Quantum Scalar i40 and Scalar i80
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This guide is for library customers, partners, third party management software developers, and other parties interested in integrating the Scalar® i40 and Scalar i80 with commercial management frameworks. It assumes that you have a working knowledge of Simple Network Management Protocol (SNMP), that you can compile a Management Information Base (MIB) on your framework application, that you can perform SNMP GET operations, and that you know how to collect SNMP TRAPs and filter them for information.

This guide describes information that you can obtain from the Scalar i40 and Scalar i80 library SNMP. Using SNMP, you can monitor the library from a network management application rather than — or in addition to — the library’s diagnostic ticket system. For information about the Scalar i40 and Scalar i80 libraries, refer to the *Scalar i40 and Scalar i80 User’s Guide*.

The Scalar i40 and Scalar i80 libraries support SNMP by publishing a MIB that can be queried to obtain the status of the library and many of its individual components. You can obtain status information automatically by configuring the library to send alerts using SNMP TRAPs, or you can obtain it on an ad-hoc basis by sending SNMP queries from your network management application.

For more information about the library MIBs, contact Quantum Support. For information on integrating MIBs with an SNMP management application, contact your network management application vendor.
Explanation of Symbols and Notes

The following symbols appear throughout this document to highlight important information.

**Note:** Note emphasizes important information related to the main topic.

**Caution:** Caution indicates potential hazards to equipment or data.

**WARNING:** Warning indicates potential hazards to personal safety.

Other Documents You Might Need

The following documents are also available for this product.

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Document Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-66545-xx</td>
<td>Scalar i40 and Scalar i80 User’s Guide</td>
</tr>
<tr>
<td>6-66546-xx</td>
<td>Scalar i40 and Scalar i80 Quick Start Guide</td>
</tr>
<tr>
<td>6-00618-xx</td>
<td>System, Safety, and Regulatory Information</td>
</tr>
<tr>
<td>6-66547-xx</td>
<td>Scalar i40 and Scalar i80 Release Notes</td>
</tr>
<tr>
<td>6-00423-xx</td>
<td>Quantum Intelligent Libraries SCSI Reference Guide</td>
</tr>
<tr>
<td>6-01317-xx</td>
<td>Quantum Intelligent Libraries SMI-S Reference Guide</td>
</tr>
</tbody>
</table>

Quantum company contacts are listed below.
Quantum Corporate Headquarters

For information about contacting Quantum, including Quantum office locations, go to:


Quantum Home Page

Visit the Quantum home page at:

http://www.quantum.com

Getting More Information or Help

The following resources are available for general product support:

- **Service and Support Website** - Register products, license software, browse Quantum Learning courses, check backup software and operating system support, and locate manuals, FAQs, firmware downloads, product updates and more in one convenient location. Benefit today at:
  
  http://www.quantum.com/support

- **Telephone Support** - To find contact information for your location, go to: http://www.quantum.com/ServiceandSupport/Contacts/ProductSelect/Index.aspx

- **eSupport** - Submit online service requests, update contact information, add attachments, and receive status updates via email. Online Service accounts are free from Quantum. That account can also be used to access Quantum's Knowledge Base, a comprehensive repository of product support information. Sign up today at:
  
  http://www.quantum.com/osr

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Preface
Chapter 1

Description

The Simple Network Management Protocol (SNMP) is a light-weight protocol designed for remote management and monitoring of infrastructure devices. The Scalar® i40 and Scalar i80 libraries provide SNMP support so you can use a framework application to monitor the status of the library. Using SNMP, you can be alerted of numerous library events.

The Scalar i40 and Scalar i80 libraries also provide informational troubleshooting procedures from their own reporting system, called the diagnostic ticket system. Diagnostic tickets enable library administrators to diagnose specific library events.

SNMP Functionality Available to Remote Applications

Both the Scalar i40 and Scalar i80 libraries support SNMP GET queries and unicast TRAPs (which can be sent only to registered recipients), that enable you to monitor library status from a remote application. SET commands are currently not enabled on the Scalar i40 and Scalar i80.
Specific Scalar i40 and Scalar i80 SNMP characteristics include:

- Supports SNMP v1, v2c, and v3
- Supports SNMP v1 and v2 TRAPs as defined by RFC 1157. You can set the library to report SNMP TRAPs using either v1 or v2 (v1 is the default). The timeout for all SNMP requests to the library must be at 10 seconds or greater (command line parameter-t).
- SMIv2 compliance only
- Usage of port 161 for GET queries
- Default community read/TRAP strings: publicCmtyStr (see SNMP Community Strings on page 8)
- TRAP registration interface in the library's Web client, which enables you to configure application IP addresses, transport protocols, and user-configurable UDP port numbers to receive TRAPs

Accessing SNMP Information

SNMP information can be obtained from the Scalar i40 and Scalar i80 using TRAPs and GET queries. Using the information contained in this guide, library administrators can configure their framework application to generate alerts to receive Scalar i40 and Scalar i80 SNMP information.

By default, most SNMP information is returned as an integer value (library partition names, however, are returned as string values). For instance, the return value of physicalLibraryState might be 2, which indicates that the robotics is not ready.

You can, however, configure the framework application to return status information as a string value, which provides a description of the status. For example, the return value of physicalLibraryState might be notReady(2).
Although the Scalar i40 and Scalar i80 support SNMP version 1 and version 2c for MIB information retrieval, we strongly recommend that you access the library using SNMP version 3 (SNMPv3). SNMPv3 is the most secure of the three versions, as it supports message digest 5, or MD5, as its authentication protocol.

To access the library for SNMP support, use the following values as needed in the remote management application:

**User name:** Admin  
**Context name:** (None. Leave this field blank.)  
**Authentication protocol:** MD5  
**Privacy protocol:** (None. Leave this field blank.)  
**Password:** Your Admin password

For secure access to the library using SNMP, disable SNMPv1 and SNMPv2c access from the Web client and the operator panel. For more information, see either the Scalar i40 and Scalar i80 User’s Guide or the relevant Scalar i40 and Scalar i80 Web client online help topics.

TRAPs enable alerts to be sent automatically to registered hosts when specific events occur. Only one application per UDP port can listen for TRAPs.

