Critical links

education appliance
enabling school 2.0

Works with
Intel® Learning Series

SCHOOL 2.0

All you need to know...

The Education Appliance is designed and manufactured by Critical Links based on Intel's reference design for the Intel Learning Series ecosystem. It is purpose-built as the classroom and school infrastructure platform to support essential learning, networking and administration capabilities.

Intel Learning Series

Intel's comprehensive technology initiative for advancing education world-wide; The Education Applinace is an essential component of the ILS ecosystem for schools to deliver 1:1 e-learning infrastructure and solutions in tandem with Intel-powered Classmate PCs, laptops and other devices.
http://www.intellearningseries.com

Learning   **Networking**   **Administration**

The Intel-powered Education Appliance from Critical Links

This dedicated "always on" appliance allows teachers to design and create educational content and activities, promote problem-solving, encourage collaborative learning, maintain e-content and easily manage Intel classmate PCs and other student devices for enhanced classroom efficiency and student productivity. This is an affordable, easy-to-use, purpose-built appliance that meets the needs of schools and teachers today.

Understanding the Needs of Teachers, Students, Administrators and Parents

Educators around the world are seeing the positive effects of a 1:1 learning model in which every student has access to a computer that is connected to the internet or the school intranet. However, it is not sufficient for every child to have a laptop or tablet computer - schools also need an e-learning infrastructure that allows the teachers to manage a roomful of student laptops, without any IT expertise or resources. The school administrators and parents should be able to leverage this connectivity and computing power that each student now has access to. The schools should have a way to store and manage educational content, manage lessons and learning activities, assign and receive homework, assign grades, report to parents etc. in a seamless manner without constant manual intervention.

The Education Appliance is 'always on', meaning the student has 24/7 access to learning resources and also the ability to discuss with fellow students and teachers, lessons and homework through forums and chats.

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"Critical Links Education Appliance combines, on a single platform, all of the network management tools and capabilities we wanted with both high quality and assured security allowing us to confidently focus only on the distribution of innovative content and services over the network. education appliance offers a suite of advanced services such as distributed storage, wireless communications, Voice over IP and Quality of Service Management that schools can leverage to easily deploy updated pedagogic software and to promote collaborative work among students, raising the teaching and learning experiences to a whole new level."

Pedro Ferreira - Member of the Board of Directors, UMIC–Knowledge Society Agency, Portuguese Government.

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Gartner Research

"IT managers for school districts seek efficient solutions to manage the increasing of school PCs. Intel offers an infrastructure solution called the Integrated Education Appliance for Classmate PCs. It includes a network infrastructure server, security, centralized software and content storage for the classroom, information backup, system management, and maintenance diagnostics…"

Gartner Report: "Intel and McGraw-Hill Advance Digital Content with K-8 effort"

- Learning Management System (LMS)
- LAMS Learning Activity Management System
- Wikis, Blogs, Forums, Chat
- School Conferencing System (SCS)
- Interactive Whiteboards
- Shared Screens
- Teacher/Student Grade book

Q. What is the Intel-powered Education Appliance from Critical Links?

As part of the Intel Learning Series, Critical Links and Intel are partnering to bring a unique solution for schools - the Education Appliance. This is an essential piece in enhancing the 1:1 e-learning eco-system that delivers additional value to schools. From managing the various devices in a Classroom/School (student and teacher laptops, interactive white boards, printers, projectors etc) to offering learning infrastructure tools (LMS, LAMS, Forums etc) as well enforcing school policies and security (Internet access, filtering, firewall etc), it delivers the most comprehensive solution without the attendant costs, complexity and IT support that would be otherwise necessary.

Q. What is Intel's involvement in this project and why?

Intel develops the solution recipe for Intel-powered education appliances that allows schools to enhance the 1:1 learning experience and complement Intel-powered classmate PCs with student PC management, school network administration and a learning collaboration infrastructure. It is part of the Intel Learning Series Alliance, an educational value added solution that includes the hardware, software and services in collaboration with a wide network of vendors and providers. Intel is taking the leadership of 1:1 education by striving to deliver a total 1:1 solution to help improve the productivity of teachers and students alike in schools and the classroom.

Q. What are the value propositions of the Critical Links Education Appliance?

The Critical Links Education Appliance is purpose-built to enhance the 1:1 e-learning experience. It works in conjunction with all SKUs of Intel-powered classmate PCs and teacher PCs as well as a plethora of other student devices. The Education Appliance is an optimized, affordable, easy to use system for improving classroom/school productivity as well as remote learning capability with parental supervision.

Benefits for students: More engaging and interactive ways to absorb information and improve learning skills, 24/7 access to resources outside the classroom, create and share content with ease etc.

