

LSI SNMP Trap Logger – User Guide

Version: 1.2.1-1

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1. Introduction

This document is the user guide for LSI SNMP Trap Logger, version 1.2.1-1.

2. Overview

The LSI SNMP Trap Logger application collects SNMP traps from the LSI SNMP Agent on Windows and Linux systems having one or more LSI SAS IR Controller installed (LSI SAS 1064/1068 family of controllers). After collecting the trap and retrieving the required information from the trap, the LSI SNMP Trap Logger application writes the information to the system log.

The LSI Trap Logger application has a popup functionality using that the application additionally alerts the user with a popup window informing that an event is written to the system log.

The LSI SNMP Trap Logger application runs as a Windows Service on the Windows operating system and runs as a daemon process on the Linux operating system.

3. Hardware Requirement

The hardware requirements for the LSI SNMP Trap Logger application are as follows:

- LSI SAS 1064/1068 family of HBA.
- SAS/SATA family of hard disk drives attached to the LSI SAS HBA(s).
- Compatible JBOD(s).

4. Software Requirement

The software requirements for the LSI SNMP Trap Logger application are as follows:

- Windows 2000/2003 /XP Enterprise Server
- Red Hat Enterprise Linux 3.0/4.0

5. Getting the software

The software is available to the user as per LSI Logic business policy.

5.1. Pre-requisites

The software pre-requirements for the LSI SNMP Trap Logger application are as follows (Windows/Linux):

- Proper device drivers to be installed for the appropriate LSI SAS HBA.
- SNMP Service for Windows; NET SNMP 5.2.2 for Linux.
- LSI SAS IR SNMP Agent to be installed for Windows.

Once the above requirements are met, you can install the LSI SNMP Trap Logger. Please ensure that all the pre-requisite software is properly installed and configured.

5.2. Actual product

The product is LSI SNMP Trap Logger, version 1.2.1-1.

6. Installing the pre-requisites

Before installing the LSI SNMP Trap logger the pre-requisites are to be installed as per the following guidelines

6.1. Windows

Installation of SNMP

If you do not have SNMP Service installed on your system, follow the steps below to install SNMP Service for Windows System.

Step 1: Select Add/Remove Programs from Control Panel.

Step 2: Select "Add/Remove Windows components" in the left side of the "Add/Remove Programs" window.

Step 3: Select "Management and Monitoring Tools".

Step 4: Click Next.

Now you will be prompted to insert Windows 2000 CD and SNMP Service will be installed.

Configuration of SNMP

Step 1: Select "Administrative Tools" from Control Panel

Step 2: Select Services from "Administrative Tools" window.

Step 3: Select SNMP Service in the "Services" window.

Step 4: Open SNMP Service.

Step 5: Go to "Security" tab and make sure that "Accept SNMP Packets from any host" is selected.

Step 6: Go to "Traps" tab and the list of host IPs to which you want the traps to be sent with community name.

Installing the LSI SNMP Agent

Step 1: Run setup.exe

Step 2: Now use SNMP Manager to retrieve the SAS IR data (It is assumed that you have compiled LSI-MegaRAID_Sas_IR.mib file already). The LSI-MegaRAID_Sas_IR.mib file is available at the same location as setup.exe

Step 3: Use Trap utility to get the traps.

NOTE: Before you install the Agent, Make sure that SNMP Service is already installed in the system.

6.2. Linux

Installation of SNMP

Make sure that you have installed NET SNMP. We have used the following version:

net-snmp-5.2.2

NET SNMP is distributed as: **net-snmp-5.2.2.tar.gz**

Available for download from the following location: **<http://www.net-snmp.org>**

Configuration of SNMP

Next follow the instructions to build and install NET SNMP 5.2.2 on your system.

Installing the LSI SNMP Agent

Step 1: Make sure you have installed the following LSI components:

- Driver for the LSI SAS IR Controller
- Storelib IR
- LSI SAS IR SNMP Agent

Step 2: Reboot the system and make sure the following components are running fine:

- SNMP daemon: `snmpd`
- LSI SAS IR SNMP Agent

6.3. Testing the pre-requisite installation on Windows

Step 1: Check if LSI SAS IR SNMP Agent installed.

