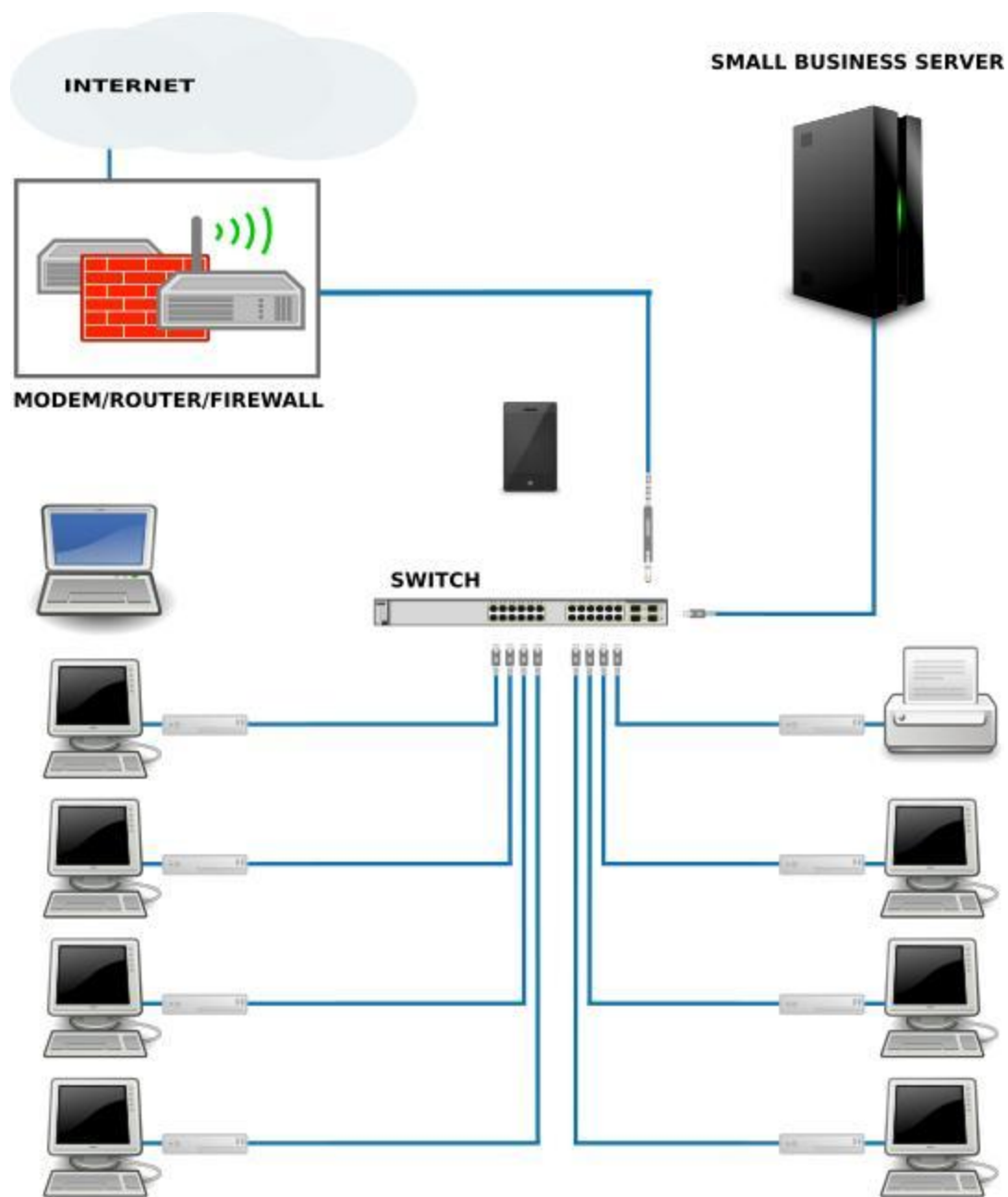
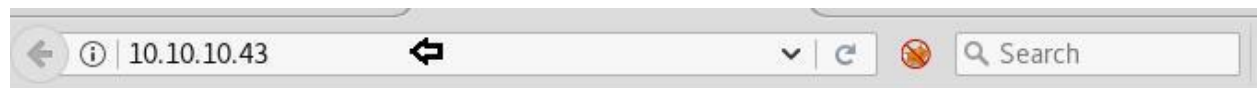
