

ALTIBASE® HDB™ Tools & Utilities

SNMP Agent Guide

Release 6.5.1

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SNMP Agent Guide

Release 6.5.1

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Preface

About This Manual

This manual discusses the Simple Network Management Protocol (SNMP) and `ALTIBASE-MIB` components.

Target Users

This manual has been prepared for the following ALTIBASE HDB users:

- Database administrators
- Technical support staff

This manual assumes that you have the following:

- A working knowledge of your computer, your operating system, and the utilities that your operating system provides.
- Some experience working with relational databases or exposure to database concepts.
- Some experience with computer programming.
- Some experience with database server administration, operating system administration or network administration.

Software Dependencies

This manual was written under the assumption that ALTIBASE HDB version 6.5.1 or above is being used as a database server.

How This Manual is Structured

This manual covers the following topics:

- [Chapter1: Introduction to SNMP](#)
The chapter provides an introduction to the Simple Network Management Protocol (SNMP) and explains the components of `ALTIBASE-MIB`.
- [Chapter2: Installing the SNMP Agent](#)
This chapter explains how to install the SNMP agent and configure ALTIBASE HDB to use SNMP.
- [Chapter3: How to Use SNMP](#)
- [Chapter4: Checking and Changing Properties](#)
This chapter discusses how to check and change ALTIBASE HDB properties with `altiPropertyTable`.
- [Chapter5: Viewing the ALTIBASE HDB Status](#)

This chapter discusses how to view the ALTIBASE HDB status using SNMP.

- [Chapter 6: Traps](#)

This chapter discusses OIDs sent to the manager using traps when significant events occur in ALTIBASE HDB.

- [Appendix A. ALTIBASE-MIB](#)
- [Appendix B. Troubleshooting](#)

Documentation Conventions

This section offers documentation conventions as follows. They make it easier to gather information from Altibase manuals.

Sample Code Conventions

The code examples explain SQL statements, stored procedures, iSQL statements, and other command line syntax.

The following table describes the printing conventions used in the code examples.

Rule	Meaning	Example
[]	Indicates an optional item.	VARCHAR [(size)] [[FIXED] VARIABLE]
{ }	Indicates a mandatory field for which one or more items must be selected.	{ ENABLE DISABLE COMPILE }
	A delimiter between optional or mandatory arguments.	{ ENABLE DISABLE COMPILE } [ENABLE DISABLE COMPILE]
. . . .	Indicates that the previous argument is repeated, or that sample code has been omitted.	iSQL> select e_lastname from employees; E_LASTNAME ----- Moon
Other Symbols	Symbols other than those shown above are part of the actual code.	EXEC :p1 := 1; acc NUMBER(11,2);
Italics	Statement elements in italics indicate variables and special values specified by the user.	SELECT * FROM table_name; CONNECT userID/password;

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Rule	Meaning	Example
Lower Case words	Indicate program elements set by the user, such as table names, column names, file names, etc.	<code>SELECT e_lastname FROM employ-ees;</code>
Upper Case words	Keywords and all elements provided by the system appear in upper case.	<code>DESC SYSTEM_.SYS_INDEX_;</code>

Related Documents

For more detailed information, please refer to the following documents:

- Administrator's Manual
- Error Message Reference
- Getting Started Guide
- Installation Guide
- iSQL User's Manual
- ODBC Reference
- Precompiler User's Manual
- Replication Manual
- SQL Reference
- Utilities Manual

Online Manuals

Online versions of our manuals (PDF or HTML) are available from Altibase's Customer Support site (<http://support.altibase.com/>).

Altibase Welcomes Your Opinions

Please feel free to send us your comments and suggestions regarding this manual. Your comments and suggestions are important to us, and may be used to improve future versions of the manual. When you send your feedback, please make sure to include the following information:

- The name and version of the manual you are using
- Your comments and suggestions regarding the manual
- Your full name, address, and phone number

In addition to suggestions, this address may also be used to report any errors or omissions discov-

ered in the manual, which we will address promptly.

If you need immediate assistance with technical issues, please contact Altibase's Customer Support site (<http://support.altibase.com/>).

We always appreciate your comments and suggestions.

About This Manual

1 Introduction to SNMP

The chapter provides an introduction to the Simple Network Management Protocol (SNMP) and explains the components of `ALTI`BASE-MIB.

1.1 What is SNMP

1.1.1 Overview of SNMP

The Simple Network Management Protocol (SNMP) is a protocol that sends the network server status and the process status to the manager.

Prior to the advent of SNMP, the Internet Control Message Protocol (ICMP) provided brief information, such as whether each network host was functioning properly and if so, its response time and so on. Ping is probably one of the most useful programs that use ICMP.

As use of the internet became widespread, the number of network hosts increased and this led to a complex network environment. Since it became impossible to efficiently manage network using only ICMP, research was conducted on alternative protocols and this led to the development of SGMP, HEMS, CMIP/SMIS and so on. Among these, SNMP (an improvement to SGMP) became the standard protocol for network management.

SNMP is an improvement to SGMP and accepts the MIB definition for HEMS.

1.1.2 Management Information Base (MIB) Structure and OID

SNMP manages a Management Information Base (MIB) which is the categorized information of objects to be managed. System information, network usage, network interface information are examples of such objects. The SNMP agent monitors traffic and stores statistical information in its MIB. Variables defined by the MIB can be changed with a Network Management System (NMS) or by the SNMP manager.

The MIB structure is shown below. MIB objects are structured as a tree for easy management.

Data is requested as below:

```
ISO.org.dod.internet.mgmt.mib-2.system.sysDescr
```

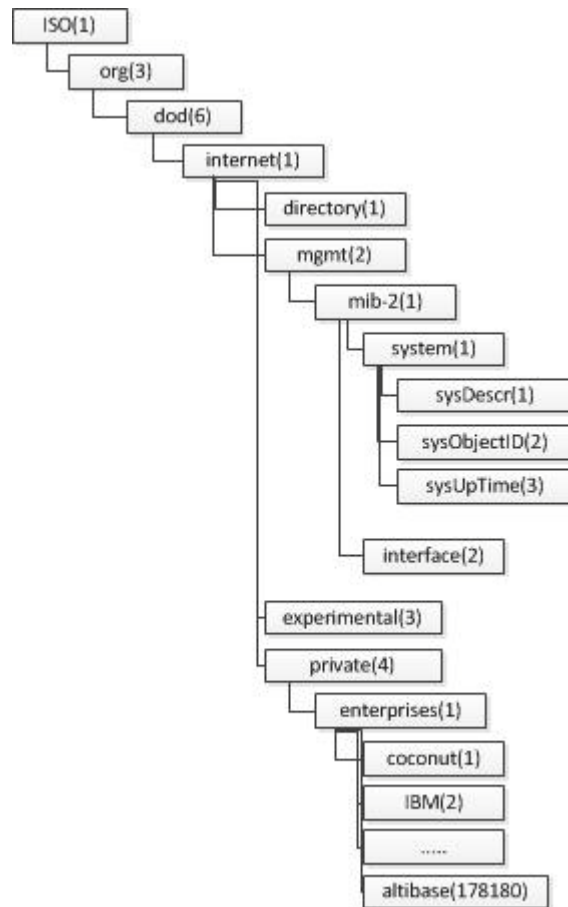
However, this request is converted to numbers when requesting for data as below:

```
1.3.6.1.2.1.1.1
```

Each MIB can be represented in numbers. These numbers are called OIDs.

Internet Assigned Number Authority (IANA) maintained MIBs are acknowledged as the standard. IANA OIDs are necessary to implement a standard MIB module. This way, users can use multiple MIBs without having to worry about duplicates.

Figure 1-1 Typical MIB Structure



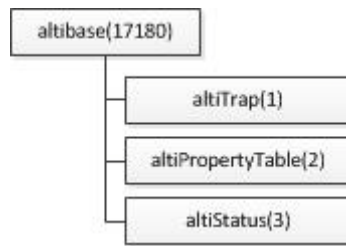
1.1.3 ALTIBASE-MIB

Altibase has registered an entity and uses the IANA OID altibase (17180) under enterprises (1)¹.

