

Work with Cloud Manager Environments

Agenda:

- Cloud Manager environments
- Adobe Experience Manager (AEM) Logging
- Continuous Integration (CI)/Continuous Deployment (CD) pipelines
- Developer Console
- Package Manager



Cloud manager environments

An AEM application deployment within a Program

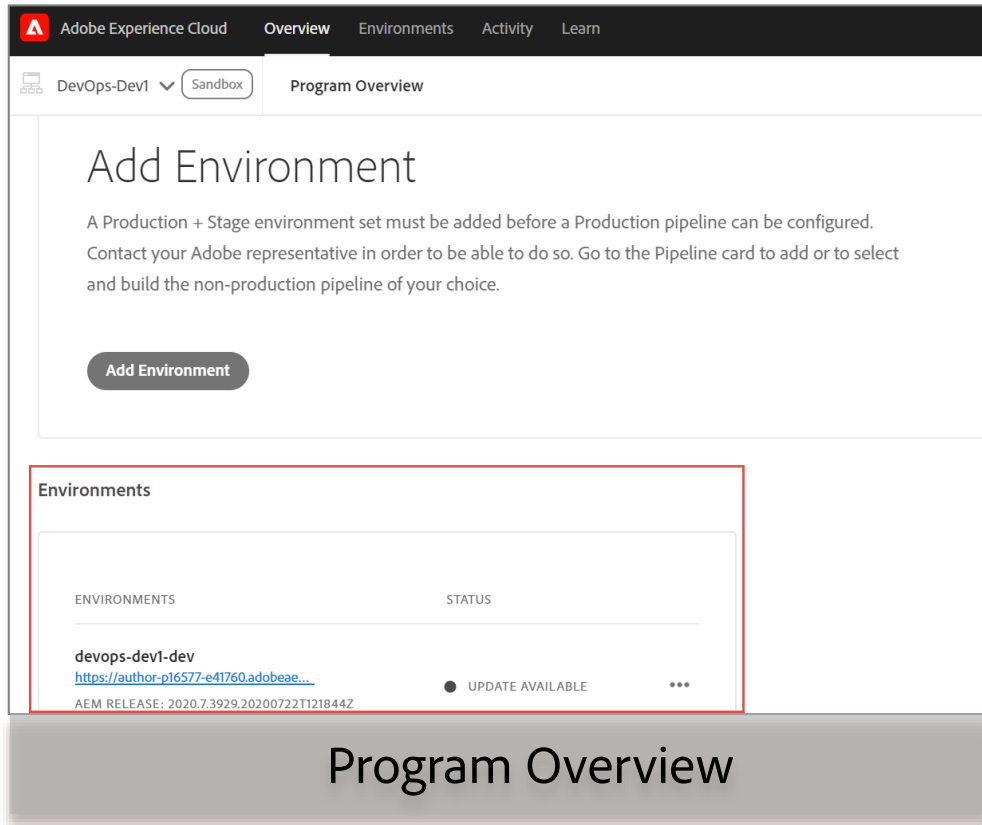
For AEM, an environment consists of :

- An author service (optionally with additional cold standby author service)
- Zero or more publish services

Accessed from **Program Overview** and **Environments** pages in Cloud Manager

Cloud manager environments

Accessed from **Program Overview** and **Environments** pages of Cloud Manager



The screenshot shows the 'Program Overview' page in Adobe Experience Cloud. The top navigation bar includes 'Overview', 'Environments', 'Activity', and 'Learn'. Below the navigation bar, there's a section titled 'Add Environment' with a description: 'A Production + Stage environment set must be added before a Production pipeline can be configured. Contact your Adobe representative in order to be able to do so. Go to the Pipeline card to add or to select and build the non-production pipeline of your choice.' Below this is an 'Add Environment' button. At the bottom, there's a table titled 'Environments' with columns 'ENVIRONMENTS' and 'STATUS'. The table contains one row for 'devops-dev1-dev' with a status of 'UPDATE AVAILABLE' and a link to the author URL. The page is labeled 'Program Overview' at the bottom.

Adobe Experience Cloud Overview Environments Activity Learn

DevOps-Dev1 Sandbox Program Overview

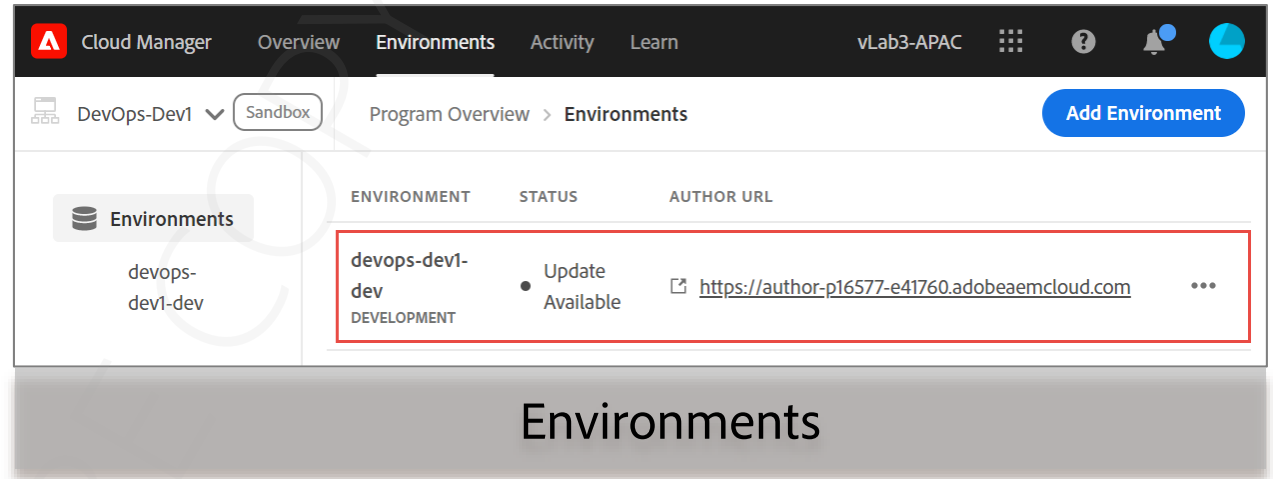
Add Environment

A Production + Stage environment set must be added before a Production pipeline can be configured. Contact your Adobe representative in order to be able to do so. Go to the Pipeline card to add or to select and build the non-production pipeline of your choice.

Add Environment

ENVIRONMENTS	STATUS
devops-dev1-dev https://author-p16577-e41760.adobeae... AEM RELEASE: 2020.7.3929.20200722T121844Z	UPDATE AVAILABLE

Program Overview



The screenshot shows the 'Environments' page in Adobe Cloud Manager. The top navigation bar includes 'Overview', 'Environments', 'Activity', and 'Learn'. Below the navigation bar, there's a section titled 'Environments' with a table. The table has columns 'ENVIRONMENT', 'STATUS', and 'AUTHOR URL'. The table contains one row for 'devops-dev1-dev' with a status of 'Update Available' and a link to the author URL. The page is labeled 'Environments' at the bottom.

