

# PART 6: WORKFLOW

Infrastructure as Code

Kief Morris @ ThoughtWorks



# WORKSHOP CONTENTS

FOUNDATIONS

STACKS

TESTING

RUNTIMES

DESIGN

**WORKFLOW**



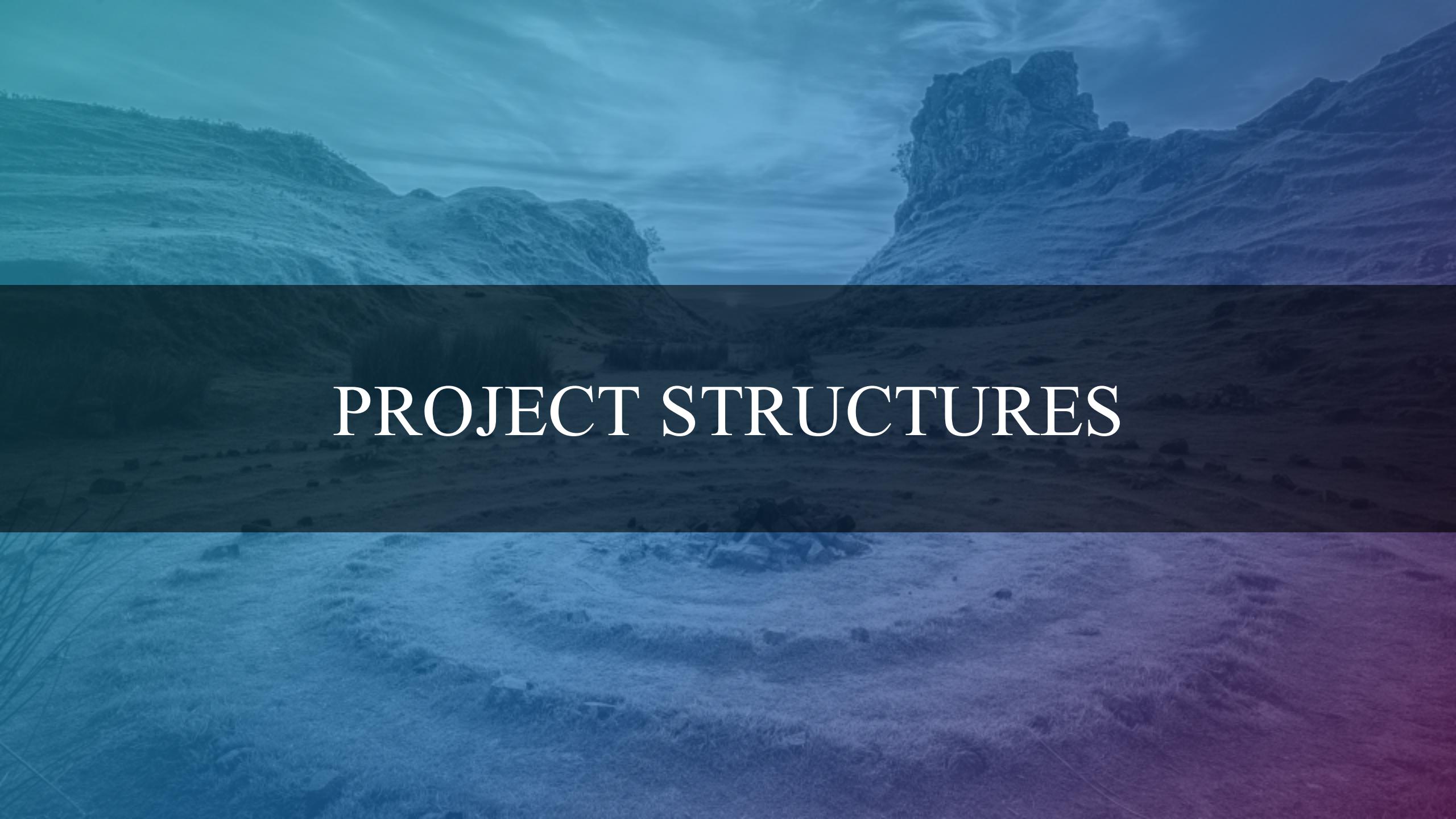
*PART 6*

# WORKFLOW

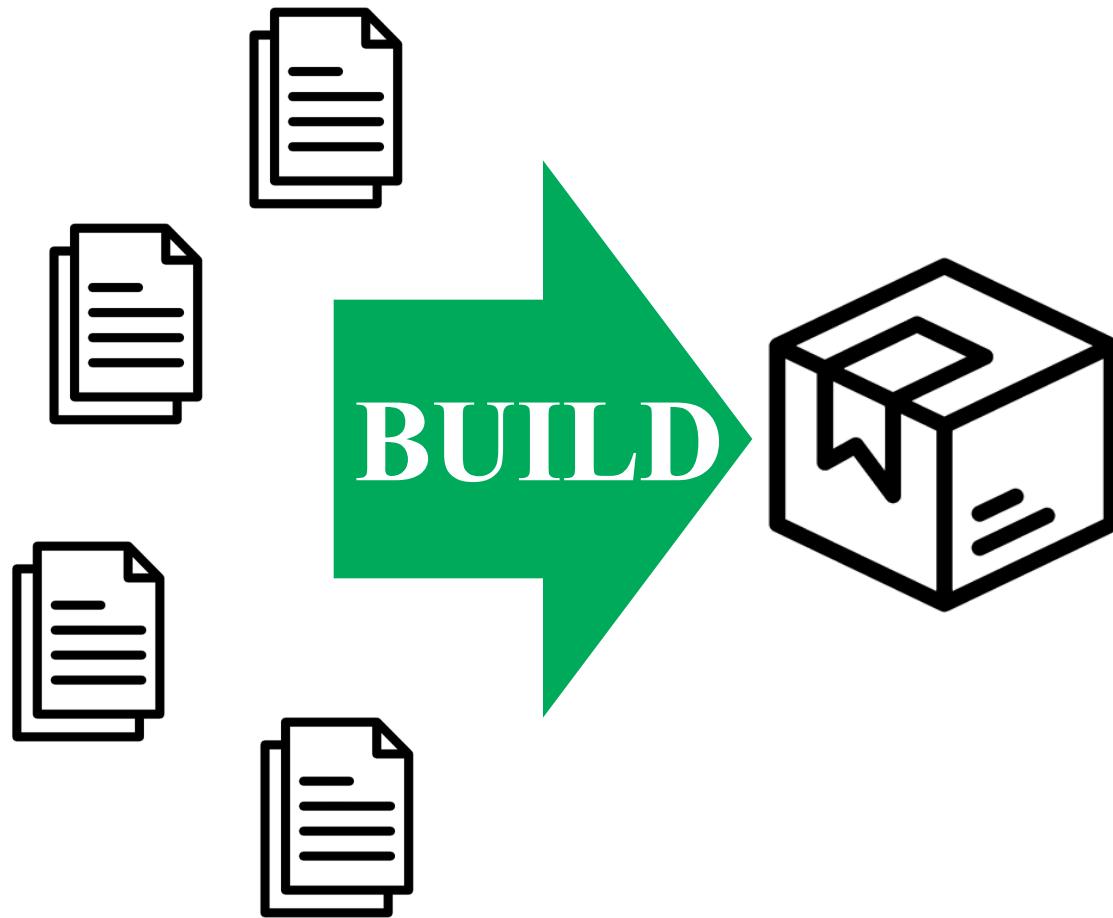
PROJECT  
STRUCTURES

DELIVERING CODE

APPLYING CODE

The background of the slide features a wide-angle photograph of a rural landscape. In the foreground, there's a field of tall, dry grass. Beyond the field, several rolling hills are visible, covered in sparse vegetation. In the distance, a range of mountains rises against a sky filled with soft, white clouds. The overall color palette is dominated by blues and greens, giving it a calm, natural feel.

