jgitver: project versioning like a ~~geek~~ git

Contents

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:

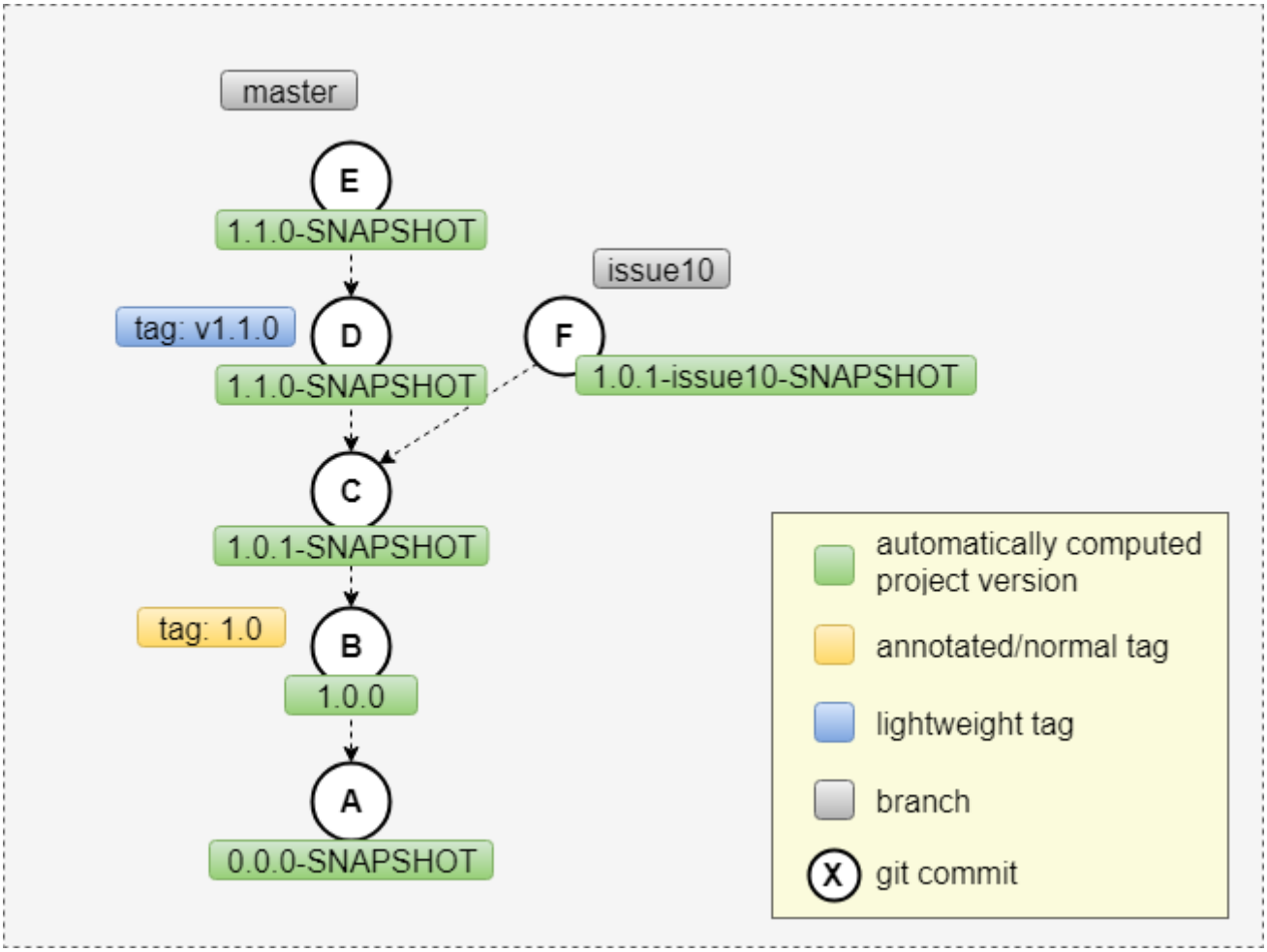


Figure 1. jgitver using default maven configuration

