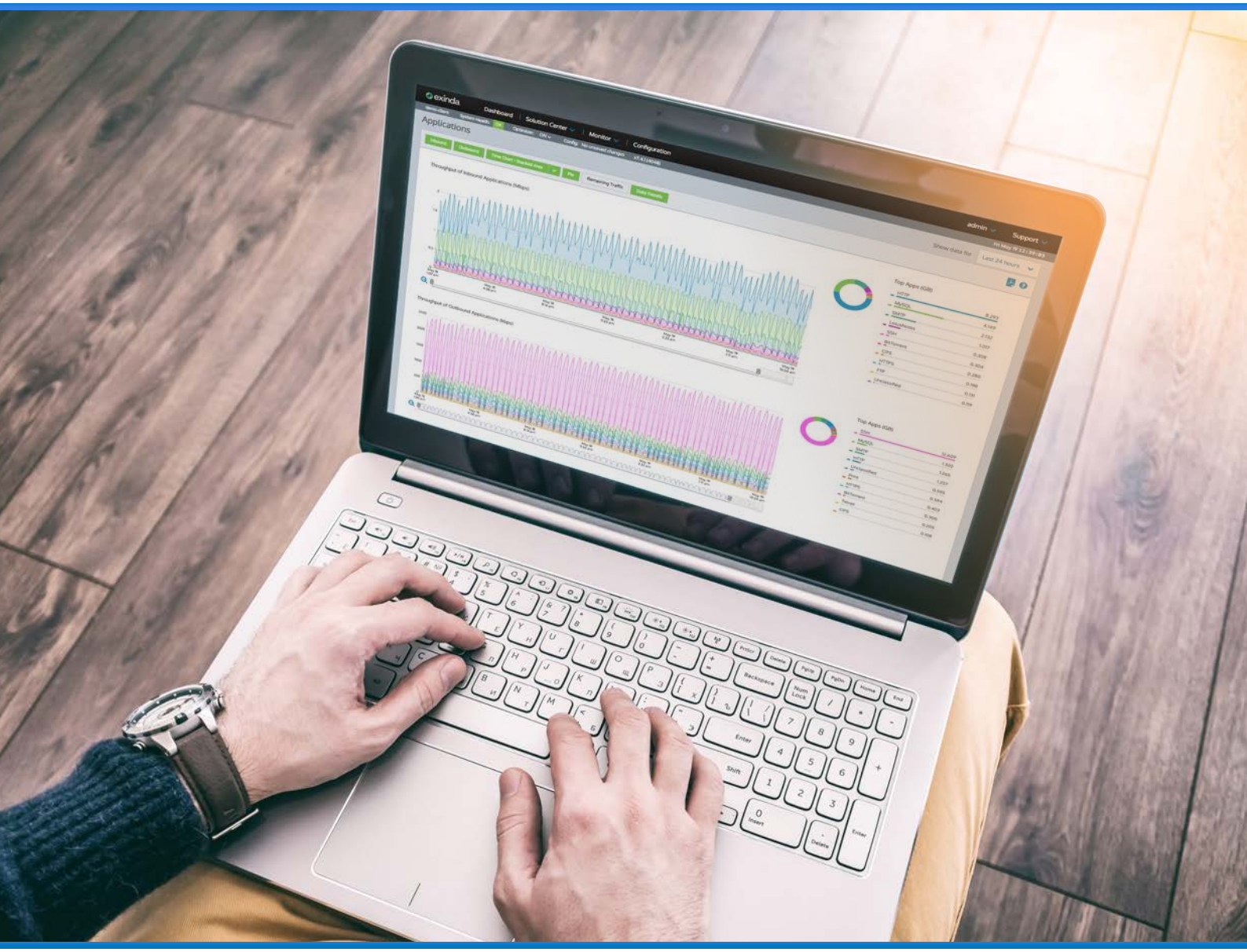
WHITEPAPER

Better network performance for education & school districts



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Introduction

Networking is a fundamental infrastructure in today's educational institutions. The emergence of new technologies coupled with a sharp decrease in their costs of acquisition and use have made it possible for educational institutions to tap into the power of digital technology to enhance the quality of education offered.

In the past, individual schools had limited freedom when it came to deciding technological adoption. The curriculum, teaching practices, and administrative rules were distributed by a higher-level or central authority and this provided little incentive for educational institutions to develop their own identities.

Today, the situation is different. Schools have greater autonomy than ever before and this has allowed them to innovate and become more competitive. New ways of learning and development are being sought increasingly by schools and parents. This in turn has created the need for high-performance networks that provide uninterrupted access to the necessary information and materials.

Adding to this, there is a greater push than ever before from state and national governments to move to technology-based learning, resulting in rapid adoption of digital tools for the classroom.

At the heart of all these changes is a solid networking infrastructure. It faces increasing and evolving demands to be robust and reliable to support the growing use of learning and testing applications as well as the many devices that connect to it.

The need for a reliable network and the challenges that come with it

Having a reliable network is one side of the coin; making the most of it for educational use is the other. In today's world of social media and entertainment apps, schools and education institutions need the right strategies and tools to ensure the network is always available for the educational applications that matter.

