



Using AKCP OID's & SNMP commands



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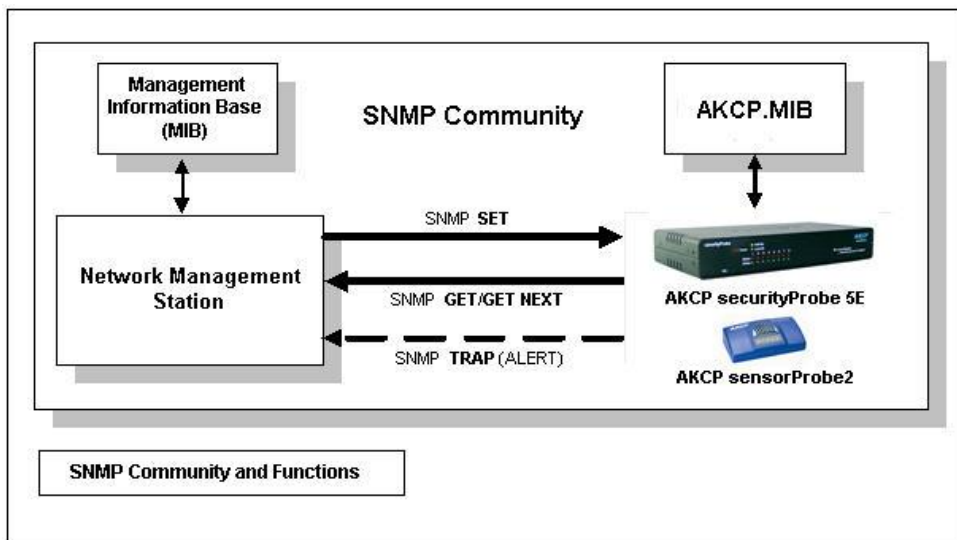
What is and OID?

An OID is an “object identifier”. In computer networking the OID is used to identify an object that is stored in a Management Information Base (MIB). The MIB is a database that manages the devices used in a network setup. In this case, the OID's are used to identify the objects, such as sensors, that are connected to your unit. Roughly speaking, each OID identifies a variable that can be read or set via an SNMP command.

What is SNMP?

SNMP is the most popular network management protocol in the TCP/IP protocol suite. It is a simple request/response protocol that communicates management information between two types of SNMP software entities: SNMP applications (also called SNMP managers) and SNMP agents (AKCP base units and sensors).

SNMP applications run in a network management station (NMS) and issue queries to gather information about the status, configuration, and performance of the AKCP devices and sensors. For example, this very simple diagram belows shows this concept of how WhatsUp Gold software, a network management station, and an AKCP securityProbe 5E, or sensorProbe2 communicate via SNMP across the TCP/IP network.



How to use this manual

This manual aims to provide the user with a guide on how to use SNMP commands and the AKCP OID's. It does assume you have previous knowledge through completion of previous tutorials on our products

If you have any difficulty viewing the screen shots or text in this manual. You can use the "Zoom In" feature on your text viewer.

Please also note the **"Quick Tips"** in each section and also the **"Quick Facts & FAQ"** in section #7 at the end of this manual for more information on SNMP commands and OID's.

1) AKCP OID's

All of the AKCP intelligent sensors are divided into three groups. All of the sensors in the same group have the same OID. The groups are as follows:

1. The first group includes temperature sensors only;
sensorProbeTempDegree = 1.3.6.1.4.1.3854.1.2.2.1.16.1.3.X
sensorProbeTempStatus = 1.3.6.1.4.1.3854.1.2.2.1.16.1.4.X
2. The second group includes all analog sensors such as humidity, airflow, 4-20mA, and DC Voltage, excluding the temperature sensor.
sensorProbeHumidityPercent = 1.3.6.1.4.1.3854.1.2.2.1.17.1.3.X
sensorProbeHumidityStatus = 1.3.6.1.4.1.3854.1.2.2.1.17.1.4.X
3. The third group includes all switch-type sensors such as water sensor, dry contact, security, motion sensor, AC Voltage Detector, relay, and siren & strobe light.
sensorProbeSwitchStatus = 1.3.6.1.4.1.3854.1.2.2.1.18.1.3.X

Where: X is a port number starting from 0 to 7 for SP8, or 0 to 27 for SP8X20.

