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# **PyJen Documentation**

***Release 1.1.0***

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## 1.1 Examples

### 1.1.1 Display a list of all jobs on the default view

```
from pyjen.jenkins import Jenkins
jk = Jenkins("http://localhost:8080")
vw = jk.default_view
jobs = vw.jobs

for j in jobs:
    print(j.name)
```

### 1.1.2 Disable all jobs in a view named “My View”

```
from pyjen.jenkins import Jenkins
jk = Jenkins("http://localhost:8080")
vw = jk.find_view("My View")
vw.disable_all_jobs()
```

### 1.1.3 Get all upstream dependencies of a job named “JobA”

```
from pyjen.jenkins import Jenkins
jen = Jenkins("http://localhost:8080")
jb = jen.find_job("JobA")
upstream = jb.all_upstream_jobs

for u in upstream:
    print u.name
```

### 1.1.4 Clone all jobs in a view who are named with a ‘trunk’ identifier for a new branch configuration

```
from pyjen.jenkins import Jenkins
j = Jenkins("http://localhost:8080")
v = j.find_view("trunk_builds")
v.clone_all_jobs("trunk", "branch")
```

## 1.1.5 Locate a nested subview on a Jenkins instance that uses the NestedView plugin

```
from pyjen.utils.helpers import find_view
v = find_view("http://localhost:8080", ('user', 'pw'), "MySubView")
print(v.name)
```

## 1.2 Contributors Guide

Developers who are interested in contributing to the PyJen project should start by contacting the project maintainer [here](#). Source for the project can be found on [GitHub](#).

To start working on an improvement for the project, start by forking the project and committing your work there. When you are happy with the changes you have made create a pull request and assign it to the maintainer. Once approved, the changes will be integrated into the next release.

All code is expected to be PEP-8 compliant. This requirement is enforced automatically by our continuous integration builds with the help of PyLint. Pull requests will not be approved when continuous integration builds fail. Further, we ask that all docstrings be compatible with the Sphinx API-doc plugin to facilitate automatic document generation by our scripts and hosting sites. Finally, we encourage contributors to add sufficient unit test coverage for any changes they make using the py.test framework used by this project.

Seeing as how PyJen supports the latest versions of both Python 2 and Python 3, all code contributions must be compatible with both of these versions. Finally, we try our best to ensure the API is compatible with both the LTS and Latest editions of the Jenkins REST API, so care should be taken to make sure contributed code - especially those supporting new Jenkins plugins - is compatible with both of these versions wherever possible.

### 1.2.1 Development Environment

The project, including all build tools, are expected to work correctly on all major operating systems (Windows, Linux, MacOS) and under all recent versions of Python (2.7, 3.4+). Further, some unit tests require the Docker client tools to be installed as well. See the section on “testing” below for details.

Once you have your host configured correctly, we recommend using a Python virtual environment for all of your development work. Maintainers of the project are currently using [virtualenv](#) however any similar virtualization tool should work. Below are the basic steps we recommend contributors follow to set up a compatible build environment:

1. make sure you have the ‘virtualenv’ tool installed

```
pip install virtualenv
```

2. Next, create a local virtual environment under your working folder for the desired Python version. In most systems this can be done as follows:

```
virtualenv -p python3 ./venv3
```

3. Activate the new virtual environment

```
Linux/Mac: source ./venv3/bin/activate
Windows: .\venv3\bin\activate.bat
```

4. install the required build time dependencies. There are 2 requirements files in the ./tests folder to simplify this process: python2.reqs and python3.reqs. The former defines all pegged revisions of all dependencies needed



to build and test the project under a Python 2 runtime. The latter defines a similar set of dependencies for the Python 3 runtime. These can easily be installed using pip as follows:

```
pip install -r ./tests/python3.reqs
```

5. Finally, you should be ready to try performing a test run of the unit tests.

```
tox -r -e py3
```

For more details on different aspects of the project, including more details on how the test framework works, dependency management, as well as some high level architectural information to get you started writing plugins, see the other sections below.

## 1.2.2 Testing

We endeavor to have as much test coverage of the library and plugin code as possible. To help simplify testing and improve coverage metrics we've adopted several different testing strategies.

Currently, all tests are orchestrated by `tox`. Under the hood `tox` runs static code analysis as well as automated unit tests. The tests are further orchestrated using `pytest`. Further, some tests in the suite require a live Jenkins service to test against. This service is automatically created and configured by the `pytest` framework. To run these tests you need only install the `Docker client` for your development system and make sure the service is running before launching `tox`.

For examples on how to write tests for various parts of the framework and plugins, we encourage you to review the existing tests and find similar ones that you can use as guides. Simply copy a test that performs a similar operation to what you want to test, rename the test and update the implementation to satisfy your new test case.

### Test Customizations

Several custom `pytest` parameters have been added to our test runner to make working with the project easier for contributors. They are as follows:

```
tox -e py3 -- --skip-docker
```

This handy flag allows developers to run the unit tests that do not depend on the Jenkins service that runs under Docker. This can be helpful for contributors who can't or don't want to install and configure Docker on their local machines. Also, tests that require the Docker service tend to be slower than their non-dockerized counterparts, so it can be helpful to run the faster tests as an initial sanity check for new changes being made.

```
tox -e py3 -- --preserve
```

This flag forces the `pytest` runner to keep the Docker container used for tests running after the test run is complete. This can be handy for debugging purposes allowing developers to examine the contents of the container after the tests have been executed to see what state the service is in, the state of the file system in the container, etc. Also, when this flag is enabled subsequent runs of the tests will re-use the same container, which can help improve build times when doing local testing.

```
tox -e py3 -- --jenkins-version jenkins:alpine
```

This test option allows us to customize the version of the Jenkins service we test against more easily. By providing the name and tag of the Docker image to use for testing, we can force the test runner to use that exact container for all tests, superseding the default one. Have a bug with a plugin that is only reproducible in v2.150.3, then just run “`tox -e py3 -- --jenkins-version jenkins:2.150.3-alpine`” to try and reproduce it.

### 1.2.3 Dependency Management

To ensure consistent build results on all platforms and on all continuous integrations servers, we peg all of the build time dependencies needed to build and test the project as specific versions. These pegged revisions are stored in the following files:

- `./tests/python2.reqs` - all dependencies needed to build under Python 2.x
- `./tests/python3.reqs` - all dependencies needed to build under Python 3.x

To make it easier to manage these requirements files, we have a custom shell script in the root folder that will auto-generate a new set of dependencies for the project based on the package dependencies defined in the `project.prop` file in the root of the project. The shell script will update the dependency list with all of the latest versions of all dependencies automatically.

### 1.2.4 Plugins

Just as found in the Jenkins back end implementation, most custom functionality in PyJen will be provided by plugins. PyJen supports a plugin system that essentially mirrors the Jenkins system which allows developers to write their own classes to wrap the REST API for any Jenkins plugin they may like.

Plugins may be packaged independently from the PyJen package or included with the package. Plugins included here are guaranteed to be covered by the same quality metrics and standards as the main library itself, which should improve the confidence users have in them. Standalone plugins packaged separately will be written by third parties and thus may vary greatly in quality and features.

Plugins included directly with the PyJen library are simply Python classes that meet the following criteria:

- the class declarations must be placed in a module under the `src/pyjen/plugins` subfolder
- the class must derive, directly or indirectly, from the `PluginBase` abstract base class

This second requirement forces derived classes to implement specific criteria to implement the required abstract interface. Currently this interface simply has two requirements:

- a static property named `'type'` of type `str` containing the character representation of the Jenkins plugin managed by the PyJen plugin
- a constructor compatible with the type of plugin being managed (in most cases, this is a single parameter of type `xml.ElementTree.Element`.)

Beyond that, plugin implementers can then proceed to implement public methods and properties on their plugin class to expose functionality particular to the plugin.

### Using Plugins

Any primitive or operation in Jenkins that supports a plugable interface is equally addressable by the associated PyJen interface without further customization by the plugin author. For example, to add support for a new type of `'builder'`, simply write your plugin class as described above and it will automatically be accessible from the `builders()` property.

This is accomplished by leveraging the metadata embedded in the Jenkins configuration information for each primitive such as a view or a job. The back-end Java plugins supported by Jenkins embed type information in the configuration metadata which maps directly onto PyJen plugin classes. So when you use PyJen to request data from the Jenkins REST API it will automatically look for and load any plugin that the active Jenkins instance may be using without further modification to the PyJen API.

## 1.3 pyjen

### 1.3.1 pyjen package

#### Subpackages

#### pyjen.plugins package

#### Submodules

#### pyjen.plugins.allview module

Class that interact with Jenkins views of type “AllView”

**class** pyjen.plugins.allview.**AllView** (*api*)

Bases: *pyjen.view.View*

view which displays all jobs managed by this Jenkins instance

Instances of this class are typically instantiated directly or indirectly through `create()`

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

pyjen.plugins.allview.**PluginClass**

alias of *pyjen.plugins.allview.AllView*

#### pyjen.plugins.artifactarchiver module

Interface to the Jenkins ‘archive artifacts’ publishing plugin

**class** pyjen.plugins.artifactarchiver.**ArtifactArchiverPublisher** (*node*)

Bases: *pyjen.utils.xml\_plugin.XMLPlugin*

Interface to the Jenkins ‘archive artifacts’ publishing plugin

This plugin is a default, built-in plugin which is part of the Jenkins core

**artifact\_regex**

Gets the regular expression used to locate files to archive

**Return type** `str`

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate(file_pattern)`

Factory method for creating a new artifact archiver

**Parameters** `file_pattern` (*str*) – regular expression matching files to be archived at the end of the build

**Return type** `pyjen.plugins.artifactarchiver.ArtifactArchiverPublisher`

`pyjen.plugins.artifactarchiver.PluginClass`

alias of `pyjen.plugins.artifactarchiver.ArtifactArchiverPublisher`

## pyjen.plugins.artifactdeployer module

properties of the ‘artifact deployer’ publishing plugin

**class** `pyjen.plugins.artifactdeployer.ArtifactDeployer` (*node*)

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Interface to the Jenkins ‘artifact deployer’ publishing plugin

