



VSPERF Results

Release draft (99e50b9)

OPNFV

August 16, 2016

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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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	25970
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:26:45

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	156685
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	24.30
majflt/s	0.00
VSZ	4768464
RSS	57758
%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	156650
%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	253377242
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:26:45

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	156685
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	24.30
majflt/s	0.00
VSZ	4768464
RSS	57758
%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	156650
%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	00:26:45

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	156685
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	24.30
majflt/s	0.00
VSZ	4768464
RSS	57758
%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	156650
%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	00:26:45

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	156685
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	24.30
majflt/s	0.00
VSZ	4768464
RSS	57758
%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	156650
%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	00:26:45

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	156685
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	24.30
majflt/s	0.00
VSZ	4768464
RSS	57758
%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	156650
%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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	4901418.879
tx_rate_mbps	Unknown
throughput_rx_mbps	2509.526
tx_rate_percent	16.469
throughput_rx_percent	16.469
frame_loss_percent	0.000
min_latency_ns	6160.000
max_latency_ns	81500.000
avg_latency_ns	8725.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:18:42
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	166519
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.26
majflt/s	0.00
VSZ	19452624
RSS	59862
%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	166484
%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	166662
%usr	0.00
%system	0.19
%guest	200.23
%CPU	100.22
CPU	.
minflt/s	2.29
majflt/s	0.00
VSZ	4742788
RSS	82319
%MEM	0.13
kB_rd/s	0.00
kB_wr/s	141.67
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	6439957.642
tx_rate_mbps	Unknown
throughput_rx_mbps	6594.517
tx_rate_percent	38.125
throughput_rx_percent	38.125
frame_loss_percent	0.000
min_latency_ns	8300.000
max_latency_ns	190200.000
avg_latency_ns	55846.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:18:42
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	166519
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.26
majflt/s	0.00
VSZ	19452624
RSS	59862
%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	166484
%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	166662
%usr	0.00
%system	0.19
%guest	200.23
%CPU	100.22
CPU	.
minflt/s	2.29
majflt/s	0.00
VSZ	4742788
RSS	82319
%MEM	0.13
kB_rd/s	0.00
kB_wr/s	141.67
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	4699053.544
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.323
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	35800.000
max_latency_ns	165520.000
avg_latency_ns	149778.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:18:42
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	166519
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.26
majflt/s	0.00
VSZ	19452624
RSS	59862
%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	166484
%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	166662
%usr	0.00
%system	0.19
%guest	200.23
%CPU	100.22
CPU	.
minflt/s	2.29
majflt/s	0.00
VSZ	4742788
RSS	82319
%MEM	0.13
kB_rd/s	0.00
kB_wr/s	141.67
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	2394593.420
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.509
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	56000.000
max_latency_ns	111760.000
avg_latency_ns	97895.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:18:42
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	166519
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.26
majflt/s	0.00
VSZ	19452624
RSS	59862
%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	166484
%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	166662
%usr	0.00
%system	0.19
%guest	200.23
%CPU	100.22
CPU	.
minflt/s	2.29
majflt/s	0.00
VSZ	4742788
RSS	82319
%MEM	0.13
kB_rd/s	0.00
kB_wr/s	141.67
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	1625468.033
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.684
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	60280.000
max_latency_ns	101280.000
avg_latency_ns	85945.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:18:42
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	166519
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.26
majflt/s	0.00
VSZ	19452624
RSS	59862
%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	166484
%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	166662
%usr	0.00
%system	0.19
%guest	200.23
%CPU	100.22
CPU	.
minflt/s	2.29
majflt/s	0.00
VSZ	4742788
RSS	82319
%MEM	0.13
kB_rd/s	0.00
kB_wr/s	141.67
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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	11543284.191
tx_rate_mbps	Unknown
throughput_rx_mbps	6279.547
tx_rate_percent	77.570
throughput_rx_percent	81.265
frame_loss_percent	0.000
min_latency_ns	5660.000
max_latency_ns	583940.000
avg_latency_ns	6990.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:03

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	160192
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	18.73
majflt/s	0.00
VSZ	4768460
RSS	57806
%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	160185
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	8184667.320
tx_rate_mbps	Unknown
throughput_rx_mbps	8643.009
tx_rate_percent	96.906
throughput_rx_percent	99.526
frame_loss_percent	0.000
min_latency_ns	5240.000
max_latency_ns	247480.000
avg_latency_ns	8460.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:03

