Managing Environments with GitOps

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Overview

Problems with traditional deployment strategies

Jenkins X environment repositories and GitOps

A deep dive into jx deployments

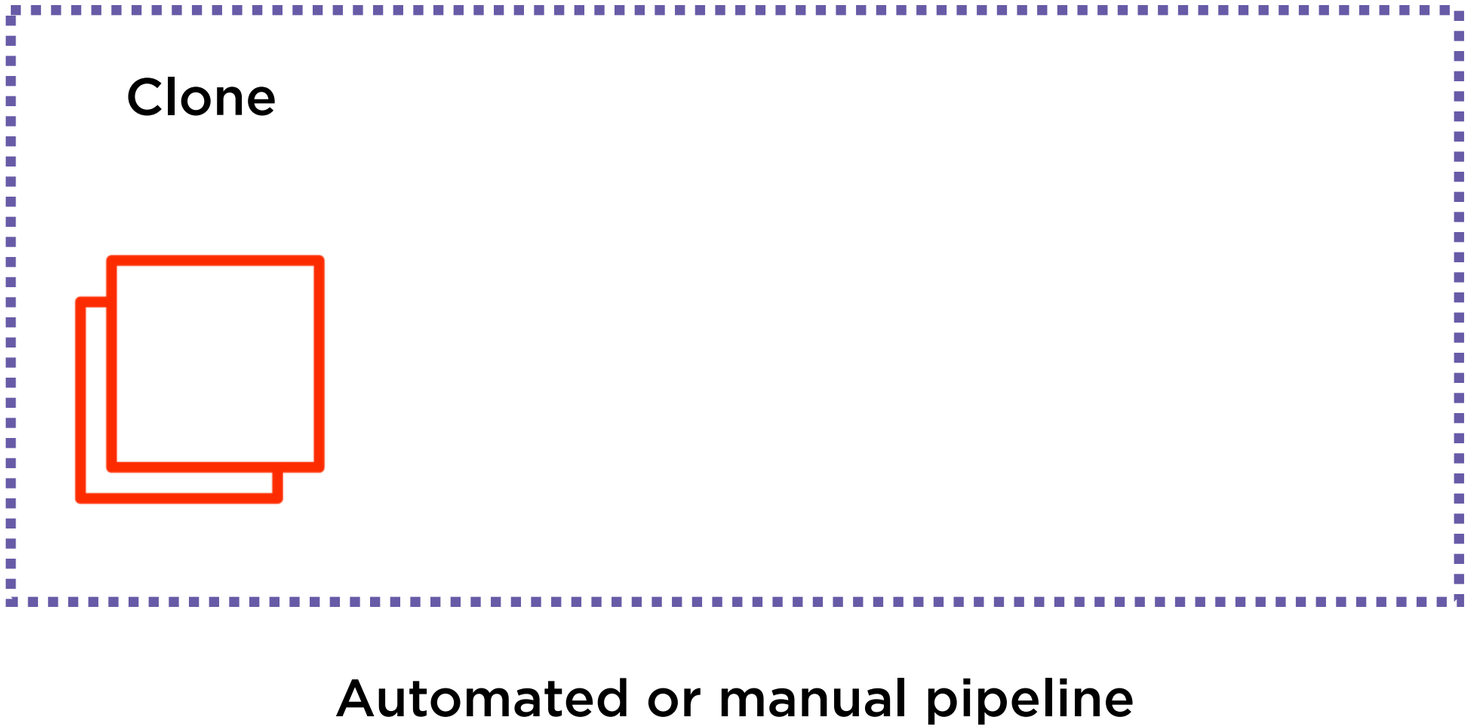
Creating new environments

Environment promotion

