

How to setup IMPB on DES-3200 series via SNMP

MIB: IP-MAC-BIND-MIB

Main OIDs:

IMPB Entry 1.3.6.1.4.1.171.12.23.4.1.1

IMPB State 1.3.6.1.4.1.171.12.23.3.2.1.2

Add address binding on port 1 with ARP mode

Example:

create address_binding ip_mac ipaddress 10.10.65.54 mac_address 00-00-00-00-00-01 ports 1

```
snmpset -v 2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.1.1.2.10.10.65.54 x
000000000001 1.3.6.1.4.1.171.12.23.4.1.1.3.10.10.65.54 i 4
1.3.6.1.4.1.171.12.23.4.1.1.4.10.10.65.54 x 8000000000000000
```

```
DGS-3200-10:4#show address_binding ip_mac all
Command: show address_binding ip_mac all

IP Address      MAC Address      Mode  Ports
-----
10.10.65.54     00-00-00-00-00-01  Static  1

Total Entries : 1
```

Change address binding configuration (Example : ports 1-4)

Example:

config address_binding ip_mac ports 1-4 state enable

```
snmpset -v 2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.1.1.2.10.10.65.54 x
000000000001 1.3.6.1.4.1.171.12.23.4.1.1.3.10.10.65.54 i 1
1.3.6.1.4.1.171.12.23.4.1.1.4.10.10.65.54 x F000000000000000
```

```
DGS-3200-10:4#show address_binding ip_mac all
Command: show address_binding ip_mac all

IP Address      MAC Address      Mode  Ports
-----
10.10.65.54     00-00-00-00-00-01  Static  1-4

Total Entries : 1
```

Delete address binding

Example:

```
delete address_binding ip_mac ipaddress 10.10.65.54
```

```
snmpset -v 2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.4.1.1.3.10.10.65.54 i 6
```

```
DGS-3200-10:4#show address_binding ip_mac all
Command: show address_binding ip_mac all

IP Address      MAC Address      Mode  Ports
-----
Total Entries : 0
```

Enable IMPB by port

Example:

```
config address_binding ip_mac ports 1 state enable strict
```

```
snmpset -v 2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.23.3.2.1.2.1 i 2
```

The screenshot shows a MIB browser interface with a tree view on the left and a details pane on the right. The tree view shows the hierarchy: swIpMacBindingTable (expanded) -> swIpMacBindingEntry -> swIpMacBindingIpIndex, swIpMacBindingMac, swIpMacBindingStatus, swIpMacBindingPorts, swIpMacBindingAction, swIpMacBindingMode. Below this is swIpMacBindingBlockedTable -> swIpMacBindingBlockedEntry -> swIpMacBindingBlockedVID, swIpMacBindingBlockedMac, swIpMacBindingBlockedVlanName, swIpMacBindingBlockedPort, swIpMacBindingBlockedType, swIpMacBindingBlockedTime.

Object name	swIpMacBindingTable
Object ID	1.3.6.1.4.1.171.12.23.4.1
Module	IP-MAC-BIND-MIB
Base syntax	Sequence Of swIpMacBindingEntry
Access	Not_Accessible
Status	Current
Sequence	1:swIpMacBindingIpIndex - IP Address 2:swIpMacBindingMac - Octet String 3:swIpMacBindingStatus - Integer 4:swIpMacBindingPorts - Octet String 5:swIpMacBindingAction - Integer 6:swIpMacBindingMode - Integer
Parent node	swIpMacBindingMgmt
First child	swIpMacBindingEntry
Description	This table specifies IP-MAC binding information.

The screenshot shows a MIB browser interface with a tree view on the left and a details pane on the right. The tree view shows the hierarchy: swIpMacBindingTable (expanded) -> swIpMacBindingEntry (expanded) -> swIpMacBindingIpIndex, swIpMacBindingMac, swIpMacBindingStatus, swIpMacBindingPorts, swIpMacBindingAction, swIpMacBindingMode. Below this is swIpMacBindingBlockedTable -> swIpMacBindingBlockedEntry -> swIpMacBindingBlockedVID, swIpMacBindingBlockedMac, swIpMacBindingBlockedVlanName.

Object name	swIpMacBindingEntry
Object ID	1.3.6.1.4.1.171.12.23.4.1.1
Module	IP-MAC-BIND-MIB
Base syntax	Sequence
Access	Not_Accessible
Status	Current
Index	1.swIpMacBindingIpIndex
Parent node	swIpMacBindingTable
First child	swIpMacBindingIpIndex
Description	IP-MAC binding entry used to add/delete/configure the address pair of the switch's authorized user database.

The screenshot shows a MIB browser interface with a tree view on the left and a details pane on the right. The tree view shows the hierarchy: swIpMacBindingTable (expanded) -> swIpMacBindingEntry (expanded) -> swIpMacBindingIpIndex (expanded) -> swIpMacBindingMac, swIpMacBindingStatus, swIpMacBindingPorts, swIpMacBindingAction, swIpMacBindingMode. Below this is swIpMacBindingBlockedTable -> swIpMacBindingBlockedEntry -> swIpMacBindingBlockedVID, swIpMacBindingBlockedMac.

