Comprehensive Guide to Installing Tiki Wiki on Debian 12 (2025 Edition)

Bernard Sfez - 05-01-2025 12:24

This comprehensive guide demonstrates how to set up a Debian 12 server with a hosting control panel and install a Tiki Wiki website solution using only open-source software.

Designed for versatility, this proven method leverages an Amazon AWS Lightsail instance but can be easily adapted to most hosting platforms. Follow this step-by-step guide to configure MariaDB, manage PHP versions, install Webmin and Virtualmin, secure your server with SSL certificates, and publish your Tiki Wiki site online—all with expert insights and professional tips to streamline the process.

This tutorial is tailored for intermediate IT administrators or full-stack developers seeking guidance on setting up and publishing websites.

In this tutorial we will learn how to setup and configure:

- AWS Lightsail instance (valid for EC2 instance too)
- Linux operating system, Debian12 and Apache2
- MariaDB (InnoDB)
- Webmin and Virtualmin web hosting control panel
- PHP
- Git and the Tiki Gitlab repository
- Tiki Wiki the website builder

Before starting this Tiki tutorial, some familiarity with shell usage and a basic understanding of server operations is recommended. However, don’t let that stop you! Feel free to dive in and learn as you go—just ensure you're working in a test environment with no real data at first. With the flexibility to terminate and reinstall instances, and the benefit of a 3-month free tier on AWS Lightsail, you have plenty of room to experiment and refine your setup until it's perfect.

If you’d rather skip the learning curve, save time, or have an expert handle your Open Source Solution and Tiki Wiki installation, hire me directly or explore the Tiki Consultants list. With a Tiki Specialist managing the process, you can rest assured of a smooth and professional setup from start to finish.