Benefits for teachers: Resources to manage and organize educational activities easily and effectively. Provide personalized attention to students, reuse of media-rich lessons, support for multiple learning styles etc.

Benefits for administrators: Perform the day-to-day management and administrative tasks with ease without any need for IT staff, block inappropriate access and enforce policies.

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LEARNING MANAGEMENT SYSTEM

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Theft Deterrence

Theft Deterrence for Intel-powered Classmate PC is an education appliance feature designed to protect the physical asset of student PCs. It disables the stolen PC and renders it useless for thieves. This mechanism involves a locally stored digital certificate that expires after rebooting student PCs without connecting to the appliance !

Connectivity

Internet access, Proxy services

Unified Communications
E-mail, Web, Messaging

Routing
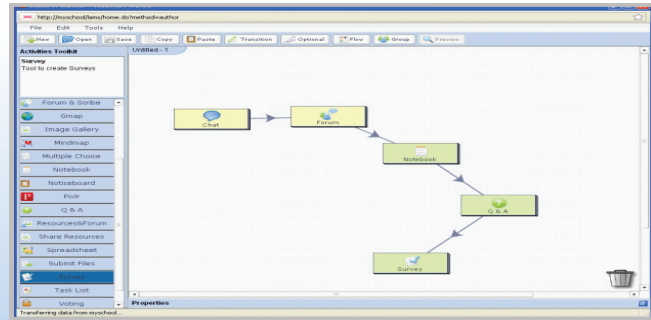
Quality of Service

Shared Storage

Network Security

Alert and IP Phone System

Q. How does the Critical Links Education Appliance work?

This Intel-powered Education Appliance works in conjunction and seamlessly with Intel-powered classmate PCs through a wired or wireless network. The Education Appliance also supports other student devices and laptops in the classroom. All desired educational services and applications are running automatically once the appliance is powered on. Teachers and students can use a web browser to use those services and applications from their laptops and Intel-powered classmate PCs.

Q. Why is it called a "purpose-built" appliance?

The 1:1 e-learning transformation brings new challenges to schools and teachers such as managing efficiency for a large number of student notebooks, classroom/school network security, e-content maintenance and sharing etc. at an affordable cost. The Critical Links Education Appliance is designed with the purpose of providing School IT staff, administrator or teacher an easy and efficient way to solve those problems and improve their efficiency.

Q. What are the key features of Critical Links Education Appliance?

This Intel-powered Education Appliance, together with Intel-powered classmate PCs and other student devices present an optimized educational solution for 1:1 e-learning. It offers abundant features with three main areas of focus.

First is the **"Learning"** part that includes LMS, LAMS, Wikis, Blogs, Chats and Social Forums. The Education Appliance also allows easy configuration and access of classroom peripherals such as printers, projectors and interactive white boards.

Second is the **"Networking"** part that includes internet access and proxy services, network security settings, Policies, Firewall, Filtering, user access authentication and so on.

Third is the **"ICT and Student Administration"** part that includes student information system (grades, attendance, schedules), management of school resources, theft deterrence, single sign-on, client PC management, asset management etc. Client PC management is specially designed for Intel-powered Classmate PCs to provide features such as backup and recovery, application/patch concurrent distribution, policy restrictions, status monitor (whether 'on' or 'off', OS, etc) and theft deterrence. All these capabilities are provided through a simple easy-to-use interface.

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LEARNING ACTIVITY MANAGEMENT SYSTEM

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Case Study

About the technology partnership between Portuguese Government Agencies and Critical Links in which the Education Appliance provided the Portuguese junior high and high schools with flexible, standardized and centrally managed technology infrastructure for learning, Internet and network communication needs at a competitive price.

http://education.critical-links.com/case-studies.html

Client PC Management

Teachers & Students Single Sign-On

Theft Deterrence

Asset Management System

Student Information System

Unified GUI Management

Full Reports and Statistics

Parental Supervision & Control

System Backup, Remote Recovery

Q. Explain the benefits of the Critical Links Education Appliance in a classroom?

The Intel-powered education appliance provides a host of complementary capabilities that will make the 1:1 e-learning environment feasible. To teachers, this purpose-built appliance offers an easy and efficient way to manage a large number of Intel-powered classmate PCs, such as image backup and recovery, installation and file/patch distribution, Internet Access Control, application/OS use control and theft deterrence. Teachers no longer need to perform these tasks manually. They can easily create and/or monitor tasks on the appliance management window via a teacher's PC. And all these tasks can be automatically executed by the appliance through the school and/or class network infrastructure.

Moreover, the Learning Management System (LMS) and Learning Activity Management System (LAMS) running on the education appliance enable an enhanced learning experience and interaction among students and teachers. Education Appliance allows the students to extend their learning activities outside of the classroom as well.

