IT@Spectrum has over 30 years of experience helping clients by providing innovative solutions to print more efficiently and automate business processes. As a Canon Premier Partner they market to organisations of all sizes in particular to the Education and Legal sectors.

Why IT@Spectrum needed a wireless solution

During the 1st quarter of 2015 IT@Spectrum moved from a traditional on premise telephone system to a cloud based Voice over IP telephone system, using network connected handsets and App based clients on manager's iPhones.

Moving to VOIP clients installed on mobile phones has shown that the current wireless solution does not have enough coverage across the building, so an alternative solution needed to be sourced.

With an imminent building move we also needed to consider a solution that was scalable to suit now and the new building.

The new solution needed to have the following features:

- Single SSID for Spectrum Staff.
- Single SSID for guests.
- Seamless roaming between access points.
- Authentication for Staff based on their Microsoft Active Directory logon.
- Authentication for Guests to be based on Pre Shared Key to be handed out as required.
- Easy management interface.
- All Access Points to be managed as one.
- All Access Points to have power provided over the network.
- Automated Firmware updates.
- Efficient management of wireless frequencies based on device capabilities.
- Ability for Access Points to be on different channels to prevent wireless congestion.
- Ability to block access on a per user basis.
- Isolation of Guest access to prevent access to Spectrum Network whilst allowing access to the internet.
- Controlled access to Internet websites for Staff and Guests.
- With the exception of features required to enable AD logon no requirement for additional software to be installed on any server or workstation.

The proposed solution was the EnGenius Neutron Managed Wireless system comprising of:

- POE Managed Network Switch with the Wireless management built in supporting up to 20 Wireless Access Points
- 4 EnGenius dual band managed Wireless Access Points.

The above will cater for the desired features as the Neutron Managed Wireless system has the following features:

- Up to 8 SSIDs per wireless band (2.4Ghz and 5Ghz)
- Fast roaming based:
  - RSSI signal strength
  - 802.11 k and r protocols
  - ARP cache of available Access Points maintained by the Managed Switch
  - Sharing of PMSK cache between Access Points to speed up authentication when Client roams.
- Management interface web based and hosted on the Managed Switch so no need for software to be installed.
- Automatic Band Steering - efficiently move the device to the correct wireless band based on client capabilities.
- Separate Guest network with isolation enabled to prevent access to main network.
- Access Points are grouped into clusters so common settings can be applied.
- Easy Introduction of new Access Points and once joined to cluster automatically provisioned as the other Access Points in the Cluster
- One Click Firmware updates – very useful as the system is constantly being developed at no extra cost or license fee, unlike some (Ruckus / Aruba etc)
- User monitoring per device.
- Floor plan / Topology / Map view with Heat map capability (Used to get an idea of indicative wireless coverage – helps eliminating black spots)

Now in place the current set up is as follows:

The four access points we are all members of a cluster with the following configuration.

- ITSWIFI SSID for staff using Active Directory authentication.
  - Controlled by Active Directory group membership
- ITSGUEST SSID for guests using the inbuilt guest SSID functionality
  - Using WPA 2PSK authentication
  - Clients are isolated

IT@SPECTRUM

Solwise

Managed AP(s)

A list of devices that have been added to the network. This sortable list consists of a filtering function where users can choose to show/hide columns that they wish to check. By selecting the device name, users will be redirected to the device information page.

