

WanPath Corruptions

Goal: Setup a WanLink with WanPath Corruptions.

In this test scenario, LANforge-ICE is used to filter traffic by VLAN on a WanLink with the use of WanPaths and then use WanPath Corruptions to overwrite the DSCP field in the IP packet.

Note: VLAN filtering was recently fixed and should be used with LANforge version 5.3.7 and up.

- 1. Setup a WanLink connection.
 - A. Go to the WanLinks tab and select Create.

LANforge Manager Version(5.3.7)
Control Reporting Tear-Off Info Plugins
Stop All Restart Manager Refresh HELP
Layer-4 Generic Test Mgr Test Group Resource Mgr Event Log Alerts Port Mgr VAP Stations Messages Status Layer-3 L3 Endps VolP/RTP VolP/RTP Endps Armageddon WanLinks Attenuators File-IO
Rpt Timer: fast (1 s) V Go Test Manager all V Select All Start Switch Stop Clear
Hide Stopped Display Create Modify Batch Modify Delete
WanLinks for Selected Test Manager
Name EID K-M State Endpoints (A ↔ B) Pkt Tx A → B Pkt Tx A ← B Bps Rx B Bps Rx A Rpt Timer
- All Wani ink Endpoints
WPs Name Run Script Max Rate Tx Pkts Rx Pkts Tx Rate Tx Drop % Dropped Tx-Failed Failed-Late TX Bytes
Logged in to: localhost:4002 as: Admin

B. Enter the WanLink name, physical ports, base transfer rate, delay, jitter etc... These impairments will be applied to all traffic on the WanLink.

0	100Mbps-wan - Cr	ea	te/Modify WanLink			\odot \land \times				
+ - All	Apply O	OK Display WanLink & WanPaths Cance								
WanLink Information Name: 100Mbps-wan Presets: CUSTOM Endpoint A Endpoint B										
	Endpoint A		Endpoint B							
Port:	2 (eth2)	•	3 (eth3)	-						
Transfer Rate:	100M (100 Mbps)	Ŧ	100M (100 Mbps)	-						
Delay:	tiny (10 ms)	Ŧ	tiny (10 ms)	-						
Drop-Freq:	zero (0%)	Ŧ	zero (0%)	-						
Jitter:	zero (O us)	•	zero (O us)	•						
Jitter-Freq:	zero (0%)	•	zero (0%)	-						

C. Select **Apply** to create the base WanLink.

For more information see LANforge-GUI User Guide: Creating & Modifying WanLinks

2. Setup the WanPaths.

A. Select All to un-hide the other WanLink config panels.

0	_		100Mbps-war	n - (Creat	te/Modify Wa	nLi	ık							$\overline{\mathbf{v}}$	\odot ×
+ - All							Ap	oly <u>O</u> K		Display	VanL	ink & War	nPath	IS	<u>C</u> a	ncel
Name: Presets:	WanLink Information 100Mbps-wan CUSTOM			•		2		WanLink Inf	orma rougi -Mod	tion n e		HW Pass Kernel-M	-Thro	ugh		
	Endpoint A		Endpoint B		1	Resource:	Resource: 1 (jetway-f24)								•	
Port:	2 (eth2)	•	3 (eth3)	-		Rpt Timer:		fast (]	s)						-	
Transfer Rate:	100M (100 Mbps)	•	100M (100 Mbps)	-							En	dooint B				
Delay:	tiny (10 ms)	•	tiny (10 ms)	•		Reorder-Freq		zero (0%)			ze	ro (0%)			-	
Drop-Freq:	zero (0%)	•	zero (0%)	•		Dup-Freq:		zero (0%)		•	ze	ro (0%)			-	
Jitter:	zero (O us)	•	zero (O us)	•]	Drop Burst		nin 1	max	1	min	1	тах	1	-	
Jitter-Freq:	zero (0%)	•	zero (0%)	•]	Deceder Arth		. 1		20	1.	1	J	20	=	
					Reorder Amt:		nin 1	max	20		1±	max	20	=		
								S	cript			5	cript			
0	Endpoint A	w	AN Paths				-	E	ndpo	oint B WA	N Pat	ths				
Crea	te-WP Mod	ify-\	VP Delete	-WP		Create-WP Modify-WP Dele						lete-W	ete-WP			
Name	Tx Rate Disabled !		Filter Pattern	C	Delay	Name	Tx R	ate Disabl	ed	!	Filt	ter Patter	'n		Dela	y
A	WanLink Information				-		War	nLink Informa	ation							
CEU-ID:	0			-	les	st Manager:	def	ault_tm						-		
	Endpoint A		Endpoint B				End	ooint A		En	dpoi	nt B				
	CEcap Replay	_	ICEcap Replay				D	ump Packet:	5		Dum	p Packets	5			
Replay File:		-		•	Dui	mp File:		Deal 1	0		F = =	- De els t	0			
	Dir		Dir					rce Packet	Gap		Porc	e Packet	бар			
	🗹 Loop Replay		🖌 Loop Replay					eorder-Xth			Reor	der-Xth				-