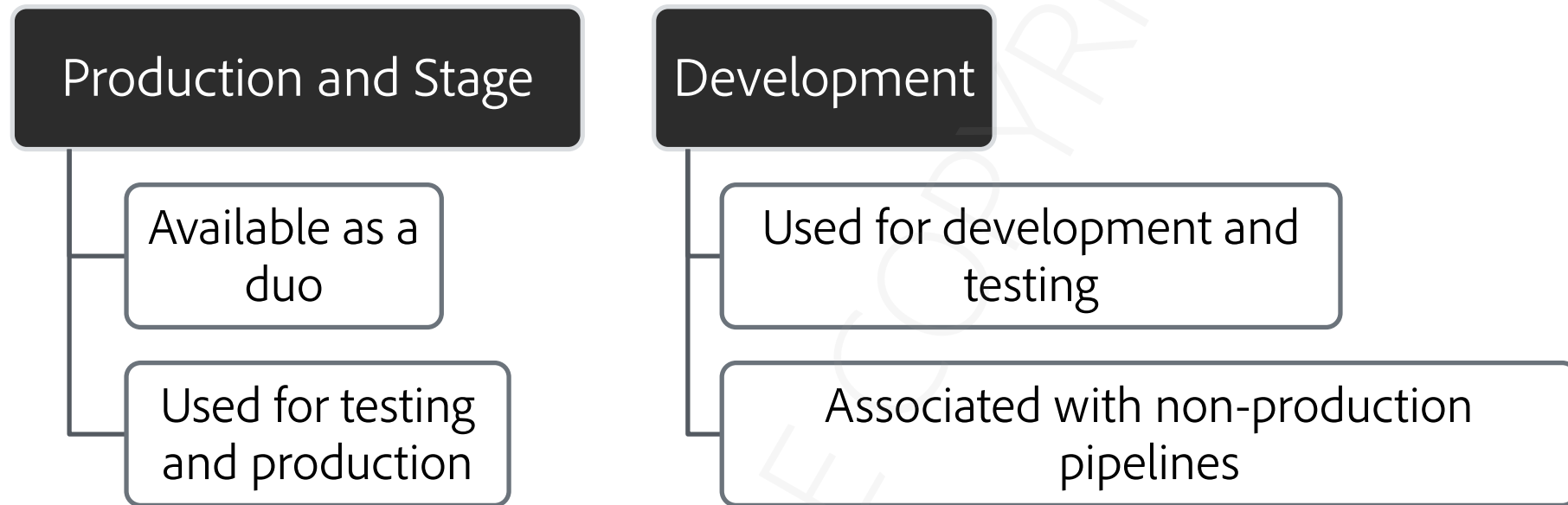
Cloud Manager Overview Environments Activity Learn vLab3-APAC

DevOps-Dev1 Sandbox Program Overview > Environments Add Environment

ENVIRONMENT	STATUS	AUTHOR URL
devops-dev1-dev DEVELOPMENT	Update Available	https://author-p16577-e41760.adobeaecloud.com

Environments

Environment types



Actions on environments

Action	Description
Add Environment	Adds a new environment to the program
Download Logs	Access a list of available log files for the environment
Update	Updates the pipeline associated with the environment to the latest release and execute the pipeline
Developer Console	Generates system status, resolve package dependencies, and is used for debugging
Delete	Deletes the selected environment

Capabilities of environments

Capability	Local	AEM as a Cloud Service					
	AEM SDK Quickstart	Dev author	Dev publish	Stage author	Stage publish	Prod author	Prod publish
Local admin user	Yes	No	No	No	No	No	No
CRXDE Lite	Yes	Yes - limited	NA	No	No	No	No
Publishing Author > Publish	<ul style="list-style-type: none"> Classic UI Replication Agents Manual 	<ul style="list-style-type: none"> Distribution Agents auto-configured 	No	<ul style="list-style-type: none"> Distribution Agents auto-configured 	No	<ul style="list-style-type: none"> Distribution Agents auto-configured 	No
Package Manager UI	Yes	Yes – mutable content only	NA	Yes – mutable content only	NA	Yes – mutable content only	
Asset Processing	DAM Update Workflow	Asset Compute	None	Asset Compute	None	Asset Compute	None

Capabilities of environments

Capability	Local	AEM as a Cloud Service					
	AEM SDK Quickstart	Dev author	Dev publish	Stage author	Stage publish	Prod author	Prod publish
i18n dictionary translation UI	Yes (author)	No	N/A	No	N/A	No	N/A
Page Editor Developer Mode	Yes (author)	No	N/A	No	N/A	No	N/A
Create custom rollout configs	Yes (author)	No	N/A	No	N/A	No	N/A
SSL Configuration	Manual through UI	Auto-configured	Auto-configured	Auto-configured	Auto-configured	Auto-configured	Auto-configured

AEM logging

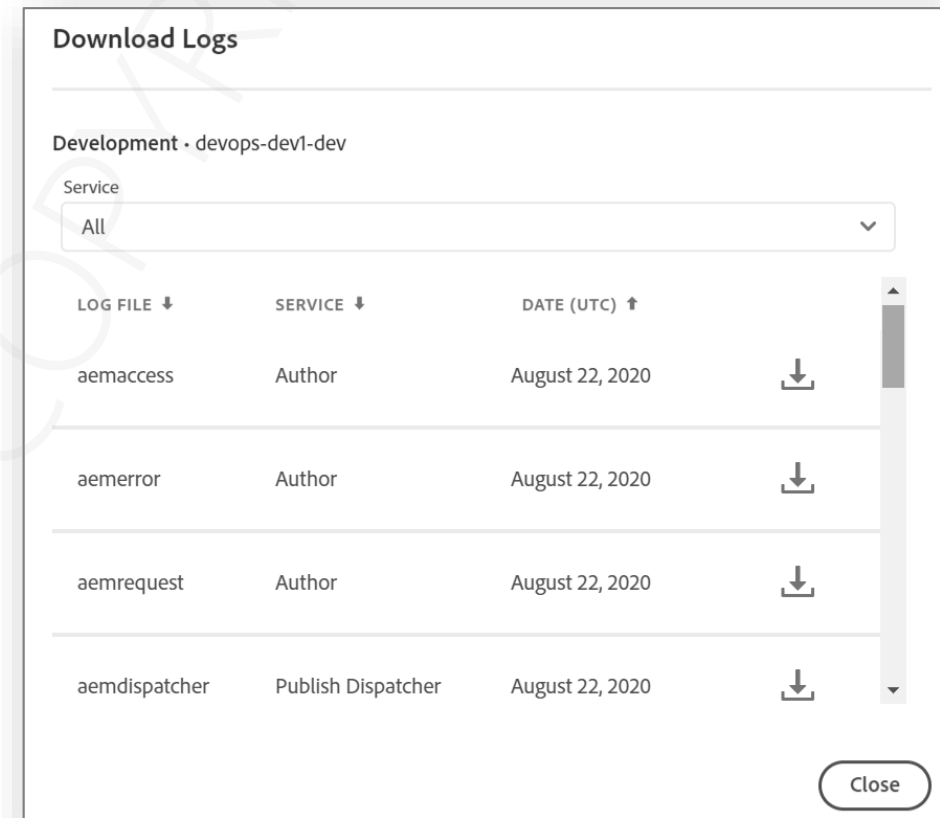
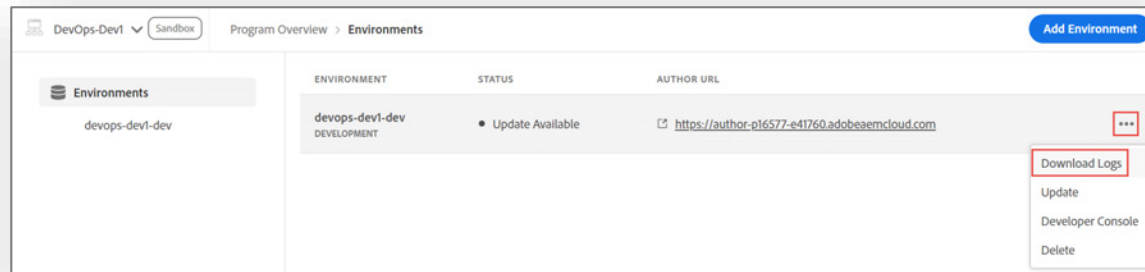
Critical function to debug and understand code execution

Categorized into two logical sets :

- AEM logging, which performs logging at the AEM application level
- Apache HTTPD Web Server/Dispatcher logging, which performs logging of the web server and Dispatcher on the Publish tier

Access logs

List of available log files for the selected environment from the **Environment** page

