

# MaheshBSD



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# MaheshaBSD Server

FreeBSD FTP/WWW/WordPress Server That Runs Off  
a USB Memory Stick

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## Quick Start 1

To learn how to write the USB image of MaheshaBSD Server onto your USB memory stick, [look here](#). The same applies to USB hard drives. I tested this USB image with an 80 GB USB HD and it worked. But only the size of 4 GB will be written to your USB drive. This means that, if you need more space, you must run the `sysinstall` command from within the MaheshaBSD Server's root account and add a new drive (to learn how to install a new disk in FreeBSD, [follow this link](#)). Or e-mail me and I will supply you with a larger USB image.

Boot your server (PC, notebook) with the MaheshaBSD Server USB flash drive. Log in as root (the root password is in "README!!!.txt" in the RAR archive.) To log in to your MaheshaBSD Server's WordPress account (via web interface), you must first edit the hosts file on your computer. The file resides in `/etc/hosts` in Unix; in Windows it is in `C:\winnt\system32\drivers\etc` (W2K, XP, Windows 7 & 8). Its syntax is as follows:

192.168.1.200 manasa

Then go to URL <http://manasa.wordpress> and follow instructions on the introductory page. Log in and start operating your WordPress website.

To copy files to FTP server in this thing, use [WinSCP](#) (SFTP), or similar programs.

This USB image is made writable. This means that you can copy files to MaheshaBSD Server right away (you will have some 1.4 GB of free space). If you do not have a spare computer for this Server, run it in VMware Player (or VirtualBox).

**You must safely turn off the computer this server is running on.** Either do this with your SSH client - log in as boss, `su` to root and type `halt -p`, or - if you are not willing to log in every time to shut this thing down - press `Ctrl+Alt+Del` on the computer this Server is running on; then, when you see a reboot screen (BIOS), turn it off.

## Introduction

*The primary goal of this software is to let users operate an easy to use FTP/WWW server with WordPress on their LAN for Intranet/home purposes. The second goal is the education purpose. Security is not the primary goal of MaheshaBSD Server and this must be taken into consideration. However, you may apply any security measures anytime and tune this thing up to your specific needs.*

## What Is MaheshaBSD Server?

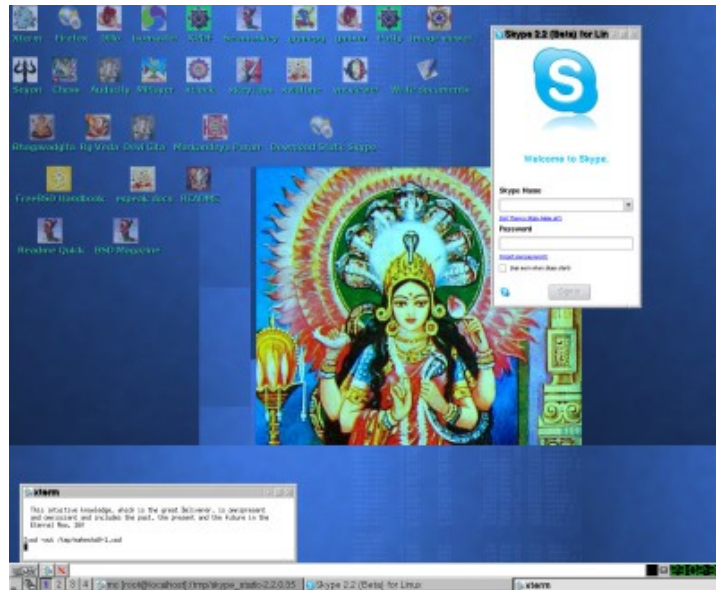
MaheshaBSD Server is a Unix product (free for personal use) based on FreeBSD from the author of [www.freebsd.nfo.sk](http://www.freebsd.nfo.sk). The objective of MaheshaBSD Server is to provide home users and small businesses/institutions a possibility to operate the simplest and least demanding **turnkey** FTP/WWW server with WordPress for the purpose of exchanging/sharing documents (information). **It is primarily an Intranet server.** It can go public, too, but certain security hazards (if any) are at your own risk. The easiest way to start your own Intranet (Internet) website is to use WordPress; it is available in MaheshaBSD Server (<http://manasa.wordpress>). You do not need to set up anything additional for WordPress to work; you just log in and start blogging. This is a very big advantage of this thing, as setting up MySQL and WordPress is not easy for the beginners. Companies/institutions/households may thus share information and data as simply as possible. Posting comments in WordPress works immediately too. Thus, you may let your colleagues know about the files you just uploaded to the MaheshaBSD Server's FTP server, or you may let anybody know how far you have progressed with your work. Your posts in WordPress may also be private.

MaheshaBSD Server edition is free for personal use but businesses and institutions (all types), if they decide to use this software for a period longer than three weeks, must donate. The donation amount is (higher?)/200/150/100/50/25 US dollars. The license applies to one Intranet network where you are going to use this software. You may choose from any of the above sums. The difference between (this software) REQUIRED DONATION SOFTWARE (RDS) and regular commercial software (a fixed price) is that, if you decide to use RDS, you must pay (donate) but you may choose any of the above sums, which is not possible with any commercial software.



## What Is MaheshaBSD?

MaheshaBSD, a [RootBSD.Net hosted project](http://www.rootbsd.net), is a non-commercial project developed by the author of [www.freebsd.nfo.sk](http://www.freebsd.nfo.sk), a website dedicated to FreeBSD and Hinduism. MaheshaBSD is a rescue toolkit that can be used for education/presentation purposes. It contains a lot of utilities and it offers innovative workarounds for many user and computer problems (if your notebook has a broken screen, booting it off a USB flash drive is the only way how to put all the data expediently and quickly into another computer; you may also unpassword Windows XP, undelete files, recover partitions, connect remotely to VNC server, etc.). MaheshaBSD is free, but making it (assembling it, writing scripts and documentation) is under the copyright © Juraj Sipos.



*On the picture above you see Skype running in MaheshaBSD and the picture of Manasa Devi, the Hindu Tantric Serpent Goddess.*

## What Is FreeBSD?

FreeBSD ([www.freebsd.org](http://www.freebsd.org)) is an advanced operating system like Windows or Linux. Unfortunately, it has not received the comparable publicity. Mostly system administrators and Internet service providers are familiar with it. It can do the same tasks as Windows or Linux (desktop computer, server, etc.) and many IT experts say that FreeBSD does its work even more efficiently.

In many applications, a FreeBSD server will use less RAM than a Linux server running the same number of applications and the same load. Companies such as Yahoo!, Qwest, and many others have built their success on the FreeBSD's power and robustness simply because of its ability to handle heavy network traffic with a topnotch performance. FreeBSD is listed among operating systems with the longest uptime in the world (the time a computer can be left unattended without reboot).



## The MaheshaBSD Server's Advantages, Unique Features, and Goals

### Advantages

MaheshaBSD Server runs on FreeBSD, **the unknown giant** among free operating systems. FreeBSD is frequently recommended as one of the best server solutions particularly for its stability and topnotch performance. The server MaheshaBSD is hosted on has been running FreeBSD without reboot since April 2010 until the time this thing was released (February 2013) and I expect that it will run unattended even longer.

There are not many free online FTP servers today. Most of them (if not all) have restrictions and bypassing them requires payment. All you need with MaheshaBSD Server is to have an **old HD** with the capacity of your choice and **a spare computer**. Donating/paying the **minimum of 25 US dollars** will be your lifetime donation without need to pay yearly/monthly subscriptions. Anonymous FTP server will instantly run off a (writable) USB memory stick on a wired network.

The computer MaheshaBSD Server will run on **does not need any attendance**. You simply boot it and when you finish your work you shut it down. MaheshaBSD Server does not need an installation and shutting it down can be made automatic at the time you specify (see [Tips](#)).

MaheshaBSD Server gives you a quick way to **immediately** operate a simple, secure and fast **turnkey** web server (with PHP too). People who are not familiar with HTML/PHP programming will operate their websites in the simple design of WordPress.

**Portability** is just another elegant feature - with a straightforward FTP/WWW server (WordPress runs on WWW) running off a USB flash drive it will be always painless to come up to any computer on your in-house network (LAN). If you travel, this server will work anywhere in the world. This is not possible (or very difficult to deploy) with Windows, as this manufacturer does not allow users make copies of this system due to its licensing policy. Microsoft does its best to prevent users make (illegal) copies of Windows. Thus, with Windows, you may only work with the computer Windows is installed on and with costly hardware MS Windows requires.

No need to purchase **expensive licenses** for an operating system. MaheshaBSD Server is an operating system (FreeBSD). With Windows you must usually have two licenses - one for Windows and another one for a program you will use. The computer running MaheshaBSD Server can be thus legally used everywhere.

**Security** - as long as your FTP (or WWW with WordPress) server does not run in Windows as a separate program - in the infamous environment where cleverer individuals may always find a way to steal your sensitive data (antivirus software often does not find viruses/Trojans) - you will be in a great advantage

as regards security risks. **The less the system is used, the less it is open to security troubles.**

**Expandability** - if you are not satisfied with a particular package (for security reasons, bugs, etc.) in this software, you just **uninstall or upgrade it**. As this thing allows immediate read-write access on USB flash drives/hard drives it booted off, it can be **customized** to your specific needs (you will install packages of your choice, make your own mail server, etc.). All changes and data will permanently stay on your USB memory stick/USB HD. Many companies may use this Server also as **cheap data storage and other solutions** (industrial cameras, cheap print servers, etc.). Samba, too, is installed in it.

MaheshaBSD Server **gives great benefits to ordinary people**, as it will let them operate their own easy to use public - turnkey FTP/WWW (with WordPress) server just by enabling the IP Forwarding option in their router settings on ports 21 (FTP), 80 (HTTP), 22 (SSH). This means that poorer people in the **Third World** will easily set up their own websites and data storage solutions (it is not easy and cheap to host several hundred gigabytes of data elsewhere). **A beginning cameraman or a nonprofit organization can make use of promotional links to video files at his or anybody's home.**

Anybody can share files on LAN simply by copying them into the /home/public\_tmp directory (writable by all user accounts; in Windows, use WinSCP - just drag-and-drop files to MaheshaBSD Server). [See the pictures here](#). Users or businesses will store files on their network **with ease and will have them instantaneously available in their browsers** (or in their private SFTP accounts).

Even **children will manage** file uploads in WordPress (images, etc.). Posting comments is allowed by default in this thing. Just upload a file and post a link for everybody to see it. Users may also have **their own** (and private) posts and websites.

**MaheshaBSD Server** is built on MaheshaBSD. This means that it has all its functionality (Linux emulation, anonymity, VNC Server, X Window, **Text-To-Speech software**, etc.). You may run X Window (graphical Windows-like environment) over network with Tightvnc.

