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**CASE STUDY**

**HEAnet**

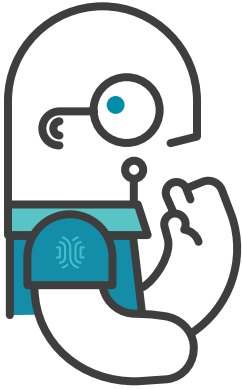
Ireland's National Education & Research Network



# Out-of-band & high availability for HEAnet

## Providing critical infrastructure uptime for Ireland's education sector

For IT providers in state, local, and education (SLED), managed services (MSPs), and managed security services (MSSPs), nothing is more important than maximizing continuity and reducing risk. One such entity is HEAnet, the national education and research network for Ireland's education sector. Serving more than one million users across the country, their remote network infrastructure is crucial to connecting students, researchers, and staff to essential resources. Their state-of-the-art network consists of several resilient layers that provide national coverage and connect their users to the rest of the world. For users across Ireland, it's crucial that HEAnet maintains comprehensive control of their critical remote infrastructure to prevent downtime.



## The Challenge

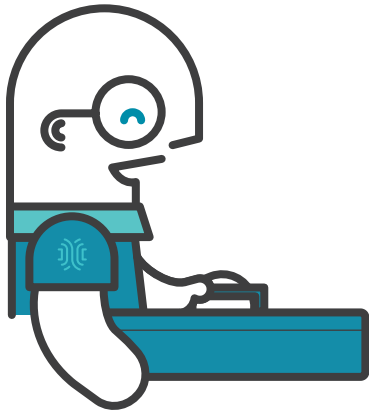
With their existing out-of-band (OOB) solution reaching its end-of-life (EOL) date, HEAnet needed a replacement that they could roll out to more than 50 remote sites. These point-of-presence (POP) locations provided critical interconnectivity between sites; however, some of these POPs were placed in extremely remote locations that were difficult to reach.

On top of this challenge, HEAnet employed a limited number of technical resources, most of whom were needed to uphold the organization's 4-hour service-level agreement (SLA). In short, HEAnet needed to outsource the job to an experienced managed services provider (MSP).

**HEAnet aimed to maximize uptime and minimize time to resolution, which meant they required a solution that could:**

- **Replace their existing OOB solution, which had become obsolete**
- **Provide centralized management & in-depth control**
- **Reduce infrastructure complexity as much as possible**
- **Provide resilience through LTE failover & high availability**

To lead the implementation, HEAnet chose Rahi Systems (Rahi) as their MSP, whose full-service IT solutions have been trusted since 2012 by companies in all industries.