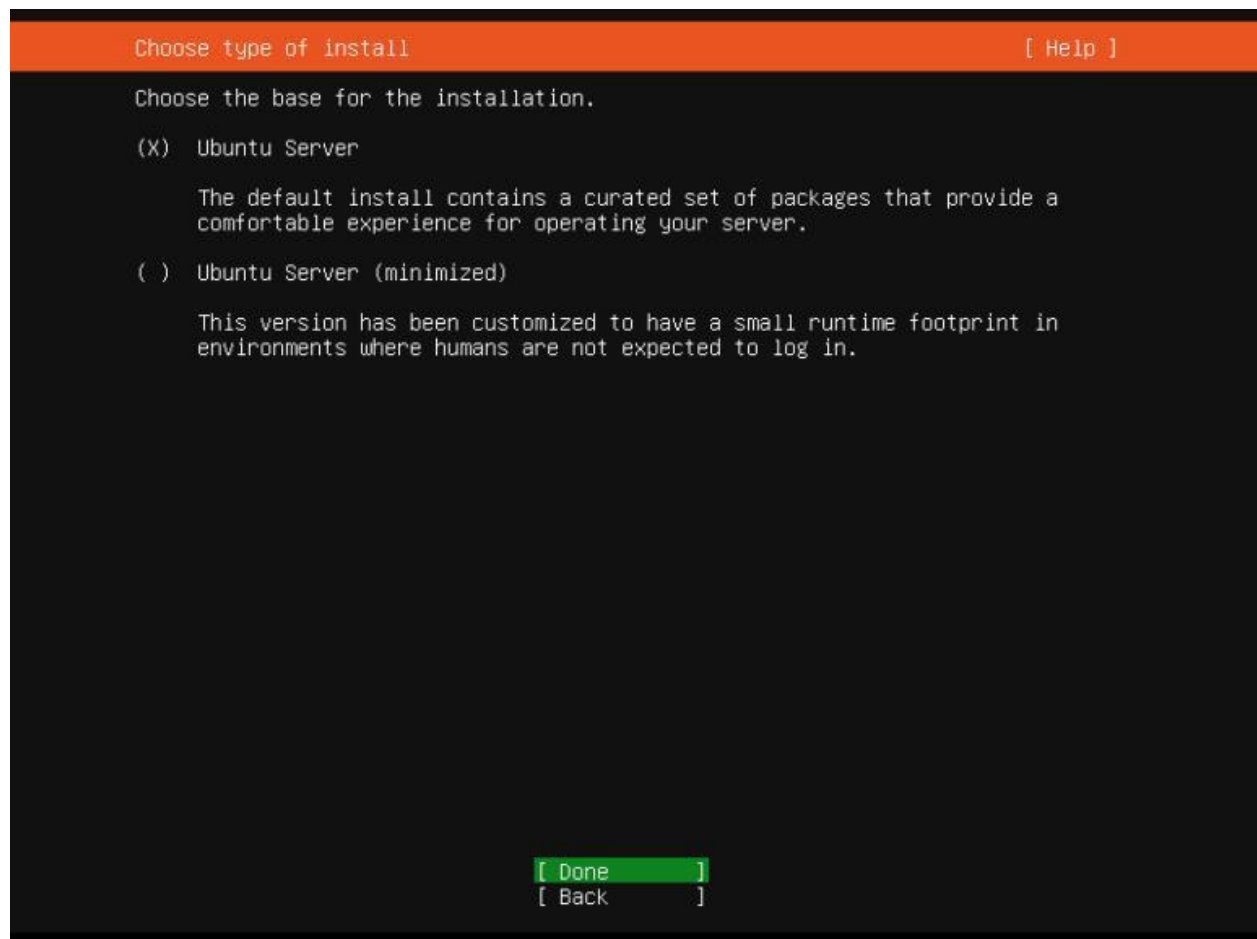


