

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

The OIDs for configuring **Packet Content ACL** in DGS-3420 series are defined in ACLMGMT-MIB.

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

swACLPktContMaskOptionTable

Object name	swACLPktContMaskOptionTable
Object ID	1.3.6.1.4.1.171.12.9.2.8
Module	ACLMGMT-MIB
Base syntax	Sequence Of swACLPktContMaskOptionEntry
Access	Not_Accessible
Status	Current
Sequence	1:swACLPktContMaskOptionProfileID - Integer 2:swACLPktContMaskOffsetChunk1State - Integer 3:swACLPktContMaskOffsetChunk1OffsetValue - Integer 4:swACLPktContMaskOffsetChunk1Mask - Octet String 5:swACLPktContMaskOffsetChunk2State - Integer 6:swACLPktContMaskOffsetChunk2OffsetValue - Integer 7:swACLPktContMaskOffsetChunk2Mask - Octet String 8:swACLPktContMaskOffsetChunk3State - Integer 9:swACLPktContMaskOffsetChunk3OffsetValue - Integer 10:swACLPktContMaskOffsetChunk3Mask - Octet String 11:swACLPktContMaskOffsetChunk4State - Integer 12:swACLPktContMaskOffsetChunk4OffsetValue - Integer 13:swACLPktContMaskOffsetChunk4Mask - Octet String 14:swACLPktContMaskOptionRowStatus - Integer 15:swACLPktContMaskOptionOwner - Integer 16:swACLPktContMaskOptionUnusedRuleEntries - Integer 17:swACLPktContMaskOptionProfileName - Octet String
Parent node	swAclMaskMgmt
First child	swACLPktContMaskOptionEntry

swACLPktContMaskOffsetChunk1State

Object name	swACLPktContMaskOffsetChunk1State
Object ID	1.3.6.1.4.1.171.12.9.2.8.1.2
Module	ACLMGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Create
Status	Current
Value list	1 : enabled(1) 2 : disabled(2)
Parent node	swACLPktContMaskOptionEntry
First child	None
Description	Specifies the state of chunk1.

swACLPktContMaskOffsetChunk1OffsetValue

Object name	swACLPktContMaskOffsetChunk1OffsetValue
Object ID	1.3.6.1.4.1.171.12.9.2.8.1.3
Module	ACLMGMT-MIB
Base syntax	Integer
Composed syntax	INTEGER
Access	Read-Create
Status	Current
Value list	1 : 0..31
Parent node	swACLPktContMaskOptionEntry
First child	None
Description	Specifies the frame content offset of chunk1.

swACLPktContMaskOffsetChunk1Mask

Object name	swACLPktContMaskOffsetChunk1Mask
Object ID	1.3.6.1.4.1.171.12.9.2.8.1.4
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	OCTET STRING
Access	Read-Create
Status	Current
Value list	1 : 4..4
Parent node	swACLPktContMaskOptionEntry
First child	None
Description	Specifies the frame content mask of chunk1.

swACLPktContMaskOptionRowStatus

Object name	swACLPktContMaskOptionRowStatus
Object ID	1.3.6.1.4.1.171.12.9.2.8.1.14
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	swACLPktContMaskOptionEntry
First child	None
Description	This object indicates the status of this entry.

swACLPktContMaskOptionProfileName

Object name	swACLPktContMaskOptionProfileName
Object ID	1.3.6.1.4.1.171.12.9.2.8.1.17
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	DisplayString
Access	Read-Create
Status	Current
Value list	1 : 1.32
Parent node	swACLPktContMaskOptionEntry
First child	None
Description	The name of the ACL mask entry unique to the mask list.