The Scalar i40 and Scalar i80 supports SNMP v1 and v2 TRAPs as defined by RFC 1157.

You can set the library to report SNMP TRAPs using either v1 or v2 (v1 is the default). The timeout for all SNMP requests to the library must be at 10 seconds or greater (command line parameter-t).

To receive TRAPs, you must perform two steps:

1. Configure your framework application to collect TRAPs from the Scalar i40 and Scalar i80.
2. Using the library’s **SNMP Trap Registrations** feature, register the host’s IP address, transport protocol, and UDP port number.

Registration informs the Scalar i40 and Scalar i80 to send TRAPs to the host.

For additional details about registering a host with the Scalar i40 and Scalar i80, refer to the **Scalar i40 and Scalar i80 User’s Guide**.
SNMP Queries

SNMP queries, or GET queries, can be initiated on a periodic basis by the framework application. By querying the MIB, hosts can gather status information about specific components of the library. Frequent MIB queries are not required, however, since the SNMP agent is event-driven, it provides updated data if a TRAP alerts of an event or status change.

Caution: As with any SNMP device, excessive MIB queries can result in performance degradation for the SNMP daemon, as well as for the network.

GETs must also include an instance ID. The instance identifies a specific device from which you can retrieve status information. For example, to determine if the second partition on a Scalar i40 and Scalar i80 is online, access the MIB variable for logical library online status and select the instance for partition 2.

SNMP Community Strings

An SNMP community string is a text string that acts as a password to authenticate messages sent between the SNMP remote management application and the device (the SNMP agent). SNMP Get and Get-next requests are valid only if the community string in the request matches the community string at the device. If the community strings do not match, either modify the community string at the device so that it is the string that the management station expects, or modify the management station so that it uses the device’s community strings.

The community string is included in every SNMPv1 and SNMPv2C packet transmitted between the SNMP manager and the SNMP agent. This string is case sensitive, cannot be empty, and cannot exceed 32 characters.

Use this procedure to configure the read-only SNMP community string.

1. Log in to the Web client.
2. Select Setup > Network Management > SNMP.
Change the community string value.
4 Click Apply.

SNMP Authentication TRAPs

SNMP authentication TRAPs occur in a number of conditions. In particular, they can occur when the SNMP agent:

- Receives a request that does not contain the correct community name.
- Receives a request not sent from a member of the acceptable host list.
- Receives a request from a bad user name or password when using SNMP Version 3.
- Sends an authentication TRAP message to one or more TRAP destinations (management systems), indicating authentication failure.

By default, authentication TRAPs are disabled on the library. Use this procedure to configure SNMP authentication TRAPs.

1 Log in to the Web client.
2 Select Setup > Network Management > SNMP.
3 Do one of the following:
   - Click the Authentication TRAPs check box to enable authentication TRAPs.
   - Remove the check from the Authentication TRAPs check box to disable authentication TRAPs.
4 Click Apply.
Chapter 1: Description
SNMP Authentication TRAPs
This section describes the basic set of Simple Network Management Protocol (SNMP) system status TRAPs issued by the library. TRAPs pertain to the entire library, not specific partitions.

**Note:** The Scalar i40 and Scalar i80 support SNMP v1 and v2 TRAPs as defined by RFC 1157.

TRAPs defined in the Tape Library Management Information Base (MIB) are issued with enterprise OID 1.3.6.1.4.1.3764.1.10.10.
### Table 1  Status TRAPs

<table>
<thead>
<tr>
<th>TRAP ID</th>
<th>TRAP</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>tapeLibNotifyStart</td>
<td>Starting&lt;br&gt;Indicates that the tape library agent has started running.</td>
</tr>
<tr>
<td>2</td>
<td>shutdownSequenceInitiated</td>
<td>Shutdown Sequence Initiated&lt;br&gt;Notification that the library has started its shutdown sequence.</td>
</tr>
<tr>
<td>3</td>
<td>tapeLibNotifyRestart</td>
<td>Restarting&lt;br&gt;Notification that the tape library agent has been restarted. This indication does not imply any configuration change (unlike the standard coldStart or warmStart TRAPs).</td>
</tr>
<tr>
<td>101</td>
<td>startupSequenceCompleted</td>
<td>Startup Sequence Completed&lt;br&gt;Indicates that the library has completed its boot sequence.</td>
</tr>
<tr>
<td>104</td>
<td>moduleDoorStatusChange</td>
<td>Module Door Status Change&lt;br&gt;Indicates that a library storage magazine has been unlocked, removed, or inserted.</td>
</tr>
<tr>
<td>105</td>
<td>ieDoorStatusChange</td>
<td>I/E Door Status Change&lt;br&gt;Indicates that an I/E station has been opened or closed.</td>
</tr>
<tr>
<td>106</td>
<td>roboticsReady</td>
<td>Robotics Ready&lt;br&gt;Indicates that the library’s robotics system has transitioned from a “not ready” to “ready” state. TRAPs 106 and 107 may occur as part of a startup or shutdown procedure.</td>
</tr>
</tbody>
</table>

*a. The library issues a TRAP whenever the aggregate state of one of the Reliability, Availability, and Serviceability (RAS) status groups changes. Listening for these TRAPs (rather than querying for them) is the preferred method of monitoring the health of the library.*
### Chapter 2: SNMP TRAPs

