System Integration and Testing

Project Proposal

Overview

- Project Name: System Integration and Testing
- Repository Name: integration
- Description: Responsible for ONAP cross-projects system integration and all related testing, such as VNF compliant & verification testing, necessary for the successful delivery and industry adaption of the ONAP project as a whole.
- Participants: AT&T, China Mobile, China Telecom, Huawei, Mirantis, Orange

Project Scope

Provides all the cross-project infrastructure framework and DevOp toolchain, code and scripts, best practice guidance and benchmark, testing reports and white paper related to:

- Cross projects Continuous System Integration Testing (CSIT)
- VNF compliant and verification testing leveraging ONAP projects
- Release delivering of the ONAP project
- PoC: building and maintenance community integration labs
- Continuous Distribution (CD) to ONAP community integration labs

Project Description

	Category	Description	Problem Being Solved
1	Test	• Code and tools for automatic system testing and continuous integration test flows across ONAP projects • Common guidelines, templates, and best practices to help project developers to write unit and system test code • Framework and tools for security testing	• Automate the building artifacts/binaries to minimize human errors and reduce engineering costs • Ensure that changes in one project will not break the functionality of other projects • Assure that the entire ONAP project/product functions correctly in the case of continual change in subprojects • Ensure consistency in unit and system testing methodology across all the ONAP projects • Capture security issues
2	CI Builder	• Scripts and definitions for build pipelines and CI jobs in Jenkins, as well as for VM and docker images required for CI tests	• Required to support the executing of CI jobs (e.g. for Jenkins)
3	Autorelease	• Scripts to build the artifacts/binaries (e.g. zip/targz files) that are used in the release candidates and final release from scratch	• Detect cyclical dependencies • Generate release candidates and final release • It generates dependency lists / graph automatically
4	Distribution	• Scripts to be used by the end user for setup and execution of the ONAP project modules • Default/sample configuration files, README files	• Ease of industry adoption of ONAP by providing scripts and other information for setup/installation/configuration

Project Description (cont.)

	Category	Description	Problem Being Solved
5	Packaging	• Scripts and package definitions for deb, RPM, etc. installer packages for various Linux or other OS distributions • Sample VM or docker images	• An industry standard installer could help anyone to try out ONAP easier • Industry adaption
6	S3P	• Test cases for performance, scalability, resilience/stress testing, longevity • Benchmarking and performance whitepapers	• Define standard S3P testing metrics • Provide and publish benchmarking results
6	Infrastructure Specification	• Develop the specifications for the “ONAP compliant” deployment and test environment	• Assist the planning and procurement of the necessary hardware and infrastructure for setting up ONAP environments
8	Bootstrap	• A framework to automatically install and test a set of base infrastructure components for new developer	• Reduce the barrier of entry to allow new ONAP developers to ramp up onto active development quickly • Reduce the cost to the community in responding to simple environment setup questions faced by new developers

Project Description (cont.)

