MECS-6110 Edge Server from ADLINK Accelerates Deployment of Universal Customer Premises Equipment (uCPE)

ADLINK's MECS-6110 edge server is a verified Intel® Select Solution for uCPE on CentOS

Universal customer premises equipment (uCPE) is an emerging category of network functions virtualization (NVF)-based edge computing and service provisioning systems that enable service agility for communications service providers (CommSPs). ADLINK has launched its MECS-6110 edge server based on the Intel Select Solutions for uCPE reference design that combines the powerful Intel® Xeon® D processor with an optimized software stack.

The MECS-6110 edge server is a uCPE platform that can bring virtualized and non-virtualized (bare metal) services to small branch offices and small-to-medium-sized businesses. Intel Select Solutions for uCPE provide a reference design for these platforms that is based on Intel technology and incorporates NFV systems architecture requirements.

Configuration and Specification

The ADLNK MECS-6110 edge server is a verified Intel Select Solution for uCPE that leverages the following hardware components:

Item	Description
Server Name	MECS-6110
Processor	Intel® Xeon® D-2177NT Processor 1.90GHz (14C/28T, 105W) Intel® Xeon® D-2183IT Processor 2.20GHz (16C/32T, 100W) Intel® Xeon® D-2187NT Processor 2.00GHz (16C/32T, 110W)
Memory	4x DDR4-2666 1DPC RDIMM sockets, ECC, REG, up to 256GB
NICs	Yes
Intel® QAT	Yes
Storage	2x 2.5" hot-swappable SATA 6Gb/s (supports 2x 240GB Intel SSDs S4510) 2x onboard M.2 NVME socket, 2242/2280 M Key
Operating System	Microsoft Windows Server 2012/2016 CentOS Linux 7.2/7.6 SuSE Linux Enterprise Server 11/12

Expansions	Option 1
	    2x PCIe x16 Gen3 single-slot FHFL interfaces, passive cooling, up to 110W each
	Option 2
	    1x PCIe x16 Gen3 dual-slot FHFL interface, passive cooling, up to 250W
	Option 3
	    1x PCIe x16 Gen3 single-slot FHFL interface, passive cooling up to 110W
	    1x PCIe x8 Gen3 single-slot FHFL interface, passive cooling up to 110W
	    1x PCIe x8 Gen3 OCP NIC v2

Features of ADLINK MECS-6110

ADLINK's MECS-6110 COTS system targets different sets of requirements at the 5G edge and fulfills general edge server requirements in the following ways:

Ruggedly Built to Endure

Designed for harsh environments, the MECS-6110 is built to withstand rugged environmental conditions and can operate from -5°C to +55°C, with a storage tolerance down to -40°C. Additionally, the platform can withstand repeated shocks of 2G (half-sine, 11ms pulse, 100 pulses in each direction) thanks to ADLINK's extensive experience in rugged embedded design and use of only the highest-quality mechanical parts. ADLINK edge servers feature a high mean time between failures (MTBF), extended support options, and secure remote configuration and monitoring.

Ready to Perform

To handle demanding and ever-increasing 5G workloads, the MECS-6110 utilizes Intel® Xeon® D processors, DDR4 ECC memory, and a combination of M.2 and 2.5" SATA drives. Each model also includes PCIe expansion slots to support add-on components to meet specific application requirements, including FGPA, GPU, and I/O expansion cards. For networking, each edge server includes both 1 GbE and 10 GbE ports, which is critical for passing large amounts of data through Open RAN virtual environments without fabric bottlenecks.

Satisfying SWaP

The MECS-6110 has standard rack-mountable dimensions and is only 1U in height, occupying much less physical space and allowing it to be easily installed in remote and/or constrained locations. A smaller system with efficient processors means less power consumed and reduced cooling demands, which becomes doubly important when installed in environments lacking data center-like cooling and ventilation.