4 MANAGED	4 ACTIVE	0 OFFLINE	0 AP(s) Detected

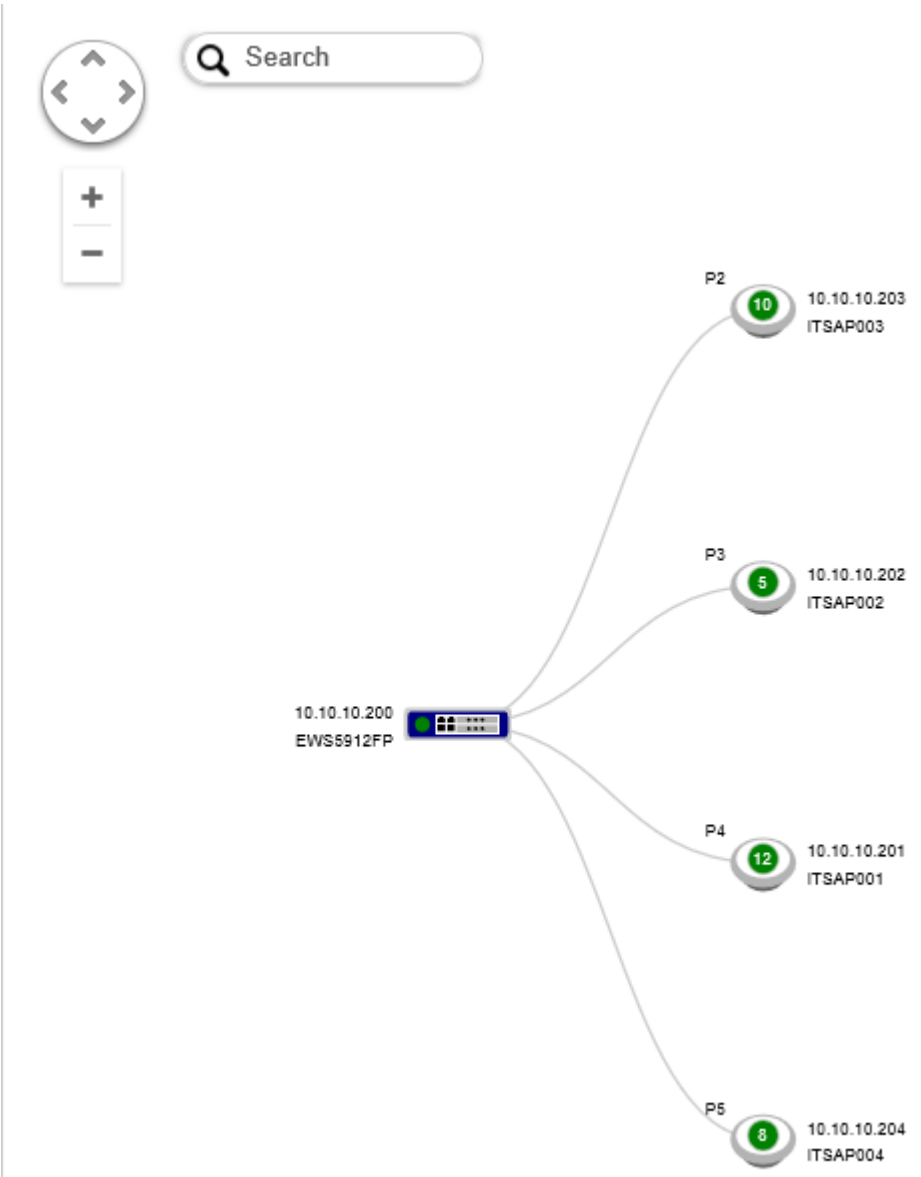
Status	Model Name	MAC Address	Device Name	IP Address	Cluster
Online	EWS310AP	88:DC:96:1F:2D:53	ITSAP001	10.10.10.201	Spectrum
Online	EWS310AP	88:DC:96:1F:2D:56	ITSAP002	10.10.10.202	Spectrum
Online	EWS310AP	88:DC:96:1F:BF:9A	ITSAP003	10.10.10.203	Spectrum
Online	EWS310AP	88:DC:96:1F:BF:A6	ITSAP004	10.10.10.204	Spectrum

