Multi-WAN w/ auto notification for WAN's status updates

PH18-MUM

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	Trip	ple WA	N	
IP>Add	Iresses			
	Address List			
	•- ~ ~ 2 7	7		
	Address	∠ Network	Interface	
	::: LOCAL Network			
	+ 192.168.10.254/24	192.168.10.0	ether4	
	÷ 192.168.50.254/24	192.168.50.0	ether1-WAN1	
	÷ 192.168.60.254/24	192.168.60.0	ether2-WAN2	
	+ 192.168.70.254/24	192.168.70.0	ether3-WAN3	
IP>DN	S DNS Settings Servers: 208.78	.222.222	•	
	208.67	.220.220] 🗢	

		Tri	pple V	VAN		
rewa	all>NAT>r	nasquera	de			
	Firewall	-				
	Filter Rules	NAT Mangle	Service Ports	Connectio	ons Address	
	+ -	V X E	7 00 Re	set Counter	rs 00 Re:	
	# Ac	tion	Chain	:11:11Out	t. Interface	
	0 = 1 =	masquerade masquerade	srcnat srcnat	eth	er1-WAN1 er2-WAN2	
	2 =	masquerade	srcnat	eth	er3-WAN3	
ewa	ll>Mangle	}				
Firewall Filter Ru	iles NAT Mangle	Service Ports Conn	ections Address L unters 00 Reset	ists Layer7 F All Counters	Protocols	
Firewall Filter Ru #	Iles NAT Mangle	Service Ports Conn Chain In. I	ections Address L unters 00 Reset	ists Layer7 F All Counters ection Mark	Protocols	New Routing Mark
Firewall Filter Ru H	Iles NAT Mangle	Service Ports Conn OO Reset Conn Chain In. I	ections Address L unters 00 Reset	ists Layer7 F All Counters ection Mark	Protocols	New Routing Mar
Firewall Filter Ru + C #	Action	Service Ports Conn Service Ports Conn Image: Chain In. Image: Chain Input ether	ections Address L unters 00 Reset Interface (Conn er1-WAN1 er2-WAN2	ists Layer7 F All Counters ection Mark	Protocols	New Routing Mart
Firewall Filter Ru	Action Action ple WAN CONFIG mark connection mark connection	Service Ports Conn Chain In I input ethe input ethe	ections Address L unters 00 Reset Interface (Conn er1-WAN1 er2-WAN2 er3-WAN3	ists Layer7 F All Counters ection Mark	Protocols	New Routing Mar
Firewall Filter Ru # ::: Tri	Action Park connection mark connection mark connection mark conting	Service Ports Conn Chain In I input ethe input ethe output ethe	ections Address L unters 00 Reset Interface (Conn er1-WAN1 er2-WAN2 er3-WAN3 wan1	ats Layer7 F All Counters ection Mark	Protocols	New Routing Mar
Firewall Filter Ru #	Action Action Mark connection Mark connection Mark connection Mark routing Mark routing	Service Ports Conn T 00 Reset Con Chain In. I input ethe input ethe output output	ections Address L unters 00 Reset Interface (Conn er1-WAN1 er2-WAN2 er3-WAN3 wan1 wan3	ats Layer7 F All Counters ection Mark _conn	Protocols	New Routing Mari

					rippl	e	WA	N			
P>	Routes	;									
Route	List										
Route	es Nexthops	Rules	VRF								
+	- // **	1	7								
and the	Dst. Address	- <u></u>	T.	Gateway				Distance	Scope	Target Scope	Routing Mark
AS	0.0.0/0	0		192.168.	50.1 reachable e	ther1-	WAN1	1	30	10	to_wan1
AS	0.0.0/0			192.168.	60.1 reachable e	ther2-	WAN2	1	30	10	to_wan2
AS	0.0.0/0			192.168.	70.1 reachable e	ther3-	WAN3	1	30	10	to_wan3
:::1	Multi-WAN										
AS	₽ 0.0.0/0			192.168.	/0.1 reachable e	ther3-	WAN3, 1]	30	10	
		D		0.0.0/05							
		no	oute <u< td=""><td>.0.0.0/0></td><td>č.</td><td></td><td></td><td></td><td></td><td></td><td></td></u<>	.0.0.0/0>	č.						
		G	ieneral	Attribut	es						
			Det	Address	00000						
			Dat.	nuuross.	0.0.0.0/0	ente la chemistra					
			0	Gateway:	192.168.70.1	Ŧ	reachable	e ether3-W/	AN3	\$	
					102.102.00.1	-	and the state		112		
					192.168.60.1	•	reachable	e ether2-wv	1112	•	
					192.168.50.1	Ŧ	reachable	e ether1-W/	AN1	\$	
					1		- hereiten hereiten hereiten				
		c	heck (Sateway	l				·····	-	
		-	aloon t	accinuy.	L						

DHCP Server DHCP Networks Leases Options Option Sets Alerts DHCP Networks Leases Options Option Sets Alerts DHCP Config DHCP Setup Name / Interface Relay Lease T DHCP Server Interface: ether4	Tripple WAN
DHCP Server DHCP Networks Leases Options Option Sets Alerts Image: Second	Local DHCP
	DHCP Server DHCP Networks Leases Options Option Sets Alerts





