

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

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

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

swACLIpTable

Object name	swACLIpTable
ObjectID	1.3.6.1.4.1.171.12.9.2.2
Module	ACLMGMT-MIB
Base syntax	Sequence Of swACLIpEntry
Access	Not_Accessible
Status	Current
Sequence	1:swACLIpProfileID - Integer 2:swACLIpUsevlan - Integer 3:swACLIpIpAddrMaskState - Integer 4:swACLIpSrcIpAddrMask - IP Address 5:swACLIpDstIpAddrMask - IP Address 6:swACLIpUseDSCP - Integer 7:swACLIpUseProtoType - Integer 8:swACLIpIcmpOption - Integer 9:swACLIpIcmpOption - Integer 10:swACLIpTcpOption - Integer 11:swACLIpUdpOption - Integer 12:swACLIpTCPPorUDPSrcPortMask - Octet String 13:swACLIpTCPPorUDPDstPortMask - Octet String 14:swACLIpTCPFlagBit - Integer 15:swACLIpTCPFlagBitMask - Integer 16:swACLIpProtoIDOption - Integer 17:swACLIpProtoID - Integer 18:swACLIpProtoIDMask - Octet String 19:swACLIpRowStatus - Integer 20:swACLIpOwner - Integer

swACLIpIpAddrMaskState

Object name	swACLIpIpAddrMaskState
Object ID	1.3.6.1.4.1.171.12.9.2.2.1.3
Module	ACLMGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Create
Status	Current
Value list	1 : other(1) 2 : dst-ip-addr(2) 3 : src-ip-addr(3) 4 : dst-src-ip-addr(4)
Parent node	swACLIpEntry
First child	None
Description	This object indicates the status of IP address mask. other (1) - Neither source IP address nor destination IP address are masked. dst-ip-addr (2) - Destination IP addresses within received frames are to be filtered when matched with the IP address entry of the table. src-ip-addr (3) - Source IP addresses within received frames are to be filtered when matched with the IP address entry of the table. dst-src-ip-addr (4) - Destination or source IP addresses within received frames are to be filtered when matched with the IP address entry of the table.

swACLIpSrcIpAddrMask

Object name	swACLIpSrcIpAddrMask
Object ID	1.3.6.1.4.1.171.12.9.2.2.1.4
Module	ACLMGMT-MIB
Base syntax	IP Address
Composed syntax	IpAddress
Access	Read-Create
Status	Current
Parent node	swACLIpEntry
First child	None
Description	This object specifies the IP address mask for the source IP address.

swACLIpDstIpAddrMask

Object name	swACLIpDstIpAddrMask
Object ID	1.3.6.1.4.1.171.12.9.2.2.1.5
Module	ACLMGMT-MIB
Base syntax	IP Address
Composed syntax	IpAddress
Access	Read-Create
Status	Current
Parent node	swACLIpEntry
First child	None
Description	This object specifies the IP address mask for the destination IP address.

swACLIpRowStatus

Object name	swACLIpRowStatus
Object ID	1.3.6.1.4.1.171.12.9.2.2.1.19
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	swACLIpEntry
First child	None
Description	This object indicates the status of this entry.

swACLIpProfileName

Object name	swACLIpProfileName
Object ID	1.3.6.1.4.1.171.12.9.2.2.1.23
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	DisplayString
Access	Read-Create
Status	Current
Value list	1 : 1.32
Parent node	swACLIpEntry
First child	None
Description	The name of the ACL mask entry unique to the mask list.

swACLIpRuleTable

Object name	swACLIpRuleTable
Object ID	1.3.6.1.4.1.171.12.9.3.2
Module	ACLMGMT-MIB
Base syntax	Sequence Of swACLIpRuleEntry
Access	Not_Accessible
Status	Current
Sequence	1:swACLIpRuleProfileID - Integer 2:swACLIpRuleAccessID - Integer 3:swACLIpRuleVlan - Octet String 4:swACLIpRuleSrcIpaddress - IP Address 5:swACLIpRuleDstIpaddress - IP Address 6:swACLIpRuleDscp - Integer 7:swACLIpRuleProtocol - Integer 8:swACLIpRuleType - Integer 9:swACLIpRuleCode - Integer 10:swACLIpRuleSrcPort - Integer 11:swACLIpRuleDstPort - Integer 12:swACLIpRuleFlagBits - Integer 13:swACLIpRuleProtoID - Integer 14:swACLIpRuleUserMask - Octet String 15:swACLIpRuleEnablePriority - Integer 16:swACLIpRulePriority - Integer 17:swACLIpRuleReplacePriority - Integer 18:swACLIpRuleEnableReplaceDscp - Integer 19:swACLIpRuleRepDscp - Integer 20:swACLIpRulePermit - Integer

