



Institute Level Radius Server (*FreeRadius*)

STEPS TO CONFIGURE

➤ Installing Required Packages

```
#sudo apt update  
#sudo apt install freeradius freeradius-mysql freeradius-ldap mysql-server -y
```

➤ Setting up the MySQL Backend

a) Initialize MySQL Radius Database

```
sudo mysql -u root -p  
CREATE DATABASE radius;  
CREATE USER 'radius'@'localhost' IDENTIFIED BY 'YOUR_SECURE_PASSWORD';  
GRANT ALL PRIVILEGES ON radius.* TO 'radius'@'localhost';  
FLUSH PRIVILEGES;  
EXIT;
```

b) Import FreeRADIUS Schema

```
sudo cat /etc/freeradius/3.0/mods-config/sql/main/mysql/schema.sql |  
sudo mysql -u root -p radius
```

➤ Configure FreeRADIUS to Use MySQL

a) Enable the SQL module:

```
sudo ln -s /etc/freeradius/3.0/mods-available/sql /etc/freeradius/3.0/mods-enabled/
```

- Edit the SQL config:

```
sudo nano /etc/freeradius/3.0/mods-available/sql
```

Ensure the following:

```
dialect = "mysql"
```

```
driver = "rlm_sql_${dialect}"
```

Set your database credentials: text

```
server = "localhost"
```

```
port = 3306
```

```
login = "radius"
```

```
password = "YOUR_SECURE_PASSWORD"
```

```
radius_db = "radius"
```

- Uncomment (read_clients = yes) and (client_table = "nas").

- Save and exit.

b) Change file permissions and restart FreeRADIUS:

```
sudo chgrp -h freerad /etc/freeradius/3.0/mods-available/sql  
sudo chown -R freerad:freerad /etc/freeradius/3.0/mods-enabled/sql  
sudo systemctl restart freeradius
```

➤ **Configure Clients Configuration :**

```
/etc/freeradius/3.0/clients.conf  
client access_point {  
    ipaddr = 192.168.0.10 (LAN IP)  
    secret = your_shared_secret  
    shortname = accesspoint  
    nastype = other  
}
```

➤ **Configure Proxy Configuration :**

```
/etc/freeradius/3.0/proxy.conf  
realm "yourinstitution.edu" {  
    authhost = LOCAL  
}  
realm default {  
    authhost = ip.of.national.radius.server  
    secret = your_shared_secret  
    shortname = nationalradius  
    nostrip  
}
```

➤ **Add a Test User to the RADIUS SQL Database**

```
sudo mysql -u root -p  
USE radius;  
INSERT INTO radcheck (username, attribute, op, value)  
VALUES ('test@yourdomain.edu', 'Cleartext-Password', ':=', 'testpass');
```

Example :-

```
USE radius;  
INSERT INTO radcheck (username, attribute, op, value)  
VALUES ('radius', 'Cleartext-Password', ':=', 'radius');
```

➤ **Run (to test) :-**

```
radtest radius radius 127.0.0.1 0 radius  
radtest <USERNAME> <PASSWORD> 127.0.0.1 0 <SHARED_SECRET>
```