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	160192
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	18.73
majflt/s	0.00
VSZ	4768460
RSS	57806
%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	160185
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	2331451.586
tx_rate_mbps	Unknown
throughput_rx_mbps	9624.232
tx_rate_percent	99.227
throughput_rx_percent	99.973
frame_loss_percent	0.000
min_latency_ns	5360.000
max_latency_ns	212240.000
avg_latency_ns	20273.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:03

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	160192
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	18.73
majflt/s	0.00
VSZ	4768460
RSS	57806
%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	160185
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	1188058.511
tx_rate_mbps	Unknown
throughput_rx_mbps	9770.593
tx_rate_percent	99.227
throughput_rx_percent	99.607
frame_loss_percent	0.000
min_latency_ns	5760.000
max_latency_ns	47500.000
avg_latency_ns	7890.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:03

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	160192
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	18.73
majflt/s	0.00
VSZ	4768460
RSS	57806
%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	160185
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	806458.209
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	209060.000
avg_latency_ns	8444.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:03

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	160192
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	18.73
majflt/s	0.00
VSZ	4768460
RSS	57806
%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	160185
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	5534
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:47:38
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	179180
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.25
majflt/s	0.00
VSZ	34136784
RSS	59967
%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	179173
%usr	0.00
%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	179488
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.17
CPU	.
minflt/s	0.69
majflt/s	0.00
VSZ	4735580
RSS	256620
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	56.05
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	179334
%usr	0.00
%system	0.09
%guest	200.02
%CPU	100.16
CPU	.
minflt/s	0.17
majflt/s	0.00
VSZ	4803148
RSS	278070
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	0.33
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	00:47:38
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	179180
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	14.25
majflt/s	0.00
VSZ	34136784
RSS	59967
%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	179173
%usr	0.00
%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	179488
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.17
CPU	•
minflt/s	0.69
majflt/s	0.00
VSZ	4735580
RSS	256620
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	56.05
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	179334
%usr	0.00
%system	0.09
%guest	200.02
%CPU	100.16
CPU	•
minflt/s	0.17
majflt/s	0.00
VSZ	4803148
RSS	278070
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	0.33
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	1075
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:47:38
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	179180
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.25
majflt/s	0.00
VSZ	34136784
RSS	59967
%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	179173
%usr	0.00
%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	179488
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.17
CPU	.
minflt/s	0.69
majflt/s	0.00
VSZ	4735580
RSS	256620
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	56.05
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	179334
%usr	0.00
%system	0.09
%guest	200.02
%CPU	100.16
CPU	.
minflt/s	0.17
majflt/s	0.00
VSZ	4803148
RSS	278070
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	0.33
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	4384
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:47:38
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	179180
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.25
majflt/s	0.00
VSZ	34136784
RSS	59967
%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	179173
%usr	0.00
%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	179488
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.17
CPU	•
minflt/s	0.69
majflt/s	0.00
VSZ	4735580
RSS	256620
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	56.05
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	179334
%usr	0.00
%system	0.09
%guest	200.02
%CPU	100.16
CPU	•
minflt/s	0.17
majflt/s	0.00
VSZ	4803148
RSS	278070
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	0.33
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	18286735
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:47:38
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	179180
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.25
majflt/s	0.00
VSZ	34136784
RSS	59967
%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	179173
%usr	0.00
%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	179488
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.17
CPU	•
minflt/s	0.69
majflt/s	0.00
VSZ	4735580
RSS	256620
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	56.05
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	179334
%usr	0.00
%system	0.09
%guest	200.02
%CPU	100.16
CPU	•
minflt/s	0.17
majflt/s	0.00
VSZ	4803148
RSS	278070
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	0.33
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_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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	23086567.859
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	6020.000
max_latency_ns	157220.000
avg_latency_ns	8075.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:17:30

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	154198
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	25.05
majflt/s	0.00
VSZ	4768464
RSS	57751
%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	154175
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	16369331.754
tx_rate_mbps	Unknown
throughput_rx_mbps	16762.196
tx_rate_percent	96.906
throughput_rx_percent	96.906
frame_loss_percent	0.000
min_latency_ns	6420.000
max_latency_ns	92660.000
avg_latency_ns	9786.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:17:30

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	154198
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	25.05
majflt/s	0.00
VSZ	4768464
RSS	57751
%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	154175
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	4699184.568
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.860
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	13740.000
max_latency_ns	54820.000
avg_latency_ns	43537.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:17:30

