

Installing FreePBX 13 on Debian 8.1

READ FIRST

Manual installations of FreePBX is considered an EXPERTS ONLY exercise. This method of installation is enough to get CORE functionality of FreePBX. Non-commercial modules may not function as expected or detailed in the Wiki's. Certain modules and features may require additional software to be installed and configured on the server.

**** COMMERCIAL MODULES CANNOT BE INSTALLED ON THIS OS ****

- Initial System Setup
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- Install Prerequisites
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 - Compile and install Asterisk
 - Install Asterisk Soundfiles.
- Install and Configure FreePBX
 - Create the Asterisk user and set base file permissions.
 - A few small modifications to Apache.
 - Configure ODBC
- That's it!

Automatic Startup

Initial System Setup

When installing the machine, at package selection make sure you pick - at least - 'web server' and 'SSH server'. You can also turn off 'Debian desktop environment'.

Log in as, or switch to, the Root User

Please note: THIS IS IMPORTANT! You must run the **entire** process as root. Attempting to use 'sudo' later on **will not work**. Please don't ignore this. You must run this entire installer as the root user. It will be helpful to enable ssh logins as root. To do so, you need to change the line 'PermitRootLogin without-password' to 'PermitRootLogin yes' in /etc/ssh/sshd_config. You can do this with the following commands.

```
sed -i 's/PermitRootLogin without-password/PermitRootLogin yes/'  
/etc/ssh/sshd_config  
service sshd restart
```

Update Your System

```
apt-get update && apt-get upgrade -y
```

Install Required Dependencies

```
apt-get install -y build-essential linux-headers-`uname -r` openssh-server
apache2 mysql-server\
mysql-client bison flex php5 php5-curl php5-cli php5-mysql php-pear
php5-gd curl sox\
libncurses5-dev libssl-dev libmysqlclient-dev mpg123 libxml2-dev
libnewt-dev sqlite3\
libsqlite3-dev pkg-config automake libtool autoconf git unixodbc-dev uuid
uuid-dev\
libasound2-dev libogg-dev libvorbis-dev libcurl4-openssl-dev libical-dev
libneon27-dev libsrtplib0-dev\
libspandsp-dev sudo libmyodbc subversion
```

As part of this install, you will be asked several times for a mysql password. You can leave this blank (just push enter) as the instructions further down will generate a **secure** password. If you set a password now, you will cause problems further down. **Please do not set a mysql password unless you are confident in your abilities to secure a SQL server.**

Reboot server

```
reboot
```

Install Prerequisites

After your machine has rebooted, you are now sure you're running the latest Linux kernel. (At the time of writing this document, the Kernel supplied was 3.16.)

Install Legacy pear requirements

```
pear install Console_Getopt
```

Install Dependencies for Google Voice (if required)

You may skip this section if you do not require Google Voice support.

Install iksemel

```
cd /usr/src
wget https://iksemel.googlecode.com/files/iksemel-1.4.tar.gz
tar xf iksemel-1.4.tar.gz
cd iksemel-*
./configure
make
make install
ldconfig
```

Install and Configure Asterisk

Download Asterisk source files.

```
cd /usr/src
wget
http://downloads.asterisk.org/pub/telephony/dahdi-linux-complete/dahdi-linux-complete-current.tar.gz
wget
http://downloads.asterisk.org/pub/telephony/libpri/libpri-current.tar.gz
wget
http://downloads.asterisk.org/pub/telephony/asterisk/asterisk-13-current.tar.gz
wget -O jansson.tar.gz
https://github.com/akheron/jansson/archive/v2.7.tar.gz
wget http://www.pjsip.org/release/2.4/pjproject-2.4.tar.bz2
```

Compile and install DAHDI.

If you don't have any physical PSTN hardware attached to this machine, you don't need to install DAHDI. (For example, a T1 or E1 card, or a USB device). Most smaller setups will not have DAHDI hardware, and this step can be safely skipped.

```
cd /usr/src
tar xvfz dahdi-linux-complete-current.tar.gz
rm -f dahdi-linux-complete-current.tar.gz
cd dahdi-linux-complete-*
make all
make install
make config
cd /usr/src
tar xvfz libpri-current.tar.gz
rm -f libpri-current.tar.gz
cd libpri-*
make
make install
```

Compile and install pjproject

```
cd /usr/src
tar -xjvf pjproject-2.4.tar.bz2
rm -f pjproject-2.4.tar.bz2
cd pjproject-2.4
CFLAGS='-DPJ_HAS_IPV6=1' ./configure --enable-shared --disable-sound
--disable-resample --disable-video --disable-opencore-amr
make dep
make
make install
```

Compile and Install jansson

```
cd /usr/src
tar vxvf jansson.tar.gz
rm -f jansson.tar.gz
cd jansson-*
autoreconf -i
./configure
make
make install
```

Compile and install Asterisk

```
cd /usr/src
tar xvfz asterisk-13-current.tar.gz
rm -f asterisk-13-current.tar.gz
cd asterisk-*
contrib/scripts/get_mp3_source.sh
contrib/scripts/install_prereq install
./configure
make menuselect
```

You will be prompted at the point to pick which modules to build. Most of them will already be enabled, but if you want to have MP3 support (eg, for Music on Hold), you need to manually turn on 'format_mp3' on the first page.