<https://plugins.jenkins.io/artifactdeployer>

**add\_entry** (*new\_entry*)

Adds a new deployer entry to this publisher

**Parameters** `new_entry` (*ArtifactDeployerEntry*) – New publisher descriptor entry to be added

**entries**

Gets the list of deployment options associated with this plugin

**Returns** list of configuration options for each set of artifacts managed by this instance

**Return type** list of *ArtifactDeployerEntry* objects

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate()`

Factory method for creating a new artifact deployer :rtype: `pyjen.plugins.artifactdeployer.ArtifactDeployer`

**class** `pyjen.plugins.artifactdeployer.ArtifactDeployerEntry` (*node*)

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

a single artifacts to be deployed by an Artifact Deployer instance

**includes**

Gets the path or regular expression describing files to be published

**Return type** `str`

**classmethod** `instantiate(include_pattern, remote_path)`

Factory method used to instantiate instances of this class

**Parameters**

- **include\_pattern** (*str*) – Path or regular expression of the file(s) to be published
- **remote\_path** (*str*) – Path to remote share where files are to be published

**Returns** instance of the artifact deployer entry

**Return type** *ArtifactDeployerEntry*

**remote**

Gets the remote location where these artifacts are to be published

**Return type** *str*

`pyjen.plugins.artifactdeployer.PluginClass`

alias of *pyjen.plugins.artifactdeployer.ArtifactDeployer*

## pyjen.plugins.buildblocker module

Interfaces for interacting with Build Blockers job property plugin

**class** `pyjen.plugins.buildblocker.BuildBlockerProperty` (*node*)

Bases: *pyjen.utils.xml\_plugin.XMLPlugin*

Wrapper for Build Blocker job properties

<https://wiki.jenkins-ci.org/display/JENKINS/Build+Blocker+Plugin>

**LEVEL\_TYPES** = ('GLOBAL', 'NODE')

**QUEUE\_SCAN\_TYPES** = ('DISABLED', 'ALL', 'BUILDABLE')

**blockers**

Gets the list of search criteria for blocking jobs

**Returns** list of search criteria for blocking jobs

**Return type** *list*

**disable()**

Disables this set of build blockers

**enable()**

Enables this set of build blockers

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** *str*

**classmethod** `instantiate` (*patterns*)

Factory method used to instantiate an instance of this plugin

**Parameters** **patterns** (either *list* or *str*) – One or more names or regular expressions for jobs that block the execution of this one.

**is\_enabled**

Checks to see whether this blockers property is currently enabled

**Returns** True if these blocking jobs are enabled, False if not

**Return type** *str*

**level**

Gets the scope of the blocked job settings

**Returns** One of BuildBlockerProperty.LEVEL\_TYPES

**Return type** *str*

**queue\_scan**

Checks to see whether build blocking scans the build queue or not

**Returns** One of BuildBlockerProperty.QUEUE\_SCAN\_TYPES

**Return type** str

pyjen.plugins.buildblocker.**PluginClass**

alias of *pyjen.plugins.buildblocker.BuildBlockerProperty*

**pyjen.plugins.buildtriggerpublisher module**

Interface to the Jenkins ‘build trigger’ publishing plugin

**class** pyjen.plugins.buildtriggerpublisher.**BuildTriggerPublisher** (*node*)

Bases: *pyjen.utils.xml\_plugin.XMLPlugin*

Interface to the Jenkins ‘build trigger’ publishing plugin

This plugin is a default, built-in plugin which is part of the Jenkins core

**static** **get\_jenkins\_plugin\_name** ()

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** str

**classmethod** **instantiate** (*project\_names*)

Factory method for creating a new build trigger

The default trigger will run when the parent job is successful

**Parameters** **project\_names** (*list*) – List of 1 or more names of jobs to trigger

**Return type** *pyjen.plugins.buildtriggerpublisher.BuildTriggerPublisher*

**job\_names**

Gets the names of 0 or more downstream jobs managed by this config

**Return type** list of str

pyjen.plugins.buildtriggerpublisher.**PluginClass**

alias of *pyjen.plugins.buildtriggerpublisher.BuildTriggerPublisher*

**pyjen.plugins.conditionalbuilder module**

Primitives for operating on Jenkins job builder of type ‘Conditional Builder’

**class** pyjen.plugins.conditionalbuilder.**ConditionalBuilder** (*node*)

Bases: *pyjen.utils.xml\_plugin.XMLPlugin*

Jenkins job builder plugin

capable of conditionally executing a build operation

<https://wiki.jenkins-ci.org/display/JENKINS/Conditional+BuildStep+Plugin>

**builder**

Gets the build step managed by this condition

**condition**

Gets the object describing the conditions for this build step

**static get\_jenkins\_plugin\_name()**

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod instantiate(condition, builder)**

Factory method for creating a new conditional build step

**Parameters**

- **builder** – Nested job build step to be executed conditionally May be any PyJen plugin that defines / manages a Job build step
- **condition** (`ConditionalBuilderCondition`) – Condition to be applied to the build step. The build step will only be executed if the terms defined by this condition evaluate to True

**Returns** newly created conditional build step

**Return type** `ConditionalBuilder`

`pyjen.plugins.conditionalbuilder.PluginClass`

alias of `pyjen.plugins.conditionalbuilder.ConditionalBuilder`

**pyjen.plugins.flexiblepublish module**

Primitives for operating on job publishers of type ‘Flexible Publisher’

**class** `pyjen.plugins.flexiblepublish.ConditionalAction(node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

conditional action associated with a flexible publisher

Contains 1 or more publishers to be run if a certain set of conditions is met.

**classmethod instantiate(condition, actions)**

Factory method for creating a new instances of this class

**Parameters**

- **condition** – Flexible publish build condition pre-configured to control this publish operation
- **actions** (`list`) – List of 1 or more “build stage” plugins that you would like to use in the publish phase of a Jenkins job

**Return type** `ConditionalPublisher`

**publishers**

List of publishers to run should the conditions associated with this action are met

**Return type** `list`

**class** `pyjen.plugins.flexiblepublish.FlexiblePublisher(node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Job plugin enabling conditional execution of post-build steps

<https://plugins.jenkins.io/flexible-publish>

**actions**

list of conditional actions associated with this instance

**Return type** list of *ConditionalAction*

**static get\_jenkins\_plugin\_name()**

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** str

**classmethod instantiate(actions)**

Factory method for creating a new instances of this class

**Parameters** **actions** (list of *ConditionalAction*) – list of conditional actions to perform under this publisher

**Return type** ParameterizedBuildTrigger

pyjen.plugins.flexiblepublish.**PluginClass**

alias of *pyjen.plugins.flexiblepublish.FlexiblePublisher*

## pyjen.plugins.folderjob module

Primitives that manage Jenkins job of type ‘Folder’

**class** pyjen.plugins.folderjob.**FolderJob** (*api*)

Bases: *pyjen.job.Job*

Jenkins job of type ‘folder’

**create\_job** (*job\_name*, *job\_class*)

Creates a new job on the Jenkins dashboard

**Parameters**

- **job\_name** (*str*) – the name for this new job This name should be unique, different from any other jobs currently managed by the Jenkins instance
- **job\_class** – PyJen plugin class associated with the type of job to be created

**Returns** An object to manage the newly created job

**Return type** *Job*

**find\_job** (*job\_name*)

Searches all jobs managed by this Jenkins instance for a specific job

**Parameters** **job\_name** (*str*) – the name of the job to search for

**Returns** If a job with the specified name can be found, an object to manage the job will be returned, otherwise None

**Return type** *Job*

**static get\_jenkins\_plugin\_name()**

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml



**Return type** `str`

#### **jobs**

Gets a list of all jobs contained in this folder

**Return type** `list of Job`

#### **static template\_config\_xml()**

XML configuration template for instantiating jobs of this type

**Returns** a basic XML configuration template for use when instantiating jobs of this type

**Return type** `str`

`pyjen.plugins.folderjob.PluginClass`

alias of `pyjen.plugins.folderjob.FolderJob`

### **pyjen.plugins.freestylejob module**

Primitives that manage Jenkins job of type ‘Freestyle’

**class** `pyjen.plugins.freestylejob.FreestyleJob` (*api*)

Bases: `pyjen.job.Job`

Jenkins job of type ‘freestyle’

#### **add\_builder(builder)**

Adds a new build step to this job

**Parameters** **builder** – build step config to add

#### **add\_publisher(publisher)**

Adds a new job publisher to this job

**Parameters** **publisher** – job publisher to add

#### **all\_downstream\_jobs**

list of all jobs that depend on this job, recursively

Includes jobs triggered by this job, and all jobs triggered by those jobs, recursively for all downstream dependencies

**Returns** A list of 0 or more jobs which depend on this one

**Return type** `list of Job` objects

#### **all\_upstream\_jobs**

list of all jobs that this job depends on, recursively

Includes jobs that trigger this job, and all jobs trigger those jobs, recursively for all upstream dependencies

**Returns** A list of 0 or more jobs this job depend on

**Return type** `list of Job` objects

#### **assigned\_node**

Gets the custom node label restricting which nodes this job can run against

**Return type** `str`

#### **assigned\_node\_enabled**

Checks to see if this job has a custom node restriction

**Return type** `bool`

**builders**

Gets all plugins configured as ‘builders’ for this job

**custom\_workspace**

gets the custom workspace associated with this job

May return an empty character string if the custom workspace feature is not currently enabled.