## Unique Features

**Quotas** - data storage in MaheshaBSD Server can be limited to any number of megabytes (for example, to 300 MB only) and to any number of files (for example, to 50 files only). This can be set up directly in the MaheshaBSD Server's environment (also remotely via Webmin).

**Remote Admin** - this system is easily configurable via Webmin (remote web interface) simply by directing your Internet browser to:

https://192.168.1.200:10000

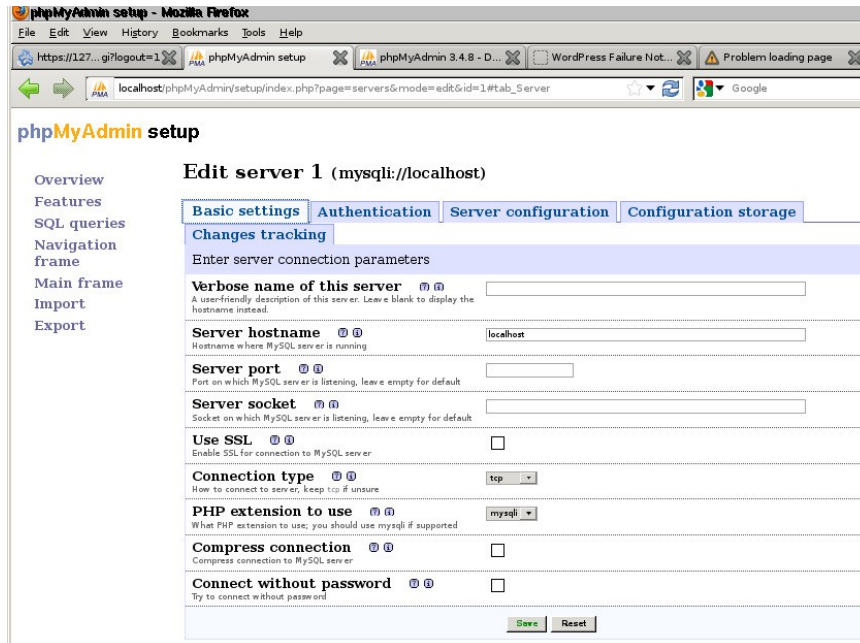
or

https://manasa:10000

or to the relevant URL on your LAN.

**MaheshaBSD Server is tunable.** You may change its default settings and set up many other things (DNS server, etc.).

With **phpMyAdmin** installed in MaheshaBSD Server many tasks with **MySQL** will be easy as a breeze. phpMyAdmin runs also remotely via TightVNC (see the picture below).



**Linux emulation is activated** in this thing. This means that you can run a lot of **Linux tools** directly in this FreeBSD box.

For security reasons, only the "boss" account is allowed to log in via SSH to MaheshaBSD Server; other accounts have not this right. **All accounts are chrooted.**

You can use **firewall** (ipfw [FreeBSD] and pf [OpenBSD]) in MaheshaBSD Server.

You can add **unlimited number of accounts**; however, in order to keep SFTP accounts chrooted, this needs some additional setup.

A **possibility to mount NTFS/FAT32** hard drives/flash drives/USB hard drives and use them for (FTP) data storage. All you need is a directory redirection (you plug a second USB drive into your computer and you will copy files to the attached USB drive with ease).

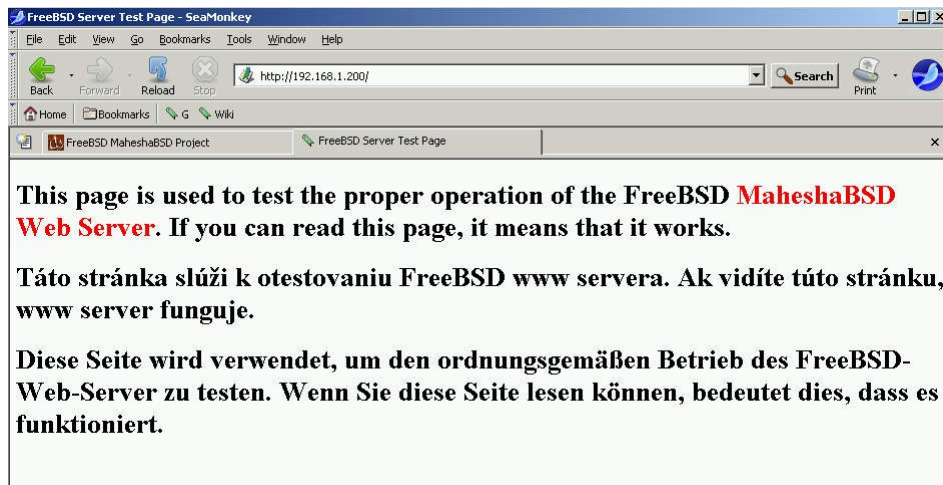
## Goals

To provide (users do not need any special knowledge of Unix) small businesses, institutions, households, etc., an **immediate and smart FTP storage and a blog solution** (WordPress) anywhere in the world.



MaheshaBSD Server has an **educational purpose**, too. If you study operating systems, it is valuable to see how FreeBSD works without installing it on your HD (depending on various HD setups, installation sometimes requires repartitioning, a really painful process for many users). With phpMyAdmin teachers will show students how to work with MySQL over network (with use of VNC Server installed in MaheshaBSD Server), and many other things too.

MaheshaBSD is a **social project**, too. Many people in the Third World **need money** for education and many institutions fail to provide the valuable infrastructure (software, paying for development of software, etc.). Institutionalism fails in many ways. I was invited to do a job as a translator for Ministry of Education, because those clerks could not speak English. Sometimes it is enough when people have a good will and motivation.



*On the picture above you see MaheshaBSD Server's web server (Apache) running on LAN (Local Area Network).*

## System Requirements

### Memory (RAM) used by MaheshaBSD Server

mfsroot (root directory, /dev/md0) - size 54 MB; 6,2 MB free  
 /tmp - size 140 MB  
 swap - size 100 MB

- ⌚ The minimum of some 356 MB RAM (look into "swapme" scripts in /root/bin and set up your own swap size).
- ⌚ A 4 GB USB flash drive minimum (or a USB hard drive of any larger size).
- ⌚ A computer that can boot off a USB flash drive/hard drive; you do not need a hard drive in the computer this thing will run on, but it may appear indispensable in case you want to share a large volume of data.
- ⌚ MaheshaBSD Server is made for the i386 platform.

## How to Write the Image onto Your USB Flash Drive?

Why I used RAR for compression? With ZIP, I often got a message "File is too large for ZIP archive"; on the other hand, some Windows software databases do not allow the TAR.GZ extension in their repositories. As I want to promote this software also in the Windows environment, I chose RAR because it has a very good compression ratio (one of the best) and, too, because unrar is available to everyone as a free tool. Almost any compression software can unrar a RAR archive.

To unrar the MaheshaBSD Server image in Windows, use free programs such as IZArc ([www.izarc.org](http://www.izarc.org)). In FreeBSD, run `pkg_add -r unrar` to install unrar. Then either use Windows programs such as WinImage that works with all possible images (ISO, IMG, etc.), or do the following:

In FreeBSD:

```
dd if=/path/MaheshaBSD9-server.img of=/dev/da0
```

in Linux

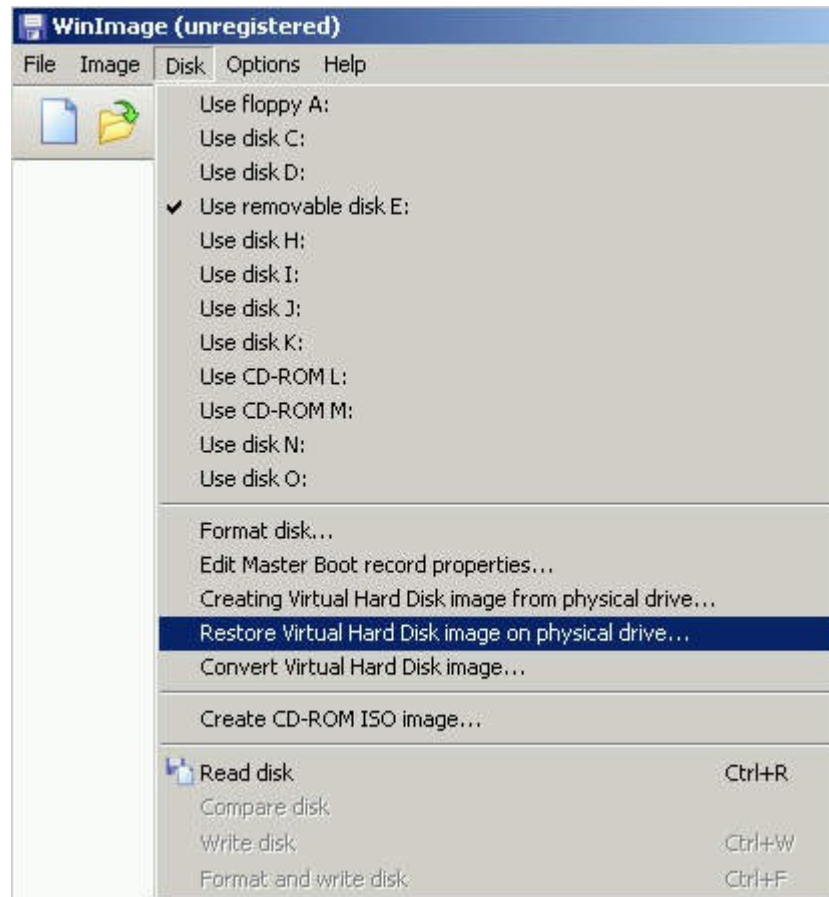
```
dd if=/path/MaheshaBSD9-server.img of=/dev/sd?
```

"?" is the number Linux assigned to your USB flash drive/USB hard drive.

