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About Advantech Cloud-IoT Group



Founded in 1983, Advantech is a global leader in the fields of IoT intelligent systems and embedded platforms. Advantech Cloud-IoT Group has been providing mission critical hardware to the world’s leading industrial and networking equipment manufacturers for over 30 years. Whether it is wired or wireless, virtual or physical nodes at the core or the edge, Advantech’s products are embedded in the telecommunications and industrial infrastructure that our world depends upon.

Quick Facts	
Headquarters	Taipei, Taiwan
Established	1983
Publicly listed	TPE: 2395
Employees	8,560
Revenue (2021)	USD \$2.09 Billion
Worldwide support	95 cities, 28 Countries

Our customers can choose from the broadest choice of computing platforms in the industry, scaling from one to hundreds of cores, consolidating packet, application, and control processing onto a single architecture and one code base. Our technology leadership stems from field-proven design expertise on Intel® architecture combined with high performance switching, hardware acceleration, and innovative offload techniques.

We team up locally with customers and partners to evaluate project requirements, share application knowledge and build optimized solutions together. Our commercial off-the-shelf platforms coupled with pre-validated operating system and application support and remote evaluation services provide the foundations for rapid and smooth deployments. In addition, Advantech’s customization capabilities allow customers to choose the precise level of differentiation, cost optimization or enhancement they require. This can range from small hardware or mechanical changes, to full-custom design or complete system branding, bundling and logistics services.

From Research & Development and support facilities in the USA, Europe and Asia, our customer-facing project teams link seamlessly into our worldwide network of over 8,000 employees. We manufacture to stringent quality procedures in our own ISO-9001 certified factories in Taiwan and China and our global integration and logistics centers operate on all continents to provide unified and localized services for optimum supply chain efficiency.

In this brochure, we bring together the core competences of our industrial, telecom, enterprise and video platforms. It also mirrors the market requirements we are observing, where operational, information and communication technologies are converging, accelerated by virtualization and consolidated onto servers for software-defined everything. The products represented here help solution providers extend services to the cloud and to the IoT edge, for a seamless transformation toward intelligent cloud-native operations. Supported by a vibrant software ecosystem and supply chain, Advantech Cloud-IoT Group is enabling the co-creation of solutions that will form the backbone of the new AIoT economy.

Your Trusted Infrastructure Partner

Leading the AIoT Digital Transformation

Companies that provide market leading solutions have learned that working with trusted partners that help them create value is one of the most critical factors to continued success. Good partners provide expertise, access to technology and time-to-market benefits that everyone can benefit from. Also crucial are development and manufacturing strategies that strive for excellence and deliver flexible and reliable platforms that maximize performance for cloud-based services. Our broad range of products combined with our customization capabilities, industry expertise, and global services allow us to firmly accompany customers through digital transformation towards a new AIoT infrastructure.

Advantech Cloud IoT Solutions



Minimize TCO with Superior Performance and Reliability

Advantech highly reliable servers and network appliances integrate over 30 years of experience providing mission and business critical hardware to the world's leading equipment manufacturers, to meet the most demanding industrial, telecom, and enterprise application needs. They are designed and manufactured in-house by a team of 100+ R&D hardware and software engineers that thoughtfully select each component following strict DQA criteria. Built-in security, maintainability, and serviceability enhancements further improve performance and reliability, minimizing costly service interruptions and on-site technical interventions. Advanced platform features include redundant BIOS and firmware images, fail-safe remote updates, and wide-temperature operation from -40 to 65°C to deliver virtually zero downtime.

Advantech's solutions are more than high quality hardware designs as we go much further than ordinary hardware vendors. Our design and manufacturing process is fully owned by Advantech, which allows us to minimize supply chain risks and deliver competitive fully integrated, tested, and validated systems with faster time to market. In addition, our solutions are supported by a global service network and leverage Advantech's industrial product life cycle management.

Integration, Customization and Design Services

Starting from commercial-off-the-shelf platforms, we offer personalized products through a wide range of specialized services. All of our platforms are application-ready with branding options available including chassis color, logo and front bezel design. Customers can cost optimize our modular appliances and servers to reach their sweet spot of price, performance, and functionality. In addition, solution providers can leverage our customized COTS framework for semi-custom electronic or mechanical design as well as BIOS firmware.



Ecosystem Partnerships

Co-creating the Future of the IoT World



To ensure functionality of business critical solutions, Advantech has formed co-creation model that brings together industry leaders and innovators to foster technology teamwork, interoperability testing and solution development. Proven product interoperability means service and solution providers can readily integrate tested combinations of hardware and software components with total confidence. In a fast paced market this allows them to evaluate and deliver innovative solutions more rapidly and respond more effectively to emerging customer needs.

Participating ecosystem partners collaborate to meet customers' application-specific needs by facilitating the transformation of leading-edge embedded technologies into readily available business solutions. Our partner ecosystem is made up of leaders in each of their respective areas of expertise. Together, these companies provide all of the essential components for developing, verifying, integrating and building high performance products.

Choosing the Right Partners

Advantech works closely with leading silicon, virtualization, software, system integration and service provider partners to jointly address the challenges of open and disaggregated solutions bringing to market optimized solutions that have been certified to perform well together. Our verified platforms are capable of sustained processing for edge to cloud workloads spanning a wide range of industrial, communications and enterprise applications. These pre-validated, pre-optimized solutions accelerate deployment and time to revenue, while reducing integration risk for service and solution providers.



Transforming the Network Edge

The arrival of virtualization technologies and cloud-native architectures to the communications industry opens up new business models and no longer locks operators into fixed architectures. The new network infrastructure is flexible, modular and open. At Advantech, we understand that a strong co-working ecosystem is required to ensure that white boxes, middleware, operating systems, orchestration and network functions work together in this multi-vendor environment. We collaborate closely with hardware and software partners in different initiatives, from industry alliances such as Intel® Network Builders to Proof of Concepts, to ensure interoperability at the earliest possible stage in the development cycle and enable our customers with early access to the latest technology which accelerates their next generation product roll-outs.

