	Acti	ve							
Port	Active	Com	Ingr mit Rate	ess Rate Active	Peak	Rate	Active	Egres	s Rate
*			Kbps			Kbps			Kbp
1		1	Kbps		1000	Kbps		1000	Kbp
2		1	Kbps		1000	Kbps		1000	Kbp
3		1	Kbps		1000	Kbps		1000	Kbp
4		1	Kbps		1000	Kbps		1000	Kbp
5		1	Kbps		1000	Kbps		1000	Kbp
6		1	Kbps		1000	Kbps		1000	Kbp
7		1	Kbps		1000	Kbps		1000	Kbp

Advanced Application -> Bandwidth Control.

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				(Ingress Rate)		:
Commit	Rate	Peak	Rate.	,	Peak	Rate,

Eggress Rate.

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Commit Rate.

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# CLI

bandwidth-control <cr>

interface port-channel <port-list> bandwidth-limit cir <Kbps>

interface port-channel <port-list> bandwidth-limit cir <cr>
interface port-channel <port-list> bandwidth-limit pir <Kbps>
interface port-channel <port-list> bandwidth-limit pir <cr>
interface port-channel <port-list> bandwidth-limit egress <Kbps>
interface port-channel <port-list> bandwidth-limit egress <cr>



		Dif	fserv												<u>2-</u>	rate	3 (	Col	or I	Markei	<u> </u>		DS	с <u>Р :</u>	Sett	ting
						Active							]													
Port											Active															
						*																				
1																		<b></b>								
2																		<b>~</b>								
		DSO	CP Setti	ng																				Di	ffse	IV
DSCI	10	80.	2. тр іма	pp	ing		_														_			_		
0	0	~	1	0	~	2	0	~	3	. (	) 🗸	4		0	*		5	0	~	6	0	*	7	0	~	
8	1	*	9	1	*	10	1	~	11		1 🗸	1:	2	1	*		13	1	*	14	1	*	16	1	*	
16	2	~	17	2	~	18	2	~	19		2 🗸	21	0	2	*		21	2	~	22	2	-	23	2	~	
24	3	~	25	3	*	26	3	~	27		3 🗸	21	8	3	*		29	3	~	30	3	×	31	3	*	
32	4	×	33	4	×	34	4	~	35	Ľ	∔ <b>~</b>	31	6	4 7	~		37	4	×	38	4	×	36	4	×	
40	0	Ť	41	0	×	42	0	×	43			4	4	o c	×		40	0	×	40	0		41	с -	×	
56	7	~	43 57	7	•	58	7	~	59		7 🗸	5. 61	2 N	7	•		61	7	•	62	7	•	63	7	•	
												1								01						l
											۹ppl	y C	an	ce												
						2 -	_								Ι	Dif	ffs	se	rv	7	8	02	2.1	0		

## ZyXEL

DSCP (Differentiated Services Code Point).

DSCP

802.1p.

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DSCP,

802.1p,

802.1p

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#### CLI

diffserv <cr>

interface port-channel <port-list>

diffserv diffserv dscp <0-63> priority <0-7>

### 2-rate-3color

2-rate-3-color marker -

DSCP 802.1p.

2-rate-3-color marker:

Color-Blind mode

\_

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DSCP

Color-Aware mode

DSCP

Bandwidth Control

2-rate-3-color

ZyXEL

«2-rate-3-color».

2-rate-3-color: Color-blind

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:

mode Color-aware mode.

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2-rate-3-color

- CIR (Commit Ingress Rate) -

- PIR (Peak Ingress Rate) –

PIR CIR 2-rate-3-color Commit • Rate Peak Rate Bandwidth Control , 2-rate-3-color Bandwidth Control Bandwidth Control -2-rate-3-color, • DSCP IP.





	Active Mode		⊂ ⊙ colo ○ colo	or-blind or-awa	l re		
Active	Commit R	late	Peak Rate		green	DSCP yellow	red
		Kbps	ŀ	Kbps			
	1	Kbps	1i	Kbps	0	0	0
	1	Kbps	1	Kbps	0	0	0
	1	Kbps	1i	Kbps	0	0	0
	1	Kbps	1	Kbps	0	0	0
	1	Kbps	1	Kbps	0	0	0
	1	Kbps	1 j	Kbps	0	0	0
	1	Kbps	1 J	Kbps	0	D	0
	1	Kbps	1	Kbps	0	0	0
	1	Kbps	1	Kbps	0	0	0
	1	Kbps	1	Kbps	0	0	0
	1	Kbps	1	Kbps	0	0	0
	1	Kbps	1	Kbps	0	0	0
	Active	Active Mode  Active Commit R  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Active           Mode           Active         Commit Rate           I         Kbps           I         Kbps	Active         Organization           Mode         Organization           Active         Commit Rate         Peak Rate           Image: State         Kbps         Image: State           Image: State         Kbps         Image: State           Image: Image: State         Kbps         Image: State           Image: Image: Image: State         Image: State         Image: State           Image: Ima	Active       Image: Color-always         Mode       Oclor-always         Active       Commit Rate       Peak Rate         Image: Color-always       Kbps       Kbps         Image: Image: Color-always       Kbps       Kbps         Image: Image: Image: Image: Color-always       Kbps       Kbps         Image: Image: Image: Image: Image: Image: Color-always       Kbps       Kbps         Image: Ima	Active       Image: Color-blind color-aware         Mode       Image: Color-aware         Active       Commit Rate       Peak Rate       green         Image: Color-aware       Image: Color-aware       Image: Color-aware       Image: Color-aware         Image: Color-aware       Image: Color-aware       Image: Color-aware       Image: Color-aware       Image: Color-aware         Image: Color	Active         Observation           Mode         Color-blind         Observation           Active         Commit Rate         Peak Rate         DSCP green           Image: State St