Manual Deployment Strategy Overview

Automated or manual pipeline

Manual Deployment Strategy Overview



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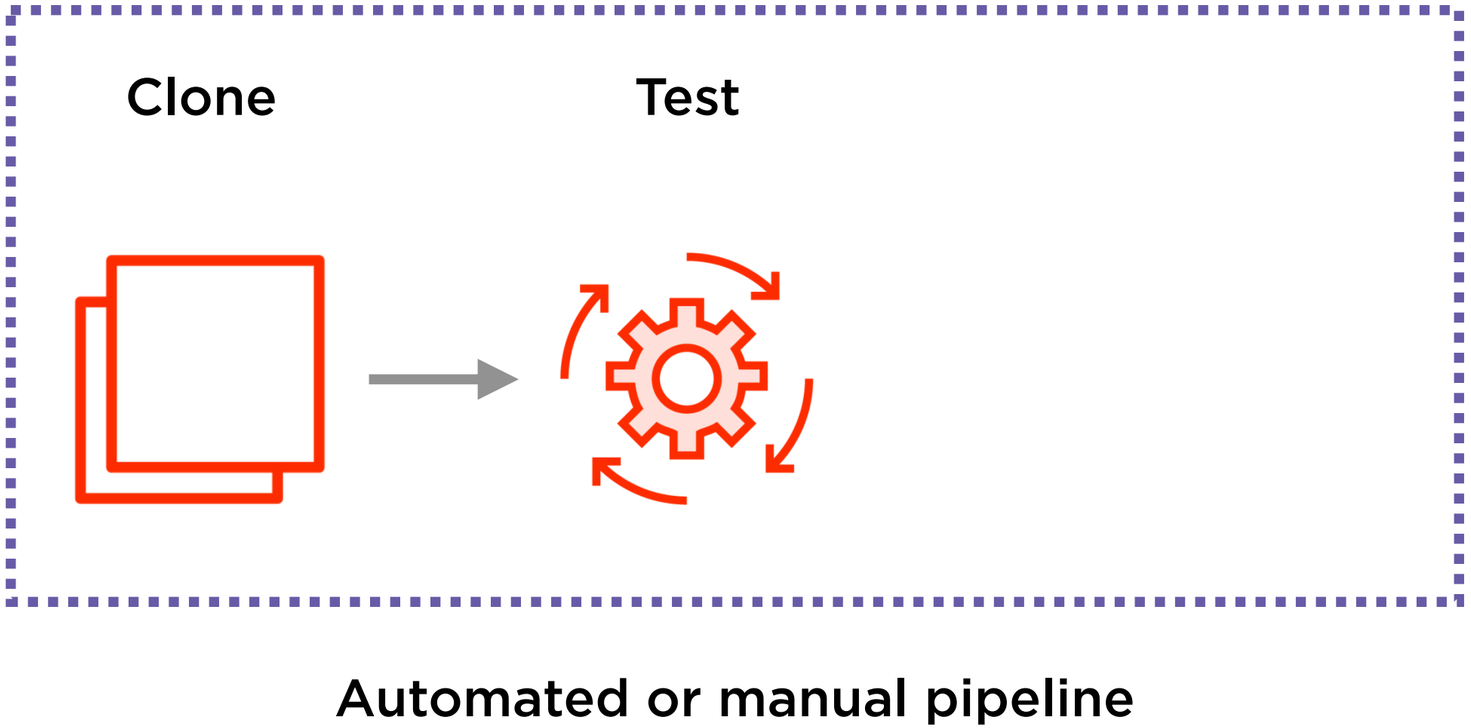

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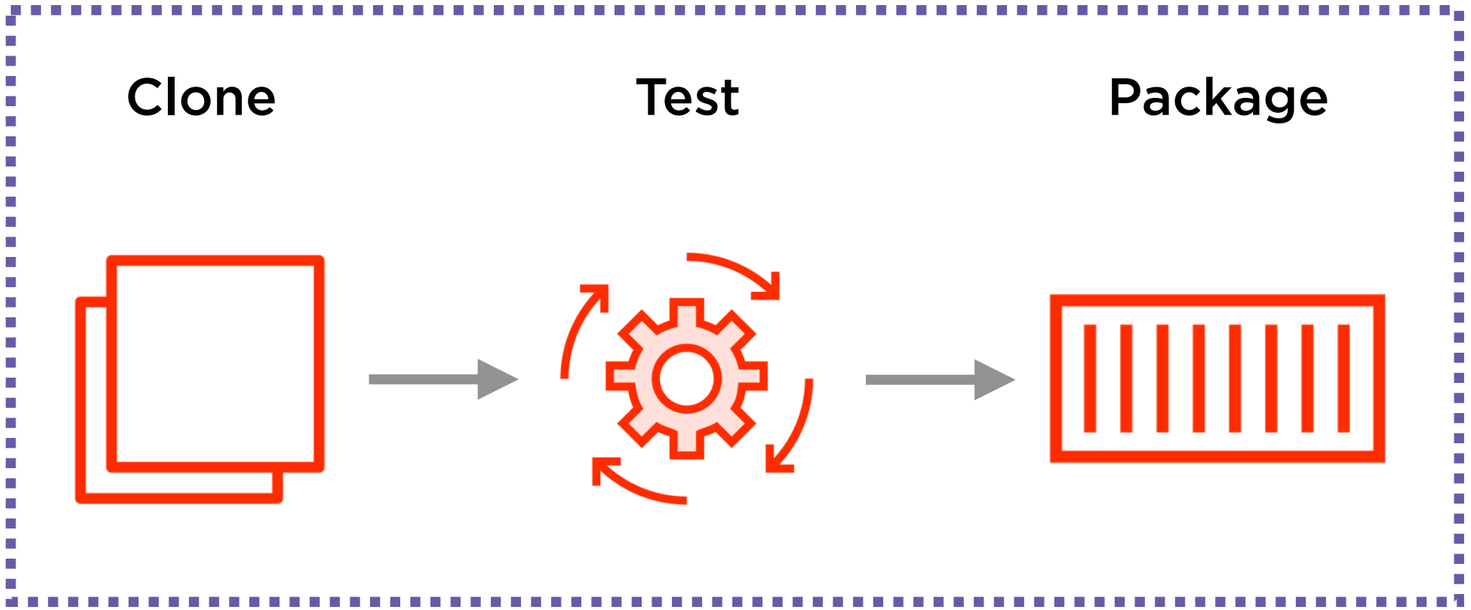

