

# jgitver: project versioning like a geek git

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[jgitver](#) consists of a set of library and plugins allowing to automatically compute project versions based on:

- git history
- git tags (annotated & lightweight)
- git branches
- configuration (predefined or explicit)

# 1. About

because we believe in some high level principles like "DRY (Don't Repeat Yourself)", "clean git history" we created [jgitver](#) to allow automatic computation of project versions without unnecessary steps or edits of files.

## 1.1. Goal

without changing `pom.xml` files or `build.gradle`, simply with `git commit`, `git tag` & `git branch` commands, your project descriptors versions are automatically computed when you launch a build command like `mvn package` or `gradle build`

- `pom.xml` version computations using defaults in maven mode:

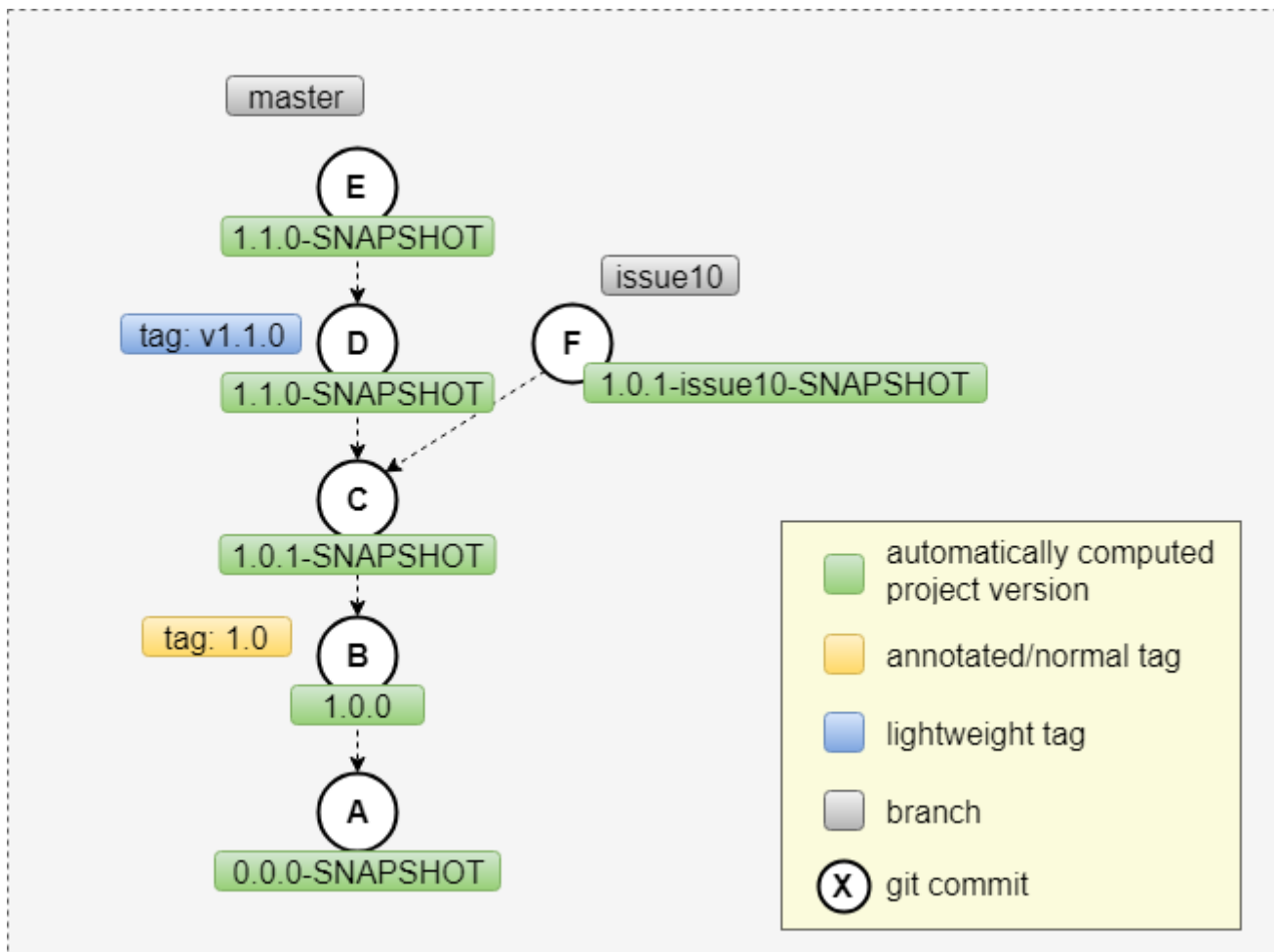


Figure 1. jgitver using default maven configuration

- `build.gradle` version computations using defaults in gradle mode:

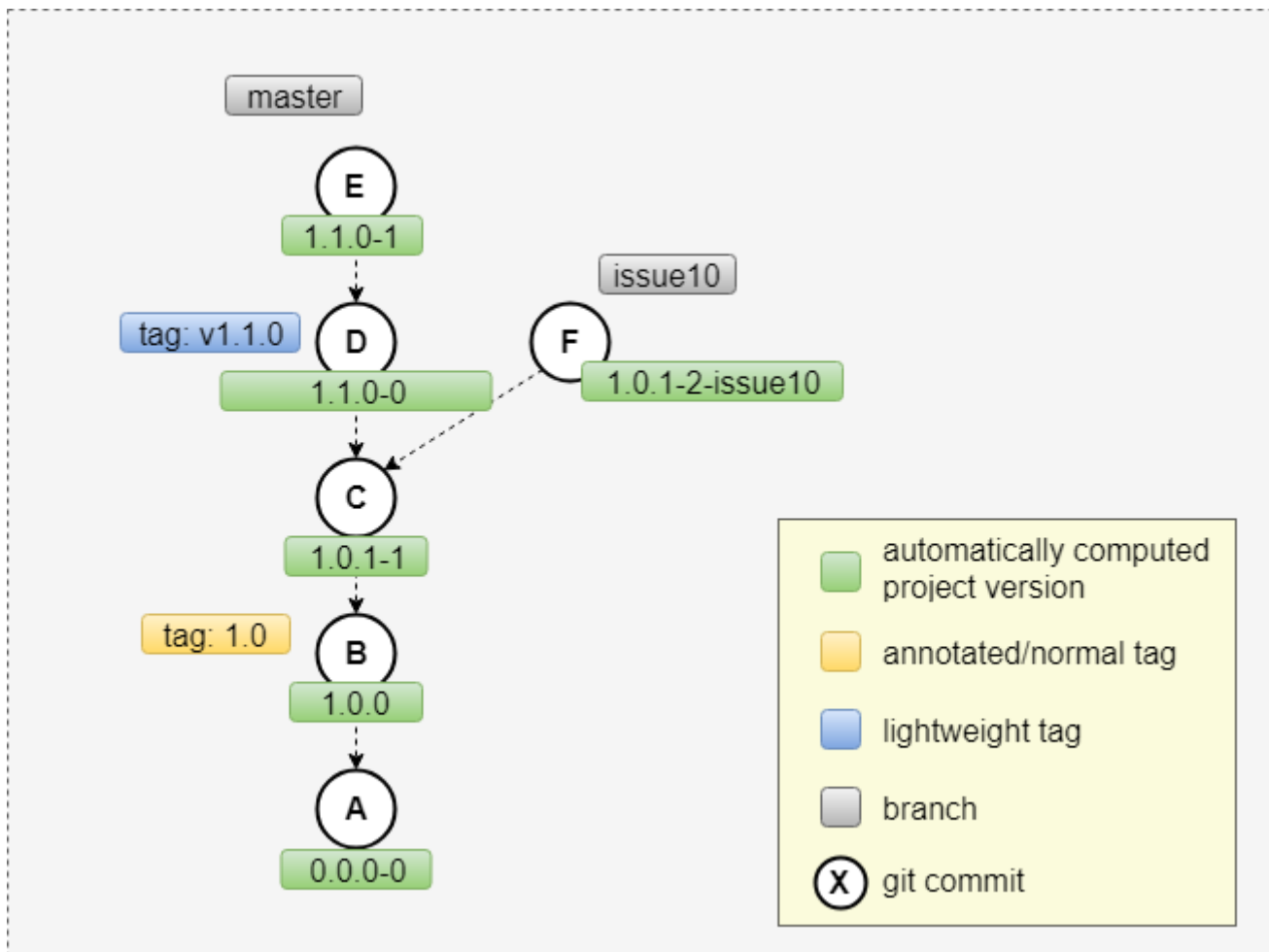


Figure 2. jgitver using default gradle configuration



jgitver is highly configurable. You can define & influence the way the version is computed. See the [User Documentation](#) for more details.

## 1.2. Clean Git history

because project version are computed automatically, there is no need anymore to pollute the project git history with some infamous unnecessary commits.

Yes `maven:release` we're looking at you !

On some projects, some 1/3 of commits are related to `maven:release` and the pom changes to adapt the version tag inside the `pom.xml`

```
Bordeaux JUG - docker run --rm -it --name jgitver mcfoggy/jgitver-demo /bin/bash
root@7c5755032aca:~/maven-war-plugin# git log --color=never --oneline | h
344b55d [INFRA-16467] move components documentation out of CMS space
a81cbdf [maven-release-plugin] prepare for next development iteration
28e74a4 [maven-release-plugin] prepare release maven-war-plugin-3.2.2
589cac9 [MWAR-303] - filtering of ${project.developers[0].id} does not wo
f1c6132 [MWAR-417] - Upgrade to plexus-interpolation to version 1.25
c62549b Revert "[MWAR-317] - Upgrade to plexus-interpolation to version 1
bfb0e59 [MWAR-317] - Upgrade to plexus-interpolation to version 1.25
ca152a6 Added Github Documentation.
62b3e37 [maven-release-plugin] prepare for next development iteration
3b292a3 [maven-release-plugin] prepare release maven-war-plugin-3.2.1
a65162d [MWAR-416] - Upgrade plexus-archiver to 3.6.0
5e8fa13 [MNGSITE-332] - Changed download templates of plugins not to refe
434c917 [MWAR-413] - Upgrade xstream to 1.4.10
8a3a3d4 [MWAR-414] - Upgrade mave-surefire/failsafe-plugin 2.21.0
2a16d37 [MWAR-401] - Upgrade the WAR lifecycle to use the maven-compiler-
da97036 [MWAR-412] - Upgrade parent to 31
17e5976 moved to git
9a4763f [maven-release-plugin] prepare for next development iteration
43a95d1 [maven-release-plugin] prepare release maven-war-plugin-3.2.0
b530fad [MWAR-407] Binary files are modified during web.xml filtering; re
9edaedd [MWAR-410] Upgrade plexus-utils to version 3.1.0
87ab36b [MWAR-409] Upgrade maven-archiver to 3.2.0 / plexus-archiver 3.5
8b1b564 [maven-release-plugin] prepare for next development iteration
8a2cc82 [maven-release-plugin] prepare release maven-war-plugin-3.1.0
6e32e02 Undoing [MWAR-401] Upgrade the WAR lifecycle to use the maven-com
22d262d CANCELLED VOTE.
c26a483 [maven-release-plugin] prepare for next development iteration
8a13abd [maven-release-plugin] prepare release maven-war-plugin-3.1.0
1d4dc9d [MWAR-404] <filteringDeploymentDescriptors>true</> is not honored
```

Figure 3. Isn't that git history pollution?

Using [jgitver](#) a release process becomes really simple: **tag & deploy**



*maven release with jgitver is reduced to the following*

```
git tag -a X.Y.Z
mvn deploy
```

## 2. Getting Started

### 2.1. Maven usage

For [maven](#) world, [jgitver](#) is provided as a maven core extension ; as such it needs to be referenced inside a file `YOUR_PROJECT/.mvn/extensions.xml`. If you do not have already an extension file, create one using any following techniques.

#### Automatic creation of `.mvn/extensions.xml`

In order to automatically create `.mvn/extensions.xml` file with latest [jgitver](#) version

- using [curl](#):

```
sh -c "$(curl -fsSL https://git.io/fA6sj)"
```

- using **wget**:

```
sh -c "$(wget -q https://git.io/fA6sj -O -)"
```

### Manual addition of `.mvn/extensions.xml`

- Create a directory `.mvn` under the root directory of your project.
- Create file `.mvn/extensions.xml`
- Add the following content to `.mvn/extensions.xml` (adapt to [latest version](#)).

```
<extensions xmlns="http://maven.apache.org/EXTENSIONS/1.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/EXTENSIONS/1.0.0
http://maven.apache.org/xsd/core-extensions-1.0.0.xsd">
  <extension>
    <groupId>fr.brouillard.oss</groupId>
    <artifactId>jgitver-maven-plugin</artifactId>
    <version>1.5.1</version>
  </extension>
</extensions>
```

### 2.1.3. Let jgitver operate

Once you have created the extensions file, your project versioning is now handled by [jgitver](#). Just launch `mvn validate` to see [jgitver](#) in action on your project ; now you can see it computing your project version.

