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Authentication, Authorization & Accounting With FreeRadius & MySQL Backend & Web Based Management with Daloradius

This tutorial explains how to set up a FreeRadius 2.x server for wifi authentication, authorization and accounting in conjunction with mysql & web based management with Daloradius on CentOS 5.x. Production deployment is also possible with minor tweaking. But as usual I do not guarantee anything & take no responsibilities.

(For basichow-to refer to the doc<http://www.howtoforge.com/wifi-authentication-accounting-with-freeradius-on-centos5>.)

The following steps are involved:

- 1- BuildingCentos 5.x binary rpms
- 2-Installing the binary packages
- 3-Configuring the FR with mysql
- 4- Settingup web management with Daloradius

Step 1- Building Centos 5.X packages

Get hold of src.rpms from<http://rpmfind.net/linux/RPM/fedora/devel/src/freeradius-2.0.5-1.fc10.src.html>.

```
rpm -Uvh freeradius-2.0.5-1.fc10.src
```

Note: It is recommended that you carry this building process on a non-production server & move over the final binary rpms over to the productions server. But it isn't mandatory if you know what you're doing.

```
cd /usr/src/redhat/RPMS/SPECS
```

```
rpmbuild -bb freeradius.spec
```

Note: You might require some package for these. yum them & rerun the rebuild process. (I got prompted for the following)

```
beecrypt-devel, sqlite-devel, unixODBC, unixODBC-devel,  
python-devel, pam-devel, elfutils-libelf-devel,  
elfutils-libelf-devel-static, rpm-devel, elfutils-devel,  
elfutils-devel-static, net-snmp-devel, mysql, cyrus-sasl-devel,  
mysql-devel, openldap-devel, gdbm-devel, libtool-ltdl-devel,  
postgresql, postgresql-devel
```

After a while (depending on your system specs) you should have rpms built at the following locations (if using x86):

```
cd /usr/src/redhat/RPMS/i386
```

Move these to a production server if this is your development workstation.

Step 2- Installing the binary packages

```
rpm -Uvh freeradius-libs-2.0.5-1.i386.rpm
```

```
rpm -Uvh freeradius-2.0.5-1.i386.rpm
```

```
rpm -Uvh freeradius-utils-2.0.5-1.i386.rpm
```

```
rpm -Uvh freeradius-mysql-2.0.5-1.i386.rpm
```

After running with the out of the box configuration, validate against a local user.

E.g: run radius in debug mode:

```
radiusd -X
```

From another shell run this while the *radius -X* is running:

```
radtest abc 123 localhost 1812 testing123
```

Make sure the user 'abc' with password '123' is set in the */etc/raddb/users* file.

Step 3- Configuring the FR with MySQL

First the MySQL bits (creating the db & its admin user). Do the following from your shell.

```
mysqladmin -u root password 123456
```

```
mysql -u root -p
```

On the MySQL shell type the following:

```
CREATE DATABASE radiusdb;
```

```
GRANT
```

```
ALL ON radiusdb.* TO radius@localhost IDENTIFIED BY "radpass";
```

```
exit;
```

Now import the file *mysql-dalo-and-fr2x.sql* schema into the radiusdb from the following zipped file which also contains *daloradius.conf* file for daloradius which is discussed later in the web management section.

[Download sql schema & daloradius.conf zipped](#)

```
unzip daloradius.zip
```

```
mysql -u root -p radiusdb < /root/mysql-dalo-fr2x.sql
```

To have a look at the db schema do the following:

```
mysql -u root -p
```

```
use database radiusdb;
```

```
show tables;
```

```
quit;
```

Now edit your */etc/raddb/sql.conf*.

Reset the user/password/database parameters to reflect the changes(eg. login = radius, password=radpass & radius_db=radiusdb); to turn the NAS management from MySQL,search for the line

```
readclients = no
```

and change it to:

```
readclients = yes
```

Edit the file `/etc/raddb/sites-enabled/default` and add a line saying 'sql' to the `authorize{ }` section (which is towards the end of the file). Also add a line saying 'sql' to the `accounting{ }` section to tell FreeRadius to store accounting records in SQL as well. Optionally add 'sql' to the `session{ }` section if you want to do Simultaneous-Use detection. Optionally add 'sql' to the `post-auth{ }` section if you want to log all authentication attempts to SQL.

