



VSPERF Results

Release draft (174015d)

OPNFV

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OPNFV BRAHMAPUTRA SCENARIOS

Available Tests and aspects of scenarios:

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

Supported deployment scenarios:

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

Loopback applications in the Guest can be:

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

Supported traffic generators:

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

OPNFV BRAHMAPUTRA RESULTS

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

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

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

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

PERFORMANCE REPORT FOR OPEN VSWITCH WITH DPDK SUPPORT

3.1 Introduction

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

This document is currently in draft form.

3.1.1 Document identifier

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

3.1.2 Scope

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

3.1.3 References

OPNFV_vswitchperf_LTD_Brahmaputra_REVIEWED

3.2 Details of the Level Test Report

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

3.2.1 Test ID: PHY2PHY_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	23316610.822
tx_rate_mbps	Unknown
throughput_rx_mbps	11938.105
tx_rate_percent	78.344
throughput_rx_percent	78.344
frame_loss_percent	0.000
min_latency_ns	6300.000
max_latency_ns	413040.000
avg_latency_ns	7937.000
type	rfc2544
packet_size	64
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	51475
%usr	200.03
%system	0.04
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	20.47
majflt/s	0.00
VSZ	2668616
RSS	20063
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	51472
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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	15716127.119
tx_rate_mbps	Unknown
throughput_rx_mbps	16093.314
tx_rate_percent	93.039
throughput_rx_percent	93.039
frame_loss_percent	0.000
min_latency_ns	7880.000
max_latency_ns	270240.000
avg_latency_ns	9845.500
type	rfc2544
packet_size	128
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	51475
%usr	200.03
%system	0.04
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	20.47
majflt/s	0.00
VSZ	2668616
RSS	20063
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	51472
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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	4699182.876
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.853
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	23060.000
max_latency_ns	65280.000
avg_latency_ns	49190.000
type	rfc2544
packet_size	512
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	51475
%usr	200.03
%system	0.04
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	20.47
majflt/s	0.00
VSZ	2668616
RSS	20063
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	51472
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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	2394602.727
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.586
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	38020.000
max_latency_ns	80720.000
avg_latency_ns	63972.500
type	rfc2544
packet_size	1024
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	51475
%usr	200.03
%system	0.04
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	20.47
majflt/s	0.00
VSZ	2668616
RSS	20063
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	51472
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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	1625464.880
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.646
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	49160.000
max_latency_ns	92080.000
avg_latency_ns	75534.500
type	rfc2544
packet_size	1518
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	51475
%usr	200.03
%system	0.04
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	20.47
majflt/s	0.00
VSZ	2668616
RSS	20063
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	51472
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	17455
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53303
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	13.23
majflt/s	0.00
VSZ	2668616
RSS	22112
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	53302
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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	80224
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53303
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	•
minflt/s	13.23
majflt/s	0.00
VSZ	2668616
RSS	22112
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	53302
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswhd	
Statistic	Value
UID	0
PID	53303
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	•
minflt/s	13.23
majflt/s	0.00
VSZ	2668616
RSS	22112
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	53302
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53303
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	13.23
majflt/s	0.00
VSZ	2668616
RSS	22112
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	53302
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53303
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	•
minflt/s	13.23
majflt/s	0.00
VSZ	2668616
RSS	22112
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	53302
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47632
RSS	3348
%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.

3.2.3 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: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	11082827.293
tx_rate_mbps	Unknown
throughput_rx_mbps	6029.058
tx_rate_percent	74.477
throughput_rx_percent	78.023
frame_loss_percent	0.000
min_latency_ns	6140.000
max_latency_ns	469560.000
avg_latency_ns	7391.000
type	rfc2544
packet_size	64
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	55880
%usr	200.04
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	13.42
majflt/s	0.00
VSZ	2668616
RSS	20005
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	55879
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	7858064.183
tx_rate_mbps	Unknown
throughput_rx_mbps	8298.116
tx_rate_percent	93.039
throughput_rx_percent	95.554
frame_loss_percent	0.000
min_latency_ns	5040.000
max_latency_ns	26180.000
avg_latency_ns	5606.000
type	rfc2544
packet_size	128
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	55880
%usr	200.04
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	13.42
majflt/s	0.00
VSZ	2668616
RSS	20005
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	55879
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	2331452.792
tx_rate_mbps	Unknown
throughput_rx_mbps	9624.237
tx_rate_percent	99.227
throughput_rx_percent	99.973
frame_loss_percent	0.000
min_latency_ns	6040.000
max_latency_ns	144260.000
avg_latency_ns	9570.000
type	rfc2544
packet_size	512
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	55880
%usr	200.04
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	13.42
majflt/s	0.00
VSZ	2668616
RSS	20005
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	55879
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	1188058.537
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	6020.000
max_latency_ns	29800.000
avg_latency_ns	6599.000
type	rfc2544
packet_size	1024
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	55880
%usr	200.04
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	13.42
majflt/s	0.00
VSZ	2668616
RSS	20005
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	55879
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	806458.210
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	6440.000
max_latency_ns	136800.000
avg_latency_ns	7130.000
type	rfc2544
packet_size	1518
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	55880
%usr	200.04
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	13.42
majflt/s	0.00
VSZ	2668616
RSS	20005
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	55879
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

