Building Forward Together | ADLINK

Mobile Edge Computing Platforms for Outdoor Telecom Applications

Extreme Outdoor Server

Designed for Extreme Outdoor Environment
Server Grade Performance
Application Ready Intelligent Platform



www.adlinktech.com

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Extreme Outdoor Server

Mobile Edge Computing - The Edge is the Future

There are over 5 million cell towers globally with the potential for deployment of 5 million Edge Servers to be placed outside in extreme outdoor elements.

By adding Edge Cloud Servers, operators can save up to 35% on backhaul usage from the Radio Access Network to the existing application server. By 2018, it is estimated that 84% of all IP traffic in the US will be made up of gaming, video and streaming web content. Users will demand low latency and improved QoE. With Edge Cloud Architectures, it is estimated that latency will be reduced by 50%.

ADLINK announces the first Xeon-class, weather-proof, Extreme Outdoor Rugged Server for Edge Cloud Architectures (also known as MEC – Mobile Edge Computing) and Network Functions Virtualization (also known as NFV).

The MEC Architecture Key Elements can be built onto ADLINK's Extreme Outdoor Server SETO-1000/1010

Mobile Edge Computing (or MEC) is an ETSI standards-based architecture enabling operators and ISP's to implement a greater mix of applications on the Mobile Edge or Radio Network environment.

The MEC Architecture is made up of 3 key elements:
- The MEC Hosting Infrastructure Management System which consists of the SETO-1000/1010 Server, Virtualization Layer and the Virtualization Manager
- The MEC Application Platform Management System which provides Traffic Control RAN Information Services, Communication Services, and Service Registry
- The Application Management System: a Virtualized Machine for MEC

Reducing Backhaul and Transmission Costs by Optimising the Network with an SETO-1000/1010 MEC system

- Data Caching of video, gaming, web content, DNS caching peer-to-peer applications and user plane of S1 links
- Enabling proxy services at the edge for web proxies, transparent security and VPN proxies and content filtering proxies
- Filtering of URL web addresses for private enterprises being served by the SETO-1000/1010
- Data compression and IPSec at the edge to increase the data flow between the edge and the application server
- Implementing codecs and compression techniques at the edge to provide improved video optimization for broadcasters, cable providers and video applications

Improving the User Experience by Enhancing Application Responsiveness and Quality

- Utilization of Deep Packet Inspection to provide content aware quality of service by adjusting specific parameters as required by the application's Quality of Service
- Providing personalized advertising, coupons and merchandise offerings from business and venues in close-proximity to users. Geo-targeting of advertisements can offer improved revenue streams for both the operators and local businesses
- Providing additional data analytics for application providers including real-time monitoring and storage variables not impacting the backhaul

ADLINK SETO-1000/1010

Industry's first high performance Mobile-Edge computing (MEC) platform designed for extreme environments and outdoor telecom/networking applications.

• Designed for Extreme Outdoor Environments • Server Grade Performance • Application Ready Intelligent Platform

Server-grade performance with Intel® Xeon® Processor E5-2400 v2 series

2x 2.5" SATA drive bays (externally accessible SETO-1000)

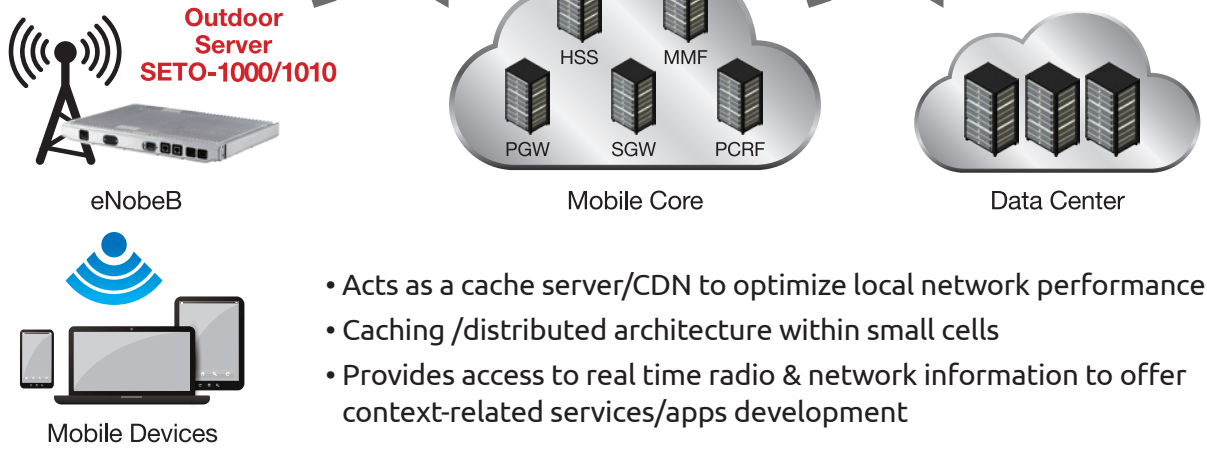
Packet processing acceleration with ADLINK PacketManager