**Return type** `str`

**custom\_workspace\_enabled**

Checks to see if this job has the custom workspace option enabled

**Return type** `bool`

**downstream\_jobs**

Gets the list of jobs to be triggered after this job completes

**Returns** A list of 0 or more jobs which depend on this one

**Return type** list of *Job* objects

**static get\_jenkins\_plugin\_name()**

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**publishers**

Gets all plugins configured as ‘publishers’ for this job

**quiet\_period**

**Returns** the delay, in seconds, builds of this job wait in the queue before being run. Returns -1 if there is no custom quiet period for this job

**Return type** `int`

**quiet\_period\_enabled**

Checks to see if a custom quiet period is defined on this job

**Return type** `bool`

**scm**

Gets the source code repository configuration from the job config

**static template\_config\_xml()**

XML configuration template for instantiating jobs of this type

**Returns** a basic XML configuration template for use when instantiating jobs of this type

**Return type** `str`

**upstream\_jobs**

Gets the list of upstream dependencies for this job

**Returns** A list of 0 or more jobs that this job depends on

**Return type** list of *Job* objects

**class** `pyjen.plugins.freestylejob.FreestyleXML` (*api*)

Bases: `pyjen.utils.jobxml.JobXML`

Abstraction around the config.xml for this type of Jenkins job

**add\_builder** (*builder*)

Adds a new builder node to the build steps section of the job XML

**Parameters** **builder** – PyJen plugin implementing the new job builder to be added

**add\_publisher** (*new\_publisher*)

Adds a new publisher node to the publisher section of the job XML

**Parameters** **new\_publisher** – PyJen plugin which supports the Jenkins publisher API

**assigned\_node**

Gets the build agent label this job is associated with

**Returns** the build agent label this job is associated with

**Return type** `str`

**builders**

Gets a list of 0 or more build operations associated with this job

**Returns** a list of build operations associated with this job

**Return type** `list` of builder plugins used by this job

**custom\_workspace**

Gets the local path for the custom workspace associated with this job

returns None if the custom workspace option is not enabled :rtype: `str`

**disable\_assigned\_node** ()

Disables a custom node assignment on this job

**disable\_custom\_workspace** ()

Disables a jobs use of a custom workspace

**disable\_quiet\_period** ()

Disables custom quiet period on a job

**publishers**

list of 0 or more post-build publishers associated with this job

**Returns** a list of post-build publishers associated with this job

**Return type** `list` of publisher plugins supported by this job

**quiet\_period**

Gets the delay, in seconds, this job waits in queue before running a build

May return None if no custom quiet period is defined. At the time of this writing the default value is 5 seconds however this may change over time.

**Return type** `int`

**scm**

Retrieves the appropriate plugin for the SCM portion of a job

Detects which source code management tool is being used by this job, locates the appropriate plugin for that tool, and returns an instance of the wrapper for that plugin pre-configured with the settings found in the relevant XML subtree.

**Returns**

One of any number of plugin objects responsible for providing extensions to the source code management portion of a job

Examples: *Subversion*

**Return type** `PluginBase`

`pyjen.plugins.freestylejob.PluginClass`  
alias of `pyjen.plugins.freestylejob.FreestyleJob`

## pyjen.plugins.gitscm module

SCM properties for jobs which pull sources from a Git repository

**class** `pyjen.plugins.gitscm.GitSCM(node)`  
Bases: `pyjen.utils.xml_plugin.XMLPlugin`

SCM properties for jobs which pull sources from a Git repository

**static** `get_jenkins_plugin_name()`  
Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate(repository_url)`  
Factory method for creating a new Git SCM code block

**Parameters** `repository_url (str)` – URI of the repository to check out during the build

**Return type** `pyjen.plugins.gitscm.GitSCM`

**url**  
Gets the repository URL for the git config

`pyjen.plugins.gitscm.PluginClass`  
alias of `pyjen.plugins.gitscm.GitSCM`

## pyjen.plugins.listview module

Primitives that operate on Jenkins views of type ‘List’

**class** `pyjen.plugins.listview.ListView(api)`  
Bases: `pyjen.view.View`

all Jenkins related ‘view’ information for views of type ListView

Instances of this class are typically instantiated directly or indirectly through `pyjen.View.create()`

**static** `get_jenkins_plugin_name()`  
Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

`pyjen.plugins.listview.PluginClass`  
alias of `pyjen.plugins.listview.ListView`

## pyjen.plugins.mavenplugin module

Primitives that operate on Jenkins jobs of type ‘Maven’

**class** `pyjen.plugins.mavenplugin.MavenPlugin` (*api*)

Bases: `pyjen.job.Job`

Custom Maven job type

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**static** `template_config_xml()`

XML configuration template to when instantiating jobs of this type

**Returns** a basic XML configuration template for use when instantiating jobs of this type

**Return type** `str`

`pyjen.plugins.mavenplugin.PluginClass`

alias of `pyjen.plugins.mavenplugin.MavenPlugin`

## pyjen.plugins.multibranch\_pipeline module

Primitives that manage Jenkins job of type ‘multibranch pipeline’

**class** `pyjen.plugins.multibranch_pipeline.MultibranchPipelineJob` (*api*)

Bases: `pyjen.job.Job`

Jenkins job of type ‘multibranch pipeline’

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**jobs**

Gets all branch jobs managed by this multibranch pipeline

**Return type** list of `PipelineJob`

**static** `template_config_xml()`

Gets config xml data to instantiate a default instance of this job

**Return type** `str`

`pyjen.plugins.multibranch_pipeline.PluginClass`

alias of `pyjen.plugins.multibranch_pipeline.MultibranchPipelineJob`

## pyjen.plugins.multijob module

Primitives that manage Jenkins job of type ‘MultiJob’

**class** `pyjen.plugins.multijob.MultiJob` (*api*)

Bases: `pyjen.job.Job`

Custom job type provided by the jenkins-multijob-plugin plugin

<https://plugins.jenkins.io/jenkins-multijob-plugin>

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**static** `template_config_xml()`

Gets XML for a default implementation of this job type

**Return type** `str`

`pyjen.plugins.multijob.PluginClass`

alias of `pyjen.plugins.multijob.MultiJob`

## pyjen.plugins.myview module

Primitives for interacting with Jenkins views of type ‘MyView’

**class** `pyjen.plugins.myview.MyView` (*api*)

Bases: `pyjen.view.View`

Interface to a view associated with a specific user

Instances of this class are typically instantiated directly or indirectly through `pyjen.View.create()`

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

`pyjen.plugins.myview.PluginClass`

alias of `pyjen.plugins.myview.MyView`

## pyjen.plugins.nestedview module

Primitives for working with Jenkins views of type ‘NestedView’

**class** `pyjen.plugins.nestedview.NestedView` (*api*)

Bases: `pyjen.view.View`

all Jenkins related ‘view’ information for views of type NestedView

Instances of this class are typically instantiated directly or indirectly through `pyjen.View.create()`

**all\_views**

Gets all views contained within this view, recursively

**Returns** list of all views contained within this view and it’s children, recursively

**Return type** list of `pyjen.view.View`

**create\_view** (*view\_name*, *view\_class*)

Creates a new sub-view within this nested view

**Parameters**

- **view\_name** (*str*) – name of the new sub-view to create
- **view\_class** – PyJen plugin class associated with the type of view to be created

**Returns** reference to the newly created view

**Return type** `pyjen.view.View`

**find\_all\_views** (*view\_name*)

Attempts to locate a sub-view under this nested view by name, recursively

NOTE: Seeing as how view names need only be unique within a single parent view, there may be multiple nested views with the same name. To reflect this requirement this method will return a list of views nested within this one that have the name given. If the list is empty then there are no matches for the given name anywhere in this view's sub-tree.

**Parameters** **view\_name** (*str*) – the name of the sub-view to locate

**Returns** List of 0 or more views with the given name

**Return type** list of `pyjen.view.View`

**find\_view** (*view\_name*)

Attempts to locate a sub-view under this nested view by name

NOTE: Seeing as how view names need only be unique within a single parent view, there may be multiple nested views with the same name. To reflect this requirement this method will return a list of views nested within this one that have the name given. If the list is empty then there are no matches for the given name anywhere in this view's sub-tree.

**Parameters** **view\_name** (*str*) – the name of the sub-view to locate

**Returns** List of 0 or more views with the given name

**Return type** list of `pyjen.view.View`

**static get\_jenkins\_plugin\_name** ()

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**views**

Gets all views contained within this view, non-recursively

To get a recursive list of all child views and their children use `all_views()`.

**Returns** list of all views contained within this view

**Return type** list of `pyjen.view.View`

`pyjen.plugins.nestedview.PluginClass`

alias of `pyjen.plugins.nestedview.NestedView`

## pyjen.plugins.nullscm module

SCM properties of Jenkins jobs with no source control configuration

```
class pyjen.plugins.nullscm.NullSCM(node)
    Bases: pyjen.utils.xml_plugin.XMLPlugin

    SCM plugin for Jobs with no source control configurations

    static get_jenkins_plugin_name()
        Gets the name of the Jenkins plugin associated with this PyJen plugin

        This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin,
        as it is encoded in the config.xml

        Return type str

    classmethod instantiate()
        Factory method used to construct instances of this class

        Return type NullSCM

pyjen.plugins.nullscm.PluginClass
    alias of pyjen.plugins.nullscm.NullSCM
```

## pyjen.plugins.parambuild\_string module

String build parameter - plugin for parameterized build plugin

```
class pyjen.plugins.parambuild_string.ParameterizedBuildStringParameter(node)
    Bases: pyjen.utils.xml_plugin.XMLPlugin

    String build parameter - plugin for parameterized build plugin

    default_value
        Gets the default value for this parameter

        Return type str

    description
        Gets the descriptive text associated with this parameter

        Return type str

    static get_jenkins_plugin_name()
        Gets the name of the Jenkins plugin associated with this PyJen plugin

        This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin,
        as it is encoded in the config.xml

        Return type str

    classmethod instantiate(name, default_value, description, trim)
        Creates a new string build parameter

        Parameters

        • name (str) – Friendly name to give this build parameter

        • default_value (str) – Text to assign this parameter when no user defined value is
          given

        • description (str) – Descriptive text to show on the Jenkins UI explaining the pur-
          pose of this parameter

        • trim (bool) – Indicates whether leading and trailing whitespace should be stripped from
          values entered into this field at build time
```



**name**

Gets the friendly name assigned to this parameter

**Return type** `str`

**trim**

Checks to see if the value for this parameter should have whitespace stripped from the start and end automatically

**Return type** `bool`

`pyjen.plugins.parambuild_string.PluginClass`

alias of `pyjen.plugins.parambuild_string.ParameterizedBuildStringParameter`

## pyjen.plugins.parameterizedbuild module

Implementation for the parameterized build plugin

**class** `pyjen.plugins.parameterizedbuild.ParameterizedBuild(node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Plugin which allows custom build paramters to be passed to a job

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate(params)`

Factory method for this class

**Parameters** `params` (*list*) – List of parameters to add to this build property Each element must be associated with a parameter type supported by the parameterized build plugin

**Returns** an instance of this class

**Return type** `ParameterizedBuild`

**parameters**

Gets a list of the build parameters associated with this property

**Return type** `list` of build parameters

`pyjen.plugins.parameterizedbuild.PluginClass`

alias of `pyjen.plugins.parameterizedbuild.ParameterizedBuild`

## pyjen.plugins.paramtrigger module

Jenkins post-build publisher of type Parameterized Build Trigger

**class** `pyjen.plugins.paramtrigger.ParameterizedBuildTrigger(node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Custom job publisher that supports triggering other Jenkins jobs which require 1 or more custom build parameters