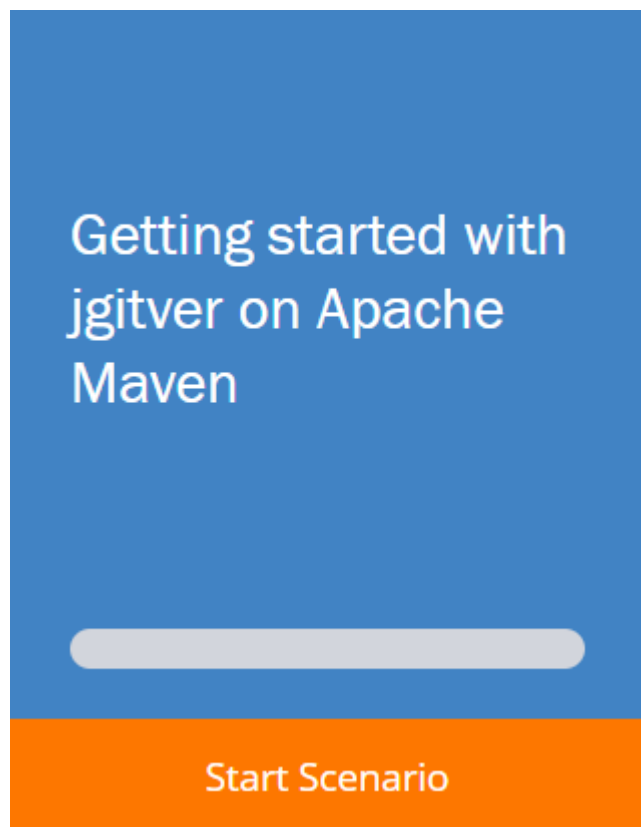
*Maven launch on jgitver project itself*

```
$ mvn validate
[INFO] no suitable configuration file found, using defaults
[INFO] Scanning for projects...
[INFO] Using jgitver-maven-plugin [1.3.0] (sha1:
ef8eec9f820d662e63a84f1210c377183e450cbd)
[INFO] jgitver-maven-plugin is about to change project(s) version(s)
[INFO]      fr.brouillard.oss::jgitver::0 -> 0.7.0-SNAPSHOT
```

Note that for your project jgitver may detect that the version is "0.0.0-SNAPSHOT" because it cannot find any suitable git tags in the repo to determine the correct version. You will need to add tags to your git repo to fully enable jgitver versioning. See the demo below for an example.

### 2.1.4. Online demo

If you want to quickly evaluate jgitver while being guided in the different steps, please follow the [jgitver interactive guide](#) on the katakoda platform.



## 2.2. Gradle usage

Using jgitver with [gradle](#) is as simple as adding it as a plugin

```
plugins {  
  id "fr.brouillard.oss.gradle.jgitver" version "0.6.1"  
}
```

Congrats, your project now uses jgitver !

```
$ gradle version  
  
> Task :version  
Version: 1.1.0-1  
  
BUILD SUCCESSFUL in 1s
```



#### **gradle version < 2.1**

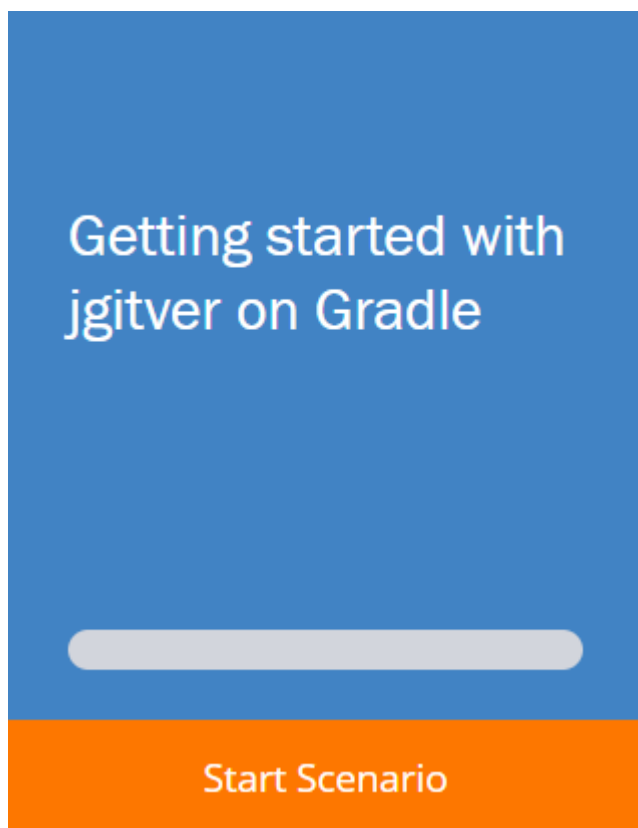
Above declaration only works for gradle  $\geq$  2.1, another way of declaring the plugin, working for all gradle versions including the ones  $<$  2.1

```
buildscript {
    repositories {
        maven {
            url "https://plugins.gradle.org/m2/"
        }
    }
    dependencies {
        classpath "gradle.plugin.fr.brouillard.oss.gradle:gradle-jgitver-
plugin:0.6.1"
    }
}

apply plugin: 'fr.brouillard.oss.gradle.jgitver'
```

### 2.2.1. Online demo

If you want to quickly evaluate jgitver while being guided in the different steps, please follow the [jgitver interactive guide](#) on the katakoda platform.



## 3. User documentation



*this section is WIP*

see the [projects](#) section to access existing projects README.



## 3.1. Modes

[jgitver](#) provides different ways of computing version called '*modes*' or '*strategies*'. Each mode comes with some behavior, defaults and configuration capabilities.

Each of the modes has their own options. Those options are detailed in the configuration section of each of the mode sections below.

The mode itself is set via the strategy option:

<details><summary>      <strong><em>Click      for      configuration      options</em></strong>  
</summary></div>

### strategy

**Type:** one of "MAVEN", "CONFIGURABLE", "PATTERN"

**Default:** "CONFIGURABLE" ("MAVEN" if using the Maven plugin)

Selects what strategy/mode to use jgitver in. CONFIGURABLE is generally referred to as the default unless specifically talking about Maven.

### mavenLike (deprecated)

**Type:** boolean

**Default:** false

Deprecated in favor of setting the strategy. If true, equivalent to setting the MAVEN strategy.