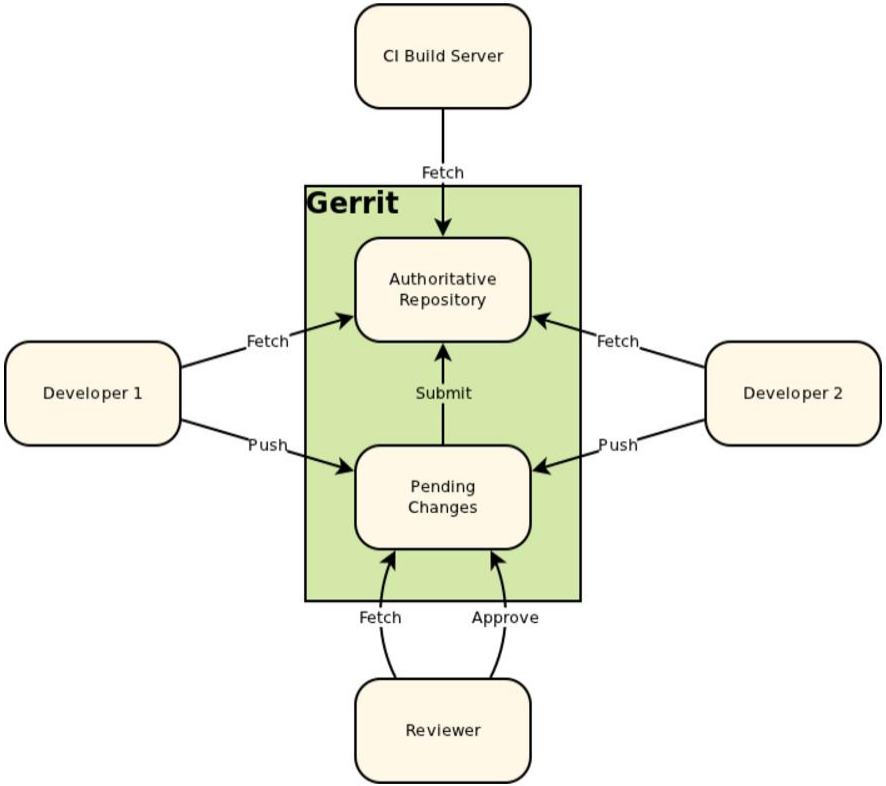
	Category	Description	Problem Being Solved
9	VF Compliant and Verification Testing	• Create automatic test cases and script for VF testing • Perform VF compliant testing and verification using tools provided by ONAP • Delivery the testing reports and whitepaper	• Assist define the testing metrics • Reduce adoption risks for end-users
10	Community Integration Lab	• Scripts and definitions for setting up a POC sample deployment of use cases in lab settings • Provisioning, installation, and setup of all the telco equipment such as switches, routers, and gateways to enable end to end testing • Allow remote access to the lab environment for interoperability testing • Automatic updates of code in lab environment from future releases	• Support the needs of consistent, reproducible lab setup for demo and POC purposes • Promote easy interoperability testing with different hardware devices, SDN controllers, etc. • Automate the process of keeping the lab code up to date with the latest changes

Suggested ONAP Toolchain

Those toolchain could cover all key aspects of DevOps: code, build, test, package, release, deployment, configuration, and monitoring

CI Toolchain: Gerrit

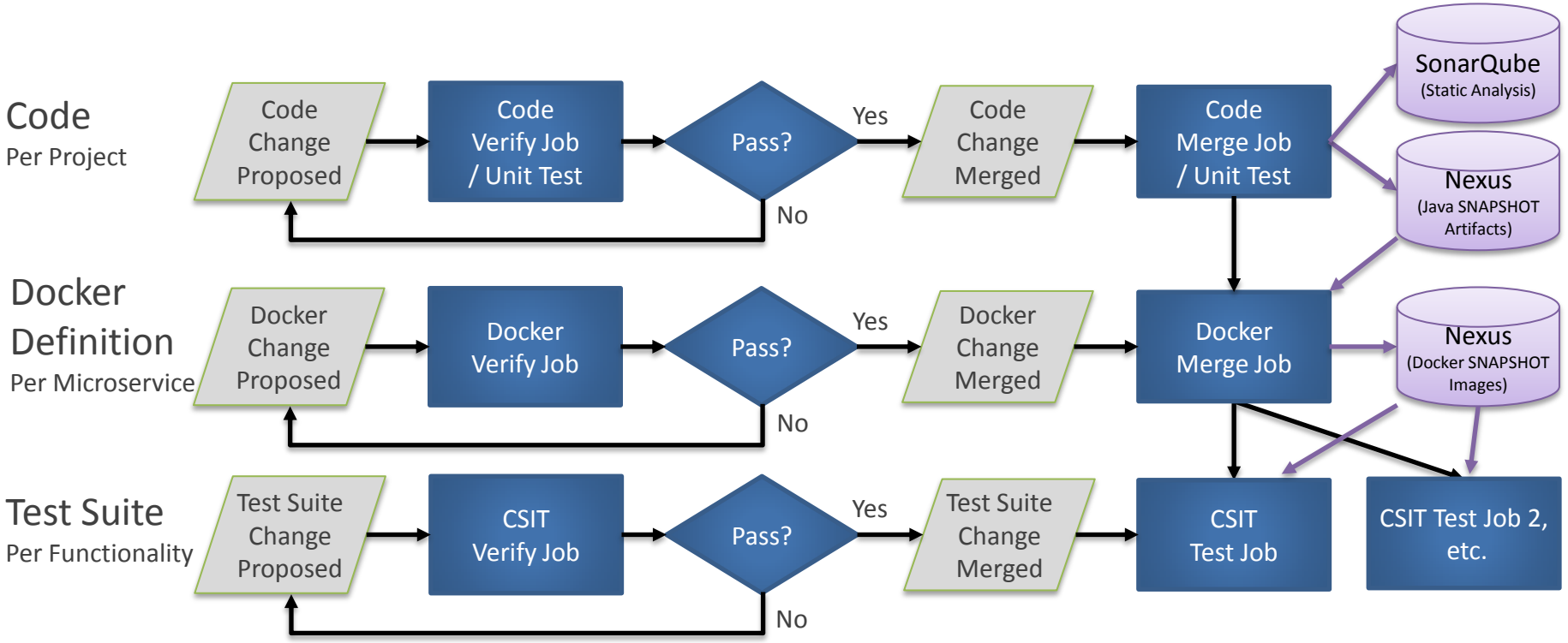
- Widely used in open source projects:
  - OPEN-O, OpenStack, OpenDaylight, OPNFV, etc.
- Facilitates collaboration between developers.