<https://plugins.jenkins.io/parameterized-trigger>

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate(triggers)`

Factory method for creating a new instances of this class

**Parameters** `triggers (list)` – List of build trigger configuration objects

**Return type** `ParameterizedBuildTrigger`

**triggers**

list of trigger operations defined for this instance of the plugin

**Return type** list of `BuildTriggerConfig` objects

`pyjen.plugins.paramtrigger.PluginClass`

alias of `pyjen.plugins.paramtrigger.ParameterizedBuildTrigger`

## pyjen.plugins.paramtrigger\_buildtrigger module

Trigger configuration for a parameterized build trigger

**class** `pyjen.plugins.paramtrigger_buildtrigger.BuildTriggerConfig(node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Contains the configuration options for a single downstream build trigger compatible with the parameterized build trigger plugin

<https://plugins.jenkins.io/parameterized-trigger>

**add\_build\_param** (`param_config`)

Adds a new configuration option for customizing the build parameters passed to the jobs that are triggered by this configuration

**Parameters** `param_config` – One of several supported plugins which offer unique customizations on how build parameters for the downstream jobs being triggered

**build\_params**

List of parameter definitions used to configure the build trigger for the downstream jobs associated with this trigger

Each element in the list may be of any number of derived types, each supporting a different type of custom behavior on how the parameters for the downstream job should be created / set.

**Return type** `list`

**condition**

The state the current job must be in before the downstream job will be triggered

**Return type** `str`

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate(job_names)`

Factory method for creating a new instances of this class

**Parameters** `job_names` (*list*) – List of the names of 1 or more Jenkins jobs to be triggered by this configuration object

**Return type** *BuildTriggerConfig*

**job\_names**

List of downstream jobs to be triggered

**Return type** *list of str*

`pyjen.plugins.paramtrigger_buildtrigger.PluginClass`

alias of `pyjen.plugins.paramtrigger_buildtrigger.BuildTriggerConfig`

### pyjen.plugins.paramtrigger\_currentbuildparams module

Trigger parameter for the Parameterized Trigger plugin

**class** `pyjen.plugins.paramtrigger_currentbuildparams.CurrentBuildParams(node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Passes the current build parameters along to a parameterized downstream job

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** *str*

**classmethod** `instantiate()`

Factory method for creating a new instances of this class

**Return type** *CurrentBuildParams*

`pyjen.plugins.paramtrigger_currentbuildparams.PluginClass`

alias of `pyjen.plugins.paramtrigger_currentbuildparams.CurrentBuildParams`

### pyjen.plugins.pipelinejob module

Primitives that manage Jenkins job of type 'pipeline'

**class** `pyjen.plugins.pipelinejob.PipelineJob(api)`

Bases: `pyjen.job.Job`

Jenkins job of type 'pipeline'

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** *str*

**scm**

Gets the source code repo where the job config is defined

**scm\_definition** (*scm*, *script\_path*='Jenkinsfile', *lightweight*=True)

Defines the Pipeline groovy script used by this job from files stored in a source code repository

**Parameters**

- **scm** – PyJen object defining the source code repository to use
- **script\_path** (*str*) – Path within the repository where the groovy script to be run is found. Defaults to 'Jenkinsfile' in the root folder
- **lightweight** (*bool*) – Set to True to have the build only check out the Jenkinsfile and no other file from the repository. Set to False to have the build check out the entire repository before running the Jenkinsfile. Defaults to True

**script**

Gets the groovy script defining this build

**Return type** *str*

**script\_definition** (*script*, *sandbox*=True)

Defines the pipeline build using an inline groovy script

**Parameters**

- **script** (*str*) – Raw Groovy script defining the build process
- **sandbox** (*bool*) – indicates whether the Groovy script can run in the safer 'sandbox' environment. Defaults to True.

**static template\_config\_xml** ()

Gets template XML that can be used to create instances of this class

**Return type** *str*

**class** pyjen.plugins.pipelinejob.**PipelineXML** (*api*)

Bases: [pyjen.utils.jobxml.JobXML](#)

Object that manages the config.xml for a pipeline job

**scm**

Gets the source code repo where the build script is located

**scm\_definition** (*scm*, *script\_path*, *lightweight*)

Defines the Pipeline groovy script used by this job from files stored in a source code repository

**Parameters**

- **scm** – PyJen object defining the source code repository to use
- **script\_path** (*str*) – Path within the repository where the groovy script to be run is found.
- **lightweight** (*bool*) – Set to True to have the build only check out the Jenkinsfile and no other file from the repository. Set to False to have the build check out the entire repository before running the Jenkinsfile.

**script**

Gets the groovy script that defines the build process for this job

**script\_definition** (*script*, *sandbox*)

Defines the pipeline build using an inline groovy script

**Parameters**

- **script** (*str*) – Raw Groovy script defining the build process

- **sandbox** (*bool*) – indicates whether the Groovy script can run in the safer ‘sandbox’ environment.

`pyjen.plugins.pipelinejob.PluginClass`  
 alias of `pyjen.plugins.pipelinejob.PipelineJob`

### pyjen.plugins.runcondition\_always module

Condition for the run condition plugin that will always produce a true result

**class** `pyjen.plugins.runcondition_always.AlwaysRun` (*node*)  
 Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Conditional build step that will always produce a true result

<https://plugins.jenkins.io/run-condition>

**static** `get_friendly_name()`

Gets the user friendly display name for this condition

This typically reflects the text found in the Jenkins UI for the condition

**Return type** `str`

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate()`

Factory method used to construct an instance of this class

**Return type** `AlwaysRun`

`pyjen.plugins.runcondition_always.PluginClass`  
 alias of `pyjen.plugins.runcondition_always.AlwaysRun`

### pyjen.plugins.runcondition\_and module

Condition for the run condition plugin that performs a logical AND operation on other build conditions

**class** `pyjen.plugins.runcondition_and.AndCondition` (*node*)  
 Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Build condition that combines 2 or more other conditions with a logical AND operation. The associated operation using this condition will only run if all of the contained conditions result in a “true” value.

<https://plugins.jenkins.io/run-condition>

**static** `get_friendly_name()`

Gets the user friendly display name for this condition

This typically reflects the text found in the Jenkins UI for the condition

**Return type** `str`

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate (terms)`

Creates a new instance of this condition

**Parameters** `terms (list)` – List of 2 or more conditions to be combined using a logical AND operation. Each element is expected to be an instance of a PyJen plugin compatible with the Run Condition plugin.

**Return type** `AndCondition`

`pyjen.plugins.runcondition_and.PluginClass`

alias of `pyjen.plugins.runcondition_and.AndCondition`

### `pyjen.plugins.runcondition_never` module

Condition for the run condition plugin that always produces a False result

**class** `pyjen.plugins.runcondition_never.NeverRun (node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Condition for the run condition plugin that always produces a False result

<https://plugins.jenkins.io/run-condition>

**static** `get_friendly_name ()`

Gets the user friendly display name for this condition

This typically reflects the text found in the Jenkins UI for the condition

**Return type** `str`

**static** `get_jenkins_plugin_name ()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate ()`

Factory method used to construct an instance of this class

**Return type** `NeverRun`

`pyjen.plugins.runcondition_never.PluginClass`

alias of `pyjen.plugins.runcondition_never.NeverRun`

### `pyjen.plugins.runcondition_not` module

Condition for the run condition plugin that inverts the logical result of another build condition.

**class** `pyjen.plugins.runcondition_not.NotCondition (node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Condition for the run condition plugin that inverts the logical result of another build condition.

<https://plugins.jenkins.io/run-condition>

**static** `get_friendly_name()`

Gets the user friendly display name for this condition

This typically reflects the text found in the Jenkins UI for the condition

**Return type** `str`

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**classmethod** `instantiate(condition)`

Factory method that constructs an instance of this class

**Parameters** `condition` – Any PyJen plugin compatible with the Run Condition plugin

**Return type** `NotCondition`

`pyjen.plugins.runcondition_not.PluginClass`

alias of `pyjen.plugins.runcondition_not.NotCondition`

## pyjen.plugins.sectionedview module

Primitives for working on Jenkins views of type ‘SectionedView’

`pyjen.plugins.sectionedview.PluginClass`

alias of `pyjen.plugins.sectionedview.SectionedView`

**class** `pyjen.plugins.sectionedview.SectionedView(api)`

Bases: `pyjen.view.View`

Interface to Jenkins views of type “SectionedView”

Views of this type support groupings of jobs into ‘sections’ which each have their own filters

**add\_section** (`section_type, name`)

Adds a new section to the sectioned view

**Parameters**

- **section\_type** (`str`) – name of class used to implement the new section to add
- **name** (`str`) – descriptive text to appear in the title area of the section

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**sections**

**Returns** a list of sections contained within this view

**Return type** list of one of the ‘SectionedView’ section types

**class** `pyjen.plugins.sectionedview.SectionedViewXML(api)`

Bases: `pyjen.utils.viewxml.ViewXML`

raw config.xml parser for a Jenkins view of type ‘Sectioned View’

**add\_section** (*section\_type*, *name*)

Adds a new section to the sectioned view

**Parameters**

- **section\_type** (*str*) – name of class used to implement the new section to add
- **name** (*str*) – descriptive text to appear in the title area of the section

**sections**

**Returns** a list of all ‘section’ objects contained in this view

**Return type** list of section plugins associated with this view

## pyjen.plugins.sectionedview\_listsection module

Primitives for controlling list view sub-sections on a sectioned view

This is a plugin supported by the SectionedView plugin

**class** `pyjen.plugins.sectionedview_listsection.ListViewSection` (*node*)

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

One of several ‘section’ types defined for a sectioned view

Represents sections of type ‘ListView’