1. An MIB has a hierarchical structure and can be extended when necessary. The user may wish to add an MIB for a product only available for use in the office or a product that controls the network within a limited network area. In this case, the user can create his or her own MIB and define it under private (4) and enterprises (1).

1.1 What is SNMP

Figure 1-2 ALTIBASE-MIB



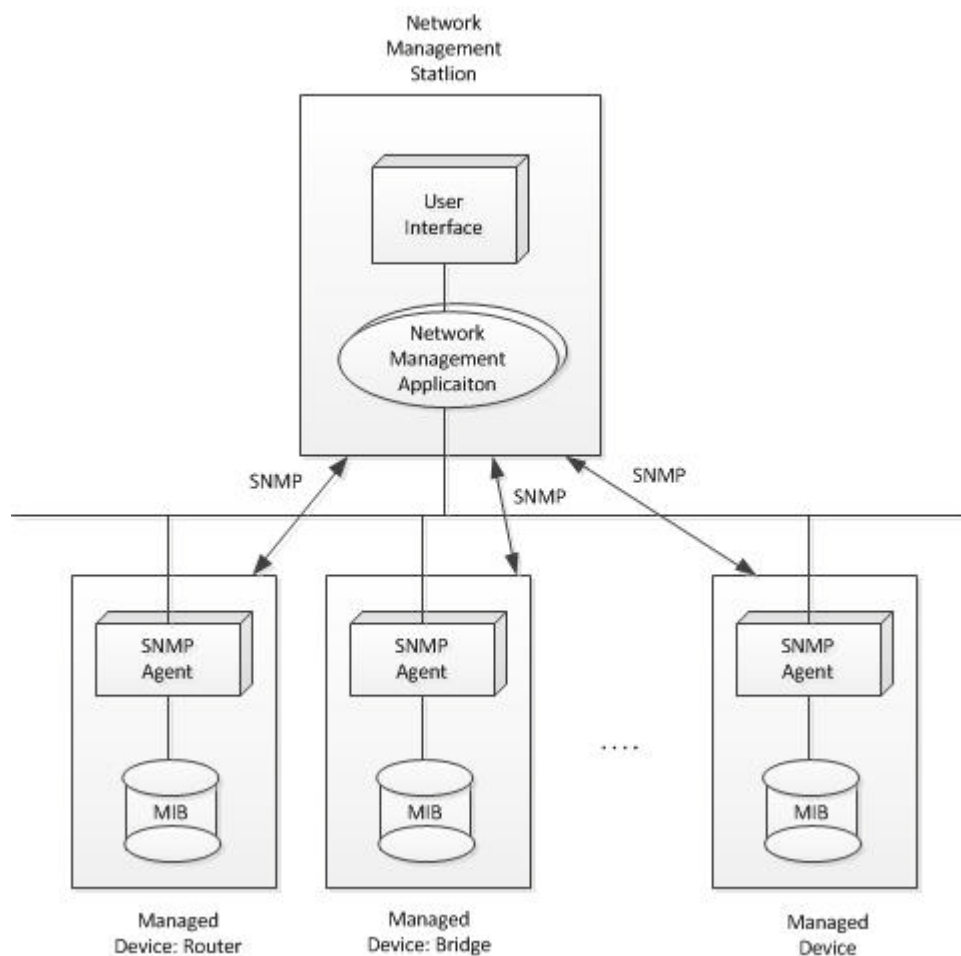
ALTIBASE-MIB is classified as `altiTrap`, `altiPropertyTable`, and `altiStatus`. Each MIB contains the following information for which further information is given in the next chapter.

- `altiTrap` MIB: Defines the OID used in the trap when a significant situation is detected.
- `altiPropertyTable` MIB: Reads or changes ALTIBASE HDB's environment properties.
- `altiStatus` MIB: Displays ALTIBASE HDB's status.

1.1.4 SNMP Related Terminology

This section explains SNMP terminology in ALTIBASE HDB.

Figure 1-3 Diagram of SNMP



- **Simple Network Management Protocol (SNMP)**

SNMP is a protocol for network management. Information such as the network server status, the process status and so on are sent to the manager.

- **Management Information Base (MIB)**

MIB is a categorical classification of the objects used by SNMP to monitor and control the network. System information, network usage, network interface information and so on are target objects for management. MIB objects have a tree structure for easy management.

- **OID**

When requesting for information, MIB can be represented as numbers. OIDs are granted OID numbers from the Internet Assigned Number Authority (IANA) to implement a standard MIB.

- **ALTBASE-MIB**

Altibase has registered an entity and uses the OID `altibase (17180)` under `enterprises (1)`.

1.1 What is SNMP

- **SNMP Agent**

The SNMP agent installs `snmpd` and `snmptrapd` in a monitor target object, collects management information, and sends it to the manager.

- **`snmpd`**

`snmpd` is the SNMP master agent daemon.

- **`snmptrapd`**

`snmptrapd` is the daemon for SNMP traps.

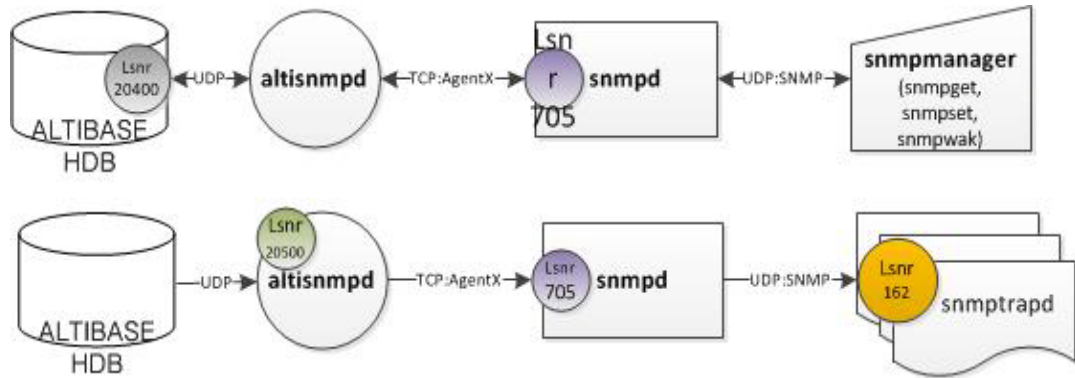
- **`altisnmpd`**

`altisnmpd` is the SNMP subagent daemon installed on the ALTIBASE HDB server.

1.2 Altibase-SNMP Model

This section discusses how SNMP manages a network.

Figure 1-4 Altibase-SNMP Model



The upper figure shows how `snmpmanager` gets Altibase MIB (The port number is `net-snmp` by default). This is the sync method. If `snmpmanager` sends a request on UDP port 161, `snmpd` passes this request to `altisnmpd` on TCP port 705, which in turn `altisnmpd` ultimately passes on to ALTIBASE HDB on UDP port 20400. When `altisnmpd` receives a response from ALTIBASE HDB, `altisnmpd` passes it on to `snmpd` and this is ultimately passed on to `snmpmanager`.

The lower figure shows how a trap raised in ALTIBASE HDB is passed on to `snmpd`. This is the async method. If ALTIBASE HDB passes the trap to `altisnmpd` on UDP port 20500, `altisnmpd` passes it on TCP port 705 to `snmpd`, and `snmpd` ultimately passes it on UDP port 162 to `snmptrapd`.

ALTIBASE HDB's own protocol is used between ALTIBASE HDB and `altisnmpd`. AgentX, the standard protocol for master agent/subagent communication is used between `altisnmpd` and `snmpd`.

1.2 Altibase-SNMP Model

2 Installing the SNMP Agent

This chapter explains how to install the SNMP agent and configure ALTIBASE HDB to use SNMP.

2.1 Installing the SNMP Agent

This section explains how to install the SNMP agent and configure it for ALTIBASE HDB. To run net-snmp, ALTIBASE HDB can be configured using

- the Altibase NET-SNMP package
- or
- the NET-SNMP in a previously installed environment.

