

Anaconda Software

AN INTRODUCTION AND BASIC OVERVIEW OF THE FEATURES

Overview

- Introduction to Anaconda
- Advantages and limitations
- Key components of Anaconda
- Virtual environment in Anaconda

What is Anaconda?

- A free and open-source software distribution
- Designed for Python and R programming
- Simplifies package management and deployment
- Widely used in Data Science, Machine Learning, Scientific Computing

Advantages of Anaconda

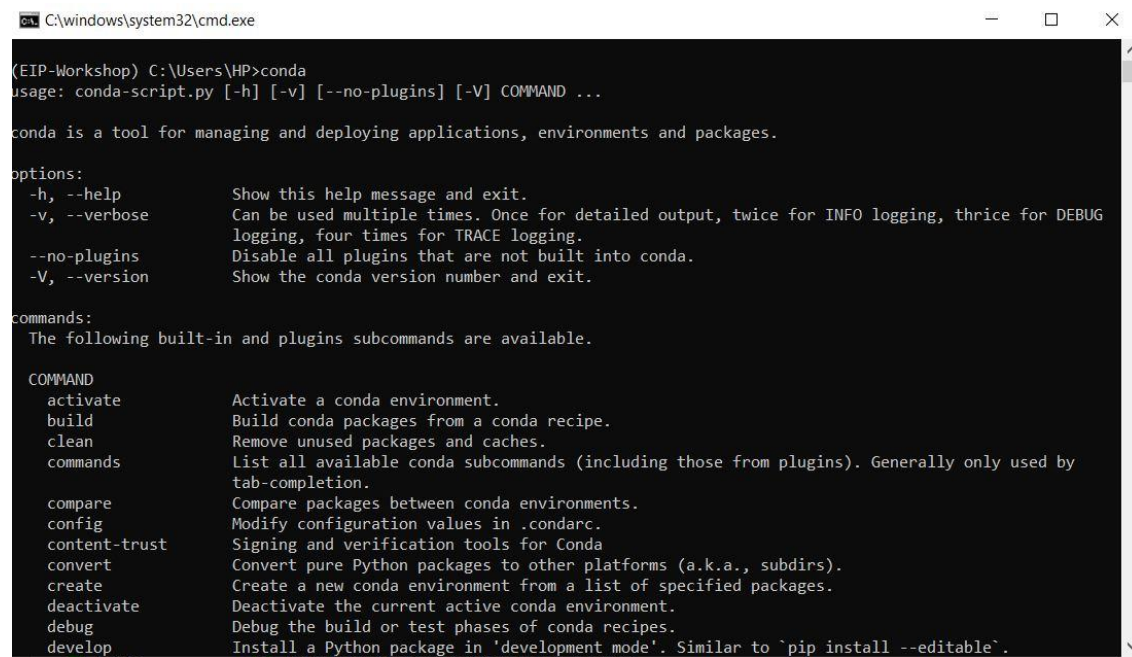
- Easy to install and use
- All-in-one platform
- Free for educational use
- Strong community support
- Saves time for beginners

Limitations of Anaconda

- Large installation size
- May use more disk space
- Not always needed for very small projects

