

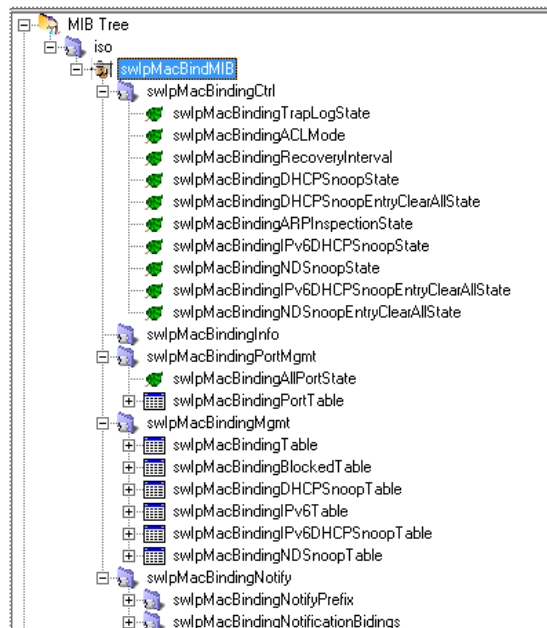
How to setup IMPB on DES-3200 series (HW: C1, FW: 4.30) via SNMP

MIB: IP-MAC-BIND-MIB

Main OIDs:

IMPB Entry Mgmt: 1.3.6.1.4.1.171.12.23.4.1.1

IMPB Port State: 1.3.6.1.4.1.171.12.23.3.2.1.2



1) IMPB Global Setting:

CLI Command	SNMP Command
enable address_binding trap_log	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.1.1.0 i 2 2 = enabled ; 3 = disabled ; 1 = other
enable address_binding dhcp_snoop	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.1.4.0 i 1 1 = enabled ; 2 = disabled
enable address_binding dhcp_snoop ipv6	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.1.7.0 i 1 1 = enabled ; 2 = disabled
enable address_binding nd_snoop	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.1.8.0 i 1 1 = enabled ; 2 = disabled

Object name	swlpMacBindingNDSnoopState
Object ID	1.3.6.1.4.1.171.12.23.1.8
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : enabled(1) 2 : disabled(2)
Parent node	swlpMacBindingCtrl
First child	None
Description	This object indicates the global state of ND snooping.

Object name	swlpMacBindingTrapLogState
Object ID	1.3.6.1.4.1.171.12.23.1.1
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : other(1) 2 : enable(2) 3 : disable(3)
Parent node	swlpMacBindingCtrl
First child	None
Description	When enabled (2), whenever there is a new MAC that violates the pre-defined IP MAC Binding configuration, a trap will be sent out and the relevant information will be logged into the system.

Object name	swlpMacBindingDHCPsnoopState
Object ID	1.3.6.1.4.1.171.12.23.1.4
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : enabled(1) 2 : disabled(2)
Parent node	swlpMacBindingCtrl
First child	None
Description	When the dhcp_snoop function is enabled, all address_binding disabled ports will act as DHCP server ports (the switch will learn IP addresses through DHCP server ports (by DHCP OFFER and DHCP ACK packets)). The auto-learned IP-MAC binding entry will be mapped to a specific source port based on the MAC address learning function. This entry will be created as an ACL-mode binding entry for this specific port. Each entry is associated with a lease time. When the lease time expires, the expired entry will be removed from this port. The automatically learned binding entry can be moved from one port to another port if the DHCP snooping function has learned that the MAC address has moved to a different port. Consider a case where DHCP snooping learns a binding entry, and the same IP-MAC binding entry has been statically configured. Suppose that the learned information is consistent with the statically configured entry, then the automatically learned entry will not be created. Supposing that the entry has been statically configured in ARP mode, since the automatically learned entry will be created in ACL mode, the entry will become an ACL mode entry. Supposing that the entry is statically configured on one port and the entry is automatically learned on another port, then both entries will exist. When the dhcp_snoop function is disabled, all of the automatically learned binding entries will be removed.

