

RMU

The ADIC logo consists of the lowercase letters "adic" in a white, sans-serif font, centered within a solid red rectangular background.

---

# **ADIC Remote Management Unit (RMU)**

## **SNMP Reference for the RMU**

**Document Number: 6-00275-01 Rev A**

## **Copyright Notice**

© *Copyright* ADIC 2001

The information contained in this document is subject to change without notice.

This document contains proprietary information which is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced, or translated to another language without prior written consent of ADIC.

ADIC shall not be liable for errors contained herein or for incidental or consequential damages (including lost profits) in connection with the furnishing, performance or use of this material whether based on warranty, contract, or other legal theory.

All trademarks within this document are the property of their respective owners.

## **Copyright Notice (Europe)**

© *Copyright* ADIC Europe 2001

All rights reserved. No part of this document may be copied or reproduced in any form or by any means, without prior written permission of ADIC Europe, ZAC des Basses Auges, 1 rue Alfred de Vigny, 78112 Fourqueux, FRANCE.

ADIC Europe assumes no responsibility for any errors that may appear in this document, and retains the right to make changes to these specifications and descriptions at any time, without notice.

This publication may describe designs for which patents are pending, or have been granted. By publishing this information, ADIC Europe conveys no license under any patent or any other right.

ADIC Europe makes no representation or warranty with respect to the contents of this document and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Further, ADIC Europe reserves the right to revise or change this publication without obligation on the part of ADIC Europe to notify any person or organization of such revision or change.

Every effort has been made to acknowledge trademarks and their owners. Trademarked names are used solely for identification or exemplary purposes, any omission is unintentional.

ADIC and ADIC Europe are trademarks of Advanced Digital Information Corporation.

ADIC  
Tel.: +1 303-705-3900  
Fax: +1-303-792-2465  
ATAC: 1-800-827-3822  
www.adic.com

ADIC Europe  
ZAC des Basses Auges  
1, rue Alfred de Vigny  
78112 Fourqueux, France  
Tel.: +33.1.3087.5300  
Fax: +33.1.3087.5301

ADIC Germany Beteiligungs GmbH, KG  
Eschenstraße 3  
D-89558 Böhmenkirch, Germany  
Tel:+00.800.9999.3822

Published: 28 May 2002

Printed in the USA

**ADIC • 11431 WILLOWS ROAD, NE • REDMOND, WASHINGTON, USA • 1-800-336-1233**  
**ADIC • 8560 UPLAND DRIVE • ENGLEWOOD, COLORADO, USA • 1-800-827-3822**  
**ADIC • 10 BROWN ROAD • ITHACA, NEW YORK, USA • 1-607-266-4000**

---

## Contents

---

# SNMP Information for the ADIC Remote Management Unit (RMU)

Introduction .....	1-5
How to Use This Document .....	1-5
SNMP Traps .....	1-5
ADIC Library Trap .....	1-5
HP TapeAlert Traps .....	1-6
Drive TapeAlert Traps .....	1-6
Library TapeAlert Traps .....	1-7
Integrating RMU MIBs with ISV Application .....	1-7
IBM Tivoli NetView .....	1-7
Web Console MIB Loader (SNMP V1/V2) .....	1-8
Unload MIB .....	1-8
Load MIB .....	1-8
HP OpenView .....	1-8
CA Unicenter TNG .....	1-8
Syntax .....	1-9

---

## Index



# SNMP Information for the ADIC Remote Management Unit (RMU)

## Introduction

This document outlines Simple Network Management Protocol (SNMP) information for the ADIC RMU. Focus is primarily placed on SNMP traps that can be collected, monitored, and used to proactively manage attached libraries. The ADIC RMU currently supports the Scalar 100, Scalar 1000, and Scalar 10K Libraries. The RMU uses custom Management Information Bases (MIBs). These MIBs provide the ability to integrate library event and notification capabilities with framework applications (i.e. Tivoli, CA Unicenter, etc.).

## How to Use This Document

This document should be used as a reference by administrators and customer engineers who use the ADIC RMU. SNMP trap information is broken into two sections.

- ADIC traps corresponding to ADICLIBMIB-v2.MIB
- HP traps corresponding to TapeAlert2.1.MIB

The sections contain detailed descriptions of the traps and a list of bind data. Administrators can use this information to decide what events they should monitor to determine if their environment is entering a warning or alert condition.

## SNMP Traps

The following sections lists all SNMP traps currently provided by the ADIC RMU. The list begins with the ADIC library traps and ends with the HP TapeAlert traps.

### ADIC Library Trap

Trap information is broken into the following categories.