Let's look at some reasons why your school district needs a robust network to prepare your students to live and work in this digital age, and some of the bottlenecks that can impede it.

Growing number of devices

The number of devices that use a school network is increasing by the day. It can be divided into two large groups — the devices that students own and bring to school, such as their smartphones, and the devices that the school buys for students' use, such as iPads and laptops. Both groups of devices need a reliable network.

As a school, the idea of bringing in new devices without the network infrastructure to support them is challenging and may have big repercussions. Critical applications and learning apps may be affected by the extensive use of entertainment apps like Facebook, Netflix, Instagram, and Snapchat. This is especially true if the school has a limited network infrastructure and bandwidth restriction coupled with an unmonitored usage policy.

Reducing bandwidth or restricting the use of these devices is not practical. They are necessary to tap into the digital world, to help the institution to remain an attractive educational destination for students and parents, and above everything, to support current trends in education.

When the performance of critical classroom applications are affected, it can lead to uncomfortable questions, reduce the time spent on teaching and ultimately have an adverse effect on the academic performance of your students.

BYOD in schools

Bring Your Own Device (BYOD) has become an integral part of education today. Educational institutions need a network that supports these devices as well, apart from the regular apps and laptops owned by the school.

Ninety-five percent of schools surveyed by Bradford Networks allow students to bring their personal devices to school. BYOD offers many advantages to teachers and children.

Source: GettingSmart.com

At the same time, this policy comes with its own challenges. Four prominent concerns emerge when we talk about BYOD in classrooms:

- Distractions that come from playing games and watching videos on personal devices.
- Unmonitored social networking access that could lead to bullying and predatory/victim behavior.
- Creation and use of inappropriate content.
- Social status and bragging rights about who owns the best device.

These four problems stem from the fact that it is not easy to monitor the use of personal devices and the content accessed through them. Though schools have addressed these challenges to some extent with a strict BYOD policy, that alone is not enough considering that students have various options like VPN and TOR to bypass the school network and access the content they want.

Tech-savvy educational materials

EdTech is an emerging field that offers new possibilities for learning to both teachers and students. Some school districts like the Vail School District have even swapped textbooks for laptops to create a textbook-free learning environment.

A 1:1 computer-to-student ratio is becoming the norm in many high schools as teachers prefer to use digital instruction tools from the Open Educational Resources (OER) instead of textbooks. Emails and apps are used to communicate with parents and to send reports or homework. Most statewide assessments of schools happen online instead of paper.

All these developments depend on a reliable network and network monitoring tools that help to proactively fix issues before they turn into outages.

Sharing resources among schools in the same district

A high-performing network makes it easy for schools to share resources with one another so schools across an entire geographical zone can benefit each other.

Lesson plans and ideas may be placed in a common repository that can be accessed by all teachers within a school district.

Such a system reduces teacher workload and helps cross-pollinate innovative ideas and results. Existing content can be repurposed or reused to meet individual teaching needs.

Schools need a robust network that can transfer files to and from common cloud storage sites quickly and securely, so all teachers can access the materials they need.

Creating a personalized approach to learning

School districts are working hard to personalize learning even more, using new tools and applications. Creating personalized learning models is complicated. It requires high levels of coordination among teachers across a district and possibly outside. It also needs extensive communication and access to a wide range of educational tools — all of which can stress existing network bandwidth and usage.

Schools face budget constraints and don't always have the resources to upgrade their networks continuously to take advantage of new approaches such as this.

How can Exinda help school districts?

Exinda provides WAN optimization and network control solutions to help schools and educational institutions get more out of their networks.

It offers an intelligent and integrated approach to many of the challenges facing schools today, and it does this through three distinct and well-integrated modules.

User-Level Network Visibility

Monitor your network across six core variables:

- Active Directory user information
- Bandwidth-usage reporting
- Layer 7 or application-level & web visibility
- Network visibility
- Service Level Agreements (SLAs) monitoring & alerting
- Traffic control.

Such in-depth network visibility helps to identify issues at the earliest.

Managing application bandwidth use

Exinda ensures reliable and consistent access to critical learning applications and student services. Also manages how bandwidth is allocated across all users, devices and applications on your network.

Reporting

Exinda comes with 40 reporting templates that give actionable insights into your network's performance. These reports have all the information you require, sorted according to users, departments, locations, devices, and applications.

Benefits of using Exinda:

- Prevents the use of content that is beyond your Acceptable Use Policy
- Helps students and teachers use educational apps more effectively
- Limits the impact of recreational apps like Netflix and Snapchat
- Blocks apps like VPN and TOR that bypass your web filters
- Helps you to use your network more efficiently
- Reduces user complaints and improves the digital experience for both students and teachers
- Ensures compliance with DMCA and other regulatory bodies
- Avoids the need for costly upgrades.

How these schools solved their problems with Exinda

Many schools and educational institutions have tapped the power of Exinda to solve their network and access-related problems.

Olentangy Local School District

Olentangy Local School District is the largest school district in the Delaware County of Ohio. With 15 elementary schools, five middle schools, three high schools, and one STEM academy, this school educates more than 19,000 students every year.

