Lenovo Intel® Select Solutions for Media Analytics

Edge Data Processing & Analytics critical to unlock revenue streams

Reduce time to value with validated and optimized NFV solutions

Lenovo & Intel® Select Solutions for Media Analytics

Services that are enhanced by the latest Intel Select Solutions for NFVi 2nd Generation optimization include retail and digital security analytics, smart cities and media & entertainment. Lenovo's commitment to deep technical partnerships with industry leaders ensures that Communications Service Providers (CoSPs) can choose among the highest performance and optimized solutions with confidence. With the latest Intel® Select Solutions for Media Analytics hardware (P2, Table 1) and software stacks (P3, Table 2) that include open source GStreamer & OpenVINO libraries, CoSPs can plan their development efforts to maximize network efficiency and deliver media solutions at the Edge.

Benefits

This Lenovo verified solution leveraging Intel Xeon 2nd Gen processors meets the Intel Reference Design performance benchmarks to address challenges emerging at the media analytics network Edge node. CoSPs face service delivery challenges with new applications, such as video object recognition which consumes energy and resources for each media stream. Key benefits include:

- Validated architecture to continue the shift to software based virtualized network functionality
- Adoption of standardized media analytics pipeline to support Ad-insertion, A/V sync and Smart Cities
- Structured framework that supports a deep learning environment supported by Open standards

Live, AI-Based Ad Insertion   Audio/Video Synchronization   Smart Cities

Source: Intel Select Solutions for Media Analytics

Figure 1: The Media Analytics Edge as part of network evolution to NFVi supports key industry use cases

Communications networks have among the highest performance requirement to meet both enterprise and consumer demands. Lenovo and Intel eliminate hurdles that CoSPs are confronted with to develop regional, Point of Presence (PoP) and Far Edge solutions. The 2nd Generation Intel® Xeon® Scalable processors are ideally suited to drive greater performance from the cloud data center to the network Edge. Lenovo works with key industry players to ensure your NFVi infrastructure meets the most demanding customer conditions.

ThinkSystem SR650

The ThinkSystem SR650 is Lenovo's most powerful, versatile 2U2P rack server design. With up to 24 drive bays, it offers industry-leading reliability and no-compromise performance to tackle Communications Service Providers (CoSP) user plane workloads

ThinkSystem SR630

The Lenovo ThinkSystem SR630 features a no-compromise 1U2P rack server design that can handle almost any workload in the software defined data center. For the CoSP control layer, the SR630 offers flexibility and scalability with a wide selection of drive types and capacities.

The Lenovo NFVi foundation reduces CoSP performance uncertainty at the network Edge

Lenovo offers a fast and efficient deployment path to reliable infrastructure with configurations that take full advantage of advanced 4G and 5G-enabled technologies. By verifying virtualization configurations and reference architectures, Lenovo ensures that CoSPs deliver leading customer experiences from their network. In addition, Lenovo also works with independent testing organizations to validate solution performance under real-world conditions. Lenovo's active participation in the ecosystem with partners lifts the pre-testing and verification burden so that CoSPs can focus on growing their business.

2nd Generation Intel® Xeon® Scalable processors:

- Offer high scalability that is cost-efficient and flexible, from the multicloud to the intelligent edge
- Establish a seamless performance foundation to help accelerate data's transformative impact
- Support breakthrough Intel® Optane™ DC persistent memory technology
- Accelerate AI performance and help deliver AI readiness across the data center
- Provide hardware-enhanced platform protection and threat monitoring

Configuration Item	Lenovo Cloud Node (Base Configuration)	Lenovo Controller Node Configuration
Processors	Intel® Xeon® Gold 6252 24C 2.1GHz processor	Intel® Xeon® Gold 5218 16C 2.3GHz processor
Memory	384 GB DDR4-2666 memory	192 GB DDR4-2666 memory
Discrete Network Adapters	2x Intel® Ethernet Network Adapter XXV710 dual-port @ 25 Gbps	2x Intel® Ethernet Network Adapter XXV710 dual-port @ 25 Gbps
Local Storage	2x ThinkSystem Intel P4500 4TB NVMe SSD	2x ThinkSystem Intel P4500 2TB NVMe SSD
	2x ThinkSystem 2.5" Intel S4510 480GB Hot Swap SSD	
LAN on Motherboard	ThinkSystem 10Gb 4-port SFP+ LOM (uses Intel X722 1/10 GbE)	
	1/10 Gbps port for management	
Software	Minimum Version	
VIM	Red Hat OpenStack Platform 13	
Gstreamer	GStreamer Core Library version 1.16.0	
Package	gst-video-analytics.git	

Table 1: Intel® Select Solutions for Media Analytics HW Configurations & Key SW components

Lenovo servers underpin a validated Media Analytics NFVi

The Intel® Select Solutions for Media Analytics based on the 2nd Generation of Intel® Xeon® scalable processors is a reference architecture. This reference architecture includes a set of validation qualifications to ensure that CoSPs benefit from a standardized Media Analytics pipeline which will deliver the most important customer experiences in the evolving digital economy.

Lenovo for CoSPs has demonstrated compliance to these virtual platform requirements and presents a platform that meets the high demands of a mobile service provider network that is evolving to include multi-access technologies including 4G and 5G.