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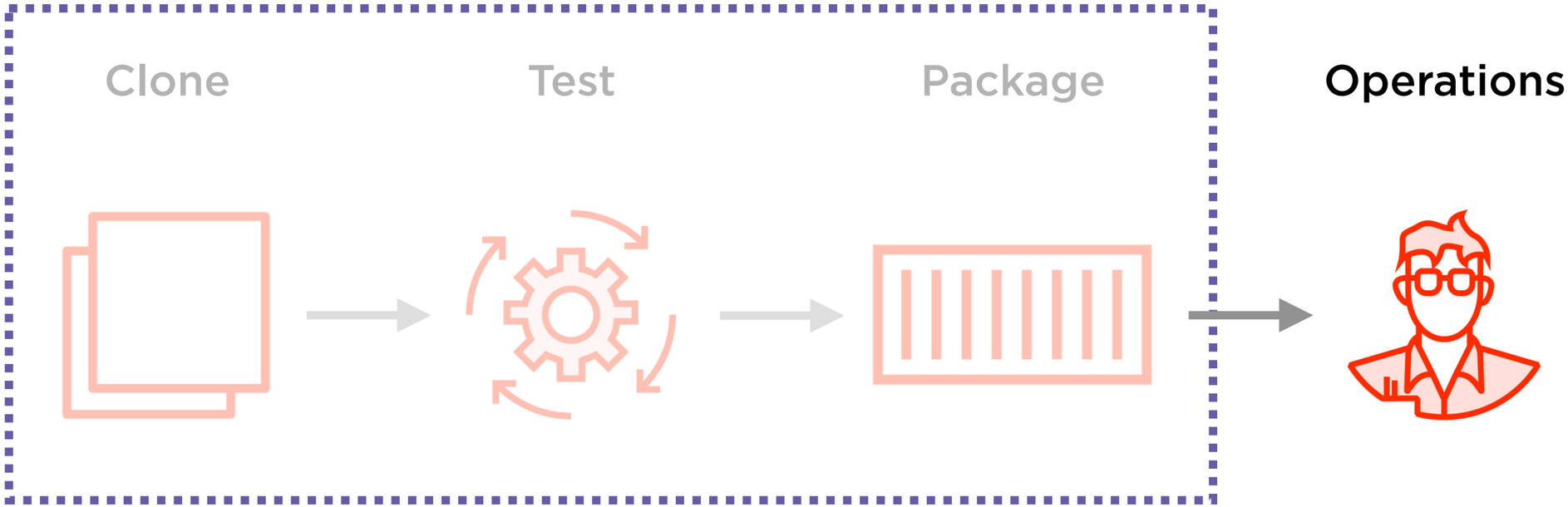

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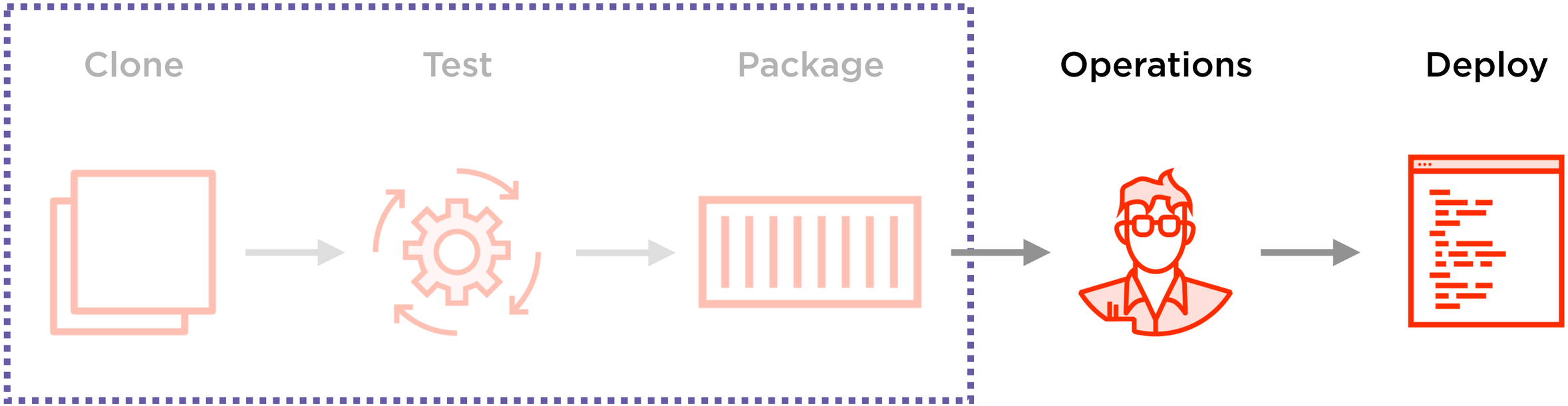