swACLIpRuleSrcIpaddress

Object name	swACLIpRuleSrcIpaddress
Object ID	1.3.6.1.4.1.171.12.9.3.2.1.4
Module	ACLMGMT-MIB
Base syntax	IP Address
Composed syntax	IpAddress
Access	Read-Create
Status	Current
Parent node	swACLIpRuleEntry
First child	None
Description	Specifies an IP source address.

swACLIpRuleDstIpaddress

Object name	swACLIpRuleDstIpaddress
Object ID	1.3.6.1.4.1.171.12.9.3.2.1.5
Module	ACLMGMT-MIB
Base syntax	IP Address
Composed syntax	IpAddress
Access	Read-Create
Status	Current
Parent node	swACLIpRuleEntry
First child	None
Description	Specifies an IP destination address.

swACLIpRulePermit

Object name	swACLIpRulePermit
Object ID	1.3.6.1.4.1.171.12.9.3.2.1.20
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	swACLIpRuleEntry
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 the packets matching the access profile are copied to the mirror port. Note : The ACL mirror function will work after the mirror is enabled and the mirror port has been configured. set-drop-precedence - Specifies the packets that match the access profile are set

swACLIpRulePort

Object name	swACLIpRulePort
Object ID	1.3.6.1.4.1.171.12.9.3.2.1.21
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	PortList
Access	Read-Create
Status	Current
Value list	1 : 0..127
Parent node	swACLIpRuleEntry
First child	None
Description	Specifies that the access rule will only apply to port(s). This object and swACLIpRuleVID can not be set together.

swACLIpRuleRowStatus

Object name	swACLIpRuleRowStatus
Object ID	1.3.6.1.4.1.171.12.9.3.2.1.22
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	swACLIpRuleEntry
First child	None
Description	This object indicates the status of this entry.

The example below is to configure IP ACL to deny traffic from Source_IP 192.168.0.20 to Destination_IP 192.168.0.30 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:

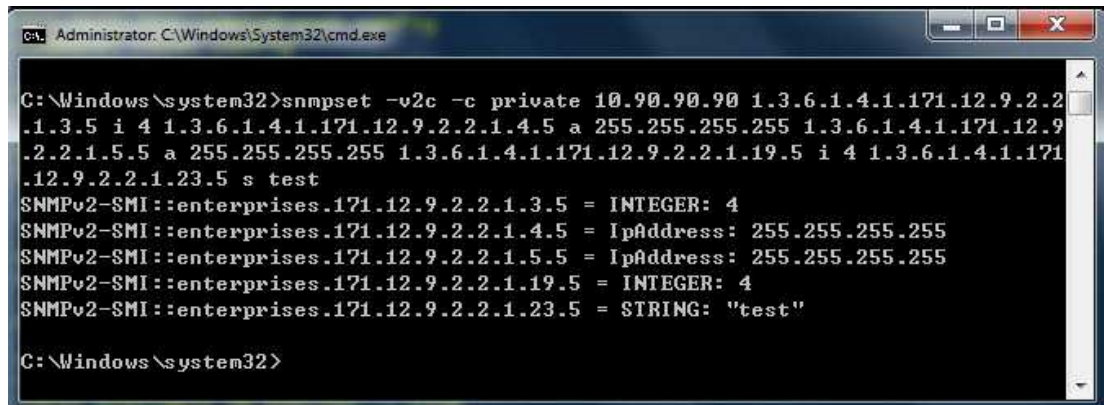
DGS-3420-265C:admin#show switch
Command: show switch

