STORAGETEK™

StorageTek ACSLS SNMP Agent for AIX

Installation Guide

Version 2.0

First Edition

312556601

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Document Effectivity

EC Number	Date	Doc Kit Number	Edition Type	Effectivity
128805	August 2003	_____	Ist Edition	This document applies to StorageTek ACSLS SNMP Agent for AIX, Version 2.0

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Chapter 1. Before you install the ACSLS SNMP Agent

Recommended System Requirements

To obtain the best StorageTek ACSLS SNMP Agent performance and operating conditions, we recommend the following minimum configuration:

- R/S 6000 with at least 256 MB of RAM.

Before you install the ACSLS SNMP Agent, you need to:

- Make sure that you are running version 4.3.3 or later of the AIX operating system.

Caution: The ACSLS SNMP agent only supports the SNMP V1 protocol.

,ACSLS Server Installation

The following ACSLS Server version is supported:

- ACSLS Server 7.0 on AIX 4.3.3 or AIX 5

Note: *For best results, it is highly recommended to have ACSLS Server 7.0 installed and running, ready for processing at boot time (the* `acsls inittab` *entry is required) before installing the StorageTek ACSLS SNMP Agent.*
The installation of the Agent will connect to the ACSLS Server and retrieve all the libraries declared on it and provide the means to monitor your network.
For details on ACSLS Server installation, refer to the ACSLS Installation, Configuration and Administration Guide.

Chapter 2. Installation

To Install the Agent

Note: *In this document, the StorageTek ACSLS SNMP Agent is referred to as the Agent.*

Caution: The agent needs to be installed in the host that is running the ACSLS 7.0 software.

1. **Log in as root.**
   You must have system administration privileges to install the package.

2. **Go to the root directory on the CD-ROM.**

3. **Issue the following command:**

   `installp -aX -d acsls_snmp.rte.2_0.bff acsls_snmp.rte`

   A series of messages appear as the package is installed.

   Once the package has been installed, the following message should be displayed:

   ```
   Installation Summary
   --------------------
   Name                 Level        Part   Event   Result
   ------------------------------------------------------------
   acsls_snmp.rte       2.0.0.0      USR    APPLY   SUCCESS
   acsls_snmp.rte       2.0.0.0      ROOT   APPLY   SUCCESS
   ```

Note: *The Agent does not start automatically after installation. You must either reboot the system, or start the agent manually. See To Start the Agent for the First Time.*
During Agent installation, the MIB file is also installed in the Agent directory for easy access. This is particularly handy for users who need to compile it and use it in their management applications (e.g. management framework).

To Start the Agent for the First Time

1. **Log in as root.**

2. **Before starting the StorageTek ACSLS SNMP Agent, you must check that both the Master Agent and dpid are running with the following commands:**

```
/usr/bin/ps -eaf | /usr/bin/grep snmpd
/usr/bin/ps -eaf | /usr/bin/grep dpid2
```

3. **Start the StorageTek ACSLS SNMP Agent:**

    ```
    /export/home/ACSNMP/AcslsAgent start
    ```

4. **Check that the Agent is running**

    ```
    /usr/bin/ps -eaf | /usr/bin/grep Acsls
    ```

    This should return the three processes, `AcslsAgtd`, `AcslsTrapper`, and `AcslsReStartAgent`.

To Start and Stop the Agent

The Agent is started automatically when you boot your system.

To Start the Agent   Log in as root and issue the following command:

```
/export/home/ACSNMP/AcslsAgent start
```

To Stop the Agent   Log in as root and issue the following command:

```
/export/home/ACSNMP/AcslsAgent stop
```

Chapter 3. Configuration

StorageTek ACSLS SNMP Agent Configuration

Note: *To modify the Agent configuration, you must log in as root.*

New or Modified Configuration

Whenever you create a new or update a configuration, you must stop the ACSLS server (refer to the *ACSLS Installation, Configuration and Administration Guide* for details about the `acsss_config` command). The ACSLS Agent should automatically stop and then restart taking into account the modifications. While the ACSLS server is not running, the Agent will return temporary values and display no Acs, Lsm, Cap, or drive.

