

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

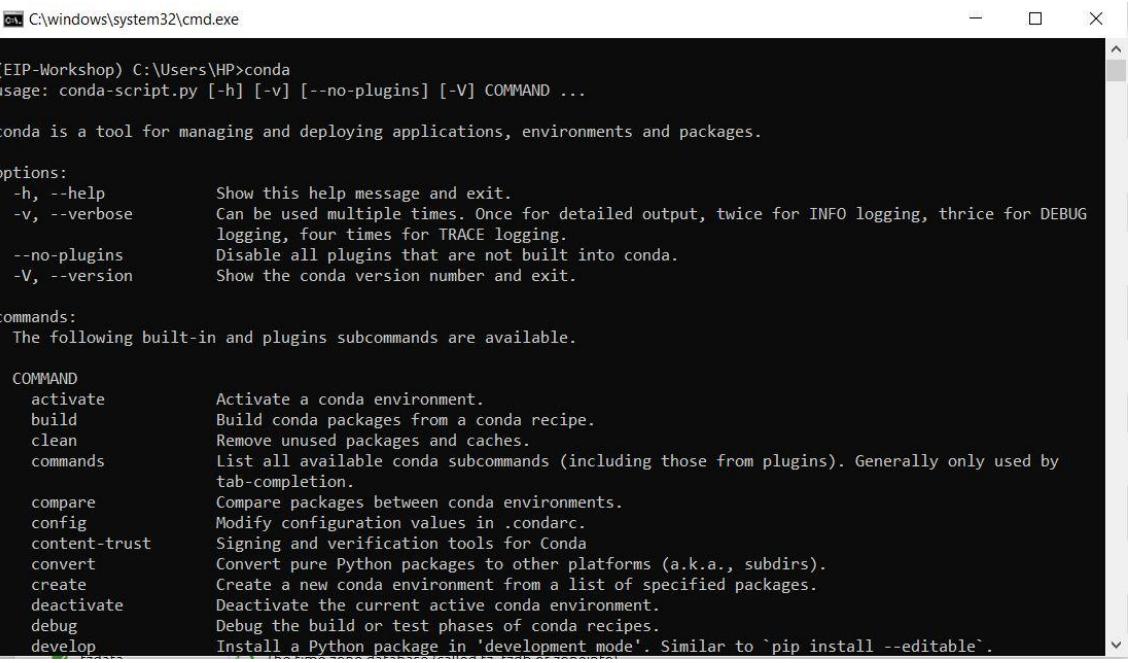
Limitations of Anaconda

- 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



The screenshot shows a Windows Command Prompt window titled 'C:\windows\system32\cmd.exe'. The command 'conda' is being run from the directory '(EIP-Workshop) C:\Users\HP>'. The output displays the usage information for the 'conda' command, including options for help (-h), verbose (-v), no-plugins, and version (-V). It also lists built-in commands like activate, build, clean, commands, compare, config, content-trust, convert, create, deactivate, debug, and develop, along with their descriptions.

