

achilles[®]

Test Report

Test Overview

Testing mode: Robustness
Test summary: Ran 1 session and 39 test cases with 83044 subtests.
Test platform: Achilles Test Software Version 3.13.20150113232721
Report generated: 2015-07-27 at 11:22:33

Test Summary

All tests completed without anomalies. The following tests ran: ARP Cache Saturation Storm (L1/L2), ARP Grammar (L1), ARP Host Reply Storm (L1/L2), ARP Request Storm (L1/L2), Ethernet Broadcast Storm (L1/L2), Ethernet Fuzzer (L1/L2) (2), Ethernet Grammar (L1), Ethernet Multicast Storm (L1/L2), Ethernet Unicast Storm (L1/L2), ICMP Grammar (L1), ICMP Storm (L1/L2), ICMP Type/Code Cross Product (L1/L2), IP Broadcast Storm (L1/L2), IP Fragmented Storm (L1/L2), IP Fuzzer (L1/L2), IP Grammar - Fragmentation (L1), IP Grammar - Header Fields (L1), IP Grammar - Options Fields (L1), IP Multicast Storm (L1/L2), IP Unicast Storm (L1/L2), TCP Fuzzer (L1/L2), TCP Grammar (L1), TCP SYN Storm (L1/L2), TCP Scan Robustness (L1/L2) (7), TCP/IP LAND Storm (L1/L2) (2), UDP Broadcast Storm (L1/L2), UDP Fuzzer (L1/L2), UDP Grammar (L1), UDP Multicast Storm (L1/L2), UDP Scan Robustness (L1/L2), UDP Unicast Storm (L1/L2)

Level 1 Certification Analysis

This analysis is an informal interpretation of test results and does not guarantee Level 1 certification.

Device type: Embedded Device
Test summary: Ran 39 test cases with 83044 subtests.

Warning: not all Level 1 tests were run with all required monitors. See the detailed analysis below.

Overall Analysis Results

Data insufficient for complete analysis. See warning(s) above.

Certification Pass/Fail Criteria

All tests in the Level 1 testsuite must run to completion in order for the device to pass certification.

Test results are determined by the Achilles Discrete Monitor and ICMP Monitor. The status of each monitor must remain Normal during test execution, provided that the test case is executed at or below 10 percent link utilization. For example, on a 100 Mbit link, all test cases are executed at 10 Mbits/s or below. If a single test does not meet the aforementioned criteria, then the DUT fails Achilles Level 1 Certification.

Pass/Fail Criteria Exceptions

If the status of a monitor changes to Warning during test execution, an exception to the pass/fail criteria may be granted if the DUT's behavior is due to an explicit design decision. For example, suppose the DUT is designed to process up to 200 packets per second on a 100 Mbit link and ignore all traffic that exceeds this limit. Such behavior will likely result in the DUT not sending ICMP replies to the Achilles, resulting in an ICMP Monitor warning. To qualify for an exception, Wurldtech must accept that the exhibited behavior and the relevant design decision(s) are reasonable. The vendor must provide design documents that describe the device's behavior. Details of the exception to the pass/fail criteria will be made public, so the end user will be aware of the device's behavior. This practice is in line with Wurldtech's view that a key utility of certification is to ensure symmetric information between the customer and end user regarding a device's network robustness and resilience.

Thus far, when granting pass/fail criteria exceptions, only ICMP Monitor Warnings have been exempted. ICMP Monitor Failures (the monitor status does not return to Normal by the end of the post-test period) and Discrete Monitor Warnings and Failures have not been exempted.

Key Parameters for Level 1 Certification

- Max link utilization: 10 percent.
- Discrete Monitor: Cycle period = 1000 milliseconds. Tolerable period error = 4 percent.
- ICMP Monitor: Timeout = 0.5 seconds. Tolerable packet loss = 10 percent.