Q. What is the singular human benefit enabled by this solution?

The Education Appliance provides teachers, students and even parents an interactive platform for learning, discussion, collaboration and engagement. By transforming the learning experience using technology, it helps create more cohesive communities and economic progress through digital inclusion.

Q. What OS will the Critical Links Education Appliance run on?

This Intel-powered Education Appliance is OS-agnostic and has an open architecture allowing support for all major OS including Microsoft Windows and open-source OSs. Education Appliance utilizes Intel® Virtualization technology to enable multiple operating systems and applications to run concurrently on a single platform without interfering with one another.

Q. What usage models will the Critical Links Education Appliance be suited to?

The Education Appliance is tailored to meet the 1:1 and/or 1:n e-learning needs of schools around the world. It supports learning, collaboration, networking and administration (including student PC management) for all the typical activities in a classroom or school and works in conjunction with Intel-powered classmate PCs or similar student devices.

Q. What languages are supported by the Education Appliance?

Critical Links Education Appliance currently supports English, German, Portuguese and Spanish. Support for languages such as Chinese, Arabic and French will be coming soon.

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Learning   Networking   Administration

Q. What additional equipment and software do I need to set up the Critical Links Education Appliance?

This Intel-powered Education Appliance comes with the full set of hardware and software required for deployment. You ONLY need printers, peripherals and access points to deploy the full infrastructure.

Q. What is required to configure and manage the Education Appliance?

The Critical Links Education Appliance provides web-based user interface for configuration and management. The GUI is fully compatible with the most popular browsers such as Internet Explorer and Firefox. All configuration and management tasks can be done locally or remotely over the internet.

Q. Can I use the Education Appliance to connect my classroom or school to the internet?

Yes. The Critical Links Education Appliance provides the full functionality and physical interfaces to securely connect your school or class network to Internet. It is fully compatible with all types of DSL, T1/E1 and cable modems.

Q. Do I need additional equipment or software to provide network security for my class or school?

No. The Critical Links Education Appliance provides all necessary functionality to fully protect your network starting from a firewall and anti-virus/anti-spam, all the way to URL policies and content filtering.

Q. Do I need additional network storage equipment for my classmate PC?

No. The Critical Links Education Appliance provides network storage functionality that is fully compatible with Windows and/or Linux based student PCs.

Q. Can I run my own school or class e-mail and web server?

Yes. E-mail and web server are integral part of the Critical Links Education Appliance with full GUI based configuration.

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Learning   **Networking**   **Administration**

Q. What do I need to connect remote students either from a different school/class or home?

The Critical Links Education Appliance provides secure VPN connections for remote users. Students can connect to the Education Appliance from home using Intel-powered classmate PC, and there is no need for any additional software other than Windows or Linux-based OS.

Q. How many students can the Critical Links Education Appliance support?

The Critical Links Education Appliance does not have any software limitations for the number of students it can support. The limiting factor is hardware configuration; with the standard SKU it can support up to 500 student accounts (100 concurrent client devices), and the advanced SKU will be able to support up to 3000 student accounts (1000 concurrent client devices). For more details, please refer to the technical datasheet.

Q. What is Student Information System (SIS)?

SIS is a suite of administrative software for schools. The Education Appliance runs the popular SchoolTool SIS and it can be used by schools for a single purpose, by individual teachers or small teams within schools, or as a comprehensive student information system for the whole school, encompassing demographics, grade book, attendance, calendars and reporting (including report card generation).

Q. What is the "backup and recovery" function for Intel-powered Classmate PCs?

The backup and recovery feature of the Critical Links Education Appliance is a high-performance, enterprise-grade system for backing up Classmate PCs and also the Education Appliance itself to a server's disk, USB disk, network storage or a remote data center. The system is highly configurable and easy to install and maintain. A full set of restore options is supported, including direct restore or downloading a zip or tar file.

Q. What is Learning Management System (LMS)?

LMS is designed to help educators create online courses with opportunities for rich interaction. LMS functionality of the Education Appliance is based on Moodle open source project. It has important features such as lesson creation and course creation tools, students and teachers database management, forums support, multiple roles (students, teachers etc.), student assignment support, blogs, wikis, chats, and student grade infrastructure.

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Learning Networking Administration

Q. What does the Education Appliance (EA) come with? What are stacks?

The Education Appliance solution comes with the hardware and the EA core software stack. (Other software stacks are optional).

