

D-link Switch: DES-3828 Firmware: R3 MIB File: V3

How to use NET-SNMP – IGMP Management (DES-3828)

The Location of IGMP Management OID

The screenshot shows the D-Link MIB Compiler interface. The left pane displays a list of MIB files with their corresponding Root IDs. The entry 'DES3828-L2MGMT-MIB' is highlighted in blue and has a red box around it. The right pane shows a tree structure of the MIB, with the 'swL2IGMPmgmt' node expanded. The tree structure is as follows:

- swL2IGMPmgmt
 - swL2IGMPMaxSupportedVlans
 - swL2IGMPMaxIpgGroupNumPerVlan
 - swL2IGMPCtrlTable
 - swL2IGMPCtrlEntry
 - swL2IGMPCtrlVid
 - swL2IGMPQueryInterval
 - swL2IGMPMaxResponseTime
 - swL2IGMPRobustness
 - swL2IGMPLastMemberQueryInterval
 - swL2IGMPHostTimeout
 - swL2IGMPRouteTimeout
 - swL2IGMPLeaveTimer
 - swL2IGMPQueryState
 - swL2IGMPCurrentState
 - swL2IGMPCtrlState
 - swL2IGMPFastLeaveState
 - swL2IGMPQueryInfoTable
 - swL2IGMPQueryInfoEntry
 - swL2IGMPInfoVid
 - swL2IGMPInfoQueryCount
 - swL2IGMPInfoTxQueryCount
 - swL2IGMPInfoTable
 - swL2IGMPInfoEntry
 - swL2IGMPVid
 - swL2IGMPGroupIpAddr
 - swL2IGMPMacAddr
 - swL2IGMPPortMap
 - swL2IGMPIpGroupReportCount
 - swL2IGMPMulticastVlanTable
 - swL2IGMPMulticastVlanEntry
 - swL2IGMPMulticastVlanId
 - swL2IGMPMulticastVlanName
 - swL2IGMPMulticastVlanSourcePort
 - swL2IGMPMulticastVlanMemberPort
 - swL2IGMPMulticastVlanRowStatus

MIB File: DES3828-L2MGMT-MIB

OID: 1.3.6.1.4.1.171.11.69.1.2.10

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Show IGMP Max Supported VLANs

:: Command ::

```
snmpget -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.1.0
```

Object name	swL2IGMPMaxSupportedVlans
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.1
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPMgmt
First child	None
Description	Maximum number of Vlans in the layer 2 IGMP control table (swL2IGMPCtrlTable).

Show IGMP Max IP Group Number Per VLAN

:: Command ::

```
snmpget -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.2.0
```

Object name	swL2IGMPMaxIpGroupNumPerVlan
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.2
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPMgmt
First child	None
Description	Maximum number of multicast ip group per Vlan in the layer 2 IGMP information table (swL2IGMPQueryInfoTable).

IGMP Control Table

Object name	swL2IGMPCtrlTable
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3
Module	DES3828-L2MGMT-MIB
Base syntax	Sequence Of swL2IGMPCtrlEntry
Access	Not_Accessible
Status	Current
Sequence	1:swL2IGMPCtrlVid - Integer 2:swL2IGMPQueryInterval - Integer 3:swL2IGMPMaxResponseTime - Integer 4:swL2IGMPRobustness - Integer 5:swL2IGMPLastMemberQueryInterval - Integer 6:swL2IGMPHostTimeout - Integer 7:swL2IGMPRouteTimeout - Integer 8:swL2IGMPLeaveTimer - Integer 9:swL2IGMPQueryState - Integer 10:swL2IGMPCurrentState - Integer 11:swL2IGMPCtrlState - Integer 12:swL2IGMPFastLeaveState - Integer
Parent node	swL2IGMPMgmt
First child	swL2IGMPCtrlEntry
Description	The table controls the Vlan's IGMP function. Its scale depends on current VLAN state (swL2VlanInfoStatus). If VLAN is disabled mode, there is only one entry in the table, with index 1. If VLAN is in Port-Base or 802.1q mode, the number of entries can be up to 12, with index range from 1 to 12.

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Show Layer2 IGMP Control VID

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.1
```

Object name	swL2IGMPCtrlVid
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.1
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPCtrlEntry
First child	None
Description	This object indicates the IGMP control entry's VLAN id. If VLAN is disabled, the Vid is always 0 and cannot be changed by management users. If VLAN is in Port-Base mode, the Vid is arranged from 1 to 12, fixed form. If VLAN is in 802.1q mode, the Vid setting can vary from 1 to 4094 by management user, and the Vid in each entry must be unique in the IGMP Control Table.

Show Layer2 IGMP Query Interval

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.2
```

Object name	swL2IGMPQueryInterval
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.2
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : 1..65535
Parent node	swL2IGMPCtrlEntry
First child	None
Description	The frequency at which IGMP Host-Query packets are transmitted on this switch.

