# ENABLE MISSION-CRITICAL PLAY

## A10 Thunder ADC Eliminates Outages, Squashes Latency and Lowers Costs

### Challenge:

Online gaming companies face unique issues:

- Downtime results in the loss of revenue and reputation
- Application response must enable real-time action
- Infrastructure needs to rapidly scale
- Expensive back-end servers are required to customize applications
- Persistent server session connectivity is demanded throughout play

### Solution:

The A10 Thunder ADC product line of Application Delivery Controllers provide:

- Application acceleration through caching, compression and protocol optimization
- Advanced traffic management with local and Global Server Load Balancing (GSLB)
- High availability, including active-active and VRRP for immediate failover
- Ability to scale to over 1 Tbps with virtual chassis system design
- Application security with DDoS and protocol anomaly protection

### Benefits:

- Superior fast action online experience with "LAN-like" connectivity
- Gamers are assured of constant application and service uptime
- Simple scalability is easy and quick to implement
- Space efficient appliances provide up to 5x the performance to price vs. alternatives
- Vulnerable gaming servers are protected from malicious attacks

## For online gaming companies, availability and quick response times are serious business

Online gaming has become a multibillion dollar enterprise, with mind-boggling innovations and off-the-charts growth in the number of players. But success in the industry is about more than just an excellent game. The site must be available whenever a user wants to play, regardless of other players, which can result in traffic spikes. Because players trust these sites with personal and credit card information, security is considered a foundation-level requirement. And perhaps no other business requires such accelerated applications, with users demanding responsiveness that approaches real time.

Online gaming businesses face many of the same challenges as other web-based companies, as well as some very distinct issues. Users of online gaming sites tend to stay online longer. In many cases, users will initiate sessions at the same time, such as holidays, creating huge peaks in traffic. The applications themselves are almost always unique, since this is, after all, the product that the gaming company offers. In consideration of availability, however, this typically results in specialized back-end servers which must be offloaded to the greatest degree possible. The industry features a significantly faster cycle time than other tech areas, and game popularity can increase exponentially overnight, so the network infrastructure must scale up instantly. Online gamers are often unforgiving, and downtime can be measured in thousands of dollars per minute, while the loss of a player has both immediate and ongoing revenue implications.

But online gaming companies must fight a more difficult foe than simple availability – latency. Today's gamers grew up with virtually real-time response to their input while in a session. It is vital that every element of the infrastructure respond consistently and as quickly as possible.

These firms have often been early adopters of first-generation application delivery controllers with lower capacity, as they immediately recognized the benefit of advanced load balancers and improved response times. Unfortunately, in some instances it has been these legacy ADCs themselves that have caused network slowdowns or outages, as hardware platforms have operated close to capacity. Online gaming companies require a high-performance ADC to deliver their own requirements for a highly available and responsive infrastructure.

## A10 Networks Thunder ADC keeps the excitement going

### LAN speeds at WAN distances

The A10 Networks® Thunder™ ADC product line of high-performance, next-generation application delivery controllers offers a host of features designed to help companies win the battle to create lifelike game response. Thunder ADC offers back-end ADC-to-server TCP optimization, including TCP connection multiplexing, to increase efficiency and reduce application server processing time. HTTP/1.1 support enables the reuse of connections multiple times. These features help to offload or minimize the CPU-intensive task of setting up and tearing down TCP sessions, delivering higher performance.

Thunder ADC also supports WAN-side protocol optimization. These TCP enhancements are fully transparent with no modifications to applications or services required, enabling IT administrators full control to tune TCP communications as desired. Specific TCP variables that can be adjusted include delayed and selective acknowledgments, fast ramp, client keep-alive and window scaling. Such optimizations are fully compliant with network standards and are easy to configure. Resulting connectivity rates have been shown to double with much less bandwidth required.