IP> Routes: when dst. when dst. when dst.	is 49.151.178.157 gatev is 124.106.88.146 gatev is 121.96.219.176 gatev	way is I way is I way is I	SP1' SP2' SP3'	s GW s GW s GW
Route List				
Route List Routes Nexthops Rules VRF				
Route List Routes Nexthops Rules VRF	Gateway	(Distance	Scope	Target Scope R
Route List Routes Nexthops Rules VRF	Gateway	(Distance	Scope	Target Scope R
Route List Routes Nexthops Rules VRF ● ● ※ ど ♥ ● Dst. Address ♥ ₩ ♥ ::::ISP2_monitor AS ▶ 124.106.88.146	Gateway	(Distance	Scope	Target Scope R
Route List Routes Nexthops Rules VRF ● ● ② □ □ ● □ ○ ○ □ □ □ □ ○ ○ □ □ □ □ □ ○ ○ □ □ □ □ □ □ ○ ○ □ </td <td>Gateway 192.168.60.1 reachable ether2-WAN2 192.168.70.1 reachable ether3-WAN3</td> <td>(Distance</td> <td>Scope 10</td> <td>Target Scope R 10</td>	Gateway 192.168.60.1 reachable ether2-WAN2 192.168.70.1 reachable ether3-WAN3	(Distance	Scope 10	Target Scope R 10

8. F	Force dst.	to Ro	ute to	a	specific	ISP via Ma	angle
Ch Ch	ain: Output ds ain: Prerouting	t.add: 49 connect	.151.178.1 ion mark:	157 : wa	new connee n1-check n	ction mark: <mark>wan</mark> ew-routing-mark	1-check :: to_wan1
Cha Cha	ain: Output ds ain: Prerouting ain: Output ds	t.add: 12 connect	4.106.88.1 tion mark: 1.96.219.1	146 : wa 176	new connee n2-check new new connee	ction mark: wan2 ew-routing-mark ction mark: wan3	2-check :: to_wan2 3-check
Ch	ain: Prerouting	connect	ion mark:	: wa	n3-check n	ew-routing-mark	:: to_wan3
Cha Cha rewal	ain: Prerouting	connect	tion mark:	Addre	n3-check n	ew-routing-mark	:: to_wan3
Cha rewal Filter f	ain: Prerouting	connect Service Ports	Connections	Addre	n3-check n ess Lists Layer7 Pr leset All Counters	ew-routing-mark	:: to_wan3
rewal	ain: Prerouting	Connect	Connections set Counters	Addre	n3-check n ess Lists Layer7 Pr leset All Counters Connection Mark	ew-routing-mark	:: to_wan3
Cha rewal Filter F	ain: Prerouting	Connect Service Ports	Connections set Counters Dst. Address 49.151.178.	Addre	n3-check n ess Lists Layer7 Pr leset All Counters Connection Mark	ew-routing-mark	.: to_wan3
rewal Filter F #	ain: Prerouting	Connect Service Ports Chain output prerouting	Connections set Counters Dst. Address 49.151.178.	Addre	n3-check n ess Lists Layer7 Pr eset All Counters Connection Mark wan1-check	ew-routing-mark	New Routing Mark
rewal Filter F # 0 1 2	ain: Prerouting Rules NAT Mangle Action Action Mark connection Mark connection Mark connection	Connect Service Ports Chain output prerouting output	Connections set Counters Dst. Address 49.151.178. 124.106.88.	Addre 00 R 157	n3-check n ess Lists Layer7 Pr eset All Counters Connection Mark wan1-check	ew-routing-mark	New Routing Mark
rewal Filter f # 0 1 2 3	ain: Prerouting	Connect	Connections set Counters 49.151.178. ⁻ 124.106.88. ⁻	Addre 00 R 157	n3-check n ess Lists Layer7 Pr leset All Counters Connection Mark wan1-check wan2-check	ew-routing-mark otocols	New Routing Mark to_wan1 to_wan2
rewal Filter f # 0 1 2 3 4	ain: Prerouting	Connect	Connections set Counters Dst. Address 49.151.178. ⁻ 124.106.88. ⁻ 121.96.219. ⁻	Addre 00 R 157 146	n3-check n ess Lists Layer7 Pr leset All Counters Connection Mark wan1-check wan2-check	ew-routing-mark otocols	New Routing Mark to_wan1 to_wan2



Route Li	1						
Routes	Nexthops Rules VRF						
			10/11/05/07/05/07/0	Linear			100000000000000000000000000000000000000
	Dst. Address 🗸	Gateway	Check Gat	Distance	Scope	Target Scope	Routing I
DAC	▶ 192.168.70.0/24	ether3-WAN3 reachable		0	10	10	
DAC	192.168.60.0/24	ether2-WAN2 reachable		0	10	10	
DC	192.168.50.0/24	ether1-WAN1 unreachable		255	10	10	
DAC	▶ 192.168.10.0/24	ether4 reachable		0	10	10	
::: ISF	P2_monitor				aucusta	ų	
AS	▶ 124.106.88.146	192.168.60.1 reachable ether2-WAN2		1 1	10	10	
::: ISF	P3_monitor						
AS	121.96.219.176	192.168.70.1 reachable ether3-WAN3	1	1	10	10	
::: ISF	P1_monitor						
S	A9.151.178.157	192.168.50.1 unreachable		1	10	10	
S	▶ 0 0 0 0/0	192 168 50 1 unreachable		1	30	10	to_wan1
AS	▶ 0.0.0.0/0	192.168.60.1 reachable ether2-WAN2		1	30	10	to_wan2
AS	▶ 0.0.0.0/0	192.168.70.1 reachable ether3-WAN3		1	30	10	to_wan3
::: Mu	ilti-WAN						
AS	0.0.0/0	192.168.70.1 reachable ether3-WAN3, 192.168.60		1	30	10	
Termir 16 17 18 19 49.1	na 5 49.151.178.157 7 49.151.178.157 8 49.151.178.157 9 49.151.178.157 51.178.157 is st	56 47 42ms 56 47 40m 56 47 39ms 56 47 39ms 56 47 39ms	F	orce	d Ro	ute Disa	bled