# PROJECT STRUCTURES

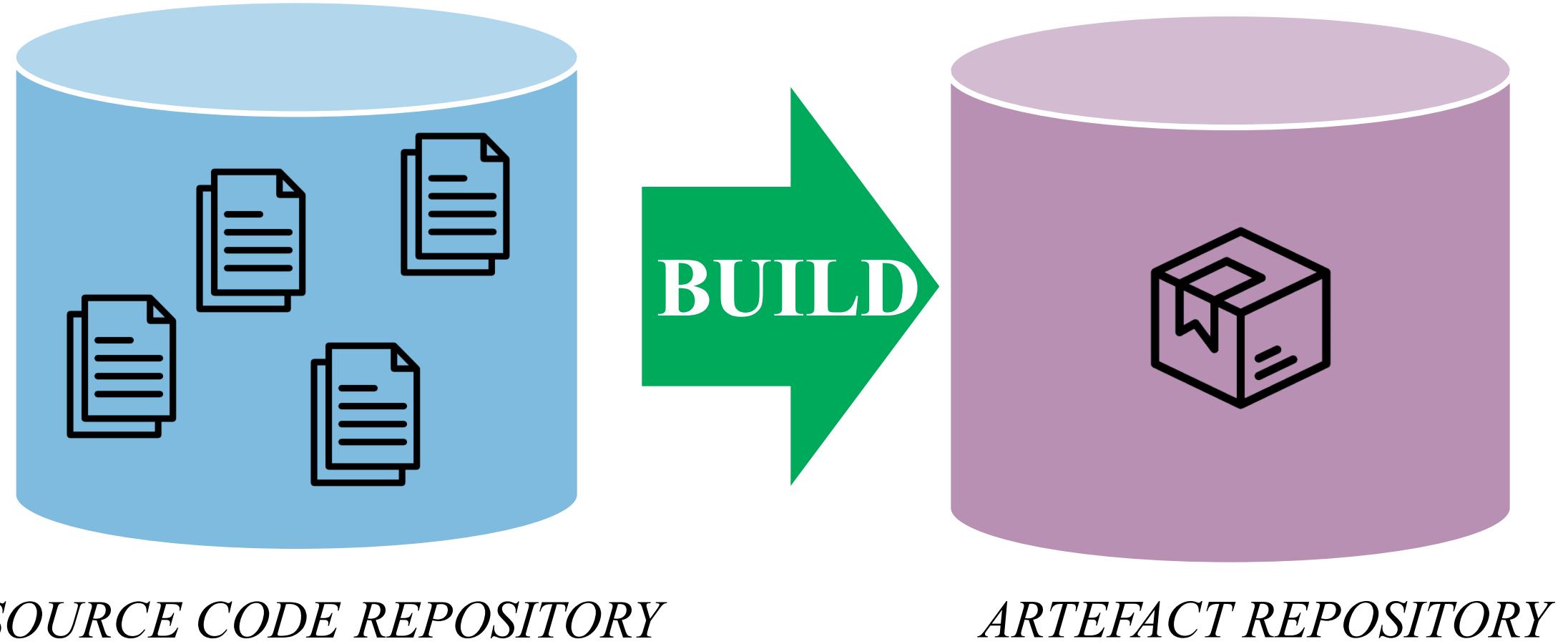


## BUILDING INFRA PROJECTS

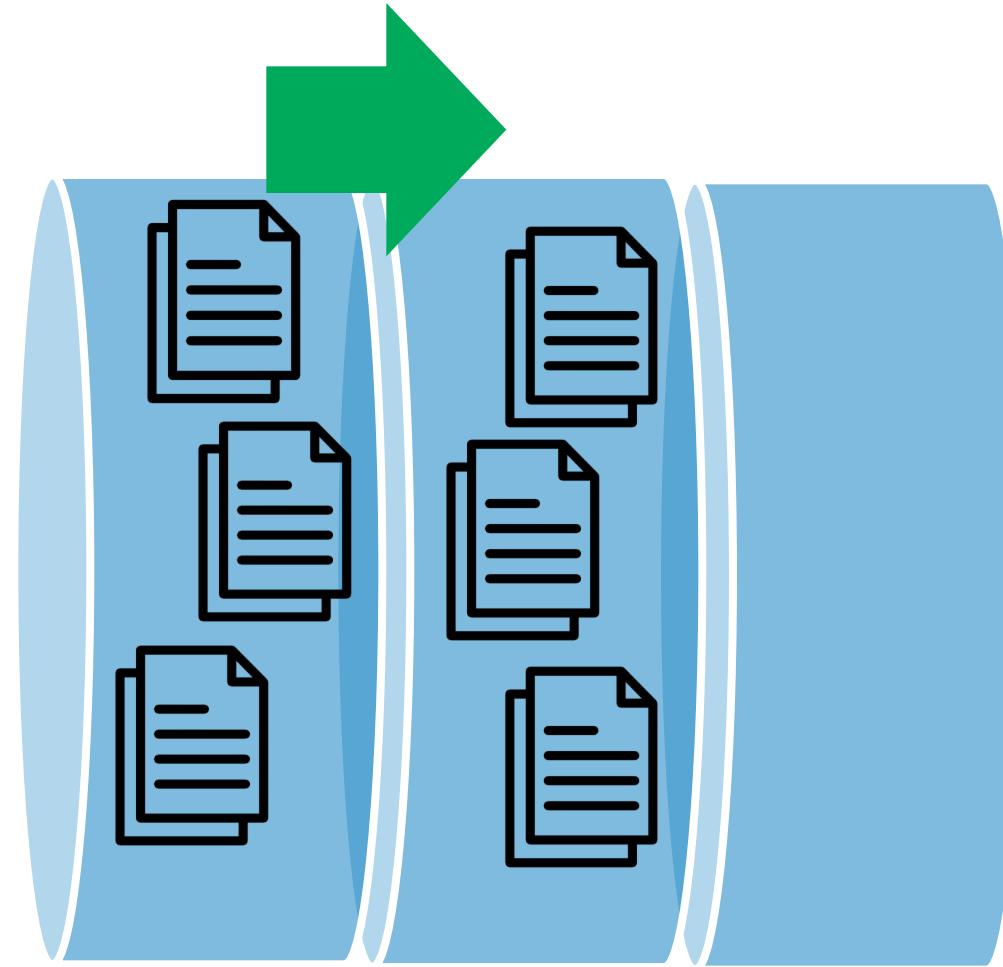
Activities may include:

- Retrieve dependencies
- Assemble build-time configuration
- Compile or transform code
- Run tests
- Make the code available for use

# PUBLISHING INFRA CODE AS AN ARTEFACT



# USING SOURCE CODE BRANCHES FOR DELIVERY



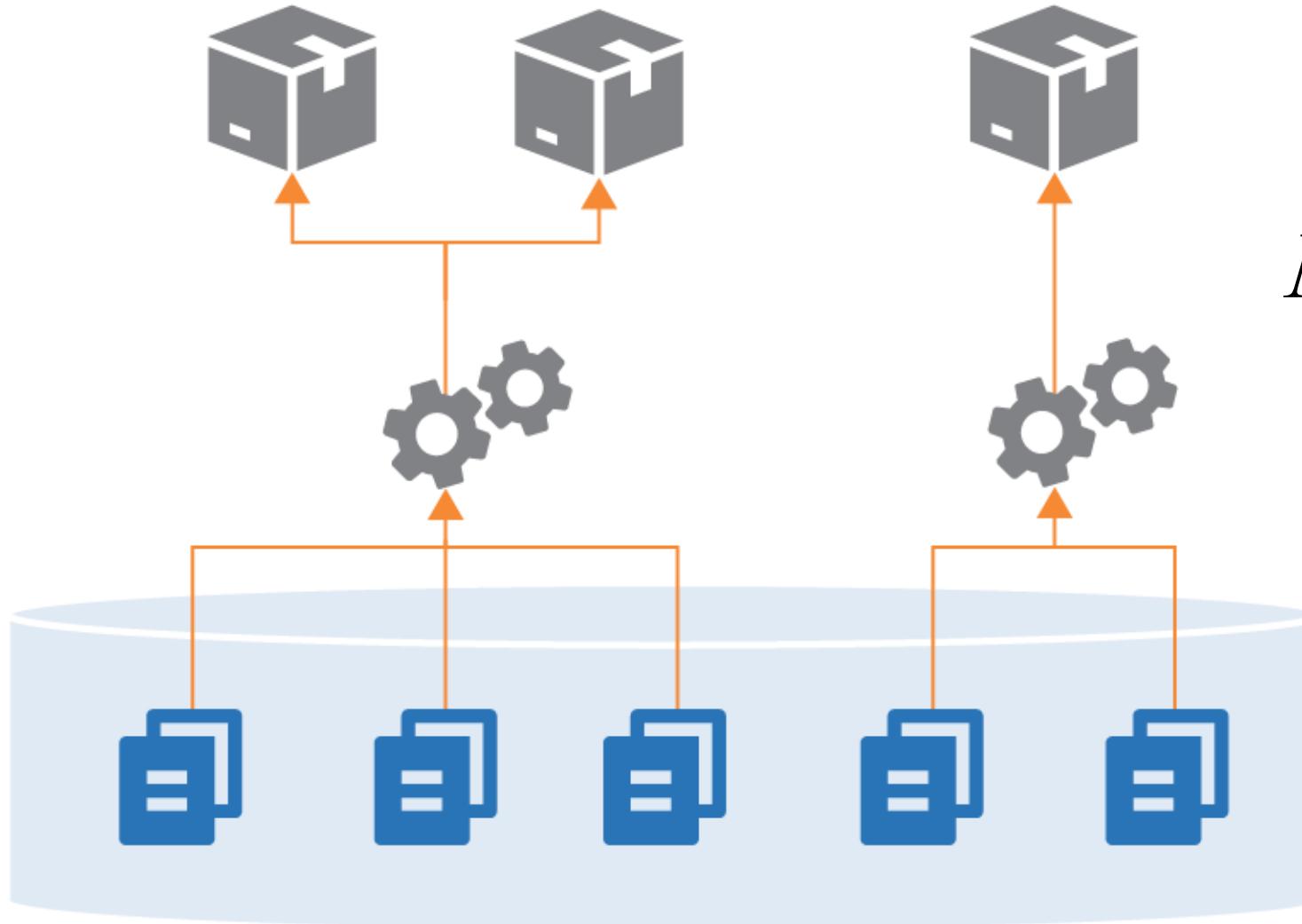
SOURCE CODE REPOSITORY

# ORGANIZING CODE

Types of code

- Application code
- Application-specific infra code
- Tests
- Configuration
- Support scripts