- Test ID: phy2phy_scalability
- Description: LTD.Scalability.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	23316604.418
tx_rate_mbps	Unknown
throughput_rx_mbps	11938.101
tx_rate_percent	78.344
throughput_rx_percent	78.344
frame_loss_percent	0.000
min_latency_ns	6240.000
max_latency_ns	422180.000
avg_latency_ns	9064.500
type	rfc2544
packet_size	64
traffic_type	udp
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	58202
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	19.73
majflt/s	0.00
VSZ	2668616
RSS	20061
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	58201
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	15585429.628
tx_rate_mbps	Unknown
throughput_rx_mbps	15959.480
tx_rate_percent	92.266
throughput_rx_percent	92.266
frame_loss_percent	0.000
min_latency_ns	8000.000
max_latency_ns	66200.000
avg_latency_ns	9408.500
type	rfc2544
packet_size	128
traffic_type	udp
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	58202
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	19.73
majflt/s	0.00
VSZ	2668616
RSS	20061
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	58201
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	4699171.175
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.805
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	21180.000
max_latency_ns	71660.000
avg_latency_ns	54916.000
type	rfc2544
packet_size	512
traffic_type	udp
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	58202
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	19.73
majflt/s	0.00
VSZ	2668616
RSS	20061
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	58201
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	2394598.010
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.547
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	40640.000
max_latency_ns	88440.000
avg_latency_ns	72622.500
type	rfc2544
packet_size	1024
traffic_type	udp
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	58202
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	19.73
majflt/s	0.00
VSZ	2668616
RSS	20061
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	58201
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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	1625462.019
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.611
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	45480.000
max_latency_ns	93480.000
avg_latency_ns	77299.000
type	rfc2544
packet_size	1518
traffic_type	udp
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	58202
%usr	200.03
%system	0.03
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	19.73
majflt/s	0.00
VSZ	2668616
RSS	20061
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	58201
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47632
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.

