

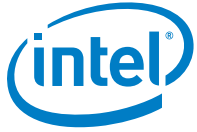
Intel® ONP Server Release 1.5

Hardware and Software Specifications

Application Note

SDN/NFV Solutions with Intel® Open Network Platform Server

Document Revision 1.0
November 2015

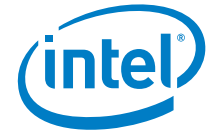


Contents

1.0 Introduction	4
1.1 Reference Documents	4
2.0 Hardware/Software Deltas	5
Legal Information	7

Tables

Table 1.	Reference Documents	4
Table 2.	Hardware Deltas and Corrective Actions	5
Table 3.	Software Deltas and Corrective Actions.....	6



Revision History

Date	Revision	Description
November 11, 2015	1.0	Initial release.



1.0 Introduction

As part of Intel® ONP Server Reference Architecture release 1.5, two key documents are delivered: (1) the *Intel® ONP Server Release 1.5 Reference Architecture Guide*, which describes integration of the open-source ingredients into Intel® ONP Server Reference Architecture, and (2) the *Intel® ONP Server Release 1.5 Performance Test Report*, which describes packet processing, performance test procedures, and results. Integration and benchmarking activities were performed using software and hardware that were not identical. This application note contains information on these differences.

Intel® aims to use identical hardware platform specifications and software versions for Intel® ONP Server Reference Architecture Guide and Performance Test Reports. Exceptions can however occur due to software issues, version revisions and other factors that occur during integration and benchmarking activities.

1.1 Reference Documents

[Table 1](#) references the documents relevant to this application note.

Table 1. Reference Documents

Document	Document Location
Intel® ONP Server Release 1.5 Reference Architecture Guide	01.org
Intel® ONP Server Release 1.5 Performance Test Report	01.org



2.0 Hardware/Software Deltas

Table 2 lists differences in hardware specifications between the Intel® ONP Server Release 1.5 Reference Architecture and Intel® ONP Server Release 1.5 Performance Test Report.

Table 2. Hardware Specifications

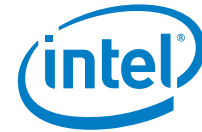
Items	Text documented in the...		Notes
	ONP 1.5 RA Guide	ONP 1.5 Performance Test Report	
Platform	Intel® Server Board S2600WTT	Intel® Server Board S2600WT2 DP	TT model has two integrated 10GbE ports. T2 model has two integrated 1GbE ports. LAN on motherboard was not used in Integration and Performance tests.
Processors	Intel® Dual Xeon® Processor E5-2697 v3, 2.6 GHz, 35 MB, 145 W, 14 cores Intel® Dual Xeon® Processor Series E5-2699 v3 2.3 GHz, 45 MB, 145 W, 18 cores	Intel® Xeon® Processor E5-2697 v3 (Formerly Haswell) Speed and power: 2.60 GHz, 145 W	Integration testing has been done on two types of processors. Performance testing uses top bin parts or targets use-case requirements.
Memory	8 GB DDR4 RDIMM Crucial CT8G4RFS423, 64-GB RAM, (8 x 8 GB)	Micron 16 GB 1Rx4 PC4-2133MHz, 16 GB per channel, 8 channels, 128 GB Total	Performance testing generally uses fully populated memory or targets use-case requirements.
NICs	Intel® Ethernet Converged Network Adapter X710-DA4 Intel® Ethernet Converged Network Adapter XL710-QDA2	2 x Intel® Ethernet Converged Network Adapter X710-DA2 (Total 4x10GbE ports)	Ethernet controllers for X710-DA4, XL710-QDA2 and X710-DA2 adapters belong to the same controller family (formerly Fortville).
BIOS Version	SE5C610.86B.01.01.0008.031 920151331 Release date: 03/19/2015	SE5C610.86B.01.01.0008.0211 20151325 Release date: 02/11/2015	Generally, the latest BIOS versions are used on all platforms. Changes can result, if there are known issues or BIOS versions change during integration and benchmarking activities.



Table 3 lists differences in software specifications between the Intel® ONP Server Release 1.5 Reference Architecture and Intel® ONP Server Release 1.5 Performance Test Report.

Table 3. Software Versions

Component	ONP 1.5 RA Guide	ONP 1.5 Performance Test Report	Note
Kernel	Kernel 3.18.8-201.fc21.x86_64	Kernel 3.17.4-301.fc21.x86_64	Although kernel 3.18.8-201.fc21.x86_64 is recommended for Intel® ONP Server Release 1.5 for its most recent set of features, kernel 3.17.4-301.fc21.x86_64 was used in performance tests as a native, verified for stability, Fedora 21 kernel.
OVS	OVS: Open vSwitch v.2.3.2 (non-DPDK nodes) OVS with DPDK-netdev: Open vSwitch v.2.4.90	Open vSwitch 2.4.0 http://openvswitch.org/releases/openvswitch-2.4.0.tar.gz	Performance tests were basing on the latest available and known stable version of OVS with DPDK-netdev.
QEMU-KVM	QEMU-KVM version: 2.3.0.5.fc21.x86_64 libvirt-1.2.9.3-2.fc21.x86_64 (non-DPDK nodes) libvirt-1.2.13.1-2.fc21.x86_64 (DPDK nodes)	QEMU-KVM version 2.2.1 http://wiki.qemu-project.org/download/qemu-2.2.1.tar.bz2	QEMU-2.2.1 was used for performance tests based on prior test work and support by OVS, see https://github.com/openvswitch/ovs/blob/master/INSTALL.DPDK.md#dpdk-vhost-user-prerequisites .



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