

Linux Server

- A Linux server is a variant of the Linux operating system that is designed to handle more intense storage and operational needs of larger organizations and their software. Linux servers are widely used today and considered amongst the most popular due to their stability, security, and flexibility, which outstrip standard Windows servers.
- Another major benefit of using Linux over closed-source software like Windows is that the former is fully open-source. This helps keep setup and maintenance costs low, as even many of the proprietary variants of the standard Linux OS (such as Debian, CentOS, Ubuntu, and Red Hat) give users significant flexibility in terms of set up, operation, and maintenance their servers.
- Additionally, Linux Servers are generally lighter to run on both physical and cloud servers because they don't require a graphics interface.

- Unlike Windows, most Linux variants are fully command-line based, making it a lightweight solution that prioritizes functionality and optimized performance over ease of use.
- Other benefits of Linux server include the ability to maintain almost 100% uptime, since most servers don't need to be taken offline to apply updates or correct errors. Linux is also excellent at managing multitasking, allowing it to handle multiple applications simultaneously.

- What Can I Use Linux Databases For?
- Linux servers are some of the most widely used around the world for a variety of reasons. Unlike Windows and other proprietary software, Linux is significantly more affordable, and gives you more control over how to configure your servers to get started. This includes the ability to handle multiple applications on the same server.
- Because of the reduced resource requirements for Linux servers, you can theoretically manage a variety of tools from a single location including BI tools, analytics, and operations applications.
- Popular Linux Servers are Ubuntu, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server, CentOS (Community OS) Linux Server, Debian, Oracle Linux, Mageia,

Basic configuration - Ubuntu Linux

Basic Config tab lets you provide local information about a server, such as its name and the password needed to access the machine.

Field definitions

Field	Description
Computer name	The unique name that should be assigned to the server.
OM Server Name	<p>(Optional) Specifies a different name for this server to display when it appears in the BMC Server Automation Console.</p> <p>If you want this server to display its Computer name when it appears in the BMC Server Automation Console, leave the OM Server Name field blank.</p> <p>If you do choose to use a different OM Server Name for this machine, make sure that this new name can be resolved to the IP address of the server.</p>
Root password	The password used to access the root account. Enter a password. Then confirm your typing by entering the password again in the Confirm password field.

How to Install and Configure DNS Server in Linux

- Domain Name Service (DNS) is an internet service that maps IP addresses to fully qualified domain names (FQDN) and vice versa.
- BIND stands for Berkley Internet Naming Daemon.
- BIND is the most common program used for maintaining a name server on Linux.

Install Bind

- Install the bind9 package using the appropriate package management utilities for your Linux distributions.
- ***On Debian/Ubuntu flavors, do the following:***
\$ sudo apt-get install bind9

- On Redhat/CentOS/Fedora, do the following:
yum install bind9
- All the DNS configurations are stored under /etc/bind directory. The primary configuration is /etc/bind/named.conf which will include other needed files.
- The file named /etc/bind/db.root describes the root nameservers in the world.

How to configure an Apache web server

Apache is the most widely used web server software. Developed and maintained by Apache Software Foundation, Apache is an open source software available for free.

- It runs on 67% of all web servers in the world.
- It is fast, reliable, and secure.
- It can be highly customized to meet the needs of many different environments by using extensions and modules.
- Most WordPress hosting providers use Apache as their web server software. However, WordPress can run on other web server software as well.
- Apache Web Server is a software package that turns a computer into an HTTP server. That is, it sends web pages – stored as HTML files – to people on the internet who request them. It is open-source software, which means it can be used and modified freely.

How to Install Apache on Ubuntu

- To install the Apache package on Ubuntu, use the command:
sudo apt-get install apache2

Verify Apache Installation

- To verify Apache was installed correctly, open a web browser and type in the address bar:
- <http://local.server.ip>

