

# Scalar Intelligent Libraries SNMP Reference Guide

This guide is for library customers, partners, third party management software developers, and other parties interested in integrating the Scalar i3 and i6 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 Quantum Scalar i3 & i6 libraries using SNMP. Using SNMP, you can monitor the library from a network management application rather than—or in addition to—the library's Reliability, Availability, and Serviceability (RAS) ticket system. For information see the Scalar i3 & i6 Documentation Centers.

The Scalar i3 & i6 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 technical support. For information on integrating MIBs with an SNMP management application, contact your network management application vendor.

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# Description

The Simple Network Management Protocol (SNMP) is a light-weight protocol designed for remote management and monitoring of infrastructure devices. The Scalar i3 & i6 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.

## SNMP Functionality Available to Remote Applications

The Scalar i3 & i6 libraries support standard SNMP functionality, including GET queries and unicast traps (which can be sent only to registered recipients), that enables you to monitor library status from a remote application. SET commands are currently not enabled on either library.

Specific library SNMP characteristics include:

- Supports SNMP v1, v2c and v3. The timeout for all SNMP requests to the library must be at 10 seconds or greater (command line parameter-t).
- Supports SNMP v1 traps as defined by RFC 1157.
- SMIv2 compliance only
- Usage of port 161 for GET queries
- Default community read/trap strings: publicCmtyStr (see SNMP Community Strings on page 5)
- Trap Registration interface in the library's remote 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 libraries using traps and GET queries. Using the information contained in this guide, library administrators can configure their framework application to generate alerts to receive library SNMP information.

By default, most SNMP information is returned as an integer value (library partition names, however, are returned as string values). You can, however, configure the framework application to return status information as a string value, which provides a description of the status.

### SNMPv3

Although Quantum Scalar i3 & i6 Libraries 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 WebGUI or via the respective RESTful Web Services configuration method. For more information, see the Scalar i3 & i6 Documentation Centers.

## 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.

Scalar i3 & i6 libraries support SNMP v1 traps as defined by RFC 1157.

The library is set to report SNMP traps using v1.

**To receive traps, you must perform two steps:**

1. Configure your framework application to collect traps from the libraries.
2. Using the library's **SNMP Trap Registrations** feature, register the host's IP address, transport protocol, and UDP port number.


Registration informs the libraries to send traps to the host.

For additional details about registering a host with the libraries, refer to the Scalar i3 & i6 Documentation Centers.

## 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. The timeout for all SNMP requests to the library must be at 10 seconds or greater (command line parameter-t).

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 **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 library 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 on the library). 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.

To configure the SNMP community string:

1. Login to the WebGUI.
2. Go to **System > SNMP**.
3. Change the community string value.
4. Click **Apply**.
5. Click **Close**.

## SNMP Authentication Traps

- SNMP authentication traps occur in a number of conditions. By default, this option is disabled. 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.

## SNMP TRAP Notifications

To configure SNMP trap notifications:

1. Login to the WebGUI.
2. Go to **Notifications > Add**. From the Type drop-down, select **Trap**.
3. Fill out the necessary fields.
4. Click **Apply**.
5. Click **Close**.

# 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 modules or partitions.

Traps defined in the Quantum Midrange Tape Library Management Information Base (MIB) are issued with enterprise OID “Quantum Midrange Tape Library MIB”, which resolves to 1.3.6.1.4.1.3697.1.10.15.

**Table 1:** Status Traps

Trap ID	Trap	Description
1	<b>tapeLibNotifyStart</b>	<b>Starting</b> Notification that the tape library agent has started.
2	<b>tapeLibNotifyShutdown</b>	<b>Shutting Down</b> Notification that the tape library agent is being shut down.
3	<b>tapeLibNotifyRestart</b>	<b>Restarting</b> Notification that the tape library agent has been restarted.
4	<b>tapeLibNotifyTest</b>	<b>Testing</b> Notification of a Test TRAP.
101	<b>startupSequenceCompleted</b>	<b>Startup Sequence Completed</b> Notification that the library completed its boot sequence.
102	<b>shutdownSequenceInitiated</b>	<b>Shutdown Sequence Initiated</b> Notification that the library started its shutdown sequence.
103	<b>phLibraryStateChange</b>	<b>Change in Library State</b> Notification of a physical library state change.

Trap ID	Trap	Description
104	<b>moduleMagazineStatusChange</b>	<b>Module Magazine Status Change</b> Notification of overall magazine access status change.
105	<b>ieAreaStatusChange</b>	<b>I/E Area Status Change</b> Notification of I/E area magazine access status change.
106	<b>libraryConfigurationChange</b>	<b>Logical Library Mode Change</b> Notification of logical library mode change.
107	<b>logicalLibraryModeChange</b>	<b>Logical Library Mode Change</b> Notification of logical library mode change.
108	<b>driveModeChange</b>	<b>Drive Mode Change</b> Notification of drive mode change.
109	<b>driveStateChange</b>	<b>Drive State Change</b> Notification of drive state change.
110	<b>libraryRASStatusChange</b>	<b>RAS Status Change: Library<sup>a</sup></b> Notification of library RAS subsystem health status change.
111	<b>driveRASStatusChange</b>	<b>RAS Status Change: Drives<sup>a</sup></b> Notification of drive RAS subsystem health status change.
112	<b>mediaRASStatusChange</b>	<b>RAS Status Change: Media<sup>a</sup></b> Notification of media RAS subsystem health status change.