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	154198
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	25.05
majflt/s	0.00
VSZ	4768464
RSS	57751
%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	154175
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	2394523.415
tx_rate_mbps	Unknown
throughput_rx_mbps	19615.936
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	14020.000
max_latency_ns	245940.000
avg_latency_ns	75941.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:17:30

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	154198
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	25.05
majflt/s	0.00
VSZ	4768464
RSS	57751
%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	154175
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	1625469.756
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.705
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	47240.000
max_latency_ns	80840.000
avg_latency_ns	69609.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:17:30

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	154198
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	25.05
majflt/s	0.00
VSZ	4768464
RSS	57751
%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	154175
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	22626031.719
tx_rate_mbps	Unknown
throughput_rx_mbps	11584.528
tx_rate_percent	76.023
throughput_rx_percent	76.023
frame_loss_percent	0.000
min_latency_ns	4620.000
max_latency_ns	478100.000
avg_latency_ns	8586.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:17:52
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	163895
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.90
majflt/s	0.00
VSZ	4768464
RSS	59803
%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	163888
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	16369330.679
tx_rate_mbps	Unknown
throughput_rx_mbps	16762.195
tx_rate_percent	96.906
throughput_rx_percent	96.906
frame_loss_percent	0.000
min_latency_ns	4660.000
max_latency_ns	256600.000
avg_latency_ns	10231.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:17:52
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	163895
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.90
majflt/s	0.00
VSZ	4768464
RSS	59803
%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	163888
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	4699155.872
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.742
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	13700.000
max_latency_ns	73080.000
avg_latency_ns	60879.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:17:52
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	163895
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.90
majflt/s	0.00
VSZ	4768464
RSS	59803
%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	163888
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	2394606.119
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.613
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	36720.000
max_latency_ns	76420.000
avg_latency_ns	64181.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:17:52
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	163895
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.90
majflt/s	0.00
VSZ	4768464
RSS	59803
%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	163888
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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	1625468.857
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.694
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	30480.000
max_latency_ns	66180.000
avg_latency_ns	54580.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:17:52
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	163895
%usr	200.24
%system	0.09
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	20.90
majflt/s	0.00
VSZ	4768464
RSS	59803
%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	163888
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	9792
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:46:08
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	169225
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	18.07
majflt/s	0.00
VSZ	19452620
RSS	57888
%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	169218
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47757
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	169367
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.41
majflt/s	0.00
VSZ	4799040
RSS	339633
%MEM	0.52
kB_rd/s	0.00
kB_wr/s	21.79
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	7249
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:46:08
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	169225
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	18.07
majflt/s	0.00
VSZ	19452620
RSS	57888
%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	169218
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47757
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	169367
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.41
majflt/s	0.00
VSZ	4799040
RSS	339633
%MEM	0.52
kB_rd/s	0.00
kB_wr/s	21.79
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	70488689
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:46:08
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	169225
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	18.07
majflt/s	0.00
VSZ	19452620
RSS	57888
%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	169218
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47757
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	169367
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.41
majflt/s	0.00
VSZ	4799040
RSS	339633
%MEM	0.52
kB_rd/s	0.00
kB_wr/s	21.79
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	35919427
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:46:08
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	169225
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	18.07
majflt/s	0.00
VSZ	19452620
RSS	57888
%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	169218
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47757
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	169367
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.41
majflt/s	0.00
VSZ	4799040
RSS	339633
%MEM	0.52
kB_rd/s	0.00
kB_wr/s	21.79
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	00:46:08
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	169225
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	18.07
majflt/s	0.00
VSZ	19452620
RSS	57888
%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	169218
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47757
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	169367
%usr	0.00
%system	0.01
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.41
majflt/s	0.00
VSZ	4799040