How to Build a Small Business Web Server

A Beginner's Guide to Hosting Your Own Website



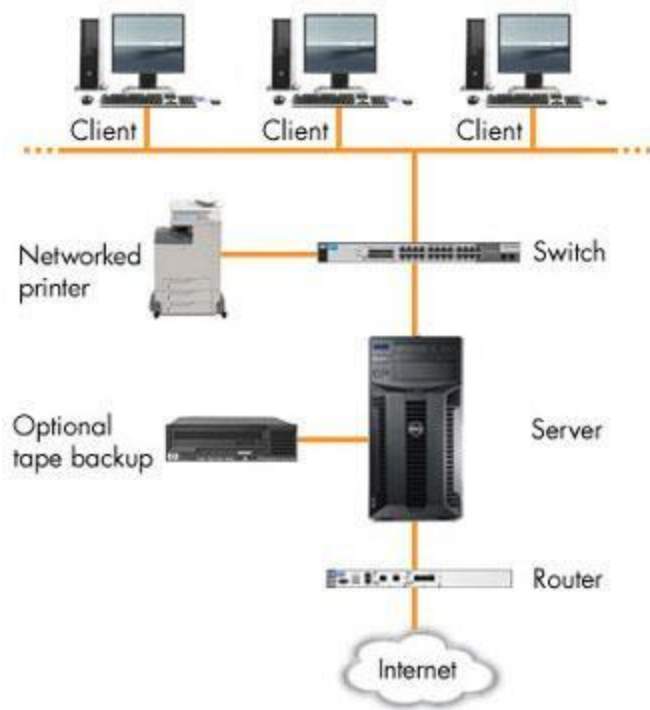




It works!

This is the default web page for this server.

The web server software is running but no content has been added, yet.



Introduction

Hosting your own website can save money, provide greater control over your data, and help you learn valuable networking skills. This tutorial explains how to create a basic web server for a small business or organization using widely available software.

By the end of this guide, you will understand:

- Server hardware requirements
- Network planning
- Installing a server operating system
- Setting up a web server
- Hosting a website
- Domain names and DNS
- Security best practices
- Backups and maintenance

Chapter 1 – What Is a Web Server?

A web server is a computer that stores website files and sends them to visitors when they access your website.

When someone enters:

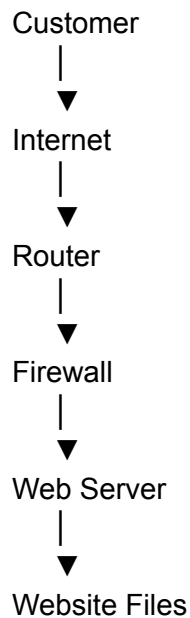
www.mybusiness.com

their browser sends a request across the Internet to your server.

The server responds by sending:

- HTML pages
 - Images
 - CSS files
 - JavaScript
 - Videos
 - Documents
-

How It Works



Chapter 2 – Hardware Requirements







A basic web server does not require expensive hardware.

