

Netra™ t1 Systems

LOMlite User's Guide



THE NETWORK IS THE COMPUTER™

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Using the Netra t1 LOMlite Device

The LOMlite device provides *lights out management* or remote management of a Netra t1 system over a serial connection. While the system is running, LOMlite also provides event reporting via the Solaris operating environment.

The LOMlite Device

LOMlite monitors the status of the PSU and fans in the system. It provides a fault LED to notify the operator of events or failures. It also provides a *host watchdog* which can reset the system in the event of a lockup.

The current status of the system can be displayed by using either the serial command interface or the UNIX driver.

LOMlite also provides the capability to power the system up, to return it to standby mode, and to reset the host from the serial command interface.

Events such as fan failures and alarm state changes are stored in an event log of ten events. The oldest fatal event is stored separately as the most likely cause of subsequent failures. To avoid filling the event log with repeated failures from a given source, only the first failure from any given source is stored. Once the operator has cleared the fault, monitoring of the failed device is re-enabled. This is performed either by restoring standby power to the system (if the system was powered off to repair the fault), or by issuing a `check` command at the LOMlite prompt. Re-enabling monitoring of a device also clears the error indication on the fault LED.

All device state changes are reported via the interface to the Solaris driver, which has more resources available for storage of such events.

Power

The LOMlite device is powered by auxiliary power. It functions even when the rest of the system is powered down.

Serial Connection

You access the LOMlite device by a terminal connected to the serial port as follows:

Connector:	serial A/LOM
Rate:	9600 baud
Parity:	No
Stop bits:	1
Data bits:	8

By default, this connection is shared with the console on the `ttya` port. You can move the console to the `ttyb` port if required.

Controlling the LOMlite Device

You enter the LOMlite escape sequence to access the LOMlite console. The escape sequence is `#.` (hash period) by default. To change the first character, enter the following command:

```
# lomctl escape=X
```

`X` represents the required first character of the LOMlite escape sequence.

When you type the LOMlite escape sequence, the LOMlite device takes control of the connection. The `lom>` prompt is displayed.

The following commands can be sent to the LOMlite device when it is connected:

TABLE 1 LOMlite Commands

Command	Use
<code>alarmoff n</code>	Set alarm <i>n</i> off. <i>n</i> can be 1, 2 or 3
<code>alarmon n</code>	Set alarm <i>n</i> on. <i>n</i> can be 1, 2 or 3
<code>check</code>	Reset monitoring to report all failures
<code>console</code>	Return control of the serial connection to the console
<code>environment</code>	Display the status of the fans, power supply, alarms and fault LED
<code>faulton</code>	Set the Fault light to on
<code>faultoff</code>	Set the Fault light to off
<code>help</code>	Display the list of LOMlite commands
<code>poweron</code>	Power the system on
<code>poweroff</code>	Power the system off
<code>reset</code>	Reset the system
<code>show model</code>	Show the system model
<code>show hostname</code>	Show the system name (equivalent to <code>uname -n</code>)
<code>show eventlog</code>	Show the event log
<code>show escape</code>	Show the current LOMlite escape sequence
<code>show</code>	Show all the information available with the show command
<code>version</code>	Show the version number of the LOMlite device

Commands can be abbreviated to a minimum of two unique characters.

By default the LOMlite reports any event that it detects over the serial connection. This can corrupt the console information when the console is connected to the serial connector. You can turn off the LOMlite reporting either by editing the driver configuration file or using the `lomctl` utility.

To turn off reporting using `lomctl`, enter the following:

```
# lomctl serialeventsoff
```

Configuring the LOMlite Device

The LOMlite device has a configuration file `lom.conf`. You can set the following in the configuration file:

TABLE 2 LOMlite Configuration File Parameters

Field	Format	Use
<code>wdog_enabled</code>	Boolean	Enable the LOMlite system watchdog when driver loads.
<code>wdog_reset</code>	Boolean	Reset the system after a watchdog timeout.
<code>wdog_alarm3</code>	Boolean	Turn fault LED on after a watchdog timeout.
<code>wdog_timeout</code>	Integer	Set the timeout for the LOMlite system watchdog. Value is in seconds.
<code>serial_events</code>	Boolean	Report LOMlite events over the serial connection.
<code>disable_wdog_on_break</code>	Boolean	Disable the LOMlite watchdog if a break signal is detected on a serial connection shared between the console and LOMlite device.
<code>disable_wdog_on_panic</code>	Boolean	Try to disable the LOMlite watchdog after a system panic. In some cases, this can fail and the watchdog can time out anyway.

Each field must be on a separate line, and followed by an equals sign (=) and a value, without spaces. In Boolean fields, 1 means true and 0 means false.

Fault LED

LOMlite drives the amber fault LED on the system. The amber fault LED flashes when a fan has failed. The LED is lit continuously when the watchdog has timed out, or when the LED has been turned on manually for verification with the LOMlite command `faulton`.

System Watchdog

The LOMlite device includes a watchdog timer which by default controls alarm 3.

The watchdog process, `tsdog`, is enabled at boot time by an rc script, `/etc/init.d/tsaldog`. You can edit this script to configure the watchdog timeout and to reset intervals. See the `tsdog(1M)` man page for details.

Alternatively, you can disable the script, edit the driver configuration file `lom.conf` to enable the watchdog, and use your own process to reset the watchdog to monitor the functioning of an application. See the `lom(7d)` man page for details of the interface that you use to set up this process.

If the watchdog expires, by default alarm 3 and the fault LED are switched on. To enable a hardware reset when this occurs, either edit the `tsdog` driver configuration file or use the `tsctl` utility. To protect against unwanted hardware resets, by default the driver attempts to turn off the watchdog after a panic or if a break sequence (to drop into `kadb` or the Open Boot Prompt (OBP)) is detected on a shared serial connection.

Both these features can be disabled by editing the `lom` driver configuration file. To turn off the reset when a break is detected on a shared serial connection, edit the file `lom.conf` to include the following line:

```
disable_wdog_on_break=0
```

To turn off the reset when a panic is detected on a shared serial connection, edit the file `lom.conf` to include the following line:

```
disable_wdog_on_panic=0
```

System Monitoring

At boot time a LOMlite monitoring daemon is started by the rc script, `/etc/init.d/lomlited`. This daemon reports upon any state change for the fans, power supply, alarms or fault LED, including restoration of service. All events are reported to `syslogd` with an identifier string `lomlited`. They are then handled according to the `syslogd` configuration.

You can use the LOMlite utilities to perform more advanced configuration and monitoring if necessary. For details, see the man pages for `lomctl(1M)`, `lominfo(1M)`, `lomprog(1M)`, `tsdog(1M)`, `tsctl(1M)`, `tsstate(1M)` and `tsunlock(1M)`.