</div></details>

### 3.1.1. maven mode



The maven mode is built to reflect maven way of versioning: SNAPSHOTS and RELEASEs

In this mode (*which is the default mode of the jgitver maven plugin*), [jgitver](#) will:

- on a DETACHED HEAD having an annotated tag, use the tag name without further computation : *mean to release*
- add SNAPSHOT qualifier to the calculated version each time it is not in the previous state : *everything is a SNAPSHOT except a release*
- increase the patch version except if it comes from a lightweight tag : *mean to start a new version pattern numbering*
- use annotated tags before lightweight ones when on a DETACHED HEAD : *reproducible builds for*



*release*

- use lightweight tags before annotated ones when on a normal branch (master or any other branch) : *start 'next' version after release*
- add a branch qualifier on purpose : *avoid version collision for feature branches*

```
<details><summary>      <strong><em>Click      for      configuration      options</em></strong>
</summary></div>
```

## nonQualifierBranches

**Type:** string (comma-separated list of branch names)

**Default:** "master"

Branches for which the version should not have a qualifier added.

Setting this option replaces any configuration for the qualifierBranchingPolicies option.

## qualifierBranchingPolicies

**Type:** list of branch policies (configuration varies)

**Default:** None

Configuration of this option varies depending on your platform (Maven vs. Gradle).

At a high-level, each branch policy is a combination of two things:

1. **Pattern**, a regex string with a single capture group
2. **Transformations**, a list of strings

Valid transformations are below:

- "IDENTITY" or "REMOVE\_UNEXPECTED\_CHARS": removes whitespace, dashes, and slashes
- "REPLACE\_UNEXPECTED\_CHARS\_UNDERSCORE": replaces whitespace, dashes, and slashes with underscores
- "UPPERCASE": all characters made uppercase with default Java locale
- "LOWERCASE": all characters made lowercase with default Java locale
- "UPPERCASE\_EN": all characters made uppercase with Java English locale
- "LOWERCASE\_EN": all characters made lowercase with Java English locale
- "IGNORE": do not use branch name as a qualifier

If you define a branch policy with a pattern but don't specify any transformations, "REPLACE\_UNEXPECTED\_CHARS\_UNDERSCORE" and "LOWERCASE\_EN" will be used by default.

See the configuration sections for more information on setting this option.

## useDefaultBranchingPolicy

**Type:** boolean

**Default:** `true`

If `true`, adds a default fallback branch policy behind any set by the `qualifierBranchingPolicies` option.

The default fallback is as follows:

- **Pattern:** `"(.*)"`
- **Transformations:** `["REPLACE_UNEXPECTED_CHARS_UNDERSCORE", "LOWERCASE_EN"]`

## maxDepth

**Type:** int

**Default:** `Integer.MAX_VALUE`

Sets how many commits deep to look for tags to calculate the version from.

## Policy

**Type:** one of "MAX", "LATEST", "NEAREST"

**Default:** `"MAX"`

Sets how tags should be used for calculating versions.

## regexVersionTag

**Type:** string (regexp with at least one capture group)

**Default:** `"v?([0-9]+(?:\.[0-9]+){0,2})(?:-[a-zA-Z0-9\-\_]+)?"`

Defines how versions should be extracted from tags. The capture group should select the version to use for calculations.

## useDirty

**Type:** boolean

**Default:** `false`

If `true`, append "dirty" as a qualifier if the repository has uncommitted changes or new files.

</div></details>

### 3.1.2. default mode



The default mode is built to reflect a standard way of versioning, each commit being uniquely identified.

In this mode (*which is the default mode of the jgitver gradle plugin*), `jgitver` will:

- on a DETACHED HEAD having an annotated tag, use the tag name without further computation
- use annotated tags before lightweight ones when on a DETACHED HEAD
- use lightweight tags before annotated ones when on a normal branch (master or any other branch)
  - exception is when HEAD is on current branch, lightweight tags have precedence only when the repository is dirty
- add a branch qualifier on purpose

<details><summary>      <strong><em>Click      for      configuration      options</em></strong>  
</summary></div>

### nonQualifierBranches

**Type:** string (comma-separated list of branch names)

**Default:** `"master"`

Branches for which the version should not have a qualifier added.

Setting this option replaces any configuration for the `qualifierBranchingPolicies` option.

### qualifierBranchingPolicies

**Type:** list of branch policies (configuration varies)

**Default:** None

Configuration of this option varies depending on your platform (Maven vs. Gradle).

At a high-level, each branch policy is a combination of two things:

1. **Pattern**, a regex string with a single capture group
2. **Transformations**, a list of strings

Valid transformations are below:

- **"IDENTITY"** or **"REMOVE\_UNEXPECTED\_CHARS"**: removes whitespace, dashes, and slashes
- **"REPLACE\_UNEXPECTED\_CHARS\_UNDERSCORE"**: replaces whitespace, dashes, and slashes with underscores
- **"UPPERCASE"**: all characters made uppercase with default Java locale
- **"LOWERCASE"**: all characters made lowercase with default Java locale
- **"UPPERCASE\_EN"**: all characters made uppercase with Java English locale
- **"LOWERCASE\_EN"**: all characters made lowercase with Java English locale
- **"IGNORE"**: do not use branch name as a qualifier

If you define a branch policy with a pattern but don't specify any transformations, **"REPLACE\_UNEXPECTED\_CHARS\_UNDERSCORE"** and **"LOWERCASE\_EN"** will be used by default.

See the configuration sections for more information on setting this option.

## useDefaultBranchingPolicy

**Type:** boolean

**Default:** **true**

If **true**, adds a default fallback branch policy behind any set by the `qualifierBranchingPolicies` option.

The default fallback is as follows:

- **Pattern:** **"(.\*)"**
- **Transformations:** **["REPLACE\_UNEXPECTED\_CHARS\_UNDERSCORE", "LOWERCASE\_EN"]**

## useDistance

**Type:** boolean

**Default:** **true**

If **true**, add the distance between HEAD and the commit with the tag used to calculate a version as a qualifier.

This is not used if the "SNAPSHOT" qualifier is added to the calculated version.

## useLongFormat

**Type:** boolean

**Default:** `false`

If `true`, put a "g" before any git commit ID qualifiers to be compliant with the `git describe --long` format.

## **useGitCommitId**

**Type:** boolean

**Default:** `false`

If `true`, appends the SHA1 git commit ID as a qualifier.

This is not used if the "SNAPSHOT" qualifier is added to the calculated version.