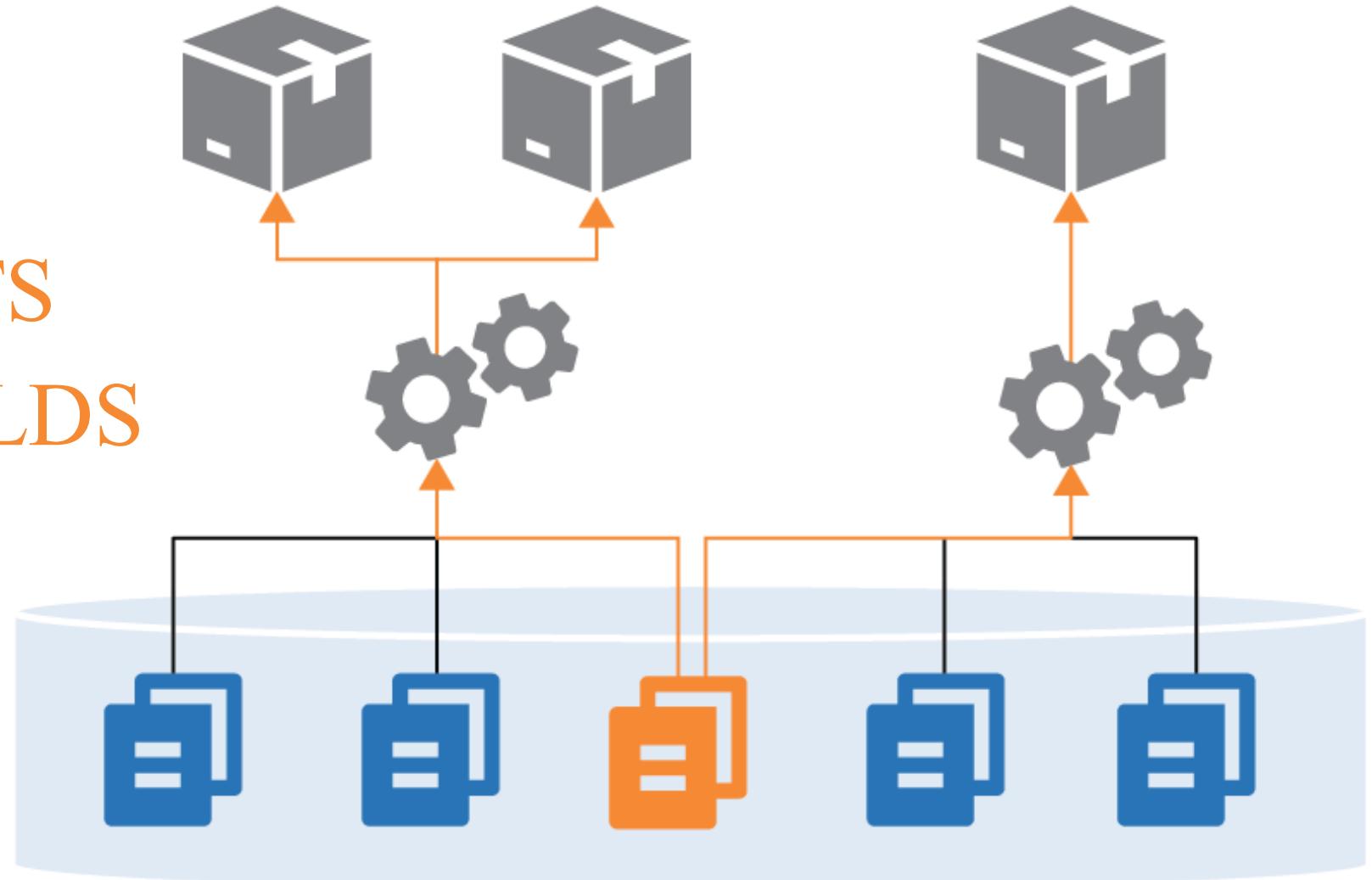




*Multiple Builds*

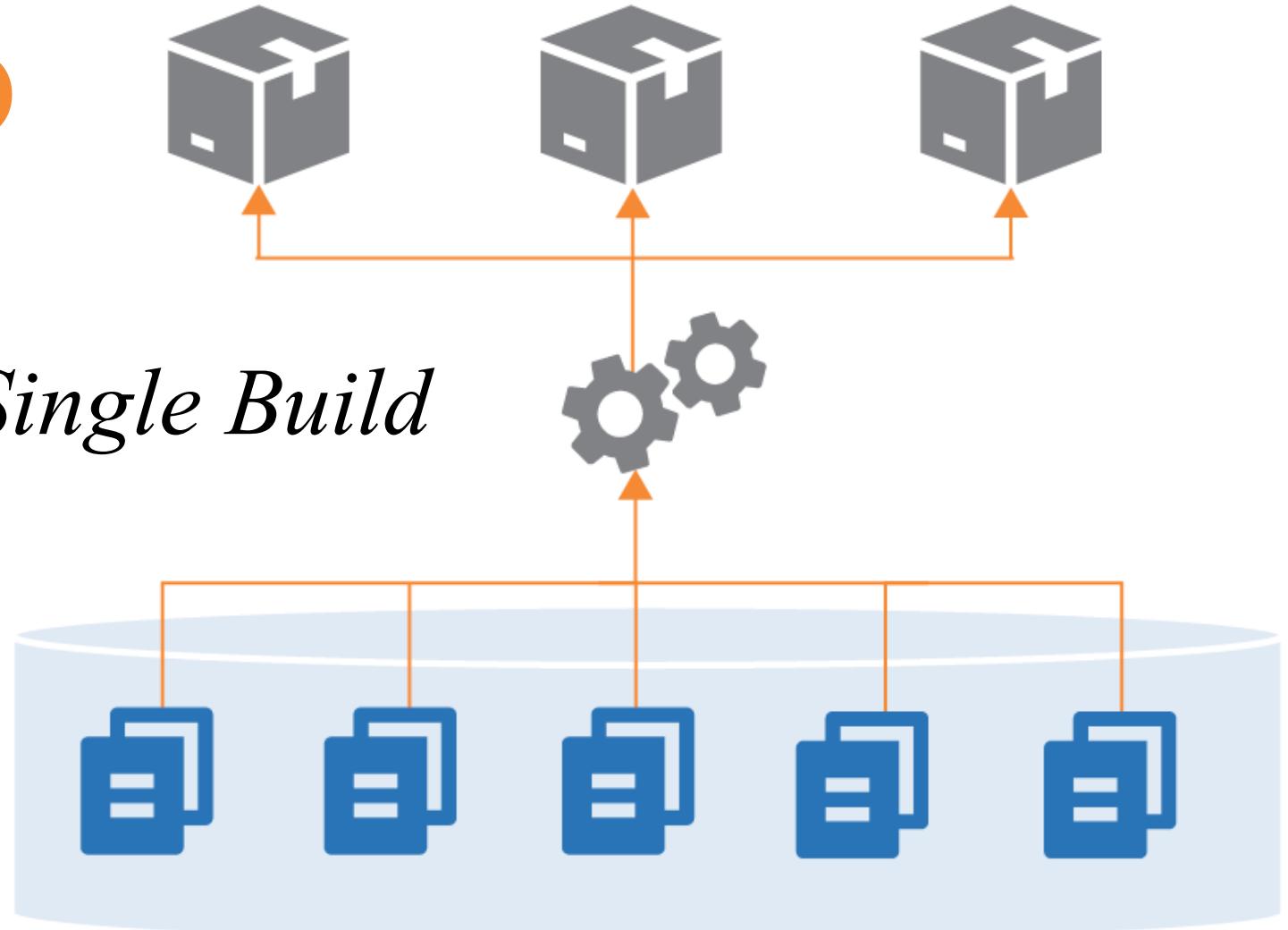
*Single Repository*

# SHARING COMPONENTS ACROSS BUILDS



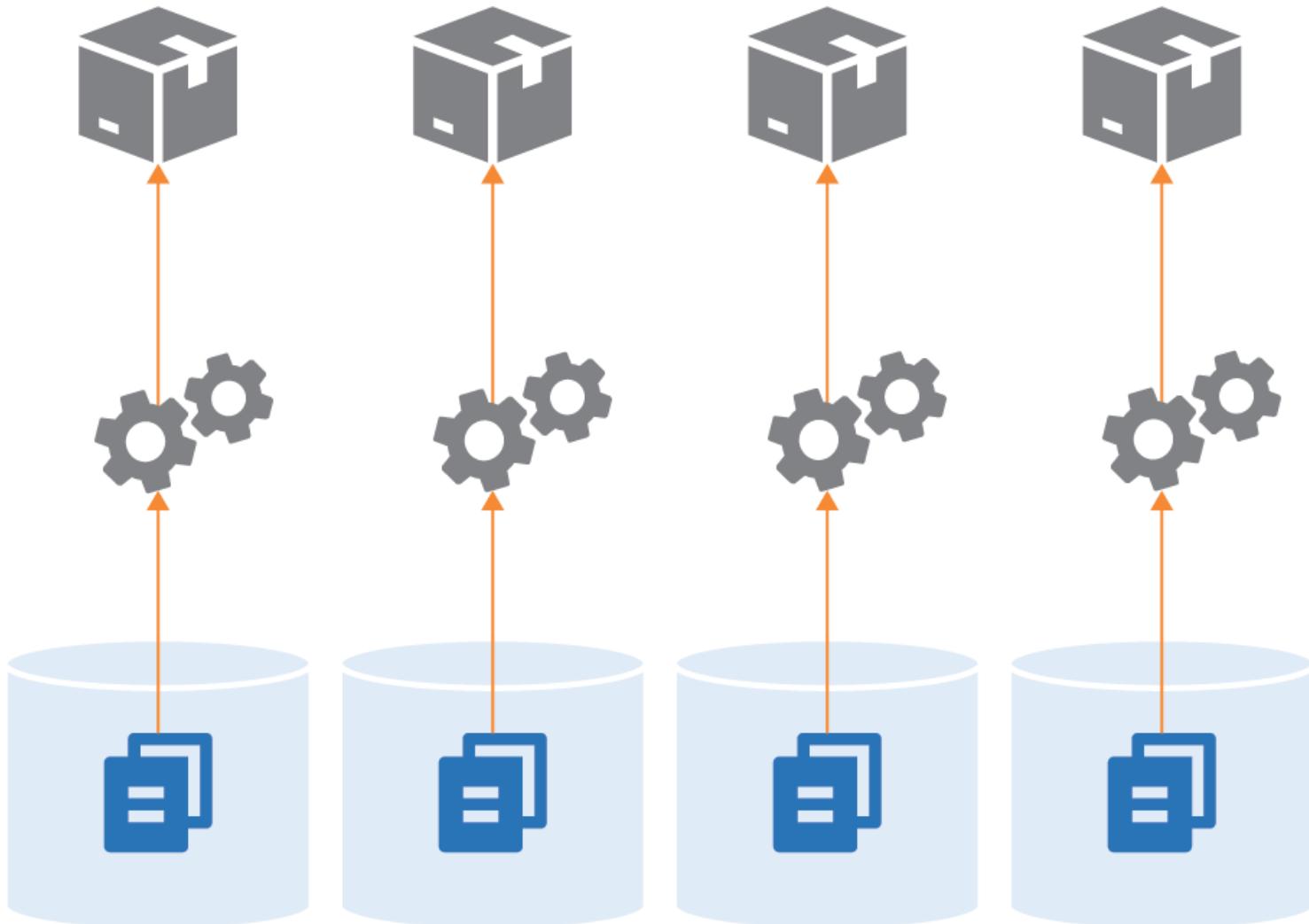
# MONO-REPO

*Single Repository*

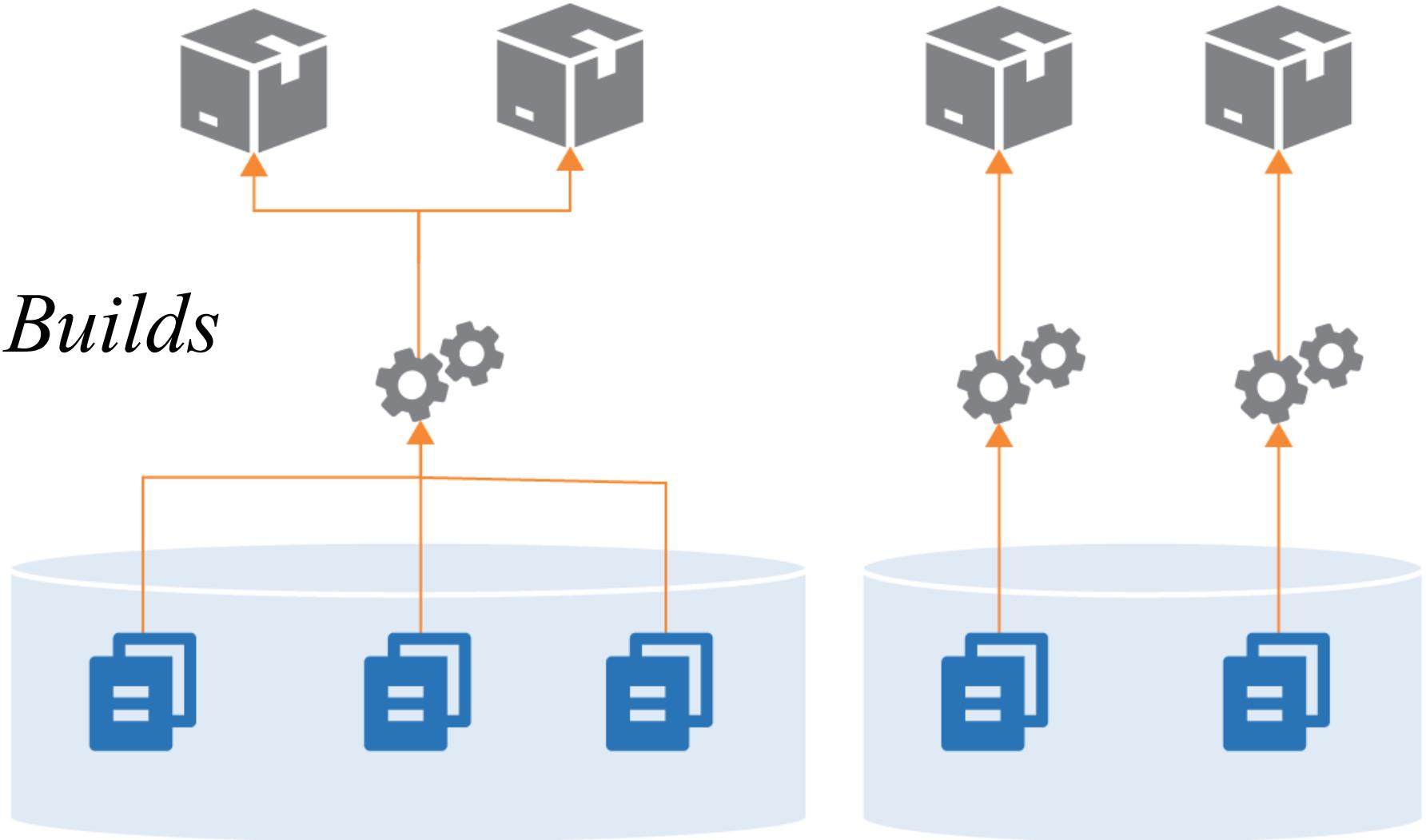


*Multiple Projects*

# MICRO-REPOS

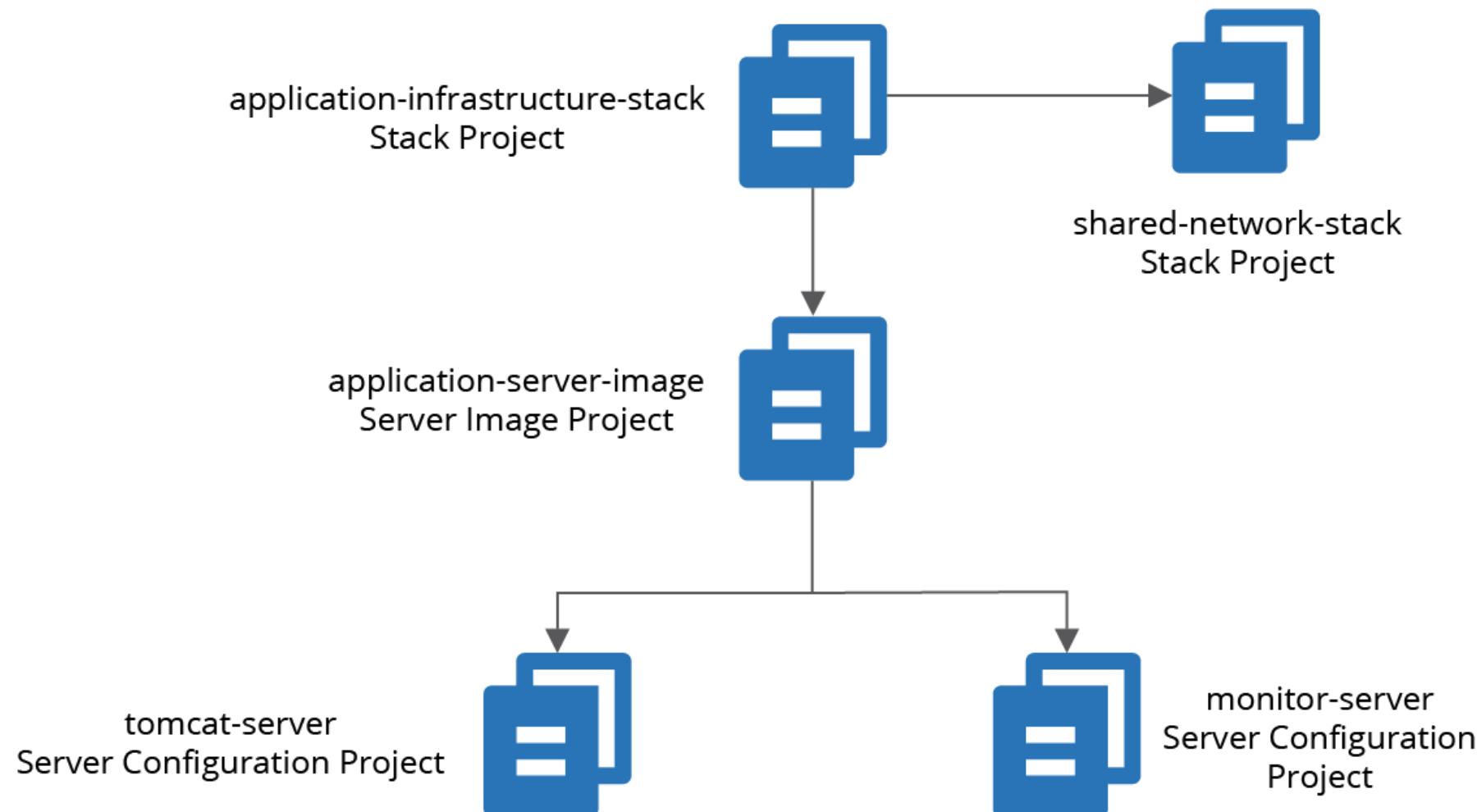


*Multiple Builds*

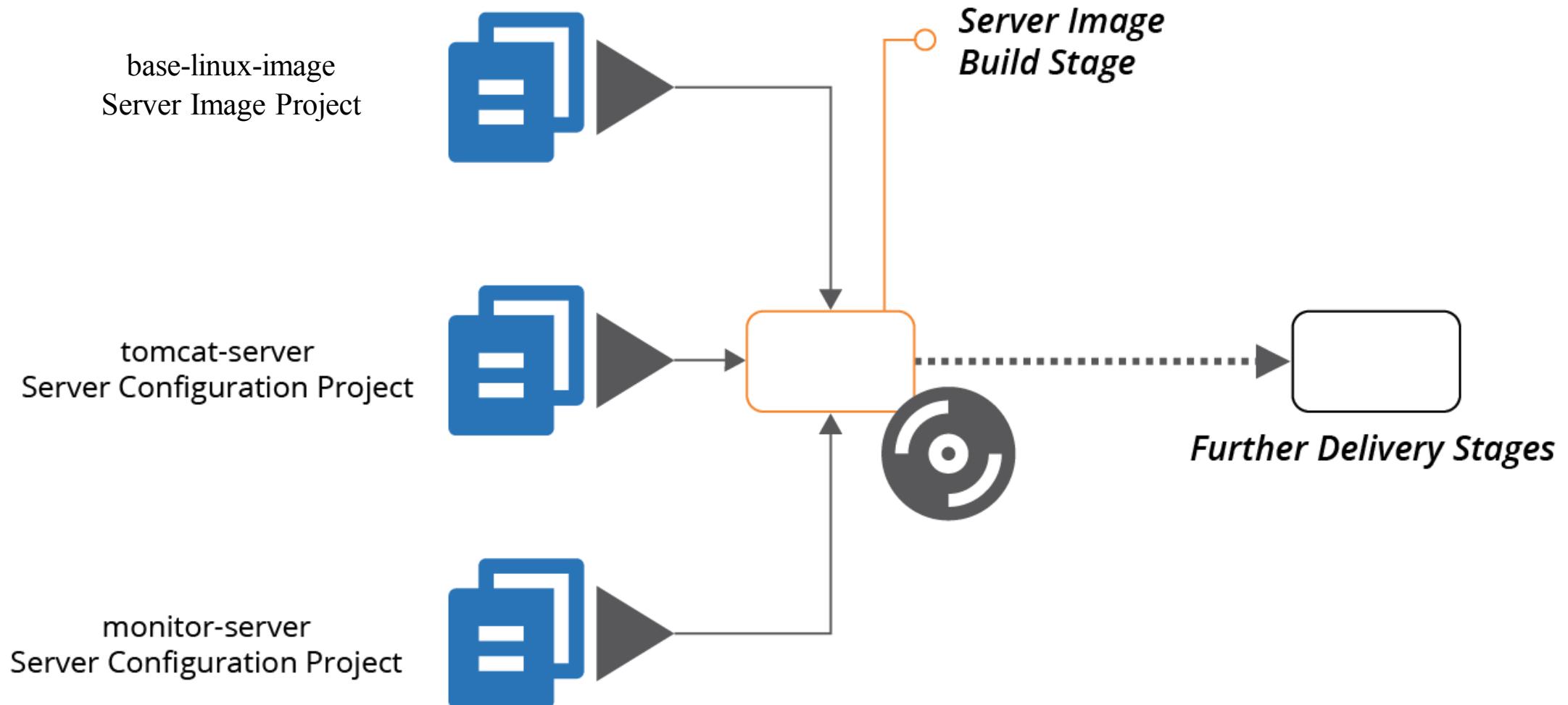


*Multiple Repositories*

