lf-releng-global-jjb

Release v0.44.0.dev0+200c13d

Sep 25, 2019

Contents

Linux Foundation Release Engineering Global Jenkins Job Builder (JJB) Documentation.

Global-JJB is a library project containing reusable Jenkins Job Builder templates. Developed for LFCI to deploy management Jenkins jobs to an LF managed Jenkins instance, there are other jobs defined which may be helpful to projects that use the same build technology. The intention is to help projects save time from having to define their own job templates.

CHAPTER 1

Release Notes

Global JJB provides regular releases. The release notes for all releases are available in the relnotes directory in Git.
https://github.com/lfit/releng-global-jjb/tree/master/relnotes

CHAPTER 2

Guides

2.1 Release Notes

2.1.1 v0.44.0

New Features

- Add an additonal Sonar job that allows the caller to provide a builder that runs prior to the Sonar scan.
- Add template to update OpenStack cloud images.
- This job finds and updates OpenStack cloud images on the ci-management source repository.
- The job is triggered in two ways:
- 1. When a packer merge job completes, the new image name created is passed down to the job.
  2. Manually trigger the job to update all images.
- When the job is triggered through an upstream packer merge job, this only generates a change request for the new image built.
- When the job is triggered manually, this job finds the latest images on OpenStack cloud and compares them with the images currently used in the source ci-management source repository. If the compared images have newer time stamps are **all** updated through a change request.
- This job requires a Jenkins configuration merge and verify job setup and working on Jenkins.
- New templates to build and push Python source and binary distributions to a PyPI server. Includes: `{project-name}-pypi-verify-{stream}`, `gerrit-pypi-verify`, `github-pypi-verify`, `{project-name}-pypi-merge-{stream}`, `gerrit-pypi-merge`, `github-pypi-merge`, `{project-name}-pypi-release-verify-{stream}`, `gerrit-pypi-release-verify`, `github-pypi-release-verify`, `{project-name}-pypi-release-merge-{stream}`, `gerrit-pypi-release-merge`, `github-pypi-release-merge`,

Upgrade Notes

- Packer merge jobs have a new build parameter when checked also updates the cloud image.
- **lf-infra-packer-build** macro now requires 1 new variables to be passed.
- 1. **update-cloud-image:** Set to true when images need to be updated on Jenkins.

Bug Fixes

- Update choosing-strategy from default to gerrit to allow building with specific refspec parameters and while not having to also set the branch to master.
- Changed the trigger to run sonar from stage-release to run-sonar. This makes it more concistent with the other parts.
- Run WhiteSource scan jobs weekly on Sunday.
- Pip install pyenv from python2 should force more-itertools to 5.0.0 In a fresh python2.7 venv "pip install pyenv" correctly pulls down more-itertools [required: Any, installed: 5.0.0] If for some reason a higher version is already installed this will downgrade more-itertools to a py2 compatible version
- Allow java-opts to be defined in WhiteSource scans. This avoids java heap failures.

2.1.2 v0.43.1

Upgrade Notes

- CONTAINER_PULL_REGISTRY and CONTAINER_PUSH_REGISTRY need to be defined in Jenkins global environment varaibles.

Bug Fixes

- Pin python-cinderclient to 4.3.0.

  A new version of python-cinderclient 5.0.0 is released which breaks the openstack jobs.
- openstack –os-cloud vex limits show –absolute Error: No module named v1.contrib
- Debug info shows: File "/home/jenkins/.local/lib/python2.7/site-packages/openstackclient/volume/client.py", line 40, in make_client from cinderclient.v1.contrib import list_extensions ImportError: No module named v1.contrib
- Update echo commands in release-job.sh for easy identification.
- Update release-container-schema to use CONTAINER_PULL_REGISTRY and CONTAINER_PUSH_REGISTRY from Jenkins global variables. These will be used to pull and push operations for self release containers. Can be overwritten in the releases files.
- Fix warnings from tox (shellcheck).
- Remove quotes from optional var WSS_UNIFIED_AGENT_OPTIONS. When empty, the quotes will cause WS Unified Agent failures.
- Upgrade WS Unified Agent CLI to latest version 19.8.1

2.1.3 v0.43.0

New Features

- Add python tox merge job templates for gerrit and github. These templates are triggered by merge events to test the Python code on the branch that received the merge. Renamed tox-verify macro to tox-common.

Bug Fixes

- Import GPG signing key in release jobs before verifying Gerrit tag details.
- INFO validate job checks that repositories matches $PROJECT Catches projects that replace / with - in their INFO file Also ensures that repositories only has one entry. We are not supporting multiple projects with a single INFO.yaml file.
- Remove unused the MAVEN_CENTRAL_URL variable. The self-release job is designed to work with any Nexus repository info published in *staging-repo.txt.gz*, which makes the *MAVEN_CENTRAL_URL* redundant, hence remove the unused variable.
- Revise tox-install.sh script to invoke python using environment variable PYTHON instead of hardcoding "python", and remove the pip –quiet flag. Extend the RTD template to pass python-version, default python2.
- Use existing builder lf-infra-maven sonar, drop incomplete builder lf-tox-maven-sonar, to gain desired behavior of pushing code analysis results to Sonar. Use trivial goal 'validate' by default. The script maven-sonar.sh calls maven twice, first with build goals and then with Sonar goals. The incomplete builder did not supply the build goals.
- Release schema verification needs to happen first before we attempt to assign values to the variables. Validate version only after the schema validation has passed and the variables are assigned.
- Organize variable setup into functions. Maven release files expects different variables than container release files.
- Rename "version" variable in container release files to "container_release_tag" which is a better user friendly name given the fact that container versions are rather called tags. Internally, we still process it as "version" to allow reuse of the tag function.

2.1.4 v0.42.1

New Features

- Add DRY_RUN build param to do a test run the job with publishing artifacts.

Upgrade Notes

- Update lftools version to **v0.26.2**.

Bug Fixes

- Verify both repos before attempting release. We have run into a case where the repo on ODL nexus was good, and the repo on Sonatype nexus was missing. Cover this case by running the verify loop over each repo before attempting release.

2.1.5 v0.42.0

New Features

- Add support for distribution_type "container"
- Add function maven_release_file and container_release_file and the logic to choose the correct one. No functional change to maven_release_file.
- Add docker login step when docker releases are being processed.
- container_release_file downloads log_dir/console.log.gz and parses it to get a list of container name and version. Verifies pulls container and grabs the image_id then performs the merge then tags and pushes the container.
- Add lf-sonar-common job-template to lf-ci-jobs.yaml and add lf-infra-sonar to macros.yaml. The purpose of a new job template is to adopt using jenkins sonar plug-in along with the sonar-project.properties file versus pom.xml. Lastly the new job template will ensure that anything using lf-infra-tox-sonar is unaffected.
- Add support for "Build with Parameters" for projects that do not want to use a release file for maven builds.

Upgrade Notes

- release-verify and merge will need to run on a docker build-node for example centos7-docker-8c-8g Lftools will need to be updated to 0.26.0 so that -v is supported for lftools nexus release
- Update lftools version to **v0.26.1**.

Bug Fixes

- Fix missing extension in ID for release-schema.yaml.
- Make "distribution_type" mandatory in future release files.
- Rename "RELEASE_FILE" parameter to "USE_RELEASE_FILE" in release-jobs. This will match the actual varaible default value better and will not collide with the local "release_file" in the script.
- Fix "USE_RELEASE_FILE" if statement. We are now using a bool instead of a string. Changing the if statements to evaluate bools.
- Add pre-build-script parameter to python clm, tox and sonar templates. Gives flexibility to install prerequisite libraries, rearrange the source tree, etc.
- Pin more-itertools ~= 5.0.0, since version 6.0.0 requires Python 3.4 https://github.com/erikrose/more-itertools/releases

  Error: more-itertools requires Python '>=3.4' but the running Python is 2.7.5
- Restructure shell/release-job.sh into functions.

2.1.6 v0.41.0

Upgrade Notes

- Update lftools version to **v0.26.0**.
- Update packer version to 1.4.3. This new packer version fixed an issues in docker image, where its unable to install the packages into docker containers due to checking of wrong container OS. Fix in 1.4.3: builder/docker: Check container os, not host os, when creating container dir default [GH-7939]

Bug Fixes

- Project job sections that define gerrit_trigger_file_paths are overriding ones set in Default parameters of lf_release_common Hard Code gerrit_trigger_file_paths to fix this.

2.1.7 v0.40.4

Upgrade Notes

- Update lftools version to **v0.25.4**.

Bug Fixes

- Git fetch needs the dashed version git fetch "$PATCH_DIR/${PROJECT////-}.bundle". Fix if statement.
- Release creds are only required for promoting the repo, which uses diff ACL as compared to normal user. Therefore dont use the release creds for the verify jobs and the scm sections in both the job templates.
- 1. The release merge job is a one way operation. Given this, Release jobs should only exist in the format {project-name}-release-verify and {project-name}-release-merge As these jobs trigger from a change to any branch/** These jobs Must Exit 0 if release job has already tagged a repo. Inevitably a release file will be pulled in from master to branch or a remerge will be requested This will again trigger the release jobs. since in this case the repo is already tagged, the job should not report a failure. This is solved by having the verfiy and merge exit 0 when the repo is already tagged 2. Rather than use project as defined in the release file use ${PROJECT////-} This changes PROJECT="optf/osdf/foo/bar" to optf-osdf-foo-bar so that we can fetch the log files. by changing /'s in the project names to -'s

2.1.8 v0.40.3

Known Issues

- Update release job template to tigger on any branch name, and not just 'master'. ODL projects branches are version '4.0.x' which requires passing the branch name to the template.

Bug Fixes

- Fix the release job script to handle any trailing '/' set on log_dir and also handle unbound variables correctly.
- Update lftools version to **v0.25.3**.

2.1.9 v0.40.1

Upgrade Notes

- Projects using lf-release-job will need to add the project's signing public key in their Jenkins Settings Files.

Bug Fixes

- Use {GERRIT_PROJECT} when calling Gerrit in release-merge job.
- Project pattern was incorrectly set to ** must be {project}
- The self-release jobs does not handle multiple repositories listed in staging-repo.txt file. This fixes the issue by deriving the NEXUS_URL and the STAGING_REPO from each entry in the file. This approach also eliminates the need for having multiple release.yaml files for every staging-repo.
- Allow lf_release_verify and lf_release_merge to verify tag signature.

2.1.10 v0.40.0

New Features

- Add packer image $NAME to the description setting so that the image name is displayed above the job logs URL. This saves a some time from looking for the image name in the jobs logs.
- Allows projects to promote their own builds. Requires setup of accounts and permissions in Gerrit, Jenkins and Nexus. Please refer to the lf-release-jobs documentation for details.
- Remove orphaned ports from the openstack cloud environment. These orphaned ports are residue of CSIT jobs that needs to be purged, as a part of the openstack cron job. A large number of stale jobs could cause IP address allocation failures.
- Enable JAVA_HOME to point to openjdk12 install path for CentOS 7.

Upgrade Notes

- Consolidated lf-infra-jjbini macros with JJB 2.0. This requires renaming any Jenkins managed files "jjbini-sandbox" to "jjbini" to switch to the format supported in JJB > 2.0.
- Projects using lf-release-jobs need to make sure they have the global variable NEXUSPROXY added in Jenkins production and Jenkins sandbox servers. The value of this variable should be the URL to the project's Nexus server. Previous commit 118b7cbf171aca498d1a0a3a485bad990ad2e7b6 missed this variable.
- Projects using lf-release-jobs need to make sure they have the global variable NEXUSPROXY added in Jenkins production and Jenkins sandbox servers. The value of this variable should be the URL to the project's Nexus server.
- This change will require to update lf-release-job calls. Update from using "{project-name}-releases-merge-{stream}", "{project-name}-releases-verify-{stream}" to "{project-name}-release-merge-{stream}", "{project-name}-release-verify-{stream}". No upgrade need to be done if using "{project-name}-gerrit-release-jobs" group.

Bug Fixes

- There is no way on finding out the $JOB_NAME pushed to sandbox with the jjb-deploy command in the logs. The change outputs the $JOB_NAME to the logs, which is useful for debugging purposes.
- Add release-schema used to validate the releases yaml file as part of lf-release-jobs.
- Tarball the $JAVADOC_DIR as a workaround for javadoc verfiy jobs to avoid uploading a large number of small files. Uploading a large number of small files does not work well with Nexus unpack plugin which fails on 504 gateway timeout.

- Allow maven goals to be configured in sonatype-clm.sh. Set to "clean install" by default.
- Allow maven goals to be configured in maven-sonar.sh. Set to "clean install" by default.
- Add support for JAVA_OPTIONS in sonar job. Some of the maven build options in the sonar job require to set the JAVA_OPTIONS to specific value for the build to pass This option will help to pass the JAVA_OPTIONS from the template.
- Perform "lftools schema verify" command to validate the release files against schema/release-schema.yaml Obtain optional maven central URL inside the loop that scans release files.
- Allow only semantic release versions like "v${SEMVER}" or "${SEMVER}". Fail the script if the version is not valid. Do not append any additional characters to the release version during tag and push steps.
- Delete stacks with the `--force` option to ensure that any delete failures does not stop the openstack-cron jobs from continuing.
- Download raw version of release-schema.yaml to compare against release files using lftools.
- Avoid the usage of project specific variables. Do not use ODLNEXUSPROXY var, but instead use a generalized variable.
- Avoid the usage of project specific variables. Do not use ODLNEXUSPROXY var, but instead use a generalized variable.
- Using "releases" and "release" in different places is becoming confusing. Standardize to "release" to match lftools command and the majority of the exisiting wording.

  Use "releases" for the list of tech team releases and trggers since it is intuitive there. For example "releases/1.1.1.yaml"
- Move info-schema to schema/info-schema.yaml to keep schemas consistency.
- Download only needed files for lf-info-yaml-verify rather than cloning the entire repo.
- Allow lf-maven-stage jobs to be triggered using either "stage-release" or "stage-maven-release".
- Allow lf-maven-docker-stage jobs to be triggered using either "stage-release" or "stage-docker-release".
- Upgrade to the WhiteSource Unified Agent version 19.7.1.

2.1.11 v0.39.1

Bug Fixes

- Update lftools version to **v0.25.2**.

2.1.12 v0.39.0

Critical Issues

- lftools v0.24.0 introduced a major issue which caused the Jenkins cloud configuration merge job for OpenStack clouds to fail. This has been corrected in lftools v0.25.1

Bug Fixes

- Add missing git-url variable in {project-name}-releases-merge-{stream} job.
- Add the {stream} name in releases-verify and releases-merge jobs.

- Some ONAP components like DCAEGEN2 do not host a version.properties file in the root of their repos. We need to be able to provide a location and/or different name for the version.properties file for jobs using the lf-maven-versions-plugin builder step.

2.1.13 v0.38.4

New Features

- Group {project-name}-releases-verify and {project-name}-releases-merge into {project-name}-gerrit-release-jobs.

  Add test jobs for lf-release-jobs.

Bug Fixes

- Change parameter names used to specify container tag method, with a new default to use the fixed string 'latest' as a tag. Merge two shell scripts into one instead of using Jenkins conditional steps. Extend to accept a custom directory for the container-tag.yaml if the yaml-file method is used to set the docker tag information; this is an optional variable which is set to empty by default, and falls back to DOCKER_ROOT.
- Add missing scm block in gerrit-releases-merge job definition. Add missing submodule-disable variable for jobs using lf-infra-gerrit-scm. Update documentation for gerrit-releases-merge and gerrit-releases-verify to remove submodule options as optional parameters.
- Update lftools version to **v0.25.0**
- Add missing $ to variable tag_file so the yq query can pull the tag from the container-tag.yaml file.
- Add -l to /bin/bash shebang line at top of docker-get-container-tag.sh to make it a login shell, which automatically includes /home/jenkins/.local/bin on the path, because that is where pip installs the yq command.

2.1.14 v0.38.3

Bug Fixes

- Add trigger on cron to docker merge macro to support regular rebuilds. This makes the merge macro match the behavior of most other jobs.
- Add yamllint verification to INFO.yaml files.

Other Notes

- Update lftools version to **v0.24.0**.

2.1.15 v0.38.2

Bug Fixes

- Add missing config for triggering on file paths to docker macros and templates, namely gerrit_trigger_file_paths and github_included_regions, to make the verify and merge macros and templates match the behavior of other jobs.

2.1.16 v0.38.1

Bug Fixes

- Install yq to be used to read yaml files. In specific, it will be needed to read container-tag.yaml.
- When calling builder step macros "lf-docker-get-container-tag", "lf-docker-build" and "lf-docker-push", make sure the needed variables are also passed explicitly to avoid these variables appear as undefined.
- Allow DOCKER_ARGS to be empty in docker-build.sh. This is not a required parameter, it can be empty.

  Remove container reference in docker-get-git-describe.sh. The CONTAINER_PUSH_REGISTRY already gets added in the docker-push script. No need to add it again.

  Rename image_name to image_build_tag in docker-get-yaml-tag to match docker-get-git-describe. Add missing "DOCKER_NAME" in the DOCKER_IMAGE.

  docker-get-git-describe.sh and docker-get-yaml-tag.sh should only export the tag variable. Let docker-build.sh process DOCKER_NAME

Other Notes

- Add yq install as part of python-tools-install.sh Allow future scripts to use yq package.

2.1.17 v0.38.0

New Features

- **gerrit-tox-verify** now has a new parameter `gerrit-skip-vote` (bool) to control whether Jenkins should skip voting depending on the build outcome. It defaults to `false` since it is the default used by the Jenkins Gerrit Trigger Plugin.
- gerrit-docker-verify runs for new commits and runs a build of the affected Docker images.
- gerrit-docker-merge runs for merged commits, runs a build of the affected Docker images and pushes the images to a specified Docker registry.
- New `lf-release-job-merge` and `lf-release-job-verify` templates allow projects to have self-serve releases. Project will create a tagname.yaml file in the releases/ directory of their git repo. example:

```
$ cat releases/4.0.0.yaml
---
distribution_type: 'maven'
version: '4.0.0'
project: 'odlparent'
log_dir: 'odlparent-maven-release-master/11/'
#below is optional
maven_central_url: 'oss.sonatype.org'
```

- **lf-infra-gerrit-scm** and **lf-infra-github-scm** now require a `submodule-disable` parameter (bool) to control whether submodules are ignored or not during git fetch operations.
- All job-templates now provide an optional `submodule-disable` parameter for git fetch operations, defaulting to `false`.

Upgrade Notes

- Any project using the **lf-infra-gerrit-scm** and **lf-infra-github-scm** macros in global-jjb should need to add a `submodule-disable` value. It is recommended to default this value to `false` since it is the default used by the Jenkins Git Plugin.
- Update gerrit comment trigger to use a more standard regex and avoid triggering jobs, when these keywords are intended to be used as code review comments between users. Also improve the regexs to make them more succinct and readable.

