
rebase-helper

Release 0.16.3

Jul 16, 2019

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There are several steps that need to be done when rebasing a package. The goal of **rebase-helper** is to automate most of these steps.

CHAPTER 1

How to get it running?

rebase-helper is packaged in Fedora, so you can just install it with **dnf**.

If you wish to use the latest codebase, consult [installation instructions](#).

CHAPTER 2

How to use it?

After installation, execute **rebase-helper** from a directory containing SPEC file, sources and patches (usually cloned dist-git repository).

Without any arguments or configuration **rebase-helper** will attempt to determine the latest upstream version automatically. If that fails, or if you wish to rebase to some different version, you can specify it explicitly as an argument:

```
$ rebase-helper 3.1.10
```

or you can pass source tarball filename instead:

```
$ rebase-helper foo-4.2.tar.gz
```

For complete CLI reference see [usage](#).

Alternatively, you can run **rebase-helper** in a container:

```
$ docker run -it -e PACKAGE=foo rebasehelper/rebase-helper:latest
```

See [docker reference](#) for more information.

CHAPTER 3

What do I get from it?

rebase-helper always creates *rebase-helper-results* directory containing the following items:

Path	Description
<i>report.txt</i>	summary report with all important information
<i>changes.patch</i>	diff against original files, directly applicable to dist-git repo
<i>logs/</i>	log files of various verbosity levels
<i>rebased-sources/</i>	git repository with all modified files
<i>checkers/</i>	reports from individual checkers that were run
<i>old-build/</i>	logs and results of old (original) version build
<i>new-build/</i>	logs and results of new (rebased) version build

CHAPTER 4

How does it work?

The following steps describe a rebase process:

- **Preparation**

- *rebase-helper-workspace* and *rebase-helper-results* directories are created
- original SPEC file is copied to *rebase-helper-results/rebased-sources* directory and its Version tag is modified

- **Getting sources**

- old and new source tarballs are downloaded and extracted to *rebase-helper-workspace* directory
- old sources are downloaded from lookaside cache if possible

- **Downstream patches**

- new git repository is initialized and the old sources are extracted and committed
- each downstream patch is applied and changes introduced by it are committed
- new sources are extracted and added as a remote repository
- `git-rebase` is used to rebase the commits on top of new sources
- original patches are modified/deleted accordingly
- resulting files are stored in *rebase-helper-results/rebased-sources*
- diff against original files is saved to *rebase-helper-results/changes.patch*

- **Build**

- old and new source RPMs are created and built with selected build tool
- old SRPM and RPMs can also be downloaded from Koji to speed up the rebase

- **Comparison**

- multiple checker tools are run against both sets of packages and their output is stored in *rebase-helper-results/checkers* directory

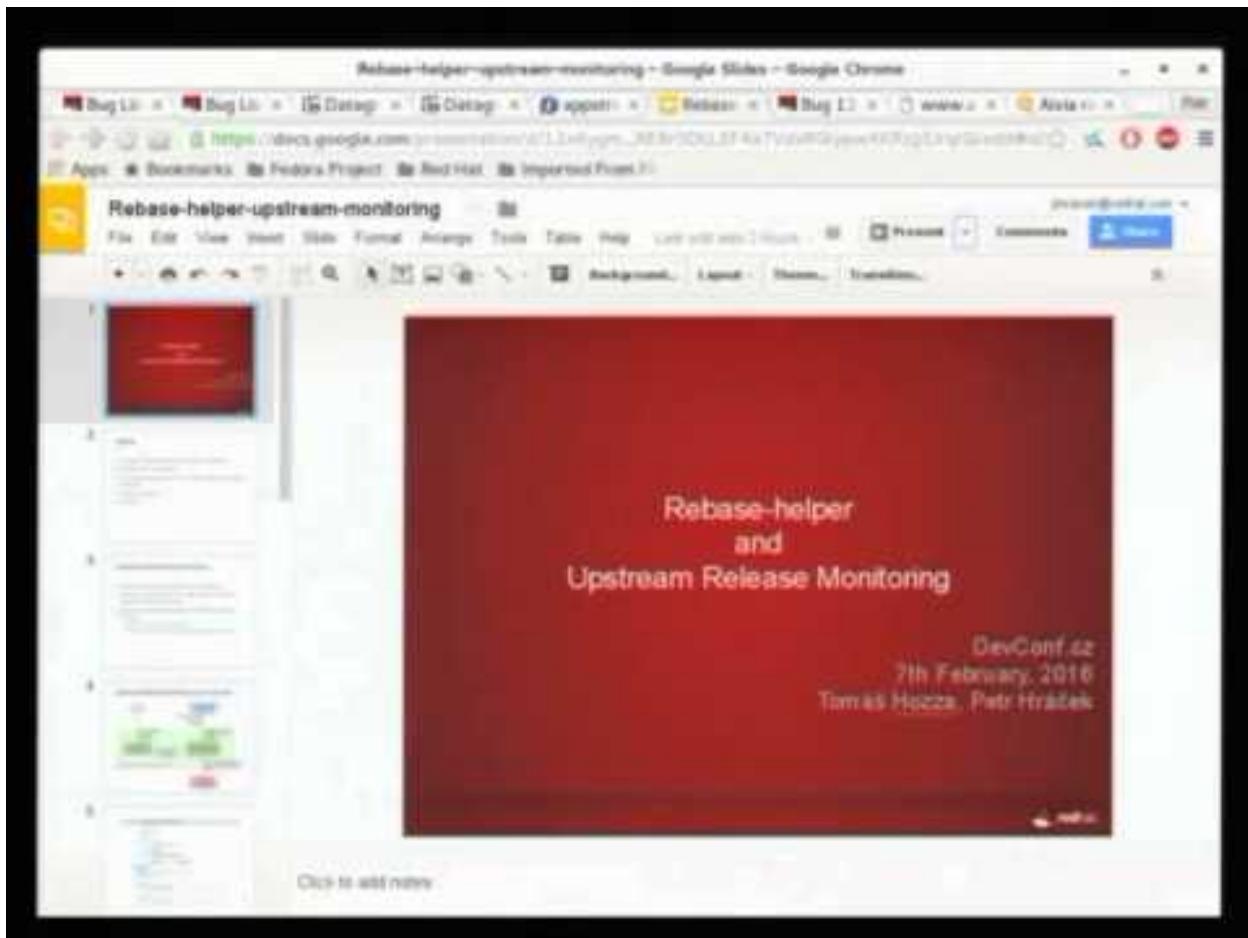
- **Cleanup**

- *rebase-helper-workspace* directory is removed

CHAPTER 5

Video presentation

At DevConf.cz 2016, Tomáš Hozza, Petr Hráček presented on rebase-helper.



5.1 User Guide

5.1.1 Installation

rebase-helper is packaged in Fedora, so you can just install it with **dnf**.

If you can't or don't want to use **rebase-helper** package, you have to install, apart from Python requirements listed in *get_requirements* function in `setup.py`, the following dependencies:

Dependency	Package name (in Fedora)	Notes
git	git	for rebasing of downstream patches
rpmbuild	rpm-build	for building SRPM and for rpmbuild build tool
mock	mock	for mock build tool, optional
koji	koji	for koji build tool, optional
rpmdiff	rpmlint	for rpmdiff checker, optional
abipkgdiff	libabigail	for abipkgdiff checker, optional
pkgdiff	pkgdiff	for pkgdiff checker, optional
csmock	csmock	for csmock checker, optional
licensecheck	licensecheck	for licensecheck checker, optional

rebase-helper is also published on [PyPI](#).

5.1.2 Rebasing in container

rebase-helper can be run in Docker container. The package to be rebased has to be specified in PACKAGE environment variable. Alternatively, you can set REPOSITORY environment variable and point it to URL of any dist-git repository. In both cases, you can reference a specific branch, tag or commit by appending it to the package name or the repository URL:

```
$ docker run -it -e PACKAGE=foo#branch=f26 rebasehelper/rebase-helper:latest  
--outputtool json
```

Results of the rebase will be stored in an exported volume.