3.2.5 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
- VNF: QemuDpdkVhostUser, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	2369329.405
tx_rate_mbps	Unknown
throughput_rx_mbps	1213.097
tx_rate_percent	7.961
throughput_rx_percent	7.961
frame_loss_percent	0.000
min_latency_ns	4060.000
max_latency_ns	279040.000
avg_latency_ns	4761.500
type	rfc2544
packet_size	64
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	60093
%usr	200.06
%system	0.02
%guest	0.00
%CPU	200.08
CPU	.
minflt/s	10.47
majflt/s	0.00
VSZ	19445832
RSS	20194
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	60092
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47732
RSS	3368
%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	60188
%usr	0.00
%system	0.08
%guest	199.94
%CPU	101.66
CPU	.
minflt/s	9.04
majflt/s	0.00
VSZ	5295583
RSS	72423
%MEM	0.22
kB_rd/s	0.02
kB_wr/s	64.65
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	2259302.509
tx_rate_mbps	Unknown
throughput_rx_mbps	2313.526
tx_rate_percent	13.375
throughput_rx_percent	13.375
frame_loss_percent	0.000
min_latency_ns	4260.000
max_latency_ns	293520.000
avg_latency_ns	4987.000
type	rfc2544
packet_size	128
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	60093
%usr	200.06
%system	0.02
%guest	0.00
%CPU	200.08
CPU	.
minflt/s	10.47
majflt/s	0.00
VSZ	19445832
RSS	20194
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	60092
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47732
RSS	3368
%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	60188
%usr	0.00
%system	0.08
%guest	199.94
%CPU	101.66
CPU	.
minflt/s	9.04
majflt/s	0.00
VSZ	5295583
RSS	72423
%MEM	0.22
kB_rd/s	0.02
kB_wr/s	64.65
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	2373136.910
tx_rate_mbps	Unknown
throughput_rx_mbps	9720.369
tx_rate_percent	50.500
throughput_rx_percent	50.500
frame_loss_percent	0.000
min_latency_ns	5900.000
max_latency_ns	225240.000
avg_latency_ns	7171.000
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	60093
%usr	200.06
%system	0.02
%guest	0.00
%CPU	200.08
CPU	.
minflt/s	10.47
majflt/s	0.00
VSZ	19445832
RSS	20194
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	60092
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47732
RSS	3368
%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	60188
%usr	0.00
%system	0.08
%guest	199.94
%CPU	101.66
CPU	.
minflt/s	9.04
majflt/s	0.00
VSZ	5295583
RSS	72423
%MEM	0.22
kB_rd/s	0.02
kB_wr/s	64.65
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	1227813.245
tx_rate_mbps	Unknown
throughput_rx_mbps	10058.246
tx_rate_percent	51.273
throughput_rx_percent	51.273
frame_loss_percent	0.000
min_latency_ns	5760.000
max_latency_ns	520620.000
avg_latency_ns	6559.000
type	rfc2544
packet_size	1024
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	60093
%usr	200.06
%system	0.02
%guest	0.00
%CPU	200.08
CPU	.
minflt/s	10.47
majflt/s	0.00
VSZ	19445832
RSS	20194
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	60092
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47732
RSS	3368
%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	60188
%usr	0.00
%system	0.08
%guest	199.94
%CPU	101.66
CPU	.
minflt/s	9.04
majflt/s	0.00
VSZ	5295583
RSS	72423
%MEM	0.22
kB_rd/s	0.02
kB_wr/s	64.65
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	1223186.006
tx_rate_mbps	Unknown
throughput_rx_mbps	14854.371
tx_rate_percent	75.250
throughput_rx_percent	75.250
frame_loss_percent	0.000
min_latency_ns	6940.000
max_latency_ns	530240.000
avg_latency_ns	9225.000
type	rfc2544
packet_size	1518
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	60093
%usr	200.06
%system	0.02
%guest	0.00
%CPU	200.08
CPU	.
minflt/s	10.47
majflt/s	0.00
VSZ	19445832
RSS	20194
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	60092
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47732
RSS	3368
%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	60188
%usr	0.00
%system	0.08
%guest	199.94
%CPU	101.66
CPU	.
minflt/s	9.04
majflt/s	0.00
VSZ	5295583
RSS	72423
%MEM	0.22
kB_rd/s	0.02
kB_wr/s	64.65
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: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
- VNF: QemuDpdkVhostUser, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	8514
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswhitcd	
Statistic	Value
UID	0
PID	62494
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.52
majflt/s	0.00
VSZ	19445832
RSS	20147
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	62493
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47741
RSS	3372
%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	62581
%usr	0.00
%system	0.01
%guest	200.01
%CPU	100.06
CPU	.
minflt/s	1.14
majflt/s	0.00
VSZ	4736440
RSS	116425
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	6.84
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	6765
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	62494
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	•
minflt/s	21.52
majflt/s	0.00
VSZ	19445832
RSS	20147
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	62493
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47741
RSS	3372
%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	62581
%usr	0.00
%system	0.01
%guest	200.01
%CPU	100.06
CPU	.
minflt/s	1.14
majflt/s	0.00
VSZ	4736440
RSS	116425
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	6.84
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	7529
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	62494
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.52
majflt/s	0.00
VSZ	19445832
RSS	20147
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	62493
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47741
RSS	3372
%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	62581
%usr	0.00
%system	0.01
%guest	200.01
%CPU	100.06
CPU	.
minflt/s	1.14
majflt/s	0.00
VSZ	4736440
RSS	116425
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	6.84
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	35919530
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	62494
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.52
majflt/s	0.00
VSZ	19445832
RSS	20147
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	62493
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47741
RSS	3372
%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	62581
%usr	0.00
%system	0.01
%guest	200.01
%CPU	100.06
CPU	.
minflt/s	1.14
majflt/s	0.00
VSZ	4736440
RSS	116425
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	6.84
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
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	62494
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.52
majflt/s	0.00
VSZ	19445832
RSS	20147
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	62493
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47741
RSS	3372
%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	62581
%usr	0.00
%system	0.01
%guest	200.01
%CPU	100.06
CPU	.
minflt/s	1.14
majflt/s	0.00
VSZ	4736440
RSS	116425
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	6.84
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: PVVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
- VNF: QemuDpdkVhostUser, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	0
tx_rate_mbps	Unknown
throughput_rx_mbps	0
tx_rate_percent	1.773
throughput_rx_percent	0.000
frame_loss_percent	100.000
min_latency_ns	0
max_latency_ns	0
avg_latency_ns	0
type	rfc2544
packet_size	64
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65367
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.13
majflt/s	0.00
VSZ	36223048
RSS	31592
%MEM	0.10
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	65366
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	65546
%usr	0.00
%system	0.14
%guest	199.95
%CPU	101.86
CPU	.
minflt/s	9.40
majflt/s	0.00
VSZ	5744460
RSS	47699
%MEM	0.15
kB_rd/s	0.03
kB_wr/s	37.27
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	65465
%usr	0.00
%system	0.01
%guest	200.02
%CPU	100.06
CPU	.
minflt/s	0.61
majflt/s	0.00
VSZ	4727740
RSS	76000
%MEM	0.23
kB_rd/s	0.00
kB_wr/s	0.05
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	0
tx_rate_mbps	Unknown
throughput_rx_mbps	0
tx_rate_percent	1.773
throughput_rx_percent	0.000
frame_loss_percent	100.000
min_latency_ns	0
max_latency_ns	0
avg_latency_ns	0
type	rfc2544
packet_size	128
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65367
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.13
majflt/s	0.00
VSZ	36223048
RSS	31592
%MEM	0.10
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65366
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	65546
%usr	0.00
%system	0.14
%guest	199.95
%CPU	101.86
CPU	.
minflt/s	9.40
majflt/s	0.00
VSZ	5744460
RSS	47699
%MEM	0.15
kB_rd/s	0.03
kB_wr/s	37.27
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	65465
%usr	0.00
%system	0.01
%guest	200.02
%CPU	100.06
CPU	.
minflt/s	0.61
majflt/s	0.00
VSZ	4727740
RSS	76000
%MEM	0.23
kB_rd/s	0.00
kB_wr/s	0.05
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	0
tx_rate_mbps	Unknown
throughput_rx_mbps	0
tx_rate_percent	1.773
throughput_rx_percent	0.000
frame_loss_percent	100.000
min_latency_ns	0
max_latency_ns	0
avg_latency_ns	0
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65367
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.13
majflt/s	0.00
VSZ	36223048
RSS	31592
%MEM	0.10
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65366
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	65546
%usr	0.00
%system	0.14
%guest	199.95
%CPU	101.86
CPU	.
minflt/s	9.40
majflt/s	0.00
VSZ	5744460
RSS	47699
%MEM	0.15
kB_rd/s	0.03
kB_wr/s	37.27
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	65465
%usr	0.00
%system	0.01
%guest	200.02
%CPU	100.06
CPU	.
minflt/s	0.61
majflt/s	0.00
VSZ	4727740
RSS	76000
%MEM	0.23
kB_rd/s	0.00
kB_wr/s	0.05
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	0
tx_rate_mbps	Unknown
throughput_rx_mbps	0
tx_rate_percent	1.773
throughput_rx_percent	0.000
frame_loss_percent	100.000
min_latency_ns	0
max_latency_ns	0
avg_latency_ns	0
type	rfc2544
packet_size	1024
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65367
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.13
majflt/s	0.00
VSZ	36223048
RSS	31592
%MEM	0.10
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65366
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	65546
%usr	0.00
%system	0.14
%guest	199.95
%CPU	101.86
CPU	.
minflt/s	9.40
majflt/s	0.00
VSZ	5744460
RSS	47699
%MEM	0.15
kB_rd/s	0.03
kB_wr/s	37.27
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	65465
%usr	0.00
%system	0.01
%guest	200.02
%CPU	100.06
CPU	.
minflt/s	0.61
majflt/s	0.00
VSZ	4727740
RSS	76000
%MEM	0.23
kB_rd/s	0.00
kB_wr/s	0.05
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	0
tx_rate_mbps	Unknown
throughput_rx_mbps	0
tx_rate_percent	1.773
throughput_rx_percent	0.000
frame_loss_percent	100.000
min_latency_ns	0
max_latency_ns	0
avg_latency_ns	0
type	rfc2544
packet_size	1518
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65367
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	21.13
majflt/s	0.00
VSZ	36223048
RSS	31592
%MEM	0.10
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65366
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	65546
%usr	0.00
%system	0.14
%guest	199.95
%CPU	101.86
CPU	.
minflt/s	9.40
majflt/s	0.00
VSZ	5744460
RSS	47699
%MEM	0.15
kB_rd/s	0.03
kB_wr/s	37.27
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	65465
%usr	0.00
%system	0.01
%guest	200.02
%CPU	100.06
CPU	.
minflt/s	0.61
majflt/s	0.00
VSZ	4727740
RSS	76000
%MEM	0.23
kB_rd/s	0.00
kB_wr/s	0.05
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_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
- VNF: QemuDpdkVhostUser, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	6811
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswhitchd	
Statistic	Value
UID	0
PID	67897
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	4.33
majflt/s	0.00
VSZ	36223088
RSS	22303
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	67896
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	68087
%usr	0.00
%system	0.05
%guest	199.84
%CPU	101.36
CPU	.
minflt/s	6.46
majflt/s	0.00
VSZ	4764265
RSS	52692
%MEM	0.16
kB_rd/s	0.00
kB_wr/s	27.36
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	68014
%usr	0.00
%system	0.02
%guest	199.98
%CPU	100.14
CPU	.
minflt/s	0.98
majflt/s	0.00
VSZ	4742588
RSS	113415
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.23
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	3866
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	67897
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	.
minflt/s	4.33
majflt/s	0.00
VSZ	36223088
RSS	22303
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	67896
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	68087
%usr	0.00
%system	0.05
%guest	199.84
%CPU	101.36
CPU	.
minflt/s	6.46
majflt/s	0.00
VSZ	4764265
RSS	52692
%MEM	0.16
kB_rd/s	0.00
kB_wr/s	27.36
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	68014
%usr	0.00
%system	0.02
%guest	199.98
%CPU	100.14
CPU	.
minflt/s	0.98
majflt/s	0.00
VSZ	4742588
RSS	113415
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.23
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	2151
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	67897
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	•
minflt/s	4.33
majflt/s	0.00
VSZ	36223088
RSS	22303
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	67896
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	68087
%usr	0.00
%system	0.05
%guest	199.84
%CPU	101.36
CPU	.
minflt/s	6.46
majflt/s	0.00
VSZ	4764265
RSS	52692
%MEM	0.16
kB_rd/s	0.00
kB_wr/s	27.36
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	68014
%usr	0.00
%system	0.02
%guest	199.98
%CPU	100.14
CPU	.
minflt/s	0.98
majflt/s	0.00
VSZ	4742588
RSS	113415
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.23
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
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	67897
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	•
minflt/s	4.33
majflt/s	0.00
VSZ	36223088
RSS	22303
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	67896
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	68087
%usr	0.00
%system	0.05
%guest	199.84
%CPU	101.36
CPU	.
minflt/s	6.46
majflt/s	0.00
VSZ	4764265
RSS	52692
%MEM	0.16
kB_rd/s	0.00
kB_wr/s	27.36
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	68014
%usr	0.00
%system	0.02
%guest	199.98
%CPU	100.14
CPU	.
minflt/s	0.98
majflt/s	0.00
VSZ	4742588
RSS	113415
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.23
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	5952
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	67897
%usr	200.05
%system	0.02
%guest	0.00
%CPU	200.07
CPU	•
minflt/s	4.33
majflt/s	0.00
VSZ	36223088
RSS	22303
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	67896
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47736
RSS	3368
%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	68087
%usr	0.00
%system	0.05
%guest	199.84
%CPU	101.36
CPU	.
minflt/s	6.46
majflt/s	0.00
VSZ	4764265
RSS	52692
%MEM	0.16
kB_rd/s	0.00
kB_wr/s	27.36
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	68014
%usr	0.00
%system	0.02
%guest	199.98
%CPU	100.14
CPU	.
minflt/s	0.98
majflt/s	0.00
VSZ	4742588
RSS	113415
%MEM	0.35
kB_rd/s	0.00
kB_wr/s	0.23
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://artifactory.opnfv.org/logs/vswitchperf/intel-pod3/2016-02-25_19-32-24/vswitchperf_logs_2016-02-25_19-32-24.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: PHY2PHY_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