Bug Fixes

- Add missing config for triggering on file paths to maven stage macros and templates, namely gerrit_trigger_file_paths nad github_included_regions, to make those macros and templates match the behavior of maven verify and maven merge.
- fix multiple jobs created using same job-template update same github check status due to hard coded status-context to Maven Verify. Now appending status-context with maven-version and java-version to make it unique. And create different status checks in the github. fix applied for maven verify and maven docker verify jobs
- Fix log shipping script to not require a LOGS_SERVER. There was a regression that caused the log shipping script to start requiring a LOGS_SERVER which fails in the case of a system that does not have that optional environment variable set.
- Handle multiple search extension or patterns passed by upstream JJB ARCHIVE_ARTIFACTS param as a single string by spliting these values before being passed to `lftools deploy archives`.

```
ARCHIVE_ARTIFACTS="**/*.prop \
                   **/*.log \
                   **/target/surefire-reports/*-output.txt \
                   **/target/failsafe-reports/failsafe-summary.xml \
                   **/hs_err_*.log **/target/feature/feature.xml"
```

For example, the above env variable passed to the script and to `lftools deploy archives` as:

```
lftools deploy archives -p **/*.prop \
                   **/*.log \
                   **/target/surefire-reports/*-output.txt \
                   **/target/failsafe-reports/failsafe-summary.xml \
                   **/hs_err_*.log **/target/feature/feature.xml \
                   "$NEXUS_URL" \
                   "$NEXUS_PATH" \
                   "$WORKSPACE"
```

The correct way of passing this as per lftools implmentation is:

```
lftools deploy archives -p '**/*.prop' \
                   -p '**/*.log' \
                   -p '**/target/surefire-reports/*-output.txt' \
                   -p '**/target/failsafe-reports/failsafe-summary.xml' \
                   -p '**/hs_err_*.log' \
                   -p '**/target/feature/feature.xml' \
                   "$NEXUS_URL" \
                   "$NEXUS_PATH" \
                   "$WORKSPACE"
```

- Fix error with handling unbound arrays for search extensions, when using *set -u*. The correct way of using this.

```
set -u
arr=()
echo "output: '${arr[@]}'"
bash: arr[@]: unbound variable
echo "output: '${arr[@]:-}'"
foo: ''
```

- lf-maven-versions-plugin builder step needs to run before maven-patch-release.sh as this second script contains a condition to confirm if the maven vesions plugin was selected as a way to remove the 'SNAPSHOT' pattern from the pom.xml files. lf-maven-docker-stage was based on lf-maven-stage and it seems that these particular builder steps were switched in place accidentally.
- The logs-deploy.sh script now allows ARCHIVE_ARTIFACTS to contain zero or more files.
- request-2.22.0 does not work with python-3.4.9, so pin requests to v2.21.0 to address the tox failures.

2.1.18 v0.37.2

Bug Fixes

- Use maven goal install (not deploy) in the maven + docker verify job. An image cannot be pushed by a verification job, and the deploy target directs the plugin to push.

2.1.19 v0.37.1

Bug Fixes

- Remove maven-versions-plugin-set-version variable in newly added macro. This is a variable that does not need to be defined by the users of the jobs. The version needed in this builder step is inherited from versions.properties as "release_version".

2.1.20 v0.37.0

New Features

- Add verify, merge and stage templates for Java projects that build and wrap a JAR (e.g., a Spring-Boot application) inside a Docker image, and do not need to deploy any JAR libraries or POM files.

Upgrade Notes

- The next release of common-packer will require a minimum version of 1.3.2 for packer. The current release of packer is 1.4.0.

Bug Fixes

- The packer-merge job for Gerrit systems was improperly configured to use the Gerrit Trigger choosing strategy and not default. This caused issues unexpected issues with retriggering merged changes when the expectation was that it would pick up the lastest change as per normal.

- This is a variable that does not need to be defined by the users of the jobs. The version needed in this builder step is inherited from versions.properties as "release_version" and it is fixed as that. This also helps teams not having to define this version in 2 places and just rely on version.properties.
- Projects using maven versions plugin let this plugin take care or updating their versions in the pom.xml. When maven-versions-plugin is set to "true", skip the stripping of SNAPSHOTS from the pom.xml files. maven-versions-plugin is set to "false" by default.

Other Notes

- Update example Jenkins Init Script in README to redirect all output to a log file.

2.1.21 v0.36.0

Prelude

WhiteSource is a security and license compliance management platform. It is used to perform scans on a great variety of coding and scripting languages.

New Features

- New `comment-to-gerrit` builder will comment back to gerrit patchset if a file called gerrit_comment.txt is created by the build.
- Allows maven to run a clean install step before the WhiteSource scan runs the Unified Agent to fetch additional dependencies. Set to false by default.
- Job {project-name}-whitesource-scan-{stream} uses the WhiteSource Unified Agent scanner CLI tool to perform the code scan and report the results into the WhiteSource dashboard.

Bug Fixes

- Tag releases will now trigger a docs build to regenerate and update the release note link.
- Update jenkins-cfg-verify job to validate new images names obtained from $GERRIT_REFSPEC instead of the master branch.
- Hardcode project version to the "GERRIT_BRANCH". Follow previous convention from CLM where reports were versioned after the branch name. Fix minor nits with bash varaibles.
- wss-unified-agent.config file should not be opened for configuration to tech teams. The config file should be part of Jenkins Settings Files and called via Managed Files. wss-unified-agent.config must be created in Jenkins config files based on wss-unified-agent.config.example.

Other Notes

- To run this job, a configuration file is needed (wss-unified-agent.config.example). A new secret text credential will need to be created. (ID=wss-apiKey Secret=WhiteSource organization API key)
- Update lftools version to **v0.23.1**.

2.1.22 v0.35.0

New Features

- The **jjb-merge** job now has a new parameter `jjb-workers` to allow configuration of the number of threads to run update with. Default is *0* which is equivalent to the number of CPU cores available on the system.
- New `info-vote-verify` macro Will count votes against an INFO.yaml change and sumbit automatically if a majority of committers vote +1 or +2 on the change. Job is triggered by +2 votes or a comment of "vote"

Other Notes

- The Maven Verify job will now call `-Dmaven.source.skip` to skip source jar generation in the verify job. This saves us some time in the verify build as the source artifacts are not useful in a verify job.

2.1.23 v0.34.0

New Features

- **jenkiins-init-scripts** The 'ciman' repo is not longer required to be located in '/opt/ciman'.
- lf-maven-set-version conditional step for lf-maven-stage to allow teams to run Maven versions plugin to update their artifact versions. Step will run if maven-versions-plugin is set to true.
- Support for the Throttle Plugin is added to JJB jobs so static build servers can restrict the number of concurrent JJB jobs ran at the same time.

  This must be explicitly enabled by setting *throttle-enabled* on the jobs.

Bug Fixes

- Adapt maven path search for files and dirs. The "-f" maven param can specify both a directory, in which case it will look for "pom.xml" in the directory, or a specific file. The original version of this search was only compatible with directories that contain a pom.xml file.
- Update the lf-maven-cental macro documentation and example templates with the missing requireed params.
- Fix JAVA_HOME for openjdk11 on CentOS 7 to use the OpenJDK version installed in /usr/lib/jvm/java-11-openjdk.
- The JJB Deploy Job is configured to trigger only if the Gerrit comment starts with the *jjb-deploy* keyword.

  Without the regex being optimized the job triggers on any occurance of the *jjb-deploy* keyword in a Gerrit comment, with is waste infra resources.

  Example of a valid command in Gerrit comment that triggers the job:

  ```
  jjb-deploy builder-jjb-*
  ```

  Example of a invalid command in Gerrit comment that would _not_ trigger the job:

  ```
  Update the job. jjb-deploy builder-jjb-*
  ```

2.1.24 v0.33.0

New Features

- **jenkins-init-scripts** If the environmental variable 'SWAP_SIZE' is set when the 'init.sh' script is called, then a 'SWAP_SIZE' GB swap space will be configured. If 'SWAP_SIZE' is '0' or is not a valid integer, then no swap space is configured. If it is unset then 1GB of swap will be configured. Previously the swap size was fixed at 1GB.
- **jenkins-init-scripts** If the work directory or volume (/w) aleady exists, the ownership will be recursivly set to 'jenkins:jenkins'. Previously only the top directory /w was owned by 'jenkins:jenkins'
- **lf-sigul-sign-dir** macros now supports a `sign-mode` parameter which allows jobs to choose to sign artifacts using either *parallel* mode or *serial* mode (default).

Upgrade Notes

- **lf-sigul-sign-dir** users need to add a new parameter `sign-mode` to their job-templates setting either *parallel* or *serial* as the value, we recommend setting serial mode for this setting.

  {project-name}-maven-stage-{stream}'s Sigul signer now defaults to *serial* mode instead of the previous *parallel* behaviour. To change this back to the previous behaviour pass the "sign-mode" parameter to the job template:

```
- project:
    name: parallel-sign
    jobs:
      - gerrit-maven-stage:
          sign-mode: parallel
```

2.1.25 v0.31.0

New Features

- New job-template **{project-name}-release-announce** for lf-releng projects to automate release announcement emails.
- Add support for pushing Sonar results to SonarCloud. Refer to *Maven Sonar docs* for details.

Upgrade Notes

- Jobs using the **lf-maven-stage** macro now need to update to the new usage. Preparation calls to **lf-provide-maven-settings**, **lf-infra-create-netrc**, and **lf-provide-maven-settings-cleanup** are no longer necessary to prepare the **lf-maven-stage** macro.

  Usage:

```
- lf-maven-stage:
   mvn-global-settings: 'global-settings'
   mvn-settings: 'settings'
   mvn-staging-id: 'staging profile id'
```

2.1.26 v0.30.0

New Features

- Packer merge jobs now include the image name in the Jenkins build description.

Bug Fixes

- Extend ${JOB_NAME} to include {java-version} parameter to support jobs to build with multiple versions of openjdk{8,11}.
- Modified lf-maven-jobs.yaml sonar cron entry to '{obj:cron}' to pass value from custom user config file.

2.1.27 v0.29.0

New Features

- Add a puppet-verify job to lf-ci-jobs. This job will perform Puppet linting on the specified repository.

```
- project:
    name: lf-infra-puppet-mymodule
    project-name: lf-infra-puppet
    project: puppet/modules/mymodule
    jobs:
      - gerrit-puppet-verify
```

Bug Fixes

- maven-fetch-metadata.sh was not respecting the "-f" (for file path) flag in MAVEN_PARAMS, causing lf-maven-merge jobs that utilize this flag to fail. It will now set a path based on this flag if it is present, or default to the current working directory.
- Check openjdk $VERSION before setting $JAVA_HOME. This enables jobs to pass "openjdk10" or "openjdk11" on CentOS 7 images to use the OpenJDK version installed in /opt.

2.1.28 v0.28.3

Bug Fixes

- Compress and upload all jjb-verify XML files to Nexus, to ease out the IOPs on cron jobs that manage the logs on Nexus and optimize job performace by ~8 mins. This is because the job generates around ~2.3K XML files (small files) which is uploaded to Nexus in every run of jjb-verify. Doing this is faster as compared to the Nexus Unpack plugin in the Nexus end unpacking the zip file we upload takes longer.

2.1.29 v0.28.1

Other Notes

- Update lftools version to **v0.19.0**.

2.1.30 v0.28.0

New Features

- New `lf-stack-create` macro allows job-templates to setup a OpenStack Heat stack, useful for spinning up CSIT labs to run integration tests against. Use with the `lf-stack-delete` macro.
- Concurrency for the gerrit-jjb-verify job can now be configured by setting the 'build-concurrent' parameter.
- New macro **lf-maven-central** is available to deploy artifacts to OSSRH staging for jobs that want to eventually deploy to Maven Central.

```
---
- job-template:
    name: lf-maven-central-macro-test

    ####################
    # Default variables #
    ####################

    mvn-central: true
    mvn-global-settings: ""
    mvn-settings: ""
    ossrh-profile-id: ""

    ####################
    # Job configuration #
    ####################

    builders:
      - lf-maven-central:
          mvn-central: "{mvn-central}"
          mvn-global-settings: "{mvn-global-settings}"
          mvn-settings: "{mvn-settings}"
          ossrh-profile-id: "{ossrh-profile-id}"
```

- The GERRIT_REFSPEC build parameter can now be used to trigger a test build from the Jenkins Sandbox system against a work in progress packer image patch from a GitHub Pull Request.

Upgrade Notes

- `lf-stack-delete` has been modified to be a companion macro to `lf-stack-create` in order to cleanup the stack at the end of a job run. It now includes a required parameter **openstack-cloud** to choose the `clouds.yaml` cloud configuration for the project. Existing users of this macro will need to update their job templates accordingly.
- Requires JJB 2.8.0 for the jenkins-sandbox-cleanup job to not fail.

> **Note:** Despite the failure if JJB 2.8.0 is not available the job will successfully delete all jobs and views, the primary purpose of this job.

Bug Fixes

- RELENG-1450 All view disappears on Jenkins Sandbox after views are deleted. The **All** view is now recreated after `delete-all` is run.

2.1.31 v0.27.0

New Features

- Add the ability to configure the location of JJB's cache directory for CI jobs.
- New view-templates `project-view`, `common-view`, and `csit-view` are available for projects to manage Jenkins views through code.

  To use the `project-view` template in a project:

```
- project:
    name: aaa-view
    views:
      - project-view

    project-name: aaa
```

  To use the `common-view` template in a project:

```
- project:
    name: daily-builds
    views:
      - common-view

    view-name: Periodic
    view-regex: '.*-periodic-.*'
```

  To use the `csit-view` template in a project:

```
- project:
    name: csit
    views:
      - csit-view

    view-name: CSIT
    view-regex: '.*csit.*'

- project:
    name: csit-1node
    views:
      - csit-view

    view-name: CSIT-1node
    view-regex: '.*-csit-1node-.*'
```

- Add support to maven-stage jobs to publish to Maven Central via OSSRH.

  This is accomplished by adding these 2 new optional parameters to the job configuration.

```
- gerrit-maven-stage:
    mvn-central: true
    ossrh-profile-id: 7edbe315063867
```

- The **openstack-cron** job now has the ability to remove images older than a specified age (default: 30).
- The **openstack-cron** job now has the ability to remove orphaned servers.
- The **openstack-cron** job now has the ability to remove orphaned stacks.

- The **openstack-cron** job now has the ability to remove orphaned volumes.
- **lf-infra-gerrit-scm** and **lf-infra-github-scm** now require a `submodule-timeout` parameter to provide a timeout value (in minutes) for git fetch operations.
- All job-templates now provide an optional `submodule-timeout` parameter for git fetch operations, defaulting to 10 minutes.

Upgrade Notes

- Some LF projects are already using a `common-view` template in their local ci-management repo. This `common-view` is called `project-view` in global-jjb so rename all instances of `common-view` to `project-view` when upgrading and remove the local `common-view` view-template definition from ci-management.
- The **openstack-cron** job now requires a new parameter configured `jenkins-urls` in order to use the job.
- Any project using the **lf-infra-gerrit-scm** and **lf-infra-github-scm** macros in global-jjb should need to add a `submodule-timeout` value. It is recommended to default this value to `10` since it is the default used by the Jenkins Git Plugin.

Bug Fixes

- The jenkins-init scripts dir is now updated to reflect changes recommended for the v0.25.0 release. We unfortunately missed this critical piece in the v0.25.0 release.
- Specify refspec to be blank for SCM config on github-maven-merge job. Setting the refspec to *+refs/pull/*:refs/remotes/origin/pr/** causes there to be no merge job triggered.
- New detox version requires tox >= 3.5 and < 4. Instead of explicitly pulling tox, we are now implicitly pulling via detox. (https://jira.opendaylight.org/browse/RELENG-136)

Other Notes

- lftools' `openstack` module will now be installed as part of pre-build.
- The **openstack-cron** job now runs every hour instead of daily. This is because stack cleanup should happen more regularly.

2.1.32 v0.26.0

New Features

- Add a new `nexus-iq-namespace` optional parameter to insert a namespace into Nexus IQ AppID. This is useful for shared Nexus IQ systems where projects might have concern about namespace collision.

  Note: We recommend when using the namespace to add a trailing - to the value. Eg. 'odl-', this is to make the namespace look nice for example "odl-aaa" is the result of namespace odl-, and project name aaa.

- Add `lf-infra-publish-windows`. A publisher for use at the end of Windows based job-templates.

Bug Fixes

- Fix packer-verify job to correctly work with `clouds.yaml` config model implemented in global-jjb v0.25.0.

2.1.33 v0.25.1

Bug Fixes

- jjb-cleanup.sh may be merged with other shell scripts that `set -u` which causes Jenkins to fail when activating virtualenvs

2.1.34 v0.25.0

New Features

- Add support to the packer-build job to use clouds.yaml for openstack builder configuration rather than through the cloud-env file. This allows us to simplify the template configuration for openstack builders moving forward.
- New macro `lf-sigul-sign-dir` available to sign artifacts in a provided directory using Sigul.

  Usage:

```
- lf-sigul-sign-dir:
    sign-dir: '$WORKSPACE/m2repo'
```

  This macro also requires a boolean variable to `SIGN_ARTIFACTS` to be set to true to activate the macro. We recommend the job-template that uses this macro to define it in the job parameters section.

  Example:

```
- bool:
    name: SIGN_ARTIFACTS
    default: '{sign-artifacts}'
    description: Use Sigul to sign artifacts.
```

- Add Sigul signing support to the maven-staging job. To activate Sigul signing make sure to set `sign-artifacts: true`. Example:

```
- project:
    name: abc
    jobs:
      - gerrit-maven-stage

    sign-artifacts: true
```

- Add lf-stack-delete macro to delete an openstack heat stack at the end of the job.

  This macro requires a parameter defined in the job named STACK_NAME containing the name of the stack to delete.

- Add lf-infra-wrappers-windows to handle Windows specific wrapper configuration.
- Refactor lf-infra-wrappers to be for Linux systems and split out the non-linux specific components into a new lf-infra-wrappers-common. This change is seamless for current users of lf-infra-wrappers.

Upgrade Notes

- Upgrade to global-jjb v0.24.6 before performing this upgrade. This ensures that jjb-verify job pulls in a regex fix that will allow it to verify the v0.25.0 upgrade.
- Global JJB now has non-JJB YAML configuration and requires action on the ci-management repo when upgrading to this version of Global JJB to prevent JJB from picking up these YAMLs as config. Follow the instructions below BEFORE upgrading globall-jjb:

```
cd <git-root>
git mv jjb/global-jjb global-jjb
mkdir jjb/global-jjb
ln -s ../../global-jjb/shell jjb/global-jjb/shell
ln -s ../../global-jjb/jjb jjb/global-jjb/jjb
git add jjb/global-jjb
git commit -sm "Prepare repo for global-jjb v0.25.0"
```

- Minimum packer version 1.2.5 is now required for the packer-build job.
- **lf-infra-packer-build** macro now requires 2 new variables to be passed.
  1. **openstack:** Set to true if template is built using the openstack builder
  2. **openstack-cloud:** The clouds.yaml cloud to use when running `packer build`

Deprecation Notes

- lftools-install.sh is deprecated and will be removed in a future release. We recommend installing lftools via *pip install –user lftools* to install instead of using this script.

Bug Fixes

- Fix *pip install pip setuptools* which seems to fail against the Nexus 3 proxy. Run them as separate calls to make things happier.
- jjb-verify will now test on all changes in the jjb directory. The previous pattern was too specific and sometimes missed verifying patches that should be verified.
- Replace jjb-verify to test on all changes in the shell/* directory.
- Fix the lftools virtualenv workaround we had to put in place in the tox-verify job by using `pip install --user` for global tool installs.
- Fix jobs failing with UNSTABLE build due to install pip==18.0 missing. This change moves all the jobs to using lf-infra-pre-build to install lftools via –user command.
- Use *python -m pip* to ensure that we are using the pip version that was installed rather than the OS wrapper version of pip.
- Fix package listing script in post-builder from causing UNSTABLE build due to difference in the two files being compared.
- Fix RTD job failing to find PBR install.

Other Notes

- Update lftools to ~ 0.17.1

2.2 Install

global-jjb requires configuration in 2 places; `Jenkins` and the *ci-management* repository.

2.2.1 Jenkins configuration

On the Jenkins side, we need to prep `environment variables` and `plugins` required by the jobs in global-jjb before we can start our first jobs.

Install Jenkins plugins

Install the following required Jenkins plugins and any optional ones as necessary by the project.

