

Schools Connectivity Services

Update for high schools

Norfolk County Council has recently let a framework agreement to Udata Infrastructure to replace the current network contract with BT, which expires in March 2016.

This sheet provides an overview of the new service for high schools, with additional technical details.

The contract was let by competitive tender to get schools and other users the best deal. The service has been carefully designed to meet schools' requirements, based on guidance from NEN (www.nen.gov.uk). It represents a significant advance on the current service.

In comparing the price with other offerings, schools should take into account the features provided – many of which are not included as standard in some other offerings.

Connectivity

- Norfolk has specified a 1Gigabit per second bearer for most high schools, based on NEN guidance.
- This enables the school to benefit from up to ten times the current speed, without any need to change bearer (and incur additional installation costs) during the life of the contract
 - The initial speed is set at either 200Mbit/s or 300Mbit/s, depending on the size of the school – compared to the current speed of 100Mbit/s.
- Schools can of course ask for a quote to stay with the current 100Mbit/s service if they wish.
- A “Superfast” (Fibre to the Cabinet) backup connection is provided as standard. This is much faster than the current ADSL backup. It also gives better performance than a standard “Superfast” connection, as it is connected into Udata’s core network at the local exchange.

Performance, reliability and monitoring

- Norfolk has specified tight standards for service availability, latency, packet loss and jitter. This means that the network is reliable and that it is suitable for all the uses to which it will be put – including not just email and web browsing but voice and video.

Speed	Latency	Jitter	Packet Loss	Availability
	to last hop under provider's control			
1Gbit/s bearer	<20ms	< 3.5ms for 95% of packets	<= 0.1% measured over a 15 minute period	99.90%
100Mbit/s bearer	<20ms	< 3.5ms for 95% of packets	<= 0.1% measured over a 15 minute period	99.90%

- The monitoring platform is a massive advance on the current contract. It provides real-time visibility not just of whether a link is up or down, but of network performance and utilisation. This allows faster diagnosis of problems, and means that they can be accurately attributed to the network or to other problems, such as the local area network or a misbehaving application.
- Service credits are paid if the standards are not met. They are:
 - paid direct to each affected school (unlike the current arrangements), and
 - paid not only for loss of service, but for failure to meet performance standards.

Working with other schools

- Because we have bought a single network for Norfolk, schools can connect to other schools – be they members of an academy chain, a cluster or a federation – via a private network.
- Groups of schools can request a “VRF” – a virtual private network that connects those schools – and only those schools – to each other. This enables one school to host ICT services on behalf of the others, and ICT staff based at one school to support the others, in a secure environment.

Security

- Schools are protected by an Internet firewall, which is subject to regular testing.
- The firewall includes an intrusion detection system (IDS), which increases security. IDSs are expensive, but by spreading the cost across Norfolk councils and schools, it has been possible to provide this enhanced security at a reasonable cost.

Web filtering

- The web filtering service is an improvement on the current arrangements. Schools can implement filtering policies by class or year group, and by time of day. Sensible default policies will be set – in consultation with the e-safety group – and schools can then tailor these to their individual requirements.
- The Norfolk e-safety group has confirmed that the web filtering requirements are sufficient for supporting the “Prevent” agenda.

Summary checklist

In considering any other offer for connectivity, you should ask:

What speed is being offered? <ul style="list-style-type: none">• Is the same bearer being offered – the council has specified 1Gbit/s by default?• Is the speed rate-limited? The offer from Udata is:<ul style="list-style-type: none">○ For a specified bandwidth – either 200Mbit/s or 300Mbit/s○ Symmetrical – the same speed in both directions• If you choose a 100Mbit/s bearer instead, check that it is not rate limited. Some suppliers provide 100Mbit/s downstream but only 40Mbit/s upstream.	
Is a backup circuit included in the price? <ul style="list-style-type: none">• Often, a backup circuit is not included, or is only ADSL, not Fibre to the Cabinet.• Is the backup circuit genuinely uncontended?	
Are the performance parameters the same? <ul style="list-style-type: none">• What is the guaranteed availability?• Are latency, packet loss and jitter guaranteed?	
What do I get service credits for? <ul style="list-style-type: none">• Do I get service credits for poor availability? If so, what are they worth and how poor does service have to be before they cut in?• Do I get service credits for poor performance (latency, jitter and packet loss)? These are fairly unusual – check whether they are provided.	
Can I get a VPN to the schools I work with? <ul style="list-style-type: none">• Is a VRF provided to interconnect schools that work together?	
What level of security is provided? <ul style="list-style-type: none">• Is a firewall included? Is it fully managed by the provider?• Is security regularly tested?• Who oversees security?• Is an intrusion detection system included?	
What is the filtering offer? <ul style="list-style-type: none">• Does the filtering tie into my active directory or shibboleth authentication?• Does it provide me with granular control – by class, year group, time of day?	
What happens if there are excess construction charges? <ul style="list-style-type: none">• The local access provider (typically BT Openreach) may levy “excess construction charges” (ECCs) if it finds a problem, like a blocked duct, when it does a site survey. Under the council contract, you can cancel your order without penalty if these are found. In considering alternative offers, always check the cancellation terms if ECCs are found.	

Contact details

The main contact point for the new contract is Udata.

You can email them on norfolkschools@update.net or call them on 0844 463 2828.

If you need advice or assistance from the council, please contact the Schools ICT team via email ict@norfolk.gov.uk or call on 0845 303 3003.