

NOTE: Complete setup for NFS requires joining the computer to the ND.EDU realm. You will need to contact ESC (eschelp@nd.edu) with your computer's hostname or IP address so that our staff can create an object in ND's Active Directory.

Validate that you can login to the NFS system

Ensure that you can login with your ND NetID and password into an ESC remote Linux system.

```
ssh remote300.helios.nd.edu
```

If you are unable to login, please contact the ESC help desk (help@esc.nd.edu or 631-0101).

Perform the steps below on the Red Hat workstation you wish to setup as an ESC NFS client

Switch user to root

```
sudo -i
```

Install Updates

```
yum update
```

Install Packages

```
yum install autofs sssd bash-completion krb5-workstation nfs4-acl-tools
```

Enable services

```
systemctl enable autofs
```

```
systemctl start autofs
```

```
systemctl enable sssd
```

```
systemctl start sssd
```

Setup krb5.conf

```
mv /etc/krb5.conf /etc/krb5.conf.orig
```

```
nano /etc/krb5.conf
```

```
[logging]
default = FILE:/var/log/krb5libs.log
kdc = FILE:/var/log/krb5kdc.log
admin_server = FILE:/var/log/kadmind.log
```

```
[libdefaults]
default_realm = ND.EDU
ticket_lifetime = 10h
renew_lifetime = 7d
```

```
[realms]
ND.EDU = {
}
```

```
[domain_realm]
nd.edu = ND.EDU
```

```
.nd.edu = ND.EDU
```

Setup and Join AD Domain

```
hostnamectl set-hostname host.domain.nd.edu
```

Note: Replace “host” and “domain” appropriately for the specific machine

```
realm discover nd.edu
```

```
realm --verbose --user=netid join
```

```
--computer-ou=OU=NFS,OU=ESC,OU=Campus,dc=nd,dc=edu nd.edu
```

Note: Replace “netid” with your ND NetID

Adjust the configuration files

```
mv /etc/idmapd.conf /etc/idmapd.conf.orig
```

```
nano /etc/idmapd.conf
```

```
[General]
```

```
Verbosity = 0
```

```
Pipefs-Directory = /run/rpc_pipefs
```

```
# set your own domain here, if it differs from FQDN minus hostname
```

```
# Domain = localdomain
```

```
Domain = esc.nd.edu
```

```
[Mapping]
```

```
Nobody-User = nobody
```

```
Nobody-Group = nogroup
```

Stop the the sssd service and clear the cache

```
systemctl stop sssd
```

```
rm -f /var/lib/sss/db/*
```

Modify the sssd.conf

```
mv /etc/sss/sss.conf /etc/sss/sss.conf.orig
```

```
nano /etc/sss/sss.conf
```

```
[sss]
```

```
domains = ND.EDU
```

```
config_file_version = 2
```

```
services = nss, pam
```

```
[domain/ND.EDU]
```

```
ad_domain = ND.EDU
```

```
krb5_realm = ND.EDU
```

```
krb5_lifetime = 10h
```

```
krb5_renewable_lifetime = 7d
```

```
krb5_renew_interval = 8h
```

```
krb5_store_password_if_offline = True
```

```
realmd_tags = manages-system joined-with-adcli
```

```
cache_credentials = True
```

```
id_provider = ad
```

```
chpass_provider = ad
```

```
default_shell = /bin/bash
ldap_id_mapping = False
use_fully_qualified_names = False
override_homedir = /escnfs/home/%u
fallback_homedir = /home/%u@%d
ignore_group_members = True
access_provider = simple
simple_allow_groups = eslinux-users-group
ad_server = addc11-prod.nd.edu, addc12-prod.nd.edu, addc13-prod.nd.edu
```

Change sssd.conf permissions and start the sssd service

```
chmod 600 /etc/sss/sss.conf
systemctl start sssd
```

Setup the autofs files

```
mv /etc/auto.master auto.master.orig
nano /etc/auto.master
#
# Sample auto.master file
# This is a 'master' automounter map and it has the following format:
# mount-point [map-type[,format]:]map [options]
# For details of the format look at auto.master(5).
#
/misc    /etc/auto.misc
#
# NOTE: mounts done from a hosts map will be mounted with the
#       "nosuid" and "nodev" options unless the "suid" and "dev"
#       options are explicitly given.
#
/net     -hosts
#
# Include /etc/auto.master.d/*.autofs
# The included files must conform to the format of this file.
#
+dir:/etc/auto.master.d
#
# Include central master map if it can be found using
# nsswitch sources.
#
# Note that if there are entries for /net or /misc (as
# above) in the included master map any keys that are the
#
# same will not be seen as the first read key seen takes
# precedence.
#
+auto.master
/escnfs/home /etc/auto.home --timeout=90 --ghost
/escnfs/apps /etc/auto.apps --timeout=90 --ghost
```

```
/escnfs/courses /etc/auto.courses --timeout=90 --ghost
/escnfs/backup /etc/auto.backup --timeout=90 --ghost
```

nano /etc/auto.home

```
* -port=2049,-fstype=nfs4,rw,proto=tcp,sec=krb5,vers=4.2 esc-nfs.esc.nd.edu:/home/&
```

nano /etc/auto.apps

```
* -port=2049,-fstype=nfs4,rw,proto=tcp,sec=krb5,vers=4.2 esc-nfs.esc.nd.edu:/apps/&
```

nano /etc/auto.courses

```
* -port=2049,-fstype=nfs4,rw,proto=tcp,sec=krb5,vers=4.2 esc-nfs.esc.nd.edu:/courses/&
```

nano /etc/auto.backup

```
* -port=2049,-fstype=nfs4,rw,proto=tcp,sec=krb5,vers=4.2 esc-nfs.esc.nd.edu:/backup/&
```

Create the root directory for the autofs mount points

```
mkdir /escnfs
```

Optional: Setup Modules

```
yum install environment-modules
```

```
nano /usr/share/Modules/init/.modulespath
```

```
#
# @(#) $Id: 38aa24cc33a5f54a93781d63005a084f74418022 $
# Module version 3.2.10
# init/.modulespath. Generated from .modulespath.in by configure.
#
# Modulepath initial setup
# =====
#
# This file defines the initial setup for the module files search path.
# Comments may be added anywhere, which begin on # and continue until the
# end of the line
# Each line containing a single path will be added to the MODULEPATH
# environment variable. You may add as many as you want - just
# limited by the maximum variable size of your shell.
#
# # location of version files
#/usr/share/Modules/$MODULE_VERSION/modulefiles # Module pkg modulefiles (if
versioning)
#/usr/share/Modules/modulefiles # Module pkg modulefiles (if no versioning)
#/etc/modulefiles # General module files
#/usr/share/Modules/your_contribs # Edit for your requirements

/escnfs/apps/Modules/modulefiles # on esc-nfs.esc.nd.edu
/etc/modulefiles # locally if needed
```

Reboot the system

```
reboot
```