B. In panel 3, for Endpoint-A WAN Paths, select Create-WP.

•			100Mbps-wa	n - (Creat	e/Modify W	anLir	۱k					
+ - All							Ар	oly	<u>0</u> K	Display	WanLink & W	anPaths	<u>C</u> ancel
Name: Presets:	WanLink Information 100Mbps-wan CUSTOM			•		2		WanLink	k Inform s-Throu pled-Mo	ation gh ide	HW Pas	ss-Through Mode	4
	Endpoint A		Endpoint B			Resource:		l (jetwa	ay-f24)				-
Port:	2 (eth2)	•	3 (eth3)	•		Rpt Timer:		fast	(1 s))			-
Transfer Rate:	100M (100 Mbps)	•	100M (100 Mbps)	-				Endpoint	tΑ		Endpoint F	}	
Delay:	tiny (10 ms)	▼	tiny (10 ms)	-		Reorder-Free	a:	zero (O	%)	•	zero (0%)		-
Drop-Freq:	zero (0%)	-	zero (0%)	-		Dup-Freq:		zero (O	%)		zero (0%)		-
Jitter:	zero (0 us)	•	zero (O us)	-		Drop Burst:		nin 1	ma	× 1	min 1	max 1	
Jitter-Freq:	zero (0%)	-	zero (0%)	-		Deerder Amt		1	-	20	1	20	
						Reorder Ami	: :	nin <u>1</u>	ma	x 20			
							l		Scrip	t		Script	
0	Endpoint	A W	AN Paths				-		End	point B WA	N Paths		
Cre	ate-WP Mod	lify-\	VP Delete	e-WP		Cr	eate-\	NР		Modify-V	VP	Delete-	WP
Name	Tx Rate Disabled !		Filter Pattern	C	elay	Name	Tx R	ate Dis	sabled	!	Filter Patt	ern	Delay
CREAD	WanLink Information				Tes	t Manager	War	Link Info	ormatio	n			-
GILD ID.	0	_		-	103	e Hanagen	der	auit_tm					
	Endpoint A		Endpoint B				Endp	point A	koto	E	ndpoint B	to	
Deeley Sile	_ ісесар керіаў		ICEcap керіау		Dur	np File:		ипр гас	.Kets		Dump Fack	515	
Replay File:	Dir		Dir		5 61		F	orce Pac	ket Gar		Force Packe	et Gap	
								rop-Xth			Drop-Xth		
	 Loop Replay 		Loop Replay				R	eorder-X	th		Reorder-Xth		