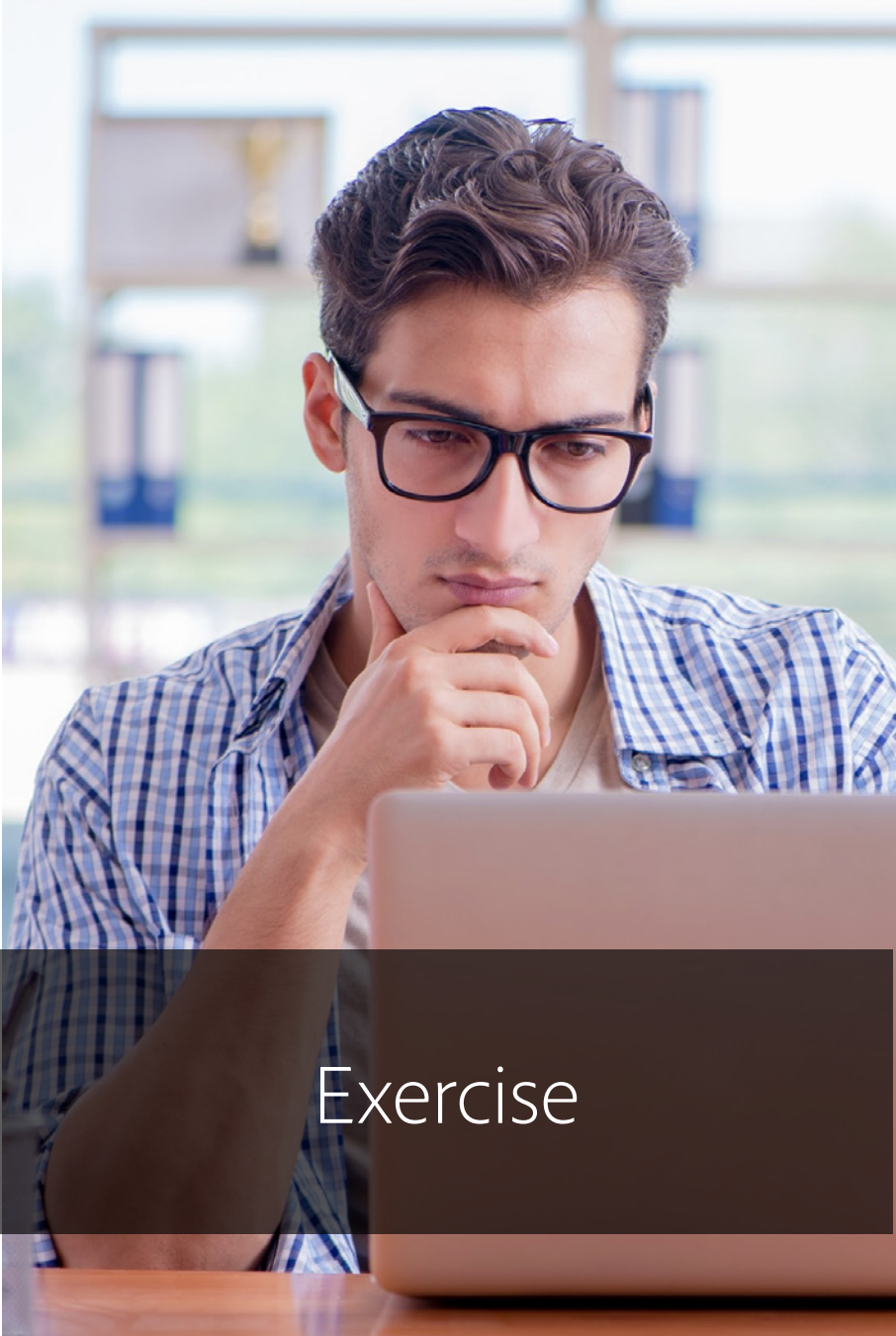


Log types

Source	Cloud log	Local log	Definition
AEM	aemerror.log	error.log	Error log for AEM
AEM	aemaccess.log	access.log	HTTP access request to the AEM service
AEM	aemrequest.log	request.log	HTTP request or response of AEM service
Apache log	aemdispatcher.log	dispatcher.log	Dispatcher log for requests, caching, and filtering
Apache log	httpdaccess.log	access.log	HTTP requests to the Apache server
Apache log	httpderror.log	error.log	Error log for Apache

Log format

Date and time	AEM as a Cloud Service node ID	Log level	Thread	Java class	Log message
29.04.2020 21:50:13.398	[cm-p1234-e5678-aem-author-59555cb5b8-q7l9s]	*DEBUG*	qtp213057203 6-1472	com.example. approval.work flow.impl.Cust omApprovalW orkflow	No specified approver, defaulting to [Creative Approvers user group]



Exercise

Exercise 1: Download logs

Scenario: Your organization is using AEM as a Cloud Service for their marketing website. As an administrator, you will log in to Cloud Manager and observe different environments associated with the program. You will observe the server logs available on the author service and download today's `aemerror.log` to your machine.

CI/CD pipelines

Enables implementation teams to quickly test and deliver new or updated code

Automates unit and performance testing processes to:

Increase deployment efficiency

Identify critical issues that are expensive to fix after deployment

Helps implementation teams to access a comprehensive code performance report:

Gain visibility into potential impact on Key Performance Indicators (KPIs)

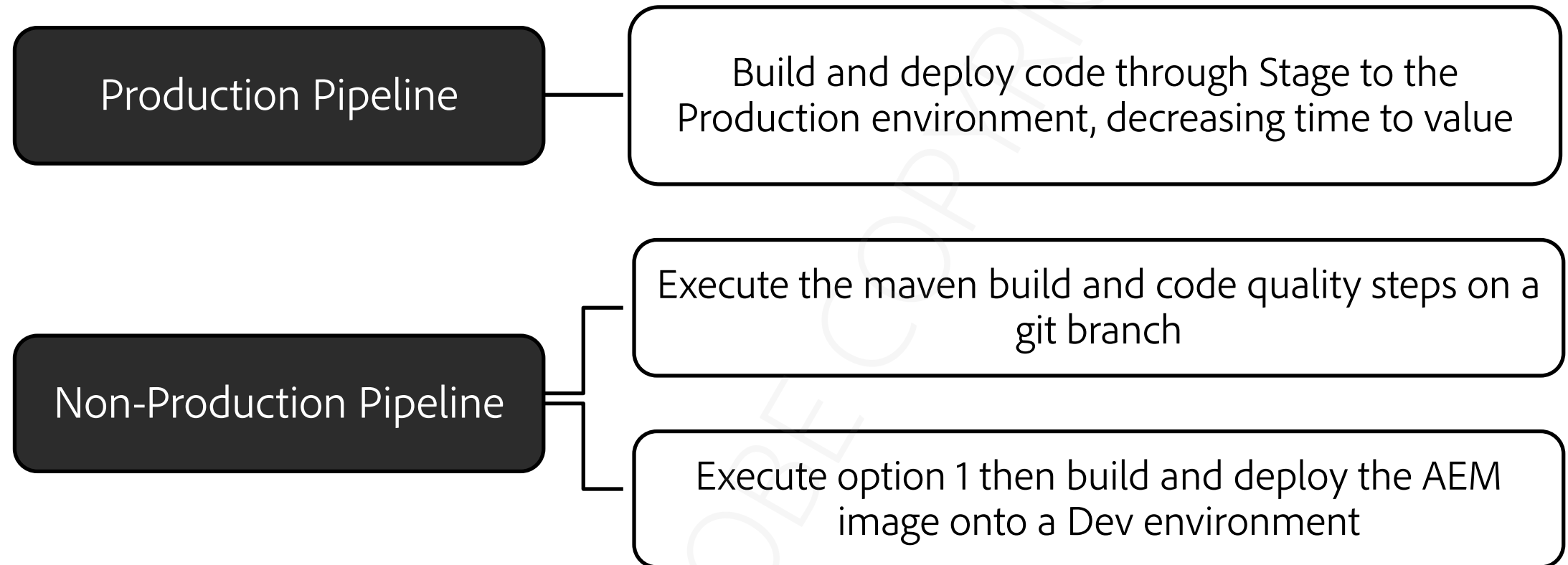
Critical security validations if the code is deployed to production

Are of two types:

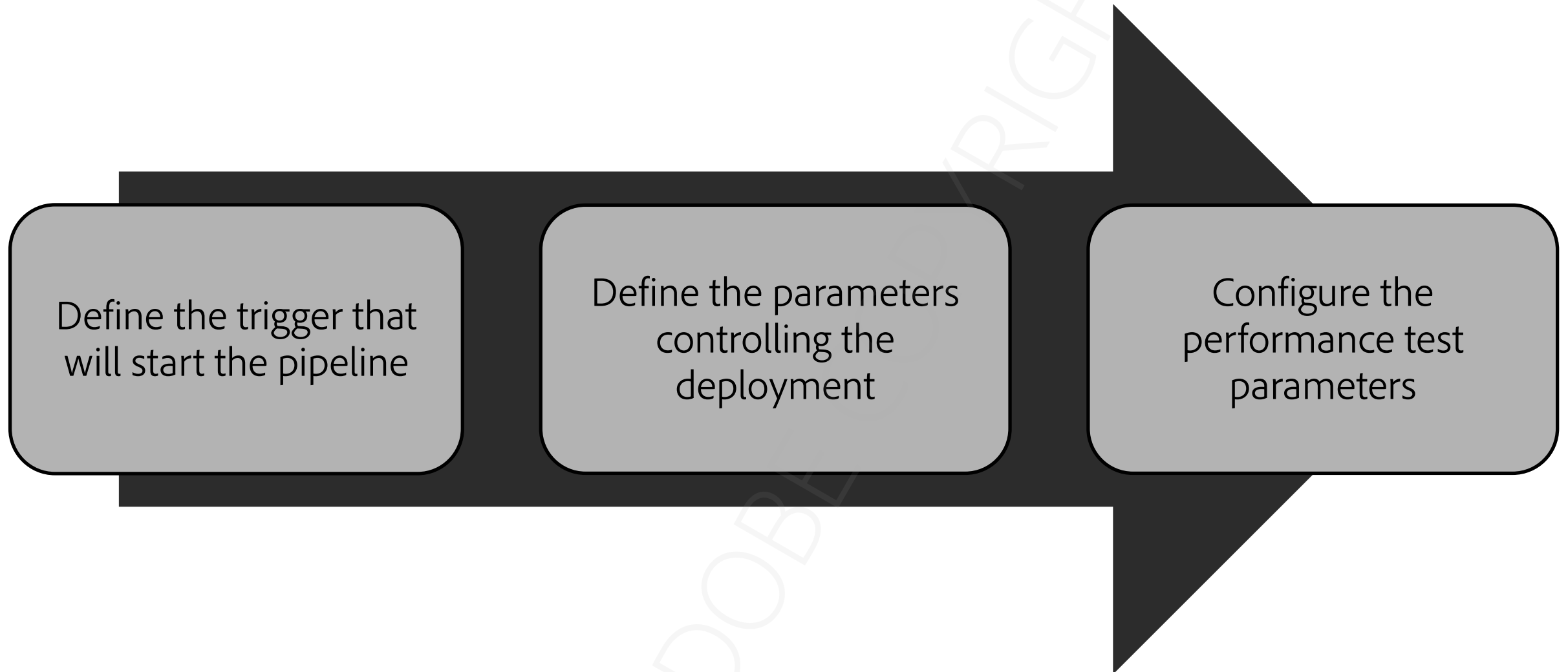
Production Pipeline

Non-Production Pipeline

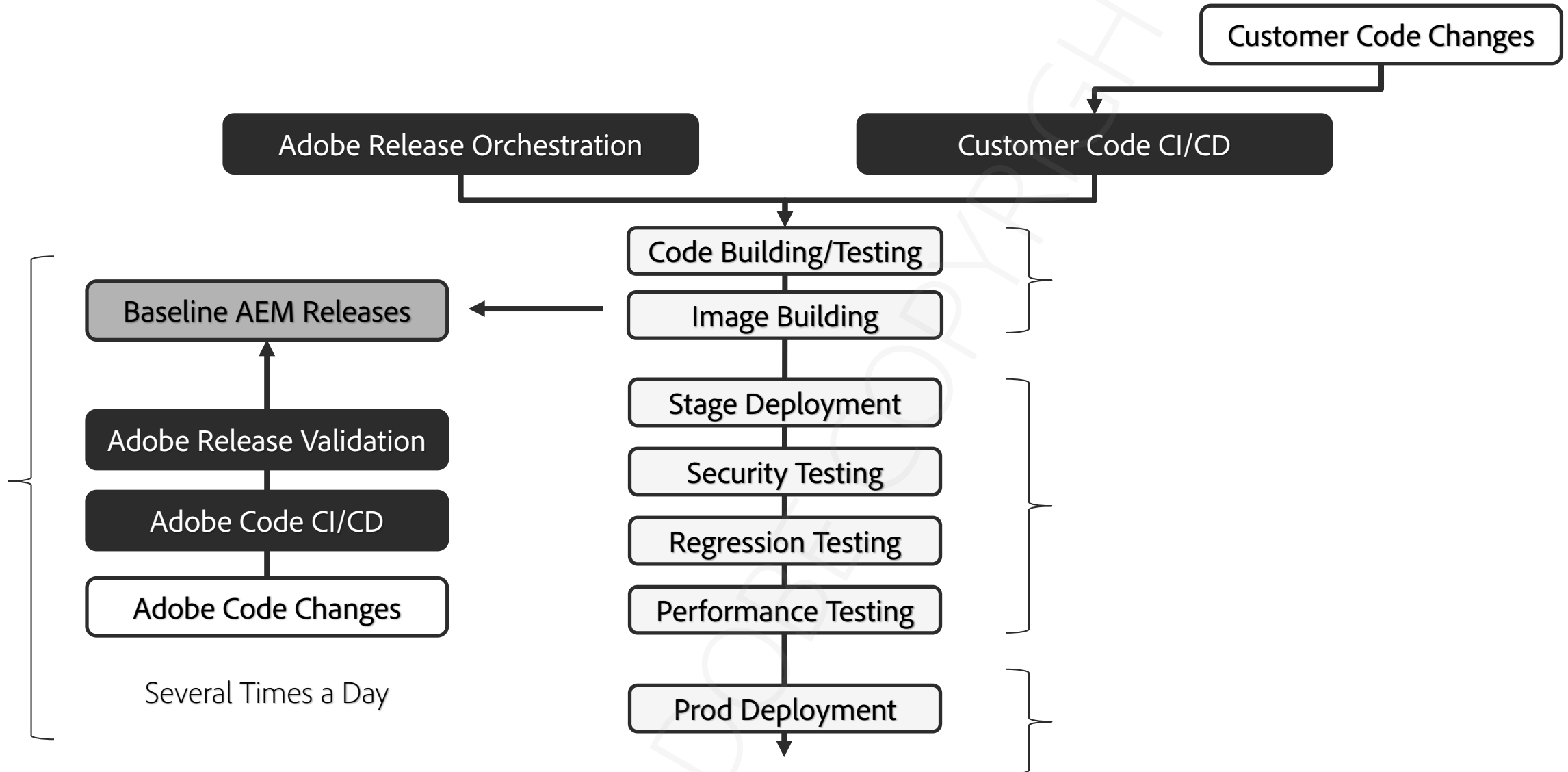
CI/CD pipelines