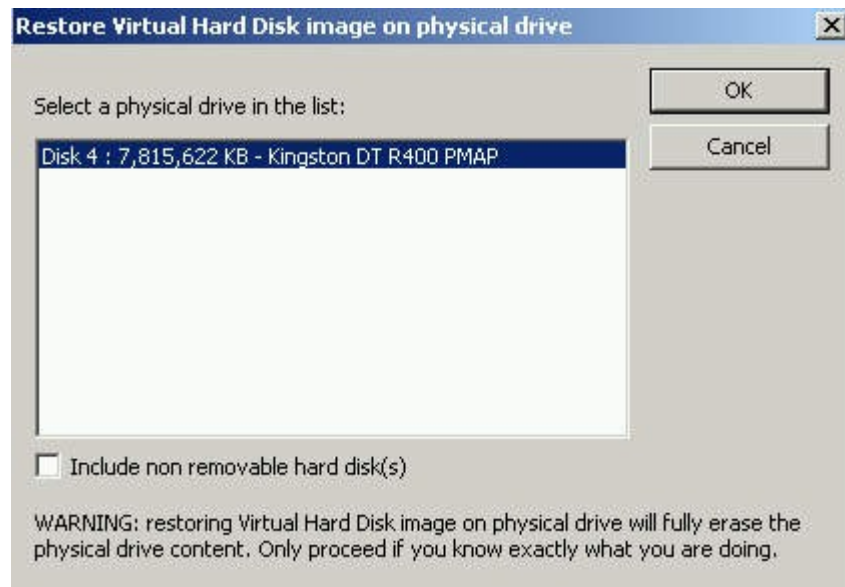
In Windows:

- 1) Install WinImage (will work 30 days without restrictions).
- 2) Run it, select *Disk*, click on *Use removable disk E:* (a USB flash drive in this case); Windows assigns USB drives letters in dependence on your computer settings - it can be F:, G:, etc., so be careful and do not use other USB flash drives in your PC, otherwise you may get confused and will inadvertently destroy the data on them. Click also on *Restore Virtual Hard Disk image on physical drive*.

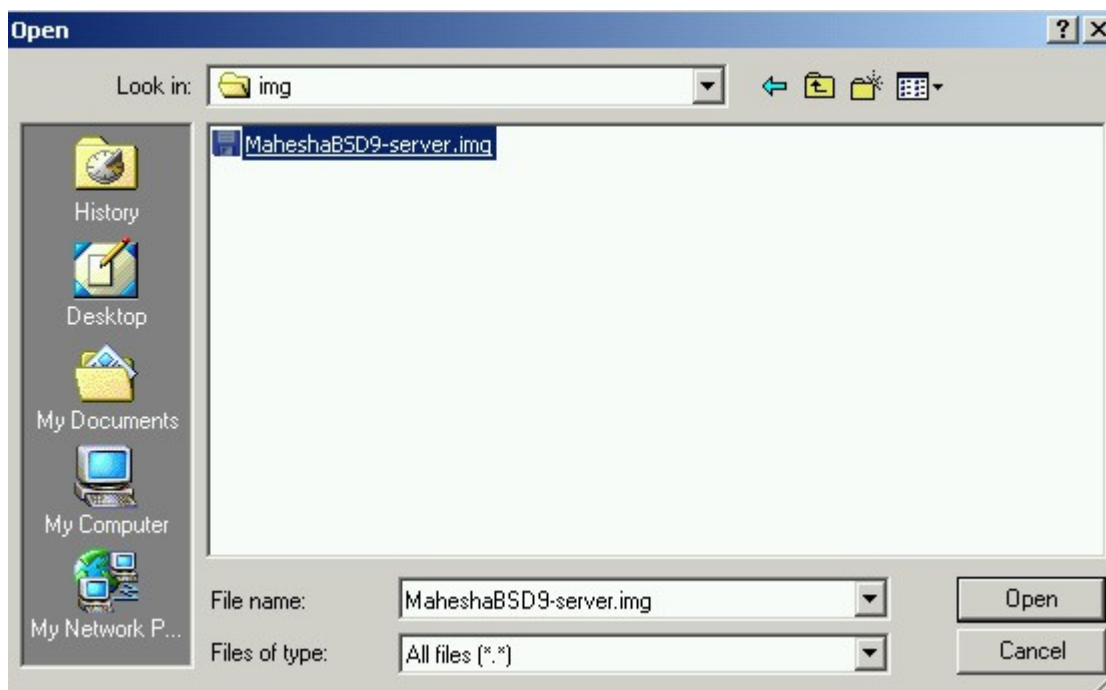
The images below show all the actions.



3) You will see your USB flash drive with its actual size; then simply click on the OK button, as the next picture shows.



4) Choose the IMG file you downloaded into your PC.



5) Click on the *Open* button.

This is the way you write the MaheshaBSD Server USB image onto your USB flash drive/USB hard drive in Windows.

## Quick Start 2

1) Make sure your computer boots off your USB flash drive. Some computers offer a boot menu just by pressing an F key (for example, F11).

2) Plug the USB flash drive into your computer. When MaheshaBSD Server boots and as soon as it is ready to receive connections, use the following IP addresses (in any PC on your LAN) in your Internet browser (for WordPress to work, edit Windows or Unix hosts file, see below).

**Note:** The following applies to cases you use a router. I tested this thing on a few notebooks (home network) and also on a corporate network. Although connection to the Internet from within MaheshaBSD worked in one case, other case was that it did not work in a different computer (a problem with automatic association of aliases). This means that going to URL <http://192.168.1.200> did not work because the network card had no alias to the IP that was accessing the Internet.

**EXPLANATION OF THE PROBLEM:** Your network is unusual - something like 10.9.0.0 (and so on).

**A solution:**

- 1) `ipconfig/ifconfig` will show you the network - for example, 10.9.0.0
- 2) Put the URL `ipconfig/ifconfig` shows you into your browser - <http://10.9.0.0> (or <ftp://10.9.0.0>, etc.).
- 3) Dynamic IP's on (local) network change. When you turn all computers off, next morning MaheshaBSD Server may have a different IP. As it is inconvenient to use a different IP every day, alias (something like a cloned copy of something but on a different place) is recommended (one IP only will be available).



4) Make an alias: `ifconfig em0 10.9.0.200 alias` from within MaheshaBSD (or permanently in `/etc/rc.local`). Now use only one IP - 10.9.0.200 (10.9.0.0 and 10.9.0.200 are copies of each other).

**EXPLANATION OF THE PROBLEM:** You must have **more** network cards. The problem is caused by aliases made automatically for a network card that is offline. To solve this, log in to the MaheshaBSD's root account and run `ifconfig` to see which network card is wired to the Internet.

**A solution:**

1) It is the IP where inet has the number; I have the following number (if your network is segmented and more network cards are needed, you will see some numbers too and it will be better to contact a system administrator in case you do not know which network card to work with; the following solution is for the most frequent case - that is, when `ifconfig` listing does not contain a number associated with other network cards present in your computer - only one network card is accessing the Internet and other NIC's are offline):

```
inet 192.168.1.101 netmask 0xffffffff00
```

On my Compaq notebook with one network card aliases were made automatically and everything worked smoothly. But on an IBM notebook with two network cards aliases were made to `fwe0` (but `fwe0` was not accessing the Internet) but `em0` was actually used for the Internet connection.

2) Run `ifconfig em0 192.168.1.200 alias` to associate a fixed IP with the relevant network card on your LAN to solve this.

Assuming your router (gateway) is on the address 192.168.0.1, you will connect to MaheshaBSD Server with the following IP's:

`ftp://192.168.0.200` (FTP server visible by everybody on LAN)

`http://192.168.0.200` (WWW server on LAN)

`https://192.168.0.200:10000` (Webmin on LAN, 10000 is the port number)

**or**

Assuming your router (gateway) is on the address 192.168.1.1

`ftp://192.168.1.200` (FTP server visible by everybody on LAN)

`http://192.168.1.200` (WWW server on LAN)

`https://192.168.1.200:10000` (Webmin on LAN)

**or**

Assuming your router (gateway) is on the address 172.16.0.1

`ftp://172.16.0.200` (FTP server visible by everybody on LAN)

`http://172.16.0.200` (WWW server on LAN)

`https://172.16.0.200:10000` (Webmin on LAN)

**or**

Assuming your router (gateway) is on the address 172.16.1.1

`ftp://172.16.1.200` (FTP server visible by everybody on LAN)

`http://172.16.1.200` (WWW server on LAN)

`https://172.16.1.200:10000` (Webmin on LAN)

**or**

Assuming your router (gateway) is on the address 10.0.0.1

`ftp://10.0.0.200` (FTP server visible by everybody on LAN)

`http://10.0.0.200` (WWW server on LAN)

`https://10.0.0.200:10000` (Webmin on LAN)

**or**

Assuming your router (gateway) is on the address 10.0.1.1

`ftp://10.0.1.200` (FTP server visible by everybody on LAN)

`http://10.0.1.200` (WWW server on LAN)

`https://10.0.1.200:10000` (Webmin on LAN)

IP's differ because some people like to set up things to their own liking and this possibility should be envisaged too. However, as I do not know your network configuration, it would be elegant to connect to MaheshaBSD Server with one IP address only (that ends with the number 200). If something gets wrong, run the script "rmaliases" - it will remove the above aliases, and then:

```
dhclient nic
```

(NIC is your Network Interface Card connected to the router - for example, fxp0). To make a new alias, run the command:

```
ifconfig fxp0 192.168.0.200 add
```

or

```
ifconfig fxp0 192.168.0.200 alias
```

To remove the alias, type the following in your shell (in MaheshaBSD Server):

```
ifconfig fxp0 192.168.0.200 remove
```

You can also edit the hosts file in WINT\system32\drivers\etc (Windows 2000, Windows XP, Windows 2003, Windows 7 and Windows 8), or in /etc in Unix, but you must do this on every computer on your LAN. If you have more than 30 computers on LAN and want to use FTP server only, the above approach is quicker.

**To connect to WordPress from a remote computer, you must use a fixed URL that you define in the WordPress *Settings - Site Address (URL)*. <http://manasa.wordpress> is defined here. For the above URL to work in your browser you must add the following entry in the **hosts** file on your remote computer (/etc/hosts in Unix; in Windows it is in C:\winnt\system32\drivers\etc (W2K, 2003, XP, Windows 7 & 8):**

```
192.168.1.200    manasa
```

or

```
10.0.0.200      manasa
```

A sample hosts file is in the RAR archive in the Win7&8-WinXP-W2K directory.

To use WiFi, see [Tips](#).