Note: *Stopping the ACSL Server is not required when adding, removing, or changing a drive (refer to the ACSLS Installation, Configuration and Administration Guide for details about the* `config drives` *command).*

To Modify the Agent URL

The default URL associated with the agent is a blank URL.

Perform an SNMP SET request on the agent URL OID with the URL to be set as parameter.

A check is performed to make sure that the URL length does not exceed 1000 characters. If the URL is valid:

• the agent is updated and the change is also recorded in the `AcslsAgtd.url` file stored on disk, from which it is loaded every time the agent starts.

Note: *If for some reason this file cannot be read, the default URL will be a blank URL.*

To Modify the Trap Destination List

To add or remove addresses in the trap destination list, you must edit the `snmpd.conf` file, refresh the SNMP subsystem to take new parameters into account, and restart the ACSLS SNMP Agent.

To add trap destinations

1. **Open the** `/etc/snmpd.conf` **file with a text editor**

2. **Look for the lines starting with a** `trap` **label**

   `trap` *community* *IPaddress*

Where *community* is the SNMP community group - usually `public` - and *IPaddress* is the IP address of the machine that should receive traps from this Agent.

Note: *The IP address is the only trap destination specification allowed. You may not specify a machine name.*

3. **Save the** `/etc/snmpd.conf` **file**

To remove trap destinations

1. **Open the** `/etc/snmpd.conf` **file with a text editor**
2. **Look for the lines starting with a** `trap` **label**
3. **Delete as many lines as necessary to remove trap destinations from the list**
4. **Save the** `/etc/snmpd.conf` **file**

To refresh the trap destination list

1. **Issue the following command:**
   `/usr/bin/refresh -s snmpd`

   The following message is returned:
   `The request for subsystem refresh was completed successfully.`

2. **Restart the ACSLS SNMP Agent:**
   `/export/home/ACSNMP/AcslsAgent stop`
   `/export/home/ACSNMP/AcslsAgent start`

To Set the Internal Polling Rate

1. **Open a MIB browser connected to the agent host.**
2. **Open an SNMP set request and enter the OID:**
   `1.3.6.1.4.1.1211.1.11.2.2`
3. **Set the MIB instance** `0` **to the desired value in seconds. If you need the SNMP type to be provided, use the type** `Integer` **or** `Integer32`**.**

Note: *The current polling rate figure must be higher than that of the minimum polling rate (*OID: `1.3.6.1.4.1.1211.1.11.2.1`*).*

To Modify SNMP Configuration

To modify the SNMP configuration, you must make sure the StorageTek ACSLS SNMP Agent and the Master Agent are not running.

You should proceed in the following order:

a. Stop the StorageTek ACSLS SNMP Agent.

b. Stop the Master Agent.

c. Modify the SNMP community.

d. Restart the Master Agent.

e. Restart the StorageTek ACSLS SNMP Agent.

Note: *Modifying SNMP configuration (i.e. Agent community) addresses security issues (e.g. hacker attacks).*

To stop the StorageTek ACSLS SNMP Agent

Issue the following command to stop the ACSLS SNMP Agent:

`/export/home/ACSNMP/AcslsAgent stop`

To stop the Master agent

Issue the following command to stop the Master Agent:

`/usr/bin/stopsrc -s snmpd`

To modify the Agent's Community

To modify the Agent's SNMP configuration , you must edit the `snmpd.conf` file and refresh the SNMP subsystem to take new parameters into account.

