



Management Information Bases (MIBs)

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Calculating of entPhysicalIndex in the Entity MIB

The inventory in the switch system can be accessed through a MIB browser. These devices are indexed (entPhysicalIndex) using three layers:

1. Module layer—includes modules located on system (e.g., cables, fan, power supply, and so forth). See the [module type breakdown table](#) for more details.
2. Device layer—a number identifying the specific device that is associated with the module (e.g., ASIC on a leaf, fan on the management board, and so forth).
3. Sensor layer—a number identifying the specific sensor that is associated with the device (e.g., fan sensors, temperature sensors, power sensors, and so forth).

Each layer is assigned a fixed position in the SNMP index number that represent it.

The physical entities in the system (other than port modules) use the following index schema:

Mod. Type ID	Module Index		Device Identifier				Sensor Type and Index	
1	2	3	4	5	6	7	8	9
Layer 1			Layer 2				Layer 3	

Quantum systems use the following index schema for port modules and port module sensors:

Mod. Type ID	Port Module Identifier							Port module Sensor index TX sensors in range 1..39 RX sensors in range 41..79	
1	2	3	4	5	6	7	8	9	10
Layer 1	Layer 2							Layer 3	

Switch-IB, Switch-IB 2 use the following index schema for port modules and port module sensors:

Mod. Type ID	Port Module Identifier					Port Module Sensor Type 0 for TX 1 for RX	Sensor index	
1	2	3	4	5	6	7	8	9
Layer 1	Layer 2					Layer 3		

Module type breakdown:

Number	Description
1	Chassis
2	Management
3	Spine
4	Leaf
5	Fan
6	Power supply
7	BBU
8	x86 CPU
9	Port module
Physical entities—10 digits representation	
1	Port module

Note

Port module 9 digits representation is kept for backwards compatibility.

Device type breakdown:

Number	Description
1	PS

Number	Description
2	FAN
3	MGMT
4	BOARD_MONITOR
5	CPU_BOARD_MONITOR
6	SX
7	SIB
8	CPU_MEZZ_TEMP
9	CPU_MEZZ_VOLT
10	CPU package Sensor
11	CPU Core Sensor
12	SX_AMBIENT_TEMP
13	SX_MONITOR
14	AUX_IN_TMP_SNSR
15	AUX_OUT_TMP_SNSR
16	MAIN_IN_TMP_SNSR
17	MAIN_OUT_TMP_SNSR
18	CPU_MEZZ_TEMP
19	controller
20	QSFP_TEMP
21	QSFP-ASIC
22	Board AMB temp
23	Ports AMB temp
24	power-mon
25	PS_MONITOR
26	CURR_MONITOR
27	MGMT_MONITOR
28	acdc-monitor1
29	acdc-monitor2

Number	Description
30	POWER_DOMAIN
31	LEAF
32	SPINE
33	pwr-monitor
34	pvc-monitor
35	SWB AMB temp
36	pcie-switch-temp
37	SPC
38	On-board inlet
39	On-board outlet
40	QTM
41	Front AMB temp
42	AMBIENT_TEMP
43	COMEX VoltMonitor1
44	COMEX VoltMonitor2
45	COMEX Ambient Sensor
46	Gearbox Sensors
47	SODIMM
48	PCH thermal Sensor
49	NV
50	LEAKAGE

Sensor type breakdown:

Number	Description
1	t
2	f
3	p
4	cu

Number	Description
5	v
6	consumer_p
7	consumer_c
8	consumer_v
9	leakage

Examples

- entPhysicalIndex with value 401191311
 - 9 digits representation.
 - Layer 1 is “401”—“4” indicates a leaf (see [module type breakdown table](#)) and “01” indicates leaf at index #1 (i.e., leaf 01)
 - Layer 2 is “1913”—this is the identifier for one of the QSFP-ASIC in the system
 - Layer 3 is “11”—this is the identifier for temperature sensor #1
 - The description for this physical entity (appears in entPhysicalDescr column of the MIB) would be: L01/QSFP-ASIC-1/T1
- entPhysicalIndex with value 501020021
 - 9 digits representation.
 - Layer 1 is “501”—“5” indicates a fan (see [module type breakdown table](#)) and “01” indicates fan at index #1 (i.e., fan 01)
 - Layer 2 is “0200”—this is the identifier for general fan in the system
 - Layer 3 is “21”—this is the identifier for fan sensor #1
 - The description for this physical entity (appears in entPhysicalDescr column of the MIB) would be: FAN1/FAN/F1
- For entPhysicalIndex with value 1000012700
 - 10 digits representation.

- Layer 1 is “1”—port module (see [module type breakdown table](#)).
- Layer 2 is “127”—port identifier
- Layer 3 is “00”—no sensors for this port module
- For entPhysicalIndex with value 1000012742
 - 10 digits representation.
 - Layer 1 is “1”—port module (see [module type breakdown table](#)).
 - Layer 2 is “127”—port identifier
 - Layer 3 is “42”—sensor in the range 41..79 indicates an RX sensor

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