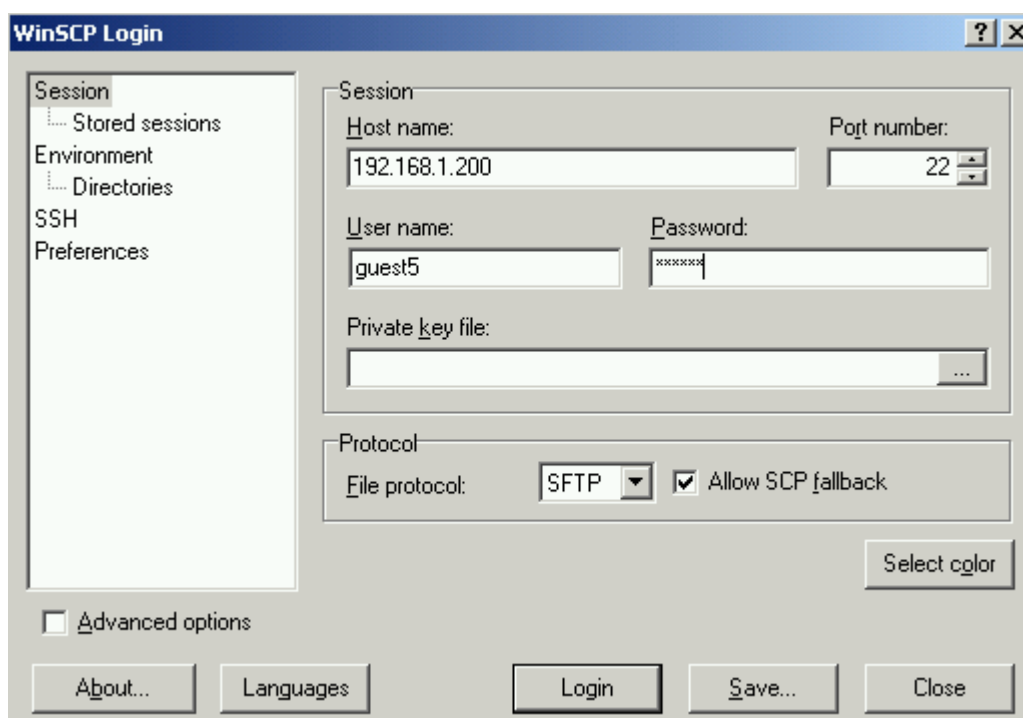
## How to Copy Files to FTP/WWW Server?

### You Need Passwords First

To start with, fetch your passwords. They are in the guest5 account (in the file passess.txt). Log in via WinSCP over network (use SFTP, not SCP):

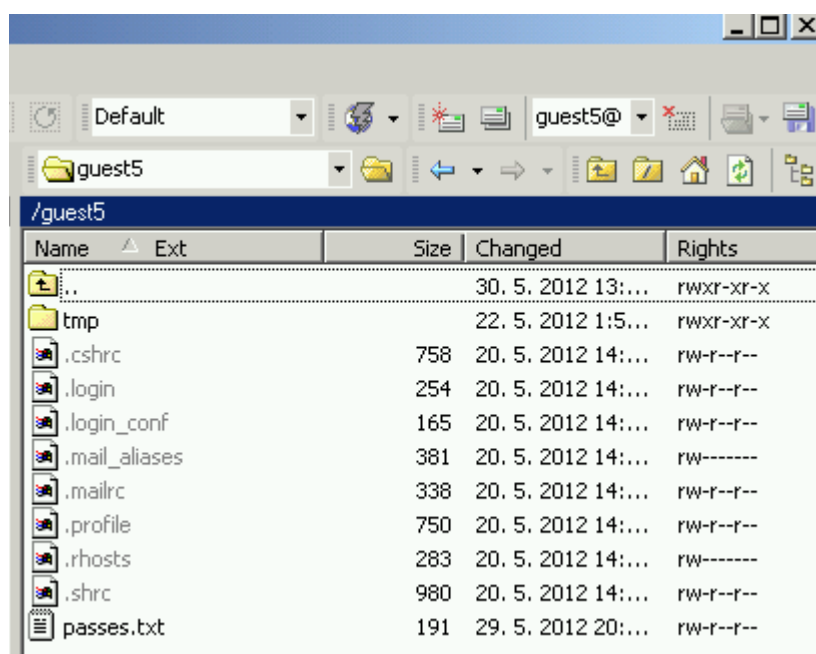
```
login: guest5
```

```
pass: guest6
```



Note: Password for root is in the RAR archive you downloaded from the Internet (in README!!!.txt).

After you log in, click on the guest5 directory, then on the file "passes.txt" to see the passwords for all accounts available in MaheshaBSD Server.



The passwords can be later [easily changed](#) with Webmin.

## How to Copy Files to MaheshaBSD Server's Web Server?

Note: Do not confuse Web Server with WordPress. WordPress, although it runs on the Apache WWW server's back, has its own interface. The following allows you to manage

your own website **independently of WordPress** (<http://manasa>, WordPress runs on <http://manasa/wordpress>).

Use sftp in Unix:

```
sftp username@your.network
```

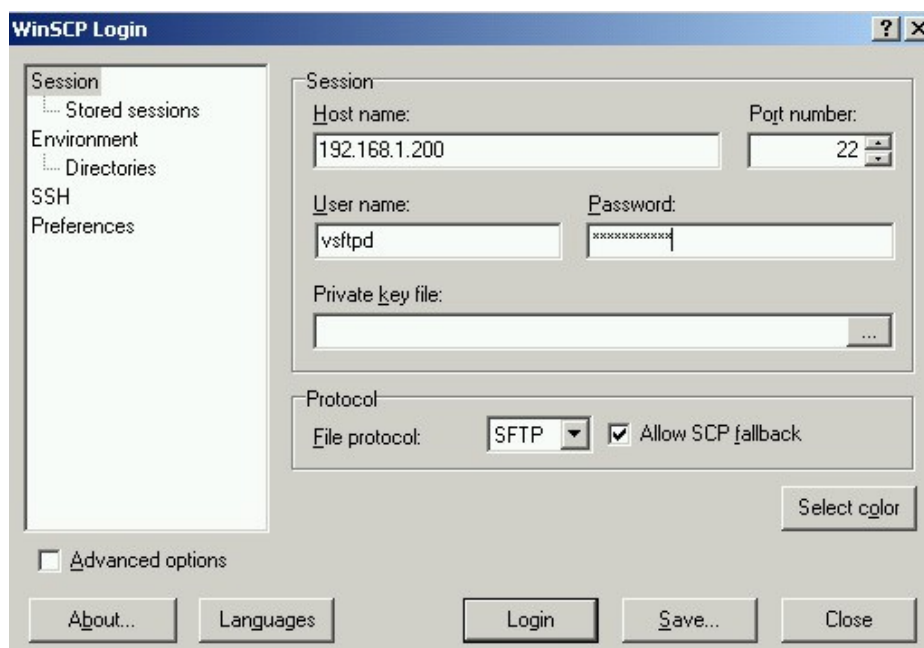
In Windows, use WinSCP. The files (\*.html, \*.php, \*.jpg, etc.) for the purposes of the MaheshaBSD Server's web server must be stored in **/usr/local/www** (/usr/local/www/index.html, etc.) - just log in as user "boss", su to root and copy files into the above directory. To make things even easier, you may also change the DocumentRoot entry in /usr/local/etc/apache22/httpd.conf (the README in /home/apache has more instructions) and restart Apache:

```
apachectl restart
```

Note: Do not worry if you are not familiar with HTML programming. The *Composer* component of Seamonkey (for creation of HTML files) has its icon in the MaheshaBSD X environment - just click on the icon with pen (*Write documents*) on the IceWM desktop and then make your own HTML documents in MaheshaBSD Server. To work with PHP, choose other software.

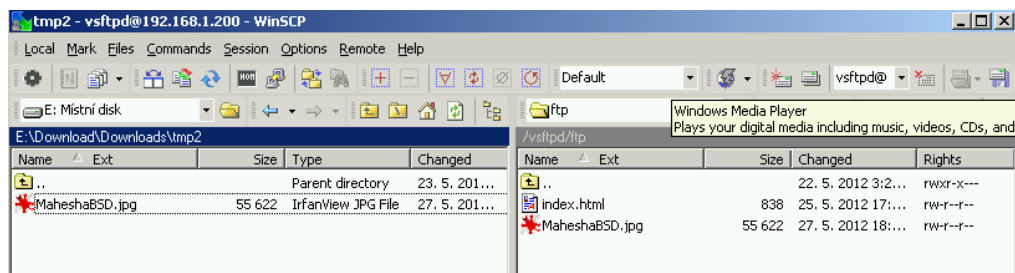
## How to Copy Files to MaheshaBSD Server's FTP Server?

First, log in to your vsftpd account (see the picture below).



After you log in you will see all the user accounts (with their directories) in the MaheshaBSD Server's /home directory. Click on the **vsftpd** directory, then on the **ftp** (vsftpd > ftp) subdirectory and then just simply copy any file to it by dragging your mouse, as the picture below shows.





On the next picture (ftp://192.168.1.200 or ftp://manasa) you see the MaheshaBSD Server's anonymous FTP server in your browser together with the file you just copied to it.



## WordPress

Before you open WordPress to the world (with IP Forwarding) with MaheshaBSD Server, make sure you change your `/etc/hosts` in Unix, or `C:\winnt\system32\drivers\hosts` in Windows (W2K, XP, 2003, Windows 7 & 8), otherwise your public WordPress service will not be accessible (this approach is better because changing the IP address in the WordPress *Settings* all the time is more difficult than to use one URL only). Open the hosts file in notepad or in any other simple text editor (Unix, Mac, etc.). The syntax of the hosts file is as follows (applies both to Unix and Windows):

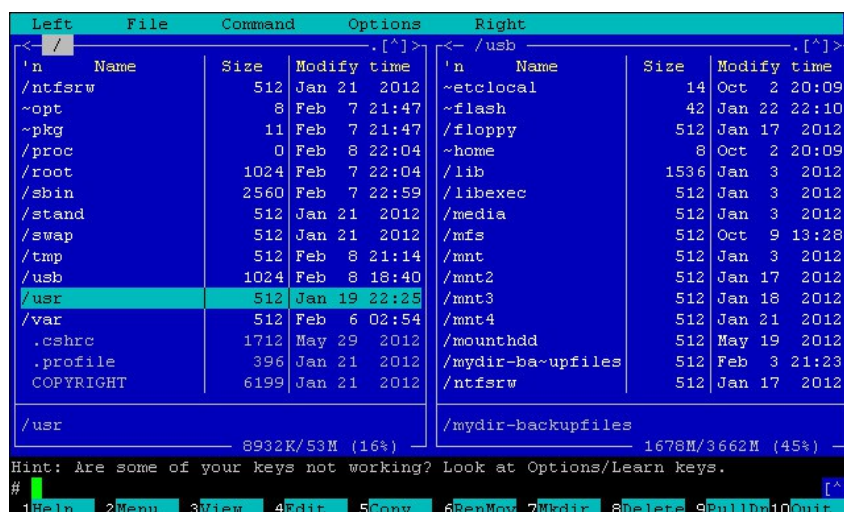
```
192.168.1.200 manasa
```

The picture below shows how the *Site Address (URL)* looks in the WordPress *Settings*.