Required

- Config File Provider
- Description Setter
- Environment Injector Plugin
- Git plugin
- Post Build Script
- SSH Agent
- Workspace Cleanup

Required for Gerrit connected systems

- Gerrit Trigger

Required for GitHub connected systems

- GitHub plugin
- GitHub Pull Request Builder

Optional

- Mask Passwords
- MsgInject
- OpenStack Cloud
- Timestamper

Environment Variables

The *Jenkins Configuration Merge* job can manage environment variables job but we must first bootstrap them in Jenkins so that the job can run and take over.

Required:

```
GIT_URL=ssh://jenkins-$SILO@git.opendaylight.org:29418
JENKINS_HOSTNAME=jenkins092
NEXUS_URL=https://nexus.opendaylight.org
SILO=production
SONAR_URL=https://sonar.opendaylight.org
```

Gerrit:

```
GERRIT_URL=https://git.opendaylight.org/gerrit
```

GitHub:

```
GIT_URL=https://github.com
GIT_CLONE_URL=git@github.com:
```

Note: Use `GIT_CLONE_URL` for GitHub projects as this will be different from the URL used in the properties configuration.

Optional:

```
LOGS_SERVER=https://logs.opendaylight.org
```

Steps

1. Navigate to https://jenkins.example.org/configure
2. Configure the environment variables as described above
3. Configure the same environment variables in the *ci-management* repo

2.2.2 ci-management

ci-management is a git repository containing *JJB* configuration files for Jenkins Jobs. Deploying Global JJB here as a submodule allows us easy management to install, upgrade, and rollback changes via git tags. Install Global JJB as follows:

1. Install Global JJB

```
GLOBAL_JJB_VERSION=v0.1.0
git submodule add https://github.com/lfit/releng-global-jjb.git global-jjb
cd global-jjb
git checkout $GLOBAL_JJB_VERSION
cd ..

# Setup symlinks
mkdir -p jjb/global-jjb
ln -s ../../global-jjb/jenkins-init-scripts jjb/global-jjb/jenkins-init-scripts
ln -s ../../global-jjb/shell jjb/global-jjb/shell
ln -s ../../global-jjb/jjb jjb/global-jjb/jjb
git add jjb/global-jjb

git commit -sm "Install global-jjb $GLOBAL_JJB_VERSION"
```

Note: We are purposely using github for production deploys of global-jjb so that uptime of LF Gerrit does not affect projects using global-jjb. In a test environment we can use https://gerrit.linuxfoundation.org/infra/releng/global-jjb if desired.

2. Setup `jjb/defaults.yaml`

   Create and configure the following parameters in the `jjb/defaults.yaml` file as described in the *defaults.yaml configuration docs <defaults-yaml>*.

Once configured commit the modifications:

```
git add jjb/defaults.yaml
git commit -sm "Setup defaults.yaml"
```

3. Push patches to Gerrit / GitHub using your favourite push method

At this point global-jjb installation is complete in the *ci-management* repo and is ready for use.

2.2.3 Deploy ci-jobs

The CI job group contains jobs that should deploy in all LF Jenkins infra. The minimal configuration to deploy the **{project-name}-ci-jobs** job group as defined in **lf-ci-jobs.yaml** is as follows:

jjb/ci-management/ci-management.yaml:

```
- project:
    name: ci-jobs

    jobs:
      - '{project-name}-ci-jobs'

    project: ci-management
    project-name: ci-management
    build-node: centos7-builder-2c-1g
```

Required parameters:

project The project repo as defined in source control.

project-name A custom name to call the job in Jenkins.

build-node The name of the builder to use when building (Jenkins label).

Optional parameters:

branch The git branch to build from. (default: master)

jjb-version The version of JJB to install in the build minion. (default: <defined by the global-jjb project>)

2.2.4 Deploy packer-jobs

The packer job group contains jobs to build custom minion images. The minimal configuration needed to deploy the packer jobs is as follows which deploys the **{project-name}-packer-jobs** job group as defined in **lf-ci-jobs.yaml**.

jjb/ci-management/packer.yaml:

```
- project:
    name: packer-builder-jobs

    jobs:
      - '{project-name}-packer-jobs'

    project: ci-management
    project-name: ci-management
    branch: master
    build-node: centos7-builder-2c-1g
```

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```
    platforms:
      - centos
      - ubuntu-16.04

    templates: builder

- project:
    name: packer-docker-jobs

    jobs:
      - '{project-name}-packer-jobs'

    project: ci-management
    project-name: ci-management
    branch: master
    build-node: centos7-builder-2c-1g

    templates: docker

    platforms:
      - centos
      - ubuntu-16.04
```

Required parameters:

project The project repo as defined in source control.

project-name A custom name to call the job in Jenkins.

build-node The name of the builder to use when building (Jenkins label).

platforms A list of supported platforms.

templates A list of templates to build. We recommend setting one template per `project` section so that we can control which platforms to build for specific templates.

Optional parameters:

branch The git branch to build from. (default: master)

packer-version The version of packer to install in the build minion, when packer is not available. (default: <defined by global-jjb>)

2.3 Configuration

2.3.1 defaults.yaml

This file lives in the ci-management repo typically under the path `jjb/defaults.yaml`. The purpose of this file is to store default variable values used by global-jjb templates.

Required

jenkins-ssh-credential The name of the Jenkins Credential to use for ssh connections. (ex: jenkins-ssh)

lftools-version Version of lftools to install. Can be a specific version like '0.6.1' or a PEP-440 definition For example *<1.0.0* or *>=1.0.0,<2.0.0*.

mvn-site-id Maven Server ID from settings.xml containing the credentials to push to a Maven site repository.

mvn-staging-id Maven Server ID from settings.xml containing the credentials to push to a Maven staging repository.

Gerrit required parameters:

gerrit-server-name The name of the Gerrit Server as defined in Gerrit Trigger global configuration. (ex: Primary)

GitHub required parameters:

git-url Set this to the base URL of your GitHub repo. In general this should be https://github.com. If you are using GitHub Enterprise, or some other GitHub-style system, then it should be whatever your installation base URL is. This sets a job property that GitHub Pull Request Builder requires to work. Note that this is the web url to your project: (eg. https://github.com/\protect\T1\textdollarORG/\protect\T1\textdollarPROJECT)

git-clone-url This is the clone prefix used by GitHub jobs. Set this to either the same base url as **git-url**, or to 'git@github.com:' including the trailing ':'. Determined by your clone method (https or git).

github-org The name of the GitHub organization interpolated into the scm config.

github_pr_org The name of the GitHub organization. All members of this organization will be able to trigger jobs.

github_pr_whitelist List of GitHub members you wish to be able to trigger jobs.

github_pr_admin_list List of GitHub members that will have admin privileges on the jobs.

Example Gerrit Infra:

```
- defaults:
    name: global

    # lf-infra defaults
    jenkins-ssh-credential: jenkins-ssh
    gerrit-server-name: OpenDaylight
    lftools-version: '<1.0.0'
    mvn-site-id: opendaylight-site
    mvn-staging-id: opendaylight-staging
```

Example GitHub Infra:

```
- defaults:
    name: global

    # lf-infra defaults
    jenkins-ssh-credential: jenkins-ssh
    github-org: lfit
    github_pr_whitelist:
      - jpwku
      - tykeal
      - zxiiro
    github_pr_admin_list:
      - tykeal
    lftools-version: '<1.0.0'
    mvn-site-id: opendaylight-site
    mvn-staging-id: opendaylight-staging
```

2.3.2 Jenkins Files

global-jjb makes use of the Jenkins Config File Provider plugin to provide some default configurations for certain tools. This section details the files to define in Jenkins' **Managed Files** configuration (eg: https://jenkins.example.org/configfiles/index).

npmrc

This file contains default npmrc configuration and lives in $HOME/.npmrc. Documentation for npmrc is available via the npm project.

Required This file MUST exist. An empty file is acceptable if a proxy is not available for the project.

type Custom file

Create a **Custom file** with contents:

```
registry = https://nexus.opendaylight.org/content/repositories/npmjs/
```

clouds-yaml

Needed by `openstack client` and `packer` to fetch OpenStack credentials and configuration. This file is OpenStack's clouds.yaml file.

Optional Needed for jobs that use `openstack client`. `packer` if building against OpenStack infra.

type Custom file

Create a **Custom file** with contents:

```
clouds:
vex:
 auth:
   project_name: OS_PROJECT_NAME
   username: OS_USERNAME
   password: OS_PASSWORD
   auth_url: 'https://auth.vexxhost.net/v3/'
   user_domain_name: Default
   project_domain_name: Default
 region_name: ca-ymq-1
```

Warning: If using packer 1.3.0 make sure that the clouds.yaml **profile** configuration is **NOT** configured. Using **profile** causes packer to look for another file called `clouds-public.yaml` for configuration.

pipconf

This file contains default configuration for the python-pip tool and lives in $HOME/.config/pip/pip.conf. Documentation for pip.conf is available via the pip project.

Required This file MUST exist. An empty file is acceptable if a proxy is not available for the project.

type Custom file

Create a **Custom file** with contents:

```
[global]
timeout = 60
index-url = https://nexus3.opendaylight.org/repository/PyPi/simple
```

jjbini

This file contains the Jenkins Job Builder configuration for *CI Jobs*.

Required This file MUST exist.

type Custom file

Create a **Custom file** with contents:

```
[job_builder]
ignore_cache=True
keep_descriptions=False
include_path=.:scripts:~/git/
recursive=True

[jenkins]
user=jenkins-jobbuilder
password=1234567890abcdef1234567890abcdef
url=https://jenkins.example.org
query_plugins_info=False

[production]
user=jenkins-jobbuilder
password=1234567890abcdef1234567890abcdef
url=https://jenkins.example.org
query_plugins_info=False

[sandbox]
user=jenkins-jobbuilder
password=1234567890abcdef1234567890abcdef
url=https://jenkins.example.org/sandbox
query_plugins_info=False
```

The last 2 sections are for the `jenkins-cfg` job use, they should match the `silo` names for the respective Jenkins systems, typically `production` and `sandbox`.

jenkins-log-archives-settings

See *lf-infra-ship-logs* for usage. If not archiving logs then keep this file with default settings, global-jjb needs the file to exist to function.

Requires a *credential* named 'logs' of type 'Username and Password' created in the Jenkins Credentials system.

1. Add Server Credentials
2. Set `ServerId` to `logs`
3. Set `Credentials` to the `logs` user created in the Credentials System

   Required This file MUST exist if using log archiving.

   type Maven settings.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<settings xmlns="http://maven.apache.org/SETTINGS/1.0.0"
          xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
          xsi:schemaLocation="http://maven.apache.org/SETTINGS/1.0.0 http://maven.
↪apache.org/xsd/settings-1.0.0.xsd">
</settings>
```

Note: This example is the default boilerplate generated by Jenkins with the comments stripped out. We can also use the default generated by Jenkins without modifying it.

packer-cloud-env

Cloud environment configuration variables for Packer jobs. These can contain credentials and configuration for whichever clouds packer jobs are using.

Required This file MUST exist to use packer jobs.

type Json file

```
{
  "cloud_auth_url": "https://auth.vexxhost.net/v3/",
  "cloud_tenant": "TENANT_ID",
  "cloud_user": "CLOUD_USERNAME",
  "cloud_pass": "CLOUD_PASSWORD",
  "cloud_network": "CLOUD_NETWORK",
  "ssh_proxy_host": ""
}
```

2.3.3 Jenkins CI Jobs

jenkins-cfg-merge

This job manages Jenkins Global configuration. Refer to the *CI Documentation* for job configuration details.

2.3.4 Log Archiving

The logs account requires a Maven Settings file created called **jenkins-log-archives-settings** with a server ID of **logs** containing the credentials for the logs user in Nexus.

2.4 Best Practices

2.4.1 JJB YAML Layout

Note: While some of this applies to the Global JJB project other recommendations are generally useful to projects that might be defining JJB templates.

The Global JJB project is a useful example project to look at so we recommend referring to the Maven job definitions as an example as you read the documentation below:

https://github.com/lfit/releng-global-jjb/blob/master/jjb/lf-maven-jobs.yaml

We recommend sectioning off the template into 3 general sections in order:

1. Job Groups (optional)
2. Common Functions
3. Job Template Definitions

In section 1) not all configurations need this so is an optional section. Job groups are useful in cases where there are jobs that are generally useful together. For example the OpenDaylight uses a lot of Merge and Verify job combinations so every new project will want both job types defined in their project.

In section 2) we want to define all common functions (anchors, aliases, macros) that are generally useful to all jobs in the file. This allows job template developers to look at the top of the file to see if there are useful functions already defined that they can reuse.

In section 3) we can declare our job definitions. In the Global JJB project we create Gerrit and GitHub versions of the jobs so the format we use here might look strange at first but is well layed out for code reuse if we need to define 2 or more versions of the same job template for different systems. We will define this in more detail in the next section.

Job Template Layout

1. Comment of Job Template Name
2. Macro containing build definition of the job a. Macro named after job b. Complete documentation of the job parameters c. Default parameters defined by the job d. Job configuration
3. job-template definition containing build triggers

In section 1) we need to declare a in large comment text to identify the job section.

In section 2) we declare the actual job definition. This is so that we have a single macro that we call in all the real job-template sections that is reusable and not duplicating any code. First we declare the macro as the job name. Then in 2.b) we provide the complete documentation of the job parameters this is so that we can link users of the job to this file and they can understand fully what options they can configure for this particular job. Then we define defaults for any parameters that are optional. The last section we define the job configuration which completes the macro.

In section 3) we declare the actual job-template. Because of all the preparations above job template definitions should be small and simple. It needs to define the scm and job triggers. The Global JJB project needs to support both Gerrit and GitHub versions of the same job so the job definitions there have 2 templates for each job defined.

2.4.2 Passing parameters to shell scripts

There are 2 ways to pass parameters into scripts:

1. JJB variables in the format {var}
2. Environment variables in the format ${VAR}

We recommend avoiding using method 1 (Pass JJB variables) into shell scripts and instead always use method 2 (Environment variables). This makes troubleshooting JJB errors easier and does not require escaping curly braces.

This method requires 3 steps:

1. Declare a parameter section or inject the variable as properties-content.
2. Invoke the shell script with *include-raw-escape* instead of *include-raw*.

3. Use the shell variable in shell script.

The benefit of this method is that parameters will always be at the top of the job page and when clicking the Build with Parameters button in Jenkins we can see the parameters before running the job. We can review the parameters retroactively by visiting the job parameters page `job/lastSuccessfulBuild/parameters/`. Injecting variables as properties-content makes the variable local to the specific macro, while declaring it as parameter makes the variable global.

Note: When a macro which invokes a shell script has no JJB parameters defined *!include-raw-escape* will insert extra curly braces, in such cases its recommended to use *!include-raw*.

2.4.3 Shell scripts

When developing shell scripts for JJB we recommend to create shell scripts as a separate file instead of inlining in YAML. This way we can ensure that the ShellCheck linter can catch potential issues with the scripts.

When writing the script itself, we recommend to redeclare all expected inputs at the top of the file using lowercase variable names before setting `set -u` after the inputs section. This ensures that all variables the script expects are at the top of the file which is useful for others to review and debug the script at a later stage. The `set -u` configuration before the start of the script code ensures that we catch any of these undeclared variables at the top of the file.

Example:

```
#!/bin/bash

# Inputs
tox_dir="${TOX_DIR:-$WORKSPACE}"
tox_envs="${TOX_ENVS:-}"

# Script start
set -eux -o pipefail

# ... script code goes here
```

2.4.4 Usage of config-file-provider

When using the config-file-provider plugin in Jenkins to provide a config file. We recommend using a macro so that we can configure the builder to remove the config file as a last step. This ensures that credentials do not exist on the system for longer than it needs to.

ship-logs example:

```
- builder:
    name: lf-ship-logs
    builders:
      - config-file-provider:
          files:
            - file-id: jenkins-log-archives-settings
              variable: SETTINGS_FILE
      - shell: !include-raw:
          - ../shell/logs-get-credentials.sh
      - shell: !include-raw:
          - ../shell/logs-deploy.sh
      - shell: !include-raw:
```

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```
        - ../shell/logs-clear-credentials.sh
    - description-setter:
        regexp: '^Build logs: .*'
```

In this example the script logs-deploy requires a config file to authenticate with Nexus to push logs up. We declare a macro here so that we can ensure that we remove credentials from the system after the scripts complete running via the logs-clear-credentials.sh script. This script contains 3 basic steps:

1. Provide credentials via config-file-provider
2. Run logs-deploy.sh
3. Remove credentials provided by config-file-provider

2.4.5 Preserving Objects in Variable References

JJB has an option to preserve a data structure object when you want to pass it to a template. https://docs.openstack.org/infra/jenkins-job-builder/definition.html#variable-references

One thing that is not explicitly covered is the format of the variable name that you pass the object to. When you use the *{obj:key}* notation to preserve the original data structure object, it will not work if the variable name has a dash - in it. The standard that we follow, and recommend, is to use an underscore _ instead of a dash.

Example:

```
.. literalinclude:: _static/github-pr-trigger.example
```

In the above example note the use of underscores in `github_pr_whitelist`, `github_pr_admin_list`, and `github_included_regions`.

2.4.6 Using single quotes around variables

Its recommended to use single quotes around JJB variables '{variable}-field' during variable substitution or when using a variable in a string field, in other cases its recommended to drop the single quotes.

Example:

```
- builder:
    name: lf-user-logs
    builders:
      - inject:
          properties-content: |
              'HOME={user-home}'
      - build-file:
          settings: '{settings-file}'
          file-version: '{file-version}'
```

2.4.7 Variable expansion and Defaults

JJB has a concept called Defaults which is what JJB will replace a variable with if unset. Variables can configure dynamic content in job-template sections and allow certain options in these sections to be configurable.

The section that expands Defaults is Job Templates no other sections will expand a default. This documentation will explain how variables and defaults expansion works and which take precedence in JJB's variable expansion logic for the following configuration sections.

- macro
- job-template
- project
- default

Macro sections

Macro sections can contain variables but do **NOT** support default values getting filled in both at the macro definition level and at the defaults configuration level. Macros and Job Templates can use Macros but any variables defined in a Macro needs to pass a value or a new variable redefined in the Job Template if you want to pass on the configuration.

So for example if you have a macro that has a '{msg}' variable:

Example:

```
- builder:
    name: echo-msg
    builders:
      - shell: "echo {msg}"
```

Any downstream job-templates or macros that use this macro **MUST** pass in a *msg: Hello* definition or redefine the msg variable *msg: {msg}*.

Job Template sections

Job Template sections can use defaults in two ways.

1. Configure the message:

   ```
   - job-template:
       name: echo-hello-world
       builders:
         - echo-msg:
             msg: 'Hello World'
   ```

2. Re-define '{msg}' variable

   ```
   - job-template:
       name: echo-message
       builders:
         - echo-msg:
             msg: '{message}'
   ```

In option 2, we redefine the variable msg as *{message}* which a user of the job-template can now pass into the job their own custom message which is different than option 1, where we set a static message to pass in. We purposely redefined the **{msg}** to **{message}** here to show that you do not need to redefine it with the same name but we could have used the same name *{msg}* in the template too if we wanted to keep it the same.

Job Templates can also default a default variable for the variables it defines.

Example:

```
- job-template:
  name: echo-message
  message: 'Hello World'
```

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```
  builders:
    - echo-msg:
        msg: '{message}'
```

This creates a job template variable called '{message}' which will default to "Hello World" if the user of the template does not explicitly pass in a message.

We should be aware of 2 Defaults concepts:

1. Default as defined in the job-template
2. Default as defined in a defaults configuration (typically defaults.yaml)

In this case there is a default '{message}' set in the job-template. JJB will use this default if the user (project section) does not declare a {message}.

If we do not declare a default in the job-template then JJB will fallback to checking the "defaults configuration".

