



Accelerating Network Transformation

Intel® Select Solution for NFVI provides ecosystem partners with a reference design for workload-optimized infrastructure, helping Communications Service Providers reduce time to deployment for Network Functions Virtualization

“For CoSPs, Intel® Select Solution for NFVI accelerates the transformation of the network end to end.”

Industry Strategic Challenges

Replacing traditional fixed function, proprietary hardware with more agile and flexible infrastructure based on Network Functions Virtualization (NFV) is top of mind for every Communications Service Provider (CoSP). NFV is crucial to delivering emerging 5G, Internet of Things (IoT), and Artificial Intelligence (AI) services with a much faster pace of innovation, while keeping Total Cost of Ownership (TCO) under control. Some CoSPs are blazing a trail with NFV, while others are following more cautiously. All the while, Intel is paying close attention to the challenges CoSPs, and the wider ecosystem, face.

Chandesh Ruparel, Director of Ecosystem Strategy and Intel® Network Builders, explains: “Hardware and software infrastructure is not one size fits all. Selecting and optimizing the right mix of hardware, software, tools, firmware, drivers, settings, and optimizations to best address a specific data center workload can be a daunting proposition for even the most seasoned technicians. This can take months, especially as it involves relatively ‘new’ technology approaches for many.”

“If you look at the number of configurations for NFV infrastructure (NFVI) in the ecosystem, there are too many. This creates fragmentation and delays. It doesn’t serve anyone well. Neither CoSPs nor solution providers see revenue until a deployment is successful. Through our extensive experience in silicon and software, together with our engagement with the Intel Network Builders ecosystem and the end-user community, we feel we are perfectly placed to offer the industry a solution.”

Drawing on Years of Industry Experience

Through years of close collaboration with the Intel Network Builders ecosystem, comprising partners, standards bodies, and open source organizations, Intel has gained extensive experience in identifying the optimal server hardware configurations and open source software stacks for NFV workloads. It is an expert in delivering excellent performance, packet processing, security, orchestration, service assurance, and scalability.

Combining this industry experience with the performance of the latest Intel® Xeon® Scalable processors, Intel has introduced Intel® Select Solution for NFVI.

Using this reference design, ecosystem partners can deliver workload-optimized server solutions to CoSP customers that lessen the time, effort, and expense involved with evaluating hardware and software integrations for NFV-based service development and deployment.

Introducing Intel® Select Solution for NFVI

Intel Select Solution for NFVI is a verified hardware and software stack that is optimized for specific software workloads across compute, storage, and network. The goal of Intel Select Solution for NFVI is to deliver a solid, optimized solution foundation to the ecosystem, reducing complexity and allowing for a much shorter development time.

Together with its partners, Intel subjects these workload-optimized configurations to rigorous regression testing and benchmarking to eliminate interoperability issues and verify performance at a system-wide level. Whenever feasible, Intel employs well-known third party and industry benchmarking tools that simulate real-world loads and help it to identify and eliminate pressure points. This ensures that every Intel Select Solution for NFVI is delivered on a balanced platform that achieves the optimal mix of performance, agility, security, and reliability.

Intel Select Solution for NFVI configured for the Ubuntu* and Red Hat Linux* operating systems are the first reference designs to be introduced in the communications and networking space. Over the coming months, Intel has plans to introduce the Intel Select Solution for other deployment domains, such as network edge, network access, and on-premise enterprise solutions. This roadmap is driven by the requirements of CoSPs.

Cross-Industry Business Benefits

Intel Select Solution offers benefits across the industry, providing a solid foundation for development while allowing for the ecosystem to deliver their value-add on top – see figure 1. Original Equipment Manufacturers (OEMs) and Operating System Vendors (OSVs) can use the Intel Select Solution to reinforce their reputation as leading solution providers. They can achieve added lift and exposure for NFVI offerings and focus their efforts on higher-level features and differentiators to remain one step ahead of the competition.

Independent Software Vendors (ISVs) can improve their early market readiness via workload-specific pre-optimization and increase their chances of being added to a CoSP's supplier shortlist. Meanwhile Systems Integrators (SIs) can reduce the time and effort needed to test, validate, benchmark, and document solutions, as well as reduce the time and effort to identify and implement use-case specific optimizations.

CoSPs can use the Intel Select Solution to make confident choices in deploying data center infrastructure that is pre-defined and purpose-built for key workloads. Intel Select Solution optimizes the cost, and minimizes the complexity and stress involved in evaluating, procuring, and integrating individual hardware and software components. It offers a faster and more efficient deployment path of tested, reliable infrastructure with verified configurations that take full advantage of virtual network enhancements and support new and emerging 5G and IoT workloads.

Traditionally performance improvements in networking workloads have translated into the biggest cost reduction tool for CoSPs. Crucially, Intel Select Solution for NFVI has optimized the performance of three data flows – network



Figure 1. Intel® Select Solution for NFVI offer benefits across the industry

traffic, data storage, and crypto acceleration. This improved and deterministic performance is especially important in virtualized environments where workloads are constantly turned on and off. Since performance is more predictable, it reduces the need for highly over-provisioned network infrastructures, which saves the CoSPs money.

Conclusion

From its position in the market, Intel is ideally placed to provide insight into the most suitable NFVI platform configurations to support communications workloads. Intel Select Solution for NFVI is part of Intel's continued effort to accelerate network transformation, offering benefits to both ecosystem partners and CoSPs. With these reference designs, server manufacturers can get to market more quickly with a value-added solution for their CoSP customers. For CoSPs, Intel Select Solution for NFVI accelerates the transformation of the network end to end.

Find the solution that is right for your organization. Contact your Intel representative or visit [intel.com/networktransformation](https://www.intel.com/networktransformation).



Intel® Xeon® Scalable Processors

Intel® Select Solution for NFVI is based on the Intel® Xeon® Scalable processor – the next-generation platform for cloud-optimized, 5G-ready networks. The Intel Xeon Scalable processor provides a foundation for agile networks that can operate with cloud economics, be highly automated and responsive, and support rapid and more secure delivery of new and enhanced services enabled by 5G and the IoT.

The Intel Xeon Scalable processor delivers a 1.65x average performance boost over the previous generation Intel Xeon processor¹. It is capable of scaling and adapting with ease to handle the demands of emerging applications and the convergence of key workloads, such as applications and services, control plane processing, high-performance packet processing, and signal processing. Efficient packet processing capabilities make it suited to running virtual network functions, while integrated Intel® QuickAssist™ Technology (Intel® QAT) accelerates cryptography and data compression workloads.

¹ Up to 1.65x Geomean based on Normalized Generational Performance going from Intel® Xeon® processor E5-26xx v4 to Intel® Xeon® Scalable processor (estimated based on Intel internal testing of OLTP Brokerage, SAP SD 2-Tier, HammerDB, Server-side Java, SPEC*int_rate_base2006, SPEC*fp_rate_base2006, Server Virtualization, STREAM* triad, LAMMPS, DPDK L3 Packet Forwarding, Black-Scholes, Intel Distribution for LINPACK)

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