Easy Manageability

The MECS-6110 supports the open Redfish® industry standard. Redfish provides simple, modern, and secure management of scalable platform hardware. Administrators can also use the Intelligent Platform Management Interface (IPMI) with iKVM and Serial over LAN (SoL) to manage and monitor the edge server remotely via a web browser.

Penalty-Free Scalability

Too often, proprietary edge solutions limit users' ability to grow and meet new workloads or platform enhancements. The MECS-6110 provides two full-height, full-length (FHFL) PCI Express slots for quick, affordable performance expansion, such as with GPU or FPGA add-on cards. Ample network bandwidth can accommodate large IoT device sets and workloads including high-resolution video, as well as lateral scaling of compute resources within edge and broader RAN deployments.

Built for Business

ADLINK maintains branch offices around the world to ensure that it can provide faster, more pertinent, regionally tailored support for all its product families, including edge servers. ADLINK further backs its edge servers with comprehensive platform certifications, including OTII compliance and AWS validation. Systems include a wealth of security features, from board- and chip-level trusted platform enhancements to application-level management tools designed to enforce IT policies and block unwanted activity. ADLINK offers a line of off-the-shelf edge servers, but the company's vertical integration and exceptional ODM engineering abilities allow clients to fine-tune these systems to specific needs or even build novel edge designs from the ground up with whatever components, functionality, or form factors are required to meet specific needs of the customer's deployment.

Key Benefits

Key benefits of deploying Intel Select Solutions for uCPE from ADLINK include:

Faster evaluation: Intel Select Solutions for uCPE combine tight hardware and software specifications to eliminate guesswork and speed decision-making. IT managers can focus their search on key value-added elements and select an optimal solution quickly.

Fast and easy deployment: Intel Select Solutions for uCPE feature pre-defined settings and rigorous system-wide tuning for efficient pre-deployment testing. This helps speed time to service delivery and IT staff can have increased confidence in solution performance.

Workload-optimized performance: Intel Select Solution for uCPE configurations are designed by Intel and its partners to deliver to a performance threshold for the workload and are built on the latest Intel architecture technology including Intel Xeon D processors.

Intel® Xeon® Processor D-2100 Product Family

The Intel Xeon processor D-2100 product family is based on the Intel Xeon Scalable processor architecture and is optimized for low power consumption and high-density solutions, integrating essential network, security, and acceleration capabilities into the platform. Intel Xeon D processor-based solutions enable CommSPs to bring intelligent services to the network edge by offering low total cost of ownership and power draw and delivering space-efficient commercial off-the-shelf servers. Key features include:

- Enhanced memory: Up to 512 GB of DDR4 ECC

- Enhanced accelerators: Integrated Intel® QuickAssist Technology (Intel® QAT) for accelerated compression and encryption/decryption

- New extensions: Intel® Advanced Vector Extensions 512 (Intel® AVX-512), a specialized instruction set for outstanding compute performance

- Enhanced networking: Up to four integrated 10 GbE Intel Ethernet adapters

Conclusion

With the MECS-6110 edge server that is verified as an Intel Select Solution for uCPE on CentOS, ADLINK is delivering a differentiated platform with validated software from an ecosystem of a large number of tested and optimized virtual network functions (VNFs). This helps CommSPs get to market quickly and deliver new services to enterprises and small businesses.

Learn More

MECS-6110 Page: https://www.adlinktech.com/Products/Edge_and_AI_Server/Edge_Server/MECS-6110

MECS Product Brochure: Unlock 5G Value with Open Standards-based COTS Edge Servers.

MEC Server Solution Brief:

- 5G Open RAN: ADLINK Edge Servers Enable Rapid 5G Open RAN Deployment
- Private 5G Network: Building Private 5G Networks to Accelerate Smart Manufacturing

Intel Select Solutions web page: https://builders.intel.com/intelselectsolutions

Intel Xeon D processor family: http://www.intel.com/xeond

Intel Select Solutions are supported by the Intel Builders Program: https://builders.intel.com