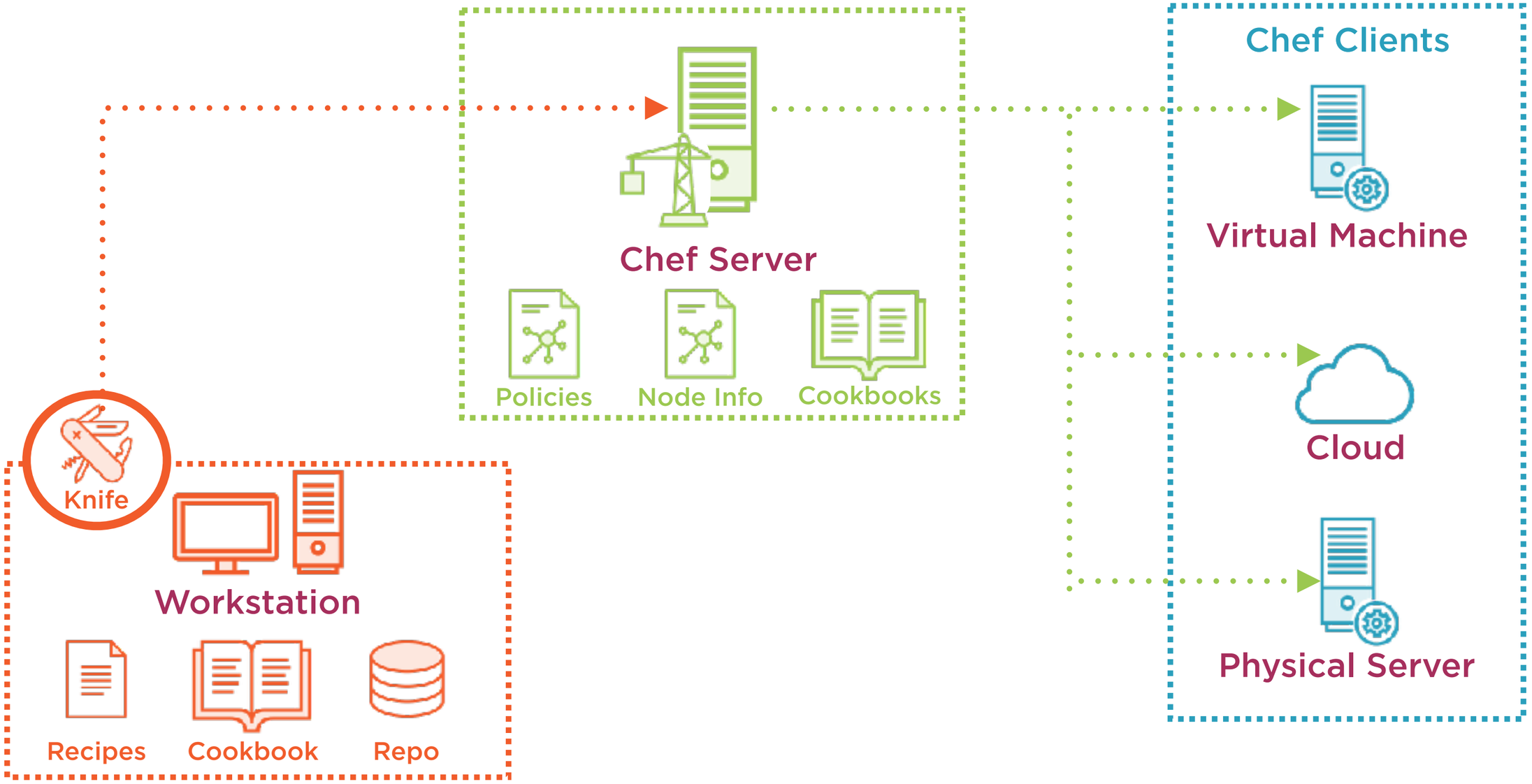
Infrastructure as code (IAC)

- Code to provision environments
- Centralized location
- Client-server configuration (push or pull)
- Increase release frequency
- Ability to rollback
- Ensure machine state
- Write once and run many-times

