Jenkins plugin

What does the plugin do

Kiuwan Plugin for Jenkins allows to execute Kiuwan analysis as a **Post-build action**.

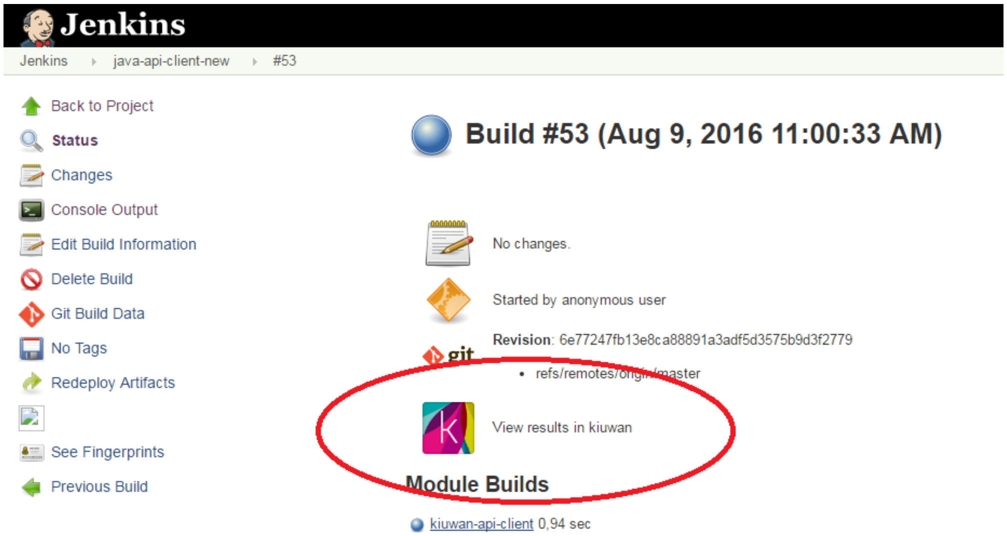
If you need to execute Kiuwan a stage within a Jenkins **Pipeline**, please go to Jenkins Pipeleline

> ⓘ Please visit our post https://www.kiuwan.com/blog/jenkins-integration-kiuwan-code-analysis/ for further info on donwload and public source code.

Once you installed and configure the Kiuwan plugin in your Jenkins installation, you will be able to run a Kiuwan analysis after build process.

After execution, and based on analysis results, you will be able to mark the build (SUCCESS, UNSTABLE, FAILURE, etc) according to Kiuwan analysis results.

Also, after the build process, Kiuwan Plugin for Jenkins adds a link to analysis results (in your Kiuwan account) from the execution build page.



Build #53 (Aug 9, 2016 11:00:33 AM)

No changes.

Started by anonymous user

Revision: 6e77247fb13e8ca88891a3adf5d3575b9d3f2779

- refs/remotes/origin/master

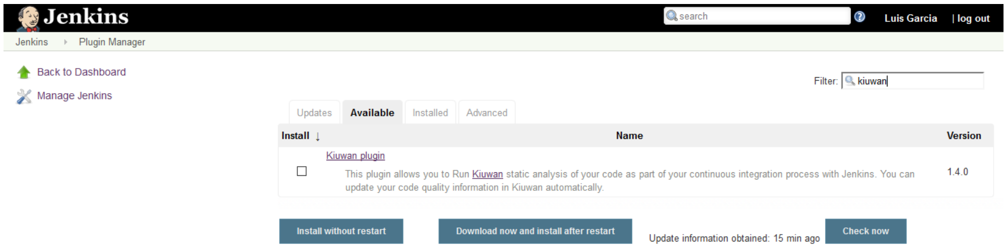
View results in kiuwan

Module Builds

kiuwan-api-client 0,94 sec

How to install

Enter your Jenkins dashboard, Select ‘Manage Jenkins’, then ‘Manage Plugins’ and then, from the top tabs, select ‘Available’. In the list you can find Kiuwan Plugin using search function of your browser or using the search box provided by Jenkins. You must check and install.