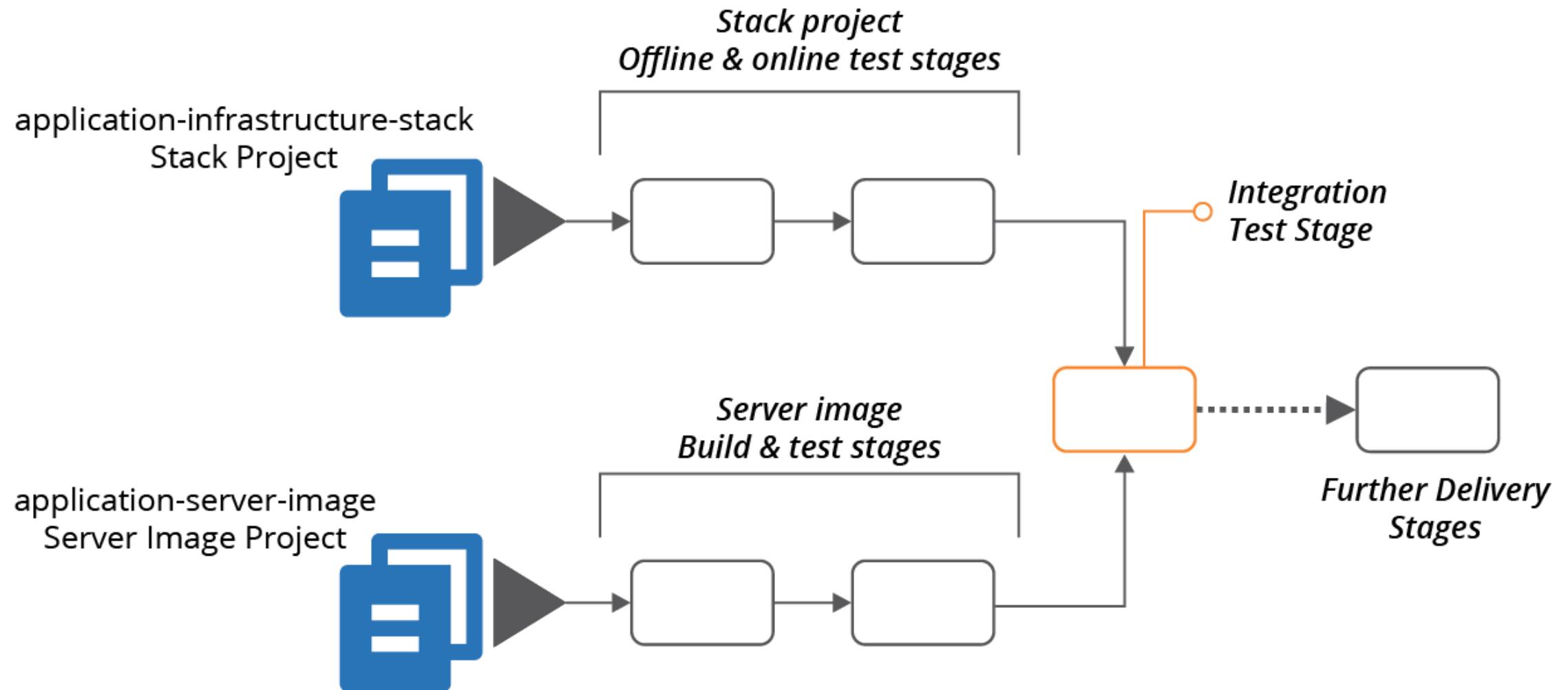
# INTEGRATING INFRASTRUCTURE PROJECTS



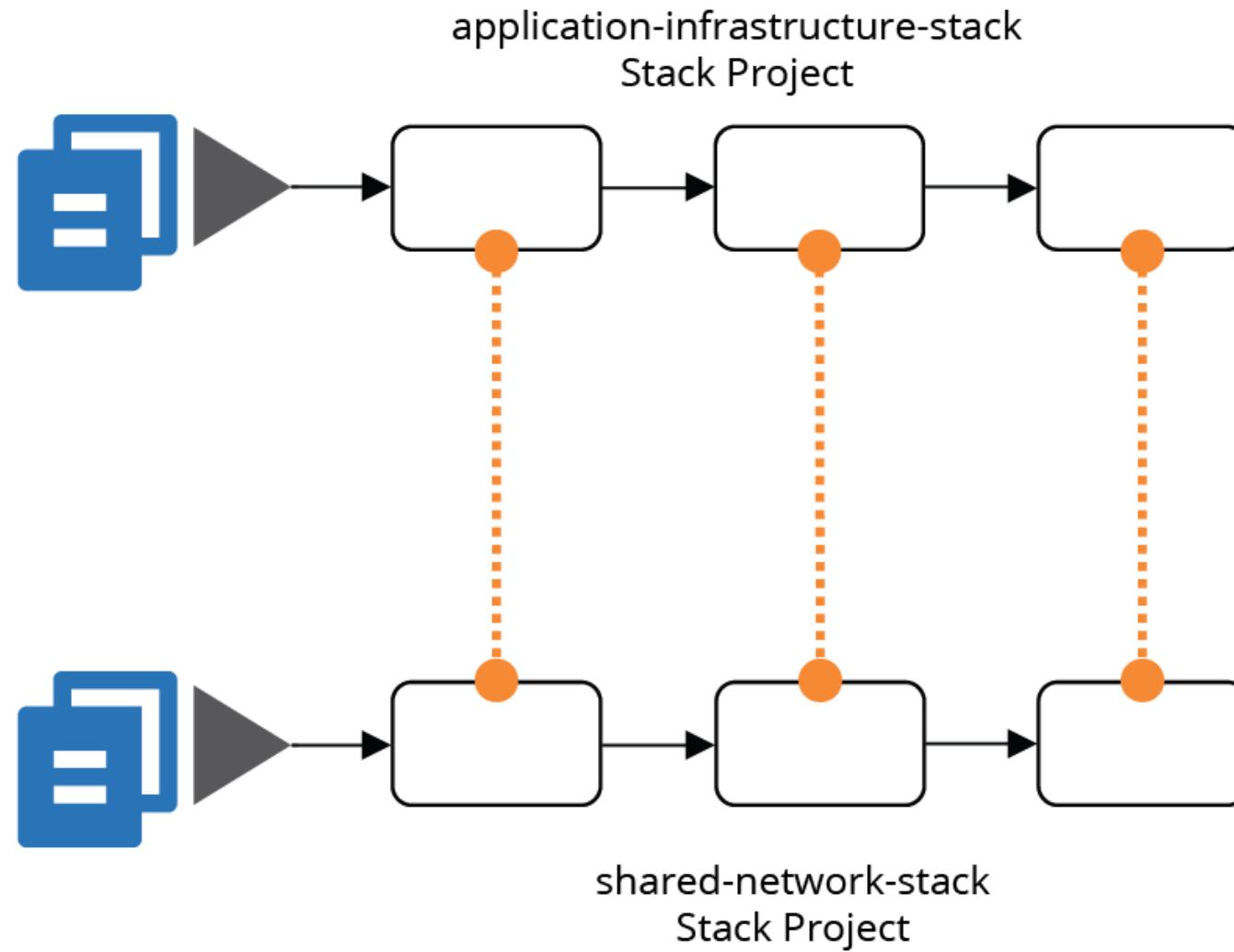
# INTEGRATING PROJECTS AT BUILD-TIME



# INTEGRATING PROJECTS DURING DELIVERY



# INTEGRATING PROJECTS WHEN APPLYING



The background of the slide features a wide-angle photograph of a rural landscape. In the foreground, there's a field of tall, dry grass. Beyond the field, several rolling hills are