If you'd like to join Advantech's Ecosystem Partner Program:

Please email us at



cloud.iot@advantech.com

or visit



www.advantech.com/Cloud-IoT

for further details.

Added-value Software Solutions

To Improve Security, Reliability and Productivity

Going beyond high quality hardware design, Advantech offers advanced platform management, software tools that improve system availability, simplify operations, and accelerate time to market. Advantech's own team of software and firmware engineers integrates over 20 years of experience building BIOS, firmware, secure and cloud-native server management and diagnostics solutions for leading industry vendors. These field proven and modular, added-value software solutions are embedded in our widely deployed telecommunication, edge computing, network appliance, storage, and private cloud server products.

Our in-house developed software tools provide the following benefits to our customers:



System Management

Advantech platform software can work as a daily doctor to keep your x86 system stable. Our solutions monitor health status, provide multiple alarm channels, and control the system through different interfaces like CLI and RESTful API, system recovery, or remote firmware updates and diagnostics instead of time-consuming RMA.



Remote Management

Providing device support on site can be time-consuming and costly. But how do you manage distribution of thousands of device at once? Advantech platform management works independently from the OS and can be done remotely from any location. With remote control, remote storage and upgrades a via web interface, you can provide an efficient service from anywhere with less maintenance and operation costs.



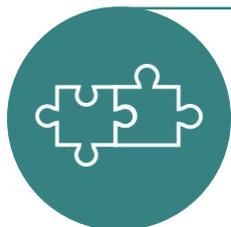
Enhanced Security

Advantech continues to develop up-to-date secured technology such as Redfish which is the next generation platform management alternative to IPMI, introducing RESTful APIs and secure communication. Advantech also passes and meets different security scans (e.g. Nessus, NMAP, etc.) and compliance to meet common international laws and guidelines (e.g. NIST SP 800-193). All security features empowered by Advantech platform management can help you to reduce service impact, security risk, maintenance cost, and improve service levels.



High Availability

Advantech hardware with integrated software solution provides fail-safe mechanisms, which help avoid any single points of failure and thus provide high availability, even on standard configurations. Based on Advantech's experience in the telecommunication and network security space, all these designs offer close to zero downtime, improve system availability, and reduce operation costs.



Application Flexibility

Advantech's in-house solution provides full capability to maintain all aspects of development and create flexible options for easy customization, quick response time, and online utility licensing. Our verified solution can offer unique ID branding at the customer's request, within certain service level agreements. Our customization helps service providers and enterprises bridge the gap between ODM and standard products to speed up time to market.

All these systems, features, and tools have a moderate impact on cost as they have been carefully designed by Advantech's in-house engineering teams and are kept consistent across Cloud IoT products. All in all, our goal is to enable customers to have a secured platform management solution to maintain their network appliances and servers in an agile and cost-efficient manner.

Our in-house developed platform management and software tools include:

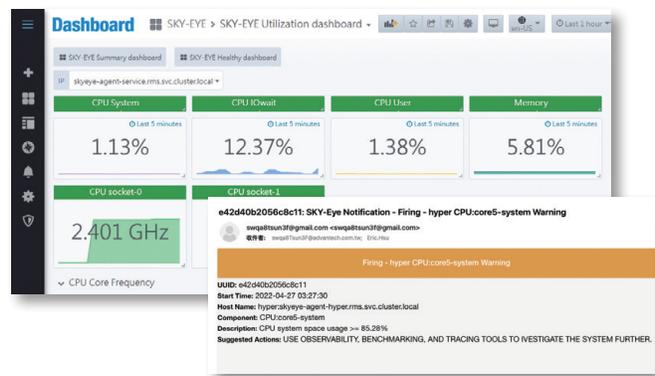
Advantech Platform Management is an in-house designed and developed carrier-grade Baseboard Management Controller (BMC) solution with Redfish support that provides secure local and remote control functions. Advanced Platform Management features include redundant BIOS and firmware images for fast recovery and fail-safe updates using industry standard protocol HPM.1, which is built into the redundant carrier-grade Baseboard Management Controller (BMC).



Advantech Server iManager is the new brand name for the Linux based Cloud-IoT platform of software utilities and APIs. Advantech Server iManager can identify network ports, monitor hardware health status with alarm channels for different users and much more. With this information, customers can prepare backup plans and maintain system stability. Customers can quickly clarify their hardware or application issues by using diagnostics to shorten mean time to prepare replacements or initiate a proper repair plan instead of time-consuming RMA procedures. Server iManager allows users to integrate these OS based tools into their service via various popular interfaces like CLI and RESTful API.



SKY-EYE is one of the software solution which can be integrated with WISE-PaaS to monitor Advantech SKY servers, collecting all hardware information with user-friendly dashboard and alerting with operation guiding can improve business agility and reducing total cost of ownership (TCO).



Advanced LAN Bypass is leading industrial hardware and software design on our network appliances and NMC/ PCIe cards that can be used for signal/traffic management or firewalls.

Safeguard the continuity of your business critical services by eliminating single points of failure with LAN bypass. Advantech's advanced LAN Bypass feature guarantees uptime by preserving network connectivity and maintaining communications in case of power outage or appliance malfunction. When Bypass Mode is active, multiple interface pairs can be bridged on power failure or appliance malfunction and will resume normal functionality when the issue is resolved.



Premium Global Services



Manufacturing



Logistics



Customer Support

The foundation of our business is built on world-class manufacturing, quality, and integration processes that enable our customers to deploy reliable business-critical solutions worldwide with total confidence.

Deploying standards-based products that enable our customers to create industry leading solutions requires a full suite of high-quality products, advanced customization technology, an extensive ecosystem and a full complement of life-cycle services. Advantech's platforms, Customized COTS framework, Ecosystem Alliance Program, Remote Evaluation and Global Services meet these needs perfectly. We provide a comprehensive service package that integrates our key service models into a complete transaction process, from the manufacturing and system integration phase, global logistics and after-sales support. In order to create the maximum value for our customers, Advantech Global Services is the shortcut for transforming your projects into reality.

