



VSPERF Results

Release draft (22ffe5b)

OPNFV

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OPNFV BRAHMAPUTRA SCENARIOS

Available Tests and aspects of scenarios:

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

Supported deployment scenarios:

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

Loopback applications in the Guest can be:

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

Supported traffic generators:

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

OPNFV BRAHMAPUTRA RESULTS

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

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

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

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

PERFORMANCE REPORT FOR OPEN VSWITCH WITH DPDK SUPPORT

3.1 Introduction

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

This document is currently in draft form.

3.1.1 Document identifier

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

3.1.2 Scope

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

3.1.3 References

OPNFV_vswitchperf_LTD_Brahmaputra_REVIEWED

3.2 Details of the Level Test Report

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

3.2.1 Test ID: PHY2PHY_TPUP

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|--------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 23086563.926 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 11820.321 |
| tx_rate_percent | 77.570 |
| throughput_rx_percent | 77.570 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5420.000 |
| max_latency_ns | 246580.000 |
| avg_latency_ns | 8637.000 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 33307 |
| %usr | 199.94 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | . |
| minflt/s | 28.20 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 20668 |
| %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 | 33306 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3328 |
| %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 | 15716128.371 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 16093.315 |
| tx_rate_percent | 93.039 |
| throughput_rx_percent | 93.039 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 7260.000 |
| max_latency_ns | 490220.000 |
| avg_latency_ns | 8962.000 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 33307 |
| %usr | 199.94 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | . |
| minflt/s | 28.20 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 20668 |
| %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 | 33306 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3328 |
| %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 | 4699185.335 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19247.863 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 26700.000 |
| max_latency_ns | 67260.000 |
| avg_latency_ns | 54446.500 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 33307 |
| %usr | 199.94 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | . |
| minflt/s | 28.20 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 20668 |
| %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 | 33306 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3328 |
| %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 | 2394603.573 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19616.592 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 32320.000 |
| max_latency_ns | 73620.000 |
| avg_latency_ns | 60559.500 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 33307 |
| %usr | 199.94 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | . |
| minflt/s | 28.20 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 20668 |
| %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 | 33306 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3328 |
| %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 | 1625465.985 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19739.659 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 16920.000 |
| max_latency_ns | 57940.000 |
| avg_latency_ns | 44461.500 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 33307 |
| %usr | 199.94 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | . |
| minflt/s | 28.20 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 20668 |
| %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 | 33306 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3328 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.2 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 19158 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 35261 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | . |
| minflt/s | 5.33 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 21923 |
| %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 | 35260 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %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 | 3216717 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 35261 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | • |
| minflt/s | 5.33 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 21923 |
| %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 | 35260 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|----------|
| b2b_frames | 70488721 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vsitchd | |
|----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 35261 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | • |
| minflt/s | 5.33 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 21923 |
| %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 | 35260 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|----------|
| b2b_frames | 35919540 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 35261 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | . |
| minflt/s | 5.33 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 21923 |
| %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 | 35260 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|----------|
| b2b_frames | 24382314 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 35261 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.00 |
| CPU | • |
| minflt/s | 5.33 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 21923 |
| %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 | 35260 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.3 Test ID: PHY2PHY_TPUT_MOD_VLAN

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|--------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 10392309.295 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 5653.416 |
| tx_rate_percent | 69.836 |
| throughput_rx_percent | 73.162 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5640.000 |
| max_latency_ns | 670260.000 |
| avg_latency_ns | 11828.000 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 37944 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 15.34 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 26791 |
| %MEM | 0.04 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 37943 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3348 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 7596755.289 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 8022.174 |
| tx_rate_percent | 89.945 |
| throughput_rx_percent | 92.377 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4780.000 |
| max_latency_ns | 100000.000 |
| avg_latency_ns | 5700.000 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 37944 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 15.34 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 26791 |
| %MEM | 0.04 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 37943 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3348 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 2331452.405 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 9624.236 |
| tx_rate_percent | 99.227 |
| throughput_rx_percent | 99.973 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 6040.000 |
| max_latency_ns | 50100.000 |
| avg_latency_ns | 13450.000 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 37944 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 15.34 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 26791 |
| %MEM | 0.04 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 37943 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3348 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 1188058.548 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 9770.593 |
| tx_rate_percent | 99.227 |
| throughput_rx_percent | 99.607 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5760.000 |
| max_latency_ns | 47980.000 |
| avg_latency_ns | 7058.000 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 37944 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | • |
| minflt/s | 15.34 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 26791 |
| %MEM | 0.04 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 37943 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3348 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 806458.016 |
| 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 | 6180.000 |
| max_latency_ns | 60420.000 |
| avg_latency_ns | 7448.000 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 37944 |
| %usr | 199.93 |
| %system | 0.07 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 15.34 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 26791 |
| %MEM | 0.04 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 37943 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3348 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.4 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