visible, covered in sparse vegetation. In the distance, a range of mountains rises against a sky filled with soft, white clouds. The overall color palette is dominated by blues and greens, giving it a calm, natural feel.

# DELIVERING INFRASTRUCTURE CODE

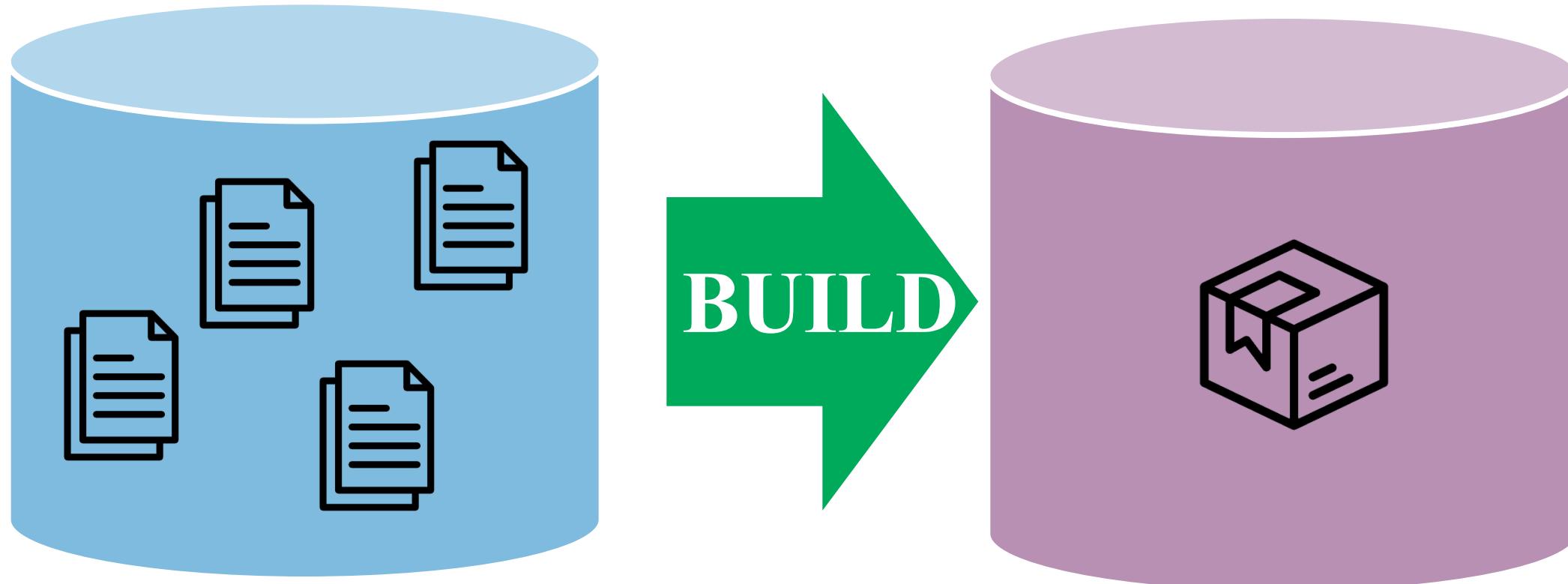
# GOAL

Ensure consistent and controlled delivery

- Promote code across stages
- Ensure consistency of code
- Repeatable, auditable, and reversible