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**include\_regex**

regular filter for jobs to be shown in this section

**Return type** `str`

**classmethod** `instantiate` (*section\_name*)

Factory method for creating a new Git SCM code block

**Parameters** **section\_name** (*str*) – Text to appear at the top of the section

**Return type** `pyjen.plugins.sectionedview_listsection.ListViewSection`

**name**

Gets the title text of this section

**Return type** `str`

`pyjen.plugins.sectionedview_listsection.PluginClass`

alias of `pyjen.plugins.sectionedview_listsection.ListViewSection`



## pyjen.plugins.sectionedview\_textsection module

Primitives for controlling plain text view sub-sections on a sectioned view

This is a plugin supported by the SectionedView plugin

```
pyjen.plugins.sectionedview_textsection.PluginClass
    alias of pyjen.plugins.sectionedview_textsection.TextSection

class pyjen.plugins.sectionedview_textsection.TextSection(node)
    Bases: pyjen.utils.xml_plugin.XMLPlugin
```

One of several ‘section’ types defined for a sectioned view

Sections of this type contain simple descriptive text

```
static get_jenkins_plugin_name()
    Gets the name of the Jenkins plugin associated with this PyJen plugin

    This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin,
    as it is encoded in the config.xml
```

**Return type** `str`

```
classmethod instantiate(section_name)
    Factory method for creating a new Git SCM code block
```

**Parameters** **section\_name** (*str*) – Text to appear at the top of the section

**Return type** *pyjen.plugins.sectionedview\_textsection.TextSection*

```
name
    Gets the title text of this section
```

**Return type** `str`

## pyjen.plugins.shellbuilder module

Interface to control a basic shell build step job builder plugin

```
pyjen.plugins.shellbuilder.PluginClass
    alias of pyjen.plugins.shellbuilder.ShellBuilder
```

```
class pyjen.plugins.shellbuilder.ShellBuilder(node)
    Bases: pyjen.utils.xml_plugin.XMLPlugin
```

Interface to control a basic shell build step job builder plugin

This plugin is a default, built-in plugin which is part of the Jenkins core

```
static get_jenkins_plugin_name()
    Gets the name of the Jenkins plugin associated with this PyJen plugin
```

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

```
classmethod instantiate(script)
    Factory method for creating a new shell build step
```

**Parameters** **script** (*str*) – shell script to run as part of this build step

**script**

Gets the shell script associated with this builder

**Return type** `str`

**unstable\_return\_code**

Gets the return code that marks the build as unstable

**Return type** `int`

**pyjen.plugins.statusview module**

Primitives for operating on Jenkins views of type ‘StatusView’

`pyjen.plugins.statusview.PluginClass`

alias of `pyjen.plugins.statusview.StatusView`

**class** `pyjen.plugins.statusview.StatusView` (*api*)

Bases: `pyjen.view.View`

Interface to Jenkins views of type ‘StatusView’

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**pyjen.plugins.subversion module**

Module defining the interfaces for interacting with Subversion properties associated with a `pyjen.job.Job`

**class** `pyjen.plugins.subversion.ModuleLocation` (*node*)

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Interface to SCM module declarations in a Subversion property of a job

**depth\_option**

**Returns** the current SVN ‘depth’ options associated with this module

**Return type** `str`

**disable\_ignore\_externals()**

Disables the ‘ignore externals’ option on this SCM module

**enable\_ignore\_externals()**

Enables the ‘ignore externals’ option on this SCM module

**ignore\_externals**

see whether the ‘ignore externals’ option is enabled on this job

**Returns** True if ignore externals is enabled, otherwise False

**Return type** `bool`

**local\_dir**

local folder where the source code for this module is checked out to

**Return type** `str`

**node**

Gets the XML node associated with this plugin

**Return type** `ElementTree.Element`

**url**

SVN URL where the source code for this module can be found

**Return type** `str`

`pyjen.plugins.subversion.PluginClass`

alias of `pyjen.plugins.subversion.Subversion`

**class** `pyjen.plugins.subversion.Subversion(node)`

Bases: `pyjen.utils.xml_plugin.XMLPlugin`

Subversion SCM job plugin

<https://wiki.jenkins-ci.org/display/JENKINS/Subversion+Plugin>

**static** `get_jenkins_plugin_name()`

Gets the name of the Jenkins plugin associated with this PyJen plugin

This static method is used by the PyJen plugin API to associate this class with a specific Jenkins plugin, as it is encoded in the config.xml

**Return type** `str`

**included\_regions**

patterns of the regions of the SVN repo to include in SCM operations

**Return type** `list of str`

**locations**

Gets the list of SVN URLs associated with this plugin instance

**Returns** set of 0 or more `ModuleLocation` objects describing the SVN parameters for this module.

**Return type** `list of ModuleLocation` objects

**Module contents**

modules that manage PyJen plugins which map to Jenkins plugins

For details on how these plugins interact with PyJen and Jenkins see `pyjen.utils.plugin_base`

**pyjen.utils package****Submodules****pyjen.utils.helpers module**

Misc helper methods shared across the library

`pyjen.utils.helpers.create_job(api, job_name, job_class)`

Creates a new job on the Jenkins dashboard

**Parameters**

- **api** – Jenkins rest api connection to use for creation of the view\*

- **job\_name** (*str*) – the name for this new job This name should be unique, different from any other jobs currently managed by the Jenkins instance
- **job\_class** – PyJen plugin class associated with the type of job to be created

`pyjen.utils.helpers.create_view(api, view_name, view_class)`

Creates a new view on the Jenkins dashboard

#### Parameters

- **api** – Jenkins rest api connection to use for creation of the view\*
- **view\_name** (*str*) – the name for this new view This name should be unique, different from any other views currently managed by the Jenkins instance
- **view\_class** – PyJen plugin class associated with the type of view to be created

### pyjen.utils.jenkins\_api module

Base class for all objects that interact with the Jenkins REST API

**class** `pyjen.utils.jenkins_api.JenkinsAPI(url, creds, ssl_cert)`

Bases: `object`

Abstraction around the raw Jenkins REST API

#### Parameters

- **url** (*str*) – URL of the Jenkins REST API endpoint to manage
- **creds** (*tuple*) – username and password pair to authenticate with when accessing the REST API
- **ssl\_cert** – Either a boolean controlling SSL verification, or a path to a cert authority bundle to use for SSL verification.

.

**clone** (*api\_url*)

Creates a copy of this instance, for a new endpoint URL

**Parameters** **api\_url** (*str*) – URL for the new REST API endpoint to be managed

**Returns** newly created JenkinsAPI

**Return type** *JenkinsAPI*

#### **crumb**

Gets a unique “crumb” identifier required by all POST operations

Introduced in Jenkins v2

Output from this helper can be used directly in post operations as an HTTP header, something like this:

```
requests.post(... headers=self.crumb)
```

reference: <https://wiki.jenkins-ci.org/display/JENKINS/Remote+access+API> (see CSRF protection section)

**Return type** `dict`

**get\_api\_data** (*target\_url=None, query\_params=None*)

retrieves the Jenkins API specific data from the specified URL

#### Parameters

- **target\_url** (*str*) – Full URL to the REST API endpoint to be queried. If not provided, data will be loaded from the default ‘url’ for this object
- **query\_params** (*str*) – optional set of query parameters to customize the returned data

**Returns** The set of Jenkins attributes, converted to Python objects, associated with the given URL.

**Return type** dict

**get\_api\_xml** (*path=None, params=None*)

Gets api XML data from a given REST API endpoint

**Parameters**

- **path** (*str*) – optional extension path to append to the root URL managed by this object when performing the get operation
- **params** (*dict*) – optional query parameters to be passed to the request

**Returns** parsed XML data

**get\_text** (*path=None, params=None*)

gets the raw text data from a Jenkins URL

**Parameters**

- **path** (*str*) – optional extension path to append to the root URL managed by this object when performing the get operation
- **params** (*dict*) – optional query parameters to be passed to the request

**Returns** the text loaded from this objects’ URL

**Return type** str

**jenkins\_headers**

HTTP headers from the main Jenkins dashboard using the REST API

The dashboard headers contain metadata describing the Jenkins instance hosting the REST API, including details such as version number, current UI theme, and others.

**Return type** dict

**jenkins\_version**

Gets the version number of the Jenkins server hosting this REST API

Typically returns a 3 tuple with the major, minor and update digits of the version number

**Return type** tuple

**post** (*target\_url, args=None*)

sends data to or triggers an operation via a Jenkins URL

**Parameters**

- **target\_url** (*str*) – Full URL to sent post request to
- **args** (*dict*) – optional set of data arguments to be sent with the post operation. Supported keys are as follows:
  - ‘headers’ - dictionary of HTTP header properties and their associated values
  - ‘data’ - dictionary of assorted / misc data properties and their values
  - ‘files’ - dictionary of file names and handles to be uploaded to the target URL
  - ‘params’ - form data to be passed to the API endpoint

**Returns** reference to the response data returned by the post request

**Return type** `requests.models.Response`

**root\_url**

URL of the main Jenkins dashboard associated with the current object

NOTE: The URL returned by this property is guaranteed to end with a trailing slash character

**Return type** `str`

**url**

Gets the URL for the REST API endpoint managed by this object

NOTE: The URL returned by this property is guaranteed to end with a trailing slash character

**Return type** `str`

## pyjen.utils.jobxml module

Abstractions for managing the raw config.xml for a Jenkins job

**class** `pyjen.utils.jobxml.JobXML` (*api*)

Bases: `object`

Wrapper around the config.xml for a Jenkins job

The source xml can be loaded from nearly any URL by appending “/config.xml” to it, as in “<http://server/jobs/job1/config.xml>”

**Parameters** *api* – Rest API for the Jenkins XML configuration managed by this object

**add\_property** (*prop*)

Adds a new job property to the configuration

**Parameters** *prop* – PyJen plugin associated with the job property to add

**plugin\_name**

Gets the name of the Jenkins plugin associated with this view

**Return type** `str`

**properties**

Gets a list of 0 or more Jenkins properties associated with this job

**Returns** a list of customizable properties associated with this job

**Return type** `list` of property plugins supported by this job

**update** ()

Posts all changes made to the object back to Jenkins

**xml**

Raw XML in plain-text format

**Return type** `str`

## pyjen.utils.plugin\_api module

Primitives for interacting with the PyJen plugin subsystem

`pyjen.utils.plugin_api.find_plugin` (*plugin\_name*)

Locates the PyJen class associated with a given Jenkins plugin

**Parameters** `plugin_name` (*str*) – Name of the Jenkins plugin to find the associated

**Returns** reference to the PyJen plugin class associated with the given Jenkins plugin, if one exists.  
If one doesn't exist, returns None.