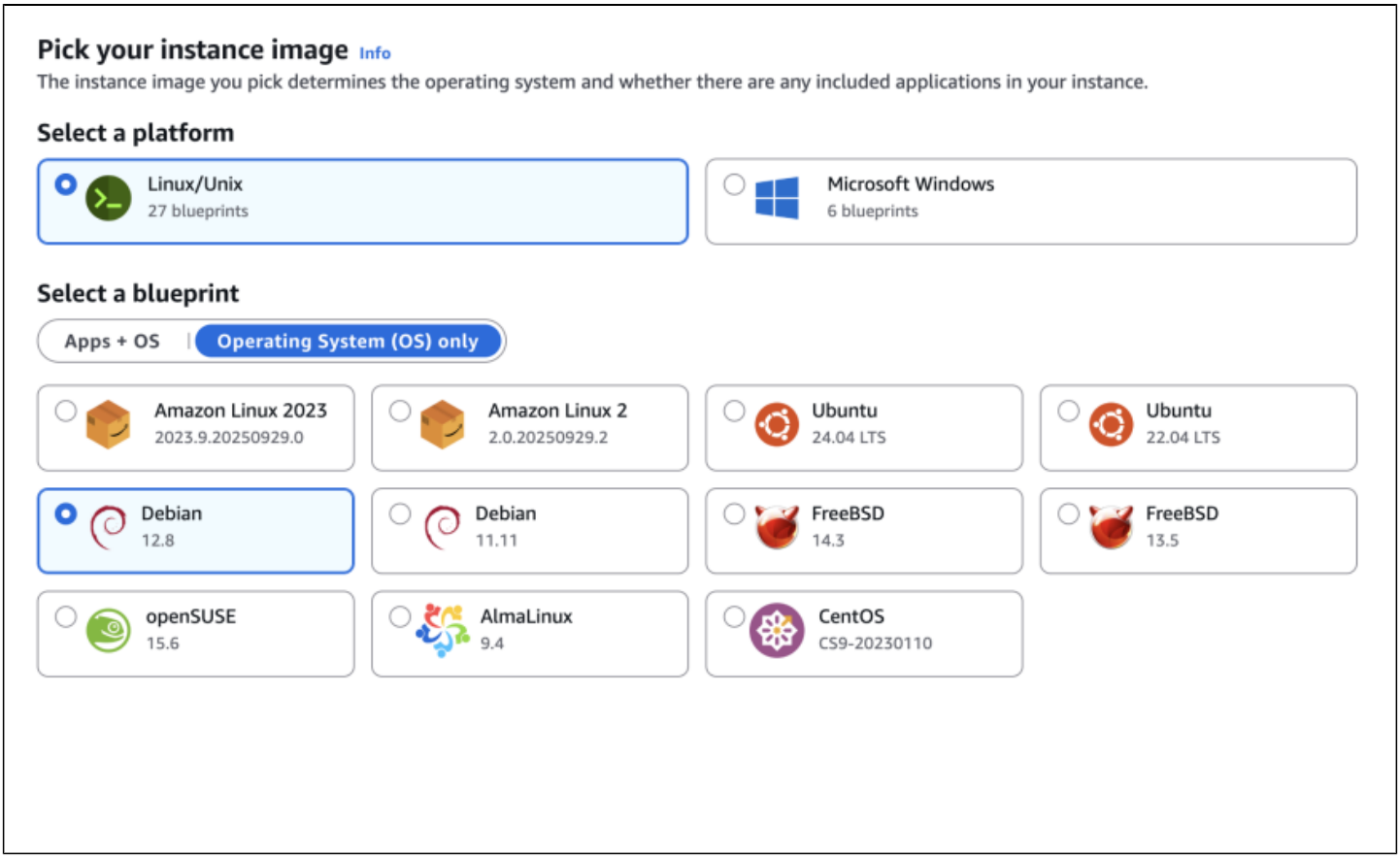
Server Preparation

Install an Amazon Lightsail Instance

Region Selection

Log into your AWS Console (or create an account) and search for "Lightsail" in the search bar.
Select your instance location by choosing a region for the server. Ideally, pick the region closest to your target users for better performance. Then, select your instance image by choosing a platform.
Note: Lightsail instances are not available in all AWS data centers and regions.

For this tutorial, select your instance image by clicking on the "Linux/Unix" blueprint, choose "OS Only", and then select Debian 12.x.
Important: Installing Virtualmin requires a pristine OS with only the basic server tools and libraries, so avoid selecting anything beyond a core basic OS installation.



SSH Key for Instance Access

In the SSH key section, you'll be prompted to use a default SSH key or to change the key associated with your account if one already exists.

If this is your first instance and you prefer simplicity, choose the default key created with your instance. Download it to your computer's ~/.ssh folder for future access.
If you already have an existing SSH key, you can upload and associate it with this new instance.
To create a new SSH key pair, follow Amazon's provided guide for assistance.

Select Your Plan

Choose your instance plan carefully. While the cheapest option may suffice for Tiki versions before Tiki 26, versions from Tiki 26+ require a minimum of 2 GB of RAM (and some pre-release versions of Tiki 28 require 4 GB as of this tutorial's publication).
Note: Lightsail does not provide a seamless upgrade path. To "upgrade" to a higher plan, you'll need to create a new instance and transfer your snapshot. Alternatively, consider using quickly duplicatable solutions like those implemented by Open Source Solutions for efficiency and reliability.

To avoid frustration later, choose your plan wisely. If you're unsure, feel free to contact the Open Source

Solutions team for guidance.

Save Your AWS Instance

Give your instance a clear, descriptive name to stay organized—especially if you plan to create additional instances for development or testing. Add tags if needed for better categorization.

Finally, click the orange "Create Instance" button. Within a minute, your instance will be running. You can access it immediately using the integrated SSH console by clicking on the terminal icon ().