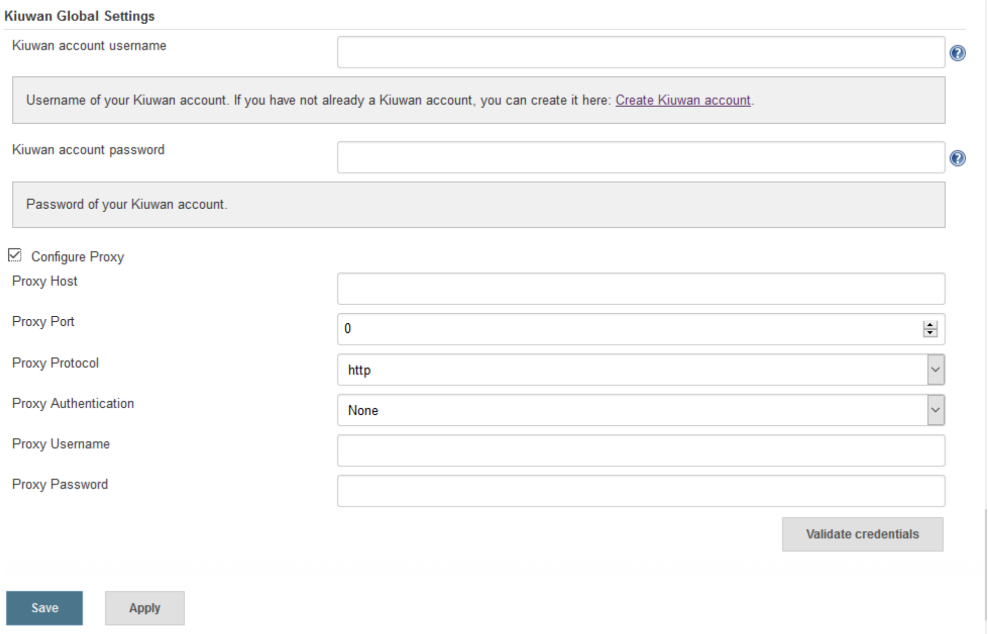
Filter: kiuwan

Install ↓	Name	Version
□	Kiuwan plugin This plugin allows you to Run Kiuwan static analysis of your code as part of your continuous integration process with Jenkins. You can update your code quality information in Kiuwan automatically.	1.4.0

Update information obtained: 15 min ago

How to configure

Click on “Manage Jenkins” and then “Configure System”. Then scroll down to the “Kiuwan Global Setting” section.



Kiuwan account username

Username of your Kiuwan account. If you have not already a Kiuwan account, you can create it here: Create Kiuwan account.

Kiuwan account password

Password of your Kiuwan account.

☑ Configure Proxy

Proxy Host

Proxy Port: 0

Proxy Protocol: http

Proxy Authentication: None

Proxy Username

Proxy Password

You need to configure your Kiuwan account credentials (username and password of your Kiuwan account).

If connectivity to Internet is through a proxy, you can configure your proxy setting by clicking Configure Proxy checkbox to provide the requested parameters.

You can validate connectivity clicking “Validate Credentials”.

How to run analysis in build process

Kiuwan analysis is executed as a Post-build action.