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

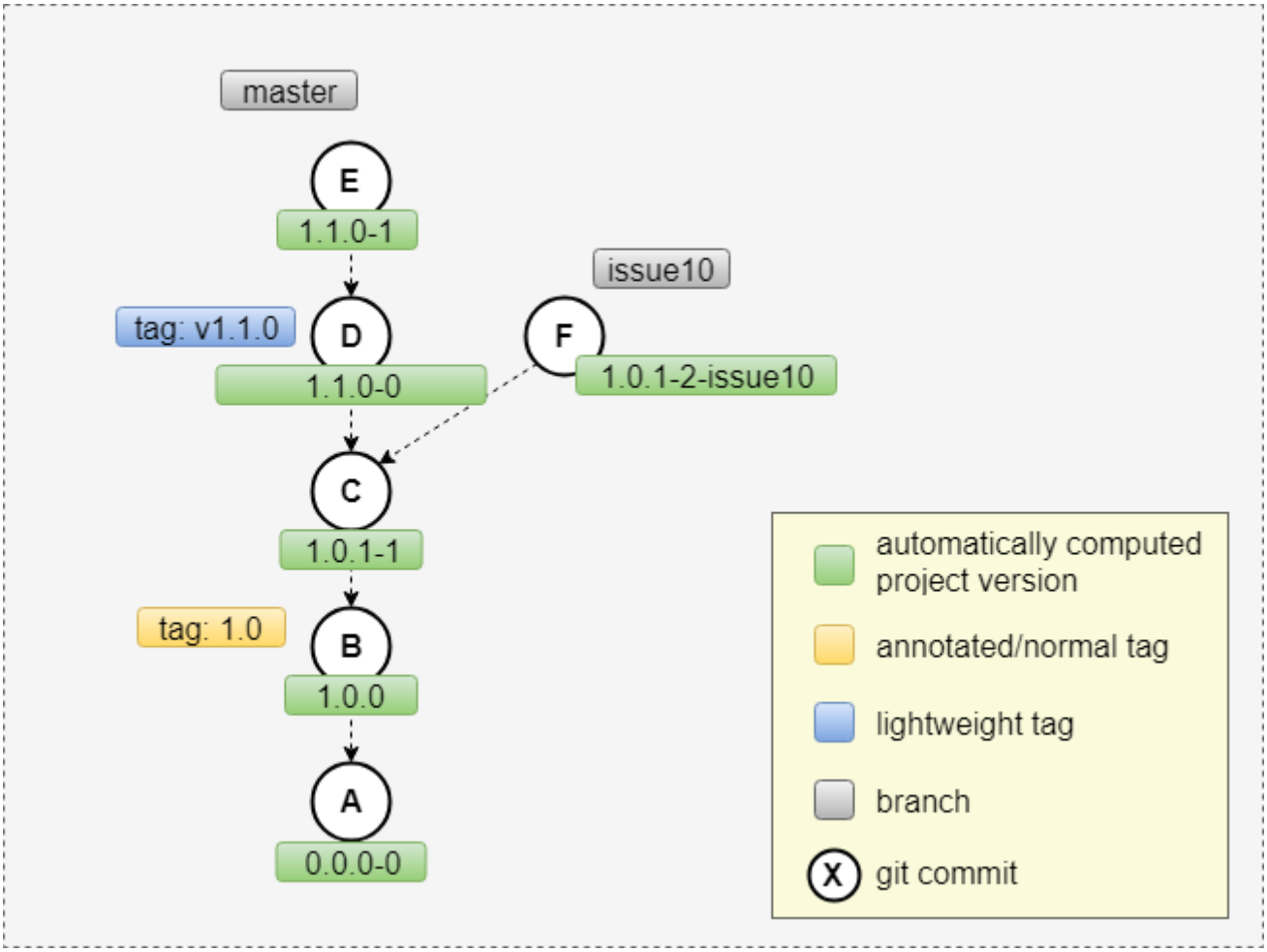


Figure 2. jgitver using default gradle configuration

jgitver is highly configurable. You can define & infuence 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`

