NEN – The Education Network

Guidance Note: the NEN and cloud computing

Background

In July 2016 the Department for Education (DFE) published *Cloud computing: how schools can move services to the cloud*, providing guidance for schools on the benefits and risks involved in moving information and services to the cloud.

This document sets out how NEN providers (regional broadband consortia/RBCs and local authorities) support schools in the use of cloud services, meeting the recommendations set out in the DFE's guidance (extracts from which are shown in italics).

Also see this previous Guidance Note for further background on cloud services for schools.

Broadband connectivity

"High download and upload speed, effective WiFi, reliability and sufficient capacity are all needed to enable an effective and beneficial cloud service."

- Cloud services can place a significant load on school networks and broadband connections, both downstream and upstream. This is particularly the case in larger schools where large numbers of pupils and staff are likely to require simultaneous, concurrent access to cloud services.

- RBCs and local authorities maintain high quality broadband connectivity and services tailored to the specific requirements of schools, delivering levels of performance, availability and reliability that institutions would struggle to match cost effectively via individual purchases.

- RBC and local authority networks are designed to scale to meet changing (and growing) demands for bandwidth and services across the schools sector.

Performance: reliability, availability & security

"Teachers and students, through their frequent personal use of public cloud services such as Google, Skype etc., have become used to solutions which have very high levels of reliability…Network effectiveness is not just a matter of bandwidth but must also address attributes such as reliability, scalability, security, latency (responsiveness), and the ability to assign a quality of service to various types of network traffic. Wherever possible, schools should seek to acquire their networking provision under arrangements that provide "end to end" network management."

- The end-to-end managed networks provided by RBCs and local authorities guarantee availability and performance and provide a high degree of resilience.

- RBC and local authority networks are interconnected via the Janet network, which maintains many private peerings (or interconnects) with the owners and providers of much of the content and services widely used in schools, including the BBC, Google and Microsoft.

- This ensures that the majority of traffic to and from schools flows across a series of managed, highly resilient and highly available private networks, rather than over the public Internet where performance and availability cannot always be guaranteed, especially during periods of high demand.

- The range and complexity of e-safety and cyber security issues and threats facing schools continue to grow and keeping pace is becoming increasingly difficult. Local authority and RBC e-safety and cyber security protections are a key element of the services they provide to schools (see this Guidance Note on managed monitoring services for an example).

- RBC and local authority networks are private rather than public networks, where strong protections can be established and maintained at a high level for the benefit of all participating schools (for example, through the provision of centrally managed filtering services and managed firewalls at the boundaries of local authority and/or RBC networks).

- See this previous Guidance Note for more on NEN peering and interconnection benefits; also see further NEN guidance on cyber security.

Advisory and support services

"A knowledgeable and experienced service provider that shares the school vision and can provide both initial and ongoing assistance."

- RBCs and local authorities have a long track record of successfully supporting schools over many years.

- Services and facilities provided directly to schools by regional and local authority networks include much more than access connectivity (the "last mile" connecting the school to the local authority or regional network). These include security and e-safety services (managed firewalls, web and email filtering, monitoring), remote diagnostic and technical support services and learning resources and content.

- RBC and local authority networks provide a private, bespoke architecture designed and built specifically to support schools.