
DLTtape Tape Unit Installation IRIX 5.3 and 6.X SGI systems

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NOTE: The information in this document pertains to DLT™2000, DLT™2000XT, DLT™4000, DLT™7000 or DLT™8000 cartridge tape drive or the DLT™2500, DLT™2500XT, DLT™2700, DLT™2700XT, DLT™4500 or DLT™4700 tape mini-library that you are installing.

The following section describes the installation and configuration of a DLTtape tape peripheral on the Silicon Graphics system running IRIX release 5.3 or 6.X. The DLTtape controller firmware must be OEM-1.

The section following the installation includes information about DLT tape cartridge compatibility and information about IRIX behavior when there are periods of non-use of the DLTtape drive. The last section describes important information regarding the use of an installed DLTtape mini-library.

Installation

SGI system must have the appropriate SCSI interface for DLTtape drive to attach to, i.e., a SCSI single-ended DLTtape drive can be attached only to a SCSI single-ended interface. The same is true for SCSI differential attachment. The hardware attachment requires the DLTtape tape peripheral to be attached to the SCSI interface while the system is powered down. After the DLTtape tape peripheral has been attached, you will need to make file modifications and perform certain system operations that allow the DLTtape tape peripheral to be recognized.

Perform the installation as follows:

1. Shut down the SGI system and remove ac power from the system. Install the DLTtape tape peripheral and connect it to its SCSI controller. Depending on the DLTtape tape peripheral you are installing, refer to one of the following manuals for switch and jumper settings and SCSI bus termination:
 - DLT2000/DLT2700 product manual (order number 81-109132)
 - DLT2500 owner's manual (order number 81-109374)
 - DLT2000XT/DLT2500XT/DLT2700XT product manual (order number 81-109253)
 - DLT4000/DLT4500/DLT4700 product manual (order number 81-106336)
 - DLT7000 Tape Drive product manual (order number 81-60000)
 - DLT8000 Tape Drive product manual (order number 81-60118)

Set the DLTtape SCSI device address to an unassigned ID.

2. Turn power on and boot the system. Log on as root and execute the following UNIX command to verify the DLTtape attachment:

```
hinv -c tape
```

For a DLTtape device whose SCSI ID is set to 4 and is attached to the system's first host adapter but not system configured, the system response should be similar to the following:

Tape drive: unit 4 on SCSI controller 0: unknown

3. If you're operating system is IRIX 5.3, open the /usr/var/sysgen/master.d/scsi file for editing; for IRIX 6.X, open /var/sysgen/master.d/scsi file for editing. As appropriate for the currently running operating system version, add the following to the table of structures. This will enable DLTtape system recognition:

For IRIX 5.3:

```
/* DLTtape tape drive */
{DECDLT, TPDLT, "<Vendor length>", 7, "<Vendor ID>", "<DLT tape unit>",0 , 0, {0, 0, 0, 0 },
MTCAN_BSF | MTCAN_BSR | MTCAN_APPEND | MTCAN_SPEOD | MTCAN_CHKRDY | MTCAN_VAR
| MTCAN_SETSZ | MTCAN_SILI | MTCAN_SEEK | MTCAN_SYNC | MTCAN_CHTYPEANY, 20, 8*60,
20*60, 5*60, 16384, 64*1024}
```

For IRIX 6.X:

```
/* DLTtape tape drive */
{DECDLT, TPDLT, "<Vendor length>", 7, "<Vendor ID>", "<DLT tape unit>",0 , 0, {0, 0, 0, 0 },
MTCAN_BSF | MTCAN_BSR | MTCAN_APPEND | MTCAN_SPEOD | MTCAN_CHKRDY | MTCAN_VAR
| MTCAN_SETSZ | MTCAN_SILI | MTCAN_SEEK | MTCAN_SYNC | MTCAN_CHTYPEANY, 20, 8*60,
20*60, 5*60, 16384, 64*1024,0 (u_char *)0}
```

Depending on the DLTtape tape peripheral you are installing, you will need to make substitutions for <Vendor length>, <Vendor ID>, and <DLTtape tape unit> in the above structure. The following table shows the DLT tape product and the corresponding substitution values:

DLTtape Tape Product <Vendor length> <Vendor ID> <DLTtape tape unit>

DLTtape Tape Product	<Vendor length>	<Vendor ID>	<DLTtape tape unit>
DLT2000 or DLT2000XT	3	DEC	DLT2000
DLT2500 or DLT2500XT	3	DEC	DLT2500
DLT2700 or DLT2700XT	3	DEC	DLT2700
DLT4000	7	Quantum	DLT4000
DLT4500	7	Quantum	DLT4500
DLT4700	7	Quantum	DLT4700
DLT7000	7	Quantum	DLT7000
DLT8000	7	Quantum	DLT8000

Keep in mind that the Vendor ID entries are case sensitive. Refer to the tpsc_types structure in the /usr/include/sys/tpsc.h file for further information on the above structure entries and to the /usr/include/sys/mtio.h file for further information on the MTCAN flag definitions.