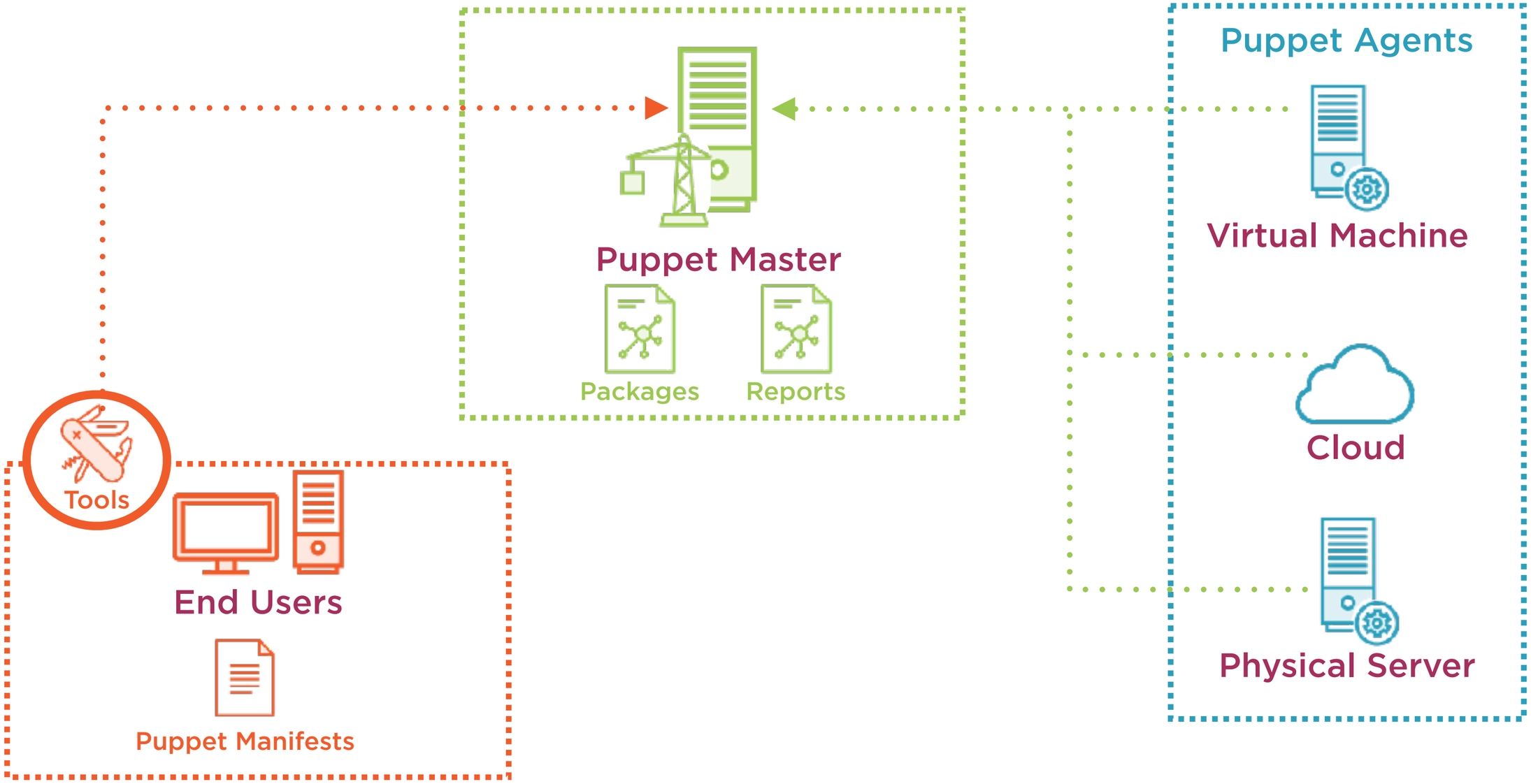
Popular CMTs

- Chef
- Puppet
- Ansible

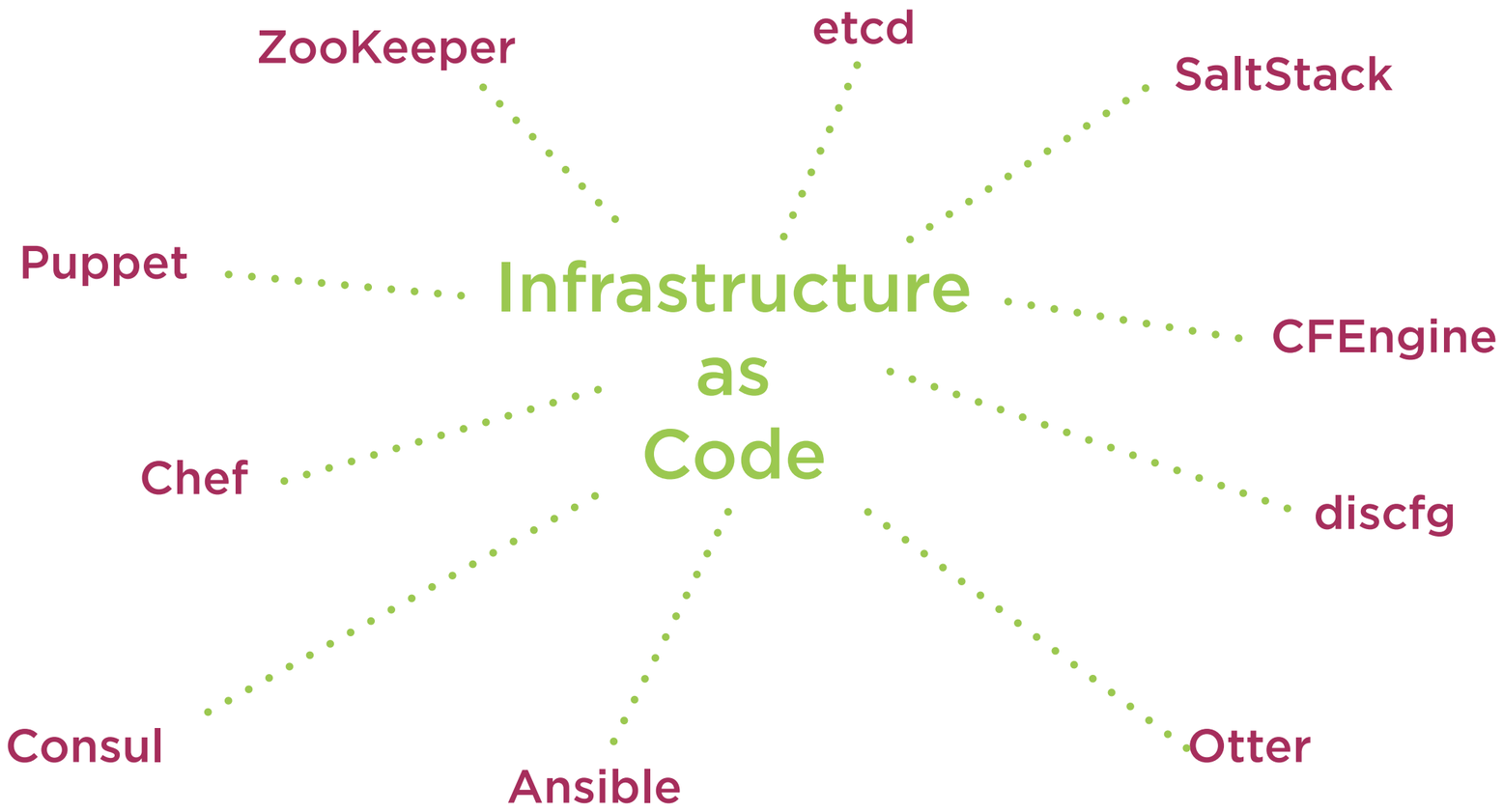
Chef Overview



Puppet Overview



Many More...


ZooKeeper
etcd