Proceed as follows to configure the SNMP community:

1. **Edit the** `/etc/snmpd.conf` **file (for example with vi):**
   `vi /etc/snmpd.conf`

2. **Look for lines starting with the** `community` **label**
   `community  name netmask  permissions`

   where
   `name` **is the SNMP community group—usually** `public` **by default,**
   `netmask` **specifies the network mask—usually** `0.0.0.0` **by default,**
   `permissions` **is one of:** `none`**,** `readOnly`**,** `writeOnly`**,** `readWrite`**.**

   (e.g. `community  public 0.0.0.0 readWrite`**)**

3. **Change the community name to the one you wish to use.**

   Note: *For further configuration refer to the* `/etc/snmpd.conf` *file.*

4. Save the `/etc/snmpd.conf` file.

5. **Issue the following command to go to the directory where the Agent is installed:**
   `cd /export/home/ACSNMP`

6. **Edit the** `AcslsAgtd.cfg` **file (for example with vi):**
   `vi AcslsAgtd.cfg`

7. **Modify the community string within the line beginning with the keyword** `SNMP_COMMUNITY`
   `SNMP_COMMUNITY:community`

8. Save the `AcslsAgtd.cfg` file.

To configure the SNMP port

With the current versions of the AIX Master Agent, ports 161 and 162 cannot be changed. This means that to this date, SNMP Agents ports 161 and 161 cannot be configured.

To restart the Master agent   **Issue the following command to restart the Master agent:**
`/usr/bin/startsrc -s snmpd`

To restart the ACSLS SNMP Agent   **Issue the following command to restart the ACSLS SNMP Agent:**
`/export/home/ACSNMP/AcslsAgent start`

To Set the Log Trace Level   The Agent logs internal events—such as entering a function or returning a null pointer—in `AcslsAgtd.log` log files located in the Agent home installation directory.

The Agent generates the first log file called `AcslsAgtd.log`. When the log file reaches 300 KB, it is rolled over to a backup file called `AcslsAgtd.log.0`. The `AcslsAgtd.log` log file is then flushed to leave room for a new 300 KB worth of information. The size of the two log files put together never exceeds 600 KB.

Four trace levels are available:

- `SILENT` produces no trace information
- `ERROR` traces errors only
- `WARNING` provides both error and warning information
- `DEBUG` traces errors, warnings and all of the Agent's operations (all messages are recorded)

The trace level is set with the environment variable `ACS_TRACE` that is set using the following values:

`DEBUG`, `WARNING`, `ERROR` or `SILENT`

Caution: Setting the log trace level to `DEBUG` accelerates log file roll over.

To change the log trace level
1. **Log in as root**
2. **Stop the Agent with the following command:**
   `/export/home/ACSNMP/AcslsAgent stop`
3. **From the Bourne shell, enter the value corresponding to the desired log trace level, for example:**
   `ACS_TRACE=DEBUG`
4. **To keep this environment variable value outside this shell, enter:**
   `export ACS_TRACE`
5. **Check the results of your choice by typing `echo $ACS_TRACE`**
6. **Restart the Agent with the following command:**
   `/export/home/ACSNMP/AcslsAgent start`

Note: *The default trace level is* `WARNING`

Chapter 4.   Troubleshooting

Installation Issues

Cannot Re-install the Agent

Explanation: The Agent must be uninstalled before reinstalling.

1. **Refer to *Uninstallation* for instructions on how to uninstall the product.**

2. **Reinstall with the procedure described in *Installation*.**

Execution Issues

External Data Has Changed

Action Required:

1. **Reconfigure the ACSLS server (refer to the *ACSLS Installation, Configuration and Administration Guide*).**

2. **Restart the ACSLS server.**

   The agent should automatically detect changes, then stop and restart when the ACSLS server is running with the latest configuration.

   Note: *Stopping the ACSLS Server is not required when adding, removing or changing drives. Refer to the* ACSLS Installation, Configuration and Administration Guide *for details on the* `config drives` *command.*

Responses from the Agent Are Timing Out or No Value Is Returned

Action Required:

1. **Check that the Master Agent is running with the following commands:**

   `/usr/bin/ps -eaf | /usr/bin/grep snmpd`

   If it is not running, start it with the following commands:

   `/usr/bin/startsrc -s snmpd`
   `/usr/bin/startsrc -s dpid2`

   Note: *the corresponding stop commands are:*
   `/usr/bin/stopsrc -s dpid2`
   `/usr/bin/stopsrc -s snmpd`