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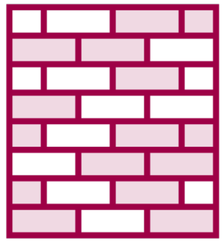

Creating a silo between developers and operations

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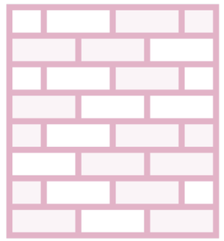

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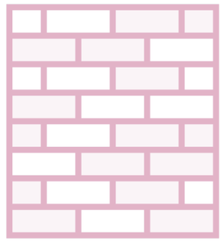

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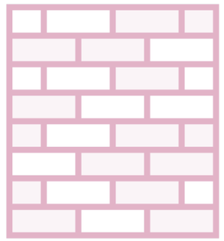

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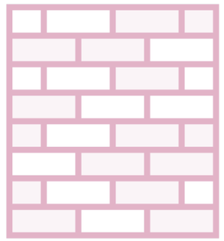

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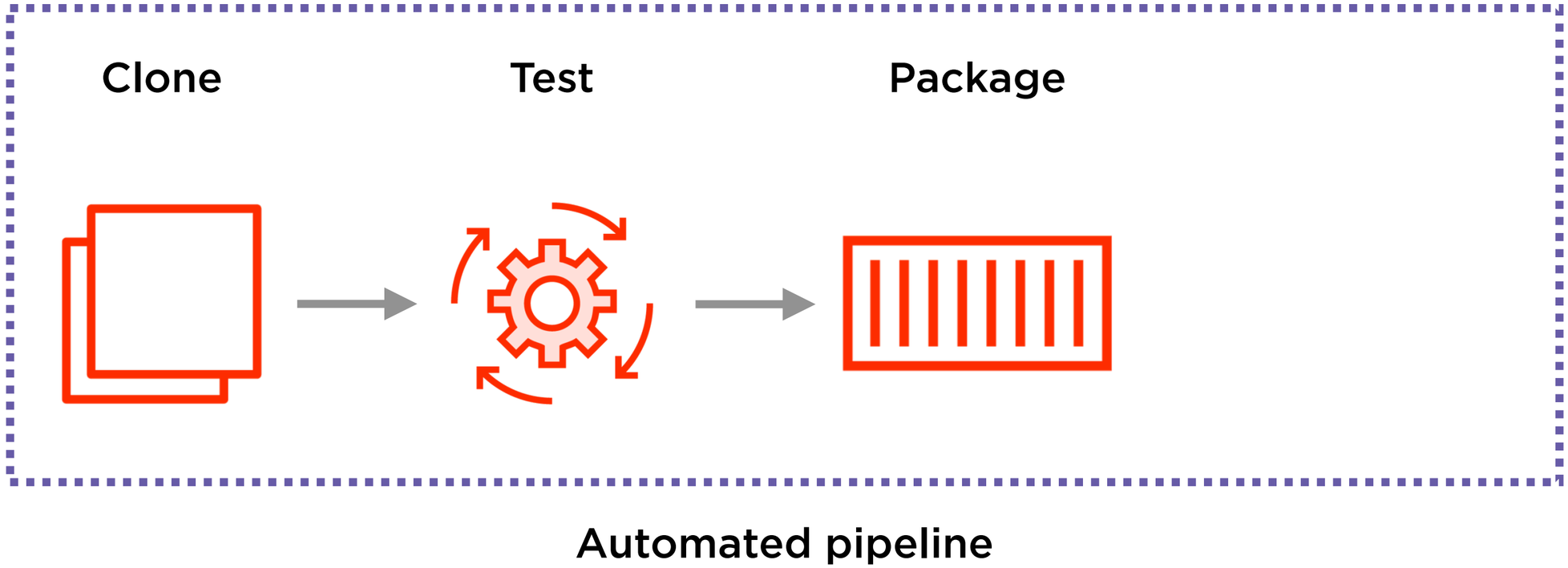

