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FreeBSD iSCSI Initiator Installation and Configuration

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Q. How do I install and configure iSCSI initiator service under FreeBSD server?

FreeBSD [1]

A. FreeBSD 7.x has full support for iSCSI. Older version such as FreeBSD 6.3 requires backport for iSCSI. Following instruction are known to work under **FreeBSD 7.0** only.

FreeBSD iscsi_initiator driver

The iscsi_initiator implements the kernel side of the Internet SCSI (iSCSI) network protocol standard, the user land companion is iscontrol and permits access to remote virtual SCSI devices via cam.

Compile driver

Please note that FreeBSD 7.x has this driver compiled by default. You can skip this step if driver exists at /boot/kernel/iscsi_initiator.ko. To compile this driver into the kernel,

```
# cd /usr/src/sys/i386/conf
# cp GENERIC ISCSIKERNEL
# vi ISCSIKERNEL
```

Place the following lines in your kernel configuration file:

```
device iscsi_initiator
```

Save and close the file. Building a Kernel, type the following commands:

```
# cd /usr/src
# make buildkernel KERNCONF=ISCSIKERNEL
```

Install the new kernel:

```
# make installkernel KERNCONF=ISCSIKERNEL
```

Now reboot the system:

```
# reboot
```

Install iSCSI Initiator driver under FreeBSD

You need FreeBSD kernel driver for the iSCSI protocol. You need to use driver called /boot/kernel/iscsi_initiator.ko. You can load this driver [2] by typing following command as root user:

```
# kldload -v iscsi_initiator.ko
```

Output:

```
Loaded iscsi_initiator.ko, id=6
```

Alternatively, to load the driver as a module at boot time, place the following line in /boot/loader.conf:

```
# vi /boot/loader.conf
```

```
# Beginning of the iSCSI block added by Vivek
iscsi_initiator_load="YES"
# End of the block added by Vivek
```

Save and close the file.

FreeBSD iscontrol command to login / negotiator / control for an iSCSI initiator session

Now, you need to use iscontrol command. First, do a discovery session and exit:

```
# iscontrol -d targetaddress=iSCSI-SERVER-IP-ADDRESS initiatorname=nxl
# iscontrol -v -d targetaddress=192.168.1.100 initiatorname=nxl
```

Please note down the list of available targetnames/targetadresses. Once you know the target name, edit /etc/iscsi.conf file:

```
# vi /etc/iscsi.conf
```

Append config directives as follows:

```
officeiscsi {
        authmethod      = CHAP
        chapIName       = YOUR-ISCSI-USERNAME
        chapSecret      = YOUR-ISCSI-PASSWORD
        initiatorname   = nxl
        TargetName      = iqn.XYZZZZZZZZZZZZZ #  whatever "iscontrol -v -d " gives you
        TargetAddress   = 192.168.1.100:3260,1 # your iscsi server IP
}
```

Save and close the file.
Where,

- **officeiscsi {** : Start config for iSCSI.
- **authmethod** : Set authentication method to chap
- **chapIName** : Your username
- **chapSecret** : Your password
- **initiatorname** : if not specified, defaults to iqn.2005-01.il.ac.huji.cs:<hostname>
- **TargetName** : is the name by which the target is known, not to be confused with target address, either obtained via the target administrator, or from a discovery session.
- **TargetAddress** : is of the form domainname[:port][,portal-group-tag] to quote the RFC: The domainname can be specified as either a DNS host name, a dotted-decimal IPv4 address, or a bracketed IPv6 address as specified in [RFC2732].
- **}** : End of config

Start an iSCSI session

The following command will read options from /etc/iscsi.conf, use the targetaddress found in the block nicknamed myiscsi, login and negotiate whatever options are specified, and start an iscsi-session.

```
# iscontrol -c /etc/iscsi.conf -n officeiscsi
```

Once you run the iscontrol command it should create a new device in /dev directory. To see the device name run dmesg command:

```
# dmesg
```

Format iSCSI volume

Now run sysinstall command to format just discovered iSCSI device name at /dev location:

```
# sysinstall
```

Select Custom > 3 Partition > Select iSCSI device name such as da1. Once formatted just mount device, enter:

```
# mkdir /iscsi
# mount /dev/da1s1 /iscsi
```

You may also need to update /etc/fstab file:

```
/dev/ad1s1 /iscsi ufs rw 3 3
```

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[1] Image: **http://www.cyberciti.biz/faq/faq/category/freebsd/**
[2] load this driver: **http://www.cyberciti.biz/tips/freebsd-how-to-load-device-driver-module-in-kernel.html**