- Test ID: phy2phy_scalability
- Description: LTD.Scalability.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 | 19633559.294 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 10052.382 |
| tx_rate_percent | 65.969 |
| throughput_rx_percent | 65.969 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5840.000 |
| max_latency_ns | 501000.000 |
| avg_latency_ns | 8669.500 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 40898 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 22.70 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 18616 |
| %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 | 40897 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %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 | 15716126.699 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 16093.314 |
| tx_rate_percent | 93.039 |
| throughput_rx_percent | 93.039 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 6620.000 |
| max_latency_ns | 109540.000 |
| avg_latency_ns | 9046.000 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 40898 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 22.70 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 18616 |
| %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 | 40897 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %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 | 4699146.960 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19247.706 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 17640.000 |
| max_latency_ns | 102040.000 |
| avg_latency_ns | 70008.000 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 40898 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 22.70 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 18616 |
| %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 | 40897 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 2394606.853 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19616.619 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 17840.000 |
| max_latency_ns | 55600.000 |
| avg_latency_ns | 42118.500 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 40898 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 22.70 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 18616 |
| %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 | 40897 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 1625468.239 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19739.686 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 23780.000 |
| max_latency_ns | 60860.000 |
| avg_latency_ns | 47362.000 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 40898 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 22.70 |
| majflt/s | 0.00 |
| VSZ | 4143516 |
| RSS | 18616 |
| %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 | 40897 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47608 |
| RSS | 3344 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.5 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
- VNF: QemuDpdkVhostUser, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 4210845.237 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 2155.953 |
| tx_rate_percent | 14.148 |
| throughput_rx_percent | 14.148 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5220.000 |
| max_latency_ns | 71340.000 |
| avg_latency_ns | 7396.000 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 42964 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 19.08 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 22756 |
| %MEM | 0.03 |
| kB_rd/s | 0.08 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 42963 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 3360 |
| %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 | 43100 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.01 |
| CPU | . |
| minflt/s | 1.96 |
| majflt/s | 0.00 |
| VSZ | 4799940 |
| RSS | 63833 |
| %MEM | 0.10 |
| kB_rd/s | 0.00 |
| kB_wr/s | 11.23 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 2651237.456 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 2714.867 |
| tx_rate_percent | 15.695 |
| throughput_rx_percent | 15.695 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4800.000 |
| max_latency_ns | 103040.000 |
| avg_latency_ns | 6209.500 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 42964 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 19.08 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 22756 |
| %MEM | 0.03 |
| kB_rd/s | 0.08 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 42963 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 3360 |
| %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 | 43100 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.01 |
| CPU | . |
| minflt/s | 1.96 |
| majflt/s | 0.00 |
| VSZ | 4799940 |
| RSS | 63833 |
| %MEM | 0.10 |
| kB_rd/s | 0.00 |
| kB_wr/s | 11.23 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 3536182.956 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 14484.205 |
| tx_rate_percent | 75.250 |
| throughput_rx_percent | 75.250 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 8680.000 |
| max_latency_ns | 93300.000 |
| avg_latency_ns | 12673.000 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 42964 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 19.08 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 22756 |
| %MEM | 0.03 |
| kB_rd/s | 0.08 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 42963 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 3360 |
| %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 | 43100 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.01 |
| CPU | . |
| minflt/s | 1.96 |
| majflt/s | 0.00 |
| VSZ | 4799940 |
| RSS | 63833 |
| %MEM | 0.10 |
| kB_rd/s | 0.00 |
| kB_wr/s | 11.23 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 2394552.434 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19616.174 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 21880.000 |
| max_latency_ns | 135920.000 |
| avg_latency_ns | 119921.500 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 42964 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 19.08 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 22756 |
| %MEM | 0.03 |
| kB_rd/s | 0.08 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 42963 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 3360 |
| %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 | 43100 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.01 |
| CPU | . |
| minflt/s | 1.96 |
| majflt/s | 0.00 |
| VSZ | 4799940 |
| RSS | 63833 |
| %MEM | 0.10 |
| kB_rd/s | 0.00 |
| kB_wr/s | 11.23 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 1625449.823 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 19739.463 |
| tx_rate_percent | 100 |
| throughput_rx_percent | 100 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 32240.000 |
| max_latency_ns | 111640.000 |
| avg_latency_ns | 83435.500 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 42964 |
| %usr | 199.94 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 19.08 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 22756 |
| %MEM | 0.03 |
| kB_rd/s | 0.08 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 42963 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 3360 |
| %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 | 43100 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.01 |
| CPU | . |
| minflt/s | 1.96 |
| majflt/s | 0.00 |
| VSZ | 4799940 |
| RSS | 63833 |
| %MEM | 0.10 |
| kB_rd/s | 0.00 |
| kB_wr/s | 11.23 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.6 Test ID: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
- VNF: QemuDpdkVhostUser, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswhdchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 45480 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 9.13 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 20781 |
| %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 | 45479 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47712 |
| RSS | 3360 |