5.1.3 Usage

SYNOPSIS

```
rebase-helper [-h] [--version] [-v] [--color {always,never,auto}]  
[--background {dark,light,auto}] [--results-dir RESULTS_DIR]  
[-p|-b|--comparepkgs-only COMPAREPKGS_DIR] [-c]  
[--buildtool {copr,koji,mock,rpmbuild}]  
[--srpm-buildtool {mock,rpmbuild}]  
[--pkgcomparetool {abipkgdiff,csmock,licensecheck,pkgdiff,rpmdiff}]  
[--outputtool {json,text}]  
[--versioneer {anitya,cpan,hackage,npmjs,pypi,rubygems}]  
[--versioneer-blacklist {anitya,cpan,hackage,npmjs,pypi,rubygems}]  
[--spec-hook-blacklist  
{commit-hash-updater,escape-macros,paths-to-rpm-macros,pypi-url-fix,  
replace-old-version,ruby-helper,typo-fix}]
```

```
[--build-log-hook-blacklist {files}] [--non-interactive]
[--favor-on-conflict {downstream, upstream, off}]
[--not-download-sources] [-w] [--apply-changes]
[--disable-inapplicable-patches] [--skip-version-check]
[--update-sources] [--skip-upload] [--force-build-log-hooks]
[--builds-nowait] [--build-tasks OLD_TASK,NEW_TASK]
[--builder-options BUILDER_OPTIONS]
[--srpm-builder-options SRPM_BUILDER_OPTIONS]
[--changelog-entry CHANGELOG_ENTRY] [--config-file CONFIG_FILE]
[--replace-old-version-with-macro] [SOURCES]
```

DESCRIPTION

rebase-helper is a tool which helps package maintainers to rebase their packages to latest upstream versions. It should be executed from a directory containing spec file, sources and patches (usually cloned dist-git repository). The new version is specified by *SOURCES* argument, which can be either version number or filename of the new source archive. Starting with version 0.10.0, this argument can be omitted and the new version determined automatically using one of available *versioneers*.

OPTIONS

Positional arguments

SOURCES

version number or filename of the new source archive

Optional arguments

-h, --help

show help message and exit

--version

show rebase-helper version and exit

-v, --verbose

be more verbose

--color {always,never,auto}

colorize the output, defaults to auto

--background {dark,light,auto}

use color scheme for the given background, defaults to auto

--results-dir RESULTS_DIR

directory where rebase-helper output will be stored

-p, --patch-only

only apply patches

-b, --build-only

only build SRPMs and RPMs

```
--comparepkgs-only COMPAREPKGS_DIR
    compare already built packages, COMPAREPKGS_DIR must be a directory with the following structure:
    <dir_name>/old,new/RPM

-c, --continue
    continue previously interrupted rebase

--buildtool {copr, koji, mock, rpmbuild}
    build tool to use, defaults to mock

--srpm-buildtool {mock, rpmbuild}
    SRPM build tool to use, defaults to rpmbuild

--pkgcomparetool {abipkgdiff, csmock, licensecheck, pkgdiff, rpmdiff}
    set of tools to use for package comparison, defaults to "csmock" if available

--outputtool {json, text}
    tool to use for formatting rebase output, defaults to text

--versioneer {anitya, cpan, hackage, npmjs, pypi, rubygems}
    tool to use for determining latest upstream version

--versioneer-blacklist {anitya, cpan, hackage, npmjs, pypi, rubygems}
    prevent specified versioneers from being run

--spec-hook-blacklist {commit-hash-updater, escape-macros, paths-to-rpm-macros, pypi-url-fix, ...}
    prevent specified spec hooks from being run

--build-log-hook-blacklist {files}
    prevent specified build log hooks from being run

--non-interactive
    do not interact with user

--favor-on-conflict {downstream, upstream, off}
    favor downstream or upstream changes when conflicts appear

--not-download-sources
    do not download sources

-w, --keep-workspace
    do not remove workspace directory after finishing

--apply-changes
    apply changes.patch after a successful rebase

--disable-inapplicable-patches
    disable inapplicable patches in rebased SPEC file

--skip-version-check
    force rebase even if current version is newer than requested version

--update-sources
    update "sources" file and upload new sources to lookaside cache

--skip-upload
    skip uploading new sources to lookaside cache

--force-build-log-hooks
    enforce running of build log hooks (even in non-interactive mode)

--builds-nowait
    do not wait for remote builds to finish
```

```
--build-tasks OLD_TASK, NEW_TASK
    comma-separated remote build task ids

--builder-options BUILDER_OPTIONS
    enable arbitrary local builder option(s), enclose BUILDER_OPTIONS in quotes to pass more than one

--srpm-builder-options SRPM_BUILDER_OPTIONS
    enable arbitrary local srpm builder option(s), enclose SRPM_BUILDER_OPTIONS in quotes to pass more than one

--changelog-entry CHANGELOG_ENTRY
    text to use as changelog entry, can contain RPM macros, which will be expanded

--config-file CONFIG_FILE
    path to a configuration file, defaults to $XDG_CONFIG_HOME/rebase-helper.cfg

--replace-old-version-with-macro
    replace old version string with %{version} instead of new version string
```

5.1.4 Writing plugins

Starting with version 0.10.0, **rebase-helper** is extensible through plugins.

You can implement your own build tool, checker, output tool, SPEC hook, build log hook or versioneer. All you have to do is to derive your plugin from corresponding base class, implement all necessary methods and register it using one of the following entry points:

Plugin type	Entry point	Base class
build tool	rebasehelper. build_tools	rebasehelper.plugins.build_tools.rpm. BuildToolBase
SRPM build tool	rebasehelper. srpm_build_tools	rebasehelper.plugins.build_tools.srpm. SRPMBuildToolBase
checker	rebasehelper.checkers	rebasehelper.plugins.checkers.BaseChecker
output tool	rebasehelper. output_tools	rebasehelper.plugins.output_tools. BaseOutputTool
SPEC hook	rebasehelper. spec_hooks	rebasehelper.plugins.spec_hooks. BaseSpecHook
build log hook	rebasehelper. build_log_hooks	rebasehelper.plugins.build_log_hooks. BaseBuildLogHook
versioneer	rebasehelper. versioneers	rebasehelper.plugins.versioneers. BaseVersioneer

Example

Listing 1: my_spec_hook/__init__.py

```
from rebasehelper.plugins.spec_hooks import BaseSpecHook

class MySpecHook(BaseSpecHook):

    NAME = 'MySpecHook'

    @classmethod
```

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```
def get_name(cls):
    return cls.NAME

@classmethod
def run(cls, spec_file, rebase_spec_file):
    """
    This method is called after original SPEC file is processed

    :param spec_file: SpecFile object representing original SPEC file
    :param rebase_spec_file: SpecFile object representing rebased SPEC file
    """
    rebase_spec_file.spec_content.section('%package').insert(0, '# processed by {}'
→\n.format(cls.NAME))
    rebase_spec_file.save()
```

Listing 2: setup.py

```
from setuptools import setup

setup(
    name='MySpecHook',
    version='0.1',
    description='Custom SPEC hook for rebase-helper',
    author='John Doe',
    install_requires=['rebasehelper>=0.10.0'],
    packages=['my_spec_hook'],
    entry_points={
        'rebasehelper.spec_hooks': ['my_spec_hook = my_spec_hook:MySpecHook']
    }
)
```

5.2 API

5.2.1 Helpers

Console helper module

class rebasehelper.helpers.console_helper.**ConsoleHelper**
Class for interacting with the command line.

class Capturer(*stdout=False, stderr=False*)
ContextManager for capturing stdout/stderr

static color_is_light(*rgb, bit_width*)
Determines whether a color is light or dark.

Parameters

- **rgb** (*tuple*) – RGB tuple.
- **bit_width** – Number of bits defining the RGB.

Returns Whether a color is light or dark.

Return type bool

```
classmethod cprint(message, fg=None, bg=None, style=None)
    Prints colored output if possible.
```

Parameters

- **message** (*str*) – String to be printed out.
- **fg** (*str*) – Foreground color.
- **bg** (*str*) – Background color.
- **style** (*str*) – Style to be applied to the printed message. Possible styles: bold, faint, italic, underline, blink, blink2, negative, concealed, crossed. Some styles may not be supported by every terminal, e.g. ‘blink’. Multiple styles should be connected with a ‘+’, e.g. ‘bold+italic’.

```
static detect_background()
```

Detects terminal background color and decides whether it is light or dark.

Returns Whether to use dark or light color scheme.

Return type str

```
static exchange_control_sequence(query, timeout=0.05)
```

Captures a response of a control sequence from STDIN.

Parameters

- **query** (*str*) – Control sequence.
- **timeout** (*int, float*) – Time given to the terminal to react.

Returns Response of the terminal.

Return type str

```
static parse_rgb_device_specification(specification)
```

Parses RGB device specification.

Parameters **specification** (*str*) – RGB device specification.

Returns If the specification follows correct format, the first element is RGB tuple and the second is bit width of the RGB. Otherwise, both elements are None.

Return type tuple

```
classmethod should_use_colors(conf)
```

Determines whether ANSI colors should be used for CLI output.

Parameters **conf** (*rebasehelper.config.Config*) – Configuration object with arguments from the command line.

Returns Whether colors should be used.

Return type bool

```
use_colors = False
```

Copr helper module

```
class rebasehelper.helpers.copr_helper.CoprHelper
```

```
classmethod build(client, project, srpm)
```

```
classmethod create_project(client, project, chroot, description, instructions)
```

```
classmethod download_build(client, build_id, destination)
classmethod get_build_status(client, build_id)
classmethod get_build_url(client, build_id)
classmethod get_client()
classmethod watch_build(client, build_id)
```

Download helper module

```
class rebasehelper.helpers.download_helper.DownloadHelper
    Class for downloading files and performing HTTP requests.
```

```
static download_file(url, destination_path, blocksize=8192)
    Downloads a file from HTTP, HTTPS or FTP URL.
```

Parameters

- **url** (*str*) – URL to be downloaded.
- **destination_path** (*str*) – Path to where the downloaded file will be stored.
- **blocksize** (*int*) – Block size in bytes.