This means that the precedence of defaults is as follows:

1. User-provided
2. Job Template
3. Defaults.yaml

Project sections

Project sections define real jobs and pass in variables as necessary. Projects sections do NOT expand defaults.yaml. So you cannot configure a setting with {var} in here and expect defaults.yaml to fill it in for you. Define required configuration here.

Example:

```
- project
    name: foo
    jobs:
      - 'echo-message'
    message: 'I am foo'
```

Defaults sections

Defaults sections are the absolute last thing JJB checks if a variable is not configured in a job-template and user did not pass in the variable. JJB will fill in whatever is in the defaults configuration.

Variable expansion order of precedence seems to be:

1. job-group section definition
2. project section definition
3. job-template variable definition
4. defaults.yaml variable definition

Note: Defaults set variables in job-templates and are NOT used in Macros.

global-jjb should not provide job-group definitions and leave it up to users of global-jjb to create their own as a job-group as a variable defined in a job group the highest precedence. Global JJB should strive to be purely a job-template and macro library for downstream consumers.

Final thoughts

For any Basic Job Configuration for example "concurrent", "jdk", "node" etc... we cannot set defaults with the same name as JJB will not expand them. To use "node" we need to give the variable for that setting a different name such as "build-node" instead, if we want JJB to perform expansion for those settings. This issue affects top level job configuration, it does not appear to affect items below the top level such as calling a builder, wrapper or parameter.

2.5 Glossary

ciman Short for *ci-management*.

ci-management Refers to the SCM repository containing the *JJB* configuration files. In most LF Projects this is the repository named `ci-management`, but is `releng/builder` in the OpenDaylight project and `releng` in the OPNFV project.

JJB Short for Jenkins Job Builder (JJB) a tool used to convert YAML definitions into XML as a way to define Jenkins job configuration.

2.6 Appendix

2.6.1 ShellCheck

When using ShellCheck to lint global-jjb or any projects that include global-jjb as part of their project (common with ci-management repos) then we require version 0.4.x of ShellCheck installed on the build vms. This version introduces annotations used by shell scripts in this repo.

CHAPTER 3

Global JJB Templates

Job template code is in the *jjb/* directory but documentation is in the *docs/jjb/* directory of this project.

3.1 C/C++ Jobs

3.1.1 Job Templates

CMake Sonar

Sonar job which runs cmake && make then publishes to Sonar.

This job purposely runs on the master branch as there are configuration needed to support multi-branch.

Template Names

- {project-name}-cmake-sonar
- gerrit-cmake-sonar
- github-cmake-sonar

Comment Trigger run-sonar

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Configure in defaults.yaml)

sonar-scanner-version Version of sonar-scanner to install.

sonarcloud-project-key SonarCloud project key.

sonarcloud-project-organization SonarCloud project organization.

sonarcloud-api-token SonarCloud API Token.

Optional parameters

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

cmake-opts Parameters to pass to cmake. (default: '')

cron Cron schedule when to trigger the job. This parameter also supports multiline input via YAML pipe | character in cases where one may want to provide more than 1 cron timer. (default: '@daily')

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

install-prefix CMAKE_INSTALL_PREFIX to use for install. (default: $BUILD_DIR/output)

make-opts Parameters to pass to make. (default: '')

pre-build Shell script to run before performing build. Useful for setting up dependencies. (default: '')

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_sonar_triggers Override Gerrit Triggers.

CMake Stage

Stage job which runs cmake && make && make install and then packages the project into a tar.xz tarball to produce a release candidate.

Template Names

- {project-name}-cmake-stage-{stream}
- gerrit-cmake-stage
- github-cmake-stage

Comment Trigger stage-release

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Configure in defaults.yaml)

nexus-group-id The Maven style Group ID for the namespace of the project in Nexus.

staging-profile-id The unique Nexus Staging Profile ID for the project. Contact your infra admin if you do not know it.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-dir Directory to build the project in. (default: $WORKSPACE/target)

build-timeout Timeout in minutes before aborting build. (default: 60)

cmake-opts Parameters to pass to cmake. (default: '')

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

install-prefix CMAKE_INSTALL_PREFIX to use for install. (default: $BUILD_DIR/output)

make-opts Parameters to pass to make. (default: '')

pre-build Shell script to run before performing build. Useful for setting up dependencies. (default: '')

stream Keyword that to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

version (default: '') Project version to stage release as. There are 2 methods for using this value:

1. Defined explicitly here.
2. Leave this value blank and set /tmp/artifact_version

Use method 2 in conjunction with 'pre-build' configuration to generate the artifact_version automatically from files in the project's repository. For example with pre-build script:

```
#!/bin/bash
MAJOR_VERSION="$(grep 'set(OCIO_VERSION_MAJOR' CMakeLists.txt
↪| awk '{{print $NF}}' | awk -F')' '{{print $1}}')"
MINOR_VERSION="$(grep 'set(OCIO_VERSION_MINOR' CMakeLists.txt
↪| awk '{{print $NF}}' | awk -F')' '{{print $1}}')"
PATCH_VERSION="$(grep 'set(OCIO_VERSION_PATCH' CMakeLists.txt
↪| awk '{{print $NF}}' | awk -F')' '{{print $1}}')"
echo "${{MAJOR_VERSION}}.${{MINOR_VERSION}}.${{PATCH_VERSION}}
↪" > /tmp/artifact_version
```

CMake Verify

Verify job which runs cmake && make && make install to test a project build..

Template Names

- {project-name}-cmake-verify-{stream}
- gerrit-cmake-verify
- github-cmake-verify

Comment Trigger recheck|reverify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Configure in defaults.yaml)

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-dir Directory to build the project in. (default: $WORKSPACE/target)

build-timeout Timeout in minutes before aborting build. (default: 60)

cmake-opts Parameters to pass to cmake. (default: '')

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

install-prefix CMAKE_INSTALL_PREFIX to use for install. (default: $BUILD_DIR/output)

make-opts Parameters to pass to make. (default: '')

pre-build Shell script to run before performing build. Useful for setting up dependencies. (default: '')

stream Keyword that to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which to filter which file modifications will trigger a build.

3.2 CI Jobs

3.2.1 Job Groups

Job groups are a great tool to configure categories of jobs together at the same time. Below the example are some starting point job-groups but we recommend creating your own to ensure that the jobs configured reflect the project's needs.

An example project:

```
- job-group:
    name: odl-maven-jobs

    jobs:
      - gerrit-maven-clm
      - gerrit-maven-merge
      - gerrit-maven-release
      - gerrit-maven-verify
      - gerrit-maven-verify-dependencies:
          build-timeout: 180

    mvn-version: mvn35

- project:
    name: aaa
    jobs:
      - odl-maven-jobs
```

In this example we are using the job-group to assign a list of common jobs to the aaa project. The job-group also hardcodes `mvn-version` to *mvn35* and `build-timeout` to *180* for all projects using this job-group.

A benefit of this method is for example disabling entire category of jobs by modifying the job-group, insert `disable-job: true` parameter against the jobs to disable.

Below is a list of CI job groups:

```
---
- job-group:
    name: "{project-name}-ci-jobs"

    jobs:
      - gerrit-jenkins-cfg-merge
      - gerrit-jenkins-cfg-verify
      - gerrit-jenkins-sandbox-cleanup
      - gerrit-jjb-deploy-job
      - gerrit-jjb-merge
      - gerrit-jjb-verify

- job-group:
    name: "{project-name}-github-ci-jobs"

    jobs:
      - github-jenkins-cfg-merge
      - github-jenkins-cfg-verify
      - github-jenkins-sandbox-cleanup
      - github-jjb-deploy-job
      - github-jjb-merge
      - github-jjb-verify

- job-group:
    name: "{project-name}-info-yaml-jobs"

    jobs:
      - gerrit-info-yaml-verify

- job-group:
    name: "{project-name}-github-info-yaml-jobs"

    jobs:
      - github-info-yaml-verify

- job-group:
    name: "{project-name}-packer-jobs"

    jobs:
      - gerrit-packer-merge
      - gerrit-packer-verify

- job-group:
    name: "{project-name}-github-packer-jobs"

    jobs:
      - github-packer-merge
      - github-packer-verify

- job-group:
    name: "{project-name}-openstack-jobs"

    jobs:
```

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```
      - gerrit-openstack-update-cloud-image
      - gerrit-openstack-cron

- job-group:
    name: "{project-name}-github-openstack-jobs"

    jobs:
      - github-openstack-update-cloud-image
      - github-openstack-cron
```

3.2.2 Macros

lf-infra-jjb-parameters

Required Parameters

jjb-cache Location of Jenkins Job Builder (JJB) cache used for jjb jobs.

jjb-version Version of Jenkins Job Builder (JJB) to install and use in the jjb jobs.

lf-jenkins-cfg-clouds

Deploys Jenkins Cloud configuration read from the `jenkins-clouds` directory in ci-management repositories.

Note: Requires the jjbini file in Jenkins CFP to contain JJB 2.0 style config definitions for "production" and "sandbox" systems.

Required Parameters

jenkins-silos Space-separated list of Jenkins silos to update configuration for as defined in ~/.config/jenkins_jobs/jenkins_jobs.ini

lf-jenkins-cfg-global-vars

Manages the Global Jenkins variables. This macro will clear all exist macros in Jenkins and replaces them with the ones defined by the ci-management/jenkins-config/global-vars-SILO.sh script.

Note: Requires the jjbini file in Jenkins CFP to contain JJB 2.0 style config definitions for "production" and "sandbox" systems.

Required parameters

jenkins-silos Space-separated list of Jenkins silos to update configuration for as defined in ~/.config/jenkins_jobs/jenkins_jobs.ini

lf-infra-jjbini

Provides jenkins_jobs.ini configuration for Jenkins.

lf-packer-common

Common packer configuration.

lf-packer-file-paths

Gerrit file-paths for packer jobs.

lf-packer-parameters

Parameters useful for packer related tasks.

Parameters

packer-version Version of packer to install / use. (shell: PACKER_VERSION)

lf-packer-verify-file-paths

Gerrit file-paths for packer verify jobs.

lf-puppet-parameters

Parameters useful for Puppet related tasks.

Parameters

puppet-lint-version Version of puppet-lint to install / use. (shell: PUPPET_LINT_VERSION)

3.2.3 Job Templates

Gerrit Branch Lock

Job submits a patch to lock or unlock a project's branch.

Template Names

- {project-name}-gerrit-branch-lock-{stream}
- gerrit-branch-lock

Comment Trigger

- lock branch
- unlock branch

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

Optional parameters

branch Git branch to build against. (default: master)

git-url URL to clone project from. (default: $GIT_URL/$GERRIT_PROJECT)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_merge_triggers Override Gerrit Triggers.

Jenkins Configuration Merge

Jenkins job to manage Global Jenkins configuration.

Note: Requires the jjbini file in Jenkins CFP to contain JJB 2.0 style config definitions for "production" and "sandbox" systems.

Template names

- {project-name}-jenkins-cfg-merge
- gerrit-jenkins-cfg-merge
- github-jenkins-cfg-merge

Optional parameters

branch Git branch to build against. (default: master)

cron How often to run the job on a cron schedule. (default: @daily)

git-url URL to clone project from. (default: $GIT_URL/$GERRIT_PROJECT)

jenkins-silos Space separated list of Jenkins silos to update configuration for as defined in ~/.config/jenkins_jobs/jenkins_jobs.ini (default: production sandbox)

Typically this template is automatically pulled in by the "{project-name}-ci-jobs" job-group and does not need to be explicitly called if the job group is being used.

Minimal Example:

```
---
- project:
    name: jenkins-cfg-merge-minimal-test
    jobs:
      - "gerrit-jenkins-cfg-merge"

    project-name: ci-management
```

Full Example:

```
---
- project:
    name: jenkins-cfg-merge-full-test
    jobs:
      - "gerrit-jenkins-cfg-merge"

    project-name: builder
    jenkins-silos: releng sandbox
```

Global Environment Variables

Global Environment Variables are managed via the `jenkins-config/global-vars-SILO.sh` file in ci-management. Replace SILO with the name of the Jenkins silo the variable configuration is for.

The format for this file is `KEY=value` for example:

```
GERRIT_URL=https://git.opendaylight.org/gerrit
GIT_BASE=git://devvexx.opendaylight.org/mirror/$PROJECT
GIT_URL=git://devvexx.opendaylight.org/mirror
JENKINS_HOSTNAME=vex-yul-odl-jenkins-2
LOGS_SERVER=https://logs.opendaylight.org
NEXUS_URL=https://nexus.opendaylight.org
ODLNEXUSPROXY=https://nexus.opendaylight.org
SILO=sandbox
SONAR_URL=https://sonar.opendaylight.org
```

Cloud Configuration

This configuration requires the OpenStack Cloud plugin in Jenkins and is currently the only cloud plugin supported.

OpenStack Cloud plugin version supported:

- 2.30 - 2.34
- 2.35 - 2.37

Cloud configuration are managed via a directory structure in ci-management as follows:

- jenkins-config/clouds/openstack/
- jenkins-config/clouds/openstack/cattle/cloud.cfg
- jenkins-config/clouds/openstack/cattle/centos7-builder-2c-2g.cfg
- jenkins-config/clouds/openstack/cattle/centos7-builder-4c-4g.cfg
- jenkins-config/clouds/openstack/cattle/centos7-docker-4c-4g.cfg

The directory name inside of the "openstack" directory is used as the name of the cloud configuration. In this case "cattle" is being used as the cloud name.

The `cloud.cfg` file is a special file used to configure the main cloud configuration in the format `KEY=value`.

Cloud Parameters

CLOUD_URL API endpoint URL for Keystone. (default: "")

CLOUD_IGNORE_SSL Ignore unverified SSL certificates. (default: false)

CLOUD_ZONE OpenStack region to use. (default: "")

CLOUD_CREDENTIAL_ID Credential to use for authentication to OpenStack. (default: "os-cloud")

INSTANCE_CAP Total number of instances the cloud will allow spin up. (default: null)

SANDBOX_CAP Total number of instances the cloud will allow to spin up. This applies to "sandbox" systems and overrides the INSTANCE_CAP setting. (default: null)

Template Parameters

Note: In the case of template definitions of a parameter below is not passed the one defined in default clouds will be inherited.

IMAGE_NAME The image name to use for this template. (required)

HARDWARE_ID OpenStack flavor to use. (required)

LABELS Labels to assign to the vm. (default: FILE_NAME)

NETWORK_ID OpenStack network to use. (default: "")

USER_DATA_ID User Data to pass into the instance. (default: jenkins-init-script)

INSTANCE_CAP Total number of instances of this type that can be launched at one time. When defined in clouds.cfg it defines the total for the entire cloud. (default: null)

SANDBOX_CAP Total number of instances of this type that can be launched at one time. When defined in clouds.cfg it defines the total for the entire cloud. This applies to "sandbox" systems and overrides the INSTANCE_CAP setting. (default: null)

FLOATING_IP_POOL Floating ip pool to use. (default: "")

SECURITY_GROUPS Security group to use. (default: "default")

AVAILABILITY_ZONE OpenStack availability zone to use. (default: "")

START_TIMEOUT Number of milliseconds to wait for the agent to be provisioned and connected. (default: 600000)

KEY_PAIR_NAME SSH Public Key Pair to use for authentication. (default: jenkins)

NUM_EXECUTORS Number of executors to enable for the instance. (default: 1)

JVM_OPTIONS JVM Options to pass to Java. (default: "")

FS_ROOT File system root for the workspace. (default: "/w")

RETENTION_TIME Number of minutes to wait for an idle slave to be used again before it's removed. If set to -1, the slave will be kept forever. (default: 0)

CONNECTION_TYPE The connection type for Jenkins to connect to the build minion. Valid options: JNLP, SSH. (default: "SSH")

For a live example see the OpenDaylight project jenkins-config directory. https://github.com/opendaylight/releng-builder/tree/master/jenkins-config

Troubleshooting

Cloud Configuration

The directory `groovy-inserts` contains the groovy script output that is used to push to Jenkins. In the event of a job failure this file can be inspected.

Jenkins Configuration Verify

Jenkins job to verify the Global Jenkins configuration.

Requires the `clouds-yaml` file to be setup on the Jenkins host.

Template names

- {project-name}-jenkins-cfg-verify
- gerrit-jenkins-cfg-verify
- github-jenkins-cfg-verify

Optional parameters

branch Git branch to build against. (default: master)

git-url URL to clone project from. (default: $GIT_URL/$GERRIT_PROJECT)

This job is not part of the "{project-name}-ci-jobs" group. It must be called explicitly.

Example:

```
---
- project:
    name: jenkins-cfg-verify
    jobs:
      - "gerrit-jenkins-cfg-verify"

    project-name: ci-management
```

Jenkins Sandbox Cleanup

Cleanup Jenkins Sandbox of jobs and views periodically.

Template names

- {project-name}-jenkins-sandbox-cleanup
- gerrit-jenkins-sandbox-cleanup
- github-jenkins-sandbox-cleanup

Comment Trigger NONE

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

Optional parameters

cron Schedule to run job. (default: '0 8 * * 6')

JJB Deploy Job

Deploy jobs to jenkins-sandbox system via code review comment.

This job checks out the current code review patch and then runs a `jenkins-jobs update` to push a patch defined by the comment.

Template names

- {project-name}-jjb-deploy-job
- gerrit-jjb-deploy-job
- github-jjb-deploy-job

Comment Trigger jjb-deploy JOB_NAME

Note: The JJB Deploy Job is configured to trigger only if the Gerrit comment starts with the *jjb-deploy* keyword.

Example of a valid command in Gerrit comment that triggers the job:

```
jjb-deploy builder-jjb-*
```

Example of a invalid command in Gerrit comment that would _not_ trigger the job:

