Oracle Linux 9

Installing and Managing Python

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Contents

Preface

Oracle Linux 9: Installing and Managing Python describes how to install and configure a Python runtime environment so that you can run applications and scripting tools that require a Python interpreter to function.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our

products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1

About Python

Python is a high-level general purpose programming language that relies on an interpreter to fulfill scripted functions. On Oracle Linux 9, many system utilities, tools for data analysis and web applications rely on the presence of a Python run-time environment to function.

Python 2 is no longer maintained by the Python community; It is also not supported or available on Oracle Linux 9. Any existing Python 2 scripts must either be migrated to Python 3 or run inside an Oracle Linux 8 container. For more information about running scripts inside containers, see Oracle Linux: Podman User's Guide.

You can read more information about creating your own Python scripts at https://www.python.org/doc/

> **Note:**
>
> The `python` command is aliased to Python 3.9 by default in Oracle Linux 9.

2

Installing Python

To install Python 3.9 on your Oracle Linux 9 system:

```
sudo dnf install python3
```

> **Note:**
>
> Python 3.9 is supported for the full lifespan of Oracle Linux 9.
>
> Application Stream packages, such as more recent versions of Python 3, have their own major version releases and may have shorter support lifespans. For more information, see Appendix B in Oracle Linux: Managing Software on Oracle Linux.

Installing Additional Python Libraries

You can also install additional dependencies from the Oracle Linux yum server. For example, to install the `requests` library for Python 3, you would install the `python3-requests` package:

```
sudo dnf install python3-requests
```

Dependencies that are installed in this way are available for any compatible Python installations on the same system. In addition, any matching packages can also be safely removed without also removing existing Python installations.

3
Installing Third-Party Packages

Before installing a third-party package, verify if you can install the Python library you need from the Oracle Linux yum server. For example, to check if the `requests` library has been provided for Python 3:

```
sudo dnf search python3-requests
```

For more information about installing additional Python libraries from the Oracle Linux yum server, read Installing Additional Python Libraries.

If you cannot find a particular dependency on the Oracle Linux yum server, or if the script that you need to run requires a newer version of the dependency than the installed package already provides, you can use the `pip` package manager to install it from a third-party source.

To ensure that your system remains supported, for each project you can install and run third-party packages in an isolated virtual environment created with the `venv` Python module.

1. Create a virtual environment named `example3` for Python 3:

   ```
   python3 -m venv --system-site-packages example3
   ```

2. You can now activate either virtual environment and begin installing third-party dependencies. For example, to install a newer version of the `requests` library for Python 3:

   ```
   source example3/bin/activate

   python3 -m pip install --user requests
   ```

   > **NOT_SUPPORTED:**
   >
   > Using the `pip3` command outside of a virtual environment will apply your changes system-wide, and that may impact compatibility with some installed packages in your Oracle Linux 9 installation.
   >
   > Add the `--user` flag to any `pip install` commands to ensure that dependency packages are only available to the current user.

3. To launch compatible scripts with the third-party packages you have installed, run them from within the same virtual environment.

To learn more about installing third-party packages inside Python virtual environments, visit https://packaging.python.org/guides/installing-using-pip-and-virtual-environments/.