
VTL-Value

**Solaris quick start guide
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This quick start guide is provided to allow you to install and configure your VTL-Value as quickly as possible. It requires knowledge of Solaris and its iSCSI implementation, if you are unfamiliar with either of these we strongly suggest you speak to your system administrator before installing the VTL-Value.

The steps in this quick start:

Is your system up-to-date?	Page 1
Configuring Solaris for the iSCSI connection	Page 2
Configuring Solaris to recognise the robotics (VTL Mode only)	Page 3
Check the configuration	Page 4

Worth knowing - 'what this guide is doing'

In Solaris there are two processes; connecting the iSCSI target and associating a driver with the device. If you are connecting a disk LUN (non-VTL) then Solaris will recognise the *disk* and correctly assign the driver. If you are connecting a VTL (default) then Solaris will recognise the *tape-drives* and assign the drivers, but may not fully recognise the *robotic changer*. Page 3 shows how to configure this in Solaris.

Sun Solaris Installation

The following example is based on a VT-loader configuration as follows:

VT-Loader: (100 slots) with 2 drives and 10 tapes

IP address: 192.168.0.19

Commands to be run are indicated in **bold**

Preliminary checks:

Recommending reading if you are not familiar with iSCSI or Solaris's implementation of iSCSI:

<http://docs.sun.com/app/docs/doc/817-5093/fmvcd?a=view>

<http://docs.sun.com/app/docs/coll/47.16>

- Verify that you are running a Solaris10 **1/06 (Jan 06)** or later release by using:

```
#cat /etc/release
```

The output will indicate the 'assembled date' e.g: **24 March 2008**

- Verify that you have the iSCSI software installed and with latest patches applied:

```
# pkginfo SUNWiscsiu SUNWiscsir
```

```
System SUNWiscsiu Sun iSCSI Device Driver
System SUNWiscsir Sun iSCSI Management Utilities
```

(Request package installation via your support route if not present)

- Check for latest iSCSI patch:

On a SPARC system:

```
# showrev -p | grep 119090
```

On an x86 system:

```
# showrev -p | grep 119091
```

Example output:

```
Patch: 119091-26 Obsoletes: 121981-03, 123501-02 Requires: 118855-36
```

Patch level illustrated or greater is required, update via your preferred Solaris update path, for example:

<http://sunsolve.sun.com/search/document.do?assetkey=119090>

- Check the Ethernet connection:

```
# ping 192.168.0.19
```

If the result is "192.168.0.19 is alive" then proceed with configuration. If you cannot ping the iSCSI target, please check Ethernet and Solaris configuration and repeat until resolved.

Configuring the iSCSI Target

Please note: It is presumed that you are familiar with iSCSI and Solaris operation. If not, it is strongly recommended that you read the Solaris operating system guide regarding iSCSI administration before proceeding.

Enable the iSCSI initiator service

```
#svcadm enable iscsi_initiator
```

Enable the discovery method as 'SendTargets'

```
# iscsiadm modify discovery --sendtargets enable
```

Add the target using the IP:PORT (port = 3260)

```
# iscsiadm add discovery-address 192.168.0.19:3260
```

The connection should now be established. To verify run:

```
# iscsiadm list target -S
```

you will now see similar to :

```
Target: iqn.2007.iscsi.scst.lib1:uvtd0
  Alias: -
  TPGT: 1
  ISID: 4000002a0000
  Connections: 1
  LUN: 0
      Vendor: HP
      Product: Ultrium 2-SCSI
      OS Device Name: /dev/rmt/0

Target: iqn.2007.iscsi.scst.lib1:uvtd1
  Alias: -
  TPGT: 1
  ISID: 4000002a0000
  Connections: 1
  LUN: 0
      Vendor: HP
      Product: Ultrium 2-SCSI
      OS Device Name: /dev/rmt/1

Target:
  Alias: -
  TPGT: 1
  ISID: 4000002a0000
  Connections: 1
```

The devices should now be available to Solaris. The default configuration of a VTL will present both tape drives and a media changer. However, the media changer may not be initially recognised by Solaris and may be shown as incomplete as highlighted in red above.

A standard disk LUN will automatically be recognized.

You may also see an error message similar to "WARNING: iscsi driver unable to online iqn.2007.iscsi.scst.lib1:uvtl0 lun 0"

- **Configuring Solaris to recognise the changer.**

On the previous page we connected the VTL, however Solaris only fully recognised the two tape drives and did not completely identify the changer. To complete the configuration perform the following steps:

- **Configure the driver aliases**

Using your preferred text editor, open the file `/etc/driver_aliases`

find the section:

```
"  
  sgen "scsa,08.bfcp"  
  sgen "scsa,08.bvhci"  
"
```

replace it with:

```
"  
  sgen "scsiclass,08"  
"
```

Save changes and go to "Update Driver" section below

If there is no **sgen** section in `/etc/driver_aliases` close the editor and run the command:

```
# add_drv -m '* 0660 root sys' -v sgen
```

The `/etc/driver_aliases` file will be created with the correct **sgen** entries

- **Update Driver**

Run:

```
#update_drv sgen
```

Restart the host system:

```
#reboot
```

Once Solaris has restarted run command:

```
#devfsadm -i iscsi
```

The connection and installation is now complete. To verify please continue to next page

- **Verify VTL configuration:**

As before, review the connected iSCSI targets by running:

```
#iscsiadm list target -S
```

You should now see a fully configured VTL such as:

```
"Target: iqn.2007.iscsi.scst.lib1:uvtd0
  Alias: -
  TPGT: 1
  ISID: 4000002a0000
  Connections: 1
  LUN: 0
      Vendor: HP
      Product: Ultrium 2-SCSI
      OS Device Name: /dev/rmt/0

Target: iqn.2007.iscsi.scst.lib1:uvtd1
  Alias: -
  TPGT: 1
  ISID: 4000002a0000
  Connections: 1
  LUN: 0
      Vendor: HP
      Product: Ultrium 2-SCSI
      OS Device Name: /dev/rmt/1

Target: iqn.2007.iscsi.scst.lib1:uvtl0
  Alias: -
  TPGT: 1
  ISID: 4000002a0000
  Connections: 1
  LUN: 0
      Vendor: M4 DATA
      Product: MagFile
      OS Device Name:
```

As a final verification you can confirm the device is listed in **/etc/scsi/changer/** by running:

```
#ls -ls /dev/scsi/changer/
```

The output should be similar to:

```
2 lrwxrwxrwx 1 root  root    88 st 1 13:12 c2t0d0 ->
../..../devices/iscsi/mediumchanger@0000iqn.2007.iscsi.scst.lib1%3Auvtl00001,0:changer
```

The Solaris configuration is now complete and the VTL-Value is ready to be configured and used by your backup application. This varies depending on your individual configuration and you should consult your administration or application notes.

The application will interface and control the VTL-Value directly.