ADLINK

LEADING EDGE COMPUTING

Meeting Modern Cybersecurity Challenges with High-Density, Modular Infrastructure



As data volumes, communication loads, and security risks multiply, ADLINK carrier-grade network appliances enable application reliability and performance at any scale

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Cyber Security Market Overview

As the world transitions to post-COVID realities, it's clear that more distributed workforces and increasing reliance on cloud platforms are here to stay. Decentralization only magnifies the need for more data flowing across broader areas. Concurrently, ongoing trends, including Internet of Things (IoT) growth, artificial intelligence/machine learning (AI/ML), and big data analytics, continue to generate and process ever larger datasets. Often, these datasets demand handling in real time, which stresses communication channels and server resources alike. Organizations must cope with both rising data volumes and more dispersed data distribution, all while simultaneously maintaining or improving security across all applications, communications, and data stores.

In past decades, enterprises could focus on establishing a firewall at the perimeter and locking down everything inside that boundary. This model no longer serves in a decentralized datasphere. Instead, organizations must control the traffic that flows in and out of all systems, whether on-premises or in the cloud. Now, there are no boundaries, only an ever-shifting and often-expanding mesh of digital assets in need of protection.

When done well, cybersecurity provides this protection in ways that are efficient, scalable, flexible, easily managed, and reliable. The U.S. National Institute of Standards and Technology (NIST) notes five core functions of any cybersecurity framework:

- *Identification of assets*, including their vulnerabilities, requirements, and associated cybersecurity policies.
- *Protection* of assets through management, maintenance, and access control.
- *Detection* of cybersecurity events.
- *Response*, including the mitigation of events and issue resolution.
- *Recovery* of assets following any security event, with the goal of minimizing event impact.

Modern cybersecurity solutions target holistic approaches to providing these functions with maximum efficiency and scalability. Specific tasks can include intrusion detection and prevention, antivirus, deep packet inspection (DPI), traffic inspection and shaping, next-generation firewall (NGFW), and software-defined wide-area network (SD-WAN) support. Any application in the organization, whether local or cloud-based, may need any or all of these services.

Globally, MarketsandMarkets expects the cybersecurity space to grow from roughly USD 218 billion in 2021 to over USD 345 billion in 2026 — a 9.6% compounding annual growth rate (CAGR) — driven largely by IoT adoption and its associated security risks. Market Research Future reached a similar conclusion, claiming the global cybersecurity market would maintain a 10.5% CAGR, propelled by rising online attacks, IoT adoption, cloud computing, and bring-your-own-device (BYOD) practices. Naturally, some regions will have higher or lower growth rates. For example, Mordor Intelligence expects France's cybersecurity market to compound at 6% annually, despite that "over 67% of firms in the country reported cyberattacks in 2019 till now." Through 2026, the same firm predicts the Middle East and Africa to average a 7.92% CAGR, Latin America 10.8%, North America 12.2%, and Asia Pacific a blistering 18.3 percent.

Every organization should address those five NIST steps on high-performance server resources that integrate well with existing data infrastructure. ADLINK CSA systems provide the hardware foundation to address these five domains with exceptional bandwidth, proven compatibility, worldwide support, and aggressively low total cost of ownership.



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Master Today's Demanding Cybersecurity Challenges

In short, modern enterprises with data-heavy applications need infrastructure able to provide comprehensive security in a cost-effective, scalable, and easily managed manner. Single-function security devices and costly, proprietary, multi-function security appliances met the more modest needs of businesses when data loads were smaller and cloud architectures had yet to sweep the enterprise landscape. Today, though, large organizations in particular need more flexible, efficient security solutions.

The ADLINK CSA series of rackmount network appliances are based on fast, open standards designed to accommodate today's toughest cloud-scale workloads, especially cybersecurity. Application examples include load balancing, deep packet inspection, network traffic analysis, next-generation firewall (NGFW), intrusion detection and protection (IDS/IPS), unified threat management, anti-malware and anti-spam, and web filtering. Previously, deploying infrastructure to supply all these functions could consume a significant amount of server room space. CSA appliances enable this spectrum of capability in a fraction of the traditional rack space, thereby reducing physical footprint, infrastructure costs, and energy consumption.