10 1 to 4 of 4 AP(s) Previous Next

AP Clusters

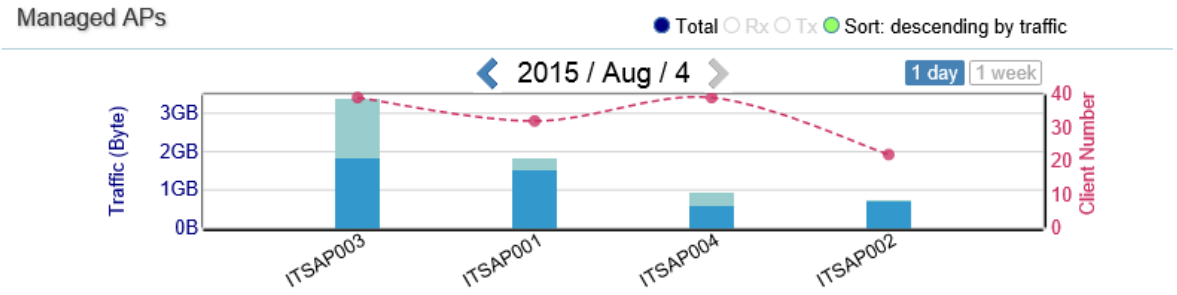
Cluster Name	APs	Member List	Description
Spectrum	4	ITSAP004 (88:DC:96:1F:BF:A6)	IT@Spectrum AP Cluster

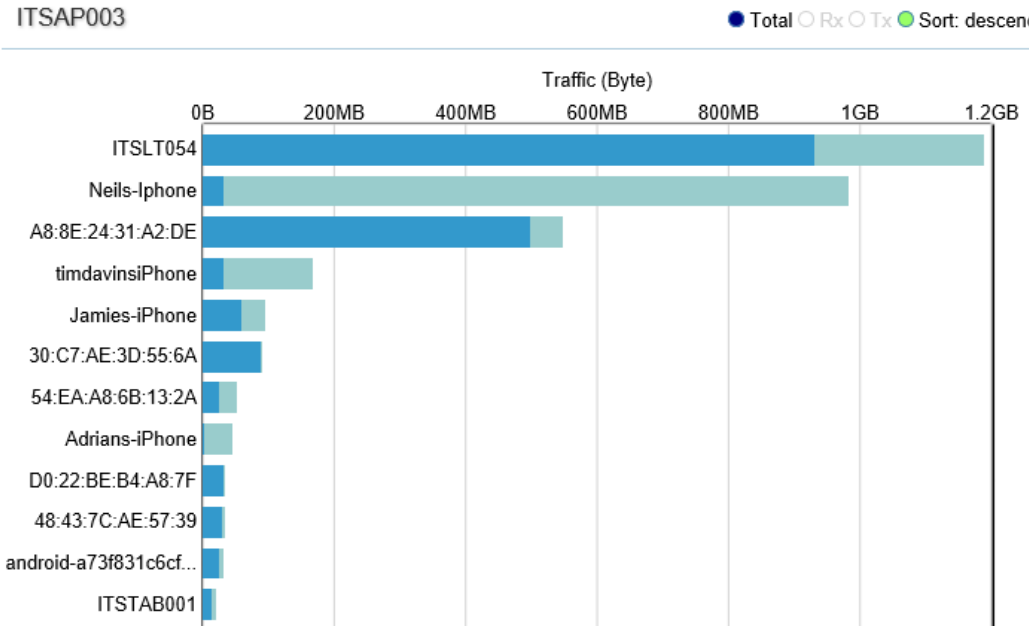
All 1 to 1 of 1 Cluster(s) Previous Next