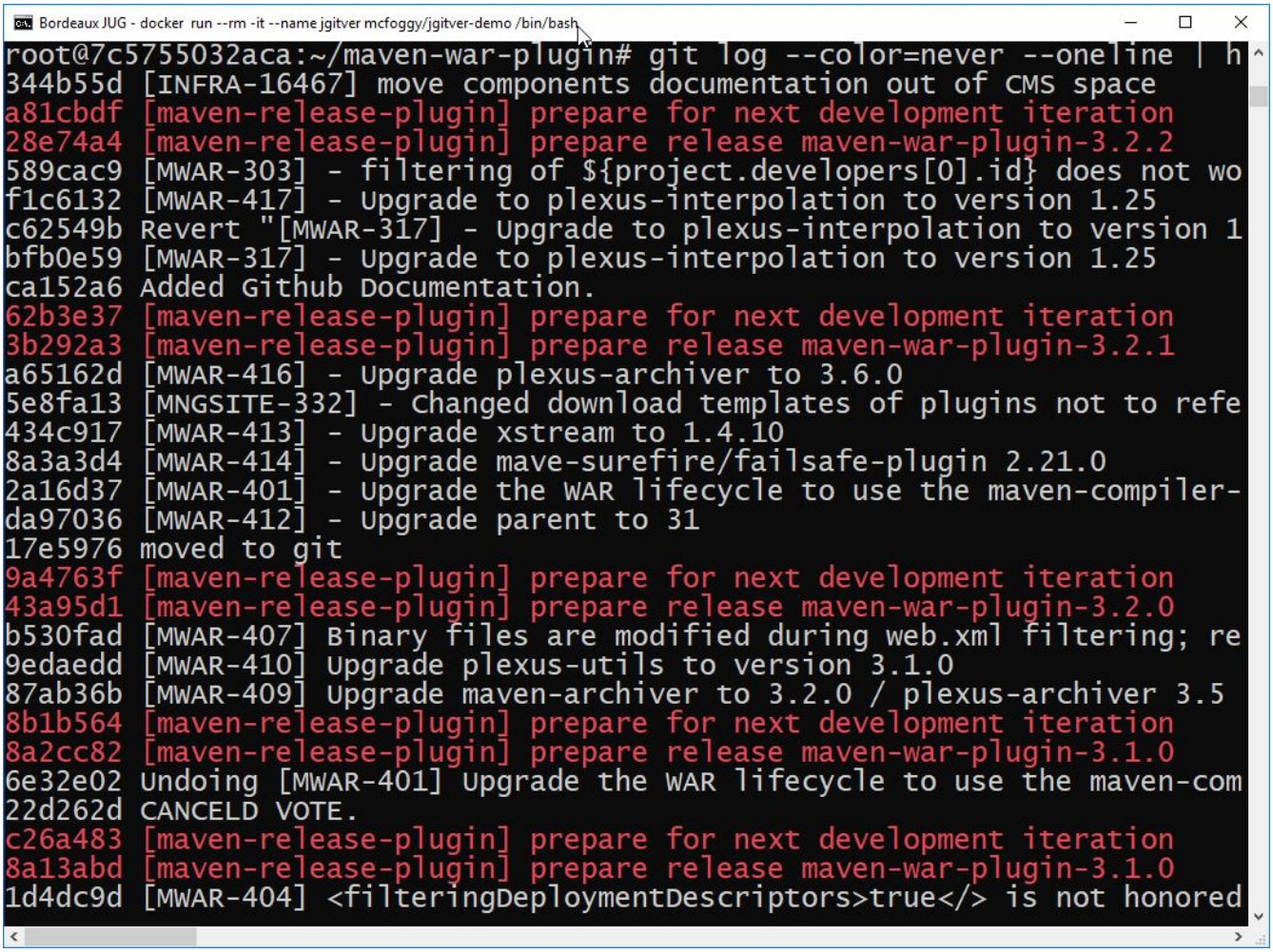


Figure 3. Isn't that git history pollution?

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 below technique.

