

Unicast Packet Loss Report

February 24, 2009
14:06:27

Device Tested:

AP Model: generic unspecified
AP SW Version: Unspecified
WLAN Switch Model: Unspecified
WLAN Switch Version: Unspecified



Overview

The packet loss test measures the rate at which frames are dropped, as well as the rate at which they are forwarded, by the system under test (SUT) when presented with specific traffic loads and frame sizes.

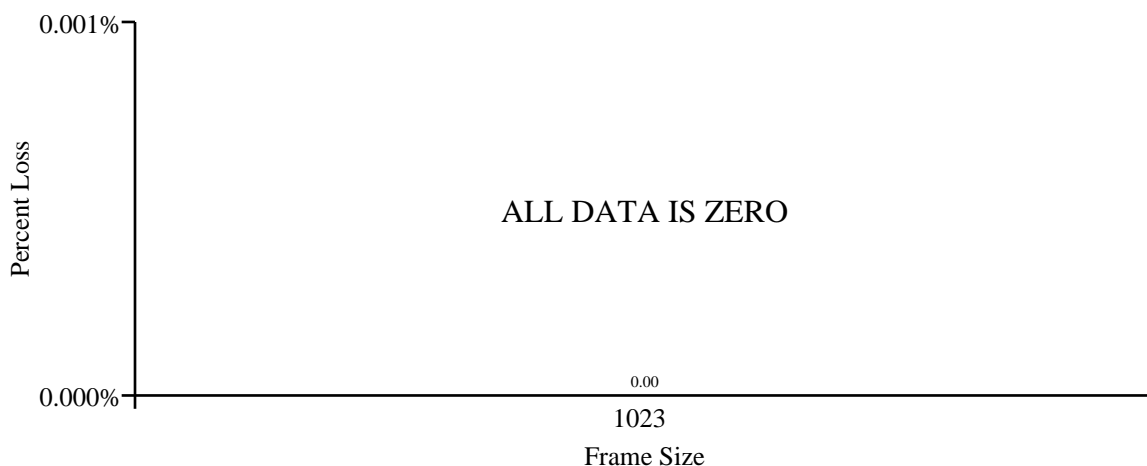
The results of this test are principally useful for characterizing the SUT behavior over a wide range of traffic, rather than for obtaining a single performance number. The test can be run using frame size and intended load sweeps to fully exercise the SUT with all combinations of traffic loads.

Frame Loss Rate

The following graph(s) show the percentage of frames that were dropped by the SUT for the specific combination(s) of intended load (ILOAD) in frames/sec and frame size in bytes. The values are averaged over all the trials.

Ideally, no frames should be lost until the ILOAD exceeds the theoretical maximum. The relationship between the ILOAD and the theoretical maximum is shown in the next section (forwarding rate graphs).