Minimum

- Dual-core CPU
- 8 GB RAM
- 256 GB SSD
- Gigabit Ethernet

Recommended

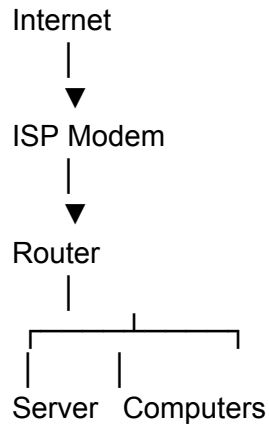
- Intel Core i5 or Ryzen 5
- 16 GB RAM
- 1 TB SSD
- UPS battery backup
- Two hard drives for backups

Chapter 3 – Network Equipment

You'll need:

- Internet connection
- Router
- Network switch (optional)
- Ethernet cable
- Static IP address (recommended)

Example:



Chapter 4 – Choosing an Operating System

Popular server operating systems include:

- Ubuntu Server
- Debian
- Rocky Linux
- Windows Server

Ubuntu Server is a common beginner-friendly choice because it is free and well documented.

Chapter 5 – Installing Ubuntu Server

Willkommen! Bienvenue! Welcome! Добро пожаловать! Welkom!

Please choose your preferred language.

[English	▶]
[Asturianu	▶]
[Català	▶]
[Hrvatski	▶]
[Nederlands	▶]
[Suomi	▶]
[Français	▶]
[Deutsch	▶]
[Ελληνικά	▶]
[Magyar	▶]
[Latviešu	▶]
[Norsk bokmål	▶]
[Polski	▶]
[Русский	▶]
[Español	▶]
[Українська	▶]

1 / 12

Use UP, DOWN and ENTER keys to select your language.

FILE SYSTEM SUMMARY

MOUNT POINT	SIZE	TYPE	DEVICE	TYPE
[/	18.948G	new ext4	new partition of local disk	▶]
[/boot/efi	1.049G	new fat32	new partition of local disk	▶]
[/home	25.000G	new ext4	new partition of local disk	▶]
[/tmp	5.000G	new ext4	new partition of local disk	▶]
[/var	20.000G	new ext4	new partition of local disk	▶]
[/var/log/	20.000G	new ext4	new partition of local disk	▶]
[/var/log/audit	5.000G	new ext4	new partition of local disk	▶]
[/var/tmp	5.000G	new ext4	new partition of local disk	▶]

AVAILABLE DEVICES

DEVICE	TYPE	SIZE
[/dev/sdb	local disk	3.000T ▶]
free space		2.999T ▶]

[Create software RAID (md) ▶]

[Create volume group (LVM) ▶]

USED DEVICES

DEVICE		TYPE	SIZE
[/dev/sda		local disk	100.000G ▶]
partition 1	new, primary ESP, to be formatted as fat32, mounted at /boot/efi		1.049G ▶]
partition 2	new, to be formatted as ext4, mounted at /home		25.000G ▶]
partition 3	new, to be formatted as ext4, mounted at /tmp		5.000G ▶]
partition 4	new, to be formatted as ext4, mounted at /var		20.000G ▶]
partition 5	new, to be formatted as ext4, mounted at /var/log/		20.000G ▶]
partition 6	new, to be formatted as ext4, mounted at /var/log/audit		5.000G ▶]
partition 7	new, to be formatted as ext4, mounted at /var/tmp		5.000G ▶]
partition 8	new, to be formatted as ext4, mounted at /		18.948G ▶]

[Done]

[Reset]