One new ADLINK CSA server design employs orthogonal Clos architecture, a high-efficiency model that reduces port counts in communication fabrics. Additionally, ADLINK extends CSA value by optimizing its hardware with switch Board Support Package (BSP) software. This software suite encompasses Broadcom's SDK as part of a link management protocol (LMP) subsystem. The BSP dovetails with ADLINK's PacketManager suite of communication tools for the configuration, management, and monitoring of CSA switch blades. Collectively, ADLINK's software significantly improves ease of control plane integration with third-party APIs, enables greater solution customization, and extends compatibility across existing datacenter systems.

Clos chassis architecture enables ADLINK's latest CSA flagship, the 12U CSA-7608, to support up to eight front-loading processor boards and six rear-facing fabric boards in a single, dense enclosure. An 800 Gigabit Ethernet fabric connects these blades via direct orthogonal connectors rather than communicating through the mid-plane, thereby reducing communication complexity and latency. This orthogonal architecture also supports new service and switch boards, mitigating the need to change enclosure hardware in future upgrades.

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Meet Unique Requirements with Superior Design & Manufacturing Services (DMS)

When one of the world's top cybersecurity solution providers needed to upgrade its hardware product line to accommodate the new functionality and higher performance levels demanded by today's application workloads, the company turned to ADLINK with a specific set of needs. The provider needed resource-dense, scalable server offerings, but it also needed those systems to integrate its own array of specialized SoC and ASIC products to optimize performance across a range of security tasks. Many companies offer cloud-scale server systems, but very few could match ADLINK's level of platform performance (both in core components and communication fabric), scalability, worldwide support, and ability to leverage vertically integrated Design & Manufacturing Services (DMS) capabilities across design, production, and validation.

Especially in the cybersecurity market, the ability to sustain very high processing and communication throughput levels is critical. Poorer engineering can yield erratic performance, despite having high-quality components. This is why working closely with ADLINK engineers and conducting extensive qualification was so important to the client. Stable infrastructure communication performance could mean the difference between dependable application operation and critical security mishaps. Additionally, the client wanted a partner able to supply extensive customer support and collaborate on long-term roadmap planning. The more one partner could supply these elements, as opposed to incurring the burdens and complexities of multi-vendor collaboration, the more easily the client could achieve its goals.

ADLINK entered the partnership with 25 years of infrastructure design experience, some of which involved sitting on the consortia and associations that create vital industry standards. For example, ADLINK possessed deep knowledge of how to best implement PCI Express through Generation 5 and 10/100 Gigabit Ethernet for the most stable transmission speeds and lowest packet loss rates. ADLINK brings the benefits of those industry relationships, such as insider access to top technology experts and developers, to its customer base. Moreover, ADLINK's substantial investment in validation and testing equipment demonstrates the company's determination to provide customers with exceptional product quality and reliability.

Thus, when the cybersecurity client needed ADLINK to adapt its CSA cybersecurity appliance line to accommodate a host of unique requirements, from integration engineering to extended lifecycle support, ADLINK was able to respond quickly and effectively. The client substantially expanded the capabilities and models offered in its portfolio and extended its worldwide competitiveness in the cybersecurity space.



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ADLINK CSA Series Network Appliances

The ADLINK CSA line provides an all-in-one, highly scalable cybersecurity hardware platform with several key benefits, including:

- The shortest possible rack depth to conserve floor space and promote datacenter airflow efficiency
- The highest possible I/O density accompanied by corresponding networking fabric bandwidth
- Variable size configurations to suit different environments and cost/performance scenarios
- Heterogeneous architecture able to balance compute with acceleration technologies, such as GPGPU and FPGA

ADLINK's CSA-7210 is a 2U appliance based on a dual Intel Xeon E5-based system core. With eight front-loading network interface modules and up to 64 10 GbE SFP+ ports, the CSA-7210 delivers formidable I/O switching and security processing capability in a remarkably compact form factor for small- to mid-size enterprise needs. The 4U CSA-7400 takes a more modular, scalable approach to the same application set. The system features four CPU nodes, two switch nodes, and four PCI Express Gen3 x8 expansion slots, with an Intel FM-10840 providing 900 Mbps of switch bandwidth. Most switch nodes for the CSA-7400 are based on Intel Core processors and available in a range of Ethernet and SFP+ (10 Gbps) configurations.