| %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 | 45606 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 199.94 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 0.29 |
| majflt/s | 0.00 |
| VSZ | 4838856 |
| RSS | 70392 |
| %MEM | 0.11 |
| kB_rd/s | 0.00 |
| kB_wr/s | 4.08 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 3866 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 45480 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | • |
| minflt/s | 9.13 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 20781 |
| %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 | 45479 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47712 |
| RSS | 3360 |
| %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 | 45606 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 199.94 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 0.29 |
| majflt/s | 0.00 |
| VSZ | 4838856 |
| RSS | 70392 |
| %MEM | 0.11 |
| kB_rd/s | 0.00 |
| kB_wr/s | 4.08 |
| 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 | 70488494 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 45480 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 9.13 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 20781 |
| %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 | 45479 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47712 |
| RSS | 3360 |
| %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 | 45606 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 199.94 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 0.29 |
| majflt/s | 0.00 |
| VSZ | 4838856 |
| RSS | 70392 |
| %MEM | 0.11 |
| kB_rd/s | 0.00 |
| kB_wr/s | 4.08 |
| 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 |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 45480 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 9.13 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 20781 |
| %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 | 45479 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47712 |
| RSS | 3360 |
| %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 | 45606 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 199.94 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 0.29 |
| majflt/s | 0.00 |
| VSZ | 4838856 |
| RSS | 70392 |
| %MEM | 0.11 |
| kB_rd/s | 0.00 |
| kB_wr/s | 4.08 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|----------|
| b2b_frames | 24382314 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 45480 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 9.13 |
| majflt/s | 0.00 |
| VSZ | 20920732 |
| RSS | 20781 |
| %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 | 45479 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47712 |
| RSS | 3360 |
| %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 | 45606 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 199.94 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 0.29 |
| majflt/s | 0.00 |
| VSZ | 4838856 |
| RSS | 70392 |
| %MEM | 0.11 |
| kB_rd/s | 0.00 |
| kB_wr/s | 4.08 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.2.7 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsDpdkVhost, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- DPDK Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
- VNF: QemuDpdkVhostUser, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|-----------------|
| b2b_frames | 0 |
| b2b_frame_loss_percent | 100 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| guest_loopback_app | testpmd testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 52321 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | . |
| minflt/s | 21.32 |
| majflt/s | 0.00 |
| VSZ | 37697948 |
| RSS | 22422 |
| %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 | 52320 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 2580 |
| %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 | 52574 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.02 |
| CPU | . |
| minflt/s | 11.58 |
| majflt/s | 0.00 |
| VSZ | 4830668 |
| RSS | 36558 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 5.70 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 52540 |
| %usr | 0.00 |
| %system | 0.03 |
| %guest | 199.96 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.59 |
| majflt/s | 0.00 |
| VSZ | 4835780 |
| RSS | 80379 |
| %MEM | 0.12 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.02 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 52321 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | • |
| minflt/s | 21.32 |
| majflt/s | 0.00 |
| VSZ | 37697948 |
| RSS | 22422 |
| %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 | 52320 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 2580 |
| %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 | 52574 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.02 |
| CPU | . |
| minflt/s | 11.58 |
| majflt/s | 0.00 |
| VSZ | 4830668 |
| RSS | 36558 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 5.70 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 52540 |
| %usr | 0.00 |
| %system | 0.03 |
| %guest | 199.96 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.59 |
| majflt/s | 0.00 |
| VSZ | 4835780 |
| RSS | 80379 |
| %MEM | 0.12 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.02 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 52321 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | • |
| minflt/s | 21.32 |
| majflt/s | 0.00 |
| VSZ | 37697948 |
| RSS | 22422 |
| %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 | 52320 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 2580 |
| %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 | 52574 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.02 |
| CPU | . |
| minflt/s | 11.58 |
| majflt/s | 0.00 |
| VSZ | 4830668 |
| RSS | 36558 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 5.70 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 52540 |
| %usr | 0.00 |
| %system | 0.03 |
| %guest | 199.96 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.59 |
| majflt/s | 0.00 |
| VSZ | 4835780 |
| RSS | 80379 |
| %MEM | 0.12 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.02 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 52321 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | • |
| minflt/s | 21.32 |
| majflt/s | 0.00 |
| VSZ | 37697948 |
| RSS | 22422 |
| %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 | 52320 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 2580 |
| %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 | 52574 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.02 |
| CPU | . |
| minflt/s | 11.58 |
| majflt/s | 0.00 |
| VSZ | 4830668 |
| RSS | 36558 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 5.70 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 52540 |
| %usr | 0.00 |
| %system | 0.03 |
| %guest | 199.96 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.59 |
| majflt/s | 0.00 |
| VSZ | 4835780 |
| RSS | 80379 |
| %MEM | 0.12 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.02 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|----------|
| Statistic | Value |
| UID | 0 |
| PID | 52321 |
| %usr | 199.95 |
| %system | 0.06 |
| %guest | 0.00 |
| %CPU | 200.01 |
| CPU | • |
| minflt/s | 21.32 |
| majflt/s | 0.00 |
| VSZ | 37697948 |
| RSS | 22422 |
| %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 | 52320 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 47720 |
| RSS | 2580 |
| %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 | 52574 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.95 |
| %CPU | 100.02 |
| CPU | . |
| minflt/s | 11.58 |
| majflt/s | 0.00 |
| VSZ | 4830668 |
| RSS | 36558 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 5.70 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 52540 |
| %usr | 0.00 |
| %system | 0.03 |
| %guest | 199.96 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.59 |
| majflt/s | 0.00 |
| VSZ | 4835780 |
| RSS | 80379 |
| %MEM | 0.12 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.02 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

