Getting Started

Welcome
Let's begin our journey toward Ubuntu Linux Server administration by asking a few key questions and taking a look at our core terms.

1. **What is a computer server?** *A computer server is a computer that is specifically designed to handle a large amount of data (both in and out), often by multiple users and at the same time.* Two servers that most people use on a daily basis are **web servers and mail servers**.

A **web server** receives requests from users and then 'serves' the user the requested page(s). For example, when you go online and browse to *http://www.google.com*, you are requesting data from a remote web server. When the server receives your request it then serves your web browser the requested page (Google's homepage).

In exactly the same way, when you enter search terms on Google you are sending data to a server which, in turn, serves you search results.

A **mail server** is what makes email possible. When sending an email to a friend, you are not sending the correspondence directly to their machine. Instead, the email leaves your machine, travels to the outgoing server, where it is then transferred to the recipient's mail server. Your friend then retrieves your email from their mail server (and hopefully sends you a friendly reply back).

Another common type of server is a file server. File servers are often used in large and small office complexes. The file server acts like a remote hard drive, where multiple users within the office can store and retrieve files. The server provides a convenient way of sharing data with many users, and it simplifies the task of creating reliable data backups by centralizing data and consolidating it in one location.

For example, consider an office complex of 30 employees, each with their own computer workstations. Now, imagine everyone saving important files to their local hard disks while also needing to share those files with other users in the office. Without a file server, the user would need to do one of the following in order to share a file with another user:

- Upload the file to someone else's server

    - Either via email (a mail server) or an upload site like ‘Dropbox’ (a web server)
- Physically take the file to the other user on a USB thumbdrive
- Share the file directly through the local network

Each option listed carries certain risks that make utilizing a file server more preferable in most cases.

First, sharing anything through a web or mail server that you do not completely own and control can be dangerous. Sensitive documents could be leaked to competitors or malicious persons who gain access to the server. Furthermore, you are not in direct control of the server’s maintenance schedule and cannot choose the best course of action for repair in the event of server failure.

Second, in today’s fast-paced and competitive business environment it is impractical for one user to take another user a file (or files) on a physical drive each time they need to collaborate. Productivity would suffer tremendously from such a system, and files could be spread among 30 workstations, each with a modified iteration of the original file.

Finally, sharing files directly through a local network would speed things up from the previous scenario, but it still poses a risk to file consistency. That is to say, modified copies of the company’s files would still be spread throughout the office complex. Each workstation would need to have a backup system in place (along with redundancy measures such as RAID), and there would be no convenient way of knowing which file was the most current iteration.

A file server simplifies the entire process by storing company data on a central computer that has redundancy and backup measures in place. There should be no need to backup individual user machines, files can be accessed conveniently and quickly by all users, updated without creating excessive iterations, and stored in-house for maximum security.

2. **What is Linux?** *Linux is a computer operating system originally developed by Linus Torvalds in 1991 which is similar in many ways to UNIX (an operating system originally developed in the 1970s), but formally inspired by MINIX (another operating system originally designed by Andrew Tanenbaum in 1987).*

You are probably already familiar with computer operating systems such as *Microsoft Windows* and *Apple’s Mac OS*. In short, operating systems allow humans to operate computer hardware in order to accomplish tasks.

3. **What is Ubuntu?** *Ubuntu is a Linux distribution based on ‘Debian’ (another Linux distribution), first released in 2004.*

Linux is an open-source project. That means anyone can read the source code, make changes (improvements) and redistribute it for free. For this reason, Linux comes in a variety of flavors, called ‘distributions.’ Each distribution can be quite unique but they all share the same foundation—the Linux ‘kernel.’ You can think of the Linux kernel as the heart of the operating system. Distributions are like bodies around this heart. Each body is unique but they all share the same heart at their core.