The 12U CSA-7608 improves on the already-successful CSA-7210 and CSA-7400 lines, in part through integration of the Intel® Tofino™ programmable Ethernet switch. Tofino switch silicon delivers up to 6.4 Tbps performance and is optimized for software-defined network implementation, which can be pivotal to cybersecurity cost-effectiveness and configuration adaptability. The CSA-7608 leverages Intel's switch to provide stable, programmable 100 Gbps bandwidth across the system's backplane, a 2.5x improvement over conventional legacy Advanced Telecom Computing Architecture (AdvancedTCA) solutions. ADLINK enables this cutting-edge performance while maintaining compatibility with an open-source ecosystem spanning applications, network function virtualization, smart NIC drivers, and a range of open-source network stacks (including Intel/Barefoot's own P4 programming language). Thus, customers with open-source software will enjoy more choice in their CSA-7608 deployments and full preservation of their existing software investments.

CSA-7608



The CSA-7608's core specifications showcase its power and flexibility for demanding cybersecurity applications:

- 8x front computing nodes
- 2x rear Intel® Tofino™ software programmable switch nodes with I/O
- 2x management nodes (optional)
- Supports dual-star, 200-400G Fabric, 1G Base, and IPMI
- Supports up to 6x AC/DC/HVDC (260-400V) PSU with N+2 redundancy
- Supports Intelligent Chassis Management Module
- Intelligent fan module & FRU monitor

All nodes/modules (also referred to as blades or cards) are hot-swappable for ease of maintenance and minimal downtime. The CSA-7608 service/application modules and switch modules are built for high-end performance. Each front slot supports up to 1000W of cooling capability and 200 Gbps board-to-board data transmission with 64 fiber connections. Switch cards integrate Tofino silicon, which delivers 6.4 Tbps of bandwidth per module in an approximately 600W power envelope.

In contrast to AdvancedTCA, orthogonal architecture does not require a high-speed backplane. This makes ADLINK's orthogonal approach more cost-effective. Additionally, compared to conventional 1U to 4U network appliances, ADLINK's CSA solutions offer higher resource density, thus lowering the need to maintain as many devices. Both factors result in lower CapEx investment.

Overall, the CSA-7608 represents ADLINK's most compelling cybersecurity platform to date, excelling across metrics in product performance, ease of deployment, and cost-per-gigabit of communications. Few alternatives can rival its ability to provide flow classification, load balancing, and deep packet inspection analytics in a single, integrated platform.

CSA-7400



The flagship CSA-7400 is ADLINK's most capable network appliance, a 4U 19" high-density platform supporting four dual CPU sleds powered by Intel® Xeon® E5 or Scalable processors that delivers up to 160 cores across eight CPUs. The CSA-7400 features 48 DIMM slots that support a maximum of 1536GB of DDR4 memory. A pair of switch modules gives each compute node a 2x 50G internal Ethernet link, and two redundant power supplies provide IT managers the ability to implement flexible power limit policies and active power management on compute nodes. Hot-swappable compute nodes and switch modules ensure maximum uptime.

The CSA-7400 offers many other technologies and features, including support for Intelligent Platform Management Interface (IPMI) 2.0, hardware-based acceleration for Network Virtualization using Generic Routing Encapsulation (NVGRE) and Virtual Extensible Local Area Network (VXLAN) (critical for layer 2 networks in the cloud), Open vSwitch (OVS) and OpenFlow protocol processing (which accelerate SDN services), and optional Wind River Titanium Server software integration (for carrier-grade NFV). The CSA-7400's broad feature set makes it suitable as a NGFW or for virtualized telecom services.

