VSPERF Results

Release draft (30d75a0)

OPNFV

May 13, 2016

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OPNFV BRAHMAPUTRA SCENARIOS

Available Tests and aspects of scenarios:

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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.

CHAPTER

TWO

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.

CHAPTER

THREE

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: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- 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	23546940.585
tx_rate_mbps	Unknown
throughput_rx_mbps	12056.034
tx_rate_percent	79.117
throughput_rx_percent	79.117
frame_loss_percent	0.000
min_latency_ns	4920.000
max_latency_ns	268080.000
avg_latency_ns	8966.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:17:24

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	38069
%usr	199.92
%system	0.09
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	28.09
majflt/s	0.00
VSZ	4143528
RSS	18658
%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	38062
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
RSS	3340
%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	16761273.843
tx_rate_mbps	Unknown
throughput_rx_mbps	17163.544
tx_rate_percent	99.227
throughput_rx_percent	99.227
frame_loss_percent	0.000
min_latency_ns	5000.000
max_latency_ns	85060.000
avg_latency_ns	10376.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:17:24

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	38069
%usr	199.92
%system	0.09
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	28.09
majflt/s	0.00
VSZ	4143528
RSS	18658
%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	38062
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
RSS	3340
%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	4699193.904
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.898
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	15840.000
max_latency_ns	53940.000
avg_latency_ns	39351.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:17:24

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	38069
%usr	199.92
%system	0.09
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	28.09
majflt/s	0.00
VSZ	4143528
RSS	18658
%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	38062
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
RSS	3340
%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	2394609.376
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.640
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	16660.000
max_latency_ns	50520.000
avg_latency_ns	39304.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:17:24

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	38069
%usr	199.92
%system	0.09
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	28.09
majflt/s	0.00
VSZ	4143528
RSS	18658
%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	38062
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
RSS	3340
%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	1625470.081
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.709
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	35120.000
max_latency_ns	68380.000
avg_latency_ns	56759.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:17:24

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	38069
%usr	199.92
%system	0.09
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	28.09
majflt/s	0.00
VSZ	4143528
RSS	18658
%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	38062
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
RSS	3340
%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: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- 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	25119
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:25:21

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	40029
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	27.79
majflt/s	0.00
VSZ	4143528
RSS	20742
%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	40022
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	3092997
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:25:21

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	40029
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	27.79
majflt/s	0.00
VSZ	4143528
RSS	20742
%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	40022
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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
test_execution_time	00:25:21

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	40029
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	27.79
majflt/s	0.00
VSZ	4143528
RSS	20742
%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	40022
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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
test_execution_time	00:25:21

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	40029
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	27.79
majflt/s	0.00
VSZ	4143528
RSS	20742
%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	40022
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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
test_execution_time	00:25:21

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	40029
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	27.79
majflt/s	0.00
VSZ	4143528
RSS	20742
%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	40022
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- 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	12003674.985
tx_rate_mbps	Unknown
throughput_rx_mbps	6529.999
tx_rate_percent	80.664
throughput_rx_percent	84.506
frame_loss_percent	0.000
min_latency_ns	4500.000
max_latency_ns	477140.000
avg_latency_ns	7498.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:20

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	42723
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	25.64
majflt/s	0.00
VSZ	4143544
RSS	18683
%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	42716
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	8184666.442
tx_rate_mbps	Unknown
throughput_rx_mbps	8643.008
tx_rate_percent	96.906
throughput_rx_percent	99.526
frame_loss_percent	0.000
min_latency_ns	5080.000
max_latency_ns	277320.000
avg_latency_ns	7406.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:20

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	42723
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	25.64
majflt/s	0.00
VSZ	4143544
RSS	18683
%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	42716
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	2331451.509
tx_rate_mbps	Unknown
throughput_rx_mbps	9624.232
tx_rate_percent	99.227
throughput_rx_percent	99.973
frame_loss_percent	0.000
min_latency_ns	5800.000
max_latency_ns	234900.000
avg_latency_ns	15814.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:20

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	42723
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	25.64
majflt/s	0.00
VSZ	4143544
RSS	18683
%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	42716
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	1188058.609
tx_rate_mbps	Unknown
throughput_rx_mbps	9770.594
tx_rate_percent	99.227
throughput_rx_percent	99.607
frame_loss_percent	0.000
min_latency_ns	5760.000
max_latency_ns	36440.000
avg_latency_ns	7143.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:20

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	42723
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	25.64
majflt/s	0.00
VSZ	4143544
RSS	18683
%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	42716
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	806458.251
tx_rate_mbps	Unknown
throughput_rx_mbps	9819.436
tx_rate_percent	99.227
throughput_rx_percent	99.485
frame_loss_percent	0.000
min_latency_ns	6180.000
max_latency_ns	247120.000
avg_latency_ns	7636.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:20

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	42723
%usr	199.93
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	25.64
majflt/s	0.00
VSZ	4143544
RSS	18683
%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	42716
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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.