<sup>a</sup> The library issues a trap whenever the aggregate state of one of the RAS status groups changes. Listening for these traps (rather than querying for them) is the preferred method of monitoring the health of the library.

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## MIBs Implemented

The library requires five Management Information Bases (MIBs): the Quantum Tape Library MIB and four standard SNMP MIBs.

To obtain the latest MIB from your Scalar i3 or i6 library:

1. Login to the WebGUI.
2. Go to **System > MIB Retrieval**.
3. Select the **Save** radio button to download the MIB to your computer, or

4. Select the **Send** radio button and enter email address(es) to send the MIB via email.
5. Click **Apply**.
6. Click **Close**.

## Quantum Library MIB Content

```
-- *****
-- QUANTUM-MIDRANGE-TAPE-LIBRARY-MIB: Scalar i3-i6 Tape Library Specific MIB
--
-- $Date: 2016-09-15 00:00:00 (Thu, 15 September 2016) $
--
-- Copyright (c) 2016 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-MIDRANGE-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;
--
-- Mid-range Tape Library OID definitions
--
mrTapeLibraryMIB MODULE-IDENTITY
```

```

LAST-UPDATED "201609150000Z"
ORGANIZATION "Quantum Corporation, Tape Automation"
CONTACT-INFO "Postal: Quantum Corporation
8560 Upland Drive
Englewood, CO. 80112
E-mail: support@quantum.com"
DESCRIPTION "Quantum Scalar i3-i6 tape library product information."
REVISION "201609150000Z"
DESCRIPTION "Current revision last updated on September 15, 2016."
 ::= { library 15 }
quantum OBJECT IDENTIFIER ::= { enterprises 3697 }
storage OBJECT IDENTIFIER ::= { quantum 1 }
library OBJECT IDENTIFIER ::= { storage 10 }

mrTapeLibrary OBJECT IDENTIFIER ::= { mrTapeLibraryMIB 5 }
rasSubSystem OBJECT IDENTIFIER ::= { mrTapeLibrary 50 }
physicalLibrary OBJECT IDENTIFIER ::= { mrTapeLibrary 60 }
logicalLibrary OBJECT IDENTIFIER ::= { mrTapeLibrary 70 }
physicalDrive OBJECT IDENTIFIER ::= { mrTapeLibrary 80 }
libraryPowerSupply OBJECT IDENTIFIER ::= { mrTapeLibrary 100 }
libraryVoltageSensor OBJECT IDENTIFIER ::= { mrTapeLibrary 110 }
libraryEnvironmentalSensor OBJECT IDENTIFIER ::= { mrTapeLibrary 120 }
--
-- Textual conventions
--
-- Boolean ::= TEXTUAL-CONVENTION
-- STATUS current
-- DESCRIPTION "Represents a general boolean type value."
-- SYNTAX INTEGER { false(0), true(1) }
DisabledEnabled ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Represents a general boolean type value."
SYNTAX INTEGER { disabled(0), enabled(1) }

LibraryState ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Robotics Ready Status."
SYNTAX INTEGER { unknown(0), ready(1), notReady(2), becomingReady(3) }

DeviceMode ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Device mode."
SYNTAX INTEGER { unknown(0), online(1), offline(2) }
DeviceState ::= TEXTUAL-CONVENTION
STATUS current

```



```

DESCRIPTION "Device state."
SYNTAX INTEGER { unknown(0), variedOn(1), variedOff(2),
notReady(3), notInstalled(4) }
VoltageType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Voltage type."
SYNTAX INTEGER { unknown(0), ac(1), dc(2) }

SensorStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Sensor Status."
SYNTAX INTEGER { unknown(0), normal(1), warning(2), critical(3) }
PSStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Power Supply Status."
SYNTAX INTEGER { unknown(0), good(1), failed(2), missing(3) }
InterfaceMethod ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Library control path interface method."
SYNTAX INTEGER { unknown(0), noInterface(1), viaControlPathDrive(2),
viaConnectionBlade(3), viaControllerBlade(4) }
InterfaceType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Device interface type."
SYNTAX INTEGER { unknown(0), scsi(1), fc(2), sas(3), iscsi(4) }
ControlPathType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Library partition control path provider type."
SYNTAX INTEGER { unknown(0), none(1), cpActive(2), cpStandby(3) }
RedundancyConfiguration ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Partition or drive redundancy configuration."
SYNTAX INTEGER { unknown(0), noRedundancy(1), multiPath(2),
basicPathFailover(3), advancedPathFailover(4) }
PartitionType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Partition type."
SYNTAX INTEGER { unknown(0), standard(1), libraryManaged(2),
libraryManagedEDLM(3), libraryManagedAMP(4),
libraryManagedVault(5) }
LibraryMagazineStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Overall library magazine status."
SYNTAX INTEGER { unknown(0), allPresent(1), notAllPresent(2)}
IEAreaStatus ::= TEXTUAL-CONVENTION