Here is the authorize section:

```
authorize {  
    ^ ^ ^ ^ ^ preprocess  
    ^ ^ ^ ^ ^ chap  
    ^ ^ ^ ^ ^ mschap  
    ^ ^ ^ ^ ^ suffix  
    ^ ^ ^ ^ ^ eap  
    ^ ^ ^ ^ ^ sql  
    ^ ^ ^ ^ ^ pap  
}
```

And the accounting section:

```
accounting {  
    ^ ^ ^ ^ ^ detail  
    ^ ^ ^ ^ ^ sql
```

```
}
```

To insert a test user in the database, go to the MySQL shell and run this:

```
mysql -u root -p
```

```
mysql> use database radiusdb;
```

```
mysql> INSERT INTO radcheck (UserName, Attribute, Value) VALUES ('sqltest', 'Password', 'testpwd');
```

```
mysql> select * from radcheck where UserName='sqltest';
```

```
mysql> exit
```

Fire up radius in debug mode:

```
radiusd -X
```

Go to another shell and run the test:

```
radtest sqltest testpwd localhost 1812 testing123
```

At this moment you should see a message containing something like ... *Accept-Accept* ... which is an indication that your user is getting authenticated just fine.

Congratulations! Your FreeRadius + MySQL setup is working.

4- Setting up web management with Daloradius

The latest stable release is version 0.9-7.

Get hold of the it from <http://sourceforge.net/projects/daloradius>.

```
tar -zxvf daloradius-0.9-7.tar.gz
```

Download the following prerequisite packages:

```
yum install install httpd -y
```

```
yum install php php-mysql php-pear php-gd php-pear-DB -y
```

```
cp daloradius-0.9-7/ /var/www -vr
```

Change ownership:

```
chown apache:apache /var/www/daloradius-0.9-7 -R
```

A few tables that are needed by Daloradius, have already been created earlier.

Copy over the already unzippedfile `daloradius.conf` from the downloaded [zipped file](#).

```
cp /root/daloradius.conf /var/www/daloradius-0.9-7/library/
```

Note: This file daloradius.conf has been modified for freeradius 2.x which, as of yet, is not being packaged by daloradius.

Now, simply adjust the MySQL database information in the DaloRadius config file.

```
vi /var/www/daloradius-0.9-7/library/daloradius.conf
```

Fill in the database details, few important parameters are listed below:

```
.....
Â Â Â .....
Â Â Â CONFIG_DB_ENGINE = mysql
Â Â Â CONFIG_DB_HOST = 127.0.0.1
Â Â Â CONFIG_DB_USER = radius
Â Â Â CONFIG_DB_PASS = radpass
Â Â Â CONFIG_DB_NAME = radiusdb
Â Â Â .....
Â Â Â .....
```

Change ownership & permission:

```
chown apache.apache /var/www/daloradius-0.9-7/library/daloradius.conf
```

```
chmod 644 /var/www/daloradius-0.9-7/library/daloradius.conf
```

```
touch /tmp/daloradius.log
```

```
chown apache.apache /tmp/daloradius.log
```


Set up the apache server.

Edit the `/etc/httpd/conf/httpd.conf` file and append this to the end of the file (customize to your likings):

```
Alias /myradius "/var/www/daloradius-0.9-7/"
<Directory /var/www/daloradius-0.9-7/>
    Â Â Options None
    Â Â order deny,allow
    Â Â deny from all
    Â Â allow from 127.0.0.1
    Â Â allow from <my management system's ip which has a web-browser>
</Directory>
```

Save and exit.

Restart the httpd server:

```
/etc/init.d/httpd restart
```

Fire up Firefox (or any other browser) and go to the URL `http://<localhost or the management system's ip>/myradius`.

Log in with the administrator for management:

username: `administrator`

password: `radius`

Change this information first for the sake of security (info is located in the operator table).

Take Daloradius for a spin. You should have created an sqltest user earlier. You can also try adding new users and testing the connectivity from within the Daloradius frontend.

Congratulations you are done.

Again developers of FreeRadius, MySQL and Daloradius, do accept my humble appreciation for all your efforts. Open source community, as always you rock, thanx.

(**Note:** I haven't mentioned anything regarding setting upeap/tls in this article. For that, just follow the section of setting up certificates and *eap.conf* from the below mentioned HowtoForge link.)

References:

<http://freeradius.org/>

http://wiki.freeradius.org/SQL_HOWTO

<http://sourceforge.net/projects/daloradius>

<http://www.howtoforge.com/wifi-authentication-accounting-with-freeradius-on-centos5>

<http://rpmfind.net/linux/RPM/fedora/devel/src/freeradius-2.0.5-1.fc10.src.html>