3.2.4 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	22395974.732
tx_rate_mbps	Unknown
throughput_rx_mbps	11466.739
tx_rate_percent	75.250
throughput_rx_percent	75.250
frame_loss_percent	0.000
min_latency_ns	6260.000
max_latency_ns	135920.000
avg_latency_ns	9553.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:17:16
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	45676
%usr	199.92
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	50.48
majflt/s	0.00
VSZ	4143528
RSS	18647
%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	45669
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	16499946.347
tx_rate_mbps	Unknown
throughput_rx_mbps	16895.945
tx_rate_percent	97.680
throughput_rx_percent	97.680
frame_loss_percent	0.000
min_latency_ns	5440.000
max_latency_ns	241140.000
avg_latency_ns	10210.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:17:16
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	45676
%usr	199.92
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	50.48
majflt/s	0.00
VSZ	4143528
RSS	18647
%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	45669
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	4699187.403
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.872
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	17220.000
max_latency_ns	59080.000
avg_latency_ns	46306.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:17:16
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	45676
%usr	199.92
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	50.48
majflt/s	0.00
VSZ	4143528
RSS	18647
%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	45669
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	2394607.668
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.626
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	16200.000
max_latency_ns	55800.000
avg_latency_ns	41248.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:17:16
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	45676
%usr	199.92
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	50.48
majflt/s	0.00
VSZ	4143528
RSS	18647
%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	45669
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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	1625472.476
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.738
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	17460.000
max_latency_ns	47660.000
avg_latency_ns	35077.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:17:16
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	45676
%usr	199.92
%system	0.08
%guest	0.00
%CPU	200.00
CPU	•
minflt/s	50.48
majflt/s	0.00
VSZ	4143528
RSS	18647
%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	45669
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47640
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.

