show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

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-

4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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-	-

14

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

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1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

-

-

4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

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14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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-

-

-

-

WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

ᵴ ᵶ Ä ⎹

Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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-

1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

-

-

4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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-	-

14

-

1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

-

1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

-

-

4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

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14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

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1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

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1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

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Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

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4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

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4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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14

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

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4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

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4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

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4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

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-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

-

1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

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-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

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4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

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14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

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-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

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1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

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1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

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1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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-

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WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

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Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

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-

4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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14

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

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1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

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-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

-

-

4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

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14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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-

-

-

-

WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

ᵴ ᵶ Ä ⎹

Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

-

-

4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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14

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

-

1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

-

-

4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

-

14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

-

-

4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

-

1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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-

WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

ᵴ ᵶ Ä ⎹

Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

-

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4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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-	-

14

-

1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

-

1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

-

-

4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

-

14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

-

-

-

-

-

WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

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Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

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4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

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ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

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53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

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1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

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-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

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4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

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14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

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Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

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-

4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

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-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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-	-

14

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

-

1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

-

-

4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

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14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

-

1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

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1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

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1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

ᵴ ᵶ Ä ⎹

Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

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4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

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-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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-	-

14

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

-

-

4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

-

1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

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4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

-

14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

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-

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-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

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1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

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WEB /1X wqos WEB /1X
wqos wqos

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WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

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Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

-

-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

-

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4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

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1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

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-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

-

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4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

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ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

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53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

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4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

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4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

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4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

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14

1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

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1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

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4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

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14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

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4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

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1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

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14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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-

-

-

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WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

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Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description

show nfpp ip-guard summary

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-

-

4.69 nfpp ip-guard policy

nfpp ip-guard policy { **per-src-ip** | **per-port** } *rate-limit-pps attack-threshold-pps*

no nfpp ip-guard policy { **per-src-ip** | **per-port** }

default nfpp ip-guard policy { **per-src-ip** | **per-port** }

per-src-ip	IP
per-port	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

1 G0/1 IP IP 2pps 10pps
50pps 100pps

5XLMLHFRQ1QWHUIDFH*
5XLMLHFRQ1QSSLSXXDUGSROLFSHUVUFLS
5XLMLHFRQ1QSSLSXXDUGSROLFSHUSRUW

show nfpp ip-guard summary

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4.70 nfpp ip-guard scan-threshold

nfpp ip-guard scan-threshold *pkt-cnt*

no nfpp ip-guard scan-threshold

default nfpp ip-guard scan-threshold

pkt-cnt	[1,9999]

IP ARP

14

-

1 G0/1 IP 20pps

5XLMLHFRQ1WUHUIDFH*

5XLMLHFRQ1IIQSSLSXDUGVFDQWKUHVKROG

show nfpp ip-guard summary

-

-

-

4.71 nfpp nd-guard enable

ND

nfpp nd-guard enable

ND

no nfpp nd-guard enable

ns-na	
rs	
ra-redirect	
rate-limit-pps	1 9999
attack-threshold-pps	1 9999

14

ND snooping

ND snooping ND snooping

4.73 show nfpp arp-guard hosts

show nfpp arp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address* | *mac-address*]]]

statistics	
vid	
interface-id	
ip-address	IP
mac-address	MAC

14

-

1 ARP 120 100
20 ACL

```
5XLMLHVKRZSSDUSXXDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO
```

2 ARP “ remain-time(s) ”

```
5XLMLHVKRZSSDUSXXDUGKRVWV
,IFROXPQKRZZLWPHDQKDUGDUHGRQWLVRODWHXVHU
9/$LQWHUIDFH,3DGGUHVV0DGGUHVVUHPDLQWLPHV

*L
*L
*L
*L
7RWDO 4 h o s t s
```

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-

4.74 show nfpp arp-guard scan

ARP

show nfpp arp-guard scan [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	ARP
vid	
interface-id	
mac-address	MAC

