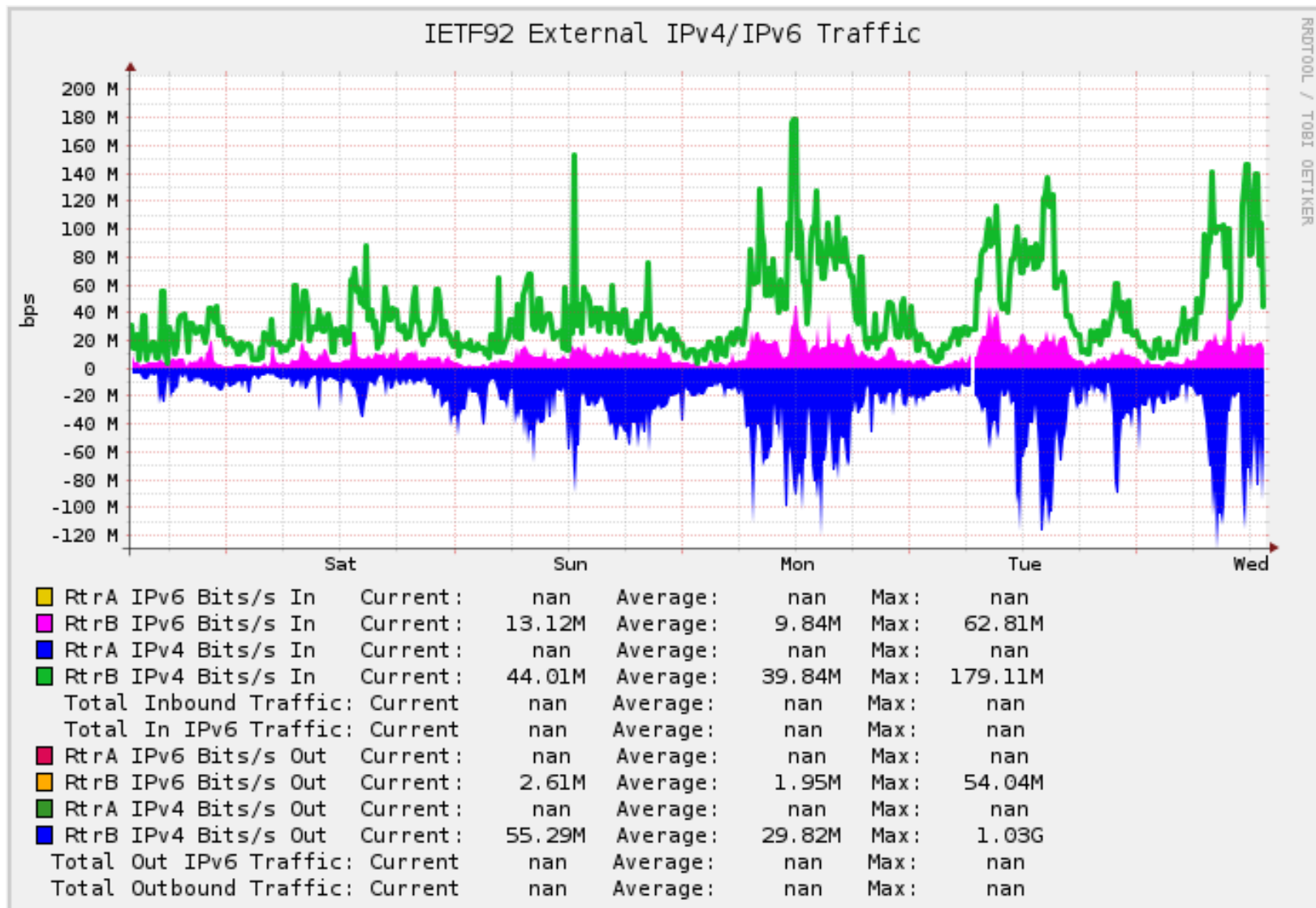