So for example an OID value that looks like this :-

.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.0

Would be the value for a temperature sensor status connected to RJ45 port 1.

Note: *The dual temperature and humidity sensor consists of a temperature sensor (**group1**) and a humidity sensor (**group2**).*

Here is a list of OID's for the temperature sensor:

Temperature OID's:

.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.0 #this is the temperature 1
.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.1 #this is the temperature 2
.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.2 #this is the temperature 3
.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.3 #this is the temperature 4
.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.4 #this is the temperature 5
.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.5 #this is the temperature 6
.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.6 #this is the temperature 7
.1.3.6.1.4.1.3854.1.2.2.1.16.1.3.7 #this is the temperature 8

This shows the OID value for a temperature sensor connected to each port. As you can see the final digit changes from 0-7 showing the 8 ports of an SP8 unit.

Switch Type sensors (group 3):

OID's can be used to set a switch output to high. For example, if you wished to remotely activate a device then you could use an OID. The status of a switch (high/low) can be found using the following OID:

.1.3.6.1.4.1.3854.1.2.2.1.18.1.3.x

Where "x" is the value (0-7 on 8 port unit) that the switch is connected.

If you wish to set the status of the switch to high then you can use the following OID :-

.1.3.6.1.4.1.3854.1.2.2.1.18.1.8.x

Again the "x" value is the port to which the switch is connected.

This can now be used for remote activation of a device. If a temperature sensor, for example, is connected on port 1 and a dry contact cable is connected on port 2, and the temperature exceeds the threshold, then the management software can send an SNMP Set to the dry contact on port 2 with the following command:

snmpset <ipaddress> <password> .1.3.6.1.4.1.3854.1.2.2.1.18.1.8.1 i 1

The i denotes an integer value

i can take 2 values: 1 = output high, 2 = output low

If set to high it will make the dry contact pins output +5V which can turn on a relay.

Quick Tip:

If you want to control an output of a Dry contact, DO NOT use online/offline to switch the dry contact on and off. Leave the Dry contact output online and use 'sensorProbeSwitchOutputLevel OID' instead.

snmpset -v1 -c <password> <ipaddress> .1.3.6.1.4.1.3854.1.2.2.1.18.1.8.0 i 0

This OID will tell port 1 to set to 0 Volts/Close

snmpset -v1 -c <password> <ipaddress> .1.3.6.1.4.1.3854.1.2.2.1.18.1.8.0 i 1

This OID will tell port 1 to set to +5 Volts/Open

Relay and Siren OIDs

We have special snmp OIDs for controlling relays and sirens. These are:

sensorProbeSwitchManualRelayAction = .1.3.6.1.4.1.3854.1.2.2.1.18.1.25.x

Where: x is a port number from 0 to 7 for SensorProbe (SP2 , SP8 , SP8L and CP8)

The integer values of this OID are:

1 = Allow sensor to control

3 = Turn On

4 = Turn Off

7 = Cycle Off-On-Off

8 = Cycle On-Off-On

The SNMP OID for controlling relays is the following:

.1.3.6.1.4.1.3854.1.2.2.1.18.1.25.0

Integer Value :

1 = allow-sensor-control

3 = relay-turnon

4 = relay-turnoff

7 = cycle Off-On-Off

8 = cycle On-Off-On

Dry Contact status

Here is SNMP OID for reading the dry contact status:
 .1.3.6.1.4.1.3854.1.2.2.1.18.1.3.(Port-1)

The return value can be:
 noStatus(1),
 normal(2),
 highCritical(4),
 lowCritical(6),
 sensorError(7),

sensorProbeSwitchStatus = 1.3.6.1.4.1.3854.1.2.2.1.18.1.3.X

Where: X is a port number starting from 0 to 7 for SP8, or 0 to 27 for SP8X20.