`pyjen.utils.plugin_api.get_all_plugins()`

Returns a list of all PyJen plugins installed on the system

**Returns** list of 0 or more installed plugins

**Return type** list of class

`pyjen.utils.plugin_api.instantiate_xml_plugin(node, parent)`

Instantiates a PyJen XML plugin from an arbitrary XML node

**Parameters**

- **node** – ElementTree node describing the plugin to be instantiated
- **parent** – ElementTree object that owns the plugin being instantiated

**Returns** Reference to the instantiated plugin, or None if the associated plugin isn't currently implemented in PyJen yet

## pyjen.utils.viewxml module

Abstractions for managing the raw config.xml for a Jenkins view

**class** `pyjen.utils.viewxml.ViewXML` (*api*)

Bases: object

Wrapper around the config.xml for a Jenkins view

Loaded from the `/view/config.xml` REST API endpoint for any arbitrary Jenkins view.

**Parameters** `api` – Rest API for the Jenkins XML configuration managed by this object

**plugin\_name**

Gets the name of the Jenkins plugin associated with this view

**Return type** `str`

**rename** (*new\_name*)

Changes the name of the view

**Parameters** `new_name` (*str*) – The new name for the view

**update** ()

Posts all changes made to the object back to Jenkins

**xml**

Raw XML in plain-text format

**Return type** `str`

## pyjen.utils.xml\_plugin module

Primitives common to all PyJen plugins that extend Jenkins config.xml

**class** `pyjen.utils.xml_plugin.XMLPlugin` (*node*)

Bases: object

Base class for all PyJen plugins that extend Jenkins config.xml

Plugins derived from this base class are always instantiated with a sub-node within a primitive's config.xml. The particulars of these sub-nodes including names, attributes, and children nodes, is unique to each Jenkins plugin. However, all such PyJen plugins must extend this base class to provide those plugin specific behaviors.

All derived classes are expected to implement the following public interfaces:

`@classmethod def create(cls, ...):`

a factory method that takes 0 or more parameters (anything necessary to construct an instance of the derived class) and returns an instance of the class pre-constructed with relevant XML content. Used when adding an instance of the plugin to an existing Jenkins object.

`@staticmethod def get_jenkins_plugin_name():`

Helper method that returns a character string representation of the Jenkins plugin name the class is associated with. This is typically the Java class name of the Jenkins plugin the PyJen plugin is meant to work with.

**Parameters** `node` (`ElementTree.Element`) – `ElementTree` XML node with the decoded XML data associated with a plugin

**node**

Gets the encoded XML data associated with this plugin

**Return type** `ElementTree.Element`

**parent**

Gets the parent XML tree this node belongs to

**update ()**

Updates parent XML tree when one exists

## Module contents

Sub-package for common utilities used by the PyJen APIs

## Submodules

### pyjen.build module

Primitives for interacting with Jenkins builds

**class** `pyjen.build.Build` (*api*)

Bases: `object`

information about a single build / run of a *Job*

Builds are executions of jobs and thus instances of this class are typically generated from the *Job* class.

**See also:**

*Job*

**Parameters** `api` (`/utils/jenkins_api/JenkinsAPI`) – Pre-initialized connection to the Jenkins REST API

**abort ()**

Aborts this build before it completes



**artifact\_urls**

list of 0 or more URLs to download published build artifacts

**Return type** `list of str`

**changeset**

Gets the list of SCM changes associated with this build

**Returns** 0 or more SCM changesets associated with / included in this build.

**Return type** `Changeset`

**console\_output**

Gets the raw console output for this build as plain text

**Returns** Raw console output from this build, in plain text format

**Return type** `str`

**description**

Gets the descriptive text associated with this build.

May be an empty string if no description given.

**Return type** `str`

**duration**

Total runtime of the build, in milliseconds

Returns 0 if build hasn't finished

**Return type** `int`

**estimated\_duration**

Estimated runtime for a running build

Estimate is based off average duration of previous builds, in milliseconds

**Return type** `int`

**is\_building**

Checks to see whether this build is currently executing

**Returns** True if the build is executing otherwise False

**Return type** `bool`

**kill()**

Performs hard kill on this build

**number**

Gets the sequence number of this build

**Returns** sequentially assigned integer value associated with this build

**Return type** `int`

**result**

Gets the status of the build

**Returns**

Result state of the associated job upon completion of this build. Typically one of the following:

- "SUCCESS"
- "UNSTABLE"

- "FAILURE"
- "ABORTED"

**Return type** `str`

**start\_time**

Gets the time stamp of when this build was started

**Returns** the date and time at which this build was started

**Return type** `datetime.datetime`

**uid**

Gets the unique identifier associated with this build

**Return type** `str`

**url**

Gets the URL of this build

**Returns** full url to this build

**Return type** `str`

## pyjen.changeset module

Primitives for interacting with SCM changesets

**class** `pyjen.changeset.Changeset` (*api*, *data*)

Bases: `object`

Represents a set of changes associated with a build of a Jenkins job

**See also:**

[\*Build\*](#)

### Parameters

- **api** (*/utils/jenkins\_api/JenkinsAPI*) – Pre-initialized connection to the Jenkins REST API
- **data** (*dict*) – Dictionary of data elements typically parsed from the “changeSet” node of a builds source data as provided by the Jenkins REST API. Should have at least the following keys:
  - **'kind'** - string describing the SCM tool associated with this set of changes.
  - **'items'** - list of 0 or more SCM revisions associated with this change

**affected\_items**

gets details of the changes associated with the parent build

**Returns** list of 0 or more revisions detailing each change associated with this Changeset

**Return type** list of [\*ChangesetItem\*](#) objects

**has\_changes**

Checks whether or not there are any SCM changes

**Returns** True if changes have been found, False if not

**Return type** `bool`

**scm\_type**

Gets the name of the SCM tool associated with this change

**Returns** Name of the SCM tool associated with this change

**Return type** `str`

**class** `pyjen.changeset.ChangesetItem`(*api, data*)

Bases: `object`

details of each SCM revision associated with a given [Changeset](#)

**See also:**

[Changeset](#)

**Parameters** `data` (*dict*) – Dictionary of attributes describing this revision. Required keys are as follows:

- **author:** `dict` describing the Jenkins user who committed this change
- **msg:** `str` representing the commit messages from the SCM tool associated with this change
- **commitId:** `str` representing the revision number of the change provided by the SCM tool
- **changes:** `list` of `dict` describing the files modified by this change

**affected\_files**

Gets a list of files modified in this commit

**Return type** `list` of `str`

**author**

**Returns** Person who committed this change to the associated SCM

**Return type** [User](#)

**commit\_id**

Gets the SCM revision associated with this specific change

**Return type** `str`

**message**

**Returns** SCM commit message associated with this change

**Return type** `str`

**pyjen.jenkins module**

Primitives for interacting with the main Jenkins dashboard

**class** `pyjen.jenkins.Jenkins`(*url, credentials=None, ssl\_cert=True*)

Bases: `object`

Python wrapper managing the Jenkins primary dashboard

Generally you should use this class as the primary entry point to the PyJen APIs. Finer grained control of each aspect of the Jenkins dashboard is then provided by the objects exposed by this class including:

- *View* - abstraction for a view on the dashboard, allowing jobs to be filtered based on different criteria like job name.
- *Job* - abstraction for a Jenkins job, allowing manipulation of job settings and controlling builds of those jobs
- ***Build*** - abstraction for an instance of a build of a particular job

**Example:** finding a job

```
j = pyjen.Jenkins('http://localhost:8080')
job = j.find_job('My Job')
if job is None:
    print ('no job by that name found')
else:
    print ('job ' + job.name + ' found')
```

**Example:** find the build number of the last good build of the first job

on the default view

```
j = pyjen.Jenkins('http://localhost:8080/') v = j.get_default_view() jobs = v.get_jobs() lgb = jobs[0].last_good_build
print ('last good build of the first job in the default view is ' + lgb.get_build_number())
```

#### Parameters

- **url** (*str*) – Full HTTP URL to the main Jenkins dashboard
- **credentials** (*tuple*) – Optional 2-tuple containing the username and password / api key to authenticate with. If not provided, anonymous access will be assumed
- **ssl\_cert** – Passed directly to the requests library when authenticating to the remote server. Maybe be a boolean indicating whether SSL verification is enabled or disabled, or may be a path to a certificate authority bundle.

#### all\_jobs

Gets all jobs managed by this Jenkins instance, recursively

Unlike the *jobs()* method, this method attempts to expose jobs which are managed by custom jobs created from third party plugins which support nesting jobs under sub-folders / sub-paths. Any job which exposes a custom 'jobs' property.

**Return type** list of *Job* objects

#### build\_queue

object that describes / manages the queued builds

**Return type** *Queue*

#### cancel\_shutdown()

Cancels a previous scheduled shutdown sequence

Cancels a shutdown operation initiated by the *prepare\_shutdown()* method

#### connected

make sure the connection to the Jenkins REST API was successful

**Returns** True if connected, false if not

**Return type** bool

**create\_job** (*job\_name*, *job\_class*)

Creates a new job on the Jenkins dashboard

**Parameters**

- **job\_name** (*str*) – the name for this new job This name should be unique, different from any other jobs currently managed by the Jenkins instance
- **job\_class** – PyJen plugin class associated with the type of job to be created

**Returns** An object to manage the newly created job

**Return type** *Job*

**create\_view** (*view\_name*, *view\_class*)

Creates a new view on the Jenkins dashboard

**Parameters**

- **view\_name** (*str*) – the name for this new view This name should be unique, different from any other views currently managed by the Jenkins instance
- **view\_class** – PyJen plugin class associated with the type of view to be created

**Returns** An object to manage the newly created view

**Return type** *View*

**default\_view**

returns a reference to the primary / default Jenkins view

The default view is the one displayed when navigating to the main URL. Typically this will be the “All” view.