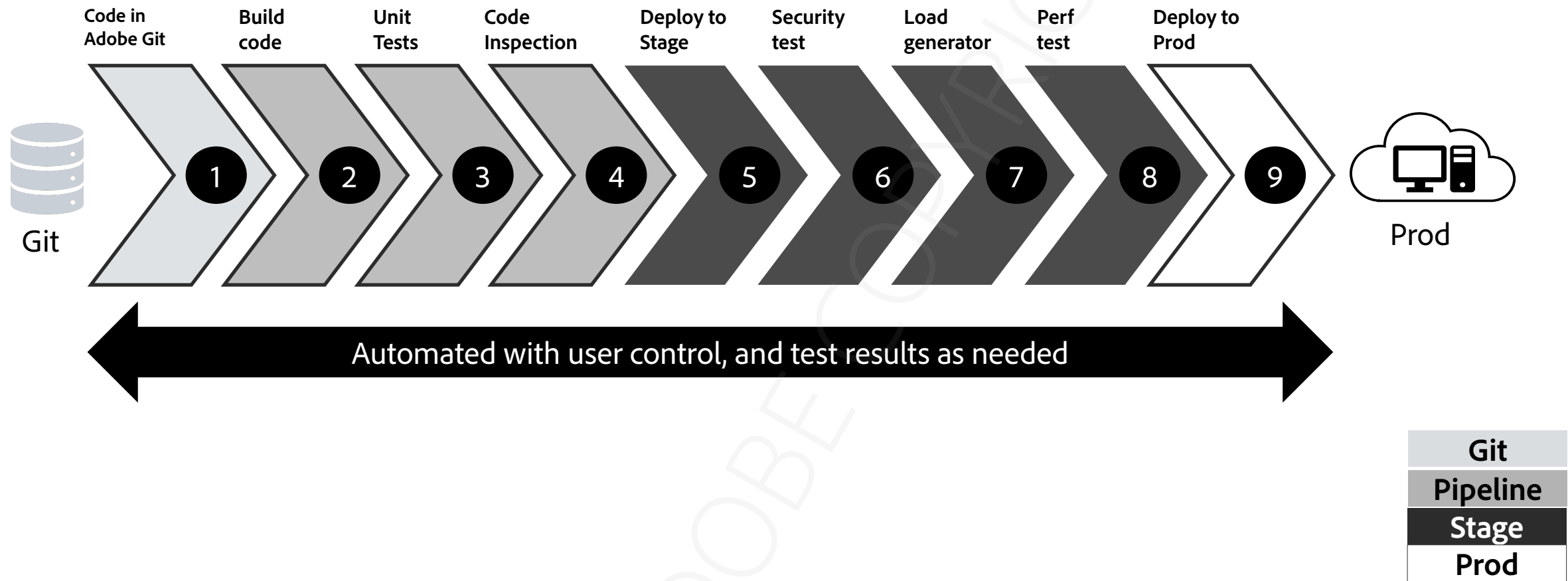
Configure CI/CD pipelines



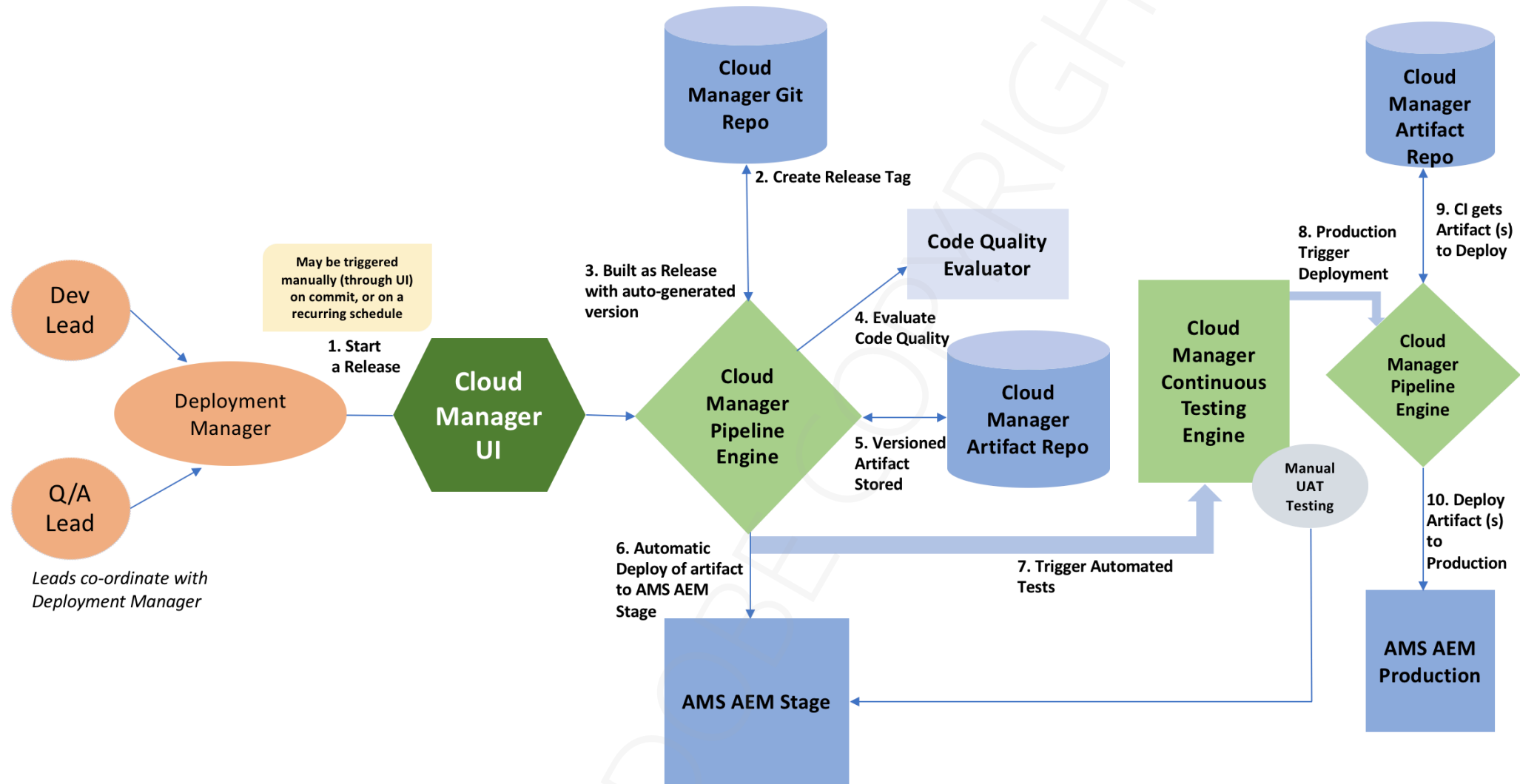
AEM as a Cloud Service: Deployment architecture of Production pipeline

