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## Shotover Sunshine Festival WiFi Network Report

Hi Nick

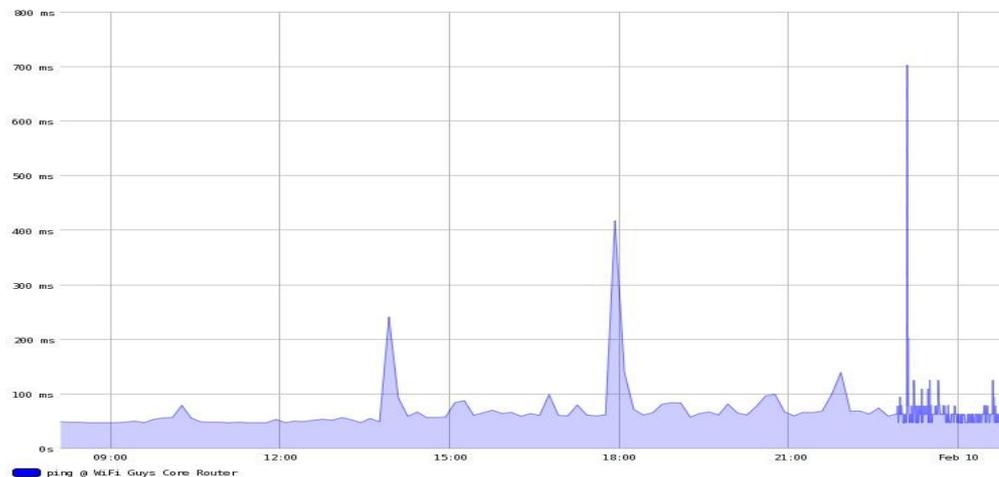
Thank you for the opportunity to offer my services to your company and allow me to put my skills to good use.

As you know the internet connection with the Telecom ADSL was perfect and did not drop off once. There were no issues with any of the wired network that I was aware of.

The WiFi performed well apart from one laptop in the VIP Bar. I would have liked to look at this more closely to see why it dropped a few times during the evening. Was it signal strength due to the mass of people around the laptop, hardware related problem or local interference?

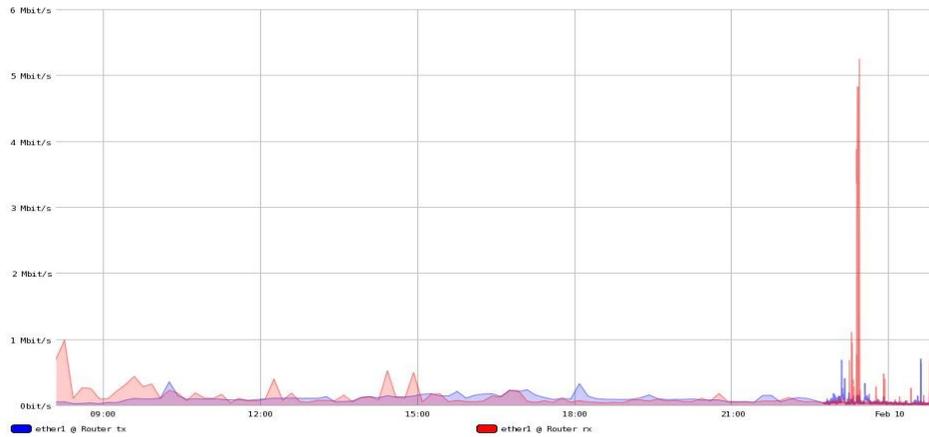
Here are some screen shots of the Networking and Wireless performance.

### Latency to Internet



The graph shows how stable the ADSL connection was with only a few spikes, this did not affect the performance for access to remote servers for the POS systems.