2) Port Table

CLI Command	SNMP Command
config address_binding ip_mac ports 1 arp_inspection strict	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.16.1 i 2 1 = port 1 2 = strict mode ; 3 = loose mode ; 1 = disabled
config address_binding ip_mac ports 1 ip_inspection enable	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.17.1 i 1 1 = port 1 1 = enabled; 2 = disabled
config address_binding ip_mac ports 1 protocol ipv4	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.18.1 i 2 1 = port 1 2 = ipv4 ; 3 = ipv6 ; 1 = all
config address_binding ip_mac ports 1 allow_zeroip enable	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.3.1 i 1 1 = port 1 1 = enabled; 2 = disabled
config address_binding ip_mac ports 1 forward_dhcp pkt enable	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.4.1 i 1 1 = port 1 1 = enabled; 2 = disabled
config address_binding ip_mac ports 1 stop_learning_threshold 100	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.8.1 i 100 1 = port 1 100 = Stop Learning Threshold entries number
config address_binding dhcp_snoop max_entry ports 1 limit 30	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.5.1 i 30 1 = port 1 30 = Stop Learning Threshold entries number ; 0 = No Limit
config address_binding nd_snoop ports 1 max_entry 20	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.5.1 i 20 1 = port 1 20 = ND Snoop Max Entry number ; 0 = No Limit
config address_binding recover_learning ports 1	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.9.1 i 2 1 = port 1 2 = start ; 1 = other
show address_binding nd_snoop binding_entry port 1	snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.6.1 1 = port 1
show address_binding dhcp_snoop binding_entry port 1	snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.3.1 1 = port 1

Object name	swIpMacBindingPortARPIInspection
ObjectID	1.3.6.1.4.1.171.12.23.3.2.1.16
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : disabled(1) 2 : strict(2) 3 : loose(3)
Parent node	swIpMacBindingPortEntry
First child	None
Description	This object used to set ARP inspection state on the specified port. When ARP inspection is enabled on the port, the legal ARP packets will be forward, while the illegal packets will be dropped. strict : In this mode, all packets are dropped by default until a legal ARP or broadcast IP packets are detected. loose : In this mode, all packets are forwarded by default until an illegal ARP or broadcast IP packets are detected.

Object name	swIpMacBindingPortIPInspection
Object ID	1.3.6.1.4.1.171.12.23.3.2.1.17
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : enabled(1) 2 : disabled(2)
Parent node	swIpMacBindingPortEntry
First child	None
Description	This object used to set the IP inspection state on the specified port. When IP inspection is enabled on the port, the legal IP packets will be forwarded, while the illegal IP packets will be dropped.

Object name	swIpMacBindingPortIPProtocol
Object ID	1.3.6.1.4.1.171.12.23.3.2.1.18
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : all(1) 2 : ipv4(2) 3 : ipv6(3)
Parent node	swIpMacBindingPortEntry
First child	None
Description	This object is used to set which kind of IP packets need to be checked by IP-MAC-PORT binding on the specified port. ipv4: Only IPv4 packets will be checked. ipv6: Only IPv6 packets will be checked. all: Both IPv4 and IPv6 packets will be checked.

Object name	swIpMacBindingPortForwardDhcpPkt
Object ID	1.3.6.1.4.1.171.12.23.3.2.1.4
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : enabled(1) 2 : disabled(2)
Parent node	swIpMacBindingPortEntry
First child	None
Description	This object can be set to forward DHCP packets or not forward DHCP packets on the specified port.

Object name	swIpMacBindingPortStopLearningThreshold
Object ID	1.3.6.1.4.1.171.12.23.3.2.1.8
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Parent node	swIpMacBindingPortEntry
First child	None
Description	This object indicates the threshold to stop learning new MAC addresses on the specified port. When the number of blocked entries exceeds the threshold, the port will stop learning new addresses. The packet with new addresses will be dropped. Note: When 0 is set on the specified port, it means no limit.

Object name	swIpMacBindingPortRecoverLearning
Object ID	1.3.6.1.4.1.171.12.23.3.2.1.9
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Current
Value list	1 : other(1) 2 : start(2)
Parent node	swIpMacBindingPortEntry
First child	None
Description	When set to start (2), it will change from the stop_learning state to the normal state on the specified port. When get, it always returns other (1).

3) Binding Table

CLI Command	SNMP Command
<pre>config address_binding ip_mac ipaddress 10.90.90.99 mac_address 0C-0C-0C-0C-0C-0C ports 1</pre>	<pre>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.1.1.2.10.90.90.99 x 0c0c0c0c0c0c 1.3.6.1.4.1.171.12.23.4.1.1.4.10.90.90.99 x 8000 1.3.6.1.4.1.171.12.23.4.1.1.3.10.90.90.99 i 4</pre> <p>10.90.90.99 = IP address 0c0c0c0c0c0c = MAC address 8000 = port 1</p> <p>[Each character 0 can turn into binary 0000, which can stand for 4 ports. For example, character "8" turns into binary is "1000", which means port 1; Character "6" turns into binary is "0110", which means port s 2-3. Hence, if you want to select ports 10, then your octet string value is:0040, which binary is <u>0000</u> <u>0000</u> <u>0100</u> <u>0000</u> <u>0000</u> <u>0000</u> <u>0000</u> <u>0000</u> => 00400000]</p> <p>4 = createAndGo(4)</p>
<pre>delete address_binding ip_mac ipaddress 10.90.90.99 mac_address 0C-0C-0C-0C-0C-0C</pre>	<pre>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.1.1.3.10.90.90.99 i 6</pre> <p>10.90.90.99 = IP address 6 = destroy(6)</p>

Object name	swIpMacBindingIpIndex
Object ID	1.3.6.1.4.1.171.12.23.4.1.1.1
Module	IP-MAC-BIND-MIB
Base syntax	IP Address
Composed syntax	IpAddress
Access	Read-Only
Status	Current
Parent node	swIpMacBindingEntry
First child	None
Description	The IP address of the IP-MAC binding entry.