2.1.1. 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 -)"
```

2.1.2. Manual edition of *.mvn/extensions.xml*

- Create a directory `.mvn` under the root directory of your project.
- Create file `.mvn/extensions.xml`
- Put 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>1.4.3</version>
  </extension>
</extensions>
```

2.1.3. let jgitver operate

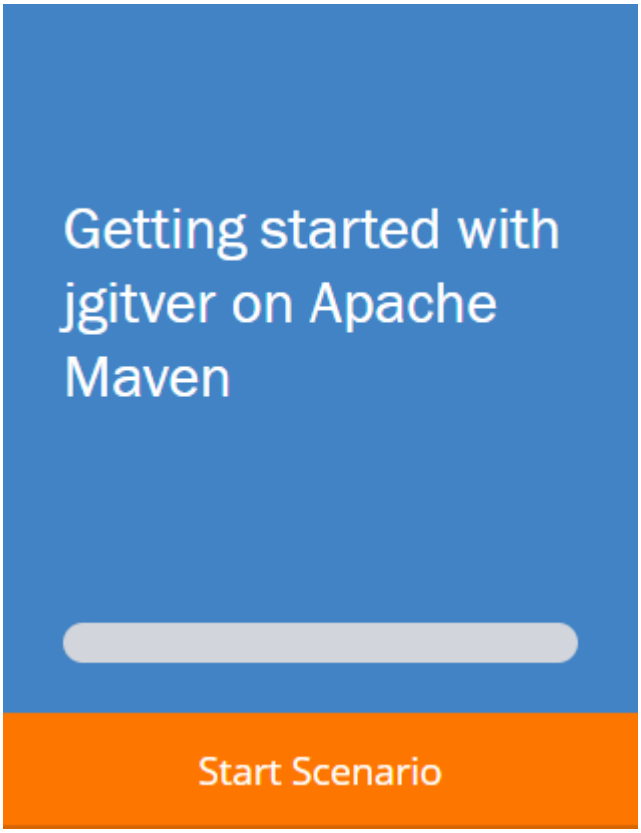
Once you have created the file, your project versioning is now handled by jgitver. Just launch `mvn validate` to see jgitver in action on your project ; now you can see it computing your project version.

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
```

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

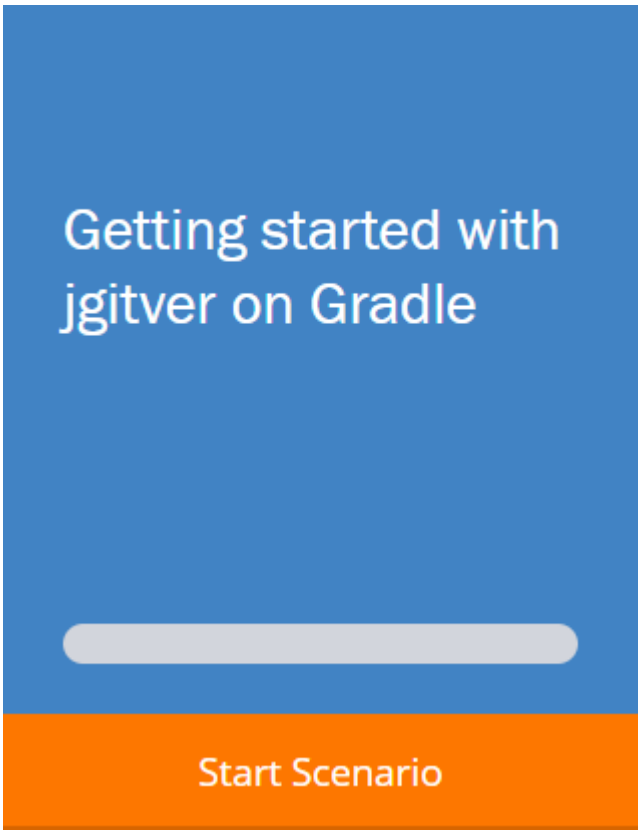
Above declaration only works for gradle >= 2.1, another way of declaring the plugin, working for all gradle versions including the ones < 2.1

```
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> Click for configuration options </summary>

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.

</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> Click for configuration options </summary>

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.

lookupPolicy

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.

</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> Click for configuration options </summary>

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.

lookupPolicy

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.

</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> Click for configuration options </summary>

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).