Manufacturing Capabilities

Our world-class manufacturing centers in Taiwan and China both maintain precise quality control, and offer a full range of cost-effective, state-of-the-art production capabilities. To maximize the efficiency of operational procedures, we have implemented a cluster manufacturing system within our segmented manufacturing service units. This unique approach enables a direct, simplified, and highly streamlined design-to-manufacturing process. We pride ourselves on our:

- In-house board, chassis, and system production capabilities
- Dual world-class manufacturing centers
- Advanced production capabilities and customizable processes
- Rigid quality assurance system
- Complete ISO standard coverage

We Build It Exactly as You Imagine It

Advantech provides full customization and branding services to integrate our innovative platforms with existing product lines and give them customers' look and feel. With our Configure-To-Order-Services we provide cost efficient services to build different system SKUs in our logistic centers around the world. Through these services we bring our clients the benefits of greater flexibility, lower inventory, shorter lead times and global reach with local touch at work.

International Quality Standards

The Group Quality system is audited and compliant with ISO 9001. The Quality system covers all aspects of product design, component selection, design verification, manufacturing, quality control and customer satisfaction. From the board of directors

down, each member takes pride in providing our customers with the highest level of quality in products and services. We also hold global certifications of ISO 13485, TL 9000, ISO 14001, OHSAS 18001 and IECQ QC 080000.

Global Logistics Services

With strong integrated ERP and SAP supply chain solutions, our worldwide logistics network offers a wide range of flexibilities to bring out different delivery models including local and global solutions that meet your unique needs and budget requirements. Advantech's Logistics Service gives you the flexibility to simplify your logistical networks, bring your products to market on time, and enjoy a timely return on your investment.

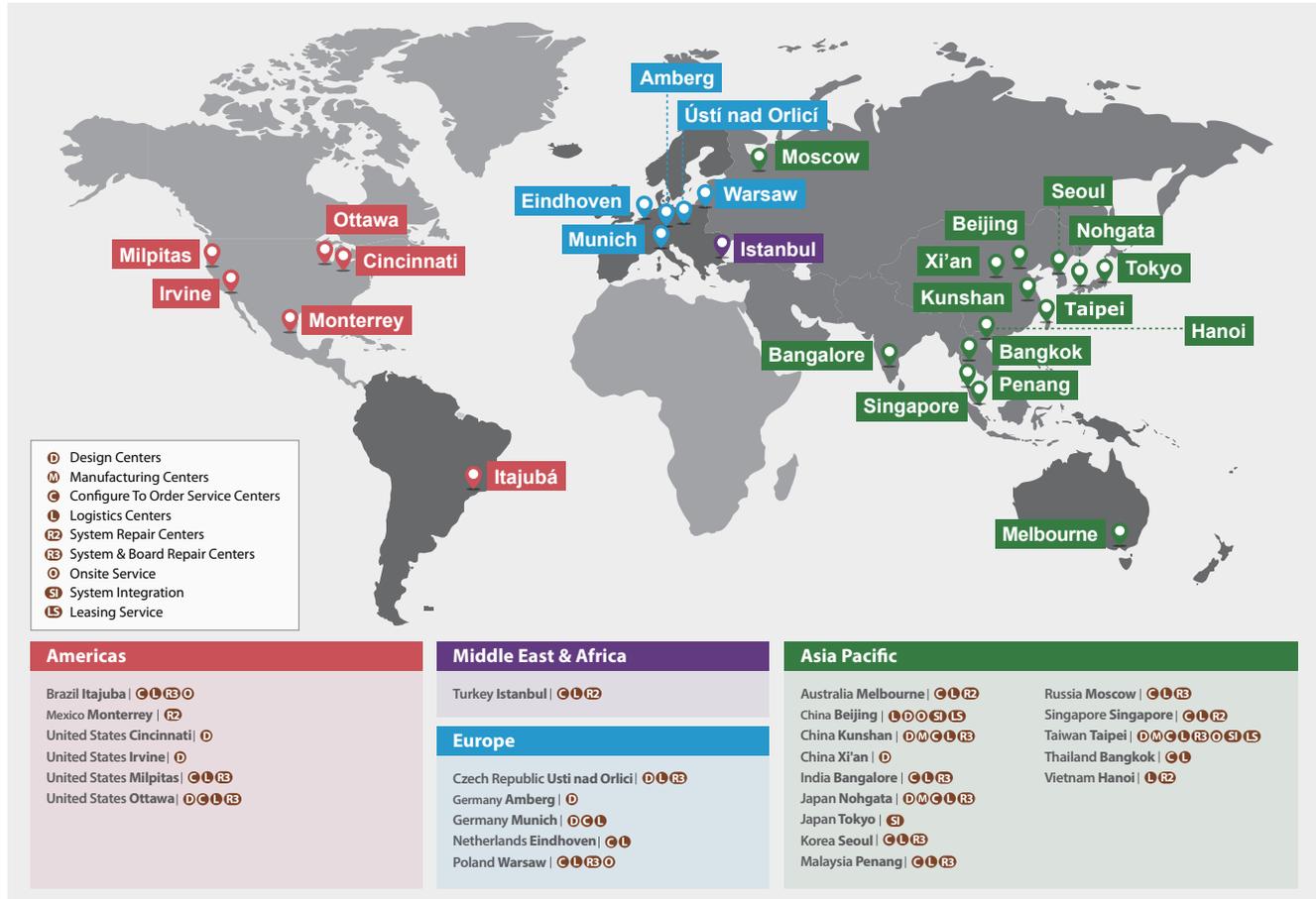
Customer Support Services

Our global presence provides localizable, customizable, and reliable customer support services that can be leveraged to create an optimized maintenance and support plan that helps reduce costs and proactively mitigate business risks. In addition to our complete technical and repair support, we provide a variety of customizable after-sales services, including extended warranty, advance replacement, upgrade, fast repair, etc. Our knowledgeable local support groups enable a consistent support experience around the world and help keep your investment at peak performance and within your budget.

