



VSPERF Results

Release draft (21c787b)

OPNFV

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OPNFV BRAHMAPUTRA SCENARIOS

Available Tests and aspects of scenarios:

Framework Test	Definition
phy2phy_tput	PacketLossRatio for Phy2Phy
back2back	BackToBackFrames for Phy2Phy
phy2phy_tput_mod_vlan	PacketLossRatioFrameModification for Phy2Phy
phy2phy_cont	Phy2Phy blast vswitch at x% TX rate and measure throughput
pvp_cont	PVP blast vswitch at x% TX rate and measure throughput
pvvp_cont	PVVP blast vswitch at x% TX rate and measure throughput
phy2phy_scalability	Scalability0PacketLoss for Phy2Phy
pvp_tput	PacketLossRatio for PVP
pvp_back2back	BackToBackFrames for PVP
pvvp_tput	PacketLossRatio for PVVP
pvvp_back2back	BackToBackFrames for PVVP
phy2phy_cpu_load	CPU0PacketLoss for Phy2Phy
phy2phy_mem_load	Same as CPU0PacketLoss but using a memory intensive app

Supported deployment scenarios:

- **Phy2Phy**: Physical port -> vSwitch -> Physical port.
- **PVP**: Physical port -> vSwitch -> VNF -> vSwitch -> Physical port.
- **PVVP**: Physical port -> vSwitch -> VNF -> vSwitch -> VNF -> vSwitch -> Physical port.

Loopback applications in the Guest can be:

- **DPDK testpmd**.
- **Linux Bridge**.
- **l2fwd**.

Supported traffic generators:

- **Ixia**: IxOS and IxNet.
- **Spirent**.
- **Dummy**.

OPNFV BRAHMAPUTRA RESULTS

The vsperf CI jobs that were used to obtain the results can be found at https://wiki.opnfv.org/wiki/vsperf_results.

The following table maps the results in the test dashboard to the appropriate test case in the VSPERF Framework and specifies the metric the vertical/Y axis is plotting. **Please note**, the presence of dpdk within a test name signifies that the vswitch under test was OVS with DPDK, while its absence indicates that the vswitch under test was stock OVS.

Dashboard Test	Framework Test	Metric	Guest Interface
tput_ovsdpdk	phy2phy_tput	Throughput (FPS)	N/A
tput_ovs	phy2phy_tput	Throughput (FPS)	N/A
b2b_ovsdpdk	back2back	Back-to-back value	N/A
b2b_ovs	back2back	Back-to-back value	N/A
tput_mod_vlan_ovs	phy2phy_tput_mod_vlan	Throughput (FPS)	N/A
tput_mod_vlan_ovsdpdk	phy2phy_tput_mod_vlan	Throughput (FPS)	N/A
scalability_ovs	phy2phy_scalability	Throughput (FPS)	N/A
scalability_ovsdpdk	phy2phy_scalability	Throughput (FPS)	N/A
pvp_tput_ovsdpdkuser	pvp_tput	Throughput (FPS)	vhost-user
pvp_tput_ovsvirtio	pvp_tput	Throughput (FPS)	virtio-net
pvp_b2b_ovsdpdkuser	pvp_back2back	Back-to-back value	vhost-user
pvp_b2b_ovsvirtio	pvp_back2back	Back-to-back value	virtio-net
pvvp_tput_ovsdpdkuser	pvvp_tput	Throughput (FPS)	vhost-user
pvvp_tput_ovsvirtio	pvvp_tput	Throughput (FPS)	virtio-net
pvvp_b2b_ovsdpdkuser	pvvp_back2back	Throughput (FPS)	vhost-user
pvvp_b2b_ovsvirtio	pvvp_back2back	Throughput (FPS)	virtio-net

The loopback application in the VNF used for PVP and PVVP scenarios was DPDK testpmd.

PERFORMANCE REPORT FOR OPEN VSWITCH WITH DPDK SUPPORT

3.1 Introduction

The objective of the OPNFV project titled “**Characterise vSwitch Performance for Telco NFV Use Cases**”, is to evaluate a virtual switch to identify its suitability for a Telco Network Function Virtualization (NFV) environment. As well as this, the project aims to identify any gaps or bottlenecks in order to drive architectural changes to improve virtual switch performance and determinism. The purpose of this document is to summarize the results of the tests carried out on the virtual switch in the Network Function Virtualization Infrastructure (NFVI) and, from these results, provide evaluations and recommendations for the virtual switch. Test results will be outlined in *details-of-LTR*, preceded by the *document-identifier* and the *scope* and *references*).

This document is currently in draft form.

3.1.1 Document identifier

The document id will be used to uniquely identify versions of the LTR. The format for the document id will be: OPNFV_vswitchperf_LTR_rel_STATUS, the status is one of: DRAFT, REVIEWED, CORRECTED or FINAL. The document id for this version of the LTR is: OPNFV_vswitchperf_LTR_Brahmaputra_DRAFT.

3.1.2 Scope

The scope of this report is to detail the results of the tests that have been performed on the virtual switch. This report will also evaluate the results of these tests and, based on these evaluations, provide recommendations on the suitability of the virtual switch for use in a Telco NFV environment.

3.1.3 References

OPNFV_vswitchperf_LTD_Brahmaputra_REVIEWED

3.2 Details of the Level Test Report

This section provides a *test-results-overview*. Also included are the *rationale* and the *conclusions*.

