



VSPERF Results

Release draft (da059df)

OPNFV

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OPNFV BRAHMAPUTRA SCENARIOS

Available Tests and aspects of scenarios:

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

Supported deployment scenarios:

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

Loopback applications in the Guest can be:

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

Supported traffic generators:

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

OPNFV BRAHMAPUTRA RESULTS

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

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

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

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

PERFORMANCE REPORT FOR OPEN VSWITCH WITH DPDK SUPPORT

3.1 Introduction

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

This document is currently in draft form.

3.1.1 Document identifier

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

3.1.2 Scope

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

3.1.3 References

OPNFV_vswitchperf_LTD_Brahmaputra_REVIEWED

3.2 Details of the Level Test Report

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

3.2.1 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	23416
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:57:53

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	132302
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	11.35
majflt/s	0.00
VSZ	4768460
RSS	57823
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	132295
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	126689189
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:57:53

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	132302
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	•
minflt/s	11.35
majflt/s	0.00
VSZ	4768460
RSS	57823
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	132295
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	70488721
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:57:53

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	132302
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	•
minflt/s	11.35
majflt/s	0.00
VSZ	4768460
RSS	57823
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	132295
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	35919540
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:57:53

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	132302
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	11.35
majflt/s	0.00
VSZ	4768460
RSS	57823
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	132295
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	24382314
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:57:53

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	132302
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	•
minflt/s	11.35
majflt/s	0.00
VSZ	4768460
RSS	57823
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	132295
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.2 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

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	3980658.578
tx_rate_mbps	Unknown
throughput_rx_mbps	2038.097
tx_rate_percent	13.375
throughput_rx_percent	13.375
frame_loss_percent	0.000
min_latency_ns	5060.000
max_latency_ns	66820.000
avg_latency_ns	6787.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:56:01
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152817
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	8.98
majflt/s	0.00
VSZ	19452620
RSS	57924
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152810
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152959
%usr	0.00
%system	0.09
%guest	200.16
%CPU	100.16
CPU	.
minflt/s	1.12
majflt/s	0.00
VSZ	4750936
RSS	234023
%MEM	0.36
kB_rd/s	0.01
kB_wr/s	21.49
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	4741612.974
tx_rate_mbps	Unknown
throughput_rx_mbps	4855.412
tx_rate_percent	28.070
throughput_rx_percent	28.070
frame_loss_percent	0.000
min_latency_ns	6660.000
max_latency_ns	102060.000
avg_latency_ns	9351.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:56:01
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152817
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	8.98
majflt/s	0.00
VSZ	19452620
RSS	57924
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152810
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152959
%usr	0.00
%system	0.09
%guest	200.16
%CPU	100.16
CPU	.
minflt/s	1.12
majflt/s	0.00
VSZ	4750936
RSS	234023
%MEM	0.36
kB_rd/s	0.01
kB_wr/s	21.49
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	4154057.707
tx_rate_mbps	Unknown
throughput_rx_mbps	17015.020
tx_rate_percent	88.398
throughput_rx_percent	88.398
frame_loss_percent	0.000
min_latency_ns	18880.000
max_latency_ns	185160.000
avg_latency_ns	68998.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:56:01
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152817
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	8.98
majflt/s	0.00
VSZ	19452620
RSS	57924
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152810
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152959
%usr	0.00
%system	0.09
%guest	200.16
%CPU	100.16
CPU	.
minflt/s	1.12
majflt/s	0.00
VSZ	4750936
RSS	234023
%MEM	0.36
kB_rd/s	0.01
kB_wr/s	21.49
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	2394580.721
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.405
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	69480.000
max_latency_ns	141080.000
avg_latency_ns	125963.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:56:01
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152817
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	8.98
majflt/s	0.00
VSZ	19452620
RSS	57924
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	152810
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152959
%usr	0.00
%system	0.09
%guest	200.16
%CPU	100.16
CPU	.
minflt/s	1.12
majflt/s	0.00
VSZ	4750936
RSS	234023
%MEM	0.36
kB_rd/s	0.01
kB_wr/s	21.49
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	1625466.202
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.662
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	67880.000
max_latency_ns	108840.000
avg_latency_ns	97349.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:56:01
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	152817
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	8.98
majflt/s	0.00
VSZ	19452620
RSS	57924
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	152810
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47768
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	152959
%usr	0.00
%system	0.09
%guest	200.16
%CPU	100.16
CPU	.
minflt/s	1.12
majflt/s	0.00
VSZ	4750936
RSS	234023
%MEM	0.36
kB_rd/s	0.01
kB_wr/s	21.49
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.3 Test ID: PHY2PHY_TPUT_MOD_VLAN

Test Environment

Below is the environment that the test was performed in:

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

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	12118686.595
tx_rate_mbps	Unknown
throughput_rx_mbps	6592.566
tx_rate_percent	81.438
throughput_rx_percent	85.316
frame_loss_percent	0.000
min_latency_ns	4620.000
max_latency_ns	184580.000
avg_latency_ns	8077.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:55:06