**Returns** object that manages the default Jenkins view

**Return type** *View*

**find\_job** (*job\_name*)

Searches all jobs managed by this Jenkins instance for a specific job

**Parameters** **job\_name** (*str*) – the name of the job to search for

**Returns** If a job with the specified name can be found, an object to manage the job will be returned, otherwise None

**Return type** *Job*

**find\_node** (*nodename*)

Locates a Jenkins build agent with the given name

**Parameters** **nodename** (*str*) – name of node to locate

**Returns** reference to Jenkins object that manages this node’s information.

**Return type** *Node* or None if node not found

**find\_user** (*username*)

Locates a user with the given username on this Jenkins instance

**Parameters** **username** (*str*) – name of user to locate

**Returns** reference to Jenkins object that manages this users information.

**Return type** *User* or None if user not found

**find\_view** (*view\_name*)

Searches views for a specific one

**Parameters** `view_name` (*str*) – the name of the view to search for

**Returns** If a view with the specified name can be found, an object to manage the view will be returned, otherwise None

**Return type** *View*

#### **is\_shutting\_down**

Is the Jenkins master is in the process of shutting down.

**Returns** If the Jenkins master is preparing to shutdown (ie: in quiet down state), return True, otherwise returns False.

**Return type** *bool*

#### **jobs**

Gets all jobs managed by this Jenkins instance

**Return type** list of *Job* objects

#### **nodes**

gets the list of nodes (aka: agents) managed by this Jenkins master

**Returns** list of 0 or more Node objects managed by this Jenkins master

**Return type** list of *Node* objects

#### **plugin\_manager**

object which manages the plugins installed on this Jenkins

**Returns** reference to Jenkins object that manages plugins on this instance

**Return type** *PluginManager*

#### **prepare\_shutdown()**

Starts a “quiet down” and prevents new builds from executing

Analogous to the “Prepare for Shutdown” link on the Manage Jenkins configuration page

You can cancel a previous requested shutdown using the *cancel\_shutdown()* method

#### **version**

Gets the version of Jenkins pointed to by this object

**Returns** Version number of the currently running Jenkins instance

**Return type** *tuple*

#### **views**

Gets a list of all views directly managed by the Jenkins dashboard

To retrieve all views managed by this Jenkins instance, including recursing into views that support sub-views, see the *all\_views()* property

**Returns** list of one or more views defined on this Jenkins instance.

**Return type** list of *View* objects

## **pyjen.job module**

Primitives for interacting with Jenkins jobs

**class** `pyjen.job.Job` (*api*)

Bases: *object*

Abstraction for operations common to all job types on Jenkins

**Parameters** `api` (/utils/jenkins\_api/JenkinsAPI) – Pre-initialized connection to the Jenkins REST API

**add\_property** (*new\_property*)

Adds a new job property to the configuration

**Parameters** `new_property` – Custom job property to be added. May be any PyJen plugin that supports the Jenkins job property plugin API.

**all\_builds**

Gets all recorded builds for this job

**Returns** all recorded builds for this job

**Return type** list of *Build* objects

**build\_health**

Gets the percentage of good builds from recorded history of this job

This metric is associated with the “weather” icon that can be shown next to jobs in certain views

**Returns** percentage of good builds on record for this job

**Return type** int

**clone** (*new\_job\_name*, *disable=True*)

“Create a new job with the same configuration as this one

**Parameters**

- **new\_job\_name** (*str*) – Name of the new job to be created
- **disable** (*bool*) – Indicates whether the newly created job should be disabled after creation to prevent builds from accidentally triggering immediately after creation

**Returns** reference to the newly created job

**Return type** *pyjen.job.Job*

**config\_xml**

Gets the raw XML configuration for the job

Allows callers to manipulate the raw job configuration file as desired.

**Returns** the full XML tree describing this jobs configuration

**Return type** str

**delete** ()

Deletes this job from the Jenkins dashboard

**disable** ()

Disables this job

Sets the state of this job to disabled so as to prevent the job from being triggered.

Use in conjunction with *enable()* and *is\_disabled* to control the state of the job.

**enable** ()

Enables this job

If this jobs current state is disabled, it will be re-enabled after calling this method. If the job is already enabled then this method does nothing.

Enabling a job allows it to be triggered, either automatically via commit hooks / polls or manually through the dashboard.

Use in conjunction with `disable()` and `is_disabled` to control the state of the job

**find\_build\_by\_queue\_id**(*queue\_id*)

Gets the build of this job which correlates to a specific queue item

**Parameters** **queue\_id** (*int*) – ID of the build queue item to correlate with. Typically extracted from the `pyjen.queue_item.QueueItem.id()` property.

**Returns** reference to the build associated with the specified queue id None if no such reference exists

**get\_build\_by\_number**(*build\_number*)

Gets a specific build of this job from the build history

**Parameters** **build\_number** (*int*) – Numeric identifier of the build to retrieve Value is typically non-negative

**Returns** Build object for the build with the given numeric identifier If such a build does not exist, returns None

**Return type** *Build*

**get\_builds\_in\_time\_range**(*start\_time*, *end\_time*)

Returns a list of all of the builds for a job that occurred between the specified start and end times

**Parameters**

- **start\_time** (*datetime*) – starting time index for range of builds to find
- **end\_time** (*datetime*) – ending time index for range of builds to find

**Returns** a list of 0 or more builds

**Return type** list of *Build* objects

**classmethod** **get\_supported\_plugins**()

Returns a list of PyJen plugins that derive from this class

**Return type** list of class

**has\_been\_built**

Checks to see whether this job has ever been built or not

**Returns** True if the job has been built at least once, otherwise false

**Return type** bool

**static** **instantiate**(*json\_data*, *rest\_api*)

Factory method for finding the appropriate PyJen view object based on data loaded from the Jenkins REST API

**Parameters**

- **json\_data** (*dict*) – data loaded from the Jenkins REST API summarizing the view to be instantiated
- **rest\_api** – PyJen REST API configured for use by the parent container. Will be used to instantiate the PyJen view that is returned.

**Returns** PyJen view object wrapping the REST API for the given Jenkins view

**Return type** *View*



**is\_disabled**

Indicates whether this job is disabled or not

**Returns** True if the job is disabled, otherwise False

**Return type** bool

**is\_failing**

Indicates whether the current state of the job is 'failed'

**Returns** True if the latest build of the job is a failure, otherwise False

**Return type** bool

**is\_unstable**

Indicates whether the current state of this job is 'unstable'

**Returns** True if the latest build of the job is unstable, otherwise False

**Return type** bool

**jenkins\_plugin\_name**

Extracts the name of the Jenkins plugin associated with this job

The data returned by this helper property is extracted from the config XML that defines this job.

**Return type** str

**last\_build**

Returns a reference to the most recent build of this job

Synonymous with the "Last Build" permalink on the jobs' main status page

**Returns** object that provides information and control for the most recent build of this job. If there are no such builds in the build history, this method returns None

**Return type** *Build*

**last\_failed\_build**

the most recent build of this job with a status of "failed"

Synonymous with the "Last failed build" permalink on the jobs' main status page

**Returns** Most recent build with a status of 'failed'. If there are no such builds in the build history, this method returns None

**Return type** *Build*

**last\_good\_build**

Gets the most recent successful build of this job

Synonymous with the "Last successful build" permalink on the jobs' main status page

**Returns** object that provides information and control for the last build which completed with a status of 'success' If there are no such builds in the build history, this method returns None

**Return type** *Build*

**last\_stable\_build**

the most recent build of this job with a status of "stable"

Synonymous with the "Last stable build" permalink on the jobs' main status page

**Returns** Most recent build with a status of 'stable'. If there are no such builds in the build history, this method returns None

**Return type** *Build*

**last\_unsuccessful\_build**

the most recent build of this job with a status of “unstable”

Synonymous with the “Last unsuccessful build” permalink on the jobs’ main status page

**Returns** Most recent build with a status of ‘unstable’ If there are no such builds in the build history, this method returns None

**Return type** *Build*

**name**

Returns the name of the job managed by this object

**Returns** The name of the job

**Return type** *str*

**properties**

all plugins configured as extra configuration properties

**recent\_builds**

Gets a list of the most recent builds for this job

Rather than returning all data on all available builds, this method only returns the latest 20 or 30 builds. This list is synonymous with the short list provided on the main info page for the job on the dashboard.

**Returns** a list of the most recent builds for this job

**Return type** list of *Build* objects

**rename** (*new\_job\_name*)

Changes the name of this job

**Parameters** *new\_job\_name* (*str*) – new name to assign to this job

**start\_build** (*\*\*kwargs*)

Forces a build of this job

Synonymous with a manual trigger. A new instance of the job (ie: a build) will be added to the appropriate build queue where it will be scheduled for execution on the next available agent + executor.

**Parameters** *kwargs* – 0 or more named arguments to pass as build parameters to the job when triggering the build.

## pyjen.node module

Declarations for the abstraction of a Jenkins build agent

**class** `pyjen.node.Node` (*api*)

Bases: `object`

Wrapper around a Jenkins build agent (aka: Node) configuration

Use this class to manipulate agents managed by a Jenkins master

**Parameters** *api* (`/utils/jenkins_api/JenkinsAPI`) – Pre-initialized connection to the Jenkins REST API

**is\_idle**

Checks to see whether any executors are in use on this Node or not

**Return type** `bool`

**is\_offline**

Checks to see whether this Node is currently offline or not

**Return type** `bool`

**name**

Gets the display name of this Node

**Return type** `str`

**number\_of\_executors**

Returns the number of executors this node provides

**Return type** `int`

**toggle\_offline** (*message=None*)

Toggles the online status of this Node

If the current state of this Node is “offline” it will be toggled to “online” and vice-versa.

**Parameters** **message** (*str*) – optional descriptive message explaining the reason this node has been taken offline.

**wait\_for\_idle** (*max\_timeout=None*)

Blocks execution until this Node enters an idle state

**Parameters** **max\_timeout** (*int*) – The maximum amount of time, in seconds, to wait for an idle state. If this value is undefined, this method will block indefinitely.

**Returns** True if the Node has entered idle state before returning otherwise returns False

**Return type** `bool`

## pyjen.plugin module

Interface for interacting with Jenkins plugins

**class** `pyjen.plugin.Plugin` (*plugin\_config*)

Bases: `object`

Abstraction around one Jenkins plugin

Constructor :param dict *plugin\_config*:

Parsed Jenkins API data associated with this plugin. Typically this content is produced by the Jenkins plugin manager API. See [PluginManager](#) for details.

