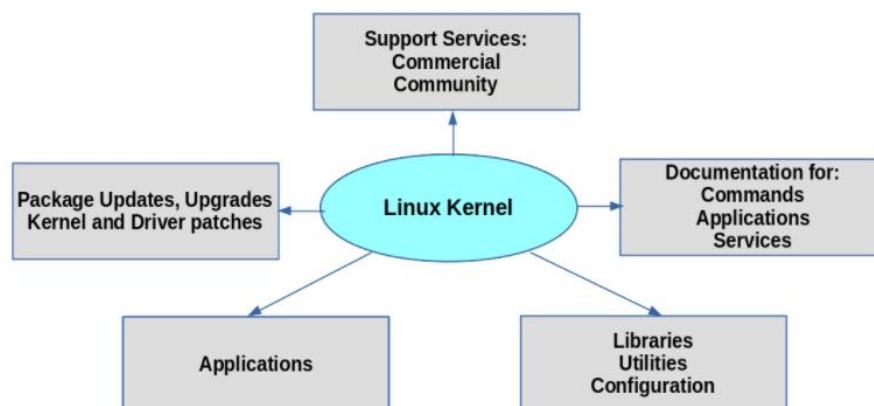


# Linux Distributions Overview

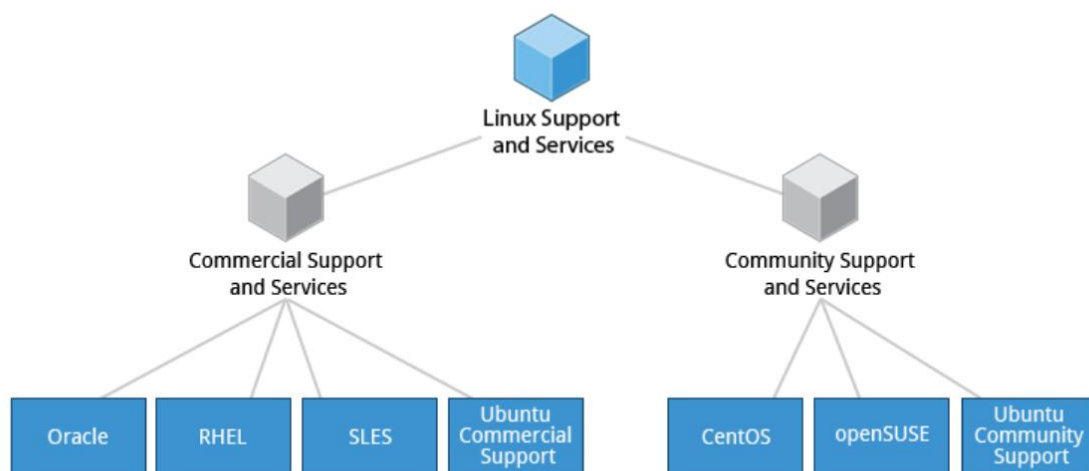
1. Suppose if we have been assigned to a project building a product for a Linux platform.
2. Project requirements include making sure the project works properly on the most widely used Linux distributions.
3. To accomplish this, we need to learn about the different components, services, and configurations associated with each distribution
4. The below is the explanation for the query what is a Linux distribution and how does it relate to the Linux kernel?
5. The Linux kernel is the core of the operating system.
6. A full Linux distribution consists of the kernel plus a number of other software tools for file-related operations, user management, and software package management.
7. Each of these tools provides a part of the complete system.
8. Each tool is often its own separate project, with its own developers working to perfect that piece of the system.
9. While the most recent Linux kernel (and earlier versions) can always be found in [The Linux Kernel Archives](https://www.kernel.org/) (<https://www.kernel.org/> website) Linux distributions may be based on different kernel versions.
10. For example, the very popular RHEL 8 distribution is based on the 4.18 kernel, which is not new, but is extremely stable.
11. Other distributions may move more quickly in adopting the latest kernel releases.
12. It is important to note that the kernel is not an all or nothing proposition.
13. For example, RHEL/CentOS have incorporated many of the more recent kernel improvements into their older versions, as have Ubuntu, openSUSE, SLES, etc.
14. Examples of other essential tools and ingredients provided by distributions include the C/C++ and Clang compilers, the gdb debugger, the core system libraries applications need to link with in order to run, the low-level interface for drawing graphics on the screen, as well as the higher-level desktop environment, and the system for installing and updating the various components, including the kernel itself.
15. All distributions come with a rather complete suite of applications already installed.



**Distribution Roles**

## Services Associated with Distributions:

1. The vast variety of Linux distributions are designed to cater to many different audiences and organizations, according to their specific needs and tastes.
2. However, large organizations, such as companies and governmental institutions and other entities, tend to choose the major commercially-supported distributions from Red Hat, SUSE, and Canonical (Ubuntu).
3. CentOS and CentOS Stream are popular free (as in no cost) alternatives to Red Hat Enterprise Linux (RHEL) and are often used by organizations that are comfortable operating without paid technical support.
4. Ubuntu and Fedora are widely used by developers and are also popular in the educational realm.
5. Note that CentOS is planned to disappear at the end of 2021 in favor of CentOS Stream.
6. Many commercial distributors, including Red Hat, Ubuntu, SUSE, and Oracle, provide long term fee-based support for their distributions, as well as hardware and software certification.
7. All major distributors provide update services for keeping your system primed with the latest security and bug fixes, and performance enhancements, as well as provide online support resources.



**Services Associated with Distributions**