A10 adds proprietary additions to further optimize TCP-based data transmissions. By using a full proxy architecture, A10 solutions separately negotiate client, including mobile gamers, and origin server side connections. Each connection has its own windows scaling parameters to allow tailored connectivity for the end user and "LAN" sides of the user session. Such a methodology obviates the need for client and server to negotiate the lowest common denominator when experiencing congestion. Each side of the connection is maximized to obtain the best achievable performance. The A10 appliance acts as an intermediary for the client to optimize the client side delivery, while the same is done for the server side.

Thunder ADC also incorporates RAM caching features. By caching and delivering frequently requested items such as images, A10 Thunder ADC can speed the load time of repeated transactions. Another feature offered on the ADC and designed to increase speed is compression, which offloads the task from the back-end server. The result is a smaller payload and faster response times. Finally, Thunder ADC provides SSL acceleration, freeing the servers further and allowing gaming companies to centralize their certificates.

## Online gaming availability 24/7/365

As games grow in popularity, it is essential to ensure that back-end servers are available and working at their best. Thunder ADC keeps the server farm at peak efficiency, with a variety of advanced Layer 4/Layer 7 Server Load Balancing features. In addition to balancing workloads and directing requests to the server with the appropriate services and content, Thunder ADC can ensure that the servers themselves are operational. Advanced health monitoring features evaluate the status of the web and application servers and the databases behind them to remove unresponsive servers from those being load-balanced. A comprehensive list of standard protocols is supported, as well as TCL scriptable health checks to ensure that not just lower Layer 2-4 connectivity is in place, but the applications themselves are functioning correctly.

Thunder ADC also provides multiple methods, such as Source IP, to ensure persistent connections when necessary. Just as with e-commerce shopping cart applications, gamers require these "sticky" connections. This feature is essential to ensure that current sessions are terminated on the same server throughout the game. Source IP preservation can be implemented at Layer 4 or Layer 7, with simple templates that can be replicated for specific uses. This persistence to the initial selected server is established at the outset of the game and maintained for each individual player – all while providing optimal load balancing.

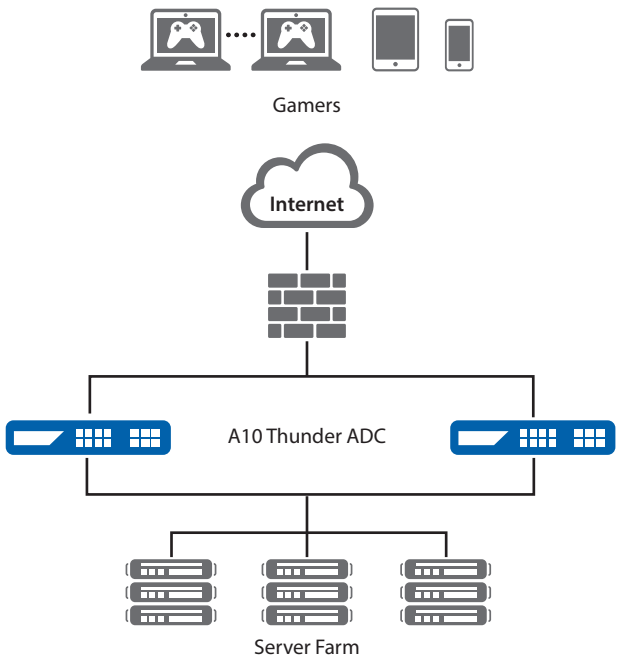


*Figure 1: A10 Thunder ADC ensures game availability and security, all while optimizing the player's user experience*

## Thunder ADC scales with your gaming site popularity

As games become popular, companies need to be able to spin up capacity as quickly and easily as possible. Thunder ADC is a perfect choice, with A10 Networks aVCS™ Virtual Chassis System (aVCS) that allows up to eight appliances to operate as a single device with centralized management. By clustering multiple devices, aVCS enables gaming companies to increase load-balancing capacity, simplify management and lower cost.