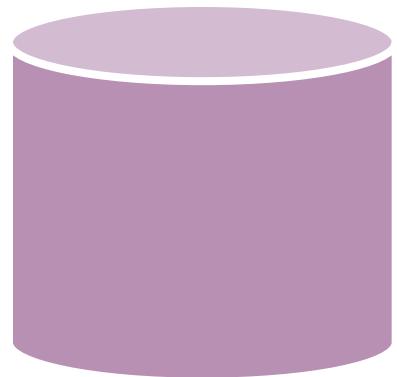
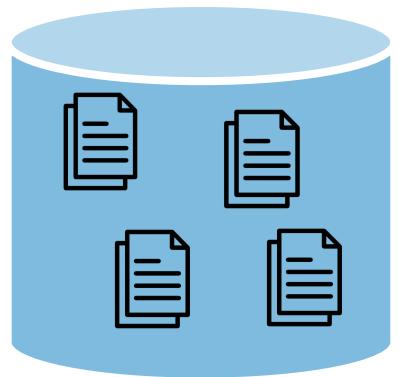


# ARTEFACTS FOR DELIVERY

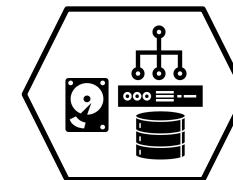
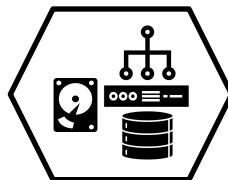
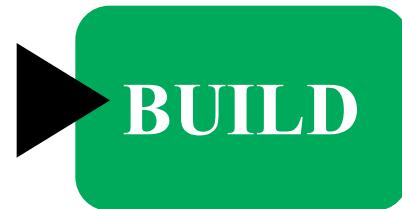


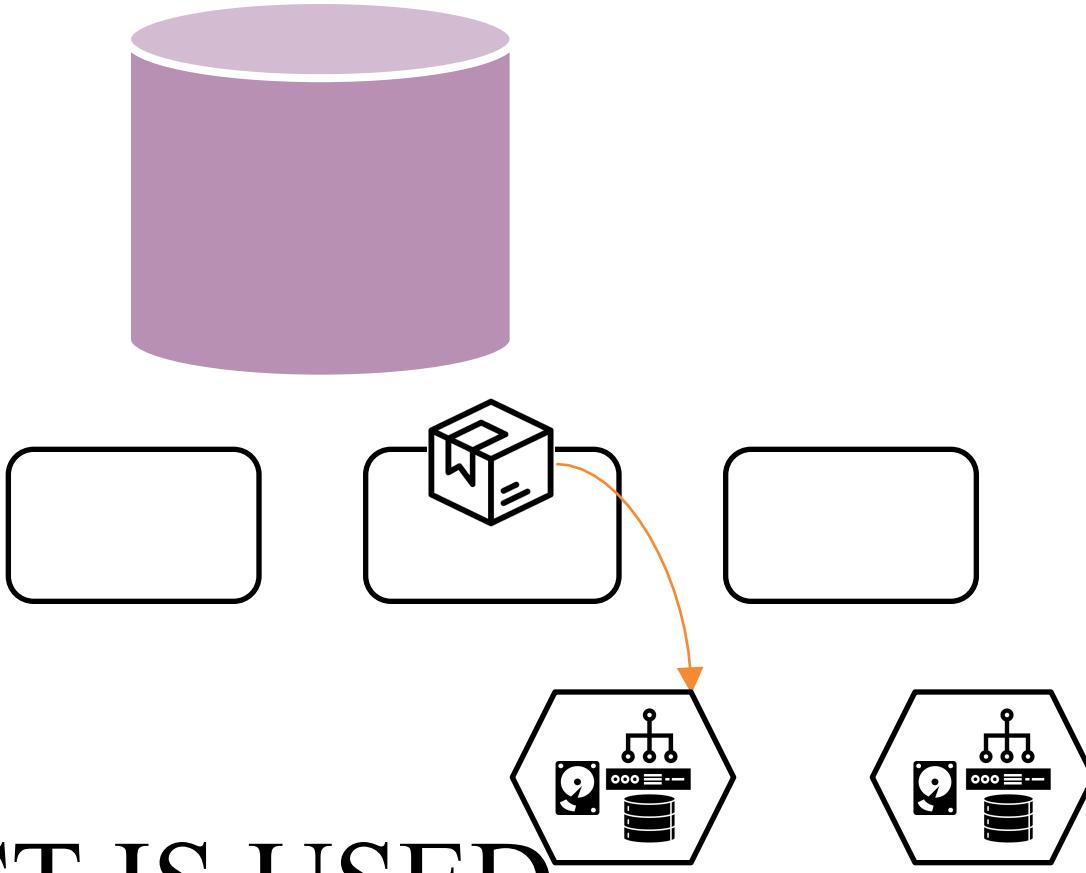
*SOURCE CODE REPOSITORY*

*ARTEFACT REPOSITORY*

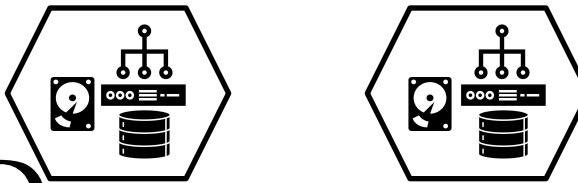
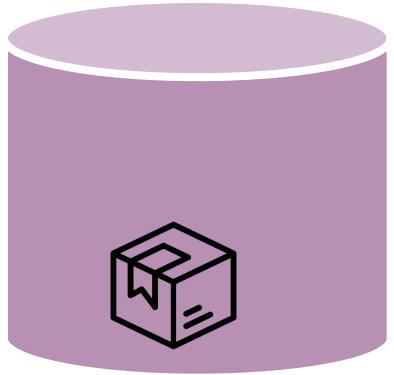


