



KPLABS Course

Nginx: Beginner to Advanced

Domain 1

ISSUED BY

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REPRESENTATIVE

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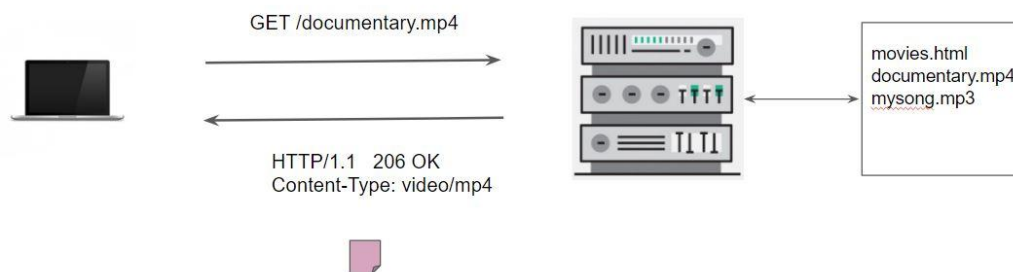
Domain 1 - Setting Up Labs

Module 1: Introduction to Nginx

1.1 Basics of Web-Servers:

A Web server is a program that uses HTTP (Hypertext Transfer Protocol) to serve the files that form Web pages to users, in response to their requests.

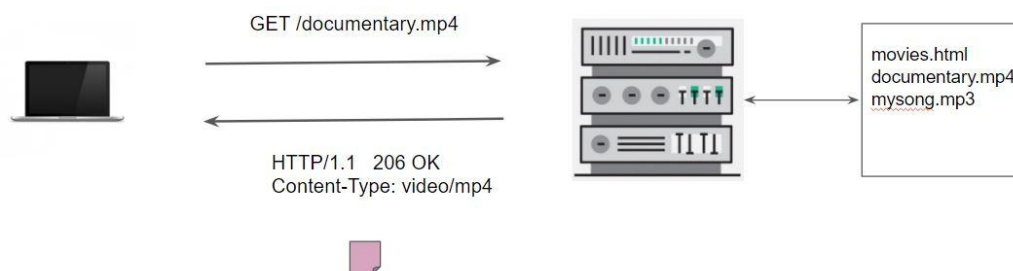
There are many popular web-servers like Apache, Nginx, IIS



1.2 Overview of Nginx

Nginx is one of the most popular web-server available in the industry.

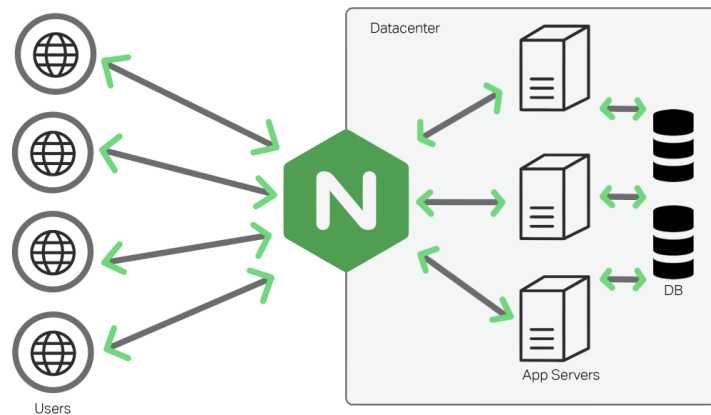
NGINX was written specifically to address the performance limitations of Apache web servers



1.3 Nginx is More than Web-Server

Nginx has much more capability than a typical web server.

It can act as a reverse proxy, do load-balancing, mail proxy, do HTTP caching.



Module 2: Installation Methods - Nginx

2.1 Installation Approaches

NGINX supports multiple different installation methods. These include:

- Linux (Recommended)
- Windows (BETA-like)
- Dockers

For this course, we will primarily be using Linux OS for Nginx practicals.



2.2 How to Create a Linux VM?

There are multiple approaches to creating a Linux-based VM.

- i) Make use of VMware Workstation / VirtualBox.
- ii) Launch New Server in Cloud (AWS, Azure, Digital Ocean etc)

2.3 Approach 1 - Use Virtualization Products

- Install VMware Workstation / VirtualBox.
- Create New VM based on Linux.
- Install Nginx.



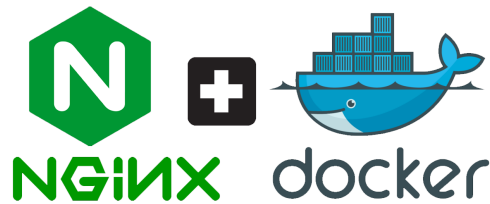
2.4 Approach 2 - Use Cloud Service Provider

- Choose a Cloud Service Provider of your choice.
- Launch a new VM based on Linux
- Install Nginx.



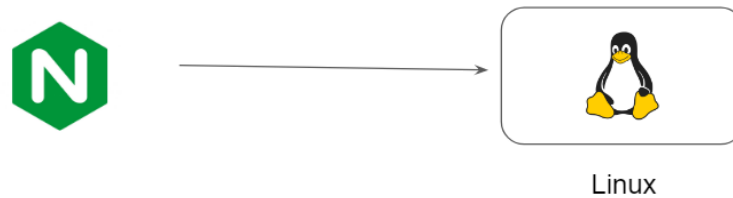
2.5 Approach 3 - Docker

- Install Docker on your laptop.
- Launch Nginx Docker container.



Module 3: Our Lab Setup

The preferred OS for Linux installation would be Linux.



The following diagram illustrates the architecture that we will be following in this course:

Criteria	Choices
Operating System	CentOS 8 / Rocky Linux 8
Cloud Provider	Digital Ocean

Why Digital Ocean?