## The Solution

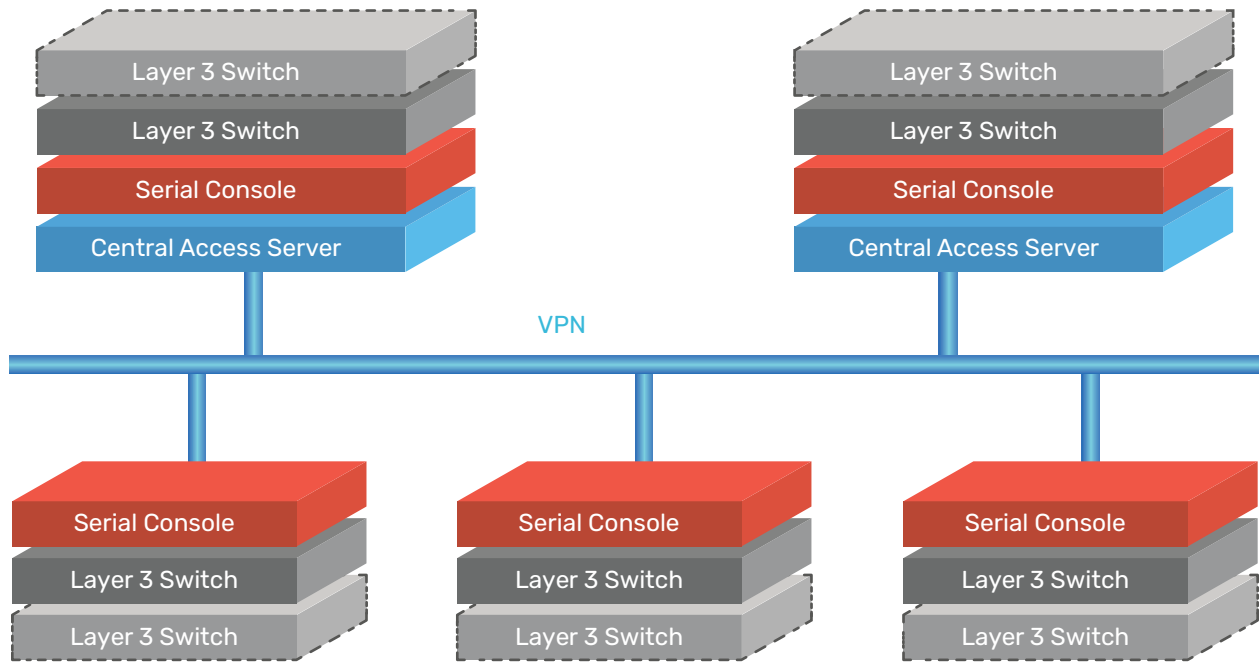
For HEAnet's solution, Rahi deployed ZPE Systems' Nodegrid Services Router (SR) family of devices.

**One of the biggest reasons for choosing Nodegrid was that it provided a complete total cost of ownership (TCO) to HEAnet. Because of Nodegrid's hardware modularity and truly open, Linux-based Nodegrid OS, the TCO was clear from the beginning.** This included hardware (with LTE cellular module), software, support, and warranty.

At their two large sites, HEAnet deployed the Nodegrid Net SR (NSR) complete with LTE cellular module for backup connectivity. With one NSR, they were able to replace both a console server and central access server at each location, while gaining cellular failover and additional switching capabilities.

At the 50+ remote locations, they deployed the Nodegrid Gate SR (GSR) also with onboard LTE capabilities. This replaced a console server at each site while introducing additional serial connectivity.

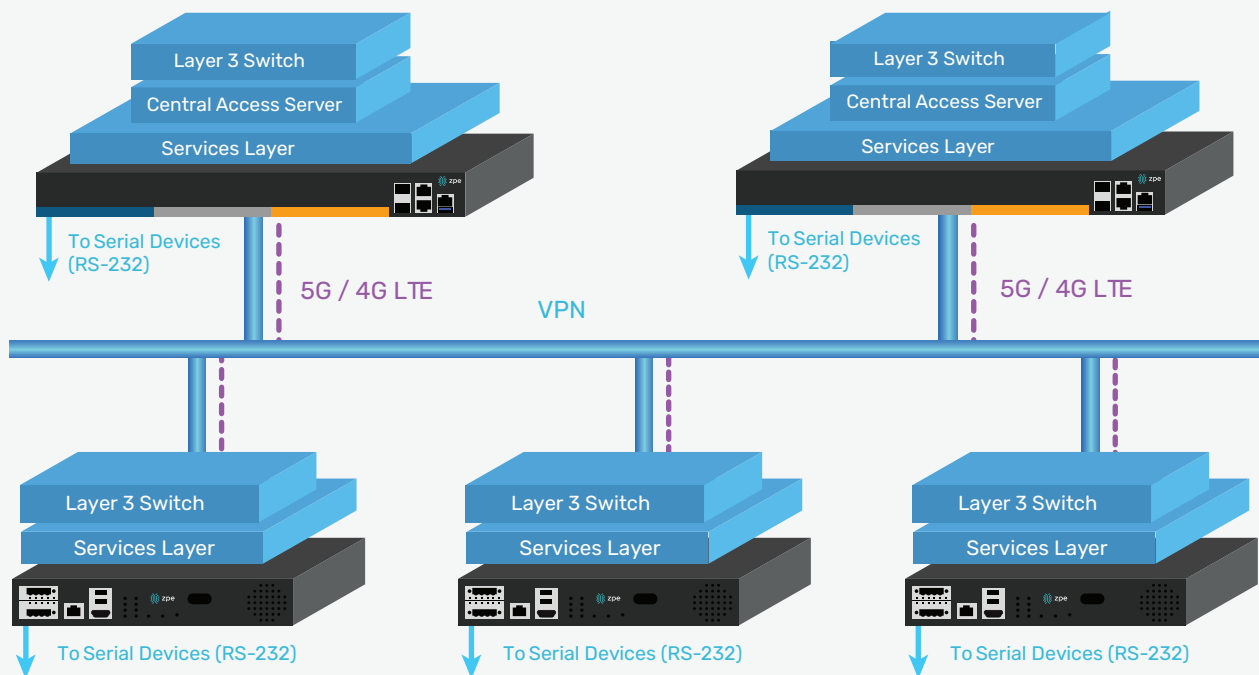
Running on all Nodegrid devices is a multi-core, x86 Intel CPU and the powerful Nodegrid OS. These allow for fast data speeds and responsive out-of-band management of all connected devices, which would prove critical to managing HEAnet's optical, MPLS, and IP infrastructure.