CODE CHANGE  
TRIGGERS PIPELINE  
BUILD STAGE

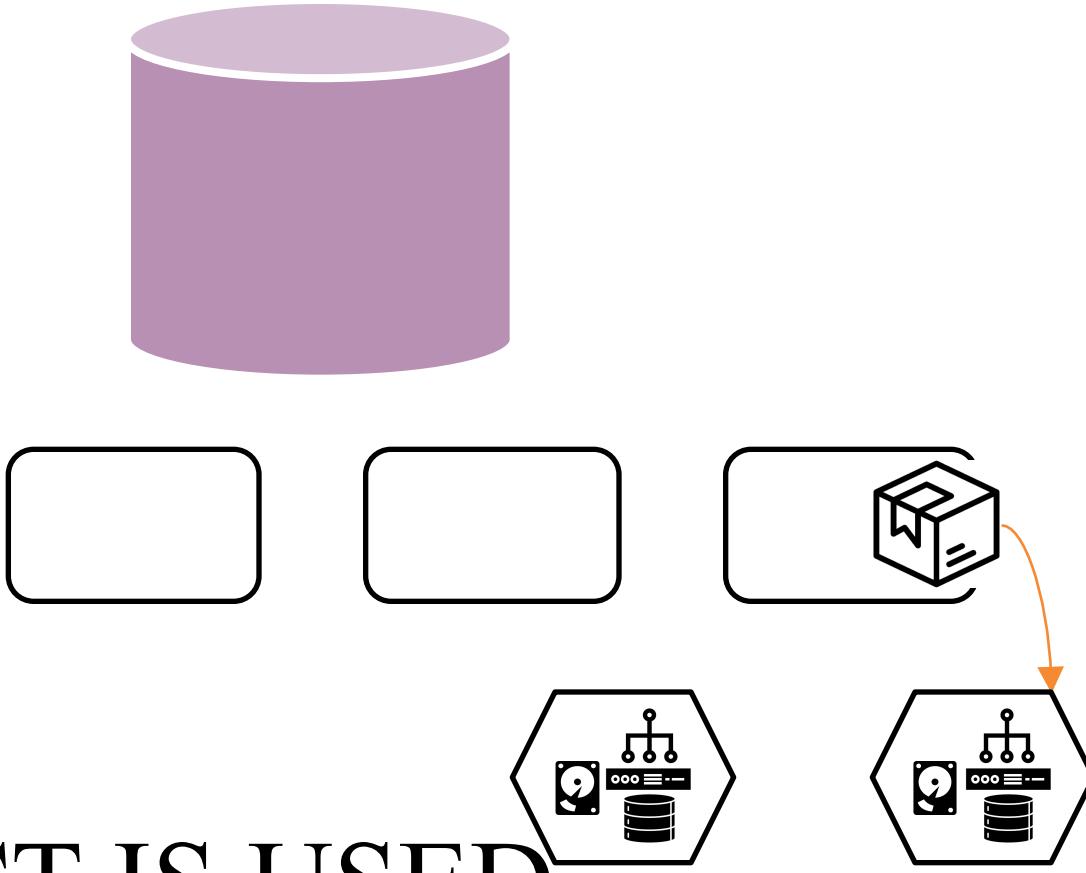




ARTEFACT IS USED  
TO APPLY CODE TO  
EACH ENVIRONMENT

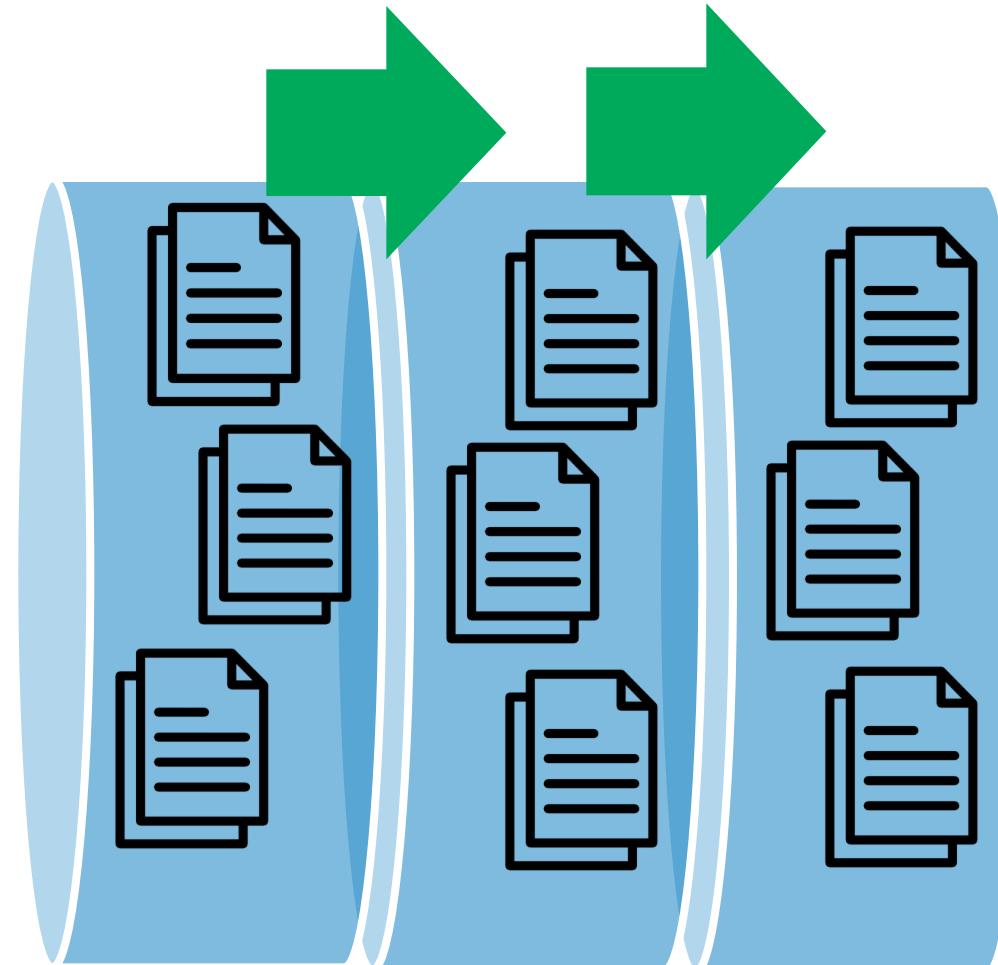


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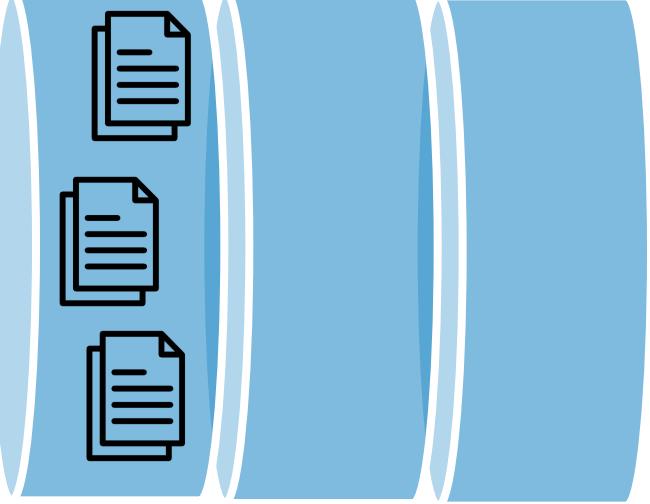


ARTEFACT IS USED  
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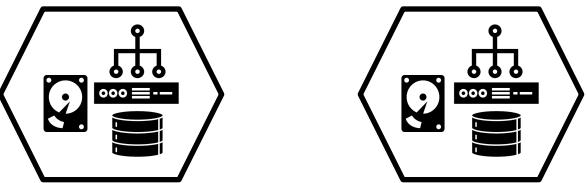
# SOURCE CODE BRANCHES FOR DELIVERY