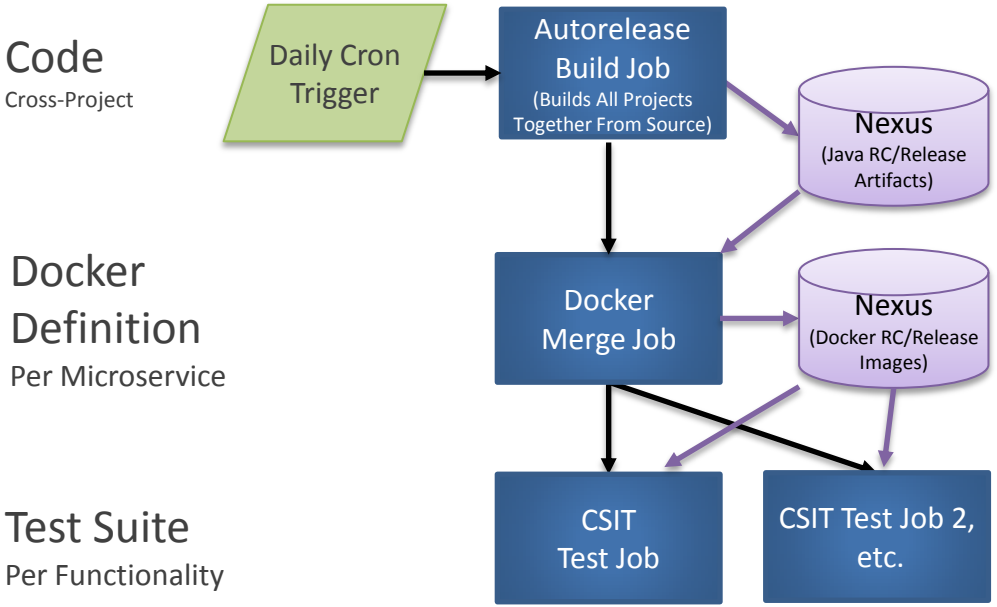
CI Toolchain: Jenkins

- Continuous integration server widely used in open source projects
- Extensive support of plugins