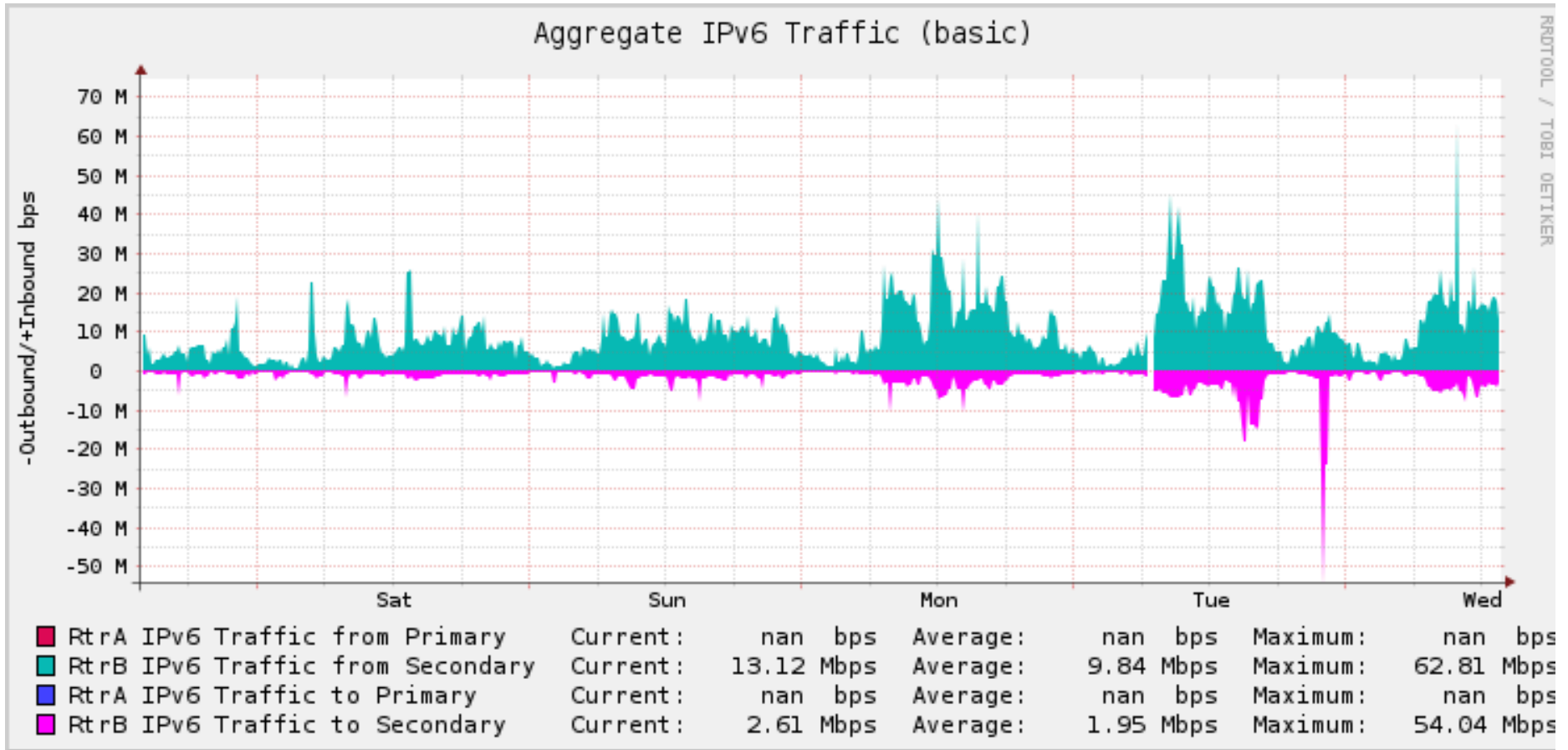# IETF 93: Prague, CZ