```
(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

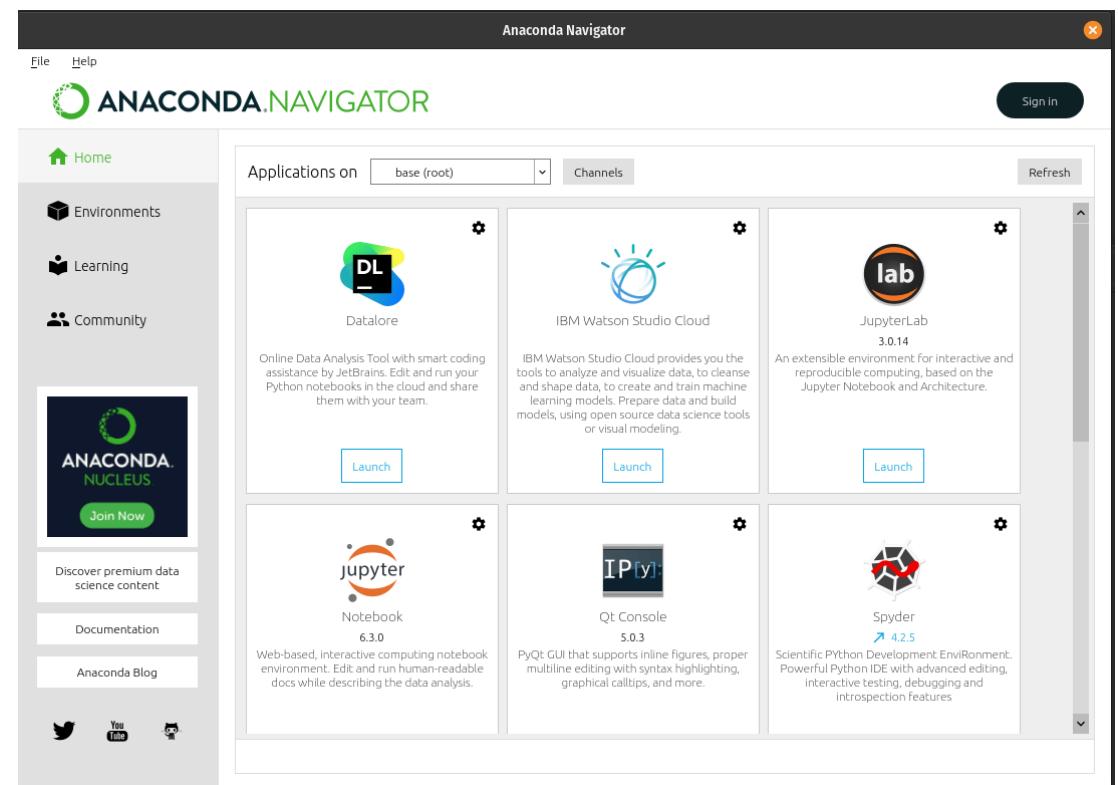
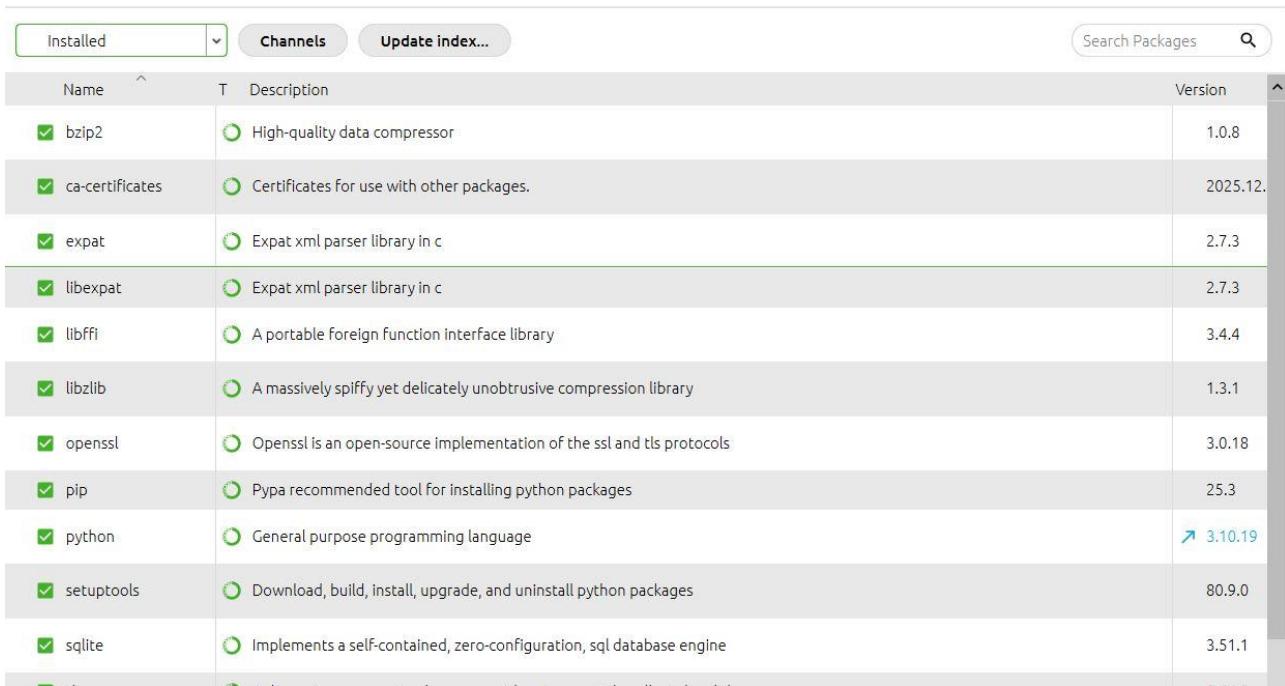


Fig: Anaconda Navigator

Conda Package Manager

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