Object name	swIpMacBindingMac
Object ID	1.3.6.1.4.1.171.12.23.4.1.1.2
Module	IP-MAC-BIND-MIB
Base syntax	Octet String
Composed syntax	MacAddress
Access	Read-Create
Status	Current
Value list	1 : 6.6
Parent node	swIpMacBindingEntry
First child	None
Description	The MAC address of the IP-MAC binding entry.

Object name	swIpMacBindingStatus
Object ID	1.3.6.1.4.1.171.12.23.4.1.1.3
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	RowStatus
Access	Read-Create
Status	Current
Value list	1 : active(1) 2 : notInService(2) 3 : notReady(3) 4 : createAndGo(4) 5 : createAndWait(5) 6 : destroy(6)
Parent node	swIpMacBindingEntry
First child	None
Description	The status of this entry.

Object name	swIpMacBindingPorts
Object ID	1.3.6.1.4.1.171.12.23.4.1.1.4
Module	IP-MAC-BIND-MIB
Base syntax	Octet String
Composed syntax	PortList
Access	Read-Create
Status	Current
Value list	1 : 0..127
Parent node	swIpMacBindingEntry
First child	None
Description	The port members of this entry.

Object name	swIpMacBindingPorts
Object ID	1.3.6.1.4.1.171.12.23.4.1.1.4
Module	IP-MAC-BIND-MIB
Base syntax	Octet String
Composed syntax	PortList
Access	Read-Create
Status	Current
Value list	1 : 0..127
Parent node	swIpMacBindingEntry
First child	None
Description	The port members of this entry.

4) Blocked Table:

CLI Command	SNMP Command
delete address_binding blocked vlan_name default mac_address 0C-0C-0C-0C-0C-0A	snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.2.1.7.1.12.12.12.12.10 i 6 1 = the VLAN ID of VLAN name "default" 12.12.12.12.12.10 = The Dec. format of MAC address 0C0C0C0C0C0A 6 = destroy(6)
show address_binding blocked all	snmpwalk -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.2.1 1 = port 1

Object name	swIpMacBindingBlockedVID
Object ID	1.3.6.1.4.1.171.12.23.4.2.1.1
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	VlanId
Access	Read-Only
Status	Current
Value list	1 : 1..4094
Parent node	swIpMacBindingBlockedEntry
First child	None
Description	This object specifies the VLAN ID.

Object name	swIpMacBindingBlockedMac
Object ID	1.3.6.1.4.1.171.12.23.4.2.1.2
Module	IP-MAC-BIND-MIB
Base syntax	Octet String
Composed syntax	MacAddress
Access	Read-Only
Status	Current
Value list	1 : 6..6
Parent node	swIpMacBindingBlockedEntry
First child	None
Description	The MAC address that was blocked.

Object name	swIpMacBindingBlockedStatus
Object ID	1.3.6.1.4.1.171.12.23.4.2.1.7
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	RowStatus
Access	Read-Create
Status	Current
Value list	1 : active(1) 2 : notReady(2) 3 : notReady(3) 4 : createAndGo(4) 5 : createAndWait(5) 6 : destroy(6)
Parent node	swIpMacBindingBlockedEntry
First child	None
Description	The status of this entry. Currently only the destroy (6) option can be used to delete this entry.

Object name	swIpMacBindingBlockedVlanName
Object ID	1.3.6.1.4.1.171.12.23.4.2.1.3
Module	IP-MAC-BIND-MIB
Base syntax	Octet String
Composed syntax	DisplayString
Access	Read-Only
Status	Current
Parent node	swIpMacBindingBlockedEntry
First child	None
Description	This object specifies the VLAN name.

Object name	swIpMacBindingBlockedPort
Object ID	1.3.6.1.4.1.171.12.23.4.2.1.4
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Only
Status	Current
Value list	1 : 0..65535
Parent node	swIpMacBindingBlockedEntry
First child	None
Description	The port that the MAC is associated with.

Object name	swIpMacBindingBlockedType
Object ID	1.3.6.1.4.1.171.12.23.4.2.1.5
Module	IP-MAC-BIND-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Write
Status	Obsolete
Value list	1 : other(1) 2 : blockByAddrBind(2) 3 : delete(3)
Parent node	swIpMacBindingBlockedEntry
First child	None
Description	The value is always blockByAddrBind. This entry will be deleted when the value is set to 'delete'.