The ALTIBASE HDB SNMP agent complies with the open source net-snmp. For further information about how to configure the NET-SNMP binary and environment configuration files, please refer to the net-snmp homepage (<http://www.net-snmp.org/>).

2.1.1 Downloading the Package

Visit the Altibase homepage (www.altibase.com), download the ALTIBASE HDB package, and install it.

If `altibase-snmp-xxx.tar.gz` is unzipped, the user will see the following:

```
$ gzip -d altibase-snmp-xxx.tar.gz
$ tar xvf altibase-snmp-xxx.tar
...
...
...
== bin
   = snmp manger (snmpget, snmpset, snmpwak)

== sbin
   = snmpd      : snmp Master/Sub agent daemon
   = snmptrapd : snmp trap daemon
   = altisnmpd : Altibase snmp sub agent daemon

== share/snmp/mibs
   = ALTIBASE-MIB.txt : Altibase MIB

== etc/snmp
   = snmpd.conf : snmpd environment configuration file
   = altisnmpd.conf : altisnmpd environment configuration file

= altisnmpd.env : set environment variable
```

Apart from three files (`altisnmpd`, `altisnmpd.conf`, and `ALTIBASE-MIB.txt`), the files are binaries compiled with net-snmp source.

Only the above three files need to be configured, if snmp is used for net-snmp on a customer's server.

2.2 Setting ALTIBASE HDB Properties

To use the SNMP feature in ALTIBASE HDB, the properties file must be changed accordingly. The ALTIBASE HDB properties file is located at `$ALTIBASE_HOME/conf`.

The following are SNMP related properties. For further information about each property, please refer to the *General Reference*.

- `SNMP_ALARM_FETCH_TIMEOUT`
- `SNMP_ALARM_QUERY_TIMEOUT`
- `SNMP_ALARM_SESSION_FAILURE_COUNT`
- `SNMP_ALARM_UTRANS_TIMEOUT`
- `SNMP_ENABLE`
- `SNMP_MSGLOG_FLAG`
- `SNMP_PORT_NO`
- `SNMP_RECV_TIMEOUT`
- `SNMP_SEND_TIMEOUT`
- `SNMP_TRAP_PORT_NO`

2.3 Installing and Running the Altibase NET-SNMP Package

This section discusses how to configure and run the Altibase NET-SNMP package. Please set the default port number to (existing value + 1000) so as to prevent it crashing with the snmp running on the system.

2.3.1 Setting Environment Variables

Environment variables can be set with the `source` command to easily execute binaries. In the following examples, this manual assumes that `altisnmp.env` is the set environment.

```
$ source altisnmp.env
ALTISNMP=/home/donlet/work/altibase-snm-1.0.1.release
ALTISNMPCONF=/home/donlet/work/altibase-snm-1.0.1.release/etc/snm
ALTISNMPBIN=/home/donlet/work/altibase-snm-1.0.1.release/bin
ALTISNMPSBIN=/home/donlet/work/altibase-snm-1.0.1.release/sbin
SNMP_PERSISTENT_FILE=/home/donlet/work/altibase-snm-1.0.1.release/var/net
snmp/snmpd.conf
SNMP_PERSISTENT_DIR=/home/donlet/work/altibase-snm-1.0.1.release/var/net
snmp
MIBDIRS=/home/donlet/work/altibase-snm-1.0.1.release/share/snmp/mibs
MIBS=ALL
```

2.3.2 Configuring and Executing snmpd

`snmpd` is the master agent daemon of SNMP. This section explains the necessary environment configuration for `snmpd` and how to execute it.

2.3.2.1 Setting the Environment Configuration File

The port number and `snmpd` must be set to use SNMP.

Set the port number 1162 for `snmpd` and `snmptrapd`, and set `snmpd` as the master agent.

```
$ cat $ALTISNMPCONF/snmpd.conf
rocommunity public
rwcommunity private
syslocation mysystem
syscontact admin@mail.com
syssservices 0
trap2sink localhost public 1162
master agentx
```

2.3.2.2 Execution

The execution options for the SNMP agent are `[-f]`, `[-l]`, `[-s]`, and `[-P]`. `[-f]` allows the user to view `snmpd` execution in the foreground. `[-l]` writes logs into files, `[-s]` writes logs in `syslogs`, and `[-P]` creates pid files.

The user can check whether `snmpd` is being executed in the foreground as below.

```
$ $ALTISNMPSBIN/snmpd -f -L -c $ALTISNMPCONF/snmpd.conf -C -x localhost:1705
```

2.3 Installing and Running the Altibase NET-SNMP Package

```
udp:localhost:1161
Turning on AgentX master support.
NET-SNMP version 5.0.8
```

In this example, `snmpd` and the `altibase snmp` subagent are communicating on TCP port 1705. `snmpd` and `snmpmanager` (`snmpget`, `snmpset`, `snmpwalk`, etc.) are communicating on UDP port 1161.

The user can terminate `snmpd` execution in the foreground and execute it in the background with "Ctrl+C". The `[-f]` and `[-l]` options have been removed to execute `snmpd` in the background.

```
$ $ALTISNMPSBIN/snmpd -c $ALTISNMPCONF/snmpd.conf -C -x localhost:1705 -l /
tmp/snmpd.log -s -P /tmp/snmpd.pid udp:localhost:1161
```

2.3.2.3 snmpd Termination

The SNMP agent can be terminated with the `kill` command.

```
$ kill `cat /tmp/snmpd.pid`
```

2.3.3 Executing snmptrapd

`snmptrapd` is a daemon for SNMP traps. This section explains how to use `snmptrapd`.

The execution options `[-f]`, `[-o]`, `[-s]`, and `[-u]` are available for `snmptrapd`. `[-f]` allows the user to view `snmpdtrapd` execution in the foreground. `[-o]` writes logs into files, `[-s]` writes logs in syslogs, and `[-u]` creates pid files.

The user can check whether `snmptrapd` is being executed in the foreground as below.

Since `trap2sink` is set to port 1162 for `snmpd.conf`, the option must be set to `udp:localhost:1162`.

```
$ $ALTISNMPSBIN/snmptrapd -f -P udp:localhost:1162
2014-10-28 14:46:32 NET-SNMP version 5.0.8 Started.
```

The user can terminate `snmptrapd` execution in the foreground and execute it in the background with "Ctrl+C". The `[-f]` and `[-P]` options have been removed to execute `snmpd` in the background.

```
$ $ALTISNMPSBIN/snmptrapd -s -o /tmp/snmptrapd.log -u /tmp/snmptrapd.pid
udp:localhost:1162
```

For example, start `snmpd` while `snmptrapd` is running. A trap that notifies that `snmpd` has restarted is written in `syslog` and the `/tmp/snmptrapd.log` file.

The user is able to check that `snmpd` and `snmptrapd` are communicating properly.

```
$ cat /tmp/snmptrapd.log
Starting snmptrapd 5.0.8
2014-10-28 14:57:40 NET-SNMP version 5.0.8 Started.
2014-10-28 14:58:12 localhost [127.0.0.1]:
    SNMPv2-MIB::sysUpTime.0 = Timeticks: (2) 0:00:00.02      SNMPv2
MIB::snmpTrapOID.0 = OID: SNMPv2-MIB::coldStart  SNMPv2-MIB::snmpTrapEnte
prise.0 = OID: NET-SNMP-TC::linux
localhost [127.0.0.1]: Trap SNMPv2-MIB::sysUpTime.0 = Timeticks: (2)
0:00:00.02, SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-MIB::coldStart, SNMPv2
```

2.3 Installing and Running the Altibase NET-SNMP Package

```
MIB::snmpTrapEnterprise.0 = OID: NET-SNMP-TC::linux
2014-10-28 14:58:14 localhost [127.0.0.1]:
    SNMPv2-MIB::sysUpTime.0 = Timeticks: (143) 0:00:01.43    SNMPv2
MIB::snmpTrapOID.0 = OID: NET-SNMP-AGENT-MIB::nsNotifyShutdown
localhost [127.0.0.1]: Trap SNMPv2-MIB::sysUpTime.0 = Timeticks: (143)
0:00:01.43, SNMPv2-MIB::snmpTrapOID.0 = OID: NET-SNMP-AGENT-MIB::nsNot
fyShutdown
```

2.3.3.1 Terminating `snmptrapd`

`snmptrapd` can be terminated with the `kill` command.

```
$ kill `cat /tmp/snmptrapd.pid`
```

2.3.4 Executing `altisnmpd`

`altisnmpd` is an SNMP subagent daemon installed in the ALTIBASE HDB server. This section explains how to set the environment configuration file and execute `altisnmpd`.

