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# Asterisk & FreePBX Installation Guide

Designed and tested on CentOS 4.3

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## Needed Components

- Web Server
- Mail Server (Not selected by default)
- MySQL Database (Not selected by default)
- Development Tools (Not selected by default)

```
[root@dhcp1 ~]# yum -y update
Setting up Update Process
Setting up repositories
...etc....
...etc...
Update: gnupg.i386 0:1.2.6-3 python.i386 0:2.3.4-14.2 sendmail.i386 0:8.13.1-3.RHEL4.3 tzdata.noarch
0:2006a-2.EL4
Complete!
root[ @dhcp1 ~]#
```

## Additional Package Installation

The following packages need to be additionally installed with yum:

```
[root@dhcp1 ~]# yum install gcc libxml2-devel libtiff-devel mysql-server php-gd php-mysql kernel-
devel kernel-smp-devel bison ncurses-devel audiofile-devel subversion libogg-devel openssl-devel
mysql-devel
```

```
[root@dhcp1 ~]# rpm -ivh http://apt.sw.be/redhat/el4/en/i386/RPMS.dag/lame-3.96.1-2.2.el4.rf.i386.rpm
```

## Downloading FreePBX Files

```
[root@dhcp1 ~]# cd /usr/src
[root@dhcp1 src]# wget http://easynews.dl.sourceforge.net/sourceforge/amportal/freepbx-2.1.1.tar.gz
[root@dhcp1s src]# tar xzf freepbx-2.1.1.tar.gz
```

A pause while the files are extracted...

```
[root@dhcp1 src]#
```

## Downloading Asterisk Files

```
[root@dhcp1 ~]# cd /usr/src
[root@dhcp1 src]# svn co http://svn.digium.com/svn/asterisk/branches/1.2 asterisk
..Lots of files...
[root@dhcp1 src]# svn co http://svn.digium.com/svn/asterisk-addons/branches/1.2 asterisk-addons
..Lots of files...
[root@dhcp1 src]# svn co http://svn.digium.com/svn/zaptel/branches/1.2 zaptel
..Lots of files...
[root@dhcp1 src]# svn co http://svn.digium.com/svn/libpri/branches/1.2 libpri
..Lots of files...
```

## Alternate Source Sound Files

```
[root@dhcp1 src]# wget http://ftp.digium.com/pub/asterisk/releases/asterisk-sounds-1.2.1.tar.gz
[root@dhcp1 src]# tar zxvf asterisk-sounds-1.2.1.tar.gz
```

## Compile Asterisk

```
[root@dhcp1]# cd /usr/src/asterisk
[root@dhcp1 asterisk]# mkdir /var/run/asterisk
[root@dhcp1 asterisk]# make install
[root@dhcp1 asterisk]# make config
```

## Create user & Setup Permissions

```
[root@dhcp1 ~]# useradd -c "Asterisk PBX" -d /var/lib/asterisk asterisk
[root@dhcp1 ~]# chown asterisk /var/lib/php/session/
```

Using nano , change User apache and Group apache to User asterisk and Group asterisk.

```
[root@dhcp1 ~]# nano +227 /etc/httpd/conf/httpd.conf
```

Also change AllowOverride None to AllowOverride All

```
[root@dhcp1 ~]# nano +311 /etc/httpd/conf/httpd.conf
```

## Setting Up MySQL Database

```
[root@dhcp1 ~]# /etc/init.d/mysqld start
Initializing MySQL database:          [ OK ]
Starting MySQL:                       [ OK ]
[root@dhcp1 ~]#
```

## Configuring the database for freePBX:

```
[root@dhcp1 ~]# cd /usr/src/freepbx-2.1.1
[root@dhcp1 freepbx-2.1.1]# mysqladmin create asterisk
[root@dhcp1 freepbx-2.1.1]# mysqladmin create asteriskcdrdb
[root@dhcp1 freepbx-2.1.1]# mysql asterisk < SQL/newinstall.sql
[root@dhcp1 freepbx-2.1.1]# mysql asteriskcdrdb < SQL/cdr_mysql_table.sql
```

## Securing the Database

(Example username = asteriskuser, Example password = amp109)

```
[root@dhcp1 freepbx-2.1.1]# mysql
```

```
mysql> GRANT ALL PRIVILEGES ON asteriskcdrdb.* TO asteriskuser@localhost IDENTIFIED BY 'amp109';
```

```
mysql> GRANT ALL PRIVILEGES ON asterisk.* TO asteriskuser@localhost IDENTIFIED BY 'amp109';
```

```
mysql> flush privileges;
```

```
mysql> \q
Bye
```

## Add an SQL Master Password

```
[root@dhcp1 freepbx-2.1.1]# mysqladmin -u root password 'password'
```

## Build the cdr\_mysql module for Asterisk

```
[root@dhcp1 freepbx-2.1.1]# cd /usr/src/asterisk-addons  
[root@dhcp1 freepbx-2.1.1]# cp Makefile Makefile.orig  
[root@dhcp1 freepbx-2.1.1]# sed -i 's/SOURCE/SOURCE -DMYSQL_LOGUNIQUEID/' Makefile  
[root@dhcp1 freepbx-2.1.1]# make && make install
```

