

How to create Ethernet ACL via NETSNMP in DGS-3420 series?

The OIDs for configuring Ethernet ACL in DGS-3420 series are defined in ACLMGMT-MIB.

(Formal release DGS-3420_Series_A1_MIB_of_FW_v1.00.023 in PMD)

swACLEthernetTable

Object name	swACLEthernetTable
Object ID	1.3.6.1.4.1.171.12.9.2.1
Module	ACLMGMT-MIB
Base syntax	Sequence Of swACLEthernetEntry
Access	Not_Accessible
Status	Current
Sequence	1:swACLEthernetProfileID - Integer 2:swACLEthernetUsevlan - Integer 3:swACLEthernetMacAddrMaskState - Integer 4:swACLEthernetSrcMacAddrMask - Octet String 5:swACLEthernetDstMacAddrMask - Octet String 6:swACLEthernetUse8021p - Integer 7:swACLEthernetUseEthernetType - Integer 8:swACLEthernetRowStatus - Integer 9:swACLEthernetOwner - Integer 10:swACLEthernetUnusedRuleEntries - Integer 11:swACLEthernetProfileName - Octet String 12:swACLEthernetVlanMask - Octet String
Parent node	swAclMaskMgmt
First child	swACLEthernetEntry
Description	This table contains ACL mask Ethernet information. The access profile will be created on the switch to define which part of each incoming frame's layer 2 header will be examined by the switch. Masks entered will be combined with the values the switch finds in the specified frame header fields.

swACLEthernetMacAddrMaskState

Object name	swACLEthernetMacAddrMaskState
Object ID	1.3.6.1.4.1.171.12.9.2.1.1.3
Module	ACLMGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Create
Status	Current
Value list	1 : other(1) 2 : dst-mac-addr(2) 3 : src-mac-addr(3) 4 : dst-src-mac-addr(4)
Parent node	swACLEthernetEntry
First child	None
Description	This object indicates the status of the MAC address mask. other (1) - Neither source MAC address nor destination MAC address are masked. dst-mac-addr (2) - Destination MAC addresses within received frames are to be filtered when matched with the MAC address entry for the table. src-mac-addr (3) - Source MAC addresses within received frames are to be filtered when matched with the MAC address entry for the table. dst-src-mac-addr (4) - Source or destination MAC addresses within received frames are to be filtered when matched with the MAC address entry of the table.

swACLEthernetSrcMacAddrMask

Object name	swACLEthernetSrcMacAddrMask
Object ID	1.3.6.1.4.1.171.12.9.2.1.1.4
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	MacAddress
Access	Read-Create
Status	Current
Value list	1 : 6.6
Parent node	swACLEthernetEntry
First child	None
Description	This object specifies the MAC address mask for the source MAC address.

swACLEthernetDstMacAddrMask

Object name	swACLEthernetDstMacAddrMask
Object ID	1.3.6.1.4.1.171.12.9.2.1.1.5
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	MacAddress
Access	Read-Create
Status	Current
Value list	1 : 6.6
Parent node	swACLEthernetEntry
First child	None
Description	This object specifies the MAC address mask for the destination MAC address.

swACLEthernetRowStatus

Object name	swACLEthernetRowStatus
Object ID	1.3.6.1.4.1.171.12.9.2.1.1.8
Module	ACLMGMT-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	swACLEthernetEntry
First child	None
Description	This object indicates the status of this entry.

swACLEthernetProfileName

Object name	swACLEthernetProfileName
Object ID	1.3.6.1.4.1.171.12.9.2.1.1.11
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	DisplayString
Access	Read-Create
Status	Current
Value list	1 : 1..32
Parent node	swACLEthernetEntry
First child	None
Description	The name of the ACL mask entry unique to the mask list.