Wireless Clients

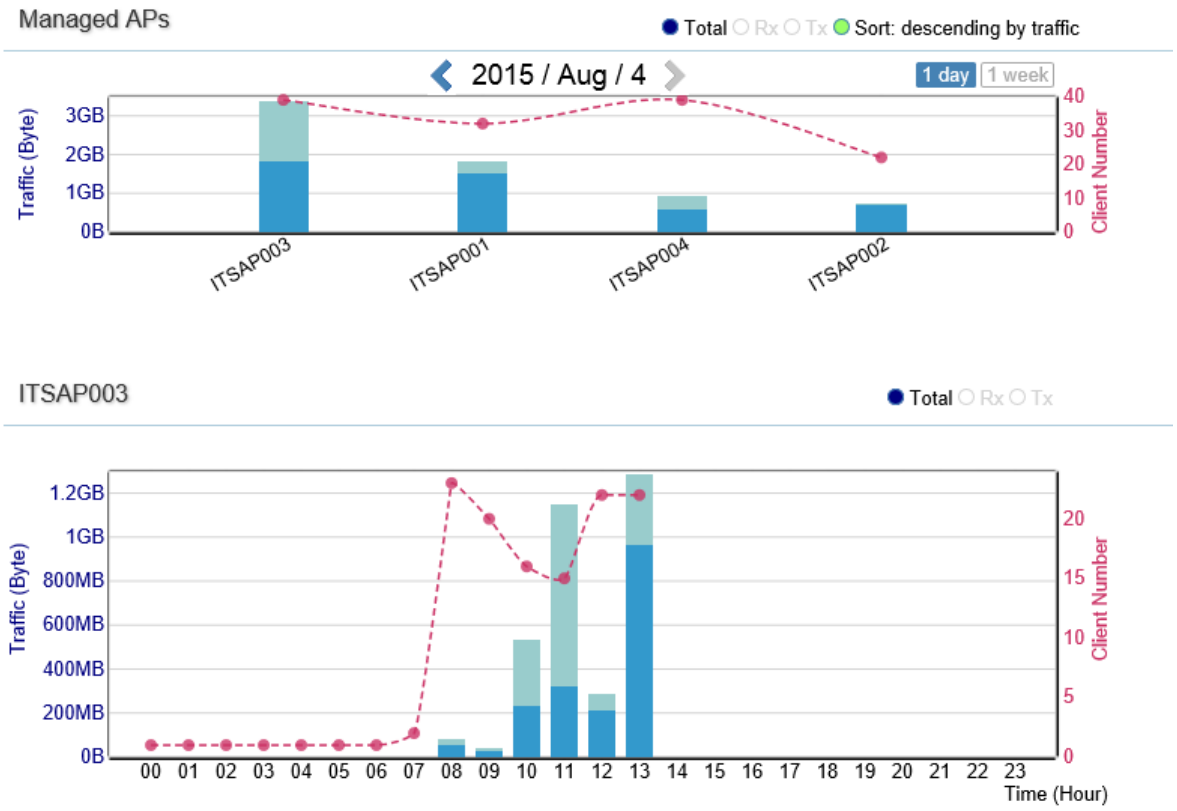
Click on the bar in the Managed APs chart to display the traffic of clients of the selected AP.

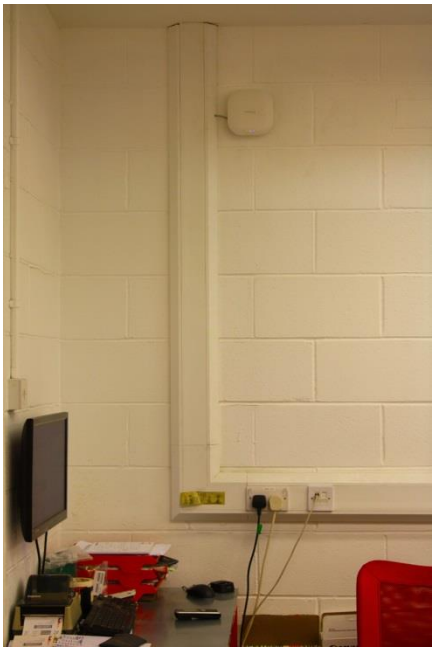




Access Points

Click on the bar in the Managed APs chart to display the traffic of the selected AP.





Experience so far

The system has been running now for a few months with no real issues. We are still playing with Access Point placement to get the best coverage and may need to add an additional Access Point. With the system set up with all Access Points set in a cluster this should not be an issue.

Products Used:

EL-EWS5912FP 8 port Gigabit PoE Management Switch

EL-EWS310AP Dual WiFi EWS Managed Access Point

www.itatspectrum.co.uk

Solwise Ltd, 17 Priory Tec Park, Hessle. HU10 9PB
01482 672872 sales@solwise.co.uk www.solwise.co.uk