Linux Distributions

THE LINUX FOUNDATION

Variety of Distributions

- There are many Linux distributions, ranging from very widely used to obscure
- They vary by intended usage, hardware and audience, as well as support level

What Is the Role of Linux Distributions?

Some of the things Linux distributions do:

- Package up open software in a convenient fashion
- Form the bridge between the upstream developers and the end users
- Test software under more varied conditions than the upstream developers are able to; in particular, they find and resolve conflicts between components
- Push out updates, or patches, for security problems and bugs, in a timely fashion
- Provide a uniform packaging system that can resolve dependencies for software components, as well as aid system administrators in many ways
- Invest resources into the improvement of all system components, including the kernel and the desktop managers, by employing and funding many leading developers
- Represent the face of Linux to new users

Our Approach

- We have tried to keep this material as distribution-agnostic as possible; for all but the most specialized distributions this will not present any inconveniences
- Occasionally which distribution you are using will matter (e.g. when we must describe the location of particular files and directories or how to install certain required software packages; fortunately, modern distributions differ much less in these matters and we will rarely have to deal with such inconveniences
- This course has been developed for and tested thoroughly on the 64-bit versions of the three major families of Linux distributions:
  - **Red Hat** (includes RHEL 7 and the CentOS and Scientific Linux systems based on RHEL, as well as recent Fedora and Oracle Linux)
  - **Debian** (includes Ubuntu and Linux Mint)
  - **SUSE** (includes openSUSE)

Other System Requirements

- If you are using a 32-bit system, almost everything will work acceptably, but we no longer make any effort to ensure it
- Generally, any recent (say last two) versions of these distributions are completely supported
- As far as software installation and control is concerned, distributions tend to use either **RPM**-based or **deb**-based package management
  - In our list, all Red Hat and SUSE derived systems are RPM-based, and all Debian derived systems are deb-based
  - When necessary, we will give required instructions for either of these two broad families

GENTOO and Arch Linux

- GENTOO is based on neither of these packaging systems, and instead uses the portage/emerge system which involves compiling directly from source
  - If you are a GENTOO user, and you have successfully accomplished a fully functional installation (which is generally not a task for novices), you will not need detailed instructions in how to install software or find things
- Arch Linux is another cutting edge distribution which has its own packaging system, and uses a rolling release philosophy
  - Once again, if you are an Arch Linux user, you are already quite experienced and adjusting to the course to it should bring the most minimal quotient of pain
- If you are running any other distribution you should not have any trouble adapting what we are doing to your installation

Amazon Web Services (AWS)

- **Amazon Web Services** (AWS) offers a wide range of virtual machine products (**instances**) which remote users can access in the cloud
- In particular, one can use their **Free Tier** account level for up to a year and the simulated hardware and software choices available may be all one needs to perform the exercises for Linux Foundation training courses and gain experience with Linux
- Or they may furnish a very educational supplement to working on local hardware, and offer opportunities to easily study more than one Linux distribution
- For kernel-level courses there are some particular challenges