Quantum

Basic SNMP Reference Guide

Quantum Scalar *i*40 and Scalar *i*80

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Preface

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.

Document Number	Document Title
6-66545-xx	Scalar i40 and Scalar i80 User's Guide
6-66546-xx	Scalar i40 and Scalar i80 Quick Start Guide
6-00618-xx	System, Safety, and Regulatory Information
6-66547-xx	Scalar i40 and Scalar i80 Release Notes
6-00423-xx	Quantum Intelligent Libraries SCSI Reference Guide
6-01317-xx	Quantum Intelligent Libraries SMI-S Reference Guide

Quantum company contacts are listed below.

Quantum Corporate Headquarters

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

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Quantum Home Page

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Getting More Information or Help

The following resources are available for general product support:

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

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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).

SNMPv3

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.

SNMP TRAPs

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**.

3 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 2
SNMP 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

TRAP ID	TRAP	Description
1	tapeLibNotifyStart	Starting Indicates that the tape library agent has started running.
2	shutdownSequenceInitiated	Shutdown Sequence Initiated Notification that the library has started its shutdown sequence.
3	tapeLibNotifyRestart	Restarting Notification that the tape library agent has been restarted. This indication does not imply any configuration change (unlike the standard coldStart or warmStart TRAPs).
101	startupSequenceCompleted	Startup Sequence Completed Indicates that the library has completed its boot sequence.
104	moduleDoorStatusChange	Module Door Status Change Indicates that a library storage magazine has been unlocked, removed, or inserted.
105	ieDoorStatusChange	I/E Door Status Change Indicates that an I/E station has been opened or closed.
106	roboticsReady	Robotics Ready 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.

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.

TRAP ID	TRAP	Description
107	roboticsNotReady	Robotics Not Ready Indicates that the library's robotics system has transitioned from a "ready" to "not ready" state. TRAPs 106 and 107 may occur as part of a startup or shutdown procedure.
108	logicalLibraryStatusChange	Logical Library State or Mode Change Indicates that a logical library, also known as a partition, has changed its ready state, and/or has been taken online or offline.
109	connectivityStatusChange	**Note:** This TRAP is currently not supported. Connectivity Status Changes are reported via TRAP 110, Control Status Change.
110	controlStatusChange	RAS Status Change: Control[a] Indicates that a library control problem has been detected. 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.
111	coolingStatusChange	**Note:** This TRAP is currently not supported. Cooling Status Changes are reported via TRAP 110, Control Status Change.
112	drivesStatusChange	RAS Status Change: Drives[a] 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.

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.

TRAP ID	TRAP	Description
113	mediaStatusChange	RAS Status Change: Media[a] 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[a] 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.

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.

Appendix A

MIBs Implemented

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

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) }
```

```
   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 }
```

```
   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 }


--
-- Library Interface Information
--
   libraryInterfaces OBJECT IDENTIFIER ::= { physicalLibrary 4 }


   libraryControl OBJECT-TYPE
      SYNTAX              InterfaceMethod
      MAX-ACCESS          read-only
      STATUS              current
      DESCRIPTION         "Library's communication control path connection."
      ::= { libraryInterfaces 1  }


--
-- Library Cartridge Slot Information
--
   libraryCartridgeSlots OBJECT IDENTIFIER ::= { physicalLibrary 5 }


   numStorageSlots OBJECT-TYPE
      SYNTAX              Integer32
      MAX-ACCESS          read-only
      STATUS              current
      DESCRIPTION         "Number of overall library storage slots."
```

```
      ::= { 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,
   phDriveLoads                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
```

```
    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
```

```
    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
```

```
      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 }


--
```

```
-- 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
```

```
      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
```

```
    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
```

```
                        has a unique partition index."
    ::= { 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 logocal library is
```

```
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."
```

```
      ::= { 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
```

```
    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 }
```

```
   startupSequenceCompleted NOTIFICATION-TYPE
      OBJECTS           {
         librarySerialNumber,
         libraryGlobalStatus
      }
      STATUS              current
     DESCRIPTION        "Notification that the library has completed its boot
sequence."
                         --#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           {
         librarySerialNumber,
         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
   phLibrayStateChange 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
```

```
      OBJECTS      {
         librarySerialNumber
      }
      STATUS              current
      DESCRIPTION         "Notification that the robot is no longer ready."
                            --#TYPE "Robotics changed state to not ready."
                          --#SUMMARY "The robot of library %s has changed state
to Not Ready."
                            --#ARGUMENTS {0}
                            --#SEVERITY INFORMATIONAL
      ::= { smallTapeLibraryMIBNotifications 107 }

   logicalLibraryStatusChange NOTIFICATION-TYPE
      OBJECTS {
         logicalLibraryName,
         librarySerialNumber,
         logicalLibraryReadyState,
         logicalLibraryOnlineMode
      }
      STATUS              current
      DESCRIPTION         "Notification that the logical library mode or state
changed."
                           --#TYPE "Partition changed online state."
                           --#SUMMARY "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 Connectivy 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 }
```

```
-- 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 sbsystem 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
```

```
      ::= { 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}
```

```
                        --#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}
```

```
                          --#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 ::= {
```

```
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,
```

```
    libraryModel,
    libraryGlobalStatus,
    libraryURL,
    libraryProductName,
    libraryFirmwareVersion,

    physicalLibraryState,
    aggregatedMainDoorStatus,
    aggregatedIEDoorStatus,

    libraryControl,

    numStorageSlots,
    numCleanSlots,
    numIESlots,

    numPhDrives,
    overallPhDriveOnlineStatus,
    overallPhDriveReadinessStatus,

    phDriveLocation,
    phDriveDeviceId,
    phDriveVendor,
    phDriveType,
    phDriveInterfaceType,
    phDriveAddress,
    phDrivePhysicalSerialNumber,
    phDriveLogicalSerialNumber,
    phDriveFirmwareVersion,
```

```
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connectivityStatus,
roboticsStatus,
mediaStatus,
driveStatus,
operatorActionRequest,

numLogicalLibraries,

logicalLibraryName,
logicalLibrarySerialNumber,
logicalLibraryModel,
logicalLibraryInterface,
logicalLibraryMediaDomain,
logicalLibrarySupportedMediaTypes,
logicalLibraryOnlineMode,
logicalLibraryReadyState,
logicalLibraryAutoClean,
logicalLibraryNumSlots,
```

```
   logicalLibraryNumIE,
   logicalLibraryNumTapeDrives,
   logicalLibraryStorageElemAddr,
   logicalLibraryIEElemAddr,
   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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