C. Enter a Name and Transfer Rate for the WanPath. Here we are matching the WanLink's transfer rate.

0	Create/Modif	y WanPath fo	r E	ndpoint: 100Mbp	s-wan-A	\odot \otimes \otimes			
	Display	Clear Counters		Apply	<u>O</u> K <u>C</u> ancel]			
Name:	wp-a			Backlog Buffer:	AUTO	-			
PCAP Filter:									
Source IP/MAC:	0.0.0.0			Source Mask:	0.0.0.0				
Dest IP/MAC:	0.0.0.0			Dest Mask:	0.0.0.0				
Transfer Rate:	100M (100 Mbps)		•	Delay					
Jitter	zero (O us)		•	Drop-Freq:	zero (0%)	-			
Min Drop Burst:	1			Max Drop Burst:	1				
Min Reorder Amount	: 1			Max Reorder Amou	nt: 20				
Reorder-Freq:	zero (0%)		•	Dup-Freq:	zero (0%)				
Jitter-Freq:	zero (0%)		•	Test Manager:		-			
🗌 ICEcap Replay	Replay File:					▼ Dir			
○ Disabled 🖌 Loop Replay 🖌 Replay Latency 🖌 Replay Loss									
• s	ame As WanLink 🛽 🛽	Replay Dup		🖌 Replay Bandwidt	:h 🔲 Use Pcap Filt	er			
🗌 Ir	overse Match	Drop-Xth		Duplicate-Xth	Reorder-Xth				
Corrupt	tion #0	Cor	rup	tion #1	Corrup	tion #2			
Rate:	0	Rate:		0	Rate:	0			
Corruption:	Random Write 👻	Corruption:		Random Write 👻	Corruption:	Random Write 🔻			
Byte-to-Write:	0	Byte-to-Write:		0	Byte-to-Write:	0			
Min Offset:	0	Min Offset:		0	Min Offset:	0			
Max Offset:	0	Max Offset:		0	Max Offset:	0			
Chain-to-Next	🗌 Do Checksum	Chain-to-Ne	xt	🔲 Do Checksum	Chain-to-Next	Do Checksum			
Corrupt	tion #3	Cor	rup	tion #4	Corrup	tion #5			
Rate:	0	Rate:		0	Rate:	0			
Corruption:	Random Write 💌	Corruption:		Random Write 💌	Corruption:	Random Write 💌			
Byte-to-Write:	0	Byte-to-Write:		0	Byte-to-Write:	0			
Min Offset:	0	Min Offset:		0	Min Offset:	0			
Max Offset:	0	Max Offset:		0	Max Offset:	0			
Chain-to-Next	Do Checksum	Chain-to-Ne	xt	Do Checksum	Chain-to-Next	Do Checksum			

D. Select checkbox for Use Pcap Filter

_	Create/Modif	y WanPath fo	r E	ndpoint: 100Mbp:	s-wan-A	\odot \otimes \otimes				
[Display	Clear Counters		Apply	<u>O</u> K <u>C</u> ancel] [
Name:	wp-a			Backlog Buffer:	AUTO	-				
PCAP Filter:										
Source IP/MAC:	0.0.0.0			Source Mask:	0.0.0					
Dest IP/MAC:	0.0.0.0			Dest Mask:	0.0.0.0					
Transfer Rate:	100M (100 Mbps)		•	Delay	zero (0 us)					
Jitter	zero (O us)		•	Drop-Freq:	rop-Freq: zero (۵%)					
Min Drop Burst:	1			Max Drop Burst:						
Min Reorder Amount:	1			Max Reorder Amou	nt: 20					
Reorder-Freq:	zero (0%)		•	Dup-Freq:	zero (0%)	-				
Jitter-Freq:	zero (0%)		•	Test Manager:		-				
🔲 ICEcap Replay	Replay File:					▼ Dir				
○ Disabled										
S:	ame As WanLink 🛛 🕨	Replay Dup		🖌 Replay Bandwidt	h 🔽 Use Pcap Filt	er				
🗌 🗌 In	verse Match	Drop-Xth		Duplicate-Xth	Reorder-Xth					
Corrupt	ion #0	Cor	rup	tion #1	Corrup	otion #2				
Rate:	0	Rate:		0	Rate:	0				
Corruption:	Random Write 🔻	Corruption:		Random Write 🔻	Corruption:	Random Write 💌				
Byte-to-Write:	0	Byte-to-Write:		0	Byte-to-Write:	0				
Min Offset:	0	Min Offset:		0	Min Offset:	0				
Max Offset:	0	Max Offset:		0	Max Offset:	0				
Chain-to-Next	Do Checksum	Chain-to-Ne	ext	Do Checksum	Chain-to-Next	Do Checksum				
Corrupt	ion #3	Cor	rup	tion #4	Corrup	otion #5				
Rate:	0	Rate:		0	Rate:	0				
Corruption:	Random Write 🔻	Corruption:		Random Write 👻	Corruption:	Random Write 👻				
Byte-to-Write:	0	Byte-to-Write:		0	Byte-to-Write:	0				
Min Offset:	0	Min Offset:		0	Min Offset:	0				
Max Offset:	0	Max Offset:		0	Max Offset:	0				
Chain-to-Next	Do Checksum	Chain-to-Ne	ext	🗌 Do Checksum	Chain-to-Next	Do Checksum				