Routes Nexthops Rules VI	RF .					
• - / :: - •	r					
Dst. Address	√ Gateway	Check Gat	Distance	Scope	Target Scope	Routing Mark F
AC 192.168.70.0/24	ether3-WAN3 reachable		0	10	10	
C 192.168.60.0/24	ether2-WAN2 unreachable		255	10	10	1
AC 192.168.50.0/24	ether1-WAN1 reachable		0	10	10	
AC 192.168.10.0/24	ether4 reachable		0	10	10	
;;; ISP2_monitor						
i 124.106.88.146	192.168.60.1 unreachable		1	10	10	
::: ISP3_monitor						1
S 121.96.219.176	192.168.70.1 reachable ether3-WAN3		1	10	10	
::: ISP1_monitor						
S 49.151.178.157	192.168.50.1 reachable ether1-WAN1		1	10	10	
IS 0.0.0.0/0	192.168.50.1 reachable ether1-WAN1	\	1	30	10	to_wan1
0.0.0/0	192.168.60.1 unreachable		1	30	10	to_wan2
ls ▶ 0.0.0.0/0	192.168.70.1 reachable ether 3-WAN3		1	30	10	to_wan3
::: Multi-WAN	100 100 70 4					
IS P 0.0.0/0	192.168.70.1 reachable ether3-WAN3, 192.168.60		1	30	10	
Terminal						
[admin@Multi-WAN auto	change Gateway1 > ping 124,106,88,146					
SEO HOST	SIZE TTL TIME	STATUS				
0 124.106.88.146	56 45 44°m	5				
1 124.106.88.146	56 45 373m	s -				
2 124.106.88.146	56 45 408m	à 🕴	F			
3 124.106.88.146	56 45 458m	5	Forc	еа к	oute Di	sabled
1 101 105 00 115	56 45 485m	8				





The Solution
To avoid monitoring IP's being pinged thru other ISP's we will use Firewall Filter.
Chain: Output dst.add: 49.151.178.157 out.interface:Ether2_Wan2 action: drop Chain: Output dst.add: 49.151.178.157 out.interface:Ether3_Wan3 action: drop
Chain: Output dst.add: 124.106.88.146 out.interface:Ether1_Wan1 action: drop Chain: Output dst.add: 124.106.88.146 out.interface:Ether3_Wan3 action: drop
Chain: Output dst.add: 121.96.219.176 out.interface:Ether1_Wan1 action: drop Chain: Output dst.add: 121.96.219.176 out.interface:Ether2_Wan2 action: drop

ewall								
lter R	ules	NAT	Mangle	Service Ports	Connections	Address 1	Jists Layer7 F	rotocols
-		1	: 2	7 00 Re	set Counters	oo Rese	t All Counters	
#	Act	tion	Chain	S Dst. Addr	ess I!	In. Inter	Out. Interface	5
0	×	drop	output	49.151.1	78.157		ether2-WAN2	
1	×	drop	output	49.151.1	78.157		ether3-WAN3	2
2	×	drop	output	124.106.8	88.146		ether1-WAN1	
3	×	drop	output	124.106.8	88.146		ether3-WAN3	
4	×	drop	output	121.96.2	19.176		ether1-WAN1	
5	×	drop	output	121.96.2	19.176		ether2-WAN2	

Firewall	ain: Out	ut dst.add:	124.106.88	.146 out.int	erface:Ethe	r3_Wan3 action:

I ! I In. Inter... Out. Interface

ether2-WAN2

ether3-WAN3

ether1-WAN1

ether3-WAN3

ether1-WAN1

ether2-WAN2

S Dst. Address

49.151.178.157

49.151.178.157

124.106.88.146

124.106.88.146 121.96.219.176

121.96.219.176

#

0

1

3

45

Action

Chain

 X drop
 output

 X drop
 output

 X drop
 output

 X drop
 output

 X drop
 output

Xdrop output drop output

•	monitorin	g IP for IS	SP3 from goi	ng out of	ISP1 &	ISP2	
in: in:	Output o	dst.add: 1 dst.add: 1	21.96.219.17 21.96.219.17	6 out.int	erface:E erface:E	ther1_Wan1	action: d
	-					_	
ewa			sist is unit		1.5500	New Second	
ilter	Rules NAT	Mangle	Service Ports (Connections	Address I	Lists Layer7 Pr	otocols
	- 0	x 8	T 00 Rese	t Counters	oo Rese	t All Counters	
ŧ	Action	Chain	S Dst. Addres	s I!	In. Inter	Out. Interface	-
0	💥 drop	output	49.151.178	.157		ether2-WAN2	
1	💥 drop	output	49.151.178	.157		ether3-WAN3	
2	💥 drop	output	124.106.88	.146		ether1-WAN1	
3	💥 drop	output	124.106.88	.146		ether3-WAN3	
	🔀 drop	output	121.96.219	.176		ether1-WAN1	
4			101 00 010	170		other2.WAN2	
-	💥 drop	output	121.96.219	176		ether1-WAN1	