- 24/7 technical support: hotline AE & online chat support
- Global deployment with local full-line repair capability
- Easy-to-use web-based repair and tracking system
- Various other value-added, after-sales support services

Global Operation Infrastructure and Logistics Network with Local Delivery

Advantech is located in 25 countries and 93 cities in each major operating region, offering a global reach with teams in many geographic regions. We support our customers through an extensive global network of offices and an industry-leading eBusiness infrastructure designed to provide responsive service that benefits clients anytime, anywhere.



Online Technical and Repair Services for Total Lifecycle Support

Our Post-Sales Repair Service is equal in importance to our Design and Manufacturing division. The service represents our commitment to provide comprehensive technical support after delivery of new products. Web-based eRMA System is a personalized portal system which offers real-time RMA status-tracking at all times, anywhere via the Internet. Through Advantech's worldwide Customer Support Centers, our clients can get regional technical support and repair services along with a stringent, dependable quality standard.

Six Ready-to-Go AdvantechCare Service Packages

(1) Extended Warranty Service:

Advantech provides 3-month, 6-month, and 1-to-3-year extended warranty service.

(2) Onsite Service:

Defective parts will be replaced with the same or higher quality components and Advantech also provide one-off onsite service by request.

(3) Fast Repair Service:

Commitment to repair the defective unit within 24 / 48 hours.

(4) Advanced Replacement Service:

Advantech provides advanced replacement service by 1-2-3 year contract and all parts are free of charge during the warranty period.

(5) Technology Update Service:

Upgrade, furnish, and refurbish your stock at a fraction of the new purchase cost. Customizable product revision management solution. Optimize system performance and extend equipment life cycles.

(6) Preventive Maintenance Service:

Advantech Preventive Maintenance Service preserves and enhances equipment reliability by replacing worn components before they actually fail.

Remote Evaluation Services

Get on the Fast Track to Deployment

Advantech's Remote Evaluation Service (RES) is designed to help you get ahead of the curve and rapidly evaluate next-generation technology on a wide range of network platforms that can emulate different deployment scenarios at different network locations. We work together with leading ecosystem partners so that you can:



Early evaluate and benchmark latest hardware and software technologies



Perform functional and interoperability testing



Get an early start on development while saving resources, time and money

RES puts virtual control of your own test lab at your finger-tips. You no longer need to incur the costs of shipping heavy freight around the world, purchasing expensive test rigs or breaking your back installing equipment in a lab which you probably wouldn't sit in anyway. The systems we propose are pre-integrated, application-ready platforms embedded in a qualified, dedicated, and secure network test environment. In addition, our Test-Drive Portals build a full-stack infrastructure platform where users can remotely evaluate network functions or application performance or interoperability for a particular configuration:



Bare Metal Evaluation: check out the performance gains achievable on next generation Intel and AMD CPUs and see how your software scales across cores. You can measure the acceleration which DPDK and Intel® QuickAssist offload can bring or validate new AI acceleration technologies.



Test-Drive Portals: lower risks and reduce time-to-market of disaggregated solutions by remotely validating applications and use cases on a wide range of Advantech platforms powered by software from a rich ecosystem. You can early detect and remove performance bottlenecks and incompatibilities or simply compare throughput of compute-intensive applications running on an accelerated vs non-accelerated environment.

Get Solutions to Market Faster and at Lower Risk

The virtual infrastructure consists of several building blocks from different vendors that need to work together to form the consistent cloud-native architecture that runs the microservices. The tight relationship between all components makes collaboration a key element in deployment success. RES provides a powerful tool to address integration challenges and help eliminate performance uncertainties by enabling collaboration beyond basic ecosystem partnership. End-users and partners can remotely test application performance and interoperability on an open virtual environment and work collaboratively towards production-ready end-to-end solutions. RES also offers a powerful tool to support developers in their critical decision making process when designing high-performance, scalable, open software.



Performance and scalability: RES allows vendors and service providers to easily test how multi-threaded, multi-tenancy function scale out across multiple network nodes and optimize provisioning and mapping. The wide choice of white boxes, appliances and servers that can be deployed to implement the virtual edge makes RES a perfect tool to accelerate the selection process and choose the appropriate platform with the right price/performance point.



Interoperability and integration: RES helps simplify complex virtual-stack dependencies when testing application compliance with standard virtualized interfaces or the conformity of a particular virtualized configuration to guarantee portability. Partners can tap into RES to reduce time and costs of multi-vendor certifications. The joint effort of certifying that particular hardware or software products have been validated to work together is a common initiative that reduces integration risks and streamlines end-user's purchasing process.

Visit our Live Test-Drive Portals
www.go-res.com

Advanced Video Solutions

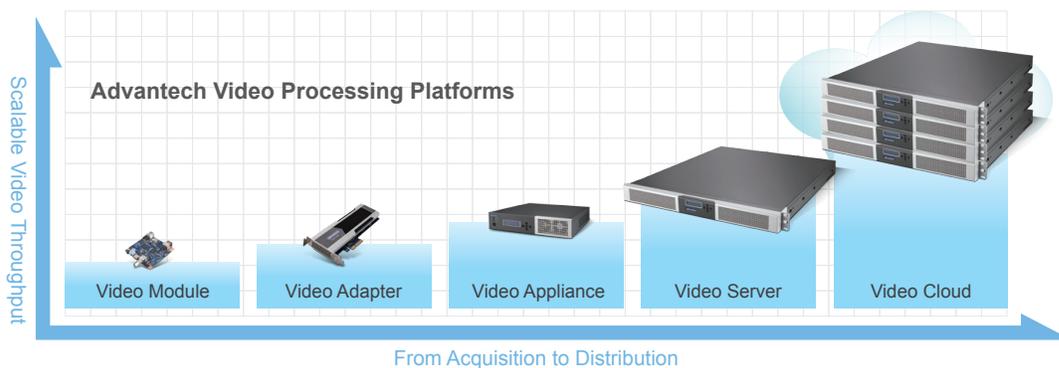
Accelerating UHD Workflow Transformation

Advantech's Video Solutions division has developed broadcast-quality video solutions for the top OEMs in the video/imaging industry. By adopting Advantech's video solutions, customers can harness our industry knowledge and edge computing and networking design skills to accelerate the deployment of next-generation media solutions.