[Back]

```
Ubuntu 20.04.3 LTS ubuntu-server tty1
ubuntu-server login: ubuntu
Password:
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.4.0-92-generic x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Wed 12 Jan 2022 10:16:13 AM UTC

System load:          0.07
Usage of /:            10.2% of 97.93GB
Memory usage:         0%
Swap usage:           0%
Temperature:          44.0 C
Processes:            412
Users logged in:       0
IPv4 address for eno49: 10.43.138.20
IPv6 address for eno49: 2001:1:1:1442:217:a4ff:fe77:32
IPv4 address for eno50: 10.43.138.22
IPv6 address for eno50: 2001:1:1:1442:217:a4ff:fe77:34

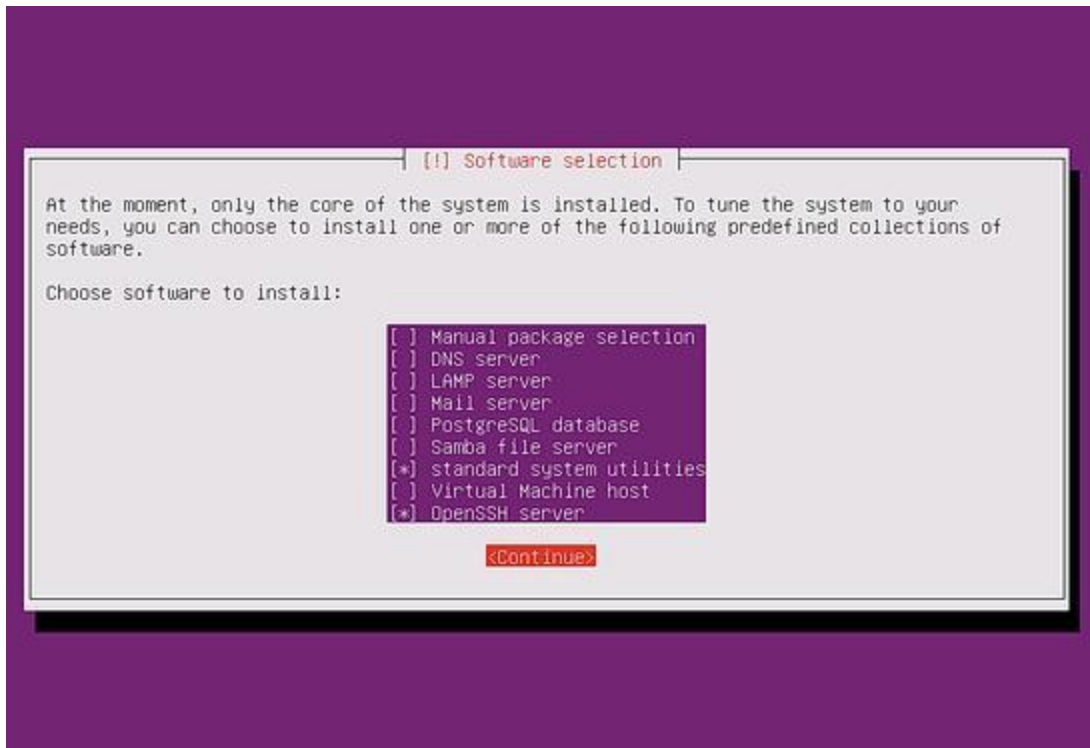
0 updates can be applied immediately.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ubuntu-server:~$ _
```



Step 1

Download the Ubuntu Server ISO.

Step 2

Create a bootable USB drive.

Step 3

Boot from the USB drive.

Step 4

Install Ubuntu Server.

During installation:

- Create an administrator account.
 - Enable SSH if you want to manage the server remotely.
 - Configure networking (DHCP or a static IP).
-

Chapter 6 – Updating the Server

After installation:

```
sudo apt update  
sudo apt upgrade
```

Keeping software updated helps improve security and stability.

Chapter 7 – Installing Apache

Apache is one of the most widely used web servers.

Install it with:

```
sudo apt install apache2
```

Start the service:

```
sudo systemctl start apache2
```

Enable automatic startup:

```
sudo systemctl enable apache2
```

Chapter 8 – Testing the Server

Open a browser.

Enter:

```
http://SERVER-IP
```

Example:

`http://192.168.1.25`

You should see the default Apache welcome page.

Chapter 9 – Website Files

Default web folder:

`/var/www/html`

Example:

`index.html`
`about.html`
`contact.html`
`images/`
`css/`
`js/`

Replace the default `index.html` with your own homepage.

Chapter 10 – Installing PHP (Optional)

If your website uses PHP:

`sudo apt install php libapache2-mod-php`

Restart Apache:

`sudo systemctl restart apache2`

Chapter 11 – Installing MySQL (Optional)

Many websites use a database.

