Higher Education Institution in Need of Architecture Redesign to Support Network Growth

Company:
- St. Petersburg College

Industry:
- Education

Critical Issues:
- Educational institution in need of a new network architecture to support growing number of applications due to rapid enrollment.

Selection Criteria:
- Clear solution for higher density and higher performance multi-tenant ADCs.

Benefits:
- Enhanced performance by increasing data center bandwidth and greater application support.

Results:
- Reduced application complexity with the flexibility of A10 ADCs' ADP capabilities while maintaining high performance.

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> **David Creamer**
> Director Network Systems & TV Operations,
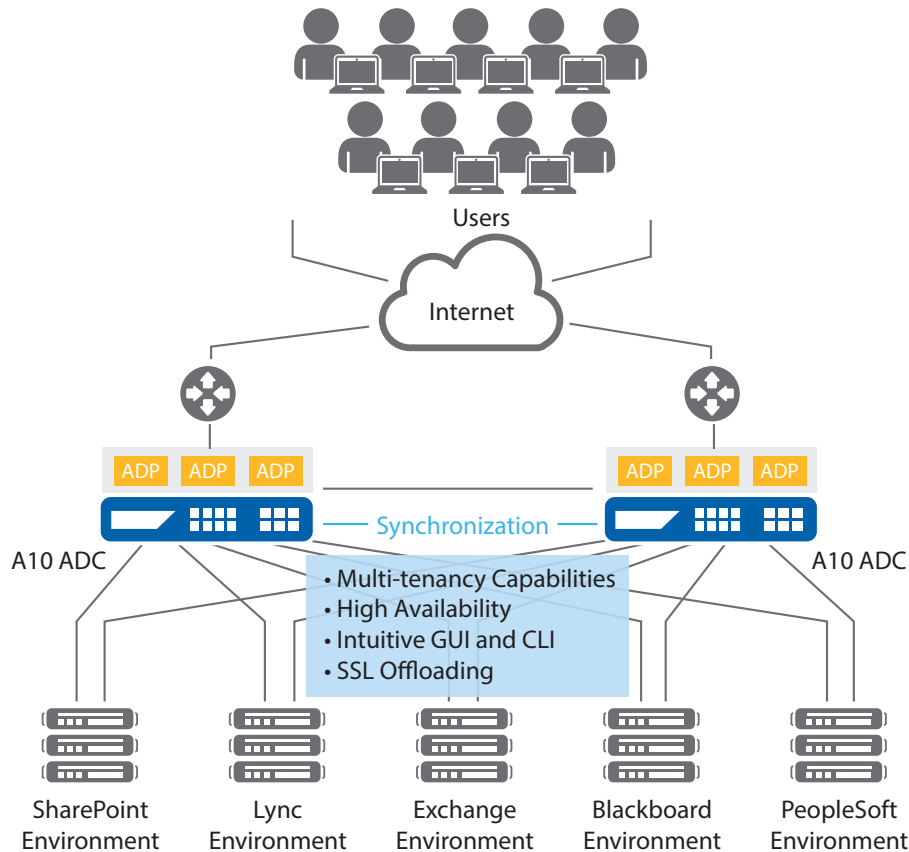> St. Petersburg College

Introduction

Established in 1927, St. Petersburg College is recognized as Florida's first two-year institution of higher education. Currently the college is a fully accredited multi-campus institution with campuses across St. Petersburg's county spanning from Clearwater, Tarpon Springs, Pinellas Park, Largo and Seminole. Over 63,000 students a year achieve their educational goals through St. Petersburg College, including students that reside in many countries across the globe.

St. Petersburg College prides itself in decades of academic and community investment. Enrollment at St. Petersburg College has increased each year since 2000. And for the last four years consecutively, St. Petersburg College has been designated Florida's leader in distance learning, ranking number one in both the number of courses offered and the number of students enrolled. Notable alumni include: NASA astronauts Nicole Stott and Samuel Durrance; Bob Carroll, writer and creator of the celebrated "I Love Lucy" television show; and famed rock musician Jim Morrison of The Doors. St. Petersburg College's network hosts approximately 3,000 staff and faculty members, in addition to the 32,000 students enrolled in online classes each semester alone.

Increased Data Center Bandwidth and Application Support

As the college grew rapidly, expanding globally with additional students, its incumbent IT infrastructure suffered, unable to meet the challenges brought by this growth. St. Petersburg College needed an advanced Application Delivery Controller (ADC) with multi-tenancy features in order to manage the diverse and rapidly increasing plethora of applications, spanning from classroom campus-wide applications such as Blackboard Learn+ to Enterprise Resource Planning (ERP) software such as Oracle PeopleSoft, in addition to Microsoft applications such as SharePoint, Lync and Exchange.

St. Petersburg College's major concern was to find a platform that could accommodate growth and significantly increase data center bandwidth. The solution needed to run efficiently and flawlessly, with no traffic impact during failover.