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
Boot PROM Version     : Build 1.00.006
Firmware Version       : Build 1.00.B031
Hardware Version       : A1
Serial Number          : QT441B3000019
System Name            :
System Location        :
System Uptime          : 0 days, 0 hours, 46 minutes, 11 seconds
System Contact         :
Spanning Tree          : Disabled
GVRP                   : Disabled
IGMP Snooping          : Disabled
MLD Snooping           : Disabled
RIP                    : Disabled
RIPng                  : Disabled
VLAN Trunk             : Disabled
Telnet                 : Enabled (TCP 23)

DGS-3420-265C:admin#
```

Step1. Create **Access_Profile ID 5**, Source_IP_Mask 255.255.255.255 & Destination_IP_Mask 255.255.255.255

```
snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.2.2.1.3.5 i 4  
1.3.6.1.4.1.171.12.9.2.2.1.4.5 a 255.255.255.255 1.3.6.1.4.1.171.12.9.2.2.1.5.5 a  
255.255.255.255 1.3.6.1.4.1.171.12.9.2.2.1.19.5 i 4 1.3.6.1.4.1.171.12.9.2.2.1.23.5 s  
test
```



```
C:\Windows\system32>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.2.2.1.3.5 i 4  
1.3.6.1.4.1.171.12.9.2.2.1.4.5 a 255.255.255.255 1.3.6.1.4.1.171.12.9.2.2.1.5.5 a  
255.255.255.255 1.3.6.1.4.1.171.12.9.2.2.1.19.5 i 4 1.3.6.1.4.1.171.12.9.2.2.1.23.5 s  
test  
SNMPv2-SMI::enterprises.171.12.9.2.2.1.3.5 = INTEGER: 4  
SNMPv2-SMI::enterprises.171.12.9.2.2.1.4.5 = IpAddress: 255.255.255.255  
SNMPv2-SMI::enterprises.171.12.9.2.2.1.5.5 = IpAddress: 255.255.255.255  
SNMPv2-SMI::enterprises.171.12.9.2.2.1.19.5 = INTEGER: 4  
SNMPv2-SMI::enterprises.171.12.9.2.2.1.23.5 = STRING: "test"  
  
C:\Windows\system32>
```

```
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: 5      Profile name: test  Type: IPv4
```

```
MASK on  
  Source IP       : 255.255.255.255  
  Dest IP        : 255.255.255.255
```

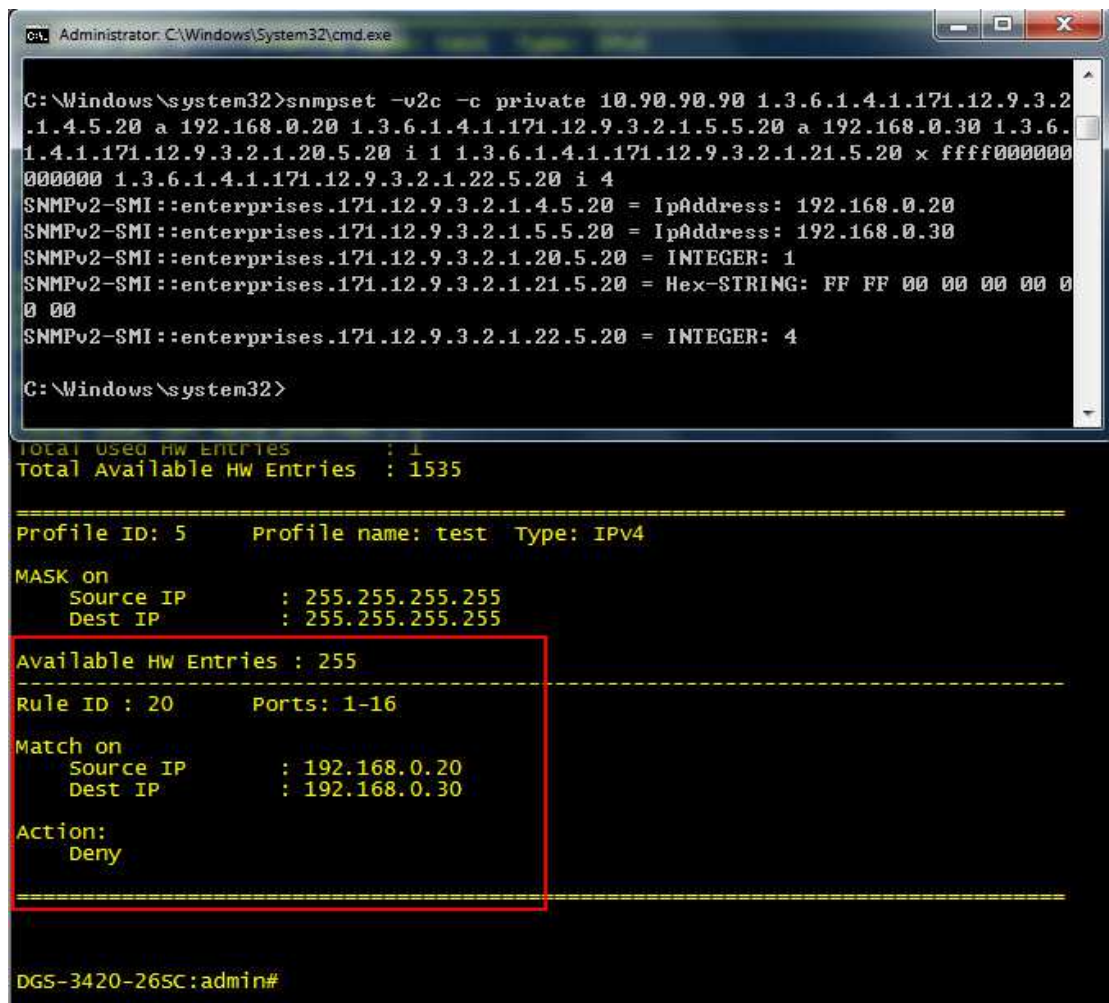
```
Available HW Entries : 256  
=====
```