7) Quick Facts and FAQ:

Question:

Do you have an OID for the securityProbe and securityProbe 5E that will tell me if any of my sensors connected to any of the RJ-45 sensor ports is in an alarm state?

Answer:

Yes, you we do. You can use this OID here: .1.3.6.1.4.1.3854.1.1.2.0

This OID will return the worst case status of the SEC or SEC 5E. So, for example you have a sensor in a normal, a warning state and a sensor in a critical state, the OID will return that a sensor on the unit that is in the critical state.

From here you can do an SNMPwalk on all the OID's to determine which sensors are in what status. This can be utilized by say a NMS for example.

Question:

Do you have an OID that will return what the MAC ID of my unit is?

Answer:

Yes, you we do. You can use this OID here: 1.3.6.1.4.1.3854.1.2.2.1.3.0

Question:

I have used the web interface to configure the device. In particular, I have used the web interface to set temperature thresholds, can these thresholds be set via SNMP commands?

Answer:

Yes, you can use the following SNMP set commands for changing your temperature\humidity thresholds.

Temperature

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.16.1.7.<port> i <High Warning value>

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.16.1.8.<port> i <High Critical value>

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.16.1.9.<port> i <Low Warning value>

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.16.1.10.<port> i <Low Critical value>

Humidity

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.17.1.7.<port> i <High Warning value>

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.17.1.8.<port> i <High Critical value>

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.17.1.9.<port> i <Low Warning value>

snmpset -m all -v 1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.17.1.10.<port> i <Low Critical value>

Question:

What is the OID for the daisyTemp temperature string sensor?

Answer:

Yes, you can use the following SNMP set commands for the daisyTemp sensor.

For the daisyTemp sensors and Relay Array the port starts at "1" thresholds.

For checking it the SNMP command is:

snmpget -m all -v1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.101.0

For setting it the SNMP command is:

snmpset -m all -v1 -c <community> <IPAddress> .1.3.6.1.4.1.3854.1.2.2.1.101.0 i <start port>

Question:

Do you have an OID for checking the sensor type, or what type of sensor is connected to my base unit?

Answer:

Yes, you can use the SensorType OID for checking the sensor type on each port and also use the Sensor Online OID again for making sure that sensor is online..

.1.3.6.1.4.1.3854.1.2.2.1.18.1.9 for checking the type of sensor

When polling this for all sensors on your unit you will get this displayed:

```
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.0 8 <- airflow
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.1 9 <- siren & strobe
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.2 3 <- ?
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.3 3 <- ?
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.4 3 <- ?
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.5 13 <- relay / voltage
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.6 3 <- ?
1.3.6.1.4.1.3854.1.2.2.1.18.1.9.7 3 <- ?
```

The values represent the sensors as follows:

temperature(1),
4-20mA(2),
humidity(3),
water(4),
atod(5),
security(6),
airflow(8),
siren(9),

dryContact(10),
voltage(12),
relay(13),
motion(14)

sensor controlled relay:

```
snmpset -mall -v1 -c<set community> <ip> .1.3.6.1.4.1.3854.1.2.2.1.18.1.7 i  
<stage>  
when  
<set community> is admin password  
<ip> is IPaddress of unit  
<stage> is 0 for close, 1 for open
```

What is MIB Browser ?

A MIB Browser is a tool that allows you to pull out data from SNMP enabled devices such as routers, switches, and servers. In addition to pulling out data, a MIB Browser may also perform the following functions.

- Retrieve and display MIB data in a human readable form
- Allow you to make it smarter by compiling in more MIB definitions
- Set MIB variables, create, modify or delete conceptual table rows
- Basic alarm (trap) management
- View the text file in a graphical manner usually featuring a MIB tree
- Support all versions of SNMP including SNMPv3 security