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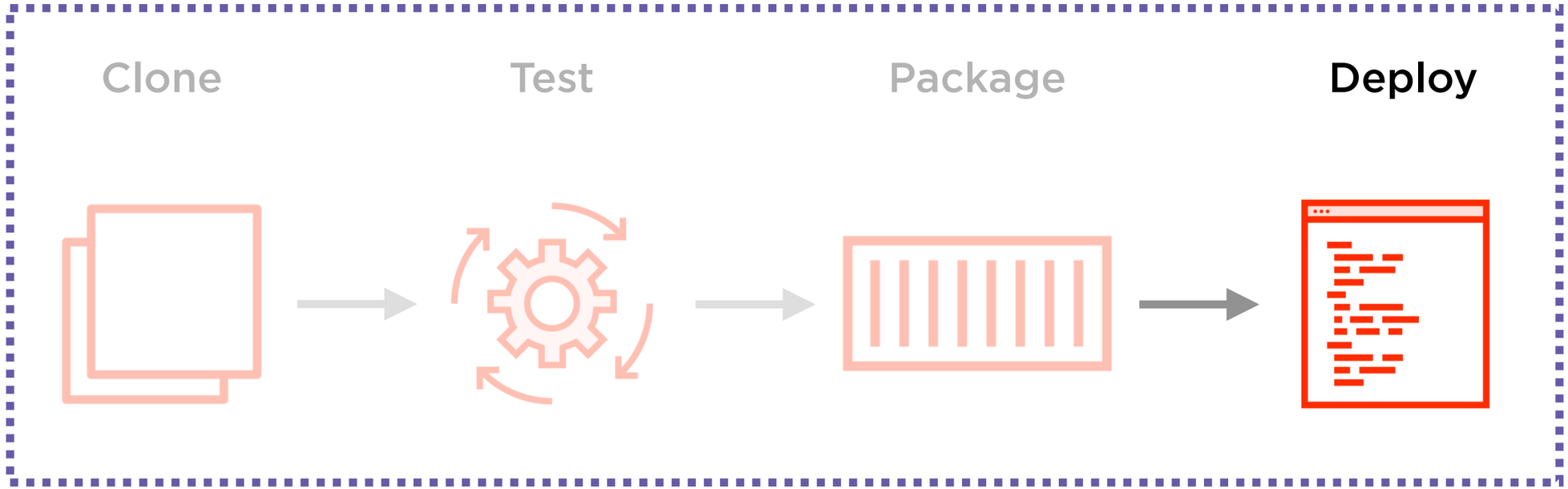

Automated pipeline

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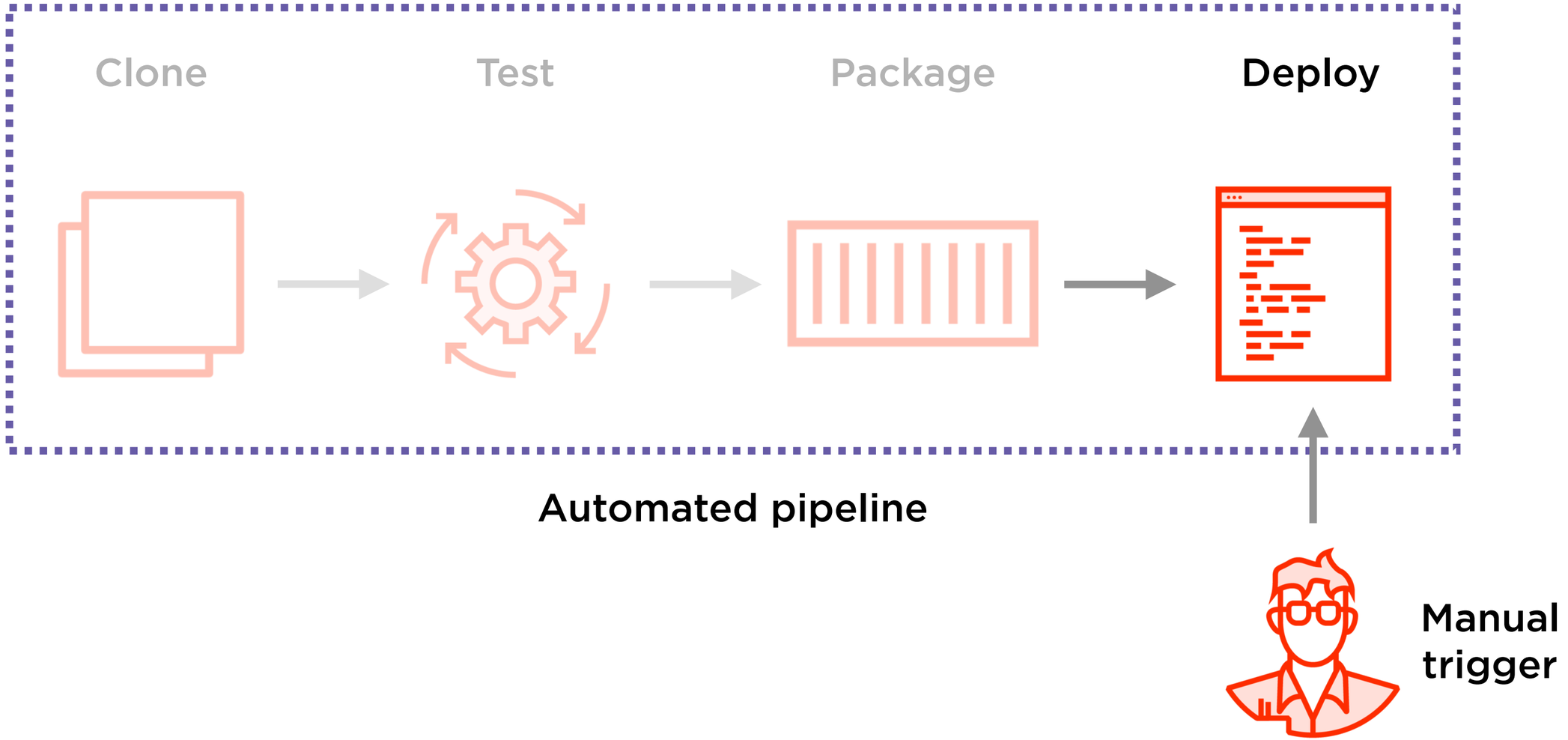