Stacks are sets of specific software certified to run on the EA. Stacks require licenses and are sold in specific number of licenses per appliance (10, 30, 60, 100, 500, 1000 etc.), known as user license packs. Customers can order the solution with the integrated hardware and software or just order the software license pack for the required number of users and install on the hardware of their choice that meets the recommended specifications. There are 4 types of software stacks:

EA Core Stack: Client PC Management Stack (Asset Management, Client device backup and restore, configuration and management of OS and applications), Theft Deterrence, ICT infrastructure (Internet connectivity, firewall and security, URL filtering, web and e-mail servers, Single Sign-on, network storage, network printers, reporting and statistics), Learning Management System (Course and lesson creation, on-line tutoring, wikis, blogs, social forums, chats, class and student administration)

LAMS Stack: Learning Activity Management System (design, manage and deliver on-line collaborative learning activities, provide teachers with a highly intuitive visual authoring environment)

SIS Stack: Student Information System (student enrollment, resource management, calendar and schedule management),

EA Alert & Notification Stack: School-wide IP-based phone system, inter-class and inter-room free communication, long-distance calls), Alert Messaging System (Intercom calls and messages, school-wide announcement system, automatic mass calls, mass alerts to online desktops)

Q. Can I connect the Education Appliance to an existing PBX system?

Yes, the Education Appliance is the ideal solution if you want to migrate gradually from a traditional phone system to an IP-based system. You simply connect the Education Appliance to your current PBX via a PRI, BRI or analog trunk and you will be able to transfer and route calls between the two systems.

Q. Can I run all the services at the same time without impacting performance?

Yes, the Education Appliance has been designed from the ground up to run many services in parallel. Each service is prioritized on the basis of latency-sensitivity. There is also built-in QoS to ensure that network traffic is managed to avoid congestion resulting in smooth voice traffic at the worst of times.

http://education.critical-links.com

education appliance FAQ – Business Section

Q. How can you become a Critical Links authorized distributor?

Critical Links can choose any number of authorized distributors for any given region depending on the market size and demand. All Intel Learning Series partners are good candidates for distributorship and we work with Intel to identify the best options for any given region. Please contact sales@crtical-links.com to initiate the discussions.

Q. Does Critical Links sell directly to end users? What are the policies regarding distribution?

Critical Links does not sell directly to end users. We work mostly with local partners who can provide local support to the end users. We would connect potential end users with the appropriate local distributors.

Q. What is the delivery time for Critical Links Education Appliance solution?

Delivery time depends on whether a customer requires the integrated appliance or just the software. For the integrated appliance, delivery time can be 2 to 4 weeks for 100 units (add 2-3 days for additional 100 units). Software can be shipped or downloaded immediately.

Q. What are different levels of support available from Critical Links for the education appliance?

Gold level support (25% of the appliance cost): Free software updates, 24/7 support, next day hardware replacement.
Silver level support (20% of the appliance cost): Free software updates, 8-5 support, extended hardware warranty.
Bronze level support: Free software updates at a fixed fee per year.

Q. What type of training is provided by Critical Links and how is it delivered?

Critical Links offers training on how to configure and use the Education Appliance features and also on how these features work together as an integrated solution. Training can be delivered on-line or face to face. Customer-specific training (for specific needs) is also available. Cost is determined by the delivery mechanism and the type of training.

Q. Does Critical Links grant exclusivity to its partners?

No. Critical Links does not grant exclusivity to its partners except under unique circumstances and comes with certain requirements and obligations for the partner.

Q. Who are some of the Critical Links distributors for the Education Appliance?

Here are some examples: Brazil - Accept (OEM, buy SW, integrate HW locally), Ecuador - Geoproyectos (Distributor, buy integrated solution), Costa Rica - Technologia Educativa (Distributor, buy integrated solution), Paraguay - Edutech (Distributor, buy integrated solution), Portugal - JPSC (OEM, buy SW, integrate HW locally)

Q. Are there any case studies available for Critical Links Education Appliance?

The Portuguese case study which explains the largest school modernization program world-wide is available for download here: http://education.critical-links.com/case-studies.html

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education appliance FAQ – Business Section

Q. How much does the Critical Links Education Appliance cost?

Final price will be determined by OEMs and local OEMs based on factors such as configuration, number of students, OS, software licenses included, after sales services and distribution costs. We anticipate that the price of the appliance to support a small-sized school starts approximately from US $ 2500.

Q. Are there school pilots or trials taking place using this solution?

The Critical Links Education Appliance is already deployed in the largest school modernization program word-wide, in Portugal (see the Portuguese case study). Critical Links, Intel and its ILS partners are working with local OEMs on pilot activities in Turkey, Brazil, Spain, South Africa and Senegal among others (that can be made public).

Q. What is the warranty on the Education Appliance?

Every Education Appliance comes with a one-year warranty and a 90-day software warranty as part of the standard package. Warranty extensions and replacement warranties can be purchased separately.

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