## **useGitCommitTimestamp**

**Type:** boolean

**Default:** `false`

If `true`, appends the git commit timestamp as a qualifier.

This is not used if the "SNAPSHOT" qualifier is added to the calculated version.

## **gitCommentIdLength**

**Type:** int (between 8 and 40 inclusive)

**Default:** `8`

Sets the length of git commit IDs used as a qualifier by the `useGitCommitId` option.

## **maxDepth**

**Type:** int

**Default:** `Integer.MAX_VALUE`

Sets how many commits deep to look for tags to calculate the version from.

## **Policy**

**Type:** one of "MAX", "LATEST", "NEAREST"

**Default:** "MAX"

Sets how tags should be used for calculating versions.

### regexVersionTag

**Type:** string (regexp with at least one capture group)

**Default:** "v?([0-9]+(?:\.[0-9]+){0,2}(?:-[a-zA-Z0-9\\-\_]+)?)"

Defines how versions should be extracted from tags. The capture group should select the version to use for calculations.

### autoIncrementPatch

**Type:** boolean

**Default:** false

If **true**, increment the patch version by one if the tag used to calculate a version was:

- A normal, annotated one (not lightweight)
- On some commit before HEAD (not on HEAD itself)

This is not used if the "SNAPSHOT" qualifier is added to the calculated version.

### useDirty

**Type:** boolean

**Default:** false

If **true**, append "dirty" as a qualifier if the repository has uncommitted changes or new files.

</div></details>

### 3.1.3. pattern mode



This mode allows some freedom to the project owner. As a project maintainer you define/configure your own pattern of versioning.



The pattern mode is new in jgitver-0.7.0 and is to be considered as beta feature.

In this mode, [jgitver](#) computes some metadatas that can be used in a pattern definition to compute the final version.

These pattern definitions are given as configuration options and should follow the grammar below.

```
<details><summary>      <strong><em>Click      for      configuration      options</em></strong>
</summary></div>
```

## nonQualifierBranches

**Type:** string (comma-separated list of branch names)

**Default:** "master"

Branches for which the version should not have a qualifier added.

Setting this option replaces any configuration for the qualifierBranchingPolicies option.

## qualifierBranchingPolicies

**Type:** list of branch policies (configuration varies)

**Default:** None

Configuration of this option varies depending on your platform (Maven vs. Gradle).

At a high-level, each branch policy is a combination of two things:

1. **Pattern**, a regex string with a single capture group
2. **Transformations**, a list of strings

Valid transformations are below:

- "IDENTITY" or "REMOVE\_UNEXPECTED\_CHARS": removes whitespace, dashes, and slashes
- "REPLACE\_UNEXPECTED\_CHARS\_UNDERSCORE": replaces whitespace, dashes, and slashes with underscores
- "UPPERCASE": all characters made uppercase with default Java locale
- "LOWERCASE": all characters made lowercase with default Java locale
- "UPPERCASE\_EN": all characters made uppercase with Java English locale
- "LOWERCASE\_EN": all characters made lowercase with Java English locale
- "IGNORE": do not use branch name as a qualifier

If you define a branch policy with a pattern but don't specify any transformations, "REPLACE\_UNEXPECTED\_CHARS\_UNDERSCORE" and "LOWERCASE\_EN" will be used by default.

See the configuration sections for more information on setting this option.



## useDefaultBranchingPolicy

**Type:** boolean

**Default:** `true`

If `true`, adds a default fallback branch policy behind any set by the `qualifierBranchingPolicies` option.

The default fallback is as follows:

- **Pattern:** `"(.*)"`
- **Transformations:** `["REPLACE_UNEXPECTED_CHARS_UNDERSCORE", "LOWERCASE_EN"]`

## maxDepth

**Type:** int

**Default:** `Integer.MAX_VALUE`

Sets how many commits deep to look for tags to calculate the version from.

## autoIncrementPatch

**Type:** boolean

**Default:** `false`

If `true`, increment the patch version by one if the tag used to calculate a version was:

- A normal, annotated one (not lightweight)
- On some commit before HEAD (not on HEAD itself)

This is not used if the "SNAPSHOT" qualifier is added to the calculated version.

## tagVersionPattern

**Type:** string

**Default:** `"${v}"`

In the PATTERN strategy, define the version pattern to use the HEAD is on an annotated tag.

## versionPattern

**Type:** string

**Default:** "\${v}\${<meta.QUALIFIED\_BRANCH\_NAME>}\${<meta.COMMIT\_DISTANCE>}"

In the PATTERN strategy, define the version pattern to use by default (when HEAD is not on an annotated tag).

</div></details>

### Pattern grammar

- A **pattern** consists of at least one **pattern element**, one after another
- A **pattern element** is either arbitrary characters or a **delimited placeholder**
  - Arbitrary characters include letters, digits, or any of the four symbols “\_-.+”
- A **delimited placeholder** is “\${”, followed by a **placeholder**, followed by “}”
- A **placeholder** is an **inner placeholder**, possibly with a **prefix** before it
- A **prefix** is one of any of the following:
  - Arbitrary characters followed by “:” means the characters will always appear before the **inner placeholder**, even if it empty
  - Arbitrary characters followed by “~” means the characters will appear before the **inner placeholder** if it is not empty
  - “<” automatically applies a separator (hyphen between qualifier and version, period between qualifiers) to conform with strict [semver rules](#)
- An **inner placeholder** is one of any of the following:
  - “v”, which will be replaced with the full calculated version number (major.minor.patch)
  - “M”, which will be replaced with the calculated major version number
  - “m”, which will be replaced with the calculated minor version number
  - “p”, which will be replaced with the calculated patch version number
  - “sys.” followed by arbitrary characters, which will be replaced with accessing that system property (via Java’s `System.getProperty`)
  - “env.” followed by arbitrary characters, which will be replaced with accessing that environment variable (via Java’s `System.getenv`)
  - “meta.” followed by arbitrary characters, which will be replaced with accessing that meta field