4. Enter the following command to configure the DLTtape device into the system:

```
/etc/autoconfig
```

5. Reboot the system.

6. After reboot is complete and you have logged in as root, change directory to /dev. Enter the following command to establish the DLTtape device files:

```
/MAKEDEV
```

7. Verify the DLTtape device files by entering the following command:

```
ls /dev/rmt
```

For a DLTtape tape peripheral installed with a SCSI ID of 4, the system response should be similar to the following:

```
tps0d4      tps0d4nrnsc    tps0d4nrsv    tps0d4nsc     tps0d4stat
tps0d4c     tps0d4nrnsv   tps0d4nrsvc   tps0d4nsv     tps0d4sv
tps0d4nr    tps0d4nrnsvc  tps0d4nrvc   tps0d4nsvc    tps0d4svc
tps0d4nrc   tps0d4nrs     tps0d4nrvc   tps0d4s       tps0d4v
tps0d4nrns  tps0d4nrsc    tps0d4ns     tps0d4sc      tps0d4vc
```

8. Enter the following command to verify the installation:

```
mt -t /dev/rmt/tps0d4 status
```

Note: that the device file tps0d4 is for an installed DLT2000 with SCSI ID of 4.

The system response should be similar to the following:

```
Controller: SCSI
Device: DEC: DLT2000
Status: 0x20262
Drive type: DLT
Media : READY, writeable, at BOT
```

DLTtape Tape Cartridge Compatibility

The following is a matrix of DLTtape tape cartridge/drive type compatibility. Use this matrix when considering tape cartridge and drive type combinations. Where compatibility is indicated, the capacities are shown as native/compressed values.

Drive Cartridge	DLT2000 DLT2500 DLT2700	DLT2000XT DLT2500XT DLT2700XT	DLT4000 DLT4500 DLT4700	DLT7000	DLT8000
DLTtape™ III (CompacTape III™)	Up to 10/20GB	Up to 10/20GB	Up to 10/20GB	Up to 10/20GB	Up to 10/20GB
DLTtape™ IIIXT (CompacTape IIIXT™)	Not Compatible	Up to 15/30GB	Up to 15/30GB	Up to 15/30GB	Up to 15/30GB
DLTtape™ IV (CompacTape IV™)	Not Compatible	Not Compatible	Up to 20/40GB	Up to 20/40GB 35/70GB	Up to 20/40GB 35/70GB 40/80GB

DLTtape Tape Drive Use and IRIX Behavior

During periods of non-use of the DLTtape tape drive there is a danger of unintended overwriting of previously written data. Also, rewinding of DLTtape tape may occur before the next record is read when the intent is to read the next record at the current tape position. The cause of this behavior is that the IRIX tape driver unloads from system memory after approximately five minutes of non-use of the tape drive. A reload of the driver will occur when a command to access the tape drive is requested. During driver reload, certain initialization tasks occur, one of which is to load a tape cartridge into the drive. For DLTtape drives, the response to tape load cartridge command when a tape is already loaded is to rewind the tape. Therefore after a five minute delay of non-use, the DLTtape tape drive will rewind before tape data access occurs.

To prevent the tape driver from unloading from memory, edit the `/usr/var/sysgen/master.d/tpsc` file on an IRIX 5.3 system. For IRIX 6.X, edit `/var/sysgen/master.d/tpsc` file. Find the line beginning with `oscdR` string and change the string to `oscdRN`. Save and close the file then reboot the system.

DLTtape Mini-Library Usage

The SGI IRIX operating system does not support SCSI-2 media changer device commands. Therefore, an installed DLT2500/DLT2500XT/DLT2700/DLT2700XT/DLT4500/DLT4700 mini-library can not be utilized in random access mode and can only be accessed in sequential mode. Refer to either the DLT2000/DLT2700 product manual, DLT2500 owner's manual, DLT2000XT/DLT2500XT/DLT2700XT or the DLT4000/DLT4500/DLT4700 product manual for detailed description of these access modes.