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Configuration of AFS client for access to cern.ch on Ubuntu/Debian

Tested on Debian Stretch

Install Packages

```
$ sudo apt install openafs-client openafs-modules-dkms openafs-krb5 krb5-user krb5-config
```

Configure AFS and Kerberos

1. Use "cern.ch" as default AFS cell

```
$ echo "cern.ch" | sudo tee /etc/openafs/ThisCell
```

2. Set up Kerberos authentication

Add the following lines to file `/etc/krb5.conf`:

```
# settings for CERN.CH realm are taken from file
#   lxplus.cern.ch:/etc/krb5.conf

[libdefaults]
    default_realm = CERN.CH

[realms]
    CERN.CH = {
        default_domain = cern.ch
        kpasswd_server = cerndc.cern.ch
        admin_server = cerndc.cern.ch
        kdc = cerndc.cern.ch
    }

[domain_realm]
    cern.ch = CERN.CH
    .cern.ch = CERN.CH
```

3. Restart OpenAFS client

On Ubuntu 16.04 and above:

```
$ sudo systemctl restart openafs-client.service
```

On older versions:

```
$ sudo service openafs-client restart
```

4. Login (optional, only needed to access protected paths):

```
$ kinit $LOGNAME@CERN.CH    # get kerberos ticket
$ aklog                     # login to AFS cell
```

Miscellanea

Configuration steps 1) and 2) can be done with:

```
$ sudo dpkg-reconfigure openafs-client
$ sudo dpkg-reconfigure krb5-config
```

It might be useful to set-up a crontab job (e.g. every 6h) to automatically renew the kerberos token:

```
0 */6 * * * kinit -R ; aklog -c cern.ch -k CERN.CH
```

Pay attention that `kinit -R` (i.e. renew existing token) won't require any password to be typed in; on the other hand, a token can be renewed for a maximum of 5d after its generation, hence a `kinit` (with password) is needed. Anyway, if `kinit` is issued on Monday morning, so that for the rest of the week you don't have to bother with that.

Reference: <http://akorneev.web.cern.ch/akorneev/howto/openafs.txt>

-- Main.VeronicaOlsen - 2017-10-16

Update: Possible problems on Ubuntu

If you have a recent Ubuntu installation, the above procedure might not entirely work as there could be a kernel incompatibility with the latest openafs. This is shown if you try `aklog`: it will then give the error

```
aklog: a pioctl failed while obtaining tokens for cellcern.ch
```

Furthermore, also a query of the openafs service with

```
$ sudo systemctl status openafs-client.service
```

will give errors:

```
openafs-client-precheck[2963]: modprobe: FATAL: Module openafs not found in directory /lib/modules
openafs-client-precheck[2963]: Failed to load openafs.ko. Does it need to be built?
```

I found a solution that worked for me, by adding a specific repository for openafs:

```
$ sudo apt-get purge openafs-client
$ sudo add-apt-repository ppa:openafs/stable
$ sudo apt-get update
$ sudo apt install openafs-client
$ sudo apt install --reinstall openafs-modules-dkms
```

Now we need to restart the service:

```
$ sudo systemctl stop openafs-client.service
$ kinit username@CERN.CH
$ sudo systemctl start openafs-client.service
```

You can check that the service is running as it should:

```
$ sudo systemctl status openafs-client.service
```

No more errors! Continue as before, `aklog` and possibly a crontab for `kinit`.

-- Main.FrederikVanDerVeken - 2017-11-21

Note: It may be enough to just run

```
$ sudo dpkg-reconfigure openafs-modules-dkms
```

-- Main.VeronicaOlsen - 2017-12-06

This topic: ABPComputing > AFSDebian

Topic revision: r7 - 2018-01-19 - VeronicaOlsen



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