



Elite International Academy secures world-class internet access with **CACHEBOX**

Accredited by Advanc-ED and the Turkish Ministry of Education, Elite International Academy was inaugurated in 2018 in at Esenyurt, Istanbul.

CHALLENGE

24Mbps fibre optic internet connection frequently maxed out from software updates, video and educational content

Actual demand spiking to 60Mbps – 3 times higher than capacity

Support tickets on network performance were high - students unable to access e-learning content, teachers unable to complete planned lessons

SOLUTION

CACHEBOX050 deployed in Bridge Mode, handling all classroom traffic

Followed in 2020 by an upgrade to **CACHEBOX130** for higher throughput

BENEFIT

Up to 3x the effective capacity delivered by **CACHEBOX** – eliminating congestion

Much faster browsing, zero support tickets on network performance

90% of popular e-learning content served resonsively from cache for a premium student experience

Easy and quick to set up and deploy

With ambitions to achieve the highest learning standards in Turkey, the Academy spared no expense investing heavily in its network infrastructure and online repository of learning material for its 200 students.

Classroom demand outstripping capacity, jeopardising e-Learning

To facilitate its e-learning curriculum, the Academy invested in more than 100 new devices for students and teachers as well as an expensive 24Mbps fibre optic connection.

However, when multiple students accessed their devices simultaneously, the spike in demand would instantly outstrip available capacity, resulting in slow browsing - jeopardising the outcomes of e-Learning at the academy.

In addition, student Chromebooks would frequently download large software updates as soon as they became available. This would cause further network congestion for several hours of the school day, as duplicate copies of these large files were downloaded individually.

"Students struggled to browse and access our online repository for educational content and download the e-books needed for classroom time," says IT Manager Ahmed Alaaeldeen.

Overwhelmed by teacher complaints and support tickets, Ahmed was concerned that as more students enrolled, the problem would worsen.

CACHEBOX – A fit for purpose, affordable solution

Already spending over \$20k of the school's annual budget on bandwidth alone, Ahmed was worried that another expensive upgrade would affect the school's plans for more student devices and online content. So he researched various solutions to help alleviate the demand on bandwidth.

Ahmed found caching to be the ideal solution. After discussion with **CACHEBOX** consultant Ilaria Mancinelli and technician Amna Ali, he was pleased it offered the perfect combination of schools-focused benefits and affordability.

"ApplianSys has over 15 years' experience working with schools: **CACHEBOX** is specifically designed to handle bandwidth-heavy software updates and optimise delivery of popular e-learning content, video and managed systems", says Ilaria.

CACHEBOX stores content locally and serves it back to students at much faster LAN speeds – saving bandwidth and, in turn, instantly freeing up more capacity for other critical classroom material.

Elite Academy quickly deployed a **CACHEBOX050** in bridge-mode to handle the entirety of classroom traffic. Ahmed reports that " deployment was smooth and easy. It only took one hour to get the school set up."



Since we started using **CACHEBOX** I haven't had any complaints about internet speed or poor network performance





The teachers can now use educational online content efficiently, including video in class. We are finally making the most out of our investment in technology!



Seamless web browsing, no more complaints

Once **CACHEBOX** was deployed, students' browsing experience had dramatically improved and support tickets had stopped.

By effectively boosting the Academy's available capacity by up to 3x (serving over 60Mbps) **CACHEBOX** was meeting peak demand throughout the school day, enabling teachers to maximise internet use in the classroom, without issue.



And with **CACHEBOX** serving up to 93% of popular e-learning content directly from cache - the Academy's students finally enjoyed fruitful classroom sessions and a seamless web browsing experience.

Education domains	Overall Traffic Volume	Volume served from Cache	% served from Cache
thinkcentral.com	13.22 GB	8.85 GB	67%
hrw.com (Holt McDougal)	5.38 GB	3.40 GB	63%
mit.edu	3.13 GB	2.22 GB	71%
edupage.org	0.98 GB	0.45 GB	46%
coolmath-games.com	0.69 GB	0.53 GB	77%
eliteacademy.school	0.46 GB	0.42 GB	93%
youtube.com	0.38 GB	0.16 GB	41%
code.org	0.32 GB	0.13 GB	40%
coolmathgameskids.com	0.19 GB	0.08 GB	45%
eharcourtschool.com	0.14 GB	0.07 GB	51%
mathplayground.com	0.05 GB	0.04 GB	86%
All Academy Traffic	222.35 GB	110.95 GB	50%

Learning domains, March 2019

Ahmed was delighted: "Since we started using **CACHEBOX**, I haven't had any complaints about internet speed or poor network performance. The teachers can now use educational online content efficiently, including video in class. We are finally making the most out of our investment in technology!"

2 YEARS LATER

Catering for Academy admissions growth

As the Academy continues to expand online learning, its looking to enable more of **CACHEBOX**'s features for the maximum in-class benefits.

Since its inauguration in 2018, Elite Academy's success has been dynamic - admissions have nearly doubled in size. With the increase in student numbers, traffic growth has been significant as well as sporadic, but **CACHEBOX** has supported that growth through boosting effective capacity, enabling the academy to do much more with less.

Happy with **CACHEBOX**'s performance and ease of operation and confident of further growth, the academy has chosen to upgrade its appliance for higher throughput. So many more future students and their devices, as well as a growing online curriculum, will benefit from being served locally.

Guaranteeing fair, consistent online assessment

With its e-learning curriculum expanding to incorporate online assessment, the Academy has been delighted by **CACHEBOX**'s Proctor Caching functionality. Serving test content locally guarantees every student the same, reliable experience, so no-one is ever disadvantaged.

Proctor Caching Domains	Content Type	Overall Traffic Volume	Volume served from Cache	% served from Cache
pearson-intl.com	HTTP	0.45 GB	0.45 GB	100%
pearsonrealize.com	HTTP	18.70 GB	15.90 GB	85%
pearsonmylabandmastering.com	HTTP	0.01 GB	0.01 GB	83%
mypearson.com	HTTP	0.02 GB	0.02 GB	82%
pearsoncmg.com	HTTP	0.60 GB	0.40 GB	67%
pearson.com	HTTPS	1.01 GB	0.57 GB	57%
pearsoned.com	HTTP	2.83 GB	0.36 GB	13%
Total Pearson Traffic		23.62 GB	17.70 GB	75%

During periods of assessment **CACHEBOX** has met an average of 75% of classroom demand for testing content, not only ensuring congestion-free access but also serving it at LAN speeds, many times faster than from internet servers.

ApplianSys works with Pearson and other leading online assessment providers to ensure content cacheability, including PARCC, ACT, SAT, PSAT and other testing platforms.

Benefitting from more **CACHEBOX** features

More recently, the Academy's teachers have been making good use of the Media Library. By pre-loading teaching resources to the **CACHEBOX** Media Library ahead of lessons, the need for on-demand internet requests in the classroom is often eliminated altogether. And because that content is shareable with students directly via secure URL, students can view it without being distracted by adverts or risk seeing other unsuitable website content.

Interception of secure-protocol HTTPS content has also been enabled. Devices logged on to the network via the school's Captive Portal now benefit from access to even more cached content, including particular video sites not normally cacheable.

This Academy's premium online user experience is directly benefitting the learning experience. With no more congestion, students can access the material they need without waiting - ensuring they remain highly engaged and focused.