```
Update the job. jjb-deploy builder-jjb-*
```

JOB_NAME can include the * wildcard character to push multiple jobs matching the pattern. For example `jjb-deploy builder-jjb-*` will push all builder-jjb-* jobs to the sandbox system.

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

Optional parameters

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

gerrit_jjb_deploy_job_triggers Override Gerrit Triggers.

JJB Merge

Runs *jenkins-jobs update* to update production job configuration

Template Names

- {project-name}-jjb-merge
- gerrit-jjb-merge
- github-jjb-merge

Comment Trigger remerge

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

jjb-cache JJB cache location. (default: $HOME/.cache/jenkins_jobs)

jjb-workers Number of threads to run **update** with. Set to 0 by default which is equivalent to the number of available CPU cores. (default: 0)

jjb-version JJB version to install. (default: see job-template)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_merge_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which can be used to filter which file modifications will trigger a build. (default defined by lf_jjb_common)

JJB Verify

Runs *jenkins-jobs test* to validate JJB syntax

Template Names

- {project-name}-jjb-verify
- gerrit-jjb-verify
- github-jjb-verify

Comment Trigger recheck|reverify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-concurrent Whether or not to allow this job to run multiple jobs simultaneously. (default: true)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

jjb-cache JJB cache location. (default: $HOME/.cache/jenkins_jobs)

jjb-version JJB version to install. (default: see job-template)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

throttle_categories List of categories to throttle by.

throttle-enabled Whether or not to enable throttling on the job. (default: true)

throttle-max-per-node Max jobs to run on the same node. (default: 1)

throttle-max-total Max jobs to run across the entire project. - 0 means 'unlimited' (default: 0)

throttle-option Throttle by the project or by list of categories defined in the throttle plugin configuration. (options: 'project', 'category'; default: project)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which can be used to filter which file modifications will trigger a build. (default defined by lf_jjb_common)

JJB Verify Upstream Global JJB

Runs `jenkins-jobs test` to validate JJB syntax for upstream global-jjb patches. This job is useful to notify upstream that they may be breaking project level jobs.

Template Names

- {project-name}-jjb-verify-upstream-gjjb
- gerrit-jjb-verify-upstream-gjjb

Comment Trigger recheck|reverify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

jjb-cache JJB cache location. (default: $HOME/.cache/jenkins_jobs)

jjb-version JJB version to install. (default: see job-template)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

Info YAML Verify

Info YAML Verify job validates that INFO.yaml file changes are kept isolated from other file changes. Verifies INFO.yaml files follow the schema defined in *lfit/releng-global-jjb/schema/info-schema.yaml*.

Template Names

- {project-name}-info-yaml-verify
- gerrit-info-yaml-verify
- github-info-yaml-verify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

License Checker

Job to scan projects for files missing license headers.

Template Names

- {project-name}-license-check
- gerrit-license-check
- github-license-check

Optional parameters

build-timeout Timeout in minutes before aborting build. (default: 15)

file-patterns Space-separated list of file patterns to scan. (default: *.go *.groovy *.java *.py *.sh)

spdx-disable Disable the SPDX-Identifier checker. (default: false)

lhc-version Version of LHC to use. (default: 0.2.0)

license-exclude-paths Comma-separated list of paths to exclude from the license checker. The paths used here will be matched using a contains rule so it is best to be as precise with the path as possible. For example a path of '/src/generated/' will be searched as '**/src/generated/**'. Example: org/opendaylight/yang/gen,protobuff/messages (default: '')

licenses-allowed Comma-separated list of allowed licenses. (default: Apache-2.0,EPL-1.0,MIT)

project-pattern The ANT based pattern for Gerrit Trigger to choose which projects to trigger job against. (default: '**')

OpenStack Cron

Cron job that runs regularly to perform periodic tasks against OpenStack.

This job requires a Config File Provider file named `clouds-yaml` available containing the credentials for the cloud.

Template Names

- {project-name}-openstack-cron
- gerrit-openstack-cron
- github-openstack-cron

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

jenkins-urls URLs to Jenkins systems to check for active builds.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 90)

cron Time when the packer image should be rebuilt (default: @hourly)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

openstack-cloud OS_CLOUD setting to pass to openstack client. (default: vex)

openstack-image-cleanup Whether or not to run the image cleanup script. (default: true)

openstack-image-cleanup-age Age in days of image before marking it for removal. (default: 30)

openstack-image-protect Whether or not to run the image protect script. (default: true)

openstack-server-cleanup Whether or not to run the server cleanup script. (default: true)

openstack-stack-cleanup Whether or not to run the stack cleanup script. (default: true)

openstack-volume-cleanup Whether or not to run the volume cleanup script. (default: true)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

Minimal Example:

```
---
- project:
    name: openstack-cron-minimal-test
    jobs:
      - "gerrit-openstack-cron"

    project-name: ci-management

    jenkins-urls: >
      https://jenkins.example.org
      https://jenkins.example.org/sandbox
```

Full Example:

```
---
- project:
    name: openstack-cron-full-test
    jobs:
      - "gerrit-openstack-cron"

    project-name: ciman-full

    jenkins-urls: >
      https://jenkins.example.org
      https://jenkins.example.org/sandbox
    openstack-cloud: example-cloud
    openstack-image-cleanup: false
    openstack-image-cleanup-age: 42
    openstack-image-protect: false
    openstack-server-cleanup: false
    openstack-stack-cleanup: false
    openstack-volume-cleanup: false
```

OpenStack Update Cloud Image

This job finds and updates OpenStack cloud images on the ci-management source repository.

The job is triggered in two ways:

1. When packer merge job completes, the new image name created is passed down to the job.
2. When the job is triggered manually to update all new images.

When the job is triggered through an upstream packer merge job, this only generates a change request for the new image built.

When the job is triggered manually, this job finds the latest images on OpenStack cloud and compares them with the images currently used in the source ci-management source repository. If the compared images have newer time stamps are **all** updated through a change request.

This job requires a Jenkins configuration merge and verify job setup and working on Jenkins.

Template Names

- {project-name}-openstack-update-cloud-image
- gerrit-openstack-update-cloud-image
- github-openstack-update-cloud-image

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

new-image-name Name of new image name passed from packer merge job or set to 'all' to update all images. (default: all)

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 90)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

openstack-cloud OS_CLOUD setting to pass to openstack client. (default: vex)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

update-cloud-image Submit a change request to update new built cloud image to Jenkins. (default: false)

Minimal Example:

```
---
- project:
    name: openstack-update-cloud-images-minimal-test
    jobs:
      - "gerrit-openstack-update-cloud-image"

    project-name: ciman-minimal
    gerrit-user: "jenkins-user"
    gerrit-host: "git.example.org"
    gerrit-topic: "update-cloud-image"
    reviewers-email: "jenkins-user@example.org"
```

Full Example:

```
---
- project:
    name: openstack-update-cloud-images-full-test
    jobs:
      - "gerrit-openstack-update-cloud-image"

    project: ciman
    project-name: ciman-full
    build-timeout: 10
    branch: master
    archive-artifacts: "**/*.log"
    jenkins-ssh-credential: "{jenkins-ssh-credential}"
    gerrit-user: "jenkins-user"
    gerrit-host: "git.example.org"
    gerrit-topic: "update-cloud-image"
    reviewers-email: "jenkins-user@example.org"
```

Packer Merge

Packer Merge job runs *packer build* to build system images in the cloud.

Template Names

- {project-name}-packer-merge-{platforms}-{templates}
- gerrit-packer-merge

- github-packer-merge

Comment Trigger remerge

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

platforms Platform or distribution to build. Typically json file found in the packer/vars directory. (Example: centos)

template System template to build. Typically shell script found in the packer/provision directory. (Example: java-builder)

Optional parameters

cron Time when the packer image should be rebuilt (default: @monthly)

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 90)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

openstack Packer template uses an OpenStack builder (default: true).

openstack-cloud Sets OS_CLOUD variable to the value of this parameter. (default: vex).

packer-cloud-settings Name of settings file containing credentials for the cloud that packer will build on. (default: packer-cloud-env)

packer-version Version of packer to install / use in build. (default: 1.0.2)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

update-cloud-image Submit a change request to update new built cloud image to Jenkins. (default: false)

Test an in-progress patch

To test an in-progress patch from a GitHub Pull Request. Upload this job to the Jenkins Sandbox. Then when manually building the job replace the GERRIT_REFSPEC parameter with the GitHub Pull Request number of the patch you would like to test.

Example GitHub:

```
GERRIT_REFSPEC: origin/pr/49/merge
```

Packer Verify

Packer Verify job runs *packer validate* to verify packer configuration.

Template Names

- {project-name}-packer-verify
- gerrit-packer-verify
- github-packer-verify

Comment Trigger recheck|reverify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

openstack Packer template uses an OpenStack builder (default: true).

openstack-cloud Sets OS_CLOUD variable to the value of this parameter. (default: vex).

packer-cloud-settings Name of settings file containing credentials for the cloud that packer will build on. (default: packer-cloud-env)

packer-version Version of packer to install / use in build. (default: 1.0.2)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which can be used to filter which file modifications will trigger a build.

Puppet Verify

Runs puppet-lint in the `puppet-dir` directory. puppet-lint runs recursively, the base directory is usually the best place to run from.

Template Names

- {project-name}-puppet-verify
- gerrit-puppet-verify

- github-puppet-verify

Comment Trigger recheck|reverify

Required Parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 15)

gerrit_trigger_file_paths Override file paths which used to filter which file modifications will trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

git-url URL clone project from. (default: $GIT_URL/$GERRIT_PROJECT)

puppet-dir Directory containing the project's puppet module(s) relative to the workspace. (default: '')

puppet-lint-version Version of puppet-lint to use for testing. (default: 2.3.6)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

Sonar

Runs Jenkins Sonarqube plug-in to review for bugs, code smells, and security vulnerabilities.

Requires `SonarQube Scanner for Jenkins`

Plug-in configurations

Manage Jenkins –> Configure System –> SonarQube servers

- Name: Sonar (fixed)
- Server URL: https://sonar.server.org/
- Server authentication token: none

Manage Jenkins –> Global Tool Configuration –> SonarQube Scanner

- Name: SonarQube Scanner (fixed)
- Install automatically
- Select latest version

Template Names

- {project-name}-sonar
- gerrit-sonar

- github-sonar

Optional Parameters

sonar-task Sonar task to run. (default: "")

sonar-properties Sonar configuration properties. (default: "")

sonar-java-opts JVM options. (default: "")

sonar-additional-args Additional command line arguments. (default: "")

Sonar with Prescan

The same as the Sonar job above, except the caller also defines a builder called `lf-sonar-prescan`, in which they can put any builders that they want to run prior to the Sonar scan.

```
- builder:
    name: lf-sonar-prescan
    builders:
      - shell: "# Pre-scan shell script"
```

Template Names

- {project-name}-sonar-prescan
- gerrit-sonar-prescan
- github-sonar-prescan

Required Parameters

lf-sonar-prescan A builder that will run prior to the Sonar scan.

Optional Parameters

sonar-task Sonar task to run. (default: "")

sonar-properties Sonar configuration properties. (default: "")

sonar-java-opts JVM options. (default: "")

sonar-additional-args Additional command line arguments. (default: "")

3.3 Docker Jobs

3.3.1 Job Groups

Job groups are a great tool to configure categories of jobs together at the same time. Below the example are some starting point job-groups but we recommend creating your own to ensure that the jobs configured reflect the project's needs.

An example project:

```
- job-group:
    name: odl-maven-jobs

    jobs:
      - gerrit-maven-clm
      - gerrit-maven-merge
```

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```
      - gerrit-maven-release
      - gerrit-maven-verify
      - gerrit-maven-verify-dependencies:
          build-timeout: 180

    mvn-version: mvn35

- project:
    name: aaa
    jobs:
      - odl-maven-jobs
```

In this example we are using the job-group to assign a list of common jobs to the aaa project. The job-group also hardcodes `mvn-version` to *mvn35* and `build-timeout` to *180* for all projects using this job-group.

A benefit of this method is for example disabling entire category of jobs by modifying the job-group, insert `disable-job: true` parameter against the jobs to disable.

Below is a list of Docker job groups:

```
---
- job-group:
    name: "{project-name}-gerrit-docker-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for any docker project ci.

    jobs:
      - gerrit-docker-verify
      - gerrit-docker-merge

- job-group:
    name: "{project-name}-github-docker-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for any docker project ci.

    jobs:
      - github-docker-verify
      - github-docker-merge
```

3.3.2 Macros

lf-docker-get-container-tag

Chooses a container tag to label the image based on the 'container-tag-method' parameter. If container-tag-method: latest, the tag 'latest' is used. If container-tag-method: git-describe, the tag is obtained using the git describe command, which requires that the repository has a git tag. If container-tag-method: yaml-file, the tag is obtained using the yq command, which requires that the repository has a YAML file named 'container-tag.yaml'. The script checks the docker-root directory by default or the directory specified by parameter container-tag-yaml-dir. An example file appears below.

lf-docker-build

Calls docker build to build the container.

lf-docker-push

Calls docker-push.sh script to push docker images.

3.3.3 Job Templates

Docker Verify

Executes a docker build task.

Template Names

- {project-name}-docker-verify-{stream}
- gerrit-docker-verify
- github-docker-verify

Comment Trigger rechecklreverify

Required parameters

build-node The node to run build on.

container-public-registry Docker registry source with base images.

docker-name Name of the Docker image.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings Maven settings.xml file containing credentials to use.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

container-tag-method Specifies the docker tag-choosing method. Options are "latest", "git-describe" or "yaml-file". Option git-describe requires a git tag to exist in the repository. Option yaml-file requires a file "container-tag.yaml" to exist in the repository. (default: latest)

container-tag-yaml-dir Directory with container-tag.yaml. (default: $DOCKER_ROOT)

docker-build-args Additional arguments for the docker build command.

docker-root Build directory within the repo. (default: $WORKSPACE, the repo root)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

pre_docker_build_script Build script to execute before the main verify builder steps. (default: a string with only a comment)

post_docker_build_script Build script to execute after the main verify builder steps. (default: a string with only a comment)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override Gerrit file paths which can be used to filter which file modifications will trigger a build.

github_included_regions Override Github file paths which can be used to filter which file modifications will trigger a build; must match parameter gerrit_trigger_file_paths

container-tag.yaml example:

```
---
tag: 1.0.0
```

Docker Merge

Executes a docker build task and publishes the resulting images to a specified Docker registry.

Template Names

- {project-name}-docker-merge-{stream}
- gerrit-docker-merge
- github-docker-merge

Comment Trigger remerge

Required parameters

build-node The node to run build on.

container-public-registry Docker registry source with base images.

container-push-registry Docker registry target for the deploy action.

docker-name Name of the Docker image.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings Maven settings.xml file containing credentials to use.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

container-tag-method Specifies the docker tag-choosing method. Options are "latest", "git-describe" or "yaml-file". Option git-describe requires a git tag to exist in the repository. Option yaml-file requires a file "container-tag.yaml" to exist in the repository. (default: latest)

container-tag-yaml-dir Directory with container-tag.yaml. (default: $DOCKER_ROOT)

cron Cron schedule when to trigger the job. This parameter also supports multiline input via YAML pipe | character in cases where one may want to provide more than 1 cron timer. No default. Use '@daily' to run daily or 'H H * * 0' to run weekly.

docker-build-args Additional arguments for the docker build command.

docker-root Build directory within the repo. (default: $WORKSPACE, the repo root)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

pre_docker_build_script Build script to execute before the main merge builder steps. (default: a string with only a comment)

post_docker_build_script Build script to execute after the main merge builder steps. (default: a string with only a comment)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

gerrit_merge_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override Gerrit file paths which can be used to filter which file modifications will trigger a build.

github_included_regions Override Github file paths which can be used to filter which file modifications will trigger a build; must match parameter gerrit_trigger_file_paths

Sample container-tag.yaml File

```
---
tag: 1.0.0
```

3.4 Info Vote Job

Job counts the votes from the committers against a change to the INFO.yaml file

If needed, will also check for a majority of TSC voters (not yet implemented)

Auto-merges the change on a majority vote.

3.4.1 info-vote

Comment Trigger recheck|reverify|Vote

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

3.5 Global Macros

3.5.1 Builders

comment-to-gerrit

This macro will post a comment to the gerrit patchset if the build creates a file named gerrit_comment.txt To use this macro add it to the list of builders.

lf-fetch-dependent-patches

Fetch all patches provided via comment trigger

This macro will fetch all patches provided via comment trigger and will create a list of projects from those patches via environment variable called DEPENDENCY_BUILD_ORDER which can be used if necessary to build projects in the specified order. The order is determined by first patch instance for a project in the patch list.

lf-license-check

Checks files for

Required parameters

file-patterns Space-separated list of file patterns to scan. For example: *.go *.groovy *.java *.py *.sh

spdx-disable Disable the SPDX-Identifier checker.

lhc-version Version of LHC to use.

license-exclude-paths Comma-separated list of paths to exclude from the license checker. The paths used here will be matched using a contains rule so it is best to be as precise with the path as possible. For example a path of '/src/generated/' will be searched as '**/src/generated/**'. Example: org/opendaylight/yang/gen,protobuff/messages

licenses-allowed Comma-separated list of allowed licenses. For example: Apache-2.0,EPL-1.0,MIT

lf-infra-create-netrc

Create a ~/.netrc file from a Maven settings.xml

Required parameters

server-id The id of a server as defined in settings.xml.

Optional parameters

ALT_NEXUS_SERVER URL of custom nexus server. If set this will take precedence. Use this to point at nexus3.$PROJECTDOMAIN for example.

lf-infra-deploy-maven-file

Deploy files to a repository.

Required parameters

global-settings-file Global settings file to use.

group-id Group ID of the repository.

maven-repo-url URL of a Maven repository to upload to.

mvn-version Version of Maven to use.

repo-id Repository ID

settings-file Maven settings file to use.

upload-files-dir Path to directory containing one or more files

lf-infra-docker-login

Login into a custom hosted docker registry and / or docker.io

The Jenkins system should have the following global variables defined

Environment variables

DOCKER_REGISTRY The DNS address of the registry (IP or FQDN) ex: nexus3.example.com (GLOBAL variable)

REGISTRY_PORTS Required if DOCKER_REGISTRY is set. Space separated list of the registry ports to login to. ex: 10001 10002 10003 10004 (GLOBAL variable)

DOCKERHUB_EMAIL If this variable is set then an attempt to login to DockerHub (docker.io) will be also made. It should be set to the email address for the credentials that will get looked up. Only _one_ credential will ever be found in the maven settings file for DockerHub. (GLOBAL variable)

lf-infra-gpg-verify-git-signature

Verify gpg signature of the latest commit message in $WORKSPACE. This command assumes that $WORKSPACE is a git repo.

lf-infra-pre-build

Macro that runs before all builders to prepare the system for job use.

lf-infra-package-listing

Lists distro level packages.

lf-infra-packer-build

Run *packer build* to build system images.

Required parameters

openstack Packer template uses an OpenStack builder (truelfalse).

openstack-cloud Sets OS_CLOUD variable to the value of this parameter.

packer-version Version of packer to use.

platform Build platform as found in the vars directory.

template Packer template to build as found in the templates directory.

Optional parameters

update-cloud-image Submit a change request to update new built cloud image to Jenkins.

lf-infra-packer-validate

Run *packer validate* to verify packer configuration.

Required parameters

openstack Packer template uses an OpenStack builder (truelfalse).

openstack-cloud Sets OS_CLOUD variable to the value of this parameter.

packer-cloud-settings Cloud configuration file. Loaded on the build server as CLOUDENV environment variable.

packer-version Version of packer to use.

lf-infra-push-gerrit-patch

Push a change through a Jenkins job to a Gerrit repository in an automated way using git-review.

Required parameters

gerrit-commit-message Commit message to assign.

gerrit-host Gerrit hostname.

gerrit-topic Gerrit topic.

gerrit-user Gerrit user-id used for submitting the change.

reviewers-email Reviewers email. Space-separated list of email addresses to CC on the patch.

project Gerrit project name.

lf-infra-ship-logs

Gather and deploy logs to a log server.

lf-infra-sysstat

Retrieves system stats.

lf-infra-update-packer-images

Find and update the new built cloud image{s} in the ci-management source repository.

lf-jacoco-nojava-workaround

Workaround for Jenkins not able to find Java in JaCoCo runs.

lf-maven-central

Publish artifacts to OSSRH (Maven Central) staging.

Requires that the project's settings.xml contains a ServerId 'ossrh' with the credentials for the project's OSSRH account.

This macro assumes the directory `$WORKSPACE/m2repo` contains a Maven 2 repository which is to upload to OSSRH.

Required parameters

mvn-central Whether or not to upload to mvn-central. (true|false)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-settings The name of settings file containing credentials for the project.

ossrh-profile-id Nexus staging profile ID as provided by OSSRH.

```
---
- job-template:
    name: lf-maven-central-macro-test

    ######################
    # Default variables #
    ######################

    mvn-central: true
    mvn-global-settings: ""
    mvn-settings: ""
    ossrh-profile-id: ""

    ######################
    # Job configuration #
    ######################

    builders:
      - lf-maven-central:
          mvn-central: "{mvn-central}"
          mvn-global-settings: "{mvn-global-settings}"
          mvn-settings: "{mvn-settings}"
          ossrh-profile-id: "{ossrh-profile-id}"
```

lf-maven-install

Call maven-target builder with a goal of –version to force Jenkins to install the need provided version of Maven. This is needed for any shell scripts that want to use Maven.