3.2.1 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: back2back
- Description: LTD.Throughput.RFC2544.BackToBackFrames
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	26396
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:58

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	95393
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	15.60
majflt/s	0.00
VSZ	4768464
RSS	57788
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	95386
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	63344594
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:58

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	95393
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	15.60
majflt/s	0.00
VSZ	4768464
RSS	57788
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	95386
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	70488721
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:58

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	95393
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	15.60
majflt/s	0.00
VSZ	4768464
RSS	57788
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	95386
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	35919540
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:58

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	95393
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	15.60
majflt/s	0.00
VSZ	4768464
RSS	57788
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	95386
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	24382314
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:58

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	95393
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	15.60
majflt/s	0.00
VSZ	4768464
RSS	57788
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	95386
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.2.2 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

- testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvp_tput
- Description: LTD.Throughput.RFC2544.PacketLossRatio
- Deployment: pvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	4210845.458
tx_rate_mbps	Unknown
throughput_rx_mbps	2155.953
tx_rate_percent	14.148
throughput_rx_percent	14.148
frame_loss_percent	0.000
min_latency_ns	5240.000
max_latency_ns	80720.000
avg_latency_ns	7193.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:23:07
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	105810
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	18.34
majflt/s	0.00
VSZ	19452620
RSS	59902
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	105803
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	105958
%usr	0.00
%system	0.02
%guest	200.11
%CPU	100.20
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4779648
RSS	145842
%MEM	0.22
kB_rd/s	0.00
kB_wr/s	117.85
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	6439945.020
tx_rate_mbps	Unknown
throughput_rx_mbps	6594.504
tx_rate_percent	38.125
throughput_rx_percent	38.125
frame_loss_percent	0.000
min_latency_ns	11760.000
max_latency_ns	180960.000
avg_latency_ns	59057.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:23:07
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	105810
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	18.34
majflt/s	0.00
VSZ	19452620
RSS	59902
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	105803
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	105958
%usr	0.00
%system	0.02
%guest	200.11
%CPU	100.20
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4779648
RSS	145842
%MEM	0.22
kB_rd/s	0.00
kB_wr/s	117.85
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1900627.198
tx_rate_mbps	Unknown
throughput_rx_mbps	7784.969
tx_rate_percent	40.445
throughput_rx_percent	40.445
frame_loss_percent	0.000
min_latency_ns	5520.000
max_latency_ns	71740.000
avg_latency_ns	6708.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:23:07
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	105810
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	18.34
majflt/s	0.00
VSZ	19452620
RSS	59902
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	105803
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	105958
%usr	0.00
%system	0.02
%guest	200.11
%CPU	100.20
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4779648
RSS	145842
%MEM	0.22
kB_rd/s	0.00
kB_wr/s	117.85
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	2394563.217
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.262
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	34060.000
max_latency_ns	133100.000
avg_latency_ns	114694.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:23:07
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	105810
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	18.34
majflt/s	0.00
VSZ	19452620
RSS	59902
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	105803
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	105958
%usr	0.00
%system	0.02
%guest	200.11
%CPU	100.20
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4779648
RSS	145842
%MEM	0.22
kB_rd/s	0.00
kB_wr/s	117.85
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1625465.200
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.649
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	79500.000
max_latency_ns	121740.000
avg_latency_ns	110276.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:23:07
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	105810
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	18.34
majflt/s	0.00
VSZ	19452620
RSS	59902
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	105803
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	105958
%usr	0.00
%system	0.02
%guest	200.11
%CPU	100.20
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4779648
RSS	145842
%MEM	0.22
kB_rd/s	0.00
kB_wr/s	117.85
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.2.3 Test ID: PHY2PHY_TPUT_MOD_VLAN

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: phy2phy_tput_mod_vlan
- Description: LTD.Throughput.RFC2544.PacketLossRatioFrameModification
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : False

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	11313016.749
tx_rate_mbps	Unknown
throughput_rx_mbps	6154.281
tx_rate_percent	76.023
throughput_rx_percent	79.644
frame_loss_percent	0.000
min_latency_ns	5480.000
max_latency_ns	128800.000
avg_latency_ns	6553.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	99282
%usr	200.22
%system	0.11
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	23.34
majflt/s	0.00
VSZ	4768460
RSS	59813
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	99274
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	8184666.393
tx_rate_mbps	Unknown
throughput_rx_mbps	8643.008
tx_rate_percent	96.906
throughput_rx_percent	99.526
frame_loss_percent	0.000
min_latency_ns	5200.000
max_latency_ns	67680.000
avg_latency_ns	7916.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	99282
%usr	200.22
%system	0.11
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	23.34
majflt/s	0.00
VSZ	4768460
RSS	59813
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	99274
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	2258762.736
tx_rate_mbps	Unknown
throughput_rx_mbps	9324.173
tx_rate_percent	96.133
throughput_rx_percent	96.856
frame_loss_percent	0.000
min_latency_ns	4780.000
max_latency_ns	45220.000
avg_latency_ns	5755.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	99282
%usr	200.22
%system	0.11
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	23.34
majflt/s	0.00
VSZ	4768460
RSS	59813
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	99274
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1188058.000
tx_rate_mbps	Unknown
throughput_rx_mbps	9770.589
tx_rate_percent	99.227
throughput_rx_percent	99.607
frame_loss_percent	0.000
min_latency_ns	5760.000
max_latency_ns	54440.000
avg_latency_ns	8166.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	99282
%usr	200.22
%system	0.11
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	23.34
majflt/s	0.00
VSZ	4768460
RSS	59813
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	99274
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	806458.213
tx_rate_mbps	Unknown
throughput_rx_mbps	9819.435
tx_rate_percent	99.227
throughput_rx_percent	99.485
frame_loss_percent	0.000
min_latency_ns	6180.000
max_latency_ns	51000.000
avg_latency_ns	8598.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	99282
%usr	200.22
%system	0.11
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	23.34
majflt/s	0.00
VSZ	4768460
RSS	59813
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	99274
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.2.4 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvvp_back2back
- Description: LTD.Throughput.RFC2544.BackToBackFrames
- Deployment: pvvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	6811
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:45:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	117100
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	15.96
majflt/s	0.00
VSZ	34136784
RSS	59936
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	117093
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47764
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117381
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.36
majflt/s	0.00
VSZ	4723340
RSS	187999
%MEM	0.29
kB_rd/s	0.00
kB_wr/s	32.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117254
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4771468
RSS	229094
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.28
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	2899
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:45:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	117100
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	15.96
majflt/s	0.00
VSZ	34136784
RSS	59936
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	117093
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47764
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117381
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.36
majflt/s	0.00
VSZ	4723340
RSS	187999
%MEM	0.29
kB_rd/s	0.00
kB_wr/s	32.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117254
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4771468
RSS	229094
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.28
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	2151
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:45:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	117100
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	15.96
majflt/s	0.00
VSZ	34136784
RSS	59936
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	117093
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47764
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117381
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.36
majflt/s	0.00
VSZ	4723340
RSS	187999
%MEM	0.29
kB_rd/s	0.00
kB_wr/s	32.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117254
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4771468
RSS	229094
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.28
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1096
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:45:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	117100
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	15.96
majflt/s	0.00
VSZ	34136784
RSS	59936
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	117093
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47764
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117381
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	•
minflt/s	0.36
majflt/s	0.00
VSZ	4723340
RSS	187999
%MEM	0.29
kB_rd/s	0.00
kB_wr/s	32.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117254
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.15
CPU	•
minflt/s	0.24
majflt/s	0.00
VSZ	4771468
RSS	229094
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.28
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	24382314
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:45:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	117100
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	15.96
majflt/s	0.00
VSZ	34136784
RSS	59936
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	117093
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47764
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117381
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.36
majflt/s	0.00
VSZ	4723340
RSS	187999
%MEM	0.29
kB_rd/s	0.00
kB_wr/s	32.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	117254
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4771468
RSS	229094
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.28
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.2.5 Test ID: PHY2PHY_TPUB

