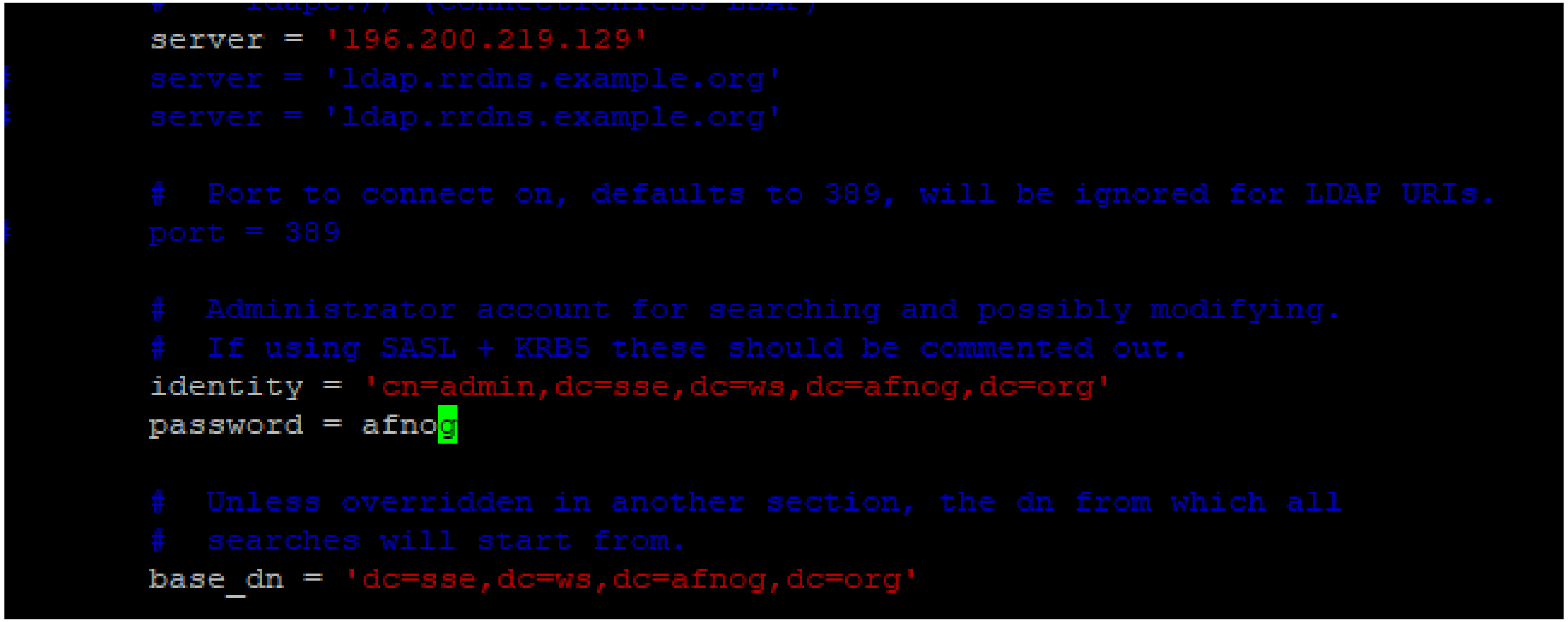
Practical Exercise Overview

- Build and install FreeRADIUS
- Configure and start FreeRADIUS with LDAP database backend
- Test authentication using FreeRADIUS

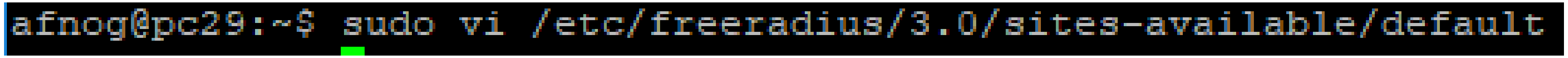
FreeRadius Installation & Configuration

- Install FreeRadius with the following commands as below.
- apt-get install freeradius freeradius-ldap –y
- sudo vi /etc/freeradius/3.0/mods-available/ldap