2.3.4.1 Setting the Environment Configuration File

For `altisnmpd` to communicate with the ALTIBASE HDB server, `SNMP_PORT_NO` must be set identically as it was set for the Altibase environment configuration file.

`altibase_trap` must also be set identically as `SNMP_TRAP_PORT_NO` for ALTIBASE HDB.

```
$ cat $ALTISNMPCONF/altisnmpd.conf
# ALTIBASE_PORT_NO SNMP_PORT_NO
altibase 20300 20400
# ALTIBASE_TRAP SNMP_TRAP_PORT_NO
altibase_trap 20500
```

To communicate with multiple ALTIBASE HDB servers, indicate the servers in the environment configuration file as below.

```
altibase 20300 20400
altibase 52473 20800
...
```

2.3.4.2 Executing `altisnmpd`

The execution options `[-f]`, `[-l]`, `[-s]`, and `[-P]` are available for `altisnmpd`. `[-f]` allows the user to view `snmpd` execution in the foreground. `[-l]` writes logs into files, `[-s]` writes logs in `syslogs`, and `[-P]` creates pid files.

Execute `altisnmpd` in the foreground to check whether it is running.

```
$ $ALTISNMPSBIN/altisnmpd -f -L -c $ALTISNMPCONF/altisnmpd.conf -x local-
host:1705
AgentX subagent for Altibase

NET-SNMP version 5.0.8

Altibase[0] : 20300      20400

Trap : 20500
```


2.3 Installing and Running the Altibase NET-SNMP Package

Since `snmpd` and `altisnmpd` communicate on TCP port 1705, the user can see that `-x localhost` is set to 1705. The `[-f]` and `[-L]` options are removed for background execution.

```
$ $ALTISNMPSBIN/altisnmpd -c $ALTISNMPCONF/altisnmpd.conf -l /tmp/altisnmpd.log -s -P /tmp/altisnmpd.pid -x localhost:1705
```

2.3.4.3 Terminating altisnmpd

`altisnmpd` can be terminated with the `kill` command.

```
$ kill `cat /tmp/altisnmpd pid`
```

If `altisnmpd` is executed or terminated, a trap is raised and this can be checked with `snmptrapd`.

```
2014-10-28 15:39:57 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1987) 0:00:19.87  SNMPv2-MIB::snm
TrapOID.0 = OID: SNMPv2-SMI::private  ALTIBASE-MIB::altiTrapAddress =
STRING: 12944  ALTIBASE-MIB::altiTrapLevel = STRING: 3  ALTIBASE-MIB::altiTra
pCode = STRING: 10000003  ALTIBASE-MIB::altiTrapMessage = STRING: /home
donlet/work/altibase-snm-1.0.1.release/sbin/altisnmpd is running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING: coldstart
2014-10-28 15:41:29 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (11225) 0:01:52.25  SNMPv2
MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private  ALTIBASE-MIB::altiTrapA
dress = STRING: 12961  ALTIBASE-MIB::altiTrapLevel = STRING: 3  ALTIBASE
MIB::altiTra
pCode = STRING: 10000003  ALTIBASE-MIB::altiTrapMessage = STRING: /home
donlet/work/altibase-snm-1.0.1.release/sbin/altisnmpd is running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING: coldstart
```

2.3.5 Executing ALTIBASE HDB

To execute ALTIBASE HDB, the following properties must be set according to the client environment. For further information about properties, please refer to [Setting ALTIBASE HDB Properties](#).

- `SNMP_ENABLE`
- `SNMP_PORT_NO`
- `SNMP_TRAP_PORT_NO`

Run ALTIBASE HDB and execute the following command.

```
$ $ALTISNMPSBIN/snmpwalk -v 2c -c private udp:localhost:1161 altibase
ALTIBASE-MIB::altiPropertyIndex.1 = INTEGER: 1
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmUtransTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmFetchTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmSessionFailureCount.1 = STRING: 3
ALTIBASE-MIB::altiStatusIndex.1 = INTEGER: 1
ALTIBASE-MIB::altiStatusDBName.1 = STRING: mydb
ALTIBASE-MIB::altiStatusDBVersion.1 = STRING: 7.1.0.0.0
ALTIBASE-MIB::altiStatusRunningTime.1 = STRING: 00:00:02
ALTIBASE-MIB::altiStatusProcessID.1 = STRING: 12973
ALTIBASE-MIB::altiStatusSessionCount.1 = STRING: 0
```

If SNMP is running properly, ALTIBASE-MIB information will be output properly.

2.4 Configuration for a Previously Installed NET-SNMP

This section explains how to link `net-snmp altisnmpd` (the `altibase snmp` subagent) and `net-snmp`, when `net-snmp` is already installed on a customer's server.

This section provides examples assuming that an `snmpd` package is already installed in `/usr` on the customer's server.

- [Setting ALTIBASE HDB Properties](#)
- [Registering ALTIBASE-MIB.txt](#)
- Configuring `altisnmpd`
- `altisnmpd.conf`

2.4.1 Setting ALTIBASE HDB Properties

The following ALTIBASE HDB properties must be set according to the customer's environment.

- `SNMP_ENABLE`
- `SNMP_PORT_NO`
- `SNMP_TRAP_PORT_NO`

2.4.2 Registering ALTIBASE-MIB.txt

Copy `ALTIBASE-MIB.txt` and add it to the SNMP environment configuration file, `snmp.conf`. In this case, it is unnecessary to restart `snmpd`.

```
sudo cp $ALTISNMP/share/snmp/mibs/ALTIBASE-MIB.txt /usr/share/snmp/mibs

# vi /etc/snmp/snmp.conf
mibs +ALTIBASE-MIB
```

2.4.3 Configuring and Running altisnmpd

For further information about `altisnmpd` configuration, please refer to [Executing altisnmpd](#).

The port for `snmpd` must be specified. The default value is `snmp.conf`. If another value is set, please contact the system administrator.

```
$ $ALTISNMPSBIN/altisnmpd -c $ALTISNMPCONF/altisnmpd.conf -l /tmp/altisnmpd.log -s -P /tmp/altisnmpd.pid -x localhost:705
```

After running ALTIBASE HDB, execute the `snmpwalk` command.

```
$ /usr/bin/snmpwalk -v 2c -c private localhost:161 altibase
ALTIBASE-MIB::altiPropertyIndex.1 = INTEGER: 1
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmUtransTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmFetchTimeout.1 = STRING: 1
```

2.4 Configuration for a Previously Installed NET-SNMP

```
ALTIBASE-MIB::altiPropertyAlarmSessionFailureCount.1 = STRING: 3
ALTIBASE-MIB::altiStatusIndex.1 = INTEGER: 1
ALTIBASE-MIB::altiStatusDBName.1 = STRING: mydb
ALTIBASE-MIB::altiStatusDBVersion.1 = STRING: 7.1.0.0.0
ALTIBASE-MIB::altiStatusRunningTime.1 = STRING: 00:38:00
ALTIBASE-MIB::altiStatusProcessID.1 = STRING: 12973
ALTIBASE-MIB::altiStatusSessionCount.1 = STRING: 0
```

If the `snmpwalk` command is executed and the following is output, the user should check the ACL setting in `/etc/snmp/snmpd.conf`.

```
$ /usr/bin/snmpwalk -v 2c -c private localhost:161 altibase
Timeout: No Response from localhost:161
```

```
/etc/snmp/snmpd.conf
# Full access from the local host
#rocommunity public localhost
#rwcommunity private localhost
```

For full access, the system administrator must remove the comment.

