Cell-Emulator
WiFi Performance Test Plan

Tue Jun 24 15:22:41 PDT 2025

Candela
TECHNOLOGIES

PDF Report | XLSX Report

Test Setup Information		
Device Under Test	Name	AP
	SSIDs	`204-cell-emulator-ap 204-cell-emulator-ap 204-cell-emulator-ap`
	Passwords	`lanforge lanforge lanforge`
	BSSIDs	`38:f8:f6:75:ca:94 38:f8:f6:75:ca:9a 38:f8:f6:75:ca:96`
	Notes	[BLANK]
Estimated Run Time	30 m	
Actual Run Time	27.127 m	

Objective

The Cell Emulator WiFi Performance test plan provides a comprehensive set of tests to qualify the performance of WiFi access points (APs) designed for residential and small office environments. This test plan currently covers fail over, performance testing for 2.4GHz, 5GHz, and 6GHz bands on cellular capable APs. The test plan is designed for service providers deploying in home WiFi APs to qualify the APs in the lab before deployment and for equipment makers to test during the development of the APs. Candela Technologies offers a fully automated cell emulator test system. The user can select from the list of tests available. Most tests can run fully automated, though some require user interaction. Measurements are made and compared to the specified PASS/FAIL criteria in the cell emulator test plan and this report will show the summary PASS/FAIL results followed by more detailed results for each test.

Summary Results

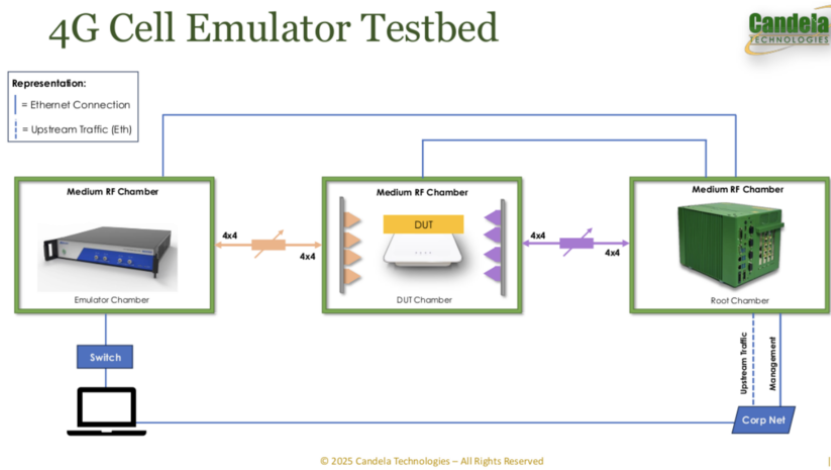| Test	Result				Candela Score	Elapsed	Info
6.2.1 Fail Over	BW	n/AC	AX	BE	0	27.047 m	
	2.4Ghz						
	5Ghz						
	6Ghz						
	MLO						

6.2.1 Fail Over

Summary

The objective of this test is to evaluate the failover capabilities of the Device Under Test (DUT), specificall its ability to seamlessly transition between its primary wired WAN interface and a secondary cellular WAN interface (e.g., LTE/5G) when a network disruption occurs. This test aims to validate the DUT's
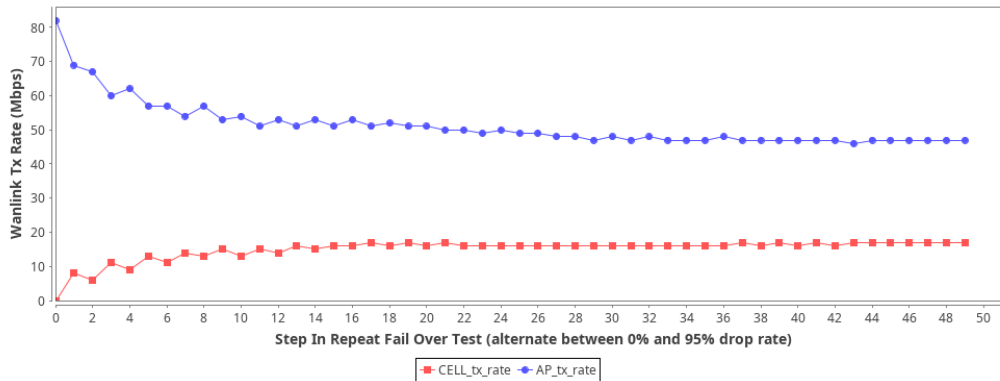
responsiveness, stability, and ability to maintain active sessions during the failover process. The test also examines whether the DUT meets expected recovery times, correctly prioritizes upstream interfaces according to configuration, and automatically reverts to the primary WAN when connectivity is restored. Metrics such as downtime duration, session persistence, network reachability, and system logs will be captured to assess performance and adherence to expected behavior.