The screenshot shows the Conda package manager interface with the following details:

Name	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

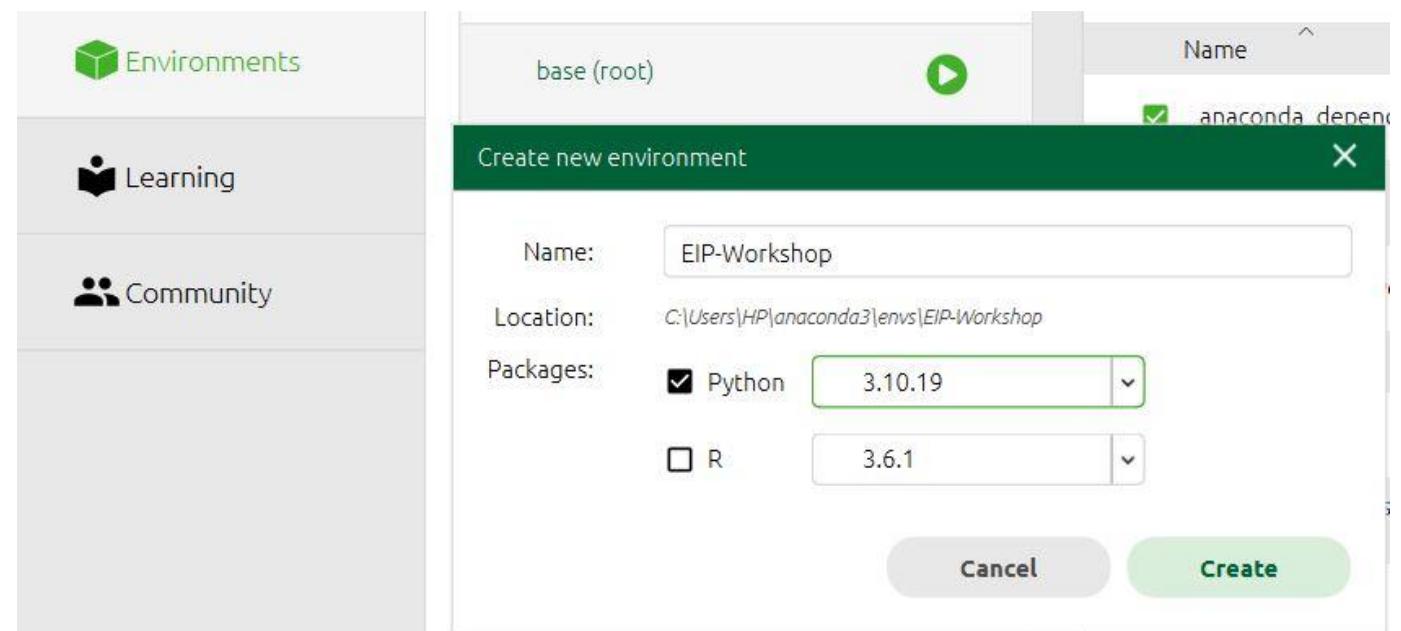


Fig: Virtual environment creation

Thank You

Any Questions?