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pfSense installation on ALIX board HOWTO

Gooze ships ALIX Boards with pfSense [1] firewall distribution on Compact Flash (CF).
This documents explains how to install pfSense from GOOZE Flash card.

pfSense is a very popular firewall based on FreeBSD, one of the most secure Operating Systems.

Preparing the Compact Flash card

This section explains how to install pfSense to Compact Fash card.
If your system was already installed when you purchased an ALIX board on GOOZE website, skip this page.

Download pfSense

pfSense is available on Compact Flash (CF) cards.

Visit GOOZE mirror and download an image suited for your Flash card:

- pfSense-2.0.1-RELEASE-512mb [2] for 512MB compact flash
- pfSense-2.0.1-RELEASE-1g [3] for 1GB compact flash
- pfSense-2.0.1-RELEASE-2g [4] for 2GB compact flash
- pfSense-2.0.1-RELEASE-4g [5] for 4GB compact flash

Plug-in the Compact Flash (CF)

Unplug any memory if not needed: additional hard-drives, USB sticks, etc ...
Plug the compact Flash card reader to your system.
Plug-in the Compact Flash.

Now make sure to understand where your compact flash is mounted.
Under GNU/Linux or FreeBSD, run dmesg. Generally, this is /dev/sd[b,c,d].

Warning: the main danger is not to understand where the flash is mounted. Any error may lead to a disaster, as you may ovewrite your main hard disc or any valuable information. Unless you are sure where the CF is mounted, you may not continue.

Transferring images to CF card

Warning: Transferring data to CF card will erase any content!

Windows :
Download physDiskwrite [6] from M0n0wall website.
More information coming soon.

GNU/Linux :

```
$ zcat pfsense-embedded.img.gz | dd of=/dev/sd[b,c,d] bs=16k
```

Mac OS X :

```
$ gzcat pfsense-embedded.img.gz | dd of=/dev/disk[n] bs=16k
```

FreeBSD:

```
$ gzip -dc pfsense-embedded.img.gz | dd of=/dev/da[n] obs=64k
```

Install the Compact Flash (CF) in the ALIX board

Unplug the power adapter of your ALIX box.

To make sure there is no electrostatic electricity, you may touch the ALIX power connector on the ALIX board. If you are unsure, do not touch anything.

Open your ALIX box and install the Compact Flash.

Connecting the serial console cable

pfSense images are made for a 9600 bauds 8N1 console.
Plug-in the serial console null-modem cable to the ALIX board.

Gooze offer a nice USB to RS-232 null-modem cable.

Now, based on your operating system, run:

GNU/Linux:

```
$ gtkterm -p /dev/ttyUSB0 -w Xon -s 9600
```

or

```
$ minicom -b 9600
```

Mac OS X:

```
$ minicom -b 9600
```

Windows:
Install and use Putty [7].

A detailed guide is available here:
ALIX board serial console HOWTO [8].

Setting ALIX console settings to 9600 bauds

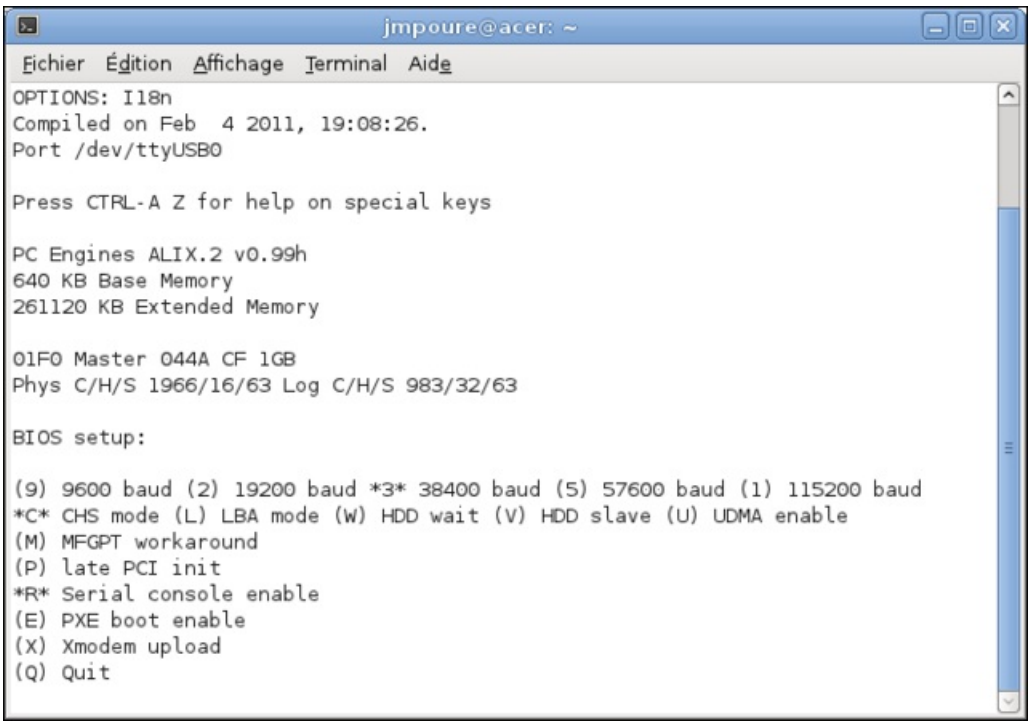
On a new hardware, we have two different settings:

- pfSense images are made for a 9600 bauds console.
- ALIX default setting are 38400 bauds 8N1.

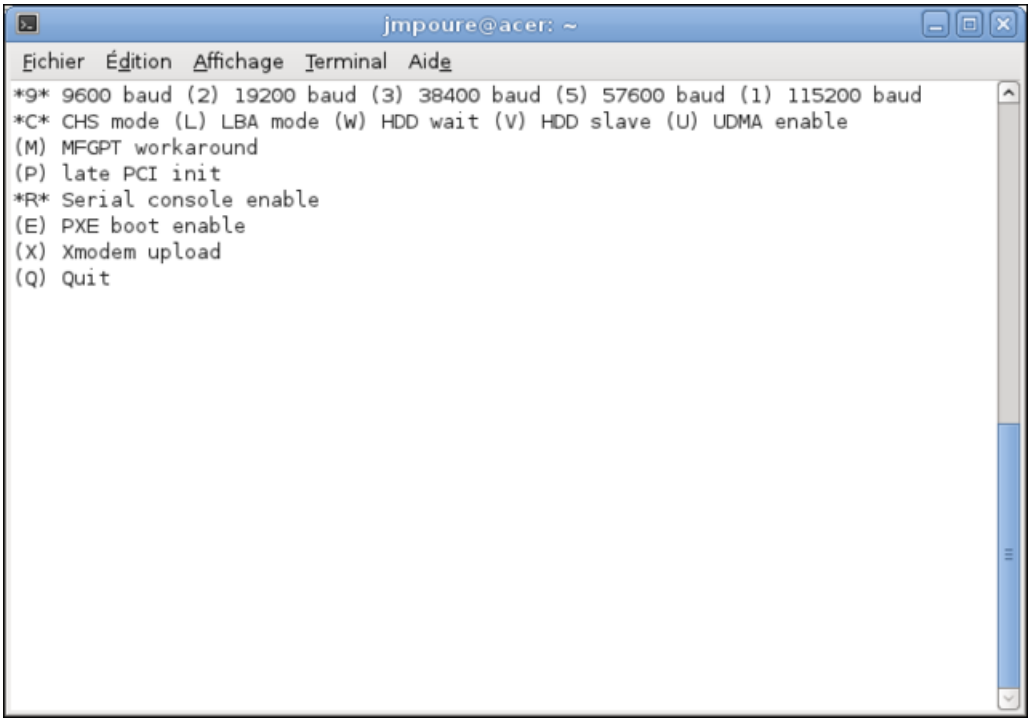
It may be interesting to set ALIX default speed to 9600 bauds.

Modify ALIX bios settings

Open your terminal with 38400 bauds.
During first seconds of boot, press the "S" key to access bios settings:



Press the '9' key to select 9600 bauds.