Users

Internet

ADP ADP ADP

A10 ADC — Synchronization — A10 ADC

- Multi-tenancy Capabilities
- High Availability
- Intuitive GUI and CLI
- SSL Offloading

SharePoint Environment | Lync Environment | Exchange Environment | Blackboard Environment | PeopleSoft Environment

Flexible and Reliable Solutions

A10 was chosen over the incumbent vendor, F5 Networks, due to the flexibility of A10 ADCs. "We chose A10 Networks primarily for the flexibility of the architecture. The ability for us to create various virtual Application Delivery Controllers with A10 ADCs and still maintain performance was very important. Additionally, ease of configuration and cost compared to our previous solution was appealing," explains David Creamer, Director Network Systems & TV Operations. St. Petersburg College established the A10 ADC as a proven virtualization solution that could fulfill the requirements of high density and high performance while delivering on flexibility and reliability.

St. Petersburg College hosts many applications that must be deployed in multiple layers across multiple servers for redundancy, features and capacity support requirements. A10 ADCs provide high-performance multi-tenancy functionality with faster client response times, while reducing the escalating costs of deploying ADCs untilizing Application Delivery Partitions (ADPs).

Key differentiators A10 ADCs provided St. Petersburg College:

- **Flexible Virtualization:** St. Petersburg College utilizes A10 ADCs' multi-tenancy feature to consolidate its numerous application environments onto the A10 ADC appliances. Through virtualized ADPs, A10 ADCs can deliver more than a hundred instances, consolidating servers to virtual platforms, for overall efficiency and flexibility; this provides the industry's highest performance

multi-tenancy solution. Beyond A10 ADCs' ADP technology, A10 ADCs' virtualization options include the Virtual Chassis System (aVCS®) for scalability.

- **Superior High Availability (HA):** With an increase in enrollment, St. Petersburg College's utmost priority for its new deployment was to focus on optimizing the end-user experience for its diverse user population of students and faculty members. Absolutely no downtime was tolerable; to meet this stringent requirement, stateful HA is used to provide sub-second failover and session synchronization between A10 ADC appliances. This ensures continuous connectivity for an enhanced and reliable end-user experience online. Furthermore, when network maintenance is performed, there is no impact to the end-user; the process is always transparent and hitless.

- **Enhanced Performance:** A10 ADCs' scalable symmetrical multi-processing (SSMP) architecture allows traffic to utilize multiple CPUs without latency or blocking; applications run exponentially faster, especially during peak usage times. A10 ADCs' Advanced Core Operating System (ACOS®) defines a new generation of ADCs with greater performance, and the greatest performance per Watt (PPW), making A10 ADCs the most flexible, scalable and energy efficient solution on the market today.

- **Advanced SSL Offload:** A10 ADCs use dedicated SSL ASIC processors to relieve server hardware of the burden of managing CPU-intensive SSL traffic. Processing SSL traffic on

A10 ADC appliances seamlessly increases transaction speeds, decreases server hardware requirements and provides ease of administration.

- **Usability Advantages:** A10 ADCs' intuitive web-based GUI, offers an effective industry-standard CLI, providing St. Petersburg College IT engineers with flexible management options and seamless deployment. A10 ADCs' wide range of active monitoring capabilities enables administrators to effectively observe activities, and also provides detailed reporting. Furthermore, A10 ADCs provide administrative resources that give granular access with role-based access control.

- **Cost Reduction:** With ADP technology, administrators can provision different partitions for different applications that are assigned to different units within the organization. This is extremely cost-effective for educational institutions such as St. Petersburg College that support a multi-campus infrastructure as well as the growing distance learning program.

A10 ADC Success

With increasing enrollment, St. Petersburg College needed to renew its network architecture due to this fast growth, seeking a solution to manage an ever-growing number of applications as well as the flexibility to provide multi-tenancy while maintaining performance. Virtualization has proven to be an effective solution to multiple IT issues, reducing application complexity and speeding up implementation time. A10 ADCs provide a straightforward, clear solution for higher density and higher performance multi-tenant ADCs, managing a growing number of applications with the flexibility to partition the ADPs for the college's new network architecture.

About A10 Application Delivery Controllers

A10 ADC is a scalable, high-performance Application Networking platform that delivers enterprises, Web properties and ISPs superior reliability and an energy efficient footprint for lower total cost of ownership (TCO). With A10 ADCs, customers of all sizes benefit from application availability, scalability and performance; increased infrastructure efficiency and a faster end user experience. A10 ADCs have a comprehensive Layer 4-7 feature set and flexible virtualization technologies such as Virtual Chassis System (aVCS), multi-tenancy and more for public, private and hybrid cloud environments. In addition, A10 ADCs lead in IPv6 migration technologies with many large scale deployments worldwide.

A10 ADCs deliver industry-leading return on investment (ROI) by leveraging A10's 64-bit Advanced Core OS (ACOS), with a scalable shared-memory parallelism architecture that leaps the competition in scalability and flexibility.

For more information, visit: www.a10networks.com/products/application_delivery_controllers.php

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**