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# cvmfs-virgo server and client setup

## Documentation

CmvFS technical report 2.1-4

## Hardware

HOSTNAME	O.S.
cvmfs-virgo.cnaf.infn.it	SL6 64bit

## Server installation and setup

### Download RPMs

```
# wget --no-check-certificate https://ecsft.cern.ch/dist/cvmfs/cvmfs-release/cvmfs-release-2-4.e
# rpm -ivh cvmfs-release-2-4.el6.noarch.rpm

# wget https://ecsft.cern.ch/dist/cvmfs/kernel/2.6.32-358.18.1.el6/kernel-firmware-2.6.32-358.18.
# wget https://ecsft.cern.ch/dist/cvmfs/kernel/2.6.32-358.18.1.el6/kernel-2.6.32-358.18.1.el6.auf
# wget https://ecsft.cern.ch/dist/cvmfs/cvmfs-2.1.15/cvmfs-server-2.1.15-1.el6.x86_64.rpm --no-ch
# wget https://ecsft.cern.ch/dist/cvmfs/cvmfs-2.1.15/cvmfs-2.1.15-1.el6.x86_64.rpm --no-check-ce

# yum install -y awstats webalizer
```

### Server installation

```
# yum localinstall kernel*.rpm
```

```
Increase ulimit adding * - nofile 8192
```

in the file `/etc/security/limits.d/90-nproc.conf`

```
# reboot
```

```
# ulimit -n
8192
```

```
# yum localinstall cvmfs*.rpm
```

### Setup cvmfs repository

```
# /etc/init.d/httpd restart
# chkconfig httpd on
```

```
# adduser virgo
```

```
# cvmfs_server mkfs virgo.infn.it
Owner of virgo.infn.it [root]: virgo
Creating configuration files... done
Creating CernVM-FS master key for virgo.infn.it in /etc/cvmfs/keys/virgo.infn.it.pub... done
Creating self-signed certificate for virgo.infn.it in /etc/cvmfs/keys/virgo.infn.it.crt... done
Create CernVM-FS Storage... done
Create Initial Repository... done
Mounting CernVM-FS Storage... done
Initial commit... New CernVM-FS repository for virgo.infn.it
```

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Before you can install anything, call ``cvmfs_server transaction`` to enable write access on your repository. Then install your software in `/cvmfs/virgo.infn.it` as user `virgo`. Once you're happy, publish using ``cvmfs_server publish``

For client configuration, have a look at `'cvmfs_server info'`

If you go for production, backup you software signing keys in `/etc/cvmfs/keys/!`

```
# ls /cvmfs/  
virgo.infn.it
```

## Software installation

- As root type `cvmfs_server transaction`
- Install software in `/cvmfs/virgo.infn.it` as user `virgo`

```
# su - virgo  
  
-bash-3.2$ ls  
new_repository  
  
-bash-3.2$ cat /cvmfs/virgo.infn.it/helloworld.sh  
#!/bin/sh  
echo "Welcome on cvmfs for virgo VO"  
  
chmod +x /cvmfs/virgo.infn.it/helloworld.sh
```

- As root `exec cvmfs_server publish` (but outside the directory `/cvmfs/virgo.infn.it`)

```
# cvmfs_server publish  
Processing changes...  
[add] /cvmfs/virgo.infn.it/helloworld.sh  
Waiting for upload of files before committing...  
Committing file catalogs...  
Exporting repository manifest  
Signing /var/spool/cvmfs/virgo.infn.it/tmp/manifest  
Remounting newly created repository revision
```

## cron to update the signature of a repository

```
# cat /etc/cron.weekly/cvmfs-resign.cron  
#!/bin/sh  
date >>/var/log/cvmfs-resign.log  
/usr/bin/cvmfs_server info|grep valid >>/var/log/cvmfs-resign.log  
/usr/bin/cvmfs_server resign >>/var/log/cvmfs-resign.log  
/usr/bin/cvmfs_server info|grep valid >>/var/log/cvmfs-resign.log  
  
# chmod +x /etc/cron.weekly/cvmfs-resign.cron
```

## cvmfs repository info

```
# cvmfs_server info  
Repository name: virgo.infn.it  
Created by CernVM-FS 2.1.10  
Stratum1 Replication Allowed: no  
Whitelist is valid for another 29 days
```

Client configuration:

Setup cvmfs repository

```
Add virgo.infn.it to CVMFS_REPOSITORIES in /etc/cvmfs/default.local
Create /etc/cvmfs/config.d/virgo.infn.it.conf and set
  CVMFS_SERVER_URL=http://localhost/cvmfs/virgo.infn.it
  CVMFS_PUBLIC_KEY=/etc/cvmfs/keys/virgo.infn.it.pub
Copy /etc/cvmfs/keys/virgo.infn.it.pub to the client
```

## Repository structure

### TODO

## Client setup

WN and UI

### cvmfs repository

```
# SL5x/CentOS5x
wget --no-check-certificate https://ecsft.cern.ch/dist/cvmfs/cvmfs-release/cvmfs-release-2-4.el5.
rpm -ivh cvmfs-release-2-4.el5.noarch.rpm

# SL6x/CentOS6x
wget --no-check-certificate https://ecsft.cern.ch/dist/cvmfs/cvmfs-release/cvmfs-release-2-4.el6.
rpm -ivh cvmfs-release-2-4.el6.noarch.rpm
```