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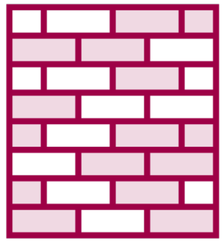

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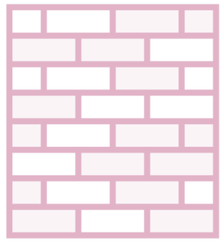

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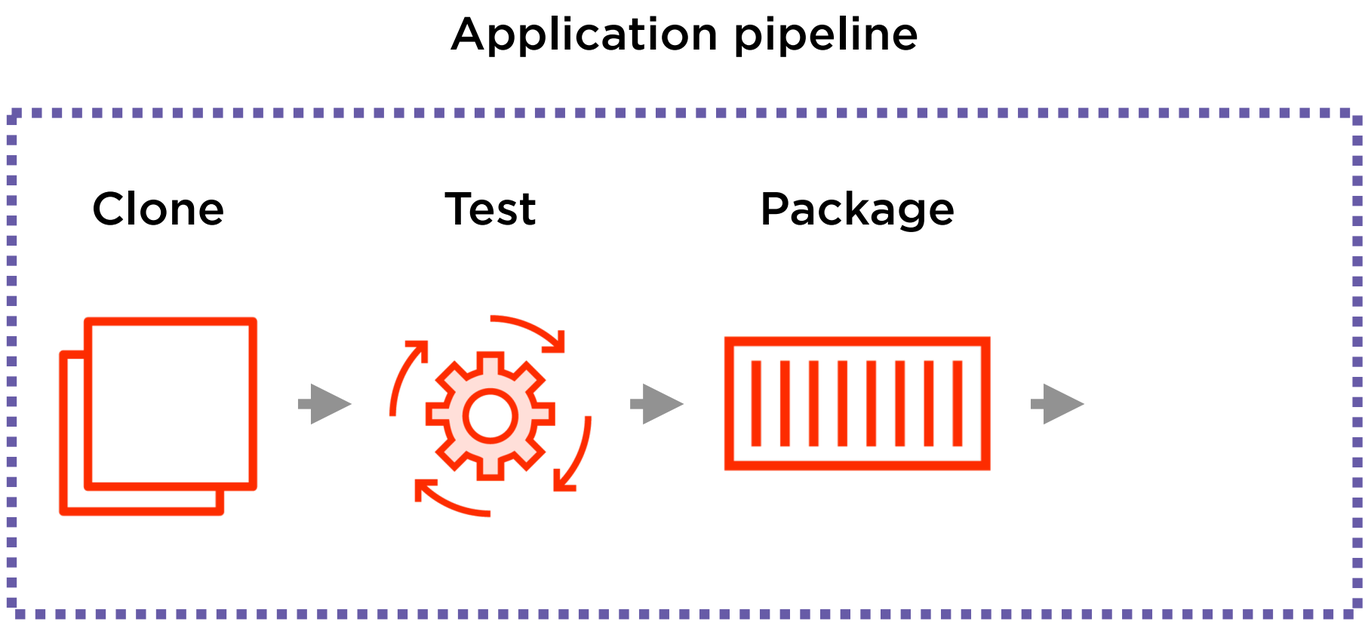