3.3 Rationale for decisions

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

3.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-05-06_16-35-41/vswitchperf_logs_2016-05-06_16-35-41.tar.gz.

3.5 General

3.5.1 Glossary

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

3.5.2 Document change procedures and history

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

PERFORMANCE REPORT FOR OPEN VSWITCH

4.1 Introduction

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

This document is currently in draft form.

4.1.1 Document identifier

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

4.1.2 Scope

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

4.1.3 References

OPNFV_vswitchperf_LTD_Brahmaputra_REVIEWED

4.2 Details of the Level Test Report

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

4.2.1 Test ID: PHY2PHY_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 988189.930 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 505.953 |
| tx_rate_percent | 3.320 |
| throughput_rx_percent | 3.320 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4340.000 |
| max_latency_ns | 2545720.000 |
| avg_latency_ns | 53356.000 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 57857 |
| %usr | 0.22 |
| %system | 1.67 |
| %guest | 0.00 |
| %CPU | 1.90 |
| CPU | . |
| minflt/s | 4.05 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13690 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 57856 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 822160.592 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 841.892 |
| tx_rate_percent | 4.867 |
| throughput_rx_percent | 4.867 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4640.000 |
| max_latency_ns | 368120.000 |
| avg_latency_ns | 32548.000 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 57857 |
| %usr | 0.22 |
| %system | 1.67 |
| %guest | 0.00 |
| %CPU | 1.90 |
| CPU | . |
| minflt/s | 4.05 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13690 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 57856 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 664870.360 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 2723.309 |
| tx_rate_percent | 14.148 |
| throughput_rx_percent | 14.148 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5660.000 |
| max_latency_ns | 650260.000 |
| avg_latency_ns | 48416.500 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 57857 |
| %usr | 0.22 |
| %system | 1.67 |
| %guest | 0.00 |
| %CPU | 1.90 |
| CPU | . |
| minflt/s | 4.05 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13690 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 57856 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 746267.047 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 6113.420 |
| tx_rate_percent | 31.164 |
| throughput_rx_percent | 31.164 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 6440.000 |
| max_latency_ns | 770580.000 |
| avg_latency_ns | 48444.000 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 57857 |
| %usr | 0.22 |
| %system | 1.67 |
| %guest | 0.00 |
| %CPU | 1.90 |
| CPU | . |
| minflt/s | 4.05 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13690 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 57856 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 707721.736 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 8594.573 |
| tx_rate_percent | 43.539 |
| throughput_rx_percent | 43.539 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 6920.000 |
| max_latency_ns | 1080000.000 |
| avg_latency_ns | 52660.500 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 57857 |
| %usr | 0.22 |
| %system | 1.67 |
| %guest | 0.00 |
| %CPU | 1.90 |
| CPU | . |
| minflt/s | 4.05 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13690 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 57856 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.2 Test ID: BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 5108 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 60747 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | . |
| minflt/s | 4.08 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 14177 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 60746 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 3382 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 60747 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | • |
| minflt/s | 4.08 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 14177 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 60746 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 1613 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vsitchd | |
|----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 60747 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | • |
| minflt/s | 4.08 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 14177 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 60746 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 1370 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 60747 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | . |
| minflt/s | 4.08 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 14177 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 60746 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 1488 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 60747 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | • |
| minflt/s | 4.08 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 14177 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 60746 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.00 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.3 Test ID: PHY2PHY_TPUT_MOD_VLAN

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- NIC(s):
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 378999.615 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 206.176 |
| tx_rate_percent | 2.547 |
| throughput_rx_percent | 2.668 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4280.000 |
| max_latency_ns | 3179280.000 |
| avg_latency_ns | 71737.000 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 65096 |
| %usr | 0.23 |
| %system | 1.51 |
| %guest | 0.00 |
| %CPU | 1.75 |
| CPU | . |
| minflt/s | 8.33 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 7576 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 65095 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| 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 | 411080.387 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 434.101 |
| tx_rate_percent | 4.867 |
| throughput_rx_percent | 4.999 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4520.000 |
| max_latency_ns | 5386680.000 |
| avg_latency_ns | 124455.000 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 65096 |
| %usr | 0.23 |
| %system | 1.51 |
| %guest | 0.00 |
| %CPU | 1.75 |
| CPU | . |
| minflt/s | 8.33 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 7576 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 65095 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| 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 | 332435.050 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 1372.292 |
| tx_rate_percent | 14.148 |
| throughput_rx_percent | 14.255 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5300.000 |
| max_latency_ns | 2647000.000 |
| avg_latency_ns | 84511.000 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 65096 |
| %usr | 0.23 |
| %system | 1.51 |
| %guest | 0.00 |
| %CPU | 1.75 |
| CPU | . |
| minflt/s | 8.33 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 7576 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 65095 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| 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 | 326830.778 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 2687.856 |
| tx_rate_percent | 27.297 |
| throughput_rx_percent | 27.401 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5720.000 |
| max_latency_ns | 2581140.000 |
| avg_latency_ns | 81143.000 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 65096 |
| %usr | 0.23 |
| %system | 1.51 |
| %guest | 0.00 |
| %CPU | 1.75 |
| CPU | . |
| minflt/s | 8.33 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 7576 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 65095 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| 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 | 328705.520 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 4002.318 |
| tx_rate_percent | 40.445 |
| throughput_rx_percent | 40.549 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 6460.000 |
| max_latency_ns | 2258220.000 |
| avg_latency_ns | 80662.000 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 65096 |
| %usr | 0.23 |
| %system | 1.51 |
| %guest | 0.00 |
| %CPU | 1.75 |
| CPU | . |
| minflt/s | 8.33 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 7576 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 65095 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2988 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.4 Test ID: PHY2PHY_SCALABILITY