RSS	339633
%MEM	0.52
kB_rd/s	0.00
kB_wr/s	21.79
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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	988188.613
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	5360.000
max_latency_ns	68200.000
avg_latency_ns	6407.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:58
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	175156
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	6.85
majflt/s	0.00
VSZ	34136784
RSS	59974
%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	175149
%usr	0.01
%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	175437
%usr	0.00
%system	0.02
%guest	200.10
%CPU	100.19
CPU	.
minflt/s	1.15
majflt/s	0.00
VSZ	4785788
RSS	259662
%MEM	0.40
kB_rd/s	0.00
kB_wr/s	92.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175413
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4761228
RSS	247975
%MEM	0.38
kB_rd/s	0.00
kB_wr/s	0.54
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	2259292.568
tx_rate_mbps	Unknown
throughput_rx_mbps	2313.516
tx_rate_percent	13.375
throughput_rx_percent	13.375
frame_loss_percent	0.000
min_latency_ns	8600.000
max_latency_ns	74340.000
avg_latency_ns	12672.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:58
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	175156
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	6.85
majflt/s	0.00
VSZ	34136784
RSS	59974
%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	175149
%usr	0.01
%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	175437
%usr	0.00
%system	0.02
%guest	200.10
%CPU	100.19
CPU	.
minflt/s	1.15
majflt/s	0.00
VSZ	4785788
RSS	259662
%MEM	0.40
kB_rd/s	0.00
kB_wr/s	92.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175413
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4761228
RSS	247975
%MEM	0.38
kB_rd/s	0.00
kB_wr/s	0.54
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	2373120.567
tx_rate_mbps	Unknown
throughput_rx_mbps	9720.302
tx_rate_percent	50.500
throughput_rx_percent	50.500
frame_loss_percent	0.000
min_latency_ns	12740.000
max_latency_ns	94920.000
avg_latency_ns	18513.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:58
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	175156
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	6.85
majflt/s	0.00
VSZ	34136784
RSS	59974
%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	175149
%usr	0.01
%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	175437
%usr	0.00
%system	0.02
%guest	200.10
%CPU	100.19
CPU	.
minflt/s	1.15
majflt/s	0.00
VSZ	4785788
RSS	259662
%MEM	0.40
kB_rd/s	0.00
kB_wr/s	92.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175413
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4761228
RSS	247975
%MEM	0.38
kB_rd/s	0.00
kB_wr/s	0.54
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	2098289.618
tx_rate_mbps	Unknown
throughput_rx_mbps	17189.189
tx_rate_percent	87.625
throughput_rx_percent	87.625
frame_loss_percent	0.000
min_latency_ns	15140.000
max_latency_ns	143000.000
avg_latency_ns	35134.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:58
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	175156
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	6.85
majflt/s	0.00
VSZ	34136784
RSS	59974
%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	175149
%usr	0.01
%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	175437
%usr	0.00
%system	0.02
%guest	200.10
%CPU	100.19
CPU	.
minflt/s	1.15
majflt/s	0.00
VSZ	4785788
RSS	259662
%MEM	0.40
kB_rd/s	0.00
kB_wr/s	92.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175413
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4761228
RSS	247975
%MEM	0.38
kB_rd/s	0.00
kB_wr/s	0.54
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	1424338.844
tx_rate_mbps	Unknown
throughput_rx_mbps	17297.171
tx_rate_percent	87.625
throughput_rx_percent	87.625
frame_loss_percent	0.000
min_latency_ns	15480.000
max_latency_ns	186960.000
avg_latency_ns	20056.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:58
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	175156
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	6.85
majflt/s	0.00
VSZ	34136784
RSS	59974
%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	175149
%usr	0.01
%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	175437
%usr	0.00
%system	0.02
%guest	200.10
%CPU	100.19
CPU	.
minflt/s	1.15
majflt/s	0.00
VSZ	4785788
RSS	259662
%MEM	0.40
kB_rd/s	0.00
kB_wr/s	92.13
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175413
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4761228
RSS	247975
%MEM	0.38
kB_rd/s	0.00
kB_wr/s	0.54
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-pod3/2016-08-16_21-08-00/vswitchperf_logs_2016-08-16_21-08-00.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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	00:42:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189028
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	.
minflt/s	3.83
majflt/s	0.00
VSZ	3365520
RSS	17597
%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	189025
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
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
b2b_frames	3382
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:42:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189028
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	•
minflt/s	3.83
majflt/s	0.00
VSZ	3365520
RSS	17597
%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	189025
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
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
b2b_frames	1344
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:42:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	189028
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	.
minflt/s	3.83
majflt/s	0.00
VSZ	3365520
RSS	17597
%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	189025
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
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
b2b_frames	1096
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:42:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189028
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	.
minflt/s	3.83
majflt/s	0.00
VSZ	3365520
RSS	17597
%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	189025
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
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
b2b_frames	1116
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:42:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189028
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	•
minflt/s	3.83
majflt/s	0.00
VSZ	3365520
RSS	17597
%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	189025
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
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.