<table>
<thead>
<tr>
<th>TRAP ID</th>
<th>TRAP</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>107</td>
<td>roboticsNotReady</td>
<td>Robotics Not Ready&lt;br&gt;Indicates that the library’s robotics system has&lt;br&gt;transitioned from a “ready” to “not ready” state.&lt;br&gt;TRAPs 106 and 107 may occur as part of a startup or shutdown procedure.</td>
</tr>
<tr>
<td>108</td>
<td>logicalLibraryStatusChange</td>
<td>Logical Library State or Mode Change&lt;br&gt;Indicates that a logical library, also known as a partition, has changed its ready state, and/or has been taken online or offline.</td>
</tr>
<tr>
<td>109</td>
<td>connectivityStatusChange</td>
<td><strong>Note:</strong> This TRAP is currently not supported. Connectivity Status Changes are reported via TRAP 110, Control Status Change.</td>
</tr>
<tr>
<td>110</td>
<td>controlStatusChange</td>
<td>RAS Status Change: Control&lt;br&gt;Indicates that a library control problem has been detected.&lt;br&gt;Indicates that the status of the library control subsystem (which includes all library components except for drives and media) has changed. If the TRAP payload Control Status variable indicates that a problem exists, use the operator panel or Web client to determine how to resolve the issue.</td>
</tr>
<tr>
<td>111</td>
<td>coolingStatusChange</td>
<td><strong>Note:</strong> This TRAP is currently not supported. Cooling Status Changes are reported via TRAP 110, Control Status Change.</td>
</tr>
<tr>
<td>112</td>
<td>drivesStatusChange</td>
<td>RAS Status Change: Drives&lt;br&gt;Indicates that the status of the drives and/or media has changed. If the TRAP payload Drive Status variable indicates that a problem exists, use the operator panel or remote web client to determine how to resolve the issue.</td>
</tr>
</tbody>
</table>

---

*a. The library issues a TRAP whenever the aggregate state of one of the Reliability, Availability, and Serviceability (RAS) status groups changes. Listening for these TRAPs (rather than querying for them) is the preferred method of monitoring the health of the library.*
### Chapter 2: SNMP TRAPs

<table>
<thead>
<tr>
<th>TRAP ID</th>
<th>TRAP</th>
<th>Description</th>
</tr>
</thead>
</table>
| 113     | mediaStatusChange     | RAS Status Change: Media<sup>a</sup>  
Indicates that the status of the media has changed. If the TRAP payload Media Status variable indicates that a problem exists, use the operator panel or remote web client to determine how to resolve the issue. |
| 114     | powerStatusChange     | **Note:** This TRAP is currently not supported. Power Status Changes are reported via TRAP 110, Control Status Change. |
| 115     | roboticsStatusChange  | **Note:** This TRAP is currently not supported. Robotics Status Changes are reported via TRAP 110, Control Status Change. |
| 116     | operatorInterventionRequired | RAS Status Change: Operator Intervention Required<sup>a</sup>  
Indicates that an error has occurred and that operator intervention is required in order to resolve the issue. |
| 117     | driveOnlineStateChange | Drive Online State Change  
Indicates that a tape drive has been taken online or offline. |

<sup>a</sup> The library issues a TRAP whenever the aggregate state of one of the Reliability, Availability, and Serviceability (RAS) status groups changes. Listening for these TRAPs (rather than querying for them) is the preferred method of monitoring the health of the library.
The library requires five Management Information Bases (MIBs): the Quantum Tape Library MIB and four standard SNMP MIBs.

Quantum Small Tape Library MIB

The Quantum Tape Library MIB provides the following information:

- System identification (library model and serial number)
- Notifications for a changed configuration (added and removed components)
- Library startup and shutdown TRAPs
- Library online and offline status
- Library composition
  - Drives
  - Robotics
- Library partitioning
- Advanced status information: Reliability, Availability and Serviceability (RAS) functionality
Appendix A: MIBs Implemented

Downloading the SNMP MIB from the Library

Reference MIBs

The library MIBs reference the following SNMP standard MIBs:

- IPV6-MIB of MIB II
- IP-MIB of MIB II
- RFC 1155-SMI
- RFC 1212
- RFC 1213-MIB
- RFC 1215

These MIBs must be included with your framework application. They are required for accurate compilation of the library MIBs.

Downloading the SNMP MIB from the Library

Administrative users can download the SNMP MIB from the library. The MIB can then be installed on an SNMP external management application.

To download the SNMP MIB:

1. From the library Web client, select Tools > Download SNMP MIB.
2. Save the file to a known location.
Quantum Library MIB Content

-- *****************************************************************************************

-- QUANTUM-SMALL-TAPE-LIBRARY-MIB.mib: Small Tape Library Platform Specific MIB

-- $Date: 2013-10-01 00:00:01 (Tue, 01 Oct 2013) $

-- Copyright (c) 2009 - 2013 by Quantum Corporation
-- All rights reserved.

-- *****************************************************************************************

-- Glossary of terms

-- FC : Fiber Channel
-- MIB : Management Information Base
-- RAS : Reliability, Accessibility and Serviceability
-- SAS : Serial Attached SCSI
-- SCSI: Small Computer System Interface
-- WWNN: World Wide Node name
-- WWPN: World Wide Port name

--

QUANTUM-SMALL-TAPE-LIBRARY-MIB DEFINITIONS ::= BEGIN

IMPORTS

NOTIFICATION-TYPE, MODULE-IDENTITY, enterprises, Integer32, OBJECT-TYPE
FROM SNMPv2-SMI

TEXTUAL-CONVENTION, DisplayString FROM SNMPv2-TC
NOTIFICATION-GROUP, MODULE-COMPLIANCE, OBJECT-GROUP FROM SNMPv2-CONF;

smallTapeLibraryMIB MODULE-IDENTITY
LAST-UPDATED "201310010000Z"
ORGANIZATION "Quantum Corporation, Tape Automation"
CONTACT-INFO "Postal: Quantum Corporation
8560 Upland Drive
Englewood, CO. 80112
E-mail: support@quantum.com"
DESCRIPTION "This MIB provides product information for Quantum's small
tape library product."
REVISION "201310010000Z"
DESCRIPTION "Current revision last updated on August 7, 2013."
::= { library 10 }

quantum OBJECT IDENTIFIER ::= { enterprises 3697 }
storage OBJECT IDENTIFIER ::= { quantum 1 }
library OBJECT IDENTIFIER ::= { storage 10 }
smallTapeLibrarySystem OBJECT IDENTIFIER ::= { smallTapeLibraryMIB 1 }

--
-- The following two OBJECT IDENTIFIERS are used
-- to define SNMPv2 Notifications that are
-- backward compatible with SNMPv1 Traps.
--
smallTapeLibraryMIBNotificationPrefix OBJECT IDENTIFIER ::= {
smallTapeLibraryMIB 3 }
smallTapeLibraryMIBNotifications OBJECT IDENTIFIER ::= {
smallTapeLibraryMIBNotificationPrefix 0 }
--
-- Textual conventions
--

