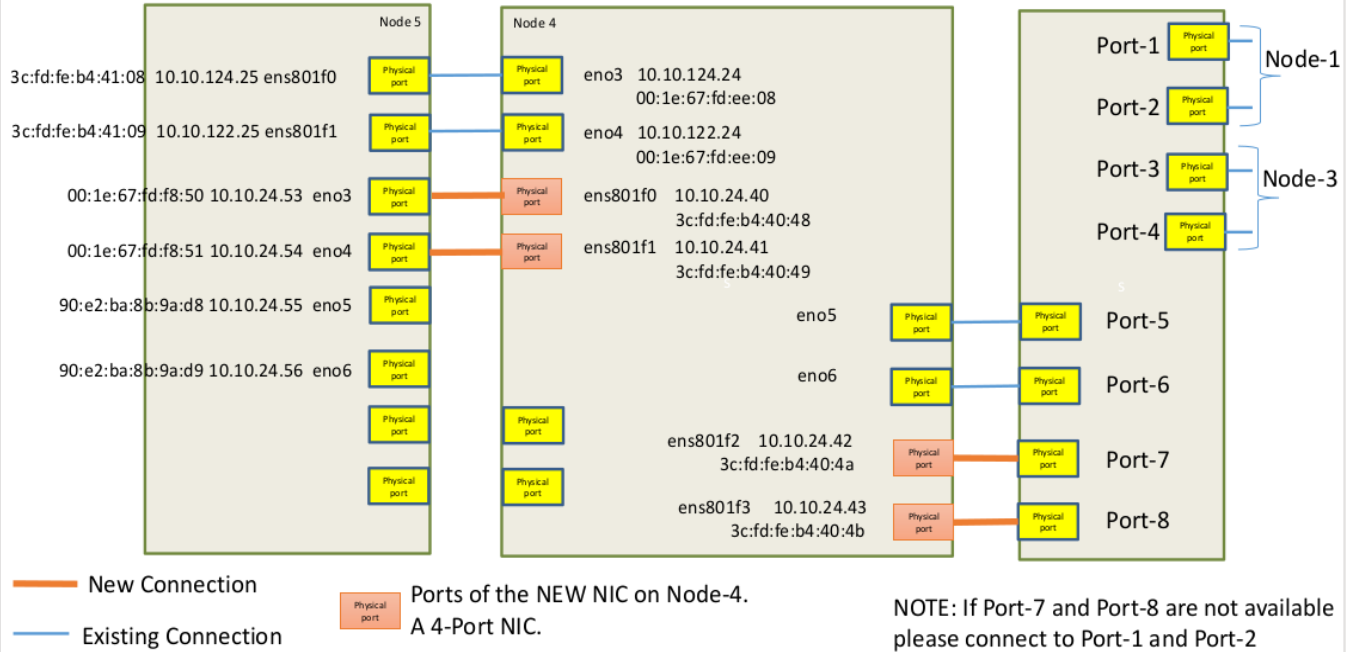
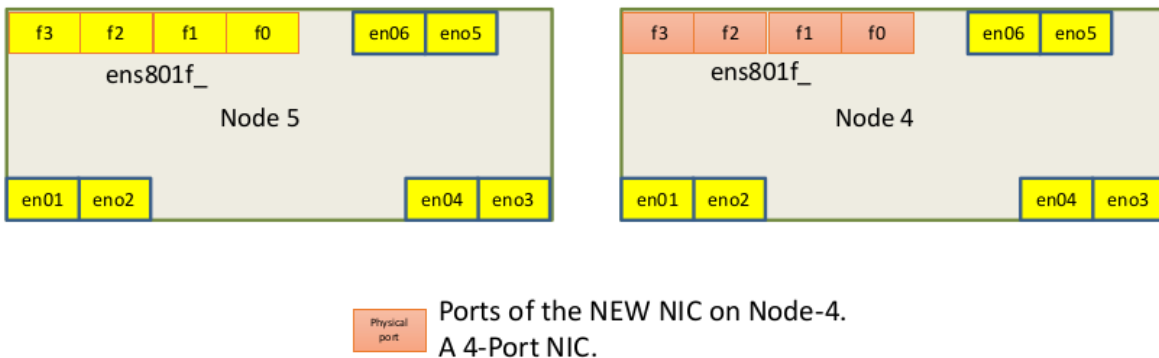


Architecture(POD12)

New NIC on Node 4: Connectivity to Node 5 & IXIA



Jacks on Node 5 and Node 4



Level Test Design(LTD) by VSperf

Speed of Activation

- o Activation.RFC2889.AddressLearningRate
- o PacketLatency.InitialPacketProcessingLatency

Accuracy of Activation

- o CPDP.Coupling.Flow.Addition

Reliability of Activation

- o Throughput.RFC2544.SystemRecoveryTime
- o Throughput.RFC2544.ResetTime

Scale of Activation

- o Activation.RFC2889.AddressCachingCapacity

Speed of Operation

o Throughput.RFC2544.PacketLossRatio

- o CPU.RFC2544.0PacketLoss
- o Throughput.RFC2544.PacketLossRatioFrameModification
- o Throughput.RFC2544.BackToBackFrames
- o Throughput.RFC2889.MaxForwardingRate
- o Throughput.RFC2889.ForwardPressure
- o Throughput.RFC2889.BroadcastFrameForwarding

Accuracy of Operation

- o Throughput.RFC2889.ErrorFramesFiltering
- o Throughput.RFC2544.Profile

Reliability of Operation

- o Throughput.RFC2889.Soak
- o Throughput.RFC2889.SoakFrameModification
- o PacketDelayVariation.RFC3393.Soak

Scalability of Operation

- o Scalability.RFC2544.0PacketLoss
- o MemoryBandwidth.RFC2544.0PacketLoss.Scalability