```

```

STATUS current
DESCRIPTION "Import Export magazine access status."
SYNTAX INTEGER { unknown(0), insertedClosed(1), ejectedOpen(2) }
CleaningStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Device cleaning status."
SYNTAX INTEGER { unknown(0), notNeeded(1), recommended(2), required(3)
}
RASSubSystemStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Device health status."
SYNTAX INTEGER { unknown(0), redFailure(1), orangeDegraded(2),
yellowWarning(3), blueAttention(4),
greenInformation(5), greenGood(6)}
--
-- Ticket severity for TRAP notification when implemtned in future release
--
-- TicketSeverity ::= TEXTUAL-CONVENTION
-- STATUS current
-- DESCRIPTION "Ticket severity definitions."
-- SYNTAX INTEGER { unknown(0), critical(1), degraded(2), warning(3),
-- attention(4), informational(5) }
--
-- Overall Tape Library parameters
--
libraryIpAddress OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "IP address of the library controller."
::= { mrTapeLibrary 1 }
libraryURL OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "URL of the library's management application."
::= { mrTapeLibrary 2 }
libraryName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Host name (DNS alias) of the tape library."
::= { mrTapeLibrary 3 }
libraryVendor OBJECT-TYPE
SYNTAX DisplayString

```

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library vendor identification."
 ::= { mrTapeLibrary 4 }
libraryModel OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library model information, i.e. 'Scalar i3' or 'Scalar i6'"
 ::= { mrTapeLibrary 5 }
libraryDescription OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Description of the library, i.e. 'Two module Scalar i3'"
 ::= { mrTapeLibrary 6 }
libraryProductName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Product ID/name of the library, i.e. 'Scalar i3-i6'"
 ::= { mrTapeLibrary 7 }
librarySerialNumber OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library serial number."
 ::= { mrTapeLibrary 8 }
libraryFirmwareVersion OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library firmware version."
 ::= { mrTapeLibrary 9 }
libraryGlobalStatus OBJECT-TYPE
SYNTAX RASubSystemStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Current RAS status of the entire library."
 ::= { mrTapeLibrary 10 }
--
-- Library RAS Status
--
libraryRASStatus OBJECT-TYPE
SYNTAX RASubSystemStatus

```

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION "Indicates overall library control subsystem status."
 ::= { rasSubSystem 1 }
driveRASStatus OBJECT-TYPE
SYNTAX RASSubSystemStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Indicates overall library drive status."
 ::= { rasSubSystem 2 }
mediaRASStatus OBJECT-TYPE
SYNTAX RASSubSystemStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Indicates overall library media status."
 ::= { rasSubSystem 3 }
--
-- Physical Library Information
--
physicalLibraryState OBJECT-TYPE
SYNTAX LibraryState
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical library's overall robotics readiness status."
 ::= { physicalLibrary 1 }
aggregatedMagazineStatus OBJECT-TYPE
SYNTAX LibraryMagazineStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical library's overall magazine presence status."
 ::= { physicalLibrary 2 }
aggregatedIEAreaStatus OBJECT-TYPE
SYNTAX IEAreaStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical library's overall insert/eject area access status."
 ::= { physicalLibrary 3 }
--
-- Library Cartridge Slot Information
--
libraryCartridgeSlots OBJECT IDENTIFIER ::= { physicalLibrary 4 }
libraryStorageSlotCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current

```

```

DESCRIPTION "Number of overall library storage slots."
 ::= { libraryCartridgeSlots 1 }
libraryCleanSlotCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Number of storage slots configured as cleaning slots."
 ::= { libraryCartridgeSlots 2 }
libraryIESlotCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Number of configured library insert/eject slots."
 ::= { libraryCartridgeSlots 3 }
--
-- Library Media Information
--
libraryMedia OBJECT IDENTIFIER ::= { physicalLibrary 5 }
libraryMediaCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total number of media minus any configured cleaning tapes."
 ::= { libraryMedia 1 }
libraryCleaningTapeCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total number of library configured cleaning tapes."
 ::= { libraryMedia 2 }
--
-- Logical Library Information
--
libraryPartitionCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Number of configured logical library 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,
logicalLibraryType PartitionType,
logicalLibraryInterface InterfaceMethod,
logicalLibraryControl RedundancyConfiguration,
logicalLibraryMode DeviceMode,
logicalLibraryState LibraryState,
logicalLibraryAutoClean DisabledEnabled,
logicalLibraryNumSlots Integer32,
logicalLibraryNumIE Integer32,
logicalLibraryNumTapeDrives Integer32,
logicalLibraryStorageElemAddr Integer32,
logicalLibraryIEElemAddr Integer32,
logicalLibraryTapeDriveElemAddr Integer32,
logicalLibraryChangerDeviceAddr Integer32
}
logicalLibraryIndex OBJECT-TYPE
SYNTAX Integer32 (0..31)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table entry to identify unique partition index."
 ::= { logicalLibraryEntry 1 }
logicalLibraryName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition identification name."
 ::= { logicalLibraryEntry 2 }
logicalLibrarySerialNumber OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition serial number."
 ::= { logicalLibraryEntry 3 }
logicalLibraryModel OBJECT-TYPE