swACLEtherRuleTable

Object name	swACLEtherRule Table
Object ID	1.3.6.1.4.1.171.12.9.3.1
Module	ACLMGMT-MIB
Base syntax	Sequence Of swACLEtherRuleEntry
Access	Not_Accessible
Status	Current
Sequence	1:swACLEtherRuleProfileID - Integer 2:swACLEtherRuleAccessID - Integer 3:swACLEtherRuleVlan - Octet String 4:swACLEtherRuleSrcMacAddress - Octet String 5:swACLEtherRuleDstMacAddress - Octet String 6:swACLEtherRule8021P - Integer 7:swACLEtherRuleEtherType - Octet String 8:swACLEtherRuleEnablePriority - Integer 9:swACLEtherRulePriority - Integer 10:swACLEtherRuleReplacePriority - Integer 11:swACLEtherRuleEnableReplaceDscp - Integer 12:swACLEtherRuleRepDscp - Integer 13:swACLEtherRulePermit - Integer 14:swACLEtherRulePort - Octet String 15:swACLEtherRuleRowStatus - Integer 16:swACLEtherRuleOwner - Integer 17:swACLEtherRuleRxRate - Integer 18:swACLEtherRuleEnableReplaceTosPrecedence - Integer 19:swACLEtherRuleRepTosPrecedence - Integer 20:swACLEtherRuleVID - Integer

swACLEtherRuleSrcMacAddress

Object name	swACLEtherRuleSrcMacAddress
Object ID	1.3.6.1.4.1.171.12.9.3.1.1.4
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	MacAddress
Access	Read-Create
Status	Current
Value list	1 : 6.5
Parent node	swACLEtherRuleEntry
First child	None
Description	Specifies that the access rule will apply to only packets with this source MAC address.

swACLEtherRuleDstMacAddress

Object name	swACLEtherRuleDstMacAddress
Object ID	1.3.6.1.4.1.171.12.9.3.1.1.5
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	MacAddress
Access	Read-Create
Status	Current
Value list	1 : 6.6
Parent node	swACLEtherRuleEntry
First child	None
Description	Specifies that the access rule will apply to only packets with this destination MAC address.

swACLEtherRulePermit

Object name	swACLEtherRulePermit
Object ID	1.3.6.1.4.1.171.12.9.3.1.1.13
Module	ACLMGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Create
Status	Current
Value list	1 : deny(1) 2 : permit(2) 3 : mirror(3) 4 : set-drop-precedence(5) 5 : rspan(6)
Parent node	swACLEtherRuleEntry
First child	None
Description	This object indicates if the result of the packet examination is 'permit' or 'deny'. The default is 'permit'. permit - Specifies that packets matching the access profile are permitted to be forwarded by the switch. deny - Specifies that packets matching the access profile are not permitted to be forwarded by the switch and will be filtered. mirror - Specifies that packets matching the access profile are copied to the mirror port. Note : The ACL-mirror function will start functioning after mirror has been enabled and the mirror port has been configured. set-drop-precedence - Specifies that packets that matching the access profile are set to drop precedence.

swACLEtherRulePort

Object name	swACLEtherRulePort
Object ID	1.3.6.1.4.1.171.12.9.3.1.1.14
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	PortList
Access	Read-Create
Status	Current
Value list	1 : 0..127
Parent node	swACLEtherRuleEntry
First child	None
Description	Specifies that the access rule will only apply to port(s). This object and swACLEtherRuleVID can not be set together.

swACLEtherRuleRowStatus

Object name	swACLEtherRuleRowStatus
Object ID	1.3.6.1.4.1.171.12.9.3.1.1.15
Module	ACLMGMT-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	swACLEtherRuleEntry
First child	None
Description	This object indicates the status of this entry.