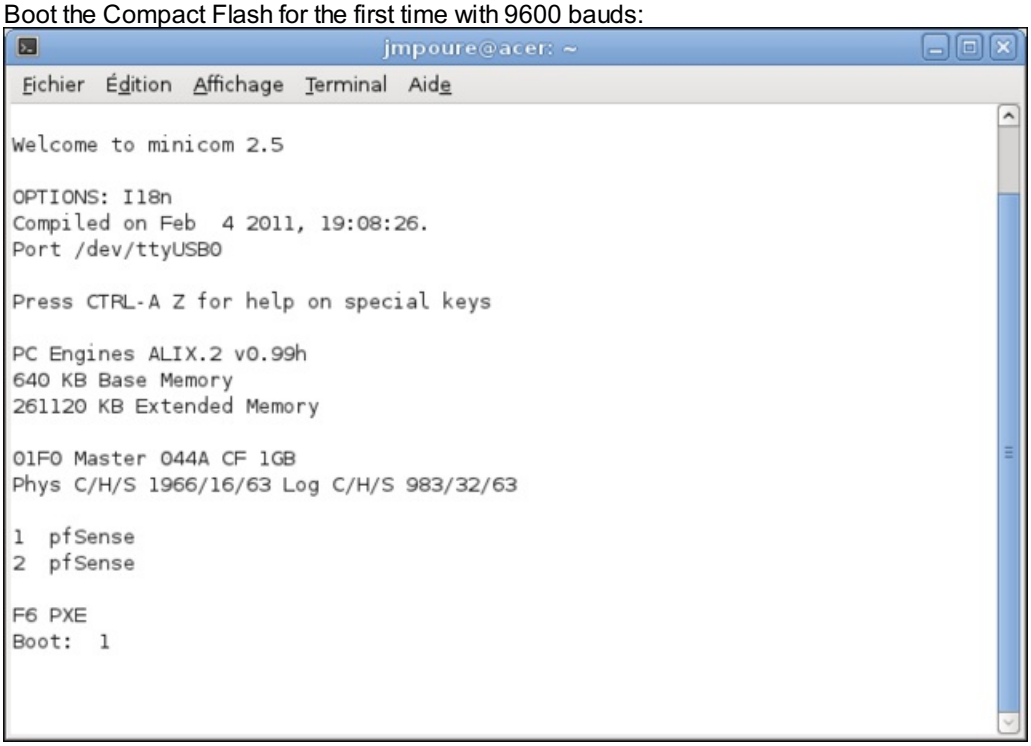


Quit to reboot.

Close your terminal as it is set from 38400 bauds and should be now 9600.

Starting pfSense in console mode

Boot the Compact Flash for the first time with 9600 bauds:



Press 1 to start pfSense in configuration mode.

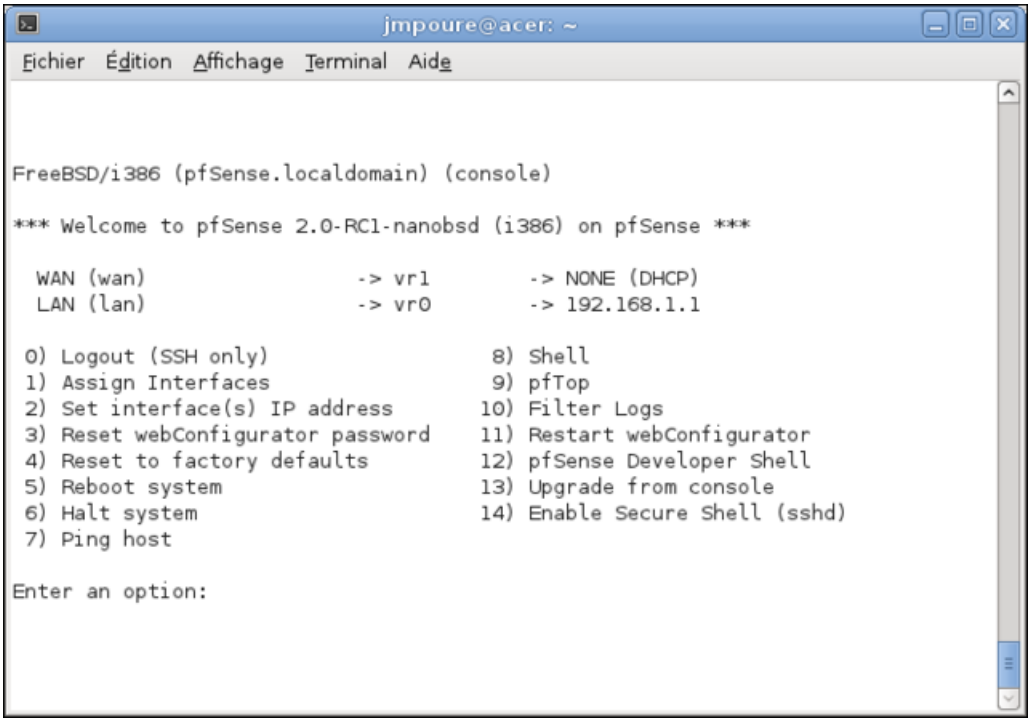
This is pfSense default text-mode menu:

```
jmpoure@acer: ~
Fichier  Édition  Affichage  Terminal  Aide
Configuring firewall......done.
Generating RRD graphs...done.
Starting CRON... done.
Executing rc.d items...
 Starting /usr/local/etc/rc.d/*.sh...done.
Bootup complete

FreeBSD/i386 (pfSense.localdomain) (console)

*** Welcome to pfSense 2.0-RC1-nanobsd (i386) on pfSense ***

  WAN (wan)                 -> vr1        -> NONE (DHCP)
  LAN (lan)                 -> vr0        -> 192.168.1.1

 0) Logout (SSH only)                  8) Shell
 1) Assign Interfaces                  9) pfTop
 2) Set interface(s) IP address       10) Filter Logs
 3) Reset webConfigurator password    11) Restart webConfigurator
 4) Reset to factory defaults         12) pfSense Developer Shell
 5) Reboot system                     13) Upgrade from console
 6) Halt system                       14) Enable Secure Shell (sshd)
 7) Ping host

Enter an option:
```