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	139442
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	5.18
majflt/s	0.00
VSZ	4768464
RSS	57819
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	139435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	8184667.151
tx_rate_mbps	Unknown
throughput_rx_mbps	8643.009
tx_rate_percent	96.906
throughput_rx_percent	99.526
frame_loss_percent	0.000
min_latency_ns	5200.000
max_latency_ns	237760.000
avg_latency_ns	8107.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:55:06

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	139442
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	5.18
majflt/s	0.00
VSZ	4768464
RSS	57819
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	139435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	2331451.781
tx_rate_mbps	Unknown
throughput_rx_mbps	9624.233
tx_rate_percent	99.227
throughput_rx_percent	99.973
frame_loss_percent	0.000
min_latency_ns	5340.000
max_latency_ns	229200.000
avg_latency_ns	20752.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:55:06

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	139442
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	5.18
majflt/s	0.00
VSZ	4768464
RSS	57819
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	139435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1188058.297
tx_rate_mbps	Unknown
throughput_rx_mbps	9770.591
tx_rate_percent	99.227
throughput_rx_percent	99.607
frame_loss_percent	0.000
min_latency_ns	5780.000
max_latency_ns	50580.000
avg_latency_ns	7805.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:55:06

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	139442
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	5.18
majflt/s	0.00
VSZ	4768464
RSS	57819
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	139435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	806458.039
tx_rate_mbps	Unknown
throughput_rx_mbps	9819.433
tx_rate_percent	99.227
throughput_rx_percent	99.485
frame_loss_percent	0.000
min_latency_ns	6200.000
max_latency_ns	44860.000
avg_latency_ns	7989.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:55:06

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	139442
%usr	200.23
%system	0.10
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	5.18
majflt/s	0.00
VSZ	4768464
RSS	57819
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	139435
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3352
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.4 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

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	3405
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	01:03:53
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	174949
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.16
majflt/s	0.00
VSZ	34136784
RSS	57896
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	174938
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175127
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.31
majflt/s	0.00
VSZ	4810051
RSS	300209
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	15.82
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175103
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4758100
RSS	311793
%MEM	0.47
kB_rd/s	0.00
kB_wr/s	0.06
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	5316
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	01:03:53
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	174949
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	14.16
majflt/s	0.00
VSZ	34136784
RSS	57896
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	174938
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175127
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.31
majflt/s	0.00
VSZ	4810051
RSS	300209
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	15.82
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175103
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4758100
RSS	311793
%MEM	0.47
kB_rd/s	0.00
kB_wr/s	0.06
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	8604
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	01:03:53
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	174949
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.16
majflt/s	0.00
VSZ	34136784
RSS	57896
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	174938
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175127
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.31
majflt/s	0.00
VSZ	4810051
RSS	300209
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	15.82
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175103
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4758100
RSS	311793
%MEM	0.47
kB_rd/s	0.00
kB_wr/s	0.06
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	4384
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	01:03:53
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	174949
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.16
majflt/s	0.00
VSZ	34136784
RSS	57896
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	174938
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175127
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.31
majflt/s	0.00
VSZ	4810051
RSS	300209
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	15.82
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175103
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4758100
RSS	311793
%MEM	0.47
kB_rd/s	0.00
kB_wr/s	0.06
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	01:03:53
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	174949
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.34
CPU	•
minflt/s	14.16
majflt/s	0.00
VSZ	34136784
RSS	57896
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	174938
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175127
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.31
majflt/s	0.00
VSZ	4810051
RSS	300209
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	15.82
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	175103
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	0.04
majflt/s	0.00
VSZ	4758100
RSS	311793
%MEM	0.47
kB_rd/s	0.00
kB_wr/s	0.06
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.5 Test ID: PHY2PHY_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	22626032.465
tx_rate_mbps	Unknown
throughput_rx_mbps	11584.529
tx_rate_percent	76.023
throughput_rx_percent	76.023
frame_loss_percent	0.000
min_latency_ns	4540.000
max_latency_ns	660760.000
avg_latency_ns	8540.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:46:02

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126569
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	11.65
majflt/s	0.00
VSZ	4768464
RSS	57829
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	126562
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	16890626.704
tx_rate_mbps	Unknown
throughput_rx_mbps	17296.002
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	34620.000
max_latency_ns	382420.000
avg_latency_ns	134421.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:46:02

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126569
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	11.65
majflt/s	0.00
VSZ	4768464
RSS	57829
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	126562
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	4699195.767
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.906
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	35960.000
max_latency_ns	69780.000
avg_latency_ns	58901.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:46:02

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126569
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	11.65
majflt/s	0.00
VSZ	4768464
RSS	57829
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	126562
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	2394607.795
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.627
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	39060.000
max_latency_ns	74600.000
avg_latency_ns	64030.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:46:02

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126569
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	11.65
majflt/s	0.00
VSZ	4768464
RSS	57829
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	126562
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1625463.401
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.628
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	38860.000
max_latency_ns	90100.000
avg_latency_ns	79108.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:46:02

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	126569
%usr	200.23
%system	0.09
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	11.65
majflt/s	0.00
VSZ	4768464
RSS	57829
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	126562
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.6 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