NOC Report

Network Basics

- 2 Optical Uplinks to Internet

    - One 10Gbps to CZNIC

    - One 1Gbps to Dial Telecom

- Native Public IPv4 and IPv6 from our own AS

- Fully redundant routing and switching core

- 78 x 802.11ac Access Points deployed

- IETF network extended to the hotel guest rooms via wired drops in the rooms and the "ietf-hotel" SSID broadcast on hotel infrastructure
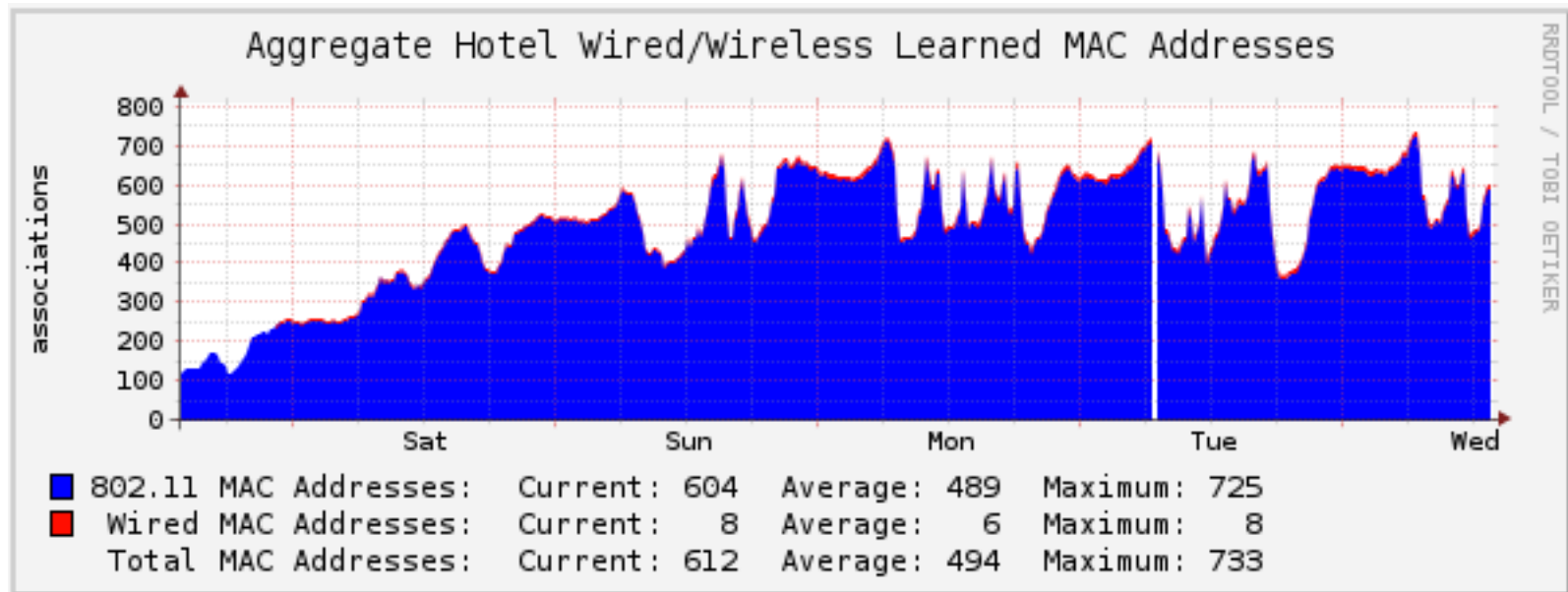
External Traffic

IETF92 External IPv4/IPv6 Traffic

External IPv6 Traffic

Aggregate IPv6 Traffic (basic)

	Current:	Average:	Maximum:
RtrA IPv6 Traffic from Primary	nan bps	nan bps	nan bps
RtrB IPv6 Traffic from Secondary	13.12 Mbps	9.84 Mbps	62.81 Mbps
RtrA IPv6 Traffic to Primary	nan bps	nan bps	nan bps
RtrB IPv6 Traffic to Secondary	2.61 Mbps	1.95 Mbps	54.04 Mbps