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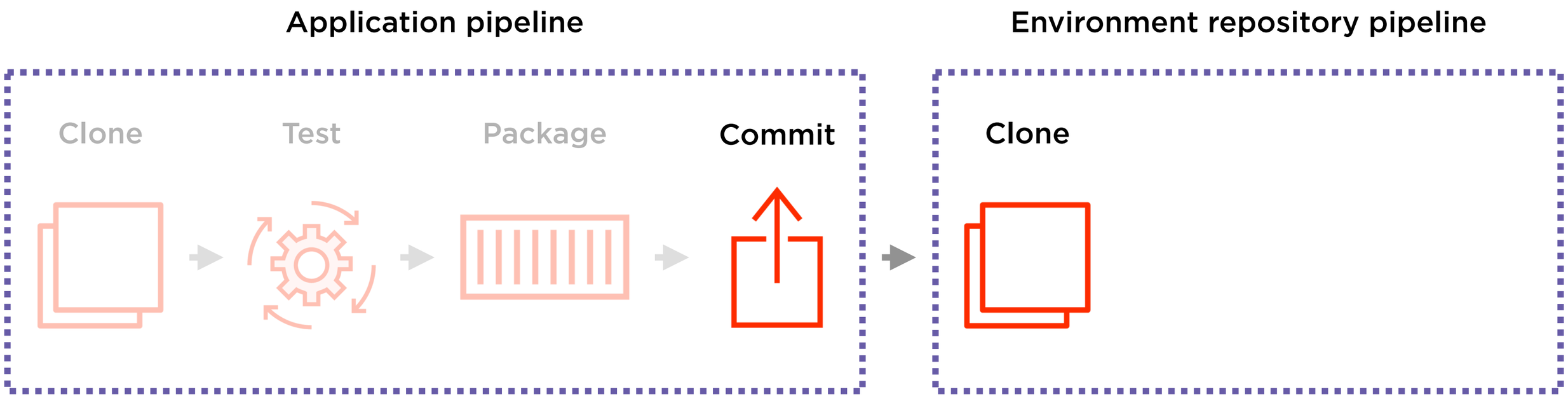

Jenkins X Environment Repository

requirements.yaml

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dependencies:
- alias: user
  name: user-service
  repository: http://chartmuseum:8080
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Desired state of an environment

Declarative list of services using Helm

Each commit triggers a pipeline which deploys everything

Kubernetes deployments are declarative and idempotent

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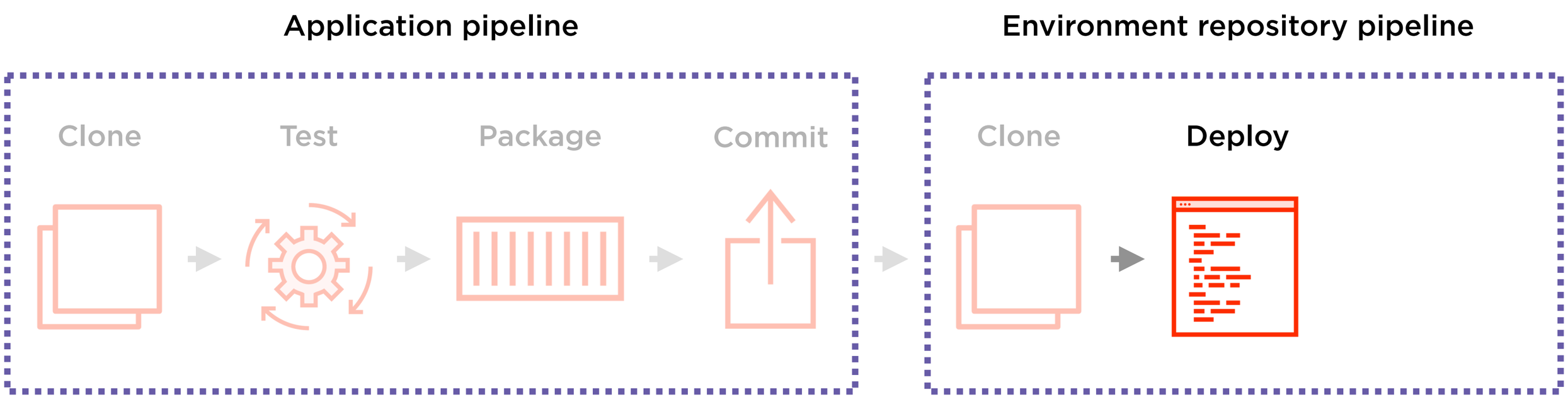

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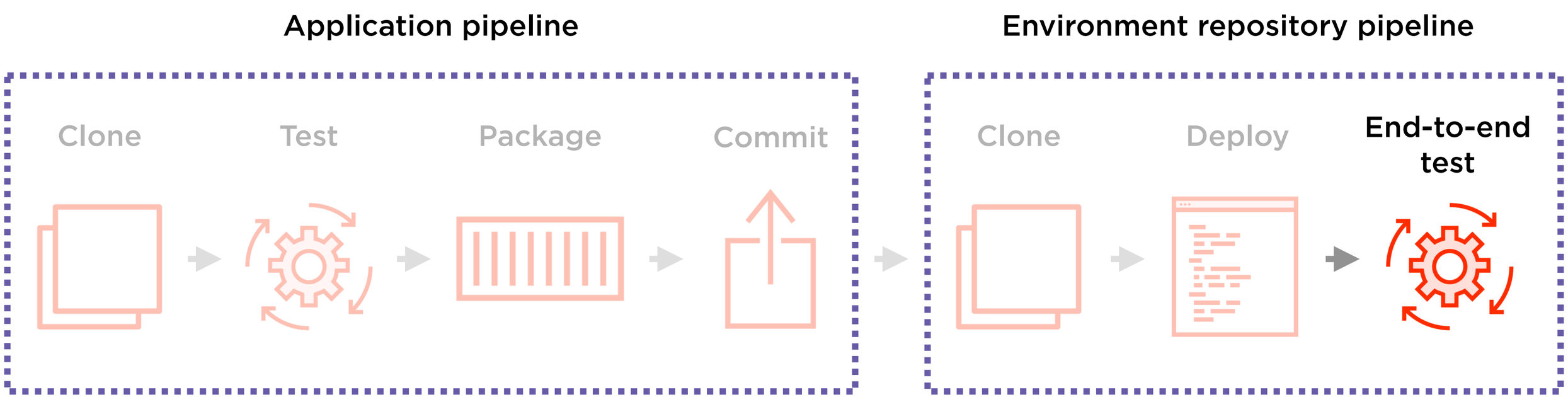

