APRICOT 2010:
NETWORK INFRASTRUCTURE

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Presentation Overview

- General Network Performance
- Take-aways
- Thanks

General Network Performance

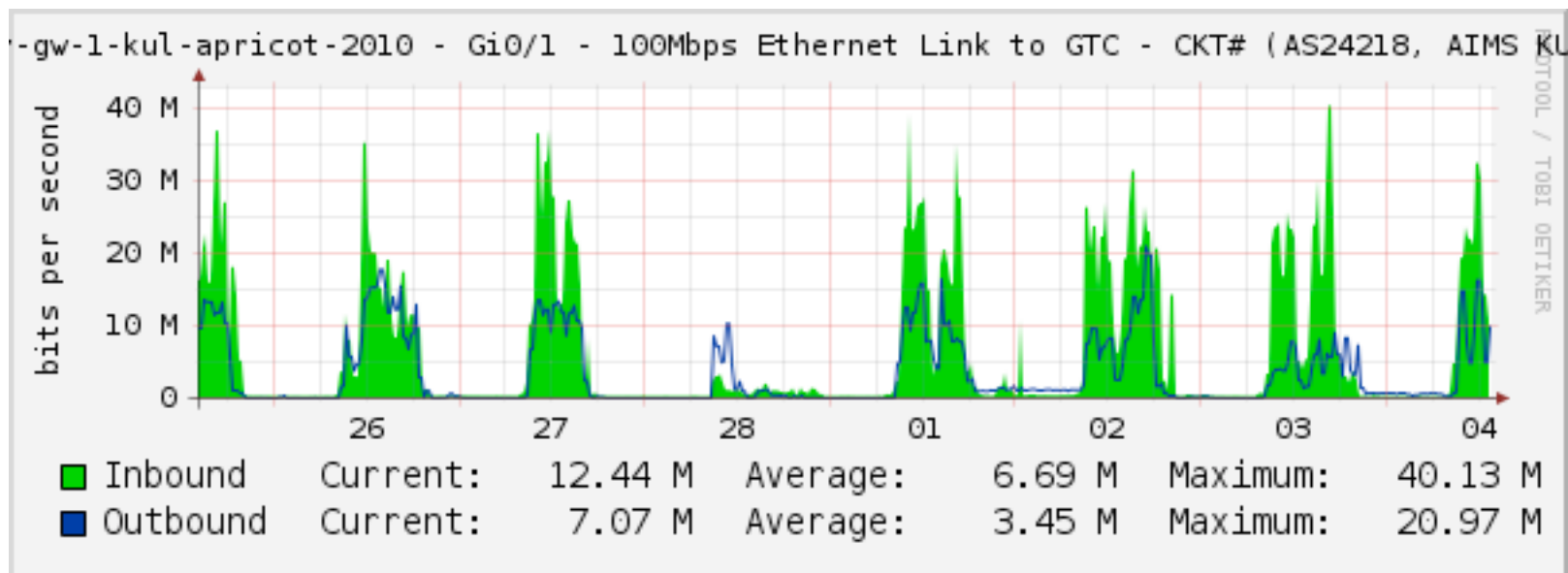# General Network Performance

- Overall bandwidth utilization:
  - Saw ~35Mbps – 45Mbps on average.
  - Peaked regularly to 50Mbps by end of day.
  - We saw 80Mbps once, but on the infrastructure VLAN (Servers), not the wireless.
  - Kudos to the APRICOT-PC, less than 25% utilization of 200Mbps IP bandwidth indicates the programme committee did yet another good job this year ☺.

General Network Performance

□ Overall bandwidth utilization:

General Network Performance

- IPv4 Connectivity:
  - No rogue DHCP servers recorded (yeah, I know… strange that we have to report about this in 2010).
- IPv6 Connectivity:
  - Was a little spotty earlier in the week.
  - Due to rogue RA's from at least 4 conference attendees supplying 6to4 gateways..
  - We identified one of them, but he hasn't yet disabled his 6to4 "services"… still filtered.

General Network Performance

- Filtering was done based on MAC addresses on the Juniper edge Ethernet switches used for APRICOT 2010 (all 7 of them, phew!).

- A bit harsh, but RA Guard still isn't operationally available.

- SeND would have made the event network deployment rather complicated. IPv6 use "should" be as easy (if not easier) to use.

- Lorenzo, too bad we couldn't "whitelist" this year. Let's try again soon ☺.

General Network Performance

- Wireless
  - No major complaints received regarding performance of the wireless network.
  - A few instances where folks couldn't support 802.11a. 802.11b/g was the alternative – that worked.
  - Strange experience with the Apple MacBook Pro 13" 2.53GHz Unibody units – access to the 802.11a radios was intermittent.
  - Earlier Unibody models or the 15" and 17" units didn't seem to exhibit this issue.
  - We saw ~200 associations to the access points in this conference hall.