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

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	22626034.811
tx_rate_mbps	Unknown
throughput_rx_mbps	11584.530
tx_rate_percent	76.023
throughput_rx_percent	76.023
frame_loss_percent	0.000
min_latency_ns	6820.000
max_latency_ns	131860.000
avg_latency_ns	8197.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:51:41
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	146326
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	17.94
majflt/s	0.00
VSZ	4768464
RSS	57769
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	146319
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	15977429.835
tx_rate_mbps	Unknown
throughput_rx_mbps	16360.888
tx_rate_percent	94.586
throughput_rx_percent	94.586
frame_loss_percent	0.000
min_latency_ns	4740.000
max_latency_ns	108340.000
avg_latency_ns	9258.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:51:41
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	146326
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	17.94
majflt/s	0.00
VSZ	4768464
RSS	57769
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	146319
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	4699188.077
tx_rate_mbps	Unknown
throughput_rx_mbps	19247.874
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	44240.000
max_latency_ns	83300.000
avg_latency_ns	72036.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:51:41
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	146326
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	17.94
majflt/s	0.00
VSZ	4768464
RSS	57769
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	146319
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	2394565.683
tx_rate_mbps	Unknown
throughput_rx_mbps	19616.282
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	36680.000
max_latency_ns	126100.000
avg_latency_ns	63360.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:51:41
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	146326
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	17.94
majflt/s	0.00
VSZ	4768464
RSS	57769
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	146319
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1625467.031
tx_rate_mbps	Unknown
throughput_rx_mbps	19739.672
tx_rate_percent	100
throughput_rx_percent	100
frame_loss_percent	0.000
min_latency_ns	38340.000
max_latency_ns	77500.000
avg_latency_ns	66024.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:51:41
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	146326
%usr	200.22
%system	0.10
%guest	0.00
%CPU	200.32
CPU	.
minflt/s	17.94
majflt/s	0.00
VSZ	4768464
RSS	57769
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	146319
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47656
RSS	3356
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.7 Test ID: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	9792
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	01:07:51
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	159816
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	14.79
majflt/s	0.00
VSZ	19452620
RSS	57875
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	159809
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	159958
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.17
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4735584
RSS	254366
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	15.22
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	01:07:51
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	159816
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	•
minflt/s	14.79
majflt/s	0.00
VSZ	19452620
RSS	57875
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	159809
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	159958
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.17
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4735584
RSS	254366
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	15.22
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	01:07:51
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	159816
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	14.79
majflt/s	0.00
VSZ	19452620
RSS	57875
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	159809
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	159958
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.17
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4735584
RSS	254366
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	15.22
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	01:07:51
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	159816
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	14.79
majflt/s	0.00
VSZ	19452620
RSS	57875
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	159809
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	159958
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.17
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4735584
RSS	254366
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	15.22
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	01:07:51
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	159816
%usr	200.26
%system	0.07
%guest	0.00
%CPU	200.33
CPU	.
minflt/s	14.79
majflt/s	0.00
VSZ	19452620
RSS	57875
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	159809
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3380
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	159958
%usr	0.00
%system	0.00
%guest	200.10
%CPU	100.17
CPU	.
minflt/s	0.24
majflt/s	0.00
VSZ	4735584
RSS	254366
%MEM	0.39
kB_rd/s	0.00
kB_wr/s	15.22
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.8 Test ID: PVVP_TPUT

Test Environment

Below is the environment that the test was performed in:

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

- Virtual Switch Set-up: pvpv
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- DPDK Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
- VNF: QemuDpdkVhostUser, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

Below are test details:

- Test ID: pvpv_tput
- Description: LTD.Throughput.RFC2544.PacketLossRatio
- Deployment: pvpv
- 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	2369328.669
tx_rate_mbps	Unknown
throughput_rx_mbps	1213.096
tx_rate_percent	7.961
throughput_rx_percent	7.961
frame_loss_percent	0.000
min_latency_ns	8220.000
max_latency_ns	94020.000
avg_latency_ns	12572.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:52:55
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	168084
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	17.89
majflt/s	0.00
VSZ	34136784
RSS	57917
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	168077
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168382
%usr	0.00
%system	0.17
%guest	200.14
%CPU	100.16
CPU	.
minflt/s	1.36
majflt/s	0.00
VSZ	4772444
RSS	320907
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.28
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168340
%usr	0.00
%system	0.08
%guest	200.20
%CPU	100.16
CPU	.
minflt/s	1.53
majflt/s	0.00
VSZ	4849232
RSS	357004
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	1.80
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	1344753.473
tx_rate_mbps	Unknown
throughput_rx_mbps	1377.028
tx_rate_percent	7.961
throughput_rx_percent	7.961
frame_loss_percent	0.000
min_latency_ns	6440.000
max_latency_ns	69960.000
avg_latency_ns	8988.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:52:55
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	168084
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	17.89
majflt/s	0.00
VSZ	34136784
RSS	57917
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	168077
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168382
%usr	0.00
%system	0.17
%guest	200.14
%CPU	100.16
CPU	.
minflt/s	1.36
majflt/s	0.00
VSZ	4772444
RSS	320907
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.28
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168340
%usr	0.00
%system	0.08
%guest	200.20
%CPU	100.16
CPU	.
minflt/s	1.53
majflt/s	0.00
VSZ	4849232
RSS	357004
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	1.80
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	2373119.080
tx_rate_mbps	Unknown
throughput_rx_mbps	9720.296
tx_rate_percent	50.500
throughput_rx_percent	50.500
frame_loss_percent	0.000
min_latency_ns	11500.000
max_latency_ns	119000.000
avg_latency_ns	18199.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:52:55
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	168084
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	17.89
majflt/s	0.00
VSZ	34136784
RSS	57917
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	168077
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168382
%usr	0.00
%system	0.17
%guest	200.14
%CPU	100.16
CPU	.
minflt/s	1.36
majflt/s	0.00
VSZ	4772444
RSS	320907
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.28
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168340
%usr	0.00
%system	0.08
%guest	200.20
%CPU	100.16
CPU	.
minflt/s	1.53
majflt/s	0.00
VSZ	4849232
RSS	357004
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	1.80
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	1505627.023
tx_rate_mbps	Unknown
throughput_rx_mbps	12334.097
tx_rate_percent	62.875
throughput_rx_percent	62.875
frame_loss_percent	0.000
min_latency_ns	10540.000
max_latency_ns	113600.000
avg_latency_ns	16075.500
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:52:55
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	168084
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	17.89
majflt/s	0.00
VSZ	34136784
RSS	57917
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	168077
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168382
%usr	0.00
%system	0.17
%guest	200.14
%CPU	100.16
CPU	.
minflt/s	1.36
majflt/s	0.00
VSZ	4772444
RSS	320907
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.28
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168340
%usr	0.00
%system	0.08
%guest	200.20
%CPU	100.16
CPU	.
minflt/s	1.53
majflt/s	0.00
VSZ	4849232
RSS	357004
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	1.80
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	1449478.098
tx_rate_mbps	Unknown
throughput_rx_mbps	17602.462
tx_rate_percent	89.172
throughput_rx_percent	89.172
frame_loss_percent	0.000
min_latency_ns	15780.000
max_latency_ns	125740.000
avg_latency_ns	20602.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:52:55
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	168084
%usr	200.27
%system	0.07
%guest	0.00
%CPU	200.34
CPU	.
minflt/s	17.89
majflt/s	0.00
VSZ	34136784
RSS	57917
%MEM	0.09
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	168077
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	47756
RSS	3384
%MEM	0.01
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168382
%usr	0.00
%system	0.17
%guest	200.14
%CPU	100.16
CPU	.
minflt/s	1.36
majflt/s	0.00
VSZ	4772444
RSS	320907
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.28
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	168340
%usr	0.00
%system	0.08
%guest	200.20
%CPU	100.16
CPU	.
minflt/s	1.53
majflt/s	0.00
VSZ	4849232
RSS	357004
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	1.80
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.3 Rationale for decisions

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

3.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-08-08_21-07-50/vswitchperf_logs_2016-08-08_21-07-50.tar.gz.

3.5 General

3.5.1 Glossary

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

3.5.2 Document change procedures and history

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

PERFORMANCE REPORT FOR OPEN VSWITCH

4.1 Introduction

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

This document is currently in draft form.

4.1.1 Document identifier

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

4.1.2 Scope

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

4.1.3 References

OPNFV_vswitchperf_LTD_Brahmaputra_REVIEWED

4.2 Details of the Level Test Report

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

4.2.1 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cddf6b0165f84a92d

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	01:02:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189381
%usr	0.21
%system	1.46
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.05
majflt/s	0.00
VSZ	3365528
RSS	18056
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	189378
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	3382
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	01:02:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189381
%usr	0.21
%system	1.46
%guest	0.00
%CPU	1.68
CPU	•
minflt/s	4.05
majflt/s	0.00
VSZ	3365528
RSS	18056
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	189378
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1344
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	01:02:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vsitchd	
Statistic	Value
UID	0
PID	189381
%usr	0.21
%system	1.46
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.05
majflt/s	0.00
VSZ	3365528
RSS	18056
%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	189378
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1096
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	01:02:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189381
%usr	0.21
%system	1.46
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.05
majflt/s	0.00
VSZ	3365528
RSS	18056
%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	189378
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
b2b_frames	1116
b2b_frame_loss_percent	0.0
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	01:02:13

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	189381
%usr	0.21
%system	1.46
%guest	0.00
%CPU	1.68
CPU	•
minflt/s	4.05
majflt/s	0.00
VSZ	3365528
RSS	18056
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	189378
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.2 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