## Client installation and setup

VO	public key
virgo	HERE

```
# yum install cvmfs-keys cvmfs cvmfs-init-scripts

# cvmfs_config setup
Starting CernVM-FS: [ OK ]

# cat /etc/cvmfs/default.local
CVMFS_REPOSITORIES=virgo.infn.it

# ll /etc/cvmfs/keys/
total 24
[...]
-r--r--r-- 1 root root 451 Sep 25 16:24 virgo.infn.it.pub

# cat /etc/cvmfs/config.d/virgo.infn.it.conf
CVMFS_SERVER_URL=http://cvmfs-virgo.cnaf.infn.it/cvmfs/virgo.infn.it
CVMFS_PUBLIC_KEY=/etc/cvmfs/keys/virgo.infn.it.pub
CVMFS_HTTP_PROXY="http://squid01.cnaf.infn.it:3128|http://squid02.cnaf.infn.it:3128"
```

Download the public key to (/etc/cvmfs/keys/virgo.infn.it.pub) from [HERE](#)

```
# /etc/init.d/autofs restart

# chkconfig autofs on
```

## Client test

### cvmfs\_config chksetup

```
# cvmfs_config chksetup
OK
```

cvmfs repository info

**cvmfs\_config showconfig**

```
# cvmfs_config showconfig virgo.infn.it
CVMFS_REPOSITORY_NAME=virgo.infn.it
CVMFS_USER=cvmfs # from /etc/cvmfs/default.conf
CVMFS_NFILES=65536 # from /etc/cvmfs/default.conf
CVMFS_CACHE_BASE=/var/lib/cvmfs # from /etc/cvmfs/default.conf
CVMFS_CACHE_DIR=/var/lib/cvmfs/shared # from
CVMFS_MOUNT_DIR=/cvmfs # from /etc/cvmfs/default.conf
CVMFS_QUOTA_LIMIT=4000 # from /etc/cvmfs/default.conf
CVMFS_SERVER_URL=http://cvmfs-virgo.cnaf.infn.it/cvmfsvirgo. # from /etc/cvmfs/config.d/virgo.infn.it
CVMFS_DEBUGLOG=
CVMFS_HTTP_PROXY=http://squid01.cnaf.infn.it:3128|http://squid02.cnaf.infn.it:3128 # from /etc/cvmfs/http-proxy.conf
CERNVM_GRID_UI_VERSION=
CVMFS_SYSLOG_LEVEL=
CVMFS_SYSLOG_FACILITY=
CVMFS_TRACEFILE=
CVMFS_TIMEOUT=5 # from /etc/cvmfs/default.conf
CVMFS_TIMEOUT_DIRECT=10 # from /etc/cvmfs/default.conf
CVMFS_PUBLIC_KEY=/etc/cvmfs/keys/virgo.infn.it.pub # from /etc/cvmfs/config.d/virgo.infn.it.conf
CVMFS_KEYS_DIR=/etc/cvmfs/keys # from /etc/cvmfs/default.conf
CVMFS_MAX_TTL=
CVMFS_RELOAD_SOCKETS=/var/run/cvmfs # from /etc/cvmfs/default.conf
CVMFS_DEFAULT_DOMAIN=
CVMFS_MEMCACHE_SIZE=
CVMFS_KCACHE_TIMEOUT=
CVMFS_ROOT_HASH=
CVMFS_REPOSITORIES=virgo.infn.it # from /etc/cvmfs/default.local
CVMFS_PROXY_RESET_AFTER=300 # from /etc/cvmfs/default.conf
CVMFS_MAX_RETRIES=1 # from /etc/cvmfs/default.conf
CVMFS_BACKOFF_INIT=2 # from /etc/cvmfs/default.conf
CVMFS_BACKOFF_MAX=10 # from /etc/cvmfs/default.conf
CVMFS_IGNORE_SIGNATURE=no # from /etc/cvmfs/default.conf
CVMFS_STRICT_MOUNT=no # from /etc/cvmfs/default.conf
CVMFS_SHARED_CACHE=yes # from /etc/cvmfs/default.conf
CVMFS_NFS_SOURCE=no # from /etc/cvmfs/default.conf
CVMFS_NFS_SHARED=
CVMFS_CHECK_PERMISSIONS=yes # from /etc/cvmfs/default.conf
CVMFS_AUTO_UPDATE=
CVMFS_MOUNT_RW=no # from /etc/cvmfs/default.conf
```

**Software check**

```
# /cvmfs/virgo.infn.it/helloworld.sh
Welcome on cvmfs for virgo VO
```

**cvmfs\_config stat**

```
# cvmfs_config stat

Running /usr/bin/cvmfs_config statvirgo.infn.it:
VERSION PID UPTIME (M) MEM (K) REVISION EXPIRES (M) NOCATALOGS CACHEUSE (K) CACHEMAX (K) NOFDUSE NOFDM
2.1.14.0 7349 2 23024 2 57 1 28 4096001 0 65024 0 2 50 3 n/a http://cvmfs-virgo.cnaf.infn.it/cvmfsvirgo
```

-- PaoloVeronesi - 2014-10-01

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