Digital Ocean allows developers to quickly deploy, manage and scale cloud infrastructure without much complexity at an affordable cost.

They provide multiple coupon codes which give a great number of credits ranging from \$50-100 USD for new users.



Personal Account Security **Referrals**

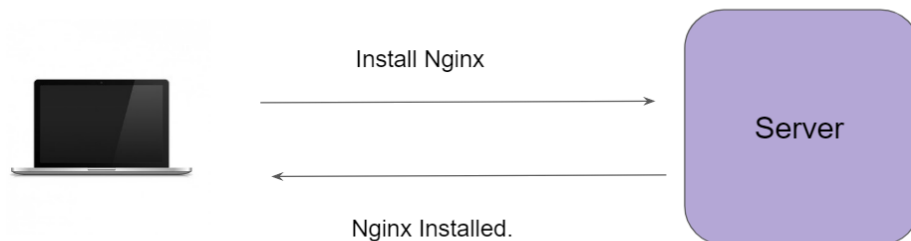
Give \$100, Get \$25

Everyone you refer gets \$100 in credit over 60 days, through referrals.

Module 4: Launching Infrastructure for Nginx

4.1 Creating Infrastructure for Nginx

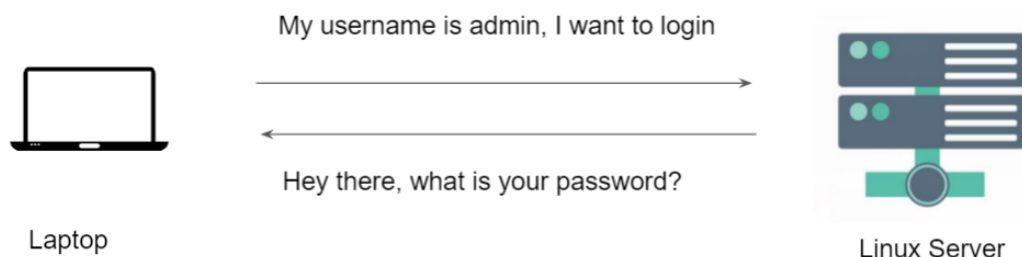
To begin with the Nginx installation process, we need one server hosting CentOS 8 / Rocky Linux 8



4.2 Password-Based Authentication

There can be multiple methods for authentication against a system.

Password-based authentication is the simplest form.



4.3 Challenges with Password-Based Authentication

Password-based authentication is generally considered to be less secure.

Many users write down the passwords in notepad files or as part of sticky notes.

Most users would not create a complex password that is difficult to hack.

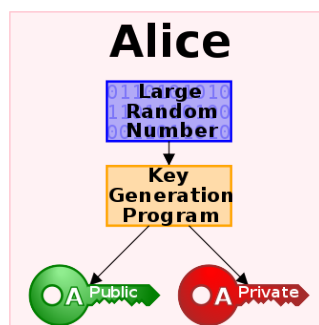


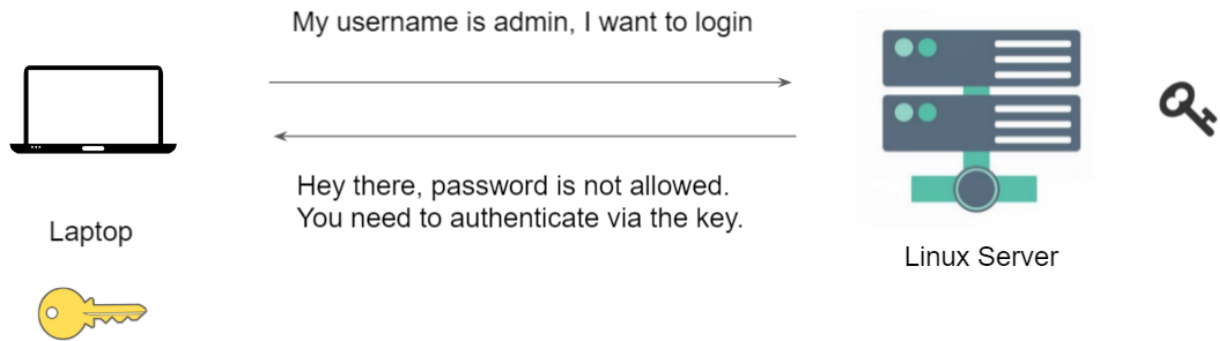
4.4 Key Based Authentication

In this type of authentication, there are two special keys that are generated.

One key is called a Public Key and the second key is called a Private key.

If the public key is stored in the server and is used as an authentication mechanism, only the corresponding private key can be used to successfully authenticate.





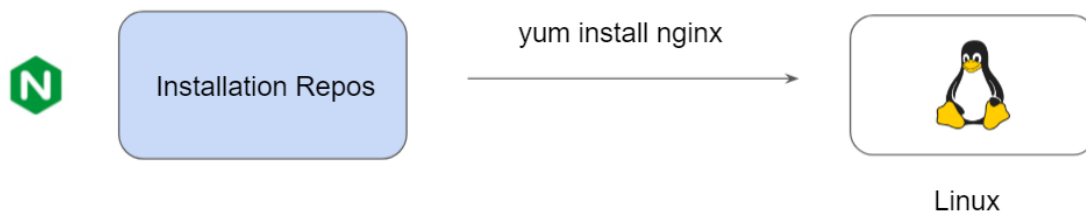
4.5 Firewall Rules

With the help of a Firewall, you can restrict the connection to your Nginx instance.

Ports	Description
22	Connection to SSH.
80	Connection to Nginx.

Module 5: Installing Nginx

Nginx can directly be installed from various public repositories available.



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