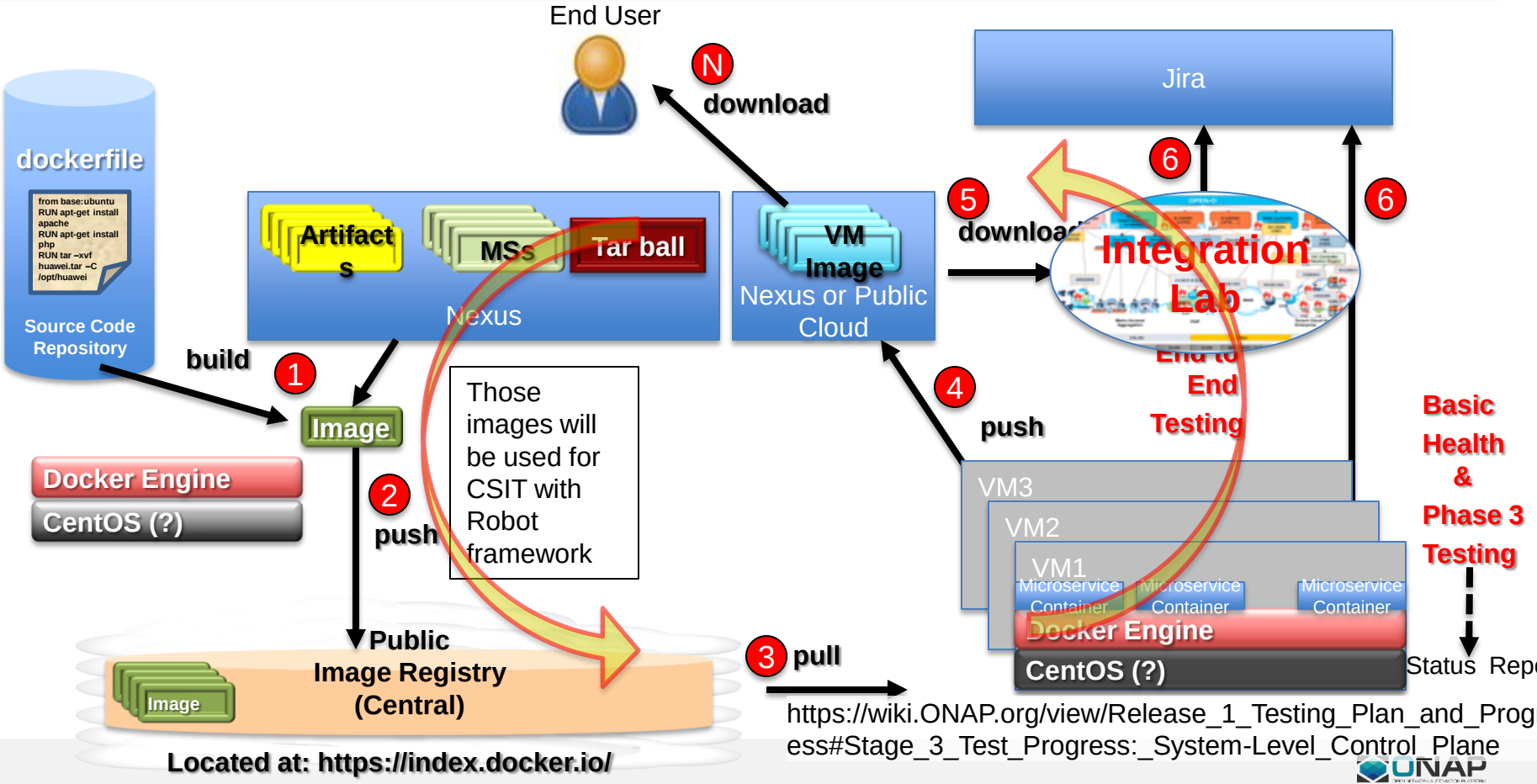
ONAP Jenkins Job Flow (Suggestion)



Autorelease / RC Job Flow (Suggestion)



Release Distribution



https://wiki.ONAP.org/view/Release_1_Testing_Plan_and_Progress#Stage_3_Test_Progress:_System-Level_Control_Plane

Resources (In progress)

Initial Committers

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