Key Components of Anaconda

- Python Interpreter
 - Conda – Package and environment manager
 - Anaconda Navigator – Graphical User Interface (GUI)
- Popular development tools:
 - Jupyter Notebook
 - Spyder IDE



```
C:\windows\system32\cmd.exe
(EIP-Workshop) C:\Users\HP>conda
usage: conda-script.py [-h] [-v] [--no-plugins] [-V] COMMAND ...

conda is a tool for managing and deploying applications, environments and packages.

options:
  -h, --help            Show this help message and exit.
  -v, --verbose          Can be used multiple times. Once for detailed output, twice for INFO logging, thrice for DEBUG
                        logging, four times for TRACE logging.
  --no-plugins           Disable all plugins that are not built into conda.
  -V, --version          Show the conda version number and exit.

commands:
  The following built-in and plugins subcommands are available.

COMMAND
  activate              Activate a conda environment.
  build                 Build conda packages from a conda recipe.
  clean                 Remove unused packages and caches.
  commands              List all available conda subcommands (including those from plugins). Generally only used by
                        tab-completion.
  compare               Compare packages between conda environments.
  config                Modify configuration values in .condarc.
  content-trust          Signing and verification tools for Conda
  convert               Convert pure Python packages to other platforms (a.k.a., subdirs).
  create                Create a new conda environment from a list of specified packages.
  deactivate             Deactivate the current active conda environment.
  debug                 Debug the build or test phases of conda recipes.
  develop               Install a Python package in 'development mode'. Similar to 'pip install --editable'.
```

Fig: Conda Terminal

Anaconda Navigator

- GUI-based application launcher
- No command-line knowledge required
- Used to:
 - Launch Jupyter Notebook
 - Launch Spyder
 - Manage environments and packages
 - Beginner-friendly interface