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Show Layer2 IGMP Max Response Time

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.3
```

Object name	swL2IGMPMaxResponseTime
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.3
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : 1..25
Parent node	swL2IGMPCtrlEntry
First child	None
Description	The maximum query response time on this switch.

Show Layer2 IGMP Robustness

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.4
```

Object name	swL2IGMPRobustness
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.4
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : 1..255
Parent node	swL2IGMPCtrlEntry
First child	None
Description	The Robustness Variable allows tuning for the expected packet loss on a subnet. If a subnet is expected to be lossy, the Robustness Variable may be increased. IGMP is robust to (Robustness Variable-1) packet losses.

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Show Layer2 IGMP Last Member Query Interval

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.5
```

Object name	swL2IGMPLastMemberQueryInterval
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.5
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : 1..25
Parent node	swL2IGMPCtrlEntry
First child	None
Description	The Last Member Query Interval is the Max Response Time inserted into Group-Specific Queries sent in response to Leave Group messages, and is also the amount of time between Group-Specific Query messages.

Show Layer2 IGMP Host Timeout

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.6
```

Object name	swL2IGMPHostTimeout
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.6
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : 1..16711450
Parent node	swL2IGMPCtrlEntry
First child	None
Description	The timer value for sending IGMP query packet when none was sent by the host in the LAN. The timer works in per-VLAN basis. Our device will be activated to send the query message if the timer is expired. Please reference RFC2236-1997.

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Show Layer2 IGMP Route Timeout

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.7
```

Object name	swL2IGMPRouteTimeout
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.7
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : 1..16711450
Parent node	swL2IGMPCtrlEntry
First child	None
Description	The Router Timeout is how long a host must wait after hearing a Query before it may send any IGMPv2 messages.

Show Layer2 IGMP Leave Timer

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.8
```

Object name	swL2IGMPLeaveTimer
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.8
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : 0..16711450
Parent node	swL2IGMPCtrlEntry
First child	None
Description	When a querier receives a Leave Group message for a group that has group members on the reception interface, it sends Group-Specific Queries every swL2IGMPLeaveTimer to the group being left.

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Show Layer2 IGMP Query State

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.9
```

Object name	swL2IGMPQueryState
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.9
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : other(1) 2 : disabled(2) 3 : enabled(3)
Parent node	swL2IGMPCtrlEntry
First child	None
Description	This object decide the IGMP query enabled or disabled.

Show Layer2 IGMP Current State

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.10
```

Object name	swL2IGMPCurrentState
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.10
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : other(1) 2 : querier(2) 3 : non-querier(3)
Parent node	swL2IGMPCtrlEntry
First child	None
Description	This object indicates the current IGMP query state.

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Show Layer2 IGMP Control State

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.11
```

Object name	swL2IGMPCtrlState
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.11
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : other(1) 2 : disable(2) 3 : enable(3)
Parent node	swL2IGMPCtrlEntry
First child	None
Description	This object indicates the status of this entry. other(1) - this entry is currently in use but the conditions under which it will remain so are different from each of the following values. disable(2) - IGMP function is disabled for this entry. enable(3) - IGMP function is enabled for this entry.

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Show Layer2 IGMP Fast Leave State

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.12
```

Object name	swL2IGMPFastLeaveState
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.3.1.12
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : other(1) 2 : disable(2) 3 : enable(3)
Parent node	swL2IGMPCtrlEntry
First child	None
Description	This object indicates the fast_leave status of this entry. other(1) - this entry is currently in use but the conditions under which it will remain so are different from each of the following values. disable(2) - IGMP fast-leave function is disabled for this entry. enable(3) - IGMP fast-leave function is enabled for this entry.

IGMP Query Info Table

Object name	swL2IGMPQueryInfoTable
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.4
Module	DES3828-L2MGMT-MIB
Base syntax	Sequence Of swL2IGMPQueryInfoEntry
Access	Not_Accessible
Status	Current
Sequence	1:swL2IGMPInfoVid - Integer 2:swL2IGMPInfoQueryCount - Integer 3:swL2IGMPInfoTxQueryCount - Integer
Parent node	swL2IGMPMgmt
First child	swL2IGMPQueryInfoEntry
Description	The table contains the number current IGMP query packets which is captured by this device, as well as the IGMP query packets sent by the device.

Show Layer2 IGMP Info VID

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.4.1.1
```

Object name	swL2IGMPInfoVid
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.4.1.1
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPQueryInfoEntry
First child	None
Description	This object indicates the Vid of associated IGMP info table entry. It follows swL2IGMPCtrlVid in the associated entry of IGMP control table (swL2IGMPCtrlTable).

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Show Layer2 IGMP Info Query Count

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.4.1.2
```

Object name	swL2IGMPInfoQueryCount
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.4.1.2
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPQueryInfoEntry
First child	None
Description	This object indicates the number of query packets received since the IGMP function enabled, in per-VLAN basis.