### Meta fields

Name	Description
“CALCULATED_VERSION”	The calculated version

<b>Name</b>	<b>Description</b>
“DIRTY”	Is the repository dirty
“DIRTY_TEXT”	Literally the text string 'dirty' if the repository is dirty, empty string otherwise
“HEAD_COMMITTER_NAME”	Name of the commiter of HEAD commit
“HEAD_COMMITTER_EMAIL”	Email of the commiter of HEAD commit
“HEAD_COMMIT_DATETIME”	Datetime of the commit
“GIT_SHA1_FULL”	Corresponds to then the full git identifier of the HEAD
“GIT_SHA1_8”	Corresponds to a substring of the git identifier of the HEAD
“BRANCH_NAME”	Corresponds to the current branch name if any
“QUALIFIED_BRANCH_NAME”	Branch name used as a qualifier if any
“PROVIDED_BRANCH_NAME”	Branch name externally provided if any.
“HEAD_TAGS”	Corresponds to the list of tags, associated with the current HEAD
“HEAD_ANNOTATED_TAGS”	Corresponds to the list of annotated tags, associated with the current HEAD
“HEAD_LIGHTWEIGHT_TAGS”	Corresponds to the list of light tags, associated with the current HEAD
“HEAD_VERSION_TAGS”	Corresponds to the list of tags, eligible as version, associated with the current HEAD
“HEAD_VERSION_ANNOTATED_TAGS”	Corresponds to the list of annotated tags, eligible as version, associated with the current HEAD
“HEAD_VERSION_LIGHTWEIGHT_TAGS”	Corresponds to the list of light tags, eligible as version, associated with the current HEAD
“BASE_TAG”	Corresponds to the base tag that was used for the version calculation
“BASE_TAG_TYPE”	Corresponds to the type of tag that was used for the version calculation
“ALL_TAGS”	Corresponds to the whole list of tags of the current repository
“ALL_ANNOTATED_TAGS”	Corresponds to the whole list of annotated tags of the current repository
“ALL_LIGHTWEIGHT_TAGS”	Corresponds to the whole list of light tags of the current repository
“ALL_VERSION_TAGS”	Corresponds to the whole list of tags that can serve for version calculation

Name	Description
“ALL_VERSION_ANNOTATED_TAGS”	Corresponds to the whole list of annotated tags of the current repository that can serve for version calculation
“ALL_VERSION_LIGHTWEIGHT_TAGS”	Corresponds to the whole list of light tags of the current repository that can serve for version calculation
“NEXT_MAJOR_VERSION”	Exposes the next calculated version by adding one to the major digit of the current retained version
“NEXT_MINOR_VERSION”	Exposes the next calculated version by adding one to the minor digit of the current retained version
“NEXT_PATCH_VERSION”	Exposes the next calculated version by adding one to the patch digit of the current retained version
“BASE_VERSION”	Exposes the version used to base the calculation on for the retained version
“CURRENT_VERSION_MAJOR”	Exposes the major version of the computed version, ie the X in X.Y.Z
“CURRENT_VERSION_MINOR”	Exposes the minor version of the computed version, ie the Y in X.Y.Z
“CURRENT_VERSION_PATCH”	Exposes the patch version of the computed version, ie the Z in X.Y.Z
“COMMIT_DISTANCE”	Exposes the commit distance from the base tag used for the version computation
“COMMIT_DISTANCE_TO_ROOT”	Exposes the distance from HEAD to the root ancestor
“COMMIT_TIMESTAMP”	Exposes the commit timestamp instant in the current system timezone using a simplified <code>DateTimeFormatter.ISO_LOCAL_DATE_TIME</code>
“COMMIT_ISO_TIMESTAMP”	Exposes the commit timestamp instant in the UTC timezone using <code>DateTimeFormatter.ISO_OFFSET_DATE_TIME</code>
“ANNOTATED”	True if the current HEAD is on an annotated tag, false otherwise
“DETACHED_HEAD”	True if the current HEAD is detached, false otherwise
“BASE_COMMIT_ON_HEAD”	True if the current HEAD is on the same commit as the one serving as reference for the version computation

## Examples

As a simple example, the following patterns produce equivalent output:

- “`${v}`”
- “`${M}.${m}.${p}`”
- “`${meta.CALCULATED_VERSION}`”

The following pattern substitutes the commit distance for the patch number:

- “`"` ${M}.${m}.${meta.COMMIT_DISTANCE}`”

The following pattern appends the branch name and git commit ID as a qualifier, using the “<” prefix to use periods after the first hyphen:

- “`${v}${<meta.QUALIFIED_BRANCH_NAME}${<meta.GIT_SHA1_8}`” might produce “1.2.3-develop.a1b2c3d4”

The following pattern appends the value of an environment variable “FOO” to the version, and always adds a hyphen even if it is empty with the “:” prefix:

- “`${v}${:-env.FOO}`” might produce “1.2.3-bar” if the “FOO” environment variable contains “bar”
- “`${v}${:-env.FOO}`” might produce “1.2.3-” if the “FOO” environment variable is empty

Same as above but using the “~” prefix to optionally apply the hyphen:

- “`${v}${~env.FOO}`” might produce “1.2.3-bar” if the “FOO” environment variable contains “bar”
- “`${v}${~env.FOO}`” might produce “1.2.3” if the “FOO” environment variable is empty

## 3.2. Maven configuration

### 3.2.1. Configuration file

[Jgitver’s Maven](#) configuration file may be placed at `$rootProjectDir/.mvn/jgitver.config.xml`.

The file should be compliant with the latest schema (given in the [README](#)). An example is below.

The file as given is the default, if a value isn’t provided it is because there isn’t a default. All settings are optional.

*jgitver.config.xml*

```
<configuration xmlns="http://jgitver.github.io/maven/configuration/1.1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://jgitver.github.io/maven/configuration/1.1.0
https://jgitver.github.io/maven/configuration/jgitver-configuration-v1_1_0.xsd">

  <!-- One of MAVEN, CONFIGURABLE, PATTERN -->
  <strategy>MAVEN</strategy>
```

```

<!-- Deprecated (this field replaced and overridden by strategy), boolean -->
<mavenLike>true</mavenLike>

<!-- One of MAX, LATEST, NEAREST -->
<policy>MAX</policy>

<!-- Boolean -->
<autoIncrementPatch>true</autoIncrementPatch>

<!-- Boolean -->
<useCommitDistance>true</useCommitDistance>

<!-- Boolean -->
<useDirty>false</useDirty>

<!-- Boolean -->
<useGitCommitId>false</useGitCommitId>

<!-- Integer between 8 and 40 inclusive -->
<gitCommitIdLength>8</gitCommitIdLength>

<!-- Integer -->
<maxSearchDepth>Integer.MAX_VALUE</maxSearchDepth>

<!-- String, comma separate multiple branches -->
<nonQualifierBranches>master</nonQualifierBranches>

<!-- An optional list of directories to not assign Jgitver's version for -->
<exclusions>
  <!-- String, relative path from project root -->
  <exclusion></exclusion>
</exclusions>

<!-- Boolean -->
<useDefaultBranchingPolicy>true</useDefaultBranchingPolicy>

<!-- String, only for PATTERN strategy" -->

<versionPattern>${v}${&lt;meta.QUALIFIED_BRANCH_NAME}&lt;meta.COMMIT_DISTANCE}</versionPattern>
<!-- Usages of "<" are escaped with "&lt;" -->

<!-- String, only for PATTERN strategy -->
<tagVersionPattern>${v}</tagVersionPattern>

<branchPolicies>
  <branchPolicy>
    <!-- String, regex with one capture group -->
    <pattern></pattern>
    <transformations>
      <!-- String, a name of a transformation -->