The example below is to configure Ethernet ACL to **deny traffic from Source_MAC 00-01-00-00-01-00 on port 1 to port 16 of DGS-3420.**

```
DGS-3420-265C Gigabit Ethernet Switch
Command Line Interface

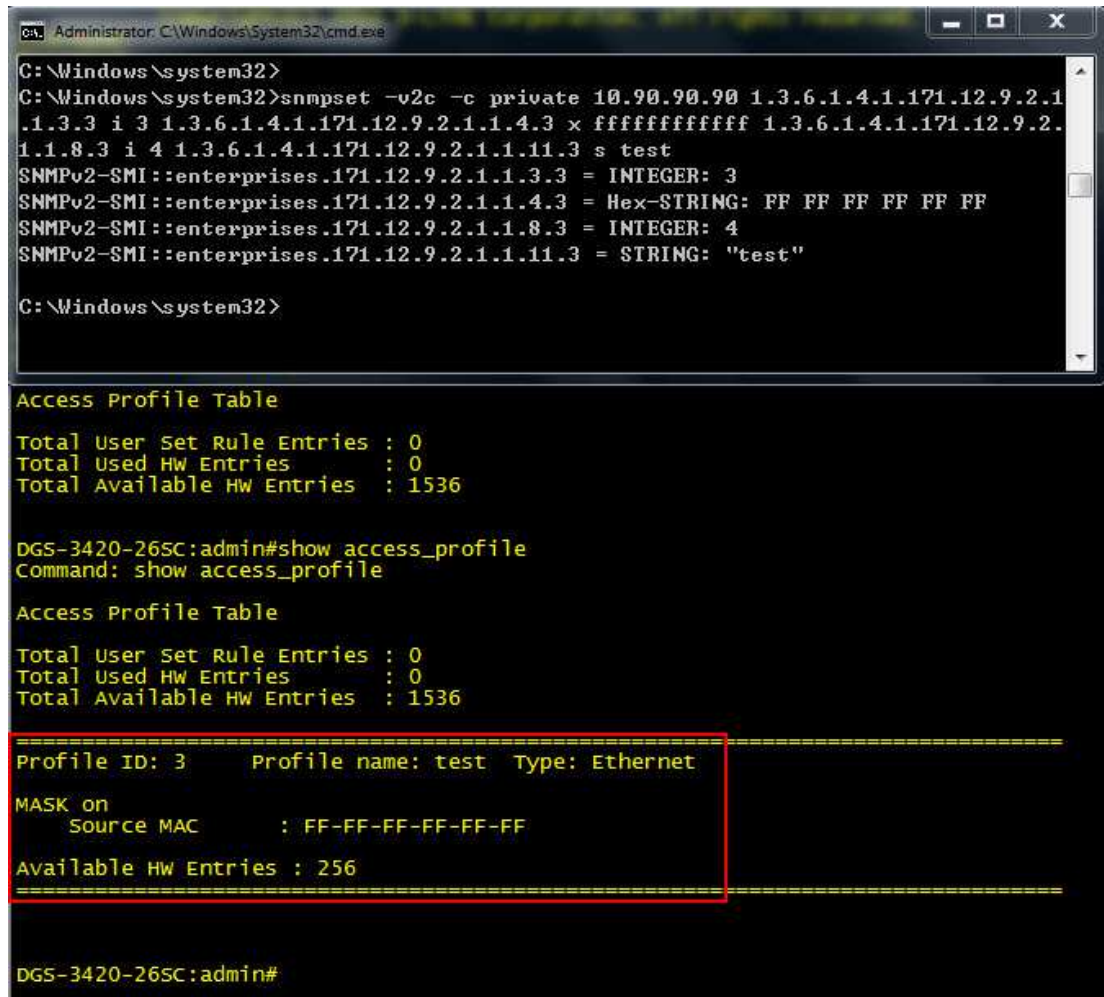
Firmware: Build 1.00.B031
Copyright(c) 2011 D-Link Corporation. All rights reserved.
UserName:
Password:

DGS-3420-265C:admin#show switch
Command: show switch

Device Type           : DGS-3420-265C Gigabit Ethernet Switch
MAC Address           : 34-08-04-AC-2C-00
IP Address             : 10.90.90.90 (Manual)
VLAN Name              : default
Subnet Mask            : 255.0.0.0
Default Gateway        : 0.0.0.0
Root PROM Version     : Build 1.00.006
Firmware Version      : Build 1.00.B031
Hardware version      : A1
Serial Number          : QT441B3000019
System Name            :
```