R ir	ewall Drop ner3_WAN3	S s Traff	ic for <mark>49.151</mark>	.178.15	7 goi	ng o	ut c	of ethe	r2_W	/AN2	and	
	Firewall											
	Filter Rules NAT Mar	ngle Service f	Ports Connections Addres	is Lists Layer7 Pi	rotc							
	+ - / *	070	o Reset Counters 00 Re	set All Counters					_			_
	# Action 0 X drop	Chain output	Src. Address Dst. Addres 49.151.178	ss I Src. P 3.157	ort 🔽 Dst	. / In 0 et	ut. Interf her2-W/	ace AN2		Bytes 896 B	Packets	
ute	whe	n ISP1	is down.		[a	max-rtt= dmin@Mult SEQ HOST 0 1	-354m8	auto change (Gateway]	ping 49. S	151.178.15 IZE TTL TI	7 ME STATUS packet reje
oute loute	List SNexthops Rules V	n ISP1	is down.		[a	max-rtt= dmin@Mult SEQ HDST 0 1 2 3 4	-354ms	auto change (Gateway]	ping 49. S	151.178.15 IZE TTL TI	7 ME STATUS packet reje packet reje packet reje packet reje packet reje
ute oute	Uist. S Nexthops Rules V S (Section 2) Dat. Address	RF	is down.	G	[a	max-rtt= dmin@Mult SEQ HOST 0 1 2 3 4 Distance (5	Scope	auto change (Target Scope	Sateway]	ping 49. S	151.178.15 IZE TTL TI	7 FE STATUS packet reje packet reje packet reje packet reje packet reje
ute oute	Whe Ist Ist Nexthops Rules V Ist Image: Second	RF Gateway ether3-WA	is down.	Cł	eck Gat	max-rtt= dmin@Mult SEQ HOST 0 1 2 3 4 0 Distance 9 0	Scope	auto change (Target Scope 10	Routing N	ping 49. S	151.178.15 IZE TTL TI	7 4E STATUS packet reje packet reje packet reje packet reje packet reje
oute loute	Uist 35 Nexthops Rules V 36 X X X 37 X X X 38 Nexthops Rules V 39 X X X 39 Nexthops Rules V 30 X X X 30 X X X 30 X X X 30 X X X 30 X X X X	RF C Gateway ether3-WA ether2-WA	is down.	Ct	neck Gat	max-rtt= dmin@Mult SEQ HOST 0 1 2 3 4 Distance \$ 0 0	Scope 10 10	auto change (Target Scope 10	Routing N	ping 49. S	151.178.15 IZE TTL TI	<pre>4E STATUS packet reje packet reje packet reje packet reje packet reje</pre>
AC	Ist Vexthops Rules V Image: State	RF C Gateway ether3:WA ether2:WA ether1:WA	IS down.	Cr	neck Gat I	max-rtt= dmin@Mult SEQ HOST 0 1 2 3 4 Distance 9 0 0 0 2555	Scope 10 10	Target Scope 10 10	Routing N	ping 49. S	151.178.15 IZE TTL TI	7 EF STATUS packet reje packet reje packet reje packet reje
AC AC AC AC	List 18* Nexthops Rules V 19: Address 19: 12: 168: 60.0/24 19: 12: 168: 50.0/24 19: 12: 168: 10.0/24 19: 22: monthstart	RF C Gateway ether3-WA ether2-WA ether1-WA ether4 read	is down.	Cr	reck Gat I	max-rtt= dmin@Mult SEQ HDST 0 1 2 3 4 0 0 0 0 255 0	Scope 10 10 10 10	Target Scope 10 10 10 10	Sateway]	ping 49. S Nark	151.178.15 IZE TTL TI	7 E STATUS packet reje packet reje packet reje packet reje
oute Route DAC DAC DAC DAC MAC S	List Participant Rules V 104. Address 105. Address 104. Address 104. Address 104. Address 19.2. 168.70.0/24 19.2. 168.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 169.50.0/24 19.2. 160.50.0/24 19.2. 169.50.0/24 19.2.	RF C Gateway ether3-WA ether4-WA ether4-wa ether4-wa 192 168 66	N3 reachable N2 reachable N1 urreachable chable	Cr	neck Gat I	max-rtt= dmin@Mult SEQ HOST 0 1 2 3 4 4 Distance S 0 0 0 2555 0	Scope 10 10 10 10	Target Scope 10 10 10 10	Fateway]	ping 49. S	151.178.15 IZE TFL TI	7 ES STATUS packet reje packet reje packet reje packet reje
DAC DAC DAC DAC DAC DAC SAC SAC SAC SAC SAC SAC SAC SAC SAC S	List P8 Nexthops Rules V D8t. Address P 192 168.70.0/24 P 192 168.60.0/24 P 192 168.60.0/24 P 192 168.50.0/24 SP2_monitor P 124.106.88.146 SP3_monitor	RF C Gateway ether3-WA ether2-WA ether1-WA ether1-WA ether1-8-06 192.168.60	is down.	G	[a	max-rtt= dmin@Mult SEQ HDST 0 1 2 3 4 4 Distance S 0 0 0 2255 0 1	Scope 10 10 10 10	Target Scope 10 10 10 10 10	Routing N	ping 49. S	151.178.15 12E TTL TU	7 STATUS packet reje packet reje packet reje packet reje