- Trap Name: Name of the trap from within ADICLIBMIB-v2.MIB.
- Description: Description of the event that generates the trap.
- Trap ID: Trap ID number as noted within the MIB.
- Bind Data: EventVars - MIB Variables that bind to the trap.

See [Library Trap Information](#) on page 1-6.



*NOTE: Standard Trap Parameters include TrapSequenceNumber, Time, Producer, EventClass, EventCode, Seq, EventVars.*

**Table 1** Library Trap Information

Trap Name	Description	Trap ID	Bind Data
Status Change	Library status changed	1	ADICV2_DISPLAYNAME ADICV2_GLOBALSTATUS ADICV2_PREVGLOBALSTATUS
DOOR CHANGE	Status of Library's door changed	2	ADICV2_DISPLAYNAME ADICV2_MOVERDOORSTATE
MAILBOX CHANGE	Status of Library's mailbox changed	3	ADICV2_DISPLAYNAME ADICV2_MOVERMAILBOXSTATE
STARTUP	Library start	4	ADICV2_DISPLAYNAME ADICV2_STARTUPSTATE
SHUTDOWN	Library shutdown	5	ADICV2_DISPLAYNAME ADICV2_SHUTDOWNSTATE
ERROR	Error detected at Library	6	ADICV2_DISPLAYNAME ADICV2_ERRORCODE ADICV2_ERRORMODIFIER
SAC	Generic Asynch Error detected at Library	7	ADICV2_DISPLAYNAME ADICV2_SERVICEACTIONCODE ADICV2_SERVICEACTIONCODE_HEX

## HP TapeAlert Traps

There are two sources of HP TapeAlert traps<sup>1</sup>.

- Associated tape drives
- Library

### Drive TapeAlert Traps



*NOTE: The RMU does not directly report the Drive TapeAlert traps.*

1. For more information, refer to: [<http://www.t10.org/drafts.htm>] and follow the links to SCSI-3 Stream Commands (SSC), SCSI Stream Commands - 2 (SSC-2), and SCSI Medium Changer Commands - 2 (SMC-2).

Drive TapeAlert traps use trap types 1 through 64. Each trap type corresponds to the bit number in the drive\_error.tape\_alert\_flags array of a LOGSENSE SCSI command response.

Each trap, except traps 4, 7, 15, and 19, binds 3 MIB variables:

- hbaNumber
- hbaChannel
- driveScsiID

Traps 4, 7, 15, and 19 bind 4 MIB variables:

- hbaNumber
- hbaChannel
- driveScsiID
- currentMedia

### Library TapeAlert Traps

Library TapeAlerts use trap types starting from 255. Each trap type corresponds to the bit number plus 255 in the drive\_error.tape\_alert\_flags array of a LOGSENSE SCSI command response.

Each trap binds 3 MIB Variable<sup>1</sup>:

- hbaNumber
- hbaChannel
- driveScsiIDs

## Integrating RMU MIBs with ISV Application

This section describes the process of loading the ADIC MIB into the following SNMP management.

- Tivoli NetView
- HP OpenView
- CA Unicenter TNG



*NOTE: ADIC strongly recommends to load both ADIC and TapeAlert MIBs.*

### IBM Tivoli NetView

---

1. Library TapeAlert traps fill this variable with a value of "-1".

## Web Console MIB Loader (SNMP V1/V2)<sup>1</sup>

The new SNMP V1/V2 Web Console MIB Loader is located in the native console under **Tools>Web Console MIB Loader**. This replaces the old native V2 MIB Loader.

The initial MIB Loader window displays a list of the loaded MIBs. Use this tool to load MIBs for the Web Console MIB Browser.

### Unload MIB

To unload a MIB, select it from the list of loaded MIBs and select Unload. An Unloading MIB window is displayed. A progress bar shows the file processing status. If no parsing errors are encountered, the Message pane displays informational messages and prompts you to accept the changes by clicking OK.

### Load MIB

To load a new MIB, select Load. Find the files to load in the Look In dropdown list, or enter the path/filenames directly into the File Name field. With the preferred MIBs selected, select Load. A Loading MIBs window displays, a progress bar shows “file processing” status, and the Messages pane provides information messages. If no parsing errors are encountered, the Message pane prompts you to accept the changes by clicking OK.

## HP OpenView

In Network Node Manager (NNM)<sup>2</sup>, Select the **Options>Load/Unload MIBs>SNMP...** menu item. The MIB Load/Unload dialog box appears, which lists the currently loaded MIBs.

At the MIB Load/Unload dialog, click the Load button. The Load MIB from File dialog box appears, listing the files in the default directory. Select the ADIC MIB file from the scroll bar list then click OK. The MIB is automatically loaded. The MIB Load/Unload dialog reappears, enabling you to load additional MIBs one at a time.