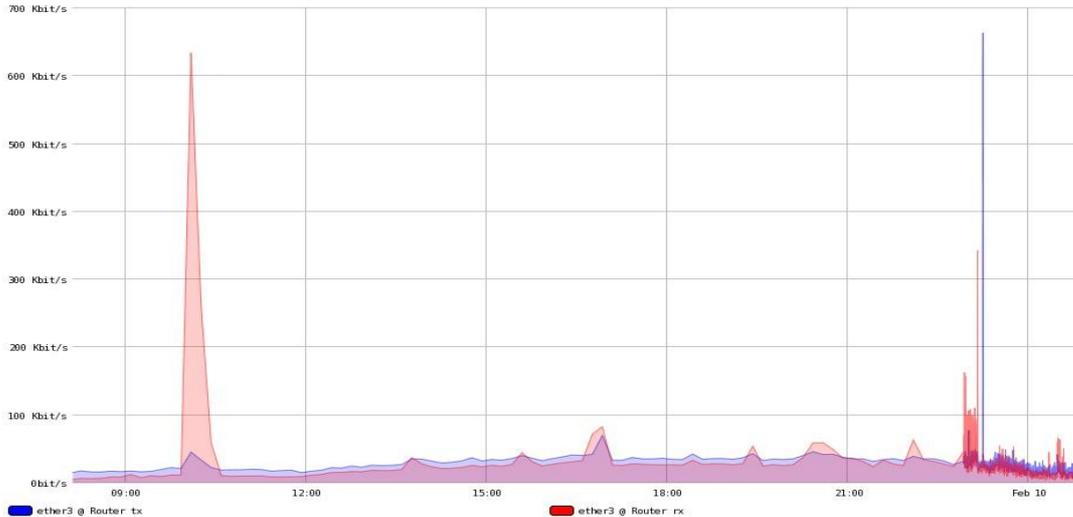
## Telecom ADSL Data Throughput



This graph shows how little data was transferred during the event. This is one of the reasons that the system worked so well due to the small packets of data to run the POS network.

Near the end of the evening, as seen in the above graph, again was an increase in the ping times. I expect this was again when I changed from LAN to WiFi.

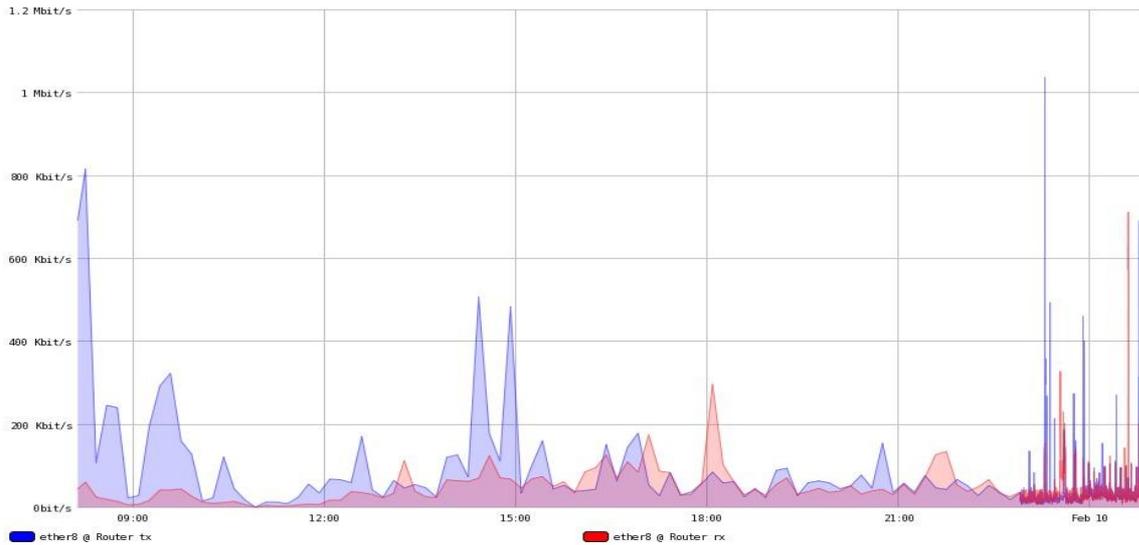
## Server Data Usage



This is showing the data usage to the onsite server. At the start you can see the spike in data throughput, this may be a software update of some type?

The spike at the end is blue which shows the server transmitting data. Not sure what this data was, possible when I changed my laptop from Local Area Connection to WiFi connection and seen the lost data it has not counted as one lump.

# Enterance and Food Vendors Data Throughput



The graph shows the data usage through the network cable supplying the entrance and Food Vendors. This will also have data usage also from others roaming from one WiFi radio to another with cellphones etc.