oute Route IAC IAC IC IAC IC IAC III IS	List P Nexthops Rules V Dat. Address 192:168:70.0724 192:168:70.0724 192:168:00.0724 192:168:10.0724 SP2_monitor P 124:106:88:146 SP3_monitor 121:06:82:19.76	RF V Gateway ether3-WA ether3-WA ether4-read 192.168.60 192.168.70	IS down.	C	[a	max-rtt= dmin@Mult SEQ HOST 0 1 2 3 4 4 Distance S 0 0 0 2555 0 1	Scope 10 10 10 10 10	auto change (Target Scope 10 10 10 10 10 10 10	Routing N	ping 49. S	151.178.15 12E TTL TI	7 7 7 7 7 7 7 7 7 7 7 7 7 7
oute Route DAC DAC DAC S S S S S	Uit Image: Constraint of the second sec	RF Cateway ether3-WA ether2-WA ether4-WA ether4 read 192.168.61 192.168.71	is down.	C	[a	max-rtt= dmin@Mult SRQ HOST 0 1 2 3 4 4 Distance 5 0 0 0 2255 0 1	Scope 10 10 10 10 10	Target Scope 10 10 10 10 10 10	Routing N	ping 49. S	151.178.15 IZE TTL TI	7 5 5 5 5 5 5 5 5 5 5 5 5 5
oute Route DAC DAC DAC S S S S S	List 58 Nexthops Rules V 50 AcAthops Rules V 50	RF C Gateway c Gatew	N3 reachable N2 reachable N2 reachable N1 urreachable 0.1 reachable ether3-WAN3 0.1 urreachable ether3-WAN3 0.1 urreachable	Cr	[a	max-rtt= dmin8/ult SEQ HOST 0 1 2 3 4 0 0 0 0 2555 0 1 1 1 1	Scope 10 10 10 10 10	auto change (Target Scope 10 10 10 10 10 10 10 10 10 10	Routing N	ping 49. S	151.178.15 IZE TTL TH	7 42 STATUS packet reje packet reje packet reje packet reje
DAC DAC DAC DAC DAC DAC DAC DAC S S S S S S	Unit Image: Second	RF	is down.	C	[a	max-rtt= dmin@kult SBQ HDST 0 1 2 3 4 4 Distance 5 0 0 0 2555 0 1 1 1 1	Scope 10 10 10 10 10 10 10 10 10 30	auto change (Target Scope 10 10 10 10 10 10 10 10 10 10	Routing N	ping 49. S	151.178.15 IZE TTL TI	7 85 STATUS packet reje packet reje packet reje packet reje packet reje
A Contection Contectio	Secthops Rules V 35 Nexthops Rules V 35 Nexthops Rules V 35 Address P 192.168.70.0/24 192.168.60.0/24 192.168.60.0/24 P 192.168.50.0/24 P 192.168.10.0/24 SP3_monitor P 121.96.219.176 SP1_monitor 49.151.178.157 P 9.00.0/0 P 0.00.0/0	RF Gateway ether3-WA ether3-WA ether4-WA ether4-WA ether4-WA ether4-WA ether4-WA ether4-WA ether4-WA ether4-WA ether4-WA ether2-WB ether3-WA 192-168-51 192-168-51 192-168-51 192-168-51 192-168-51	Is down.	G	[a	max-rtt= dmin@Vult SEQ HDST 0 1 2 3 4 0 0 0 0 2255 0 1 1 1 1 1 1	Scope 10 10 10 10 10 10 10 10 10 10 30 30	auto change (Target Scope 10 10 10 10 10 10 10 10 10 10 10 10 10	Routing N	ping 49. S	151.178.15 IZE TTL TI	7 82 STATUS packet reje packet reje packet reje packet reje
Action Action	Institute Institute 10 Nexthops Rules V 10 Address 10 10 112 168.00.0/24 112 168.10.0/24 112 168.10.0/24 112 168.10.0/24 112 168.10.0/24 112 168.10.0/24 112 105.82.114 112 115 112 105.219.176 112 100.00/0 112 105.00.0/0 100.00/0 100.00/0	n ISP1	IS down.	C	la neck Gat 1	max-rtt= dmin@Hult SBQ HDST 0 1 2 3 4 Distance [S 0 0 0 2255 0 1 1 1 1 1 1 1 1 1 1	Scope 10 10 10 10 10 10 10 30 30 30	Target Scope 10 10 10 10 10 10 10 10 10 10 10 10 10	Routing N	ping 49. S	151.178.15 12E TTL TI	7 65 STATUS packet resp packet resp packet resp packet resp packet resp
Action Control	List ¹⁵⁸ Nexthops Rules V ¹⁵⁹ Dot. Address Dat. Address P 192.168.70.0/24 P 192.168.50.0/24 P 0.0.0.0/0	RF Gateway ether3-WA ether3-WA ether1-WA ether1-WA ether1-WA ether1-WA ether1-WA ether1-WA ether1-WA ether1-WA ether1-WA 192.168.51 192.168.51 192.168.52 192.168.62 192.168.62 192.168.62 192.168.64 192.	is down.	Cr	reck Gat I	max-rtt= dmin@Hult SBQ HDST 0 1 2 3 4 0 0 0 0 0 255 0 1 1 1 1 1 1 1 1	Scope 10 10 10 10 10 10 10 10 10 20 30 30 30 20	Target Scope 10 10 10 10 10 10 10 10 10 10 10 10 10	Routing N	ping 49. S	151.178.15 IZE TTL TI	7 67 STATUS packet rej packet rej packet rej packet rej