4.2.2 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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	526164.686
tx_rate_mbps	Unknown
throughput_rx_mbps	269.396
tx_rate_percent	1.773
throughput_rx_percent	1.768
frame_loss_percent	0.312
min_latency_ns	17380.000
max_latency_ns	26563120.000
avg_latency_ns	70148.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:13
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	5688
%usr	0.20
%system	1.44
%guest	0.00
%CPU	1.63
CPU	.
minflt/s	2.55
majflt/s	0.00
VSZ	3365520
RSS	18032
%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	5685
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3196
%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	5894
%usr	0.00
%system	0.68
%guest	199.44
%CPU	100.18
CPU	.
minflt/s	0.63
majflt/s	0.00
VSZ	4700900
RSS	274519
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	100.41
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	299559.648
tx_rate_mbps	Unknown
throughput_rx_mbps	306.749
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.003
min_latency_ns	12760.000
max_latency_ns	1800680.000
avg_latency_ns	47836.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:13
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	5688
%usr	0.20
%system	1.44
%guest	0.00
%CPU	1.63
CPU	.
minflt/s	2.55
majflt/s	0.00
VSZ	3365520
RSS	18032
%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	5685
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3196
%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	5894
%usr	0.00
%system	0.68
%guest	199.44
%CPU	100.18
CPU	.
minflt/s	0.63
majflt/s	0.00
VSZ	4700900
RSS	274519
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	100.41
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	156029.880
tx_rate_mbps	Unknown
throughput_rx_mbps	639.098
tx_rate_percent	3.320
throughput_rx_percent	3.320
frame_loss_percent	0.000
min_latency_ns	23700.000
max_latency_ns	1093260.000
avg_latency_ns	94962.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:13
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	5688
%usr	0.20
%system	1.44
%guest	0.00
%CPU	1.63
CPU	.
minflt/s	2.55
majflt/s	0.00
VSZ	3365520
RSS	18032
%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	5685
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3196
%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	5894
%usr	0.00
%system	0.68
%guest	199.44
%CPU	100.18
CPU	.
minflt/s	0.63
majflt/s	0.00
VSZ	4700900
RSS	274519
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	100.41
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	153593.541
tx_rate_mbps	Unknown
throughput_rx_mbps	1258.238
tx_rate_percent	6.414
throughput_rx_percent	6.414
frame_loss_percent	0.000
min_latency_ns	28780.000
max_latency_ns	2101160.000
avg_latency_ns	98032.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:13
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	5688
%usr	0.20
%system	1.44
%guest	0.00
%CPU	1.63
CPU	.
minflt/s	2.55
majflt/s	0.00
VSZ	3365520
RSS	18032
%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	5685
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3196
%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	5894
%usr	0.00
%system	0.68
%guest	199.44
%CPU	100.18
CPU	.
minflt/s	0.63
majflt/s	0.00
VSZ	4700900
RSS	274519
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	100.41
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	255125.368
tx_rate_mbps	Unknown
throughput_rx_mbps	3098.242
tx_rate_percent	15.695
throughput_rx_percent	15.695
frame_loss_percent	0.000
min_latency_ns	31180.000
max_latency_ns	753360.000
avg_latency_ns	112391.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:13
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	5688
%usr	0.20
%system	1.44
%guest	0.00
%CPU	1.63
CPU	.
minflt/s	2.55
majflt/s	0.00
VSZ	3365520
RSS	18032
%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	5685
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3196
%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	5894
%usr	0.00
%system	0.68
%guest	199.44
%CPU	100.18
CPU	.
minflt/s	0.63
majflt/s	0.00
VSZ	4700900
RSS	274519
%MEM	0.42
kB_rd/s	0.00
kB_wr/s	100.41
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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	724284.294
tx_rate_mbps	Unknown
throughput_rx_mbps	394.011
tx_rate_percent	4.867
throughput_rx_percent	5.099
frame_loss_percent	0.000
min_latency_ns	4180.000
max_latency_ns	6053500.000
avg_latency_ns	556072.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:27:31

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	194198
%usr	0.22
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.01
majflt/s	0.00
VSZ	3365520
RSS	17664
%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	194195
%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	541728.776
tx_rate_mbps	Unknown
throughput_rx_mbps	572.066
tx_rate_percent	6.414
throughput_rx_percent	6.587
frame_loss_percent	0.000
min_latency_ns	4760.000
max_latency_ns	723620.000
avg_latency_ns	37366.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:27:31