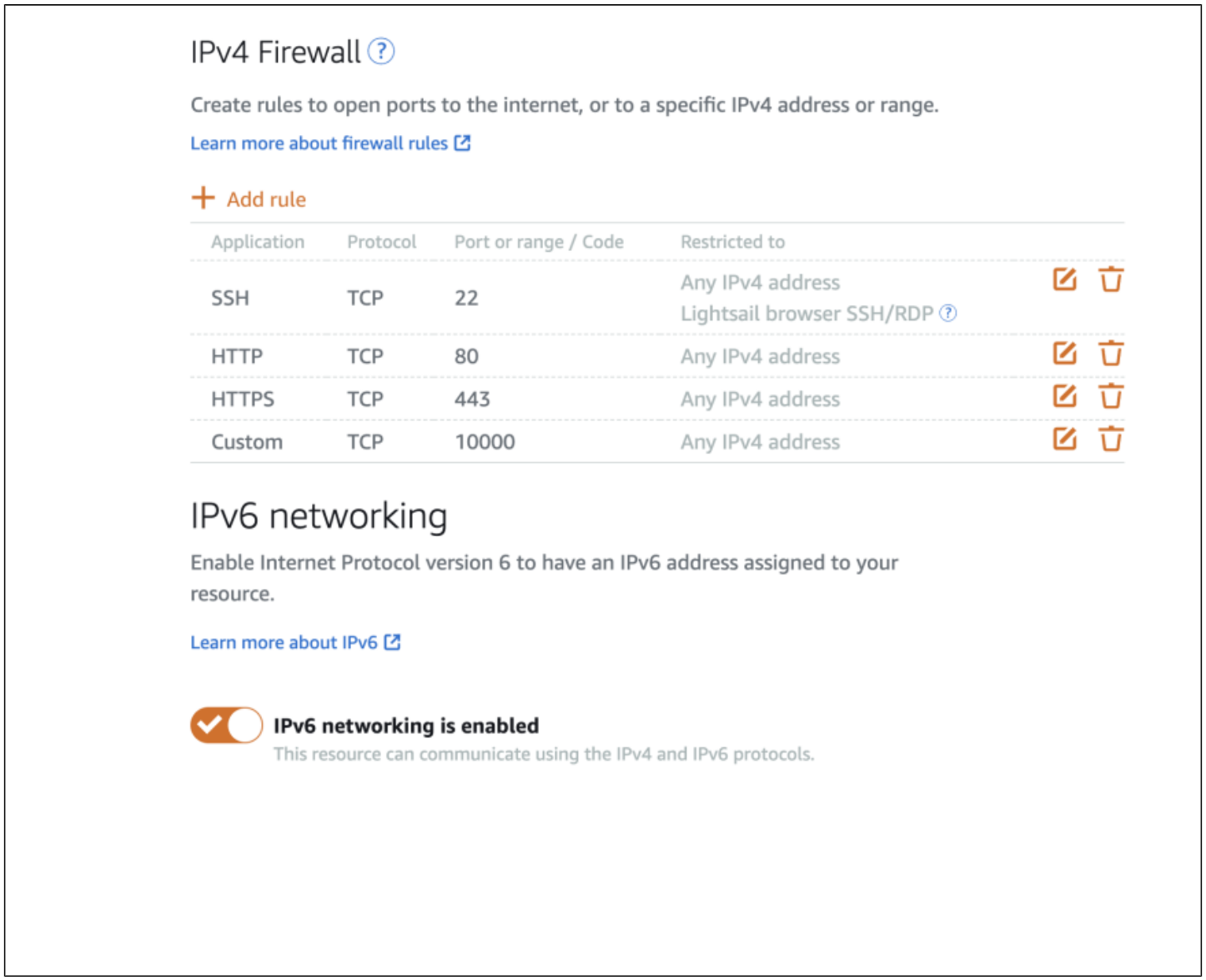
Lightsail Networking and Security Group Setup

Configuring access to your site and the Virtualmin control panel is essential for server security. Begin by navigating to the Lightsail instance control panel and selecting Networking to manage and secure your access settings.

By default, ports 22 (SSH) and 80 (HTTP) should already be open.

1. Set the security group and click Add Rule to open additional ports:

- 443 for HTTPS (SSL-secured site access)
- 10000 for Virtualmin control panel access



2. Set Access Restrictions based on IP (suggested):

- Open ports 80 and 443 to all traffic (no IP restrictions).
- Restrict access to ports 22 and 10000 to your IP only for security. During setup, you may use the Lightsail browser-based SSH/RDP for SSH access.
- Keep port 22 open during setup but plan to restrict access to your IP afterward. For enhanced security, consider changing the default SSH port once setup is complete.

At Open Source Solutions, we follow our proven Server Ports Management Policy (OSS Managed Server) to mitigate intrusion risks, ensuring strict control and heightened security for our clients' servers.

