

How to get “show environment” information via SNMP on DGS-3120 Equipment.mib

The screenshot shows a MIB Tree on the left with the following structure:

- iso
 - swEquipmentMIB
 - swEquipment
 - swEquipmentCapacity
 - swPowerTable
 - swFanTable
 - swTemperatureTable
 - swUnitMgmt
 - swExternalAlarmTable
 - swEquipmentPowerSaving
 - swEquipmentTemperatureCtrl
 - swEquipmentNotify
 - swEquipmentNotifyMgmt
 - swEquipmentNotification
 - swNotificationBindings

Properties for swEquipmentMIB:

Object name	swEquipmentMIB
Object ID	1.3.6.1.4.1.171.12.11
Module	EQUIPMENT-MIB
Base syntax	Module Identity
Access	Not_Accessible
Status	Mandatory
Parent node	iso
First child	swEquipment
Last updated	0907210000Z
Organization	D-Link Corp.
Contact info	http://support.dlink.com
Description	equipments MIB.

We do not have a uni-oid to query all the information in command “show environment”, so we need to query the information one by one:

```

DGS-3120-24PC:admin#sh en
Command: show environment

High Warning Temperature Threshold(Celsius) :    79
Low Warning Temperature Threshold(Celsius)  :    11
Unit 1
Internal Power : Active
External Power : Fail
Right Fan 1 : Speed Low (3000 RPM)
Right Fan 2 : Speed Low (3000 RPM)
Right Fan 3 : Speed Low (3000 RPM)
Right Fan 4 : Speed Low (3000 RPM)
Current Temperature(Celsius) :    29
Fan High Temperature Threshold(Celsius) :    40
Fan Low Temperature Threshold(Celsius) :    35
  
```

Annotations for the output:

- High Warning Temperature Threshold(Celsius) : 79 → EQUIPMENT-MIB => *swTemperatureHighThresh*
- Low Warning Temperature Threshold(Celsius) : 11 → EQUIPMENT-MIB => *swTemperatureLowThresh*
- Unit 1 → EQUIPMENT-MIB => *swUnitNumOfUnit*
- Internal Power : Active → EQUIPMENT-MIB => *swPowerStatus*
- External Power : Fail → EQUIPMENT-MIB => *swPowerStatus*
- Right Fan 1-4 : Speed Low (3000 RPM) → EQUIPMENT-MIB => *swFanStatus + swFanSpeed*
- Current Temperature(Celsius) : 29 → EQUIPMENT-MIB => *swTemperatureCurrent*

Fan High Temperature Threshold(Celsius) : 40
 Fan Low Temperature Threshold(Celsius) : 35 **Do not support so far.**

As diagram shown above:

1) **EQUIPMENT-MIB -> swTemperatureTable -> swTemperatureHighThresh & swTemperatureLowThresh:**

Object name	swTemperatureHighThresh
Object ID	1.3.6.1.4.1.171.12.11.1.8.1.3
Module	EQUIPMENT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : -500..500
Parent node	swTemperatureEntry
First child	None
Description	The high threshold of shelf temperature.

Object name	swTemperatureLowThresh
Object ID	1.3.6.1.4.1.171.12.11.1.8.1.4
Module	EQUIPMENT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : -500..500
Parent node	swTemperatureEntry
First child	None
Description	The low threshold of shelf temperature.

:: **SNMP Command:**

```
snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.8.1.3
```

```
snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.8.1.4
```

```
C:\>snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.8.1.3
EQUIPMENT-MIB::swTemperatureHighThresh.1 = INTEGER: 79

C:\>snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.8.1.4
EQUIPMENT-MIB::swTemperatureLowThresh.1 = INTEGER: 11
```

2) **EQUIPMENT-MIB -> swUnitMgmt -> swUnitNumOfUnit**

Object name	swUnitNumOfUnit
Object ID	1.3.6.1.4.1.171.12.11.1.9.3
Module	EQUIPMENT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swUnitMgmt
First child	None
Description	The current number of units.