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Native Git can easily rollback, deploy groups, create new environments, etc.

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Each deployment can end-to-end test all services

Full observability through Git

Natively declarative and idempotent deployments

GitOps

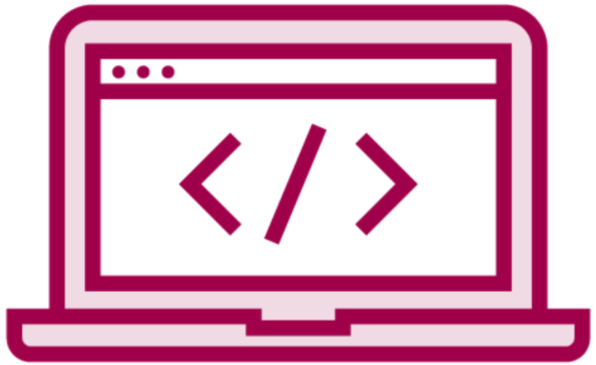
Where Git is the single source of truth for an environment, meaning all changes are observable and declarative

Demo

Deploy an application to staging

Analysis of staging repository

Using JX to view the application and staging pipelines



jx create env

Automated creation of a new environment

Creates Git repository and sets up pipelines

Creates namespace within Kubernetes

Environment Creation Strategy Advantages

Can be done by developers

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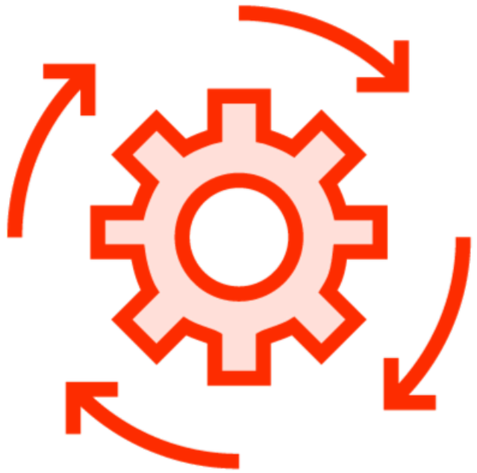


Fast and fully automated process

Environment Creation Strategy Advantages

Can be done by developers

Fast and fully automated process

Completely observable through Git

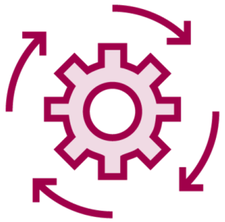
Demo

Create a new environment

Analysis of new repository

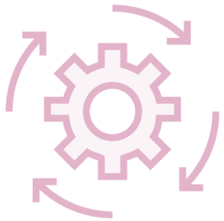
Deploy an application to our environment

Environment Promotion Strategies



Auto : All new releases are automatically promoted

Environment Promotion Strategies



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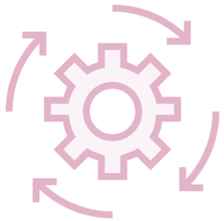
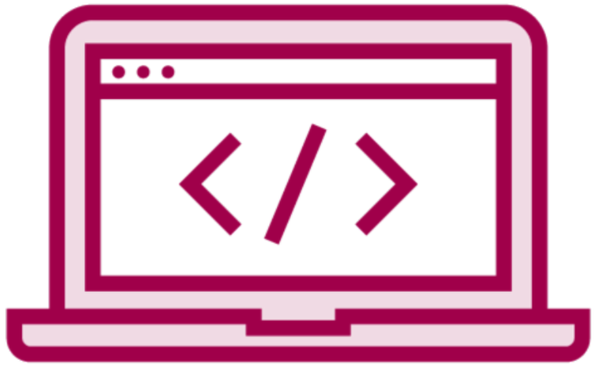
Environment Promotion Strategies



Auto : All new releases are automatically promoted

Manual : Releases are promoted manually

Never : Releases are never promoted to the environment



jx promote

Deploy a service to an environment

Orchestrated via Git commits behind the scenes

Useful for manual releases to production

Demo

Look at our environment's promotion strategies

Promote an application to production

Summary

Jenkins X adopts GitOps, where Git is the single-source-of-truth for our environments

Deployments are declarative commits to these repositories

We automatically deploy to auto environments

We manually deploy to manual environments