3. Set Up a Static IP:
Your public IPv4 address will change when you stop and start your Lightsail instance. To prevent this, create and attach a static IPv4 address to your instance from the IPv4 networking section. This ensures your instance retains a fixed IP address.

Although it is outside the scope of this tutorial, now is a good time to point your domain to the server's static public IP address, ensuring your domain correctly maps to your hosting solution.

4.Apply and Test:
Reboot the instance to apply the changes. Verify that your static IP is attached and that the necessary ports are open.

This configuration ensures a secure foundation for managing your site and server on Lightsail, protecting sensitive ports from unauthorized access while maintaining functionality.

Enabling root login

With your AWS instance default comes an "admin" account member of the sudoers group and therefor able to switch to the "root" super user (su). Enable root login only if your server or hosting configuration impose it.

Sudo or Set and use root login

Sudo or Set and use root login

Depending of your account settings, you may be able to use the root user or use the sudo command. If you can use the root user or sudo that's ok, you can skip this.
If you want to enable root login anyway... this is the way.

Logged as the default "admin" user. (I use nano but it is the same with VI, VIM or any editor)

Switch for the Super user (root)

```
sudo su
```

Edit ssh configuration file

```
nano /etc/ssh/sshd_config
```

Change §a8046b6c46965fdc3a4b4b0555e06726§ to §b496f614fe4ed805b6a060fb38a59369§ and §317417b64f5899ab77f3da79f4ff4fad§ to §14ee732c33fe87995e4fad56ec9bd5fc§ and of course save your changes.
You will need to remove a small script that forbid root to use his SSH key

Edit the authorized_keys file

```
nano ~/.ssh/authorized_keys
```

The script begins with "no-port-fowarding..." you need to remove this script up to the ssh key itself that starts with "ssh-rsa...".
That way the ssh key will be accessible to the ssh login.

Restart SSHD to validate changes

```
systemctl restart sshd
```

Set the root password

```
passwd root
```

Reboot your instance

```
sudo reboot
```

You will be disconnected, reconnect and check everything is working fine when you login as root.

Login as root

```
ssh root@xx.xx.xx.xx (your instance IP)
```

Note: It is a good practice, and I highly recommend it, to disable root access on production servers once everything is in place. This can be done by setting the "PermitRootLogin" and "PasswordAuthentication" parameters to "no" in the "/etc/ssh/sshd_config" file.

Connect to Your Server Using SSH

Connect Using the AWS Browser-Based SSH/RDP

Once your instance is running, you can begin managing it. A simple way to access your server is through Lightsail's browser-based SSH/RDP, which provides direct, secure SSH access via an AWS terminal.

For most management tasks, this browser-based method is sufficient. However, you should also be able to log in using an external terminal application, and later, we'll use the Virtualmin integrated terminal for more advanced tasks.

Connect Using SSH from an External Terminal

Alternatively, you can connect to your server using your preferred terminal application (e.g., PuTTY, macOS Terminal, or others) for shell access. This approach requires the public IP of your instance and your locally stored SSH key. The default administrative user set by AWS is admin.

The command to connect (assuming your SSH key is stored as LightsailDefaultKeyPair-us-east-1.pem) would look like this:

SSH using the stored default key

```
ssh -i ~/.ssh/LightsailDefaultKeyPair-us-east-1.pem admin@xx.xx.xx.xx
```

Replace xx.xx.xx.xx with your instance's public IP address. This method offers greater flexibility, particularly for advanced configuration and software installations.

If you didn't set the SSH key during instance creation, configuring the SSH key pair may be a bit challenging if you're not familiar with IT administration. Here’s how to proceed:

Replace LightsailDefaultKeyPair-us-east-1.pem with your key filename.
Download the SSH key to your computer.
Move the key to your ~/.ssh directory.
Set the correct file permissions:

Set per file permissions

```
sudo chmod 600 ~/.ssh/LightsailDefaultKeyPair-us-east-1.pem
```

After this, you should be able to connect with the following command:

SSH using the stored default key

```
ssh -i ~/.ssh/LightsailDefaultKeyPair-us-east-1.pem admin@xx.xx.xx.xx
```

For further documentation, visit the Amazon Lightsail SSH Using Terminal guide.