3.2.5 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- 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_20160303.qcow2
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303_copy.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	4210844.752
tx_rate_mbps	Unknown
throughput_rx_mbps	2155.953
tx_rate_percent	14.148
throughput_rx_percent	14.148
frame_loss_percent	0.000
min_latency_ns	5160.000
max_latency_ns	165160.000
avg_latency_ns	7154.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:18:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	47737
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	43.94
majflt/s	0.00
VSZ	20920748
RSS	18726
%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	47730
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	47953
%usr	0.00
%system	0.03
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.96
majflt/s	0.00
VSZ	4839876
RSS	35676
%MEM	0.05
kB_rd/s	0.16
kB_wr/s	13.97
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	4610959.452
tx_rate_mbps	Unknown
throughput_rx_mbps	4721.622
tx_rate_percent	27.297
throughput_rx_percent	27.297
frame_loss_percent	0.000
min_latency_ns	6100.000
max_latency_ns	69860.000
avg_latency_ns	8513.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:18:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	47737
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	43.94
majflt/s	0.00
VSZ	20920748
RSS	18726
%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	47730
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	47953
%usr	0.00
%system	0.03
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.96
majflt/s	0.00
VSZ	4839876
RSS	35676
%MEM	0.05
kB_rd/s	0.16
kB_wr/s	13.97
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	4698795.857
tx_rate_mbps	Unknown
throughput_rx_mbps	19246.268
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	28180.000
max_latency_ns	332640.000
avg_latency_ns	305898.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:18:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	47737
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	43.94
majflt/s	0.00
VSZ	20920748
RSS	18726
%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	47730
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	47953
%usr	0.00
%system	0.03
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.96
majflt/s	0.00
VSZ	4839876
RSS	35676
%MEM	0.05
kB_rd/s	0.16
kB_wr/s	13.97
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	2394564.646
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.274
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	55220.000
max_latency_ns	150260.000
avg_latency_ns	133786.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:18:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	47737
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	43.94
majflt/s	0.00
VSZ	20920748
RSS	18726
%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	47730
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	47953
%usr	0.00
%system	0.03
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.96
majflt/s	0.00
VSZ	4839876
RSS	35676
%MEM	0.05
kB_rd/s	0.16
kB_wr/s	13.97
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	1625461.846
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.609
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	55220.000
max_latency_ns	107580.000
avg_latency_ns	91816.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:18:46
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	47737
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	43.94
majflt/s	0.00
VSZ	20920748
RSS	18726
%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	47730
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	47953
%usr	0.00
%system	0.03
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.96
majflt/s	0.00
VSZ	4839876
RSS	35676
%MEM	0.05
kB_rd/s	0.16
kB_wr/s	13.97
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: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- 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_20160303.qcow2
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303_copy.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
test_execution_time	00:36:56
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	49994
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	16.18
majflt/s	0.00
VSZ	20920756
RSS	22456
%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	49924
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3376
%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	50120
%usr	0.00
%system	0.02
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.86
majflt/s	0.00
VSZ	4783556
RSS	40022
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	7.24
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
test_execution_time	00:36:56
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	49994
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	16.18
majflt/s	0.00
VSZ	20920756
RSS	22456
%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	49924
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3376
%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	50120
%usr	0.00
%system	0.02
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.86
majflt/s	0.00
VSZ	4783556
RSS	40022
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	7.24
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	70488721
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:36:56
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	49994
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	16.18
majflt/s	0.00
VSZ	20920756
RSS	22456
%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	49924
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3376
%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	50120
%usr	0.00
%system	0.02
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.86
majflt/s	0.00
VSZ	4783556
RSS	40022
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	7.24
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	35919540
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:36:56
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	49994
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	16.18
majflt/s	0.00
VSZ	20920756
RSS	22456
%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	49924
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3376
%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	50120
%usr	0.00
%system	0.02
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.86
majflt/s	0.00
VSZ	4783556
RSS	40022
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	7.24
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	24382314
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:36:56
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	49994
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	16.18
majflt/s	0.00
VSZ	20920756
RSS	22456
%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	49924
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3376
%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	50120
%usr	0.00
%system	0.02
%guest	199.97
%CPU	100.01
CPU	•
minflt/s	1.86
majflt/s	0.00
VSZ	4783556
RSS	40022
%MEM	0.06
kB_rd/s	0.00
kB_wr/s	7.24
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: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- 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_20160303.qcow2
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303_copy.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
test_execution_time	00:36:14
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53808
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	17.50
majflt/s	0.00
VSZ	37697960
RSS	20807
%MEM	0.03
kB_rd/s	0.09
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	53801
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47744
RSS	3196
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54073
%usr	0.00
%system	0.02
%guest	199.96
%CPU	100.01
CPU	•
minflt/s	1.53
majflt/s	0.00
VSZ	4772296
RSS	35503
%MEM	0.05
kB_rd/s	0.25
kB_wr/s	9.47
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54027
%usr	0.00
%system	0.01
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.05
majflt/s	0.00
VSZ	4819400
RSS	35209
%MEM	0.05
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	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
test_execution_time	00:36:14
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53808
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	17.50
majflt/s	0.00
VSZ	37697960
RSS	20807
%MEM	0.03
kB_rd/s	0.09
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	53801
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47744
RSS	3196
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54073
%usr	0.00
%system	0.02
%guest	199.96
%CPU	100.01
CPU	•
minflt/s	1.53
majflt/s	0.00
VSZ	4772296
RSS	35503
%MEM	0.05
kB_rd/s	0.25
kB_wr/s	9.47
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54027
%usr	0.00
%system	0.01
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.05
majflt/s	0.00
VSZ	4819400
RSS	35209
%MEM	0.05
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	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
test_execution_time	00:36:14
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53808
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	17.50
majflt/s	0.00
VSZ	37697960
RSS	20807
%MEM	0.03
kB_rd/s	0.09
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	53801
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47744
RSS	3196
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54073
%usr	0.00
%system	0.02
%guest	199.96
%CPU	100.01
CPU	•
minflt/s	1.53
majflt/s	0.00
VSZ	4772296
RSS	35503
%MEM	0.05
kB_rd/s	0.25
kB_wr/s	9.47
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54027
%usr	0.00
%system	0.01
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.05
majflt/s	0.00
VSZ	4819400
RSS	35209
%MEM	0.05
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	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
test_execution_time	00:36:14
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53808
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	17.50
majflt/s	0.00
VSZ	37697960
RSS	20807
%MEM	0.03
kB_rd/s	0.09
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	53801
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47744
RSS	3196
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54073
%usr	0.00
%system	0.02
%guest	199.96
%CPU	100.01
CPU	•
minflt/s	1.53
majflt/s	0.00
VSZ	4772296
RSS	35503
%MEM	0.05
kB_rd/s	0.25
kB_wr/s	9.47
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54027
%usr	0.00
%system	0.01
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.05
majflt/s	0.00
VSZ	4819400
RSS	35209
%MEM	0.05
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	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
test_execution_time	00:36:14
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	53808
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	17.50
majflt/s	0.00
VSZ	37697960
RSS	20807
%MEM	0.03
kB_rd/s	0.09
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	53801
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47744
RSS	3196
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54073
%usr	0.00
%system	0.02
%guest	199.96
%CPU	100.01
CPU	•
minflt/s	1.53
majflt/s	0.00
VSZ	4772296
RSS	35503
%MEM	0.05
kB_rd/s	0.25
kB_wr/s	9.47
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	54027
%usr	0.00
%system	0.01
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.05
majflt/s	0.00
VSZ	4819400
RSS	35209
%MEM	0.05
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.