E. Enter the PCAP Filter **vlan 1010** to apply any WanPath impairment or corruptions only to packets with 802.1q vlan id 1010

Everencien	ic	harad	00	the	tondumn	overacion	field
EXCLESSION	15	DUSED	()[1	Ine		excression	neid.
		10 0.0 0 0.	· · ·			0,00,000,011	

•	Create/Modif	y WanPath fo	r E	ndpoint: 100Mbp:	s-wan-A	\odot \otimes \otimes
	Display	Clear Counters		Apply	<u>O</u> K <u>C</u> ancel	
Name:	wp-a			Backlog Buffer:	AUTO	-
PCAP Filter:	vlan 1010				L	
Source IP/MAC:				Source Mask:		
Dest IP/MAC:	0.0.0.0			Dest Mask:	0.0.0	
Transfer Rate:	100M (100 Mbps)		•	Delay	zero (O us)	-
Jitter	zero (O us)		•	Drop-Freq:	zero (0%)	•
Min Drop Burst:	1			Max Drop Burst:	1	
Min Reorder Amount	: 1			Max Reorder Amou	nt: 20	
Reorder-Freq:	zero (0%)		•	Dup-Freq:	zero (0%)	-
Jitter-Freq:	zero (0%)		•	Test Manager:		•
🔲 ICEcap Replay	Replay File:					- Dir
00)isabled	Z Loop Replay		☑ Replay Latency	🖌 Replay Loss	
• s	ame As WanLink 🛽	Replay Dup		🖌 Replay Bandwidt	:h 🔽 Use Pcap Filt	er
🗌 li	nverse Match	Drop-Xth		Duplicate-Xth	🗌 Reorder-Xth	
Corrup	tion #0	Cor	rup	tion #1	Corrup	tion #2
Rate:	0	Rate:		0	Rate:	0
Corruption:	Random Write 👻	Corruption:		Random Write 💌	Corruption:	Random Write 💌
Byte-to-Write:	0	Byte-to-Write:		0	Byte-to-Write:	0
Min Offset:	0	Min Offset:		0	Min Offset:	0
Max Offset:	0	Max Offset:		0	Max Offset:	0
Chain-to-Next	🗌 Do Checksum	Chain-to-Ne	xt	🔲 Do Checksum	Chain-to-Next	Do Checksum
Corrup	tion #3	Cor	rup	otion #4	Corrup	tion #5
Rate:	0	Rate:		0	Rate:	0
Corruption:	Random Write 💌	Corruption:		Random Write 💌	Corruption:	Random Write 💌
Byte-to-Write:	0	Byte-to-Write:		0	Byte-to-Write:	0
Min Offset:	0	Min Offset:		0	Min Offset:	0
Max Offset:	0	Max Offset:	0		Max Offset:	0
Chain-to-Next	Do Checksum	Chain-to-Ne	xt	Do Checksum	Chain-to-Next	Do Checksum

F. Select **Apply** to create the WanPath.

For more information see Tcpdump man page, Pcap Filter Syntax

3. Setup the Corruptions.

- A. Enter the following values into Corruption #0 fields
 - A. Rate 100000

(how often, per million packets, should the corruption be applied)

- B. Corruption Write Byte
- C. Byte-to-Write 40 (hex 0x00-0xff or decimal 0-255)
 If you enter 0x28 and select OK, the GUI will translate it to decimal 40.
- D. Min Offset 19
- E. Max Offset 20

The Differentiated Services Field is in byte 20 of the ethernet frame which corresponds to the 2nd byte of the IP header.

B. Select checkbox **Do Checksum** which will re-calculate the checksum after making the errors so that the packet is still valid.

