



Secure Resilient Networks

Fire service improves access to emergency risk data with new VPN

Fire crews at the Shropshire Fire & Rescue service are being given improved access to emergency incident risk data thanks to a new secure Virtual Private Network (VPN) implemented by Wide Area Networking specialist, CI-Net.

Updates to mapping information as well as building layouts and other incident specific data can be communicated faster to fire crews on route to calls, with increased reliability and fewer technical difficulties. Risk data is sent to the county's fire stations over the new VPN and downloaded to touch-screen computers located on emergency vehicles or appliances via wireless network connections within each station.

The new network is designed to give the service a reliable, resilient infrastructure for the flow of information to the individual stations from its headquarters in Shrewsbury, which employs 318 fire fighters serving a population of approximately 448,900.

In addition to supporting the communication of emergency risk data which is managed by the Command and Control Centre in Shrewsbury, the VPN enables the distribution of more general administrative information to PCs in fire station offices.

The stations receive emails and admin information from HQ to support the day-to-day running of the service including brigade orders that fire crews must adhere to. The GIU (graphical information unit), which is based in Shrewsbury, is responsible for adding regular updates to the mapping data covering the region that all fire stations need to maintain. Updates include essential things like changes in the location of fire hydrants.

The VPN relies on CI-Net's 8Mb ADSL links terminating on Zyxel Wireless VPN routers at all 21 fire stations in the region. The Shrewsbury headquarters office is supported by separate connections capable of up to 2 and 8mbps. The use of two separately load balanced always-on links provides a crucial automatic failover facility should one of the lines go down and caters for the higher bandwidth required at head office which has over 150 users.

The CI-Net VPN replaces an older dial-up VPN which was based on ADSL broadband connections that had presented a number of challenges.



Shropshire fire fighters will have access to up to date emergency incident risk data thanks to a new secure VPN from CI-Net.

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Previously the service had to have someone within the individual fire stations to create a dial-up link to HQ, which was often slow and unreliable. For the on-board computers within the fire vehicles or appliances, a specific software script had been written to create an automatic VPN connection via wireless access points in the fire stations. But if the VPN didn't work, connectivity could be lost, delaying the availability of risk data relating to emergency calls.

CI-Net has designed a meshed VPN allowing the headquarters office to communicate effectively with the remote fire station sites. There are also plans to create a secondary failover site from which data can be accessed in the event of an operational disaster at the Shrewsbury site.

Eventually the service aims to replicate all the key data and applications at Shrewsbury to a site in Telford. When this is up and running the VPN will allow the fire stations to access critical data from this secondary site if problems are experienced at HQ.

CI-Net manages the solution from their Oxford Network Operation Centre, allowing the company to manage the network infrastructure including change control and issue resolution from a single point. The managed service incorporates network monitoring and fault reporting with agreed SLAs for providing fixes and replacement equipment.

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John Rix
Network Manager, Shropshire Fire and Rescue

Security was a major priority which is why all the fire service's Internet access is diverted through a policy controlled device located on the CI-Net network which provides hosted content filtering. A StoneGate firewall device protects the network and manages load balancing and failover facilities at the Shrewsbury HQ. The StoneGate and Zyxel routers ensure all traffic between Shropshire Fire and Rescue sites is encrypted.

As the fire service expects its communications requirements to increase over time, another requirement was scalability. The solution delivered is cost effective and future-proof that meets current demand, but also incorporates plenty of flexibility for future expansion as new needs emerge. The use of load-balancing technology allows CI-Net to simply add additional links to cater for any increases in network traffic.

John Rix, network manager at Shropshire Fire and Rescue explains why CI-Net was selected for the project. “We evaluated two other companies when looking for a supplier but were quickly convinced that CI-Net had the technical experience, flexibility and the best understanding of how to meet our requirements, including minimizing the management burden on our own IT Team.”

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