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: phy2phy_tput
- Description: LTD.Throughput.RFC2544.PacketLossRatio
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	23086567.913
tx_rate_mbps	Unknown
throughput_rx_mbps	11820.323
tx_rate_percent	77.570
throughput_rx_percent	77.570
frame_loss_percent	0.000
min_latency_ns	4640.000
max_latency_ns	281560.000
avg_latency_ns	8300.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:16:42

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	93049
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	30.25
majflt/s	0.00
VSZ	4768460
RSS	57752
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	93040
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	16890757.795
tx_rate_mbps	Unknown
throughput_rx_mbps	17296.136
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	27900.000
max_latency_ns	230980.000
avg_latency_ns	116866.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:16:42

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	93049
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	30.25
majflt/s	0.00
VSZ	4768460
RSS	57752
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	93040
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	4699196.331
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.908
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	46740.000
max_latency_ns	80400.000
avg_latency_ns	69345.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:16:42

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	93049
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	30.25
majflt/s	0.00
VSZ	4768460
RSS	57752
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	93040
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	2394607.915
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.628
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	51200.000
max_latency_ns	88940.000
avg_latency_ns	76804.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:16:42

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	93049
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	30.25
majflt/s	0.00
VSZ	4768460
RSS	57752
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	93040
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1625416.342
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.056
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	50020.000
max_latency_ns	279360.000
avg_latency_ns	141529.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:16:42