SaltStack
Puppet
Infrastructure as Code
CFEngine
Chef
discfg
Consul
Ansible
Otter

Containers

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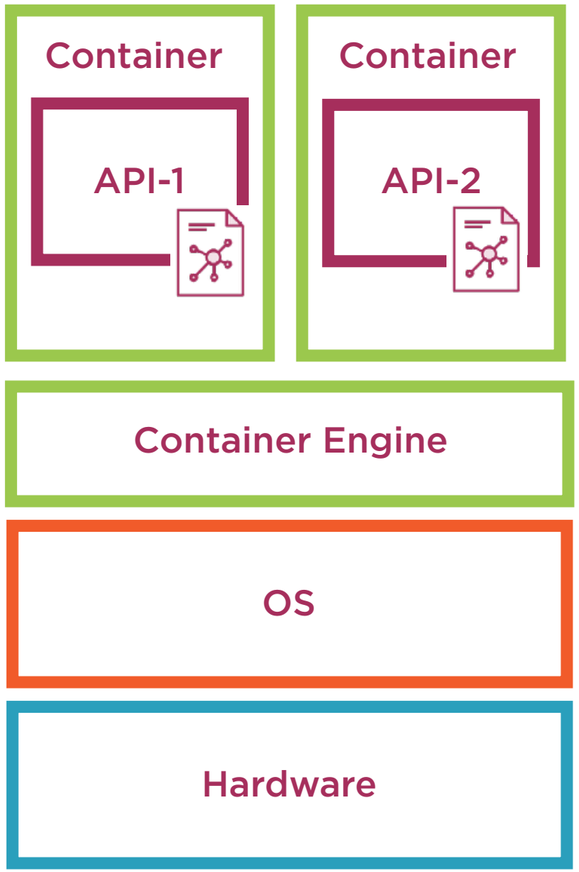