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 IP-MAC binding.

<ul style="list-style-type: none"> swIpMacBindingTable swIpMacBindingEntry <ul style="list-style-type: none"> swIpMacBindingPlIndex swIpMacBindingMac swIpMacBindingStatus swIpMacBindingPorts swIpMacBindingAction swIpMacBindingMode swIpMacBindingBlockedTable <ul style="list-style-type: none"> swIpMacBindingBlockedEntry <ul style="list-style-type: none"> swIpMacBindingBlockedVID swIpMacBindingBlockedMac swIpMacBindingBlockedVlanName 	<p>Object name swIpMacBindingMac Object ID 1.3.6.1.4.1.171.12.23.4.1.1.2 Module IP-MAC-BIND-MIB</p> <p>Base syntax Octet String Composed syntax MacAddress Access Read-Create Status Current Value list 1 : 6..6</p> <p>Parent node swIpMacBindingEntry First child None Description The MAC address of IP-MAC binding.</p>
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<ul style="list-style-type: none"> swIpMacBindingTable swIpMacBindingEntry <ul style="list-style-type: none"> swIpMacBindingPlIndex swIpMacBindingMac swIpMacBindingStatus swIpMacBindingPorts swIpMacBindingAction swIpMacBindingMode swIpMacBindingBlockedTable <ul style="list-style-type: none"> swIpMacBindingBlockedEntry <ul style="list-style-type: none"> swIpMacBindingBlockedVID swIpMacBindingBlockedMac swIpMacBindingBlockedVlanName swIpMacBindingBlockedPort swIpMacBindingBlockedType swIpMacBindingBlockedTime swIpMacBindingNotify 	<p>Object name swIpMacBindingStatus Object ID 1.3.6.1.4.1.171.12.23.4.1.1.3 Module IP-MAC-BIND-MIB</p> <p>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)</p> <p>Parent node swIpMacBindingEntry First child None Description The status of this entry.</p>
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<ul style="list-style-type: none"> swIpMacBindingTable swIpMacBindingEntry <ul style="list-style-type: none"> swIpMacBindingPlIndex swIpMacBindingMac swIpMacBindingStatus swIpMacBindingPorts swIpMacBindingAction swIpMacBindingMode swIpMacBindingBlockedTable <ul style="list-style-type: none"> swIpMacBindingBlockedEntry <ul style="list-style-type: none"> swIpMacBindingBlockedVID swIpMacBindingBlockedMac swIpMacBindingBlockedVlanName 	<p>Object name swIpMacBindingPorts Object ID 1.3.6.1.4.1.171.12.23.4.1.1.4 Module IP-MAC-BIND-MIB</p> <p>Base syntax Octet String Composed syntax PortList Access Read-Create Status Current Value list 1 : 0..127</p> <p>Parent node swIpMacBindingEntry First child None Description The port members of this entry.</p>
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<ul style="list-style-type: none"> swIpMacBindingTable swIpMacBindingEntry <ul style="list-style-type: none"> swIpMacBindingPlIndex swIpMacBindingMac swIpMacBindingStatus swIpMacBindingPorts swIpMacBindingAction swIpMacBindingMode swIpMacBindingBlockedTable <ul style="list-style-type: none"> swIpMacBindingBlockedEntry <ul style="list-style-type: none"> swIpMacBindingBlockedVID swIpMacBindingBlockedMac swIpMacBindingBlockedVlanName swIpMacBindingBlockedPort 	<p>Object name swIpMacBindingAction Object ID 1.3.6.1.4.1.171.12.23.4.1.1.5 Module IP-MAC-BIND-MIB</p> <p>Base syntax Integer Composed syntax INTEGER Access Read-Only Status Current Value list 1 : inactive(1) 2 : active(2)</p> <p>Parent node swIpMacBindingEntry First child None Description The action of this entry.</p>
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<ul style="list-style-type: none"> swIpMacBindingTable swIpMacBindingEntry <ul style="list-style-type: none"> swIpMacBindingIpIndex swIpMacBindingMac swIpMacBindingStatus swIpMacBindingPorts swIpMacBindingAction swIpMacBindingMode swIpMacBindingBlockedTable <ul style="list-style-type: none"> swIpMacBindingBlockedEntry <ul style="list-style-type: none"> swIpMacBindingBlockedVid swIpMacBindingBlockedMac swIpMacBindingBlockedVlanName swIpMacBindingBlockedPort swIpMacBindingBlockedType 	<table border="0"> <tr><td>Object name</td><td>swIpMacBindingMode</td></tr> <tr><td>Object ID</td><td>1.3.6.1.4.1.171.12.23.4.1.1.6</td></tr> <tr><td>Module</td><td>IP-MAC-BIND-MIB</td></tr> <tr><td>Base syntax</td><td>Integer</td></tr> <tr><td>Composed syntax</td><td>INTEGER</td></tr> <tr><td>Access</td><td>Read-Create</td></tr> <tr><td>Status</td><td>Current</td></tr> <tr><td>Value list</td><td>1 : arp(1) 2 : acl(2)</td></tr> <tr><td>Parent node</td><td>swIpMacBindingEntry</td></tr> <tr><td>First child</td><td>None</td></tr> <tr><td>Description</td><td>The mode of this entry.</td></tr> </table>	Object name	swIpMacBindingMode	Object ID	1.3.6.1.4.1.171.12.23.4.1.1.6	Module	IP-MAC-BIND-MIB	Base syntax	Integer	Composed syntax	INTEGER	Access	Read-Create	Status	Current	Value list	1 : arp(1) 2 : acl(2)	Parent node	swIpMacBindingEntry	First child	None	Description	The mode of this entry.
Object name	swIpMacBindingMode																						
Object ID	1.3.6.1.4.1.171.12.23.4.1.1.6																						
Module	IP-MAC-BIND-MIB																						
Base syntax	Integer																						
Composed syntax	INTEGER																						
Access	Read-Create																						
Status	Current																						
Value list	1 : arp(1) 2 : acl(2)																						
Parent node	swIpMacBindingEntry																						
First child	None																						
Description	The mode of this entry.																						