CSA-7210



The CSA-7210 network appliance houses two processor sockets in a 2U 19" form factor. The system offers support for Intel® Xeon® Silver or Gold Scalable processors, up to the 18-core 165W Intel® Xeon® Gold 6150 Processor 2.70GHz. Sixteen DIMM slots allow the CSA-7210 to accept up to 512GB DDR4 2666 ECC registered memory. The platform's scalability shows with configurations of either eight Network Interface Module (NIM) slots and a PCIe x8 Gen3 full-height full-length (FHFL) slot, or four NIM slots and two PCIe x16 Gen 3 FHFL slots reserved for access to acceleration hardware such as GPU and FPGA. Network I/O consists of two RJ-45 10/100/1000BASE-T Ethernet ports and two 10GB SFP+ Ethernet ports. For storage, the CSA-7210 has four 3.5" SATA 6Gb/s connectors; one is a hot-swappable bay, and the other three include hardware RAID support. The CSA-7210 also contains an onboard CFast socket. For additional management convenience, customers can opt to equip the CSA-7210 with a 128x32 4-button LCD.



Use Case All-in-One, High-Density Cybersecurity Solution

Product Spotlight: CSA-7608



One leading cybersecurity provider needed a better solution to offer its mid- to large-size enterprise clients. The provider had historically relied on proprietary appliance hardware, working under the common belief that specialized hardware would deliver best-in-class performance for security applications. However, in cybersecurity as in so many other fields today, proprietary appliances saddle users with expensive support costs and limit scalability. The cybersecurity provider turned to ADLINK for help in devising a more flexible, cost effective, high-performance solution.

The client wanted a highly integrated solution that would enable a broad array of networking and cybersecurity functionality. The solution should support functions and applications including load balancing, deep packet inspection, network traffic analysis, next-generation firewall, intrusion detection and protection, unified threat management, anti-malware and anti-spam, and web filtering. When implemented as stand-alone devices, the resulting "security sprawl" consumes datacenter installation space, expands infrastructure complexity, requires more maintenance, and potentially creates interoperability issues.

When seeking an all-in-one answer to security sprawl, customers may turn to larger appliances able to support higher I/O density, such as those based on AdvancedTCA. Aimed at telecom and datacenter installations, AdvancedTCA cards are 8U high and generally offer maximum backplane bandwidth of 40 Gbps. AdvancedTCA has the benefit of modular daughterboards and thus upgradeable compute resources, but that 40 Gbps bottleneck was choking the client's solution scalability.

The cybersecurity client needed the functionality of a full rack of dedicated security appliances, the space savings of a consolidated approach, sufficient compute and networking performance to accommodate mid- to large-scale enterprises, and a competitive cost basis. ADLINK had the solution for just such a security foundation.

ADLINK's network cybersecurity OEM client implemented the CSA-7608 as the foundation of its new product offerings. The increasingly problematic bandwidth constriction that had beset its previous AdvancedTCA solutions, caused by clients' ever-climbing data loads, vanished with the shift to ADLINK's 100 Gbps switching architecture. This was a necessary evolution given how the client had seen increasing demand from its customers to shift from distributed security processing in private networks to centralized processing in cloud networks.

The modularity and scalability of ADLINK's CSA-7608 ensure that the cybersecurity client will continue to be able to meet rising network traffic demands without sacrificing any of the compute strength needed to counter today's and tomorrow's cybersecurity threats. The client achieved its goal of having a smaller total solution footprint while maintaining full functionality, serviceability, and adherence to open standards. In the months to come, the CSA-7608 will help the client become more competitive, delivering even better value to existing customers and expanding its value proposition for attracting new cybersecurity business.

Use Case NSFOCUS' IDS/IPS Solution

Worldwide 5G LTE penetration has brought virtually every nation onto the internet, and at broadband speeds. Internet of Things proliferation means countless new devices connecting online each day. However, this explosion has presented malicious entities with a host of new vectors from which to launch increasingly sophisticated cyberattacks.