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	526529.588
tx_rate_mbps	Unknown
throughput_rx_mbps	269.583
tx_rate_percent	1.773
throughput_rx_percent	1.769
frame_loss_percent	0.244
min_latency_ns	14780.000
max_latency_ns	20306180.000
avg_latency_ns	60791.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:58:15
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	15149
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.29
majflt/s	0.00
VSZ	3365532
RSS	20197
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	15146
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3232
%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	15350
%usr	0.00
%system	0.31
%guest	199.80
%CPU	100.17
CPU	.
minflt/s	0.39
majflt/s	0.00
VSZ	4808448
RSS	267964
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	31.92
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	299562.496
tx_rate_mbps	Unknown
throughput_rx_mbps	306.752
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.002
min_latency_ns	12980.000
max_latency_ns	2008460.000
avg_latency_ns	45138.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:58:15
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	15149
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.29
majflt/s	0.00
VSZ	3365532
RSS	20197
%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	15146
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3232
%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	15350
%usr	0.00
%system	0.31
%guest	199.80
%CPU	100.17
CPU	.
minflt/s	0.39
majflt/s	0.00
VSZ	4808448
RSS	267964
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	31.92
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	265067.022
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	37320.000
max_latency_ns	388060.000
avg_latency_ns	115027.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:58:15
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	15149
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.29
majflt/s	0.00
VSZ	3365532
RSS	20197
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	15146
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3232
%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	15350
%usr	0.00
%system	0.31
%guest	199.80
%CPU	100.17
CPU	.
minflt/s	0.39
majflt/s	0.00
VSZ	4808448
RSS	267964
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	31.92
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	190635.718
tx_rate_mbps	Unknown
throughput_rx_mbps	1561.688
tx_rate_percent	7.961
throughput_rx_percent	7.961
frame_loss_percent	0.000
min_latency_ns	30280.000
max_latency_ns	256040.000
avg_latency_ns	93213.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:58:15
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	15149
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.29
majflt/s	0.00
VSZ	3365532
RSS	20197
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	15146
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3232
%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	15350
%usr	0.00
%system	0.31
%guest	199.80
%CPU	100.17
CPU	.
minflt/s	0.39
majflt/s	0.00
VSZ	4808448
RSS	267964
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	31.92
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	255125.574
tx_rate_mbps	Unknown
throughput_rx_mbps	3098.245
tx_rate_percent	15.695
throughput_rx_percent	15.695
frame_loss_percent	0.000
min_latency_ns	43640.000
max_latency_ns	309140.000
avg_latency_ns	104919.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:58:15
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	15149
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.29
majflt/s	0.00
VSZ	3365532
RSS	20197
%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	15146
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3232
%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	15350
%usr	0.00
%system	0.31
%guest	199.80
%CPU	100.17
CPU	.
minflt/s	0.39
majflt/s	0.00
VSZ	4808448
RSS	267964
%MEM	0.41
kB_rd/s	0.00
kB_wr/s	31.92
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.3 Test ID: PHY2PHY_TPUT_MOD_VLAN

Test Environment

Below is the environment that the test was performed in:

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

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	724284.328
tx_rate_mbps	Unknown
throughput_rx_mbps	394.011
tx_rate_percent	4.867
throughput_rx_percent	5.099
frame_loss_percent	0.000
min_latency_ns	4140.000
max_latency_ns	6234220.000
avg_latency_ns	439594.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:55:57

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	1141
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.19
majflt/s	0.00
VSZ	3365520
RSS	20089
%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	1014
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	672377.149
tx_rate_mbps	Unknown
throughput_rx_mbps	710.030
tx_rate_percent	7.961
throughput_rx_percent	8.176
frame_loss_percent	0.000
min_latency_ns	4460.000
max_latency_ns	3052320.000
avg_latency_ns	177010.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:55:57

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	1141
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.19
majflt/s	0.00
VSZ	3365520
RSS	20089
%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	1014
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	586844.381
tx_rate_mbps	Unknown
throughput_rx_mbps	2422.494
tx_rate_percent	24.977
throughput_rx_percent	25.164
frame_loss_percent	0.000
min_latency_ns	5420.000
max_latency_ns	1946620.000
avg_latency_ns	110470.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:55:57

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	1141
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.19
majflt/s	0.00
VSZ	3365520
RSS	20089
%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	1014
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	567604.073
tx_rate_mbps	Unknown
throughput_rx_mbps	4667.976
tx_rate_percent	47.406
throughput_rx_percent	47.588
frame_loss_percent	0.000
min_latency_ns	5920.000
max_latency_ns	1252680.000
avg_latency_ns	73529.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:55:57

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	1141
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.19
majflt/s	0.00
VSZ	3365520
RSS	20089
%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	1014
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	567588.048
tx_rate_mbps	Unknown
throughput_rx_mbps	6910.952
tx_rate_percent	69.836
throughput_rx_percent	70.018
frame_loss_percent	0.000
min_latency_ns	6460.000
max_latency_ns	1271000.000
avg_latency_ns	72924.000
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:55:57

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	1141
%usr	0.21
%system	1.44
%guest	0.00
%CPU	1.65
CPU	.
minflt/s	4.19
majflt/s	0.00
VSZ	3365520
RSS	20089
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	1014
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.4 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