Plug in a network cable from your local network (WAN) to the ALIX board.
pfSense is not able to assign wireless interfaces from the console.

Press 1 to assign interfaces.
When asked, press 'a' for automatic configuration.

Now your interfaces have been detected, but the IP address is 192.168.1.1:



Press 2 to assign a new IP adress, which can be reached on your LAN:
In our example, we modified the default LAN address to 192.168.0.1.
When asked, choose 24 (255.255.255.0) as network mask and restart webconfigurator.

Note down the IP address of your ALIX board.

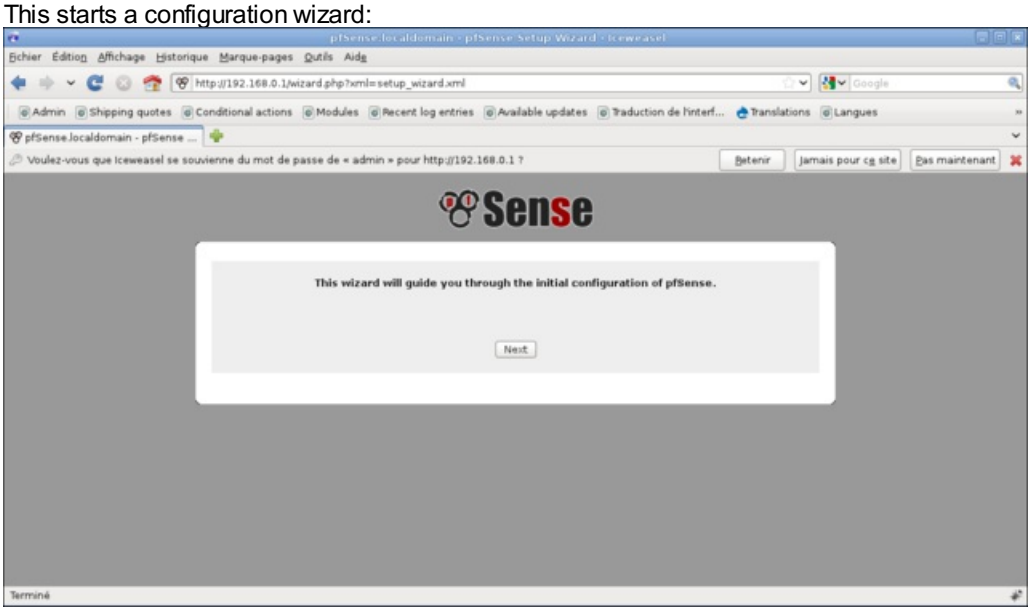
Starting pfSense wizard

Start your web browser and connec to your ALIX board IP adress.
In our case, the address is http://192.168.0.1 [9]

Enter default credentials:

- User: admin
- Password: pfsense

This starts a configuration wizard:



Follow the wizard and your configuration and your pfSense firewall will be running in a matter of minutes.

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Source URL: http://www.gooze.eu/howto/pfsense-installation-on-alix-board-howto

Links:
[1] http://www.pfsense.org/
[2] http://download.gooze.eu/embedded/pfsense/pfSense-2.0.1-RELEASE-512mb-i386-nanobsd.img.gz
[3] http://download.gooze.eu/embedded/pfsense/pfSense-2.0.1-RELEASE-1g-i386-nanobsd.img.gz
[4] http://download.gooze.eu/embedded/pfsense/pfSense-2.0.1-RELEASE-2g-i386-nanobsd.img.gz
[5] http://download.gooze.eu/embedded/pfsense/pfSense-2.0.1-RELEASE-4g-i386-nanobsd.img.gz
[6] http://m0n0.ch/wall/physdiskwrite.php
[7] http://www.chiark.greenend.org.uk/~sgtatham/putty/
[8] http://www.gooze.eu/howto/alix-board-serial-console-howto
[9] http://192.168.0.1