	Contribution & Live Production	Media Processing & Distribution
Video Acceleration	<ul style="list-style-type: none"> Supports various mezzanine compression formats for transporting 4K video over 10GbE 	<ul style="list-style-type: none"> Efficient HD/UHD H.264/H.265 encoder, decoder and transcoder PCIe acceleration for higher density, lower TCO deployments
Networking	<ul style="list-style-type: none"> IP media transport supporting different industry standards such as SMPTE 2022 and SMPTE 2110 	<ul style="list-style-type: none"> Low latency media-over-IP interfacing & switching Software-defined networking & ToR switching
Computing	<ul style="list-style-type: none"> Ethernet, SDI, HDMI, USB, and analog interface flexibility Embedded computing solutions for field applications 	<ul style="list-style-type: none"> Application-ready x86 platforms optimized to run compute-intensive video processing applications FPGA expertise for innovative IP integration

By leveraging our extensive industry experience and technical knowledge, Advantech develops innovative solutions that address specific customer needs. Starting in the design phase through to quality assurance, production, and global logistics, Advantech works with customers to create a collaborative environment for developing innovative solutions.

Advantech's scalable video platforms are designed for modular functionality to support a wide range of application scenarios. From ultra-lightweight modules that can be embedded into live streaming devices to high-density architectures developed for live cloud-based media services, Advantech's video processing platforms provide a software framework that simplifies integration with IP workflow solutions.



Simplifying Solution Customization

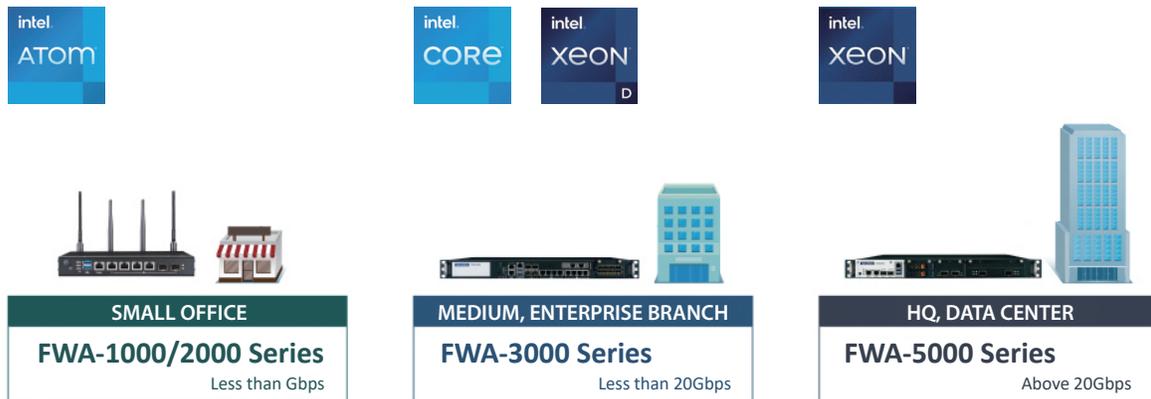
Advantech has invested substantial resources into developing the essential building blocks of integrated video infrastructure, including video acquisition, transport, processing, and distribution technologies. With Advantech, customers are not limited to standard product offerings. Our flexible design approach allows OEMs to easily customize Advantech's commercial off-the-shelf products through our Customized COTS service. The advantage is that this provides customers with the "best of both worlds". OEMs can distinguish themselves with unique products that leverage the cost benefits of custom ODM design and accelerate time to market. Supported by our world-class team of video architects and engineers, Advantech also welcomes full customization design and joint development projects according to customer requirements.



- Based on Advantech's standard product and technology roadmap with minor changes
- Co-architected-design based on common IP from converging product and technology roadmaps
- Based on customer product and technology roadmaps
- Strategic partnership
- Customer-driven design

SD-WAN, SASE & uCPE

Universal Edge Platforms for Cloud Native Enterprises

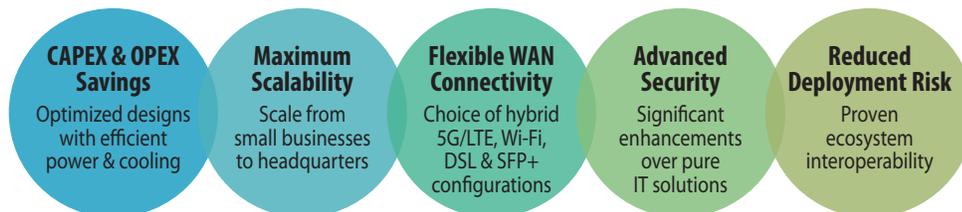


Advantech Edge Appliances provide a solid and open foundation for service providers and enterprises to deploy agile and secure network solutions that break away from monolithic architectures. These scalable white boxes integrate latest computing and networking technologies into optimized edge platforms that are widely deployed running popular SD-WAN, security and uCPE software from industry leading ecosystem partners. This flexible approach to enterprise networking allows for disaggregated strategies that minimize supply chain risks and protect network investment — building an open and virtual infrastructure ready and adaptable to next generation converged and cloud-native models.

Advantech Universal Edge Appliances streamline enterprise network transformation with commercial-off-the-shelf white-box platforms that can scale enterprise secure connectivity services from small and medium branches to large premises and headquarters. Our networking platforms have been specifically designed to run high-availability telecommunication services to minimize costly downtime and service interventions. They integrate innovative features and are supported by a global service network for a competitive edge. Advantech works closely with leading virtualization, uCPE, SD-WAN, SASE and security partners to foster technology teamwork, interoperability testing and solution development. Proven product interoperability means customers can rapidly deploy tested combinations of hardware and software components with total confidence.