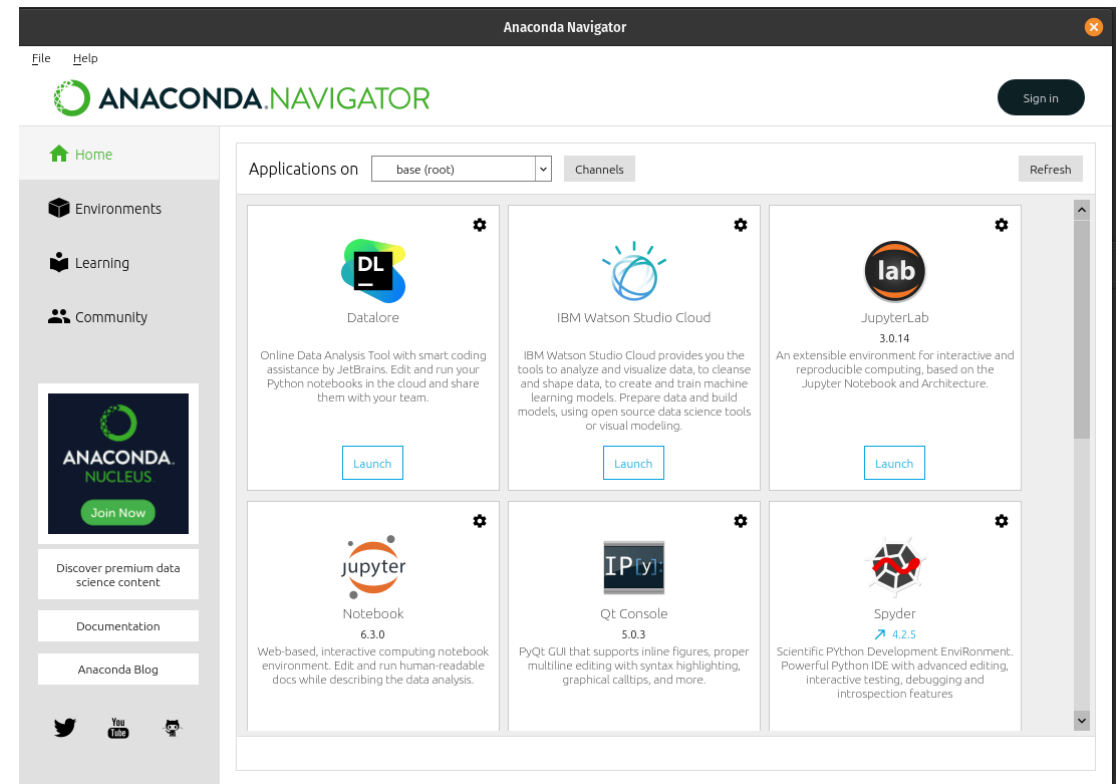
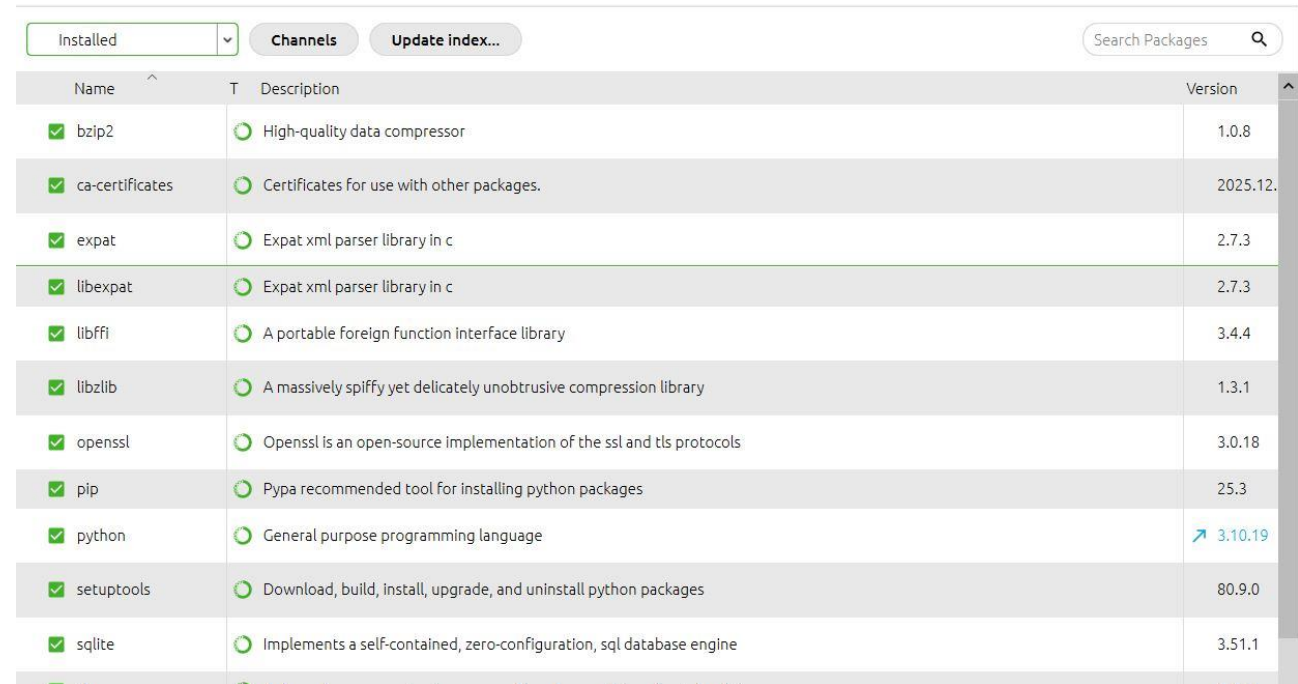


Fig: Anaconda Navigator

Conda Package Manager

- Manages:
 - Libraries (NumPy, Pandas, etc.)
 - Software dependencies
- Advantages:
 - Avoids version conflicts
 - Cross platform
 - Simple to install/update packages



The screenshot displays the Conda package manager's package list. At the top, there is a dropdown menu set to 'Installed', a 'Channels' button, and an 'Update index...' button. A search bar labeled 'Search Packages' is located in the top right corner. The main content is a table with columns for 'Name', 'T', 'Description', and 'Version'. Each row represents an installed package, with a green checkmark in the 'Name' column and a green circle icon in the 'T' column. The 'python' package is highlighted with a blue arrow pointing to its version '3.10.19'.