swACLPktContRuleOptionTable

Object name	swACLPktContRuleOptionTable
Object ID	1.3.6.1.4.1.171.12.9.3.7
Module	ACLMGMT-MIB
Base syntax	Sequence Of swACLPktContRuleOptionEntry
Access	Not_Accessible
Status	Current
Sequence	1:swACLPktContRuleOptionProfileID - Integer 2:swACLPktContRuleOptionAccessID - Integer 3:swACLPktContRuleOffsetChunk1OffsetValue - Integer 4:swACLPktContRuleOffsetChunk1Content - Octet String 5:swACLPktContRuleOffsetChunk2OffsetValue - Integer 6:swACLPktContRuleOffsetChunk2Content - Octet String 7:swACLPktContRuleOffsetChunk3OffsetValue - Integer 8:swACLPktContRuleOffsetChunk3Content - Octet String 9:swACLPktContRuleOffsetChunk4OffsetValue - Integer 10:swACLPktContRuleOffsetChunk4Content - Octet String 11:swACLPktContRuleOptionEnablePriority - Integer 12:swACLPktContRuleOptionPriority - Integer 13:swACLPktContRuleOptionReplacePriority - Integer 14:swACLPktContRuleOptionEnableReplaceDescp - Integer 15:swACLPktContRuleOptionRepDescp - Integer 16:swACLPktContRuleOptionPermit - Integer 17:swACLPktContRuleOptionPort - Octet String 18:swACLPktContRuleOptionRowStatus - Integer 19:swACLPktContRuleOptionOwner - Integer 20:swACLPktContRuleOptionRxRate - Integer

swACLPktContRuleOffsetChunk1Content

Object name	swACLPktContRuleOffsetChunk1Content
Object ID	1.3.6.1.4.1.171.12.9.3.7.1.4
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	OCTET STRING
Access	Read-Create
Status	Current
Value list	1 : 4.4
Parent node	swACLPktContRuleOptionEntry
First child	None
Description	Specifies the frame content of chunk1.

swACLPktContRuleOptionPermit

Object name	swACLPktContRuleOptionPermit
Object ID	1.3.6.1.4.1.171.12.9.3.7.1.16
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 : rspan(4)
Parent node	swACLPktContRuleOptionEntry
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 that match the access profile are permitted to be forwarded by the switch. deny - Specifies that packets that match the access profile are not permitted to be forwarded by the switch and will be filtered. mirror - Specifies that the packets that match the access profile are copied to the mirror port. Note: The ACL mirror function will function after mirror is enabled and a mirror port has been configured. rspan - Specifies the packets that match the access profile are sent the copied one to RSPAN. This option is apply for per flow RSPAN on source switch.

swACLPktContRuleOptionPort

Object name	swACLPktContRuleOptionPort
Object ID	1.3.6.1.4.1.171.12.9.3.7.1.17
Module	ACLMGMT-MIB
Base syntax	Octet String
Composed syntax	PortList
Access	Read-Create
Status	Current
Value list	1 : 0..127
Parent node	swACLPktContRuleOptionEntry
First child	None
Description	Specifies that the access rule will only apply to port(s). This object and swACLPktContRuleOptionVID can not be set together.

#swACLPktContRuleOptionRowStatus

Object name	swACLPktContRuleOptionRowStatus
Object ID	1.3.6.1.4.1.171.12.9.3.7.1.18
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	swACLPktContRuleOptionEntry
First child	None
Description	This object indicates the status of this entry.

The example below is to configure **Packet Content ACL to deny traffic of which the EtherType is ARP (0x0806)** 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:

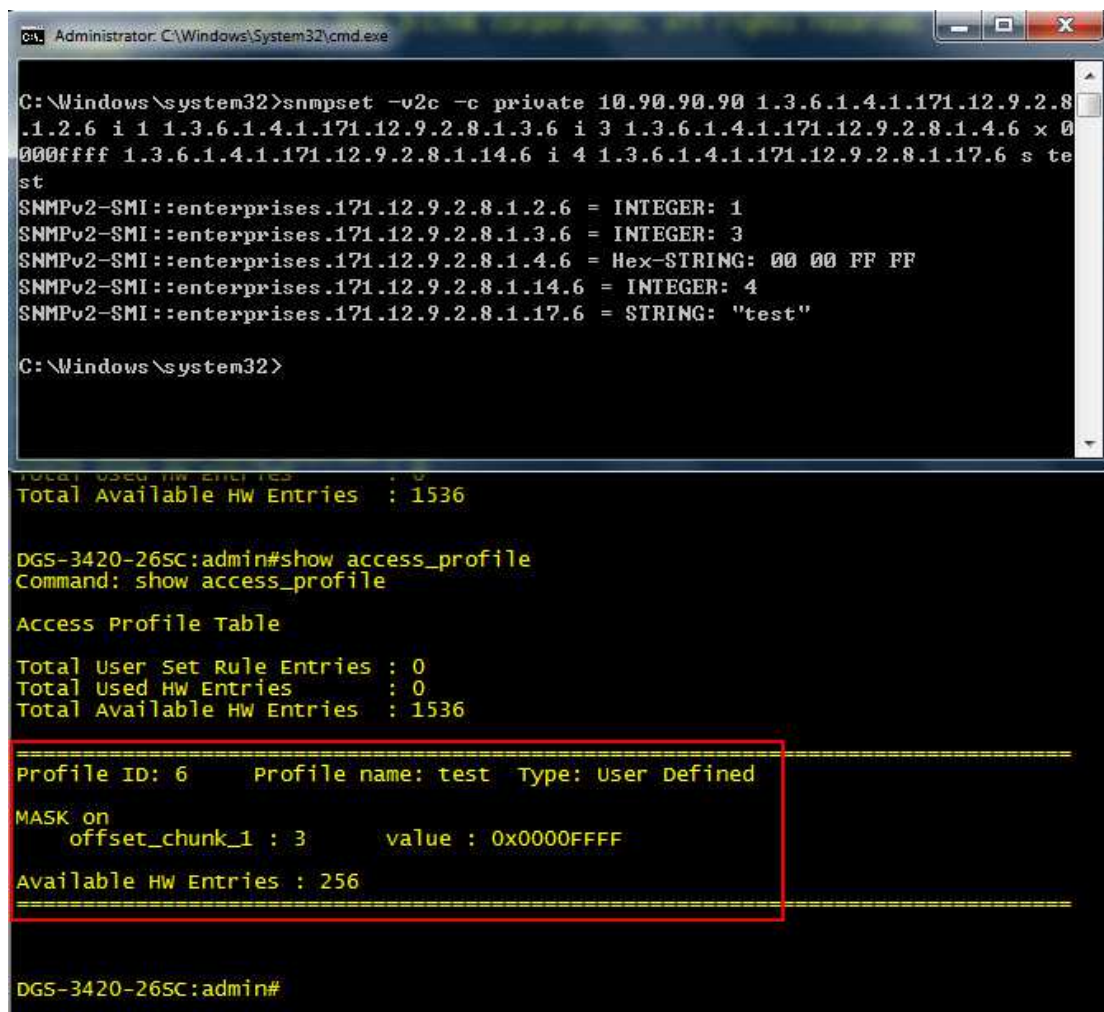
DGS-3420-265C:admin#show switch
Command: show switch

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, 1 hours, 32 minutes, 40 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 6**, offset_chunk_1, **content offset 3**, mask 0x0000FFFF for Ethernet Type (13th & 14th bytes)

```
snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.2.8.1.2.6 i 1
1.3.6.1.4.1.171.12.9.2.8.1.3.6 i 3 1.3.6.1.4.1.171.12.9.2.8.1.4.6 x 0000ffff
1.3.6.1.4.1.171.12.9.2.8.1.14.6 i 4 1.3.6.1.4.1.171.12.9.2.8.1.17.6 s test
```



