site — Site-specific configuration hook

Source code: Lib/site.py

This module is automatically imported during initialization. The automatic import can be suppressed using the interpreter's `-S` option.

Importing this module normally appends site-specific paths to the module search path and adds callables, including `help()` to the built-in namespace. However, Python startup option `-S` blocks this and this module can be safely imported with no automatic modifications to the module search path or additions to the builtins. To explicitly trigger the usual site-specific additions, call the `main()` function.

> *Changed in version 3.3:* Importing the module used to trigger paths manipulation even when using `-S`.

It starts by constructing up to four directories from a head and a tail part. For the head part, it uses `sys.prefix` and `sys.exec_prefix`; empty heads are skipped. For the tail part, it uses the empty string and then `lib/site-packages` (on Windows) or `lib/pythonX.Y[t]/site-packages` (on Unix and macOS). (The optional suffix "t" indicates the free threading build, and is appended if `"t"` is present in the `sys.abiflags` constant.) For each of the distinct head-tail combinations, it sees if it refers to an existing directory, and if so, adds it to `sys.path` and also inspects the newly added path for configuration files.

> *Changed in version 3.5:* Support for the "site-python" directory has been removed.

> *Changed in version 3.13:* On Unix, Free threading Python installations are identified by the "t" suffix in the version-specific directory name, such as `lib/python3.13t/`.

If a file named "pyvenv.cfg" exists one directory above sys.executable, sys.prefix and sys.exec_prefix are set to that directory and it is also checked for site-packages (sys.base_prefix and sys.base_exec_prefix will always be the "real" prefixes of the Python installation). If "pyvenv.cfg" (a bootstrap configuration file) contains the key "include-system-site-packages" set to anything other than "true" (case-insensitive), the system-level prefixes will not be searched for site-packages; otherwise they will.

A path configuration file is a file whose name has the form *`name`*`.pth` and exists in one of the four directories mentioned above; its contents are additional items (one per line) to be added to `sys.path`. Non-existing items are never added to `sys.path`, and no check is made that the item refers to a directory rather than a file. No item is added to `sys.path` more than once. Blank lines and lines beginning with `#` are skipped. Lines starting with `import` (followed by space or tab) are executed.

> **Note:** An executable line in a `.pth` file is run at every Python startup, regardless of whether a particular module is actually going to be used. Its impact should thus be kept to a minimum. The primary intended purpose of executable lines is to make the corresponding module(s) importable (load 3rd-party import hooks, adjust `PATH` etc). Any other initialization is supposed to be done upon a module's actual import, if and when it happens. Limiting a code chunk to a single line is a deliberate measure to discourage putting anything more complex here.

For example, suppose `sys.prefix` and `sys.exec_prefix` are set to `/usr/local`. The Python X.Y library is then installed in `/usr/local/lib/pythonX.Y`. Suppose this has a subdirectory `/usr/local/lib/pythonX.Y/site-packages` with three subsubdirectories, `foo`, `bar` and `spam`, and two path configuration files, `foo.pth` and `bar.pth`. Assume `foo.pth` contains the following:

```
# foo package configuration

foo
bar
bletch
```

and `bar.pth` contains:

```
# bar package configuration

bar
```

Then the following version-specific directories are added to `sys.path`, in this order:

```
/usr/local/lib/pythonX.Y/site-packages/bar
/usr/local/lib/pythonX.Y/site-packages/foo
```

Note that `bletch` is omitted because it doesn't exist; the `bar` directory precedes the `foo` directory because `bar.pth` comes alphabetically before `foo.pth`; and `spam` is omitted because it is not mentioned in either path configuration file.

sitecustomize

After these path manipulations, an attempt is made to import a module named `sitecustomize`, which can perform arbitrary site-specific customizations. It is typically created by a system administrator in the site-packages directory. If this import fails with an `ImportError` or its subclass exception, and the exception's `name` attribute equals to `'sitecustomize'`, it is silently ignored. If Python is started without output streams available, as with `pythonw.exe` on Windows (which is used by default to start IDLE), attempted output from `sitecustomize` is ignored. Any other exception causes a silent and perhaps mysterious failure of the process.

usercustomize

After this, an attempt is made to import a module named `usercustomize`, which can perform arbitrary user-specific customizations, if `ENABLE_USER_SITE` is true. This file is intended to be created in the user site-packages directory (see below), which is part of `sys.path` unless disabled by `-s`. If this import fails with an `ImportError` or its subclass exception, and the exception's `name` attribute equals to `'usercustomize'`, it is silently ignored.