The Appliance Advantage

Although standard IT servers may be considered for deployment of network functions on the customer premises, white-box appliances offer a reduced CAPEX alternative for deployment in volume. Advantech's offering embraces CSP disaggregation strategies and enables a more cost effective separation of hardware and software in the provisioning of zero-touch appliances installed at customer branch offices.



Advantech's open white-box approach, using standard x86 processors in feature-flexible appliances, provides the range of bare-metal server platforms needed by CSPs and system integrators to transform conventional deployment models in the enterprise WAN.

Visit www.ucpe.tech to find out more about our enterprise networking and the ecosystem partners that enable end-to-end solutions

Network Security

Excel to Protect Your Customers

Network security evolves as rapidly as new threats spread. Security applications protect services and users in a variety of network deployments with different architectures. However, they all share a basic requirement: complete visibility and control over traffic crossing the network. Applications such as intrusion detection and prevention, SSL inspection, Unified Threat Management or next-generation firewalls need to capture 100% of the traffic across all packet sizes without risking any data. They therefore strongly rely on Deep Packet Inspection (DPI) techniques to accurately classify network traffic. Traditional DPI stops at application identification but the latest application-aware solutions can classify both enterprise and consumer applications and protocols, and extract valuable insights up to Layer 7.

Network security equipment vendors need solutions able to perform packet processing at wire speeds on 100G/40G/25G/10G ports as well as on legacy gigabit Ethernet ports. In addition, their network application platforms need to be scalable and flexible in order to adjust to evolving requirements such as increases in network bandwidth, application performance, and the virtualization of security functions. To achieve this, network security vendors are investing more and more in application software development and require flexible, scalable, and high performance platforms to deliver their solutions. From their perspective, any appliance upon which their network applications are delivered must meet and exceed strict performance criteria, reduce overall development costs, and accelerate time-to-market.

Network Throughput from Mbps to Tbps

Advantech's communications platforms provide scalability and reliability with the broadest range of communication platforms based on Intel® architecture scaling from megabits to terabits per second throughput. Our desktop and 1U rackmount server platforms meet the needs of UTM solution providers supplying small to medium businesses as well as large enterprises. For large enterprise solutions requiring the fastest of security appliances, Advantech's high end platforms scale from 2U rackmount appliances all the way up to multi-bladed server solutions offering scalable performance for data center and telecom network security, where customers need terabits per second of processing performance.



We help accelerate time-to-market by working closely with major processor and network interface vendors on early silicon to ensure we have the latest technology available for the earliest possible customer sampling. By working in close unison with silicon vendors we are able to provide platforms, blades and accelerators which give our customers an advantage and allow them to deploy solutions in volume as soon as production level silicon is available.

Intel® QuickAssist & Data Plane Development Kit (DPDK)

NPU-like packet processing performance is attained by leveraging the performance-optimized libraries in the DPDK to speed up packet processing and increase throughput. The platform integrates Intel® QuickAssist Technology, a set of software modules for bulk encryption, data compression, and other workloads critical to networking. As acceleration hardware embedded within the chipset or add-in modules are available, compute-intensive algorithms can be off-loaded from the CPU cores, freeing up processor cycles for application and control processing.

What's more, you can tap into Intel® architecture with the guarantee of proven software compatibility spanning multiple processor generations allowing you to commit to any platform today with the assurance your software investment is securely future-proofed. Scalability makes it simpler to design a range of products using a common software base starting with desktop appliances for SMB security and ranging to UTMs and policy enforcement engines leveraging DPDK and Intel® QuickAssist Technology in next-generation network platforms.

Inference Edge Solutions

Leading the Industrial Edge Digital Transformation



Internet of Things (IoT), artificial intelligence (AI) and high-performance computing (HPC) are transforming advanced manufacturing. Industry leaders are directing efforts towards enhancing digitization in automation and manufacturing as they seek change that engenders sustainable manufacturing in the factories of the future. When the computation is moved as close to the source of data as possible, there is a rapid increase in high quality data at the edge and massive amounts of data waiting to be consumed. Using a traditional “cloud computing” model requires all this data to be transmitted back to a centralized data center to be processed, before being transmitted back to the device.

Edge Accelerator Servers (HPC-6 + ASMB-6 series) bring high computation capability, enrich expansion possibility, and bring small form factor high-density design to the edge of the network. This puts them physically, logically, or geographically close to the end device, thereby reducing network bandwidth usage and latency and shortening response times.

The Edge Accelerator Server (HPC-6 + ASMB-6) series are powered by Intel® Xeon® Scalable processors, Intel® Xeon® W Processors and Intel® Core™ Processors and support up to 11 cards for AI acceleration such as NIC cards, frame grabbers, RAID cards and more. Each Edge Accelerator Server supports up to 2 double-deck GPU cards or 4 single-deck GPU cards for a wide array of applications across a diverse range of industries, such as IEM, machine vision, factory automation, artificial intelligence (AI), smart cities, medical technology and more.

Advantech SKY-6000 series of GPU powered rackmount servers offer massive parallel computing power and unrivaled networking flexibility. They are designed to deliver ample processing power for the most computationally-intensive applications. GPU-accelerated computing takes advantage of the massive parallel architecture of GPU for compute-intensive tasks, while the rest of the application code runs on the CPU. SKY-6000 servers are powered by Intel® Xeon® Scalable processors, with NVIDIA-certified systems, which can support up to 10 x NVIDIA® GPUs. This maximizes the acceleration of parallel computing applications, including AI, deep learning, self-driving cars, smart cities, medical, big data, high performance computing, and virtual reality (VR).