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: p2p
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 988189.279 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 505.953 |
| tx_rate_percent | 3.320 |
| throughput_rx_percent | 3.320 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4320.000 |
| max_latency_ns | 2572280.000 |
| avg_latency_ns | 64745.500 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 67989 |
| %usr | 0.23 |
| %system | 1.49 |
| %guest | 0.00 |
| %CPU | 1.72 |
| CPU | . |
| minflt/s | 5.05 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 5789 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 67988 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 952807.876 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 975.675 |
| tx_rate_percent | 5.641 |
| throughput_rx_percent | 5.641 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 4540.000 |
| max_latency_ns | 3194600.000 |
| avg_latency_ns | 122097.500 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 67989 |
| %usr | 0.23 |
| %system | 1.49 |
| %guest | 0.00 |
| %CPU | 1.72 |
| CPU | . |
| minflt/s | 5.05 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 5789 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 67988 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 810253.832 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 3318.800 |
| tx_rate_percent | 17.242 |
| throughput_rx_percent | 17.242 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 5600.000 |
| max_latency_ns | 3294300.000 |
| avg_latency_ns | 85739.000 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 67989 |
| %usr | 0.23 |
| %system | 1.49 |
| %guest | 0.00 |
| %CPU | 1.72 |
| CPU | . |
| minflt/s | 5.05 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 5789 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 67988 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 783307.997 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 6416.859 |
| tx_rate_percent | 32.711 |
| throughput_rx_percent | 32.711 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 6420.000 |
| max_latency_ns | 1852940.000 |
| avg_latency_ns | 70468.500 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 67989 |
| %usr | 0.23 |
| %system | 1.49 |
| %guest | 0.00 |
| %CPU | 1.72 |
| CPU | . |
| minflt/s | 5.05 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 5789 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 67988 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 770582.339 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 9357.952 |
| tx_rate_percent | 47.406 |
| throughput_rx_percent | 47.406 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 6760.000 |
| max_latency_ns | 2029760.000 |
| avg_latency_ns | 62370.000 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |
| stream_count | 8000 |
| match_type | L4 |
| pre-installed_flows | No |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 67989 |
| %usr | 0.23 |
| %system | 1.49 |
| %guest | 0.00 |
| %CPU | 1.72 |
| CPU | . |
| minflt/s | 5.05 |
| majflt/s | 0.00 |
| VSZ | 2775644 |
| RSS | 5789 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 67988 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45764 |
| RSS | 2992 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.5 Test ID: PVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|--------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 525218.981 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 268.912 |
| tx_rate_percent | 1.773 |
| throughput_rx_percent | 1.765 |
| frame_loss_percent | 0.491 |
| min_latency_ns | 7920.000 |
| max_latency_ns | 25991580.000 |
| avg_latency_ns | 86469.000 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 70896 |
| %usr | 0.20 |
| %system | 1.28 |
| %guest | 0.00 |
| %CPU | 1.49 |
| CPU | . |
| minflt/s | 5.02 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 9269 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 70895 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45868 |
| RSS | 3212 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 71055 |
| %usr | 0.00 |
| %system | 1.00 |
| %guest | 199.00 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 1.84 |
| majflt/s | 0.00 |
| VSZ | 4751956 |
| RSS | 39796 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 8.30 |
| 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 | 299544.350 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 306.733 |
| tx_rate_percent | 1.773 |
| throughput_rx_percent | 1.773 |
| frame_loss_percent | 0.008 |
| min_latency_ns | 8240.000 |
| max_latency_ns | 2458840.000 |
| avg_latency_ns | 51066.500 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 70896 |
| %usr | 0.20 |
| %system | 1.28 |
| %guest | 0.00 |
| %CPU | 1.49 |
| CPU | . |
| minflt/s | 5.02 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 9269 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 70895 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45868 |
| RSS | 3212 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 71055 |
| %usr | 0.00 |
| %system | 1.00 |
| %guest | 199.00 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 1.84 |
| majflt/s | 0.00 |
| VSZ | 4751956 |
| RSS | 39796 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 8.30 |
| 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 | 301412.875 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 1234.587 |
| tx_rate_percent | 6.414 |
| throughput_rx_percent | 6.414 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 8420.000 |
| max_latency_ns | 1204240.000 |
| avg_latency_ns | 100160.000 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 70896 |
| %usr | 0.20 |
| %system | 1.28 |
| %guest | 0.00 |
| %CPU | 1.49 |
| CPU | . |
| minflt/s | 5.02 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 9269 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 70895 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45868 |
| RSS | 3212 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 71055 |
| %usr | 0.00 |
| %system | 1.00 |