Boolean ::= TEXTUAL-CONVENTION
  STATUS       current
  DESCRIPTION  "Represents a general boolean type value."
  SYNTAX       INTEGER { false(0), true(1) }

OnOff ::= TEXTUAL-CONVENTION
  STATUS       current
  DESCRIPTION  "Represents a boolean switch type on or off value."
  SYNTAX       INTEGER { off(0), on(1) }

NoYes ::= TEXTUAL-CONVENTION
  STATUS       current
  DESCRIPTION  "Represents a boolean no yes answer type value."
  SYNTAX       INTEGER { no(0), yes(1) }

OnlineMode ::= TEXTUAL-CONVENTION
  STATUS       current
  DESCRIPTION  "Device Online mode."
  SYNTAX INTEGER { online(1), onlinePending(2), offline(3), offlinePending(4), shutdownPending(5) }

LibraryReadyState ::= TEXTUAL-CONVENTION
  STATUS       current
  DESCRIPTION  "Robotics Ready Status."
  SYNTAX INTEGER { ready(1), notReady(2), becomingReady(3) }
Appendix A: MIBs Implemented

Downloading the SNMP MIB from the Library

DriveReadyState ::= TEXTUAL-CONVENTION
   STATUS     current
   DESCRIPTION "Drive Ready status."
   SYNTAX INTEGER { ready(1), notReady(2), notInstalled(3) }

InterfaceMethod ::= TEXTUAL-CONVENTION
   STATUS     current
   DESCRIPTION "Library control path interface method."
   SYNTAX INTEGER { viaControlPathDrive(1), viaConnectionBlade(2),
                    viaDriveAndBlade(3) }

InterfaceType ::= TEXTUAL-CONVENTION
   STATUS     current
   DESCRIPTION "Device interface type."
   SYNTAX INTEGER { scsi(1), fibreChannel(2), sas(3), iscsi(4) }

LibraryDoorStatus ::= TEXTUAL-CONVENTION
   STATUS     current
   DESCRIPTION "Library access door status."
   SYNTAX INTEGER { open(1), closed(2), unknown(3) }

IEDoorStatus ::= TEXTUAL-CONVENTION
   STATUS     current
   DESCRIPTION "Import Export Station Door Status."
   SYNTAX INTEGER { open(1), closedAndLocked(2), closedAndUnLocked(3) }

RASSubSystemStatus ::= TEXTUAL-CONVENTION
   STATUS     current
   DESCRIPTION "Device health status."
SYNTAX INTEGER { good(1), failed(2), degraded(3), warning(4), informational(5), unknown(6), invalid(7) }

CleaningStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Device cleaning status."
SYNTAX INTEGER { recommended(1), notNeeded(2), required(3) }

--
-- Overall Tape Library parameters
--

libraryIpAddress OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The IP address of this SNMP agent. If the library has only an IPV4 address, or both an IPV4 and an IPV6 address, then the IP address is displayed in IPV4 format (xxx.xxx.xxx.xxx). If the library only has an IPV6 address, then it will report an IPV6 address."
::= { smallTapeLibrarySystem 1 }

librarySNMPAgentDescription OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Description of the library SNMP agent."
::= { smallTapeLibrarySystem 2 }
libraryName OBJECT-TYPE
SYNTAX             DisplayString
MAX-ACCESS         read-only
STATUS             current
DESCRIPTION        "Host name for the system hosting the SNMP agent."
::= { smallTapeLibrarySystem 3 }

libraryVendor OBJECT-TYPE
SYNTAX             DisplayString
MAX-ACCESS         read-only
STATUS             current
DESCRIPTION        "Library vendor identification."
::= { smallTapeLibrarySystem 4 }

librarySerialNumber OBJECT-TYPE
SYNTAX             DisplayString
MAX-ACCESS         read-only
STATUS             current
DESCRIPTION        "Library serial number."
::= { smallTapeLibrarySystem 5 }

libraryDescription OBJECT-TYPE
SYNTAX             DisplayString
MAX-ACCESS         read-only
STATUS             current
DESCRIPTION        "Description of the library."
::= { smallTapeLibrarySystem 6 }
libraryModel OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library model information."
::= { smallTapeLibrarySystem 7 }

libraryGlobalStatus OBJECT-TYPE
SYNTAX RASSubSystemStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Current status of the entire library system (including all attached drives)."
::= { smallTapeLibrarySystem 8 }

libraryURL OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "URL of the library's management application."
::= { smallTapeLibrarySystem 9 }

libraryProductName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Product name of the library."
::= { smallTapeLibrarySystem 10 }
Appendix A: MIBs Implemented
Downloading the SNMP MIB from the Library

libraryFirmwareVersion OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library firmware version."
::= { smallTapeLibrarySystem 11 }

--
-- Physical Library Information
--
physicalLibrary OBJECT IDENTIFIER ::= { smallTapeLibrarySystem 15 }

physicalLibraryState OBJECT-TYPE
SYNTAX LibraryReadyState
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical library's overall robotics readiness status."
::= { physicalLibrary 1 }

aggregatedMainDoorStatus OBJECT-TYPE
SYNTAX LibraryDoorStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical library's overall main access door open status."
::= { physicalLibrary 2 }

aggregatedIEDoorStatus OBJECT-TYPE
SYNTAX IEDoorStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical library's overall insert/eject area closure status."
 ::= { physicalLibrary 3 }
Appendix A: MIBs Implemented
Downloading the SNMP MIB from the Library

::= { libraryCartridgeSlots 1 }  

numCleanSlots OBJECT-TYPE  
SYNTAX Integer32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "Number of storage slots configured as cleaning slots."  
 ::= { libraryCartridgeSlots 2 }  

numIESlots OBJECT-TYPE  
SYNTAX Integer32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "Number of configured library insert/eject slots."  
 ::= { libraryCartridgeSlots 3 }  