Workstation		Data Center	
 Single Deck  Double Deck	 HPC-7420+ASMB-976 x4 (Single Deck) x2 (Double Deck)	 SKY-6200 x8 (Single Deck) x4 (Double Deck)	 SKY-640V2 x8 (Single Deck) x4 (Double Deck)
 HPC-6120+ASMB-610 x2 (Single Deck) x1 (Double Deck)	 HPC-6240+ASMB-622 x4 (Single Deck) x2 (Double Deck)	 SKY-6100 x5 (Single Deck) x1 (Double Deck)	 SKY-6420 x10 (Double Deck)
Intel Core / Xeon W		Intel Xeon Scalable	

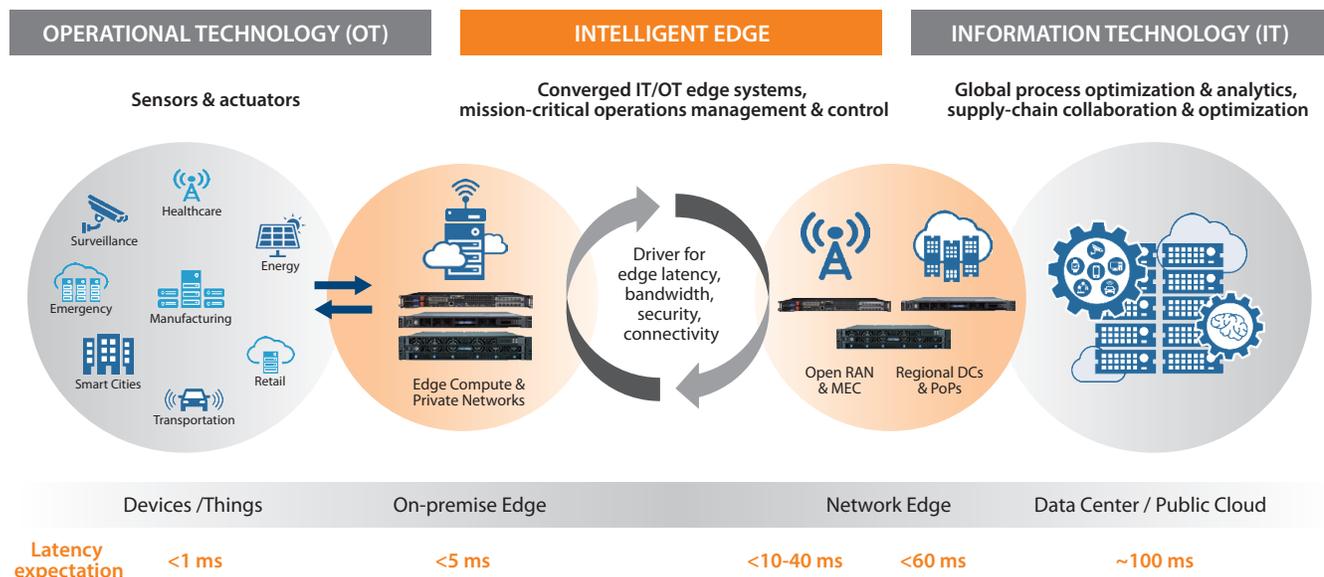
5G Open RAN & Edge Computing

Extend Your Reach with Advantech's Micro-Datacenter-in-a-Box

The next wave of innovation in the communications industry that introduces new concepts such as real-time interactive services or the Internet of Things (IoT) is redefining the network edge role. The combination of 5G Open RAN, Artificial Intelligence (AI) and Multi-access Edge Computing (MEC) has the potential to transform the digital experience as it allows applications to seize user's proximity to provide low latency and high bandwidth benefits. Equipment manufacturers, developers and service providers are co-working to enable this new intelligent edge where diverse access protocols co-exist with revenue generating applications. The result is a decentralized and elastic architecture using cloudlets at the edge of the network as an intermediary processing stage to avoid the costs of transporting large amounts of data back to the cloud.

As the industry seeks to accelerate the delivery of these new services at the edge, it is vital that Communication Service Providers (CSPs) optimize infrastructure for density and cost leveraging existing brown field sites where possible. Advantech SKY-8000 series of 5G Edge Servers is designed to efficiently meet increasing edge computing trends by bringing higher aggregate compute performance closer to the user while fully complying with telecom industry equipment practices. It extends the same programming and deployment environment of the datacenter to central offices, aggregation sites or base stations, taking a micro-datacenter-in-a-box approach that packs 3rd Gen Intel Xeon Scalable processors and latest acceleration technologies in short-depth platforms that meet high availability network needs.

Building a Competitive Edge with SKY-8000 Servers



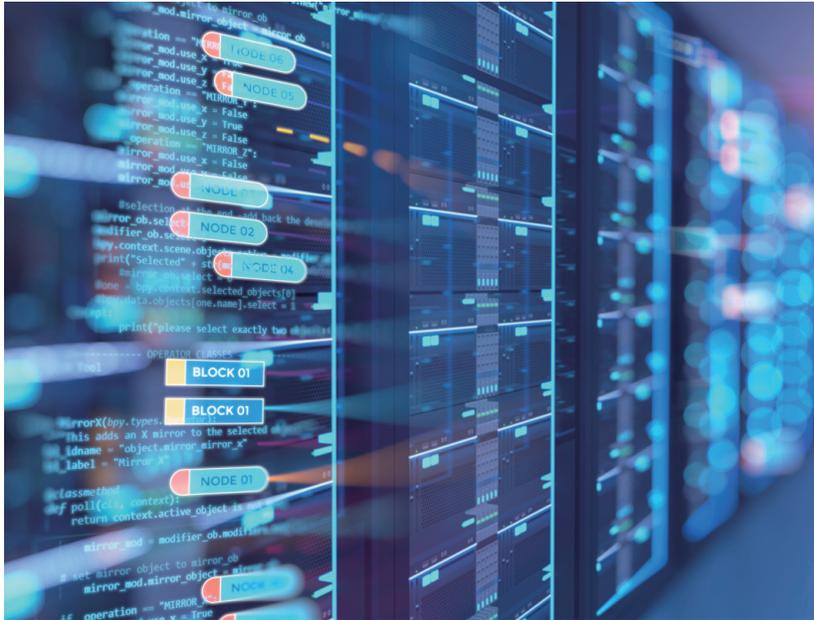
Carrier-Grade Platforms Designed for Five 9's Availability

