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# **pytest-cloud Documentation**

***Release 5.0.2***

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## Distributed tests planner plugin for pytest testing framework

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### 1.1 Install pytest-cloud

```
pip install pytest-cloud

# install GNU parallel utility
# https://www.gnu.org/software/parallel/
# for MacOS, you can use:
brew install parallel
```

### 1.2 Features

The plugin provides an easy way of running tests among several test nodes (workers). Uses the great [pytest-xdist](#) plugin for actual distributed run. When used, it will automatically detect capabilities of given node(s) and run only the number of test processes it is able to handle. It will also filter out offline nodes or nodes which were failed to respond to the capabilities acquisition call.

Supports automatic codebase propagation to the test nodes, so you don't have to install python dependencies for your project on remote test nodes globally - just make sure that your virtualenv folder is *inside* your project folder - that's a requirement. It will also detect a root folder of the test environment (project root), and will *rsync* it to all test nodes.

NOTE: > *pytest-cloud* uses *virtualenv* instead of built-in *venv* package.

ATM only ssh transport is supported. So ensure that you have at least public key auth enabled to your test nodes from the master node (where `py.test` is executed).

## 1.3 Command-line options

- **`--cloud-node`** Node hostname (or `user@hostname`) to run tests on. Multiple allowed.
- **`--cloud-nodes`** Space-separated list of node hostname (or `user@hostname`) to run tests on. Multiple allowed.
- **`--cloud-python`** Optional python executable name to be used on the remote test nodes. Default is the executable name used for the test run on the master.
- **`--cloud-chdir`** Optional relative path to be used on the remote test nodes as target folder for syncing file and run tests. Default is `pytest_<username>_<current_folder_name>`.
- **`--cloud-virtualenv-path`** Optional relative path to the virtualenv to be used on the remote test nodes. By default it will try to detect whether current test process is using virtualenv and if it's located inside of the current directory. If that's the case, it will use it for `rsync` on the remote node(s).
- **`--cloud-mem-per-process`** Optional amount of memory roughly needed for test process, in megabytes. Will be used to calculate amount of test processes per node, getting the free memory, dividing it for the memory per process needed, and getting the minimum of that value and the number of CPU cores of the test node.
- **`--cloud-max-processes`** Optional maximum number of processes per test node. Overrides from above the calculated number of processes using memory and number of CPU cores.
- **`--cloud-rsync-bandwidth-limit`** Optional bandwidth limit per `rsync` process, in kilobytes per second. 5000 by default.
- **`--cloud-rsync-max-processes`** Optional process count limit for `rsync` processes. By default there's no limit so `rsync` will be in parallel for all test nodes.
- **`--cloud-rsync-cipher`** Optional ssh cipher selection for `rsync` processes. `aes128-gcm@openssh.com` by default. Default cipher is chosen to have the least possible network overhead. Network overhead is system, compilation and CPU architecture dependent, however chosen cipher is showing good results in majority of use cases.

## 1.4 Ini file options

- **`cloud_develop_eggs`** Optional list of python package paths to install in development mode on remote side. Required to be inside of the project root directory.

## 1.5 Example

```
py.test tests/ --cloud-node=10.0.120.{1..40} --cloud-mem-per-process=1000 --rsyncdir=.
```

Or if you pass list of nodes as space-separated list:

```
py.test tests/ --cloud-nodes='10.0.120.1 10.0.120.2' --cloud-mem-per-process=1000 --  
↪rsyncdir=.
```

## 1.6 Contact

If you have questions, bug reports, suggestions, etc. please create an issue on the [GitHub project page](#).

## 1.7 License

This software is licensed under the [MIT license](#)

See [License file](#)

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## CHAPTER 2

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Internal API

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## CHAPTER 3

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### Authors

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**Anatoly Bubenkov** original idea and implementation, new features and improvements

**Oleg Pidsadnyi** bugfixes and further improvements

These people have contributed to *pytest-cloud*, in alphabetical order:

- **Andreas Pelme**
- **Dariusz Smigiel**
- **Loic Dachary**
- **Michael Overmeyer**
- **Orthographic Pedant**
- **Zac Hatfield-Dodds**



### 4.1 5.0.3

- Fixes issue #21 (dasm)
- Fully dropped python2 support (dasm)
- Added explicit requirement for virtualenv (dasm)

### 4.2 5.0.2

- Remove python2 support (bubenkoff)

### 4.3 5.0.1

- Correctly handle default venv location (bubenkoff)

### 4.4 5.0.0

- Compatible with pytest-xdist  $\geq$  1.26.0 *including* 2.0.0+ (Zac-HD)

### 4.5 4.0.0

- Add config option to select cipher for ssh connection (dasm)
- Fix deprecation warnings for pytest (dasm)
- Support pytest-xdist  $\geq$  1.26.0 (dasm)

- Support pytest >= 3.6.1 (dasm)
- Remove support for Python 3.0, 3.1, 3.2, 3.3 (consistent with pytest-xdist) (dasm)

## 4.6 3.0.1

- support python 3.7 (bubenkoff)

## 4.7 3.0.0

- support pytest-xdist >=1.22.1 (bubenkoff)

## 4.8 2.0.0

- pytest fixed version number is removed from the requirements (olegpidsadnyi)
- removed pytest-cache dependency (olegpidsadnyi)

## 4.9 1.3.8

- Add verbosity to rsync progress (bubenkoff)

## 4.10 1.3.4

- Add develop eggs setting to install packages on remote side in development mode (bubenkoff)

## 4.11 1.2.16

- Correctly handle python path on remote side (bubenkoff)

## 4.12 1.2.12

- Add rsync progress to the output, change default bandwidth limit (bubenkoff)

## 4.13 1.2.11

- Fast native rsync instead of python based one (bubenkoff)

## 4.14 1.1.0

- Avoid unnecessary multiple ssh connections to the same node (bubenkoff)

## 4.15 1.0.25

- Correct virtualenv execution (bubenkoff)

## 4.16 1.0.18

- Ensure plugin command line hook is executed first (bubenkoff)
- Correct free memory calculation (bubenkoff)

## 4.17 1.0.15

- Add pyc files cleanup (bubenkoff)

## 4.18 1.0.13

- Automatic discovery of the virtualenv (bubenkoff)
- Fixes to rsyncing (bubenkoff)
- Safer node id generation (bubenkoff)
- Guarantee uniqueness of provided nodes (bubenkoff)

## 4.19 1.0.10

- Delete orphan files when rsyncing (bubenkoff)

## 4.20 1.0.7

- Add possibility to pass node list as space separated (bubenkoff)

## 4.21 1.0.6

- Initial public release