0	Create/Modif	y WanPath for E	ndpoint: 100Mbps	-wan-A	\odot \sim \times
[Display	Clear Counters	Apply	<u>O</u> K <u>C</u> ancel]
Name:	wp-a		Backlog Buffer:	AUTO	-
PCAP Filter:	vlan 1010			L	
Source IP/MAC:			Source Mask:		
Dest IP/MAC:	0.0.0.0		Dest Mask:	0.0.0.0	
Transfer Rate:	100M (100 Mbps)		Delay	zero (O us)	•
Jitter	zero (O us)	-	Drop-Freq:	zero (0%)	-
Min Drop Burst:	1		Max Drop Burst:	1	
Min Reorder Amount:	1		Max Reorder Amour	nt: 20	
Reorder-Freq:	zero (0%)	-	Dup-Freq:	zero (0%)	-
Jitter-Freq:	zero (0%)	-	Test Manager:		-
🗌 ICEcap Replay	Replay File:				▼ Dir
O Di	isabled 🗾	Loop Replay	🖌 Replay Latency	🖌 Replay Loss	
Si	ame As WanLink 🛛 🕨	Replay Dup	🖌 Replay Bandwidt	h 🔽 Use Pcap Filt	er
🗌 In	verse Match	Drop-Xth	Duplicate-Xth	🗌 Reorder-Xth	
Corrupt	ion #0	Corrup	otion #1	Corrup	tion #2
Rate:	100000	Rate:	0	Rate:	0
Corruption:	Write Byte 🔻	Corruption:	Random Write 💌	Corruption:	Random Write 💌
Byte-to-Write:	40	Byte-to-Write:	0	Byte-to-Write:	0
Min Offset:	19	Min Offset:	0	Min Offset:	0
Max Offset:	20	Max Offset:	0	Max Offset:	0
Chain-to-Next	✓ Do Checksum	Chain-to-Next	Do Checksum	Chain-to-Next	Do Checksum
Corrupt	ion #3	Corrup	otion #4	Corrup	otion #5
Rate:	0	Rate:	0	Rate:	0
Corruption:	Random Write 🔻	Corruption:	Random Write 👻	Corruption:	Random Write 💌
Byte-to-Write:	0	Byte-to-Write:	0	Byte-to-Write:	0
Min Offset:	0	Min Offset:	0	Min Offset:	0
Max Offset:	0	Max Offset:	0	Max Offset:	0
Chain-to-Next	Do Checksum	Chain-to-Next	Do Checksum	Chain-to-Next	Do Checksum

C. Select **OK** then create a second WanPath for this WanLink on Endpoint-B using the same values.

•	Create/Modif	y WanPath for	E	ndpoint: 100Mbp	s-wan-B	\checkmark		
	Display	Clear Counters		Apply	<u>O</u> K <u>C</u> ancel			
Name:	wp-b			Backlog Buffer:	AUTO	-		
PCAP Filter:	vlan 1010							
Source IP/MAC:				Source Mask:				
Dest IP/MAC:	0.0.0.0			Dest Mask:	0.0.0.0			
Transfer Rate:	100M (100 Mbps)		•	Delay	zero (O us)			
Jitter	zero (O us)		-	Drop-Freq:	zero (0%)	-		
Min Drop Burst:	1			Max Drop Burst:	1			
Min Reorder Amount	: 1			Max Reorder Amou	int: 20			
Reorder-Freq:	zero (0%)		•	Dup-Freq:	zero (0%)	-		
Jitter-Freq:	zero (0%)		•	Test Manager:		-		
🗌 ICEcap Replay	Replay File:					▼ Dir		
○ Disabled 🖌 Loop Replay 🖌 Replay Latency 🖌 Replay Loss								
() S	ame As WanLink 🛽	Replay Dup		🖌 Replay Bandwid	th 🔽 Use Pcap Filt	:er		
🗌 Ir	nverse Match	Drop-Xth		Duplicate-Xth	Reorder-Xth			
Corrupt	tion #0	Corr	up	tion #1	Corrup	otion #2		
Rate:	100000	Rate:		0	Rate:	0		
Corruption:	Write Byte 💌	Corruption:		Random Write 💌	Corruption:	Random Write 💌		
Byte-to-Write:	40	Byte-to-Write:		0	Byte-to-Write:	0		
Min Offset:	19	Min Offset:		0	Min Offset:	0		
Max Offset:	20	Max Offset:		0	Max Offset:	0		
Chain-to-Next	🖌 Do Checksum	Chain-to-Ne	xt	🔲 Do Checksum	Chain-to-Next	Do Checksum		
Corrupt	tion #3	Corr	rup	tion #4	Corrup	otion #5		
Rate:	0	Rate:		0	Rate:	0		
Corruption:	Random Write 👻	Corruption:		Random Write 💌	Corruption:	Random Write 👻		
Byte-to-Write:	Byte-to-Write: 0 Byte-to-Writ			0	Byte-to-Write:	0		
Min Offset:	Offset: 0 Min Offset:			0	0			
Max Offset:	0	Max Offset:	0 Max Offset:		Max Offset:	0		
Chain-to-Next	Do Checksum	Chain-to-Ne	xt	🗌 Do Checksum	Chain-to-Next	Do Checksum		

