

# CASE STUDY

DrayTek provide WiFi to the world famous  
**CAVERN CLUB**



**DrayTek**

Router - Switches - Managed Wireless - VoIP

INTELLIGENT WIRELESS  
MANAGED CONNECTIVITY



## DrayTek provide WiFi to the world famous Cavern Club

The Cavern Club made famous during the 1960s by the iconic pop group The Beatles, is now rated in the top 10 UK most popular tourist destinations.. With live music every day from 11.00 a.m. and a modern bar/pub , the venue is always busy with up to 600 visitors per day.

The Cavern Club attracts visitors from all ages and demographic groups be they from the Cruise ships stopping off in Liverpool docks, holidaymakers or of course the many UK residents with an interest in this historic venue.

Not surprisingly many visitors are keen to take snap shots and share their experiences across social media whilst enjoying the entertainment and immersing themselves in all the memorabilia.

### The Challenge

*“We want visitors to be able to connect instantly to social media and share their experience but with no 3G/4G signal underground and multiple pillars with solid brick construction we had struggled to enable a reliable wireless internet service. We also wanted to take advantage of the higher broadband speeds available with VDSL so were considering a router upgrade”*

**George Guinness, IT Manager**

From a technical perspective there were several challenges that needed consideration:

- With the brickwork labyrinthine construction of the Cavern Club, WiFi signals can abruptly disappear for users that walk behind a pillar or move to a different part of the club.
- With such a high density of visitors all on social media, the access points in use can quickly become congested potentially causing bottlenecks and loss of service.
- Visitors want to be able to walk in, log on, and then move around the venue without losing connection.
- With so many different types of mobile devices in use it was important that all of the various WiFi implementations were supported and that, where possible, the most efficient option was utilised when a device connected.
- Cavern Club staff also require access to office systems via the WiFi, so two separate networks (SSIDs) with different security credentials needed to be provided throughout the new WiFi network
- It was important that the network could be centrally managed as there was a multiple access point requirement in the Cavern Club plus the need for WiFi in the associated Cavern Pub across the road and the head office just around the corner.
- The existing low speed routers needed replacing with VDSL capable devices approved for usage on BT networks

With such a mix of requirements George Guinness approached a specialist organisation local to the area called Lansafe that were trusted to scope out the requirement and be accountable for providing a reliable service that met the needs of the business.

*“When we started to investigate the requirements for the Cavern Club it quickly became clear that a highly robust and manageable wireless solution was required. Basic standalone access points just wouldn’t cut it so we looked for a higher end option from a credible supplier that could address the WiFi challenges, help with the associated LAN infrastructure and provide the VDSL router.”*

**Adam Baxendale , Lansafe’s Commercial Director**

Following contact with DrayTek at one of their technical roadshows Lansafe proposed a complete DrayTek solution.

### The Solution

The first step was to specify the right class of access point to handle the many requirements stated previously and then, following a site survey, to define how many devices would be required and precisely where they should be situated.

The key considerations were:

- Every area with the club needed to have a strong WiFi signal.
- All of the major WiFi standards needed to be accommodated due to the diversity of mobile devices requiring access.
- Due to the high density of visitors and the likely peaks in usage, all points within the venue needed to be served by several access points.

With assistance from DrayTek’s technical team Lansafe proposed using 10 devices made up of VigorAP 902 wall mounted and Vigor AP-910c ceiling mounted (smoke alarm style) access points installed in strategic points throughout the club. With a DrayTek solution, access points can be mixed and matched according to the specific requirements. See pictures below



**VigorAP-902**  
Wall mounted access point



**Vigor AP-910C**  
Ceiling mounted access point

Once installed all areas have WiFi coverage and all users, wherever they are in the venue, can connect to one of a minimum of 4 and maximum of 8 access points at any given location.

The VigorAP 902 and AP-910c both support wireless 802.11ac and all of the major previous standards including wireless “n” and dual band. This flexibility of standards support allows for all types of users to connect using whatever WiFi capability is available with their mobile device.

All of the individual access points connect together within the network and broadcast the same network SSID. This means that users see only one network wherever they are, and can freely move around the venue moving from one access point to another automatically. Lansafe set up a visitor network SSID and an office SSID only available to Cavern Club staff.

The DrayTek solution further enhances the user experience by connecting all devices in an intelligent and highly effective way using a combination of the following features:

**Band steering** – Typically mobile devices also have flexibility of WiFi standards. DrayTek WiFi can take advantage of this and effectively “force” the WiFi connection per device at the most efficient mutually compatible standard. This can help reduce congestion on the network.

**Airtime fairness** – This ensures that a user connecting on an especially slow WiFi link perhaps limited by their mobile device, does not “unfairly” slow down other users with faster connections available.

**Load balancing** – By using DrayTek’s load balancing feature users will connect to the nearest available access point that has the least concurrent connections at that time thus reducing potential bottlenecks. Furthermore each access point can be set a limit of concurrent connections aiding capacity management.



For the Wan and Lan connectivity Lansafe installed a Draytek VSP-2261 PoE switch to both power and connect up all the access points to the main network and a Vigor 2860 router with full BT compliance approval supporting both VDSL and ADSL connects the network to the Internet completing the solution set.

Once the Cavern Club managed wireless network was installed, this was extended to the Cavern Pub with 3 DrayTek access points and Vigor 2860 router, and also to the closely located head office with a further Vigor 2860 and access point.

The final stage was to implement DrayTek's central management system called ACS-SI, where all the networks can be managed, monitored and controlled.

*"We don't send a product out of the office without ACS control. This enables us amongst other things to monitor the network devices 24/7 and for troubleshooting the extensive access to historical data is invaluable"*

**Adam Baxendale , Lansafe's Commercial Director**

ACS-SI is installed on a server and connects to every DrayTek device on the network that supports the TR069 management protocol. This essentially embraces all of DrayTek's routers, access points and modems.

For the Cavern Club, Lansafe can set up a standard configuration for all of the access points and then provision this to all devices in one action. This greatly speeds up the configuration set up and reduces risk of error. The provisioning tool is also useful for making network wide changes such as an SSID update etc.

It also allows for control of the three networks (Cavern Club, Cavern Pub and head office) from a central place.

The installation, once complete was an immediate success. The multitude of visitors now have internet access wherever they are in the venue and when artists with their entourage suddenly arrive en masse, they can fine tune the set up and contact their office via the WiFi network with their Laptops.