Filter I	Dulas NAT 1								
	nules NAT N	Mangle Serv	vice Ports Connections	Address Lis	ts Layer7 Protoco	ols			
+	*		00 Reset Counters	00 Reset A	VI Counters				
#	Action	Chain output	Dst. Address / I: 124.106.88.146	I Out. Interfa ether1-WA	ce N1 N3	/ Bytes	Packets 0 B (
-	1 10 100 FT				2				magicat
		U U					11		packet
C	Dst. Address	√ Gateway	/		Check Gat Distance	Scope Targ	et Scope Routing M	lark	packet
DAC	Dst. Address 192.168.70.0/24 192.168.60.0/24	√ Gateway ether3-V	y VAN3 reachable		Check Gat Distance	Scope Targ	et Scope Routing M 10	lark	packet
DAC DAC DAC	Dst. Address	Gateway ether3-V ether2-V ether1-V	Y VAN3 reachable VAN2 unreachable VAN1 reachable		Check Gat Distance (255	Scope Targ 0 10 5 10 0 10	et Scope Routing M 10 10 10	lark	packer
DAC DC DAC DAC DAC	Dst. Address	U Gateway ether3-V ether2-V ether1-V ether4 re	/ VAN3 reachable VAN2 unreachable VAN1 reachable aachable		Check Gat Distance (259 (Scope Targ 0 10 5 10 0 10 0 10	et Scope Routing M 10 10 10 10	lark	packe
DAC DAC DAC DAC DAC DAC	Dist. Address 192.168.70.0/24 192.168.60.0/24 192.168.50.0/24 192.168.10.0/24 192.168.10.0/24	U Gateway ether3-V ether2-V ether1-V ether4 re	/ VAN3 reachable VAN2 unreachable VAN1 reachable eachable		Check Gat Distance (255 (Scope Targ 0 10 5 10 0 10 0 10 0 10	et Scope Routing N 10 10 10 10	1ark	packer
DAC DC DAC DAC DAC DAC DAC S	Dst. Address	U C Gateway ether3-V ether2-V ether1-V ether4 rs 192.168	VAN3 reachable VAN2 unreachable VAN1 reachable eachable achable .60.1 unreachable		Check Gat Distance (255 ((Scope Targ 0 10 5 10 0 10 0 10 0 10	et Scope Routing M 10 10 10 10 10	fark	packer
DAC DAC DAC DAC DAC DAC DAC S S S S	Jst. Address ▶ 192.168.70.0/24 ▶ 192.168.60.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24 ▶ 192.168.10.0/24	v Gateway ether3-V ether2-V ether1-V ether4 rs 192.168	VAN3 reachable VAN2 unreachable VAN1 reachable eachable achable		Check Gat Distance (255 ((Scope Targ 0 10 5 10 0 10 0 10 1 10	et Scope Routing N 10 10 10 10 10	lark	packe.
DAC DAC DAC DAC DAC DAC S S S S S S S S S S S S S S S S S S S	>>>>>>>>>>>>>>>>>>>>>>>>>>>>	t Gateway ether3-V ether2-V ether1-V ether4 rs 192.168	/ VAN3 reachable VAN2 unreachable eachable eachable .60.1 unreachable .70.1 reachable ether3-WAN3		Check Gat Distance (2550 (((Scope Targ 0 10 5 10 0 10 10 1 10 1 10	et Scope Routing M 10 10 10 10 10 10	Nark	packe.
DAC DAC DAC DAC DAC TISP2 S TISP2 AS TISP2	>Jst. Address > 192.168.70.0/24 > 192.168.60.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 192.168.50.0/24 > 124.106.88.146 3 monitor > 121.96.219.176 1 monitor > 0.014.120.125	Ư √ Gateway ether3-V ether4-V ether1-Y ether1-Y ether1-Y ether1-Y 192,168 192,168	/ VAN3 reachable VAN2 unreachable VAN1 reachable achable achable .60.1 unreachable .70.1 reachable ether3-WAN3		Check Gat Distance (255 ((Scope Targ 0 10 5 10 0 10 1 10 1 10	et Scope Routing M 10 10 10 10 10 10	1ark	packe.
DAC DAC DAC DAC DAC DAC DAC DAC DAC DAC	Dst. Address Dst. Address 192.168.70.0/24 192.168.60.0/24 192.168.50.0/24 192.168.10.0/24 2monitor 124.106.88.146 3monitor 121.96.219.176 monitor 121.96.219.176 Monitor 9.151.178.157	J √ Gateway ether3-V ether1-V ether1-V 192.168 192.168 192.168 192.168	/ VAN3 reachable VAN1 reachable eachable achable achable 60.1 unreachable .70.1 reachable ether3-WAN3 .50.1 reachable ether1-WAN1		Check Gat Distance (255 ((Scope Targ 10 10 10 10 10 10 10 10 10 10	et Scope Routing M 10 10 10 10 10 10 10 10	1ark	packe
DAC DAC DAC DAC DAC DAC S S S S S S S S S S S S S S S S S S S	St. Address 192.168.70.0/24 192.168.60.0/24 192.168.60.0/24 192.168.50.0/24 192.168.10.0/24 2monitor 124.106.88.146 3monitor 121.96.219.176 1montor 49.151.178.157 0.00.0/0	J √ Gateway ether3-V ether3-V ether1-V ether1-V ether1-V ether1-V 192.168 192.168 192.168 192.168	VAN3 reachable VAN2 unreachable VAN1 unreachable eachable achable 5.0.1 unreachable 5.0.1 reachable ether3-WAN3 5.0.1 reachable ether1-WAN1 5.0.1 reachable ether1-WAN1		Check Gat Distance (255 ((Scope Targ 0 10 5 10 0 10 1 10 1 10 1 10 1 20	et Scope Routing N 10 10 10 10 10 10 10 10 10 10	1ark	packe
DAC DAC DAC DAC DAC DAC S S S S S S S S S S S S S S S S S S S	Jat. Address >192.168.70.0/24 >192.168.70.0/24 >192.168.60.0/24 >192.168.60.0/24 >192.168.50.0/24 >192.168.50.0/24 2_monitor >124.106.28.146 3_monitor >49.151.178.157 >0.00.0/0 >0.00.0/0	J ♥ Gateway ether3-V ether2-V ether1-V ether4 re 192,168 <	/ VAN3 reachable VAN2 unreachable Acha		Check Gat Distance (255 () 	Scope Targ 0 10 0 10 0 10 0 10 1 10 1 10 1 10 1 10 1 30 1 30	et Scope Routing M 10 10 10 10 10 10 10 10 10 10	hark	packe
DAC DAC DAC DAC DAC DAC DAC TISP2 S TISP2 S TISP2 AS S S AS S S S S S S S S S S S S S S	X. Address 192.163.70.0/24 192.163.70.0/24 192.168.00.0/24 192.168.00.0/24 192.168.00.0/24 192.165.00.0/24 192.165.10.0/24	J √ Gateway ether3-V ether4-V ether1-V ether1-V ether1-V 192.168 192.168 192.168 192.168 192.168 192.168 192.168 192.168 192.168	/ VAN3 reachable VAN2 unreachable AVAN1 reachable sachable sachable sc0.1 unreachable ether3-WAN3 s50.1 reachable ether1-WAN1 s50.1 reachable ether1-WAN1 s50.1 reachable ether1-WAN1 s70.1 reachable		Check Gat Distance (255 (() 	Scope Targ 0 10 5 10 0 10 1 10 1 10 1 10 1 30 1 30	et Scope Routing M 10 10 10 10 10 10 10 10 10 10	tark	packe