In response, CIOs, network managers, and security professionals continue to harden their defenses in an effort to keep pace. Hardware platforms configured and deployed for specific functions, such as IDS/IPS, are a powerful option for organizations. To address these needs, NSFOCUS turned to ADLINK's CSA-7400 to develop a carrier-grade next-gen 100G+ IDS/IPS solution.

NSFOCUS' Network Intrusion Protection Systems (NIPS) and Network Intrusion Detection Systems (NIDS) offerings protect customers where traditional, but outmoded, security approaches fall short. NIDS adds a continually updated reputation feature library to an attack rule feature library, and together these supplement known threat detection with the ability to thwart unknown malware and persistent intranet infiltration. NIPS also uses a host of techniques — attack feature library, real-time reputation library, integrated sandbox detection, flow virus detection, and mobile security housekeeper — to defend against multiple threats.

Offering these security features on NSFOCUS' 100G+ carrier-grade platform requires immense computing resources. They need 100GB interface support, with each component using an 800G connection and 64 10GB ports at minimum, with upstream and downstream port consistency and receive side scaling (RSS). Dense and massively accelerated processing are essential for deep packet inspection, and network packet processing platforms also need wire speed transceiving capability and zero packet loss for 64-byte packets. Same source and same host ensures uninterrupted data flow to processor boards for load balancing, and hot-swappable components allow for carrier-grade uptime. NSFOCUS also requires a standardized API management interface for packaged interchange and traffic and hardware control.

ADLINK's CSA-7400 feature set perfectly aligns with NSFOCUS' requirements. Its modular I/O design provides scalable bandwidth, 100GB/40GB interfaces, and a maximum of 72 10GB interfaces. Because the network appliance uses a spacious 4U form factor, it can accommodate up to four dual Intel® Xeon® Processor E5-2600 v3/v4 or Intel® Xeon® Scalable Processor compute nodes for exceptional performance with small packets. Additionally, each compute node can process 50GB+ data streams with zero packet loss. The CSA-7400's dual redundant switches support auto elimination of faulty nodes during the load balancing process, as well as hardware-based same source same host functionality. The CSA-7400's hot-swappable components and redundant power supply unit (PSU) makes it ideal for carrier-grade high availability, and together they support out-of-band module operation monitoring in real time through IPMI. Using ADLINK PacketManager, the CSA-7400 gives enterprises like NSFOCUS port and virtual local-area network (VLAN) management, as well as protocol stacks for Link Aggregation Control Protocol (LACP), Link Layer Discovery Protocol (LLDP), Rapid Spanning Tree Protocol (RSTP), and Virtual Router Redundancy Protocol (VRRP). In addition, the CSA-7400 uses access-control list (ACL) for intelligent traffic forwarding.



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Use Case AppEx Networks' SD-WAN Solution

Modern, international companies frequently encounter challenges in building reliable, high-performance networks that span the globe. In many situations, dedicated hardware is cost-prohibitive or otherwise infeasible. SD-WAN has become popular as a way for businesses to incorporate routers, firewalls, DPI, and WAN acceleration with easy management and monitoring.

Once set up, an effective SD-WAN can yield a number of benefits. Edge networking devices can connect to the SD-WAN and manage network connections. Moreover, those devices can use dedicated links/multiprotocol label switching (MPLS) to dynamically select network links based latency, jitter, and/or throughput. SD-WAN multi-router optimization and redundancy maintains uninterrupted traffic as long as one usable path between points exists. Perhaps the greatest strength of an SD-WAN is its ability to be deployed and virtually dismantled on the fly as projects start and stop.

CloudWAN, AppEx Networks' SD-WAN solution, focuses on the idea that its service is available anywhere an internet connection exists. CloudWAN uses WAN traffic optimization for most applications but does rely on dedicated low-latency links for certain applications. By using Real-Time TCP Tunnel (RTT) transmission optimization and global dynamic router optimizations, the majority of connections meet or exceed the performance of MPLS or dedicated links. The end result is exceptionally reliable, high-performance data links without painfully high deployment and maintenance costs.

