



# Hartlepool Borough Council

## Hartlepool and Northgate Managed Services Create Town-wide e-Learning Network with Aerohive Wi-Fi Solution

### Challenges

- Town needed to fulfill Government of England’s commitment to fund projects to equip students with broadband access in the home
- Challenged to provide home-based broadband service after one year when Government funding would run out
- Needed a Wi-Fi solution that would be easy to deploy, easy to manage and easy to maintain over the long term with the flexibility to grow and evolve without major upgrades
- Wanted to avoid replicating previous mistake of deploying controller-based WLAN

### Results

- Deployed Hartlepool LearnNet, which used government funding to deploy an Aerohive wireless LAN in schools, as well as other locations where students gather, such as community centers, youth centers, and libraries
- Security issues were resolved by establishing three LearnNet-wide SSIDs: one for students and teachers, and another for guests and supply teachers; students and teachers at each school are issued separate Private Pre-Shared Keys (PPSK)
- Using HiveManager and has found its Wi-Fi network to be easy to deploy and manage
- Aerohive served as is an important enabler for e-Learning in Hartlepool, and positively impacted the education of many students

Hartlepool, on the northeast coast of England, like many communities throughout the country, strives to provide all its residents with educational opportunities. Technology can enhance and enrich learning and teaching through the innovative use of ICT, but the digital divide often puts e-Learning technologies out of reach for many groups and individuals.

To level the playing field, the Government of England had committed funding, through the Home Access Programme, to equip students with technology in the home, providing broadband access. But the funding only lasted for one year. Colin Scott, Strategic Director for e-Learning in Hartlepool Borough Council, wondered what would

happen when the year ended if families could not afford to pay for the connection. Colin, whose team assists Hartlepool’s teachers and students in using ICT technology to improve their learning opportunities, saw a way to meet the needs of disadvantaged students while leveraging and extending those funds, expanding access to a much wider base of users.

Colin’s vision was to invest some of the funding in deploying wireless LANs in schools, as well as other locations where students gather, such as community centers, youth centers, and libraries. Through this network, which would be known as the Hartlepool LearnNet, any student with a laptop or personal device could then access the Internet and on-line curriculum applications from wireless hot spots.

“LearnNet [Hartlepool’s city-wide student WLAN access programme] will become an important enabler for e-learning in Hartlepool, positively impacting the education of many students.”

—Colin Scott  
Strategic Director, e-Learning, Hartlepool Borough Council

### Evaluating the Alternatives

With a full-time focus on promoting e-Learning in the schools, Colin’s team had little interest or time to implement and manage a wireless network, so they turned to Northgate Managed Services. Northgate provide infrastructure services and solutions to both public and private sector organisations and specialist managed services in the education, government, and utilities sectors.

Northgate had previously deployed a controller-based wireless LAN for the Hartlepool Borough Council and initially considered the same product for the LearnNet project. Then Northgate learned of Aerohive. "As a managed service provider we look for solutions that are easy to deploy, easy to manage, and easy to maintain over the long term with the flexibility to grow and evolve without major upgrades—solutions that protect our investment," says James Turnbull, Managing Director with Northgate. "Based on cost, scalability, resiliency, and the pedigree of the staff within Aerohive, we felt that Aerohive was the way forward."

### Cooperative Control Architecture Delivers Effective Solution

The Aerohive solution was different than the product initially considered. Aerohive's cooperative control access points (HiveAPs) require no network controllers or overlay networks. Instead, software in the HiveAPs enables them to self organise into groups called Hives. The result is enterprise-class network management and security without the cost, performance, and availability issues associated with controller deployments. Cooperative control eliminates the single point of failure, making the system more reliable.

In the first phase of the LearnNet rollout, Northgate deployed a HiveAP in each of more than 40 schools. HiveAPs are located in year 5/6 classrooms in primary schools and in dining halls in secondary schools. A number of schools found additional funding to expand their Aerohive network to cover the entire school.

Providing wireless access to the Internet and to local and centralized servers was a security concern for the schools. This was resolved by establishing two LearnNet-wide SSIDs: one for students and teachers, and another for guests and supply teachers. Students and teachers at each school are issued separate Private Pre-Shared Key (PPSK), a unique authentication feature within Aerohive access points. If a breach occurs, only the Private Pre-Shared Key for the particular school must be re-issued. "It eliminates the downtime for users at the other schools," says Turnbull who adds, "Another benefit of the Aerohive solution was that it put the security decision at the access point. It wasn't going to a central controller to enforce security policies, creating latency across the network."

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—James Turnbull  
Managing Director, Northgate Managed Services

An additional requirement was the ability for students to easily log on with their credentials at another school and get access to their home school's curriculum network. Aerohive not only enables this capability, but also provides a record of where they logon.

The second SSID is managed through the Aerohive Guest Manager, which makes it simple to create guest accounts while keeping the guest network secure. Visitors to a school can request temporary access to the Internet from an administrator. Supply teachers, who may be assigned to the school for one day or a week, can similarly be given Internet access as well as access to the curriculum network. At the end of their assignment, access is revoked.

### Easy to Deploy and Manage

Northgate is pleased with Aerohive's ease of installation and ongoing management. "We install a HiveAP, push the configuration out to it, and email the Private Pre-Shared Key to the school. It's pretty simple."

Ongoing maintenance has been just as smooth. "We monitor the HiveManager for issues. To me it's an easy system to manage. It requires very little housekeeping," says James Turnbull.

### Expanding the Footprint

Phase two of the LearnNet is underway, adding HiveAPs in community centers, youth centers, and other establishments where students may hang out after school, on weekends, or during holiday. Northgate recently deployed two HiveAPs at an outdoor education centre in the Cleveland Hills above Hartlepool. "Eventually the LearnNet Wi-Fi will extend almost around the town of Hartlepool," says Turnbull.

Colin has been pleased with the early success of the LearnNet. "The reaction from those who have used it is that it works well. LearnNet will become an important enabler for e-Learning in Hartlepool, positively impacting the education of many students."



Contact us today to learn how your organization can benefit from an Aerohive wireless LAN architecture.

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