Checking the Hostname

To ensure smooth operation of Virtualmin/Webmin, it's essential to properly configure your server's hostname and Fully Qualified Domain Name (FQDN). By default, your server may auto-generate the hostname, but it’s important to verify and correct it if necessary.

Step 1: Check the Current Hostname
Once logged into your server via SSH, use the following command to check the current hostname:

Check hostname

```
hostnamectl
```

In the output, the "Static hostname" will typically show the instance's local IP. Confirm this by running the following command to output only the hostname:

Check hostname

```
hostname
```

Step 2: Set the Hostname to Your FQDN
You need to update the hostname to match your FQDN (e.g., yourdomain.com) before proceeding with the next step (Installing Virtualmin). To do this, edit the hostname configuration file:

Edit the hostname

```
sudo nano /etc/hostname
```

Change the existing entry to your desired FQDN (e.g., subdomain.domain.com).

Step 3: Edit the Hosts File
Next, verify and update the /etc/hosts file to include your FQDN. It should look like this:
It should look like this `127.0.1.1 subdomain.domain.com subdomain` but by default this is not set of course.

To check the current configuration, run:

Check hostname

```
cat /etc/hosts
```

To edit the hosts file and set the correct FQDN, use:

Edit host

```
sudo nano /etc/hosts
```

Add or update the line as shown above (replace subdomain.domain.com and subdomain with your actual domain and subdomain).

Step 4: Reboot the Server
After making these changes, reboot your server to ensure the changes take effect:

Reboot server

```
sudo reboot
```

Step 5: Verify Changes
Once the server reboots, check that everything is set up correctly by running:

Check hostname

```
hostname
```

If your FQDN is displayed correctly, you are ready to proceed with installing Virtualmin. If not, double-check the configuration files or refer to the troubleshooting options below.

Fix host file and make it permanent
You need also to check and add your host to the hosts file if your providing company didn't set it right.
But if you do it directly (editing /etc/hosts) the changes will be reverted on the next reboot.
To make it permanent, you need to modify the template used to recreate on each reboot the hosts file.

Some instance may use a Cloud configuration file other may use a Debian host file.
You will find useful information in the top comments of `/etc/hosts`
If the file start with: "Your system has configured 'manage_etc_hosts' as True.", it means your server is using cloud-init and you need to change the value of "preserve_hostname" to true at /etc/cloud/cloud.cfg

Edit hosts.debian.tmpl

```
nano /etc/cloud/cloud.cfg
preserve_hostname: true
```

Reboot the server and check changes are permanent.

Upgrade your Debian OS

Assuming you've been provided with root access and SSH information, enabling you to connect via password or SSH Key, let's begin by ensuring our instance is up-to-date.

We want to work on the last version of the dozens of software and library your server will depend on. Log onto your server and update/upgrade it with the following commands:

Upgrade Linux Server

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

Install Webmin and Virtualmin

Virtualmin will install everything you need and it is critical the installation of Virtualmin comes first.
Else you will be warned previous tools or libraries have been installed and sometimes it means you will have to clean them manually before proceding.

We will download Virtualmin automated install script and run it. It is basically a shell script that will handle rest of the installation once executed.

Download Virtualmin install script

```
wget https://software.virtualmin.com/gpl/scripts/install.sh
```

You can do a full install but also you can do a minimal install which will spare the instance resources. For exemple where I don't need a mail server I do minimal install.

Full install of Virtualmin

```
sh install.sh
```

Minimal install of Virtualmin

```
sudo sh install.sh --minimal
```

```
admin@fwtestserver:~$ sudo sh install.sh --minimal
[INFO] Log will be written to: /home/admin/virtualmin-install.log

  Welcome to the Virtualmin GPL installer, version 7.4.0

  This script must be run on a freshly installed supported OS. It does not
  perform updates or upgrades (use your system package manager) or license
  changes (use the "virtualmin change-license" command).

  The systems currently supported by the install script are:

    Red Hat Enterprise Linux and derivatives
      - RHEL 8 and 9 on x86_64
      - Alma and Rocky 8 and 9 on x86_64
      - CentOS 7 on x86_64

    Debian Linux and derivatives
      - Debian 10, 11 and 12 on i386 and amd64
      - Ubuntu 20.04 LTS, 22.04 LTS and 24.04 LTS on i386 and amd64

  If your OS/version/arch is not listed, installation will fail. More
  details about the systems supported by the script can be found here:

    https://www.virtualmin.com/os-support

  The selected package bundle is LAMP and the size of install is
  minimal. It will require up to 1 GB of disk space.

  Exit and re-run this script with --help flag to see available options.
```

You should see now the different components being installed one by one.
This is taking some times... Just wait for the process to complete.