```
static progress(download_total, downloaded, start_time)
```

Prints current progress and estimated remaining time of a download to the standard output.

Parameters

- **download_total** (*int*) – Total download size in bytes.
- **downloaded** (*int*) – Size of the already downloaded portion of a file in bytes.
- **start_time** (*float*) – Time when the download started in seconds since epoch.

```
static request(url, **kwargs)
```

Performs an HTTP request or an FTP RETR command.

Parameters

- **url** (*str*) – HTTP, HTTPS or FTP URL.
- ****kwargs** – Keyword arguments to be passed to requests.session.get().

Returns Response object.

Return type requests.Response

Git helper module

```
class rebasehelper.helpers.git_helper.GitHelper
    Class which operates with git repositories
```

```
GIT_USER_EMAIL = 'rebase-helper@localhost.local'
GIT_USER_NAME = 'rebase-helper'

classmethod get_email()
classmethod get_user()
classmethod run_mergetool(repo)
```

Input helper module

```
class rebasehelper.helpers.input_helper.InputHelper
    Class for command line interaction with the user.
```

```
static get_message (message, default_yes=True, any_input=False)
    Prompts a user with yes/no message and gets the response.
```

Parameters

- **message** (*str*) – Prompt string.
- **default_yes** (*bool*) – If the default value should be YES.
- **any_input** (*bool*) – Whether to return default value regardless of input.

Returns True or False, based on user's input.

Return type bool

Koji Helper module

```
class rebasehelper.helpers.koji_helper.KojiHelper
```

```
classmethod create_session (login=False, profile='koji')
    Creates new Koji session and immediately logs in to a Koji hub.
```

Parameters

- **login** (*bool*) – Whether to perform a login.
- **profile** (*str*) – Koji profile to use.

Returns Newly created session instance.

Return type koji.ClientSession

Raises RebaseHelperError – If login failed.

```
classmethod display_task_results (tasks)
```

Prints states of Koji tasks.

Parameters **tasks** (*list*) – List of koji.TaskWatcher instances.

```
classmethod download_build (session, build_id, destination, arches)
```

Downloads RPMs and logs of a Koji build.

Parameters

- **session** (*koji.ClientSession*) – Active Koji session instance.
- **build_id** (*str*) – Koji build ID.
- **destination** (*str*) – Path where to download files to.
- **arches** (*list*) – List of architectures to be downloaded.

Returns List of downloaded RPMs and list of downloaded logs.

Return type tuple

Raises DownloadError – If download failed.

```
classmethod download_task_results (session, tasklist, destination)
```

Downloads packages and logs of finished Koji tasks.

Parameters

- **session** (*koji.ClientSession*) – Active Koji session instance.
- **tasklist** (*list*) – List of task IDs.
- **destination** (*str*) – Path where to download files to.

Returns List of downloaded RPMs and list of downloaded logs.

Return type tuple

Raises DownloadError – If download failed.

functional = False

classmethod get_build(*session, package, version*)

Looks up Koji build of a specific version of a package.

Parameters

- **session** (*koji.ClientSession*) – Active Koji session instance.
- **package** (*str*) – Package name.
- **version** (*str*) – Package version.

Returns Found latest package version and Koji build ID.

Return type tuple

classmethod get_latest_build(*session, package*)

Looks up latest Koji build of a package.

Parameters

- **session** (*koji.ClientSession*) – Active Koji session instance.
- **package** (*str*) – Package name.

Returns Found latest package version and Koji build ID.

Return type tuple

classmethod get_old_build_info(*package_name, package_version*)

Gets old build info from Koji.

Parameters

- **package_name** (*str*) – Package name from specfile.
- **package_version** (*str*) – Package version from specfile.

Returns Koji build id, package version.

Return type tuple

classmethod get_task_url(*session, task_id*)

classmethod upload_srpm(*session, srpm*)

Uploads SRPM to a Koji hub.

Parameters

- **session** (*koji.ClientSession*) – Active Koji session instance.
- **srpm** (*str*) – Valid path to SRPM.

Returns Remote path to the uploaded SRPM.

Return type str

Raises RebaseHelperError – If upload failed.

classmethod **watch_koji_tasks** (*session*, *tasklist*)

Waits for Koji tasks to finish and prints their states.

Parameters

- **session** (*koji.ClientSession*) – Active Koji session instance.
- **tasklist** (*list*) – List of task IDs.

Returns Dictionary mapping task IDs to their states or None if interrupted.

Return type dict

Lookaside cache helper module

class rebasehelper.helpers.lookaside_cache_helper.**LookasideCacheHelper**

Class for downloading files from Fedora/RHEL lookaside cache

classmethod **download** (*tool*, *basepath*, *package*)

rpkg_config_dir = '/etc/rpkg'

classmethod **update_sources** (*tool*, *basepath*, *package*, *old_sources*, *new_sources*, *upload=True*)

Macro helper module

class rebasehelper.helpers.macro_helper.**MacroHelper**

Class for working with RPM macros

MACROS_WHITELIST = ['_bindir', '_datadir', '_includedir', '_infodir', '_initdir', '_li

static dump()

Gets list of all defined macros.

Returns All defined macros.

Return type list

static expand (*s*, *default=None*)

classmethod **expand_macros** (*macros*)

Expands values of multiple macros.

Parameters **macros** (*list*) – List of macros to be expanded, macros are represented as dicts.

Returns List of macros with expanded values.

Return type list

static filter (*macros*, ***kwargs*)

Finds all macros satisfying certain conditions.

Parameters

- **macros** (*list*) – Macros to be filtered.
- ****kwargs** – Filters to be used.

Returns Macros satisfying the conditions.

Return type list

```
classmethod purge_macro(macro: str) → None  
static substitute_path_with_macros(path, macros)  
    Substitutes parts of a path with macros.
```

Parameters

- **path** (*str*) – Path to be changed.
- **macros** (*list*) – Macros which can be used as a substitution.

Returns Path expressed using macros.

Return type str

Path helper module

```
class rebasehelper.helpers.path_helper.PathHelper  
    Class for performing path related tasks.
```

```
static file_available(filename)  
    Checks if the given file exists.
```

Parameters **filename** (*str*) – Path to the file.

Returns Whether the file exists.

Return type bool

```
static find_all_files(top_path, pattern)  
    Recursively searches for all files matching the given pattern.
```

Parameters

- **top_path** (*str*) – Directory where to start the search.
- **pattern** (*str*) – Filename pattern.

Returns List containing absolute paths to all found files.

Return type list

```
static find_all_files_current_dir(top_path, pattern)  
    Searches for all files that match the given pattern inside a directory.
```

Parameters

- **top_path** (*str*) – Directory where to start the search.
- **pattern** (*str*) – Filename pattern.

Returns List containing absolute paths to all found files.

Return type list

```
static find_first_dir_with_file(top_path, pattern)  
    Recursively searches for a directory containing a file that matches the given pattern.
```

Parameters

- **top_path** (*str*) – Directory where to start the search.
- **pattern** (*str*) – Filename pattern.

Returns Full path to the directory containing the first occurrence of the searched file. None if there is no file matching the pattern.

Return type str

```
static find_first_file(top_path, pattern, recursion_level=None)
```

Recursively searches for a file that matches the given pattern.

Parameters

- **top_path** (str) – Directory where to start the search.
- **pattern** (str) – Filename pattern.
- **recursion_level** (int) – How deep in the directory tree the search can go.

Returns Path to the file matching the pattern or None if there is no file matching the pattern.

Return type str

```
static get_temp_dir()
```

Creates a new temporary directory.

Returns Path to the created directory.

Return type str

Process helper module

```
class rebasehelper.helpers.process_helper.ProcessHelper
```

Class for executing subprocesses.