3.2.8 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- 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_20160303.qcow2
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303_copy.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
test_execution_time	00:50:51
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	57690
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	11.25
majflt/s	0.00
VSZ	37697960
RSS	24017
%MEM	0.04
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	57683
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3364
%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	57947
%usr	0.00
%system	0.18
%guest	199.95
%CPU	99.99
CPU	•
minflt/s	0.89
majflt/s	0.00
VSZ	4861900
RSS	37901
%MEM	0.06
kB_rd/s	0.02
kB_wr/s	6.35
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	57918
%usr	0.00
%system	0.00
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.04
majflt/s	0.00
VSZ	4813252
RSS	42749
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.03
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:50:51
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	57690
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	11.25
majflt/s	0.00
VSZ	37697960
RSS	24017
%MEM	0.04
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	57683
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3364
%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	57947
%usr	0.00
%system	0.18
%guest	199.95
%CPU	99.99
CPU	•
minflt/s	0.89
majflt/s	0.00
VSZ	4861900
RSS	37901
%MEM	0.06
kB_rd/s	0.02
kB_wr/s	6.35
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	57918
%usr	0.00
%system	0.00
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.04
majflt/s	0.00
VSZ	4813252
RSS	42749
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.03
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:50:51
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	57690
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	11.25
majflt/s	0.00
VSZ	37697960
RSS	24017
%MEM	0.04
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	57683
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3364
%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	57947
%usr	0.00
%system	0.18
%guest	199.95
%CPU	99.99
CPU	•
minflt/s	0.89
majflt/s	0.00
VSZ	4861900
RSS	37901
%MEM	0.06
kB_rd/s	0.02
kB_wr/s	6.35
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	57918
%usr	0.00
%system	0.00
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.04
majflt/s	0.00
VSZ	4813252
RSS	42749
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.03
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:50:51
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	57690
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	11.25
majflt/s	0.00
VSZ	37697960
RSS	24017
%MEM	0.04
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	57683
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3364
%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	57947
%usr	0.00
%system	0.18
%guest	199.95
%CPU	99.99
CPU	•
minflt/s	0.89
majflt/s	0.00
VSZ	4861900
RSS	37901
%MEM	0.06
kB_rd/s	0.02
kB_wr/s	6.35
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	57918
%usr	0.00
%system	0.00
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.04
majflt/s	0.00
VSZ	4813252
RSS	42749
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.03
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:50:51
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	57690
%usr	199.95
%system	0.06
%guest	0.00
%CPU	200.01
CPU	•
minflt/s	11.25
majflt/s	0.00
VSZ	37697960
RSS	24017
%MEM	0.04
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	57683
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47740
RSS	3364
%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	57947
%usr	0.00
%system	0.18
%guest	199.95
%CPU	99.99
CPU	•
minflt/s	0.89
majflt/s	0.00
VSZ	4861900
RSS	37901
%MEM	0.06
kB_rd/s	0.02
kB_wr/s	6.35
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	57918
%usr	0.00
%system	0.00
%guest	199.94
%CPU	100.00
CPU	•
minflt/s	0.04
majflt/s	0.00
VSZ	4813252
RSS	42749
%MEM	0.07
kB_rd/s	0.00
kB_wr/s	0.03
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.3 Rationale for decisions

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

3.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-05-13_03-18-56/vswitchperf_logs_2016-05-13_03-18-56.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
OPNFV_vswitchperf_LTR_ver_1.0_Jan_15_CN_DRAFT	Christopher Nolan	23/01/2015
OPNFV_vswitchperf_LTR_ver_1.1_Jan_15_CN_DRAFT	Christopher Nolan	28/01/2015

CHAPTER

FOUR

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: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce

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	988188.797
tx_rate_mbps	Unknown
throughput_rx_mbps	505.953
tx_rate_percent	3.320
throughput_rx_percent	3.320
frame_loss_percent	0.000
min_latency_ns	4320.000
max_latency_ns	1861540.000
avg_latency_ns	60161.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:11

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	63075
%usr	0.22
%system	1.21
%guest	0.00
%CPU	1.42
CPU	•
minflt/s	5.01
majflt/s	0.00
VSZ	2775668
RSS	13430
%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	63068
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	822161.456
tx_rate_mbps	Unknown
throughput_rx_mbps	841.893
tx_rate_percent	4.867
throughput_rx_percent	4.867
frame_loss_percent	0.000
min_latency_ns	4660.000
max_latency_ns	549880.000
avg_latency_ns	32334.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:11