**download** (*output\_folder, overwrite=False, show\_progress=False*)

Downloads the plugin installation file for this plugin

**Parameters**

- **output\_folder** (*str*) – path where the downloaded plugin file will be stored
- **overwrite** (*bool*) – indicates whether existing plugin files should be overwritten in the target folder
- **show\_progress** (*bool*) – indicates whether a progress bar should be displayed as the plugin is downloaded

**download\_url**

URL where the version of this plugin may be downloaded

**enabled**

Checks to see if this plugin is enabled or not

**info\_url**

Gets the URL for the website describing the use of this plugin

**latest\_download\_url**

URL where the latest version of this plugin can be downloaded

**long\_name**

Gets the descriptive name of this plugin

**required\_dependencies**

list of the dependencies this plugin needs in order to work correctly

**Returns** list of 0 or more dictionaries containing the ‘shortName’ and ‘version’ of all dependencies

**short\_name**

Gets the abbreviated name of this plugin

**version**

Gets the version of this plugin

## pyjen.plugin\_manager module

Interfaces for managing plugins for a particular Jenkins instance

**class** `pyjen.plugin_manager.PluginManager` (*api*)

Bases: `object`

Abstraction around Jenkins plugin management interfaces

Supports adding, removing and querying information about Jenkins plugins

**Parameters** `api` (`/utils/jenkins_api/JenkinsAPI`) – Pre-initialized connection to the Jenkins REST API

**find\_plugin\_by\_shortcode** (*short\_name*)

Finds an installed plugin based on its abbreviated name

**Parameters** `short_name` (*str*) – abbreviated form of the plugin name to locate

**Returns** reference to the given plugin, or None if no such plugin found

**Return type** `Plugin`

**install\_plugin** (*plugin\_file*)

Installs a new plugin on the selected Jenkins instance

NOTE: If using this method to batch-install many plugins at once you may want to add a short wait / sleep between calls so as to not overwhelm the target server with upload requests. Ad-hoc tests show that Jenkins will refuse connections if too many uploads are running in parallel.

**Parameters** `plugin_file` (*str*) – path to the HPI/JPI file to install

**plugins**

list of all installed plugins from the current Jenkins instance

**Returns** list of 0 or more plugins installed on the Jenkins instance

**Return type** List of 0 or more `Plugin` objects

## pyjen.queue module

Abstraction around the Jenkins build queue

**class** `pyjen.queue.Queue` (*api*)

Bases: `object`

Abstraction around the Jenkins build queue

**Parameters** `api` (/utils/jenkins\_api/JenkinsAPI) – Pre-initialized connection to the Jenkins REST API

**items**

Gets a list of scheduled builds waiting in the queue

**Return type** `list of QueueItem`

## pyjen.queue\_item module

Abstraction around a scheduled build contained in the Jenkins build queue

**class** `pyjen.queue_item.QueueItem` (*api*)

Bases: `object`

Abstraction around a scheduled build contained in the Jenkins build queue

**Parameters** `api` (/utils/jenkins\_api/JenkinsAPI) – Pre-initialized connection to the Jenkins REST API

**blocked**

Is this scheduled build waiting for some other event to complete?

May return `None` if this queue item has been invalidated by Jenkins

**Return type** `bool`

**build**

Once this scheduled build leaves the queue, this property returns a reference to the running build. While the item is still queued, this property returns `None`.

See the ‘waiting’ property on this object for a way to detect whether a queued item has left the queue or not.

**buildable**

TBD

May return `None` if this queue item has been invalidated by Jenkins

**Return type** `bool`

**cancel** ()

Cancels this queued build

**cancelled**

Has this queued build been cancelled?

May return `None` if this queue item has been invalidated by Jenkins

**Return type** `bool`

**is\_valid** ()

Checks to make sure the queue item this object manages still exists

Jenkins periodically expires / invalidates queue items server-side. There is no way for us to detect or predict when this will happen. When it does, this client-side queue item object will no longer refer to a valid REST API endpoint. This helper method helps users of the PyJen library check to see if the object still points to a valid queue item.

**Return type** `bool`

**job**

Gets the Jenkins job associated with this scheduled build

May return None if this queue item has been invalidated by Jenkins

**Return type** `pyjen.job.Job`

**reason**

Descriptive text explaining why this build is still in the queue

May return None if this queue item has been invalidated by Jenkins

**Return type** `str`

**stuck**

Is this scheduled build blocked / unable to build?

May return None if this queue item has been invalidated by Jenkins

**Return type** `bool`

**uid**

Gets the numeric identifier of this queued build

Guaranteed to return a valid identifier, even when the queue item this object refers to has been invalidated by Jenkins.

**Return type** `int`

**waiting**

Is this queue item still waiting in the queue?

May return None if this queue item has been invalidated by Jenkins

**Return type** `bool`

## **pyjen.user module**

Primitives for interacting with Jenkins users

**class** `pyjen.user.User` (*api*)

Bases: `object`

Interface to all primitives associated with a Jenkins user

**See also:**

`author()`

**See also:**

`find_user()`

**Parameters** `api` (`/utils/jenkins_api/JenkinsAPI`) – Pre-initialized connection to the Jenkins REST API

**description**

descriptive text associated with the user.

May be an empty string if no description found.

**Return type** `str`

**email**

Gets this users' email address as reported by Jenkins.

May be None if no email on record for user.

**Return type** `str`

**full\_name**

the users first and last names separated by a space

**Return type** `str`

**user\_id**

Gets the unique identifier for this user

**Return type** `str`

**pyjen.version module****pyjen.view module**

Primitives for interacting with Jenkins views

**class** `pyjen.view.View` (*api*)

Bases: `object`

generic Jenkins views providing interfaces common to all view types

**Parameters** `api` (`/utils/jenkins_api/JenkinsAPI`) – Pre-initialized connection to the Jenkins REST API

**clone** (*new\_view\_name*)

Make a copy of this view with the specified name

**Parameters** `new_view_name` (*str*) – name to give the newly created view

**Returns** reference to the created view

**Return type** `View`

**config\_xml**

Gets the raw XML configuration for the view

Allows callers to manipulate the raw view configuration file as desired.

**Returns** the full XML tree describing this view's configuration

**Return type** `str`

**delete** ()

Deletes this view from the dashboard

**delete\_all\_jobs** ()

allows callers to do bulk deletes of all jobs found in this view

**disable\_all\_jobs** ()

allows caller to bulk-disable all jobs found in this view

**enable\_all\_jobs()**

allows caller to bulk-enable all jobs found in this view

**classmethod get\_supported\_plugins()**

Returns a list of PyJen plugins that derive from this class

**Return type** `list of class`

**static instantiate** (*json\_data*, *rest\_api*)

Factory method for finding the appropriate PyJen view object based on data loaded from the Jenkins REST API

**Parameters**

- **json\_data** (*dict*) – data loaded from the Jenkins REST API summarizing the view to be instantiated
- **rest\_api** – PyJen REST API configured for use by the parent container. Will be used to instantiate the PyJen view that is returned.

**Returns** PyJen view object wrapping the REST API for the given Jenkins view

**Return type** `View`

**jenkins\_plugin\_name**

Extracts the name of the Jenkins plugin associated with this View

The data returned by this helper property is extracted from the config XML that defines this job.

**Return type** `str`

**jobs**

Gets a list of jobs associated with this view

Views are simply filters to help organize jobs on the Jenkins dashboard. This method returns the set of jobs that meet the requirements of the filter associated with this view.

**Returns** list of 0 or more jobs that are included in this view

**Return type** `list of Job` objects

**name**

Gets the display name for this view

This is the name as it appears in the tabbed view of the main Jenkins dashboard

**Returns** the name of the view

**Return type** `str`

**rename** (*new\_view\_name*)

Changes the name of this view

**Parameters** **new\_view\_name** (*str*) – new name for the selected source view

**view\_metrics**

Composes a report on the jobs contained within the view

**Returns** Dictionary containing metrics about the view

**Return type** `dict`



## Module contents

Abstraction layer for the Jenkins REST API designed to simplify the interaction with the Jenkins web interface from the Python scripting environment.

## 1.4 Revision History

### 1.4.1 1.0.0

- First official release
- reworked API to eliminate easy\_connect methods
- Updated unit tests to use py.test framework
- Fixed PyLint warnings

### 1.4.2 0.0.11dev

- Added prototype caching support for REST API endpoints
- Added Travis CI support to builds
- misc cleanup

### 1.4.3 0.0.10dev

- Added helper method for view metrics calculations
- misc bug fixes

### 1.4.4 0.0.9dev

- rewrote plugin API to make it easier to use
- overhauled the object interfaces to create parent-child relationships between entities
- added support for online API documentation from ReadTheDocs.org
- numerous improvements to the public API

### 1.4.5 0.0.1dev - 0.0.8dev

Early revisions of the API from its inception through to numerous changes and improvements

## 1.5 Frequently Asked Questions

TBD



## OVERVIEW

PyJen is an extensible, user and developer friendly Python interface to the [Jenkins](#) CI tool, wrapping the features exposed by the standard [REST API](#) using Pythonic objects and functions. Tested against the latest 2.x and 3.x versions of CPython and the latest trunk and LTS editions of the Jenkins REST API, we endeavor to provide a stable, reliable tool for a variety of users.

With an intuitive and well thought out interface, PyJen offers anyone familiar with the Python programming language an easy way to manage Jenkins dashboards from a simple command prompt. All core primitives of Jenkins, including views, jobs and builds are easily accessible and can be loaded, analyzed and even modified or created via simple Python commands.

Comments, suggestions and bugs may be reported to the project [maintainer](#)



## QUICK START GUIDE

1. First, and most obviously, you must have Python installed on your system. For details specific to your OS we recommend seeing [Python's website](#). We recommend using the latest version of Python 2.x / 3.x for best results.
2. Next, we recommend that you install the pip package manager as described [here](#). If you are using newer editions of Python (3.x), or if you are using certain Linux distributions / packages you likely already have this tool installed. You can confirm this by running the following command:

```
# pip --version
```

which should result in output that looks something like this:

```
pip 8.0.2 from C:\Python34x64\lib\site-packages (python 3.4)
```

3. Install PyJen directly from PyPI using PIP:

```
# pip install pyjen
```

4. import the pyjen module and start scripting! Here is a short example that shows how you can get the name of the default view from a Jenkins instance:

```
>>> from pyjen.jenkins import Jenkins
>>> jenkins_obj = Jenkins("http://localhost:8080", ('username', 'passwd'))
>>> default_view = jenkins_obj.default_view
>>> print(default_view.name)
```



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