D. Verify that the WanPaths on this WanLink are setup correctly, then select **OK** on the *Create/Modify WanLink* window shown here

0			100Mbps-wa	in - (Creat	te/Modify Wa	anLi	nk					\sim	\odot ×
+ - All							Ар	ply <u>O</u> K		Display W	/anLink & War	Paths	<u>C</u> a	ncel
Name: Presets:	WanLink Information 100Mbps-wan CUSTOM			•		2		WanLink Info	ormati ough -Mode	ion	HW Pass-	Through de		•
	Endpoint A		Endpoint B			Resource:	cce: 1 (jetway-f24)						•	
Transfer Rate:	2 (eth2) 100M (100 Mbps)	• •	100M (100 Mbps)	•		Rpt Timer:	fast (1 s)						•	
Delay:	tiny (10 ms)	-		Reorder-Freq		Endpoint A zero (0%)		-	Endpoint B zero (0%)		-			
Drop-Freq:	zero (0%)	•	zero (0%)	•		Dup-Freq:		zero (0%)		-	zero (O%)		-	
Jitter:	zero (O us)	•	zero (O us)	-		Drop Burst:		min 1	max]	L	min 1	max 1		
Jitter-Freq:	zero (0%)	•	zero (U%)	•		Reorder Amt:		min 1	max 2	20	min 1	max 20		
Script Script														
Crea	Endpoint A ate-WP Mod	A WA	AN Paths NP Delet	e-WP		Cre	ate-'	E WP	indpoi	int B WAN Modify-WF	I Paths	Delete-V	VP	
Name wp-a 10	Tx Rate Disabled !	cap	Filter Pattern : vlan 1010		Delay 0	Name wp-b 1	Tx F .00 M	late Disable	ed !	Pcap: v	Filter Patter Van 1010	n	Dela	y 0 🔺
						▼								-
CPU-ID:	WanLink Information				Tes	t Manager:	War def	Link Informa ault tm	tion			-		
	Endpoint A		Endpoint B ICEcap Replay		Dur	nn File.	Endp	ooint A ump Packets	1	End End	lpoint B Dump Packets			
Replay File:	Dir		Dui	np me:	p File: Force Packet Gap Force Packet Gap Drop-Xth Drop-Xth				Gap					

For more information see LANforge-GUI User Guide: Creating & Modifying WanPaths

- 4. Run traffic through LANforge-ICE ports eth2 and eth3, and capture traffic on eth2.
 - A. Here we are using LANforge-FIRE on a secondary resource to send a 10Mbps bi-directional UDP flow between 802.1q VLAN endpoints eth2.1010 and eth3.1010 with an IP ToS value of decimal 184 which corresponds to DSCP value decimal 46 or Expedited Forwarding

•			udp-1010 - Creat	e/N	100	dify Cross Conne	ect			\sim \sim \times
+ - All						Display	Sync Batch-Create		Apply OK 0	Cancel
CX Name: CX Type:	Cross-Connect Judp-1010 LANforge / UDP			•		Report Timer:	Cross-Connect fast (1 s) Endpoint A		Endpoint B	-
	Endpoint A	_	Endpoint B			Pld Pattern	increasing	-	increasing	-
Resource:	2 (jw2)	•	2 (jw2)	•		Min IP Port:	AUTO	-	AUTO	-
Port:	25 (eth2.1010)	•	15 (eth3.1010)	•		Max IP Port:	Same	-	Same	-
Min Tx Rate:	10M (10 Mbps)	•	10M (10 Mbps)	•		Min Duration:	Forever	-	Forever	-
Max Tx Rate:	Same	•	Same	•		Max Duration:	Same	-	Same	
Min PDU Size:	AUTO	•	AUTO	Ŧ		Min Reconn:	0 (0 ms)	-	0 (0 ms)	
Max PDU Size:	Same	•	Same	•		Max Beconn:	Same	-	Same	-
IP ToS:	Voice (EF) (184)	•	Voice (EF) (184)	•		Multi-Conn:	Normal (0)	-	Normal (0)	-
Pkts To Send:	Infinite	•	Infinite	•			Script		Script	
							Thresholds		Thresholds	

B. Go to the **Port Mgr** tab and highlight WanLink port eth2, then select the **Sniff Packets** button to bring up Wireshark.