2.4 Configuration for a Previously Installed NET-SNMP

3 How to Use SNMP

3.1 SNMP Commands

SNMP receives network information either when there is a request or a significant event occurs.

SNMP is an asynchronous protocol that communicates on User Datagram Protocol (UDP) and only performs the following four simple operations.

3.1.1 SNMP GET

SNMP `GET` retrieves a certain OID value from the SNMP agent. The basic information used for this operation is the server address (or name) or community name (for privileges) of the server on which the agent is installed, and the OID number or MIB hierarchy name.

3.1.2 SNMP WAK

SNMP `WAK` retrieves the next OID of a certain OID from the SNMP agent. This is usually called in series to retrieve all the OIDs under a certain OID.

3.1.3 SNMP SET

SNMP `SET` changes the value of a certain OID.

3.1.4 SNMP TRAP

SNMP `TRAP` notifies that a significant event has occurred. Traps are used to notify asynchronous events.

4 Checking and Changing Properties

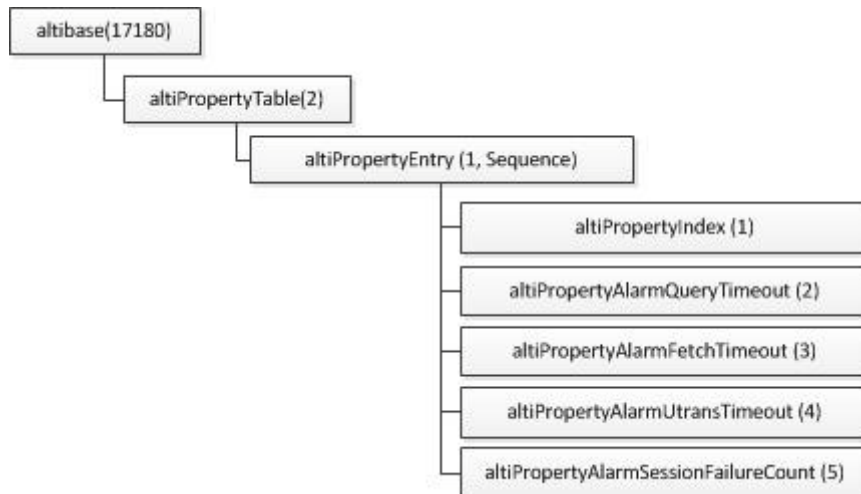
This chapter discusses how to check and change ALTIBASE HDB properties with `altPropertyTable`.

4.1 altiPropertyTable

4.1 altiPropertyTable

Altibase settings can be checked or changed using altiPropertyTable.

Figure 4-1 altiPropertyTable MIB



altiPropertyTable (2) under altibase (17180) has 6 subobjects. If multiple databases exist on one server, subobjects are grouped for classification. In the above figure, 5 objects are grouped under altiPropertyEntry to separate one from another.

4.1.1 altiPropertyIndex MIB (1)

4.1.1.1 OID

1.3.6.1.4.1.17180.2.1.1

4.1.1.2 Syntax

DisplayString

4.1.1.3 Max-Access

Read-only

4.1.1.4 Description

Starting at 1, the altiPropertyIndex value increases by 1, depending on the number of Altibase servers managed by the Altibase SNMP subagent.

4.1.1.5 Example

```
$ snmpget -v 2c -c private localhost altiPropertyIndex.1
```



```

ALTIBASE-MIB::altiPropertyIndex.1 = INTEGER: 1
$ snmpwalk -v 2c -c private localhost altiPropertyIndex
ALTIBASE-MIB::altiPropertyIndex.1 = INTEGER: 1
ALTIBASE-MIB::altiPropertyIndex.2 = INTEGER: 1

```

4.1.2 altiPropertyAlarmQueryTimeout MIB (2)

4.1.2.1 OID

1.3.6.1.4.1.17180.2.1.2

4.1.2.2 Syntax

DisplayString

4.1.2.3 Max-Access

Read-write

4.1.2.4 Description

`altiPropertyAlarmQueryTimeout` sets whether or not to raise a trap when a query timeout occurs in a session connected to Altibase. If this value is 0, a trap is not raised.

The initial value can be set for `SNMP_ALARM_QUERY_TIMEOUT` and the default value is 1.

4.1.2.5 Example

```

$ snmpwalk -v 2c -c private localhost altiPropertyAlarmQueryTimeout
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 2
$ snmpset -v 2c -c private localhost altiPropertyAlarmQueryTimeout.1 s 0
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 0
$ snmpget -v 2c -c private localhost altiPropertyAlarmQueryTimeout.1
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 0

```

4.1.3 altiPropertyAlarmFetchTimeout MIB (3)

4.1.3.1 OID

1.3.6.1.4.1.17180.2.1.3

4.1.3.2 Syntax

DisplayString

4.1.3.3 Max-Access

Read-write

4.1 altiPropertyTable

4.1.3.4 Description

altiPropertyAlarmFetchTimeout sets whether or not to raise a trap when a query timeout occurs in a session connected to ALTIBASE HDB. If this value is 0, a trap is not raised.

The initial value can be set for SNMP_ALARM_QUERY_TIMEOUT and the default value is 1.

4.1.3.5 Example

```
$ snmpwalk -v 2c -c private localhost altiPropertyAlarmQueryTimeout
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 2
$ snmpset -v 2c -c private localhost altiPropertyAlarmQueryTimeout.1 s 0
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 0
$ snmpget -v 2c -c private localhost altiPropertyAlarmQueryTimeout.1
ALTIBASE-MIB::altiPropertyAlarmQueryTimeout.1 = STRING: 0
```

4.1.4 altiPropertyAlarmUtransTimeout MIB (4)

4.1.4.1 OID

1.3.6.1.4.1.17180.2.1.4

4.1.4.2 Syntax

DisplayString

4.1.4.3 Max-Access

Read-write

4.1.4.4 Description

altiPropertyAlarmUtransTimeout sets whether or not to raise a trap when a utrans timeout occurs in a session connected to ALTIBASE HDB. If this value is 0, a trap is not raised.

The initial value can be set for SNMP_ALARM_UTRANS_TIMEOUT and the default value is 1.

4.1.4.5 Example

```
$ snmpwalk -v 2c -c private localhost altiPropertyAlarmUtransTimeout
ALTIBASE-MIB::altiPropertyAlarmUtransTimeout.1 = STRING: 1
ALTIBASE-MIB::altiPropertyAlarmUtransTimeout.1 = STRING: 2
$ snmpset -v 2c -c private localhost altiPropertyAlarmUtransTimeout.1 s 0
ALTIBASE-MIB::altiPropertyAlarmUtransTimeout.1 = STRING: 0
$ snmpget -v 2c -c private localhost altiPropertyAlarmUtransTimeout.1
ALTIBASE-MIB::altiPropertyAlarmUtransTimeout.1 = STRING: 0
```

4.1.5 altiPropertyAlarmSessionFailureCount MIB (5)

4.1.5.1 OID

1.3.6.1.4.1.17180.2.1.5

4.1.5.2 Syntax

DisplayString

4.1.5.3 Max-Access

Read-write

4.1.5.4 Description

altiPropertyAlarmSessionFailureCount sets the number of times an error needs to continuously occur for a trap to be raised in a session connected to ALTIBASE HDB. If this value is 0, a trap is not raised.

The initial value can be set for `SNMP_ALARM_SESSION_FAILURE_COUNT` and the default value is 3.