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	63075
%usr	0.22
%system	1.21
%guest	0.00
%CPU	1.42
CPU	•
minflt/s	5.01
majflt/s	0.00
VSZ	2775668
RSS	13430
%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	63068
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	737562.058
tx_rate_mbps	Unknown
throughput_rx_mbps	3021.054
tx_rate_percent	15.695
throughput_rx_percent	15.695
frame_loss_percent	0.000
min_latency_ns	5780.000
max_latency_ns	888320.000
avg_latency_ns	51980.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:11

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	63075
%usr	0.22
%system	1.21
%guest	0.00
%CPU	1.42
CPU	•
minflt/s	5.01
majflt/s	0.00
VSZ	2775668
RSS	13430
%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	63068
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	801827.982
tx_rate_mbps	Unknown
throughput_rx_mbps	6568.575
tx_rate_percent	33.484
throughput_rx_percent	33.484
frame_loss_percent	0.000
min_latency_ns	6320.000
max_latency_ns	1712040.000
avg_latency_ns	60331.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:11

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	63075
%usr	0.22
%system	1.21
%guest	0.00
%CPU	1.42
CPU	•
minflt/s	5.01
majflt/s	0.00
VSZ	2775668
RSS	13430
%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	63068
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	758010.782
tx_rate_mbps	Unknown
throughput_rx_mbps	9205.283
tx_rate_percent	46.633
throughput_rx_percent	46.633
frame_loss_percent	0.000
min_latency_ns	7120.000
max_latency_ns	840040.000
avg_latency_ns	51090.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:11

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	63075
%usr	0.22
%system	1.21
%guest	0.00
%CPU	1.42
CPU	•
minflt/s	5.01
majflt/s	0.00
VSZ	2775668
RSS	13430
%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	63068
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.2 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	5108
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:42:35

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65784
%usr	0.21
%system	1.20
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	3.92
majflt/s	0.00
VSZ	2775668
RSS	9690
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65781
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	3382
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:42:35

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65784
%usr	0.21
%system	1.20
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	3.92
majflt/s	0.00
VSZ	2775668
RSS	9690
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65781
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1613
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:42:35

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65784
%usr	0.21
%system	1.20
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	3.92
majflt/s	0.00
VSZ	2775668
RSS	9690
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65781
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1370
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:42:35

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65784
%usr	0.21
%system	1.20
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	3.92
majflt/s	0.00
VSZ	2775668
RSS	9690
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65781
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1488
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:42:35

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	65784
%usr	0.21
%system	1.20
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	3.92
majflt/s	0.00
VSZ	2775668
RSS	9690
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	65781
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2996
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.3 Test ID: PHY2PHY_TPUT_MOD_VLAN

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce

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	609189.479
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	4200.000
max_latency_ns	2077900.000
avg_latency_ns	115220.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:27:54

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	69966
%usr	0.22
%system	1.22
%guest	0.00
%CPU	1.44
CPU	•
minflt/s	3.95
majflt/s	0.00
VSZ	2775668
RSS	11137
%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	69963
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	607053.325
tx_rate_mbps	Unknown
throughput_rx_mbps	641.048
tx_rate_percent	7.188
throughput_rx_percent	7.382
frame_loss_percent	0.000
min_latency_ns	4480.000
max_latency_ns	3606500.000
avg_latency_ns	111215.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:27:54

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	69966
%usr	0.22
%system	1.22
%guest	0.00
%CPU	1.44
CPU	•
minflt/s	3.95
majflt/s	0.00
VSZ	2775668
RSS	11137
%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	69963
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	550510.087
tx_rate_mbps	Unknown
throughput_rx_mbps	2272.506
tx_rate_percent	23.430
throughput_rx_percent	23.606
frame_loss_percent	0.000
min_latency_ns	5380.000
max_latency_ns	1922200.000
avg_latency_ns	102682.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:27:54

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	69966
%usr	0.22
%system	1.22
%guest	0.00
%CPU	1.44
CPU	•
minflt/s	3.95
majflt/s	0.00
VSZ	2775668
RSS	11137
%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	69963
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	539822.614
tx_rate_mbps	Unknown
throughput_rx_mbps	4439.501
tx_rate_percent	45.086
throughput_rx_percent	45.259
frame_loss_percent	0.000
min_latency_ns	5760.000
max_latency_ns	1514800.000
avg_latency_ns	98078.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:27:54

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	69966
%usr	0.22
%system	1.22
%guest	0.00
%CPU	1.44
CPU	•
minflt/s	3.95
majflt/s	0.00
VSZ	2775668
RSS	11137
%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	69963
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	529871.541
tx_rate_mbps	Unknown
throughput_rx_mbps	6451.716
tx_rate_percent	65.195
throughput_rx_percent	65.365
frame_loss_percent	0.000
min_latency_ns	6420.000
max_latency_ns	1326080.000
avg_latency_ns	40167.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:27:54