--  
-- Drive Information  
--

physicalDrive OBJECT IDENTIFIER ::= { physicalLibrary 6 }  

numPhDrives OBJECT-TYPE  
SYNTAX Integer32  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION "Number of installed tape drives."  
 ::= { physicalDrive 1 }
overallPhDriveOnlineStatus OBJECT-TYPE
SYNTAX            OnlineMode
MAX-ACCESS        read-only
STATUS            current
DESCRIPTION       "Overall tape drive online status."
::= { physicalDrive 2 }

overallPhDriveReadinessStatus OBJECT-TYPE
SYNTAX            DriveReadyState
MAX-ACCESS        read-only
STATUS            current
DESCRIPTION       "Overall tape drive readiness status."
::= { physicalDrive 3 }

physicalDriveTable OBJECT-TYPE
SYNTAX            SEQUENCE OF PhysicalDriveEntry
MAX-ACCESS        not-accessible
STATUS            current
DESCRIPTION       "A table of all tape drive devices in the domain
of this SNMP agent."
::= { physicalDrive 4 }

physicalDriveEntry OBJECT-TYPE
SYNTAX            PhysicalDriveEntry
MAX-ACCESS        not-accessible
STATUS            current
DESCRIPTION       "Tape drive information."
INDEX            { phDriveIndex }
::= { physicalDriveTable 1 }
PhysicalDriveEntry ::= SEQUENCE {
  phDriveIndex                Integer32,  
  phDriveLocation             DisplayString,  
  phDriveDeviceId             DisplayString,  
  phDriveVendor               DisplayString,  
  phDriveType                 DisplayString,  
  phDriveInterfaceType        InterfaceType,  
  phDriveAddress              DisplayString,  
  phDrivePhysicalSerialNumber DisplayString,  
  phDriveLogicalSerialNumber  DisplayString,  
  phDriveFirmwareVersion      DisplayString,  
  phDriveOnlineState          OnlineMode,  
  phDriveReadinessState       DriveReadyState,  
  phDriveRasStatus            RASSubSystemStatus,  
  phDrive Loads               Integer32,  
  phDriveCleaningStatus       CleaningStatus,  
  phDriveLogicalLibraryName   DisplayString,  
  phDriveControlPathDrive     Boolean
}

phDriveIndex OBJECT-TYPE
  SYNTAX              Integer32 (1..1000)
  MAX-ACCESS          not-accessible
  STATUS              current
  DESCRIPTION         "Tape drive table entry index."
  ::= { physicalDriveEntry 1 }

phDriveLocation OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Tape drive location within the library."
::= { physicalDriveEntry 2 }

phDriveDeviceId OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Tape drive device identifier."
::= { physicalDriveEntry 3 }

phDriveVendor OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Tape drive vendor identification."
::= { physicalDriveEntry 4 }

phDriveType OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Tape drive type/generation."
::= { physicalDriveEntry 5 }

phDriveInterfaceType OBJECT-TYPE
SYNTAX InterfaceType
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MAX-ACCESS                read-only
STATUS                    current
DESCRIPTION               "Tape drive interface type."
::= { physicalDriveEntry 6 }

phDriveAddress  OBJECT-TYPE
SYNTAX              DisplayString
MAX-ACCESS          read-only
STATUS              current
DESCRIPTION         "Tape drive FC WWNN, SAS Address, or SCSI ID."
::= { physicalDriveEntry 7 }

phDrivePhysicalSerialNumber OBJECT-TYPE
SYNTAX              DisplayString
MAX-ACCESS          read-only
STATUS              current
DESCRIPTION         "Physical tape drive serial number."
::= { physicalDriveEntry 8 }

phDriveLogicalSerialNumber OBJECT-TYPE
SYNTAX              DisplayString
MAX-ACCESS          read-only
STATUS              current
DESCRIPTION         "SCSI host reported tape drive serial number."
::= { physicalDriveEntry 9 }

phDriveFirmwareVersion OBJECT-TYPE
SYNTAX              DisplayString
MAX-ACCESS          read-only
Appendix A: MIBs Implemented
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```plaintext
STATUS            current
DESCRIPTION       "Tape drive firmware version."
::= { physicalDriveEntry 10 }

phDriveOnlineState OBJECT-TYPE
SYNTAX             OnlineMode
MAX-ACCESS         read-only
STATUS             current
DESCRIPTION        "Tape drive online status."
::= { physicalDriveEntry 11 }

phDriveReadinessState OBJECT-TYPE
SYNTAX             DriveReadyState
MAX-ACCESS         read-only
STATUS             current
DESCRIPTION        "Tape drive ready status."
::= { physicalDriveEntry 12 }

phDriveRasStatus OBJECT-TYPE
SYNTAX             RASSubSystemStatus
MAX-ACCESS         read-only
STATUS             current
DESCRIPTION        "Tape drive health status."
::= { physicalDriveEntry 13 }