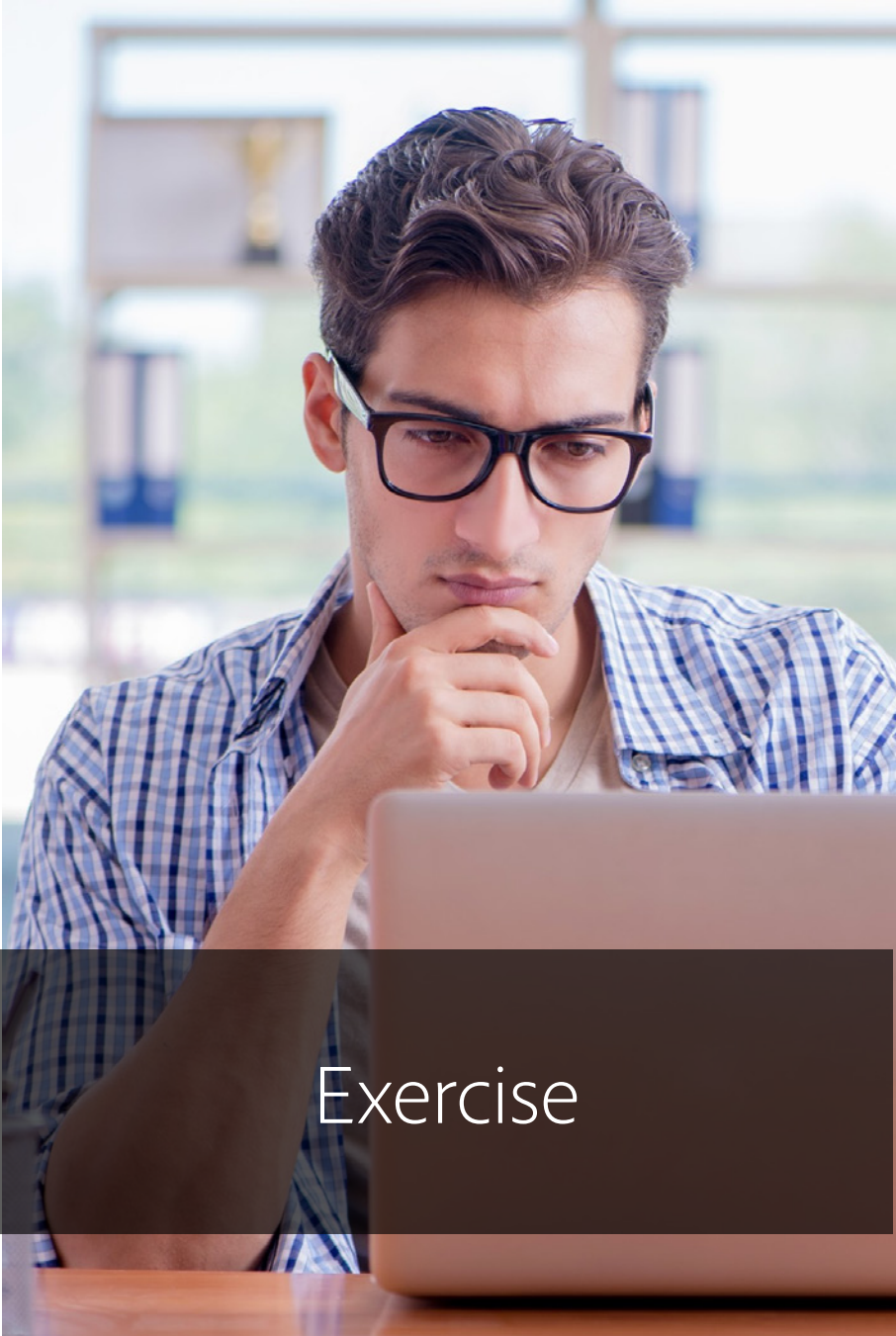


CI/CD process flow of Non-production pipeline



Production pipeline process





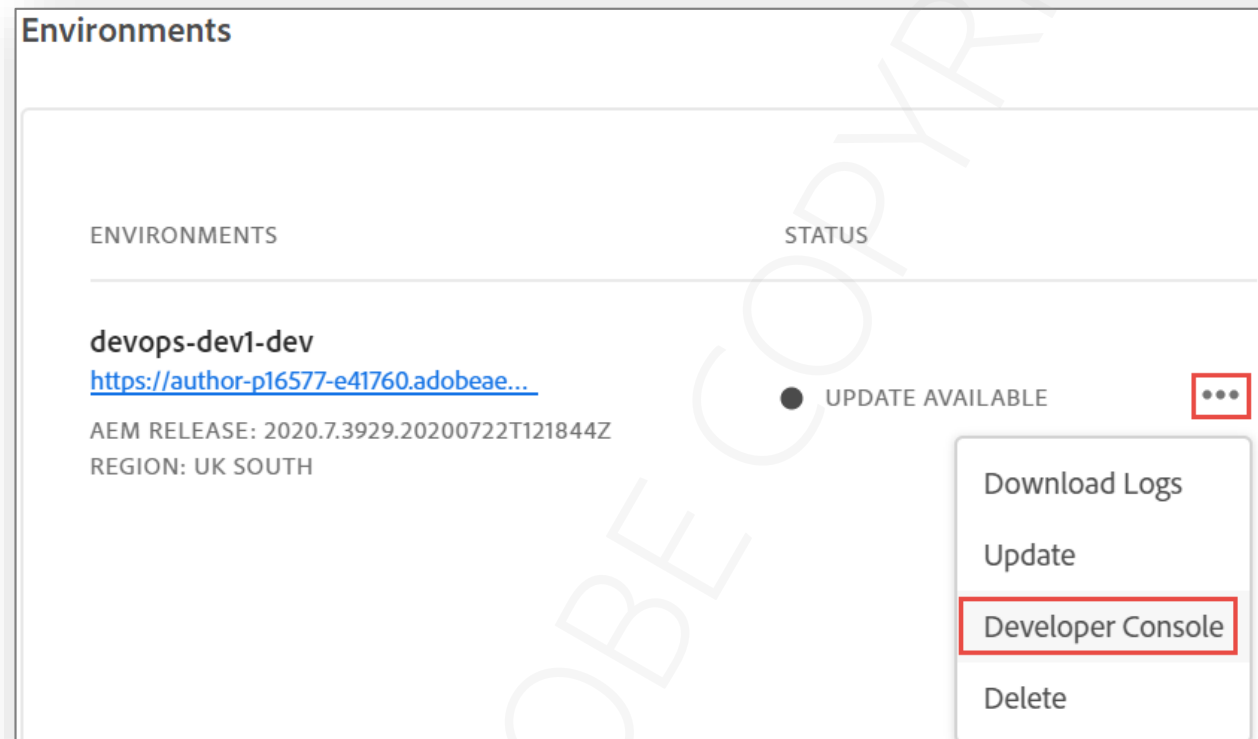
Exercise

Exercise 2: Create an auto-executing Code Quality pipeline

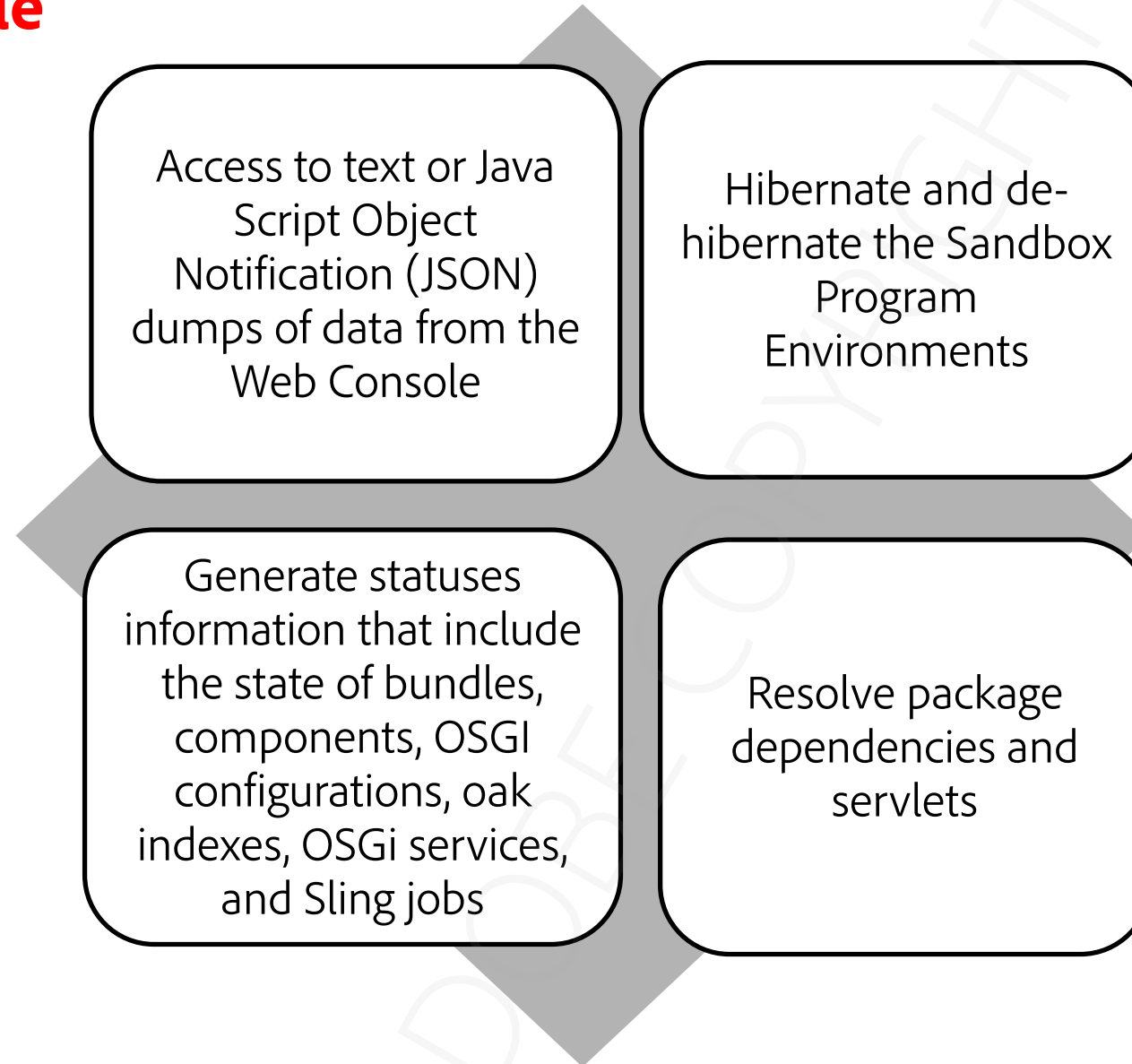
Scenario: Depending on the build process, Cloud Manager offers a wide variety of pipeline configurations to start the pipeline manually or automatically. In this exercise, you will create a Code Quality Pipeline that will auto execute whenever the changes are pushed to Cloud Manager from the Git branch.