## Install freePBX

```
[root@dhcp1 ~]# cd /usr/src/freepbx-2.1-beta1  
[root@dhcp1 freepbx-2.1-beta1]# ./install_amp
```

```
Checking for PEAR DB..OK  
Checking for PEAR Console::Getopt..OK  
Checking for libasteriskperl (perl bindings for asterisk)...Checking user..OK  
Checking for /etc/amportal.conf../etc/amportal.conf does not exist, copying default  
Creating new /etc/amportal.conf  
Enter your USERNAME to connect to the 'asterisk' database: [asteriskuser]  
Enter your PASSWORD to connect to the 'asterisk' database: [amp109]  
Enter the hostname of the 'asterisk' database: [localhost]  
Enter a USERNAME to connect to the Asterisk Manager interface: [admin]  
Enter a PASSWORD to connect to the Asterisk Manager interface:[amp111]  
Enter the path to use for your AMP web root:[/var/www/html]  
Enter the path to use for your FOP web root:[/var/www/html/panel]  
Created /var/www/html/panel  
Enter the path to your Apache cgi-bin:[/var/www/cgi-bin]  
Enter the IP ADDRESS or hostname used to access the AMP web-admin:[xx.xx.xx.xx] The IP Address of  
your Asterisk Machine  
Enter a PASSWORD to perform call transfers with the Flash Operator Panel: [passw0rd]  
Use simple Extensions [extensions] admin or separate Devices and Users [deviceanduser]? extensions  
Enter directory in which to store AMP executable scripts: [/var/lib/asterisk/bin]  
Created /var/lib/asterisk/bin  
Enter directory in which to store super-user scripts: [/usr/sbin]  
/etc/amportal.conf writtenOK  
Reading /etc/amportal.conf..OK  
Checking for /etc/asterisk/asterisk.conf../etc/asterisk/asterisk.conf does not exist, copying default  
OK  
Reading /etc/asterisk/asterisk.conf..OK  
Connecting to database..OK  
Checking current version of AMP..1.10.010beta1  
Installing new AMP files..OK  
Configuring install for your environment..OK  
Setting permissions on files..OK  
Checking for upgrades..5 found  
Upgrading to 1.10.010..  
Upgrading to 1.10.010..OK  
Upgrading to 2.0beta1..  
-> Running PHP script /usr/src/freepbx-2.0-beta4/upgrades/2.0beta1/emergencycid.php  
-> Running SQL script /usr/src/freepbx-2.0-beta4/upgrades/2.0beta1/tables.sql  
PHP Notice: Undefined variable: data in /usr/src/freepbx-2.0-beta4/install_amp on line 305  
Upgrading to 2.0beta1..OK  
Upgrading to 2.0beta2..  
Upgrading to 2.0beta2..OK
```

```
Upgrading to 2.0beta3..
-> Running PHP script /usr/src/freepbx-2.0-beta4/upgrades/2.0beta3/fixgotovm.php
Updating existing voicemail destinations..
..OK
Upgrading to 2.0beta3..OK
Upgrading to 2.0beta4..
Upgrading to 2.0beta4..OK
Generating AMP configs..
Generating Configurations.conf..
Checking for PEAR DB..OK
Checking for PEAR Console::Getopt..OK
Checking for /etc/ampportal.conf..OK
Reading /etc/ampportal.conf..OK
Connecting to database..OK
Please Reload Asterisk by visiting http://XXX.XXX.XXX.XX/admin
Generating AMP configs..OK
Restarting Flash Operator Panel..-bash: /var/www/html/admin/bounce_op.sh: Permission denied
OK
Please Reload Asterisk by visiting http://XXX.XXX.XXX.XX/admin
```

## ampportal control script

```
[root@dhcp1 ~]# $ampportal
```

```
-----AMP Control Script-----
```

```
Usage: ampportal start|stop|kill|chown
```

```
start: Starts Asterisk and Flash Operator Panel server
```

```
stop: Gracefully stops Asterisk and the FOP server
```

```
restart: Stop and Starts
```

```
kill: Kills Asterisk and the FOP server
```

```
chown: Sets appropriate permissions on files
```

```
$ /usr/sbin/ampportal stop
```

```
$ /usr/sbin/ampportal start
```

## Auto Start

```
[root@dhcp1 ~]# echo /usr/sbin/ampportal start >> /etc/rc.local
```

## Ensure services are starting at boot time and reboot

```
[root@dhcp1 freepbx-2.1.1]# chkconfig --list httpd
```

```
httpd 0:off 1:off 2:off 3:off 4:off 5:off 6:off
```

```
[root@dhcp1 freepbx-2.1.1]# chkconfig --list mysqld
```

```
mysqld 0:off 1:off 2:off 3:off 4:off 5:off 6:off
```

```
[root@dhcp1 freepbx-2.1.1]# chkconfig httpd on
```

```
[root@dhcp1 freepbx-2.1.1]# chkconfig mysqld on
```

## REBOOT

## Upgrading to FreePBX 2.2.3

```
[root@dhcp1 ~]# cd /usr/src/
```

```
[root@dhcp1 src]# wget http://mirror.freepbx.org/freepbx-2.2.3.tar.gz
```

```
[root@dhcp1 src]# tar zxvf freepbx-2.2.3.tar.gz
```

```
[root@dhcp1 src]# cd freepbx-2.2.3  
[root@dhcp1 freepbx-2.2.3]# ./install_amp --my-svn-is-correct
```