4.1.5.5 Example

```
$ snmpwalk -v 2c -c private localhost altiPropertyAlarmSessionFailureCount
ALTIBASE-MIB::altiPropertyAlarmSessionFailureCount.1 = STRING: 3
ALTIBASE-MIB::altiPropertyAlarmSessionFailureCount.2 = STRING: 3
$ snmpset -v 2c -c private localhost altiPropertyAlarmSessionFailureCount.1 s
2
ALTIBASE-MIB::altiPropertyAlarmSessionFailureCount.1 = STRING: 2
$ snmpget -v 2c -c private localhost altiPropertyAlarmSessionFailureCount.1
ALTIBASE-MIB::altiPropertyAlarmSessionFailureCount.1 = STRING: 2
```

4.1 altiPropertyTable

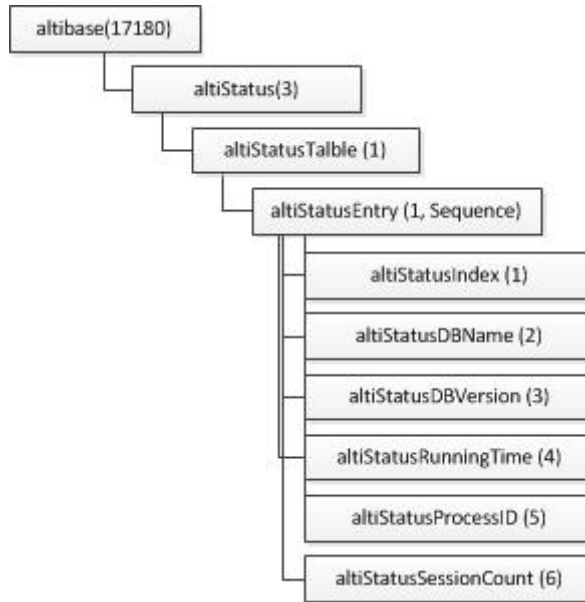
5 Viewing the ALTIBASE HDB Status

This chapter discusses how to view the ALTIBASE HDB status using SNMP.

5.1 altiStatus

The ALTIBASE HDB status can be viewed using `altiStatus`.

Figure 5-1 altiStatus MIB



The `altiStatus` MIB has `altiStatus(3)` under `altibase(17180)`. `altiStatus` has `altiStatusTable(1)` that contains status information of Altibase. This information is classified into 6 objects under `altiStatusEntry`.

5.1.1 altiStatusIndex MIB (1)

5.1.1.1 OID

1.3.6.1.4.1.17180.3.1.1.1

5.1.1.2 Syntax

DisplayString

5.1.1.3 Max-Access

Read-only

5.1.1.4 Description

Starting at 1, the `altiPropertyIndex` value increases by 1, depending on the number of ALTI-BASE HDB servers managed by the Altibase SNMP subagent.

5.1.1.5 Example

```
$ snmpget -v 2c -c public localhost altiStatusIndex.1
ALTI-BASE-MIB::altiStatusIndex.1 = INTEGER: 1
$ snmpwalk -v 2c -c public localhost altiStatusIndex
ALTI-BASE-MIB::altiStatusIndex.1 = INTEGER: 1
ALTI-BASE-MIB::altiStatusIndex.2 = INTEGER: 2
```

5.1.2 altiStatusDBName (2)

5.1.2.1 OID

1.3.6.1.4.1.17180.3.1.1.2

5.1.2.2 Syntax

DisplayString

5.1.2.3 Max-Access

Read-only

5.1.2.4 Description

altiStatusDBName displays the ALTIBASE HDB name.

5.1.2.5 Example

```
$ snmpget -v 2c -c public localhost altiStatusDBName.1
ALTI-BASE-MIB::altiStatusDBName.1 = STRING: mydb
$ snmpwalk -v 2c -c public localhost altiStatusDBName
ALTI-BASE-MIB::altiStatusDBName.1 = STRING: mydb
ALTI-BASE-MIB::altiStatusDBName.2 = STRING: mydb
```

5.1.3 altiStatusDBVersion MIB (3)

5.1.3.1 OID

1.3.6.1.4.1.17180.3.1.1.3

5.1.3.2 Syntax

DisplayString

5.1.3.3 Max-Access

Read-only

5.1 altiStatus

5.1.3.4 Description

altiStatusDBVersion displays the ALTIBASE HDB version.

5.1.3.5 Example

```
$ snmpget -v 2c -c public localhost altiStatusDBVersion.1
ALTIBASE-MIB::altiStatusDBVersion.1 = STRING: 6.3.1.2.7
$ snmpwalk -v 2c -c public localhost altiStatusDBVersion
ALTIBASE-MIB::altiStatusDBVersion.1 = STRING: 6.3.1.2.7
ALTIBASE-MIB::altiStatusDBVersion.2 = STRING: 7.1.1.0.0
```

5.1.4 altiStatusRunningTime MIB (4)

5.1.4.1 OID

1.3.6.1.4.1.17180.3.1.1.4

5.1.4.2 Syntax

DisplayString

5.1.4.3 Max-Access

Read-only

5.1.4.4 Description

altiStatusRunningTime displays the run time of the ALTIBASE HDB process. The run time consists of days, hours, minutes, and seconds.

5.1.4.5 Example

```
$ snmpwalk -v 2c -c public localhost altiStatusRunningTime.1
ALTIBASE-MIB::altiStatusRunningTime.1 = STRING: 00:00:14
$ snmpwalk -v 2c -c public localhost altiStatusRunningTime
ALTIBASE-MIB::altiStatusRunningTime.1 = STRING: 00:00:21
ALTIBASE-MIB::altiStatusRunningTime.2 = STRING: 1 days, 03:12:56
```

5.1.5 altiStatusProcessID MIB (5)

5.1.5.1 OID

1.3.6.1.4.1.17180.3.1.1.5

5.1.5.2 Syntax

DisplayString

5.1.5.3 Max-Access

Read-only

5.1.5.4 Description

altiStatusProcessID displays the ALTIBASE HDB process ID.

5.1.5.5 Example

```
$ snmpget -v 2c -c public localhost altiStatusProcessID.1
ALTIBASE-MIB::altiStatusProcessID.1 = STRING: 23201
$ snmpwalk -v 2c -c public localhost altiStatusProcessID
ALTIBASE-MIB::altiStatusProcessID.1 = STRING: 23201
ALTIBASE-MIB::altiStatusProcessID.2 = STRING: 23343
```

5.1.6 altiStatusSessionCount MIB (6)

5.1.6.1 OID

1.3.6.1.4.1.17180.3.1.1.6

5.1.6.2 Syntax

DisplayString

5.1.6.3 Max-Access

Read-only

5.1.6.4 Description

altiStatusSessionCount displays the number of ALTIBASE HDB sessions. This is equal to the number of clients currently connected to ALTIBASE HDB.

5.1.6.5 Example

```
$ snmpget -v 2c -c public localhost altiStatusSessionCount.1
ALTIBASE-MIB::altiStatusSessionCount.1 = STRING: 10
$ snmpwalk -v 2c -c public localhost altiStatusSessionCount
ALTIBASE-MIB::altiStatusSessionCount.1 = STRING: 10
ALTIBASE-MIB::altiStatusSessionCount.2 = STRING: 7
```

5.1 altiStatus

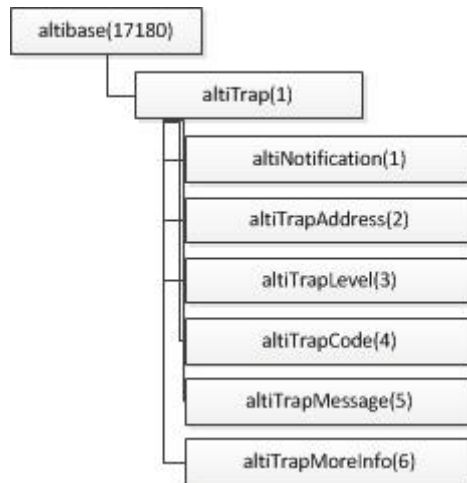
6 Traps

This chapter discusses OIDs sent to the manager using traps when significant events occur in ALTI-BASE HDB.

6.1 altiTrap

altiTrap is a management information base (MIB) that shows the OIDs to be sent using traps.

Figure 6-1 altiTrap MIB



altiTrap MIB uses the trap altiTrap (1) under altibase (171780) to define the OIDs to be sent to the manager. These OIDs define information such as the port number, level, trap code, message, etc.

6.1.1 altiNotification MIB (1)

6.1.1.1 OID

1.3.6.1.4.1.17180.1.1

6.1.1.2 Syntax

```
OBJECT {altiTrapAddress, altiTrapLevel, altiTrapCode, altiTrapMes-  
sage, altiTrapMoreInfo }
```

6.1.1.3 Description

altiNotification is an object type (notification) that contains 5 MIBs and is used to send a trap.