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	69966
%usr	0.22
%system	1.22
%guest	0.00
%CPU	1.44
CPU	•
minflt/s	3.95
majflt/s	0.00
VSZ	2775668
RSS	11137
%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	69963
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.4 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	988189.624
tx_rate_mbps	Unknown
throughput_rx_mbps	505.953
tx_rate_percent	3.320
throughput_rx_percent	3.320
frame_loss_percent	0.000
min_latency_ns	4040.000
max_latency_ns	8491100.000
avg_latency_ns	83069.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:28:04
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	72671
%usr	0.21
%system	1.21
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	6.84
majflt/s	0.00
VSZ	2775664
RSS	9089
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	72668
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	952808.964
tx_rate_mbps	Unknown
throughput_rx_mbps	975.676
tx_rate_percent	5.641
throughput_rx_percent	5.641
frame_loss_percent	0.000
min_latency_ns	4580.000
max_latency_ns	3723620.000
avg_latency_ns	93617.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:28:04
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	72671
%usr	0.21
%system	1.21
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	6.84
majflt/s	0.00
VSZ	2775664
RSS	9089
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	72668
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	810253.634
tx_rate_mbps	Unknown
throughput_rx_mbps	3318.799
tx_rate_percent	17.242
throughput_rx_percent	17.242
frame_loss_percent	0.000
min_latency_ns	5700.000
max_latency_ns	3035960.000
avg_latency_ns	70582.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:28:04
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	72671
%usr	0.21
%system	1.21
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	6.84
majflt/s	0.00
VSZ	2775664
RSS	9089
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	72668
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	801829.085
tx_rate_mbps	Unknown
throughput_rx_mbps	6568.584
tx_rate_percent	33.484
throughput_rx_percent	33.484
frame_loss_percent	0.000
min_latency_ns	6400.000
max_latency_ns	2299880.000
avg_latency_ns	64614.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:28:04
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	72671
%usr	0.21
%system	1.21
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	6.84
majflt/s	0.00
VSZ	2775664
RSS	9089
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	72668
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	795728.195
tx_rate_mbps	Unknown
throughput_rx_mbps	9663.323
tx_rate_percent	48.953
throughput_rx_percent	48.953
frame_loss_percent	0.000
min_latency_ns	6960.000
max_latency_ns	1560540.000
avg_latency_ns	60817.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:28:04
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	72671
%usr	0.21
%system	1.21
%guest	0.00
%CPU	1.41
CPU	•
minflt/s	6.84
majflt/s	0.00
VSZ	2775664
RSS	9089
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	72668
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2992
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.5 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303_copy.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	525896.753
tx_rate_mbps	Unknown
throughput_rx_mbps	269.259
tx_rate_percent	1.773
throughput_rx_percent	1.767
frame_loss_percent	0.363
min_latency_ns	7420.000
max_latency_ns	30831860.000
avg_latency_ns	66016.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:29:31
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	75591
%usr	0.19
%system	1.16
%guest	0.00
%CPU	1.35
CPU	•
minflt/s	4.43
majflt/s	0.00
VSZ	2775780
RSS	12343
%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	75525
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3220
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	75745
%usr	0.00
%system	1.11
%guest	198.84
%CPU	100.00
CPU	•
minflt/s	0.51
majflt/s	0.00
VSZ	4763216
RSS	36040
%MEM	0.05
kB_rd/s	0.02
kB_wr/s	8.29
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	299567.742
tx_rate_mbps	Unknown
throughput_rx_mbps	306.757
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.000
min_latency_ns	7580.000
max_latency_ns	444940.000
avg_latency_ns	46855.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:29:31
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	75591
%usr	0.19
%system	1.16
%guest	0.00
%CPU	1.35
CPU	•
minflt/s	4.43
majflt/s	0.00
VSZ	2775780
RSS	12343
%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	75525
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3220
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	75745
%usr	0.00
%system	1.11
%guest	198.84
%CPU	100.00
CPU	•
minflt/s	0.51
majflt/s	0.00
VSZ	4763216
RSS	36040
%MEM	0.05
kB_rd/s	0.02
kB_wr/s	8.29
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	265067.024
tx_rate_mbps	Unknown
throughput_rx_mbps	1085.715
tx_rate_percent	5.641
throughput_rx_percent	5.641
frame_loss_percent	0.000
