The Growing Presence of Esports in Schools
Extreme Networks for Higher Education

Introduction

Esports in schools is at the confluence of some of the most important drivers in education. Student engagement, recruiting, and retention; blending online and offline campus experiences, and preparing students for future careers can all be advanced through a well-implemented esports program. Because of these important benefits, esports now have a rapidly-growing presence in education and should be integrated into the planning of every school, whether higher education or primary/secondary.

Our Extreme-eCampus News Worldwide Esports Survey found that 21% of schools already have an esports program and only 29% of schools are not considering adding one. The competitive games include League of Legends, Overwatch, Fortnight, Super Smash Brothers, and FIFA 19.

Required Capabilities

According to the Extreme-eCampus News Esports Survey 38% of schools have an esports competition facility and 24% are planning to implement one. These facilities often include a several thousand square foot room with high ceiling and space for up to 24 high performance gaming stations as well as a shout caster streaming station.

The room may have indirect, programmable LED lighting. Large 55" 4K monitors are often mounted on the walls. Space for lockers for the team members may be in the room or separate room. There is often also space for team meetings and game reviews. All of this requires adequate electrical power, HVAC, and most importantly a low-latency, higher performance, secure cloud-driven network.

The general computing and networking required capabilities for esports include:

• High performance game workstations
• Audio communication among team mates
• Video capture and connection to broadcast sites like Twitch and YouTube
• Wi-Fi connections for coaches and spectators

Critical Technology Challenges and Core Competencies

Delivering the best possible on-campus and off-campus esports experience requires that these critical technology issues be addressed.

Network Latency, Jitter, Delays, and Bandwidth Bottlenecks

Quick and decisive player reactions only translate to advantage if they are passed through the network with minimal delay. To achieve the maximum advantage, the wired and wireless cloud network must be capable of adequate bandwidth and introduce the minimum possible latency. While total bandwidth requirements for esports are not high, the network must be capable of allocating the bandwidth where it is most needed. The cloud-driven network must have adequate backhaul capability to handle the wired and wireless edge data throughput from competitors, visitors, and video input devices.

Continuous Availability

All game-related connections must be highly reliable and resilient. There can be severe consequences if a player's system drops out. Keeping the network and systems available requires excellent security and visibility into the network. With the right tools and visibility into the network, reliability and user experience can be maximized.

Network Management and Security

Anything that takes away network bandwidth can be detrimental to esports performance. It is important to keep unauthorized devices and users from gaining access to the esports network to prevent outages, loss of important data, and distributed denials of service (DDoS) attacks. Cloud-based networks are especially immune to cyberattack. Network Access Control is important to keep unauthorized devices and users off the network, especially when it is being managed in the cloud.

Constant Visibility into Network Applications and Responsiveness

It is important to have a view into the esports network to insure balanced performance, low latencies, and continuous connectivity. When cloud network applications analytics are presented graphically, the network manager can rapidly assess whether esports network traffic is well-balanced and both local and remote computing resources are responding with minimal delays. The analytics can also insure that only the appropriate traffic is running on the network.

Broadband Connection to the Internet

A path out to the Internet is required for esports for connection to the game servers and to competitors at other schools. Typically, the bandwidth required specifically for esports is not high, in the range of 1-2 Mbps. To accommodate all school traffic to and from the Internet, schools typically make sure they have several hundred Mbps of bandwidth.

Technical Services and Support

Access to a global technical access center (GTAC) on a 24x7 basis ensures that all support questions can always be answered promptly to keep the network functioning. Prior to network installation, it is important to survey and assess the RF characteristics of the site to determine optimal placement of access points and switches. Depending on the network support resources available on campus, cloud network training and managed services may be required.

Extreme is the only company in the industry that takes an architectural approach to bringing products to market from R&D to product release. As a result, all of our network products from wireless to wired and core to edge are managed by a single Extreme Management Center screen for easy management by resource-constrained college and primary/secondary school IT teams.

Extreme's cloud-driven network solutions are designed to address the needs of the IT and network management staff, the faculty and district staff, and students and visitors. The network is comprehensively supported by Extreme Services, Support and Technical Training. The Extreme Networks GTAC provides technical assistance 24 hours a day, 365 days a year. SupportNet offerings let you choose the exact level of service ideal for your organization.

Our SLX Series switches offer the highly reliable and resilience that esports require. Wireless, low-latency network access are provided by ExtremeWireless AP 500 Wi-Fi 6 Access Points and Controllers, which deliver highly-scalable, highly-available, seamless and secure, easily-managed Wi-Fi connectivity. Wired access and wireless backhaul are provided by ExtremeSwitching and Extended Edge Switching. These solutions also provide cross-platform stacking, embedded application controls, and PoE+ for IoT devices.

Continuous availability and network security are enhanced with Fabric Connect and ExtremeAI Security. The network is easily managed with ExtremeManagement, which can also manage devices from different vendors. Extreme Control insures that only authorized devices and users can access the network. These solutions provide a single pane of glass management system for wired/wireless visibility and control from the data center to the mobile edge. Extreme's hyper-segmented cloud fabric insures maximum security and high performance for multicast devices like video cameras, which are an important part of the esports experience.

Extreme Networks is the Wi-Fi provider of the NFL and Wi-Fi analytics provider for the Super Bowl and has extensive experience in successfully providing the cloud network infrastructure for sporting venues and stadiums. This experience insures successful deployments in high density and high demand venues, where performance and reliability are critical. Extreme's solutions are deployed at 14 stadiums and professional sports venues. ExtremeAnalytics makes it easy to monitor network performance and gives application insights for an optimized esports experience.

Conclusion

Esports competitive centers and arenas require special technical considerations to insure the best, most competitive game environment. The network connections must deliver high performance low-latency connections.

Network application analytics are most important for insuring that only the appropriate traffic is running on the network and to track heavy loading and delays in responsiveness. Network analytics graphically displays traffic, sorted by application, and response times.

Additional Resources

To learn more please visit the Esports Solution Center and our solution pages for Higher Education and Primary/Secondary Education.

http://www.extremenetworks.com/contact

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