Readline configuration

On systems that support `readline`, this module will also import and configure the `rlcompleter` module, if Python is started in interactive mode and without the `-S` option. The default behavior is enable tab-completion and to use `~/.python_history` as the history save file. To disable it, delete (or override) the `sys.__interactivehook__` attribute in your `sitecustomize` or `usercustomize` module or your `PYTHONSTARTUP` file.

> *Changed in version 3.4:* Activation of rlcompleter and history was made automatic.

Module contents

site.PREFIXES
A list of prefixes for site-packages directories.

site.ENABLE_USER_SITE
Flag showing the status of the user site-packages directory. `True` means that it is enabled and was added to `sys.path`. `False` means that it was disabled by user request (with `-s` or `PYTHONNOUSERSITE`). `None` means it was disabled for security reasons (mismatch between user or group id and effective id) or by an administrator.

site.USER_SITE
Path to the user site-packages for the running Python. Can be `None` if `getusersitepackages()` hasn't been called yet. Default value is `~/.local/lib/pythonX.Y[t]/site-packages` for UNIX and non-framework macOS builds, `~/Library/Python/X.Y/lib/python/site-packages` for macOS framework builds, and `%APPDATA%\Python\PythonXY\site-packages` on Windows. The optional "t" indicates the free-threaded build. This directory is a site directory, which means that `.pth` files in it will be processed.

site.USER_BASE
Path to the base directory for the user site-packages. Can be `None` if `getuserbase()` hasn't been called yet. Default value is `~/.local` for UNIX and macOS non-framework builds, `~/Library/Python/X.Y` for macOS framework builds, and `%APPDATA%\Python` for Windows. This value is used to compute the installation directories for scripts, data files, Python modules, etc. for the user installation scheme. See also `PYTHONUSERBASE`.

site.main()
Adds all the standard site-specific directories to the module search path. This function is called automatically when this module is imported, unless the Python interpreter was started with the `-S` flag.

> *Changed in version 3.3:* This function used to be called unconditionally.

site.addsitedir(*sitedir, known_paths=None*)
Add a directory to sys.path and process its `.pth` files. Typically used in `sitecustomize` or `usercustomize` (see above).

> *Added in version 3.2.*

`site.`**`getuserbase`**`()`

Return the path of the user base directory, `USER_BASE`. If it is not initialized yet, this function will also set it, respecting `PYTHONUSERBASE`.

> *Added in version 3.2.*

`site.`**`getusersitepackages`**`()`

Return the path of the user-specific site-packages directory, `USER_SITE`. If it is not initialized yet, this function will also set it, respecting `USER_BASE`. To determine if the user-specific site-packages was added to `sys.path` `ENABLE_USER_SITE` should be used.

> *Added in version 3.2.*

Command Line Interface

The `site` module also provides a way to get the user directories from the command line:

```
$ python -m site --user-site
/home/user/.local/lib/python3.11/site-packages
```

If it is called without arguments, it will print the contents of `sys.path` on the standard output, followed by the value of `USER_BASE` and whether the directory exists, then the same thing for `USER_SITE`, and finally the value of `ENABLE_USER_SITE`.

`--user-base`

Print the path to the user base directory.

`--user-site`

Print the path to the user site-packages directory.

If both options are given, user base and user site will be printed (always in this order), separated by `os.pathsep`.

If any option is given, the script will exit with one of these values: `0` if the user site-packages directory is enabled, `1` if it was disabled by the user, `2` if it is disabled for security reasons or by an administrator, and a value greater than 2 if there is an error.

See also:

- **PEP 370** – Per user site-packages directory
- The initialization of the sys.path module search path – The initialization of `sys.path`.