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	93049
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	30.25
majflt/s	0.00
VSZ	4768460
RSS	57752
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	93040
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.2.6 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: phy2phy_scalability
- Description: LTD.Scalability.Flows.RFC2544.0PacketLoss
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	23777019.617
tx_rate_mbps	Unknown
throughput_rx_mbps	12173.834
tx_rate_percent	79.891
throughput_rx_percent	79.891
frame_loss_percent	0.000
min_latency_ns	8040.000
max_latency_ns	350780.000
avg_latency_ns	38609.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:19:34
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	103028
%usr	200.25
%system	0.08
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	24.65
majflt/s	0.00
VSZ	4768464
RSS	57754
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	103021
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	15977429.941
tx_rate_mbps	Unknown
throughput_rx_mbps	16360.888
tx_rate_percent	94.586
throughput_rx_percent	94.586
frame_loss_percent	0.000
min_latency_ns	5800.000
max_latency_ns	78260.000
avg_latency_ns	9252.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:19:34
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	103028
%usr	200.25
%system	0.08
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	24.65
majflt/s	0.00
VSZ	4768464
RSS	57754
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	103021
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	4699179.931
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.841
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	15040.000
max_latency_ns	60280.000
avg_latency_ns	48802.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:19:34
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	103028
%usr	200.25
%system	0.08
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	24.65
majflt/s	0.00
VSZ	4768464
RSS	57754
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	103021
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	2394605.832
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.611
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	45360.000
max_latency_ns	83800.000
avg_latency_ns	72678.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:19:34
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	103028
%usr	200.25
%system	0.08
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	24.65
majflt/s	0.00
VSZ	4768464
RSS	57754
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	103021
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1625415.833
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.050
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	38920.000
max_latency_ns	263940.000
avg_latency_ns	153637.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:19:34
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	103028
%usr	200.25
%system	0.08
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	24.65
majflt/s	0.00
VSZ	4768464
RSS	57754
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	103021
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.2.7 Test ID: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvp_back2back
- Description: LTD.Throughput.RFC2544.BackToBackFrames
- Deployment: pvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	9366
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:29:19
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	109134
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	15.34
majflt/s	0.00
VSZ	19452620
RSS	57854
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	109127
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	109277
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.18
CPU	.
minflt/s	0.60
majflt/s	0.00
VSZ	4710028
RSS	140487
%MEM	0.21
kB_rd/s	0.00
kB_wr/s	36.28
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	8699
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:29:19
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	109134
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	15.34
majflt/s	0.00
VSZ	19452620
RSS	57854
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	109127
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	109277
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.18
CPU	.
minflt/s	0.60
majflt/s	0.00
VSZ	4710028
RSS	140487
%MEM	0.21
kB_rd/s	0.00
kB_wr/s	36.28
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	70488721
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:29:19
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	109134
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	15.34
majflt/s	0.00
VSZ	19452620
RSS	57854
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	109127
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	109277
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.18
CPU	.
minflt/s	0.60
majflt/s	0.00
VSZ	4710028
RSS	140487
%MEM	0.21
kB_rd/s	0.00
kB_wr/s	36.28
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	35919540
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:29:19
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	109134
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	15.34
majflt/s	0.00
VSZ	19452620
RSS	57854
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	109127
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	109277
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.18
CPU	.
minflt/s	0.60
majflt/s	0.00
VSZ	4710028
RSS	140487
%MEM	0.21
kB_rd/s	0.00
kB_wr/s	36.28
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	24382314
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:29:19
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	109134
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	15.34
majflt/s	0.00
VSZ	19452620
RSS	57854
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	109127
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	109277
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.18
CPU	.
minflt/s	0.60
majflt/s	0.00
VSZ	4710028
RSS	140487
%MEM	0.21
kB_rd/s	0.00
kB_wr/s	36.28
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.2.8 Test ID: PVVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cddf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvvp_tput
- Description: LTD.Throughput.RFC2544.PacketLossRatio
- Deployment: pvvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	988189.060
tx_rate_mbps	Unknown
throughput_rx_mbps	505.953
tx_rate_percent	3.320
throughput_rx_percent	3.320
frame_loss_percent	0.000
min_latency_ns	5320.000
max_latency_ns	55460.000
avg_latency_ns	6373.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:29:09
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	113155
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	11.70
majflt/s	0.00
VSZ	34136784
RSS	57949
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	113148
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113361
%usr	0.00
%system	0.23
%guest	200.01
%CPU	100.19
CPU	.
minflt/s	1.33
majflt/s	0.00
VSZ	4849288
RSS	155205
%MEM	0.24
kB_rd/s	0.00
kB_wr/s	92.26
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113309
%usr	0.00
%system	0.04
%guest	200.11
%CPU	100.15
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4761168
RSS	197509
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	0.35
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	3304476.939
tx_rate_mbps	Unknown
throughput_rx_mbps	3383.784
tx_rate_percent	19.563
throughput_rx_percent	19.563
frame_loss_percent	0.000
min_latency_ns	8140.000
max_latency_ns	158020.000
avg_latency_ns	33287.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:29:09
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	113155
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	11.70
majflt/s	0.00
VSZ	34136784
RSS	57949
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	113148
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113361
%usr	0.00
%system	0.23
%guest	200.01
%CPU	100.19
CPU	•
minflt/s	1.33
majflt/s	0.00
VSZ	4849288
RSS	155205
%MEM	0.24
kB_rd/s	0.00
kB_wr/s	92.26
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113309
%usr	0.00
%system	0.04
%guest	200.11
%CPU	100.15
CPU	•
minflt/s	1.51
majflt/s	0.00
VSZ	4761168
RSS	197509
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	0.35
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1864280.348
tx_rate_mbps	Unknown
throughput_rx_mbps	7636.092
tx_rate_percent	39.672
throughput_rx_percent	39.672
frame_loss_percent	0.000
min_latency_ns	9600.000
max_latency_ns	80060.000
avg_latency_ns	13609.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:29:09
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	113155
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	11.70
majflt/s	0.00
VSZ	34136784
RSS	57949
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	113148
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113361
%usr	0.00
%system	0.23
%guest	200.01
%CPU	100.19
CPU	.
minflt/s	1.33
majflt/s	0.00
VSZ	4849288
RSS	155205
%MEM	0.24
kB_rd/s	0.00
kB_wr/s	92.26
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113309
%usr	0.00
%system	0.04
%guest	200.11
%CPU	100.15
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4761168
RSS	197509
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	0.35
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1950132.304
tx_rate_mbps	Unknown
throughput_rx_mbps	15975.484
tx_rate_percent	81.438
throughput_rx_percent	81.438
frame_loss_percent	0.000
min_latency_ns	11500.000
max_latency_ns	115560.000
avg_latency_ns	26364.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:29:09
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	113155
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	11.70
majflt/s	0.00
VSZ	34136784
RSS	57949
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	113148
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113361
%usr	0.00
%system	0.23
%guest	200.01
%CPU	100.19
CPU	.
minflt/s	1.33
majflt/s	0.00
VSZ	4849288
RSS	155205
%MEM	0.24
kB_rd/s	0.00
kB_wr/s	92.26
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113309
%usr	0.00
%system	0.04
%guest	200.11
%CPU	100.15
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4761168
RSS	197509
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	0.35
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1449478.404
tx_rate_mbps	Unknown
throughput_rx_mbps	17602.466
tx_rate_percent	89.172
throughput_rx_percent	89.172
frame_loss_percent	0.000
min_latency_ns	16000.000
max_latency_ns	189400.000
avg_latency_ns	20882.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:29:09
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	113155
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	11.70
majflt/s	0.00
VSZ	34136784
RSS	57949
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	113148
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113361
%usr	0.00
%system	0.23
%guest	200.01
%CPU	100.19
CPU	.
minflt/s	1.33
majflt/s	0.00
VSZ	4849288
RSS	155205
%MEM	0.24
kB_rd/s	0.00
kB_wr/s	92.26
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	113309
%usr	0.00
%system	0.04
%guest	200.11
%CPU	100.15
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4761168
RSS	197509
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	0.35
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

3.3 Rationale for decisions

The tests conducted do not have pass/fail/conditional-pass criteria. The test is simply conducted and the results are reported.

3.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-08-18_21-07-43/vswitchperf_logs_2016-08-18_21-07-43.tar.gz.

3.5 General

3.5.1 Glossary

- NFV - Network Function Virtualization
- Mbps - 1,000,000bps

3.5.2 Document change procedures and history

Document ID	Author	Date Modified
<i>OPNFV_vswitchperf_LTR_ver_1.0_Jan_15_CN_DRAFT</i>	Christopher Nolan	23/01/2015
<i>OPNFV_vswitchperf_LTR_ver_1.1_Jan_15_CN_DRAFT</i>	Christopher Nolan	28/01/2015

PERFORMANCE REPORT FOR OPEN VSWITCH

4.1 Introduction

The objective of the OPNFV project titled “**Characterise vSwitch Performance for Telco NFV Use Cases**”, is to evaluate a virtual switch to identify its suitability for a Telco Network Function Virtualization (NFV) environment. As well as this, the project aims to identify any gaps or bottlenecks in order to drive architectural changes to improve virtual switch performance and determinism. The purpose of this document is to summarize the results of the tests carried out on the virtual switch in the Network Function Virtualization Infrastructure (NFVI) and, from these results, provide evaluations and recommendations for the virtual switch. Test results will be outlined in *details-of-LTR*, preceded by the *document-identifier* and the *scope* and *references*).