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	758001.312
tx_rate_mbps	Unknown
throughput_rx_mbps	388.097
tx_rate_percent	2.547
throughput_rx_percent	2.547
frame_loss_percent	0.000
min_latency_ns	3880.000
max_latency_ns	13880880.000
avg_latency_ns	1263914.000
type	rfc2544
packet_size	64
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	71289
%usr	0.18
%system	0.38
%guest	0.00
%CPU	0.56
CPU	.
minflt/s	1.27
majflt/s	0.00
VSZ	1300912
RSS	10822
%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	71288
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	560866.014
tx_rate_mbps	Unknown
throughput_rx_mbps	574.327
tx_rate_percent	3.320
throughput_rx_percent	3.320
frame_loss_percent	0.000
min_latency_ns	4400.000
max_latency_ns	2207280.000
avg_latency_ns	190450.500
type	rfc2544
packet_size	128
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	71289
%usr	0.18
%system	0.38
%guest	0.00
%CPU	0.56
CPU	.
minflt/s	1.27
majflt/s	0.00
VSZ	1300912
RSS	10822
%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	71288
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	555833.309
tx_rate_mbps	Unknown
throughput_rx_mbps	2276.693
tx_rate_percent	11.828
throughput_rx_percent	11.828
frame_loss_percent	0.000
min_latency_ns	5000.000
max_latency_ns	3410320.000
avg_latency_ns	177740.500
type	rfc2544
packet_size	512
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	71289
%usr	0.18
%system	0.38
%guest	0.00
%CPU	0.56
CPU	.
minflt/s	1.27
majflt/s	0.00
VSZ	1300912
RSS	10822
%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	71288
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	449930.606
tx_rate_mbps	Unknown
throughput_rx_mbps	3685.832
tx_rate_percent	18.789
throughput_rx_percent	18.789
frame_loss_percent	0.000
min_latency_ns	5700.000
max_latency_ns	551000.000
avg_latency_ns	45112.000
type	rfc2544
packet_size	1024
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	71289
%usr	0.18
%system	0.38
%guest	0.00
%CPU	0.56
CPU	.
minflt/s	1.27
majflt/s	0.00
VSZ	1300912
RSS	10822
%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	71288
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	481426.049
tx_rate_mbps	Unknown
throughput_rx_mbps	5846.438
tx_rate_percent	29.617
throughput_rx_percent	29.617
frame_loss_percent	0.000
min_latency_ns	6840.000
max_latency_ns	879540.000
avg_latency_ns	51859.500
type	rfc2544
packet_size	1518
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	71289
%usr	0.18
%system	0.38
%guest	0.00
%CPU	0.56
CPU	.
minflt/s	1.27
majflt/s	0.00
VSZ	1300912
RSS	10822
%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	71288
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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.