The image shows two terminal windows. The top window is a Windows Administrator command prompt running the 'snmpset' command to configure SNMPv2-SMI enterprises. The bottom window is a network device terminal showing the configuration of an access profile.

```
Administrator: C:\Windows\System32\cmd.exe
C:\Windows\system32>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.2.8
.1.2.6 i 1 1.3.6.1.4.1.171.12.9.2.8.1.3.6 i 3 1.3.6.1.4.1.171.12.9.2.8.1.4.6 x 0
000ffff 1.3.6.1.4.1.171.12.9.2.8.1.14.6 i 4 1.3.6.1.4.1.171.12.9.2.8.1.17.6 s te
st
SNMPv2-SMI::enterprises.171.12.9.2.8.1.2.6 = INTEGER: 1
SNMPv2-SMI::enterprises.171.12.9.2.8.1.3.6 = INTEGER: 3
SNMPv2-SMI::enterprises.171.12.9.2.8.1.4.6 = Hex-STRING: 00 00 FF FF
SNMPv2-SMI::enterprises.171.12.9.2.8.1.14.6 = INTEGER: 4
SNMPv2-SMI::enterprises.171.12.9.2.8.1.17.6 = STRING: "test"

C:\Windows\system32>
```

```
DGS-3420-265C: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

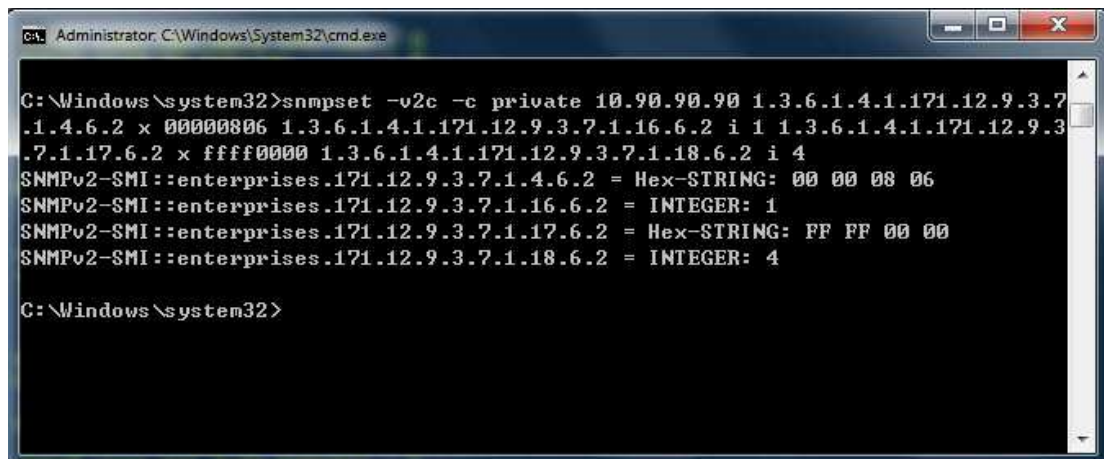
=====
Profile ID: 6      Profile name: test  Type: User Defined
MASK on
  offset_chunk_1 : 3      value : 0x0000FFFF
Available HW Entries : 256
=====

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

Step2. Configure **Access ID 2**, **Ether Type 0x00000806**, **port range from 1-16**, action Deny.

F equal to 4 ports.

```
snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.3.7.1.4.6.2 x 00000806
1.3.6.1.4.1.171.12.9.3.7.1.16.6.2 i 1 1.3.6.1.4.1.171.12.9.3.7.1.17.6.2 x ffff0000
1.3.6.1.4.1.171.12.9.3.7.1.18.6.2 i 4
```



```
C:\Windows\system32>snmpset -v2c -c private 10.90.90.90 1.3.6.1.4.1.171.12.9.3.7.1.4.6.2 x 00000806
1.3.6.1.4.1.171.12.9.3.7.1.16.6.2 i 1 1.3.6.1.4.1.171.12.9.3.7.1.17.6.2 x ffff0000
1.3.6.1.4.1.171.12.9.3.7.1.18.6.2 i 4
SNMPv2-SMI::enterprises.171.12.9.3.7.1.4.6.2 = Hex-STRING: 00 00 08 06
SNMPv2-SMI::enterprises.171.12.9.3.7.1.16.6.2 = INTEGER: 1
SNMPv2-SMI::enterprises.171.12.9.3.7.1.17.6.2 = Hex-STRING: FF FF 00 00
SNMPv2-SMI::enterprises.171.12.9.3.7.1.18.6.2 = INTEGER: 4

C:\Windows\system32>
```

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

-----
Profile ID: 6      Profile name: test  Type: User Defined
MASK on
  offset_chunk_1 : 3      value : 0x0000FFFF
Available HW Entries : 255
-----
Rule ID : 2      Ports: 1-16
Match on
  offset_chunk_1 : 3      value : 0x00000806
Action:
  Deny
-----

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