14

-

1 ARP 4

5XLMLHVKRZ&SSDUSX&XDUGVFDQ&WDWLVWLFV

$&&3VFDQ&WDEOHKDVUHFRUGV

2 ARP “ timestamp ” ARP “ 2008-01-23 16:23:10 ” 2008 1 23 16 23 10 ARP

5XLMLHVKRZ&SSDUSX&XDUGVFDQ

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

ł

ł1$

ł1$

7RWDO 4 r e c o r d (s)

3 vlan 1,G0/1 MAC 0000.0000.0001

Ruijie# show nfpp arp-guard scan vlan 1 interface G 0/1 0000.0000.0001

9/$LQ&WHUIDFH,3DGGUHVV0&&&GGUHVVWLPHVWDPS

ł1$

7RWDO 1 r e c o r d (s)

-

-

4.75 show nfpp arp-guard summary

show nfpp arp-guard summary

-	-

53B2A0 .63790B4609E5 1 Tf 5.807 0 261.2747 03.24

14

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14

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1 ARP

```
5XLMLHVKRQSSDUSXDUGWUXVWHGKRVW
,3DGGUHVVPDF




7RWDO 2 r e c o r d ( s )
```

-

-

4.77 show nfpp dhcp-guard hosts

show nfpp dhcp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*mac-address*]]]

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCP 120 100
20 ACL

```
5XLMLHVKRQSSGKFSXDUGKRVWVVWDWLVWLFV
```

```
VXFFHVVIDLOWRWDO
```

2 DHCP “ remain-time(s) ”

```
5XLMLHVKRZQ SSGKFSXDUGKRVWV
,IFROXPQ QKRZZLWPHDQ QKDUGZDUHIDLOHGWRLVRODWHKRVW
9/$LQ QHUIDFH0RGGUHVVUHPDLQQLPHVHFRQV

1
1
7RWDO 2 h o s t ( s )
```

-

-

4.78 show nfpp dhcp-guard summary

show nfpp dhcp-guard summary

-	-

14

1 DHCP

```
5XLMLHVKRZQ SSGKFSXDUGVXPPDU\
 F o r m a t o f c o l u m n R a t e - l i m i t a n d A t t a c k - t h r e s h o l d i s
I n t e r f a c e S t a t u s I s o l a t e - p e r i o d R a t e - l i m i t A t t a c k - t
G l o b á l ' M E n a b l e 3 0 0 - / 5 / 1 5 0 - / 1 0
G i 0 / 1 E n a b l e 1 8 0 - / 6 / - - / 8
G i 0 / 2 D i s a b l e 2 0 0 - / 5 / 3 0 - / 1 0
```

	“m	Interface	Global				
	“m	Status					
	“m	Rate-limit	IP		/sW	MAC	/j
	“m	Attack-threshold		-r			

-

-

4.79 show nfpp dhcp-guard trusted-host

show nfpp dhcp-guard trusted-host

statistics	
vid	
interface-id	
mac-address	MAC

14

-

1 DHCPv6 120 100
20 ACL

[redacted]

-

14

1 DHCPv6

```
5XLMLHVKRQSSGKFSYXXDUGVXPPDU\
  Format of column Rate-limit and  Attack-threshold is
Interface  Status  Isolate-period Rate-limit Attack-t
Global      Enable  300                -/5/150      -/10
Gi 0/1      Enable  180                -/6/-         -/8
Gi 0/2      Disable 200                -/5/30       -/10

Maximum count of monitored hosts: 1000
Monitor period 300s
```

“m Interface *(/AG00VDEOHPSCSMeA3UyBUV7AHCPIt8T9MVHCSBCw“m

1 DHCPv6

5XLMLHVKRQSSGKFSYXXDUGWUXVWHGKRVW
PDF

7RWDO 2 r e c o r d (s)

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4.83 show nfpp icmp-guard hosts

show nfpp icmp-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 ICMP 120 100
20 M

```
9/$LQWHUIDFH,3DGGUHVVUHPDLQLQLPHV

ℓ
ℓ
7RWDO   2   h o s t ( s )
```