4.2.2 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

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

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	73436
%usr	0.19
%system	0.35
%guest	0.00
%CPU	0.54
CPU	.
minflt/s	2.74
majflt/s	0.00
VSZ	1300916
RSS	7019
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	73435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	3382
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	73436
%usr	0.19
%system	0.35
%guest	0.00
%CPU	0.54
CPU	•
minflt/s	2.74
majflt/s	0.00
VSZ	1300916
RSS	7019
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	73435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	1344
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	73436
%usr	0.19
%system	0.35
%guest	0.00
%CPU	0.54
CPU	•
minflt/s	2.74
majflt/s	0.00
VSZ	1300916
RSS	7019
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	73435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	1096
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	73436
%usr	0.19
%system	0.35
%guest	0.00
%CPU	0.54
CPU	.
minflt/s	2.74
majflt/s	0.00
VSZ	1300916
RSS	7019
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	73435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	1116
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	73436
%usr	0.19
%system	0.35
%guest	0.00
%CPU	0.54
CPU	•
minflt/s	2.74
majflt/s	0.00
VSZ	1300916
RSS	7019
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	73435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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.

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: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	609189.896
tx_rate_mbps	Unknown
throughput_rx_mbps	331.399
tx_rate_percent	4.094
throughput_rx_percent	4.289
frame_loss_percent	0.000
min_latency_ns	3960.000
max_latency_ns	4234980.000
avg_latency_ns	113640.000
type	rfc2544
packet_size	64
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	76429
%usr	0.20
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.32
majflt/s	0.00
VSZ	1300912
RSS	10816
%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	76428
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	607052.553
tx_rate_mbps	Unknown
throughput_rx_mbps	641.047
tx_rate_percent	7.188
throughput_rx_percent	7.382
frame_loss_percent	0.000
min_latency_ns	4120.000
max_latency_ns	3533480.000
avg_latency_ns	390373.000
type	rfc2544
packet_size	128
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	76429
%usr	0.20
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.32
majflt/s	0.00
VSZ	1300912
RSS	10816
%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	76428
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	550492.686
tx_rate_mbps	Unknown
throughput_rx_mbps	2272.434
tx_rate_percent	23.430
throughput_rx_percent	23.605
frame_loss_percent	0.000
min_latency_ns	4920.000
max_latency_ns	1885940.000
avg_latency_ns	183064.000
type	rfc2544
packet_size	512
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	76429
%usr	0.20
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.32
majflt/s	0.00
VSZ	1300912
RSS	10816
%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	76428
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	521301.476
tx_rate_mbps	Unknown
throughput_rx_mbps	4287.183
tx_rate_percent	43.539
throughput_rx_percent	43.706
frame_loss_percent	0.000
min_latency_ns	5600.000
max_latency_ns	1334240.000
avg_latency_ns	102214.000
type	rfc2544
packet_size	1024
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	76429
%usr	0.20
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.32
majflt/s	0.00
VSZ	1300912
RSS	10816
%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	76428
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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	517299.075
tx_rate_mbps	Unknown
throughput_rx_mbps	6298.634
tx_rate_percent	63.648
throughput_rx_percent	63.814
frame_loss_percent	0.000
min_latency_ns	6640.000
max_latency_ns	1024420.000
avg_latency_ns	39211.000
type	rfc2544
packet_size	1518
traffic_type	udp

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	76429
%usr	0.20
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.32
majflt/s	0.00
VSZ	1300912
RSS	10816
%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	76428
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	3000
%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.

4.2.4 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

Below are test details:

- Test ID: phy2phy_scalability
- Description: LTD.Scalability.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	758000.824
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	3920.000
max_latency_ns	13228680.000
avg_latency_ns	997363.000
type	rfc2544
packet_size	64
traffic_type	udp
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	78544
%usr	0.17
%system	0.36
%guest	0.00
%CPU	0.53
CPU	.
minflt/s	2.92
majflt/s	0.00
VSZ	1300916
RSS	10810
%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	78543
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	691514.064
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	4040.000
max_latency_ns	8741640.000
avg_latency_ns	644624.500
type	rfc2544
packet_size	128
traffic_type	udp
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	78544
%usr	0.17
%system	0.36
%guest	0.00
%CPU	0.53
CPU	.
minflt/s	2.92
majflt/s	0.00
VSZ	1300916
RSS	10810
%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	78543
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	519488.659
tx_rate_mbps	Unknown
throughput_rx_mbps	2127.826
tx_rate_percent	11.055
throughput_rx_percent	11.055
frame_loss_percent	0.000
min_latency_ns	5480.000
max_latency_ns	2609060.000
avg_latency_ns	87758.000
type	rfc2544
packet_size	512
traffic_type	udp
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	78544
%usr	0.17
%system	0.36
%guest	0.00
%CPU	0.53
CPU	.
minflt/s	2.92
majflt/s	0.00
VSZ	1300916
RSS	10810
%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	78543
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	542536.075
tx_rate_mbps	Unknown
throughput_rx_mbps	4444.456
tx_rate_percent	22.656
throughput_rx_percent	22.656
frame_loss_percent	0.000
min_latency_ns	5660.000
max_latency_ns	3167820.000
avg_latency_ns	176499.500
type	rfc2544
packet_size	1024
traffic_type	udp
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	78544
%usr	0.17
%system	0.36
%guest	0.00
%CPU	0.53
CPU	.
minflt/s	2.92
majflt/s	0.00
VSZ	1300916
RSS	10810
%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	78543
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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	531713.802
tx_rate_mbps	Unknown
throughput_rx_mbps	6457.132
tx_rate_percent	32.711
throughput_rx_percent	32.711
frame_loss_percent	0.000
min_latency_ns	6740.000
max_latency_ns	2581500.000
avg_latency_ns	248023.000
type	rfc2544
packet_size	1518
traffic_type	udp
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	78544
%usr	0.17
%system	0.36
%guest	0.00
%CPU	0.53
CPU	.
minflt/s	2.92
majflt/s	0.00
VSZ	1300916
RSS	10810
%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	78543
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45760
RSS	2996
%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.