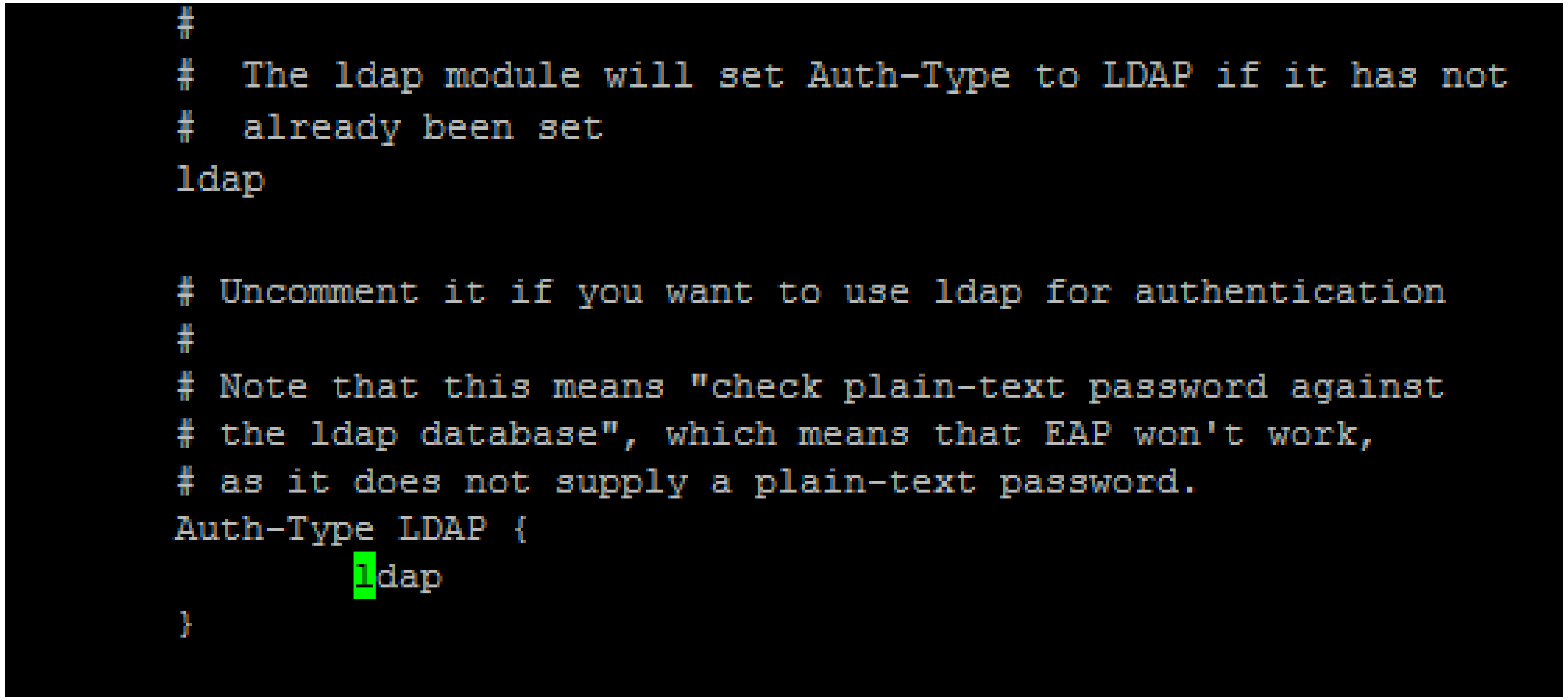


```
        #    ldapc:// (connectionless LDAP)
        server = '196.200.219.129'
#       server = 'ldap.rrdns.example.org'
#       server = 'ldap.rrdns.example.org'

        #  Port to connect on, defaults to 389, will be ignored for LDAP URIs.
#       port = 389

        #  Administrator account for searching and possibly modifying.
        #  If using SASL + KRB5 these should be commented out.
        identity = 'cn=admin,dc=sse,dc=ws,dc=afnog,dc=org'
        password = afnog

        #  Unless overridden in another section, the dn from which all
        #  searches will start from.
        base_dn = 'dc=sse,dc=ws,dc=afnog,dc=org'
```

FreeRadius Installation & Configuration Cont..