However, AppEx's industry-leading SD-WAN requires hardware able to meet a range of demanding requirements. After careful consideration, it was decided to include ADLINK's COTS high-performance carrier-grade CSA-7400 platform in the solution. With high-speed links and dual redundancy between compute nodes via switching nodes, the CSA-7400 features an extraordinary 800G of I/O on its front panel. It also supports hot-swapping vital components for continuous operation — essential features for a high-performance SD-WAN.

The CSA-7400 meets AppEx's needs in specific ways. CloudWAN's Zeta TCP unilateral WAN optimization technology ensures reliable, efficient data transmission through virtual tunnels, and uses proprietary optimization techniques for live streaming and video conferencing. CloudWAN also presents customers with a range of encryption algorithms for security. The resources necessary to provide these services stem from ADLINK's CSA-7400 quad compute nodes, each equipped with dual Intel® Xeon® E5-2600 v3/v4 processors or Intel® Xeon® Scalable processors for ample processing power in a 4U form factor.

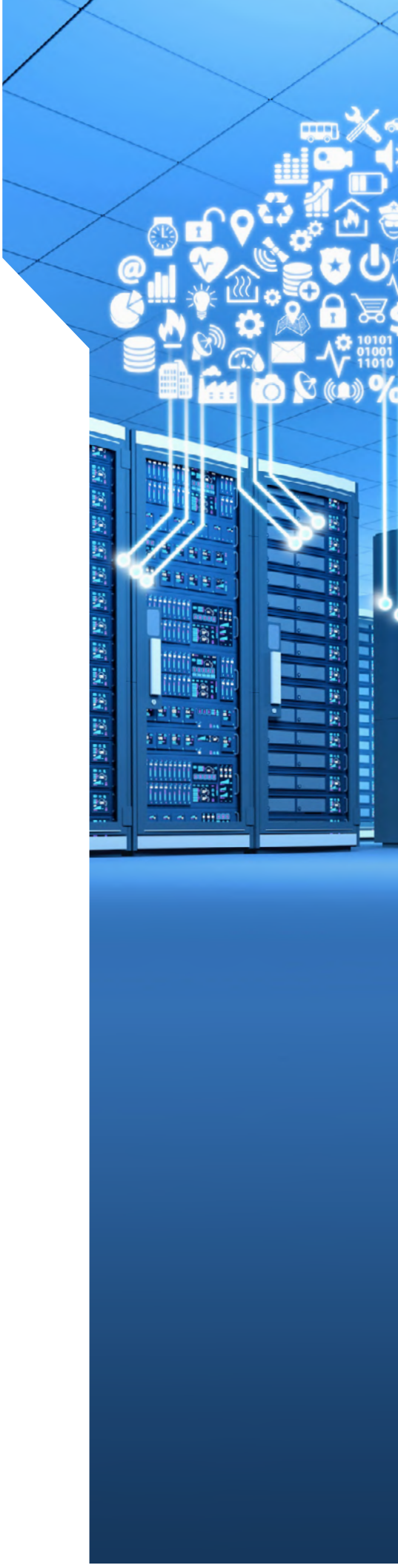
ADLINK's network appliance has hot-swappable components and PSU redundancy, which lets AppEx's CloudWAN boast carrier-grade 99.99% availability. ADLINK also considered redundancy when developing the CSA-7400's switch boards, which support load-balancing management based on a 5-tuple group. With ADLINK's reliable hardware underpinning AppEx's SD-WAN service, CloudWAN can automatically eliminate faulty nodes during the load-balancing process for dependable data flow processing.

In order to continue leading the field, CloudWAN point of presence (POP) nodes must regularly adjust according to changing deployment environments. Here, the CSA-7400's ability to smoothly transition from 100G/40G or up to 72 10G interfaces gives CloudWAN the capability to tackle a variety of challenging external links and traffic requirements for AppEx's clients. Complementing the CSA-7400's hardware capabilities, ADLINK's PacketManager middleware tackles thermal management and hot-swap management duties for smooth deployment and faster time to market.