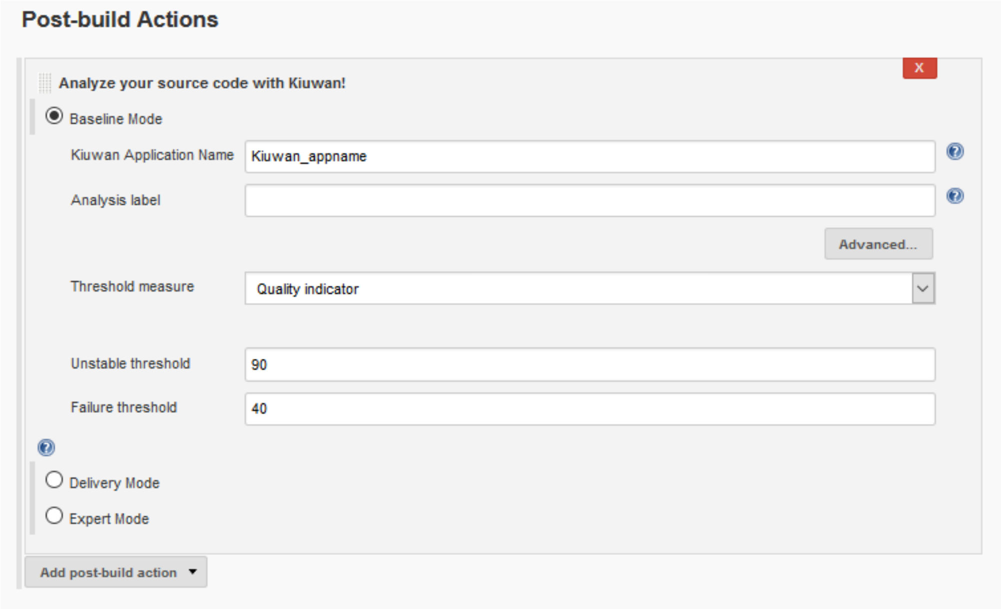
To run Kiuwan, in your project configuration you should add a Post action named "Analyze your source code with Kiuwan!".

Three options are available:

- ***Baseline Mode***: In this mode, you can execute a baseline analysis, check its results, and change the status of your build if the selected measure does not meet the selected thresholds.
- ***Delivery Mode***: If you have a subscription with deliveries, you can execute a delivery analysis choosing this mode.
- ***Expert Mode***: If you want to indicate Kiuwan Local Analyzer's command line options and extra parameters manually, this is your option.

Baseline Mode

Selection of Baseline Mode configures Kiuwan Plugin for Jenkins to define the analysis scope as “baseline”.



Post-build Actions

Analyze your source code with Kiuwan!

● Baseline Mode

Kiuwan Application Name: Kiuwan_appname

Analysis label:

Threshold measure: Quality indicator

Unstable threshold: 90

Failure threshold: 40

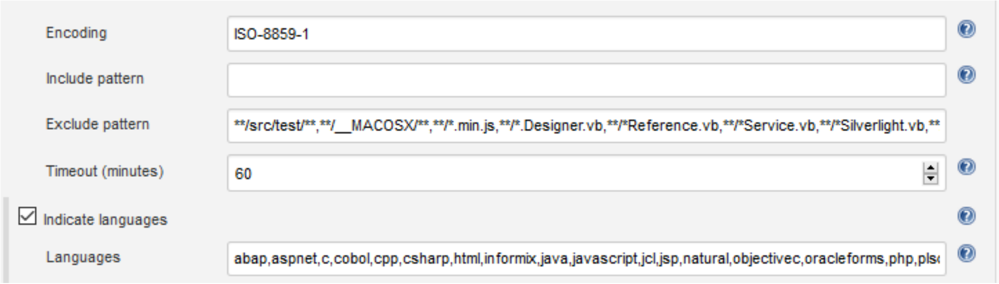
○ Delivery Mode

○ Expert Mode

Kiuwan Application Name should be configured to the application name as it’s defined in Kiuwan. If the app does not exist, it will be created. If not set, Jenkins project name will be used.

Analysis Label lets identify the analysis. If not set, Jenkins build number (#n) will be used.

Clicking on Advanced button you will be able to define additional configuration parameters such as default encoding to be used in the analysis, include/exclude patterns, timeout and languages.



Encoding: ISO-8859-1

Include pattern:

Exclude pattern: **/src/test/**,**/__MACOSX/**,**/*.min.js,**/*.Designer.vb,**/*Reference.vb,**/*Service.vb,**/*Silverlight.vb,**

Timeout (minutes): 60

☑ Indicate languages

Languages: abap,aspnet,c,cobol,cpp,csharp,html,informix,java,javascript,jcl,jsp,natural,objectivec,oracleforms,php,pls

You can find online help on these configuration parameters clicking the question mark (?).