Service providers can deploy aVCS in conjunction with VRRP-a, A10's high availability protocol optimized for Server Load Balancing. VRRP-a, like Virtual Router Redundancy Protocol (VRRP), eliminates single points of failure on the network; this protocol also ensures sub-second failover and provides scalability of up to eight appliances in an aVCS failover group. Gaming companies can also take advantage of A10's virtual appliances, which allow for immediate spin-up/down on-demand with up to 8 Gbps per instance throughput, ideal for "bursty" gaming traffic levels.

## Extensible architecture that's easy to manage

The A10 Networks Advanced Core Operating System (ACOS®) provides the foundation for Thunder ADC. By taking full advantage of multi-core processors, our ACOS application networking platform delivers unprecedented performance in a small form factor. ACOS testing has demonstrated up to 150 Gbps of throughput with five million new sessions/second and 256 million concurrent sessions – all in a single rack unit appliance.

While conventional application networking vendors have been challenged to scale system performance with rapidly escalating gaming demands, the A10 Networks ACOS platform leverages our shared memory architecture and Flexible Traffic Accelerator (FTA)

to efficiently utilize multi-core processors and scale performance linearly with increasing CPU/processor density. This means that IT administrators are ready for whatever the market requires.

Thunder ADC not only offers superior price/performance and appealing scalability, but its flexibility makes these application delivery controllers an ideal choice for load balancing the customized applications that online gaming providers depend upon. A10 Networks aFleX® scripting language enables IT to offload complex, repetitive operations, then reinsert relevant information back into the server-bound traffic stream at Layer 7. The reverse operation speeds outgoing traffic, enabling a superior user experience.

Finally, with all of the customized equipment that makes up an online gaming operation, most overburdened IT departments do not have time for individualized, device-by-device management. That's why A10 Thunder ADC features third-party APIs, enabling seamless centralized management. And because a customized infrastructure requires a partner – not just a vendor – our support is just as responsive as the infrastructure.

### Bulletproof security features

Because players' personal and credit card information may be used, security is vital to online gaming companies. Thunder ADC provides a host of features, including a built-in Web Application Firewall (WAF), to help meet Payment Card Industry Data Security Standard (PCI-DSS) requirements. Application access management handles authentication tasks before connections are allowed to the back-end servers. And the A10 Thunder servers offer volumetric Distributed Denial of Service (DDoS) and protocol anomaly protection to handle attacks involving over 100 Gbps of malicious traffic.

### No licensing model

Thunder ADC hardware appliances include all features and performance without licenses, ensuring no budget surprises and no need to purchase licenses during unforeseen peak loads. All innovative and advanced features are included, such as aVCS clustering, application acceleration, Global Server Load Balancing (GSLB), Web Application Firewall (WAF) and aFleX scripting. Also included is A10 Networks aXAPI®, a REST-based Application Programming Interface (API) for management, which is unique within the ADC market. In addition, annual support costs are significantly lower than those of alternative solutions.

## Get the availability you need and the experience users demand with A10

The A10 Thunder ADC line of application delivery controllers has been built to ensure that online gaming organizations can deliver highly available resources with a user experience that's second to none. At the same time, Thunder ADC can offload CPU-intensive tasks, enabling your specialized servers to do their job faster, and all with industry-leading security. Thunder ADC is built on a platform that optimizes both user experience and your bottom line, with innovative features to enable servers to do more, faster. The unique A10 Advanced Core Operating System (ACOS) offers you vastly improved performance in a remarkably small form factor. And you can manage the system in the way that works for you – from a central network management system (NMS) via GUI to device-specific CLI.

## About A10 Networks

A10 Networks is a leader in application networking, providing a range of high-performance application networking solutions that help organizations ensure that their data center applications and networks remain highly available, accelerated and secure. Founded in 2004, A10 Networks is based in San Jose, California, and serves customers globally with offices worldwide. For more information, visit: **www.a10networks.com**


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To learn more about the A10 Thunder Application Service Gateways and how it can enhance your business, contact A10 Networks at: **www.a10networks.com/contact** or call to talk to an A10 sales representative.