L

(rew	Sults	Traffic for 1	21.96.21	9.176	going c	out of	ether1_	WAN1	and	
her	2 WAN2.									
Fire	wall									
Filt	er Bules MAT M.	unale Consiste Deste	Connections	Adda	. 1:4. 1	Ducto colo				
1.05	INAT Ma	angle Service Forts	Connections	Address	s Lists Layer /	FIOLOCOIS	2			
+		🗇 🍸 00 R	eset Counters	oo Res	set All Counters	1				
#	Action Cl	hain ! Dst. Ad	dress / I :	I Out. Int	terface		Bytes	Packets		
	💥 drop ou	rtput 121.96.	219.176	ether1-	WAN1		504 E	3 9	9	
	💥 drop ou	tput 121.96.	219.176	ether2-	WAN2		0 E	3 (D	
w	hen ISP3 is	down.		/ /com [adm	nmand U nin@Multi-WAN	ove up t love up o se comma auto cha	o base level one level and at the ba ange Gateway]	se level	.96.219.176]
W Route L Routes	hen ISP3 is	down.		/ [adm SF	nmand U nin@Multi-WAN EO HOST 1 2	love up t love up d se comma auto cha	o base level ne level ind at the ba inge Gateway]	se level > ping 121 S	.96.219.176 IZE TTL TIME	STATUS packet packet packet
W Foute L Routes	hen ISP3 is	Gateway		/ [adm SF	mmand U nin@Multi-WAN 20 HOST 0 1 2 Check GatDista	love up t love up o se comma auto cha	to base level ine level ind at the ba inge Gateway] Target Scope	se level > ping 121 S Routing Mark	.96.219.176 IZE TTL TIME	STATUS packet packet packet
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C Route L Routes C DAC DAC DAC DAC DAC	hen ISP3 is Nexthops Rules VF Nexthops Rules VF	G down.	able le le	/ [adm SF	mmand 1 min@Multi-WAN 80 HOST 0 1 2 Check GatDist	nce Scope 0 0 0 0	o base level ne level nnd at the ba nge Gateway] 0 10 0 10 0 10 0 10 -	se level ping 121 S Routing Mark	.96.219.176 IZE TTL TIME	STATUS packet packet packet
Poute I Routes Poutes DC DAC DAC DAC MAC MAC	hen ISP3 is Nexthops Rules VF → → → → → → → → → → → → → → → → → → →	G down.	able le le e ether2-WAN2	/ /com [adm SE	nmand T nin@Multi-WAN 80 HOST 0 1 2 Check Gat Dist	nce Scope 255 0 1	o base level nne level nnd at the ba nnge Gateway] Target Scope 0 10 0 10 0 10 0 10 0 10 0 10	se level ping 121 S Routing Mark	.96.219.176 IZE TTL TIME	STATUS packet packet packet
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Route L Routes Poutes DC DAC DAC DAC DAC CAC S S S S S S S	heen ISP3 is Nexthops Rules VF ■ Nexthops Rules VF ■ 2000 00000000000000000000000000000000	Gateway ether3-WAN3 unreach ether3-WAN3 unreach ether4-WAN1 reachab ether1-WAN1 reachab ether4 reachable 192 168.60,1 reachabl	able le e ether2-WAN2 able	/ /com [adm SF	mmand U min@Multi-WAN 0 1 2 Check.GatDist	iove up for a second auto characteristic comma auto characteristic communication of the second auto characteristic characteristic communication of the second auto characteris	o base level me level nd at the ba nge Gateway] Target Scope 0 10 0 10 0 10 0 10 0 10 0 10 0 10	se level ping 121 S Routing Mark	.96.219.176 IZE TTL TIME	STATUS packet packet packet
Route L Routes PC DAC DAC DAC DAC DAC S S S S S S S S S S S	Heen ISP3 is Nexthops Rules VF Nexthops Rules VF Nexthops Rules VF Northops Rules Northops	G down.	able le e ether2-WAN2 able e ether1-WAN1	/. /con [adn SE	tmmand T nin@Multi-WAN 0 1 2 Check GatDist	nce Scope 255 0 1 1	o base level me level nd at the ba nge Gateway] Target Scope 0 10 0 10	se level	.96.219.176 IZE TTL TIME	STATUS packet packet packet
Route L Routes DC DAC DAC DAC DAC MAS S S S S S S S S S S S S S S S S S S	hen ISP3 is Nexthops Rules VF → Nexthops Rules VF → 192:168.07.0./24 → 192:168.60./24 → 192:168.60./24 → 192:168.60./24 → 192:168.60./24 → 192:168.50./24 → 192:168.50.0/24 → 192:168.	G down.	able le e ether2-WAN2 able e ether1-WAN1 e ether1-WAN1 e ether1-WAN1	/. /con [adm SF	tranand T min@Multi-WAN 0 1 2 Check Gat Distr	nce Scope 255 0 1 1 1 1	o base level mo level and at the ba nge Gateway] 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 1	se level ping 121 S Routing Mark	.96.219.176 IZE TTL TIME	STATUS packet packet packet
Route L Routes DC DAC DAC DAC DAC DAC C AS S S S S S S S S S S S S S S S	hen ISP3 is Nexthops Rules VF ■	Gateway ether3-WAN3 unreach ether3-WAN3 unreach ether4-WAN1 reachable ether4-wAN1 reachable 192 168:00.1 reachable 192 168:00.1 unreach 192 168:00.1 reachable 192 168	able le e ether2-WAN2 able e ether1-WAN1 e ether1-WAN1 e ether2-WAN2 able	//con [adm SE	a transformed a	nce Scope 255 0 1 1 1 1 1 1 1 1	o base level ind at the ba ind at the ba o 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10	se level ping 121 S Routing Mark o_wan1 o_wan2 o_wan3	.96.219.176 IZE TTL TIME	STATUS packet packet packet
Route L Routes L PC DAC DAC DAC DAC DAC DAC C DAC S :::: IS S :::: IS S :::: IS S :::: IS S :::: S S :::: IS S :::: S S :::: S	hen ISP3 is Nexthops Rules VF Nexthops Rules VF Nexthops Rules VF Image: State	G down.	able le le e ether2-WAN2 able e ether1-WAN1 e ether1-WAN1 e ether2-WAN2 able	/ /con [adn SF	tmmand T min@Multi-WAN 0 1 2 Check GatDist.	iove up 1 iove up 2 iove up 2 se communa auto cha 255 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	o base level ind at the ba inge Gateway] 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 1	se level ping 121 S Routing Mark o wan1 o wan2 o wan3	.96.219.176 128 TTL TIME	STATUS packet packet packet