```
DGS-3420-26SC:admin#
```

Step2. Configure **Access ID 20**, Source_IP 192.168.0.20, Destination_IP 192.168.0.30, port range from **1-16**.

F equal to 4 ports.

```
snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.3.2.1.4.5.20 a 192.168.0.20
1.3.6.1.4.1.171.12.9.3.2.1.5.5.20 a 192.168.0.30 1.3.6.1.4.1.171.12.9.3.2.1.20.5.20 i 1
1.3.6.1.4.1.171.12.9.3.2.1.21.5.20 x ffff000000000000
1.3.6.1.4.1.171.12.9.3.2.1.22.5.20 i 4
```



```
Administrator: C:\Windows\System32\cmd.exe
C:\Windows\system32>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.3.2
.1.4.5.20 a 192.168.0.20 1.3.6.1.4.1.171.12.9.3.2.1.5.5.20 a 192.168.0.30 1.3.6.
1.4.1.171.12.9.3.2.1.20.5.20 i 1 1.3.6.1.4.1.171.12.9.3.2.1.21.5.20 x ffff000000
000000 1.3.6.1.4.1.171.12.9.3.2.1.22.5.20 i 4
SNMPv2-SMI::enterprises.171.12.9.3.2.1.4.5.20 = IPAddress: 192.168.0.20
SNMPv2-SMI::enterprises.171.12.9.3.2.1.5.5.20 = IPAddress: 192.168.0.30
SNMPv2-SMI::enterprises.171.12.9.3.2.1.20.5.20 = INTEGER: 1
SNMPv2-SMI::enterprises.171.12.9.3.2.1.21.5.20 = Hex-STRING: FF FF 00 00 00 00 0
0 00
SNMPv2-SMI::enterprises.171.12.9.3.2.1.22.5.20 = INTEGER: 4

C:\Windows\system32>

Total Used HW Entries      : 1
Total Available HW Entries : 1535

=====
Profile ID: 5      Profile name: test  Type: IPv4
MASK on
  Source IP      : 255.255.255.255
  Dest IP       : 255.255.255.255

Available HW Entries : 255
-----
Rule ID : 20      Ports: 1-16

Match on
  Source IP      : 192.168.0.20
  Dest IP       : 192.168.0.30

Action:
  Deny

=====

DGS-3420-265C:admin#
```