```
DEV_NULL = '/dev/null'
```

```
static run_subprocess(cmd, input_file=None, output_file=None, ignore_stderr=False)
```

Runs the specified command in a subprocess.

Parameters

- **cmd** (iterable) – A sequence of program arguments.
- **input_file** (str, typing.BytesIO) – File to read the input from.
- **output_file** (str, typing.BytesIO) – File to write the output of the command to.
- **ignore_stderr** (bool) – Whether to ignore stderr output.

Returns Exit code of the subprocess.

Return type int

```
static run_subprocess_cwd(cmd, cwd=None, input_file=None, output_file=None, ignore_stderr=False, shell=False)
```

Runs the specified command in a subprocess in a different working directory.

Parameters

- **cmd** (iterable) – A sequence of program arguments.
- **cwd** (str) – Working directory for the command.
- **input_file** (str, typing.BytesIO) – File to read the input from.
- **output_file** (str, typing.BytesIO) – File to write the output of the command to.

- **ignore_stderr** (*bool*) – Whether to ignore stderr output.
- **shell** (*bool*) – Whether to run the command in a shell.

Returns Exit code of the subprocess.

Return type int

```
static run_subprocess_cwd_env(cmd, cwd=None, env=None, input_file=None, out-
                               put_file=None, ignore_stderr=False, shell=False)
```

Runs the specified command in a subprocess in a different working directory with a redefined environment.

Parameters

- **cmd** (*iterable*) – A sequence of program arguments.
- **cwd** (*str*) – Working directory for the command.
- **env** (*dict*) – Environment variables for the new process.
- **input_file** (*str, typing.BytesIO*) – File to read the input from.
- **output_file** (*str, typing.BytesIO*) – File to write the output of the command to.
- **ignore_stderr** (*bool*) – Whether to ignore stderr output.
- **shell** (*bool*) – Whether to run the command in a shell.

Returns Exit code of the subprocess.

Return type int

```
static run_subprocess_env(cmd, env=None, input_file=None, output_file=None, ig-
                          nore_stderr=False, shell=False)
```

Runs the specified command in a subprocess with a redefined environment.

Parameters

- **cmd** (*iterable*) – A sequence of program arguments.
- **env** (*dict*) – Environment variables for the new process.
- **input_file** (*str, typing.BytesIO*) – File to read the input from.
- **output_file** (*str, typing.BytesIO*) – File to write the output of the command to.
- **ignore_stderr** (*bool*) – Whether to ignore stderr output.
- **shell** (*bool*) – Whether to run the command in a shell.

Returns Exit code of the subprocess.

Return type int

RPM helper module

```
class rebasehelper.helpers.rpm_helper.RpmHelper
```

Class for working with RPM database and packages.

```
ARCHES = []
```

```
static all_packages_installed(pkg_names=None)
```

Checks if all specified packages are installed.

Parameters **pkg_names** (*list*) – List of package names to check.

Returns True if all packages are installed, False otherwise.

Return type bool

```
classmethod decode (data)
```

static get_arches ()
Gets list of all known architectures

```
static get_header_from_rpm (rpm_name)
```

Gets an RPM header from the given RPM package.

Parameters rpm_name (str) – Path to the package.

Returns Header object obtained from the package.

Return type rpm.hdr

Returns

```
classmethod get_info_from_rpm (rpm_name, info)
```

Gets package name from an RPM file.

Parameters

- rpm_name (str) – Path to the file.
- info (bool) – Which part of the RPM header to return.

Returns Package name obtained from the RPM file.

Return type str

Returns

```
classmethod get_rpm_spec (path) → <sphinx.ext.autodoc.importer._MockObject object at 0x7f7f1e274b70>
```

```
static install_build_dependencies (spec_path=None, assume_yes=False)
```

Installs build dependencies of a package using dnf.

Parameters

- spec_path (str) – Absolute path to the SPEC file.
- assume_yes (bool) – Whether to automatically answer ‘yes’ to all questions.

Returns Exit code of the subprocess run.

Return type int

```
static is_package_installed (pkg_name=None)
```

Checks whether a package is installed.

Parameters pkg_name (str) – Name of the package.

Returns Whether the package is installed.

Return type bool

```
classmethod parse_spec (path, flags=None)
```

```
classmethod split_nevra (s)
```

Splits string into name, epoch, version, release and arch components

5.2.2 Plugins

Build Log Hooks package

```
class rebasehelper.plugins.build_log_hooks.__init__.BaseBuildLogHook
    Base class for a build log hook.
```

CATEGORIES = []

classmethod format(data)

Formats build log hook output to a readable text form.

classmethod merge_two_results(old, new)

classmethod run(spec_file, rebase_spec_file, results_dir, **kwargs)

Runs the build log hook.

Parameters

- **spec_file** (rebasehelper.specfile.SpecFile) – Original SpecFile object.
- **rebase_spec_file** (rebasehelper.specfile.SpecFile) – Rebased SpecFile object.
- **kwargs** (dict) – Keyword arguments from instance of Application.

Returns The first element is a dict containing changes, the second is a bool whether the build process should be restarted.

Return type tuple

```
class rebasehelper.plugins.build_log_hooks.__init__.BuildLogHookCollection(entrypoint:
    str,
    manager:
        Plug-
        in-
        Man-
        ager)
```

run(spec_file, rebase_spec_file, non_interactive, force_build_log_hooks, **kwargs)
 Runs all non-blacklisted build log hooks.

Parameters

- **spec_file** (rebasehelper.specfile.SpecFile) – Original SpecFile object.
- **rebase_spec_file** (rebasehelper.specfile.SpecFile) – Rebased SpecFile object.
- **non_interactive** (bool) – Whether rebase-helper is in non-interactive mode.
- **force_build_log_hooks** (bool) – Whether to run the hooks even in non-interactive mode.
- **kwargs** (dict) – Keyword arguments from instance of Application.

Returns Whether build log hooks made some changes to the SPEC file.

Return type bool

Build Tools package

```
class rebasehelper.plugins.build_tools.__init__.BuildTemporaryEnvironment(sources,
patches,
spec,
re-
sults_dir)
```

Class representing temporary environment.

```
TEMPDIR_RESULTS = 'TEMPDIR_RESULTS'
TEMPDIR_SOURCES = 'TEMPDIR_SOURCES'
TEMPDIR_SPEC = 'TEMPDIR_SPEC'
TEMPDIR_SPECS = 'TEMPDIR_SPECS'
```

```
class rebasehelper.plugins.build_tools.__init__.MockTemporaryEnvironment(sources,
patches,
spec,
re-
sults_dir)
```

Class representing temporary environment for MockBuildTool.

```
class rebasehelper.plugins.build_tools.__init__.RpmbuildTemporaryEnvironment(sources,
patches,
spec,
re-
sults_dir)
```

Class representing temporary environment for RpmbuildBuildTool.

```
TEMPDIR_BUILD = 'TEMPDIR_BUILD'
TEMPDIR_BUILDROOT = 'TEMPDIR_BUILDROOT'
TEMPDIR_RPMBUILD = 'TEMPDIR_RPMBUILD'
TEMPDIR_RPMS = 'TEMPDIR_RPMS'
TEMPDIR_SRPMs = 'TEMPDIR_SRPMs'
```

```
rebasehelper.plugins.build_tools.__init__.check_mock_privileges() → bool
```

Checkers package

```
class rebasehelper.plugins.checkers.__init__.BaseChecker
```

Base class of package checkers.

DEFAULT

If True, the checker is run by default.

Type bool

CATEGORY

Category which determines when the checker is run.

Type *CheckerCategory*

results_dir

Path where the results are stored.

Type str

```
CATEGORY = None
DEFAULT = False

classmethod format(data)
    Formats checker output to a readable text form.

classmethod get_category()
classmethod get_checker_output_dir_short()
    Return short version of checker output directory

classmethod get_important_changes(checker_output)
    Each checker has an opportunity to highlight some of its output. This function is optional, as not all checkers provide output with critical information.

    Parameters checker_output (dict) – Dictionary with output from the given checker.

    Returns List of strings to be output to CLI as warning messages.

    Return type list

classmethod get_underlined_title(text, separator='=')

classmethod is_available()
results_dir = None

classmethod run_check(results_dir, **kwargs)
    Perform the check itself and return results.

class rebasehelper.plugins.checkers.__init__.CheckerCategory
An enumeration.

RPM = 3
SOURCE = 1
SRPM = 2

class rebasehelper.plugins.checkers.__init__.CheckerCollection(entrypoint: str,
                                                               manager: PluginManager)
    Class representing the process of running various checkers on final packages.

    get_default_plugins(return_one: bool = False) → Union[List[Type[rebasehelper.plugins.plugin.Plugin]],
                                                          Type[rebasehelper.plugins.plugin.Plugin]]
    get_supported_plugins() → List[Type[rebasehelper.plugins.plugin.Plugin]]
    run(results_dir: str, checker_name: str, **kwargs) → Optional[Dict[str, Any]]
        Runs a particular checker and returns the results.

    Parameters
        • results_dir – Path to a directory in which the checker should store the results.
        • checker_name – Name of the checker to be run.

    Raises NotImplementedError – If a checker with the given name doesn't exist.