General Network Performance

- Wireless
  - Another 60 or so associations to the access points within the corridors.
  - 802.11a associations averaged ~30% of total wireless connectivity.
  - Many thanks to Jonny Martin for all the RF tuning (all 25x access points) he did.

General Network Performance

- APNIC Video Streaming
  - No complaints received from the illustrious APNIC Streaming team.
  - It seems they thought the "bandwidth" was of relatively good quality. Sounds good enough to me ☺.
  - No, seriously, I think they were happy.

General Network Performance

- Special Meetings & Exhibitors
  - These mostly used the wireless network.
  - Some special meetings required rooms with cable in order to have voice or video conferences. No major complaints.

Take-aways

Take-aways

- Packet buffers and software-based routers
  - The APRICOT/APNIC 2010 event used Cisco 7206-VXR/NPE-G2 routers for access to the Internet.
  - Beasts, these, but software-based.
  - So received some complaints from users about slow-starts for session setup of some applications.
  - A buffer-tune likely fixed that problem. There could still be other factors, not enough time to diagnose.

Take-aways

- Connectivity (IPv4)
  - Folk from Fiji could not "call home" from the conference network.
  - Suspect the APRICOT/APNIC IPv4 address space used at the last APNIC meeting in Nadi was still in situ, there.
  - Probably want to "disassociate" with the APRICOT/APNIC IP address space after it passes through your town ☺.

Take-aways

- IPv6
  - We need RA Guard.
  - Meanwhile, 'rafixd' looks like a viable alternative (originally developed by the KAME project – now ported to Linux too).
  - 'rafixd' has been reported to be ineffective on Windows XP machines, though.
  - Use Ethernet switches that support MAC address filtering. You never know when you'll need it.

Take-aways

- Wireless
  - Continue to use conference-grade wireless access points.
  - Even with little work done on them, they still hold up far better than anything else.
  - The Cisco "yobs" rock! ☺.
  - The flat-panel, 8dBi wi-fi antennae are great for enclosed, small rooms, to "direct" the signal and reduce the amount of leakage outside said room.

Take-aways

□ Wireless

Take-aways

- DNS
  - A couple of issues with DNS record population this year, namely 'in-addr.arpa'.
  - Many (or most) would not have noticed this – some did!
  - No excuse.

Take-aways

- Conference Programme
  - Even with 200Mbps at the event's disposal, we really didn't hear about congestion complaints or have to hunt anyone down for "abusing" the network.
  - So either I instilled sufficient "fear" on Monday afternoon ("I'm watching you"), or the APRICOT-PC did a hell of a job.
  - I'm voting for the latter!
  - (sigh) So much Tv to catch up on next week…

Thanks

Thanks

- Speaking as Global Transit Communications, the AIMS Data Centre and TIME dotCom (no, I still get only one salary):

  - A big Thanks! to the APIA, APRICOT and APNIC for giving us the opportunity, and priviledge, to "network" this year's event.

  - The pleasure was all ours.

  - Five years is a long time to wait, but we'll still be here when APRICOT/APNIC, hopefully, returns to Malaysia.

Thanks

- Speaking on behalf of myself:
    - Thanks to Philip Smith and Jonny Martin for entrusting me with this year's network. It's hard to get them to "let things go", but I hope it was worth it… sure was for me and my team ☺.
    - Thanks to Cisco Malaysia for their help with all the wireless access points we used this year – it's amazing how some things come together ☺.
    - Thanks to Juniper Malaysia for their help with the Ethernet edge switches we used this year – and thank God for 802.3af.

Thanks

- Speaking on behalf of myself:
  - Thanks to the Kuala Lumpur Convention Centre for their big help in getting us access to all their internal infrastructure, shutting off their wi-fi, and pretty much letting us "take-over" this joint.
  - Thanks to Neuropower (Malaysia) for their help with the UPS systems – power was surely not an issue this year, and the entire infrastructure was electrically protected.

Thanks

- Speaking on behalf of myself:
  - Thanks to all PIKOM staff, especially Molly, Alice, Sheila, Grace, Wendell Tiffany and Juslin for all their co-ordination and co-operation these past several months, putting everything together. How simply do I put this, "I and my team enjoy working with you".
  - Thanks to the Global Transit, AIMS, TIME dotCOM and Megawisra teams (my employer[s]) for their dedication to the APRICOT/APNIC, and all they did to make it a success!

Thanks

- Speaking on behalf of myself:
  - Thanks to my team – Johnathan and Shasi, as well as their team, Nurul, Vivek, Kanna and Wong, for working hard to ensure network was where it was needed at all times. These folk continue to inspire me.
  - Thanks to the Izzinet (Malaysia) team for helping with setup of the network and other logistics.

Thanks

- Speaking on behalf of myself:
  - Lastly, but certainly not least by any means, Thanks to Afzal (CEO of TIME dotCOM and Chairman of the rest) and to Megat (COO of TIME) for letting me "run loose" with our network to see yet another successful APRICOT/APNIC event recorded.

END

Thank you!

Q&A

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