Fanless, -40℃ to +55℃ operation, NEBS shock & vibration resistant

IPMC remote management thru 10/100/1000BASE-T RJ-45 or 10GbE SFP+ ports

IP65 water & dust proof



- Acts as a cache server/CDN to optimize local network performance
- Caching /distributed architecture within small cells
- Provides access to real time radio & network information to offer context-related services/apps development

More Ideas for Mobile Edge Computing Applications ···



Augmented Reality Content Delivery

- Augmented Reality (AR) application on a smart-phone or tablet overlays AR content onto objects viewed on the device camera.
- Applications on the Mobile Edge Computing (MEC) server can provide local object tracking and local AR content caching.
- Minimizes round trip time and maximizes throughput for optimum quality of experience.
- Offers consumer or enterprise propositions, such as tourist information, sporting event information, advertisements etc.



Video Analytics & Caching

- The video management application transcodes and stores captured video streams from cameras received on the LTE uplink.
- The video analytics application processes the video data to detect and notify specific configurable events e.g. object movement, lost child, abandoned luggage, etc. safety, public security to smart cities.
- Using video analytics can not just save up to 50% of the backhaul for video but also improves latency up to 35%.
- Reserved PCIe extension for video transcoding acceleration.



Distributed Content and DNS Caching

- Provide backhaul and transport savings and improved QoE.
- Content caching has the potential to reduce backhaul capacity requirements by up to 35%.
- Local Domain Name System (DNS) caching can reduce web page download time by 20%.



SETO-1000/1010

Extreme Outdoor Server with Intel® Xeon® Processor E5-2400 v2 Series

Specifications

CPU / Chipset /Memory

CPU	Single/Dual Intel® Xeon® E5-2418L v2 (6C/12T) 2.0GHz
	Single/Dual Intel® Xeon® E5-2428L v2 (8C/16T) 1.8GHz
	Single/Dual Intel® Xeon® E5-2448L v2 (10C/20T) 1.8GHz
Chipset	Intel® C604 Chipset
Memory	Six DDR3-1600/1866 240-pin VLP RDIMM sockets, up to 96 GB (up to 48GB for single CPU SKUs)

BIOS

Chip	AMI BIOS on SPI flash memory

I/O Interfaces

Ethernet Dual	10/100/1000BASE-T RJ-45 port
	Dual 10G SFP+ interface
Storage	Onboard bootable 32 GB SATA flash (optional up to 256GB)
	SETO-1000: Two 2.5” SATA SSD drive bays (external access)
	SETO-1010: Two 2.5” SATA SSD drive bays (internal)
USB	Two USB 2.0 ports on front panel
Front Panel I/O	2x USB port, 2x LAN, 2x SFP+, 1x COM port
Power Input	DC 36-72V power input, supports DC-48V for Telcom
Video	VGA output by VGA port (SETO-1010)

IPMI

Chip	Smart Fusion A2F500
IPMI	IPMI v2.0 based intelligent system manager & power manager. Supports temperature management for platform power manager: cold start heating, overheating, lower performance, shutdown& auto recover, self & remotediagnostic capability.

Other Features

Expansion	Mini PCIe socket onboard; PCIe x16 signals via proprietary onboard connector (max. 15W)
Packet Processing Acceleration	Intel® Communications Chipset 8920 (optional)
Operating System	Linux 6.x

Mechanical and Environmental

Form Factor	Fanless with aluminum conduction cooling enclosure
Dimension	340 mm x 440 mm x 44 mm (L x W x H)
Weight	10 kg
Operating Temp.	-40˚C to +55˚C
Storage Temp.	-40˚C to +70˚C
Humidity	5% to 95%, non-condensed
Shock	20G peak-to-peak, 11ms duration, non-operating
Vibration	Non-operation: 1.88Grms, 5-500Hz each axis
	Operation: 0.5Grms, 5-500Hz each axis
Power Consumption	400~500W
IP rating	IP65
Certification	FCC, CE, UL, NEBS Level 3 (design)

Comparison between SETO-1000 and SETO-1010

Specifications	SETO-1000	SETO-1010
Removable drive bay	•	
Internal driver bay		•
1GbE port	2	3
LAN bypass		•
SFP+	2	2
Optical bypass		•
VGA output		•

WORLDWIDE OFFICES

ADLINK Technology, Inc.