Step1. Create **Access_Profile ID 3**, Source_MAC_Mask FF-FF-FF-FF-FF

```
snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.2.1.1.3.3 i 3  
1.3.6.1.4.1.171.12.9.2.1.1.4.3 x ffffffff 1.3.6.1.4.1.171.12.9.2.1.1.8.3 i 4  
1.3.6.1.4.1.171.12.9.2.1.1.11.3 s test
```



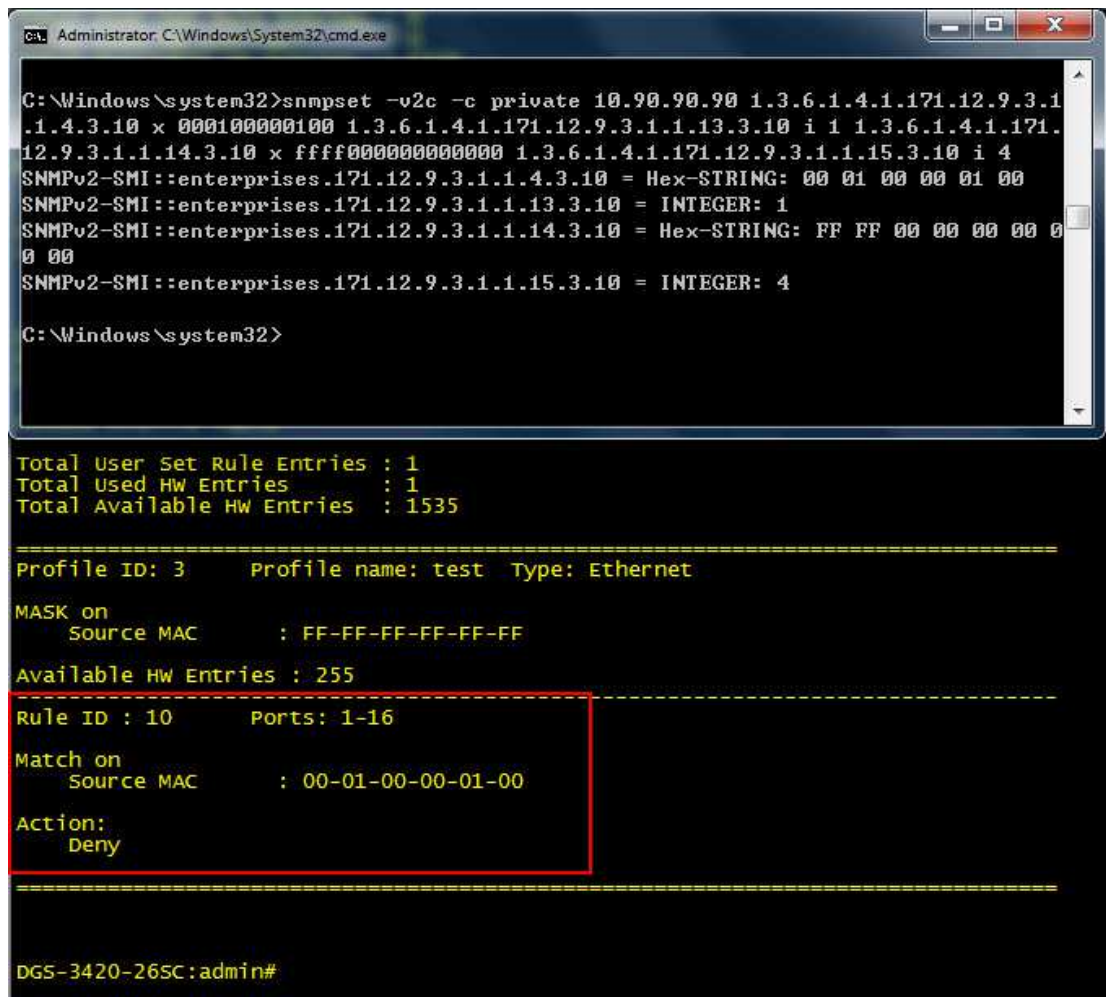
```
Administrator: C:\Windows\System32\cmd.exe  
C:\Windows\system32>  
C:\Windows\system32>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.2.1.1.3.3 i 3  
.1.3.3 i 3 1.3.6.1.4.1.171.12.9.2.1.1.4.3 x ffffffff 1.3.6.1.4.1.171.12.9.2.1.1.8.3 i 4  
1.3.6.1.4.1.171.12.9.2.1.1.11.3 s test  
SNMPv2-SMI::enterprises.171.12.9.2.1.1.3.3 = INTEGER: 3  
SNMPv2-SMI::enterprises.171.12.9.2.1.1.4.3 = Hex-STRING: FF FF FF FF FF FF  
SNMPv2-SMI::enterprises.171.12.9.2.1.1.8.3 = INTEGER: 4  
SNMPv2-SMI::enterprises.171.12.9.2.1.1.11.3 = STRING: "test"  
C:\Windows\system32>
```

```
Access Profile Table  
Total User Set Rule Entries : 0  
Total Used HW Entries       : 0  
Total Available HW Entries  : 1536  
  
DGS-3420-26SC:admin#show access_profile  
Command: show access_profile  
  
Access Profile Table  
Total User Set Rule Entries : 0  
Total Used HW Entries       : 0  
Total Available HW Entries  : 1536  
-----  
Profile ID: 3      Profile name: test  Type: Ethernet  
MASK on  
  Source MAC      : FF-FF-FF-FF-FF-FF  
Available HW Entries : 256  
-----  
  
DGS-3420-26SC:admin#
```