| %guest | 199.00 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 1.84 |
| majflt/s | 0.00 |
| VSZ | 4751956 |
| RSS | 39796 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 8.30 |
| 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 | 320285.637 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 2623.780 |
| tx_rate_percent | 13.375 |
| throughput_rx_percent | 13.375 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 18500.000 |
| max_latency_ns | 886420.000 |
| avg_latency_ns | 97750.000 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 70896 |
| %usr | 0.20 |
| %system | 1.28 |
| %guest | 0.00 |
| %CPU | 1.49 |
| CPU | . |
| minflt/s | 5.02 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 9269 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 70895 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45868 |
| RSS | 3212 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 71055 |
| %usr | 0.00 |
| %system | 1.00 |
| %guest | 199.00 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 1.84 |
| majflt/s | 0.00 |
| VSZ | 4751956 |
| RSS | 39796 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 8.30 |
| 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 | 317986.564 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 3861.629 |
| tx_rate_percent | 19.563 |
| throughput_rx_percent | 19.563 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 11020.000 |
| max_latency_ns | 1492200.000 |
| avg_latency_ns | 108618.000 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 70896 |
| %usr | 0.20 |
| %system | 1.28 |
| %guest | 0.00 |
| %CPU | 1.49 |
| CPU | . |
| minflt/s | 5.02 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 9269 |
| %MEM | 0.01 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 70895 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45868 |
| RSS | 3212 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 71055 |
| %usr | 0.00 |
| %system | 1.00 |
| %guest | 199.00 |
| %CPU | 100.00 |
| CPU | . |
| minflt/s | 1.84 |
| majflt/s | 0.00 |
| VSZ | 4751956 |
| RSS | 39796 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 8.30 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.6 Test ID: PVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvp
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|---------|
| b2b_frames | 0 |
| b2b_frame_loss_percent | 100 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74047 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | . |
| minflt/s | 4.18 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13953 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 74046 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 3208 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74215 |
| %usr | 0.00 |
| %system | 0.06 |
| %guest | 200.05 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.53 |
| majflt/s | 0.00 |
| VSZ | 4809816 |
| RSS | 48507 |
| %MEM | 0.07 |
| kB_rd/s | 0.00 |
| kB_wr/s | 5.34 |
| 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 |
|------------------------|---------|
| b2b_frames | 0 |
| b2b_frame_loss_percent | 100 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74047 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | • |
| minflt/s | 4.18 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13953 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 74046 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 3208 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74215 |
| %usr | 0.00 |
| %system | 0.06 |
| %guest | 200.05 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.53 |
| majflt/s | 0.00 |
| VSZ | 4809816 |
| RSS | 48507 |
| %MEM | 0.07 |
| kB_rd/s | 0.00 |
| kB_wr/s | 5.34 |
| 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 |
|------------------------|---------|
| b2b_frames | 268 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74047 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | . |
| minflt/s | 4.18 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13953 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 74046 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 3208 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74215 |
| %usr | 0.00 |
| %system | 0.06 |
| %guest | 200.05 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.53 |
| majflt/s | 0.00 |
| VSZ | 4809816 |
| RSS | 48507 |
| %MEM | 0.07 |
| kB_rd/s | 0.00 |
| kB_wr/s | 5.34 |
| 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 |
|------------------------|---------|
| b2b_frames | 274 |
| b2b_frame_loss_percent | 0.0 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74047 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | . |
| minflt/s | 4.18 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13953 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 74046 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 3208 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74215 |
| %usr | 0.00 |
| %system | 0.06 |
| %guest | 200.05 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.53 |
| majflt/s | 0.00 |
| VSZ | 4809816 |
| RSS | 48507 |
| %MEM | 0.07 |
| kB_rd/s | 0.00 |
| kB_wr/s | 5.34 |
| 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 |
|------------------------|---------|
| b2b_frames | 0 |
| b2b_frame_loss_percent | 100 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |
| guest_loopback_app | testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74047 |
| %usr | 0.23 |
| %system | 1.45 |
| %guest | 0.00 |
| %CPU | 1.68 |
| CPU | . |
| minflt/s | 4.18 |
| majflt/s | 0.00 |
| VSZ | 2775648 |
| RSS | 13953 |
| %MEM | 0.02 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 74046 |
| %usr | 0.00 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 3208 |
| %MEM | 0.00 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 74215 |
| %usr | 0.00 |
| %system | 0.06 |
| %guest | 200.05 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.53 |
| majflt/s | 0.00 |
| VSZ | 4809816 |
| RSS | 48507 |
| %MEM | 0.07 |
| kB_rd/s | 0.00 |
| kB_wr/s | 5.34 |
| 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.