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Testbed Diagram
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CSV Data for Fail Over Test: Wanlink Tx Rate Over Repeat Fail Over

6.2.1 Fail Over Results

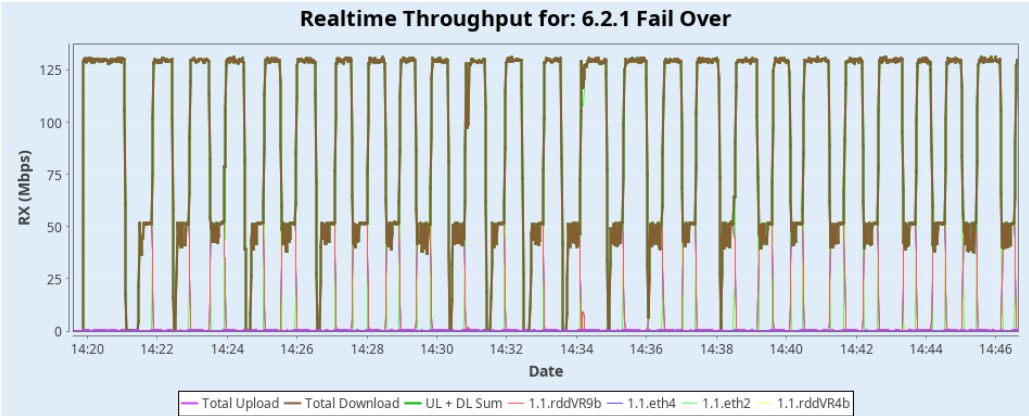| Type	Result	Value	P/F Value	Notes
Configuration NOTE	INFO			Fail Over AP settle time is set to: 1 m.
Topology Note	INFO			Topology Treated Successfully
Topology Note	INFO			ap_wl AP-Wanlink found
Topology Note	INFO			cell_wl CELL-Wanlink found
topology note	INFO			wanlink endpoints initialized
Configuration NOTE	INFO			Starting Repeat Fail Over Test.

Testing NOTE	FAIL			AP failed over to CELL in 32 seconds, but exceeded acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 74917237, cell_a_rx: 1085301 ap_a_tx: 110, cell_a_tx: 442
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 28146966, cell_a_rx: 19000945 ap_a_tx: 141, cell_a_tx: 482
Testing NOTE	PASS			AP failed over to CELL in 22 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 75522976, cell_a_rx: 15641665 ap_a_tx: 224, cell_a_tx: 1199
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 66199832, cell_a_rx: 18097425 ap_a_tx: 177, cell_a_tx: 906
Testing NOTE	PASS			AP failed over to CELL in 16 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 73689573, cell_a_rx: 19662854 ap_a_tx: 199, cell_a_tx: 1152
Testing NOTE	PASS			AP failed over to AP in 6 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 72604316, cell_a_rx: 20574780 ap_a_tx: 198, cell_a_tx: 977
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 75129176, cell_a_rx: 12722743 ap_a_tx: 236, cell_a_tx: 1130
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 58483196, cell_a_rx: 18659354 ap_a_tx: 171, cell_a_tx: 808
Testing NOTE	PASS			AP failed over to CELL in 10 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 62504815, cell_a_rx: 19335341 ap_a_tx: 225, cell_a_tx: 1222
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 63012357, cell_a_rx: 24239512 ap_a_tx: 321, cell_a_tx: 1353
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 75664349, cell_a_rx: 14272756 ap_a_tx: 203, cell_a_tx: 1179
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 58964501, cell_a_rx: 20275125 ap_a_tx: 136, cell_a_tx: 737
Testing NOTE	PASS			AP failed over to CELL in 12 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 63095080, cell_a_rx: 22352347 ap_a_tx: 189, cell_a_tx: 1113
Testing NOTE	PASS			AP failed over to AP in 6 seconds, which is within acceptable recovery time of 30 seconds.

Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 67438746, cell_a_rx: 22938688 ap_a_tx: 325, cell_a_tx: 1528
Testing NOTE	PASS			AP failed over to CELL in 10 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 66248972, cell_a_rx: 22810799 ap_a_tx: 215, cell_a_tx: 1137
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 66283874, cell_a_rx: 23272947 ap_a_tx: 313, cell_a_tx: 1310
Testing NOTE	PASS			AP failed over to CELL in 12 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 71027929, cell_a_rx: 20652644 ap_a_tx: 189, cell_a_tx: 1168
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 65714378, cell_a_rx: 22130336 ap_a_tx: 312, cell_a_tx: 1427
Testing NOTE	PASS			AP failed over to CELL in 14 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 64952367, cell_a_rx: 18474901 ap_a_tx: 202, cell_a_tx: 1138
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 67923163, cell_a_rx: 17236414 ap_a_tx: 262, cell_a_tx: 1282
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 73938354, cell_a_rx: 11123190 ap_a_tx: 344, cell_a_tx: 1385
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 57095645, cell_a_rx: 18982051 ap_a_tx: 148, cell_a_tx: 912
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 64914039, cell_a_rx: 12793330 ap_a_tx: 189, cell_a_tx: 1113
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 50262099, cell_a_rx: 17788177 ap_a_tx: 172, cell_a_tx: 965
Testing NOTE	PASS			AP failed over to CELL in 20 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 65804362, cell_a_rx: 15792451 ap_a_tx: 215, cell_a_tx: 1254
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 58543686, cell_a_rx: 17238095 ap_a_tx: 154, cell_a_tx: 908
Testing NOTE	FAIL			AP failed over to CELL in 30 seconds, but exceeded acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 96683942, cell_a_rx: 7890136 ap_a_tx: 261, cell_a_tx: 1510

Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 67979512, cell_a_rx: 18433523 ap_a_tx: 121, cell_a_tx: 850
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 88026264, cell_a_rx: 12718195 ap_a_tx: 202, cell_a_tx: 1221
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 71255421, cell_a_rx: 18359232 ap_a_tx: 136, cell_a_tx: 769
Testing NOTE	PASS			AP failed over to CELL in 16 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 71038979, cell_a_rx: 19964170 ap_a_tx: 189, cell_a_tx: 1118
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 73126434, cell_a_rx: 20566319 ap_a_tx: 299, cell_a_tx: 1194
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 87046848, cell_a_rx: 12990667 ap_a_tx: 189, cell_a_tx: 1178
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 72259574, cell_a_rx: 17700880 ap_a_tx: 123, cell_a_tx: 752
Testing NOTE	PASS			AP failed over to CELL in 22 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 84652939, cell_a_rx: 15888809 ap_a_tx: 223, cell_a_tx: 1093
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 73310992, cell_a_rx: 19945653 ap_a_tx: 196, cell_a_tx: 967
Testing NOTE	PASS			AP failed over to CELL in 10 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 68305366, cell_a_rx: 21526331 ap_a_tx: 203, cell_a_tx: 1054
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 68261887, cell_a_rx: 22833201 ap_a_tx: 336, cell_a_tx: 1335
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 94118505, cell_a_rx: 13203088 ap_a_tx: 203, cell_a_tx: 1035
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 71773284, cell_a_rx: 20590903 ap_a_tx: 150, cell_a_tx: 681
Testing NOTE	PASS			AP failed over to CELL in 14 seconds, which is within acceptable recovery time of 30 seconds.

Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 68012089, cell_a_rx: 22078449 ap_a_tx: 203, cell_a_tx: 1110
Testing NOTE	PASS			AP failed over to AP in 6 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 71374922, cell_a_rx: 20825674 ap_a_tx: 228, cell_a_tx: 1200
Testing NOTE	PASS			AP failed over to CELL in 22 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 89159672, cell_a_rx: 14754246 ap_a_tx: 215, cell_a_tx: 1037
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 77353821, cell_a_rx: 18863243 ap_a_tx: 149, cell_a_tx: 841
Testing NOTE	PASS			AP failed over to CELL in 8 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 72610087, cell_a_rx: 20013016 ap_a_tx: 189, cell_a_tx: 1209
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 58721269, cell_a_rx: 26140054 ap_a_tx: 300, cell_a_tx: 1303
Testing NOTE	PASS			AP failed over to CELL in 10 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 74325274, cell_a_rx: 19363534 ap_a_tx: 189, cell_a_tx: 1208
Testing NOTE	PASS			AP failed over to AP in 4 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 64562354, cell_a_rx: 22726143 ap_a_tx: 314, cell_a_tx: 1302
Testing NOTE	PASS			AP failed over to CELL in 24 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 100.0		ap_a_rx: 89771751, cell_a_rx: 12775056 ap_a_tx: 202, cell_a_tx: 1117
Testing NOTE	PASS			AP failed over to AP in 2 seconds, which is within acceptable recovery time of 30 seconds.
Testing Iter Note	INFO	Packet Drop Rate is: 0.0		ap_a_rx: 77937662, cell_a_rx: 17571245 ap_a_tx: 147, cell_a_tx: 923

Realtime Throughput for: 6.2.1 Fail Over

CSV For Graph Above | Key Performance Indicators CSV

Test configuration and LANforge software version	
Auto-Helper	true
Allow-11w (MFP/PMF)	false
SAE-PWE	2
Disable-MLO	false
TXS All	false
Skip 2.4Ghz Tests	false
Skip 5Ghz Tests	false
Duration-120	120
Duration-60	60
Channel 2GHz	AUTO
Channel 5GHz	AUTO
Channel 6GHz	AUTO
Calibrate against LANforge AP	true
LANforge Calibration TxPower-2.4G	20
LANforge Calibration TxPower-5G	20
Multi-Conn	10
Use-IPv6	false
UDP-Burst	false
UDP-GRO	false
Multiple Endpoints:	1
ToS	0
Pld Pattern	RANDOM_FIXED
UDP Send Buffer Size:	0
UDP Receive Buffer Size:	0
TCP Send Buffer Size:	0
TCP Receive Buffer Size:	0
Upstream Port	1.1.5 WAN-UPSTREAM Firmware: 0x80000760, 1.1313.0 Resource: cellemulatorLF
Alien Upstream Port	
Turn-Table Chamber	
Prefer Virtual STA Radios	false
Opposite-Speed:	0
1Gbps Throughput Limit:	925000000
2.5Gbps Throughput Limit:	2300000000
5Gbps Throughput Limit:	4600000000
Prefer Group 0	true
Prefer Group 1	false
Prefer Group 2	false
Extra TxStatus	false
Extra RxStatus	false

TXS All	false
Adjust UL Atten with STA TxPower	true
Adjust UL Atten with DUT TxPower	false
2.4GHz Channel	-1 Mhz
5GHz Channel	-1 Mhz
6GHz Channel	-1 Mhz
Default NSS	2
2.4GHz 2m RSSI	-25
5GHz 2m RSSI	-30
Attenuation Adjustment	0
Extra Download Path-loss	0
2.4Ghz Bandwidth	20
5Ghz Bandwidth	80
6Ghz AX Bandwidth	160
6Ghz BE Bandwidth	320
STA TX Power:	20
DUT AP Expected TX Power-2.4G:	30
DUT AP Expected TX Power-5G:	30
Virt-Sta Rotation 2.4GHz	0
Virt-Sta Rotation 5GHz	0
Virt-Sta Rotation 6GHz	0
AX Rotation 2.4GHz	0
AX Rotation 5GHz	0
AX Rotation 6GHz	0
6.2.1 Fail Over	
AP Settle Time:	1 min
Max Packet Drop:	100
Min Packet Drop:	0
Packet Drop Step Interval:	10
Max Delay:	100
Min Delay:	0
Delay Step Interval:	10
Max Jitter:	100
Min Jitter:	0
Jitter Step Interval:	10
Repeat Fail Over Iterations:	50
Repeat Fail Over Degrade Percent:	100
Test Packet Drop	false
Test Delay	false
Test Jitter	false

Test Repeat Fail Over	true
Details for Resource: 1.1	Hostname: cellemulatorLF LANforge ver: 5.5.1 64bit Kernel-Version: 6.11.12+
Show Events	true
Build Date	Tue Jun 24 02:01:00 PM PDT 2025
Git Version	6b88b111c043af39f26eca793c02a324c8bd3eaf

CSV Data

META Information for Cell-Emulator

Generated by Candela Technologies LANforge network testing tool.
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