Required parameters

mvn-version Version of Maven to install.

lf-pip-install

Call pip install to install packages into a virtualenv located in /tmp/v/VENV

Note: The first package listed in PIP_PACKAGES is used as the VENV name.

lf-provide-maven-settings

Push a global settings and user settings maven files to the build node.

lf-provide-maven-settings-cleanup

Cleanup maven settings.xml configuration. This should be called at the end of any macros that calles the *lf-provide-maven-settings* macro.

lf-rtd-trigger-build

Script to trigger a build on http://readthedocs.org

lf-rtd-verify

ReadTheDocs verify script. Installs and runs tox.

Required parameters

doc-dir Document directory.

python-version Python version.

check-info-votes

Calls shell script to validate votes on a change to an INFO.yaml

lf-release

releases lftools.ini (required) needed to push to nexus.

[nexus] username= password=

Then runs ../shell/release-job.sh

lf-sigul-sign-dir

Use Sigul to sign a directory via {sign-dir}.

Requires `SIGUL_BRIDGE_IP` configured as a global envvar.

Required Parameters

sign-artifacts Whether or not to sign artifacts with Sigul.

sign-dir Directory to sign.

sign-mode serial|parallel

lf-infra-provide-docker-cleanup

Forcibly removes all of the docker images.

lf-infra-sonar

Runs Jenkins SonarQube plug-in.

Requires `SonarQube Scanner for Jenkins`

Optional Parameters

sonar-task Sonar task to run. (default: "")

sonar-properties Sonar configuration properties. (default: "")

sonar-java-opts JVM options. (default: "")

sonar-additional-args Additional command line arguments. (default: "")

lf-infra-sonar-with-prescan

Runs Jenkins SonarQube plug-in after a pre-scan builder, which is defined by the macro's caller.

Requires `SonarQube Scanner for Jenkins`

Required Parameters

lf-sonar-prescan A builder that will run prior to the Sonar scan.

Optional Parameters

sonar-task Sonar task to run. (default: "")

sonar-properties Sonar configuration properties. (default: "")

sonar-java-opts JVM options. (default: "")

sonar-additional-args Additional command line arguments. (default: "")

3.5.2 Parameters

lf-clm-parameters

Provides the policy evaluation stage to run against Nexus IQ Server. Valid values include: 'build', 'stage-release', 'operate'.

lf-cmake-parameters

Provides parameters needed by CMake. Should be used by any jobs that need to call the `cmake && make && make install` pattern.

lf-infra-maven-parameters

Provides parameters needed by Maven. Should be used by any jobs that need to call the mvn cli.

lf-infra-openstack-parameters

Provides parameters needed by OpenStack client CLI. Use in jobs that need to call the openstack cli.

Required Parameters

os-cloud Configures `OS_CLOUD` envvar as used by openstack cli.

lf-infra-parameters

Standard parameters used in the LF CI environments. Gerrit variables are not used by GitHub projects, but defining them is not harmful. Should be used in every job template.

lf-infra-node-parameters

Provides parameters needed by NodeJS and NPM. Should be used by any jobs that need to run NodeJS or NPM.

lf-infra-tox-parameters

Provides parameters needed by python-tox. Should be used by any jobs that need to run *tox <https://tox.readthedocs.io>*.

lf-build-with-parameters-maven-release

Provides parameters needed for maven release jobs 'build with parameters'.

3.5.3 Properties

lf-infra-properties

Configures the build-discarder plugin for Jenkins with the recommended lf-infra settings. Should be used in all job-templates.

3.5.4 Publishers

lf-jacoco-report

Provides basic configuration for the JaCoCo plugin.

lf-infra-publish

Provides basic lf-infra recommended publisher configurations which should be used in all job templates. This primary objective of this trigger is to gather build logs and copy them to a log server.

lf-infra-publish-windows

Windows publisher for use at the end of Windows job templates. Takes care of cleaning out the workspace at the end of a job.

3.5.5 SCM

lf-infra-gerrit-scm

Basic SCM configuration for Gerrit based projects.

Required parameters

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

lf-infra-github-scm

Basic SCM configuration for GitHub based projects.

On the *branch* variable you can assign *$sha1* or *$ghprbActualCommit* as the value. This will require that the job be triggered via the GHPRB plugin and not manually.

Required parameters

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

3.5.6 Wrappers

lf-infra-wrappers-common

Provides lf-infra recommended wrappers which should be used in every job-template. It's meant to be used by more specific wrappers below.

lf-infra-wrappers

Provides lf-infra recommended wrappers which should be used in every job-template that's run on Linux systems.

This wrapper requires that a managed file called *npmrc* exists in the Jenkins. The main use case here is to point to a npm proxy, on Nexus for example. The type of the file should be "Custom file". You can set various npmrc settings in it. Documentation on npm configuration can be found at https://docs.npmjs.com/files/npmrc. If you are not using npm then it is fine for the file to be empty.

Example npmrc:

```
registry=https://nexus3.onap.org/repository/npm.public/
```

lf-infra-wrappers-windows

Provides lf-infra recommended wrappers which should be used in every job-template that's run on Windows systems.

3.6 Maven Jobs

3.6.1 Job Groups

Job groups are a great tool to configure categories of jobs together at the same time. Below the example are some starting point job-groups but we recommend creating your own to ensure that the jobs configured reflect the project's needs.

An example project:

```
- job-group:
    name: odl-maven-jobs

    jobs:
      - gerrit-maven-clm
      - gerrit-maven-merge
      - gerrit-maven-release
      - gerrit-maven-verify
      - gerrit-maven-verify-dependencies:
          build-timeout: 180

    mvn-version: mvn35

- project:
    name: aaa
    jobs:
      - odl-maven-jobs
```

In this example we are using the job-group to assign a list of common jobs to the aaa project. The job-group also hardcodes `mvn-version` to *mvn35* and `build-timeout` to *180* for all projects using this job-group.

A benefit of this method is for example disabling entire category of jobs by modifying the job-group, insert `disable-job: true` parameter against the jobs to disable.

Below is a list of Maven job groups:

```
---
- job-group:
    name: "{project-name}-maven-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for any project ci.

    jobs:
      - gerrit-maven-clm
      - gerrit-maven-merge
      - gerrit-maven-stage
      - gerrit-maven-verify
```

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```
      - gerrit-maven-verify-dependencies

- job-group:
    name: "{project-name}-github-maven-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for any project ci that is using github.

    jobs:
      - github-maven-clm
      - github-maven-merge
      - github-maven-stage
      - github-maven-verify

- job-group:
    name: "{project-name}-maven-javadoc-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for any project ci.

    jobs:
      - gerrit-maven-javadoc-publish
      - gerrit-maven-javadoc-verify

- job-group:
    name: "{project-name}-github-maven-javadoc-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for any project ci.

    jobs:
      - github-maven-javadoc-publish
      - github-maven-javadoc-verify
```

3.6.2 Macros

lf-infra-maven-sonar

Runs Sonar against a Maven project.

Required Parameters

java-version Version of Java to execute Sonar with.

mvn-version Version of Maven to execute Sonar with.

mvn-settings Maven settings.xml file containing credentials to use.

lf-infra-maven-sonarcloud

Runs Sonar against a Maven project and pushes results to SonarCloud.

Required Parameters

java-version Version of Java to execute Sonar with.

mvn-version Version of Maven to execute Sonar with.

mvn-settings Maven settings.xml file containing credentials to use.

sonarcloud-project-key SonarCloud project key.

sonarcloud-project-organization SonarCloud project organization.

sonarcloud-api-token SonarCloud API Token.

lf-maven-build

Calls the maven build script to perform a maven build.

Required parameters

mvn-goals The maven goals to perform for the build. (default: clean deploy)

lf-maven-common

Common Jenkins configuration for Maven jobs.

lf-maven-deploy

Calls the maven deploy script to push artifacts to Nexus.

lf-maven-versions-plugin

Conditionally calls Maven versions plugin to set, update and commit the maven *versions:set*.

Required Parameters

maven-versions-plugin Whether to call Maven versions plugin or not. (default: false)

version-properties-file Name and path of the version properties file. (default: version.properties)

mvn-version Version of Maven to execute Sonar with.

mvn-pom Location of pom.xml.

mvn-settings Maven settings.xml file containing credentials to use.

lf-maven-stage

Calls the maven stage script to push artifacts to a Nexus staging repository.

Required Parameters

mvn-global-settings The name of the Maven global settings to use for Maven configuration.

mvn-settings The name of settings file containing credentials for the project.

lf-update-java-alternatives

Setup Java alternatives for the Distro.

Required Parameters

java-version Version of Java to set as the default Java. Eg. openjdk8

lf-infra-sonatype-clm

Runs a Sonatype CLM scan against a Maven project and pushes results to Nexus IQ server.

Optional parameters

mvn-goals The maven goals to perform for the build. (default: clean install)

3.6.3 Job Templates

Maven CLM

Produces a CLM scan of the code into Nexus IQ Server.

Template Names

- {project-name}-maven-clm-{stream}
- gerrit-maven-clm
- github-maven-clm

Comment Trigger run-clm

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

Optional parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-goals The maven goals to perform for the build. (default: clean install)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

nexus-iq-namespace Insert a namespace to project AppID for projects that share a Nexus IQ system to avoid project name collision. We recommend inserting a trailing - dash if using this parameter. For example 'odl-'. (default: '')

nexus-iq-stage Stage the policy evaluation will be run against on the Nexus IQ Server. (default: 'build')

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_merge_triggers Override Gerrit Triggers.

Maven JavaDoc Publish

Produces and publishes javadocs for a Maven project.

Expects javadocs to be available in $WORKSPACE/target/site/apidocs

Template Names

- {project-name}-maven-javadoc-publish-{stream}-{java-version}
- gerrit-maven-javadoc-publish
- github-maven-javadoc-publish

Comment Trigger remerge

Required parameters

build-node The node to run build on.

javadoc-path The path in Nexus to deploy javadoc to.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

mvn-site-id Maven Server ID from settings.xml to pull credentials from. (Note: This setting should be configured in defaults.yaml.)

Optional parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_merge_triggers Override Gerrit Triggers.

Maven JavaDoc Verify

Produces javadocs for a Maven project.

Expects javadocs to be available in $WORKSPACE/target/site/apidocs

Template Names

- {project-name}-maven-javadoc-verify-{stream}-{java-version}
- gerrit-maven-javadoc-verify
- github-maven-javadoc-verify

Comment Trigger recheck|reverify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

Optional parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

deploy-path The path in Nexus to deploy javadoc to. (default: $PROJECT/$STREAM)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

Maven Merge

Merge job which runs *mvn clean deploy* to build a project.

This job pushes files to Nexus using cURL instead of allowing the Maven deploy goal to push the upload. This is to get around the issue that Maven deploy does not properly support uploading files at the end of the build and instead pushes as it goes. There exists a *-Ddeploy-at-end* feature however it does not work with extensions.

This job uses the following strategy to deploy jobs to Nexus:

1. *wget -r* to fetch maven-metadata.xml from Nexus
2. *mvn deploy -DaltDeploymentRepository* to prepare files for upload
3. Removes untouched maven-metadata.xml files before upload
4. Use lftools (cURL) upload script to push artifacts to Nexus

Template Names

- {project-name}-maven-merge-{stream}
- gerrit-maven-merge
- github-maven-merge

Comment Trigger remerge

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

mvn-snapshot-id Maven Server ID from settings.xml to pull credentials from. (Note: This setting should be configured in defaults.yaml.)

nexus-snapshot-repo The repository id of the Nexus snapshot repo to deploy to.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

cron Cron schedule when to trigger the job. This parameter also supports multiline input via YAML pipe | character in cases where one may want to provide more than 1 cron timer. (default: 'H H * * 0' to run weekly)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

nexus-cut-dirs Number of directories to cut from file path for *wget -r*.

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_merge_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which can be used to filter which file modifications will trigger a build.

Maven Merge for Docker

Produces a snapshot docker image in a Nexus registry. Appropriate for Java projects that do not need to deploy any POM or JAR files.

Similar to Maven Merge as described above but logs in to Docker registries first and skips the lf-maven-deploy builder. The project POM file should invoke a plugin to build and push a Docker image. The base image should be pulled from the registry in the environment variable CONTAINER_PULL_REGISTRY. The new image should be pushed to the registry in the environment variable CONTAINER_PUSH_REGISTRY.

Template Names

- {project-name}-maven-docker-merge-{stream}
- gerrit-maven-docker-merge
- github-maven-docker-merge

Required parameters

container-public-registry Docker registry source with base images.

container-snapshot-registry Docker registry target for the deploy action.

All other required and optional parameters are identical to the Maven Merge job described above.

Maven Stage

Produces a release candidate by creating a staging repo in Nexus.

The staging repo name is in the format PROJECT-NUMBER for example "aaa-1234", "autorelease-2000", "odlparent-1201", etc...

This job runs a Maven build and deploys to $WORKSPACE/m2repo directory. This directory is then used later to deploy to Nexus.

Template Names

- {project-name}-maven-stage-{stream}
- gerrit-maven-stage
- github-maven-stage

Comment Trigger "stage-release" or "stage-maven-release"

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

mvn-staging-id Maven Server ID from settings.xml to pull credentials from. (Note: This setting should be configured in defaults.yaml.)

staging-profile-id Profile ID of the project's Nexus staging profile.

Optional parameters

archive-artifacts Artifacts to archive to the logs server (default: '').

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

cron Cron schedule when to trigger the job. This parameter also supports multiline input via YAML pipe | character in cases where one may want to provide more than 1 cron timer. (default: '')

deploy-path The path in Nexus to deploy javadoc to. (default: $PROJECT/$STREAM)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-central Set to 'true' to also stage to OSSRH. This is for projects that want to release to Maven Central. If set the parameter `ossrh-profile-id` also needs to be set. (default: false)

maven-versions-plugin Whether to call Maven versions plugin or not. (default: false)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

ossrh-profile-id Profile ID for project as provided by OSSRH. (default: '')

sign-artifacts Sign artifacts with Sigul. (default: false)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

version-properties-file Name and path of the version properties file. (default: version.properties)

gerrit_release_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which can be used to filter which file modifications will trigger a build.

Maven Stage for Docker

Produces a release candidate docker image in a Nexus registry. Appropriate for Java projects that do not need to deploy any POM or JAR files.

Similar to Maven Stage as described above but logs in to Docker registries first and skips the lf-maven-deploy builder. The project POM file should invoke a plugin to build and push a Docker image. The base image should be pulled from the registry in the environment variable CONTAINER_PULL_REGISTRY. The new image should be pushed to the registry in the environment variable CONTAINER_PUSH_REGISTRY.

Template Names

- {project-name}-maven-docker-stage-{stream}
- gerrit-maven-docker-stage
- github-maven-docker-stage

Comment Trigger "stage-release" or "stage-docker-release"

Required parameters

container-public-registry Docker registry source with base images.

container-staging-registry Docker registry target for the deploy action.

Optional parameters

gerrit_release_docker_triggers Override Gerrit Triggers.

All other required and optional parameters are identical to the Maven Stage job described above.

Maven Sonar

Sonar job which runs mvn clean install then publishes to Sonar.

This job purposely only runs on the master branch as there are Additional configuration needed to support multiple branches and there's not much interest in that kind of support.

Template Names

- {project-name}-sonar
- gerrit-maven-sonar
- github-maven-sonar

Comment Trigger run-sonar

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

Optional parameters

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

cron Cron schedule when to trigger the job. This parameter also supports multiline input via YAML pipe | character in cases where one may want to provide more than 1 cron timer. (default: 'H H * * 6' to run weekly)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-goals The maven goals to perform for the build. (default: clean install)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

sonar-mvn-goals Maven goals to run for sonar analysis. (default: sonar:sonar)

sonarcloud Whether or not to use SonarCloud `true|false`. (default: false)

sonarcloud-project-key SonarCloud project key. (default: '')

sonarcloud-project-organization SonarCloud project organization. (default: '')

sonarcloud-api-token SonarCloud API Token. (default: '')

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_sonar_triggers Override Gerrit Triggers.

SonarCloud Example:

```
---
- project:
    name: example-sonarcloud
    jobs:
      - gerrit-maven-sonar

    project: "sonarcloud"
    project-name: "sonarcloud"
    branch: "master"
    mvn-settings: "sonarcloud-settings"
    mvn-opts: "-Xmx1024m"
    sonarcloud: true
    sonarcloud-project-key: KEY
    sonarcloud-project-organization: ORGANIZATION
    sonarcloud-api-token: TOKEN
```

Maven Verify

Verify job which runs mvn clean install to test a project build..

Template Names

- {project-name}-maven-verify-{stream}-{mvn-version}-{java-version}
- gerrit-maven-verify
- github-maven-verify

Comment Trigger recheck|reverify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which can be used to filter which file modifications will trigger a build.

Maven Verify for Docker

Similar to Maven Verify as described above but logs in to Docker registries first. The project POM file should invoke a plugin to build a Docker image. The base image should be pulled from the registry in the environment variable CONTAINER_PULL_REGISTRY.

Template Names

- {project-name}-maven-docker-verify-{stream}-{mvn-version}-{java-version}
- gerrit-maven-docker-verify
- github-maven-docker-verify

Required parameters

container-public-registry Docker registry source with base images.

All other required and optional parameters are identical to the Maven Verify job described above.

Maven Verify w/ Dependencies

Verify job which runs mvn clean install to test a project build /w deps

This job can be used to verify a patch in conjunction to all of the upstream patches it depends on. The user of this job can provide a list via comment trigger.

Template Names

- {project-name}-maven-verify-deps-{stream}-{mvn-version}-{java-version}
- gerrit-maven-verify-dependencies

Comment Trigger recheck: SPACE_SEPARATED_LIST_OF_PATCHES

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should be configured in defaults.yaml)

mvn-settings The name of settings file containing credentials for the project.

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-opts Sets MAVEN_OPTS. (default: '')

mvn-params Additional mvn parameters to pass to the cli. (default: '')

mvn-version Version of maven to use. (default: mvn35)

stream Keyword that can be used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths which can be used to filter which file modifications will trigger a build.

3.7 NodeJS Jobs

3.7.1 Job Groups

Job groups are a great tool to configure categories of jobs together at the same time. Below the example are some starting point job-groups but we recommend creating your own to ensure that the jobs configured reflect the project's needs.

An example project:

```
- job-group:
    name: odl-maven-jobs

    jobs:
      - gerrit-maven-clm
      - gerrit-maven-merge
      - gerrit-maven-release
      - gerrit-maven-verify
      - gerrit-maven-verify-dependencies:
          build-timeout: 180

    mvn-version: mvn35

- project:
    name: aaa
    jobs:
      - odl-maven-jobs
```

In this example we are using the job-group to assign a list of common jobs to the aaa project. The job-group also hardcodes `mvn-version` to *mvn35* and `build-timeout` to *180* for all projects using this job-group.

A benefit of this method is for example disabling entire category of jobs by modifying the job-group, insert `disable-job: true` parameter against the jobs to disable.

Below is a list of Node job groups:

```
---
- job-group:
    name: "{project-name}-github-node-jobs"

    # Job group containing recommended jobs to deploy for a Node Project.

    node-version: 6.11.4

    jobs:
      - github-node-verify

- job-group:
    name: "{project-name}-node-jobs"

    # Job group containing recommended jobs to deploy for a Node Project.

    node-version: 6.11.4

    jobs:
      - gerrit-node-verify
```

3.7.2 Job Templates

Node Verify

Verify job for NodeJS projects

Template Names

- {project-name}-node-verify-{stream}
- gerrit-node-verify
- github-node-verify

Comment Trigger recheck|reverify

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

node-version Version of NodeJS to install. Default defined in job-group.

Optional parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

node-dir Path to a NodeJS project to run node test against (default: '')

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths filter which checks which file modifications will trigger a build.

3.8 OpenStack Heat

This section contains a series of macros for projects that need to spin up full test labs using HEAT scripts.

3.8.1 Job Setup

The 2 macros *lf-stack-create* & *lf-stack-delete* are companion macros and used together when constructing a job template that needs to spin up a full integration lab using Heat Orchestration Templates (HOT).

Example Usage:

```
- job-template:
    name: csit-test

    ######################
    # Default variables #
    ######################

    openstack-cloud: vex
    openstack-heat-template: csit-2-instance-type.yaml
    openstack-heat-template-dir: 'openstack-hot'

    odl_system_count: 1
    odl_system_flavor: odl-highcpu-4
    odl_system_image: ZZCI - CentOS 7 - builder - x86_64 - 20181010-215635.956
    tools_system_count: 1
    tools_system_flavor: odl-highcpu-2
    tools_system_image: ZZCI - Ubuntu 16.04 - mininet-ovs-25 - 20181029-223449.514

    ######################
    # Job configuration #
    ######################

    builders:
      - lf-infra-pre-build
      - lf-stack-create:
          openstack-cloud: '{openstack-cloud}'
          openstack-heat-template: '{openstack-heat-template}'
          openstack-heat-template-dir: '{openstack-heat-template-dir}'
          openstack-heat-parameters: |
              vm_0_count: '{odl_system_count}'
              vm_0_flavor: '{odl_system_flavor}'
              vm_0_image: '{odl_system_image}'
              vm_1_count: '{tools_system_count}'
              vm_1_flavor: '{tools_system_flavor}'
              vm_1_image: '{tools_system_image}'

    publishers:
      - lf-stack-delete:
          openstack-cloud: '{openstack-cloud}'
```

3.8.2 Macros

lf-stack-create

Creates an OpenStack stack as configured by the job. Name pattern of stack is `$SILO-$JOB_NAME-$BUILD_NUMBER`.

Requires `lf-infra-pre-build` macro to run first to install the `openstack` and `lftools` packages.

Requires a Config File Provider configuration for clouds.yaml named `clouds-yaml`.

Required Parameters

openstack-cloud The `OS_CLOUD` variable to pass to OpenStack client. (Docs: https://docs.openstack.org/python-openstackclient)

openstack-heat-template Name of template file to use when running stack create.

openstack-heat-template-dir Directory in the ci-management repo containing the OpenStack heat templates.

Example:

```
---
- job-template:
    name: stack-create-test

    ######################
    # Default variables #
    ######################

    openstack-cloud: lf-cloud
    openstack-heat-template: csit-2-instance-type.yaml
    openstack-heat-template-dir: "openstack-hot"

    odl_system_count: 1
    odl_system_flavor: odl-highcpu-4
    odl_system_image: ZZCI - CentOS 7 - builder - x86_64 - 20181010-215635.956
    tools_system_count: 2
    tools_system_flavor: odl-highcpu-2
    tools_system_image: ZZCI - Ubuntu 16.04 - mininet-ovs-25 - 20181029-223449.514

    ######################
    # Job configuration #
    ######################

    builders:
      - lf-infra-pre-build
      - lf-stack-create:
          openstack-cloud: "{openstack-cloud}"
          openstack-heat-template: "{openstack-heat-template}"
          openstack-heat-template-dir: "{openstack-heat-template-dir}"
          openstack-heat-parameters: |
            vm_0_count: '{odl_system_count}'
            vm_0_flavor: '{odl_system_flavor}'
            vm_0_image: '{odl_system_image}'
            vm_1_count: '{tools_system_count}'
            vm_1_flavor: '{tools_system_flavor}'
            vm_1_image: '{tools_system_image}'
```

lf-stack-delete

Deletes the stack associated with this job. Name pattern of stack is `$SILO-$JOB_NAME-$BUILD_NUMBER`.

Requires `lf-infra-pre-build` macro to run first to install the `openstack` and `lftools` packages.

Requires a Config File Provider configuration for clouds.yaml named `clouds-yaml`.

Required Parameters

openstack-cloud The `OS_CLOUD` variable to pass to OpenStack client. (Docs: https://docs.openstack.org/python-openstackclient)

Example:

```
---
- job-template:
    name: stack-delete-test

    ######################
    # Default variables #
    ######################

    openstack-cloud: lf-cloud

    ######################
    # Job configuration #
    ######################

    publishers:
      - lf-stack-delete:
          openstack-cloud: "{openstack-cloud}"
```

3.9 Python Jobs

3.9.1 Job Groups

Job groups are a great tool to configure categories of jobs together at the same time. Below the example are some starting point job-groups but we recommend creating your own to ensure that the jobs configured reflect the project's needs.

An example project:

```
- job-group:
    name: odl-maven-jobs

    jobs:
      - gerrit-maven-clm
      - gerrit-maven-merge
      - gerrit-maven-release
      - gerrit-maven-verify
      - gerrit-maven-verify-dependencies:
          build-timeout: 180

    mvn-version: mvn35

- project:
    name: aaa
    jobs:
      - odl-maven-jobs
```

In this example we are using the job-group to assign a list of common jobs to the aaa project. The job-group also hardcodes `mvn-version` to *mvn35* and `build-timeout` to *180* for all projects using this job-group.

A benefit of this method is for example disabling entire category of jobs by modifying the job-group, insert `disable-job: true` parameter against the jobs to disable.

Below is a list of Python job groups:

```
---
- job-group:
    name: "{project-name}-python-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for a Gerrit-based Python project to verify commits using tox.

    jobs:
      - gerrit-python-xc-clm
      - gerrit-tox-verify
      - gerrit-tox-merge

- job-group:
    name: "{project-name}-github-python-jobs"

    # This job group contains all the recommended jobs that should be deployed
    # for a Github-based Python project to verify commits using tox.

    jobs:
      - github-python-xc-clm
      - github-tox-verify
      - github-tox-merge

- job-group:
    name: "{project-name}-gerrit-pypi-jobs"

    # This job group contains all the recommended jobs that should be deployed for
    # a Gerrit-based Python project to test, build and deploy a library to PyPI.

    jobs:
      - gerrit-pypi-verify
      - gerrit-pypi-merge
      - gerrit-pypi-release-verify
      - gerrit-pypi-release-merge

- job-group:
    name: "{project-name}-github-pypi-jobs"

    # This job group contains all the recommended jobs that should be deployed for
    # a Github-based Python project to test, build and deploy a library to PyPI.

    jobs:
      - github-pypi-verify
      - github-pypi-merge
      - github-pypi-release-verify
      - github-pypi-release-merge
```

3.9.2 Macros

lf-infra-clm-python

Runs CLM scanning against a Python project.

Required Parameters

clm-project-name Project name in Nexus IQ to send results to.

lf-infra-pypi-tag-release

Checks the format of the release version string and checks the git repository for that tag. In a merge job, continues to tag the repository and push the tag to the git server. Also installs supporting tools including Sigul and lftools. Sigul requires a CentOS build node.

lf-infra-pypi-upload

Uploads distribution files from subdirectory "dist" to a PyPI repository using a Python virtual enviroment to install required packages. The Jenkins server must have a configuration file ".pypirc".

Required Parameters

pypi-repo PyPI repository key in .pypirc configuration file; e.g., "staging" or "pypi".

lf-infra-tox-install

Installs Tox into a virtualenv.

Required Parameters

python-version Version of Python to invoke the pip install of the tox-pyenv package that creates a virtual environment, either "python2" or "python3".

lf-infra-tox-run

Creates a Tox virtual environment and invokes tox.

Required Parameters

parallel Boolean. If true use detox (distributed tox); else use regular tox.

3.9.3 Job Templates

Python XC CLM

CLM scans for Python based repos. This job will call the Nexus IQ CLI directly to run the scans.

A new credential named "nexus-iq-xc-clm" needs to exist in the Jenkins credentials. The credential should contain the username and password to access Nexus IQ Server.

Template Names

- {project-name}-python-clm-{stream}
- gerrit-python-xc-clm
- github-python-xc-clm

Comment Trigger run-clm

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should get configured in defaults.yaml)

Optional parameters

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

nexus-iq-cli-version Nexus IQ CLI package version to download and use. (default: 1.44.0-01)

nexus-iq-namespace Insert a namespace to project AppID for projects that share a Nexus IQ system to avoid project name collision. We recommend inserting a trailing - dash if using this parameter. For example 'odl-'. (default: '')

build-timeout Timeout in minutes before aborting build. (default: 60)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-version Version of Java to use for the build. (default: openjdk8)

pre-build-script Shell script to execute before the CLM builder. For example, install prerequisites or move files to the repo root. (default: a string with a shell comment)

stream Keyword used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_clm_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

Python Sonar with Tox

Sonar scans for Python based repos. This job invokes tox to run tests and gather coverage statistics from the test results, then invokes Maven to publish the results to a Sonar server.

To get the Sonar coverage results, file tox.ini must exist and contain coverage commands to run.

The coverage commands define the code that gets executed by the test suites. Checking coverage does not guarantee that the tests execute properly, but it identifies code that is not executed by any test.

This job reuses the Sonar builder used in Java/Maven projects which runs maven twice. The first invocation does nothing for Python projects, so the job uses the goal 'validate' by default. The second invocation publishes results using the goal 'sonar:sonar' by default.

For example:

```
[testenv:py27]
commands =
        coverage run --module pytest --junitxml xunit-results.xml
        coverage xml --omit=".tox/py27/*","tests/*"
        coverage report --omit=".tox/py27/*","tests/*"
```

For more details refer to coverage and sonar documentation:

https://coverage.readthedocs.io/

https://docs.sonarqube.org/display/PLUG/Python+Coverage+Results+Import

Template Names

- {project-name}-tox-sonar

- gerrit-tox-sonar
- github-tox-sonar

Comment Trigger run-sonar

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally should get configured in defaults.yaml)

mvn-settings The name of the settings file with credentials for the project.

Optional parameters

branch Git branch, should be master (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

cron Cron schedule when to trigger the job. This parameter also supports multiline input via YAML pipe | character in cases where one may want to provide more than 1 cron timer. (default: H 11 * * * to run once a day)

disable-job Whether to disable the job (default: false)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

github-url URL for Github. (default: https://github.com)

java-version Version of Java to use for the build. (default: openjdk8)

mvn-global-settings The name of the Maven global settings to use for

mvn-goals The Maven goal to run first. (default: validate)

mvn-version Version of maven to use. (default: mvn35)

parallel Boolean indicator for tox to run tests in parallel or series. (default: false, in series)

pre-build-script Shell script to execute before the Sonar builder. For example, install prerequisites or move files to the repo root. (default: a string with a shell comment)

python-version Python version to invoke pip install of tox-pyenv (default: python2)

sonar-mvn-goal The Maven goal to run the Sonar plugin. (default: sonar:sonar)

stream Keyword used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_sonar_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

Tox Verify

Tox runner to verify a project on creation of a patch set. This job is pyenv aware so if the image contains an installation of pyenv at /opt/pyenv it will pick it up and run Python tests with the appropriate Python versions. This job will set the following pyenv variables before running.

```
export PYENV_ROOT="/opt/pyenv"
export PATH="$PYENV_ROOT/bin:$PATH"
```

Template Names

- {project-name}-tox-verify-{stream}
- gerrit-tox-verify
- github-tox-verify

Comment Trigger recheck|reverify

Required Parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

pre-build-script Shell script to execute before the Tox builder. For example, install pre-requisites or move files to the repo root. (default: a string with a shell comment)

parallel Boolean indicator for tox to run tests in parallel or series. (default: false, in series)

python-version Python version to invoke pip install of tox-pyenv (default: python2)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

tox-dir Directory containing the project's tox.ini relative to the workspace. The default uses tox.ini at the project root. (default: '.')

tox-envs Tox environments to run. If blank run everything described in tox.ini. (default: '')

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

Tox Merge

Tox runner to verify a project after merge of a patch set. This job is pyenv aware so if the image contains an installation of pyenv at /opt/pyenv it will pick it up and run Python tests with the appropriate Python versions. This job will set the following pyenv variables before running.

```
export PYENV_ROOT="/opt/pyenv"
export PATH="$PYENV_ROOT/bin:$PATH"
```

Template Names

- {project-name}-tox-merge-{stream}
- gerrit-tox-merge
- github-tox-merge

Comment Trigger remerge

Required Parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 10)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

pre-build-script Shell script to execute before the CLM builder. For example, install prerequisites or move files to the repo root. (default: a string with only a comment)

python-version Python version to invoke pip install of tox-pyenv (default: python2)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

tox-dir Directory containing the project's tox.ini relative to the workspace. The default uses tox.ini at the project root. (default: '.')

tox-envs Tox environments to run. If blank run everything described in tox.ini. (default: '')

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

PyPI Verify

Verifies a Python library project on creation of a patch set. Runs tox then builds a source distribution and (optionally) a binary distribution. The project repository must have a setup.py file with configuration for packaging the component.

The tox runner is pyenv aware so if the image contains an installation of pyenv at /opt/pyenv it will pick it up and run Python tests with the appropriate Python versions. The tox runner sets the following pyenv variables before running.

```
export PYENV_ROOT="/opt/pyenv"
export PATH="$PYENV_ROOT/bin:$PATH"
```

Template Names

- {project-name}-pypi-verify-{stream}
- gerrit-pypi-verify
- github-pypi-verify

Comment Trigger recheck

Required Parameters

build-node The node to run the build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 15)

dist-binary Whether to build a binary wheel distribution. (default: true)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

parallel Boolean indicator for tox to run tests in parallel or series. (default: false, in series)

pre-build-script Shell script to execute before the tox builder. For example, install system prerequisites. (default: a shell comment)

python-version Python version to invoke pip install of tox-pyenv (default: python3)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

tox-dir Directory containing the project's tox.ini relative to the workspace. The default uses tox.ini at the project root. (default: '.')

tox-envs Tox environments to run. If blank run everything described in tox.ini. (default: '')

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

PyPI Merge

Creates and uploads distribution files on merge of a patch set. Runs tox, builds a source distribution and (optionally) a binary distribution, and uploads the distribution(s) to a PyPI repository. This job should be configured to use a staging

PyPI repository like testpypi.python.org, not a public release area like the global PyPI repository. Like the verify job, this requires a setup.py file for packaging the component.

The tox runner is pyenv aware so if the image contains an installation of pyenv at /opt/pyenv it will pick it up and run Python tests with the appropriate Python versions. The tox runner sets the following pyenv variables before running.

```
export PYENV_ROOT="/opt/pyenv"
export PATH="$PYENV_ROOT/bin:$PATH"
```

Requires a .pypirc configuration file in the Jenkins builder home directory, an example appears next.

```
[distutils] # this tells distutils what package indexes you can push to
index-servers =
staging
pypi

[staging]
repository: https://testpypi.python.org/pypi
username: your_username
password: your_password

[pypi]
repository: https://pypi.python.org/pypi
username: your_username
password: your_password
```

Template Names

- {project-name}-pypi-merge-{stream}
- gerrit-pypi-merge
- github-pypi-merge

Comment Trigger pypi-remerge

Required Parameters

build-node The node to run the build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 15)

dist-binary Whether to build a binary wheel distribution. (default: true)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

parallel Boolean indicator for tox to run tests in parallel or series. (default: false, in series)

pre-build-script Shell script to execute before the tox builder. For example, install system prerequisites. (default: a shell comment)

pypi-repo Key for PyPI repository parameters in the .pypirc file. Merge jobs should use a server like testpypi.python.org. (default: staging)

python-version Python version to invoke pip install of tox-pyenv (default: python3)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

tox-dir Directory containing the project's tox.ini relative to the workspace. The default uses tox.ini at the project root. (default: '.')

tox-envs Tox environments to run. If blank run everything described in tox.ini. (default: '')

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

PyPI Release Verify

Verifies a Python library project on creation of a patch set with a release yaml file. Runs tox, builds source and (optionally) binary distributions, checks the format of the version string, checks that the distribution file names contain the release version string, and checks that no tag exists in the code repository for the release version.

To initiate the release process, create a releases/ or .releases/ directory at the root of the project repository, add one release yaml file to it, and submit a change set with that release yaml file. A schema and and an example for the release yaml file appear below. The version in the release yaml file must be a valid Semantic Versioning (SemVer) string, matching either the pattern "v#.#.#" or "#.#.#" where "#" is one or more digits.

This job is similar to the PyPI verify job, but is only triggered by a patch set with a release yaml file.

The build node for PyPI release verify jobs must be CentOS, which supports the sigul client for accessing a signing server.

Note: The release file regex is: (releases/.*.yaml|.releases/.*.yaml). In words, the directory name can be ".releases" or "releases"; the file name can be anything with suffix ".yaml".

The JSON schema for a pypi release file appears below.

```
---
$schema: "http://json-schema.org/schema#"
$id: "https://github.com/lfit/releng-global-jjb/blob/master/release-pypi-schema.yaml"

required:
  - "distribution_type"
  - "project"
  - "version"

properties:
  distribution_type:
    type: "string"
  project:
    type: "string"
  version:
    type: "string"
```

An example of a pypi release file appears below.

```
$ cat releases/1.0.0-pypi.yaml
---
distribution_type: pypi
version: 1.0.0
project: 'example-project'
```

Template Names

- {project-name}-pypi-release-verify-{stream}
- gerrit-pypi-release-verify
- github-pypi-release-verify

Required Parameters

build-node The node to run build on, which must be Centos.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 15)

dist-binary Whether to build a binary wheel distribution. (default: true)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

parallel Boolean indicator for tox to run tests in parallel or series. (default: false, in series)

pre-build-script Shell script to execute before the tox builder. For example, install pre-requisites or move files to the repo root. (default: a string with a shell comment)

pypi-repo Key for PyPI repository parameters in the .pypirc file. Release jobs should use a server like pypy.org. (default: pypi)

python-version Python version to invoke pip install of tox-pyenv (default: python3)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

tox-dir Directory containing the project's tox.ini relative to the workspace. The default uses tox.ini at the project root. (default: '.')

tox-envs Tox environments to run. If blank run everything described in tox.ini. (default: '')

use-release-file Whether to use the release file. (default: true)

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

PyPI Release Merge

Publishes a Python library on merge of a patch set with a release yaml file. Runs tox, builds source and (optionally) binary distributions, checks the format of the version string, checks that the distribution file names contain the release version string, checks that no tag exists in the code repository for the release version, tags the code repository with the release version, pushes the tag to the git server, and uploads distributions to a PyPI repository.

This job is similar to the PyPI merge job, but is only triggered by merge of a release yaml file and checks the version and tag before uploading to a public repository such as PyPI.

See the PyPI Release Verify job above for documentation of the release yaml file format.

The build node for PyPI release merge jobs must be CentOS, which supports the sigul client for accessing a signing server.

A Jenkins user can also trigger this release job via the "Build with parameters" action, removing the need to merge a release yaml file. The user must enter parameters in the same way as a release yaml file, except for the special USE_RELEASE_FILE and DRY_RUN check boxes. The user must uncheck the USE_RELEASE_FILE check box if the job should run with a release file, while passing the required information as build parameters. Similarly, the user must uncheck the DRY_RUN check box to test the job while skipping upload of files to a repository.

The special parameters are as follows:

```
VERSION = 1.0.0
USE_RELEASE_FILE = false
DRY_RUN = false
```

Template Names

- {project-name}-pypi-release-merge-{stream}
- gerrit-pypi-release-merge
- github-pypi-release-merge

Required Parameters

build-node The node to run build on, which must be Centos.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch The branch to build against. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 15)

dist-binary Whether to build a binary wheel distribution. (default: true)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

parallel Boolean indicator for tox to run tests in parallel or series. (default: false, in series)

pre-build-script Shell script to execute before the tox builder. For example, install pre-requisites or move files to the repo root. (default: a string with a shell comment)

pypi-repo Key for PyPI repository parameters in the .pypirc file. Release jobs should use a server like pypy.org. (default: pypi)

python-version Python version to invoke pip install of tox-pyenv (default: python3)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

tox-dir Directory containing the project's tox.ini relative to the workspace. The default uses tox.ini at the project root. (default: '.')

tox-envs Tox environments to run. If blank run everything described in tox.ini. (default: '')

use-release-file Whether to use the release file. (default: true)

gerrit_trigger_file_paths Override file paths used to filter which file modifications trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

3.10 Self-Serve Release Jobs

Self-serve release jobs allow a project team to direct Jenkins to promote a jar file or container image from a staging area to a release area. To trigger the action, create a releases/ or .releases/ directory, add a release yaml file to it, and submit a change set with one release yaml file to Gerrit. Upon merge of the change, Jenkins will sign the reference extrapolated by log_dir and promote the artifact. The expected format of the release yaml file appears in schemas and examples below.

The build node for maven and container release jobs must be CentOS, which supports the sigul client for accessing a signing server. The build node for container release jobs must have Docker installed.

A Jenkins user can also trigger a release job via the "Build with parameters" action, removing the need for a release yaml file. The user must enter parameters in the same way as a release yaml file, except for the special USE_RELEASE_FILE and DRY_RUN check boxes. The user must uncheck the USE_RELEASE_FILE check box if the job should run with a release file, while passing the required information as build parameters. Similarly, the user must uncheck the DRY_RUN check box to test the job while skipping repository promotion to Nexus.

The special parameters are as follows:

```
GERRIT_BRANCH = master
VERSION = 1.0.0
LOG_DIR = example-project-maven-stage-master/17/
DISTRIBUTION_TYPE = maven
USE_RELEASE_FILE = false
DRY_RUN = false
```

Note: The release file regex is: (releases/.*.yamll.releases/.*.yaml). In words, the directory name can be ".releases" or "releases"; the file name can be anything with suffix ".yaml".

The JSON schema for a maven release job appears below.