4.2.5 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	527809.223
tx_rate_mbps	Unknown
throughput_rx_mbps	270.238
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.000
min_latency_ns	14600.000
max_latency_ns	684340.000
avg_latency_ns	50878.500
type	rfc2544
packet_size	64
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	80750
%usr	0.19
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.51
majflt/s	0.00
VSZ	1300920
RSS	6830
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	80749
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3000
%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	80872
%usr	0.00
%system	0.48
%guest	199.26
%CPU	101.03
CPU	.
minflt/s	4.78
majflt/s	0.00
VSZ	4696644
RSS	148871
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	79.26
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	560863.386
tx_rate_mbps	Unknown
throughput_rx_mbps	574.324
tx_rate_percent	3.320
throughput_rx_percent	3.320
frame_loss_percent	0.000
min_latency_ns	21180.000
max_latency_ns	808320.000
avg_latency_ns	106941.000
type	rfc2544
packet_size	128
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	80750
%usr	0.19
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.51
majflt/s	0.00
VSZ	1300920
RSS	6830
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	80749
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3000
%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	80872
%usr	0.00
%system	0.48
%guest	199.26
%CPU	101.03
CPU	.
minflt/s	4.78
majflt/s	0.00
VSZ	4696644
RSS	148871
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	79.26
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	592178.556
tx_rate_mbps	Unknown
throughput_rx_mbps	2425.563
tx_rate_percent	12.602
throughput_rx_percent	12.602
frame_loss_percent	0.000
min_latency_ns	40740.000
max_latency_ns	826200.000
avg_latency_ns	109196.000
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	80750
%usr	0.19
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.51
majflt/s	0.00
VSZ	1300920
RSS	6830
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	80749
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3000
%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	80872
%usr	0.00
%system	0.48
%guest	199.26
%CPU	101.03
CPU	.
minflt/s	4.78
majflt/s	0.00
VSZ	4696644
RSS	148871
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	79.26
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	524013.174
tx_rate_mbps	Unknown
throughput_rx_mbps	4292.716
tx_rate_percent	21.883
throughput_rx_percent	21.883
frame_loss_percent	0.000
min_latency_ns	30800.000
max_latency_ns	793660.000
avg_latency_ns	116248.000
type	rfc2544
packet_size	1024
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	80750
%usr	0.19
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.51
majflt/s	0.00
VSZ	1300920
RSS	6830
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	80749
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3000
%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	80872
%usr	0.00
%system	0.48
%guest	199.26
%CPU	101.03
CPU	.
minflt/s	4.78
majflt/s	0.00
VSZ	4696644
RSS	148871
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	79.26
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	619682.033
tx_rate_mbps	Unknown
throughput_rx_mbps	7525.419
tx_rate_percent	38.125
throughput_rx_percent	38.125
frame_loss_percent	0.000
min_latency_ns	50780.000
max_latency_ns	903940.000
avg_latency_ns	312286.500
type	rfc2544
packet_size	1518
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	80750
%usr	0.19
%system	0.41
%guest	0.00
%CPU	0.61
CPU	.
minflt/s	0.51
majflt/s	0.00
VSZ	1300920
RSS	6830
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	80749
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3000
%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	80872
%usr	0.00
%system	0.48
%guest	199.26
%CPU	101.03
CPU	.
minflt/s	4.78
majflt/s	0.00
VSZ	4696644
RSS	148871
%MEM	0.45
kB_rd/s	0.00
kB_wr/s	79.26
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: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83090
%usr	0.14
%system	0.27
%guest	0.00
%CPU	0.41
CPU	.
minflt/s	2.18
majflt/s	0.00
VSZ	1300916
RSS	8880
%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	83089
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3220
%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	83216
%usr	0.00
%system	0.22
%guest	199.89
%CPU	100.94
CPU	.
minflt/s	4.87
majflt/s	0.00
VSZ	4780592
RSS	197191
%MEM	0.60
kB_rd/s	0.00
kB_wr/s	46.62
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	128
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83090
%usr	0.14
%system	0.27
%guest	0.00
%CPU	0.41
CPU	•
minflt/s	2.18
majflt/s	0.00
VSZ	1300916
RSS	8880
%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	83089
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3220
%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	83216
%usr	0.00
%system	0.22
%guest	199.89
%CPU	100.94
CPU	.
minflt/s	4.87
majflt/s	0.00
VSZ	4780592
RSS	197191
%MEM	0.60
kB_rd/s	0.00
kB_wr/s	46.62
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83090
%usr	0.14
%system	0.27
%guest	0.00
%CPU	0.41
CPU	.
minflt/s	2.18
majflt/s	0.00
VSZ	1300916
RSS	8880
%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	83089
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3220
%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	83216
%usr	0.00
%system	0.22
%guest	199.89
%CPU	100.94
CPU	.
minflt/s	4.87
majflt/s	0.00
VSZ	4780592
RSS	197191
%MEM	0.60
kB_rd/s	0.00
kB_wr/s	46.62
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1024
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83090
%usr	0.14
%system	0.27
%guest	0.00
%CPU	0.41
CPU	.
minflt/s	2.18
majflt/s	0.00
VSZ	1300916
RSS	8880
%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	83089
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3220
%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	83216
%usr	0.00
%system	0.22
%guest	199.89
%CPU	100.94
CPU	.
minflt/s	4.87
majflt/s	0.00
VSZ	4780592
RSS	197191
%MEM	0.60
kB_rd/s	0.00
kB_wr/s	46.62
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1518
traffic_type	udp
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83090
%usr	0.14
%system	0.27
%guest	0.00
%CPU	0.41
CPU	.
minflt/s	2.18
majflt/s	0.00
VSZ	1300916
RSS	8880
%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	83089
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3220
%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	83216
%usr	0.00
%system	0.22
%guest	199.89
%CPU	100.94
CPU	.
minflt/s	4.87
majflt/s	0.00
VSZ	4780592
RSS	197191
%MEM	0.60
kB_rd/s	0.00
kB_wr/s	46.62
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.7 Test ID: PVVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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	527412.629
tx_rate_mbps	Unknown
throughput_rx_mbps	270.035
tx_rate_percent	1.773
throughput_rx_percent	1.772
frame_loss_percent	0.075
min_latency_ns	30120.000
max_latency_ns	1579160.000
avg_latency_ns	250805.500
type	rfc2544
packet_size	64
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	86402
%usr	0.09
%system	0.19
%guest	0.00
%CPU	0.28
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	1300912
RSS	9553
%MEM	0.03
kB_rd/s	0.07
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	86401
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3216
%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	86607
%usr	0.00
%system	0.93
%guest	199.08
%CPU	101.36
CPU	.
minflt/s	6.89
majflt/s	0.00
VSZ	4778556
RSS	45239
%MEM	0.14
kB_rd/s	0.14
kB_wr/s	67.40
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	86584
%usr	0.00
%system	1.04
%guest	199.01
%CPU	100.61
CPU	.
minflt/s	1.46
majflt/s	0.00
VSZ	4790332
RSS	111914
%MEM	0.34
kB_rd/s	0.00
kB_wr/s	0.56
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	299567.893
tx_rate_mbps	Unknown
throughput_rx_mbps	306.758
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.000
min_latency_ns	25400.000
max_latency_ns	564180.000
avg_latency_ns	60644.000
type	rfc2544
packet_size	128
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	86402
%usr	0.09
%system	0.19
%guest	0.00
%CPU	0.28
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	1300912
RSS	9553
%MEM	0.03
kB_rd/s	0.07
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	86401
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3216
%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	86607
%usr	0.00
%system	0.93
%guest	199.08
%CPU	101.36
CPU	.
minflt/s	6.89
majflt/s	0.00
VSZ	4778556
RSS	45239
%MEM	0.14
kB_rd/s	0.14
kB_wr/s	67.40
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	86584
%usr	0.00
%system	1.04
%guest	199.01
%CPU	100.61
CPU	.
minflt/s	1.46
majflt/s	0.00
VSZ	4790332
RSS	111914
%MEM	0.34
kB_rd/s	0.00
kB_wr/s	0.56
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	410450.777
tx_rate_mbps	Unknown
throughput_rx_mbps	1681.206
tx_rate_percent	8.734
throughput_rx_percent	8.734
frame_loss_percent	0.000
min_latency_ns	42740.000
max_latency_ns	978720.000
avg_latency_ns	141397.500
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	86402
%usr	0.09
%system	0.19
%guest	0.00
%CPU	0.28
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	1300912
RSS	9553
%MEM	0.03
kB_rd/s	0.07
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	86401
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3216
%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	86607
%usr	0.00
%system	0.93
%guest	199.08
%CPU	101.36
CPU	•
minflt/s	6.89
majflt/s	0.00
VSZ	4778556
RSS	45239
%MEM	0.14
kB_rd/s	0.14
kB_wr/s	67.40
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	86584
%usr	0.00
%system	1.04
%guest	199.01
%CPU	100.61
CPU	•
minflt/s	1.46
majflt/s	0.00
VSZ	4790332
RSS	111914
%MEM	0.34
kB_rd/s	0.00
kB_wr/s	0.56
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	431410.875
tx_rate_mbps	Unknown
throughput_rx_mbps	3534.118
tx_rate_percent	18.016
throughput_rx_percent	18.016
frame_loss_percent	0.000
min_latency_ns	58340.000
max_latency_ns	1327920.000
avg_latency_ns	193534.500
type	rfc2544
packet_size	1024
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	86402
%usr	0.09
%system	0.19
%guest	0.00
%CPU	0.28
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	1300912
RSS	9553
%MEM	0.03
kB_rd/s	0.07
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	86401
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3216
%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	86607
%usr	0.00
%system	0.93
%guest	199.08
%CPU	101.36
CPU	.
minflt/s	6.89
majflt/s	0.00
VSZ	4778556
RSS	45239
%MEM	0.14
kB_rd/s	0.14
kB_wr/s	67.40
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	86584
%usr	0.00
%system	1.04
%guest	199.01
%CPU	100.61
CPU	.
minflt/s	1.46
majflt/s	0.00
VSZ	4790332
RSS	111914
%MEM	0.34
kB_rd/s	0.00
kB_wr/s	0.56
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	380848.807
tx_rate_mbps	Unknown
throughput_rx_mbps	4625.028
tx_rate_percent	23.430
throughput_rx_percent	23.430
frame_loss_percent	0.000
min_latency_ns	51960.000
max_latency_ns	579060.000
avg_latency_ns	139910.000
type	rfc2544
packet_size	1518
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	86402
%usr	0.09
%system	0.19
%guest	0.00
%CPU	0.28
CPU	.
minflt/s	1.20
majflt/s	0.00
VSZ	1300912
RSS	9553
%MEM	0.03
kB_rd/s	0.07
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	86401
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3216
%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	86607
%usr	0.00
%system	0.93
%guest	199.08
%CPU	101.36
CPU	.
minflt/s	6.89
majflt/s	0.00
VSZ	4778556
RSS	45239
%MEM	0.14
kB_rd/s	0.14
kB_wr/s	67.40
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	86584
%usr	0.00
%system	1.04
%guest	199.01
%CPU	100.61
CPU	.
minflt/s	1.46
majflt/s	0.00
VSZ	4790332
RSS	111914
%MEM	0.34
kB_rd/s	0.00
kB_wr/s	0.56
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_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-229.14.1.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 S2600JF [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz
- CPU cores: 32
- Memory: 32727096 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 174015dfc37446ca710fe70df1398d63adb0a873
- Traffic Generator: IxNet, Version: 7.50.1009.20, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20151216.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