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	01:03:33
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	37388
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	•
minflt/s	4.90
majflt/s	0.00
VSZ	3365636
RSS	20945
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	37385
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37680
%usr	0.00
%system	0.03
%guest	200.08
%CPU	100.16
CPU	.
minflt/s	0.33
majflt/s	0.00
VSZ	4761364
RSS	236489
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	31.34
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37655
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	1.55
majflt/s	0.00
VSZ	4780824
RSS	299485
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	0.07
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	01:03:33
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	37388
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	.
minflt/s	4.90
majflt/s	0.00
VSZ	3365636
RSS	20945
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	37385
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37680
%usr	0.00
%system	0.03
%guest	200.08
%CPU	100.16
CPU	.
minflt/s	0.33
majflt/s	0.00
VSZ	4761364
RSS	236489
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	31.34
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37655
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	1.55
majflt/s	0.00
VSZ	4780824
RSS	299485
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	0.07
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	01:03:33
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	37388
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	.
minflt/s	4.90
majflt/s	0.00
VSZ	3365636
RSS	20945
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	37385
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37680
%usr	0.00
%system	0.03
%guest	200.08
%CPU	100.16
CPU	.
minflt/s	0.33
majflt/s	0.00
VSZ	4761364
RSS	236489
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	31.34
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37655
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	1.55
majflt/s	0.00
VSZ	4780824
RSS	299485
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	0.07
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	01:03:33
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	37388
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	.
minflt/s	4.90
majflt/s	0.00
VSZ	3365636
RSS	20945
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	37385
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37680
%usr	0.00
%system	0.03
%guest	200.08
%CPU	100.16
CPU	.
minflt/s	0.33
majflt/s	0.00
VSZ	4761364
RSS	236489
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	31.34
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37655
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	1.55
majflt/s	0.00
VSZ	4780824
RSS	299485
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	0.07
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	01:03:33
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	37388
%usr	0.22
%system	1.45
%guest	0.00
%CPU	1.67
CPU	•
minflt/s	4.90
majflt/s	0.00
VSZ	3365636
RSS	20945
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	37385
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	•
minflt/s	0.00
majflt/s	0.00
VSZ	45868
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37680
%usr	0.00
%system	0.03
%guest	200.08
%CPU	100.16
CPU	.
minflt/s	0.33
majflt/s	0.00
VSZ	4761364
RSS	236489
%MEM	0.36
kB_rd/s	0.00
kB_wr/s	31.34
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	37655
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.15
CPU	.
minflt/s	1.55
majflt/s	0.00
VSZ	4780824
RSS	299485
%MEM	0.46
kB_rd/s	0.00
kB_wr/s	0.07
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.5 Test ID: PHY2PHY_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	758001.051
tx_rate_mbps	Unknown
throughput_rx_mbps	388.097
tx_rate_percent	2.547
throughput_rx_percent	2.547
frame_loss_percent	0.000
min_latency_ns	4060.000
max_latency_ns	6797980.000
avg_latency_ns	557332.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:52:37

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	183020
%usr	0.21
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.09
majflt/s	0.00
VSZ	3365520
RSS	17765
%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	183017
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	691513.487
tx_rate_mbps	Unknown
throughput_rx_mbps	708.110
tx_rate_percent	4.094
throughput_rx_percent	4.094
frame_loss_percent	0.000
min_latency_ns	4340.000
max_latency_ns	3562300.000
avg_latency_ns	204128.500
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:52:37

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	183020
%usr	0.21
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.09
majflt/s	0.00
VSZ	3365520
RSS	17765
%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	183017
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	628535.601
tx_rate_mbps	Unknown
throughput_rx_mbps	2574.482
tx_rate_percent	13.375
throughput_rx_percent	13.375
frame_loss_percent	0.000
min_latency_ns	5260.000
max_latency_ns	3356380.000
avg_latency_ns	174432.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:52:37

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	183020
%usr	0.21
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.09
majflt/s	0.00
VSZ	3365520
RSS	17765
%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	183017
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	616627.862
tx_rate_mbps	Unknown
throughput_rx_mbps	5051.415
tx_rate_percent	25.750
throughput_rx_percent	25.750
frame_loss_percent	0.000
min_latency_ns	5760.000
max_latency_ns	2810020.000
avg_latency_ns	178759.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:52:37

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	183020
%usr	0.21
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.09
majflt/s	0.00
VSZ	3365520
RSS	17765
%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	183017
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	544284.914
tx_rate_mbps	Unknown
throughput_rx_mbps	6609.796
tx_rate_percent	33.484
throughput_rx_percent	33.484
frame_loss_percent	0.000
min_latency_ns	6560.000
max_latency_ns	824540.000
avg_latency_ns	47338.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:52:37

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	183020
%usr	0.21
%system	1.45
%guest	0.00
%CPU	1.66
CPU	.
minflt/s	4.09
majflt/s	0.00
VSZ	3365520
RSS	17765
%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	183017
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2988
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.6 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