```

```

SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition product identification."
 ::= { logicalLibraryEntry 4 }

logicalLibraryType OBJECT-TYPE
SYNTAX PartitionType
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition configuration type."
 ::= { logicalLibraryEntry 5 }
logicalLibraryInterface OBJECT-TYPE
SYNTAX InterfaceMethod
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition control interface method."
 ::= { logicalLibraryEntry 6 }
logicalLibraryControl OBJECT-TYPE
SYNTAX RedundancyConfiguration
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition control path configuration."
 ::= { logicalLibraryEntry 7 }
logicalLibraryMode OBJECT-TYPE
SYNTAX DeviceMode
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition online/offline mode."
 ::= { logicalLibraryEntry 8 }
logicalLibraryState OBJECT-TYPE
SYNTAX LibraryState
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition ready/not-ready status."
 ::= { logicalLibraryEntry 9 }
logicalLibraryAutoClean OBJECT-TYPE
SYNTAX DisabledEnabled
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Partition's automatic drive cleaning support configuration."
 ::= { logicalLibraryEntry 10 }
logicalLibraryNumSlots OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only

```

```

STATUS current
DESCRIPTION "Number of configured partition storage elements."
 ::= { logicalLibraryEntry 11 }
logicalLibraryNumIE OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Number of configured partition Insert/Eject elements."
 ::= { logicalLibraryEntry 12 }
logicalLibraryNumTapeDrives OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Number of configured data transfer elements (tape drives)."
 ::= { logicalLibraryEntry 13 }
logicalLibraryStorageElemAddr OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "First partition storage SCSI element address."
 ::= { logicalLibraryEntry 14 }
logicalLibraryIEElemAddr OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "First partition Insert/Eject SCSI element address."
 ::= { logicalLibraryEntry 15 }
logicalLibraryTapeDriveElemAddr OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "First partition data transfer SCSI element address."
 ::= { logicalLibraryEntry 16 }
logicalLibraryChangerDeviceAddr OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "First partition medium transport SCSI element address."
 ::= { logicalLibraryEntry 17 }
--
-- Drive Information
--
libraryPhDriveCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only

```



```

STATUS current
DESCRIPTION "Number of installed tape drives."
 ::= { physicalDrive 1 }
physicalDriveTable OBJECT-TYPE
SYNTAX SEQUENCE OF PhysicalDriveEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "A table of all tape drive configured in the library."
 ::= { physicalDrive 2 }
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,
  phDriveMode DeviceMode,
  phDriveState DeviceState,
  phDriveRasStatus RASSubSystemStatus,
  phDriveLoads Integer32,
  phDriveCleaningStatus CleaningStatus,
  phDriveLogicalLibraryName DisplayString,
  phDriveControlPathDrive ControlPathType,
  phDriveDataPathConfiguration RedundancyConfiguration
}
phDriveIndex OBJECT-TYPE
SYNTAX Integer32 (0..47)
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 }
phDriveMode OBJECT-TYPE
SYNTAX DeviceMode
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Tape drive online status."
 ::= { physicalDriveEntry 11 }
phDriveState OBJECT-TYPE
SYNTAX DeviceState
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) owning the drive."
 ::= { physicalDriveEntry 16 }
phDriveControlPathDrive OBJECT-TYPE
SYNTAX ControlPathType