-

-

4.84 show nfpp icmp-guard summary

show nfpp icmp-guard summary

-	-

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1 ICMP

```
5XLMLHVKRZSSLFPSXDUGVXPPDU\
  F o r m a t   o f   c o l u m n   R a t e - l i m i t   a n d   A t t a c k - t h r e s h o l d   i s
I n t e r f a c e   S t a t u s   I s o l a t e - p e r i o d   R a t e - l i m i t   A t t a c k - t
G l o b a l   E n a b l e   3 0 0   4 / - / 6 0   8 / - / 1
G i   0 / 1   E n a b l e   1 8 0   5 / - / -   8 / -
G i   0 / 2   D i s a b l e   2 0 0   4 / - / 6 0   8 / - /

M a x i m u m   c o u n t   o f   m o n i t o r e d   h o s t s :   1 0 0 0
M o n i t o r   p e r i o d   3 0 0 s
```

- “m Interface Global
- “m Status
- “m Rate-limit IP /sW MAC /j
  “m Attack-threshold -r

-

-

4.85 show nfpp icmp-guard trusted-host

show nfpp icmp-guard trusted-host

-	-

14

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1 ICMP

```
5XLMLHVKRQSSLFPSXDUGWUXVWHGKRVW
,3DGGUHVVPDVN



7RWDO 2 r e c o r d ( s )
```

-

-

4.86 show nfpp ip-guard hosts

show nfpp ip-guard hosts [**statistics** | [[**vlan** *vid*] [**interface** *interface-id*] [*ip-address*]]]

statistics	
vid	
interface-id	
ip-address	IP

14

-

1 IP 120 100
20 ACL
5XLMLHVKRZ SSLSX XDUGKRVWVVWDWLVWLFV
VXFFHVVIDLOWRWDO

2 IP “ remain-time(s) ”
5XLMLHVKRZ SSLSX XDUGKRVWV
,IFRXPQ KRZ ZLWPHDQ KDUGZDUHGRWLVRODWHKRVW
9/$1 WHUIDFH,3DGGUHVV5HDVRQ HPDLQ WLPHV

1 $7&
1 6&
7RWDO 2 h o s t (s)

Q mq ReasonrMVo,Ru ATTACKrMVoY IP q3.g1¶
le SCANrMVo}AMvQd

-

-

4.87 show nfpp ip-guard summary

show nfpp ip-guard summary

-	-

14

1 IP

5XLMLHVKRQSSLSXDUGVXPPDU\

Format of column Rate-limit and Attack-threshold is

In Rate-limit Attack-thr

G 8 / - / 1

G i /-

G i

Ma

Mo

“m Interface Global ID VS80ffP8L8GDFeyeTATUX“m

```
,3DGGUHVVPDVN




7RWDO   2   r e c o r d ( s )
```

-

-

4.89 show nfpp log

NFPP

show nfpp log summary

NFPP

show nfpp log buffer [**statistics**]

statistics	NFPP

14

”-”

%NFPP_ARP_GUARD-4-DOS_DETECTED:
Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

1 NFPP

```
5XLMLHVKRWSSORYXPPDU\
7RWDO [illegible]
[illegible]
[illegible]
[illegible]
1 - 3 ,  5
i n t e r f a c e  G i  0 / 1
i n t e r f a c e  G i  0 / 2
```

2 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHUVWDWLVWLFV
7KHUHDUHORZ&YLH&XIIHU
```

3 NFPP