    Returns Results of the checker.
```

Output Tools package

```
class rebasehelper.plugins.output_tools.__init__.BaseOutputTool
    Base class for OutputTools. print_cli_summary must be overridden in order to produce different CLI output

    DEFAULT = False
    EXTENSION = ''

    classmethod get_report_path(app)
    classmethod prepend_results_dir_name(*path_members)
    classmethod print_cli_summary(app)
        Print report of the rebase

        Parameters app – Application instance

    classmethod print_important_checkers_output()
        Iterates over all checkers output to highlight important checkers warning

    classmethod print_patches_cli()
        Print info about patches

    classmethod print_patches_section_cli(logger_method, patch_type)
        Print info about one of the patches key section

        Parameters
            • logger_method – method to be used for logging
            • patch_type – string containing key for the patch_dict

    classmethod print_report_file_path()
        Print path to the report file

    classmethod run(logs, app)

class rebasehelper.plugins.output_tools.__init__.OutputToolCollection(entrypoint:
    str,
    manager:
    Plug-
    in-
    Manager)
```

Class representing the process of running various output tools.

run(tool, logs=None, app=None)
Runs specified output tool.

Parameters

- **tool**(str) – Tool to run.
- **logs**(list) – Build logs containing information about the failed rebase.
- **app**(rebasehelper.application.Application) – Application class instance.

Plugin Collection module

```
class rebasehelper.plugins.plugin_collection.PluginCollection(entrypoint: str,
                                                               manager: PluginManager)

get_all_plugins() → List[Type[rebasehelper.plugins.plugin.Plugin]]
get_default_plugins(return_one: bool = False) → Union[Type[rebasehelper.plugins.plugin.Plugin],
                                                       List[Type[rebasehelper.plugins.plugin.Plugin]]]
get_options() → List[Union[Dict[str, Any], List[Dict[str, Any]]]]
Gets options of all plugins of one type.

    Returns List of plugins' options.

    Return type list

get_plugin(tool: str) → Type[rebasehelper.plugins.plugin.Plugin]
get_supported_plugins() → List[Type[rebasehelper.plugins.plugin.Plugin]]
```

Plugin Manager module

```
class rebasehelper.plugins.plugin_manager.PluginManager

COLLECTIONS = [<class 'rebasehelper.plugins.build_log_hooks.BuildLogHookCollection'>, ...]

get_options()
Gets options of all plugins.

    Returns List of plugins' options.

    Return type list
```

RPM Build Tools package

```
class rebasehelper.plugins.build_tools.rpm.__init__.BuildToolBase
Build tool base class.

DEFAULT
If True, the build tool is default tool.

    Type bool

ACCEPTS_OPTIONS
If True, the build tool accepts additional options passed via --builder-options.

    Type bool

CREATES_TASKS
If True, the build tool creates remote tasks.

    Type bool

ACCEPTS_OPTIONS = False
CREATES_TASKS = False
DEFAULT = False
```

```
classmethod build(spec, results_dir, srpm, **kwargs)
```

Build binaries from the sources.

Keyword arguments: spec – path to a SPEC file sources – list with absolute paths to SOURCES patches – list with absolute paths to PATCHES results_dir – path to DIR where results should be stored

Returns: dict with: ‘srpm’ -> absolute path to SRPM ‘rpm’ -> list of absolute paths to RPMs ‘logs’ -> list of absolute paths to logs

```
static get_builder_options(**kwargs)
```

classmethod get_detached_task(task_id, results_dir)

Gets packages and logs for specified task

Parameters

- **task_id** – detached task id
 - **results_dir** – path to DIR where results should be stored

Returns tuple with: list of absolute paths to RPMs list of absolute paths to logs

```
classmethod get_logs()
```

Get logs from previously failed build Returns: dict with 'logs' -> list of absolute paths to logs

```
classmethod get_task_info(build_dict)
```

`get-task` Gets information about detached remote task

Parameters build dict – build data

Returns task info

classmethod **prepare**(*spec, conf*)

Prepare for building.

Parameters **spec** = spec file or

— 1 —

WaitUntilTaskFinished(*start_time*, *task_id*, *results_dir*)

Waits until specified task is finished

Parameters

- `build_dict` – build data
 - `results_dir` – path to DIR where results should be stored

Returns tuple with: list of absolute paths to RFMs list of absolute paths to logs

```
class Tebasenhelper.plugins.BuildToolsIpm.__init__.BuildToolsCollection(entrypoint,
    str,
    manager:
    Plug-
    in-
    Man-
    ager)
```

Collection of RPM build tools.

SPEC Hooks package

```
class rebasehelper.plugins.spec_hooks.__init__.BaseSpecHook  
    Base class for a spec hook
```

CATEGORIES = []

```
classmethod run(spec_file, rebase_spec_file, **kwargs)
    Runs a spec hook.
```

Parameters

- **spec_file** – Original spec file object
- **rebase_spec_file** – Rebased spec file object
- **kwargs** – Keyword arguments from Application instance

```
class rebasehelper.plugins.spec_hooks.__init__.SpecHookCollection(entrypoint:
    str, manager:
    PluginManager)
```

Class representing the process of running various spec file hooks.

```
run(spec_file, rebase_spec_file, **kwargs)
    Runs all non-blacklisted spec hooks.
```

Parameters

- **spec_file** (`rebasehelper.specfile.SpecFile`) – Original SpecFile object.
- **rebase_spec_file** (`rebasehelper.specfile.SpecFile`) – Rebased SpecFile object.
- ****kwargs** – Keyword arguments from Application instance.

SRPM Build Tools package

```
class rebasehelper.plugins.build_tools.srpm.__init__.SRPMBuildToolBase
SRPM build tool base class.
```

DEFAULT

If True, the build tool is default tool.

Type bool

DEFAULT = False

```
classmethod build(spec, results_dir, **kwargs)
Build SRPM with chosen SRPM Build Tool
```

Parameters

- **spec** – SpecFile object
- **results_dir** – absolute path to DIR where results should be stored

Returns absolute path to SRPM, list with absolute paths to logs

```
classmethod get_logs()
```

Get logs from previously failed build Returns: dict with ‘logs’ -> list of absolute paths to logs

```
static get_srpm_builder_options(**kwargs)
```

```
class rebasehelper.plugins.build_tools.srpm.__init__.SRPMBuildToolCollection(entrypoint:
    str,
    manager:
    Plug-
    in-
    Man-
    ager)
```

Collection of SRPM build tools.

Versioneers package

```
class rebasehelper.plugins.versioneers.__init__.BaseVersioneer
```

Base class for a versioneer

CATEGORIES = []

```
classmethod run(package_name)
```

Runs a versioneer.

Parameters **package_name** – Name of a package

Returns Latest upstream version of a package

```
class rebasehelper.plugins.versioneers.__init__.VersioneerCollection(entrypoint:
    str,
    man-
    ager:
    Plug-
    inMan-
    ager)
```

```
run(versioneer, package_name, category, versioneer_blacklist=None)
```

Runs the specified versioneer or all versioneers subsequently until one of them succeeds.

Parameters

- **versioneer** (*str*) – Name of a versioneer.
- **package_name** (*str*) – Name of a package.
- **category** (*str*) – Package category.
- **versioneer_blacklist** (*list*) – List of versioneers that will be skipped.

Returns Latest upstream version of a package.

Return type str

5.2.3 Application module

```
class rebasehelper.application.Application(cli_conf, execution_dir, results_dir, deb-
bug_log_file)
```

```
apply_changes()
```

```
build_binary_packages()
```

Function calls build class for building packages

```
build_source_packages()
```

```
debug_log_file = None

static extract_archive(archive_path, destination)
    Extracts given archive into the destination and handle all exceptions.

    Parameters
        • archive_path – path to the archive to be extracted
        • destination – path to a destination, where the archive should be extracted to

    Returns

static extract_sources(archive_path, destination)
    Function extracts a given Archive and returns a full dirname to sources

generate_patch()
    Generates patch to the results_dir containing all needed changes for the rebased package version

get_all_log_files()
    Function returns all log_files created by rebase-helper First if debug log file and second is report summary
    log file

    Returns

    get_checker_outputs()
    get_new_build_logs()
    get_rebased_patches()
        Function returns a list of patches either ``: [list_of_deleted_patches] :return:

    get_rebasehelper_data()
    get_rpm_packages(dirname)
        Function returns RPM packages stored in dirname/old and dirname/new directories

    Parameters dirname – directory where are stored old and new RPMS

    Returns

    kwargs = {}
    new_rest_sources = []
    new_sources = ''
    old_rest_sources = []
    old_sources = ''
    patch_sources(sources)
    prepare_next_run(results_dir)
    prepare_sources()
        Function prepares a sources.