Guestroom MAC Addresses

Aggregate Hotel Wired/Wireless Learned MAC Addresses

RRDTOOL / TOBI OETIKER

		Current	Average	Maximum
🟦	802.11 MAC Addresses:	Current: 604	Average: 489	Maximum: 725
🟥	Wired MAC Addresses:	Current: 8	Average: 6	Maximum: 8
	Total MAC Addresses:	Current: 612	Average: 494	Maximum: 733

Aggregate Hotel Traffic

IETF - Aggregate Hotel Traffic - bits/s (64bit)

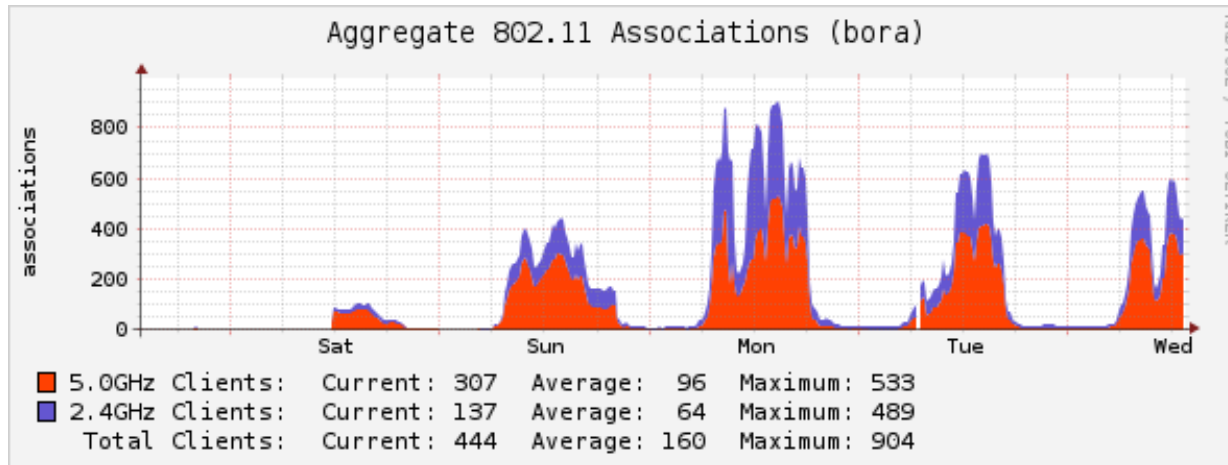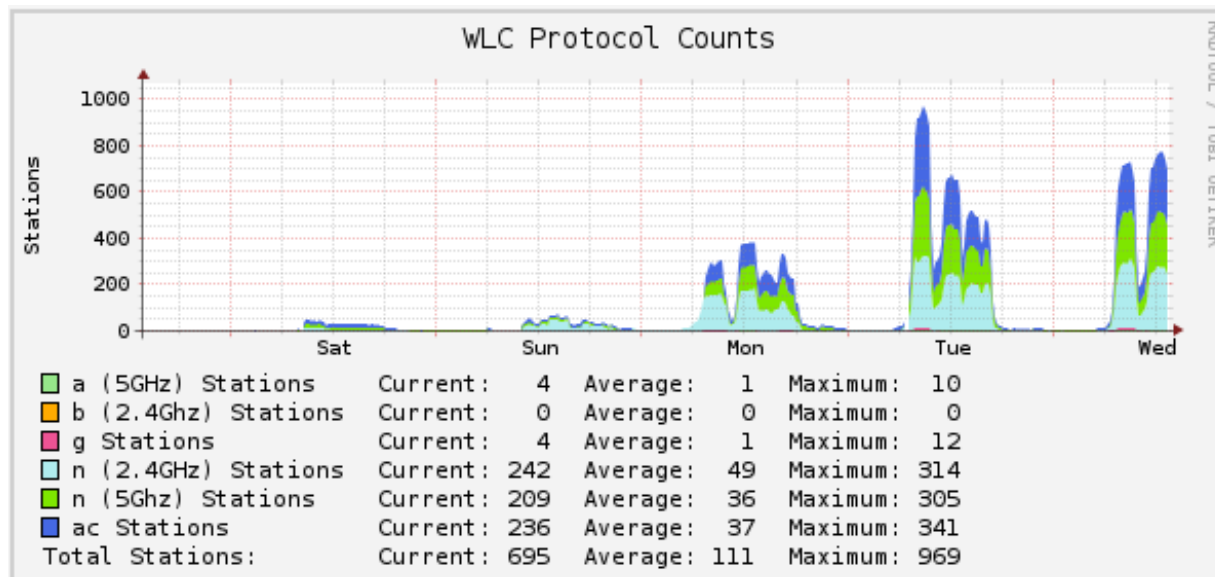|	Current:	Average:	Max:
🟧 RtrA xe-0/0/1.2136 Bits/s In	29.13k	87.05k	37.76M
🟨 RtrA xe-0/0/1.2136 Bits/s Out	9.72M	6.92M	37.76M
🟥 RtrA xe-0/0/1.2144 Bits/s In	336.15	914.29	11.70k
🟥 RtrA xe-0/0/1.2144 Bits/s Out	914.63	913.39	129.86k
🟪 RtrB xe-0/0/1.2136 Bits/s In	888.26k	646.99k	2.56M
🟪 RtrB xe-0/0/1.2136 Bits/s Out	2.68M	1.59M	7.15M
🟩 RtrB xe-0/0/1.2144 Bits/s In	224.10	728.87	2.10k
🟩 RtrB xe-0/0/1.2144 Bits/s Out	616.90	1.13k	2.56k
🟪 Traffic	13.31M	8.99M	43.43M
🟪 Traffic	13.31M	8.99M	43.43M