Field	Value
Site Title	localhost
Tagline	Just another WordPress site
WordPress Address (URL)	http://manasa.wordpress
Site Address (URL)	http://manasa.wordpress
E-mail Address	mahisasura@lavabit.com
Membership	<input type="checkbox"/> Anyone can register

WordPress has a [very good documentation](#). If you forget your admin password, you must reset it in MySQL. See [Tips](#) below.

You may also copy a new version of WordPress easily into this thing. Just download WordPress (latest.tar.gz), untar it and copy it over the /usr/local/www/wordpress directory.



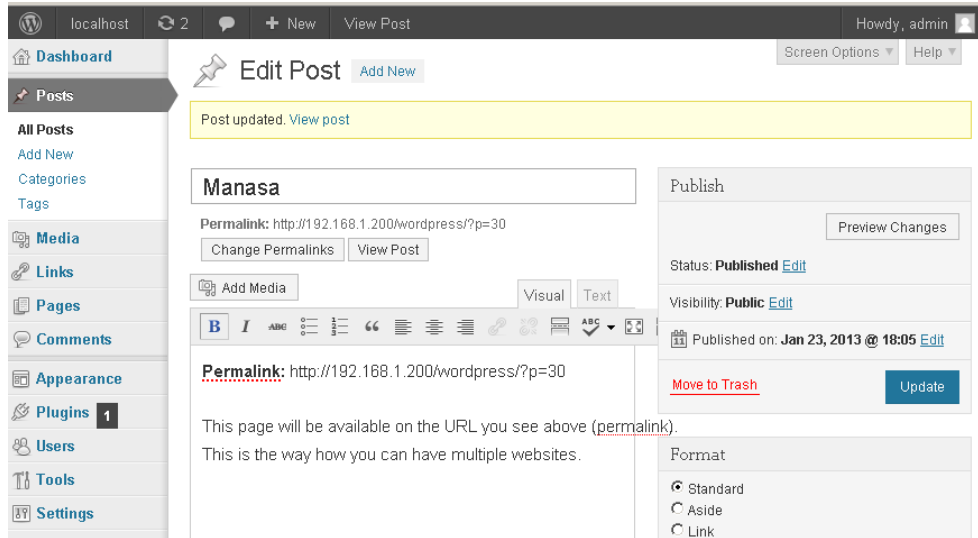
If you are a beginner, copy files with Midnight Commander (type `mc` in the command shell, then press `F5` to copy a directory/file from the left panel to the right panel).

Keep **wp-config.php** in the /usr/local/www/wordpress directory, as it contains the **database name** used by WordPress ("wordpress" in MaheshaBSD Server), the **database username** ("root" in MaheshaBSD Server), the **database host** ("localhost" in MaheshaBSD Server) and the **database password** to access the database (it is defined just near the text string 'DB\_PASSWORD' in wp-config.php). I will not write it here, but if you want to see it, look into /usr/local/www/wordpress/wp-config.php.

If you come across any problems that you cannot solve (lost passwords, etc.), it would be much easier to write the original USB image of MaheshaBSD Server back onto your USB flash drive. However, you will lose your WordPress data

with the above approach. To prevent this, back up the `/var/db/mysql` directory frequently. If something gets wrong, then just copy it back where it belongs (`/var/db/mysql`). You may also play with the `mysql` commands - see [Tips](#) below.

To have more sites, all you need is to write a new post - *Posts > Add New*, give it a name, as you see on the picture below, and click on update.



Now, when you go to the **Permalink** specified above in bold, your post will be available at that URL.

Posted on [January 23, 2013](#)

[← Previous](#)

[Edit](#)

## Manasa

**Permalink:** <http://192.168.1.200/wordpress/?p=30>

This page will be available on the URL you see above (permalink). This is the way how you can have multiple websites.

This entry was posted in [Uncategorized](#) by [admin](#). Bookmark the [permalink](#).

In MaheshaBSD Server, anybody can post comments without restrictions. To change this, log in as Admin and go to *Settings*. However, to suit WordPress to your specific needs, read the documentation relevant to WordPress, as management of WordPress is beyond the scope of this manual.

By allowing "Anybody can register" in the WordPress Admin account (in *Settings*) the e-mailing of passwords does not work (I did not solve this, as giving anybody a possibility to register easily is a security risk; the other reason is that password e-mailing in an Intranet environment is not really necessary). However, the Admin can add new users from within his/her Admin account.

## The MaheshaBSD Server's Accounts

All directories in `/usr/home` - except for `/home/public_tmp` - are private (`apache`, `boss`, `guest`, `guest1`, `guest2`, `guest3`, `guest4`, `guest5`, `vsftpd`) and intended for private data storage/sharing (documents, images, etc.). When you log in to any MaheshaBSD Server's account via SFTP (WinSCP), you will only see the directories of the accounts, not their contents. You may look only into the directory you own. This means that, if you log in as user `guest5` via SFTP, you will not be able to see files and directories in other accounts except for the one(s) you own (as user `guest5` in this case).

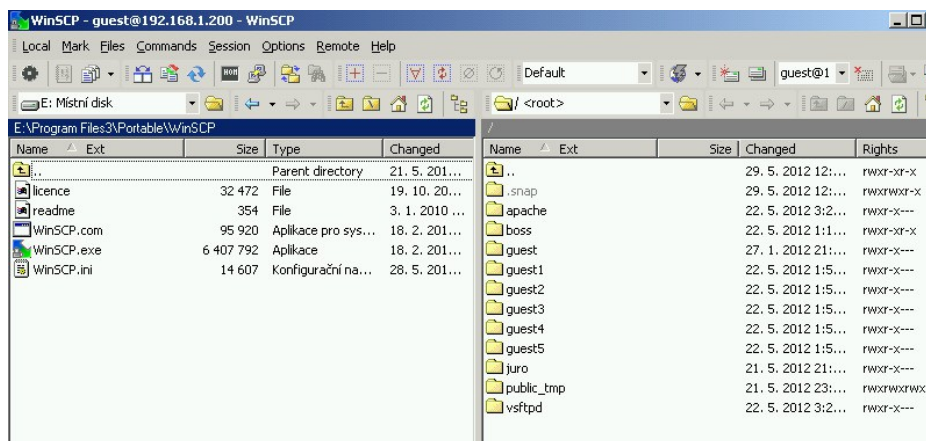
## SFTP

Although it is easy to add new accounts in FreeBSD, some configuration is needed, as SFTP accounts are chrooted in this thing (without this elegance anybody would have a possibility to see files anywhere on the system, which is not good). Currently, only the following user accounts are available in `/home`; they all can be accessed via SFTP (Secure FTP):

### `/usr/home`

- ⌚ **apache** - account to which you copy html, php, jpg files, or any other type of files for the purposes of easy to use MaheshaBSD Server's web server (WordPress, although it runs on Apache, has its own web management, so do not confuse these two). However, you must change the `DocumentRoot` directive in your `httpd.conf` to `/usr/home/apache/www` to easily copy files there as user "apache". `httpd.conf` with this entry is already in `/home/apache` - see the README in `/home/apache`. After doing this, you must also copy the `/usr/local/www/wordpress` directory into the directory specified in `httpd.conf`.
- ⌚ **boss** - the administrator account with fewer privileges and the only account that is allowed to log in via SSH to MaheshaBSD Server and `su` to root (no other user is permitted to log in to any other account via SSH). "boss" can see anything on the computer MaheshaBSD Server is running on - he may look, for example, into `/etc` or `/usr/local/etc`; other users are without this privilege.
- ⌚ **guest** - user account.
- ⌚ **guest1** - user account.
- ⌚ **guest2** - user account.
- ⌚ **guest3** - user account.
- ⌚ **guest4** - user account.
- ⌚ **guest5** - user account.
- ⌚ **vsftpd** - FTP account that serves the purposes of the MaheshaBSD Server's FTP service (set up as anonymous, but this can be changed) - in WinSCP, you just log in to your `vsftpd` account (as user "vsftpd"), then you click on the `vsftpd` directory, then on its subdirectory `ftp` (`vsftpd > ftp`) where you can copy anything. Your browser will immediately display it (you must click on the *Reload/Refresh* button).





public\_tmp is not an account, but the directory where all users (apache, boss, guest, guest1, guest2, guest3, guest4, guest5, vsftpd) may write anything without restrictions and which serves as a sharing place for all accounts on the system (however, it is not visible on the Internet, neither is it public on LAN).

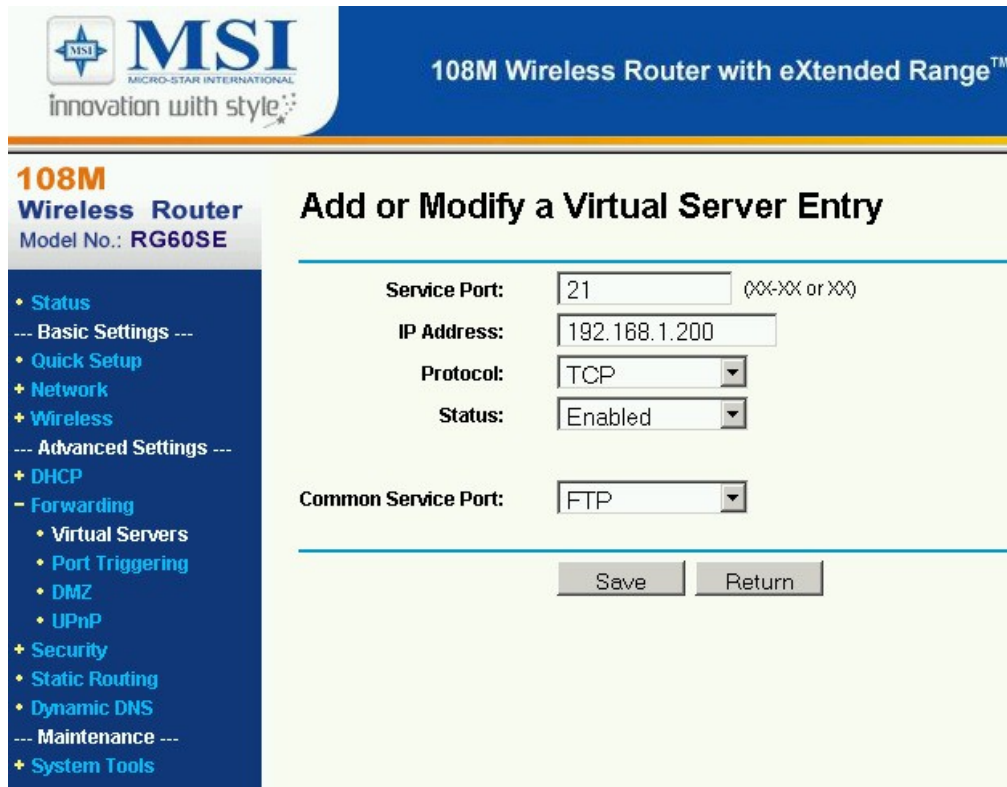
All /home directories are mutually protected against snooping. Not even the user "boss" may view their contents via SFTP, but he/she may log in as "boss", su to root (via SSH) and gain superuser rights.