It should end with:
"SUCCESS to configure at https://xxx-xxx-xxx-xxx:10000 (or https://yourFQDN:10000)."
You should be ready to login to your Virtualmin panel using your root access if your firewall is set correctly.
It happens your hosting services open only certain ports by default like 80,443,22. For virtualmin you need to also open port 10000.

Setup your root access to Virtualmin

To be able to use Virtualmin as root without enabling root login I run a new webmin passwd command to change the password and set Webmin password authentication.

Set your Webmin root user

```
sudo webmin passwd --user root
```

Use it to login to your new Virtualmin.
https://xxx-xxx-xxx-xxx:10000 (or https://yourFQDN:10000

Virtualmin setup and post-installation optional features.

Once you've logged into your Virtualmin web interface, you may need to trust the SSL certificate (depending on your browser and system configuration).

Follow the Virtualmin Post-Installation Wizard. This wizard is straightforward and provides step-by-step guidance to complete the setup. While the questions may vary based on your system and the version of Virtualmin you're using, in most cases, it is safe to proceed with the default settings suggested by the wizard.
Database servers

- Run MariaDB database server?
  I use MariaDB for my Tiki Wiki installs so, yes.
  You will have to validate or change the MariaDB root password, enter it and save it somewhere if needed later.
- Run PostgreSQL database server?__
  As stated above it will be a no.

DNS configuration
Primary nameserver should show the hostname set previously.

System email address
Set your admin email.

You can stop now and have enough to launch your first Virtual Server (site) or continue with additional wizard settings.

Password storage
We don't want to store in clear the passwords used on the server so I select "Only store hashed passwords".

MariaDB configuration size
This depend of your usage of the Tiki Wiki instance but selecting the "suggested" option by the virtualmin wizard is fine.

SSL key directory
Unless you know what you do keep the default. (Per-domain)

At this stage, the process should be complete. However, you may encounter a prompt asking if you'd like to create a default virtual server. If this happens, I recommend selecting "No" to manually configure the settings for your domain.

After making any necessary changes, I always recheck the configuration to ensure everything is in order. Once satisfied, proceed to a last reboot of the server, and check all our settings didn't change so you can create your first Virtual Server—essentially a website.

Create your first Virtual Server (your website)

- Set your domain name.
- Give it a description.
- Set the Administration password (even if you use an SSH key keep a second access is wise.
- Add an SSH public key (copy your Public key)
- Set the Administration username (or keep default)

In the Advanced panel I usually change only the Default database name.

In the Enabled features panel if you won't use Email and the Internet AWStats I suggest to disable it (Mail for domain and Enable AWStats reporting)

Don't change the rest and Create your server.
Once it has been created Return to the Virtual Server screen and in the Quotas and limits panel you should check the Server Quota. During Tiki Wiki installation from git, the setup process may require more than 2Gb so you can set to unlimited during the setup and limit the quota once everything is running.

Install Let's Encrypt SSL Certificate

Note: By default, Virtualmin attempts to set up SSL for all domains in the "Domains associated with this server" list. If some of these domains aren’t set up correctly or are inaccessible, the certificate request will fail. To avoid this, I recommend manually specifying only the domains you’re using in the "Domain names listed here" field to install the certificates only for the relevant domains.

To install the Let's Encrypt SSL certificate, follow these steps:

- Go to the Virtual Server List, select your Virtual Server, and in the left-hand menu, navigate to Manage Virtual Server > Setup SSL Certificate. Then, select the Let's SSL Providers.
- In the Request certificate for field, select and enter the domain names for which you need the SSL certificate, using the "Domain names listed here" option.
- Ensure that the "Automatically renew certificate?" option is set to Yes, then click Request Certificate.