After selecting 'Save & Exit' you can then continue

```
make
make install
make config
ldconfig
update-rc.d -f asterisk remove
```

Install Asterisk Soundfiles.

The 'make install' above installs a standard low-quality base sound file by default. This is suitable if you are on a small, underpowered system (such as a Raspberry Pi), but on a larger system you should install higher quality soundfiles. Note that this installs the (8khz) 'wav' soundfiles and G722 (High Definition 'Wideband') audio.

```
cd /var/lib/asterisk/sounds
wget
http://downloads.asterisk.org/pub/telephony/sounds/asterisk-core-sounds-en
-wav-current.tar.gz
wget
http://downloads.asterisk.org/pub/telephony/sounds/asterisk-extra-sounds-e
n-wav-current.tar.gz
tar xvf asterisk-core-sounds-en-wav-current.tar.gz
rm -f asterisk-core-sounds-en-wav-current.tar.gz
tar xzf asterisk-extra-sounds-en-wav-current.tar.gz
rm -f asterisk-extra-sounds-en-wav-current.tar.gz
# Wideband Audio download
wget
http://downloads.asterisk.org/pub/telephony/sounds/asterisk-core-sounds-en
-g722-current.tar.gz
wget
http://downloads.asterisk.org/pub/telephony/sounds/asterisk-extra-sounds-e
n-g722-current.tar.gz
tar xzf asterisk-extra-sounds-en-g722-current.tar.gz
rm -f asterisk-extra-sounds-en-g722-current.tar.gz
tar xzf asterisk-core-sounds-en-g722-current.tar.gz
rm -f asterisk-core-sounds-en-g722-current.tar.gz
```

Install and Configure FreePBX

Create the Asterisk user and set base file permissions.

```
useradd -m asterisk
chown asterisk. /var/run/asterisk
chown -R asterisk. /etc/asterisk
chown -R asterisk. /var/{lib,log,spool}/asterisk
chown -R asterisk. /usr/lib/asterisk
rm -rf /var/www/html
```

A few small modifications to Apache.

```
sed -i 's/(\^upload_max_filesize = \).*/\120M/' /etc/php5/apache2/php.ini
cp /etc/apache2/apache2.conf /etc/apache2/apache2.conf_orig
sed -i 's/^\(User\|Group\).*/\1 asterisk/' /etc/apache2/apache2.conf
sed -i 's/AllowOverride None/AllowOverride All/' /etc/apache2/apache2.conf
service apache2 restart
```

Configure ODBC

Edit /etc/odbcinst.ini and add the following. Note that this command assumes you are installing to a new machine, and that the file is empty. If this is not a freshly installed machine, please manually verify the contents of the file, rather than just copying and pasting the lines below. The 'EOF' does not go in the file, it simply signals to the 'cat' command that you have finished pasting.

```
cat >> /etc/odbcinst.ini << EOF
[MySQL]
Description = ODBC for MySQL
Driver = /usr/lib/x86_64-linux-gnu/odbc/libmyodbc.so
Setup = /usr/lib/x86_64-linux-gnu/odbc/libodbcmyS.so
FileUsage = 1

EOF
```

You may need to verify these paths, if you're not on a x86_64 machine. You can use the command `find / -name libmyodbc.so` to verify the location

Edit or create /etc/odbc.ini and add the following section. Note that, again, this command assumes you are installing to a new machine, and the file is empty. Please manually verify the contents of the files if this is not the case.

```
cat >> /etc/odbc.ini << EOF
[MySQL-asteriskcdrdb]
Description=MySQL connection to 'asteriskcdrdb' database
driver=MySQL
server=localhost
database=asteriskcdrdb
Port=3306
Socket=/var/run/mysqld/mysqld.sock
option=3

EOF
```

Download and install FreePBX.

```
cd /usr/src
wget
http://mirror.freepbx.org/modules/packages/freepbx/freepbx-13.0-latest.tgz
tar vxzf freepbx-13.0-latest.tgz
rm -f freepbx-13.0-latest.tgz
cd freepbx
./start_asterisk start
./install -n
```

That's it!

You can now start using FreePBX. Open up your web browser and connect to the IP address or hostname of your new FreePBX server. You will see the Admin setup page, which is where you set your 'admin' account password, and configure an email address to receive update notifications.

There are (at the time of writing) approximately 50 additional modules that can be installed to enhance the usability of your FreePBX machine - you can install these via Module Admin.

We hope you enjoy using FreePBX 13!

Automatic Startup

Please note you need to set up FreePBX to start asterisk (and it's associated services) on bootup. [You can view an example systemd startup script here.](#)