Frame Loss Rate with 128.0 pkts/sec offered

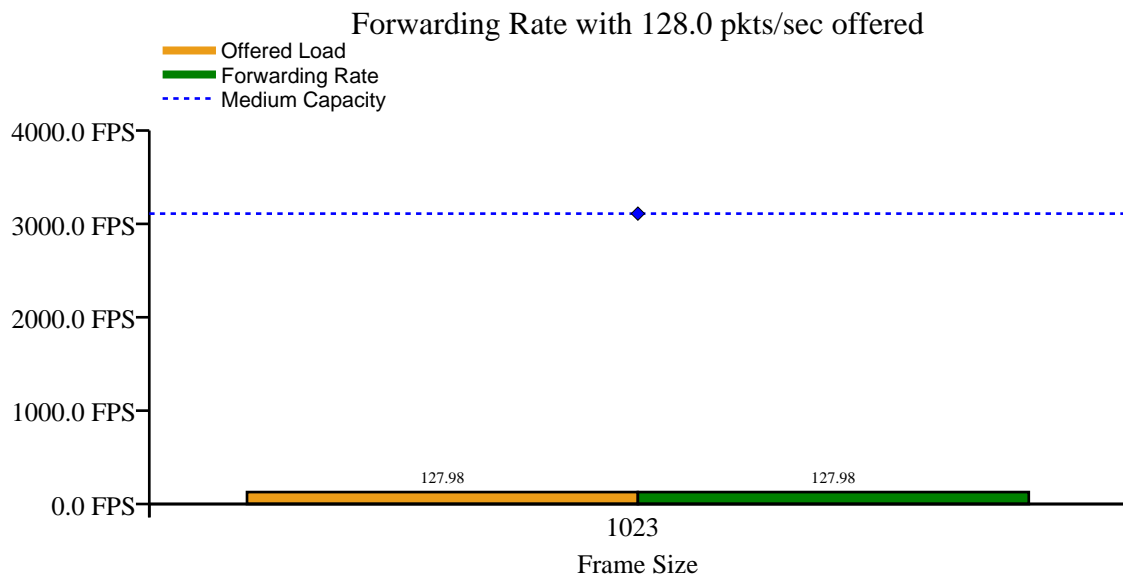




Forwarding Rate

The following graph(s) compares the ILOAD presented to the SUT, versus the rate at which the SUT was able to successfully forward the traffic. The dashed line indicates the theoretical maximum ILOAD, as determined by the physical media. All traffic values are in frames/sec for specific frame sizes in bytes. The values are averaged over all the trial(s).

Ideally, the forwarding rate should equal the ILOAD whenever the latter is less than or equal to the theoretical maximum. NOTE: For 11n clients the theoretical maximum assumes the Best Effort AC, AIFSn of 2, and ECWMin of 4.



Test Conditions

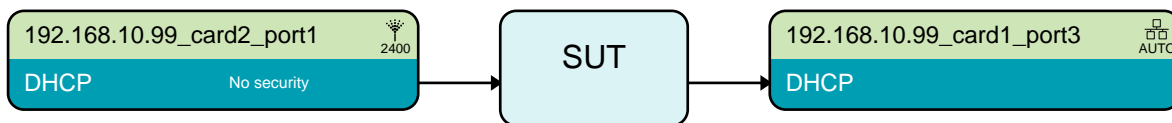
Parameter	Value	Description
Frame Sizes	[1023]	Frame sizes in bytes
ILOAD	[128]	Traffic load, frames/sec

Test Configuration

Parameter	Value	Description
Learning Time	2 sec	Transmission time (seconds) for initial learning packets, to allow the SUT to set up forwarding tables
Transmit Time	10 sec	Trial duration (seconds) - i.e., duration of test traffic
Number of Trials	1	Number of times measurements are repeated for averaging
Settle Time	2 sec	Idle time after test traffic transmission completes

Test Topology

The test topology is shown below. Traffic is transmitted in the direction of the arrows. The test client port identifiers and IP addresses are indicated in the boxes, together with the security mode and channel ID for WLAN clients.



A total of 2 ports were used in this test.

Client Configuration

Client Group	PHY Type	PHY Rate (Mbps)	MCS	A-MPDU	Port
ether_group	Ethernet	100	N/A	N/A	192.168.10.99_card1_port3
wireless_group	11ag	54.0	N/A	N/A	192.168.10.99_card2_port1

Methodology

The test is performed by associating test clients with the SUT ports, performing any desired learning transmissions, and then generating unidirectional test traffic between the test clients. The test then calculates frame loss rate as defined in RFC 2544, and forwarding rate according to RFC 2285. Proprietary signatures and tags are inserted into the test traffic to ensure accurate measurement results.

The test is repeated for each combination of test conditions (i.e., frame size and ILOAD), and the required number of trials. The results are recorded separately for each trial, as well as being averaged into the graphs shown above.

Detailed Results

Frame Size	ILOAD	Trial	Theoretical Rate pkts/sec	Theoretical Rate bits/sec	OLOAD	Forwarding Rate pkts/sec	Forwarding Rate bits/sec	Frame Loss Rate	USC:LT
1023	128.0	1	3110	25455676	128.0	128.0	1047375.8	0.0	PASS

Note: Abbreviations used: USC-User Specified Criteria and LT-Loss Tolerance

User specified P/F criteria

With this feature user can decide the criteria for pass or fail of the test. User can configure the loss tolerance allowed based on which the test is evaluated to Pass/Fail

Parameter	User defined Value	Overall Result
Loss Tolerance	5	Total:1, PASS:1 and FAIL:0

Access Point Information

The following table shows the SUT details. The received signal strength indication (RSSI) from the SUT is sampled on each port at the start of each trial and averaged over all of the trials.

Port Name	Channel	BSSID	SSID	Min RSSI	Avg RSSI	Max RSSI
192.168.10.99_card2_port1	6	00:1F:90:F4:94:8C	verizontest	-17.0 dBm	-17.0 dBm	-17.0 dBm

RSSI values should be between -25 dBm and -35 dBm. If the RSSI is not in this range, modify the external attenuation to bring it into this range.

Other Info

Results Directory /home/autolab1/vwautomate/automation/bin/./../results/20090224-140533/unicast_packet_loss
WaveTest Version 3.5.1, 2008.11.17.05