:: **SNMP Command:**

```
snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.9.3
```

```
C:\>snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.9.3
EQUIPMENT-MIB::swUnitNumOfUnit.0 = INTEGER: 1
```

3) EQUIPMENT-MIB -> swEquipment -> swPowerTable -> swPowerEntry -> swPowerStatus

Object name	swPowerStatus
Object ID	1.3.6.1.4.1.171.12.11.1.6.1.3
Module	EQUIPMENT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : other(0) 2 : lowVoltage(1) 3 : overCurrent(2) 4 : working(3) 5 : fail(4) 6 : connect(5) 7 : disconnect(6)
Parent node	swPowerEntry
First child	None
Description	Indicates the current power status. lowVoltage : The voltage of the power unit is too low. overCurrent: The current of the power unit is too high. working : The power unit is working normally. fail : The power unit has failed. connect : The power unit is connected but not powered. disconnect : The power unit is not connected.

:: SNMP Command:

```
snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.6.1.3
```

```
C:\>snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.6.1.3
EQUIPMENT-MIB::swPowerStatus.1.1 = INTEGER: working(3)
EQUIPMENT-MIB::swPowerStatus.1.2 = INTEGER: fail(4)
```

4) EQUIPMENT-MIB -> swEquipment -> swFanTable -> swFanStatus + swFanSpeed

Object name	swFanStatus
Object ID	1.3.6.1.4.1.171.12.11.1.7.1.3
Module	EQUIPMENT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : other(0) 2 : working(1) 3 : fail(2) 4 : speed-0(3) 5 : speed-low(4) 6 : speed-middle(5) 7 : speed-high(6)
Parent node	swFanEntry
First child	None
Description	Indicates the current fan status. speed-0 : If Fan function is normal and the Fan does not spin due to the temperature isn't reach the threshold, status of Fan is Speed 0. speed-low : Fan spin using the lowest speed. speed-middle: Fan spin using the middle speed. speed-high : Fan spin using the highest speed.

Object name	swFanSpeed
Object ID	1.3.6.1.4.1.171.12.11.1.7.1.6
Module	EQUIPMENT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swFanEntry
First child	None
Description	Indicates the fan work speed(RPM).

:: SNMP Command:

SW FanStatus: snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.7.1.3

```
C:\>snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.7.1.3
EQUIPMENT-MIB::swFanStatus.1.7 = INTEGER: speed-low<4>
EQUIPMENT-MIB::swFanStatus.1.8 = INTEGER: speed-low<4>
EQUIPMENT-MIB::swFanStatus.1.9 = INTEGER: speed-low<4>
EQUIPMENT-MIB::swFanStatus.1.10 = INTEGER: speed-low<4>
```

SW FanSpeed: snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.7.1.6

```
C:\>snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.7.1.6
EQUIPMENT-MIB::swFanSpeed.1.7 = INTEGER: 3000
EQUIPMENT-MIB::swFanSpeed.1.8 = INTEGER: 3000
EQUIPMENT-MIB::swFanSpeed.1.9 = INTEGER: 3000
EQUIPMENT-MIB::swFanSpeed.1.10 = INTEGER: 3000
```

5) **EQUIPMENT-MIB -> swEquipment -> swTemperatureTable -> swTemperatureCurrent**

Object name	swTemperatureCurrent
Object ID	1.3.6.1.4.1.171.12.11.1.8.1.2
Module	EQUIPMENT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : -500..500
Parent node	swTemperatureEntry
First child	None
Description	The shelf current temperature.

:: SNMP Command: snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.8.1.2

```
C:\>snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.11.1.8.1.2
EQUIPMENT-MIB::swTemperatureCurrent.1 = INTEGER: 29
```

6) **Fan High Temperature Threshold(Celsius) : 40**
Fan Low Temperature Threshold(Celsius) : 35

=> So far we do not support these two OID.