Show Layer2 IGMP Info Tx Query Count

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.4.1.3
```

Object name	swL2IGMPInfoTxQueryCount
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.4.1.3
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPQueryInfoEntry
First child	None
Description	This object indicates the send count of IGMP query messages, in per-VLAN basis. In case of IGMP timer expiration, the switch sends IGMP query packets to related VLAN member ports and increment this object by 1.

IGMP Info Table

Object name	swL2IGMPInfoTable
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.5
Module	DES3828-L2MGMT-MIB
Base syntax	Sequence Of swL2IGMPInfoEntry
Access	Not_Accessible
Status	Current
Sequence	1:swL2IGMPVid - Integer 2:swL2IGMPGroupIpAddr - IP Address 3:swL2IGMPMacAddr - Octet String 4:swL2IGMPPortMap - Octet String 5:swL2IGMPIpGroupReportCount - Integer
Parent node	swL2IGMPMgmt
First child	swL2IGMPInfoEntry
Description	The table containing current IGMP information which captured by this device, provided that swL2DevCtrlIGMPSnooping and swL2IGMPCtrlState of associated VLAN entry are all enabled. Note that the priority of IGMP table entries is lower than Filtering Table, i.e. if there is a table hash collision between the entries of IGMP Table and Filtering Table inside the switch H/W address table, then Filtering Table entry overwrite the colliding entry of IGMP Table. See swL2FilterMgmt description also.

Show Layer2 IGMP PVID

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.5.1.1
```

Object name	swL2IGMPVid
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.5.1.1
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPInfoEntry
First child	None
Description	This object indicates the Vid of individual IGMP table entry. It shows the Vid of IGMP report information captured on network.

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Show Layer2 IGMP Group IP Address

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.5.1.2
```

Object name	swL2IGMPGroupIpAddr
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.5.1.2
Module	DES3828-L2MGMT-MIB
Base syntax	IP Address
Composed syntax	IpAddress
Access	Read-Only
Status	Current
Parent node	swL2IGMPInfoEntry
First child	None
Description	This object is identify group ip address which is captured from IGMP packet, in per-Vlan basis.

Show Layer2 IGMP Group Mac Address

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.5.1.3
```

Object name	swL2IGMPMacAddr
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.5.1.3
Module	DES3828-L2MGMT-MIB
Base syntax	Octet String
Composed syntax	MacAddress
Access	Read-Only
Status	Current
Value list	1 : 6..6
Parent node	swL2IGMPInfoEntry
First child	None
Description	This object is identify mac address which is corresponding to swL2IGMPGroupIpAddr, in per-Vlan basis.

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Show Layer2 IGMP Port Map

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.5.1.4
```

Object name	swL2IGMPPortMap
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.5.1.4
Module	DES3828-L2MGMT-MIB
Base syntax	Octet String
Composed syntax	PortList
Access	Read-Only
Status	Current
Value list	1 : 0..127
Parent node	swL2IGMPInfoEntry
First child	None
Description	This object indicates which ports are belong to the same multicast group, in per-Vlan basis. Each multicast group has a octet string to indicate with port map. The most significant bit represents the lowest numbered port, and the least significant bit represents the highest numbered port. Thus, each port of the switch is represented by a single bit within the value of this object. If that bit has a value of '1' then that port is included in the set of ports; the port is not included if its bit has a value of '0'(Note that the setting of the bit corresponding to the port from which a frame is received is irrelevant). The 4 octets is represent one unit port according its logic port. If the unit less 32 port, the other port don't care just fill zero.

Show Layer2 IGMP Report Count

:: Command ::

```
snmpwalk -v2c -c public 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.5.1.5
```

Object name	swL2IGMPIpGroupReportCount
Object ID	1.3.6.1.4.1.171.11.69.1.2.10.5.1.5
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swL2IGMPInfoEntry
First child	None
Description	This object indicate how much report packet was receive by our device corresponding with this entry from IGMP function enabled, in per-Vlan basis.

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Enable IGMP Snooping

Step 1. Set up Query State to be “Enable”

```
snmpset -v2c -c private 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.9.1 i 3
```

Step 2. Enable Control State to be “Enable”

```
snmpset -v2c -c private 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.10.3.1.11.1 i 3
```

Step 3. Enable Global IGMP Snooping Function

```
snmpset -v2c -c private 192.168.0.1 1.3.6.1.4.1.171.11.69.1.2.1.2.2.0 i 3
```

Object name	swL2DevCtrlIGMPSnooping
Object ID	1.3.6.1.4.1.171.11.69.1.2.1.2.2
Module	DES3828-L2MGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : other(1) 2 : disabled(2) 3 : enabled(3)
Parent node	swL2DevCtrl
First child	None
Description	This object indicates layer 2 Internet Group Management Protocol (IGMP) capture function is enabled or disabled.