<ul style="list-style-type: none"> BindingPortMgmt MacBindingAllPortState MacBindingPortTable swIpMacBindingPortEntry <ul style="list-style-type: none"> swIpMacBindingPortIndex swIpMacBindingPortState swIpMacBindingPortZeroPState swIpMacBindingPortForwardDhcpPk swIpMacBindingPortDHCPSnoopMac swIpMacBindingPortDHCPSnoopEnt swIpMacBindingPortMode swIpMacBindingPortStopLearningThr swIpMacBindingPortRecoverLearning swIpMacBindingPortLearningStatus swIpMacBindingPortIPv6State swIpMacBindingPortIPv6DHCPSnoop swIpMacBindingPortNDSnoopMaxEr swIpMacBindingPortIPv6DHCPSnoop swIpMacBindingPortNDSnoopEntryC BindingMgmt MacBindingTable <ul style="list-style-type: none"> swIpMacBindingIpIndex swIpMacBindingMac swIpMacBindingStatus swIpMacBindingPorts swIpMacBindingAction swIpMacBindingMode swIpMacBindingAclStatus MacBindingBlockedTable <ul style="list-style-type: none"> swIpMacBindingBlockedEntry swIpMacBindingBlockedVid 	<table border="0"> <tr><td>Object name</td><td>swIpMacBindingPortState</td></tr> <tr><td>Object ID</td><td>1.3.6.1.4.1.171.12.23.3.2.1.2</td></tr> <tr><td>Module</td><td>IP-MAC-BIND-MIB</td></tr> <tr><td>Base syntax</td><td>Integer</td></tr> <tr><td>Composed syntax</td><td>INTEGER</td></tr> <tr><td>Access</td><td>Read-Write</td></tr> <tr><td>Status</td><td>Current</td></tr> <tr><td>Value list</td><td>1 : other(1) 2 : enable-strict(2) 3 : disable(3) 4 : enable-loose(4)</td></tr> <tr><td>Parent node</td><td>swIpMacBindingPortEntry</td></tr> <tr><td>First child</td><td>None</td></tr> <tr><td>Description</td><td>This object enables (strict or loose mode)/disables IP-MAC binding on the specified port.</td></tr> </table> <p>Note: enable-strict (2): This means strict mode (SW learning). All packets are sent to the CPU. If the user chooses this option, the port will check ARP packets and IP packets by IP-MAC-PORT Binding entries. If the MAC address can be found or not found by the entry, the MAC will be set as dynamic learned or it will be set as blocked, respectively. Other packets will be sent to the CPU and dropped.</p> <p>enable-loose (4) : This means loose mode (HW learning): Only ARP packets and IP broadcast packets will be sent to the CPU. If the user chooses, the port will learn MAC addresses on non-ARP and non-IP broadcast packets directly, so these packets will be bypassed. But if the switch receives ARP or IP broadcast packets and cannot bypass the IP MAC Binding checking, the switch will set this MAC address as blocked and all packets from this MAC address will be dropped.</p>	Object name	swIpMacBindingPortState	Object ID	1.3.6.1.4.1.171.12.23.3.2.1.2	Module	IP-MAC-BIND-MIB	Base syntax	Integer	Composed syntax	INTEGER	Access	Read-Write	Status	Current	Value list	1 : other(1) 2 : enable-strict(2) 3 : disable(3) 4 : enable-loose(4)	Parent node	swIpMacBindingPortEntry	First child	None	Description	This object enables (strict or loose mode)/disables IP-MAC binding on the specified port.
Object name	swIpMacBindingPortState																						
Object ID	1.3.6.1.4.1.171.12.23.3.2.1.2																						
Module	IP-MAC-BIND-MIB																						
Base syntax	Integer																						
Composed syntax	INTEGER																						
Access	Read-Write																						
Status	Current																						
Value list	1 : other(1) 2 : enable-strict(2) 3 : disable(3) 4 : enable-loose(4)																						
Parent node	swIpMacBindingPortEntry																						
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