Software Environment

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The material produced by The Linux Foundation is distribution-flexible. This means that technical explanations, labs and procedures should work on most modern distributions, and we do not promote products sold by any specific vendor (although we may mention them for specific scenarios).

In practice, most of our material is written with the three main Linux distribution families in mind:

- Red Hat/Fedora
- openSUSE/SUSE
- Debian.

Distributions used by our students tend to be one of these three alternatives, or a product that is derived from them.

Which Distribution to Choose?

You should ask yourself several questions when choosing a new distribution:

- Has your employer already standardized?
- Do you want to learn more?
- Do you want to certify?

While there are many reasons that may force you to focus on one Linux distribution versus another, we encourage you to gain experience on all of them. You will quickly notice that technical differences are mainly about package management systems, software versions, and file locations. Once you get a grasp of those differences, it becomes relatively painless to switch from one Linux distribution to another.

Some tools and utilities have vendor-supplied frontends, especially for more particular or complex reporting. The steps included in the text may need to be modified to run on a different platform.

Red Hat/Fedora Family

Fedora is the community distribution that forms the basis of Red Hat Enterprise Linux, CentOS, Scientific Linux and Oracle Linux. Fedora contains significantly more software than Red Hat's enterprise version. One reason for this is that a diverse community is involved in building Fedora; it is not just one company.

The Fedora community produces new versions every six months or so. For this reason, we decided to standardize the Red Hat/Fedora part of the course material on the latest version of CentOS/CentOS Stream, which provides much longer release cycles. Once installed, CentOS Stream is also virtually identical to Red Hat Enterprise Linux (RHEL), which is the most popular Linux distribution in enterprise environments:

- Current material is based upon the latest release of Red Hat Enterprise Linux (RHEL) - 7.x at the time of publication, and should work well with later versions
- Supports x86, x86-64, Itanium, PowerPC and IBM System Z
- RPM-based, uses dnf (or yum) to install and update
- Long release cycle; targets enterprise server environments
- Upstream for CentOS and Oracle Linux
- Downstream for CentOS Stream

Note: CentOS/CentOS Stream is used for demos and labs because it is available at no cost.

CentOS and CentOS Stream

CentOS historically has been basically a copy of RHEL with some time delay after updates.

CentOS Stream gets updates before RHEL, but otherwise is quite close to it. Thus newer features will be absorbed quicker.

Red Hat is ending support for CentOS 8 at the end of 2021. Thus, this course is now tested with the CentOS Stream distribution; any variance from CentOS 8 or RHEL 8 will be minor and should not even be noticeable.

SUSE/openSUSE Family

The relationship between openSUSE and SUSE Linux Enterprise Server is similar to the one we just described between Fedora and Red Hat Enterprise Linux. In this case, however, we decided to use openSUSE as the reference distribution for the openSUSE family, due to the difficulty of obtaining a free version of SUSE Linux Enterprise Server. The two products are extremely similar and material that covers openSUSE can typically be applied to SUSE Linux Enterprise Server with no problem:

- Current material is based upon the latest release of openSUSE, and should work well with later versions
- RPM-based, uses zypper to install and update
- YaST available for administration purposes
- x86 and x86-64
- Upstream for SUSE Linux Enterprise Server (SLES)

Note: openSUSE is used for demos and labs because it is available at no cost.

Debian Family

The Debian distribution is the upstream for several other distributions, including Ubuntu, Linux Mint and others. Debian is a pure open source project, and focuses on a key aspect: stability. It also provides the largest and most complete software repository to its users.

Ubuntu aims at providing a good compromise between long-term stability and ease of use. Since Ubuntu gets most of its packages from Debian's unstable branch, Ubuntu also has access to a very large software repository. For those reasons, we decided to use Ubuntu as the reference Debian-based distribution for our lab exercises:

- Commonly used on both servers and desktops
- DPKG-based, uses apt-get and frontends for installing and updating
- Upstream for Ubuntu, Linux Mint and others
- Current material is based upon Ubuntu 16.04 and 17.10 and should work well with later versions
- x86 and x86-64 - Long Term Release (LTS)

Note: Ubuntu is used for demos and labs because it is available at no cost, as is Debian, but has a wider user base.