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Use Case High-Galaxy's ADC Solution



Although cloud computing and cloud services have opened new possibilities and given countless organizations the ability to extend their global reach, the cloud still presents unique challenges. Whether groups develop cloud technologies in-house or turn to a third-party provider, security, speed, and stability are essential. Between the user and the application server, an application delivery network can vastly improve cloud services, and an application delivery controller intelligently manages resources for optimal performance.

High-Galaxy ANS ADC performs a variety of roles. The ANS hardware platform supports L4-L7 load balancing, link load balancing, global load balancing, an application data flow management framework, API management interface, application protection, HTTP protection, and IPv6. Its parallel network flow processing engine divides workload between the common application management service, which runs on CPU0, and the L4-L7 network flow processing engine runs on the other processor cores. The ANS ADC also facilitates virtualization deployments in the cloud and supports leading virtual machine environments (VMware, KVM, Hyper-V) for network application delivery via virtualized software.

With its broad feature set, the ANS application delivery controller has extensive capabilities suited for the requirements of modern cloud services. Throughput for L7 processing ranges from 5 Gbps to 120 Gbps, while virtualized throughput peaks at 30 Gbps. Active-Standby and Active-Active HA modes are supported, and automatic application switchover guarantees uninterrupted data flow. ANS' cluster mode means customers can aggregate as many as 32 ANS units, for exceptional scalability as needs grow over time. Advanced flow management technology reduces server load for tasks like Security Socket Layer (SSL) acceleration and offloading, application caching, and TCP buffering. When a dedicated acceleration card is incorporated, ANS can expand to offer SSL encryption/decryption and HTTP compression/decompression.

High-Galaxy solution also presents a full slate of security features. It has a feature library from Open Web Application Security Project (OWASP) to protect against common web attacks. ANS also employs a number of other security techniques, including protocol analysis, pattern recognition, statistics thresholds, abnormal traffic monitoring, and self-learning to stay ahead of malicious actors. As a result, the ANS application delivery controller can ward off overflow attacks, WebCGI attacks, DDoS attacks, Trojans, and other exploits. High-Galaxy continually updates ANS' rule repository, as well.

ADLINK's CSA-7200 Series is the ideal match for the ANS application delivery controller. Dual Intel® Xeon® E5-2600 v3/v4 CPUs combine Intel® Data Plane Development Kit (DPDK) with ADLINK Packet Manager for 10 times as much data processing as standard usage models. The CSA-7200's modular I/O design gives High-Galaxy the freedom to deploy the requisite number of interfaces to achieve data throughput needs, including 100G/40G optical interfaces. With native support for Intel virtualization technologies such as VT-x, VT-d, and VT-c, the CSA-7200 is able to integrate with virtualization management platforms like OPNFV and Wind River Titanium Server. By leveraging ADLINK PacketManager for DPDK OVS and nDPI, the CSA-7200 provides an application development framework for SDN and DPI for intelligent data flow forwarding. The CSA-7200's PCIe expansion slot is invaluable, too, as it supports an add-in card capable of encryption/decryption or compression/decompression. Using either the PCIe or M.2 interfaces, adding an SSD can equip the CSA-7200 with high-speed caching. The CSA-7200's redundant PSUs and hot-swap components ensure High-Galaxy ANS application delivery controller has the high availability necessary for carrier-grade reliability.

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Benefits of ADLINK Manufacturing

Smart Teams Revolutionize Design and Manufacturing

The genius behind ADLINK's ability to deliver best-in-class, affordable products while minimizing time to market is our Design and Manufacturing Services team. Our DMS group brings years of experience with fast prototyping and highly effective R&D so that efficiency and quality are consistent throughout our product range. The team's efforts have earned ADLINK the prestigious ISO-9001 certification.