    Returns

    print_summary(exception=None)
        Save rebase-helper result and print the summary using output tools. :param exception: Error message from
        rebase-helper :return:

    print_task_info(builder)
    rebase_spec_file = None
```

```

rebase_spec_file_path = None
rebased_patches = {}
rebased_repo = None
report_log_file = None
result_file = ''
run()
run_package_checkers(results_dir, **kwargs)
    Runs checkers on packages and stores results in a given directory.

```

Parameters

- **results_dir** (*str*) – Path to directory in which to store the results.
- **category** (*str*) – checker type(SOURCE/SRPM/RPM)

Returns None

```
static setup(cli_conf)
```

```
static setup_logging(results_dir)
```

Adds file handlers of various verbosity to loggers.

Parameters **results_dir** – Path to directory which results are stored in.

Returns Path to debug log.

Return type string

```
spec_file = None
```

```
spec_file_path = None
```

```
temp_dir = ''
```

5.2.4 Archive module

```
class rebasehelper.archive.Archive(filename=None)
```

Class representing an archive with sources

```
extract_archive(path=None)
```

Extracts the archive into the given path

Parameters **path** – Path where to extract the archive to.

Returns

```
classmethod get_supported_archives()
```

Return list of supported archive types

```
class rebasehelper.archive.ArchiveTypeBase
```

Base class for various archive types

```
EXTENSION = ''
```

```
classmethod extract(archive=None, filename=None, path=None)
```

Extracts the archive into the given path

Parameters **path** – Path where to extract the archive to.

Returns

```
classmethod match (filename=None)
```

Checks if the filename matches the archive type. If yes, returns True, otherwise returns False.

```
classmethod open (filename=None)
```

Opens archive with the given filename and returns the proper archive type object.

```
class rebasehelper.archive.Bz2ArchiveType
```

.bz2 archive type

```
EXTENSION = '.bz2'
```

```
classmethod extract (archive=None, filename=None, path=None)
```

Extracts the archive into the given path

Parameters `path` – Path where to extract the archive to.

Returns

```
classmethod open (filename=None)
```

Opens archive with the given filename and returns the proper archive type object.

```
class rebasehelper.archive.CratePseudoArchiveType
```

Class representing .crate pseudoarchive (Rust packages).

```
EXTENSION = '.crate'
```

```
classmethod extract (archive=None, filename=None, path=None)
```

Extracts the archive into the given path

Parameters `path` – Path where to extract the archive to.

Returns

```
classmethod open (filename=None)
```

Opens archive with the given filename and returns the proper archive type object.

```
class rebasehelper.archive.GemPseudoArchiveType
```

.gem files are not archives - this is a pseudo type

```
EXTENSION = '.gem'
```

```
classmethod extract (archive=None, filename=None, path=None)
```

Extracts the archive into the given path

Parameters `path` – Path where to extract the archive to.

Returns

```
classmethod open (filename=None)
```

Opens archive with the given filename and returns the proper archive type object.

```
class rebasehelper.archive.TarArchiveType
```

.tar archive type

```
EXTENSION = '.tar'
```

```
class rebasehelper.archive.TarBz2ArchiveType
```

.tar.bz2 archive type

```
EXTENSION = '.tar.bz2'
```

```
class rebasehelper.archive.TarGzArchiveType
```

.tar.gz archive type

```
EXTENSION = '.tar.gz'
```

```
classmethod extract (archive=None, filename=None, path=None)
    Extracts the archive into the given path

    Parameters path – Path where to extract the archive to.

    Returns

classmethod open (filename=None)
    Opens archive with the given filename and returns the proper archive type object.

class rebasehelper.archive.TarXzArchiveType
    .tar.xz archive type

    EXTENSION = '.tar.xz'

classmethod extract (archive=None, filename=None, path=None)
    Extracts the archive into the given path

    Parameters path – Path where to extract the archive to.

    Returns

classmethod open (filename=None)
    Opens archive with the given filename and returns the proper archive type object.

class rebasehelper.archive.TgzArchiveType
    .tgz archive type

    EXTENSION = '.tgz'

class rebasehelper.archive.ZipArchiveType
    .zip archive type

    EXTENSION = '.zip'

classmethod extract (archive=None, filename=None, path=None)
    Extracts the archive into the given path

    Parameters path – Path where to extract the archive to.

    Returns

classmethod match (filename=None)
    Checks if the filename matches the archive type. If yes, returns True, otherwise returns False.

classmethod open (filename=None)
    Opens archive with the given filename and returns the proper archive type object.

rebasehelper.archive.register_archive_type (archive)
```

5.2.5 CLI module

```
class rebasehelper.cli.CLI (args=None)
    Class for processing data from commandline

    static build_parser (available_choices_only=False)

class rebasehelper.cli.CliHelper

    static run ()
```

5.2.6 Exception module

```
exception rebasehelper.exceptions.BinaryPackageBuildError(*args, **kwargs)
    Error indicating failure during the build of binary package.

exception rebasehelper.exceptions.CheckerNotFoundError
    Error indicating not being able to find checker binary.

exception rebasehelper.exceptions.DownloadError
    Exception indicating that download of a file failed.

exception rebasehelper.exceptions.LookasideCacheError
    Exception indicating a problem in accessing lookaside cache.

exception rebasehelper.exceptions.ParseError

exception rebasehelper.exceptions.RebaseHelperError(*args, **kwargs)
    Class representing Error raised inside rebase-helper after intentionally catching some expected and well known
    exception/error.

exception rebasehelper.exceptions.SourcePackageBuildError(*args, **kwargs)
    Error indicating failure during the build of source package
```

5.2.7 Logger module

```
class rebasehelper.logger.ColorizingStreamHandler(stream=None)

    colors = {'dark': {10: {'bg': 'default', 'fg': 'brightblack', 'style': None}, 11:
        emit(record)
            Emit a record.

        If a formatter is specified, it is used to format the record. The record is then written to the stream with a
        trailing newline. If exception information is present, it is formatted using traceback.print_exception and
        appended to the stream. If the stream has an 'encoding' attribute, it is used to determine how to do the
        output to the stream.

    set_terminal_background(background)
        terminal_background = 'dark'

    class rebasehelper.logger.CustomLogger(name, level=0)

        HEADING = 26
        IMPORTANT = 27
        SUCCESS = 25
        TRACE = 11
        VERBOSE = 12

    class rebasehelper.logger.LoggerHelper
        Helper class for setting up a logger

        static add_file_handler(logger_object, path, formatter_object=None, level=None)
            Adds file handler to the given logger.
```

Parameters

- **logger_object** (*logging.Logger*) – Logger object to add the handler to.
- **path** (*str*) – Path to a log file.
- **formatter_object** (*logging.Formatter*) – Formatter object used to format logged messages.
- **level** (*int*) – Severity threshold.

Returns Created file handler instance.

Return type *logging.FileHandler*

static add_stream_handler (*logger_object*, *level=None*, *formatter_object=None*)

Adds stream handler to the given logger.

Parameters

- **logger_object** (*logging.Logger*) – Logger object to add the handler to.
- **level** (*int*) – Severity threshold.
- **formatter_object** (*logging.Formatter*) – Formatter object used to format logged messages.

Returns Created stream handler instance.

Return type *logging.StreamHandler*

static get_basic_logger (*logger_name*, *level=10*)

Sets up a basic logger without any handler.

Parameters

- **logger_name** (*str*) – Logger name.
- **level** (*int*) – Severity threshold.

Returns Created logger instance.

Return type *logging.Logger*

5.2.8 Patcher module

class *rebasehelper.patcher.Patcher*

Class for git command used for patching old and new sources

classmethod apply_old_patches()

Function applies a patch to a old/new sources

classmethod apply_patch (*repo*, *patch_object*)

Function applies patches to old sources It tries apply patch with am command and if it fails then with command –apply

static decorate_patch_name (*patch_name*)

classmethod extract_patch_name (*message*)

classmethod init_git (*directory*)

Function initialize old and new Git repository

classmethod insert_patch_name (*message*, *patch_name*)

new_repo = None

new_sources = None

```
non_interactive = False
old_repo = None
old_sources = None
output_data = None

@classmethod def patch(old_dir, new_dir, rest_sources, patches, **kwargs):
    The function can be used for patching one directory against another
    patches = []
    source_dir = None
    @classmethod def strip_patch_name(diff, patch_name)
```

5.2.9 Specfile module

```
class rebasehelper.specfile.PackageCategory
    An enumeration.

    R = re.compile('^R-')
    haskell = re.compile('^ghc-')
    nodejs = re.compile('^nodejs-')
    perl = re.compile('^perl-')
    php = re.compile('^php-')
    python = re.compile('^python[23]?-')
    ruby = re.compile('^rubygem-')
    rust = re.compile('^rust-')

class rebasehelper.specfile.PatchList

class rebasehelper.specfile.PatchObject(path, index, strip)
    Class represents set of information about patches

    get_patch_name()

class rebasehelper.specfile.SpecContent(content)
    Class representing content of a SPEC file.

    DISALLOW_INLINE_COMMENTS = ['%package', '%patchlist', '%sourcelist', '%description', ...]
    SECTION_HEADERS = ['%package', '%prep', '%build', '%install', '%check', '%clean', '%pr...']