## CLI

trtcm <cr>

trtcm mode <color-aware|color-blind> interface port-channel <port-list> trtcm <cr> interface port-channel <port-list> trtcm cir <Kbps> interface port-channel <port-list> trtcm pir <Kbps> interface port-channel <port-list> trtcm dscp green <0-63> interface port-channel <port-list> trtcm dscp yellow <0-63> interface port-channel <port-list> trtcm dscp red <0-63>

🔘 Classifiei								
Active								
Name							_	
icket Format	All	~						
	VLAN	<ul> <li>Any</li> <li>Image: Any</li> </ul>						
	Priority	<ul> <li>Any</li> <li>0 </li> </ul>						
	Ethernet Type	All     Others	Y (Hex)	)				
Layer 2	Source	MAC Address	<ul> <li>Any</li> <li>MAC</li> </ul>					
	Source	Port	<ul> <li>Any</li> <li>Image: Any</li> </ul>					
	Destination	MAC Address	<ul> <li>Any</li> <li>MAC</li> </ul>	:	:		:	
	DSCP	⊙ Any						
	IP Protocol	<ul> <li>O Others</li> </ul>	Establish ( (Dec)	Only				
Laver 3	Courses	IP Address / Address Prefix	0.0.0.0		/			
Layer 5	Source	Socket Number	Any					
	Destination	IP Address / Address Prefix	0.0.0.0		/			
	Destination	Socket Number	<ul> <li>Any</li> <li>Image: Any</li> </ul>					

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(2- 3- )

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Ethernet,	Ethernet+T		3000	
,	3-	4000-	,	
	2+.			

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Ethernet (Packet Format),VLAN 802.1q,802.1p(Priority),Ethernet (Ethernet Type),MAC-

(Source, Destination)

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•

(IP Protocol), IP-

DCSP,

192.168.1.0/24.

TCP UDP

(Socket Number),

SYN

TCP ( **Establish only**).

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CLI

classifier <name> [vlan<vlan-id>][..]

,

classifier help

Policy						
Active						
Name						
Classifier(s)		-				Выбор классификатора из списка
Parameters	VLAN ID Egress Port Outgoing packet for Priority DSCP TOS	nat for Egress port	General 1 Tag O Untag Q V Q V	Bandwidth Out-of-Profile DBCP	Metering Kbp	Параметры, относящиеся к действиям: Идентификатор VLAN, выходной порт, скорость, DSCP для пакетов (превышающих ограничение по скорости), новый приоритет 802.1p, TOS, DSCP
Action	No change     Descrift here average     Do not drop the     Private     No change     So the paskets     Replace the 92     Differer     No change     So the paskets     Replace the 92     Differer     No change     So the paskets     S	eff matching frame prev B82.1 priority to priority queue 1 priority queue 1 priority queue 1 priority del del D6 field with the B2.2ddepoint field in the B the minars pair B the agress point B the agress	ously marked for decipie in IP TOS value 1. priority value former DCP value DCP value DCP value Precedence	ed for dropping or	to be sent to the CPU) to	<b>Действия:</b> - удалить пакет; - не удалять пакет, ранее подготовленный к удалению; - изменить приоритет 802.1р, поместить в очередь согласно приоритету, скопировать поле IP TOS в приоритет 802.1р; - изменить поле TOS, скопировать приоритет 802.1р в TOS, установить DSCP (DiffservCodepoint); - отправить пакет в порт-«зеркало», отправить в выходной порт, установить VLAN ID; - при превышении скорости: удалить пакет; изменить DSCP; отбросить в случае перегрузки выходного канала; не удалять
		Add	Cancel Clear			

7 –

Actions,

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Parameters.





policy <name> policy help

Metering												
🔲 Enable												
	Drop the packet											
Out-of-profile	Change the DSCP value	Change the DSCP value										
action	🗹 Set Out-Drop Precedence	Set Out-Drop Precedence										
	🔲 Do not drop the matching frame pre	Do not drop the matching frame previously marked for dropping										
	Bandwidth		Metering									
	Out-of-profile:	Bandwidth	512	Kbps								
	•	Out-of-Profile										
-		DSCP										
-	DSCP											
-												
-												
	3											

8 –



6 –

 PC1
 PC2
 9

 10
 (
 6).
 9

 2.
 IP :

PC1 - 192.168.1.101

PC2 - 192.168.1.102

 3.
 ,
 PC1
 «Ixia Perfomance Endpoint»

 (
 ->
 ->
 ->

 >
 ).
 ->
 ->

4.

Chariot. PC2 NetIQ Chariot Console. 5. «New». Edit -> Add Pair.

«Endpoint 1»IP-PC1,«Endpoint 2»PC2.«Select Script»,«Throughput.scr»,«Open».

«Edit Script»,

6.

•

file\_size. Current Value — 500000. (File > Save to Pair) • 7. Web-192.168.1.1 ( . ). 8. ( admin, 1234). 9. Advanced Application > Bandwidth Control. (Eggress) 10. 10 1 / . PC1—PC2 Chariot. 11.

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# ICMP.

1.		Advanced Ap	plicatior	n > (	Classifier.			
2.		Active,	icmp,	IP	Protocol	ICMP	, Source	IP
	address 192.168	3.1.0/24						
3.	Add.							
4.		Advanced App	olication	> P	olicy.			
5.		,		n	oicmp,			
		icmp,			А	ction	Discard	the
	packet.							

6. Add.

- 7. , ping
- 8. , PC2 « » PC1, > ...
  - IP- PC2: \\**192.168.2.3**

•