## How to Make MaheshaBSD Server Public?

IP Forwarding is a feature (configurable in many routers) with use of which you make a server behind your router public. Thanks to websites such as [whatismyip.com](http://whatismyip.com) you will easily find out your public IP address (if you are behind router). The MaheshaBSD Server's FTP/WWW/SSH services (WordPress runs on WWW), if they run behind router, are available on LAN only and you need to make them (SSH, FTP, WWW, etc.) public. IP Forwarding will do the job.

Note: The following does not pertain to a situation when you are directly connected to the Internet (without router)!

You will use the local IP address on which the MaheshaBSD Server's FTP or WWW (or any other) service runs on your LAN - type it in the address box (as the picture below shows) together with the port number you want to open for the public access (protocol TCP): **21 (FTP)**, **80 (WWW, WordPress runs on WWW)**, **22 (SSH)**, **10000 (Webmin)**.



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- Status
- Basic Settings ---
- Quick Setup
- Network
- Wireless
- Advanced Settings ---
- DHCP
- Forwarding
  - Virtual Servers
  - Port Triggering
  - DMZ
  - UPnP
- Security
- Static Routing
- Dynamic DNS
- Maintenance ---
- System Tools

### Add or Modify a Virtual Server Entry

Service Port:  (XX-XX or XX)

IP Address:

Protocol:

Status:

Common Service Port:

If your public IP address is 00.00.00.0 (just an imaginary IP address) and you enabled IP Forwarding in your router to port 21, then anybody will access your FTP server from the Internet at the following URL - ftp://00.00.00.0

If you assign the Service Port the number 80, then your home WWW server will be public on the Internet. WordPress runs as WWW, which means that it will be publicly available too. Anywhere in the world you just use this public URL - http://your\_public\_ip/wordpress; additional URL's created in WordPress (new posts) may be accessible as independent websites (for example, http://your\_public\_ip/wordpress/?p=30).

## How to Setup/Change Passwords and Other Configurations?

### Webmin

Note: Some Webmin modules do not work because of the absence of Java.

Webmin is a Unix system administration tool - remote admin; you can modify many administrator settings over network with it.

To work with Webmin, you do not need any special knowledge of Unix. Just log in to your Webmin interface via web (the URL is https://192.168.1.200:10000, or use the appropriate URL if you have a customized LAN configuration - for example, https://10.0.0.200:10000, or https://manasa:10000).

## Quotas

The function of quotas is to limit the number of files and the volume of the data users are allowed to write in their accounts. This function does not work immediately. You must first mount a disk with FreeBSD native file system on it (will not work with partitions such as FAT32, NTFS, etc.). To use this feature, work only with disks mounted with native FreeBSD file system (USB drives too).

First, if you do not want to log in physically as root, log in to your "boss" account via SSH (go to URL 192.168.1.200, 192.168.0.200, 10.0.0.200, 10.0.1.200, 172.16.0.200, 172.16.1.200 or manasa). If you are a Windows user, use programs such as putty. Then su to root (type su and then the password).

1) Search for the partition (which you want to mount) with native FreeBSD file system on it in /etc/fstab (or just write the partition's identifier [name] therein) - use the command:

```
ee /etc/fstab
```

("ee" is the editor) and uncomment the line that contains the relevant partition's identifier - delete the "#" character next to the partition's name; save your changes; I already made a few fstab entries for you; they look like this:

```
#/dev/ada0s3f /mounthdd ufs rw,userquota,groupquota 2 2
```

Note: "#" is a comment, which means that the system ignores any line beginning with "#".

If you have a spare USB hard drive that can be formatted, type the following in the command shell to format it: newfs /dev/dals1a

2) After you uncomment the relevant partition, mount it:

```
mount-a
```

(this will automatically mount/remount all partitions defined in /etc/fstab);

3) Type (as root in your SSH shell; or physically on the computer where MaheshaBSD Server is running):

```
quotaon /mounthdd
```

This will activate quotas on the partition mounted in /mounthdd.

## Setting up Quotas in Webmin

Log in to Webmin via network (https://192.168.1.200:10000/ or https://manasa:10000/) and click on the menu *Disk Quotas* on the left - *System* > *Disk Quotas*.

Help.. Search Docs..

### Disk Quotas

Filesystem	Type	Mounted From	Status	Action
/mounthdd (users)	FreeBSD Unix Filesystem	/dev/ada0s3f	User and Group Quotas Active	Disable Quotas
/mounthdd (groups)				

Edit User Quotas:  ... Enter or select a user, and click this button to view his quotas on all filesystems.

Edit Group Quotas:  ... Enter or select a group, and click this button to view its quotas on all filesystems.

Clipboard04

In the top box (see the picture above) type the name of the user you want to assign quotas to - for example, guest1. Then click on *Edit User Quotas*.

The next step assigns limits (like the number of files the user guest1 is permitted to use in his/her account and the allowable volume of megabytes/gigabytes), as the next picture shows.

Module Index  
Help..

## Edit User Quota

Quota for guest1 on /mount/ddd

**Soft kilobyte limit** ☒ Unlimited  **Hard kilobyte limit** ☒ Unlimited

**Available space on disk**  total / 6.45 GB free

**Soft file limit** ☒ Unlimited  **Hard file limit** ☒ Unlimited

**Available files on disk** 2190334 total / 1703908 free disk

Click this button to display a list of all filesystems on which this user has disk quotas, with links to edit them.

[Return to filesystem list](#)

For the beginning, you just need to know that *Soft kilobyte limit* is the number of kilobytes/megabytes you want to allow the user guest1 to write into his/her account. Choose MB, uncheck "Unlimited", and type "200" (or any number) in the empty box next *Soft kilobyte limit*. The user guest1, after you click on the *Update* button, will be allowed to write only the volume of the data that does not exceed 200 MB.

## Webmin Language Settings

Click on the menu - *Webmin* > *Webmin Configuration* and choose *Language*. To change the language, click on *Language*.

Login: admin

Module Config

## Webmin Configuration

Webmin 1.570

Webmin 1.570 on localhost (FreeBSD)

**Webmin**

- Backup Configuration Files
- Change Language and Theme
- Webmin Actions Log
- Webmin Configuration
- Webmin Servers Index
- Webmin Users

**System**

- Servers
- Others
- Networking
- Hardware
- Cluster
- Un-used Modules

Search:

☒ View Module's Logs

☐ System Information

☐ Refresh Modules

☐ Logout

**IP Access Control**

**Ports and Addresses**

**Logging**

**Proxy Servers and Downloads**

**User Interface**

**Webmin Modules**

**Operating System and Environment**

**Language**

**Index Page Options**

**Upgrade Webmin**

**Authentication**

**Reassign Modules**

**Edit Categories**

**Module Titles**

**Webmin Themes**

**Trusted Referrers**

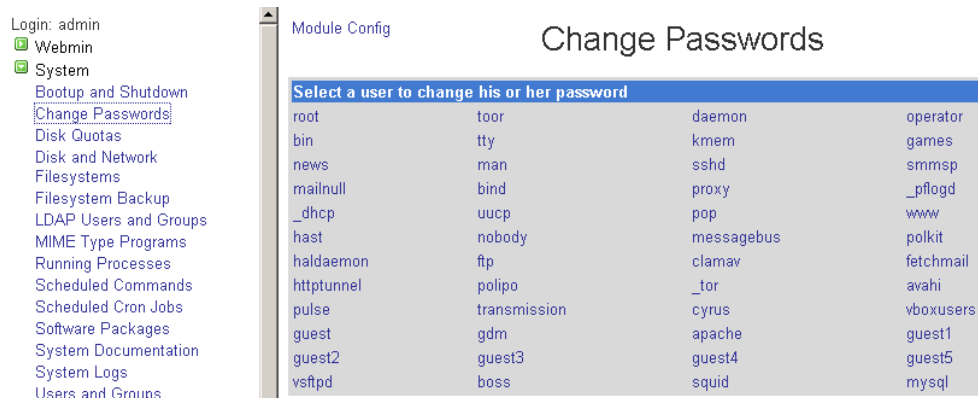


After you choose your language, the items in your Webmin menu on the right will be displayed in the language you choose.

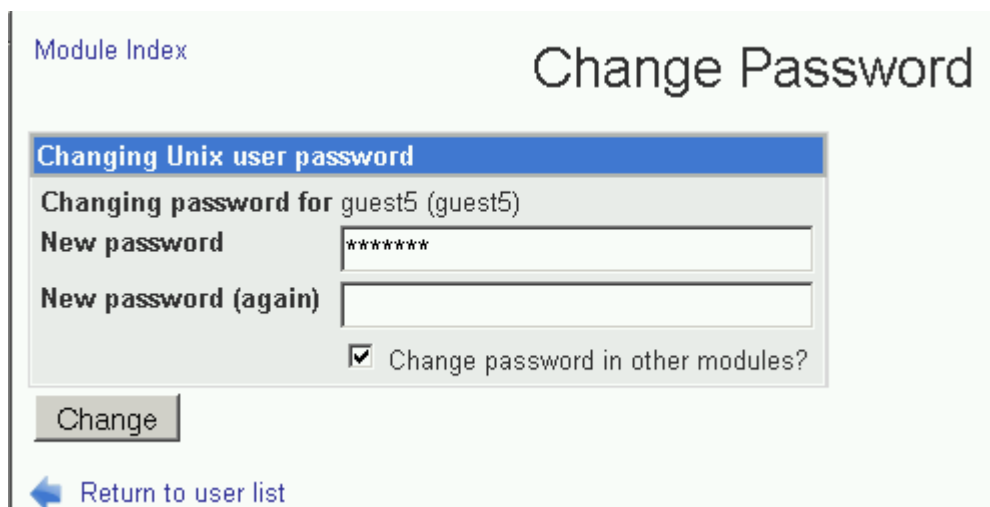
## Changing Passwords

Click on *System > Change Passwords* on the left column with menu and then choose, for example, guest5 as the account you will assign a new password to.

The same approach works for any account.



Then, after you type a new password twice, click on the *Change* button, as the next picture shows.



## Backing up Configurations

Click on *System* in the menu column on the left, then on *Backup Configuration Files*, choose *Local file* - you must type the full path and the file name that is to be created (just give it any name), then click on *Modules to backup* (hold down the Ctrl key and select multiple modules with your mouse), and finally click on *Backup Now*.