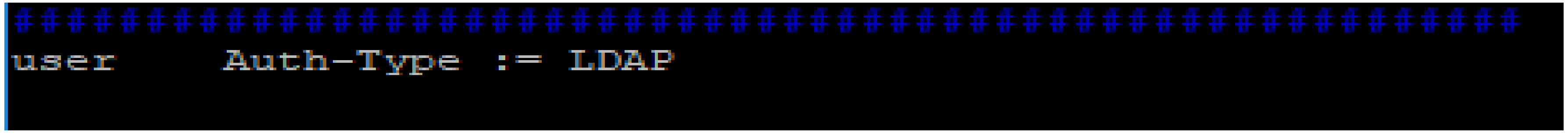
```
afnog@pc29:~$ sudo vi /etc/freeradius/3.0/sites-available/default
```



```
#
#  The ldap module will set Auth-Type to LDAP if it has not
#  already been set
ldap

# Uncomment it if you want to use ldap for authentication
#
# Note that this means "check plain-text password against
# the ldap database", which means that EAP won't work,
# as it does not supply a plain-text password.
Auth-Type LDAP {
        ldap
}
```

FreeRadius Installation & Configuration Cont..

vi /etc/freeradius/3.0/users



```
#########################################################
user     Auth-Type := LDAP
```

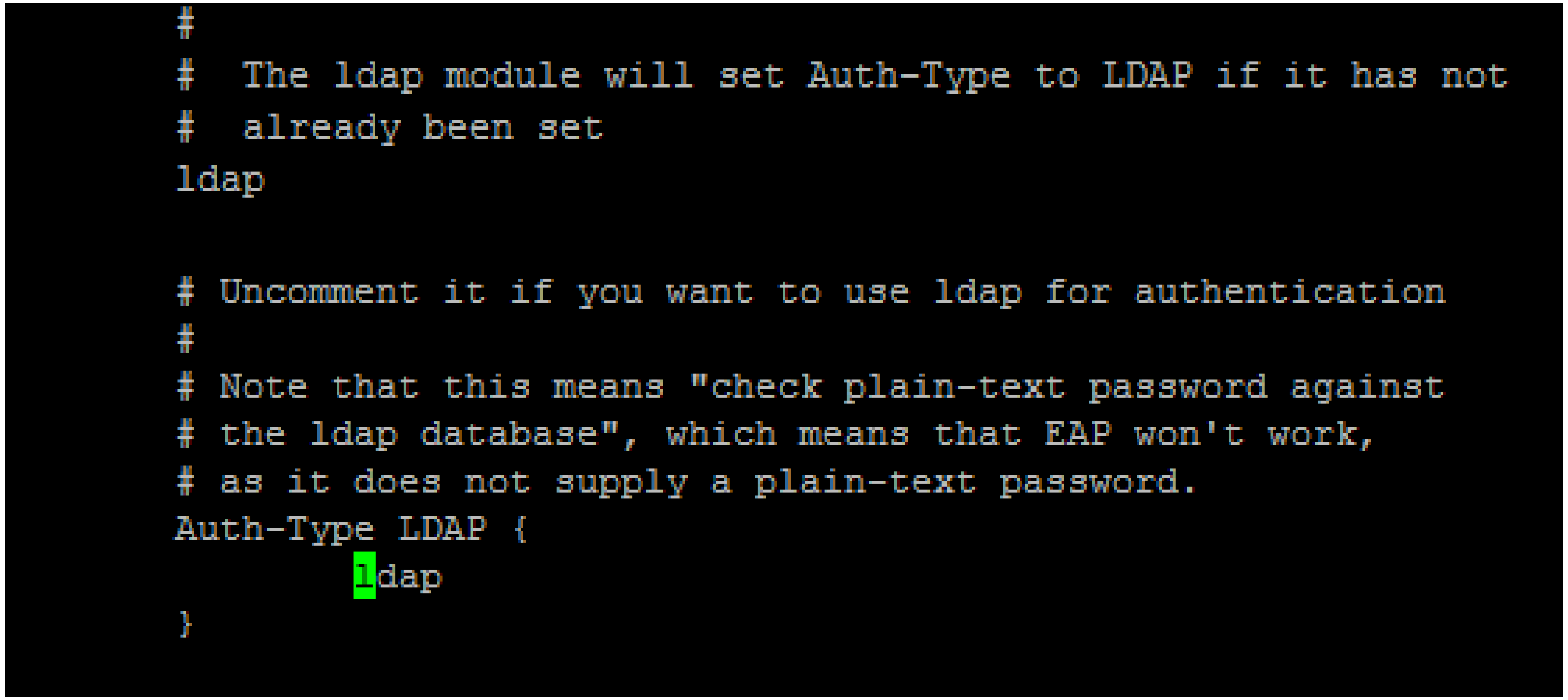
The above is to enabled LDAP Authentication for users.