Configure Samba in Linux

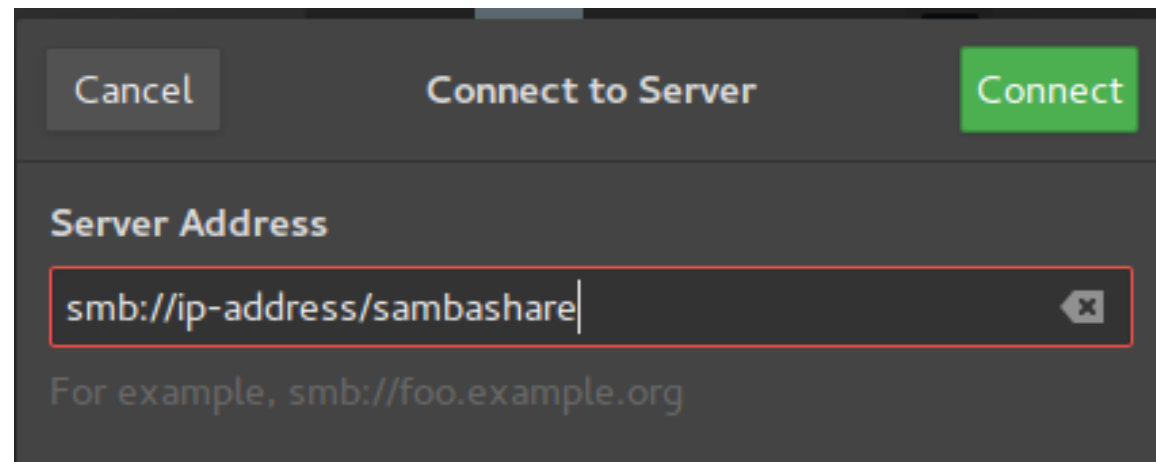
- A Samba file server enables file sharing across different operating systems over a network.
- It lets you access your desktop files from a laptop and share files with Windows and macOS users.
- Installing Samba
sudo apt update
- ***sudo apt install samba***
- ***Setting up Samba***
- ***Now that Samba is installed, we need to create a directory for it to share:***
- ***mkdir /home/<username>/sambashare/***

Setting up User Accounts and Connecting to Share

- Since Samba doesn't use the system account password, we need to set up a Samba password for our user account:
- ***sudo smbpasswd -a username***

Connecting to Share

- ***On Ubuntu: Open up the default file manager and click Connect to Server then enter***



- On Windows, open up File Manager and edit the file path to:
- [\\ip-address\sambashare](#)

Linux package and package installer

Package management is very important in Linux, and knowing how to use multiple package managers can prove life saving for a power user, since downloading or installing software from repositories, plus updating, handling dependencies and uninstalling software is very vital and a critical section in Linux system Administration.

1. DPKG – Debian Package Management System

Dpkg is a base package management system for the Debian Linux family, it is used to install, remove, store and provide information about .deb packages.

APT (Advanced Packaging Tool)

It is a very popular, free, powerful and more so, useful command line package management system that is a front end for dpkg package management system.

Users of Debian or its derivatives such as Ubuntu and Linux Mint should be familiar with this package management tool

2. RPM (Red Hat Package Manager)

- This is the Linux Standard Base packing format and a base package management system created by RedHat.
- Being the underlying system, there several front-end package management tools that you can use with it and but we shall only look at the best and that is:

YUM (Yellowdog Updater, Modified)

It is an open source and popular command line package manager that works as a interface for users to RPM. You can compare it to APT under Debian Linux systems, it incorporates the common functionalities that APT has.

3. Pacman Package Manager –

- It is a popular and powerful yet simple package manager for Arch Linux and some little known Linux distributions, it provides some of the fundamental functionalities that other common package managers provide including installing, automatic dependency resolution, upgrading, uninstalling and also downgrading software.

4. Zypper Package Manager – openSUSE

It is a command line package manager on OpenSUSE Linux and makes use of the libzypp library, its common functionalities include repository access, package installation, resolution of dependencies issues and many more.

Importantly, it can also handle repository extensions such as patterns, patches, and products.

Virtual Server

- A virtual server is a server that shares hardware and software resources with other operating systems (OS), versus dedicated servers. Because they are cost-effective and provide faster resource control, virtual servers are popular in Web hosting environments.
- On the Internet, a virtual server is a server (computer and various server programs) at someone else's location that is shared by multiple Web site owners so that each owner can use and administer it as though they had complete control of the server. Some Internet service providers (ISPs) offer a virtual server service instead of, or in addition to, virtual hosting..

- Using a virtual server, a company or individual with a Web site can not only have their own domain name and IP address, but can administer their own file directories, add e-mail accounts and address assignments, assign multiple domain names that resolve to a basic domain name without involvement from the ISP, manage their own logs and statistics analysis, and maintain passwords.
- Users of a virtual server, however, do not have to manage the hardware aspects of running a server and effectively share the cost of expensive line connections to the Internet

Cloud computing

- Cloud computing is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user. The term is generally used to describe data centers available to many users over the Internet. Large clouds, predominant today, often have functions distributed over multiple locations from central servers. If the connection to the user is relatively close, it may be designated an edge server.
- The cloud is also not about having a dedicated network attached storage (NAS) hardware or server in residence. Storing data on a home or office network does not count as utilizing the cloud. (However, some NAS will let you remotely access things over the Internet,
- Cloud computing was popularized with Amazon.com releasing its Elastic Compute Cloud product in 2006

- In August 2006, Amazon created subsidiary Amazon Web Services and introduced its Elastic Compute Cloud (EC2).
- In April 2008, Google released the beta version of Google App Engine
- In February 2010, Microsoft released Microsoft Azure, which was announced in October 2008.
- On March 1, 2011, IBM announced the IBM Smart Cloud framework to support Smarter Planet.