Timeout indicates the maximum allowed time (in minutes) for Jenkins to wait for Kiuwan analysis. Once that time is reached, build will be set as ABORTED.

Please, note that this timeout will alse be passed to Kiuwan Local Analyzer as timeout for its internal tasks (rules, metrics and clones), overriding so timout value set in AGENT_HOME/conf/analyzer.properties).

So, please be careful to set Jenkins timeout value high enough to allow Kiuwan to finalize the analysis.

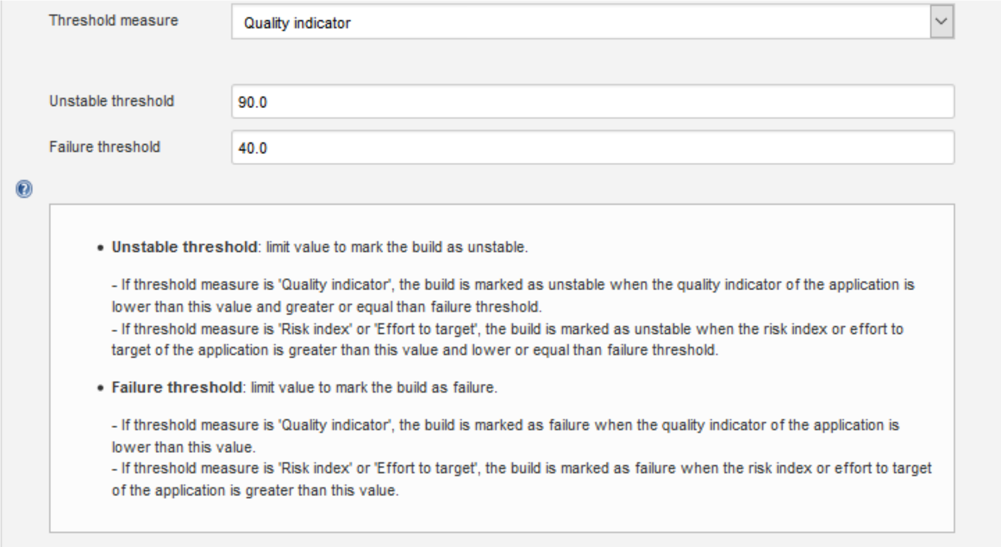
These configuration values will override parameter values set in JENKINS_HOME/tools/KiuwanLocalAnalyzer/conf/analyzer.properties.

For any other configuration parameter not shown in this configuration page, you should edit analyzer.properties file.

In Baseline mode, you can set the build status depending on thresholds based on indicators of Kiuwan Analysis:

- Quality indicator
- Risk Index

- Effort to Target



Threshold measure: Quality indicator

Unstable threshold: 90.0

Failure threshold: 40.0

- **Unstable threshold**: limit value to mark the build as unstable.

  - If threshold measure is 'Quality indicator', the build is marked as unstable when the quality indicator of the application is lower than this value and greater or equal than failure threshold.
  - If threshold measure is 'Risk index' or 'Effort to target', the build is marked as unstable when the risk index or effort to target of the application is greater than this value and lower or equal than failure threshold.