```

```

        <transformation>REPLACE_UNEXPECTED_CHARS_UNDERSCORE</transformation>
        <transformation>LOWERCASE_EN</transformation>
    </transformations>
</branchPolicy>
</branchPolicies>

<!-- String, regex with at least one capture group -->
<regexVersionTag>v?([0-9]+(?:\.[0-9]+){0,2})(?:-[a-zA-Z0-9\\-
_]+)?</regexVersionTag>
</configuration>

```

The branch policy is a list so that it may represent policies for different patterns. For example:

```

<configuration xmlns="http://jgitver.github.io/maven/configuration/1.1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://jgitver.github.io/maven/configuration/1.1.0
https://jgitver.github.io/maven/configuration/jgitver-configuration-v1_1_0.xsd">
  <branchPolicies>
    <branchPolicy>
      <pattern>feature_(.*)</pattern>
      <transformations>
        <transformation>REMOVE_UNEXPECTED_CHARS</transformation>
        <transformation>UPPERCASE</transformation>
      </transformations>
    </branchPolicy>
    <branchPolicy>
      <pattern>(master)</pattern>
      <transformations>
        <transformation>IGNORE</transformation>
      </transformations>
    </branchPolicy>
  </branchPolicies>
</configuration>

```

For more information on all of the different options, see the configuration options for your chosen [mode](#).

## 3.3. Gradle configuration



Configuration of the [gradle-jgitver-plugin](#) is only supported in plugin versions above 0.2.0.

Information on behavior before that point is available in the [README](#).

### 3.3.1. Configuration block

[Jgitver's Gradle](#) configuration block is as follows.



The block as given is the default, if a value is missing it is because none is provided by default. All settings are optional.

*build.gradle*

```
jgitver {
    // One of 'MAVEN', 'CONFIGURABLE', 'PATTERN'
    strategy 'CONFIGURABLE'

    // Deprecated (use strategy instead), boolean
    mavenLike false

    // One of 'MAX', 'LATEST', 'NEAREST'
    policy 'MAX'

    // Boolean
    autoIncrementPatch true

    // Boolean
    useDistance true

    // Boolean
    useDirty false

    // Boolean
    failIfDirty false

    // Boolean
    useGitCommitTimestamp false

    // Boolean
    useGitCommitID false

    // Integer between 8 and 40 inclusive
    gitCommitIDLength 8

    // Since plugin version 0.7.0, integer
    maxDepth Integer.MAX_VALUE

    // String, comma separate multiple branches
    nonQualifierBranches 'master'

    // Since plugin version 0.6.0, string, only for PATTERN strategy
    versionPattern '${v}${<meta.QUALIFIED_BRANCH_NAME>}${<meta.COMMIT_DISTANCE>}'

    // Since plugin version 0.6.0, string, only for PATTERN strategy
    tagVersionPattern '${v}'

    // Closure, can be set multiple times
    policy {
        // String, regex with one capture group
```

```

    pattern =
    // Array of strings, each being a transformation
    transformations = ['REPLACE_UNEXPECTED_CHARS_UNDERSCORE', 'LOWERCASE_EN']
}

// One of 'FIRST_PARENT', 'LOG', 'DEPTH'
distanceCalculatorKind 'FIRST_PARENT'

// String, regex with at least one capture group
regexVersionTag 'v?([0-9]+(?:\.[0-9]+){0,2}(?:-[a-zA-Z0-9\-\_]+)?)'
}

```

The branch policy can be set multiple times to set policies for different patterns. For example:

```

jgitver {
    policy {
        pattern = 'feature_(.*)'
        transformations = ['REMOVE_UNEXPECTED_CHARS', 'UPPERCASE']
    }
    policy {
        pattern = '(master)'
        transformations = ['IGNORE']
    }
}

```

For more information on all of the different options, see the configuration options for your chosen [mode](#).

### 3.3.2. Multi-project builds

In a [multi-project](#) build, [jgitver](#) can be enabled and globally for all projects. Assuming that the root project and all sub-projects are in the same repository, this will keep their versions perfectly in sync.

Configuration is done in the root project's `build.gradle`:

*build.gradle*

```

// Define plugin here (only actually applies the plugin in the root project)
plugins {
    id "fr.brouillard.oss.gradle.jgitver" version "0.9.1"
}

allprojects {

    // Ensure plugin is applied in all projects
    apply plugin: 'fr.brouillard.oss.gradle.jgitver'

    jgitver {

```

```
    // Your config goes here
  }
}
```

## 3.4. IDEs usage

By providing dynamic versioning, [jgitver](#) is not currently the best friend of IDEs.

But on the other hand your IDE is probably not your build tool ; so it is not a problem if it does understand all of your build pipeline.

Please refer to the instructions of your preferred IDE and if you need projects dependencies within the IDE then look at the latest paragraph.