Before starting, make sure your domain is properly configured at your domain registrar.

Checking Server Status and Managing Running Services

In your Virtualmin dashboard, you’ll find a panel displaying the status of your servers and applications. Here, you can verify which services are running and take necessary actions:

- Check PHP Version: Confirm the PHP version currently in use to ensure compatibility with your applications.
- Mail and Mailbox Applications:
  - Keep Postfix running as it is essential for sending emails, such as system notifications or application-generated messages.
  - Disable Dovecot if your server does not need to process or receive incoming emails.

However, stopping Dovecot via the dashboard only halts the service temporarily. To disable it permanently:
In the left-hand menu, navigate to Webmin > System > Bootup and Shutdown.
Locate any services labeled "Dovecot" in the list.
Select the service, and at the bottom of the page, click Disable On Boot.

Additional Recommendations

- Enable Fail2Ban: Protect your server from brute-force attacks by enabling this intrusion prevention tool.
- Configure a Firewall: Enhance your server’s security by enabling and configuring a firewall to restrict unauthorized access.

By carefully managing these services and implementing security measures, you ensure your server runs efficiently and remains protected.

Installing Multiple Versions of PHP

Note: This information was accurate at the time of writing this tutorial.

Debian 12 comes with PHP 8.2 by default, but this version may not meet your specific requirements. If you need PHP 8.1 or other versions, you can install and configure them on your server.

Adding PHP8.1 from the sury repository

You can configure which one is the default PHP version used on your new Virtual Servers. You can change that default in System Settings -> Server Templates -> Default -> PHP Options. To set your host or domain PHP version go to Virtualmin -> Server configuration -> PHP version and on that screen you can set the PHP version for your domain.

Navigate to System Settings > Server Templates > Default > PHP Options.

Set PHP Version for a Specific Domain:
Go to Virtualmin, select domain > Web Configuration > PHP Options.
On this screen, you can select the PHP version for a particular domain.
Installing Libraries for Additional PHP Versions
If you need to support multiple PHP versions (e.g., PHP 8.2), install the required libraries as follows:

Additional libraries for Tiki Wiki

Don't forget that anyway you have to install a few additional libraries and they should be accessible to complete the setup.
That's why these have been added above but you can also add them for your other PHP versions. (change the version number)

Install PHP8.2

```
sudo apt-get install php8.2-gd php8.2-intl php8.2-curl php8.2-zip php8.2-bcmath
```

By following this process, you can ensure your server has the required PHP versions and libraries for various applications.

Secure the server (basic)

Enhancing server security requires skills, knowledge, and expertise beyond the scope of this article. However, it is crucial to implement basic measures to protect your server and data. Here, we will review the minimum steps you should take. For a comprehensive security review of your Tiki and server, please contact me.

Secure your MySQL database (mariaDB)

The latest version of MySQL, powered by the MariaDB engine, will be automatically installed by Virtualmin during setup.
Once the installation is complete, we will secure it to strengthen our defenses against potential threats and unauthorized access.

Secure mariaDB

```
sudo mysql_secure_installation
```

You should be able to answer most of the questions without too much thinking those are my answers (explanations can be found on the web)

- Enter current password for root (enter for none) => enter the root password set during Virtualmin install, else:
- Set root password? [Y/n] y - *As it is a first install*
- Switch to unix_socket authentication [Y/n] Y
- Change the root password? [Y/n] n
- Remove anonymous users? [Y/n] y
- Disallow root login remotely? [Y/n] y
- Remove test database and access to it? [Y/n] y
- Reload privilege tables now? [Y/n] y

Done, let's check MariaDB is running:

Test mariaDB status

```
sudo systemctl status mariadb
```

Some errors may appear since we did not use the root password for this command. However, MariaDB should indicate that it is "Active," confirming that the service is running successfully.

Install, Enable and configure fail2ban

Navigate to Webmin > Unused Modules.
By default, you should find "Fail2Ban Intrusion Detector" listed here.
Install the module and the necessary packages and enable it to run at server boot.

Missing default jail local file

On Debian12 there is a problem at the time this article was written.