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

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbf6b0165f84a92d

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	758000.963
tx_rate_mbps	Unknown
throughput_rx_mbps	388.096
tx_rate_percent	2.547
throughput_rx_percent	2.547
frame_loss_percent	0.000
min_latency_ns	4060.000
max_latency_ns	7129040.000
avg_latency_ns	686977.500
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:58:18
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	8103
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.28
majflt/s	0.00
VSZ	3365520
RSS	18232
%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	8100
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	691513.264
tx_rate_mbps	Unknown
throughput_rx_mbps	708.110
tx_rate_percent	4.094
throughput_rx_percent	4.094
frame_loss_percent	0.000
min_latency_ns	4260.000
max_latency_ns	8952480.000
avg_latency_ns	248345.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:58:18
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	8103
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.28
majflt/s	0.00
VSZ	3365520
RSS	18232
%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	8100
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	628532.320
tx_rate_mbps	Unknown
throughput_rx_mbps	2574.468
tx_rate_percent	13.375
throughput_rx_percent	13.375
frame_loss_percent	0.000
min_latency_ns	5260.000
max_latency_ns	3175320.000
avg_latency_ns	343561.000
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:58:18
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	8103
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.28
majflt/s	0.00
VSZ	3365520
RSS	18232
%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	8100
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	598098.163
tx_rate_mbps	Unknown
throughput_rx_mbps	4899.620
tx_rate_percent	24.977
throughput_rx_percent	24.977
frame_loss_percent	0.000
min_latency_ns	5880.000
max_latency_ns	2613200.000
avg_latency_ns	125189.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:58:18
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	8103
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.28
majflt/s	0.00
VSZ	3365520
RSS	18232
%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	8100
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

Metric	Result
tx_rate_fps	Unknown
throughput_rx_fps	594573.934
tx_rate_mbps	Unknown
throughput_rx_mbps	7220.506
tx_rate_percent	36.578
throughput_rx_percent	36.578
frame_loss_percent	0.000
min_latency_ns	6580.000
max_latency_ns	2481320.000
avg_latency_ns	122054.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:58:18
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	8103
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.68
CPU	.
minflt/s	4.28
majflt/s	0.00
VSZ	3365520
RSS	18232
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	8100
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45772
RSS	2984
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.7 Test ID: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.28.2.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WT2R [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v4 @ 2.20GHz
- CPU cores: 88
- Memory: 65687480 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cdbc6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

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	01:03:06
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	22304
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.70
CPU	.
minflt/s	0.78
majflt/s	0.00
VSZ	3365520
RSS	18087
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	22301
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	22505
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4844308
RSS	322478
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.25
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	01:03:06
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	22304
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.70
CPU	.
minflt/s	0.78
majflt/s	0.00
VSZ	3365520
RSS	18087
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	22301
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	22505
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4844308
RSS	322478
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.25
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	01:03:06
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	22304
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.70
CPU	.
minflt/s	0.78
majflt/s	0.00
VSZ	3365520
RSS	18087
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	22301
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	22505
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4844308
RSS	322478
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.25
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	01:03:06
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	22304
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.70
CPU	.
minflt/s	0.78
majflt/s	0.00
VSZ	3365520
RSS	18087
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	22301
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	22505
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4844308
RSS	322478
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.25
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	01:03:06
guest_loopback_app	testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	22304
%usr	0.21
%system	1.48
%guest	0.00
%CPU	1.70
CPU	.
minflt/s	0.78
majflt/s	0.00
VSZ	3365520
RSS	18087
%MEM	0.03
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	22301
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.00
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45884
RSS	3204
%MEM	0.00
kB_rd/s	0.00
kB_wr/s	0.00
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	22505
%usr	0.00
%system	0.05
%guest	200.10
%CPU	100.16
CPU	.
minflt/s	1.76
majflt/s	0.00
VSZ	4844308
RSS	322478
%MEM	0.49
kB_rd/s	0.00
kB_wr/s	5.25
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.8 Test ID: PVVP_TPUT

Test Environment

Below is the environment that the test was performed in:

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

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: da059df422c839bb5d6393455a43c44e95873c73
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 81bec2c9bc5362597950058cddf6b0165f84a92d
- VNF: QemuVirtioNet, Version: 2.5.0, GIT tag: a8c40fa2d667e585382080db36ac44e216b37a1c
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160804.qcow2
- **VM loopback apps:**
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd
 - testpmd, Version: 16.04.0-rc0, GIT tag: 6dc5de3a6aefba3946fe04368d93994db3f7a5fd