## Before

Virtualized Functions

## After





## The Results

The Nodegrid solution proved much faster to deploy than offerings from competing vendors. Whereas other solutions required a full day's worth of effort to bring sites online, Nodegrid could be set up in only a fraction of that time.

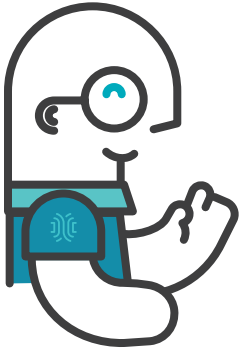
Because Nodegrid supports true zero touch provisioning, it can automatically build entire environments in as little as 30 minutes. For HEAnet and Rahi, this allowed a single engineer to fully deploy and install two sites per day – including removing old kit, installing new kit, racking, stacking, and other proper installation protocols.

The NSR and GSR also come with plenty of serial interfaces. These allowed teams to connect critical routers, firewalls, fiber equipment, webcams, and rack PDUs to their consolidated solution.

Both large sites ran parallel to each other to provide high availability, and provided centralized console access to all 50+ distributed remote locations. HEAnet was also able to deploy an extra-stable VPN tunnel that dynamically follows available connections, for added resilience to downtime.

**In all, Nodegrid satisfied all of HEAnet's OOB requirements in a streamlined and flexible solution.**





## The Benefits

Nodegrid replaced HEAnet's existing OOB solution to give support teams centralized, in-depth management capabilities of all their critical remote infrastructure. Nodegrid also reduced their hardware footprint to simplify deployment and operations, while providing a robust platform for serial connectivity, cellular failover, and redundancy.