This document is currently in draft form.

4.1.1 Document identifier

The document id will be used to uniquely identify versions of the LTR. The format for the document id will be: OPNFV_vswitchperf_LTR_rel_STATUS, the status is one of: DRAFT, REVIEWED, CORRECTED or FINAL. The document id for this version of the LTR is: OPNFV_vswitchperf_LTR_Brahmaputra_DRAFT.

4.1.2 Scope

The scope of this report is to detail the results of the tests that have been performed on the virtual switch. This report will also evaluate the results of these tests and, based on these evaluations, provide recommendations on the suitability of the virtual switch for use in a Telco NFV environment.

4.1.3 References

OPNFV_vswitchperf_LTD_Brahmaputra_REVIEWED

4.2 Details of the Level Test Report

This section provides a *test-results-overview*. Also included are the *rationale* and the *conclusions*.

4.2.1 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d

Below are test details:

- Test ID: back2back
- Description: LTD.Throughput.RFC2544.BackToBackFrames
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	5108
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:42:08

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126795
%usr	0.20
%system	1.41
%guest	0.00
%CPU	1.61
CPU	.
minflt/s	3.84
majflt/s	0.00
VSZ	3365528
RSS	33367
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	126792
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	3382
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:42:08

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126795
%usr	0.20
%system	1.41
%guest	0.00
%CPU	1.61
CPU	•
minflt/s	3.84
majflt/s	0.00
VSZ	3365528
RSS	33367
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	126792
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1344
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:42:08

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	126795
%usr	0.20
%system	1.41
%guest	0.00
%CPU	1.61
CPU	.
minflt/s	3.84
majflt/s	0.00
VSZ	3365528
RSS	33367
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	126792
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1096
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:42:08

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126795
%usr	0.20
%system	1.41
%guest	0.00
%CPU	1.61
CPU	.
minflt/s	3.84
majflt/s	0.00
VSZ	3365528
RSS	33367
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	126792
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

VSPERF Results, Release draft (21c787b)

Metric	Result
b2b_frames	1116
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:42:08

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126795
%usr	0.20
%system	1.41
%guest	0.00
%CPU	1.61
CPU	•
minflt/s	3.84
majflt/s	0.00
VSZ	3365528
RSS	33367
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	126792
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.2.2 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

- testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvp_tput
- Description: LTD.Throughput.RFC2544.PacketLossRatio
- Deployment: pvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	526398.807
tx_rate_mbps	Unknown
throughput_rx_mbps	269.516
tx_rate_percent	1.773
throughput_rx_percent	1.769
frame_loss_percent	0.268
min_latency_ns	15860.000
max_latency_ns	23962820.000
avg_latency_ns	66350.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:18
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	138955
%usr	0.19
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	34382
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	138952
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	139152
%usr	0.00
%system	0.64
%guest	199.48
%CPU	100.17
CPU	.
minflt/s	0.67
majflt/s	0.00
VSZ	4767512
RSS	281053
%MEM	0.43
kB_rd/s	0.00
kB_wr/s	64.95
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	299566.553
tx_rate_mbps	Unknown
throughput_rx_mbps	306.756
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.000
min_latency_ns	16080.000
max_latency_ns	1967480.000
avg_latency_ns	46323.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:18
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	138955
%usr	0.19
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	34382
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	138952
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	139152
%usr	0.00
%system	0.64
%guest	199.48
%CPU	100.17
CPU	.
minflt/s	0.67
majflt/s	0.00
VSZ	4767512
RSS	281053
%MEM	0.43
kB_rd/s	0.00
kB_wr/s	64.95
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	228721.090
tx_rate_mbps	Unknown
throughput_rx_mbps	936.842
tx_rate_percent	4.867
throughput_rx_percent	4.867
frame_loss_percent	0.000
min_latency_ns	27520.000
max_latency_ns	1190960.000
avg_latency_ns	103520.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:18
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	138955
%usr	0.19
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	34382
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	138952
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	139152
%usr	0.00
%system	0.64
%guest	199.48
%CPU	100.17
CPU	.
minflt/s	0.67
majflt/s	0.00
VSZ	4767512
RSS	281053
%MEM	0.43
kB_rd/s	0.00
kB_wr/s	64.95
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	135072.520
tx_rate_mbps	Unknown
throughput_rx_mbps	1106.514
tx_rate_percent	5.641
throughput_rx_percent	5.641
frame_loss_percent	0.000
min_latency_ns	28980.000
max_latency_ns	485400.000
avg_latency_ns	99114.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:18
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	138955
%usr	0.19
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	34382
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	138952
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	139152
%usr	0.00
%system	0.64
%guest	199.48
%CPU	100.17
CPU	.
minflt/s	0.67
majflt/s	0.00
VSZ	4767512
RSS	281053
%MEM	0.43
kB_rd/s	0.00
kB_wr/s	64.95
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	229981.194
tx_rate_mbps	Unknown
throughput_rx_mbps	2792.892
tx_rate_percent	14.148
throughput_rx_percent	14.148
frame_loss_percent	0.000
min_latency_ns	35220.000
max_latency_ns	580360.000
avg_latency_ns	105191.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:18
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	138955
%usr	0.19
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	34382
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	138952
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	139152
%usr	0.00
%system	0.64
%guest	199.48
%CPU	100.17
CPU	.
minflt/s	0.67
majflt/s	0.00
VSZ	4767512
RSS	281053
%MEM	0.43
kB_rd/s	0.00
kB_wr/s	64.95
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.2.3 Test ID: PHY2PHY_TPUT_MOD_VLAN

