Edinburgh Napier University delivers scalability and security by embracing the cloud

How BSI assisted an international university with the installation of our Gartner leading technology solution: Secure Web Gateway.

Edinburgh Napier University is a public university which takes its name from the brilliant 16th century mathematician John Napier. It is a multi-campus university and has three main campuses located across the city, with 19,000 students enrolled.

The university's growth over the past number of years led to an exponential increase in the IT infrastructure complexity. The need and requirement to fully protect endpoints from cyber threats became apparent. The previous solution involved an on-premise appliance-based web filtering solution, that was at end-of-life. In addition the reporting solution didn't meet all the university's requirements, offer any malware protection or SSL inspection features. Edinburgh Napier not only manage staff and student desktops including laptops, but also allow students, staff and visitors to connect their own personal devices to the university's wireless network.

Edinburgh Napier requirements:

- 100% cloud-based solution in line with the GDPR regulation and compliance
- Provide scalability and growth, accommodating future expansion and the increase of student numbers
- A leading API solution that provides URL protocols of blacklist or whitelist infringements
- All URLs both allowed and blocked to be logged for at least 30 days
- Provide equal protection for mobile devices including integration with Airwatch MDM solution
- Integrate with Microsoft Active Directory for user authentication and policy application
- Easily monitor and enforce internet usage policies for students across the entire university

The challenge

BSI Cybersecurity and Information Resilience consultants assessed the Edinburgh Napier University's environment uncovering a common theme – how to protect such a large and diverse group of users and devices from internet threats?

The university sought to find a replacement solution that could perform web content filtering, malware protection and reporting for all their users, regardless of location.

Also needed was a cloud-based solution, with around the clock availability and protection that filtered web traffic from the wired and wireless networks used by on-campus students, remote workers, and visitors using the eduroam1 network.

It was critical for the university to be able to store data logs but at the same time, preserve users' confidentiality and ultimately, protect personal data. Lastly and importantly, a bespoke solution was required to provide end users with a mechanism for reporting suspected mis-categorizations of websites.

BSI assisted with the initial planning, proof of concept trial, wider deployment process, as well as the testing of systems and user devices, involving the cloud partners as required. In addition, providing a "hands on" support structure, for any troubleshooting or problems that might arise. BSI was available throughout the entire process providing real-time security consultancy, and best practice as deployment matured.

"The proof of concept was very valuable to understand the product before a full implementation and BSI with Zscaler supported this approach to delivery."

Jen Moxey, *Network Services and Security Manager, Edinburgh Napier University.*

The solution

After understanding Edinburgh Napier University's key requirements and main challenges, Zscaler, an award winning cloud computer security solution was selected. Zscaler, a leader in the Gartner Magic Quadrant for Secure Web Gateway for many years, provides an interface solution between the users and the internet, protecting the network from cyberthreats, stopping intellectual property leaks, ensuring compliance with corporate content and access policies. The solution delivers security stack as a service from the cloud, eliminating the cost and complexity of traditional secure web gateway approaches. With this selected web security products, and by moving security to a globally distributed cloud, the solution brings the internet gateway closer to the user thus providing a faster and enhanced experience.

The platform is a scalable solution meeting Edinburgh Napier's web filtering requirements, plus malware protection and SSL inspection. Scalability is central to the principles of the solution and design goals, therefore becoming a perfect fit for their ongoing requirements. Moreover, with over 100 datacentres globally, all built to be highly resilient and scalable, the solution is maintained at 40% above required maximum capacity levels.

The solution provides extensive scanning functionality against modern malware threats including viruses, botnets and zero-day exploits. These are detected and blocked in the cloud, whether a user is connecting from their desktop, a notebook computer, or a mobile device. Zscaler provides a very simple and easy way to generate detailed reports on user browsing data. This is achieved through its web-based administration interface, which reveals interesting and previously unknown data to the university. These reports show the most popular

The benefits

- Scales with traffic demands with 24x7x365 availability
- No hardware or software requirements for implementation
- Award-winning web security with URL filtering and firewall protection
- Applies equal policies to users on their desktop, laptop, and mobile devices regardless of their location
- Flexibility in access control rules that allow policies to be applied by user, group, department, location and time
- Endpoint protection from malware and advanced threats
- Powerful reporting engine that provides extensive analytics and searchable transaction logs stored for 6 months
- Implementations are easier and timelines are shorter than traditional appliance-based solutions
- High-speed cloud-scale infrastructure provides web security with ultra-low latency
- Offers a REST-based API for querying if a given URL is allowed or blocked
- Online module-based training and certification for service desk operators

"Zscaler's web filtering is of significant importance to the university, as we have a duty of care to our staff and students alike, whom are using the internet on a daily basis. Reassuringly, we see it as an extra layer of protection from malware for our endpoints."

Graeme Hamilton, *Information Security Manager, Edinburgh Napier University*

[1]eduroam network – Educational Roaming Infrastructure

applications being used by Edinburgh Napier staff and students, allowing them to better understand users' browsing behaviours. File type control has also allowed them to improve security by displaying a caution page to users attempting to download executable files from the internet.