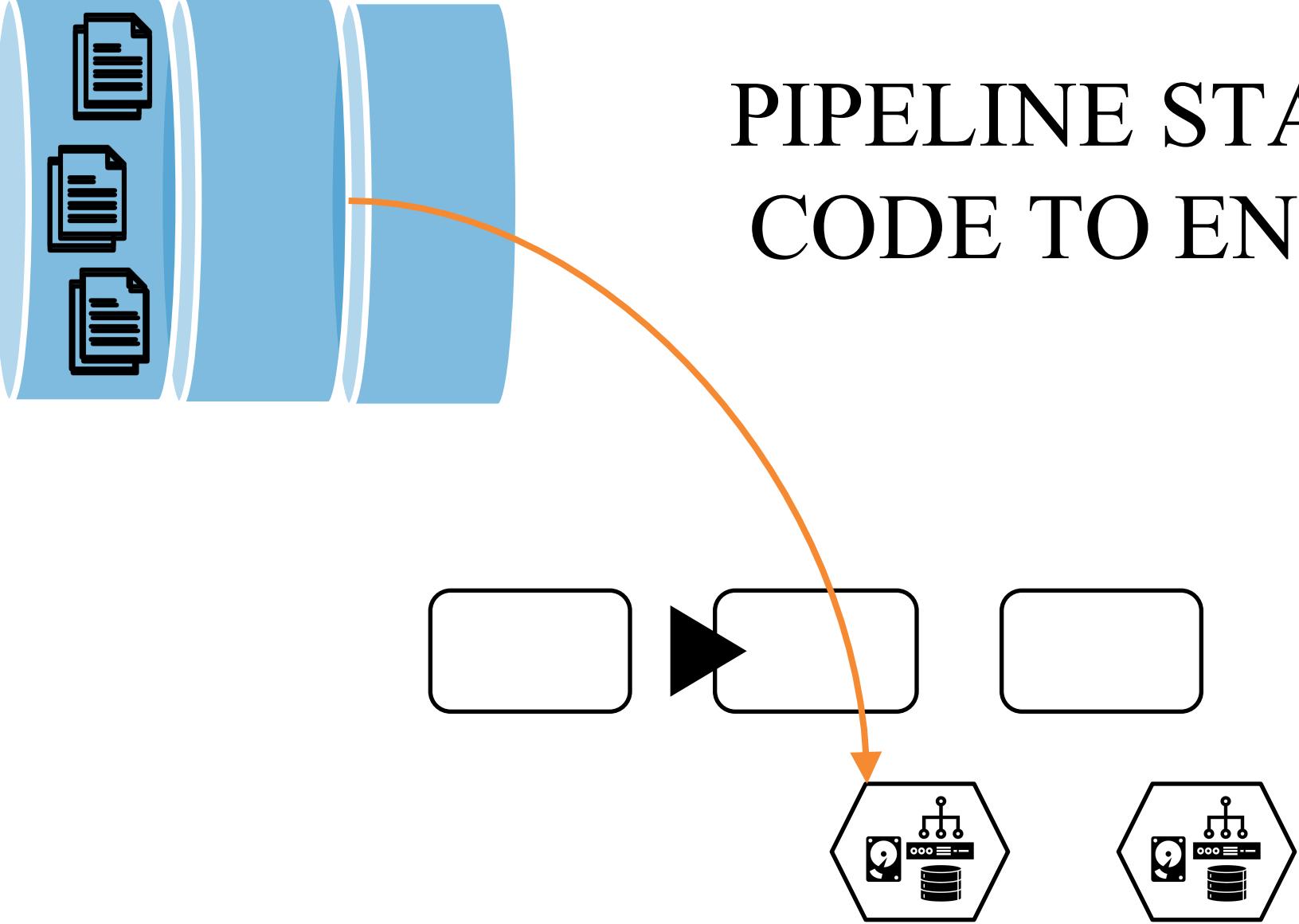


SOURCE CODE REPOSITORY

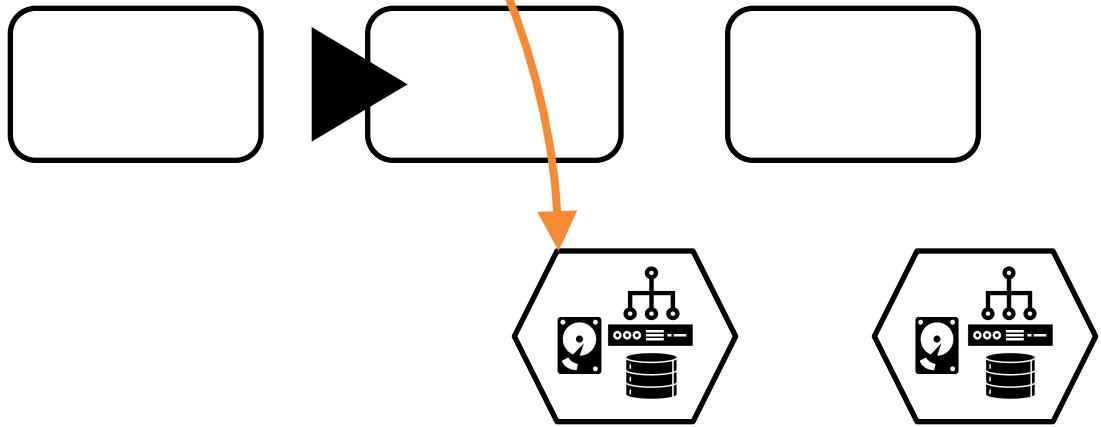


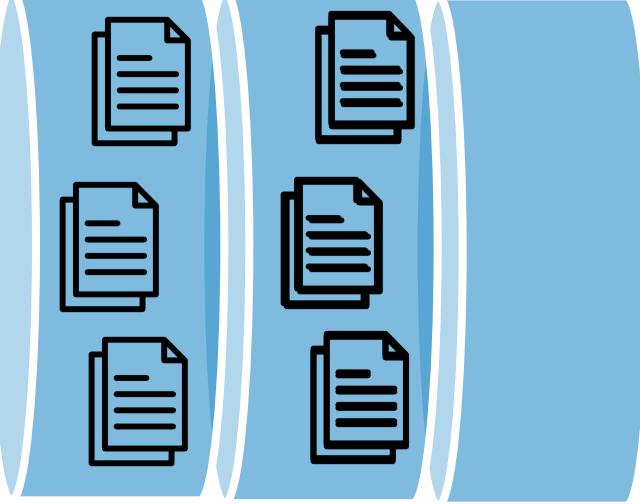
# PIPELINE STAGES MERGE CODE TO ENVIRONMENT BRANCHES



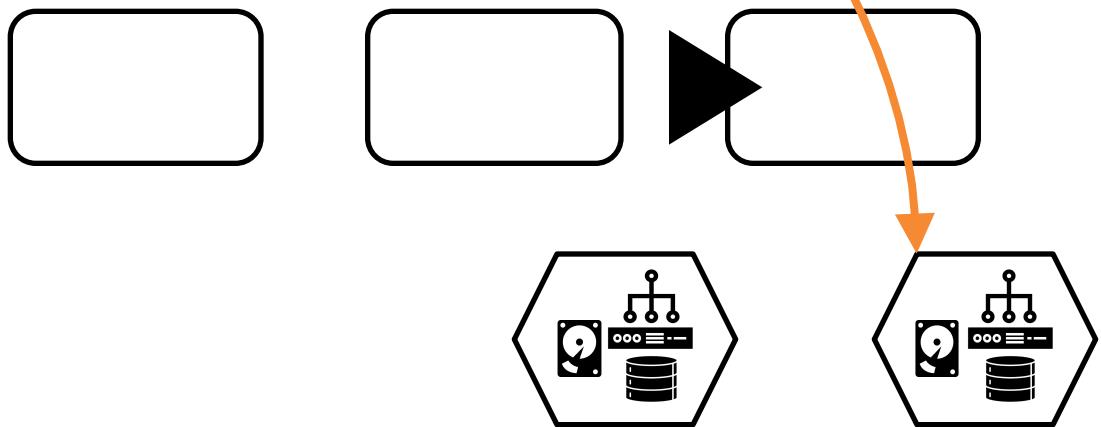


# PIPELINE STAGES MERGE CODE TO ENVIRONMENT BRANCHES





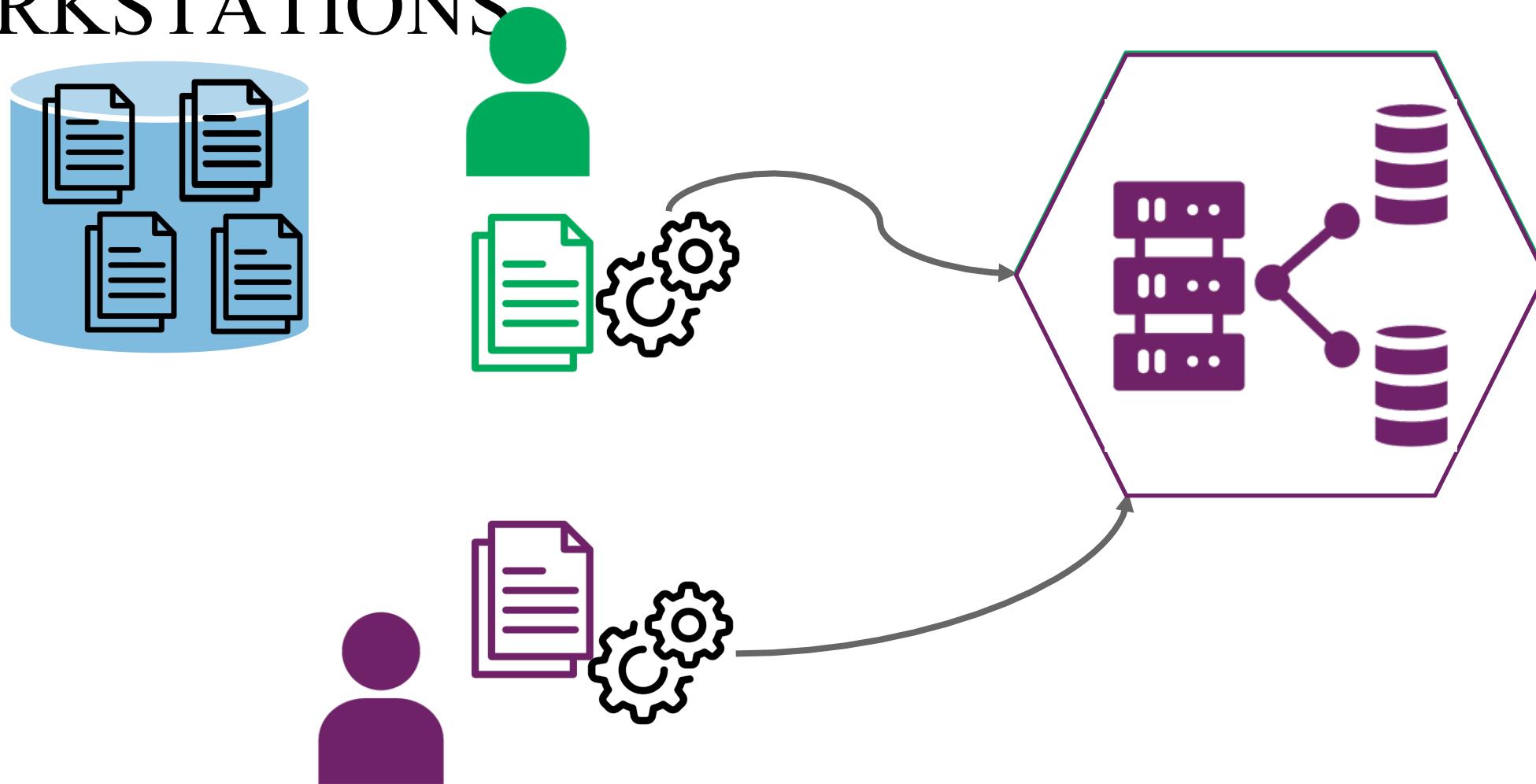
# PIPELINE STAGES MERGE CODE TO ENVIRONMENT BRANCHES



A wide-angle photograph of a rugged mountain range under a cloudy sky. In the foreground, there's a grassy, rocky hillside. The middle ground shows a valley with sparse vegetation and rocky outcrops. The background features several peaks, with one prominent peak on the right side.

# APPLYING CODE

# APPLYING CODE FROM LOCAL WORKSTATIONS



# APPLYING CODE FROM A CENTRAL SERVICE



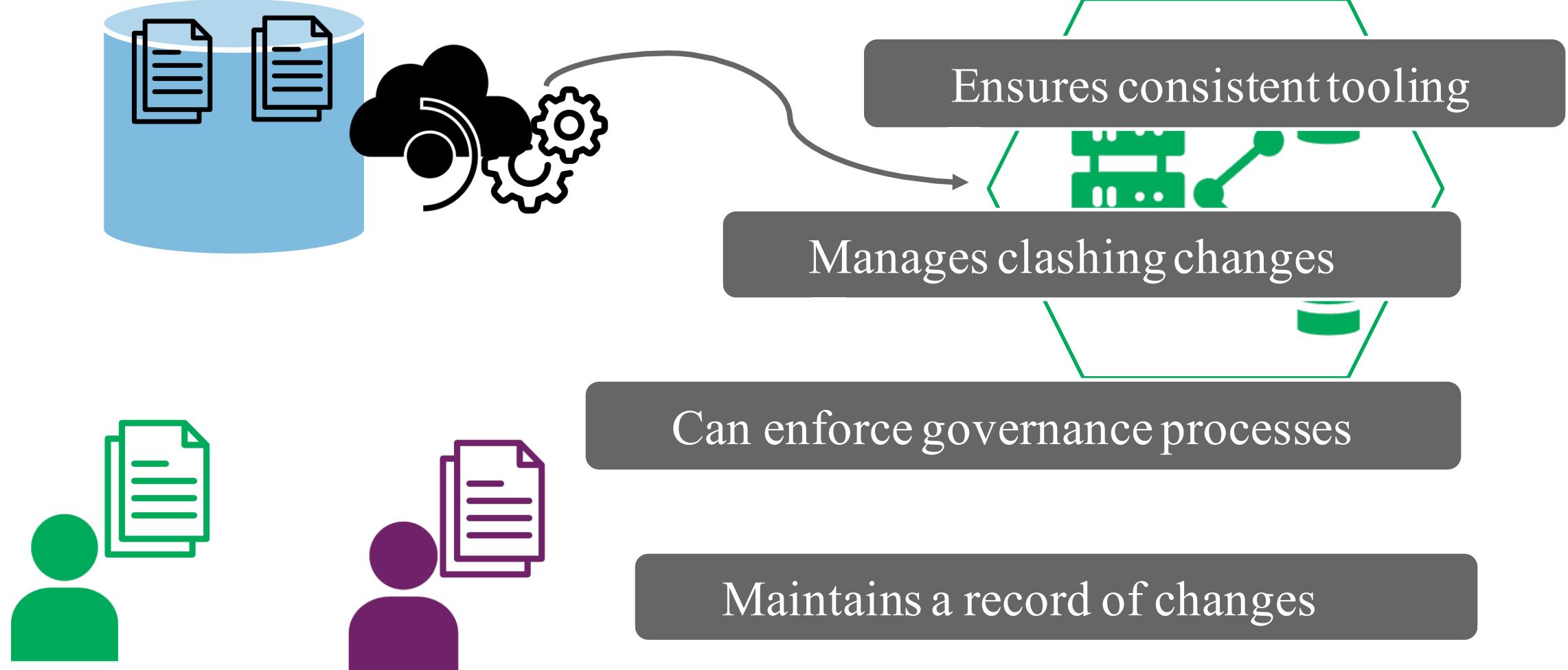
# APPLYING CODE FROM A CENTRAL SERVICE



# APPLYING CODE FROM A CENTRAL SERVICE



# APPLYING CODE FROM A CENTRAL SERVICE



# APPLYING CODE FROM A CENTRAL SERVICE



## SOLUTIONS:

- Build service
- Pipeline service
- Atlantis
- Terraform Cloud
- WeaveWorks



# GITOPS

## Practices for GitOps

- Branch per environment
- Code applied by a central service
- Continuously applied code



# WRAPPER SCRIPTS

Things these scripts do

- Assemble configuration
- Retrieve dependencies
- Package code
- Integrate projects
- Execute infrastructure tools
- Run tests



# QUESTIONS!