    @classmethod def get_comment_span(line: str, section: str) → Tuple[int, int]
        Gets span of a comment depending on the section.
```

Parameters

- **line** – Line to find the comment in.
- **section** – Section the line is in.

Returns Span of the comment. If no comment is found, both tuple elements are equal to the length of the line for convenient use in a slice.

replace_section(*name, content*)

Replaces content of a section.

In case there are multiple sections with the same name, the first one is replaced.

Parameters

- **name** (*str*) – Section name.
- **content** (*list*) – Section content as a list of lines.

Returns False if section was not found else True.

Return type bool

section(*name*)

Gets content of a section.

In case there are multiple sections with the same name, the first one is returned.

Parameters **name** (*str*) – Section name.

Returns Section content as a list of lines.

Return type list

class rebasehelper.specfile.SpecFile(*path: str, sources_location: str = ''*)

Class representing a SPEC file

copy(*new_path*)

Creates a copy of the current object and copies the SPEC file to a new location.

Parameters **new_path** (*str*) – Path to copy the new SPEC file to.

Returns The created SpecFile instance.

Return type SpecFile

download_remote_sources()

Method that iterates over all sources and downloads ones, which contain URL instead of just a file.

Returns None

static extract_version_from_archive_name(*archive_path, source_string=''*)

Method extracts the version from archive name based on the source string from SPEC file. It extracts also an extra version such as ‘b1’, ‘rc1’, ...

Parameters

- **archive_path** – archive name or path with archive name from which to extract the version
- **source_string** – Source string from SPEC file used to construct version extraction regex

Returns tuple of strings with (extracted version, extra version) or (None, None) if extraction failed

find_archive_target_in_prep(*archive*)

Tries to find a command that is used to extract the specified archive and attempts to determine target path from it. ‘tar’ and ‘unzip’ commands are supported so far.

Parameters **archive** – Path to archive

Returns Target path relative to builddir or None if not determined

get_NVR()

get_applied_patches()

Method returns list of all applied patches.

Returns list of PatchObject

get_archive()

Method returns the basename of first Source in SPEC file a.k.a. Source0

Returns basename of first Source in SPEC file

Return type str

get_epoch_number() → str

Returns Epoch of the package.

get_extra_version()

Returns an extra version of the package - like b1, rc2, ...

Returns String

get_main_files_section()

Finds the exact name of the main %files section.

Returns Name of the main files section.

Return type str

get_new_log(changelog_entry)

Constructs a new changelog entry.

Parameters `changelog_entry(str)` – Message to use in the entry.

Returns List of lines of the new entry.

Return type list

get_not_used_patches()

Method returns list of all unapplied patches.

Returns list of PatchObject

get_package_name() → str

Returns name of the package.

get_patches()

Method returns list of all applied and not applied patches

Returns list of PatchObject

get_prep_section()

Function returns whole prep section

get_release() → str

Returns the whole release string of the package.

get_release_number()

Method for getting the release of the package

Returns

get_requires() → List[str]

Returns package requirements.

get_setup_dirname()

Get dirname from %setup or %autosetup macro arguments

Returns dirname

get_sources()
Method returns dictionary with local sources list.

Returns list of Sources with absolute path

Return type list of str

static get_subpackage_name(files_section)
Gets subpackage name based on the %files section.

get_version() → str
Returns the package version.

is_test_suite_enabled()
Returns whether test suite is enabled during the build time

Returns True if enabled or False if not

redefine_release_with_macro(*args, **kwargs)

reload()
Reloads the whole Spec file.

revert_redefine_release_with_macro(*args, **kwargs)

save()
Saves changes made to SpecContent and updates the internal state.

set_extra_version(*args, **kwargs)

set_release_number(release)
Method to set release number

Parameters `release` –

Returns

set_tag(*args, **kwargs)

set_version(version)
Method to update the version in the SPEC file

Parameters `version` – string with new version

Returns None

set_version_using_archive(archive_path)
Method to update the version in the SPEC file using a archive path. The version is extracted from the archive name.

Parameters `archive_path` –

Returns

static split_version_string(version_string= "")
Method splits version string into version and possibly extra string as ‘rc1’ or ‘b1’, ...

Parameters `version_string` – version string such as ‘1.1.1’ or ‘1.2.3b1’, ...

Returns tuple of strings with (extracted version, extra version, separator) or (None, None, None) if extraction failed

update_changelog(*args, **kwargs)

update_paths_to_patches(*args, **kwargs)

update_setup_dirname(*args, **kwargs)

```
write_updated_patches (*args, **kwargs)
rebasehelper.specfile.get_rebase_name (dir_name, name)
    Function returns a name in results directory
```

Parameters

- **dir_name** –
- **name** –

Returns full path to results dir with name

```
rebasehelper.specfile.saves (func)
    Decorator for saving the SpecFile after a method is run.
```

5.2.10 Temporary environment module

```
class rebasehelper.temporary_environment.TemporaryEnvironment (exit_callback=None)
    Class representing a temporary environment (directory) that can be used as a workspace.
```

Works as a context manager.

```
TEMPDIR = 'TEMPDIR'
```

```
env ()
```

Gets a copy of _env dictionary.

Returns Copy of _env dictionary.

Return type dict

