

DPI Configuration Guide

CLI Configuration for APC System

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Configuration

● Definitions

■ Definition of DPI Profile

- A profile is a set of application rules.

■ Definition of Application Rule

- Rule is configuration of QoS. Action and Bandwidth Contract.
 - Action has 3 types, permit, drop and DHCP marking.
 - Bandwidth Contract is up or down rate limitation(kbps).

■ CLIs

- Show application list which is supported in the current package.
 - APC_DPI# show dpi app-list

```
APC_DPI# show dpi app-list
DPI Application List(Total 29 apps)
A,B,C,D,E
 1. BITTORRENT      :
11. BING            :
12. DNS             :
51. COMMON_PATTERNS :

F,G,H,I,J
 3. FTP_DATA       :
10. FLASH_YAHOO   :
13. FLASH          :
14. FTP            :
15. GMAIL          :
17. GOOGLE         :
18. GOOGLE_EARTH  :
19. GOOGLE_GROUPS :
20. GOOGLE_MAPS   :
21. HTTP          :
22. HTTP_SECURE   :
27. FACEBOOK      :
```

Configuration

- Create new profile and rule

- A profile has at least one rule and the max rule count per profile is 256.
- The max profile count is 32.

- Example

- Profile name: "pro01"
- Rule of Application: BITTORRENT

```
APC_DPI# conf t
APC_DPI/configure# dpi profile pro01
Ready to create new DPI profile "pro01"
APC_DPI/configure/dpi/profile pro01# rule BITTORRENT
Rule for application "BITTORRENT" is created.
APC_DPI/configure/dpi/profile pro01/rule BITTORRENT#
APC_DPI/configure/dpi/profile pro01/rule BITTORRENT# show dpi profile pro01

Profile "pro01" QoS Configurations
| Profile Index ..... 1
| Rule Count ..... 1 rule(s)
| Status ..... DISABLE
|
| Rule List
|   1. BITTORRENT           : DROP   DSCP-N/A UP-      0 Kbps DN-      0 Kbps
| Application Group List
```

- Default QoS value

- Action: Drop
- Bandwidth Contract(Up/Down): 0/0 Kbps - unlimited

- Profile Status

- Enable/Disable: On/off of QoS configuration in some WLAN.

Configuration

- Apply the profile to a WLAN
 - DPI profile is applied to a WLAN basis
 - There is not global enabling.

```
APC_DPI# configure terminal
APC_DPI/configure# wlan 1
wlanId : 1
APC_DPI/configure/wlan 1# dpi-profile pro01
"pro01" profile is enabled.
APC_DPI/configure/wlan 1# show dpi summary
```

DPI Profile List

Index	DPI Profile Name	Rule Count	Status
1	pro01	1	DISABLE

DPI Profile List applied to WLANs

WLAN-ID	DPI Profile Name	Rule Count
1	pro01	1

DPI Application Group List

Index	App Group Name	App Count
-------	----------------	-----------

DPI Application Group Detail

Configuration

- Enabling/Disabling of profile
 - Enable means QoS control and detection
 - Application Detection + QoS
 - Disable means detection only
 - Default
 - Application Detection only

```
APC_DPI# configure terminal
APC_DPI/configure# dpi profile pro01
"pro01" profile already exists and has configured rule count - 1
APC_DPI/configure/dpi/profile pro01# ?

    enable          Enable DPI profile
    exit            Exit from profile mode
    rule            Configure application rule for this profile

APC_DPI/configure/dpi/profile pro01# enable
"pro01" profile is enabled.
APC_DPI/configure/dpi/profile pro01# show dpi profile pro01

Profile "pro01" QoS Configurations
| Profile Index ..... 1
| Rule Count ..... 1 rule(s)
| Status ..... ENABLE
|
| Rule List
|   1. BITTORRENT      : DROP  DSCP-N/A UP-      0 Kbps DN-      0 Kbps
| Application Group List

APC_DPI/configure/dpi/profile pro01# no enable
"pro01" profile is disabled.
APC_DPI/configure/dpi/profile pro01# show dpi profile pro01

Profile "pro01" QoS Configurations
| Profile Index ..... 1
| Rule Count ..... 1 rule(s)
| Status ..... DISABLE
|
| Rule List
|   1. BITTORRENT      : DROP  DSCP-N/A UP-      0 Kbps DN-      0 Kbps
| Application Group List
```

Configuration

- Application Group

- A group is set of applications and can be applied to a profile as a rule.

```
APC_DPI# configure terminal
APC_DPI/configure# dpi app-group ?
<WORD>                               Enter dpi application group name
APC_DPI/configure# dpi app-group SNS
Ready to create new group "SNS"
APC_DPI/configure/dpi/app-group SNS# ?

    application      Configure application for this group
    description      Configure description for this group
    exit              Exit from app-group mode

APC_DPI/configure/dpi/app-group SNS# application BITTORRENT
Application "BITTORRENT" is added.
APC_DPI/configure/dpi/app-group SNS# application TELNET
Application "TELNET" is added.
APC_DPI/configure/dpi/app-group SNS# application TWITTER
Application "TWITTER" is added.
APC_DPI/configure/dpi/app-group SNS# show dpi summary

DPI Profile List
-----
|  Index |  DPI Profile Name |  Rule Count |  Status |
-----
|    1   |        pro01     |            1 | DISABLE |
-----

DPI Profile List applied to WLANs
-----
| WLAN-ID |  DPI Profile Name |  Rule Count |
-----
|    1   |        pro01     |            1 |
-----

DPI Application Group List
-----
|  Index |  App Group Name |  App Count |
-----
|    1   |        SNS      |            3 |
-----

DPI Application Group Detail
SNS(Count: 3)
-----
|  ID |  Application Name |
-----
|    1 |        BITTORRENT |
|    4 |          TELNET   |
|   23 |          TWITTER   |
-----
```