High bandwidth low-latency services are the common thread of new use cases

Multi-access networks support 4G and 5G technologies so that high bandwidth low-latency applications can be delivered efficiently across networks in both moderately and densely populated environments.

Retail and Digital Security

Retail usages may include from gathering enhanced consumer insights which could include behavioral and shopping behaviors. Shopping venues may determine business intelligence required to constantly adapt to behavior of patrons. Commercial, public and private buildings can also benefit from security provided by network based technologies. In the case of most environments, data shared across locations and connected to real-time response systems can elevate the value of security mechanisms that are deployed.

Smart Cities

Smart cities define a collection of data sensors and inputs with digital tools that can be used to compile, analyze and share data through pre-defined channels. City planners and managers may also use tools to analyze collected information to make important decisions. Collected data might be used for traffic management, development planning, allocation of city services and to accommodate temporary population changes that may occur based on time-of-day or other predictable schedule.

Media and Entertainment

A/V synchronization and Ad insertion are two key areas for this category. Customers have high expectations for their experiences on mobile devices. The category includes both pre-recorded content reservoirs and live streaming. With adoption of 5G technologies, consumers will continue to raise their expectations for content delivered to wireless devices.

Table 2: Intel® Select Solution MA SW Stack
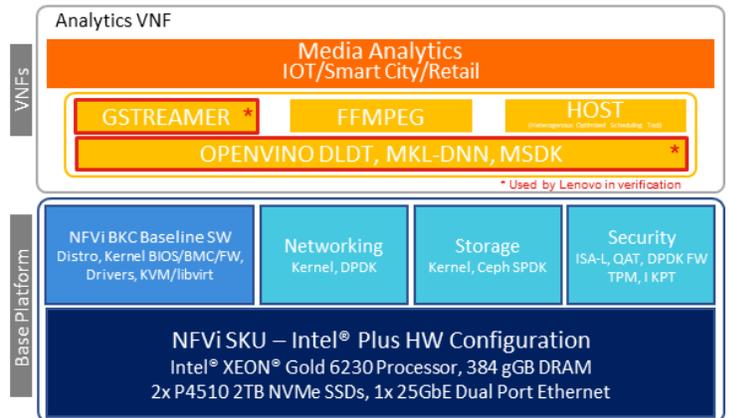
Source: Intel Select Solutions for Media Analytics Reference Design

Table 3: Carrier-grade Edge media applications

Edge Media Analytics Area	Typical Use Case
Retail and Digital Security	Enhanced consumer insights
	Business Intelligence
	Building security
Smart Cities	Traffic Intelligence
	Intelligent Resource allocation
	First Responder navigation
Media and Entertainment	Streaming Entertainment with enhanced A/V experience
	Content Delivery with targeted Ad-insertion
	Live (augmented) Enhancement

Lenovo and Intel are collaborating to advance and accelerate deployment of mobile network solutions. Our partnership ensures that mobile subscriber and enterprise customers benefit from optimized digital experiences.

Accelerate the evolution to NFV with Lenovo

Lenovo is well known for delivering servers to industry with the #1 uptime and exceptional customer satisfaction. However, in addition to servers, Lenovo delivers software solutions for CoSPs which dramatically improve operational systems to deploy virtualized infrastructure in communications networks.

Lenovo Open Cloud Automation (LOC Automation) creates an automated platform to deploy, optimize and manage high performance cloud infrastructure. LOC Automation accelerates cloud deployment by up to 3X with respect to manual deployment. By delivering an automated deployment model, performance will be replicated across deployments. Intel Select Solutions customers benefit from:

- Accelerated deployment and consistent cloud readiness
- Rapid time to incremental revenue
- Edge friendly solution to efficiently extend the network
- Built in benchmarking to observe, manage and reduce costs.

Lenovo is your infrastructure deployment partner to ensure that your network rollout, expansions and maintenance perform beyond your expectations.

Why Lenovo for CoSPs

Lenovo infrastructure is built on a global manufacturing, services and support footprint, and is ranked #1 globally in both server reliability and customer support. Our CoSP and partner validated solutions are built on open standards and interfaces to preclude vendor lock-in. Lenovo XClarity Administrator simplifies Physical Infrastructure Management (PIM).

For More Information

To learn more about Lenovo for CoSP solutions and validated partner configurations, contact your Lenovo Business Partner or visit: lenovo.com/cosp

Highlights of Lenovo Intel® Select Solutions for NFVI, Optimized and Pre-Tested

- Simplified evaluation. VNF validation and the transition to virtualized infrastructure are two areas where Communications Service Providers (CoSPs) spend more time and money to find optimal solutions. Intel® Select Solutions through Lenovo are tightly specified to eliminate guesswork and accelerate decision-making.
- Fast and easy deployment. With predefined settings and rigorous system-wide tuning, solutions deployed on Lenovo infrastructure are designed to increase efficiency in carriers testing process, speed time to service delivery, and increase confidence in performance.
- Workload-optimized performance. Lenovo configurations meet or exceed Intel® Select Solutions design goals to deliver a guaranteed performance threshold for the workload and are built on the latest Intel architecture.