ADLINK's Asia headquarters also has in-house PCB layout teams, SMT lines, system integration, and test capabilities. Our tight control over every phase of manufacture lets our customers minimize total cost of ownership (TCO) while simultaneously giving them extensive customization and system integration advantages.

Finally, by having total control over our manufacturing facilities, ADLINK can boast end-to-end security, from design to production, making our hardware immune to outside tampering.

Customer-Focused Service – Local and Online

ADLINK's customers are our top priority, and we maintain a tireless dedication to all of our customers' needs. Over the years, we've built a strategic global footprint to facilitate customer proximity, a valuable advantage for high-touch-type customers and programs. In addition to local service, ADLINK provides the following online services on demand:

eRMA. ADLINK's eRMA system allows customers to begin the RMA process quickly. They can obtain an RMA number and track RMA status online at any time.

Partner Center. ADLINK distributes all product and marketing information on new solutions as soon as they're available at our global headquarters. Global sales representatives and distributors have instant access to the ADLINK Partner Center.

ADLINK's carrier-grade network appliances enable system integrators to develop next-generation networking applications that deliver uninterrupted enterprise network services and fend off increasingly challenging cyber attacks, through superior flexibility, modularity, scalability and more importantly, the highest processing and I/O density in the market.



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Why ADLINK?

By leveraging more than two decades of expertise in developing highly reliable and available embedded computing systems, ADLINK is a premier supplier to worldwide leading telecommunications equipment manufacturers (TEMs) and networking solution providers. ADLINK's carrier-grade, open standards-based COTS and custom solutions enable customers to speed time-to-market by focusing on differentiating their next-generation applications at the edge of both cloud and mobile networks. ADLINK is committed to helping solution providers facilitate the transformation to 5G network infrastructure, open up enormous opportunities of new services, fend off increasingly challenging cyber-attacks, and deliver uninterrupted enterprise network services.



Technology Leadership

As a long-standing pioneer in embedded technologies, ADLINK demonstrates strong thought leadership in prominent industry consortia, including the Open Compute Project (OCP), Open Data Center Committee (ODCC), and Telecom Infra Project (TIP). The company also drives standards establishment and technology advancements to enable state-of-the-art edge computing and GPGPU solutions for information and communications technology (ICT) infrastructure transformation.



Extensive Portfolio

ADLINK is dedicated to continued development of its extensive, highly cost-effective, standards-compliant COTS product portfolio. ADLINK's complementary product lines promote multi-vendor interoperability; enable customers to effectively drive low TCO with great flexibility in solution selection; and leverage edge computing, IoT, AI, and machine learning technologies to enable a wide range of new applications and services in the era of 5G.



Strategic Partnership

As a Premier member of the Intel® Internet of Things Solutions Alliance, as well as the NVIDIA Quadro Embedded Partner and OEM/Jetson Preferred Partner programs, ADLINK leverages unrivalled access to advanced processing technologies, driving innovative, open standards-based heterogeneous computing solutions for data-intensive use cases.



Quality and Integrity

With world-class in-house manufacturing facilities, established quality management systems, and supply chain management (ISO-9000 and TL9000 certified), ADLINK ensures uncompromised carrier-grade quality. Equally importantly, ADLINK fully controls product integrity and security, and thus remains immune to any outside tampering.



Supply Longevity

ADLINK ensures best practices in product obsolescence and lifecycle management. We leverage strategic partnerships with key component and software vendors, delivering supply longevity to support long life-cycle customer programs.



Business Flexibility

As a flexible and agile organization with best-in-class ODM capabilities, ADLINK can effectively and efficiently address rebranding, customization, joint development, and hardware prototyping smoothly and promptly. ADLINK makes ease of doing business one of our top priorities and focuses on helping customers speed time-to-market for long-term mutual success.



Global Support

As a global enterprise with a strategic footprint in design, manufacturing, and service worldwide, ADLINK leverages customer proximity to effectively deliver products to regional market specifications and requirements. This high-touch business model, which hinges on local technical and business services, is key to most networking and communications projects.

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