As a full-service security practice, BSI is uniquely placed to provide extensive security advice, remediation support and identify information security issues using the Zscaler platform. BSI's consultants also trained key members of the network services and security team within the university's IT personnel. This was conducted during the initial planning of the deployment process and insured effectiveness with user testing and the proof of concept deployment.

The deployment proved to be very simple as the solution was 100% integrated with the university's existing solution, which facilitated the automation and transparency during the seamless process.

Measurable results

Edinburgh Napier University embraced the cloud-first world, improved their security posture and user experience. The solution was successfully implemented on the entire network as well as roaming Windows, MacOS, iOS and Android devices. With our team of highly skilled security experts, BSI ensured that the solution was embedded into the university infrastructure. Additional support is provided - during and post implementation - to ensure organizations get value from the system to resolve any issues that may occur.

"Moving to a cloud-based web filtering solution was a new challenge for us, but BSI guided and assisted us throughout the process, from design through to successful completion. It was very beneficial to start the deployment with a small group of test users, then gradually expand to include additional users once we were confident that the solution was operating as expected. Both BSI and Zscaler fully supported us in adopting this approach and were very responsive on the few occasions when we encountered issues."

Graeme Hamilton, *Information Security Manager, Edinburgh Napier University*

It proved beneficial to start the deployment with a small number of test users initially. On a global scale, Zscaler manages more than 11 billion transactions per month and blocks 30+ million threats per day. This protected Edinburgh Napier University network against botnets, adware, spyware, cross-site scripting, and more.

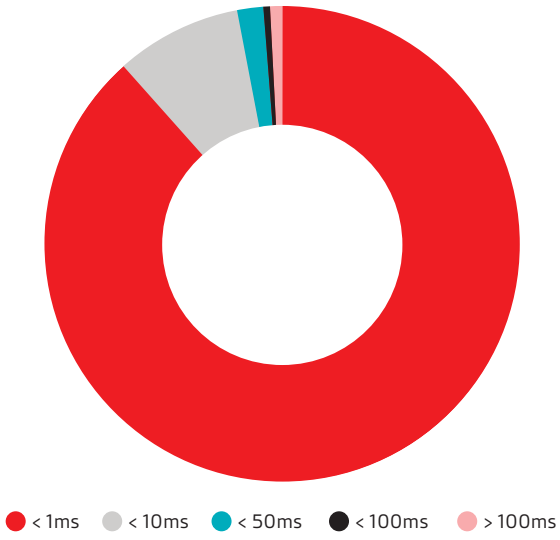

Fig.1: Proxy latency breakdown: Edinburgh Napier University internet transactions experience less than 10 milliseconds of proxy latency. Zscaler quarterly report, Dec 01 to Feb 28, 2018.

- Of the tested group, 97% of the university's internet transactions experienced less than 10 milliseconds of proxy latency (see Fig.1 Proxy latency breakdown)
- With almost 300 million transactions in 90 days, traffic directed to Zscaler via an HTTP tunnel on Windows and OS X systems provides a safe and fast internet experience for staff and students
- Zscaler enabled local internet breakouts securely and provided visibility and security for mobile traffic
- The solution also protected against sophisticated advanced threats, such as trojan, spyware call back, malicious content and phishing
- Most advanced threats Zscaler blocked which are not detected by the firewall, proxy, or anti-virus solutions. 1% of the threats blocked in their network were botnet call-backs

Edinburgh Napier University is now using a cloud-based web filtering solution that scales with elasticity to the university's traffic demands, providing 24x7x365 availability, blocks malicious traffic and monitors anomalies with ease. Every request from every user, location and device around the world is now available in seconds.

BSI Cybersecurity and Information Resilience

BSI Cybersecurity and Information Resilience helps you address your information challenges. We enable organizations to secure information, data and critical infrastructure from the changing threats that affect your people, processes and systems; strengthening your information governance and assuring resilience. Our cyber, information security and data management professionals are experts in:

Cybersecurity

Penetration testing, vulnerability management, incident response and cloud security services

Security awareness

Phishing and user awareness training, online solutions, social engineering and simulation testing

Information management and privacy

Information risk management, privacy, data protection, eDiscovery and forensics

Compliance and testing

PCI DSS services, Cyber Lab testing and product and software assessments (CC, CAS-T/CPA)

About Zscaler

Zscaler is an award-winning Security as a Service platform that sits between your company and the internet, protecting your enterprise from cyberthreats, stopping intellectual property leaks and ensuring compliance with corporate content and access policies. It monitors your network and user activity, secures roaming users and mobile devices, and manages all of this globally from a single management console. Zscaler's security capabilities provide in-depth defence, protecting you from a broad range of threats including:

- Malicious URL request
- Viruses
- APTs
- Zero-day malware
- Adware
- Spyware
- Ransomware
- Botnets
- Cross-site scripting

We work with best in class organizations to provide the technology solutions needed to secure critical information in the cloud

zscaler™

Find out more

Call UK: **+44 345 222 1711**
Call IE: **+353 1 210 1711**
Visit: **bsigroup.com**

bsi.