	Auto	o Ema	il setu	р	
Now that we are	assured that wh	nen ISP1 is	down you cai	nnot ping 49.151.	178.157
Now that we are Now that we are Now that we are Now that we are Now Teminal MetaROUTER Partition	assured that wh assured that wh Rood Ping Graphing IP Scan MAC Server	ien ISP2 is ien ISP3 is We could	down you car down you car now use ther	nnot ping 124.106. nnot ping 121.96.2 n as triggers.	88.146
🛃 Make Supout.nf	Netwatch Host :::11 49.151.178.157 :::13 121.96.219.176 :::12 124.106.88.146	Interval 00:00:30 00:00:30	Timeout (Status) 1000 up) 1000 up	Since Dec/13/2017 11:14:30 Dec/13/2017 11:27:21 Dec/13/2017 11:27:22	

Auto Email setup					
Netwatch Host <49.151.178.157> Host Up Down Host: 49.151.178.157 Interval: 00:00:30 Timeout: 1000 since: Dec/13/2017 11:14:30	Interval period could be shorten for a more accurate status check				
Netwatch Host <49.151.178.157>	Netwatch Host <49.151.178.157>				
Host Up Down	Host Up Down				
On Up:	On Down:				
/tool e-mail send to=aesflordeliza@gmail.com	/tool e-mail send to=aesflordeliza@gmail.com				
subject="ISP1 is now up"	subject="ISP1 is down"				
body="ISP1 on Ether1 is now restored"	body="ISP1 on Ether1 is disconnected"				
from="mar.flordeliza@mikrotikphilippines.com"	from="mar.flordeliza@mikrotikphilippines.com"				

Nith the use o	of Netwatch monitor	ring <mark>124.106.8</mark>	8.146 for ISP2	
Netwatch Host <124.10	6.88.146>			
Host Up Down			Interval peri	od could be shorter
Host: 124.106.88	146		for a more a	ccurate status chec
Interval: 00:00:30				
Timeout: 1000		ms		
Status: up				
Since: Dec/13/20	17 11:27:22			
Netwatch Host <	(124.106.88.146>	Netwa	tch Host <124.106.8	8.146>
Host Up Do	wn	Host	Up Down	
		On Up:		On Down:
/tool e-mail ser subject="ISP2 body="ISP2 or from="mar flore	d to=aesflordeliza@gmail. is now up" b Ether2 is now restored" eliza@mikrotikphilippines.	com ^ /tool subje body com'' from:	e-mail send to=aesfl ect="ISP2 is down" ="ISP2 on Ether2 is ="mar.flordeliza@mik	ordeliza@gmail.com A Down'' rotikphilippines.com''

Vith the u	se of Netwatch moni	toring 12	21.96.219.176 for ISP3
Netwatch Host Up Host: Interval: Timeout: Status: Since:	Host <121.96.219.176> Down 121.96.219.176 00:00:30 1000 up Dec/13/2017 11:27:21	ms	Interval period could be shorted for a more accurate status chec
Netwatch H	ost <121.96.219.176>		Netwatch Host <121.96.219.176>
Host Up	Down		Host Up Down
/tool e-mai subject="l{ body="ISP from="mar:	l send to=aesflordeliza@gma SP3 is now up" 3 on Ether3 is now restored flordeliza@mikrotikphilippine	On Up: ail.com	: On Down: /tool e-mail send to=aesflordeliza@gmail.com subject="ISP3 is down" body="ISP3 on Ether3 is Down" from="mar.flordeliza@mikrotikphilippines.com"