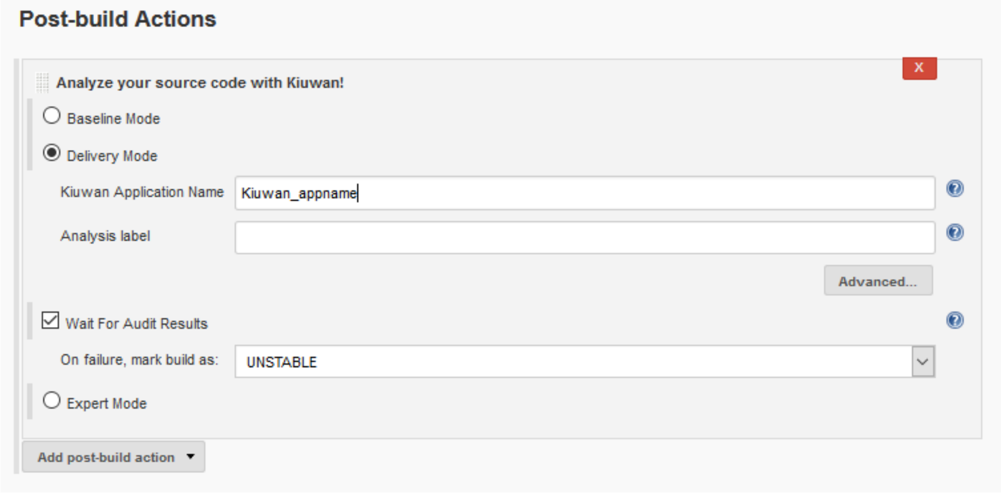
- **Failure threshold**: limit value to mark the build as failure.

  - If threshold measure is 'Quality indicator', the build is marked as failure when the quality indicator of the application is lower than this value.
  - If threshold measure is 'Risk index' or 'Effort to target', the build is marked as failure when the risk index or effort to target of the application is greater than this value.

You can define thresholds to mark the build as UNSTABLE and FAILURE depending on indicator values as the above picture shows.

Delivery Mode

Selection of Delivery Mode configures Kiuwan Plugin for Jenkins to define the analysis scope as “Delivery” (partial or complete).



Post-build Actions

Analyze your source code with Kiuwan!

○ Baseline Mode

● Delivery Mode

Kiuwan Application Name: Kiuwan_appname

Analysis label:

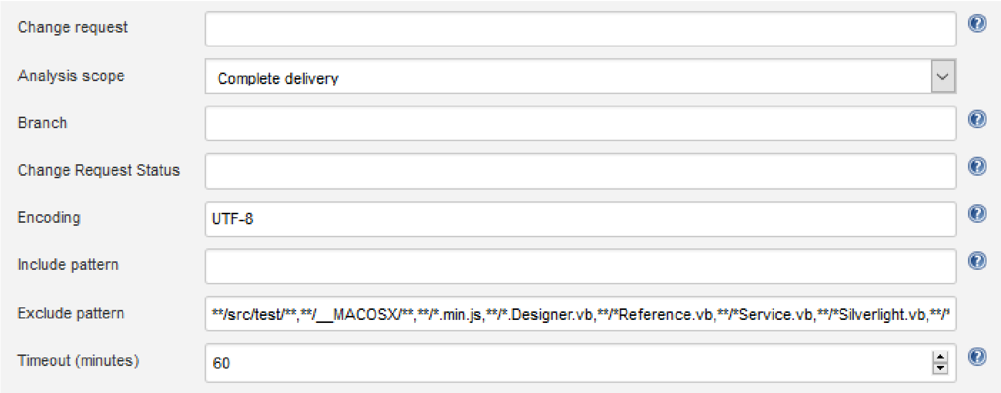
☑ Wait For Audit Results

On failure, mark build as: UNSTABLE

○ Expert Mode

As in Baseline mode, you need to define Kiuwan Application Name and Analysis Label.

Also, clicking on Advanced button will allow you to set additional parameters:



Change request	
Analysis scope	Complete delivery
Branch	
Change Request Status	
Encoding	UTF-8
Include pattern	
Exclude pattern	`**/src/test/**,**/__MACOSX/**,**/*.min.js,**/*.Designer.vb,**/*Reference.vb,**/*Service.vb,**/*Silverlight.vb,**/*`
Timeout (minutes)	60

Special importance has Analysis Scope parameter:

- Complete Delivery
- Partial Delivery

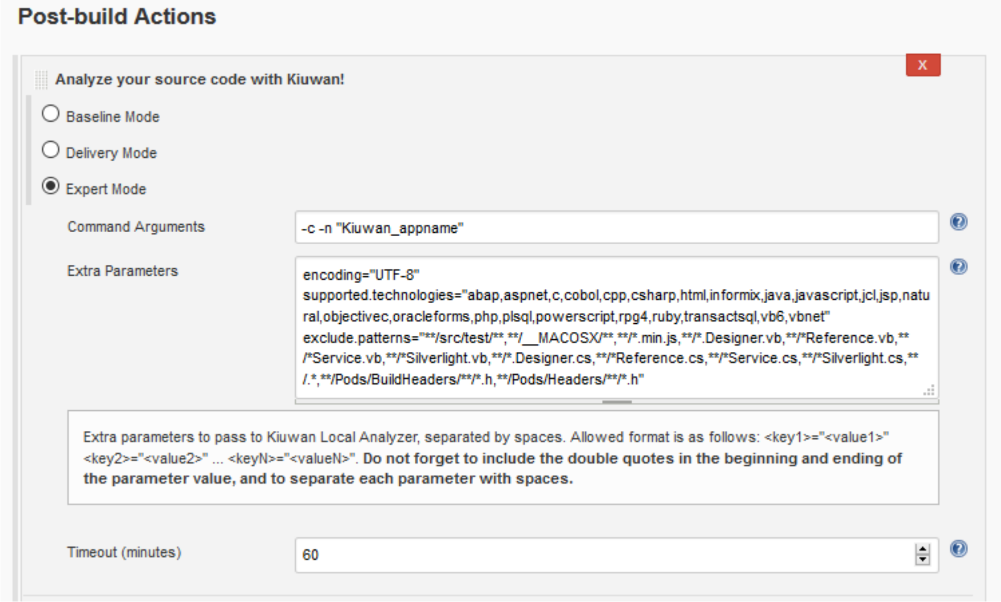
Please, see note on Baseline mode about “timeout” specification.

Wait For Audit Results checkbox allows to mark the build depending on the result of the Audit associated to the Kiuwan application. If checked, the build will be marked as UNSTABLE in case the Audit fails.

> ⓘ You can configure any parameter by referencing system variables with the syntax *${MY_VAR}*

Expert Mode

Selection of Expert Mode allows full control on Kiuwan analysis configuration.



Post-build Actions

Analyze your source code with Kiuwan!

○ Baseline Mode

○ Delivery Mode

● Expert Mode

Command Arguments	-c -n "Kiuwan_appname"

Extra Parameters

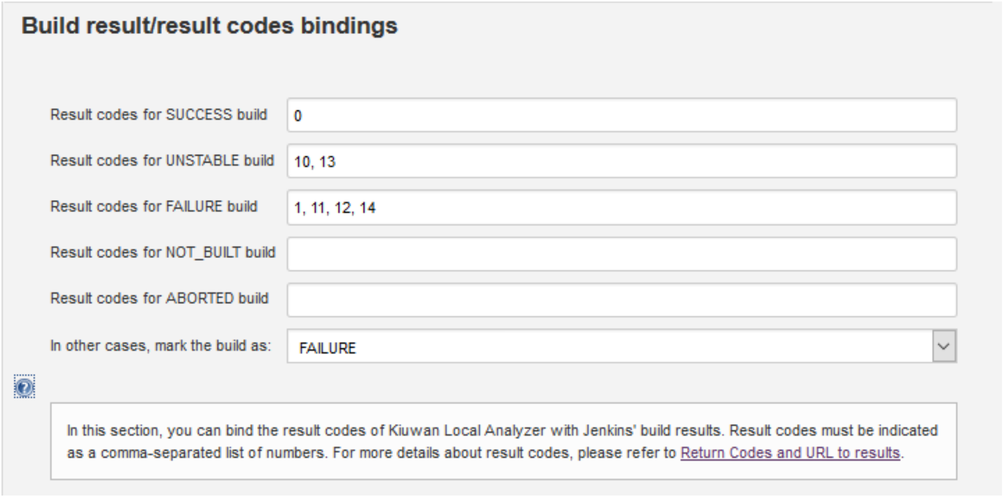
```
encoding="UTF-8"
supported.technologies="abap,aspnet,c,cobol,cpp,csharp,html,informix,java,javascript,jcl,jsp,natu
ral,objectivec,oracleforms,php,plsql,powerscript,rpg4,ruby,transactsql,vb6,vbnet"
exclude.patterns="**/src/test/**,**/__MACOSX/**,**/*.min.js,**/*.Designer.vb,**/*Reference.vb,**
/*Service.vb,**/*Silverlight.vb,**/*.Designer.cs,**/*Reference.cs,**/*Service.cs,**/*Silverlight.cs,**
/.*,**/Pods/BuildHeaders/**/*.h,**/Pods/Headers/**/*.h"
```