Detailed Analysis

Tests run without required monitors

Monitors specified in the Certification Pass/Fail Criteria should be enabled when running all Level 1 tests. The following tests were not run with all required monitors enabled: Ethernet Unicast Storm (L1/L2), Ethernet Multicast Storm (L1/L2), Ethernet Broadcast Storm (L1/L2), Ethernet Fuzzer (L1/L2), Ethernet Fuzzer (L1/L2), Ethernet Grammar (L1), ARP Request Storm (L1/L2), ARP Host Reply Storm (L1/L2), ARP Cache Saturation Storm (L1/L2), ARP Grammar (L1), IP Unicast Storm (L1/L2), IP Multicast Storm (L1/L2), IP Broadcast Storm (L1/L2), IP Fragmented Storm (L1/L2), IP Fuzzer (L1/L2), IP Grammar - Header Fields (L1), IP Grammar - Fragmentation (L1), IP Grammar - Options Fields (L1), ICMP Storm (L1/L2), ICMP Grammar (L1), ICMP Type/Code Cross Product (L1/L2), TCP Scan Robustness (L1/L2), TCP Scan Robustness (L1/L2), TCP Scan Robustness (L1/L2), TCP Scan Robustness (L1/L2), TCP Scan Robustness (L1/L2), TCP Scan Robustness (L1/L2), TCP SYN Storm (L1/L2), TCP/IP LAND Storm (L1/L2), TCP/IP LAND Storm (L1/L2), TCP Fuzzer (L1/L2), TCP Grammar (L1), UDP Scan Robustness (L1/L2), UDP Unicast Storm (L1/L2), UDP Multicast Storm (L1/L2), UDP Broadcast Storm (L1/L2), UDP Fuzzer (L1/L2), UDP Grammar (L1)

Tests that Meet Certification Pass/Fail Criteria

The following tests ran without anomalies: ARP Cache Saturation Storm (L1/L2), ARP Grammar (L1), ARP Host Reply Storm (L1/L2), ARP Request Storm (L1/L2), Ethernet Broadcast Storm (L1/L2), Ethernet Fuzzer (L1/L2) (2), Ethernet Grammar (L1), Ethernet Multicast Storm (L1/L2), Ethernet Unicast Storm (L1/L2), ICMP Grammar (L1), ICMP Storm (L1/L2), ICMP Type/Code Cross Product (L1/L2), IP Broadcast Storm (L1/L2), IP Fragmented Storm (L1/L2), IP Fuzzer (L1/L2), IP Grammar - Fragmentation (L1), IP Grammar - Header Fields (L1), IP Grammar - Options Fields (L1), IP Multicast Storm (L1/L2), IP Unicast Storm (L1/L2), TCP Fuzzer (L1/L2), TCP Grammar (L1), TCP SYN Storm (L1/L2), TCP Scan Robustness (L1/L2) (7), TCP/IP LAND Storm (L1/L2) (2), UDP Broadcast Storm (L1/L2), UDP Fuzzer (L1/L2), UDP Grammar (L1), UDP Multicast Storm (L1/L2), UDP Scan Robustness (L1/L2), UDP Unicast Storm (L1/L2)

Session 1

Session time: 2015-05-26 at 13:43:36
Test summary: Ran 39 test cases with 83044 subtests.
Device name: FG200
Device notes: None

Environment

Field	Network 1	Network 2
Achilles IP	172.17.11.254/16	None
Achilles MAC	00:0C:29:74:07:D9	None
DUT IP	172.17.11.3	None
DUT MAC	00:06:71:2D:00:03	None
VCS IP	None	None
VCS MAC	None	None

ARP Monitor (DUT #1)

The ARP Monitor uses ARP Request/Response messages to determine whether the DUT's networking software is functioning.

Parameter	Value
Timeout (s)	1.500

ICMP Monitor (DUT #1)

The ICMP Monitor uses ICMP Echo Request/Response messages to determine whether the DUT's networking software is functioning.

Parameter	Value
Request Timeout (intervals of 0.1s)	5
Packet Loss Warning (%)	10
Strict Address Checking	Enabled

TCP Ports Monitor (DUT #1)

The TCP Ports Monitor observes specified TCP ports on the DUT and determines whether the ports are open or closed.

Parameter	Value
TCP Ports	Open ports: 80, 1090

UDP Ports Monitor (DUT #1)

The UDP Ports Monitor observes specified UDP ports on the DUT and determines whether the ports are open or closed.

Parameter	Value
UDP Ports	Open ports: 0, 123, 1025, 1026, 1089, 1090, 1091, 1095, 2355, 4660
Source IP Addresses	Achilles IP: 172.17.11.254
Known Closed UDP Port	Search

Discovery

Open TCP Ports

Port	Service	Source
80	www	scan
1090	ff-fms	scan

Open UDP Ports

Port	Service	Source
0	unknown	scan
123	ntp	scan
1025	unknown	scan
1026	unknown	scan
1089	ff-annunc	scan
1090	ff-fms	scan
1091	ff-sm	scan
1095	unknown	scan
2355	unknown	scan
4660	unknown	scan

Multicast IP Addresses

IP Address	Source
224.0.0.33	user