2. **Verify that both** `AcslsAgtd` **and** `AcslsTrapper` **are running:**

   `/usr/bin/ps -eaf | /usr/bin/grep Acsls`

3. **If they are not running, start the Agent with the following command:**

```
/export/home/ACSNMP/AcslsAgent start
```

4. **Ensure a community name is defined in the** /etc/snmpd.conf **file. If it is not:**

   a. Using a text editor, add this line to the end of the file:

   ```
   community   public   0.0.0.0   0.0.0.0   readWrite
   ```

   b. Refresh the SNMP Master Agent:

   /usr/bin/refresh -s snmpd

   Note: *To update the* snmpd.conf *file, refer to the indications given in the file.*

No ACSLS Library Server Running

Explanation: The ACSLS Library Server is not running.

Action Required: Refer to the *ACSLS Installation, Configuration and Administration Guide* for details on how to start the ACSLS Library Server.

Having Trouble Removing the Agent?

Explanation: If you have attempted to uninstall the Agent although it has not completed a given task and is currently running, you will be informed as follows:

```
ERROR, the agent is running
```

Action Required: Stop the SNMP Agent and remove the Agent.

1. **At the prompt, issue the following command:**

   /export/home/ACSNMP/AcslsAgent stop

2. **Repeat the removal procedure as described in** *Uninstallation*.

SNMP Issues

Traps Are Not Being Forwarded

Action Required:

1. **Verify that a trap destination is set in the** /etc/snmpd.conf **file.**

   If it is not, add a line comparable to this:

   ```
   trap    community    IPaddress
   ```

   where *community* is the SNMP community group—usually public—and *IPaddress* is the IP address of the machine that should receive traps from this Agent.

2. **Refresh the master agent:**

   /usr/bin/refresh -s snmpd

   Note: *To update the* snmpd.conf *file, refer to the indications given in the file.*

"snmp set" Commands Return "error status 4 (read-only)"

Explanation: This problem is due to the snmp AIX file sets `bos.net.tcp.client.4.2.1.34`+ or `4.3.3.10`+.
The snmpsets are rejected because the variables are read-only.

Action Required:

1. **Upgrade to "bos.net.tcp.client.4.3.3.21".**

2. **Issue the following command to turn off snmp security:**
   `chssys -s snmpd -a "-U"`

   Note: *This change is persistent but a file system restore or a future change to AIX could overwrite the entry, and inadvertently re-enable snmpd security.*

3. **Issue the following command to refresh the snmpd daemon:**
   `refresh -s snmpd`

SNMP Requests Generate SNMP No Such Name or Timeouts

Explanation: SNMP configuration may need to be verified.

Action Required:

1. **Check the community and access privileges defined in the file:**
   `/etc/snmpd/conf file`

   line: `community` *name* `netmask` *permissions*

   e.g. `community public 0.0.0.0 0.0.0.0 readWrite`

2. **Check whether the appropriate community is defined in the** `/export/home/ACSNMP/AcslsAgtd.cfg` **file.**

   Community is indicated in lines starting with the `SNMP-COMMUNITY` tag

   If you need to make changes, refer to *To Modify SNMP Configuration*

Appendix A. Uninstallation

To Remove the Agent

Note: *You must stop the Agent before you proceed.*

1. **Login in as root**

2. **Issue the following command to stop the Agent:**

   `/export/home/ACSNMP/AcslsAgent stop`

3. **Enter the following the command:**

   `installp -u acsls_snmp`

   The install utility will uninstall the package, and a SUCCESS message should be displayed.

Appendix B. Before you Contact StorageTek Support

How do I know which version of the StorageTek ACSLS SNMP Agent I have?

Before contacting StorageTek for support services, make sure you know what version of this product is installed on your machine.

If you do not know, proceed as follows:

From the shell command line type the following command:

```
lslpp -L | grep acsls_snmp
```

The Agent name and version is displayed as in the example below:

```
acsls_snmp.rte 2.0.0.0 ACSLS SNMP Agent
```