min_latency_ns	9180.000
max_latency_ns	1577040.000
avg_latency_ns	97665.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:29:31
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	75591
%usr	0.19
%system	1.16
%guest	0.00
%CPU	1.35
CPU	•
minflt/s	4.43
majflt/s	0.00
VSZ	2775780
RSS	12343
%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	75525
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3220
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	75745
%usr	0.00
%system	1.11
%guest	198.84
%CPU	100.00
CPU	•
minflt/s	0.51
majflt/s	0.00
VSZ	4763216
RSS	36040
%MEM	0.05
kB_rd/s	0.02
kB_wr/s	8.29
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	264719.839
tx_rate_mbps	Unknown
throughput_rx_mbps	2168.585
tx_rate_percent	11.055
throughput_rx_percent	11.055
frame_loss_percent	0.000
min_latency_ns	10220.000
max_latency_ns	1602980.000
avg_latency_ns	102057.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:29:31
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	75591
%usr	0.19
%system	1.16
%guest	0.00
%CPU	1.35
CPU	•
minflt/s	4.43
majflt/s	0.00
VSZ	2775780
RSS	12343
%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	75525
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3220
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	75745
%usr	0.00
%system	1.11
%guest	198.84
%CPU	100.00
CPU	•
minflt/s	0.51
majflt/s	0.00
VSZ	4763216
RSS	36040
%MEM	0.05
kB_rd/s	0.02
kB_wr/s	8.29
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	292841.413
tx_rate_mbps	Unknown
throughput_rx_mbps	3556.266
tx_rate_percent	18.016
throughput_rx_percent	18.016
frame_loss_percent	0.000
min_latency_ns	11220.000
max_latency_ns	2131740.000
avg_latency_ns	106743.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:29:31
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	75591
%usr	0.19
%system	1.16
%guest	0.00
%CPU	1.35
CPU	•
minflt/s	4.43
majflt/s	0.00
VSZ	2775780
RSS	12343
%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	75525
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3220
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	75745
%usr	0.00
%system	1.11
%guest	198.84
%CPU	100.00
CPU	•
minflt/s	0.51
majflt/s	0.00
VSZ	4763216
RSS	36040
%MEM	0.05
kB_rd/s	0.02
kB_wr/s	8.29
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: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303_copy.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
test_execution_time	00:43:49
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	78635
%usr	0.20
%system	1.20
%guest	0.00
%CPU	1.40
CPU	•
minflt/s	4.53
majflt/s	0.00
VSZ	2775788
RSS	11047
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	78632
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45860
RSS	3212
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	78799
%usr	0.00
%system	0.03
%guest	199.93
%CPU	100.02
CPU	•
minflt/s	0.63
majflt/s	0.00
VSZ	4757056
RSS	39212
%MEM	0.06
kB_rd/s	0.54
kB_wr/s	72.41
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:43:49
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	78635
%usr	0.20
%system	1.20
%guest	0.00
%CPU	1.40
CPU	•
minflt/s	4.53
majflt/s	0.00
VSZ	2775788
RSS	11047
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	78632
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45860
RSS	3212
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	78799
%usr	0.00
%system	0.03
%guest	199.93
%CPU	100.02
CPU	•
minflt/s	0.63
majflt/s	0.00
VSZ	4757056
RSS	39212
%MEM	0.06
kB_rd/s	0.54
kB_wr/s	72.41
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:43:49
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	78635
%usr	0.20
%system	1.20
%guest	0.00
%CPU	1.40
CPU	•
minflt/s	4.53
majflt/s	0.00
VSZ	2775788
RSS	11047
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	78632
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45860
RSS	3212
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	78799
%usr	0.00
%system	0.03
%guest	199.93
%CPU	100.02
CPU	•
minflt/s	0.63
majflt/s	0.00
VSZ	4757056
RSS	39212
%MEM	0.06
kB_rd/s	0.54
kB_wr/s	72.41
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:43:49
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	78635
%usr	0.20
%system	1.20
%guest	0.00
%CPU	1.40
CPU	•
minflt/s	4.53
majflt/s	0.00
VSZ	2775788
RSS	11047
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	78632
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45860
RSS	3212
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	78799
%usr	0.00
%system	0.03
%guest	199.93
%CPU	100.02
CPU	•
minflt/s	0.63
majflt/s	0.00
VSZ	4757056
RSS	39212
%MEM	0.06
kB_rd/s	0.54
kB_wr/s	72.41
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:43:49
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	78635
%usr	0.20
%system	1.20
%guest	0.00
%CPU	1.40
CPU	•
minflt/s	4.53
majflt/s	0.00
VSZ	2775788
RSS	11047
%MEM	0.02
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	78632
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45860
RSS	3212
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	78799
%usr	0.00
%system	0.03