Wireless Associations

Autonomous AP

Controller Based AP

A Few Changes

Wireless Controller Testing and Deployment

- Deployed Wireless Controller with Dual 10Gb uplinks to Core
- Deployed Wireless Controller based Access Points as experiment to Grand Ballroom to test performance and stability
- Great success with Controller based Access points, led to deployment of controller based access points deployed along side autonomous for plenary

Fun Networking Details

The Wired Hotel Rooms:
- The hotel has 800+ VLANs mapped individually to each room
- 800 Subnets were created to service all these VLANs
- Two solutions were created (Thank you Clemens and Warren for your hard work)

Challenges

The Wireless Hotel Rooms (ietf-hotel), had a number of issues this week. Mikenopa has worked very diligently to repair the hotel deployment and access points for us. Repairs are still on going, and we have helped them to make some adjustments.

ARP and Broadcast traffic has been causing lots of chaos on the wireless network. The NOC has deployed an ARP sponge to soak some of it up, as well as making changes to the size of our DHCP scopes to apply filters to the higher ends of the subnets.

Compromised Network messages were popping up on Monday morning for a large group of users. This was root caused back to a TKIP issue for MAC systems. We have disabled TKIP support, and all access points only do AES encryption now. The NOC provided wireless USB dongles for anyone with a device that does not support AES natively

Network Team

IETF NOC Team Volunteers:

- Hirochika Asai (WIDE)
- Randy Bush (IIJ)
- Joe Clarke (Cisco)
- Chris Elliott
- Bill Fenner (Arista)
- Bill Jensen (University of Wisconsin –Madison)
- Hans Kuhn (NSRC)
- Warren Kumari (Google)
- Lucy Lynch (NSRC)
- Jim Martin (Internet Systems Consortium)
- Clemens Schrimpe (Kiez.NET)
- Bjoern A. Zeeb

Verilan:

- Con Reilly
- James Dishongh
- Aaron Nelson
- Nick Kukich
- Edward McNair
- Colin Doyle

Thank You

- CZNIC & DIAL
  - Connectivity
- Brocade
  - OpenDaylight Capable Switch

- Juniper
  - Gear contribution
- OSC Radiator
  - Licensing

- Cisco
  - For all the equipment use here at the IETF events

And our friends here at the Hilton Hotel and Mikenopa