Step2. Configure **Access ID 10**, **Source_MAC 00-01-00-00-01-00**, port range from **1-16**.

F equal to 4 ports.

```
snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.3.1.1.4.3.10 x 000100000100  
1.3.6.1.4.1.171.12.9.3.1.1.13.3.10 i 1 1.3.6.1.4.1.171.12.9.3.1.1.14.3.10 x  
ffff000000000000 1.3.6.1.4.1.171.12.9.3.1.1.15.3.10 i 4
```



```
C:\Windows\system32>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.3.1.1.4.3.10 x 000100000100 1.3.6.1.4.1.171.12.9.3.1.1.13.3.10 i 1 1.3.6.1.4.1.171.12.9.3.1.1.14.3.10 x ffff000000000000 1.3.6.1.4.1.171.12.9.3.1.1.15.3.10 i 4  
SNMPv2-SMI::enterprises.171.12.9.3.1.1.4.3.10 = Hex-STRING: 00 01 00 00 01 00  
SNMPv2-SMI::enterprises.171.12.9.3.1.1.13.3.10 = INTEGER: 1  
SNMPv2-SMI::enterprises.171.12.9.3.1.1.14.3.10 = Hex-STRING: FF FF 00 00 00 00 00 00  
SNMPv2-SMI::enterprises.171.12.9.3.1.1.15.3.10 = INTEGER: 4  
  
C:\Windows\system32>  
  
Total User Set Rule Entries : 1  
Total Used HW Entries : 1  
Total Available HW Entries : 1535  
  
-----  
Profile ID: 3 Profile name: test Type: Ethernet  
  
MASK on  
Source MAC : FF-FF-FF-FF-FF-FF  
  
Available HW Entries : 255  
  
-----  
Rule ID : 10 Ports: 1-16  
  
Match on  
Source MAC : 00-01-00-00-01-00  
  
Action:  
Deny  
  
-----  
  
DGS-3420-26SC:admin#
```