

OPENFREEZER – DOWNLOAD AND INSTALLATION INSTRUCTIONS

The latest stable release of OpenFreezer is available for download at <http://openfreezer.org/downloads>.

Apache/PHP/MySQL setup tutorial: <http://www.php-mysql-tutorial.com/wikis/php-tutorial/installing-php-and-mysql.aspx>

Python installation and setup help: <http://docs.python.org/using/index.html>

Your PHP installation must have MySQL support (modify **php.ini**), and Python **MySQLdb** module must be installed.

Database and server code can be installed either on the same hardware node, or on separate nodes, according to your preference.

Installing the system on a UNIX platform:

1. Download and install the following software components on your UNIX server(s), if not already available:

- **MySQL** DBMS version 5 or later: <http://www.mysql.com/>
- **PHP** version 5 or later: <http://php.net/>
- **Apache** HTTP server: <http://httpd.apache.org/>
- **Python** version 2.4 or later: <http://python.org/>
- **BioPython**: http://biopython.org/wiki/Main_Page
- **ReportLab** (for generating Vector maps with Python): <http://www.reportlab.com/>
- **Overlib**: <http://www.bosrup.com/web/overlib/>

2. Download and unpack the source code archive **openfreezer.tgz**

The unpacked directory contains:

- A folder named **OpenFreezer** that contains PHP and Python code (the Python code is located in the **cgi** subdirectory of *OpenFreezer*),
- A database dump file, named **openfreezer.sql**,
- A copy of the **Installation Instructions** in PDF format, and
- A database startup guide called **OpenFreezer Database Notes**.

3. Place the *OpenFreezer* folder in your server's web directory (e.g. */var/www/html*), and enable the execution of Python scripts from the */cgi* subdirectory by editing **httpd.conf** as explained below.

If you decide to not place the *cgi* folder within the PHP source code directory, create a symbolic link named *cgi* in the *OpenFreezer* directory to locate the Python scripts.

4. Change permissions for the *cgi* directory to make Python scripts executable:

```
xterm> chmod -R a+x OpenFreezer/cgi
```

5. If your Python interpreter is not located at */usr/local/bin/python*, create a symbolic link, e.g:

```
xterm> ln -s /usr/env/python /usr/local/bin/python
```

(change */usr/env/python* to your Python interpreter's location)

6. In your MySQL workspace, create an empty schema that will be populated in the next step:

```
mysql> create database my_openfreezer_db;
```

(replace *my_openfreezer_db* with a schema name of your choice)

7. Use the database dump file to add tables to the newly created schema. At the command prompt, type:

```
xterm> mysql -u my_user -p my_openfreezer_db < openfreezer.sql
```

The schema now contains tables with basic information pre-filled, ready to be used.

8. Create a new MySQL user, e.g. *'openfreezer_www'*, and grant them SELECT, INSERT and UPDATE privileges on *my_openfreezer_db*.

9. On your server, edit the **httpd.conf** file:

- Define *ServerName*, *DocumentRoot* and *ServerAlias* for your *OpenFreezer* setup directory.
- Add the *ExecCGI* option to the *cgi* subdirectory with ability to handle *.py* extensions.
- Set *LD_LIBRARY_PATH* to point to your MySQL directory.
- It is helpful to designate an *ErrorLog* file, e.g. */my_install_dir/my_openfreezer-error.log*.

Example:

(replace the highlighted directives according to your server's specifications)

```
<VirtualHost *:80>
```

```

ServerName my_openfreezer.me.com
DocumentRoot /var/www/html/my_openfreezer.me.com/OpenFreezer
CustomLog /var/www/html/my_openfreezer.me.com/my_access.log combined
ErrorLog /var/www/html/my_openfreezer.me.com/my_error.log
    AddType application/x-httpd-php .php
    SetEnv LD_LIBRARY_PATH /usr/local/lib/mysql
<Directory /var/www/html/my_openfreezer.me.com/OpenFreezer>
    Options None ExecCGI
    AddHandler cgi-script .cgi .pl .py
    DirectoryIndex index.php
    AllowOverride AuthConfig
    Order deny,allow
    Deny from all
    Allow from xxx.yyy.zzz.0/24
</Directory>
</VirtualHost>

```

10. In the *OpenFreezer* folder, edit the following lines in the file named **DatabaseConn.php**:

```

$databaseip = "Your MySQL server IP";
$databasename = "my_openfreezer_db";
$name = "openfreezer_www";
$pw = "MySQL password for openfreezer_www";
$hostname = "Your OpenFreezer URL, e.g. http://www.my_openfreezer.org";

```

**** NOTE:** If your database and web server are on the same physical tier, use 'localhost' as your database IP, i.e.:

```

$databaseip = "localhost";

```

11. In file **OpenFreezer /scripts/menu.js** that contains Javascript functions, edit the first line:

```

var hostName = "Your OpenFreezer URL, e.g. http://www.my_openfreezer.org";

```

(note the trailing slash)

12. Finally, edit the file **database_conn.py** in the *cgi* folder:

- Set **__root_dir__** to your OpenFreezer installation directory (include a trailing slash)
- Set **__hostname__** to your OpenFreezer URL (include a trailing slash)
- Change **__mail_server__** to your local mail server IP

- Change `__mail_admin__` and `__mailto_clone_request__` to local mailing addresses of your choice

Example:

```
__hostname__ = "http://my_openfreezer.me.com/"
__root_dir__ = "/var/www/html/ my_openfreezer.me.com/OpenFreezer/"
__mailto_clone_request__ = "my_clone_request@my_openfreezer.me.com"
__mailto_programmer__ = "my_programmer@my_openfreezer.me.com"
__mailto_biologist__ = "my_biologist@my_openfreezer.me.com"
__mail_server__ = "smtp.me.com"
__mail_admin__ = "my_openfreezer_admin@my_openfreezer.me.com"
```

- In function **databaseConnect()**, change MySQLdb connection parameters in a manner similar to the following:

```
db = MySQLdb.connect(host="my.mysql.server.name", user="openfreezer_www", passwd="openfreezer_www_passwd", db="my_openfreezer_db")
```

**** NOTE:** If your database and web server are on the same physical tier, use 'localhost' as your host name:

```
db = MySQLdb.connect(host="localhost", user="openfreezer_www", passwd="openfreezer_www_passwd", db="my_openfreezer_db")
```