A default jail local file is missing and that doesn't allow fail2ban to start and you need to manually create it.

Create and edit the jail.local file

```
sudo nano /etc/fail2ban/jail.local
```

If there, add already another missing parameters for a filter you should use right away, SSHD.

Add sshd backed parameter

```
[sshd]
backend=systemd
```

In some case, the installation using Virtualmin module fails and it is required to do it from the shell/terminal using.

Install fail2ban from shell

```
sudo apt install fail2ban
```

Verify the Module Status in the Networking Panel:

After enabling the module, go to Webmin > Networking > Fail2Ban Intrusion Detector.
The module might still show as stopped.
Double-Check the Status Using the Shell: To ensure that Fail2Ban is running, execute the following command in your terminal:

Check fail2ban status

```
sudo systemctl status fail2ban
```

If Fail2Ban is running, you'll see output indicating its "active" status.
If not, start the service manually with:

Start and check fail2ban

```
sudo systemctl start fail2ban
sudo systemctl status fail2ban
```

Enable Fail2Ban at Boot: To ensure Fail2Ban starts automatically after a reboot, run the command:

By following these steps, Fail2Ban will be correctly installed and operational.
For a complete Fail2Ban setup and advanced protection tailored to your needs, Open Source Solutions provides Enterprise-Grade Maintenance services as part of its offering providing an additional layer of protection for your server.

Installing Tiki from the Official Tiki Repository (Anonymous)

Navigate to Your HTML Directory
Begin by navigating to the html directory. If you are unsure of its location, check the Virtual Server Summary in Virtualmin.

Clone the Tiki Repository

Visit Tiki's website for detailed instructions, or refer to the complete installation guide. For a quick setup, use the following command to clone the desired Tiki branch (in this example, 28.x) without the repository history:

Download Tiki from the git repo

```
git clone --depth=1 --branch=28.x https://gitlab.com/tikiwiki/tiki.git .
```

Setting SSH to connect to Gitlab

To use the SSH key associated with your GitLab account, you need to create a config file in your ~/.ssh directory. Here's how to do it:

Go to the .ssh directory in your home folder (e.g., /home/domain/.ssh). If the directory does not exist, create it:

Create and set permissions for .ssh directory

```
mkdir -p ~/.ssh
chmod 700 ~/.ssh
```

Create and Configure the SSH Config File
Inside the .ssh directory, create a config file and add the following content:

Create config file and copy inside

```
# GitLab.com
Host gitlab.com
PreferredAuthentications publickey
IdentityFile ~/.ssh/id_rsa
```

Replace id_rsa with the filename of your private SSH key.

Set File Permissions
Ensure the config file has the correct ownership and permissions:

Set config file permission

```
chmod 600 ~/.ssh/config
chown your_user:your_user ~/.ssh/config
```

Test the connection to GitLab to confirm that your SSH key is being used:

test ssh connection to Gitlab

```
ssh -T git@gitlab.com
```

You should see a success message confirming the connection.
Once the SSH key and configuration are set, proceed with cloning your repository into the html directory.

Installing Tiki using ssh

Navigate into your html directory (public_html). If you don't know where it is located on your new server on Virtualmin check the Virtual Server Summary.
There is at https://tiki.org a complete installation guide

Download Tiki from your git repo

```
git clone --branch=target_branch --depth=1 git@gitlab.com:youruser/your_repo .
```

Then it is required to run tiki setup.sh to install packages and fix the files and directories permissions.

From version 27, Tiki uses a different method to complete the setup

From Tiki27 Tiki uses the Tiki 27 plus Build System. This includes the integration of tools like Composer for PHP dependencies and Node.js for JavaScript and CSS dependencies. Please refer to an article I wrote, How to upgrade to Tiki Wiki 27

Tiki setup.sh for version prior to Tiki27.

Follow: https://doc.tiki.org/Installation#Install_Tiki.

To set a Tiki26, I need to run PHP8.1 (I have several PHP version installed) so I add the path.

Tiki setup to run php8.1

```
sh setup.sh -p /usr/bin/php8.1
```

From here follow the regular Tiki install process (setup.sh (see additional notes below), database creation) and you have a Tiki ready to be installed !