```
path ()
```

Gets the path to the temporary environment.

Returns Absolute path to the temporary environment.

Return type str

5.3 Change Log

5.3.1 [Unreleased]

5.3.2 [0.16.3] - 2019-05-03

Fixed

- Fixed handling of SPEC files with conditionalized sections
- Fixed **replace-old-version** SPEC hook not to update version in *%changelog* and local sources
- Fixed capturing RPM error output during SPEC parsing
- Fixed handling of absolute *%license* and *%doc* paths in **files** build log hook
- Fixed logging of SRPM and RPM build errors

Changed

- Updated packit configuration for packit 0.2.0
- Adapted to upcoming change in RPM python API
- Made SpecFile class more suitable for external use

5.3.3 [0.16.2] - 2019-03-07

Added

- Added support for packit
- Added SPEC hook for replacing old version string

Fixed

- Fixed documentation building by mocking requests-gssapi
- Fixed TestOutputTool for checkers

Changed

- Build log hooks are now run only if build of **new** binary packages fails
- It is now possible to use --get-old-build-from-koji option without FAS

5.3.4 [0.16.1] - 2019-02-28

Fixed

- Made GitPatchTool auto-skip empty commits caused by new rebase implementation in git 2.20
- Fixed TestGitHelper to work on real systems with existing git configuration

5.3.5 [0.16.0] - 2019-02-27

Added

- Added category for *R* packages
- Added make test-podman as an alternative to make test-docker
- Added --skip-upload option (to be used in conjunction with --update-sources)
- Added check that all sources for the new version are present
- Added SPEC hook for escaping macros in comments

Changed

- `--get-old-build-from-koji` now tries to get specific version build (as opposed to the latest one)
- Implemented parsing of multiline macros and shell expansions in SPEC files
- **rebase-helper** can now handle multiline enquoted strings in `%prep` section
- Refactored `GitPatchTool` to make the rebase process more robust and to preserve as much of the original downstream patches as possible
- `git mergetool` is now run again if there are some unresolved conflicts left
- Associated comments are now removed along with patches

Fixed

- Fixed populating list of logs on build failures
- Added missing abort after failed `git am`
- Fixed processing SPEC files without `%prep` section
- Fixed several issues in **ruby-helper** SPEC hook
- Fixed unwanted expansion of `%autosetup` macro
- Fixed automatic rebulding based on build log hooks result
- Fixed removal of `%doc` and `%license` files in subpackages

Removed

- Removed `requests-kerberos` support and switched to `requests-gssapi` exclusively

5.3.6 [0.15.0] - 2018-12-21

Added

- Implemented build log hooks and added `files` hook to detect and fix missing/unpackaged files

Changed

- Refactored and simplified all plugins

Fixed

- Fixed not listing all argument choices while generating documentation
- Fixed error in parsing `rpmdiff` output
- Fixed insertion of extra blank lines to a SPEC file after removing patches

Removed

- Removed unneeded packages from base Docker image

5.3.7 [0.14.0] - 2018-10-04

Added

- Added **PathsToRPMMacros** SPEC hook for transforming paths in `%files` section
- Added `--favor-on-conflict` option to prefer upstream or downstream changes with conflicting patches

Changed

- Extended **PyPIURLFix** SPEC hook to incorporate the new <https://pypi.org> website
- Made processing of patches in a SPEC file more robust
- Rewritten functional test to use an artificial package designed to check most aspects of the rebase process
- `pylint` is now run with Python 3 only, as Python 2 variant is no longer supported
- Code refactoring, simplified `SpecFile` class
- Checkers are no longer required for **rebase-helper** to run, only available checkers are used

Fixed

- Fixed bug in **licensecheck** checker when used with `json` output tool
- Fixed SPEC hook tests
- Fixed strangely acting lookaside cache upload progressbar
- Fixed downloading of SRPMs with `--get-old-build-from-koji`
- Fixed building usage documentation

5.3.8 [0.13.2] - 2018-05-18

Added

- Added **licensecheck** checker for detecting license changes
- Added another *not-so-verbose* verbosity level

Changed

- Refactored `utils` module

Fixed

- Fixed **abipkgdiff** detecting changes in only one object file
- Fixed uploads to lookaside cache
- Fixed broken consequent build retries

5.3.9 [0.13.1] - 2018-04-19

Added

- Added `--apply-changes` option to apply `changes.patch` after successful rebase
- Implemented `.gitignore` update with `--update-sources`

Changed

- Extended `README.md`
- Cleaned up constants

Fixed

- Fixed crash after failed rebase when no checkers were run

5.3.10 [0.13.0] - 2018-03-29

Added

- Added possibility to make changes to specfile between build retries
- Added **CommitHashUpdater** SPEC hook
- Added **hackage** versioneer
- Added support for uncompressed tar archives
- Created integration environment for test suite to isolate it from the internet
- Added `--update-sources` option to update `sources` file and upload new sources to lookaside cache

Changed

- Switched to `requests` library for downloads
- Made error messages from **Koji** builds more useful
- Reworked handling of downstream patches
- Changed package build process to build first SRPMs and then RPMs
- Divided checkers into categories running at different phases of rebase
- **Koji** build tool refactored to be better adjustable and extensible
- Colorized **rebase-helper** output and enhanced log messages
- Significantly improved rebase summary and report

Fixed

- Fixed `TestConsoleHelper.test_get_message()` test
- Fixed bug in **rpmdiff** output analysis
- Fixed some code styling errors and a large number of issues found by static analysis

5.3.11 [0.12.0] - 2017-12-19

Added

- Added **npmjs** and **cpan** versoneers
- Added possibility to specify custom py.test arguments
- Added possibility to customize changelog entry
- Added version check to abort rebase if requested version is not newer than current
- Added separate tox tasks for linting
- Implemented **rpmbuild** and **mock** SRPM build tools
- Added possibility to configure rebase-helper with configuration file
- Added possibility to blacklist certain SPEC hooks or versoneers
- Created `rebasehelper/rebase-helper` Docker Hub repository

Changed

- Made several speed optimizations in the test suite
- Tests requiring superuser privileges are now automatically skipped if necessary
- Simplified build analysis and made related log messages more useful

Fixed

- Fixed documentation builds on readthedocs.org broken by *rpm distribution* requirement
- Fixed reading username and e-mail from git configuration
- Added missing dependencies to Dockerfile
- Fixed processing of custom builder options
- Added workarounds for RPM bugs related to `%sources` and `%patches`
- Fixed several unhandled exceptions
- Fixed parsing tarball filename containing certain characters

5.3.12 [0.11.0] - 2017-10-04

Added

- Added `rpm-py-installer` to install `rpm-python` from pip
- Implemented detection of package category (*python, perl, ruby, nodejs, php*)
- Added **RubyGems** versioneer
- Added **RubyHelper** SPEC hook for getting additional sources based on instructions in SPEC file comments

Changed

- Value of *Version* and *Release* tags is now preserved if there are any macros that can be modified instead
- Versioneers and SPEC hooks are now run only for matching package categories
- Bash completion is now generated from source code, so it is always up-to-date

Fixed

- Prevented unwanted modifications of `%prep` section
- Fixed unexpected removal of rpms and build logs after last build retry
- Added files are no longer listed as removed in `rpmdiff` report

5.3.13 [0.10.1] - 2017-08-30

Added

- Added `--version` argument

Changed

- **Anitya** versioneer now primarily searches for projects using Fedora mapping
- Python dependencies moved from `requirements.txt` to `setup.py`

Fixed

- Made `CustomManPagesBuilder` work with Sphinx ≥ 1.6
- `%prep` section parser is now able to handle backslash-split lines

5.3.14 [0.10.0] - 2017-08-25

Added

- Implemented extensible SPEC hooks and versioneers
- Added **PyPI** SPEC hook for automatic fixing of Source URL of Python packages

- Added **Anitya** and **PyPI** vensioneers for determining latest upstream version of a package
- Added possibility to download old version build of a package from Koji
- Added support for test suite to be run in Docker containers
- Implemented functional tests for automatic testing of whole rebase process
- Diff against original source files is now generated as *changes.patch*

Changed

- Introduced plugin system for extending build tools, checkers and output tools
- Updated for **Koji 1.13** which finally brings Python 3 support
- Improved output information and reports
- Added colorized output
- Improved project documentation

Fixed

- Pre-configured git username and e-mail address is now used if available
- Fixed several issues in **rpmdiff** and especially **abipkgdiff** checkers
- Fixed several test suite related issues

5.3.15 [0.9.0] - 2017-01-05

Added

- Old sources are now downloaded from Fedora lookaside cache
- Auto-generated and improved CLI documentation and man page
- Added support for downloading files of unknown size

Changed

- `SpecFile` class preparation for pre-download hooks
- Code cleanup and refactorization

Fixed

- Fixed regexp for getting release number from SPEC
- Fixed functionality of `--results-dir` option
- Several upstream monitoring fixes
- Fixed issues caused by Fedora Flag Day

5.3.16 [0.8.0] - 2016-07-31

Added

- Added support for JSON output format
- Added support for **copr** build tool
- Added support for passing arbitrary extra arguments to local builders (**mock**, **rpmbuild**) with `--builder-options`.
- Added new option `--build-retries` allows the user to specify number of build retries (by default 2)
- Added support for **csmock** check tool

Changed

- Renamed **fedpkg** build tool to **koji** to make it more clear
- Downloading of files is now done only using standard Python library and not using PyCURL

Fixed

- Many bug fixes and code clean up

5.3.17 [0.7.3] - 2016-04-08

Added

- Added `rpm.addMacro`

Fixed

- Handled exceptions raised during parsing of SPEC files
- Fixed unapplied patches mixing with deleted ones

5.3.18 [0.7.2] - 2016-03-15

Added

- Added information about scratch builds

Fixed

- Added check if file exists and is empty for **the-new-hotness**
- Patches are applied in case `--builds-nowait` option is used

5.3.19 [0.7.1] - 2016-02-22

Added

- Two new command line options used by upstream monitoring

Fixed

- **fedpkg** reimplementation

5.3.20 [0.7.0] - 2016-01-13

Changed

- Several improvements

Fixed

- **pkgdiff** is now smarter
- Included `tar.bz2` into list of supported formats
- Added support for noarch package in case of **fedpkg** build
- Checker should return `None` if there is no debug package

Removed

- Removed a bunch of debug stuff

5.3.21 [0.6.2] - 2015-11-09

Fixed

- Logs are being saved to their own directory
- Prep script is moved into workspace directory
- No more traceback in case `koji` module is not present
- Each checker creates its own log file
- **rebase-helper** informs if it failed or not
- Report on script is smarter

5.3.22 [0.6.1] - 2015-10-30

Added

- `upstream-monitoring.py` - used by upstream monitoring service
- `rebase-helper-fedmsg.py` - testing Python script

5.3.23 [0.6.0] - 2015-07-31

Added

- Parts of %prep section related to patching are executed
- Support for **abipkgdiff**

Fixed

- Several fixes
- Replaced yum with dnf

5.3.24 [0.5.0] - 2015-05-22

Added

- Added support for building packages via **fedpkg** (or **koji**)
- Added summary report for better overview
- continue option implemented for `git rebase`
- Added several tests
- Added class for operating with Git repositories

Changed

- `git rebase` is used instead of `patch` command

Fixed

- Fixed several decoding issues
- Several **PEP8** and **W1202** fixes

Removed

- `DiffHelper` class is not needed

5.3.25 [0.4.0] - 2014-12-05

Added

- Handling of extra versions like `b1`, `rc1`, etc.
- Added build log analyzer to detect unpackaged files or other issues
- Added Bash completion

Changed

- Improved version extraction from archive name
- **rebase-helper** output is looged to `rebase-helper-results` directory
- `SpecFile` class rewritten

5.3.26 [0.3.1] - 2014-07-25

Added

- New build class
- `--build-only` option
- Installation of build dependencies in case of **rpmbuild** tool
- More tests
- `RebaseHelperError` class for catching exceptions

Fixed

- Several fixes

5.3.27 [0.3.0]

Added

- **pkgdiff** tool for comparing RPM packages
- Tests for `Archive` class and `SPEC` file

5.3.28 [0.2.0]

Added

- `diff_helper` for comparing two tarballs
- Applying patches to tarballs
- `patch_helper`

5.3.29 [0.1.0]

Added

- Initial classes
- CLI interface

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