</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

Name	Description
“DIRTY”	Is the repository dirty
“HEAD_COMMITTER_NAME”	Name of the commiter of HEAD commit
“HEAD_COMMITER_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
“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
“ALL_VERSION_ANNOTATED_TAGS”	Corresponds to the whole list of annotated tags of the current repository that can serve for version calculation

Name	Description
“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_TIMESTAMP”	Exposes the commit timestamp instant in the current system timezone using a simplified DateTimeFormatter.ISO_LOCAL_DATE_TIME

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}</vers
ionPattern>
    <!-- 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

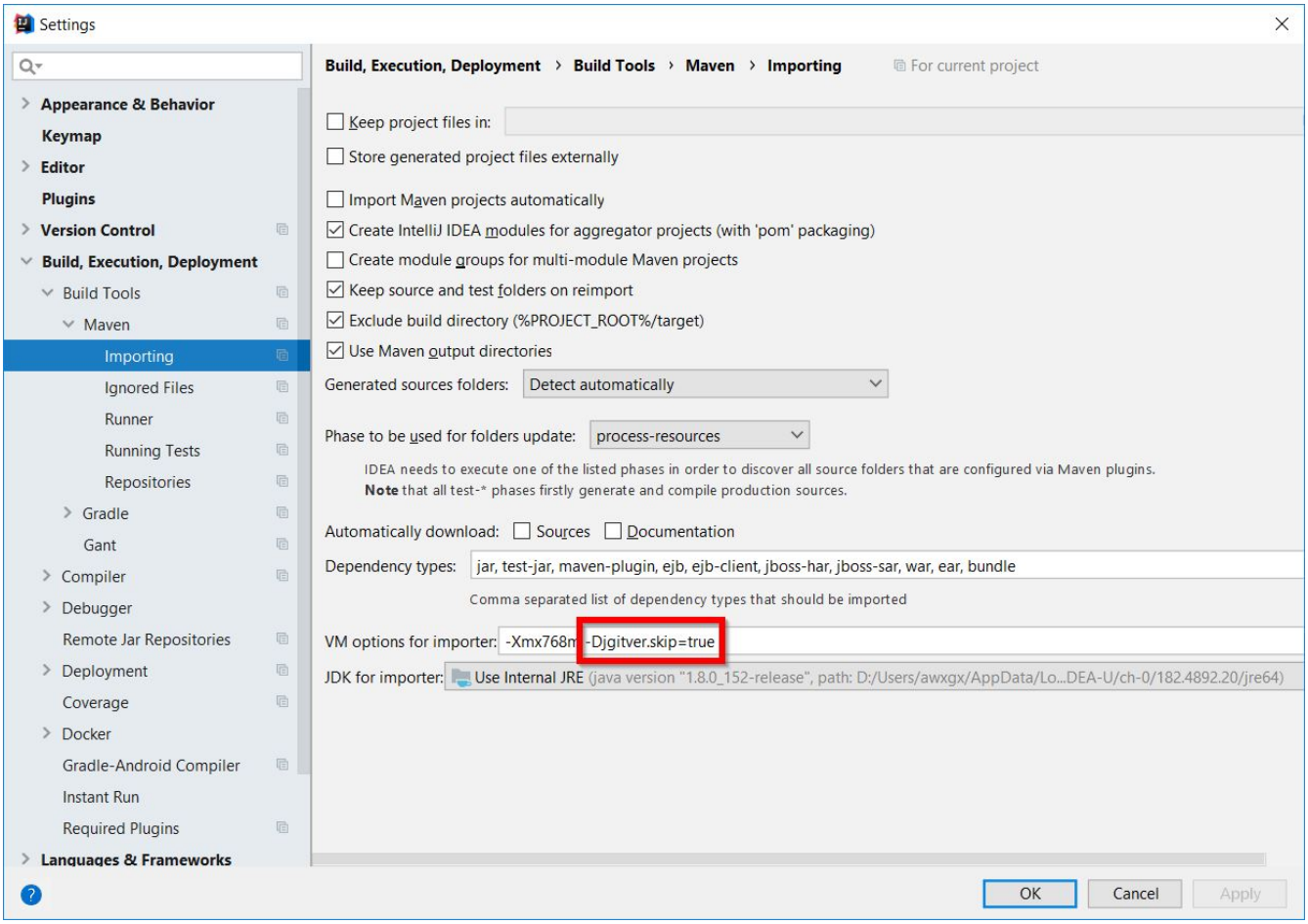
Having jgitver setup on your project does not hurt Eclipse at all.

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

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 it's 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]