9F, No.166 Jian Yi Road, Zhonghe District
New Taipei City 235, Taiwan
新北市中和區建一路166號9樓
Tel: +886-2-8226-5877
Fax: +886-2-8226-5717
Email: service@adlinktech.com

Ampro ADLINK Technology, Inc.

5215 Hellyer Avenue, #110 San Jose, CA 95138, USA
Tel: +1-408-360-0200
Toll Free: +1-800-966-5200 (USA only)
Fax: +1-408-360-0222
Email: info@adlinktech.com

ADLINK Technology Singapore Pte. Ltd.

84 Genting Lane #07-02A, Cityneon Design Centre,
Singapore 349584
Tel: +65-6844-2261
Fax: +65-6844-2263
Email: singapore@adlinktech.com

ADLINK Technology Singapore Pte Ltd. (Indian Liaison Office)

#50-56, First Floor, Spearhead Towers
Margosa Main Road (between 16th/17th Cross)
Malleswaram, Bangalore - 560 055, India
Tel: +91-80-65605817, +91-80-42246107
Fax: +91-80-23464606
Email: india@adlinktech.com

ADLINK Technology Japan Corporation

〒101-0045 東京都千代田区神田鍛冶町3-7-4
神田374ビル4F
KANDA374 Bldg. 4F, 3-7-4 Kanda Kajicho,
Chiyoda-ku, Tokyo 101-0045, Japan
Tel: +81-3-4455-3722
Fax: +81-3-5209-6013
Email: japan@adlinktech.com

ADLINK Technology, Inc. (Korean Liaison Office)

경기도 성남시 분당구 수내로46번길4 경동빌딩 2층 (수내동 4-4번지) (우) 13595
2F, Kyungdong B/D, 4 Sunae-ro 46 beon-gil
Bundang-gu, Seongnam-si, Gyeonggi-do, Korea, 13595
Toll Free: +82-80-800-0585,
Tel: +82-31-786-0585
Fax: +82-31-786-0583
Email: korea@adlinktech.com

PENTA ADLINK Technology GmbH

Ulrichsbergerstrasse 17
94469 Deggendorf, Germany
Tel: +49 (0) 991 290 94-10
Fax: +49 (0) 991 290 94-29
Email: emea@adlinktech.com

ADLINK Technology (China) Co., Ltd.

上海市浦东新区张江高科技园区芳春路300号 (201203)
300 Fang Chun Rd., Zhangjiang Hi-Tech Park
Pudong New Area, Shanghai, 201203 China
Tel: +86-21-5132-8988
Fax: +86-21-5192-3588
Email: market@adlinktech.com

ADLINK Technology Beijing

北京市海淀区上地东路1号盈创动力大厦E座801室(100085)
Rm. 801, Power Creative E, No. 1 Shang Di East Rd.
Beijing, 100085 China
Tel: +86-10-5885-8666
Fax: +86-10-5885-8626
Email: market@adlinktech.com

ADLINK Technology Shenzhen

深圳市南山区科技园南区高新南七道数字技术园
A1栋2楼C区 (518057)
2F, C Block, Bldg. A1, Cyber-Tech Zone, Gao Xin Ave. Sec. 7
High-Tech Industrial Park S., Shenzhen, 518054 China
Tel: +86-755-2643-4858
Fax: +86-755-2664-6353
Email: market@adlinktech.com

LiPPERT ADLINK Technology GmbH

Hans-Thoma-Strasse 11, D-68163 Mannheim, Germany
Tel: +49 621 43214-0
Fax: +49 621 43214-30
Email: emea@adlinktech.com

ADLINK Technology, Inc. (French Liaison Office)

6 allée de Londres, Immeuble Ceylan 91940 Les Ulis, France
Tel: +33 (0) 1 60 12 35 66
Fax: +33 (0) 1 60 12 35 66
Email: france@adlinktech.com

ADLINK Technology, Inc. (Israel Liaison Office)

27 Maskit St., Corex Building PO Box 12777
Herzliya 4673300, Israel
Tel: +972-54-632-5251
Fax: +972-77-208-0230
Email: israel@adlinktech.com

ADLINK Technology, Inc. (UK Liaison Office)

Tel: +44 774 010 59 65
Email: UK@adlinktech.com

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