phDriveLoads OBJECT-TYPE
SYNTAX             Integer32
MAX-ACCESS         read-only
STATUS             current
```
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DESCRIPTION         "Tape drive's total cartridge load count."
::= { physicalDriveEntry 14 }

phDriveCleaningStatus OBJECT-TYPE
SYNTAX              CleaningStatus
MAX-ACCESS          read-only
STATUS              current
DESCRIPTION         "Tape drive's cleaning status."
::= { physicalDriveEntry 15 }

phDriveLogicalLibraryName OBJECT-TYPE
SYNTAX              DisplayString
MAX-ACCESS          read-only
STATUS              current
DESCRIPTION         "Name of the logical library (partition) to which this physical drive is associated.
If the drive is not associated with a logical library, this field will be blank."
::= { physicalDriveEntry 16 }

phDriveControlPathDrive OBJECT-TYPE
SYNTAX              Boolean
MAX-ACCESS          read-only
STATUS              current
DESCRIPTION         "Indication whether the tape drive is hosting a library control path."
::= { physicalDriveEntry 17 }

--
Appendix A: MIBs Implemented
Downloading the SNMP MIB from the Library

-- Library RAS Status

--

rasSubSystem OBJECT IDENTIFIER ::= { physicalLibrary 10 }

-- CHP: Object not supported

powerStatus OBJECT-TYPE
SYNTAX RASSubSystemStatus
MAX-ACCESS read-only
STATUS obsolete
DESCRIPTION "Indicates overall library power supply status."
::= { rasSubSystem 1 }

-- CHP: Object not supported

coolingStatus OBJECT-TYPE
SYNTAX RASSubSystemStatus
MAX-ACCESS read-only
STATUS obsolete
DESCRIPTION "Indicates overall library cooling fan status."
::= { rasSubSystem 2 }

controlStatus OBJECT-TYPE
SYNTAX RASSubSystemStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Indicates overall library control subsystem status."
::= { rasSubSystem 3 }

-- CHP: Object not supported

connectivityStatus OBJECT-TYPE
Appendix A: MIBs Implemented
Downloading the SNMP MIB from the Library

SYNTAX              RASSubSystemStatus
MAX-ACCESS          read-only
STATUS              obsolete
DESCRIPTION         "Indicates overall library connectivity status."
 ::= { rasSubSystem 4 }

-- CHP: Object not supported
roboticsStatus OBJECT-TYPE
    SYNTAX              RASSubSystemStatus
    MAX-ACCESS          read-only
    STATUS              obsolete
    DESCRIPTION         "Indicates overall library robotics status."
    ::= { rasSubSystem 5 }

mediaStatus OBJECT-TYPE
    SYNTAX              RASSubSystemStatus
    MAX-ACCESS          read-only
    STATUS              current
    DESCRIPTION         "Indicates overall library media status."
    ::= { rasSubSystem 6 }

driveStatus OBJECT-TYPE
    SYNTAX              RASSubSystemStatus
    MAX-ACCESS          read-only
    STATUS              current
    DESCRIPTION         "Indicates overall library drive status."
    ::= { rasSubSystem 7 }

operatorActionRequest OBJECT-TYPE
SYNTAX       NoYes
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  "Indicates if operator intervention is required."
::= { rasSubSystem 8 }

-- Logical Library Information

logicalLibrary OBJECT IDENTIFIER ::= { smallTapeLibrarySystem 16 }

numLogicalLibraries OBJECT-TYPE
  SYNTAX       Integer32
  MAX-ACCESS   read-only
  STATUS       current
  DESCRIPTION  "Number of configured logical libraries (partitions)."
  ::= { logicalLibrary 1 }

logicalLibraryTable OBJECT-TYPE
  SYNTAX       SEQUENCE OF LogicalLibraryEntry
  MAX-ACCESS   not-accessible
  STATUS       current
  DESCRIPTION  "Logical library information table."
  ::= { logicalLibrary 2 }

logicalLibraryEntry OBJECT-TYPE
  SYNTAX       LogicalLibraryEntry
  MAX-ACCESS   not-accessible
  STATUS       current
Appendix A: MIBs Implemented

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DESCRIPTION "Partition information."
INDEX { logicalLibraryIndex }
::= { logicalLibraryTable 1 }

LogicalLibraryEntry ::= SEQUENCE {
    logicalLibraryIndex Integer32,
    logicalLibraryName DisplayString,
    logicalLibrarySerialNumber DisplayString,
    logicalLibraryModel DisplayString,
    logicalLibraryInterface InterfaceMethod,
    logicalLibraryMediaDomain DisplayString,
    logicalLibrarySupportedMediaTypes DisplayString,
    logicalLibraryOnlineMode OnlineMode,
    logicalLibraryReadyState LibraryReadyState,
    logicalLibraryAutoClean OnOff,
    logicalLibraryNumSlots Integer32,
    logicalLibraryNumIE Integer32,
    logicalLibraryNumTapeDrives Integer32,
    logicalLibraryStorageElemAddr Integer32,
    logicalLibraryIEElemAddr Integer32,
    logicalLibraryTapeDriveElemAddr Integer32,
    logicalLibraryChangerDeviceAddr Integer32
}

logicalLibraryIndex OBJECT-TYPE
SYNTAX Integer32 (1..18)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table entry index value where each unique partition
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::= { logicalLibraryEntry 1 }

logicalLibraryName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Logical library (partition) name."
::= { logicalLibraryEntry 2 }

logicalLibrarySerialNumber OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Logical library serial number."
::= { logicalLibraryEntry 3 }

logicalLibraryModel OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Logical library product identification."
::= { logicalLibraryEntry 4 }

logicalLibraryInterface OBJECT-TYPE
SYNTAX InterfaceMethod
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Interface method by which the logical library is

has a unique partition index."
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controlled.

::= { logicalLibraryEntry 5 }

logicalLibraryMediaDomain OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Supported Media Domains."
::= { logicalLibraryEntry 6 }

logicalLibrarySupportedMediaTypes OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Supported Media Types."
::= { logicalLibraryEntry 7 }

logicalLibraryOnlineMode OBJECT-TYPE
SYNTAX OnlineMode
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Logical library online status."
::= { logicalLibraryEntry 8 }

logicalLibraryReadyState OBJECT-TYPE
SYNTAX LibraryReadyState
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Logical library ready status."
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::= { logicalLibraryEntry 9 }

logicalLibraryAutoClean OBJECT-TYPE
  SYNTAX              OnOff
  MAX-ACCESS          read-only
  STATUS              current
  DESCRIPTION         "Logical library's automatic drive cleaning support configuration."
  ::= { logicalLibraryEntry 10 }