Containers

Orchestration engines

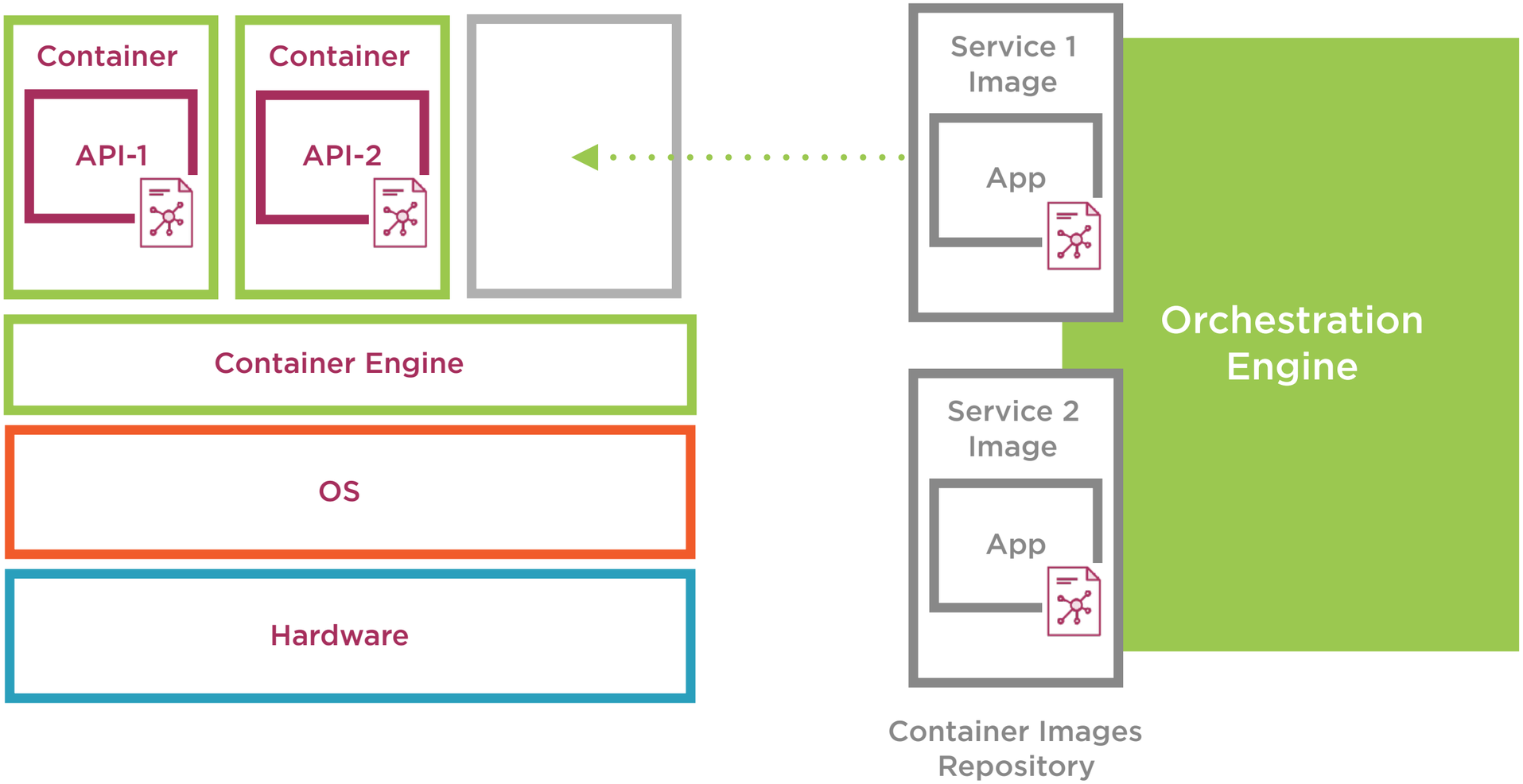
Alternative to configuration management tools

- Avoid combining: Quick startup for containers
- Use CMTs for the creation of images

Ideal for microservices configuration

- Build and deploy preconfigured images
- Autoscaling is made easy
- Define state
- Infrastructure as code still supported
- Define dependencies on other services

Containers


Container
API-1
Container
API-2
Container Engine
OS
Hardware
Service 1
Image
App
Service 2
Image
App
Orchestration
Engine
Container Images
Repository

Summary

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