With such a high school density, the network was already overloaded with educational apps like Schoology, LaunchPad by ClassLink, Google Apps for Education, and Office 365. The school district also released a BYOD policy as they believed that the existing network could support up to 9,000 devices at the same time.

The already-heavy load of the network worsened with the new BYOD policy. The biggest challenge was how to use the network efficiently so enough bandwidth was available for all educational needs including online testing applications. Administors also wanted a solution that was easy to use, provided deep insights into user activity, and fit with a limited budget.

Exinda helped the school district achieve all of this.

> *I think it's a testament to Exinda that we're able to run a district of our size on a 500 Mbps connection. We're still ranked very highly as far as the quality of our education in the State of Ohio and are providing what our students need with very limited access. With Exinda we are getting the most bang for our buck when it comes to bandwidth and we can show we are being good stewards of taxpayer dollars.*

Charlene Kolosky,
Network Administrator at Olentangy Local School District

The IT staff at Olentangy School District have complete visibility into their network and can quickly identify excessive streaming or VPN access. It can prioritize applications and has made the most of its available 500 Mbps connection for a reliable and safe online experience to 22,000 users.

The Glennie School

The Glennie School is a private day and boarding school for girls in Toowoomba, Queensland, Australia. With about 800 students, this school is well-known for excellent facilities, pastoral care programs, and commitment to expanding the use of technology in classrooms. This school was an early adopter of technology, supporting a 1:1 student-to-computer ratio since 1996.

Glennie School wanted to limit the use of social media during school hours while providing guaranteed bandwidth to a range of educational applications like YourTutor, Mathletics, and Google Apps for Education. The school's pastoral care program was committed to providing a safe and online experience for students.

To achieve both these objectives, The Glennie School implemented Exinda Network Orchestrator.

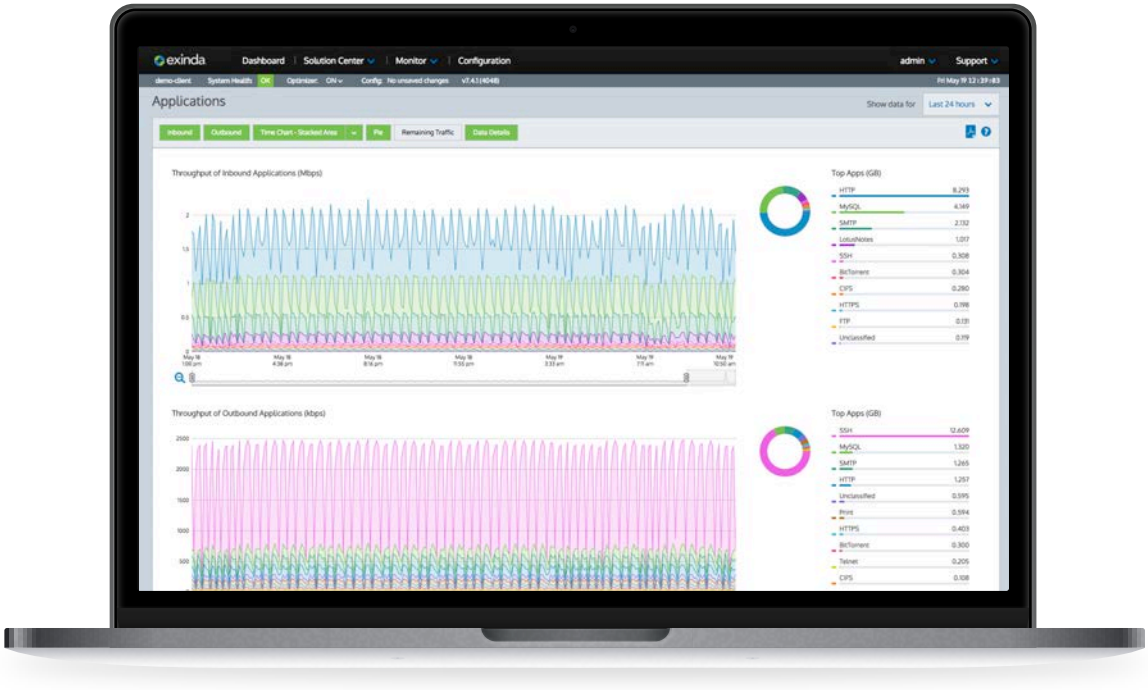
> *Exinda was one of the first solutions we could find that offered layer 7 application definitions for web traffic and allowed us to apply blocking rules for Active Directory users and groups without having to set proxy settings in the browser. Exinda is very intuitive to configure and use compared to other products and provides great insight into the network.*
>
> Matthew Russell,
> **IT Manager at The Glennie School**

Network administrators can identify who is accessing what applications and at what times of the day. They can restrict the use of social media during school hours, but enable it for boarding students in the evenings. They are maximizing the use of their 200 Mbps connection.

These case studies show how Exinda can transform the digital learning experience of your school without compromising security or budget allocations.

Reach out to an Exinda Solution Expert today

Request your free demo



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