logicalLibraryNumSlots OBJECT-TYPE
  SYNTAX              Integer32
  MAX-ACCESS          read-only
  STATUS              current
  DESCRIPTION         "Number of configured logical library storage elements."
  ::= { logicalLibraryEntry 11 }

logicalLibraryNumIE OBJECT-TYPE
  SYNTAX              Integer32
  MAX-ACCESS          read-only
  STATUS              current
  DESCRIPTION         "Number of configured logical library Insert/Eject elements."
  ::= { logicalLibraryEntry 12 }

logicalLibraryNumTapeDrives OBJECT-TYPE
  SYNTAX              Integer32
  MAX-ACCESS          read-only
  STATUS              current
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DESCRIPTION         "Number of configured logical library tape drives."
 ::= { logicalLibraryEntry 13 }

logicalLibraryStorageElemAddr OBJECT-TYPE
 SYNTAX              Integer32
 MAX-ACCESS          read-only
 STATUS              current
 DESCRIPTION         "First logical library storage element address."
 ::= { logicalLibraryEntry 14 }

logicalLibraryIEElemAddr OBJECT-TYPE
 SYNTAX              Integer32
 MAX-ACCESS          read-only
 STATUS              current
 DESCRIPTION         "First logical library Insert/Eject element address."
 ::= { logicalLibraryEntry 15 }

logicalLibraryTapeDriveElemAddr OBJECT-TYPE
 SYNTAX              Integer32
 MAX-ACCESS          read-only
 STATUS              current
 DESCRIPTION         "First logical library data transfer element address."
 ::= { logicalLibraryEntry 16 }

logicalLibraryChangerDeviceAddr OBJECT-TYPE
 SYNTAX              Integer32
 MAX-ACCESS          read-only
 STATUS              current
 DESCRIPTION         "Logical library medium transport element address."
::= { logicalLibraryEntry 17 }

-- ************************
-- TRAP definitions
-- ************************
--
-- Notifications relating to the basic operation of the agent
-- These are generated by the net-snmp code, so we mirror them here so that it
-- has an equivalent for our enterprise OID.
--
tapeLibNotifyStart NOTIFICATION-TYPE
  STATUS current
  DESCRIPTION "An indication that the tape library agent has started
  running."
  ::= { smallTapeLibraryMIBNotifications 1 }

tapeLibNotifyShutdown NOTIFICATION-TYPE
  STATUS current
  DESCRIPTION "Notification that the tape library agent is in the process
  of being shut down."
  ::= { smallTapeLibraryMIBNotifications 2 }

tapeLibNotifyRestart NOTIFICATION-TYPE
  STATUS current
  DESCRIPTION "Notification that the tape library agent has been
  restarted.
  This indication does not imply any configuration change
  (unlike the standard coldStart or warmStart traps)."
  ::= { smallTapeLibraryMIBNotifications 3 }
Appendix A: MIBs Implemented
Downloading the SNMP MIB from the Library

startupSequenceCompleted NOTIFICATION-TYPE

OBJECTS  

   
plibrarySerialNumber,
libraryGlobalStatus

}  

STATUS  current  

DESCRIPTION  "Notification that the library has completed its boot
sequence. Status = %d."

--#TYPE "Startup Sequence Completed."
--#SUMMARY "The library %s has completed its bootup
sequence. Status = %d."

--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 101 }

shutdownSequenceInitiated NOTIFICATION-TYPE

OBJECTS  

   
plibrarySerialNumber,
libraryGlobalStatus

}  

STATUS  current  

DESCRIPTION  "Notification that the library has started its
shutdown sequence."

--#TYPE "Shutdown Sequence Initiated."
--#SUMMARY "The library %s has initiated a shutdown
sequence. Status = %d."

--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 102 }
-- CHP: Disabled this TRAP as Puma does not support this subsystem

phLibraryStateChange NOTIFICATION-TYPE

OBJECTS {
    librarySerialNumber,
    physicalLibraryState
}

STATUS obsolete
DESCRIPTION "Notification that the online state of the physical library changed."

--#TYPE "Change in Online state of the Physical Library."
--#SUMMARY "The library %s has changed its online state. State = %d."

--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 103 }

moduleDoorStatusChange NOTIFICATION-TYPE

OBJECTS {
    librarySerialNumber,
    aggregatedMainDoorStatus
}

STATUS current
DESCRIPTION "Notification that the access status of a magazine changed."

--#TYPE "Change in main chassis access status."
--#SUMMARY "Magazine access status of library %s has changed. Status = %d."

--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 104 }
ieDoorStatusChange NOTIFICATION-TYPE

OBJECTS {
    librarySerialNumber,
    aggregatedIEDoorStatus
}

STATUS current
DESCRIPTION "Notification that the status of an Insert/Eject area changed."
    --#TYPE "Change in IE door status."
    --#SUMMARY "An I/E area of library %s has changed status. Status = %d."
    --#ARGUMENTS {0,1}
    --#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 105 }

roboticsReady NOTIFICATION-TYPE

OBJECTS {
    librarySerialNumber
}

STATUS current
DESCRIPTION "Notification that the robot is ready."
    --#TYPE "Robotics changed state to ready."
    --#SUMMARY "The robot of library %s has changed state to Ready."
    --#ARGUMENTS {0}
    --#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 106 }

roboticsNotReady NOTIFICATION-TYPE
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OBJECTS {
    librarySerialNumber
}

STATUS current
DESCRIPTION "Notification that the robot is no longer ready."
    "Robotics changed state to not ready."
    "The robot of library %s has changed state to Not Ready."
    "Partition %s of library %s has changed status. Mode = %d, State = %d."
--#ARGUMENTS {0,1,2,3}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 107 }

logicalLibraryStatusChange NOTIFICATION-TYPE

OBJECTS {
    logicalLibraryName,
    librarySerialNumber,
    logicalLibraryReadyState,
    logicalLibraryOnlineMode
}

STATUS current
DESCRIPTION "Notification that the logical library mode or state changed."
    "Partition changed online state."
    "Partition %s of library %s has changed status. Mode = %d, State = %d."
--#ARGUMENTS {0,1,2,3}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 108 }

-- CHP: Disabled this TRAP as Puma does not support this subsystem
connectivityStatusChange NOTIFICATION-TYPE

OBJECTS {
    librarySerialNumber,
    connectivityStatus
}
STATUS obsolete
DESCRIPTION "Notification that the connectivity subsystem health status changed."
--#TYPE "RAS status of the Connectivity SubSystem Changed."
--#SUMMARY "The connectivity subsystem of library %s has changed the RAS status. Status = %d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 109 }