LANforge Manager Version(5.3.7)												\heartsuit \land \bigotimes	
Control Reporting Tear-Off Info Plugins													
Stop All Restart Mapager Refrach													
Stop All Restart Manager Refresh											TILLI		
Laver-4 Generic Test Mar Test Group Resource Mar Event Log Alerts Port Mar VAP Stations Messages													
Status Laver-3 Listender VolP/RTP VolP/RTP Ender Automatication Wantinker Attenuators Fil											File-IO		
and a state of the												The lo	
Disp: 127.0.0.1:1 Sniff Packets 1 Clear Counters Reset Port Delete													
Pot Timor, modium, (9, c)				Apply		T View Details		Create Modify Patch Mod			ch Modify		
	пре пі	ner: [Арріу		* <u>v</u> iew D	ecans	Cleate	IMI		CITMOUTY	
All Ethernet Interfaces (Ports) for all Resources.													
Dest	Dh -			050	Altera	Parent	DV D to a	DV DIA-	Dee DY	har DV	TV D to a	Tr plate	Deer
Port	Pha	Dowr		SEC	Allas	Dev	RX Bytes	RX PKts	Pps RX	bps KX	TX Bytes	TX PKts	Pps
1 1 00			192168100198	10	etb0		5 529 927	8 709 413	55	143 334	5 281 552	9 61 7 5 4 1	
1.1.01		~	0.0.0.0	0	eth1		0	0,700,410	0	0	0,201,002,	0	
1.1.02		i i i i	0.0.0.0	0	eth2		3.482.049	2.399.718	0	4	7,757,660,	4.297.3	
1.1.03			0.0.0.0	0	eth3		3,482,026,	2,399,705	0	0	7,757,666,	4,297,3	
1.1.04			0.0.0.0	0	eth4		0	0	0	0	12,506	147	
1.1.05			0.0.0.0	0	eth5		0	0	0	0	12,234	147	
1.1.06			0.0.0.0	0	wiphy0		0	0	0	0	0	0	
1.1.07			0.0.0.0	0	wiphy1		0	0	0	0	0	0	
1.1.08		~	0.0.0.0	0	wlan0	wiphy0	0	0	0	0	0	0	
1.1.09			0.0.0.0	0	wlan1	wiphyl	0	0	0	0	0	0	
1.2.00			192.168.100.103	0	ethu		653,572,601	5,346,946	13	15,109	5,202,101,	4,863,373	
1.2.01			172160102	0	eth1		2 460 280	2 204 176	0	0	2 492 050	2 200 880	
1 2 03			172.16.0.102	0	eth2		3,460,380,	2,304,170	0	0	3,462,039,	2,399,000	
1 2 04			0.0.0.0	0	eth4		2 394	2,304,170	0	0	9,402,030,	138	
1.2.05			0.0.0.0	0	eth5		2,052	6	0	0	9,852	138	
1.2.06			192.168.9.29	0	eth3.1009	eth3	0	0	0	0	9,306	131	
1.2.07			192.168.8.28	0	eth3.1008	eth3	0	0	0	0	9,306	131	
1.2.08			192.168.1.11	0	eth2.1001	eth2	84,760,294	68,374	0	0	85,730,804	68,508	
1.2.09			192.168.9.19	0	eth2.1009	eth2	0	0	0	0	9,236	130	
1.2.10			192.168.5.15	0	eth2.1005	eth2	0	0	0	0	9,236	130	
1.2.11			192.168.7.17	0	eth2.1007	eth2	0	0	0	0	9,306	131	
Logged in to: localhost:4002 as: Admin													

C. The capture will show that periodically the DSCP field gets overwritten per the WanPath corruption logic of writing a decimal value 40 in the IP ToS field which corresponds to a DSCP value of decimal 10 or Assured Forwarding 11.