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d

Below are test details:

- Test ID: phy2phy_tput_mod_vlan
- Description: LTD.Throughput.RFC2544.PacketLossRatioFrameModification
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : False

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	609189.436
tx_rate_mbps	Unknown
throughput_rx_mbps	331.399
tx_rate_percent	4.094
throughput_rx_percent	4.289
frame_loss_percent	0.000
min_latency_ns	4480.000
max_latency_ns	902960.000
avg_latency_ns	51447.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:27:33

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	131932
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	3.81
majflt/s	0.00
VSZ	3365516
RSS	16834
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	131929
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	541728.483
tx_rate_mbps	Unknown
throughput_rx_mbps	572.065
tx_rate_percent	6.414
throughput_rx_percent	6.587
frame_loss_percent	0.000
min_latency_ns	4740.000
max_latency_ns	1001680.000
avg_latency_ns	38672.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:27:33

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	131932
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	3.81
majflt/s	0.00
VSZ	3365516
RSS	16834
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	131929
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	550506.310
tx_rate_mbps	Unknown
throughput_rx_mbps	2272.490
tx_rate_percent	23.430
throughput_rx_percent	23.606
frame_loss_percent	0.000
min_latency_ns	5400.000
max_latency_ns	921600.000
avg_latency_ns	57140.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:27:33

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	131932
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	3.81
majflt/s	0.00
VSZ	3365516
RSS	16834
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	131929
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	567602.863
tx_rate_mbps	Unknown
throughput_rx_mbps	4667.966
tx_rate_percent	47.406
throughput_rx_percent	47.588
frame_loss_percent	0.000
min_latency_ns	5740.000
max_latency_ns	1458240.000
avg_latency_ns	73264.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:27:33

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	131932
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	3.81
majflt/s	0.00
VSZ	3365516
RSS	16834
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	131929
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	567587.518
tx_rate_mbps	Unknown
throughput_rx_mbps	6910.946
tx_rate_percent	69.836
throughput_rx_percent	70.018
frame_loss_percent	0.000
min_latency_ns	6460.000
max_latency_ns	1178820.000
avg_latency_ns	82973.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:27:33

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	131932
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	3.81
majflt/s	0.00
VSZ	3365516
RSS	16834
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	131929
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.2.4 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvvp_back2back
- Description: LTD.Throughput.RFC2544.BackToBackFrames
- Deployment: pvvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:43:32
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	152124
%usr	0.21
%system	1.47
%guest	0.00
%CPU	1.69
CPU	•
minflt/s	4.54
majflt/s	0.00
VSZ	3365644
RSS	18257
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	152121
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152515
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.17
CPU	.
minflt/s	0.59
majflt/s	0.00
VSZ	4789004
RSS	235853
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	41.11
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152387
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.15
CPU	.
minflt/s	0.27
majflt/s	0.00
VSZ	4848408
RSS	266353
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	3.60
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:43:32
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152124
%usr	0.21
%system	1.47
%guest	0.00
%CPU	1.69
CPU	.
minflt/s	4.54
majflt/s	0.00
VSZ	3365644
RSS	18257
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152121
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152515
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.17
CPU	•
minflt/s	0.59
majflt/s	0.00
VSZ	4789004
RSS	235853
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	41.11
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152387
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.15
CPU	•
minflt/s	0.27
majflt/s	0.00
VSZ	4848408
RSS	266353
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	3.60
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:43:32
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152124
%usr	0.21
%system	1.47
%guest	0.00
%CPU	1.69
CPU	.
minflt/s	4.54
majflt/s	0.00
VSZ	3365644
RSS	18257
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152121
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152515
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.17
CPU	.
minflt/s	0.59
majflt/s	0.00
VSZ	4789004
RSS	235853
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	41.11
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152387
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.15
CPU	.
minflt/s	0.27
majflt/s	0.00
VSZ	4848408
RSS	266353
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	3.60
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:43:32
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152124
%usr	0.21
%system	1.47
%guest	0.00
%CPU	1.69
CPU	•
minflt/s	4.54
majflt/s	0.00
VSZ	3365644
RSS	18257
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152121
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152515
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.17
CPU	.
minflt/s	0.59
majflt/s	0.00
VSZ	4789004
RSS	235853
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	41.11
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152387
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.15
CPU	.
minflt/s	0.27
majflt/s	0.00
VSZ	4848408
RSS	266353
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	3.60
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:43:32
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152124
%usr	0.21
%system	1.47
%guest	0.00
%CPU	1.69
CPU	•
minflt/s	4.54
majflt/s	0.00
VSZ	3365644
RSS	18257
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152121
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152515
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.17
CPU	.
minflt/s	0.59
majflt/s	0.00
VSZ	4789004
RSS	235853
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	41.11
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152387
%usr	0.00
%system	0.04
%guest	200.07
%CPU	100.15
CPU	.
minflt/s	0.27
majflt/s	0.00
VSZ	4848408
RSS	266353
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	3.60
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.2.5 Test ID: PHY2PHY_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d

Below are test details:

- Test ID: phy2phy_tput
- Description: LTD.Throughput.RFC2544.PacketLossRatio
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	758000.782
tx_rate_mbps	Unknown
throughput_rx_mbps	388.096
tx_rate_percent	2.547
throughput_rx_percent	2.547
frame_loss_percent	0.000
min_latency_ns	4060.000
max_latency_ns	7182360.000
avg_latency_ns	703422.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:27:47

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	123237
%usr	0.22
%system	1.50
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	3.75
majflt/s	0.00
VSZ	3365520
RSS	18499
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	123234
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	691513.461
tx_rate_mbps	Unknown
throughput_rx_mbps	708.110
tx_rate_percent	4.094
throughput_rx_percent	4.094
frame_loss_percent	0.000
min_latency_ns	4300.000
max_latency_ns	9190240.000
avg_latency_ns	241210.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:27:47