Also copy ldap file from mod-available directory to the mod-enabled directory as below.

sudo cp /etc/freeradius/3.0/mods-available/ldap /etc/freeradius/3.0/mods-enabled/

FreeRadius Installation & Configuration Cont..

- vi /etc/freeradius/3.0/sites-available/inner-tunnel

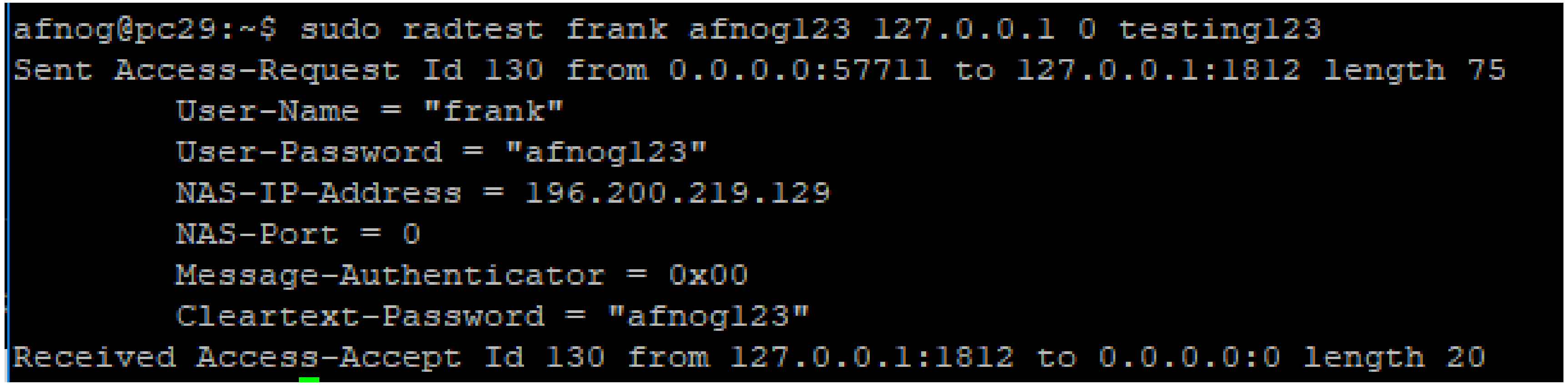


```
        #
        #  The ldap module will set Auth-Type to LDAP if it has not
        #  already been set
        ldap

        # Uncomment it if you want to use ldap for authentication
        #
        # Note that this means "check plain-text password against
        # the ldap database", which means that EAP won't work,
        # as it does not supply a plain-text password.
        Auth-Type LDAP {
                ldap
        }
```

sudo systemctl restart freeradius **// Restart the FreeRadius Service**

Testing FreeRadius authentication against LDAP

- sudo radtest frank afnog123 127.0.0.1 0 testing123

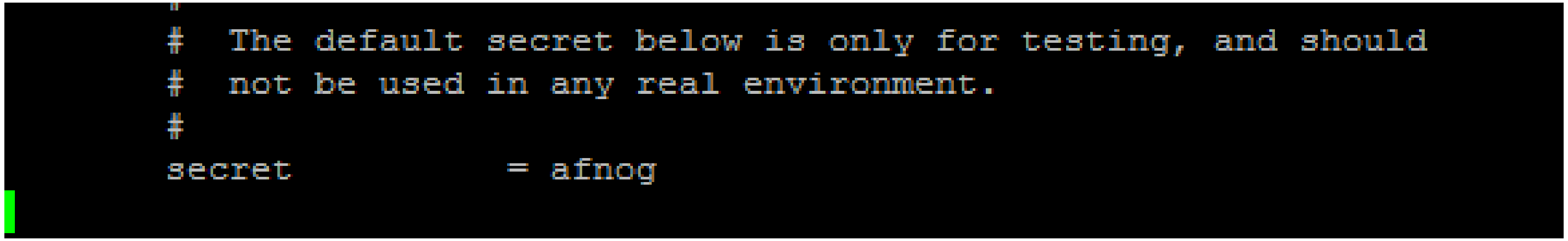


```
afnog@pc29:~$ sudo radtest frank afnog123 127.0.0.1 0 testing123
Sent Access-Request Id 130 from 0.0.0.0:57711 to 127.0.0.1:1812 length 75
        User-Name = "frank"
        User-Password = "afnog123"
        NAS-IP-Address = 196.200.219.129
        NAS-Port = 0
        Message-Authenticator = 0x00
        Cleartext-Password = "afnog123"
Received Access-Accept Id 130 from 127.0.0.1:1812 to 0.0.0.0:0 length 20
```

