Upgrading optparse code

Release 3.13.1

Guido van Rossum and the Python development team

December 19, 2024

Python Software Foundation
Email: docs@python.org

Contents

Originally, the `argparse` module had attempted to maintain compatibility with `optparse`. However, `optparse` was difficult to extend transparently, particularly with the changes required to support `nargs=` specifiers and better usage messages. When most everything in `optparse` had either been copy-pasted over or monkey-patched, it no longer seemed practical to try to maintain the backwards compatibility.

The `argparse` module improves on the `optparse` module in a number of ways including:

- Handling positional arguments.
- Supporting subcommands.
- Allowing alternative option prefixes like `+` and `/`.
- Handling zero-or-more and one-or-more style arguments.
- Producing more informative usage messages.
- Providing a much simpler interface for custom `type` and `action`.

A partial upgrade path from `optparse` to `argparse`:

- Replace all `optparse.OptionParser.add_option()` calls with `ArgumentParser.add_argument()` calls.
- Replace `(options, args) = parser.parse_args()` with `args = parser.parse_args()` and add additional `ArgumentParser.add_argument()` calls for the positional arguments. Keep in mind that what was previously called `options`, now in the `argparse` context is called `args`.
- Replace `optparse.OptionParser.disable_interspersed_args()` by using `parse_intermixed_args()` instead of `parse_args()`.
- Replace callback actions and the `callback_*` keyword arguments with `type` or `action` arguments.
- Replace string names for `type` keyword arguments with the corresponding type objects (e.g. int, float, complex, etc).
- Replace `optparse.Values` with `Namespace` and `optparse.OptionError` and `optparse.OptionValueError` with `ArgumentError`.
- Replace strings with implicit arguments such as `%default` or `%prog` with the standard Python syntax to use dictionaries to format strings, that is, `%(default)s` and `%(prog)s`.
- Replace the OptionParser constructor `version` argument with a call to `parser.add_argument('--version', action='version', version='<the version>')`.