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	525972.493
tx_rate_mbps	Unknown
throughput_rx_mbps	269.298
tx_rate_percent	1.773
throughput_rx_percent	1.767
frame_loss_percent	0.351
min_latency_ns	29300.000
max_latency_ns	14796020.000
avg_latency_ns	101012.000
type	rfc2544
packet_size	64
traffic_type	udp
test_execution_time	00:57:06
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	30207
%usr	0.19
%system	1.37
%guest	0.00
%CPU	1.56
CPU	.
minflt/s	4.61
majflt/s	0.00
VSZ	3365636
RSS	30970
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	30202
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3200
%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	30499
%usr	0.00
%system	0.45
%guest	199.66
%CPU	100.15
CPU	.
minflt/s	0.38
majflt/s	0.00
VSZ	4821732
RSS	329428
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	21.16
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	30474
%usr	0.00
%system	0.49
%guest	199.61
%CPU	100.15
CPU	.
minflt/s	0.02
majflt/s	0.00
VSZ	4817688
RSS	353149
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	0.34
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	299569.076
tx_rate_mbps	Unknown
throughput_rx_mbps	306.759
tx_rate_percent	1.773
throughput_rx_percent	1.773
frame_loss_percent	0.000
min_latency_ns	25180.000
max_latency_ns	1282360.000
avg_latency_ns	60103.000
type	rfc2544
packet_size	128
traffic_type	udp
test_execution_time	00:57:06
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	30207
%usr	0.19
%system	1.37
%guest	0.00
%CPU	1.56
CPU	.
minflt/s	4.61
majflt/s	0.00
VSZ	3365636
RSS	30970
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	30202
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3200
%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	30499
%usr	0.00
%system	0.45
%guest	199.66
%CPU	100.15
CPU	.
minflt/s	0.38
majflt/s	0.00
VSZ	4821732
RSS	329428
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	21.16
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	30474
%usr	0.00
%system	0.49
%guest	199.61
%CPU	100.15
CPU	.
minflt/s	0.02
majflt/s	0.00
VSZ	4817688
RSS	353149
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	0.34
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	265067.857
tx_rate_mbps	Unknown
throughput_rx_mbps	1085.718
tx_rate_percent	5.641
throughput_rx_percent	5.641
frame_loss_percent	0.000
min_latency_ns	66120.000
max_latency_ns	1031880.000
avg_latency_ns	154466.500
type	rfc2544
packet_size	512
traffic_type	udp
test_execution_time	00:57:06
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	30207
%usr	0.19
%system	1.37
%guest	0.00
%CPU	1.56
CPU	.
minflt/s	4.61
majflt/s	0.00
VSZ	3365636
RSS	30970
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovssdb-server	
Statistic	Value
UID	0
PID	30202
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3200
%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	30499
%usr	0.00
%system	0.45
%guest	199.66
%CPU	100.15
CPU	.
minflt/s	0.38
majflt/s	0.00
VSZ	4821732
RSS	329428
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	21.16
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	30474
%usr	0.00
%system	0.49
%guest	199.61
%CPU	100.15
CPU	.
minflt/s	0.02
majflt/s	0.00
VSZ	4817688
RSS	353149
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	0.34
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	246199.118
tx_rate_mbps	Unknown
throughput_rx_mbps	2016.863
tx_rate_percent	10.281
throughput_rx_percent	10.281
frame_loss_percent	0.000
min_latency_ns	66840.000
max_latency_ns	636920.000
avg_latency_ns	153703.000
type	rfc2544
packet_size	1024
traffic_type	udp
test_execution_time	00:57:06
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	30207
%usr	0.19
%system	1.37
%guest	0.00
%CPU	1.56
CPU	.
minflt/s	4.61
majflt/s	0.00
VSZ	3365636
RSS	30970
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	30202
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3200
%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	30499
%usr	0.00
%system	0.45
%guest	199.66
%CPU	100.15
CPU	.
minflt/s	0.38
majflt/s	0.00
VSZ	4821732
RSS	329428
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	21.16
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	30474
%usr	0.00
%system	0.49
%guest	199.61
%CPU	100.15
CPU	.
minflt/s	0.02
majflt/s	0.00
VSZ	4817688
RSS	353149
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	0.34
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	255126.561
tx_rate_mbps	Unknown
throughput_rx_mbps	3098.257
tx_rate_percent	15.695
throughput_rx_percent	15.695
frame_loss_percent	0.000
min_latency_ns	62580.000
max_latency_ns	686460.000
avg_latency_ns	156737.500
type	rfc2544
packet_size	1518
traffic_type	udp
test_execution_time	00:57:06
guest_loopback_app	testpmd testpmd

Statistics collected

The following system statistics were collected during testcase execution:

Process: ovs-vswitchd	
Statistic	Value
UID	0
PID	30207
%usr	0.19
%system	1.37
%guest	0.00
%CPU	1.56
CPU	.
minflt/s	4.61
majflt/s	0.00
VSZ	3365636
RSS	30970
%MEM	0.05
kB_rd/s	0.00
kB_wr/s	0.01
kB_ccwr/s	0.00

Process: ovsdb-server	
Statistic	Value
UID	0
PID	30202
%usr	0.00
%system	0.00
%guest	0.00
%CPU	0.01
CPU	.
minflt/s	0.00
majflt/s	0.00
VSZ	45880
RSS	3200
%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	30499
%usr	0.00
%system	0.45
%guest	199.66
%CPU	100.15
CPU	.
minflt/s	0.38
majflt/s	0.00
VSZ	4821732
RSS	329428
%MEM	0.50
kB_rd/s	0.00
kB_wr/s	21.16
kB_ccwr/s	0.00

Process: qemu-system-x86	
Statistic	Value
UID	0
PID	30474
%usr	0.00
%system	0.49
%guest	199.61
%CPU	100.15
CPU	.
minflt/s	0.02
majflt/s	0.00
VSZ	4817688
RSS	353149
%MEM	0.54
kB_rd/s	0.00
kB_wr/s	0.34
kB_ccwr/s	0.00

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.3 Rationale for decisions

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

4.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-08-08_21-07-50/vswitchperf_logs_2016-08-08_21-07-50.tar.gz.

4.5 General

4.5.1 Glossary

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

4.5.2 Document change procedures and history

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