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	194198
%usr	0.22
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.01
majflt/s	0.00
VSZ	3365520
RSS	17664
%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	194195
%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	586855.864
tx_rate_mbps	Unknown
throughput_rx_mbps	2422.541
tx_rate_percent	24.977
throughput_rx_percent	25.164
frame_loss_percent	0.000
min_latency_ns	5420.000
max_latency_ns	1683660.000
avg_latency_ns	128678.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:27:31

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	194198
%usr	0.22
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.01
majflt/s	0.00
VSZ	3365520
RSS	17664
%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	194195
%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	576863.757
tx_rate_mbps	Unknown
throughput_rx_mbps	4744.128
tx_rate_percent	48.180
throughput_rx_percent	48.364
frame_loss_percent	0.000
min_latency_ns	5860.000
max_latency_ns	1565000.000
avg_latency_ns	103968.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:27:31

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	194198
%usr	0.22
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.01
majflt/s	0.00
VSZ	3365520
RSS	17664
%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	194195
%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	561301.301
tx_rate_mbps	Unknown
throughput_rx_mbps	6834.405
tx_rate_percent	69.063
throughput_rx_percent	69.242
frame_loss_percent	0.000
min_latency_ns	6440.000
max_latency_ns	1015040.000
avg_latency_ns	73513.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:27:31

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	194198
%usr	0.22
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.01
majflt/s	0.00
VSZ	3365520
RSS	17664
%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	194195
%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.

4.2.4 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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbc6b0165f84a92d
- 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	00:43:31
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	19014
%usr	0.20
%system	1.45
%guest	0.00
%CPU	1.65
CPU	•
minflt/s	4.81
majflt/s	0.00
VSZ	3365644
RSS	18927
%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	19011
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45872
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	19333
%usr	0.00
%system	0.06
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.35
majflt/s	0.00
VSZ	4762344
RSS	271324
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	23.63
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	19281
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4796140
RSS	295574
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	3.58
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	00:43:31
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	19014
%usr	0.20
%system	1.45
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.81
majflt/s	0.00
VSZ	3365644
RSS	18927
%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	19011
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45872
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	19333
%usr	0.00
%system	0.06
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.35
majflt/s	0.00
VSZ	4762344
RSS	271324
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	23.63
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	19281
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4796140
RSS	295574
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	3.58
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	00:43:31
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	19014
%usr	0.20
%system	1.45
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.81
majflt/s	0.00
VSZ	3365644
RSS	18927
%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	19011
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45872
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	19333
%usr	0.00
%system	0.06
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.35
majflt/s	0.00
VSZ	4762344
RSS	271324
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	23.63
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	19281
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4796140
RSS	295574
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	3.58
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	00:43:31
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	19014
%usr	0.20
%system	1.45
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.81
majflt/s	0.00
VSZ	3365644
RSS	18927
%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	19011
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45872
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	19333
%usr	0.00
%system	0.06
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.35
majflt/s	0.00
VSZ	4762344
RSS	271324
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	23.63
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	19281
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4796140
RSS	295574
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	3.58
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	00:43:31
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	19014
%usr	0.20
%system	1.45
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.81
majflt/s	0.00
VSZ	3365644
RSS	18927
%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	19011
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45872
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	19333
%usr	0.00
%system	0.06
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.35
majflt/s	0.00
VSZ	4762344
RSS	271324
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	23.63
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	19281
%usr	0.00
%system	0.02
%guest	200.08
%CPU	100.15
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4796140
RSS	295574
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	3.58
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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	758000.098
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	4080.000
max_latency_ns	6484800.000
avg_latency_ns	626201.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:27:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	185520
%usr	0.22
%system	1.49
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	4.72
majflt/s	0.00
VSZ	3365516
RSS	16724
%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	185517
%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	691513.226
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	4380.000
max_latency_ns	2690920.000
avg_latency_ns	215655.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:27:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	185520
%usr	0.22
%system	1.49
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	4.72
majflt/s	0.00
VSZ	3365516
RSS	16724
%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	185517
%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	628533.742
tx_rate_mbps	Unknown
throughput_rx_mbps	2574.474
tx_rate_percent	13.375
throughput_rx_percent	13.375
frame_loss_percent	0.000
min_latency_ns	5200.000
max_latency_ns	3669800.000
avg_latency_ns	240305.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:27:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	185520
%usr	0.22
%system	1.49
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	4.72
majflt/s	0.00
VSZ	3365516
RSS	16724
%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	185517
%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	561055.640
tx_rate_mbps	Unknown
throughput_rx_mbps	4596.168
tx_rate_percent	23.430
throughput_rx_percent	23.430
frame_loss_percent	0.000
min_latency_ns	5920.000
max_latency_ns	1389200.000
avg_latency_ns	57550.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:27:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	185520
%usr	0.22
%system	1.49
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	4.72
majflt/s	0.00
VSZ	3365516
RSS	16724
%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	185517
%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	506569.307
tx_rate_mbps	Unknown
throughput_rx_mbps	6151.778
tx_rate_percent	31.164
throughput_rx_percent	31.164
frame_loss_percent	0.000
min_latency_ns	6680.000
max_latency_ns	532900.000
avg_latency_ns	46259.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:27:44