Windows 32 bit OS: "lsi_mrdsnmpagent.dll" should be in
%system root%\system32

Windows 64 bit OS: "lsi_mrdsnmpagent.dll" should be in
%system root%\SysWOW64

Step 2: Check if LSI SAS IR SNMP Agent is working. The command is:

```
C:\>snmputil get 127.0.0.1 .1.3.6.1.4.1.3582.5.1.4.3.1.1.0
```

Step 3: Check if traps are coming. The command is:

```
C:\>snmputil trap
```

6.4. Testing the pre-requisite installation on Linux

Reboot the system and make sure the following components are running fine:

- snmpd
- LSI SAS IR SNMP Agent

7. Purpose of the LSI SNMP Trap Logger

The LSI SNMP Trap Logger application collects SNMP traps from the LSI SNMP Agent on Windows and Linux systems having one or more LSI SAS IR Controller installed (LSI SAS 1064/1068 family of controllers). After collecting the trap and retrieving the required information from the trap, the LSI SNMP Trap Logger application writes the information to the system log and also to a separate log file.

8. Installing the LSI SNMP Trap Logger

8.1. Windows

Follow the given steps to install the LSI SNMP Trap Logger application:

Step 1: Make sure your operating system is one of the following:

- Windows 2000 X86
- Windows 2003 X86
- Windows 2003 X64
- Windows XP X86

Step 2: Make sure that you have installed the Windows SNMP services.

Step 3: Check to see if the Windows SNMP service is running. You can use the following commands at the MS-DOS prompt to start and stop the Windows SNMP service:

```
net start snmp (Use this to start Windows SNMP service)
net stop snmp (Use this to stop Windows SNMP service)
```

Step 4: Install the LSI Logic SAS IR SNMP Agent. Make sure it is running and active.

Step 5: You can install the LSI Logic Trap Logger by running the given installation program:

```
LSI_TrapLogger.exe
```

Please follow the on screen instructions to complete the installation.

Step 6: Check to ensure that the following service is installed and started:

LSITrapLogger

Step 7: Go to the Property of the service by double clicking on it. Go to the tab "Recovery". Select the option "Restart the Service" from the dropdown menu for "First Failure". See the "Screenshot.bmp" image bundled with the installer for help.

8.2. Linux

Step 1: Become root and start the installation as follows:

```
# rpm -ivh LSITrapLogger-1.1.0-2.i386.rpm
```

Step 2: If you want to check the RPM installation, you can do so using the following command:

```
# rpm -qa | grep -i LSI
```

You should see the following in the listing:

```
LSITrapLogger-1.1.0-2
```

Step 3: Make sure the following line is in your /etc/ld.so.conf file:

```
/usr/local/bin
```

If it is missing, become root; edit the /etc/ld.so.conf file to add the above line at the end of the file and run:

```
ldconfig
```

Step 4: Start the LSI SNMP Trap Logger daemon as follows:

```
# /etc/init.d/LSITrapLogger start
```

The following commands are available:

```
#/etc/init.d/LSITrapLogger  
{start|stop|restart|condrestart|status}
```

Step 5: When a trap is logged the LSI SNMP Trap Logger creates the following file:

```
/var/log/LSI_Trap.log
```

Step 6: It is safe to view the contents of the file using the following command:

```
# cat /var/log/LSI_Trap.log
```


8.3. Configuration of the LSI SNMP Trap Logger

The configuration set up for the LSI SNMP Trap Logger needs to be done inside **LSITrapLogger.conf** file by setting the configuration parameters as follows:

```
;A sample LSITrapLogger.conf file
[ RUN ]
DebugMode = 0

[ LOGS ]
KeepOldLog = 1
```

The meanings of the entries of the .conf file are as follows:

Configuration Section	:	RUN
Configuration Value	:	DebugMode
Default Value	:	0
Possible Values	:	0, 1
Description	:	The behaviour of the application is as follows depending on the value specified in the configuration files:

0	No debug log messages are logged to the log file.
1	All log level messages are logged to the log file. This causes the application to produce highest detail of log file.

Configuration Section	:	LOGS
Configuration Value	:	KeepOldFlag
Default Value	:	1
Possible Values	:	0, 1
Description	:	The behaviour of the application is as follows depending on the value specified in the configuration files:

0	The log file gets overwritten with new value if it reaches a maximum size of: 1 MB (not user configurable as of now)
1	This causes the application to create a backup file of the log file, when it reaches a maximum allowable size of 1 MB, (not user configurable as of now) and create a new log file. The name of the backup file looks like this: LSITrapLogger.<timestamp>

8.4. Basic testing of the LSI SNMP Trap Logger installation

Once the LSI Trap Logger installation and configuration is complete and it's subsequently run, simple testing needs to be carried out to see that it works fine. The technique is as follows:

Step 1: Disconnect at least one disk in JBOD

Step 2: Check the following log file that the trap interception message is logged along with a pop-up window:

Windows:

```
\Program File\LSILogic\LSITrapLogger.log
```

Linux:

```
/var/log/LSITrapLogger.log
```

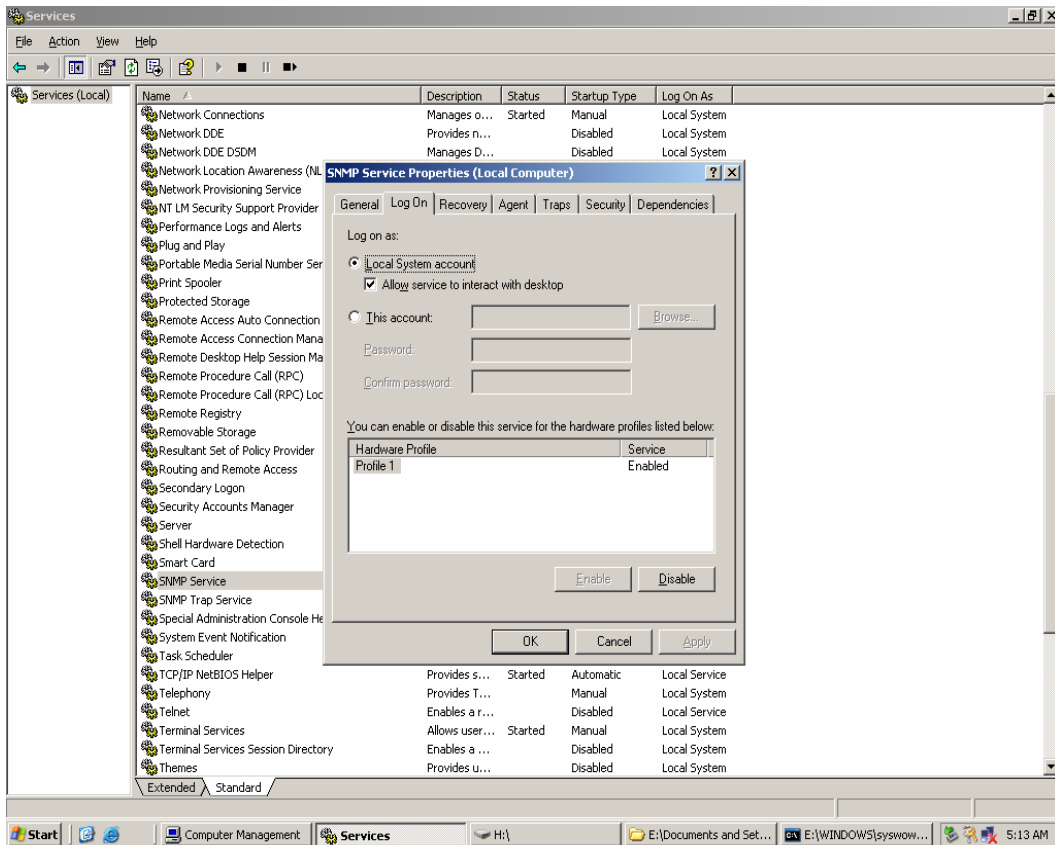
9. Troubleshooting

Troubleshooting of the LSI SNMP Trap logger on Windows and Linux is discussed below:

9.1. SNMP Setup Troubleshooting on Windows

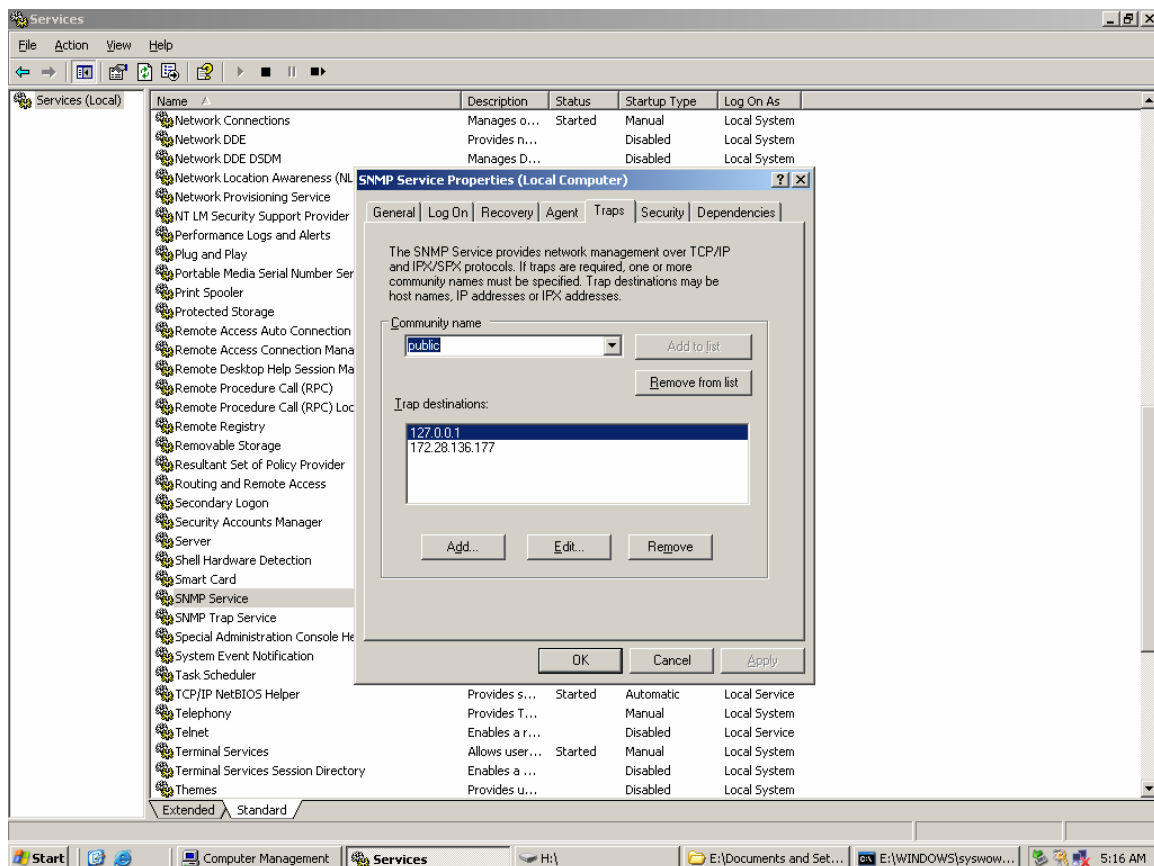
After installing the SNMP services (refer the README file of the LSI SAS IR SNMP Agent) do the following steps:

1. Double click on the SNMP service. Go to the **Log On** tab of the “**SNMP Service Properties**” dialog. Check the **Allow service to interact with desktop** check box as in the following picture.