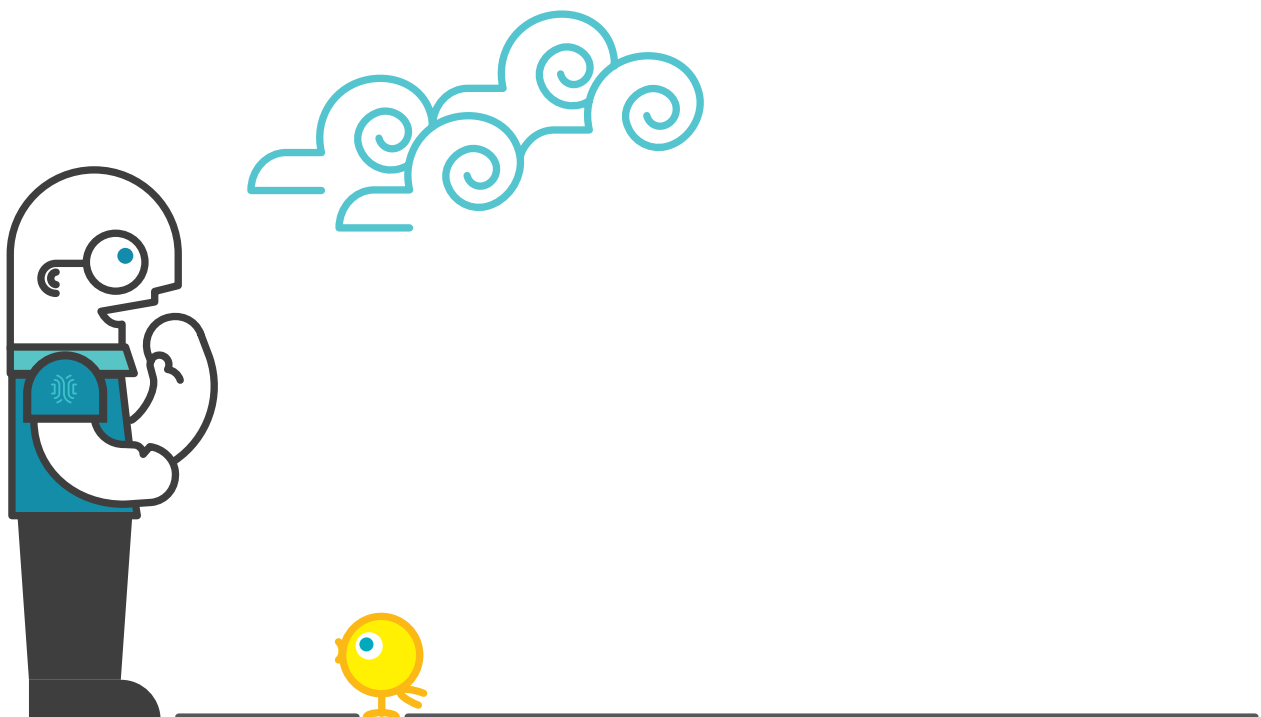
**With Nodegrid, HEAnet benefitted from:**

- Cellular failover, which meant sites were never offline
- Drastically reduced device stacks, which saved space, power, and maintenance times
- The latest out-of-band technology, which centralizes access to their entire critical infrastructure

The initial benefit to HEAnet was the time and cost savings that resulted from faster deployments. **Instead of having to wait on intensive rollouts, which would have required 50+ days' worth of work, Nodegrid could be fully implemented at each location in as little as 30 minutes.** Only a single engineer was needed and could fully deploy two sites per day, meaning Rahi could efficiently allocate their resources, reduce their workload, and decrease project costs, all of which gave them a competitive edge to help secure the deal. For both parties, Nodegrid meant a smooth business transaction and an implementation that was completed in half the time that would have been required by competing solutions.

Because Nodegrid eliminated complexity by consolidating the hardware footprint and centralizing OOB access, uptime became extremely resilient while resolution times were minimized. With only a single Nodegrid device at each location, teams could connect and gain access to a plethora of critical infrastructure, including routers, firewalls, fiber equipment, and PDUs. This drastically expanded the control of their OOB network, and Nodegrid's built-in LTE meant they didn't have to add additional devices and complexity in order to gain cellular backup.

More reliability was baked into the solution in the form of an extra-stable VPN tunnel. This dynamically changed to follow current available internet connections, keeping sites online regardless of provider interruptions and outages. With their devices directly connected to the Internet, HEAnet did not have to compromise on security. The vendor-neutral Nodegrid OS allowed them to deploy their choice of solutions to keep their infrastructure protected, and includes a powerful virtualization layer to accommodate their changing future needs.



To discover out-of-band that gives you simple, reliable control of your critical remote infrastructure, get in touch with ZPE Systems. Visit our website to see a reference diagram, get in touch with an expert, or set up a free Nodegrid demo.