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	123237
%usr	0.22
%system	1.50
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	3.75
majflt/s	0.00
VSZ	3365520
RSS	18499
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	123234
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	628540.403
tx_rate_mbps	Unknown
throughput_rx_mbps	2574.501
tx_rate_percent	13.375
throughput_rx_percent	13.375
frame_loss_percent	0.000
min_latency_ns	5280.000
max_latency_ns	3210520.000
avg_latency_ns	256785.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:27:47

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	123237
%usr	0.22
%system	1.50
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	3.75
majflt/s	0.00
VSZ	3365520
RSS	18499
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	123234
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	616319.375
tx_rate_mbps	Unknown
throughput_rx_mbps	5048.888
tx_rate_percent	25.750
throughput_rx_percent	25.750
frame_loss_percent	0.000
min_latency_ns	5800.000
max_latency_ns	2999060.000
avg_latency_ns	214327.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:27:47

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	123237
%usr	0.22
%system	1.50
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	3.75
majflt/s	0.00
VSZ	3365520
RSS	18499
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	123234
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	582001.608
tx_rate_mbps	Unknown
throughput_rx_mbps	7067.828
tx_rate_percent	35.805
throughput_rx_percent	35.805
frame_loss_percent	0.000
min_latency_ns	6540.000
max_latency_ns	1955700.000
avg_latency_ns	78957.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:27:47

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	123237
%usr	0.22
%system	1.50
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	3.75
majflt/s	0.00
VSZ	3365520
RSS	18499
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	123234
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.2.6 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d

Below are test details:

- Test ID: phy2phy_scalability
- Description: LTD.Scalability.Flows.RFC2544.0PacketLoss
- Deployment: p2p
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	758000.920
tx_rate_mbps	Unknown
throughput_rx_mbps	388.096
tx_rate_percent	2.547
throughput_rx_percent	2.547
frame_loss_percent	0.000
min_latency_ns	4020.000
max_latency_ns	11098440.000
avg_latency_ns	771516.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:27:39
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	135330
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.38
majflt/s	0.00
VSZ	3365520
RSS	17267
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	135327
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	691513.449
tx_rate_mbps	Unknown
throughput_rx_mbps	708.110
tx_rate_percent	4.094
throughput_rx_percent	4.094
frame_loss_percent	0.000
min_latency_ns	4320.000
max_latency_ns	4935020.000
avg_latency_ns	239286.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:27:39
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	135330
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.38
majflt/s	0.00
VSZ	3365520
RSS	17267
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	135327
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	592179.653
tx_rate_mbps	Unknown
throughput_rx_mbps	2425.568
tx_rate_percent	12.602
throughput_rx_percent	12.602
frame_loss_percent	0.000
min_latency_ns	5240.000
max_latency_ns	2905180.000
avg_latency_ns	131988.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:27:39
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	135330
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.38
majflt/s	0.00
VSZ	3365520
RSS	17267
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	135327
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	598098.653
tx_rate_mbps	Unknown
throughput_rx_mbps	4899.624
tx_rate_percent	24.977
throughput_rx_percent	24.977
frame_loss_percent	0.000
min_latency_ns	5760.000
max_latency_ns	2756480.000
avg_latency_ns	143285.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:27:39
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	135330
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.38
majflt/s	0.00
VSZ	3365520
RSS	17267
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	135327
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	569430.077
tx_rate_mbps	Unknown
throughput_rx_mbps	6915.159
tx_rate_percent	35.031
throughput_rx_percent	35.031
frame_loss_percent	0.000
min_latency_ns	6500.000
max_latency_ns	2127860.000
avg_latency_ns	88973.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:27:39
stream_count	8000
match_type	L4
pre-installed_flows	No

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	135330
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.38
majflt/s	0.00
VSZ	3365520
RSS	17267
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	135327
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.2.7 Test ID: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvp_back2back
- Description: LTD.Throughput.RFC2544.BackToBackFrames
- Deployment: pvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:42:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	142691
%usr	0.22
%system	1.43
%guest	0.00
%CPU	1.64
CPU	•
minflt/s	4.67
majflt/s	0.00
VSZ	3365520
RSS	18522
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	142688
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	142892
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.37
majflt/s	0.00
VSZ	4750825
RSS	325281
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	6.62
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:42:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	142691
%usr	0.22
%system	1.43
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.67
majflt/s	0.00
VSZ	3365520
RSS	18522
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	142688
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	142892
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.37
majflt/s	0.00
VSZ	4750825
RSS	325281
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	6.62
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:42:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	142691
%usr	0.22
%system	1.43
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.67
majflt/s	0.00
VSZ	3365520
RSS	18522
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	142688
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	142892
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.37
majflt/s	0.00
VSZ	4750825
RSS	325281
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	6.62
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:42:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	142691
%usr	0.22
%system	1.43
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.67
majflt/s	0.00
VSZ	3365520
RSS	18522
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	142688
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	142892
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.37
majflt/s	0.00
VSZ	4750825
RSS	325281
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	6.62
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:42:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	142691
%usr	0.22
%system	1.43
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.67
majflt/s	0.00
VSZ	3365520
RSS	18522
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	142688
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	142892
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.37
majflt/s	0.00
VSZ	4750825
RSS	325281
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	6.62
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.2.8 Test ID: PVVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 21c787b5bb7dd4592bc83718756ac670232a8347
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cddf6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvvp_tput
- Description: LTD.Throughput.RFC2544.PacketLossRatio
- Deployment: pvvp
- Traffic type: rfc2544
- Bidirectional : True