%guest	199.93
%CPU	100.02
CPU	•
minflt/s	0.63
majflt/s	0.00
VSZ	4757056
RSS	39212
%MEM	0.06
kB_rd/s	0.54
kB_wr/s	72.41
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.7 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.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 S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 30d75a0778d825fa13eecea7d352eedfe35bd4ed
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: f3ea2ad27fd076735fdb78286980749bb12fe1ce
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
  - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303_copy.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
test_execution_time	00:45:31
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83858
%usr	0.20
%system	1.19
%guest	0.00
%CPU	1.39
CPU	•
minflt/s	5.20
majflt/s	0.00
VSZ	2775792
RSS	9803
%MEM	0.01
kB_rd/s	0.02
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	83855
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3120
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84196
%usr	0.00
%system	0.04
%guest	199.92
%CPU	99.99
CPU	•
minflt/s	0.35
majflt/s	0.00
VSZ	4852304
RSS	38863
%MEM	0.06
kB_rd/s	0.03
kB_wr/s	6.45
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84081
%usr	0.00
%system	0.06
%guest	199.93
%CPU	100.00
CPU	•
minflt/s	0.97
majflt/s	0.00
VSZ	4824652
RSS	36406
%MEM	0.06
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	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:45:31
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83858
%usr	0.20
%system	1.19
%guest	0.00
%CPU	1.39
CPU	•
minflt/s	5.20
majflt/s	0.00
VSZ	2775792
RSS	9803
%MEM	0.01
kB_rd/s	0.02
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	83855
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3120
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84196
%usr	0.00
%system	0.04
%guest	199.92
%CPU	99.99
CPU	•
minflt/s	0.35
majflt/s	0.00
VSZ	4852304
RSS	38863
%MEM	0.06
kB_rd/s	0.03
kB_wr/s	6.45
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84081
%usr	0.00
%system	0.06
%guest	199.93
%CPU	100.00
CPU	•
minflt/s	0.97
majflt/s	0.00
VSZ	4824652
RSS	36406
%MEM	0.06
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	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:45:31
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83858
%usr	0.20
%system	1.19
%guest	0.00
%CPU	1.39
CPU	•
minflt/s	5.20
majflt/s	0.00
VSZ	2775792
RSS	9803
%MEM	0.01
kB_rd/s	0.02
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	83855
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3120
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84196
%usr	0.00
%system	0.04
%guest	199.92
%CPU	99.99
CPU	•
minflt/s	0.35
majflt/s	0.00
VSZ	4852304
RSS	38863
%MEM	0.06
kB_rd/s	0.03
kB_wr/s	6.45
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84081
%usr	0.00
%system	0.06
%guest	199.93
%CPU	100.00
CPU	•
minflt/s	0.97
majflt/s	0.00
VSZ	4824652
RSS	36406
%MEM	0.06
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	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:45:31
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83858
%usr	0.20
%system	1.19
%guest	0.00
%CPU	1.39
CPU	•
minflt/s	5.20
majflt/s	0.00
VSZ	2775792
RSS	9803
%MEM	0.01
kB_rd/s	0.02
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	83855
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3120
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84196
%usr	0.00
%system	0.04
%guest	199.92
%CPU	99.99
CPU	•
minflt/s	0.35
majflt/s	0.00
VSZ	4852304
RSS	38863
%MEM	0.06
kB_rd/s	0.03
kB_wr/s	6.45
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84081
%usr	0.00
%system	0.06
%guest	199.93
%CPU	100.00
CPU	•
minflt/s	0.97
majflt/s	0.00
VSZ	4824652
RSS	36406
%MEM	0.06
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	0
b2b_frame_loss_percent	100
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:45:31
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	83858
%usr	0.20
%system	1.19
%guest	0.00
%CPU	1.39
CPU	•
minflt/s	5.20
majflt/s	0.00
VSZ	2775792
RSS	9803
%MEM	0.01
kB_rd/s	0.02
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	83855
%usr	0.01
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45864
RSS	3120
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84196
%usr	0.00
%system	0.04
%guest	199.92
%CPU	99.99
CPU	•
minflt/s	0.35
majflt/s	0.00
VSZ	4852304
RSS	38863
%MEM	0.06
kB_rd/s	0.03
kB_wr/s	6.45
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	84081
%usr	0.00
%system	0.06
%guest	199.93
%CPU	100.00
CPU	•
minflt/s	0.97
majflt/s	0.00
VSZ	4824652
RSS	36406
%MEM	0.06
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.

4.3 Rationale for decisions

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

4.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-05-13_03-18-56/vswitchperf_logs_2016-05-13_03-18-56.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
OPNFV_vswitchperf_LTR_ver_1.0_Jan_15_CN_DRAFT	Christopher Nolan	23/01/2015
OPNFV_vswitchperf_LTR_ver_1.1_Jan_15_CN_DRAFT	Christopher Nolan	28/01/2015