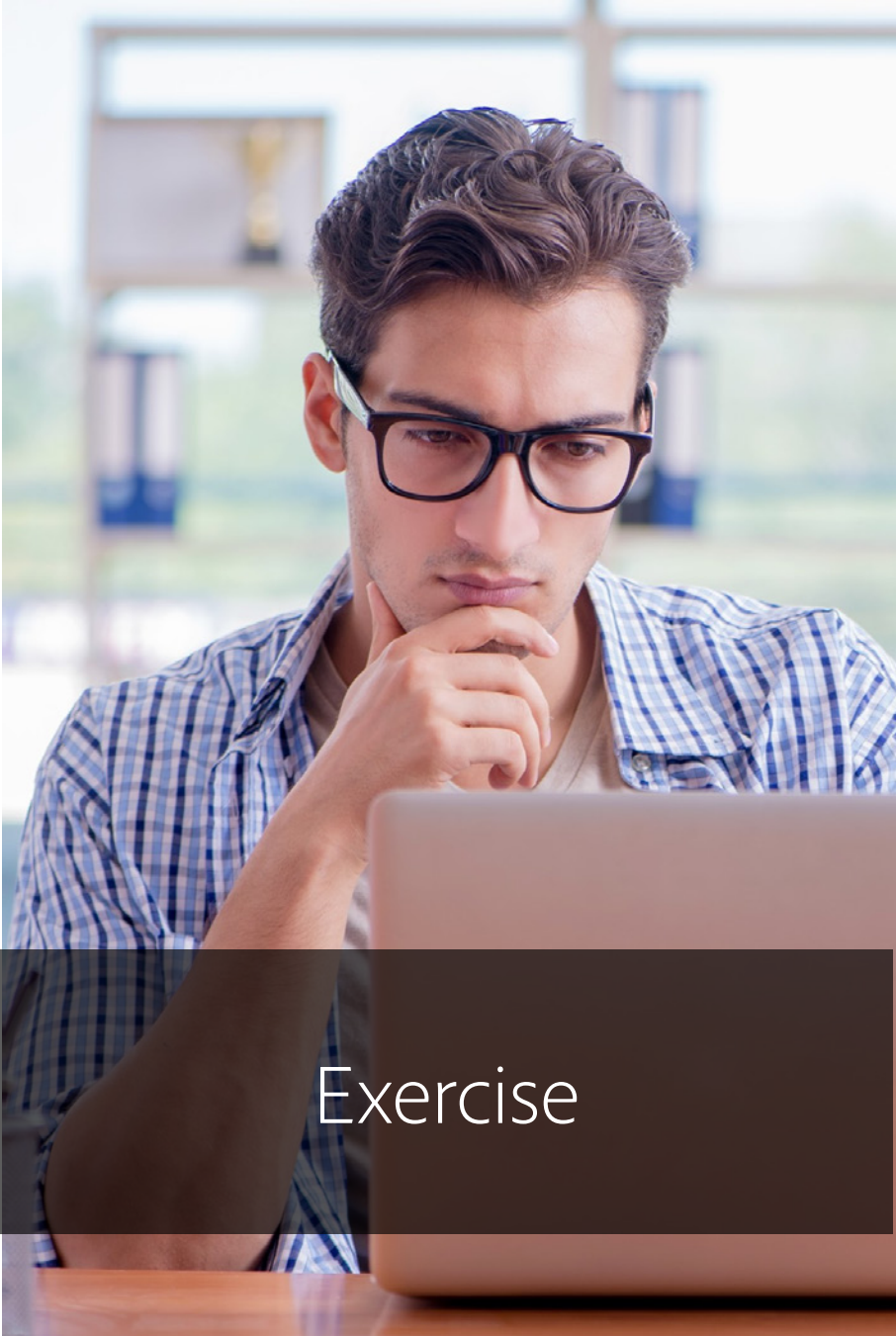
Developer console

Accessed from the drop-down menu in the **Environments** page of Cloud Manager



Developer console





Exercise

Exercise 3: Access and explore the Developer Console

Content package to feature model converter (cpfm)

Cloud Manager transforms locally assembled content packages into an artifact conforming to the Sling Feature Model, which is how an AEM as a Cloud Service application is described when running in a cloud environment:

- Extract OSGi bundles, OSGi configurations, resources
- Iteratively scan nested content packages from an input content package
- Create one or more Sling Feature model files
- Deploy the extracted OSGi bundles in a directory structure compliant with maven repository conventions

Content package versus Sling feature

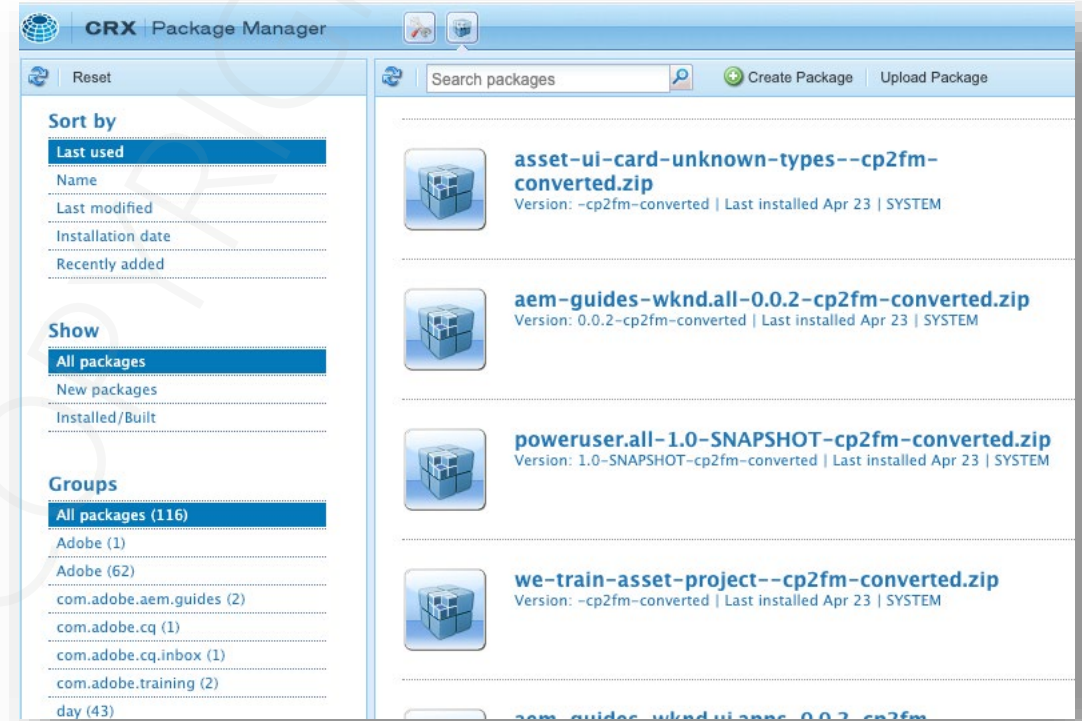
Content package	Sling Feature
<ul style="list-style-type: none">• Zipped archives• OSGi bundles• OSGi configurations• Resources, including nested content-packages• Used to install content into a JCR repository	<ul style="list-style-type: none">• Describe an entire OSGi-based application based on reusable components• Includes everything related to this application such as, bundles, configuration, framework properties, capabilities, requirements, and custom artifacts

Cloud Manager and Content packages

Custom code is deployed to cloud environments by Cloud Manager through content packages

Cloud Manager transforms immutable content packages into artifacts conforming to the Sling Feature Model

- Package names include *cp2fm*
- Packages have all metadata removed
- Packages cannot be downloaded, replicated, or opened



Content separation – A review

AEM requires a separation of content and code

Content packages cannot mix mutable and immutable content

Allows the cloud service to be auto-updated

When content packages mix mutable and immutable content, Cloud Manager pipeline fails

- Immutable Content – (/apps) components and clientlibs
 - Mutable Content – (/content, /conf) configurations, pages, and assets
 - Adobe – (/libs) AEM product code
-
- No separation validation on local quickstart