Where Username = frank
Password = afnog123
Radius Secret = testing123
Also Note that we have a successful authentication as shown in diagram above with radius packet in yellow colors

Securing FreeRadius

vi /etc/freeradius/3.0/clients.conf

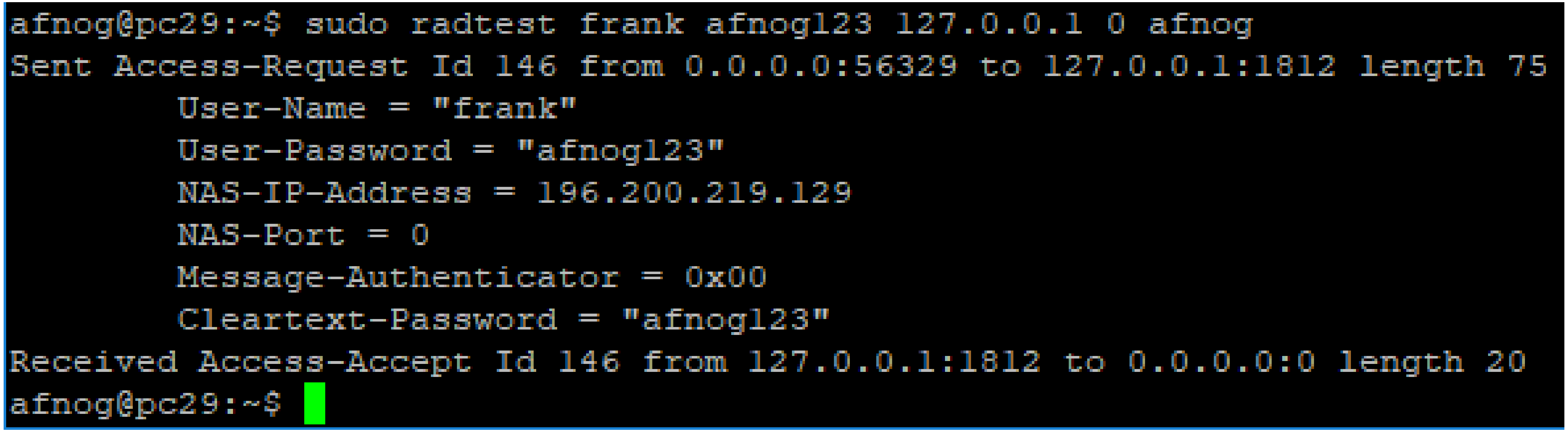


```
        #   The default secret below is only for testing, and should
        #   not be used in any real environment.
        #
        secret          = afnog
```

The Above is to change the Radius Secret from testing123 to afnog

sudo systemctl restart freeradius //N.B: Restart Radius anytime there are changes done to the config

Securing FreeRadius Continue



```
afnog@pc29:~$ sudo radtest frank afnog123 127.0.0.1 0 afnog
Sent Access-Request Id 146 from 0.0.0.0:56329 to 127.0.0.1:1812 length 75
        User-Name = "frank"
        User-Password = "afnog123"
        NAS-IP-Address = 196.200.219.129
        NAS-Port = 0
        Message-Authenticator = 0x00
        Cleartext-Password = "afnog123"
Received Access-Accept Id 146 from 127.0.0.1:1812 to 0.0.0.0:0 length 20
afnog@pc29:~$
```

Run the test as done earlier for the test account and this time round changing the secret to afnog

You should get an Access-Accept packet which shows Radius password has been changed.