Name	T	Description	Version
✓ bzip2	○	High-quality data compressor	1.0.8
✓ ca-certificates	○	Certificates for use with other packages.	2025.12.
✓ expat	○	Expat xml parser library in c	2.7.3
✓ libexpat	○	Expat xml parser library in c	2.7.3
✓ libffi	○	A portable foreign function interface library	3.4.4
✓ libzlib	○	A massively spiffy yet delicately unobtrusive compression library	1.3.1
✓ openssl	○	Openssl is an open-source implementation of the ssl and tls protocols	3.0.18
✓ pip	○	Pypa recommended tool for installing python packages	25.3
✓ python	○	General purpose programming language	↗ 3.10.19
✓ setuptools	○	Download, build, install, upgrade, and uninstall python packages	80.9.0
✓ sqlite	○	Implements a self-contained, zero-configuration, sql database engine	3.51.1

Fig: Package management

Virtual Environments in Anaconda

- Virtual environment = isolated workspace
- Allows:
 - Different Python versions
 - Different library versions
- Useful for:
 - Multiple projects
 - Team collaboration
- Prevents software conflicts

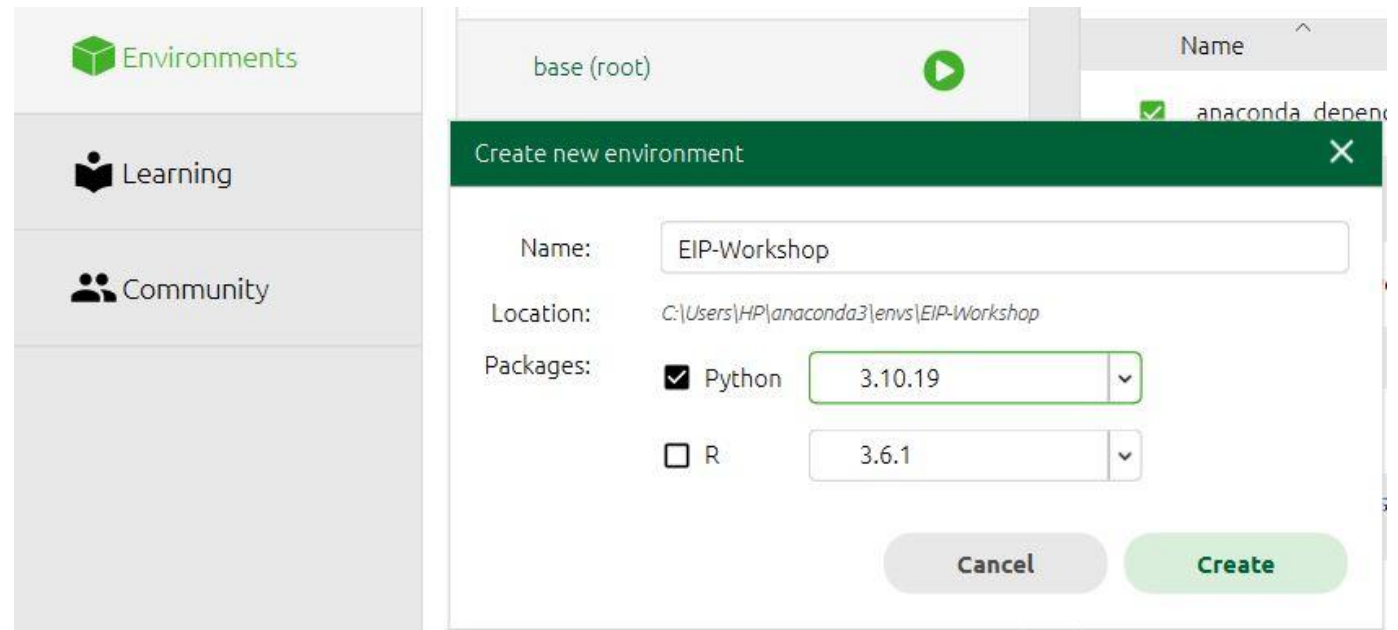


Fig: Virtual environment creation

Thank You

Any Questions?