```
5XLMLHVKRZ&SSORZ&XIIHU
3URWRFRO9/$1&QWHUIDFH&3DGGUHVV0&GGUHVV5HDVRQ&LPHVWDPS

&3 &&&&
```

-	-

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14

1 ND

```
5XLMLHVKRQSSQXXDUGVXPPDU\
  Format of column Rate-limit and Attack-threshold is
Interface Status Rate-limit Attack-threshold
Global Enable 20/5/10 40/10/20
Gi 0/1 Enable 15/15/15 30/30/30
Gi 0/2 Disable -/5/30 -/10/50
```

- “m Interface Global
- “m Status
- “m Rate-limit LsÍ /dA /s /sdA /7 Gø3 m Attack-threshold -r
- hHt -/5/30r G 0/2 h /dA s .¾ 5s dA /7Gø3 ¾ 30d

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4.91 show nfpp nd-guard trusted-host

show nfpp nd-guard trusted-host

-	-

14

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1 ND

5XLMLHVKRQSSQXDUGWUXVWHGKRVW_ZZZ7WUXVWHt°pU0D

Q¸WLAN QOS

WLAN QOS Q¸Ø

1. WQOS

1 WQOS

fair-schedule	AP
sta-fair	
wlan-qos ap-based	AP
wlan-qos netuser	
wlan-qos wlan-based	WLAN
wqos fs enable	wqos

1.1 fair-schedule

AP

fair-schedule

no

no fair-schedule

-	-

15

-

-

-

-

-

-

1.2 sta-fair

sta-fair *mac-address* **priority** *priority*

wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos ap-based total-user-limit { **down-streams** | **up-streams** } **intelligent**

per-user-limit	AP
total-user-limit	AP
down-streams	AP
up-streams	AP
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.4 wlan-qos netuser

wlan-qos netuser *mac-address* { **inbound** | **outbound** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos netuser *mac-address* { **inbound** | **outbound** }

mac-address	MAC		
inbound			
outbound			
average-data-rate		8Kbps	8-261120
burst-data-rate		8Kbps	8-261120

15

-

-

-

-

-

1.5 wlan-qos wlan-based

WLAN

wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit** } { **down-streams** | **up-streams** } **average-data-rate** *average-data-rate* **burst-data-rate** *burst-data-rate*

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } { **per-user-limit** | **total-user-limit**} { **down-streams** | **up-streams** }

WLAN total-user-limit

Wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams** } **intelligent**

no

no wlan-qos wlan-based { *wlan-id* | *ssid* } **total-user-limit** { **down-streams** | **up-streams }** **intelligent**

wlan-id	WLAN

ssid	WLAN SSID
per-user-limit	WLAN
total-user-limit	WLAN
down-streams	WLAN
up-streams	WLAN
Intelligent	total-user-limit
average-data-rate	8Kbps 8-261120
burst-data-rate	8Kbps 8-261120

total-user-limit

15

total-user-limit

-

-

-

-

-

1.6 wqos fs enable

wqos

wqos fs enable

wqos

no wqos fs enable

wqos

15

WEB /1X wqos WEB /1X
wqos wqos

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WLAN 45%

WLAN 45%

1. WDS

1 WDS

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1.2 parent

NONROOT ₩ Ã ï ب ل ROOT ᵞ ʒ Ụ ε ʁ ᵽ Ṫ Ă ᵽ NONROOT ₩ Ã ï ˡ ب ل

ODQG

3 χ ˜ ì Æ WDS ⁷ ì ʒ Ụ

5 XMLKZGRWZGVUGHQ
6 0 1 2 1 5 2 2 %
8 0 0 d 0 . f 8 2 2 . 3 3 0 4

WBI 1 / 0
ROOT 3 2 d 0 . f 8 2 2 . 3 3 0 3

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1 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ ROOT ₩ Ã ᵢ ᵢ ᵡ ᵢ WLAN ᵲ 1

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH UGH DDQ

2 χ AP ᵢ ᵇ ᵲ AP ᵀ Ă ᵽ WDS ᵡ ᵢ NONROOT ₩ Ã ᵢ

5 ⅍ MLF RQ ⅍ IRWD GLRW WDWLRQ OQ RWEUGH

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Æ ᵢ **show running-config** ᵘ ɲ ᵢ ᵢ ⓪ ˜ station-role ᵇ ᵲ

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1.5 wds pre-config

nonroot ᵢ ᵇ ᵲ ᵘ ɲ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ ᵢ ᵢ ᵶ

```
5XMLHRQLIRWDGLRSDWVGXMLHRW
5XMLHRQLIRWDGLRZSHRQFHWH
5XMLHRQLIRWDGLRLW
5XMLHRQDSPRGHLW
```

2 χ AP i ‥ ‰

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1. y·
2. MAC
3. VLAN
4. MAC VLAN
5. VLAN-Group
6. LLDP
7. PPP
8. PPPOE-CLIENT

1 L

bandwidth	
carrier-delay	
clear counter	clear counters
clear interface	clear interface

description