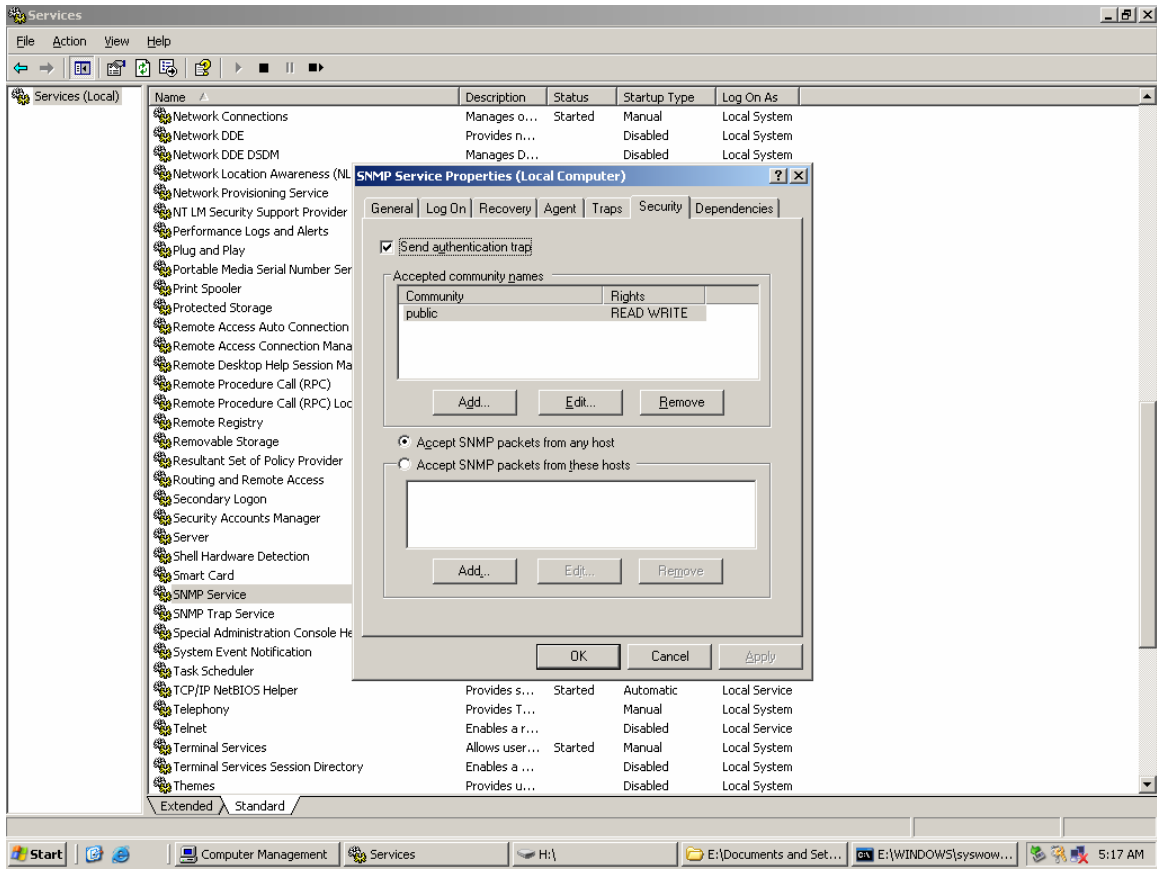


2. Go to the **Traps** tab of the “SNMP Service Properties” dialog and verify the following:
 - Community name is specified as “**public**” in the “Community name” drop box.
 - The “Trap destinations” list box includes the IP address of the local host: 127.0.0.1

Refer to the following screenshot.



3. Go to the **Security** tab of the “SNMP Service Properties” dialog. This portion should be configured as shown in the following screenshot:



NOTE: If any change is made in the SNMP service, then restart both the SNMP service and the SNMP Trap service.

4. To check the SNMP setup use the “SNMPUtil” command as follows:

```
C:\>snmputil get 127.0.0.1 public .1.3.6.1.2.1.1.1.0
```

The output from the above command should be similar to the following example:

```
C:\>snmputil get 127.0.0.1 public .1.3.6.1.2.1.1.1.0
```

Variable = system.sysDescr.0

Value = String Hardware: AMD64 Family 15 Model 5 Stepping 8 AT/AT COMPATIBLE

- Software: Windows Version 5.2 (Build 3790 Multiprocessor Free)

Please ensure that you have the “SNMPUtil.exe” location in your path.

9.2. SNMP Setup Troubleshooting on Linux

1. Check if “snmpd” exists in the system. The command is:
type snmpd
Or
whereis snmpd
2. Check if “snmpd” running on the system. The command is:
ps -eaf | grep -i snmpd
3. Check if “snmpd” working on the system. The command is:
snmpget -v 1 -c public localhost .1.3.6.1.2.1.1.1.0
or
snmpget -v 1 -c public localhost system.sysDescr.0

9.3. LSI SAS IR SNMP Agent Troubleshooting on Windows

1. Check if LSI SAS IR SNMP Agent installed. Verify:
Windows 32 bit OS: “lsi_mrdsnmpagent.dll” should be in %system root%\system32
Windows 64 bit OS: “lsi_mrdsnmpagent.dll” should be in %system root%\SysWOW64
2. Check if LSI SAS IR SNMP Agent is working. The command is:
C:\>snmputil get 127.0.0.1 .1.3.6.1.4.1.3582.5.1.4.3.1.1.0
3. Check if traps are coming. The command is:
C:\>snmputil trap

9.4. LSI SAS IR SNMP Agent Troubleshooting on Linux

1. Check if LSI SAS IR Agent is installed in the system. The command is:
rpm -qa | grep -i sas_ir_snmp
2. Check if LSI SAS IR Agent is running. The command is:
ps -eaf | grep -i lsi
“lsi_mrdsnmpagent” should be in the output list.
3. Check if traps are coming by running “snmptrapd”. Check the *man page* for “snmptrapd”.

9.5. LSI SNMP Trap Logger Troubleshooting on Windows

1. Check if LSI SNMP TrapLogger installed. A service should be installed named “LSITrapLogger”.
2. Check if LSI SNMP TrapLogger running, that is the service mentioned above is running.
3. Check if LSI SNMP TrapLogger working. Generate a trap by remove a physical disk from any SAS IR controller in the system for example. A popup message should come on the screen.

9.6. LSI SNMP Trap Logger Troubleshooting on Linux

1. Check if LSI SNMP TrapLogger installed. The command is:

```
# rpm -qa | grep -i lsi
```
2. Check if LSI SNMP TrapLogger is running. The command is:

```
# ps -eaf | grep -i lsi
```
3. Check if LSI SNMP TrapLogger is working. Popup message should come if a physical disk is removed from any SAS IR controller in the system.