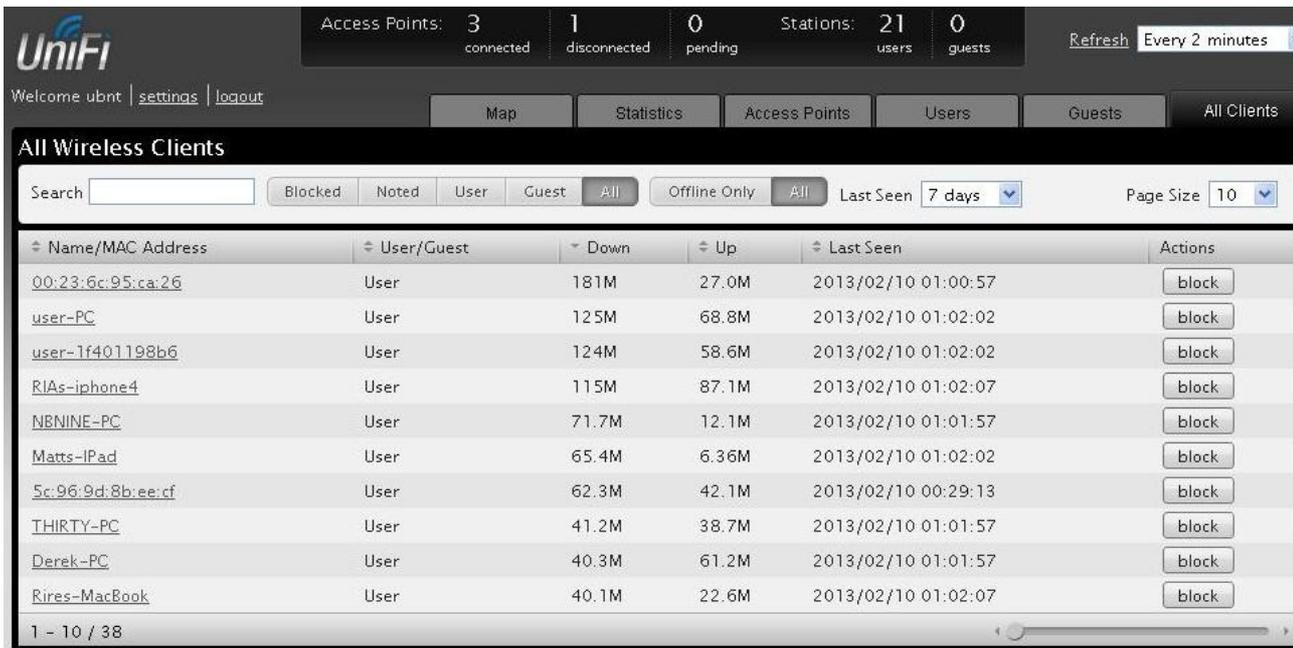
## WiFi Statistics



The data above tells us the majority of WiFi traffic was the food vendors. This was expected. The max clients connected about 10pm was 24. The traffic peaked about 1:30pm and 11pm with 119M of data used at this time.

This data is based only on WiFi users on the 4 x WiFi Radios I installed.

# TOP 10 WiFi Clients



The screenshot shows the UniFi network management interface. At the top, it displays network statistics: 3 Access Points connected, 1 disconnected, 0 pending, 21 Stations users, and 0 guests. Below this is a navigation bar with tabs for Map, Statistics, Access Points, Users, Guests, and All Clients. The 'All Wireless Clients' section is active, showing a table of the top 10 clients. The table has columns for Name/MAC Address, User/Guest, Down, Up, Last Seen, and Actions. The clients listed are: 00:23:6c:95:ca:26 (User, 181M down, 27.0M up), user-PC (User, 125M down, 68.8M up), user-1f401198b6 (User, 124M down, 58.6M up), RIAs-iphone4 (User, 115M down, 87.1M up), NBNINE-PC (User, 71.7M down, 12.1M up), Matts-iPad (User, 65.4M down, 6.36M up), 5c:96:9d:8b:ee:cf (User, 62.3M down, 42.1M up), THIRTY-PC (User, 41.2M down, 38.7M up), Derek-PC (User, 40.3M down, 61.2M up), and Rires-MacBook (User, 40.1M down, 22.6M up). Each row has a 'block' button in the Actions column. The interface also includes a search bar, filter buttons (Blocked, Noted, User, Guest, All), and a 'Last Seen' filter set to 7 days.

Name/MAC Address	User/Guest	Down	Up	Last Seen	Actions
00:23:6c:95:ca:26	User	181M	27.0M	2013/02/10 01:00:57	block
user-PC	User	125M	68.8M	2013/02/10 01:02:02	block
user-1f401198b6	User	124M	58.6M	2013/02/10 01:02:02	block
RIAs-iphone4	User	115M	87.1M	2013/02/10 01:02:07	block
NBNINE-PC	User	71.7M	12.1M	2013/02/10 01:01:57	block
Matts-iPad	User	65.4M	6.36M	2013/02/10 01:02:02	block
5c:96:9d:8b:ee:cf	User	62.3M	42.1M	2013/02/10 00:29:13	block
THIRTY-PC	User	41.2M	38.7M	2013/02/10 01:01:57	block
Derek-PC	User	40.3M	61.2M	2013/02/10 01:01:57	block
Rires-MacBook	User	40.1M	22.6M	2013/02/10 01:02:07	block

The top user downloaded only 181M of data. The software allows you to edit the client details and display a name instead of MAC address etc for future reference. Looks like there was no abuse of the data usage on WiFi network.

## Conclusion:

In general the event was a success. Not much could have been done to make things more stable as there were no major outages.

Power seems to be one of the most important factors that can upset the network greatly. This can be resolved with battery backs in a few places. 12V or 24V can be used.

As much as I love WiFi, you can not beat the network cable, by far the best way to get backbone network access to each location around the site. This and local WiFi together worked like a treat.

The 5Ghz link to the house performed well with no issues and would be a second option to backbone networking in future sites with low interference issues. This is a simple and effective way to widen coverage and hard to reach locations with cable runs over 100M.

Traffic rules can be configured in my router to prioritise the data so your POS system would get priority over other traffic if there was a need to do so in the future with high traffic or low bandwidth sites

I look forward to improving our business relationship and working together to be able to provide a reliable, professional and functional service to your customers in the near future.

Thank you

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