### 3.4.1. Eclipse

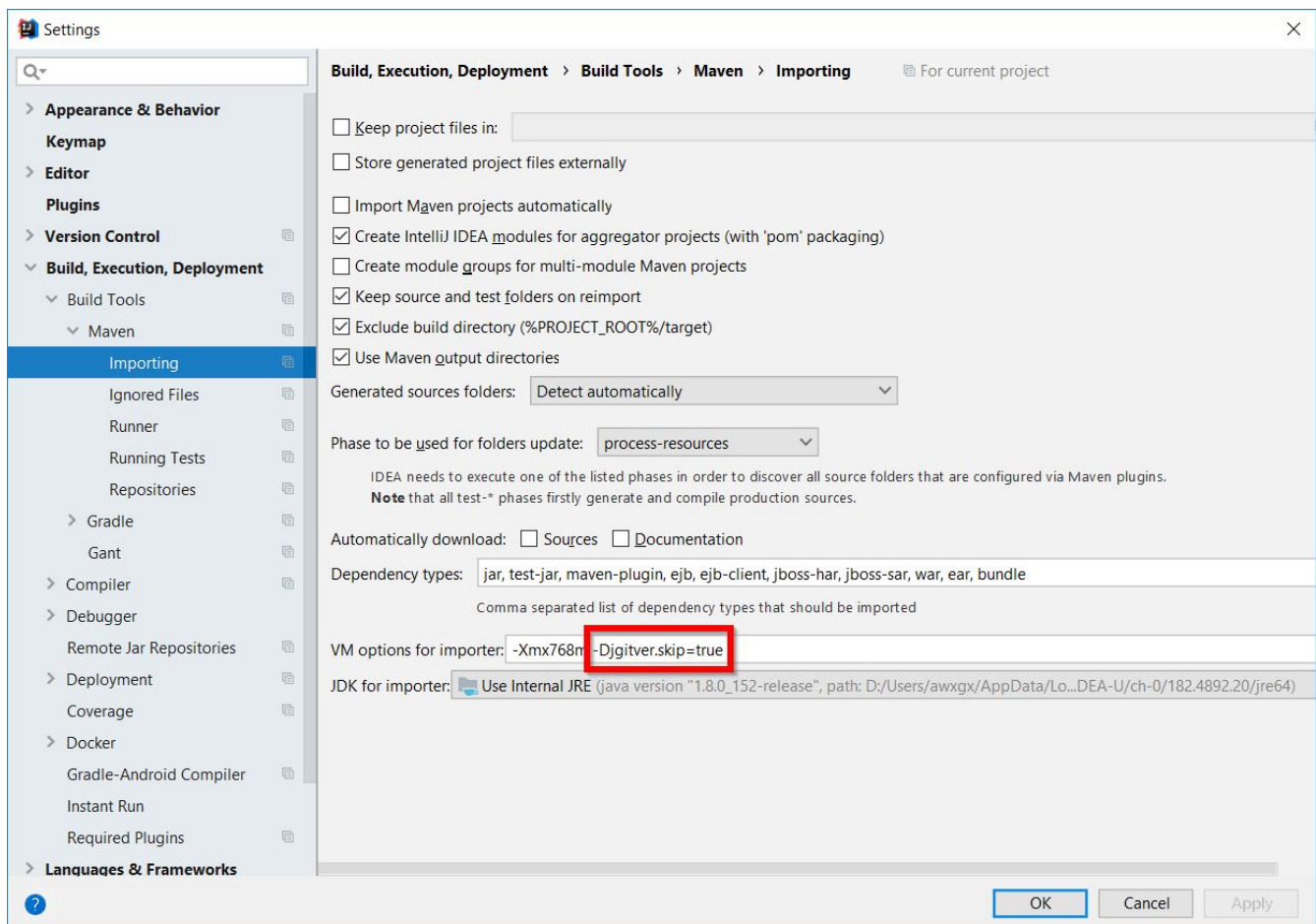
Having [jgitver](#) setup on your project does not hurt Eclipse at all.

Just import your project as you would do normally. Eclipse will import it using the content of your pom.xml file, it will not evaluate version using [jgitver](#).

### 3.4.2. IntelliJ IDEA

Unfortunately, IntelliJ IDEA still does not work out of the box when [jgitver](#) is there. The problem has been reported to IntelliJ under the following issue [IDEA-187928](#).

To workaround IntelliJ failure, you have to deactivate [jgitver](#) for the import step. For maven projects for example, open the settings **CTRL+ALT+S** and modify imports settings by adding **-Djgitver.skip=true** as in the below image.



### 3.4.3. Netbeans

Exactly like Eclipse does, Netbeans just use the content of the pom.xml while importing your project. Just import your project as you would do normally.

### 3.4.4. Project dependencies within IDEs

If you want to open several projects within your IDE and make project references between those projects then having projects which version is dynamically changing is not the best way to help your IDE keeping the references between the projects.

Especially if your are not using maven like **SNAPSHOT** but unique version for each of your commits then it is better to bypass the dynamic nature of [jgitver](#).



this section is WIP

## 4. Developer documentation

### 4.1. Projects

[jgitver](#) is composed by:

- [jgitver library](#): a java library using git that computes a git repository version based on a given configuration

- [jgitver maven plugin](#): a maven core extension allowing to compute POM versions without any effort or [pom.xml](#) modification
- [jgitver gradle plugin](#): a gradle plugin allowing to compute gradle project version

As it is always good to *eat your own food*, all the above projects self-use either the [jgitver maven plugin](#) or [gradle one](#) ; thus you can look at them as examples.

## 4.2. Contribution



*this section is WIP*

Any kind of contribution is highly appreciated and welcome.

You can help the project in many ways:

- leverage it's usage in your company
- create a blog, tweet, post on social media ; make some awareness of the project
- star the [projects](#) on github
- ask & answer questions on the [gitter chat room](#)
- report issues in each [projects](#) issues page ([library](#), [maven](#), [gradle](#))
- participate in documentation enhancement (**VERY important**)
  - this documentation enhancement, please read the [README](#), open a [pull request](#) with your change
  - README & documentation enhancement (via PR on each [project](#))
  - new katacoda tutorials, make PR on this project: [jgitver-katacoda-scenarios](#)
- new feature or bug fixing via a PR on each [project](#)
- support the project:
  - via a [paypal](#) donation
  - for other kind of support please email Matthieu Brouillard using: [oss@brouillard.fr](mailto:oss@brouillard.fr)

## 4.3. Who is using jgitver



If you want your company/project to be named here you can either:

- send me a [Twitter URL]
- push me an [email](#) [Matthieu Brouillard](#)
- open an [issue](#)
- create a [PR](#)

jgitver is already in use in:

- all [jgitver](#) projects

- [AGFA Healthcare](#)
- [Oracle Labs Australia](#)
- project contributors ([library](#), [maven](#))

## 4.4. Support

### 4.4.1. Community Support

- for a question about the usage of [jgitver](#) or any of its plugin, please use the [chat on gitter](#) room.
- in case of bug please open an issue:
  - maven related problems: [jgitver-maven-plugin/issues](#)
  - gradle related problems: [gradle-jgitver-plugin/issues](#)
  - for enhancement requests, please open an issue on the [library itself](#)
- to contribute to this documentation, please read the [README](#), open a [pull request](#) with your change
- due to history, the maven plugin had also a [wiki](#). There is a continuous effort to migrate the wiki pages into the official documentation [project](#).

### 4.4.2. Professional support

For anything outside of the community support please contact me [email](#) [Matthieu Brouillard](#)  
[Twitter URL]