```

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION "Indication whether drive is hosting a library control path."
 ::= { physicalDriveEntry 17 }
phDriveDataPathConfiguration OBJECT-TYPE
SYNTAX RedundancyConfiguration
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Drive data path port configuration."
 ::= { physicalDriveEntry 18 }
--
-- Library Power Supply Information
--
libraryPSCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Number of installed power supplies."
 ::= { libraryPowerSupply 1 }
libraryPowerSupplyTable OBJECT-TYPE
SYNTAX SEQUENCE OF LibraryPowerSupplyEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table of library power supplies."
 ::= { libraryPowerSupply 2 }
libraryPowerSupplyEntry OBJECT-TYPE
SYNTAX LibraryPowerSupplyEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table entry for each configured power supply."
INDEX { libraryPSIndex }
 ::= { libraryPowerSupplyTable 1 }
LibraryPowerSupplyEntry ::= SEQUENCE {
libraryPSIndex Integer32,
libraryPSName DisplayString,
libraryPSLocation DisplayString,
libraryPSType VoltageType,
libraryPSWattage Integer32,
libraryPSStatus PSStatus,
libraryPSPowerConsumption Integer32
}
libraryPSIndex OBJECT-TYPE
SYNTAX Integer32 (0..31)
MAX-ACCESS not-accessible
STATUS current

```

DESCRIPTION "Table entry to identify unique power supply index."

::= { libraryPowerSupplyEntry 1 }

libraryPSName OBJECT-TYPE

SYNTAX DisplayString

MAX-ACCESS read-only

STATUS current

DESCRIPTION "Display name of this power supply."

::= { libraryPowerSupplyEntry 2 }

libraryPSLocation OBJECT-TYPE

SYNTAX DisplayString

MAX-ACCESS read-only

STATUS current

DESCRIPTION "Power supply location coordinate."

::= { libraryPowerSupplyEntry 3 }

libraryPSType OBJECT-TYPE

SYNTAX VoltageType

MAX-ACCESS read-only

STATUS current

DESCRIPTION "Power supply type of AC or DC"

::= { libraryPowerSupplyEntry 4 }

libraryPSWattage OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION "Power output rating in units of Watts."

::= { libraryPowerSupplyEntry 5 }

libraryPSStatus OBJECT-TYPE

SYNTAX PSStatus

MAX-ACCESS read-only

STATUS current

DESCRIPTION "Status of the P/S."

::= { libraryPowerSupplyEntry 7 }

libraryPSPowerConsumption OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION "Power consumption in units of Watts."

::= { libraryPowerSupplyEntry 8 }

--

-- Library Voltage Sensor information

--

libraryVoltageSensorCount OBJECT-TYPE

SYNTAX Integer32

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library voltage sensor count."
 ::= { libraryVoltageSensor 1 }
libraryVoltageSensorTable OBJECT-TYPE
SYNTAX SEQUENCE OF LibraryVoltageSensorEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table of library voltage sensors."
 ::= { libraryVoltageSensor 2 }
libraryVoltageSensorEntry OBJECT-TYPE
SYNTAX LibraryVoltageSensorEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table entry for each configured voltage sensors."
INDEX { libraryVoltageSensorIndex }
 ::= { libraryVoltageSensorTable 1 }
LibraryVoltageSensorEntry ::= SEQUENCE {
libraryVoltageSensorIndex Integer32,
libraryVoltageSensorName DisplayString,
libraryVoltageSensorLocation DisplayString,
libraryVoltageSensorType VoltageType,
libraryVoltageSensorStatus SensorStatus,
libraryVoltageSensorValue Integer32
}
libraryVoltageSensorIndex OBJECT-TYPE
SYNTAX Integer32 (0..15)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table entry voltage sensor index."
 ::= { libraryVoltageSensorEntry 1 }
libraryVoltageSensorName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Display name of this voltage sensor."
 ::= { libraryVoltageSensorEntry 2 }
libraryVoltageSensorLocation OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical location of the voltage sensor."
 ::= { libraryVoltageSensorEntry 3 }
libraryVoltageSensorType OBJECT-TYPE
SYNTAX VoltageType

```

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION "Voltage sensor type of AC or DC."
 ::= { libraryVoltageSensorEntry 4 }
libraryVoltageSensorStatus OBJECT-TYPE
SYNTAX SensorStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Voltage sensor status."
 ::= { libraryVoltageSensorEntry 5 }

libraryVoltageSensorValue OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Voltage sensor value in milli-Volts."
 ::= { libraryVoltageSensorEntry 6 }
--
-- Library Environmental Sensor information
--
-- Humidity
--
libraryHumidity OBJECT IDENTIFIER ::= { libraryEnvironmentalSensor 1 }
libraryHumiditySensorCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library humidity sensor count."
 ::= { libraryHumidity 1 }
libraryHumiditySensorTable OBJECT-TYPE
SYNTAX SEQUENCE OF LibraryHumiditySensorEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table of library humidity sensors."
 ::= { libraryHumidity 2 }
libraryHumiditySensorEntry OBJECT-TYPE
SYNTAX LibraryHumiditySensorEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table entry for each configured humidity sensor."
INDEX { libraryHumiditySensorIndex }
 ::= { libraryHumiditySensorTable 1 }
LibraryHumiditySensorEntry ::= SEQUENCE {
libraryHumiditySensorIndex Integer32,
libraryHumiditySensorName DisplayString,

```

```

libraryHumiditySensorLocation DisplayString,
libraryHumiditySensorStatus SensorStatus,
libraryHumiditySensorValue Integer32
}

```

```

libraryHumiditySensorIndex OBJECT-TYPE
SYNTAX Integer32 (0..1)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table index of this humidity sensor."
 ::= { libraryHumiditySensorEntry 1 }
libraryHumiditySensorName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Display name of this humidity sensor."
 ::= { libraryHumiditySensorEntry 2 }
libraryHumiditySensorLocation OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical location of this humidity sensor."
 ::= { libraryHumiditySensorEntry 3 }
libraryHumiditySensorStatus OBJECT-TYPE
SYNTAX SensorStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Humidity sensor status in normal, warning or critical range."
 ::= { libraryHumiditySensorEntry 4 }
libraryHumiditySensorValue OBJECT-TYPE
SYNTAX Integer32 (0..100)
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library humidity sensor data in %."
 ::= { libraryHumiditySensorEntry 5 }
--
-- Temperature
--
libraryTemperature OBJECT IDENTIFIER ::= { libraryEnvironmentalSensor 2 }
libraryTemperatureSensorCount OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Library temperature sensor count."
 ::= { libraryTemperature 1 }

```



