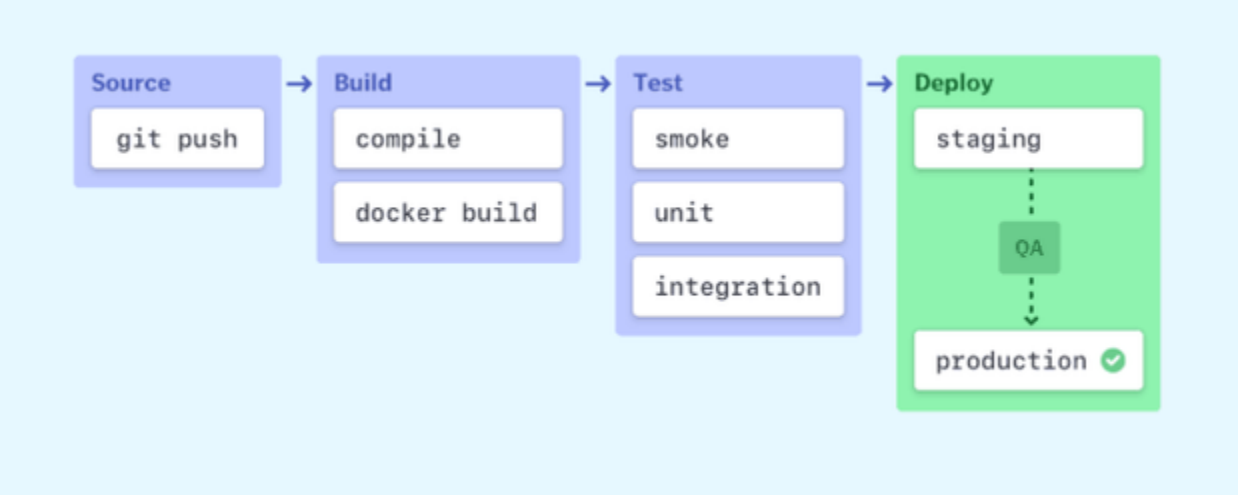
How to - Standardize Onboarding process

End To End Workflow using CI/CD Pipeline Bitbucket and Gitlab

Devops	Tools	Version
CI/CD	Jenkins	- 2.176
Version Control system	- Bitbucket - Gitlab	-v5.12.2 - 12.2.5-ee
Build	- Scala - R - Python	- 2.13.1 - 3.6.1 - 3.7.4
Containerization	Docker	- 17.03.1-ce-rc1
Configuration Management	Ansible	- 2.8.6
Artifacts Management	Nexus	- 3.15.2-01
Code Quality Checks	Sonar	- 6.7.5

Most software releases go through a couple of typical stages



Continuous Integration with stages:

1. Source stage

In most cases a pipeline run is triggered by a source code repository. A change in code triggers a notification to the CI/CD tool, which runs the corresponding pipeline.

We have a Bitbucket & Gitlab repository where the development team will commit the code.

BitBucket Repo

1.1 Repository creation steps for BitBucket:

Please refer document How to- repository configuration for default branch& merge hook-bit bucket.

1.2 Sample HelloWorld project creation for Scala Code

Please refer document **How to - Bitbucket repo setup - Create sample scala repo**

Gitlab Repo

1.3 Repository Creation steps for Gitlab:

please refer document How to - GitLab Repository Creation

1.4. Sample HelloWorld project creation for Python

Please refer document **GitLab: Setup sample Python repository**

2.Build stage

From Bitbucket/Gitlab, Jenkins pulls the code and then Jenkins moves it into the **commit phase**, where the code is committed from every branch. The **build phase** is where we compile the code.

2.1 Jenkins installation and configuration and Build scala code using Jenkins file

Please refer document **How to - Install jenkins and configuration on Cloud**

2.2 Jenkins integration for R code base

Please refer document **Jenkins R Build Support**

3.Test stage

In this phase we run automated tests to validate the correctness of our code and the behavior of our product. The test stage acts as a safety net that prevents easily reproducible bugs from reaching the end users.

3.1 Integration of sonar for scala code

please refer document How To - jenkins -Sonar integration for Scala

3.2 Integration of sonar for Python

please refer document **How To - PYTHON ONBOARDING**

4. Package

In this phase pushing artifacts in to nexus repository

4.1 Pushing the artifacts in to nexus/Jforg repository

please refer documents Nexus Artifactory Configurations With Basic Maven Repository

Jfrog Artifactory- Jenkins Integration:-

5.Deploy stage

Once we have a built a runnable instance of our code that has passed all predefined tests, we're ready to deploy it

There are usually multiple deploy environments, for example Test,Staging & UAT