controlStatusChange NOTIFICATION-TYPE

OBJECTS {
    librarySerialNumber,
    controlStatus
}
STATUS current
DESCRIPTION "Notification that the library control subsystem health status changed."
--#TYPE "RAS status of the Library Control SubSystem Changed."
--#SUMMARY "The library control subsystem of library %s has changed the RAS status. Status = %d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 110 }
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-- CHP: Disabled this TRAP as Puma does not support this subsystem

coolingStatusChange NOTIFICATION-TYPE

OBJECTS {
  librarySerialNumber,
  coolingStatus
}
STATUS obsolete
DESCRIPTION "Notification that the cooling subsystem health status changed."
--#TYPE "RAS status of the Cooling SubSystem Changed."
--#SUMMARY "The cooling subsystem of library %s has changed the RAS status. Status = %d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 111 }

driveStatusChange NOTIFICATION-TYPE

OBJECTS {
  librarySerialNumber,
  phDriveRasStatus
}
STATUS current
DESCRIPTION "Notification that the drive subsystem health status changed."
--#TYPE "RAS status of the Drive SubSystem Changed."
--#SUMMARY "The drive subsystem of library %s has changed the RAS status. Status = %d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
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::= { smallTapeLibraryMIBNotifications 112 }

mediaStatusChange NOTIFICATION-TYPE

OBJECTS {

  librarySerialNumber,

  mediaStatus

}

STATUS current

DESCRIPTION "Notification that the media subsystem health status changed."

--#TYPE "RAS status of the Media SubSystem Changed."

--#SUMMARY "The media subsystem of library %s has changed the RAS status. Status = %d."

--#ARGUMENTS {0,1}

--#SEVERITY INFORMATIONAL

::= { smallTapeLibraryMIBNotifications 113 }

-- CHP: Disabled this TRAP as Puma does not support this subsystem

powerStatusChange NOTIFICATION-TYPE

OBJECTS {

  librarySerialNumber,

  powerStatus

}

STATUS obsolete

DESCRIPTION "Notification that the power subsystem health status changed."

--#TYPE "RAS status of the Power SubSystem Changed."

--#SUMMARY "The power subsystem of library %s has changed the RAS status. Status = %d."

--#ARGUMENTS {0,1}
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-- SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 114 }

-- CHP: Disabled this TRAP as Puma does not support this subsystem
roboticsStatusChange NOTIFICATION-TYPE
    OBJECTS {
        librarySerialNumber,
        roboticsStatus
    }
    STATUS              obsolete
    DESCRIPTION         "Notification that the robotics subsystem health status changed."
    --#TYPE "RAS status of the Robotics SubSystem Changed."
    --#SUMMARY "The robotics subsystem of library %s has changed the RAS status. Status = %d."
    --#ARGUMENTS {0,1}
    --#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 115 }

operatorInterventionRequired NOTIFICATION-TYPE
    OBJECTS {
        librarySerialNumber,
        libraryGlobalStatus
    }
    STATUS              current
    DESCRIPTION         "Notification that operator intervention is required."
    --#TYPE "Operator intervention is required."
    --#SUMMARY "Library %s requires operator intervention. Global RAS status = %d."
    --#ARGUMENTS {0,1}
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--#SEVERITY CRITICAL
::= { smallTapeLibraryMIBNotifications 116 }

driveOnlineStateChange NOTIFICATION-TYPE
OBJECTS {
    phDriveVendor,
    phDriveDeviceId,
    phDrivePhysicalSerialNumber,
    phDriveLocation,
    librarySerialNumber,
    phDriveOnlineState,
    phDriveReadinessState
}
STATUS current
DESCRIPTION "Notification that the drive online or readiness state changed."
--#TYPE "Drive status changed."
--#SUMMARY "Tape drive %s %s %s in location %s of library %s has changed state. Mode = %d, State = %d."
--#ARGUMENTS {0,1,2,3,4,5,6}
--#SEVERITY INFORMATIONAL
::= { smallTapeLibraryMIBNotifications 117 }

--
-- Conformance information
--
smallTapeLibraryMIBConformance OBJECT IDENTIFIER ::= { smallTapeLibraryMIB 4 }
smallTapeLibraryMIBCompliances OBJECT IDENTIFIER ::= {
    smallTapeLibraryMIBConformance 1 }
smallTapeLibraryMIBGroups      OBJECT IDENTIFIER ::= {
}
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smallTapeLibraryMIBConformance 2 }

--
-- Compliance statements
--
smallTapeLibraryMIBCompliance MODULE-COMPLIANCE
  STATUS  current
  DESCRIPTION
  "The compliance statement for entities that implement the Small Tape
  Library MIB"
  MODULE  -- this module
  MANDATORY-GROUPS {
    smallTapeLibraryMIBGroup,
    smallTapeLibraryMIBNotifGroup
  }
  ::= { smallTapeLibraryMIBCompliances 1 }

--
-- Units of conformance
--
smallTapeLibraryMIBGroup OBJECT-GROUP
OBJECTS {
  libraryIpAddress,
  librarySNMPAgentDescription,
  libraryName,
  libraryVendor,
  librarySerialNumber,
  libraryDescription,
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libraryModel,
libraryGlobalStatus,
libraryURL,
libraryProductName,
libraryFirmwareVersion,

physicalLibraryState,
aggregatedMainDoorStatus,
aggregatedIEDoorStatus,

libraryControl,

numStorageSlots,
numCleanSlots,
numIESlots,

numPhDrives,
overallPhDriveOnlineStatus,
overallPhDriveReadinessStatus,

phDriveLocation,
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phDriveOnlineState,
phDriveReadinessState,
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```
logicalLibraryNumIE,
logicalLibraryNumTapeDrives,
logicalLibraryStorageElemAddr,
logicalLibraryIEIElemAddr,
logicalLibraryTapeDriveElemAddr,
logicalLibraryChangerDeviceAddr
}
STATUS current
DESCRIPTION
"A collection of objects providing Small Tape Library Management information."
::= { smallTapeLibraryMIBGroups 1 }

smallTapeLibraryMIBNotifGroup NOTIFICATION-GROUP
NOTIFICATIONS {
  tapeLibNotifyStart,
tapeLibNotifyShutdown,
tapeLibNotifyRestart,
startupSequenceCompleted,
shutdownSequenceInitiated,
phLibrayStateChange,
moduleDoorStatusChange,
ieDoorStatusChange,
roboticsReady,
roboticsNotReady,
logicalLibraryStatusChange,
connectivityStatusChange,
controlStatusChange,
coolingStatusChange,
```
driveStatusChange,
mediaStatusChange,
powerStatusChange,
roboticsStatusChange,
operatorInterventionRequired,
driveOnlineStateChange
}
STATUS current
DESCRIPTION
  "A collection of objects providing Small Tape Library Notification
capabilities."
 ::= { smallTapeLibraryMIBGroups 2 }

END

--
-- END OF QUANTUM-SMALL-TAPE-LIBRARY-MIB
--
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