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	185520
%usr	0.22
%system	1.49
%guest	0.00
%CPU	1.71
CPU	.
minflt/s	4.72
majflt/s	0.00
VSZ	3365516
RSS	16724
%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	185517
%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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	758000.446
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	7076520.000
avg_latency_ns	807274.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:27:42
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	1990
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	17220
%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	1986
%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	691513.473
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	5109400.000
avg_latency_ns	335882.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:27:42
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	1990
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	17220
%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	1986
%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	592179.560
tx_rate_mbps	Unknown
throughput_rx_mbps	2425.567
tx_rate_percent	12.602
throughput_rx_percent	12.602
frame_loss_percent	0.000
min_latency_ns	5280.000
max_latency_ns	2537860.000
avg_latency_ns	154241.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:27:42
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	1990
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	17220
%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	1986
%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	598099.092
tx_rate_mbps	Unknown
throughput_rx_mbps	4899.628
tx_rate_percent	24.977
throughput_rx_percent	24.977
frame_loss_percent	0.000
min_latency_ns	5820.000
max_latency_ns	2458260.000
avg_latency_ns	153559.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:27:42
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	1990
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	17220
%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	1986
%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	556857.483
tx_rate_mbps	Unknown
throughput_rx_mbps	6762.477
tx_rate_percent	34.258
throughput_rx_percent	34.258
frame_loss_percent	0.000
min_latency_ns	6540.000
max_latency_ns	1110160.000
avg_latency_ns	68698.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:27:42
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	1990
%usr	0.22
%system	1.51
%guest	0.00
%CPU	1.73
CPU	.
minflt/s	4.51
majflt/s	0.00
VSZ	3365524
RSS	17220
%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	1986
%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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	00:42:55
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	9364
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.64
CPU	•
minflt/s	4.74
majflt/s	0.00
VSZ	3365520
RSS	18552
%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	9361
%usr	0.00
%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	9561
%usr	0.00
%system	0.16
%guest	200.07
%CPU	100.18
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	4746988
RSS	186758
%MEM	0.28
kB_rd/s	0.00
kB_wr/s	61.42
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	00:42:55
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	9364
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.74
majflt/s	0.00
VSZ	3365520
RSS	18552
%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	9361
%usr	0.00
%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	9561
%usr	0.00
%system	0.16
%guest	200.07
%CPU	100.18
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	4746988
RSS	186758
%MEM	0.28
kB_rd/s	0.00
kB_wr/s	61.42
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	00:42:55
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	9364
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.74
majflt/s	0.00
VSZ	3365520
RSS	18552
%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	9361
%usr	0.00
%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	9561
%usr	0.00
%system	0.16
%guest	200.07
%CPU	100.18
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	4746988
RSS	186758
%MEM	0.28
kB_rd/s	0.00
kB_wr/s	61.42
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	00:42:55
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	9364
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.74
majflt/s	0.00
VSZ	3365520
RSS	18552
%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	9361
%usr	0.00
%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	9561
%usr	0.00
%system	0.16
%guest	200.07
%CPU	100.18
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	4746988
RSS	186758
%MEM	0.28
kB_rd/s	0.00
kB_wr/s	61.42
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	00:42:55
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	9364
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.64
CPU	.
minflt/s	4.74
majflt/s	0.00
VSZ	3365520
RSS	18552
%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	9361
%usr	0.00
%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	9561
%usr	0.00
%system	0.16
%guest	200.07
%CPU	100.18
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	4746988
RSS	186758