ice_ex12_wanpath_corruption.pcap [Wireshark 2.1.1 (Git Rev Unknown from unknown)] (as superuser)									
File Edit View Go Ca	apture Analyze Statistic	s Telephony Tools Int	ternals Help						
• • 🖌 🗖 🖉	🙆 🖿 🛅 🗙 G	Q 🤄 📎 😵	ā 🖄 🗐 🕞	0 - 1 🕶 🍑 🎦 📑	Me 🙄				
Filter:		•	Expression Cle	ear Apply Save					
No. Time	Source	Destination	Protocol L	ength Differentiated Services Co	odepoint Info				
149 0.086121	192.168.0.30	192.168.0.20	LANforge	1518 Expedited Forwarding	Seq: 73	^			
150 0.086902	192.168.0.30	192.168.0.20	LANforge	1518 Assured Forwarding 11	Seq: 74				
151 0.089134	192.168.0.20	192.168.0.30	LANTOrge	1518 Expedited Forwarding	Seq: 75				
153 0.089607	192.168.0.30	192.168.0.20	LANforge	1518 Expedited Forwarding	Seq: 75				
154 0.089652	192.168.0.20	192.168.0.30	LANforge	1518 Expedited Forwarding	Seg: 77				
155 0.090103	192.168.0.30	192.168.0.20	LANforge	1518 Expedited Forwarding	Seq: 76				
156 0.090684	192.168.0.20	192.168.0.30	LANforge	1518 Expedited Forwarding	Seq: 78				
157 0.091129	192.168.0.30	192.168.0.20	LANforge	1518 Expedited Forwarding	Seq: 77				
158 0.091657	192.168.0.20	192.168.0.30	LANforge	1518 Expedited Forwarding	Seq: 79				
159 0.092085	192.168.0.30	192.168.0.20	LANforge	1518 Expedited Forwarding	Seq: 78				
161 0.093118	192.168.0.30	192.168.0.20	LANforge	1518 Expedited Forwarding	Seq: 79				
162 0.093899	192.168.0.30	192.168.0.20	LANforge	1518 Assured Forwarding 11	Seq: 80				
163 0.095637	192.168.0.20	192.168.0.30	LANforge	1518 Expedited Forwarding	Seq: 81				
164 0.095843	192.168.0.20	192.168.0.30	LANforge	1518 Expedited Forwarding	Seq: 82				
165 0.096231	192.168.0.30	192.168.0.20	LANforge	1518 Expedited Forwarding	Seq: 81	-			
- C						•			
 Ethernet II, Src: J 802.10 Virtual LAN, Internet Protocol V User Datagram Proto LANforge Traffic Ge 	DetwayIn_cc:5b:d3 (00 PRI: 0, CFI: 0, ID: /ersion 4, Src: 192.1 pcol, Src Port: 33018 enerator	:30:18:cc:5b:d3), Ds 1010 68.0.30, Dst: 192.16 , Dst Port: 33017	t: JetwayIn_cc:5b: 8.0.20	d2 (00:30:18:cc:5b:d2)					
0000 00 30 18 cc 5b 0010 08 00 45 b8 05 0020 00 1e c0 a8 00 0030 00 00 1a 2b 3c 0040 00 48 5a 7a 28 0050 00 01 06 01 02 0060 0e 0f 10 01 02 0050 0e 0f 10 11 12	d2 00 30 18 cc 5b c dc 79 90 40 00 40 1 14 80 fa 80 f9 05 c 4d 00 14 00 13 05 5 58 11 02 e7 78 00 6 03 04 05 06 07 08 0 13 14 15 16 17 18 1 20 24 25 26 37 20 20	3 81 00 03 f2 .0 3 946 c0 a8E. 8 49 fa 00 00 c 00 00 00 004 1 00 00 00 004 9 0a 0b 0c 6d9 9 1a 1b 1c 1d	[0[y. @.@.9F I <m< td=""><td></td><td></td><td>Ô</td></m<>			Ô			
○ 🥙 File: "ice_ex12_v	wanpath_corruption.pcap"	3,038 kB 00:00:01	Packets: 1981 · Disp	ayed: 1981 (100.0%) · Marked: 2 (0.1%	6) · Profile: Default				

For more information see LANforge-GUI User Guide: Layer-3 Cross-Connects

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