Extra parameters to pass to Kiuwan Local Analyzer, separated by spaces. Allowed format is as follows: <key1>="<value1>" <key2>="<value2>" ... <keyN>="<valueN>". **Do not forget to include the double quotes in the beginning and ending of the parameter value, and to separate each parameter with spaces.**

Timeout (minutes)	60

Expert Mode allows to set/override any parameter value configured in JENKINS_HOME/tools/KiuwanLocalAnalyzer/conf/analyzer.properties

By clicking on Advanced button, you can bind the result codes of Kiuwan Local Analyzer with Jenkins' build results.



Build result/result codes bindings

Result codes for SUCCESS build: 0

Result codes for UNSTABLE build: 10, 13

Result codes for FAILURE build: 1, 11, 12, 14

Result codes for NOT_BUILT build:

Result codes for ABORTED build:

In other cases, mark the build as: FAILURE

In this section, you can bind the result codes of Kiuwan Local Analyzer with Jenkins' build results. Result codes must be indicated as a comma-separated list of numbers. For more details about result codes, please refer to Return Codes and URL to results.

You can find further reference on return codes in Local Analyzer Return Codes

Jenkins Pipeleline

In order to execute Kiuwan as a stage in Jenkins **Pipeline** you need to install **Kiuwan Local Analyzer** (**KLA**) into the Jenkins node.

- To install KLA, please follow instructions as described in KLA - Installation and Network Configuration

It's highly recommended to install KLA with the same user that will execute KLA when launched from Jenkins Pipeline.

In case installation and execution users be different, make sure that *execution user has read-write-execute permissions over KLA installation directory and subdirectories*.

Once KLA is installed at the Jenkins node, in order to execute Kiuwan as a stage in Jenkins **Pipeline** you can use next *Groovy* script as a basis:

- Please note that *you must first generate credentials* (through **Jenkins' Credentials Plugin**, https://plugins.jenkins.io/credentials)
- You can find detailed info on available Command Line Interface options of KLA at Kiuwan Local Analyzer CLI - Command Line Interface

```
stage('invoke analyzer') {
        withCredentials([usernamePassword(credentialsId:
'7e163ee4-fb62-432f-8a5e-9b04350277cf',
                        passwordVariable: 'PASSWORD',
                        usernameVariable: 'USERNAME')]) {
                            def returnCode = bat(script: "${AGENT_HOME}/bin/agent.cmd
-s \"${WORKSPACE}\" -n \"appPipeline\" -cr \"CR001\" -l ${BUILD_NUMBER} -wr --user
\"$USERNAME\" --pass \"$PASSWORD\"",
                            returnStatus: true)

                         switch(returnCode){
                                case 0:
                                    break
                                case 14:
                                    currentBuild.result = 'UNSTABLE'
                                    break
                                case 1:
                                case 10:
                                    currentBuild.result = 'FAILURE'
                                    break
                                case 11:
                                case 12:
                                    currentBuild.result = 'NOT_BUILT'
                                    break
                                case 13:
                                    currentBuild.result = 'ABORTED'
                                    break
                                default:
                                    currentBuild.result = 'NOT_BUILT'
                                }
                        }
    }
```