Advantech has designed the SKY-8000 series for next generation carrier networks with a number of objectives in mind:

- Help service providers to evolve from closed proprietary solutions to **open and seamless cloud-native architectures** running microservices on off-the-shelf servers anywhere in the network.
- Ensure **carrier-grade availability** and conformity to standards such as NEBS in order to accelerate brown field deployment in the network edge.
- Facilitate the deployment of Open RAN by providing a platform **optimized for DU deployment** to integrate the required highdensity vRAN acceleration, I/O and time synchronization technologies while optimizing performance per watt.
- Provide the flexibility needed now to deploy new cloud-native applications and services, paving the way to 5G, Edge AI and the Internet of Things (IoT).

Hyperconverged Infrastructure (HCI)

Achieving Superior Flexibility and Scalability



The continued proliferation of hyper converged infrastructure (HCI) owes its growth in equal parts to HCI's clear technology merits and the dynamic evolution of our global network from the data center to the edge. The efficiencies that HCI strategies and solutions provide – in cost, deployment, and scalability – make them ideally suited to accommodate shifting network and computing requirements as compute infrastructure is distributed ever farther away from our central data center hubs, and ever deeper into regional and/or remote geographies. HCI – particularly when deployed far from the data center core – brings data, content and AI guided decision-making agility closer to the end users and end infrastructure where it's needed. This is achieved with an easy-to-scale model that prioritizes reliability and resiliency – and flexibility, most of all – at ultra-efficient cost structures.

HCI Core Benefits

HCI is broadly defined as an approach to ICT architecture that combines computing, storage and networking in a single system, simplifying IT environments while simultaneously making them more adaptable in their ability to accommodate a wide range of applications and workloads. HCI prioritizes elasticity and scalability, and can be flexibly deployed and maintained in a simplified manner. As ICT infrastructure and data traffic spreads progressively outward from our core datacenters, there will naturally be decreased bandwidth capacity, rack space, power and IT staff resources to service it. HCI is therefore optimized to maximize computing, storage and networking efficiencies in a dense, low power system profile that's highly modular, reliable and secure.

Sky High Innovation with AMD

HCI features and functionality are designed for maximum versatility, accommodating almost any workload from data center to edge – sophisticated in capability, yet simple to deploy and manage. This is an extremely careful balance to achieve – and it requires significant HCI experience and expertise.



SKY-7260S3P

Advantech has taken these and other key considerations into account in the design of its SKY-7260S3P server and storage platform for HCI, the latest entry in Advantech's SKY series of industrial server solutions spanning HCI, storage servers, edge servers and more. Based on AMD EPYC™ 7543 CPUs, Advantech's SKY-7260S3P is a fully featured, single socket server for virtualized workloads and HCI deployments.

The SKY-7260S3P supports high memory capacity up to 2TB for extraordinary memory throughput coupled with large I/O throughput leveraging up to 128 lanes of PCIe Gen4. This is complemented with powerful compute spanning up to 64 AMD "Zen 3" cores, high storage capacity up to 200TB (all HDD configuration), and networking flexibility via 10G SFP+ and 10GBase-T OCP mezzanine modules. Advantech's SKY-7260S3P delivers outstanding price/performance benefits and almost 2X less power consumption.

Advantech's proprietary BMC management platform provides a reliable server and secure environment for next-generation AI-driven ICT infrastructure. This is complemented by AMD Secure Memory Encryption (SME) and Secure Encrypted Virtualization (SEV) to provide state-of-the-art security features and a, reliable HCI server platform designed with enterprise- class robustness for the AI and IoT-driven compute requirements of tomorrow.

Data Center Storage Performance

Multi-node Server Boosts Secondary Storage Applications



Data-centric services and applications are booming in all domains. Both end-users and enterprises are seeking data services with larger capacities and higher performance. These services are intended for data storage and analysis, and are the basis of many service-driven business models. The demands for these services has increased server, computing, and storage performance requirements.

While storage is important—performance, reliability, and scalability remain critical considerations. Therefore, adopting expandable hyper-converged infrastructure and scale-out capabilities according to application needs is highly valued within this market. Likewise, hot-swappable field-replaceable units (FRU) and redundant designs that ensure the continuous operation, are similarly essential trends in data service applications.

Ensuring service quality and development flexibility is a priority for data service providers. These providers seek fast-deployment, high-density server hardware systems that are easy-to-maintain. Using redundant designs is an essential consideration when building a stable system. Therefore, the power supply, cooling fans, storage, and other important components require redundant functionality. Likewise, failover settings are essential. Current mainstream data service server architectures are a combination of high-speed NVMe SSDs and high-capacity HDDs. This architecture balances capacity, performance, and cost.

Advantech SKY-9240C is a 2U4N rackmount multi-node server that supports four independent systems with individual boxes enabling multiple functions. The total configuration utilizes up to 8 x CPUs, 4 x PCIe cards, and 4 x OCP Mezz, to deliver excellent flexibility and scalability, while yielding a reduced total cost of ownership. SKY-9240C is designed for hyper-converged infrastructure and high-performance computing applications. This solution's hot-swapping capability allows HDD/SSD tray, cooling fans, MB/Node sled, and power supplies to be replaced without an interruption in service.

To provide 24 hours of uninterrupted data service operation and improve reliability, SKY-9240C utilizes numerous redundant components including a redundant PSU and cooling fan (dual-rotor 8 cm/3.14 in). SKY-9240C is equipped with a self-developed dual/failover BIOS & BMC design. Advantech designed this BMC to furnish data service providers with unique functions that help manage the whole system. SKY-9240C delivers the best customized tuning and meets the unique product needs of data service providers.