Configuration

- Apply group to profile as a rule

```
APC_DPI# configure terminal
APC_DPI/configure# dpi profile pro02
Ready to create new DPI profile "pro02"
APC_DPI/configure/dpi/profile pro02# rule SNS
Application group "SNS" is created.
APC_DPI/configure/dpi/profile pro02/rule SNS# show dpi profile pro02

Profile "pro02" QoS Configurations
| Profile Index ..... 2
| Rule Count ..... 3 rule(s)
| Status ..... DISABLE
|
| Rule List
| Application Group List
|   1. SNS : DROP DSCP-N/A UP- 0 Kbps DN- 0 Kbps
|     1. BITTORRENT
|     4. TELNET
|    23. TWITTER
```

- Profile cannot have duplicate application rule.
 - BITTORRENT is already configured as a rule, so cannot add SNS group which has BITTORRENT.

```
APC_DPI/configure/dpi/profile pro01# show dpi profile pro01

Profile "pro01" QoS Configurations
| Profile Index ..... 1
| Rule Count ..... 1 rule(s)
| Status ..... DISABLE
|
| Rule List
|   1. BITTORRENT : DROP DSCP-N/A UP- 0 Kbps DN- 0 Kbps
| Application Group List

APC_DPI/configure/dpi/profile pro01# rule SNS
Error, application group "SNS" includes same application configured in this profile. Need to check rule list.
```

Configuration

- Definition of Application Group

- One group has up to 128 applications.
- The max group count is 32.
- Rule of group's bandwidth contract value means not a total of group, it is each application's bandwidth value.
 - TELNET and FTP is a group and BW contract is 1024Kbps, then, it means NOT TELNET+FTP = 1024 but TELNET=1024 and FTP=1024

Statistics

- Category
 - Application/WLAN/station/os-type/group

```
APC DPI# show dpi stat ?
  application      Show DPI application stat
  wlan             Show DPI wlan stat
  station          Show DPI station stat
  os-type          Show DPI os-type stat
  group            Show DPI application group stat
```

Statistics

- Accumulated Applications
 - All the Applications

```
APC_DPI# show dpi stat application
```

Accumulated Application Stat

ID	Application Name	Upstream Packet Count	Upstream Byte	Downstream Packet Count	Downstream Byte
	*		Upstream Kbps		Downstream Kbps
	**	Drop	Drop	Drop	Drop
1	BITTORRENT	0	0	0	0
3	FTP_DATA	0	0	0	0
4	TELNET	0	0	0	0
5	TFTP	0	0	0	0
6	VIMEO	0	0	0	0
7	YAHOO_MSG_VOIP	0	0	0	0
8	YOUTUBE	0	0	0	0
9	VSHARE	0	0	0	0
10	FLASH_YAHOO	0	0	0	0
11	BING	0	0	0	0
12	DNS	0	0	0	0
13	FLASH	0	0	0	0
14	FTP	0	0	0	0
15	GMAIL	0	0	0	0
17	GOOGLE	31	4,247	23	5,302
18	GOOGLE_EARTH	0	0	0	0
19	GOOGLE_GROUPS	0	0	0	0
20	GOOGLE_MAPS	0	0	0	0
21	HTTP	6	396	2	2,057
	*Kbps		0.31		1.61
22	HTTP_SECURE	120	30,886	90	25,433
	*Kbps		7.66		2.14
23	TWITTER	0	0	0	0
24	YAHOO_MAIL	0	0	0	0
25	YAHOO_SEARCH	0	0	0	0
26	ORKUT	0	0	0	0
27	FACEBOOK	0	0	0	0
28	LINKEDIN	0	0	0	0
29	VOICETALKSIGNAL	0	0	0	0
30	KAKAOTALK_VOIP	0	0	0	0
51	COMMON_PATTERNS	0	0	0	0

Top 10 Applications

RANK	ID	Application Name	Upstream Packet Count	Upstream Byte	Downstream Packet Count	Downstream Byte
1	22	HTTP_SECURE	120	30,886	90	25,433
2	17	GOOGLE	31	4,247	23	5,302
3	21	HTTP	6	396	2	2,057

Statistics

- Specific Application
 - Show detailed Application stat.

```
APC_DPI# show dpi stat application HTTP_SECURE
```

```
- "HTTP_SECURE"(ID: 22) Stat
```

```
  Description
```

```
  ""
```

Upstream Packet Count	210 packets
Upstream Byte	41,139 bytes
Downstream Packet Count	153 packets
Downstream Byte	36,498 bytes
Upstream Packet Drop Count	0 packets
Upstream Drop Byte	0 bytes
Downstream Packet Drop Count	0 packets
Downstream Drop Byte	0 bytes

```
Top 10 Stations
```

1. 28:E1:4C:85:5D:9C	18.45%	14,322 bytes	----1----2----3----4----5----6----7----8----9--- %
----------------------	--------	--------------	--

```
Top 10 Stations(History)
```

1. 28:E1:4C:85:5D:9C	81.55%	63,315 bytes	----1----2----3----4----5----6----7----8----9--- %
----------------------	--------	--------------	--

```
Top 10 WLANs
```

1. 1	100.00%	77,637 bytes	----1----2----3----4----5----6----7----8----9--- %
------	---------	--------------	--

```
Top 10 Device types
```

1. Apple iPhone	100.00%	77,637 bytes	----1----2----3----4----5----6----7----8----9--- %
-----------------	---------	--------------	--

```
Top 10 OS types
```

1. Apple iOS	100.00%	77,637 bytes	----1----2----3----4----5----6----7----8----9--- %
--------------	---------	--------------	--

Thank you!