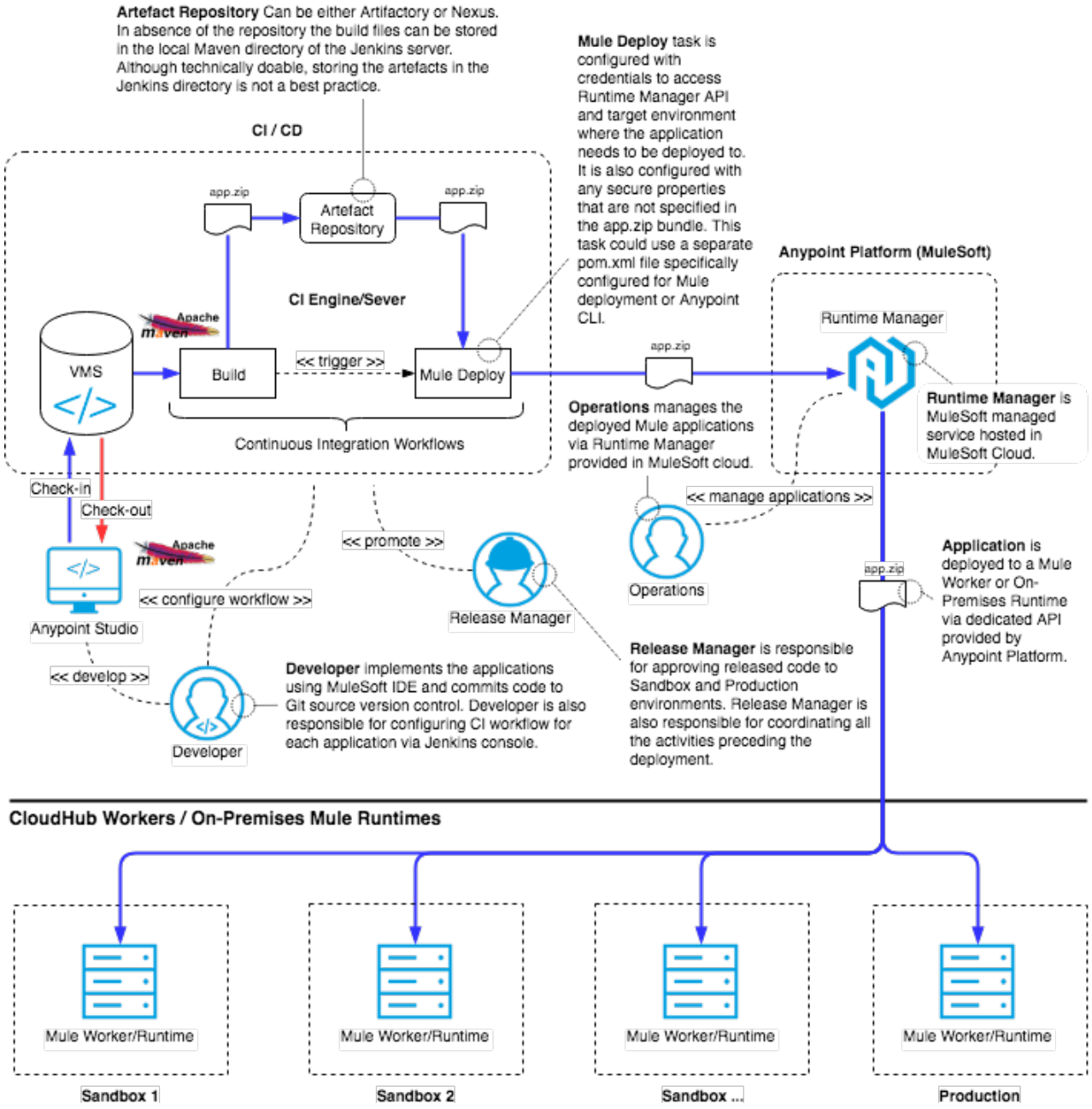
Continuous Integration Reference Architecture

The following diagram illustrates the Reference Architecture for the CI process typically implemented by MuleSoft customers. The architecture includes all the MuleSoft best practices in this space and can be extended or customised based on the specific customer's requirements.



A Continuous Integration workflow is typically triggered when the Developer's code is merged into the relevant Version Management System (VMS) e.g. GitHub or SVN branch. The source code is built and unit tests run via Apache Maven. Unit tests are implemented in the Mule application using MUnit and they run upon application build. If one or more unit tests fail, the build is aborted and flagged on the CI Server dashboard for the Release Manager to review.

Depending on the type of project we are building, a successful build can produce either a `.zip` file artefact, which represents the Mule application deployable archive or a `.jar` file, which is a library artefact to be imported into the Mule applications as a Maven Dependency. Mule application artefacts

(.zip) and libraries (.jar) should be stored to an Artefact Repository Management system (i.e. Nexus or Artifactory).

The Release Manager can approve the deployment of a Mule application to a specific target environment. The deployment task that is configured in CI Server uses the MuleSoft Anypoint Platform API to deploy the application via the Runtime Manager. Typically the applications are deployed across different environments. Environment based roles and permissions should be set up by the Operations team to protect access to runtimes and applications.

Sensitive application properties can be secured using CloudHub Secure Application Properties. However, such properties should be injected at deployment time by the CI Server deployment job or encrypted at development time using the Mule Credentials Vault.

1 External References

- Mule Plugin for Maven
- Anypoint Enterprise Security
- Safely Hiding Application Properties