6.1.1.4 Example

```
# snmptrapd -f -P  
2014-10-24 13:30:46 localhost [127.0.0.1]:  
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1017350) 2:49:33.50  
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private  
ALTIBASE-MIB::altiTrapAddress = STRING: 52473  
ALTIBASE-MIB::altiTrapLevel = STRING: 3
```

```
ALTIBASE-MIB::altiTrapCode = STRING: 10000001
ALTIBASE-MIB::altiTrapMessage = STRING: Altibase is running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING:
```

6.1.2 altiTrapAddress MIB (2)

6.1.2.1 OID

1.3.6.1.4.1.17180.2.1.2

6.1.2.2 Syntax

DisplayString

6.1.2.3 Description

`altiTrapAddress` displays the ALTIBASE HDB port number and is used to identify on which ALTIBASE HDB the trap was raised.

6.1.3 altiTrapLevel (3)

6.1.3.1 OID

1.3.6.1.4.1.17180.1.3

6.1.3.2 Syntax

DisplayString

6.1.3.3 Description

`altiTrapLevel` displays the trap priority. Each level means the following:

- 1: This is a very important and urgent event.
- 2: This is a major event.
- 3: This is a common event.

6.1.4 altiTrapCode (4)

6.1.4.1 OID

1.3.6.1.4.1.17180.1.4

6.1 altiTrap

6.1.4.2 Syntax

DisplayString

6.1.4.3 Description

Codes are used to distinguish traps in ALTIBASE HDB. Trap codes are further discussed in [Trap Codes](#).

6.1.5 altiTrapMessage (5)

6.1.5.1 OID

1.3.6.1.4.1.17180.1.5

6.1.5.2 Syntax

DisplayString

6.1.5.3 Description

`altiTrapMessage` displays a description of the trap that was raised in ALTIBASE HDB.

6.1.6 altiTrapMoreInfo (6)

6.1.6.1 OID

1.3.6.1.4.1.17180.1.6

6.1.6.2 Syntax

DisplayString

6.1.6.3 Description

`altiTrapMoreInfo` displays additional information about traps raised in ALTIBASE HDB.

6.2 Trap Codes

This section discusses trap codes (`altiTrapCode`) and trap levels (`altiTrapLevel`) of ALTIBASE HDB.

6.2.1 Altibase Running Status

6.2.1.1 Code

10000001

6.2.1.2 Level

3

6.2.1.3 Description

Altibase Running Status displays that ALTIBASE HDB is currently running.

6.2.1.4 Example

```
# snmptrapd -f -P
2014-10-24 13:30:46 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1017350) 2:49:33.50
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 52473
ALTIBASE-MIB::altiTrapLevel = STRING: 3
ALTIBASE-MIB::altiTrapCode = STRING: 10000001
ALTIBASE-MIB::altiTrapMessage = STRING: Altibase is running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING:
```

6.2.2 Altibase UnRunning Status

6.2.2.1 Code

10000002

6.2.2.2 Level

3

6.2.2.3 Description

Altibase UnRunning Status displays that ALTIBASE HDB is currently not running.

6.2 Trap Codes

6.2.2.4 Example

```
# snmptrapd -f -P
2014-10-24 13:33:38 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1034562) 2:52:25.62
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 52473
ALTIBASE-MIB::altiTrapLevel = STRING: 1
ALTIBASE-MIB::altiTrapCode = STRING: 10000002
ALTIBASE-MIB::altiTrapMessage = STRING: Altibase is not running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING:
```

6.2.3 Altibase Subagent Running Status

6.2.3.1 Code

10000003

6.2.3.2 Level

3

6.2.3.3 Description

Altibase Subagent Running Status displays that ALTIBASE HDB's subagent (altisnmpd) is running.

6.2.3.4 Example

```
# snmptrapd -f -P
2014-10-24 13:40:24 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1075187) 2:59:11.87
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 22082
ALTIBASE-MIB::altiTrapLevel = STRING: 3
ALTIBASE-MIB::altiTrapCode = STRING: 10000003
ALTIBASE-MIB::altiTrapMessage = STRING: Altisnmpd is running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING: coldstartALTIBASE-MIB::altiTrapCode
= STRING: 10000002
ALTIBASE-MIB::altiTrapMessage = STRING: Altibase is not running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING:
```

6.2.4 Altibase Subagent UnRunning Status

6.2.4.1 Code

10000004

6.2.4.2 Level

3

6.2.4.3 Description

Altibase Subagent UnRunning Status displays that ALTIBASE HDB's subagent (altisnmpd) is not running.

6.2.4.4 Example

```
# snmptrapd -f -P
2014-10-24 13:40:23 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1075030) 2:59:10.30
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 21947
ALTIBASE-MIB::altiTrapLevel = STRING: 1
ALTIBASE-MIB::altiTrapCode = STRING: 10000004
ALTIBASE-MIB::altiTrapMessage = STRING: Altisnmpd is not running.
ALTIBASE-MIB::altiTrapMoreInfo = STRING: nsNotifyShutdown
```

6.2.5 Session Query Timeout

6.2.5.1 Code

10000101

6.2.5.2 Level

2

6.2.5.3 Description

Session Query Timeout displays that altiPropertyAlarmQueryTimeout is 1 and a query timeout has occurred in an ALTIBASE HDB session.

6.2.5.4 Example

```
# snmptrapd -f -P
2014-10-24 14:00:01 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1192924) 3:18:49.24
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 52473
ALTIBASE-MIB::altiTrapLevel = STRING: 2
ALTIBASE-MIB::altiTrapCode = STRING: 10000101
ALTIBASE-MIB::altiTrapMessage = STRING: [Notify : Query Timeout] Session
Closed by Server : Session ID = 2
ALTIBASE-MIB::altiTrapMoreInfo = STRING: Please check altibase_boot.log
```

6.2.6 Session Fetch Timeout

6.2.6.1 Code

10000102

6.2 Trap Codes

6.2.6.2 Level

2

6.2.6.3 Description

Session Fetch Timeout displays that altiPropertyAlarmFetchTimeout is 1 and a fetch timeout has occurred in an ALTIBASE HDB session.

6.2.6.4 Example

```
# snmptrapd -f -P
2014-10-24 14:00:01 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1192924) 3:18:49.24
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 52473
ALTIBASE-MIB::altiTrapLevel = STRING: 2
ALTIBASE-MIB::altiTrapCode = STRING: 10000102
ALTIBASE-MIB::altiTrapMessage = STRING: [Notify : Fetch Timeout] Session
Closed by Server : Session ID = 2
ALTIBASE-MIB::altiTrapMoreInfo = STRING: Please check altibase_boot.log
```

6.2.7 Session Utrans Timeout

6.2.7.1 Code

10000103

6.2.7.2 Level

2

6.2.7.3 Description

Session Utrans Timeout displays that altiPropertyAlarmUtransTimeout is 1 and a utrans timeout has occurred in an ALTIBASE HDB session.

6.2.7.4 Example

```
# snmptrapd -f -P
2014-10-24 14:12:01 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1192924) 3:18:49.24
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 52473
ALTIBASE-MIB::altiTrapLevel = STRING: 2
ALTIBASE-MIB::altiTrapCode = STRING: 10000103
ALTIBASE-MIB::altiTrapMessage = STRING: [Notify : Utrans Timeout] Session
Closed by Server : Session ID = 2
ALTIBASE-MIB::altiTrapMoreInfo = STRING: Please check altibase_boot.log
```

6.2.8 Too Many Continuous Query Failure

6.2.8.1 Code

10000201

6.2.8.2 Level

2

6.2.8.3 Description

A trap is raised when query execution continuously fails for as many times as `altiSessionFailureCount`.