```

libraryTemperatureSensorTable OBJECT-TYPE
SYNTAX SEQUENCE OF LibraryTemperatureSensorEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table of library temperature sensors."
 ::= { libraryTemperature 2 }
libraryTemperatureSensorEntry OBJECT-TYPE
SYNTAX LibraryTemperatureSensorEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table entry for each configured temperature sensor."
INDEX { libraryTemperatureSensorIndex }
 ::= { libraryTemperatureSensorTable 1 }
LibraryTemperatureSensorEntry ::= SEQUENCE {
libraryTemperatureSensorIndex Integer32,
libraryTemperatureSensorName DisplayString,
libraryTemperatureSensorLocation DisplayString,
libraryTemperatureSensorStatus SensorStatus,
libraryTemperatureSensorValue Integer32
}

libraryTemperatureSensorIndex OBJECT-TYPE
SYNTAX Integer32 (0..3)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Table index of this temperature sensor."
 ::= { libraryTemperatureSensorEntry 1 }
libraryTemperatureSensorName OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Display name of this temperature sensor."
 ::= { libraryTemperatureSensorEntry 2 }
libraryTemperatureSensorLocation OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Physical location of this temperature sensor."
 ::= { libraryTemperatureSensorEntry 3 }
libraryTemperatureSensorStatus OBJECT-TYPE
SYNTAX SensorStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Temperature sensor status in normal, warning or critical range."
 ::= { libraryTemperatureSensorEntry 4 }

```

```

libraryTemperatureSensorValue OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The temperature sensor reading in degrees Celsius."
 ::= { libraryTemperatureSensorEntry 5 }

-- *****
-- TRAP definitions
-- *****
--
-- Notifications relating to the basic operation of the agent
-- These are generated by the net-snmp code, and mirrored here to have
-- an equivalent for our enterprise OID.
--
tapeLibNotifyStart NOTIFICATION-TYPE
STATUS current
DESCRIPTION "Notification that the tape library agent has started."
 ::= { mrTapeLibraryMIBNotifications 1 }

tapeLibNotifyShutdown NOTIFICATION-TYPE
STATUS current
DESCRIPTION "Notification that the tape library agent is being shut down."
 ::= { mrTapeLibraryMIBNotifications 2 }
tapeLibNotifyRestart NOTIFICATION-TYPE
STATUS current
DESCRIPTION "Notification that the tape library agent has been restarted."
 ::= { mrTapeLibraryMIBNotifications 3 }
tapeLibNotifyTest NOTIFICATION-TYPE
STATUS current
DESCRIPTION "Notification of a Test TRAP."
 ::= { mrTapeLibraryMIBNotifications 4 }

startupSequenceCompleted NOTIFICATION-TYPE
OBJECTS {
librarySerialNumber,
libraryGlobalStatus
}
STATUS current
DESCRIPTION "Notification that the library completed its boot sequence."
--#TYPE "Startup Sequence Completed."
--#SUMMARY "The library %s completed its boot sequence. Status = %d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL

```

```

 ::= { mrTapeLibraryMIBNotifications 101 }
 shutdownSequenceInitiated NOTIFICATION-TYPE
 OBJECTS {
  librarySerialNumber,
  libraryGlobalStatus
 }
 STATUS current
 DESCRIPTION "Notification that the library started its shutdown sequence."
 --#TYPE "Shutdown Sequence Initiated."
 --#SUMMARY "The library %s initiated a shutdown sequence. Status = %d."
 --#ARGUMENTS {0,1}
 --#SEVERITY INFORMATIONAL
 ::= { mrTapeLibraryMIBNotifications 102 }
 phLibrayStateChange NOTIFICATION-TYPE
 OBJECTS {
  librarySerialNumber,
  physicalLibraryState
 }
 STATUS current
 DESCRIPTION "Notification of a physical library state change."
 --#TYPE "Change in readiness state of the physical library."
 --#SUMMARY "The library %s has changed its ready state. State = %d."
 --#ARGUMENTS {0,1}
 --#SEVERITY INFORMATIONAL
 ::= { mrTapeLibraryMIBNotifications 103 }

 moduleMagazineStatusChange NOTIFICATION-TYPE
 OBJECTS {
  librarySerialNumber,
  aggregatedMagazineStatus
 }
 STATUS current
 DESCRIPTION "Notification of overall magazine access status change."
 --#TYPE "Change in library magazine access status."
 --#SUMMARY "Magazine access status of library %s changed. Status = %d."
 --#ARGUMENTS {0,1}
 --#SEVERITY INFORMATIONAL
 ::= { mrTapeLibraryMIBNotifications 104 }
 ieAreaStatusChange NOTIFICATION-TYPE
 OBJECTS {
  librarySerialNumber,
  aggregatedIEAreaStatus
 }
 STATUS current
 DESCRIPTION "Notification of I/E area magazine access status change."

```