4.2.7 Test ID: PVVP_TPUT

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB

- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-----------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 407387.265 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 208.582 |
| tx_rate_percent | 1.773 |
| throughput_rx_percent | 1.369 |
| frame_loss_percent | 22.815 |
| min_latency_ns | 29740.000 |
| max_latency_ns | 3579200.000 |
| avg_latency_ns | 924906.000 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| guest_loopback_app | testpmd testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78673 |
| %usr | 0.21 |
| %system | 1.29 |
| %guest | 0.00 |
| %CPU | 1.51 |
| CPU | . |
| minflt/s | 4.55 |
| majflt/s | 0.00 |
| VSZ | 2775754 |
| RSS | 15141 |
| %MEM | 0.02 |
| kB_rd/s | 0.03 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 78672 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45872 |
| RSS | 2404 |
| %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 | 79012 |
| %usr | 0.00 |
| %system | 0.81 |
| %guest | 199.14 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.92 |
| majflt/s | 0.00 |
| VSZ | 4828748 |
| RSS | 42279 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 9.02 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78897 |
| %usr | 0.00 |
| %system | 1.17 |
| %guest | 198.83 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.09 |
| majflt/s | 0.00 |
| VSZ | 4844624 |
| RSS | 36368 |
| %MEM | 0.06 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-----------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 299424.359 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 306.611 |
| tx_rate_percent | 1.773 |
| throughput_rx_percent | 1.773 |
| frame_loss_percent | 0.048 |
| min_latency_ns | 27480.000 |
| max_latency_ns | 2368620.000 |
| avg_latency_ns | 173270.000 |
| type | rfc2544 |
| packet_size | 128 |
| traffic_type | udp |
| guest_loopback_app | testpmd testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78673 |
| %usr | 0.21 |
| %system | 1.29 |
| %guest | 0.00 |
| %CPU | 1.51 |
| CPU | . |
| minflt/s | 4.55 |
| majflt/s | 0.00 |
| VSZ | 2775754 |
| RSS | 15141 |
| %MEM | 0.02 |
| kB_rd/s | 0.03 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 78672 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45872 |
| RSS | 2404 |
| %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 | 79012 |
| %usr | 0.00 |
| %system | 0.81 |
| %guest | 199.14 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.92 |
| majflt/s | 0.00 |
| VSZ | 4828748 |
| RSS | 42279 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 9.02 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78897 |
| %usr | 0.00 |
| %system | 1.17 |
| %guest | 198.83 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.09 |
| majflt/s | 0.00 |
| VSZ | 4844624 |
| RSS | 36368 |
| %MEM | 0.06 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-----------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 228721.115 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 936.842 |
| tx_rate_percent | 4.867 |
| throughput_rx_percent | 4.867 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 56660.000 |
| max_latency_ns | 1229400.000 |
| avg_latency_ns | 146378.500 |
| type | rfc2544 |
| packet_size | 512 |
| traffic_type | udp |
| guest_loopback_app | testpmd testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78673 |
| %usr | 0.21 |
| %system | 1.29 |
| %guest | 0.00 |
| %CPU | 1.51 |
| CPU | . |
| minflt/s | 4.55 |
| majflt/s | 0.00 |
| VSZ | 2775754 |
| RSS | 15141 |
| %MEM | 0.02 |
| kB_rd/s | 0.03 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 78672 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45872 |
| RSS | 2404 |
| %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 | 79012 |
| %usr | 0.00 |
| %system | 0.81 |
| %guest | 199.14 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.92 |
| majflt/s | 0.00 |
| VSZ | 4828748 |
| RSS | 42279 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 9.02 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78897 |
| %usr | 0.00 |
| %system | 1.17 |
| %guest | 198.83 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.09 |
| majflt/s | 0.00 |
| VSZ | 4844624 |
| RSS | 36368 |
| %MEM | 0.06 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-----------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 227677.938 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 1865.138 |
| tx_rate_percent | 9.508 |
| throughput_rx_percent | 9.508 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 60220.000 |
| max_latency_ns | 413180.000 |
| avg_latency_ns | 154122.500 |
| type | rfc2544 |
| packet_size | 1024 |
| traffic_type | udp |
| guest_loopback_app | testpmd testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78673 |
| %usr | 0.21 |
| %system | 1.29 |
| %guest | 0.00 |
| %CPU | 1.51 |
| CPU | . |
| minflt/s | 4.55 |
| majflt/s | 0.00 |
| VSZ | 2775754 |
| RSS | 15141 |
| %MEM | 0.02 |
| kB_rd/s | 0.03 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 78672 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45872 |
| RSS | 2404 |
| %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 | 79012 |
| %usr | 0.00 |
| %system | 0.81 |
| %guest | 199.14 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.92 |
| majflt/s | 0.00 |
| VSZ | 4828748 |
| RSS | 42279 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 9.02 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78897 |
| %usr | 0.00 |
| %system | 1.17 |
| %guest | 198.83 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.09 |
| majflt/s | 0.00 |
| VSZ | 4844624 |
| RSS | 36368 |
| %MEM | 0.06 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|-----------------------|-----------------|
| tx_rate_fps | Unknown |
| throughput_rx_fps | 255125.921 |
| tx_rate_mbps | Unknown |
| throughput_rx_mbps | 3098.249 |
| tx_rate_percent | 15.695 |
| throughput_rx_percent | 15.695 |
| frame_loss_percent | 0.000 |
| min_latency_ns | 51600.000 |
| max_latency_ns | 1895720.000 |
| avg_latency_ns | 186632.000 |
| type | rfc2544 |
| packet_size | 1518 |
| traffic_type | udp |
| guest_loopback_app | testpmd testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78673 |
| %usr | 0.21 |
| %system | 1.29 |
| %guest | 0.00 |
| %CPU | 1.51 |
| CPU | . |
| minflt/s | 4.55 |
| majflt/s | 0.00 |
| VSZ | 2775754 |
| RSS | 15141 |
| %MEM | 0.02 |
| kB_rd/s | 0.03 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 78672 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45872 |
| RSS | 2404 |
| %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 | 79012 |
| %usr | 0.00 |
| %system | 0.81 |
| %guest | 199.14 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.92 |
| majflt/s | 0.00 |
| VSZ | 4828748 |
| RSS | 42279 |
| %MEM | 0.06 |
| kB_rd/s | 0.02 |
| kB_wr/s | 9.02 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 78897 |
| %usr | 0.00 |
| %system | 1.17 |
| %guest | 198.83 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 1.09 |
| majflt/s | 0.00 |
| VSZ | 4844624 |
| RSS | 36368 |
| %MEM | 0.06 |
| kB_rd/s | 0.00 |
| kB_wr/s | 0.00 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.2.8 Test ID: PVVP_BACK2BACK

Test Environment

Below is the environment that the test was performed in:

- OS: centos 7.2.1511 Core
- Kernel Version: 3.10.0-327.13.1.el7.x86_64
- **NIC(s):**
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
 - Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection (rev 01)
- Board: Intel Corporation S2600WTT [2 sockets]
- CPU: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
- CPU cores: 72
- Memory: 65696348 kB
- Virtual Switch Set-up: pvvp
- vswitchperf: GIT tag: 22ffe5b07adeb514572dc3db8b435ef4107e348b
- Traffic Generator: IxNet, Version: 8.01.1029.6, GIT tag: None
- vSwitch: OvsVanilla, Version: 2.5.90, GIT tag: 02ab4b1a6a173979a51cabd7000a34546d517e60
- VNF: QemuVirtioNet, Version: 2.3.0, GIT tag: e5b3a24181ea0cebf1c5b20f44d016311b7048f0
- **VM images:**
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
 - /home/jenkins/vloop-vnf-ubuntu-14.04_20160303.qcow2
- **VM loopback apps:**
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab
 - testpmd, Version: 2.2.0, GIT tag: a38e5ec15e3fe615b94f3cc5edca5974dab325ab

Below are test details:

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

Test results for packet size: 64

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

| Metric | Result |
|------------------------|-----------------|
| b2b_frames | 0 |
| b2b_frame_loss_percent | 100 |
| type | rfc2544 |
| packet_size | 64 |
| traffic_type | udp |
| guest_loopback_app | testpmd testpmd |