6.2.8.4 Example

```
# snmptrapd -f -P
2014-10-24 14:12:01 localhost [127.0.0.1]:
SNMPv2-MIB::sysUpTime.0 = Timeticks: (1192924) 3:18:49.24
SNMPv2-MIB::snmpTrapOID.0 = OID: SNMPv2-SMI::private
ALTIBASE-MIB::altiTrapAddress = STRING: 52473
ALTIBASE-MIB::altiTrapLevel = STRING: 2
ALTIBASE-MIB::altiTrapCode = STRING: 10000103
ALTIBASE-MIB::altiTrapMessage = STRING: [Notify : Session Failure] Session
Failed Continuously : Session ID = 2, Count = 3
ALTIBASE-MIB::altiTrapMoreInfo = STRING: Please check altibase_boot.log
```

6.2 Trap Codes

Appendix A. ALTIBASE-MIB

This appendix provides the ALTIBASE-MIB.txt file.

ALTIBASE-MIB.txt

```

ALTIBASE-MIB DEFINITIONS ::= BEGIN

IMPORTS
OBJECT-TYPE, NOTIFICATION-TYPE, MODULE-IDENTITY, enterprises
FROM SNMPv2-SMI
DisplayString
FROM SNMPv2-TC;

altibase MODULE-IDENTITY
LAST-UPDATED "201410310000Z"
ORGANIZATION "ALTIBASE R&D Division"
CONTACT-INFO "Altibase Corporation
10F, DaerungPost Tower2, 182-13 Guro-dong,
Guro-gu, Seoul
150-790,
Korea
TEL. +82-2-2082-1000
http://support.altibase.com"
DESCRIPTION "This MIB module defines Altibase MIB."
 ::= { enterprises 17180 }

altiTrap OBJECT IDENTIFIER ::= { altibase 1 }

altiNotification NOTIFICATION-TYPE
OBJECTS      { altiTrapAddress, altiTrapLevel, altiTrapCode,
altiTrapMessage, altiTrapMoreInfo }
STATUS      current
DESCRIPTION "altiNotification"
 ::= { altiTrap 1 }

altiTrapAddress OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "The Altibase port number in use."
 ::= { altiTrap 2 }

altiTrapLevel OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "Trap Level = 1|2|3"
 ::= { altiTrap 3 }

altiTrapCode OBJECT-TYPE

```

ALTIBASE-MIB.txt

```
SYNTAX      DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "Trap Code."
 ::= { altiTrap 4 }

altiTrapMessage OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "The trap message."
 ::= { altiTrap 5 }

altiTrapMoreInfo OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "The reserved field"
 ::= { altiTrap 6 }

altiPropertyTable OBJECT-TYPE
SYNTAX      SEQUENCE OF AltiPropertyEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "altiPropertyTable"
 ::= { altibase 2 }

altiPropertyEntry OBJECT-TYPE
SYNTAX      AltiPropertyEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "altiPropertyEntry"
INDEX       { altiPropertyIndex }
 ::= { altiPropertyTable 1 }

altiPropertyEntry ::= SEQUENCE {
altiPropertyIndex          INTEGER,
altiPropertyAlarmQueryTimeout  DisplayString,
altiPropertyAlarmUtransTimeout  DisplayString,
altiPropertyAlarmFetchTimeout  DisplayString,
altiPropertyAlarmSessionFailureCount  DisplayString,
}

altiPropertyIndex OBJECT-TYPE
SYNTAX      INTEGER
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "altiPropertyIndex"
 ::= { altiPropertyEntry 1 }

altiPropertyAlarmQueryTimeout OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION "altiPropertyAlarmQueryTimeout 0|1
Zero : Do nothing.
One  : Send the trap when a query timeout occurs in a session."
 ::= { altiPropertyEntry 2 }

altiPropertyAlarmUtransTimeout OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION "altiPropertyAlarmUtransTimeout 0|1
```

```

Zero : Do nothing.
One  : Send the trap when a utrans timeout occurs in a session."
 ::= { altiPropertyEntry 3 }

altiPropertyAlarmFetchTimeout OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION "altiPropertyAlarmFetchTimeout 0|1
Zero : Do nothing.
One  : Send the trap when a fetch timeout occurs in a session. "
 ::= { altiPropertyEntry 4 }

altiPropertyAlarmSessionFailureCount OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION "altiPropertyAlarmSessionFailureCount [0..4294967295]
Zero       : Do nothing.
Non-zero  : Send the trap when query execution continues to fail for as many
times as altiPropertyAlarmSessionFailureCount."
 ::= { altiPropertyEntry 5 }

altiStatus OBJECT IDENTIFIER ::= { altibase 3 }

altiStatusTable OBJECT-TYPE
SYNTAX      SEQUENCE OF altiStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "altiStatusTable"
 ::= { altiStatus 1 }
altiStatusEntry OBJECT-TYPE
SYNTAX      altiStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "altiStatusEntry"
INDEX       { altiStatusIndex }
 ::= { altiStatusTable 1 }

altiStatusEntry ::= SEQUENCE {
altiStatusIndex      INTEGER,
altiStatusDBName     DisplayString,
altiStatusDBVersion  DisplayString,
altiStatusRunningTime DisplayString,
altiStatusProcessID  DisplayString,
altiStatusSessionCount DisplayString
}

altiStatusIndex OBJECT-TYPE
SYNTAX      INTEGER
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "altiStatusIndex"
 ::= { altiStatusEntry 1 }
altiStatusDBName OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "The Altibase database name."
 ::= { altiStatusEntry 2 }

altiStatusDBVersion OBJECT-TYPE
SYNTAX      DisplayString

```

ALTIBASE-MIB.txt

```
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The Altibase version."
 ::= { altiStatusEntry 3 }

altiStatusRunningTime OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "altiStatusRunningTime = [dd days, HH:MM:SS
The Altibase run time."
 ::= { altiStatusEntry 4 }

altiStatusProcessID OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION "altiStatusProcessID = PID
Process ID of Altibase."
 ::= { altiStatusEntry 5 }

altiStatusSessionCount OBJECT-TYPE
SYNTAX DisplayString
MAX-ACCESS read-only
STATUS current
DESCRIPTION " The number of currently open Altibase sessions."
 ::= { altiStatusEntry 6 }

END
```


Appendix B.

Troubleshooting

FAQ

altisnmpd Related FAQ

Q. When I run `altisnmpd`, I get the error message: "Error: Failed to connect to the agentx master agent: Unknown host (Connection refused)".

A. Verify that the `snmpd` daemon is running. If so, use the `altisnmpd -x` option to check whether the IP and port are correct.

Q. When I execute the `snmpget` and `snmpwalk` commands, I get the error message: "No Such Object available on this agent at this OID".

A. This error can occur if `altisnmpd` and `snmpd` are not communicating correctly. Verify that `altisnmpd` is running. If the user restarted `snmpd`, `altisnmpd` must also be restarted.

Q. When I execute the `snmpset` command, I get the error message: "Error in packet. Reason: not-Writable (that object does not support modification)...".

A. This error can occur if the value for a read-only object has been set. If it is a read-write object, this is a network problem. In this case, refer to the manual.

Q. When I execute the `snmpget` and `snmpwalk` commands, I get the error message: "No Such Instance currently exists at this OID".

A. This checks whether the name for an OID or object is saved correctly. The user can view `Alti-base MIB` information with the `snmpwalk` command.

```
e.g. > snmpwalk -v 2c -c private IP:PORT altibase
```

Also, verify that `ALTIBASE HDB` is running.

Q. When I execute the `snmpget` and `snmpwalk` commands, I get the error message: "Unknown Object Identifier (Sub-id not found: (top) -> xxx)".

A. Verify that the OID name or the object name has been properly specified. If the `ALTIBASE-MIB.txt` file cannot be loaded, check whether the file exists in `$MIBDIRS` and then check that `$MIBS` is set to `ALL`.

Q. When I execute the `snmpwalk` command, the entire `ALTIBASE MIB` is not output.

```
e.g. > snmpwalk -v 2c -c private IP:PORT altibase
ALTIBASE-MIB::altiPropertyIndex.1 = INTEGER: 1
ALTIBASE-MIB::altiStatusIndex.1 = INTEGER: 1
```

FAQ

- A.** Verify that ALTIBASE HDB is running.

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