



CDE Lightband future-proofs infrastructure with DNSBOX

CHALLENGE

State laws made it difficult to compete with other SPs

Existing DHCP not reliable enough for current load and future plans

SOLUTION

Redundant pair of **DNSBOX220s** to handle DNS and DHCP

1x**DNSBOX** master controls slaves, does IPAM and DNS management

BENEFIT

Easy task delegation - senior technical staff freed up for more business-critical tasks

Powerful integrations with other systems using **DNSBOX's** IPAM and API functionality

Increased DHCP performance, with redundancy

Established in 1938, The Clarksville Department of Electricity (CDE) Lightband provisions internet services across 100 square miles of the city of Clarksville, Tennessee. It serves roughly 60,000 customers and maintains 892 miles of power lines and 960 miles of fibre optic cable.

A board of five local business people, appointed by the mayor and city council, governs the policies of CDE Lightband.

Like many municipal ISPs, CDE Lightband aims to develop internet infrastructure in remote communities where privately owned ISPs would not profit from investment.

THE CHALLENGE

Across the US, state laws often make it difficult for municipal ISPs to compete with private companies like Verizon and Time Warner that dominate internet infrastructure. These laws can result in more overhead costs for municipal ISPs, so it's critical they run cost effective operations.

Network Engineer at CDE Lightband Mike Neverdusky identified multiple inefficiencies with the department's existing DDI infrastructure which resulted in increased operational costs: "A lot of time and technical resource was spent on DNS and DHCP management: The task of creating hosts was complicated, manual and error-prone, requiring detailed domain knowledge to get right. As a result, configuration errors were frequently experienced. The old system was filled with data entries we weren't even sure could be deleted. Our technical staff had to spend hours fixing these – which was a huge drain on time and resource needed for other business projects."



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Moving Infrastructure from DSL to FTTH

At the same time, CDE Lightband was in the process of moving its customers from DSL to fibre-to-the-home (FTTH) infrastructure. While the DSL infrastructure used PPPoE, Mike knew that using DHCP for FTTH would allow customers to connect to the internet much faster, without additional configuration.

However, the department's existing DHCP server struggled to handle DHCP leases for 15,000 customers. Knowing this would go up by a third in the following months, a more powerful and scalable system was necessary to remain competitive.

"There were general DHCP issues negatively affecting customer services. For example, many customers would get disconnected because of IP conflicts. This meant our technical staff had to spend time on issues they couldn't fully resolve and normal business operations suffered as a result."



We now have increased DHCP performance and redundancy to meet the needs of our growing FTTH customers...



The service provider needed highly reliable DHCP to guarantee connectivity for existing and new customers. Thinking further ahead, CDE also wanted to integrate their DHCP and IP infrastructure with other systems to facilitate future projects:

- Linking customer data (addresses, billing, ONT device numbers) to specific IPs

- Supporting IP-enabled electricity meters that enable new energy billing models

Mike recognised the need to deploy an advanced DDI solution capable of resolving these issues and allowing technical staff to be freed up for more business-critical projects.

DNSBOX AN IDEAL SOLUTION

Mike researched DDI vendors online and found that ApplianSys' **DNSBOX** offered an ideal solution. The department deployed a redundant pair of **DNSBOX220s** to handle DNS and DHCP – one active and one failover unit.

It also deployed a **DNSBOX420** master appliance to control the **DNSBOX220s** and provide DNS management and IPAM.

The department has further plans to deploy two more pairs of **DNSBOX220** DHCP servers: One to handle DHCP for VOIP services, and another for its IPTV operation.

FUTURE PROOFING INFRASTRUCTURE. OPTIMISING RESOURCE. SAVING TIME AND MONEY.

DNSBOX's IPAM and API integration functionality provide a strong platform for CDE to create powerful integrations with other systems, streamline processes and further reduce administrative costs. The **DNSBOX220** DHCP servers ensure that DHCP services remain robust and reliable.

"We now have increased DHCP performance and redundancy to meet the needs of our growing volume of FTTH customers," comments Mike.

DNSBOX's automated configuration and validation features along with the simple, intuitive user interface save the department's senior technical staff many hours: "It's much quicker to configure hosts now!" comments Mike.

The highly granular user account management features have given CDE confidence that junior administrators can configure DDI without the risk of errors. **DNSBOX** allows them to:

- Undo/redo change logs for DNS and IPAM, providing a simple way to revert changes without the overhead of having to find out what the old data was.

- Reduce the time spent solving errors and troubleshooting issues via automated error checking and validation features significantly.

"The **DNSBOX** solution has helped CDE remove the IP conflicts experienced with the previous system, reducing the impact on customers and saving the team lots of time," comments **DNSBOX** Sales Executive Ross Horn.



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