Package Manager – A review

Create and build packages
in your browser

Packages may be shared or
downloaded
as *.zip files

Immutable package can
only be installed locally

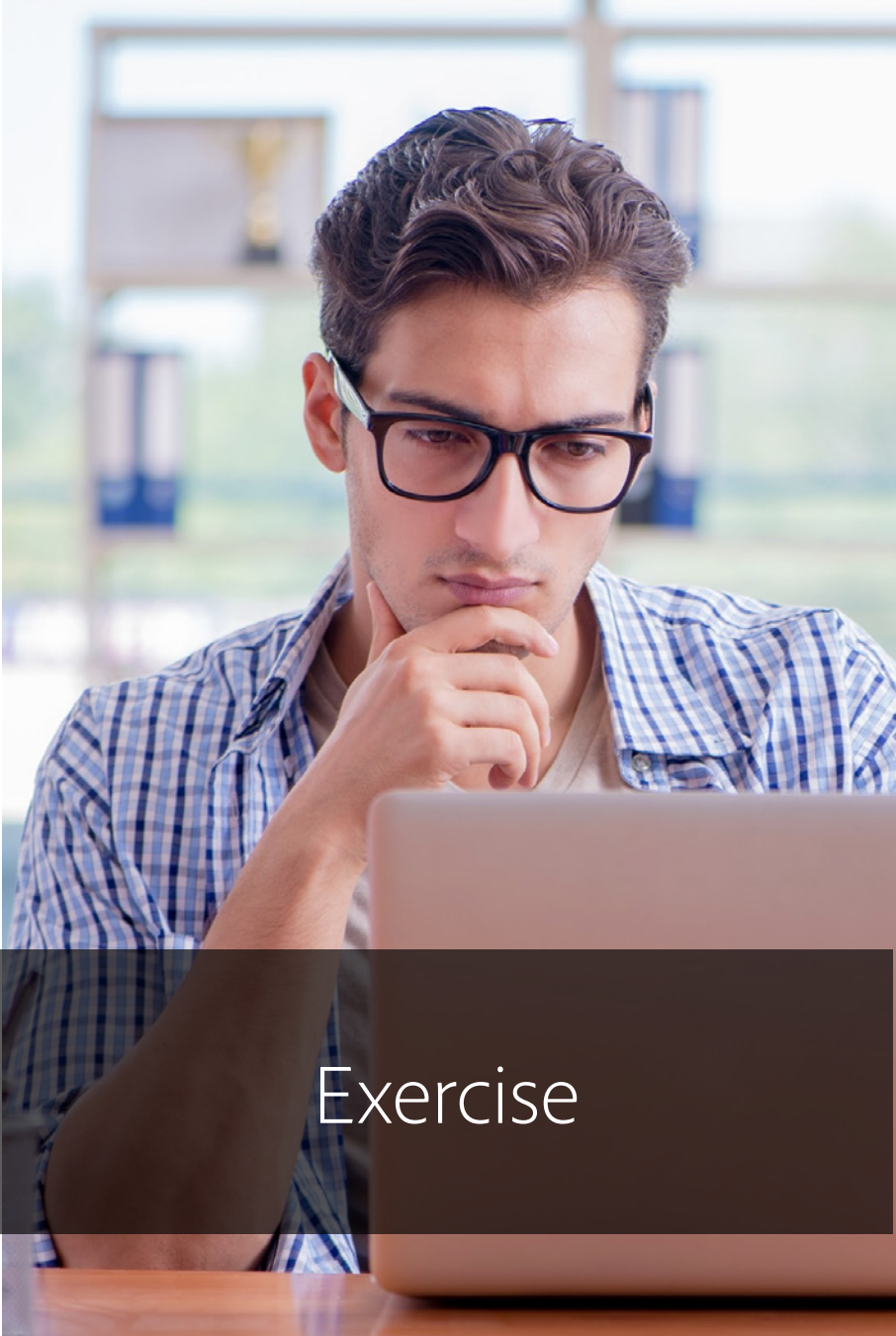
Use Groups to identify and
label packages

The screenshot displays the Adobe Package Manager interface. It features a list of packages with details such as name, version, and size. A context menu is open over the first package, showing options like Delete, Coverage, Contents, Rewrap, Other Versions, Uninstall, Test Install, Validate, and Replicate.

Package Name	Version	Last Installed	Size
aem-guides-wknd.ui.apps-0.0.1-SNAPSHOT.zip	0.0.1-SNAPSHOT	Sep 17 admin	695.6 KB
aem-guides-wknd.ui.content-0.0.1-SNAPSHOT	0.0.1-SNAPSHOT	Sep 17 admin	7.8 MB
cq-remotedam-client-ui-content-1.1.8.zip	1.1.8	Sep 12 admin	25.9 KB

Context Menu Options:

- Delete
- Coverage
- Contents
- Rewrap
- Other Versions
- Uninstall
- Test Install
- Validate
- Replicate



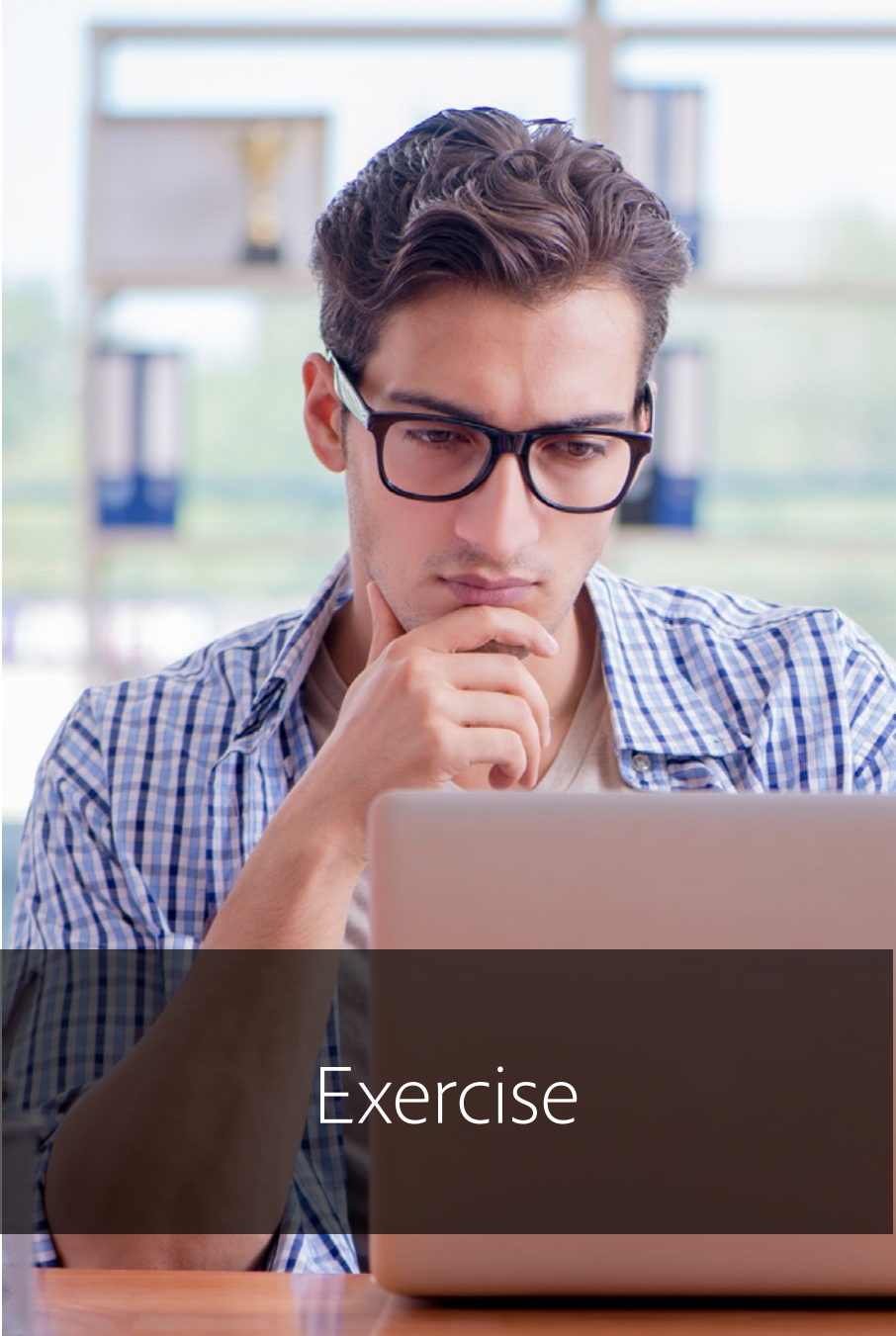
Exercise

Exercise 4: Observe and attempt to upload immutable content packages

Scenario: As an administrator, you want to verify whether you can upload immutable content by using the Package Manager.

Tasks to perform:

1. Observe immutable content packages
2. Attempt to upload an immutable content package



Exercise

Exercise 5: Create, upload, and install mutable content packages

Scenario: An author, participating in User Acceptance Testing (UAT) wants to validate and test pages, created from their templates and components, in the AEM as a Cloud Service development environment. At the end of the test, the author would like to return the environment to the original state so that the next test can begin.

Tasks to perform:

1. Create new content
2. Create a content package containing test content and download it
3. Upload a mutable content package of test content
4. Reinstall the WKND mutable content package



Key takeaways

- The Cloud Manager AEM environment consists of an author service and zero or more publish services
- Logging is a critical function for debugging and understanding code execution on local and cloud development environments.
- The CI/CD pipeline automates unit and performance testing to increase deployment efficiency and identify critical issues that are expensive to fix after deployment
- Developer Console provides access to developer tools available in local installs
- cp2fm transforms locally assembled content packages into an artifact conforming to the Sling Feature Model
- Content packages **cannot** mix mutable and immutable content