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	525434.119
tx_rate_mbps	Unknown
throughput_rx_mbps	269.022
tx_rate_percent	1.773
throughput_rx_percent	1.765
frame_loss_percent	0.471
min_latency_ns	25440.000
max_latency_ns	20491940.000
avg_latency_ns	115229.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	148157
%usr	0.20
%system	1.37
%guest	0.00
%CPU	1.57
CPU	.
minflt/s	5.78
majflt/s	0.00
VSZ	3365644
RSS	17808
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	148154
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148484
%usr	0.00
%system	0.94
%guest	199.21
%CPU	100.17
CPU	.
minflt/s	2.40
majflt/s	0.00
VSZ	4807440
RSS	177040
%MEM	0.27
kB_rd/s	0.00
kB_wr/s	36.68
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148432
%usr	0.00
%system	0.89
%guest	199.27
%CPU	100.15
CPU	.
minflt/s	2.04
majflt/s	0.00
VSZ	4790024
RSS	203917
%MEM	0.31
kB_rd/s	0.00
kB_wr/s	0.92
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	299561.032
tx_rate_mbps	Unknown
throughput_rx_mbps	306.750
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.003
min_latency_ns	23840.000
max_latency_ns	1845660.000
avg_latency_ns	56358.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	148157
%usr	0.20
%system	1.37
%guest	0.00
%CPU	1.57
CPU	.
minflt/s	5.78
majflt/s	0.00
VSZ	3365644
RSS	17808
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	148154
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148484
%usr	0.00
%system	0.94
%guest	199.21
%CPU	100.17
CPU	.
minflt/s	2.40
majflt/s	0.00
VSZ	4807440
RSS	177040
%MEM	0.27
kB_rd/s	0.00
kB_wr/s	36.68
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148432
%usr	0.00
%system	0.89
%guest	199.27
%CPU	100.15
CPU	.
minflt/s	2.04
majflt/s	0.00
VSZ	4790024
RSS	203917
%MEM	0.31
kB_rd/s	0.00
kB_wr/s	0.92
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	192376.091
tx_rate_mbps	Unknown
throughput_rx_mbps	787.972
tx_rate_percent	4.094
throughput_rx_percent	4.094
frame_loss_percent	0.000
min_latency_ns	44680.000
max_latency_ns	1560720.000
avg_latency_ns	127564.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	148157
%usr	0.20
%system	1.37
%guest	0.00
%CPU	1.57
CPU	.
minflt/s	5.78
majflt/s	0.00
VSZ	3365644
RSS	17808
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	148154
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148484
%usr	0.00
%system	0.94
%guest	199.21
%CPU	100.17
CPU	.
minflt/s	2.40
majflt/s	0.00
VSZ	4807440
RSS	177040
%MEM	0.27
kB_rd/s	0.00
kB_wr/s	36.68
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148432
%usr	0.00
%system	0.89
%guest	199.27
%CPU	100.15
CPU	.
minflt/s	2.04
majflt/s	0.00
VSZ	4790024
RSS	203917
%MEM	0.31
kB_rd/s	0.00
kB_wr/s	0.92
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	209157.148
tx_rate_mbps	Unknown
throughput_rx_mbps	1713.415
tx_rate_percent	8.734
throughput_rx_percent	8.734
frame_loss_percent	0.000
min_latency_ns	52900.000
max_latency_ns	1717120.000
avg_latency_ns	137671.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	148157
%usr	0.20
%system	1.37
%guest	0.00
%CPU	1.57
CPU	.
minflt/s	5.78
majflt/s	0.00
VSZ	3365644
RSS	17808
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	148154
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148484
%usr	0.00
%system	0.94
%guest	199.21
%CPU	100.17
CPU	.
minflt/s	2.40
majflt/s	0.00
VSZ	4807440
RSS	177040
%MEM	0.27
kB_rd/s	0.00
kB_wr/s	36.68
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148432
%usr	0.00
%system	0.89
%guest	199.27
%CPU	100.15
CPU	.
minflt/s	2.04
majflt/s	0.00
VSZ	4790024
RSS	203917
%MEM	0.31
kB_rd/s	0.00
kB_wr/s	0.92
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	267698.553
tx_rate_mbps	Unknown
throughput_rx_mbps	3250.931
tx_rate_percent	16.469
throughput_rx_percent	16.469
frame_loss_percent	0.000
min_latency_ns	65760.000
max_latency_ns	2359720.000
avg_latency_ns	162685.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:51
guest_loopback_app	testpmd testpmd testpmd testpmd testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	148157
%usr	0.20
%system	1.37
%guest	0.00
%CPU	1.57
CPU	.
minflt/s	5.78
majflt/s	0.00
VSZ	3365644
RSS	17808
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	148154
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3208
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148484
%usr	0.00
%system	0.94
%guest	199.21
%CPU	100.17
CPU	.
minflt/s	2.40
majflt/s	0.00
VSZ	4807440
RSS	177040
%MEM	0.27
kB_rd/s	0.00
kB_wr/s	36.68
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	148432
%usr	0.00
%system	0.89
%guest	199.27
%CPU	100.15
CPU	.
minflt/s	2.04
majflt/s	0.00
VSZ	4790024
RSS	203917
%MEM	0.31
kB_rd/s	0.00
kB_wr/s	0.92
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

pidstat is used to collect the process statistics, as such some values such as %CPU and %USER maybe > 100% as the values are summed across multiple cores. For more info on pidstat please see: <http://linux.die.net/man/1/pidstat>.

Known issues: Some reported metrics have the value “unkown”. These values are marked unknown as they are not values retrieved from the external tester (traffic generator). They were incorrectly derived in a way that made assumptions about packet sizes, as such they have been deprecated from vsperf and marked as unknown. They will be resolved in the next release.

4.3 Rationale for decisions

The tests conducted do not have pass/fail/conditional-pass criteria. The test is simply conducted and the results are reported.

4.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-08-18_21-07-43/vswitchperf_logs_2016-08-18_21-07-43.tar.gz.

4.5 General

4.5.1 Glossary

- NFV - Network Function Virtualization
- Mbps - 1,000,000bps

4.5.2 Document change procedures and history

Document ID	Author	Date Modified
<i>OPNFV_vswitchperf_LTR_ver_1.0_Jan_15_CN_DRAFT</i>	Christopher Nolan	23/01/2015
<i>OPNFV_vswitchperf_LTR_ver_1.1_Jan_15_CN_DRAFT</i>	Christopher Nolan	28/01/2015