```

--#TYPE "Change in IE area access status."
--#SUMMARY "An I/E area of library %s changed status. Status = %d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { mrTapeLibraryMIBNotifications 105 }
libraryConfigurationChange NOTIFICATION-TYPE
OBJECTS {
librarySerialNumber
}
STATUS current
DESCRIPTION "Notification of library configuration change."
--#TYPE "Library configuration change."
--#SUMMARY "The configuration of library %s changed."
--#ARGUMENTS {0}
--#SEVERITY INFORMATIONAL
::= { mrTapeLibraryMIBNotifications 106 }

logicalLibraryModeChange NOTIFICATION-TYPE
OBJECTS {
logicalLibraryName,
librarySerialNumber,
logicalLibraryMode
}
STATUS current
DESCRIPTION "Notification of logical library mode change."
--#TYPE "Change in online/offline mode of a logical library."
--#SUMMARY "Partition %s of library %s has changed its mode. Mode = %d."
--#ARGUMENTS {0,1,2}
--#SEVERITY INFORMATIONAL
::= { mrTapeLibraryMIBNotifications 107 }
driveModeChange NOTIFICATION-TYPE
OBJECTS {
phDriveVendor,
phDriveDeviceId,
phDrivePhysicalSerialNumber,
phDriveLocation,
librarySerialNumber,
phDriveMode,
phDriveState
}
STATUS current
DESCRIPTION "Notification of drive mode change."
--#TYPE "Drive changed online/offline mode."
--#SUMMARY "Tape drive %s %s with serial number %s at location %s of library %s has
changed mode. Mode = %d, State = %d."

```

```

--#ARGUMENTS {0,1,2,3,4,5,6}
--#SEVERITY INFORMATIONAL
 ::= { mrTapeLibraryMIBNotifications 108 }
driveStateChange NOTIFICATION-TYPE
OBJECTS {
  phDriveVendor,
  phDriveDeviceId,
  phDrivePhysicalSerialNumber,
  phDriveLocation,
  librarySerialNumber,
  phDriveMode,
  phDriveState
}
STATUS current
DESCRIPTION "Notification of drive state change."
--#TYPE "Drive changed ready state."
--#SUMMARY "Tape drive %s %s with serial number %s at location %s of library %s has
changed state. Mode = %d, State = %d."
--#ARGUMENTS {0,1,2,3,4,5,6}
--#SEVERITY INFORMATIONAL
 ::= { mrTapeLibraryMIBNotifications 109 }
libraryRASStatusChange NOTIFICATION-TYPE
OBJECTS {
  librarySerialNumber,
  libraryRASStatus
}
STATUS current
DESCRIPTION "Notification of library RAS subsystem health status change."
--#TYPE "RAS status of the Library Control SubSystem changed."
--#SUMMARY "The library control subsystem of library %s changed RAS status. Status =
%d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
 ::= { mrTapeLibraryMIBNotifications 110 }

driveRASStatusChange NOTIFICATION-TYPE
OBJECTS {
  librarySerialNumber,
  driveRASStatus
}
STATUS current
DESCRIPTION "Notification of drive RAS subsystem health status change."
--#TYPE "RAS status of the Drive SubSystem changed."
--#SUMMARY "The drive subsystem of library %s changed RAS status. Status = %d."
--#ARGUMENTS {0,1}

```

```

--#SEVERITY INFORMATIONAL
::= { mrTapeLibraryMIBNotifications 111 }

mediaRASStatusChange NOTIFICATION-TYPE
OBJECTS {
librarySerialNumber,
mediaRASStatus
}
STATUS current
DESCRIPTION "Notification of media RAS subsystem health status change."
--#TYPE "RAS status of the Media SubSystem Changed."
--#SUMMARY "The media subsystem of library %s changed RAS status. Status = %d."
--#ARGUMENTS {0,1}
--#SEVERITY INFORMATIONAL
::= { mrTapeLibraryMIBNotifications 112 }
--
-- CHP: To be defined in future release
--
-- rasTicketNotification NOTIFICATION-TYPE
-- OBJECTS {
-- librarySerialNumber,
-- future.....
-- }
-- STATUS current
-- DESCRIPTION "Notification of event ticket occurrence."
-- #TYPE "New event ticket opened."
-- #SUMMARY "Library %s opened a new event ticket %s."
-- #ARGUMENTS {0,1}
-- #SEVERITY INFORMATIONAL
-- ::= { mrTapeLibraryMIBNotifications 113 }
--
--
-- Conformance information
--
mrTapeLibraryMIBConformance OBJECT IDENTIFIER ::= { mrTapeLibraryMIB 2 }
mrTapeLibraryMIBCompliances OBJECT IDENTIFIER ::= { mrTapeLibraryMIBConformance 1 }
mrTapeLibraryMIBGroups OBJECT IDENTIFIER ::= { mrTapeLibraryMIBConformance 2 }
--
-- Compliance statements
--
mrTapeLibraryMIBCompliance MODULE-COMPLIANCE
STATUS current
DESCRIPTION "The compliance statement for the Mid-Range Tape Library MIB."
MODULE -- this module
MANDATORY-GROUPS { mrTapeLibraryMIBGroup, mrTapeLibraryMIBNotifGroup }

```