VSperf Test Cases

phy2phy_tput

LTD.Throughput.RFC2544.PacketLossRatio

pvp_tput

LTD.Throughput.RFC2544.PacketLossRatio

Currently, we are checking Speed of Operation, in that we are focusing on Packet Loss. We are running Throughput test for packet loss([RFC2544](#) section 26.1, 26.2, 26.3)

Formulas:

Frame_loss_percentage = $(tx_frames - rx_frames) * 100 / tx_frames$

Frame rate in Traffic gen

RFC2544

Section 26: Benchmarking tests:

#1 Throughput:

The throughput is the fastest rate at which the count of test frames transmitted by the DUT is equal to the number of test frames sent to it by the test equipment.
{ i.e. Max frame rate at which frame loss is zero }

Reporting Format:

Graph:

X-axis: Frame sizes

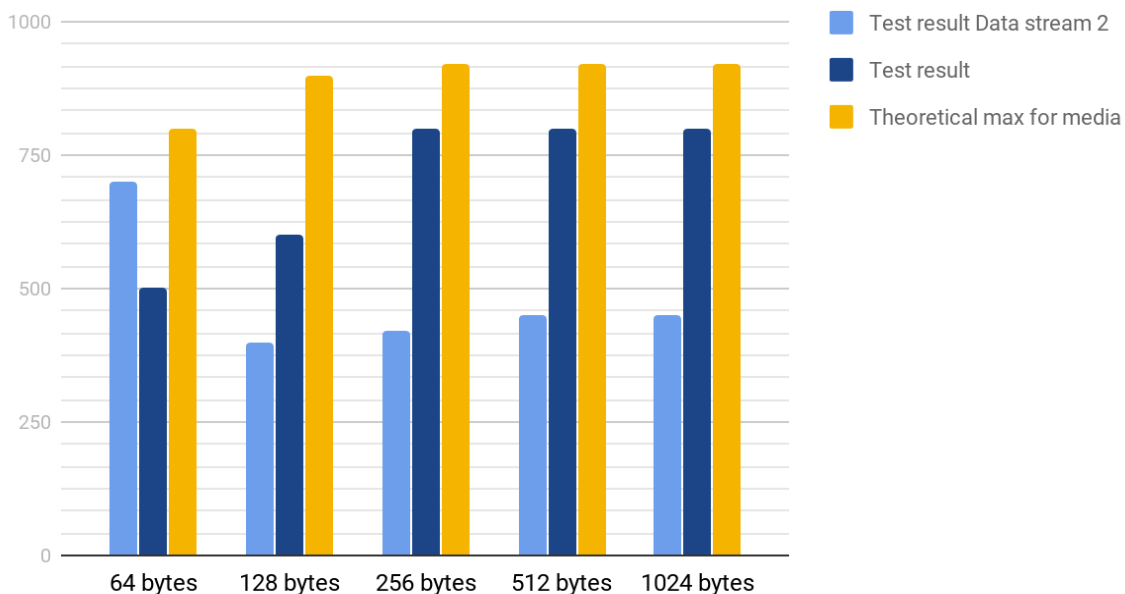
Y-axis: Frame rate

There SHOULD be at least two lines on the graph. There SHOULD be one line showing the theoretical frame rate for the media at the various frame sizes. The second line SHOULD be the plot of the test results. Additional lines MAY be used on the graph to report the results for each type of data stream tested.

Text accompanying the graph SHOULD indicate the protocol, data stream format, and type of media used in the tests.

Example graph:

Throughput



Fields:

Timestamp: Unix timestamp of data

Rx_port: Receiving port(set as 1 or 0)

Tx_port: Transmitting port(set as 1 or 0)

Rx_pkts: Received packets

Tx_pkts: Transmitted packets

Rx_pps: Receiving packets per second rate

Tx_pps: Transmitting packets per second rate

Rx_bps_num: Receiving Bits per second

Rx_bps_den: Receiving Bits per second including layer 1

Tx_bps_num: Transmitting Bits per second

Tx_bps_den: Transmitting Bits per second including layer 1

Pkts_lost: Number of packets lost. (tx_pkts - rx_pkts)

Pkts_lost_percentage: Percentage of packets lost. $((\text{pkts_lost} * 100) / \text{tx_pkts})$

Frame_rate: Frame rate(or line rate). This is the traffic load in gbps or mbps.

Frame_rate_percentage: Frame rate percentage. It is in the form of percentage to maximum frame rate.

Iteration: Iteration number in binary search.

UID:

TGID: The identification number of the thread group leader.

TID: The identification number of the thread being monitored.

%usr: Percentage of CPU used by the task while executing at the user level (application), with or without nice priority. Note that this field does NOT include time spent running a virtual processor.

%system: Percentage of CPU used by the task while executing at the system level (kernel).

%guest: Percentage of CPU spent by the task in virtual machine (running a virtual processor).

%CPU: Total percentage of CPU time used by the task.

CPU: Processor number to which the task is attached.

minflt/s: Total number of minor faults the task has made per second, those which have not required loading a memory page from disk.

majflt/s: Total number of major faults the task has made per second, those which have required loading a memory page from disk.

VSZ: Virtual Size: The virtual memory usage of entire task in kilobytes.

RSS: Resident Set Size: The non-swapped physical memory used by the task in kilobytes.

%MEM: Percentage of Memory used.

kB_rd/s: Number of kilobytes the task has caused to be read from disk per second.

kB_wr/s: Number of kilobytes the task has caused, or shall cause to be written to disk per second.

kB_ccwr/s: Number of kilobytes whose writing to disk has been cancelled by the task. This may occur when the task truncates some dirty pagecache. In this case, some IO which another task has been accounted for will not be happening.