If there were no problems loading the MIB, the ADIC MIB will be included in the Loaded MIBs scroll bar list which allows the use of the **Monitor>MIB Values>Browse MIB>SNMP...** operation. Click on the Close button to exit this operation.

## CA Unicenter TNG

A utility called *ldmib* loads the MIB definition associated with an agent into sadmin Store.<sup>3</sup>

---

1. For more information, refer to [[http://www.tivoli.com/support/public/Prodman/puglic\\_manuals/td/netview/G111-0879-00/en\\_US/PDF/readme.pdf](http://www.tivoli.com/support/public/Prodman/puglic_manuals/td/netview/G111-0879-00/en_US/PDF/readme.pdf)]

2. For more information, refer to: [<http://support.3com.com/infodeli/tools/netmgt/temwin/temnt97/091288gs/04-usin1.htm#32249>].

3. For more information, refer to: [[http://support.ca.com/tng22manuals/caref\\_all/cmdref0000325.html](http://support.ca.com/tng22manuals/caref_all/cmdref0000325.html)]



## Syntax

You can type *ldmib* at the shell prompt, or submit the LDMIB batch job without the PARM parameter to see a list of options for this utility.

Example: `ldmib [-h hostName|ipAddr] -n mibName -m mibFile [-i|-r]` where:

`-h hostName|ipAddr`: specifies the name or IP address of the system on which the common services are running. Default: local system

`-n mibName`: specifies the symbolic name of a node defined in the MIB definition file specified by *mibFile*. This symbolic name becomes the top Object Identifier (OID) of the MIB.



*NOTE: this parameter is not required if the first line of the MIB contains the following line:*

```
--MibName = mibName.
```

`-m mibFile [-i|-r]`: specifies the name of the text file that holds the ASN.1 encoded definitions for the MIB attributes you want to load into sadmin Store. The `-i` parameter generates an include file containing C #define statements for every object name in the specified MIB definition file. The comment lines in the include file also document the fully qualified OID of each MIB object. The `-r` parameter removes the specified MIB definitions from sadmin Store.

This OID is optionally the top-level node defined in the file, however it can be any symbolic name that appears to the left of an ASN.1 expression that is included in the MIB definition file:

Example: `mibName ::= OBJECT IDENTIFIER {xxxx n}`

If the specified attribute is not the top-level node defined in the file, the resulting MIB loaded into sadmin Store includes only those branches of the tree below the specified node.

Also, please note the following requirements:



*Note: The mibName attribute is case sensitive and must be specified exactly as it appears in the text file.*

*The MIB definitions in the file must be in RFC 1212 or RFC 1215 format.*

*The file name must end with the .TXT extension.*

*The include file has the same name as the MIB definition file with the extension.h instead of .TXT.*



## Index

<b>- A -</b>	
ADIC Library Traps	1-5
MIB variable binding	1-7
Type 255	1-7
ADICLIBMIB-v2.MIB	1-5
<b>- H -</b>	
HP Drive Traps	1-5
MIB variable binding	1-7
MIB variables binding	1-6
Types 1 .. 64	1-7
<b>- I -</b>	
ISV Application	1-7
CA Unicenter TNG	
MIB Loading/Unloading	1-8, 1-9
HP OpenView	
MIB Loading/Unloading	1-8
IBM Tivoli	
MIB Loading/Unloading	1-7, 1-8
<b>- L -</b>	
Loading/Unloading ADIC Library MIB	1-7
Loading/Unloading HP Drive MIB	1-7
LOGSENSE	1-7
<b>- M -</b>	
Management Information Bases	
ADICLIBMIB-v2.MIB	1-5
Tapealrt2.1.MIB	1-5
MIB	
ADICLIBMIBv2.MIB	1-5
Tapealrt2.1.MIB	1-5
<b>- S -</b>	
SCSI Command	
LOGSENSE	1-7
Simple Network Management Protocol	1-5
SNMP	1-5
Traps	1-5, 1-6
Standard Trap Parameters	
EventClass	1-6
EventVars	1-6
Producer	1-6
Seq	1-6
Time	1-6
TrapSequenceNumber	1-6
<b>- T -</b>	
Tapealrt2.1.MIB	1-5
Traps	1-5
ADIC Library	1-5
Bind Data	1-5
Description	1-5
Trap ID	1-5
Trap Name	1-5
HP Drive	1-5, 1-6
Standard Trap Parameters	
EventClass	1-6
EventVars	1-6
Producer	1-6
Seq	1-6
Time	1-6
TrapSequenceNumber	1-6