**Backup configuration now**

**Modules to backup**

- Scheduled Commands
- Scheduled Cron Jobs
- Security Sentries
- Sendmail Mail Server
- SpamAssassin Mail Filter
- Squid Proxy Server
- Squid Report Generator
- System Logs
- System Logs NG
- System Time

**Backup destination**

☒ Local file  ...

☐ FTP server  file on server

Login as user  with password

Server port ☐ Default ☒ 22

☐ SSH server  file on server

Login as user  with password

Server port ☒ Default ☐ 22

☐ Download in browser

**Include in backup**

☐ Webmin module configuration files ☒ Server configuration files ☐ Other listed files ..

**Backup Now**

## Restoring the Backup

You will do this the same way as with *Backup*, but you will click on the *Restore* tab. Check the *Local file* field, click on the button with "." (to choose your backup directory), select the file to restore your configurations from (the file is expected to be local - that is, it must reside on the computer where MaheshaBSD Server is running), then choose modules you want to restore. Finally, click on the *Restore Now* tab.

## Other Webmin Possibilities

In Webmin you can set up a lot of things including firewall, DNS server, SSH server, etc. You can also enter shell commands (*Others > Command Shell*).

## Options for Advanced Users

### How to Enable PF (OpenBSD Packet Filter)

The OpenBSD packet filter (pf) is a unique firewall. You must either log in physically to MaheshaBSD Server or via SSH. As root, type the following in your shell:

```
kldload pf
```

Edit `/etc/pf.conf` to suit your needs. There is a lot of information available on OpenBSD Packet Filter on the Internet. To enable PF, run:

```
pfctl -e
```

from the shell; with the following command, PF will immediately start working with rules in `/etc/pf.conf`:

```
pfctl -f /etc/pf.conf
```

## How to Add Another Disk in MaheshaBSD Server?

Adding disks is also very well documented at this [link](#).

### Examples

#### USB Drive

##### *FAT32*

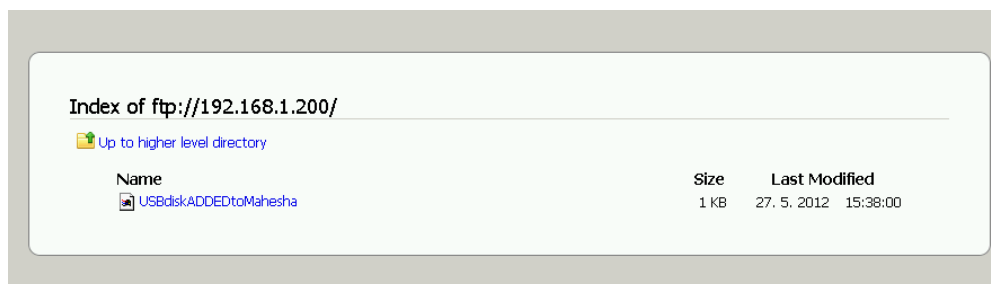
Create a www and ftp directory in the root path on your USB flash drive/hard drive, preferably somewhere in the Windows environment. If your Windows assigns the letter K: to your USB drive, then the www and ftp directory will be in the path K:\www and K:\ftp. After you plug the additional USB disk into the computer where MaheshaBSD Server is running, log in as "boss" via SSH, su to root and type the following in your shell:

```
chown vsftpd:vsftpd /mnt
mount -t msdosfs /dev/dals1 /mnt
/sbin/mount_nullfs /mnt/ftp /usr/home/vsftpd/ftp
```

The first command sets the rights. The second will mount your USB drive with FAT32 file system on it into /mnt. The third command will redirect the /usr/home/vsftpd/ftp directory to /mnt/ftp (that is, to your USB drive), so that you can write directly to your attached USB drive simply by dragging (copying) files into the ftp directory (redirected to K:\ftp) as user "vsftpd" after you log in to your vsftpd account via SFTP.

On the picture below you see the path (/usr/home/vsftpd/ftp) that I redirected from MaheshaBSD Server into my USB hard drive with FAT32 file system on it.

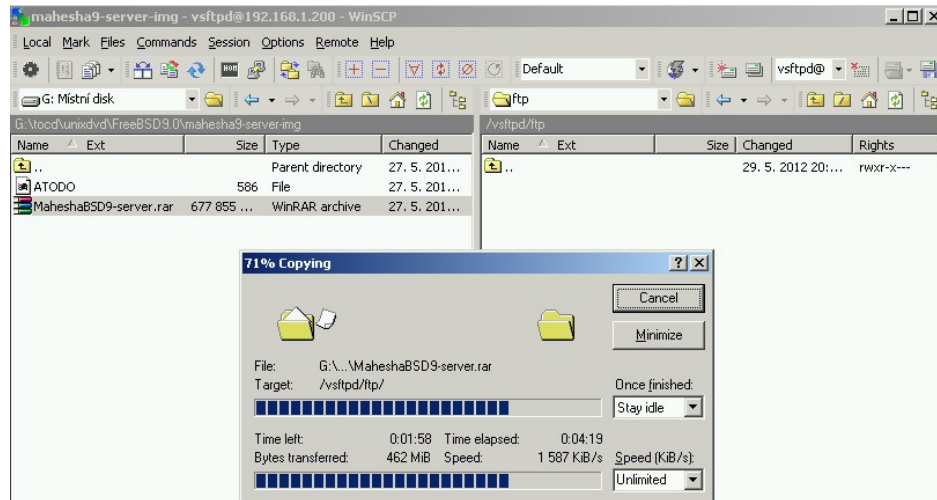
Note: In Unix, the redirection is only a directory redirection. The files will be physically copied onto the other drive, but you will see them in /home/vsftpd/ftp. This will ease your work and copying with SFTP will be simple.



##### *NTFS*

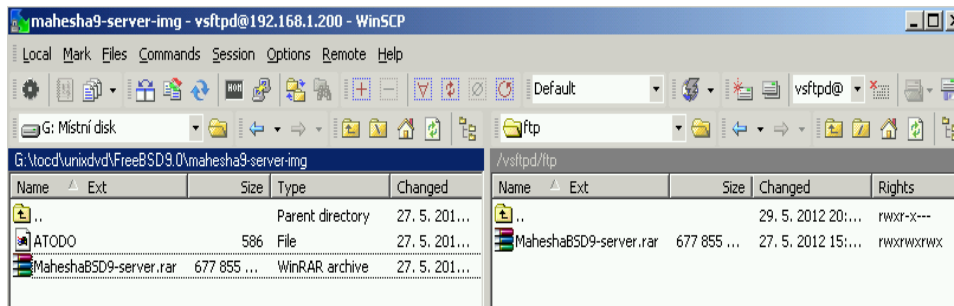
Mounting a NTFS partition works exactly the same way as above, but instead of the mount command you use ntfs-3g (this is a specialty both of MaheshaBSD and MaheshaBSD Server - both editions can mount NTFS disks for RW access; a feature that many BSD LiveCD distributions available elsewhere do not have):

```
chown vsftpd:vsftpd /mnt
ntfs-3g /dev/dals1 /mnt
/sbin/mount_nullfs /mnt/ftp /usr/home/vsftpd/ftp
```



*On the picture above you see the file of about the size of 660 megabytes being copied onto the attached USB drive with NTFS file system on it.*

The picture below shows the same file (on the right) already successfully copied onto the attached USB drive with the NTFS file system on it.

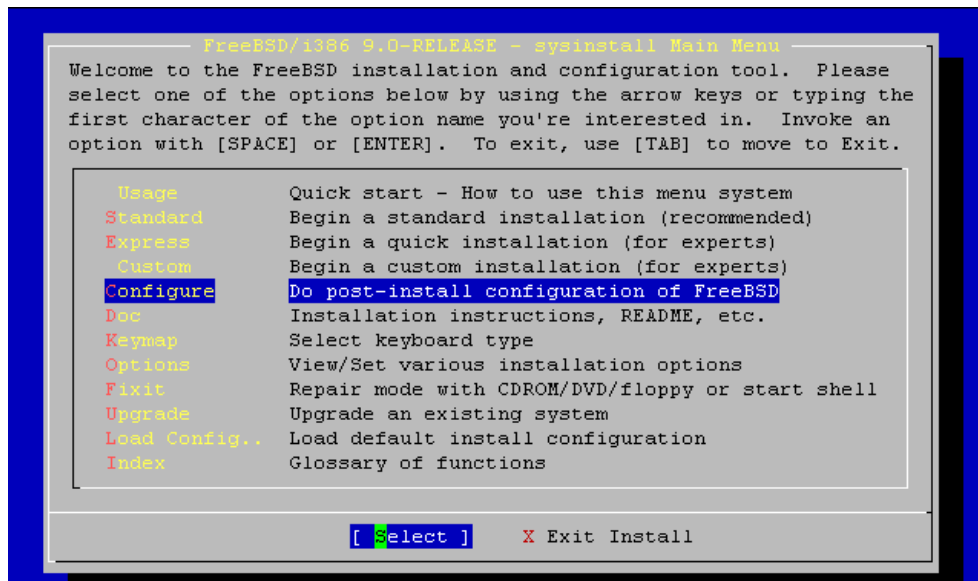


### *Hard Drives With Native FreeBSD File System*

To create a native FreeBSD file system on a hard drive, plug your USB hard drive into the computer where MaheshaBSD Server is running.

Run `sysinstall` from the command shell (as root).

Choose "Do post-install configuration of FreeBSD", as you see on the picture below.



Then choose "The disk slice (PC-style partition) editor", then the disk you want to work with; keep its current geometry. Then create new partitions, or choose the existing ones (FAT32, NTFS, Ext3 [Linux]) and format them. To change the partition type, press "T" (Change Type) and then type "165" (a FreeBSD partition).

If partitions already exist on your HD, the above step is not necessary, as you may format them right away:

```
newfs /dev/dals1
```

After the partition with FreeBSD native file system is ready, mount it:

```
mount /dev/dals1 /mnt (or instead of /mnt choose /mounthdd)
```

Finally, redirect it to /home/vsftpd/ftp as follows (make sure /mnt/ftp or /mnt/www is on the disk you are now going to redirect with mount\_nullfs to MaheshaBSD Server):

```
/sbin/mount_nullfs /mnt/ftp /usr/home/vsftpd/ftp
```

Now copying of files to an external disk will be easy.

## Hard Drives in Your PC (SATA/IDE, etc.)

Same as above, but choose /dev/ada0 as the device. /dev/ada0 is the first hard drive, /dev/ada0s1 the first partition on that drive ("slice" in the FreeBSD terminology).