```

 ::= { mrTapeLibraryMIBCompliances 1 }
 --
 -- The following two OBJECT IDENTIFIERS are used
 -- to define SNMPv2 Notifications that are
 -- backward compatible with SNMPv1 Traps.
 --
 mrTapeLibraryMIBNotificationPrefix OBJECT IDENTIFIER ::= { mrTapeLibraryMIB 1 }
 mrTapeLibraryMIBNotifications OBJECT IDENTIFIER ::= {
 mrTapeLibraryMIBNotificationPrefix 0 }
 --
 -- Units of conformance
 --
 mrTapeLibraryMIBGroup OBJECT-GROUP
 OBJECTS {
 libraryIpAddress
 ,libraryURL
 ,libraryName
 ,libraryVendor
 ,libraryModel
 ,libraryDescription
 ,libraryProductName
 ,librarySerialNumber
 ,libraryFirmwareVersion
 ,libraryGlobalStatus

 ,libraryRASStatus
 ,driveRASStatus
 ,mediaRASStatus
 ,physicalLibraryState
 ,aggregatedMagazineStatus
 ,aggregatedIEAreaStatus
 ,libraryStorageSlotCount
 ,libraryCleanSlotCount
 ,libraryIESlotCount

 ,libraryMediaCount
 ,libraryCleaningTapeCount
 ,libraryPartitionCount
 ,logicalLibraryName
 ,logicalLibrarySerialNumber
 ,logicalLibraryModel
 ,logicalLibraryType
 ,logicalLibraryInterface
 ,logicalLibraryControl
 ,logicalLibraryMode

```

```
,logicalLibraryState
,logicalLibraryAutoClean
,logicalLibraryNumSlots
,logicalLibraryNumIE
,logicalLibraryNumTapeDrives
,logicalLibraryStorageElemAddr
,logicalLibraryIEElemAddr
,logicalLibraryTapeDriveElemAddr
,logicalLibraryChangerDeviceAddr
,libraryPhDriveCount
,phDriveLocation
,phDriveDeviceId
,phDriveVendor
,phDriveType
,phDriveInterfaceType
,phDriveAddress
,phDrivePhysicalSerialNumber
,phDriveLogicalSerialNumber
,phDriveFirmwareVersion
,phDriveMode
,phDriveState
,phDriveRasStatus
,phDriveLoads
,phDriveCleaningStatus
,phDriveLogicalLibraryName
,phDriveControlPathDrive
,phDriveDataPathConfiguration
,libraryPSCount
,libraryPSName
,libraryPSLocation
,libraryPSType
,libraryPSWattage
,libraryPSStatus
,libraryPSPowerConsumption

,libraryVoltageSensorCount
,libraryVoltageSensorName
,libraryVoltageSensorLocation
,libraryVoltageSensorType
,libraryVoltageSensorStatus
,libraryVoltageSensorValue

,libraryHumiditySensorCount
,libraryHumiditySensorName
,libraryHumiditySensorLocation
```



```

,libraryHumiditySensorStatus
,libraryHumiditySensorValue
,libraryTemperatureSensorCount
,libraryTemperatureSensorName
,libraryTemperatureSensorLocation
,libraryTemperatureSensorStatus
,libraryTemperatureSensorValue
}
STATUS current
DESCRIPTION "A collection of Mid-Range Tape Library Management information."
::= { mrTapeLibraryMIBGroups 1 }
mrTapeLibraryMIBNotifGroup NOTIFICATION-GROUP
NOTIFICATIONS {
tapeLibNotifyStart
,tapeLibNotifyShutdown
,tapeLibNotifyRestart
,tapeLibNotifyTest
,startupSequenceCompleted
,shutdownSequenceInitiated
,phLibrayStateChange
,moduleMagazineStatusChange
,ieAreaStatusChange
,libraryConfigurationChange
,logicalLibraryModeChange
,driveModeChange
,driveStateChange
,libraryRASStatusChange
,driveRASStatusChange
,mediaRASStatusChange
-- ,rasTicketNotification
}
STATUS current
DESCRIPTION "A collection of notification capabilities."
::= { mrTapeLibraryMIBGroups 2 }
END
--
-- END OF QUANTUM-MIDRANGE-TAPE-LIBRARY-MIB
--

```

# Contacting Quantum

## Contacts

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

<https://www.quantum.com/aboutus/contactus/index.aspx>

For further assistance, or for training opportunities, contact the Quantum Customer Support Center:

Region	Support Contact
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