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswhitchd | |
|------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82113 |
| %usr | 0.24 |
| %system | 1.50 |
| %guest | 0.00 |
| %CPU | 1.74 |
| CPU | . |
| minflt/s | 4.72 |
| majflt/s | 0.00 |
| VSZ | 2775709 |
| RSS | 13742 |
| %MEM | 0.02 |
| kB_rd/s | 0.05 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 82112 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 2660 |
| %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 | 82446 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.90 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.41 |
| majflt/s | 0.00 |
| VSZ | 4767824 |
| RSS | 42224 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 5.88 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82331 |
| %usr | 0.00 |
| %system | 0.02 |
| %guest | 199.93 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.02 |
| majflt/s | 0.00 |
| VSZ | 4812368 |
| RSS | 39206 |
| %MEM | 0.06 |
| kB_rd/s | 0.01 |
| kB_wr/s | 0.03 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 128

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82113 |
| %usr | 0.24 |
| %system | 1.50 |
| %guest | 0.00 |
| %CPU | 1.74 |
| CPU | . |
| minflt/s | 4.72 |
| majflt/s | 0.00 |
| VSZ | 2775709 |
| RSS | 13742 |
| %MEM | 0.02 |
| kB_rd/s | 0.05 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 82112 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | . |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 2660 |
| %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 | 82446 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.90 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.41 |
| majflt/s | 0.00 |
| VSZ | 4767824 |
| RSS | 42224 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 5.88 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82331 |
| %usr | 0.00 |
| %system | 0.02 |
| %guest | 199.93 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.02 |
| majflt/s | 0.00 |
| VSZ | 4812368 |
| RSS | 39206 |
| %MEM | 0.06 |
| kB_rd/s | 0.01 |
| kB_wr/s | 0.03 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 512

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82113 |
| %usr | 0.24 |
| %system | 1.50 |
| %guest | 0.00 |
| %CPU | 1.74 |
| CPU | • |
| minflt/s | 4.72 |
| majflt/s | 0.00 |
| VSZ | 2775709 |
| RSS | 13742 |
| %MEM | 0.02 |
| kB_rd/s | 0.05 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 82112 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 2660 |
| %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 | 82446 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.90 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.41 |
| majflt/s | 0.00 |
| VSZ | 4767824 |
| RSS | 42224 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 5.88 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82331 |
| %usr | 0.00 |
| %system | 0.02 |
| %guest | 199.93 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.02 |
| majflt/s | 0.00 |
| VSZ | 4812368 |
| RSS | 39206 |
| %MEM | 0.06 |
| kB_rd/s | 0.01 |
| kB_wr/s | 0.03 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1024

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82113 |
| %usr | 0.24 |
| %system | 1.50 |
| %guest | 0.00 |
| %CPU | 1.74 |
| CPU | • |
| minflt/s | 4.72 |
| majflt/s | 0.00 |
| VSZ | 2775709 |
| RSS | 13742 |
| %MEM | 0.02 |
| kB_rd/s | 0.05 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovsdb-server | |
|-----------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 82112 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 2660 |
| %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 | 82446 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.90 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.41 |
| majflt/s | 0.00 |
| VSZ | 4767824 |
| RSS | 42224 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 5.88 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82331 |
| %usr | 0.00 |
| %system | 0.02 |
| %guest | 199.93 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.02 |
| majflt/s | 0.00 |
| VSZ | 4812368 |
| RSS | 39206 |
| %MEM | 0.06 |
| kB_rd/s | 0.01 |
| kB_wr/s | 0.03 |
| kB_ccwr/s | 0.00 |

Test results for packet size: 1518

A detailed summary of the main results is outlined below.

Results/Metrics Collected

The following are the metrics obtained during this test:

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

Statistics collected

The following system statistics were collected during testcase execution:

| Process: ovs-vswitchd | |
|-----------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82113 |
| %usr | 0.24 |
| %system | 1.50 |
| %guest | 0.00 |
| %CPU | 1.74 |
| CPU | • |
| minflt/s | 4.72 |
| majflt/s | 0.00 |
| VSZ | 2775709 |
| RSS | 13742 |
| %MEM | 0.02 |
| kB_rd/s | 0.05 |
| kB_wr/s | 0.01 |
| kB_ccwr/s | 0.00 |

| Process: ovssdb-server | |
|------------------------|-------|
| Statistic | Value |
| UID | 0 |
| PID | 82112 |
| %usr | 0.01 |
| %system | 0.00 |
| %guest | 0.00 |
| %CPU | 0.01 |
| CPU | • |
| minflt/s | 0.00 |
| majflt/s | 0.00 |
| VSZ | 45876 |
| RSS | 2660 |
| %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 | 82446 |
| %usr | 0.00 |
| %system | 0.04 |
| %guest | 199.90 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.41 |
| majflt/s | 0.00 |
| VSZ | 4767824 |
| RSS | 42224 |
| %MEM | 0.06 |
| kB_rd/s | 0.05 |
| kB_wr/s | 5.88 |
| kB_ccwr/s | 0.00 |

| Process: qemu-system-x86 | |
|--------------------------|---------|
| Statistic | Value |
| UID | 0 |
| PID | 82331 |
| %usr | 0.00 |
| %system | 0.02 |
| %guest | 199.93 |
| %CPU | 99.99 |
| CPU | . |
| minflt/s | 0.02 |
| majflt/s | 0.00 |
| VSZ | 4812368 |
| RSS | 39206 |
| %MEM | 0.06 |
| kB_rd/s | 0.01 |
| kB_wr/s | 0.03 |
| kB_ccwr/s | 0.00 |

Anomalies

No anomalies were detected during the course of this test.

Testing Activities/Events

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

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

4.3 Rationale for decisions

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

4.4 Conclusions and recommendations

The test results are stable. The vsperf CI jobs that were used to obtain the results can be found at https://artifacts.opnfv.org/logs/vswitchperf/intel-pod3/2016-05-06_16-35-41/vswitchperf_logs_2016-05-06_16-35-41.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 |