Install MySQL:

```
sudo apt install mysql-server
```

Secure the installation:

```
sudo mysql_secure_installation
```

Chapter 12 – Domain Names

Instead of:

123.45.67.89

people prefer:

www.mybusiness.com

To do this:

1. Register a domain name.
 2. Point its DNS records to your public IP address.
 3. Configure your web server to respond to that domain.
-

Chapter 13 – Port Forwarding

If the server is hosted in your office, you'll typically configure your router to forward web traffic from the Internet to the internal server.

Common web ports are:

- HTTP: 80
- HTTPS: 443

Only expose services that are necessary, and secure the server before making it publicly accessible.

Chapter 14 – HTTPS Encryption

HTTPS encrypts data between visitors and your website.

A typical setup involves:

- Obtaining a TLS/SSL certificate from a trusted certificate authority.
 - Configuring your web server to use the certificate.
 - Redirecting HTTP traffic to HTTPS.
-

Chapter 15 – Firewall

Ubuntu includes a simple firewall called UFW.

Allow web traffic:

```
sudo ufw allow 80  
sudo ufw allow 443  
sudo ufw enable
```

Check status:

```
sudo ufw status
```

Chapter 16 – User Accounts

Avoid using the administrator account for everyday tasks.

Create separate accounts for administrators and use strong, unique passwords or SSH keys for remote access.

Chapter 17 – Website Backups

Back up:

- Website files
- Images
- Databases
- Configuration files

Consider keeping:

- Local backups
- External drive backups
- Cloud backups

Test your backups periodically to ensure they can be restored.

Chapter 18 – Monitoring

Monitor:

- CPU usage
- Memory
- Disk space
- Network activity
- Website uptime

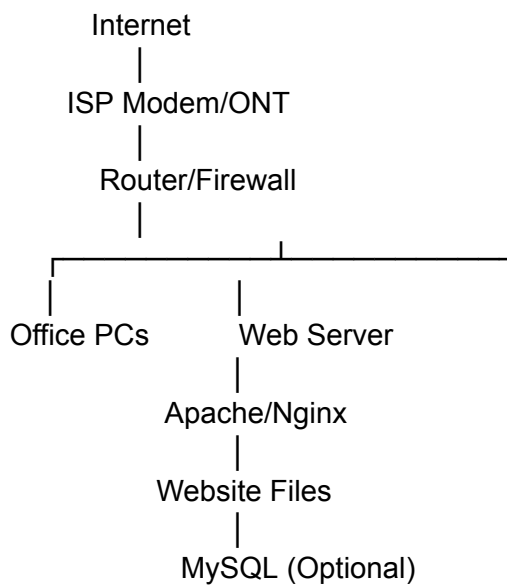
Early monitoring helps detect problems before they affect visitors.

Chapter 19 – Maintenance Checklist

Perform these tasks regularly:

- Install software updates.
 - Review logs for unusual activity.
 - Renew TLS certificates if needed.
 - Verify backups.
 - Remove unused software and accounts.
 - Check available disk space.
-

Example Network Diagram



Advantages of Self-Hosting

- Greater control over your data
- No monthly hosting plan (beyond Internet and hardware costs)
- Flexibility to customize software
- Opportunity to learn networking and server administration

Considerations

Self-hosting also means you're responsible for:

- Applying security updates
- Monitoring availability
- Managing backups
- Protecting the network
- Maintaining reliable Internet connectivity

For many small businesses, renting a virtual private server (VPS) or using a managed hosting provider can reduce maintenance while still providing flexibility. Self-hosting can be a good fit for organizations with the time and expertise to manage their own infrastructure.

Summary

A basic self-hosted web server typically consists of:

1. A dedicated computer running a server operating system.
2. A web server such as Apache.
3. Your website files.
4. A properly configured network and firewall.
5. HTTPS for secure connections.
6. Regular updates, monitoring, and backups.

With careful planning and ongoing maintenance, a small organization can successfully host its own website while maintaining security and reliability.