%MEM	0.28
kB_rd/s	0.00
kB_wr/s	61.42
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: 99e50b9aa86d3bd92d23a32ff34b5f80b9b3e4da
- 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	525274.294
tx_rate_mbps	Unknown
throughput_rx_mbps	268.940
tx_rate_percent	1.773
throughput_rx_percent	1.765
frame_loss_percent	0.485
min_latency_ns	27540.000
max_latency_ns	29544520.000
avg_latency_ns	121867.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:52
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	14971
%usr	0.21
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	5.00
majflt/s	0.00
VSZ	3365648
RSS	20501
%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	14968
%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	15267
%usr	0.00
%system	0.85
%guest	199.32
%CPU	100.19
CPU	.
minflt/s	2.07
majflt/s	0.00
VSZ	4708104
RSS	198710
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	92.12
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	15242
%usr	0.00
%system	0.90
%guest	199.24
%CPU	100.16
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4778776
RSS	312375
%MEM	0.48
kB_rd/s	0.00
kB_wr/s	6.27
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	299543.065
tx_rate_mbps	Unknown
throughput_rx_mbps	306.732
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.009
min_latency_ns	23700.000
max_latency_ns	4033800.000
avg_latency_ns	61646.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:52
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	14971
%usr	0.21
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	5.00
majflt/s	0.00
VSZ	3365648
RSS	20501
%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	14968
%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	15267
%usr	0.00
%system	0.85
%guest	199.32
%CPU	100.19
CPU	.
minflt/s	2.07
majflt/s	0.00
VSZ	4708104
RSS	198710
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	92.12
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	15242
%usr	0.00
%system	0.90
%guest	199.24
%CPU	100.16
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4778776
RSS	312375
%MEM	0.48
kB_rd/s	0.00
kB_wr/s	6.27
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	228722.073
tx_rate_mbps	Unknown
throughput_rx_mbps	936.846
tx_rate_percent	4.867
throughput_rx_percent	4.867
frame_loss_percent	0.000
min_latency_ns	51840.000
max_latency_ns	416520.000
avg_latency_ns	138129.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:52
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	14971
%usr	0.21
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	5.00
majflt/s	0.00
VSZ	3365648
RSS	20501
%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	14968
%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	15267
%usr	0.00
%system	0.85
%guest	199.32
%CPU	100.19
CPU	.
minflt/s	2.07
majflt/s	0.00
VSZ	4708104
RSS	198710
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	92.12
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	15242
%usr	0.00
%system	0.90
%guest	199.24
%CPU	100.16
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4778776
RSS	312375
%MEM	0.48
kB_rd/s	0.00
kB_wr/s	6.27
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	79509.484
tx_rate_mbps	Unknown
throughput_rx_mbps	651.342
tx_rate_percent	3.320
throughput_rx_percent	3.320
frame_loss_percent	0.000
min_latency_ns	40520.000
max_latency_ns	3271820.000
avg_latency_ns	107303.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:52
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	14971
%usr	0.21
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	5.00
majflt/s	0.00
VSZ	3365648
RSS	20501
%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	14968
%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	15267
%usr	0.00
%system	0.85
%guest	199.32
%CPU	100.19
CPU	.
minflt/s	2.07
majflt/s	0.00
VSZ	4708104
RSS	198710
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	92.12
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	15242
%usr	0.00
%system	0.90
%guest	199.24
%CPU	100.16
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4778776
RSS	312375
%MEM	0.48
kB_rd/s	0.00
kB_wr/s	6.27
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	242554.666
tx_rate_mbps	Unknown
throughput_rx_mbps	2945.584
tx_rate_percent	14.922
throughput_rx_percent	14.922
frame_loss_percent	0.000
min_latency_ns	62140.000
max_latency_ns	1819940.000
avg_latency_ns	150396.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:52
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	14971
%usr	0.21
%system	1.38
%guest	0.00
%CPU	1.58
CPU	.
minflt/s	5.00
majflt/s	0.00
VSZ	3365648
RSS	20501
%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	14968
%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	15267
%usr	0.00
%system	0.85
%guest	199.32
%CPU	100.19
CPU	.
minflt/s	2.07
majflt/s	0.00
VSZ	4708104
RSS	198710
%MEM	0.30
kB_rd/s	0.00
kB_wr/s	92.12
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	15242
%usr	0.00
%system	0.90
%guest	199.24
%CPU	100.16
CPU	.
minflt/s	1.51
majflt/s	0.00
VSZ	4778776
RSS	312375
%MEM	0.48
kB_rd/s	0.00
kB_wr/s	6.27
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-pod3/2016-08-16_21-08-00/vswitchperf_logs_2016-08-16_21-08-00.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