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
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswhdchd	
Statistic	Value
UID	0
PID	88962
%usr	0.10
%system	0.19
%guest	0.00
%CPU	0.29
CPU	.
minflt/s	0.42
majflt/s	0.00
VSZ	1300912
RSS	6813
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	88961
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45872
RSS	3216
%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	89229
%usr	0.00
%system	0.19
%guest	199.93
%CPU	100.97
CPU	.
minflt/s	2.32
majflt/s	0.00
VSZ	4776516
RSS	54733
%MEM	0.17
kB_rd/s	0.00
kB_wr/s	6.46
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	89140
%usr	0.00
%system	0.10
%guest	199.92
%CPU	100.14
CPU	.
minflt/s	0.90
majflt/s	0.00
VSZ	4826696
RSS	187951
%MEM	0.57
kB_rd/s	0.00
kB_wr/s	0.68
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
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	88962
%usr	0.10
%system	0.19
%guest	0.00
%CPU	0.29
CPU	.
minflt/s	0.42
majflt/s	0.00
VSZ	1300912
RSS	6813
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	88961
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45872
RSS	3216
%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	89229
%usr	0.00
%system	0.19
%guest	199.93
%CPU	100.97
CPU	.
minflt/s	2.32
majflt/s	0.00
VSZ	4776516
RSS	54733
%MEM	0.17
kB_rd/s	0.00
kB_wr/s	6.46
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	89140
%usr	0.00
%system	0.10
%guest	199.92
%CPU	100.14
CPU	.
minflt/s	0.90
majflt/s	0.00
VSZ	4826696
RSS	187951
%MEM	0.57
kB_rd/s	0.00
kB_wr/s	0.68
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	268
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	88962
%usr	0.10
%system	0.19
%guest	0.00
%CPU	0.29
CPU	•
minflt/s	0.42
majflt/s	0.00
VSZ	1300912
RSS	6813
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	88961
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45872
RSS	3216
%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	89229
%usr	0.00
%system	0.19
%guest	199.93
%CPU	100.97
CPU	.
minflt/s	2.32
majflt/s	0.00
VSZ	4776516
RSS	54733
%MEM	0.17
kB_rd/s	0.00
kB_wr/s	6.46
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	89140
%usr	0.00
%system	0.10
%guest	199.92
%CPU	100.14
CPU	.
minflt/s	0.90
majflt/s	0.00
VSZ	4826696
RSS	187951
%MEM	0.57
kB_rd/s	0.00
kB_wr/s	0.68
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	274
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	88962
%usr	0.10
%system	0.19
%guest	0.00
%CPU	0.29
CPU	•
minflt/s	0.42
majflt/s	0.00
VSZ	1300912
RSS	6813
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	88961
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45872
RSS	3216
%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	89229
%usr	0.00
%system	0.19
%guest	199.93
%CPU	100.97
CPU	.
minflt/s	2.32
majflt/s	0.00
VSZ	4776516
RSS	54733
%MEM	0.17
kB_rd/s	0.00
kB_wr/s	6.46
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	89140
%usr	0.00
%system	0.10
%guest	199.92
%CPU	100.14
CPU	.
minflt/s	0.90
majflt/s	0.00
VSZ	4826696
RSS	187951
%MEM	0.57
kB_rd/s	0.00
kB_wr/s	0.68
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	372
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	88962
%usr	0.10
%system	0.19
%guest	0.00
%CPU	0.29
CPU	•
minflt/s	0.42
majflt/s	0.00
VSZ	1300912
RSS	6813
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	88961
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45872
RSS	3216
%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	89229
%usr	0.00
%system	0.19
%guest	199.93
%CPU	100.97
CPU	.
minflt/s	2.32
majflt/s	0.00
VSZ	4776516
RSS	54733
%MEM	0.17
kB_rd/s	0.00
kB_wr/s	6.46
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	89140
%usr	0.00
%system	0.10
%guest	199.92
%CPU	100.14
CPU	.
minflt/s	0.90
majflt/s	0.00
VSZ	4826696
RSS	187951
%MEM	0.57
kB_rd/s	0.00
kB_wr/s	0.68
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://artifactory.opnfv.org/logs/vswitchperf/intel-pod3/2016-02-25_19-32-24/vswitchperf_logs_2016-02-25_19-32-24.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