## Security

You can increase kernel secure levels by running the following:

```
sysctl kern.securelevel=1
```

or

```
sysctl kern.securelevel=2
```

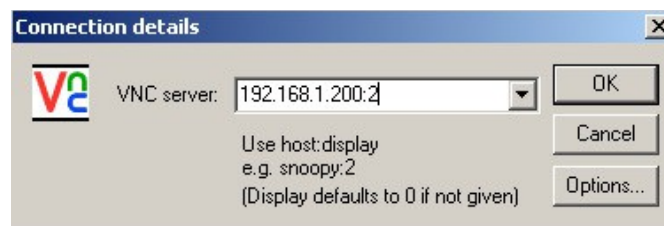
or

```
sysctl kern.securelevel=3
```

in your root shell. I tested this and both servers (FTP and WWW) work very well. However, you cannot return to lower secure levels and you may expect problems when running the MaheshaBSD Server's X Window System from within MaheshaBSD Server. Running WordPress, too, may cause problems with higher secure levels. You must reboot to return to the previous configuration. The higher the number, the better the security.

## Tips

- ⌚ **MaheshaBSD Server** is built on MaheshaBSD. This means that it has all its functionality (Linux emulation, anonymity, VNC Server, X Window, **Text-To-Speech software**, etc.). You may run X Window (graphical Windows-like environment) over the network with free programs like Tightvnc (available also for Windows). All you need to do is to type `vncserver :2` either in the root or guest account on the computer MaheshaBSD (or MaheshaBSD Server) is running on (it will act as a VNC server). The number `:2` (or `:1`) is the number of the display. If password is not set up, `vncserver` will then prompt you for a password (you may change anytime with `vncpasswd`).



This way you may run phpMyAdmin (a free and open source tool written in PHP intended to handle the administration of MySQL with use of a Web browser) and many other GUI applications remotely (in Microsoft Windows, Linux, Mac, etc.). To run Xvnc over the Internet, you must open the port 5900; the last number is your display number (+1, +2, etc.) - that is, to open MaheshaBSD to the world with display : 2, the following port must be opened in your router: 5902. If you want 10 people to have a remote access over the Internet via MaheshaBSD's VNC server, all following ports must be opened: 5901, 5902, 5903, 5904, 5905, 5906, 5907, 5908, 5909, 5910.

- ⌚ It is better to start rc.d scripts manually, as booting to a single-user mode every time something goes wrong is a way to lose time (and a lot of time). Therefore, run everything from scripts - the following is just an example: `(/usr/local/etc/rc.d/samba start)`.
- ⌚ Always shut your computer down if you want to reboot it, as some data may stay in memory and can trouble you after reboot.
- ⌚ If you receive an error message "Write to restore size failed" upon installing new packages, this is because `/tmp` in memory is not large enough. Just increase it - run the `/root/bin/tmp` script. It will assign 250 MB to `/tmp` (in memory). To do this, run the `utmp` script to



detach the previous memory from the system. The tmp script will do this too.

- ⌚ There are more approaches to reset the MySQL password used by WordPress for its Admin account. One of them is to use the MySQL commands:

```
mysql -u root -p (login to mysql)
mysql> show databases;
```

The Internet provides a lot of information on this.

- ⌚ With a computer that has a lot of power consumption run `sysctl` as follows:

```
sysctl dev.cpu.0.freq=600
```

The CPU frequencies differ on systems with different CPU's. In case your CPU does not support the level 600 (as you see above), the following command shows the frequencies you may try:

```
sysctl dev.cpu.0.freq_levels
```

- ⌚ To speed up this Server, run the script `/root/bin/optim` to put `/var` into memory (with its default shape).
- ⌚ All important files are backed up in `/usb/mfs` (`etc.tgz`, `etclocal.tgz`, `home.tgz`, `root.tgz`, `var.tgz`) and it is thus easy to recreate the default shape of MaheshaBSD Server without writing its default USB image back onto your flash drive.
- ⌚ The user "boss", if he/she logs in to his/her account via SSH (Windows users should use free programs such as putty), may `su` to root anytime to gain superuser privileges. With commands:

```
chmod 777 /usr/home/guest
chmod 777 /usr/home/guest1
chmod 777 /usr/home/guest2
chmod 777 /usr/home/guest3
chmod 777 /usr/home/guest4
chmod 777 /usr/home/guest5
```

the superuser will change the permission rights, so that, in case of `chmod 777`, all guest users will see the contents of their directories with a possibility to create and copy files in all these directories without restrictions (except for the case you imposed quota policies on certain users).

You may also assign these guest accounts the more privileged permission rights with the following:

```
chown -R -v boss:wheel /usr/home/guest
```

In the above case, the user "guest" will be able to see files and directories in MaheshaBSD Server almost everywhere.

Note: `/home/guest` and `/usr/home/guest` are the same directories.

- ⌚ Run the following command to restart Apache:
- ```
apachectl restart
```

- ⌚ To restart vsftpd, first kill it with `pkill`:  
`pkill vsftpd`  
 Then rerun vsftpd:  
`/usr/local/libexec/vsftpd &`
- ⌚ As the USB image of MaheshaBSD Server is writable, **you must safely turn off the computer this Server is running on, otherwise you will end up with a dirty file system.** Either do this with your SSH client - log in as boss, su to root, type `halt -p`, or press Ctrl+Alt+Del. As soon as you see a reboot screen (BIOS), you may safely turn the computer off. You may, too, setup your own automatic shutdown approach. An example script is `/root/bin/sss1`. It will shut your computer in 2 minutes from after its execution.  
 Its syntax is:  
`/sbin/shutdown -p + 2 minutes`  
`" + 2 minutes"` may be changed to `" + 2 hours"` or to `" + 8 hours"` (or days).

All you need is to put the above command in your `/etc/rc.local` and upon the next reboot your computer will safely shut down at the time you specified.

However, the above will shut the computer down at the time from after its boot. If you have a business meeting and come to your office later one day than other days, it may appear inconvenient if your computer is automatically turned off at 10:00 pm on Monday and at 7:30 pm on Tuesday. To shut it down always automatically at a fixed time, use the `at` command. This command is used for a one time command scheduling; `cron` is used for a periodic command scheduling.

To shut your computer down always at a specific time and not at the time from after its boot, type the following in your shell:

```
at 8pm
and press [Enter], then type halt followed by [Enter] again. To save
your job press CTRL+D
at 7:57pm
[Enter]
halt -p
[Enter]
Ctrl+D
```

`cron` must be running to use the `at` command. It does not run in MaheshaBSD Server because it writes a lot of output into its log file. To run `cron` manually:

```
/etc/rc.d/cron onestart
```

`cron` needs `/etc/crontab`; it does not exist in the `/etc` directory of MaheshaBSD, but a copy of it (`/etc/crontab.copy`), which needs to be renamed to `/etc/crontab`. `cron` (and thus also `atrun` - `cron` is scheduled to run it every 5 minutes) runs `/usr/libexec/atrun` every 5 minutes, which is important. The `at` command will not work if `cron`

does not run on your system. To avoid this inconvenience, you must run `atrun` (it runs jobs queued by `at`) manually and a little later (use `sleep` to solve this) after the time the `at` command was scheduled to run a command:

```
at 7:57pm
[Enter]
halt -p
[Enter]
Ctrl+D

sleep 122
atrun
```

- ⌚ To backup your WordPress data, copy `/var/db/mysql` to a secure directory.
- ⌚ You may use swap with different sizes - "swapme" scripts in `/root/bin` will do the job.
- ⌚ WiFi needs its own setup. First, load the WiFi kernel module - for example, the ZyDas driver (make sure FreeBSD supports your WiFi driver!!!):

```
kldload if_zyd
```

Run the command:

```
ifconfig zyd0 192.168.1.111 mode 11b ssid
put_your_ssid_here channel 6
```

Then

```
wpa_supplicant -d -i zyd0 -c /etc/wpa_supplicant.conf
```

provided you edited `wpa_supplicant.conf` in `/etc` and have appropriate entries in it. The contents of the above file looks as follows:

```
# Sample wp_supplicant file, you need to kldload the
# kernel module for your WiFi to work
ctrl_interface=/var/run/wpa_supplicant
ap_scan=1
eapol_version=1

network={
ssid="your_ssid_broadcast_name"
bssid=00:00:00:00:00:00 #Mac address of your wireless
router
proto=WPA
scan_ssid=1
key_mgmt=WPA-PSK
pairwise=CCMP TKIP
group=CCMP TKIP
identity="FreeBSD"
psk="your_password"
priority=2
}
```

- ⌚ Modify the configuration file of your FTP server (`vsftpd.conf`) - something you may not do on other servers where you have no sufficient permissions. Log in as "boss" via SSH (or do this physically on the computer this Server is running on), `su` to root and type:
 

```
ee /usr/local/etc/vsftpd.conf
```

 and uncomment the following two lines:

```
local_enable=YES
write_enable=YES
```

After you restart vsftpd, you will be able to log in to all your accounts simply by typing the appropriate local IP address (or public?) in your browser together with the user name and his/her password, for example: `ftp://login:pass@192.168.1.200`

## Conclusion

The above-mentioned features of **MaheshaBSD Server** - an easy to use FTP and WWW server (with WordPress) - make MaheshaBSD the **Server Edition** ([www.freebsd.nfo.sk/maheshaeng.htm](http://www.freebsd.nfo.sk/maheshaeng.htm)).

## Troubleshooting

- ⌚ If you redirect (with `mount_nullfs`) a corrupted disk to your MaheshaBSD Server, it may cause problems and MaheshaBSD Server will not work properly with it. Diagnose the disk with hardware diagnostics tools; if it is a NTFS disk, run the `chkdsk` command in Windows with the `/f` option - for example, `chkdsk K: /f` or with the `/R` option - `chkdsk K: /R` (the option `/R` checks the disk's surface for errors; if problems persist, replace the disk).
- ⌚ To find out your default gateway, run `ipconfig` in the Windows command prompt; in Unix use `ifconfig`.
- ⌚ In certain scenarios, if you use a USB flash drive with a lower size than the MaheshaBSD Server's default image, it may work but will not be mountable in other FreeBSD systems. To prevent such unexpected problems related to the size of this USB image, make sure your flash drive has at least 3,700 MB (not lower). You will not experience any problems with higher capacity USB flash drives.
- ⌚ Do not copy files to `/`, as this (root) directory resides in memory with only a few spare megabytes left (some 6 MB's of free memory). It is recommended to store files on your writable usb flash drive/hard drive in the `/usb` directory.
- ⌚ Always reboot MaheshaBSD Server in case something goes fatally wrong.
- ⌚ If you experience "kernel trap 12" error upon booting this thing, this problem will be most probably associated with `mfsroot.gz` that gets unpacked into memory on the fly upon booting. To solve this, keep only one memory in one memory slot if you have 2 memories (in your desktop computer). If that does not help, you must have a hardware problem.

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