```
---
$schema: "http://json-schema.org/schema#"
$id: "https://github.com/lfit/releng-global-jjb/blob/master/release-schema.yaml"

required:
  - "distribution_type"
  - "log_dir"
```

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```
  - "project"
  - "version"

properties:
  distribution_type:
    type: "string"
  log_dir:
    type: "string"
  project:
    type: "string"
  version:
    type: "string"
```

Example of a maven release file:

```
$ cat releases/1.0.0-maven.yaml
---
distribution_type: 'maven'
version: '1.0.0'
project: 'example-project'
log_dir: 'example-project-maven-stage-master/17/'
```

The JSON schema for a container release job appears below.

```
---
$schema: "http://json-schema.org/schema#"
$id: "https://github.com/lfit/releng-global-jjb/blob/master/release-container-schema.
↪yaml"

required:
  - "containers"
  - "distribution_type"
  - "project"
  - "container_release_tag"
  - "ref"

properties:
  containers:
    type: "array"
    properties:
      name:
        type: "string"
      version:
        type: "string"
    additionalProperties: false
  distribution_type:
    type: "string"
  project:
    type: "string"
  container_release_tag:
    type: "string"
  container_pull_registry"
    type: "string"
  container_push_registry"
    type: "string"
  ref:
    type: "string"
```

An example of a container release file appears below. The job applies the container_release_tag string to all released containers. The job uses the per-container version strings to pull images from the container registry.

```
$ cat releases/1.0.0-container.yaml
---
distribution_type: 'container'
container_release_tag: '1.0.0'
container_pull_registry: 'nexus.onap.org:10003"
container_push_registry: 'nexus.onap.org:10002"
project: 'test'
containers:
    - name: test-backend
      version: 1.0.0-20190806T184921Z
    - name: test-frontend
      version: 1.0.0-20190806T184921Z
```

Note: Job should appear under gerrit-maven-stage

Example of a terse Jenkins job to call the global-jjb macro:

```
- gerrit-maven-stage:
    sign-artifacts: true
    build-node: centos7-docker-8c-8g
    maven-versions-plugin: true
- '{project-name}-gerrit-release-jobs':
    build-node: centos7-docker-8c-8g
```

Note: Release Engineers: please follow the setup guide below before adding the job definition.

3.10.1 Setup for LFID, Nexus, Jenkins and Gerrit

3.10.2 LFID

Create an `lfid` and an `ssh-key`

`YOUR_RELEASE_USERNAME` for example: onap-release

`YOUR_RELEASE_EMAIL` for example: collab-it+onap-release@linuxfoundation.org

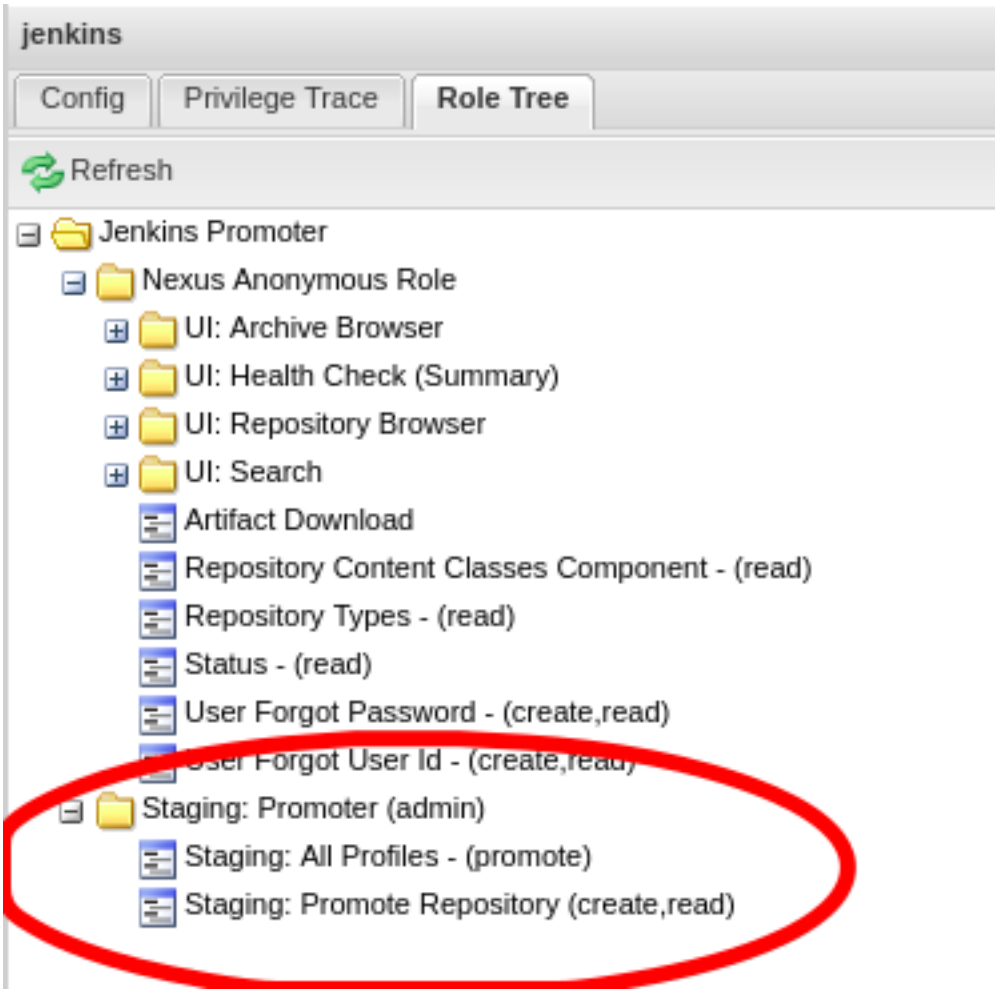
ssh-key example:

```
ssh-keygen -t rsa -C "collab-it+odl-release@linuxfoundation.org"  -f /tmp/odl-release
```

Create an LFID with the above values

3.10.3 Nexus

Create a Nexus account called `'jenkins-release'` with promote privileges.



3.10.4 Gerrit

Log into your Gerrit with `YOUR_RELEASE_USERNAME`, upload the public part of the `ssh-key` you created earlier. Log out of Gerrit and log in again with your normal account for the next steps.

In Gerrit create a new group called `self-serve-release` and give it direct push rights via `All-Projects` Add `YOUR_RELEASE_USERNAME` to group `self-serve-release` and group `Non-Interactive Users`

In All project, grant group self-serve-release the following:

```
[access "refs/heads/*"]
  push = group self-serve-release
[access "refs/tags/*"]
  createTag = group self-serve-release
  createSignedTag = group self-serve-release
  forgeCommitter = group self-serve-release
  push = group self-serve-release
```

3.10.5 Jenkins

Add a global credential to Jenkins called `jenkins-release` and set the ID: `'jenkins-release'` as its value insert the private half of the `ssh-key` that you created for your Gerrit user.

Add Global vars in Jenkins: Jenkins configure -> Global properties -> Environment variables

`RELEASE_USERNAME = YOUR_RELEASE_USERNAME RELEASE_EMAIL = YOUR_RELEASE_EMAIL`

Note: Add these variables to your global-vars-$SILO.sh file or they will be overwritten.

Jenkins configure -> Managed Files -> Add a New Config -> Custom File

id: signing-pubkey Name: SIGNING_PUBKEY (optional) Comment: SIGNING_PUBKEY (optional)

Content: (Ask Andy for the public signing key) ——BEGIN PGP PUBLIC KEY BLOCK——

Add or edit the managed file in Jenkins called `lftoolsini`, appending a nexus section: Jenkins Settings -> Managed files -> Add (or edit) -> Custom file

```
[nexus.example.com]
username=jenkins-release
password=<plaintext password>
```

3.10.6 Ci-management

Upgrade your project's global-jjb if needed, then add the following to your global defaults file (e.g., jjb/defaults.yaml).

```
jenkins-ssh-release-credential: 'jenkins-release'
```

3.10.7 Macros

lf-release

Release verify and merge jobs are the same except for their scm, trigger, and builders definition. This anchor is the common template.

3.10.8 Job Templates

Release Merge

Template Name {project-name}-release-merge

Comment Trigger remerge

Required parameters

build-node The node to run build on.

jenkins-ssh-release-credential Credential to use for SSH. (Generally set in defaults.yaml)

stream run this job against: **

Optional parameters

branch Git branch to fetch for the build. (default: all)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 15)

project-pattern Project to trigger build against. (default: **)

gerrit_merge_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths filter which checks which file modifications will trigger a build. **default**:

```
- compare-type: REG_EXP
  pattern: '(releases\/.*\.yaml|\.releases\/.*\.yaml)'
```

Release Verify

Template Name {project-name}-release-verify

Comment Trigger rechecklreverify

Required Parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

stream run this job against: **

Optional Parameters

branch Git branch to fetch for the build. (default: all)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-node The node to run build on.

build-timeout Timeout in minutes before aborting build. (default: 15)

doc-dir Directory where tox will place built docs. as defined in the tox.ini (default: docs/_build/html)

gerrit-skip-vote Skip voting for this job. (default: false)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

project-pattern Project to trigger build against. (default: **)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths filter which checks which file modifications will trigger a build. **default**:

```
- compare-type: REG_EXP
  pattern: '(releases\/.*\.yaml|\.releases\/.*\.yaml)'
```

— Job Templates ==========

3.11 Release Announce

Job for lf-releng projects to automate release announcement emails.

Template Names

- {project-name}-release-announce
- gerrit-release-announce

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Configured in defaults.yaml)

3.12 ReadTheDocs Jobs

3.12.1 Job Groups

Job groups are a great tool to configure categories of jobs together at the same time. Below the example are some starting point job-groups but we recommend creating your own to ensure that the jobs configured reflect the project's needs.

An example project:

```
- job-group:
    name: odl-maven-jobs

    jobs:
      - gerrit-maven-clm
      - gerrit-maven-merge
      - gerrit-maven-release
      - gerrit-maven-verify
      - gerrit-maven-verify-dependencies:
          build-timeout: 180

    mvn-version: mvn35

- project:
    name: aaa
    jobs:
      - odl-maven-jobs
```

In this example we are using the job-group to assign a list of common jobs to the aaa project. The job-group also hardcodes `mvn-version` to *mvn35* and `build-timeout` to *180* for all projects using this job-group.

A benefit of this method is for example disabling entire category of jobs by modifying the job-group, insert `disable-job: true` parameter against the jobs to disable.

Below is a list of Maven job groups:

```
---
- job-group:
    name: "{project-name}-rtd-jobs"

    jobs:
      - gerrit-rtd-merge
      - gerrit-rtd-verify

- job-group:
    name: "{project-name}-github-rtd-jobs"

    jobs:
      - github-rtd-merge
      - github-rtd-verify
```

3.12.2 Macros

lf-rtd-common

RTD verify and merge jobs are the same except for their scm, trigger, and builders definition. This anchor is the common template.

3.12.3 Job Templates

ReadTheDocs Merge

Merge job which triggers a POST of the docs project to readthedocs.

To use this job first configure the `Generic API incoming webhook` in ReadTheDocs. To do that follow these steps:

1. Browse to https://readthedocs.org/dashboard/PROJECT/integrations/
2. Click on `Generic API incoming webhook`

   Note: If not available click on `Add integration` and add the `Generic API incoming webhook`.

3. Copy the custom webhook URL, this is your `rtd-build-url`

   For example: https://readthedocs.org/api/v2/webhook/opendaylight/32321/

4. Copy the token, this is your `rtd-token`

Template Names

- {project-name}-rtd-merge-{stream}
- gerrit-rtd-merge
- github-rtd-merge

Comment Trigger remerge

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

rtd-build-url This is the generic webhook url from readthedocs.org. Refer to the above instructions to generate one. (Check Admin > Integrations > Generic API incoming webhook)

rtd-token The unique token for the project Generic webhook. Refer to the above instructions to generate one. (Check Admin > Integrations > Generic API incoming webhook)

Optional parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 15)

git-url base URL of git project. (default: https://github.com)

project-pattern Project to trigger build against. (default: **)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_merge_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths filter which checks which file modifications will trigger a build. **default**:

```
- compare-type: ANT
  pattern: '**/*.rst'
- compare-type: ANT
  pattern: '**/conf.py'
```

ReadTheDocs Verify

Verify job which runs tox to test the docs project

Template Names

- {project-name}-rtd-verify-{stream}
- gerrit-rtd-verify
- github-rtd-verify

Comment Trigger recheck|reverify

Required Parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Generally set in defaults.yaml)

Optional Parameters

branch Git branch to fetch for the build. (default: master)

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-node The node to run build on.

build-timeout Timeout in minutes before aborting build. (default: 15)

doc-dir Directory where tox will place built docs. as defined in the tox.ini (default: docs/_build/html)

gerrit-skip-vote Skip voting for this job. (default: false)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

project-pattern Project to trigger build against. (default: **)

python-version Python version (default: python2)

stream Keyword representing a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

gerrit_verify_triggers Override Gerrit Triggers.

gerrit_trigger_file_paths Override file paths filter which checks which file modifications will trigger a build. **default**:

```
- compare-type: ANT
  pattern: '**/*.rst'
- compare-type: ANT
  pattern: '**/conf.py'
```

3.13 Jenkins Views

3.13.1 View Templates

JJB view-templates provides a way to manage Jenkins views through code. Using view-templates we can define common views configuration that are interesting to a project.

We recommend creating separate project sections for views apart from job configuration such that job configuration does not overlap with the view configuration.

Example Usage:

```
---
- project:
    name: project-view
    views:
      - common-view

    project-name: project

- project:
    name: project-stream1
    jobs:
      - '{project-name}-{seq}'

    project: project
    project-name: project
    seq:
      - a
      - b

- project:
    name: project-stream2
    jobs:
      - '{project-name}-{seq}'

    project: project
    project-name: project
    seq:
      - x
      - y

- job-template:
    name: '{project-name}-{seq}'
```

Project view

Groups all jobs owned by a project under one view by capturing jobs with the prefix of `project-name`.

This view uses the following columns:

Columns

- status
- weather
- job
- last-success
- last-failure
- last-duration
- build-button
- jacoco
- find-bugs

Template Names

- {project-name}
- project-view

Required parameters

project-name The name of the project utilizing the view.

Optional parameters

view-filter-executors View filter executor. (default: false)

view-filter-queue View filter queue. (default: false)

view-recurse View recurse. (default: false)

Example:

```
---
- project:
    name: project-view-test
    views:
      - project-view

    project-name: project-view-test
```

Common view

Groups all jobs owned by a project under one view by capturing jobs with the prefix of `project-name`.

This view uses the following columns:

Columns

- status
- weather

- job
- last-success
- last-failure
- last-duration
- build-button
- jacoco
- find-bugs

Template Names

- {view-name}
- common-view

Required parameters

view-name The name of the view.

view-regex Regex to match the jobs.

Optional parameters

view-filter-executors View filter executor. (default: false)

view-filter-queue View filter queue. (default: false)

view-recurse View recurse. (default: false)

Example:

```
---
- project:
    name: common-view-test
    views:
      - common-view

    view-name: Daily
    view-regex: ".*-daily-.*"
```

CSIT view template

View template that loads columns useful for CSIT jobs.

This view uses the following columns:

Columns

- status
- weather
- job
- last-success
- last-failure
- last-duration
- build-button

- robot-list

Template Names

- {view-name}
- csit-view

Required parameters

view-name The name of the view.

view-regex Regex to match the jobs.

Optional parameters

view-description View description. (default: 'CSIT Jobs.')

view-filter-executors View filter executor. (default: false)

view-filter-queue View filter queue. (default: false)

view-recurse View recurse. (default: false)

Example:

```
---
- project:
    name: csit-view-test
    views:
      - csit-view

    view-name: CSIT-1node
    view-regex: ".*csit-1node.*"
```

3.14 WhiteSource Jobs

3.14.1 Macros

lf-infra-wss-mvn-clean-install

Run maven clean install. Applicable to Maven based repos.

lf-infra-wss-unified-agent-scan

Run WhiteSource Unified Agent for a project.

3.14.2 Job Templates

WhiteSource Unified Agent scan

Trigger WhiteSource code scans using Unified Agent. For more details: https://whitesource.atlassian.net/wiki/spaces/WD/pages/33718339/Unified+Agent

The WhiteSource Unified Agent scanner runs using a configuration file: https://s3.amazonaws.com/unified-agent/wss-unified-agent.config

Template Names

- {project-name}-whitesource-scan-{stream}
- gerrit-whitesource-scan
- github-whitesource-scan

Comment Trigger run-whitesource

Required parameters

build-node The node to run build on.

jenkins-ssh-credential Credential to use for SSH. (Set in defaults.yaml)

wss-product-name Product to asociate the WhiteSource report in the dashboard.

wss-unified-agent-config Path to wss-unifed-agent.config.

Optional parameters

build-days-to-keep Days to keep build logs in Jenkins. (default: 7)

build-timeout Timeout in minutes before aborting build. (default: 60)

git-url URL clone project from. (default: $GIT_URL/$PROJECT)

java-opts Java options. Example: -Xmx1024m

java-version Version of Java to use for the build. (default: openjdk8)

mvn-clean-install Run maven clean install before the code scan. (default: false)

mvn-global-settings The name of the Maven global settings to use for Maven configuration. (default: global-settings)

mvn-version Version of maven to use. (default: mvn35)

pom Path of the pom.xml file.

stream Keyword used to represent a release code-name. Often the same as the branch. (default: master)

submodule-recursive Whether to checkout submodules recursively. (default: true)

submodule-timeout Timeout (in minutes) for checkout operation. (default: 10)

submodule-disable Disable submodule checkout operation. (default: false)

wss-unified-agent-version WhiteSource Unified Agent version package to download and use.

gerrit_trigger_file_paths Override file paths which used to filter which file modifications will trigger a build. Refer to JJB documentation for "file-path" details. https://docs.openstack.org/infra/jenkins-job-builder/triggers.html#triggers.gerrit

gerrit_wss_triggers Override Gerrit Triggers.

CHAPTER 4

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