



IPAC'19 – IT Setup Report

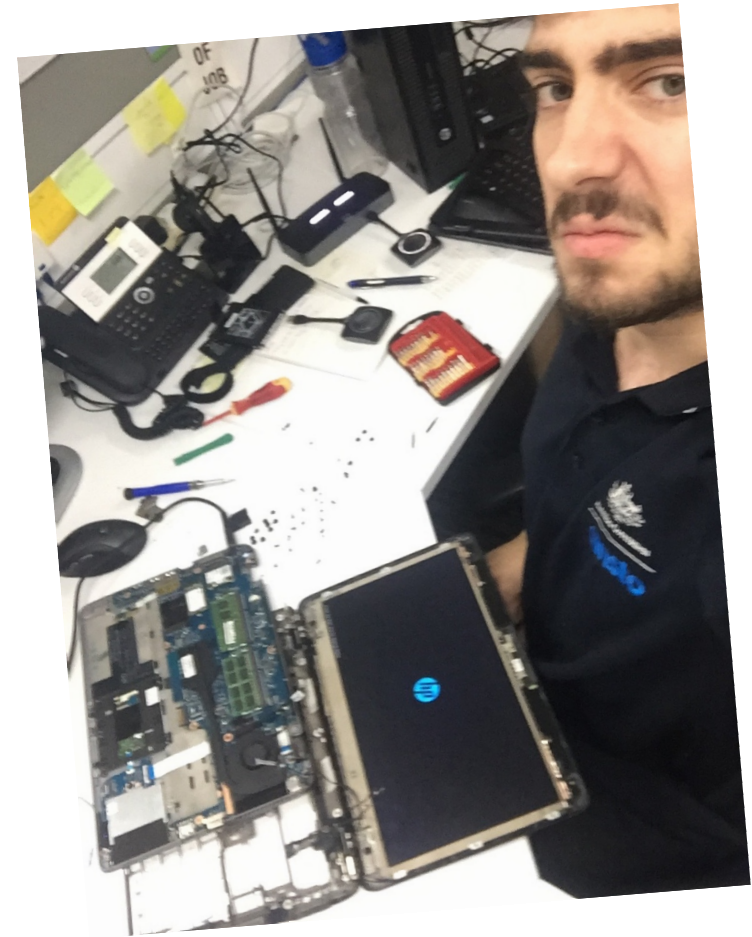
Mark Caetano – ANSTO

JTM2019 - Santos

Science. Ingenuity. Sustainability.

Hello!

- Based in Sydney, Australia
- IT/Networks/Audio Visual Technician by trade
- Academic Computing background
- First involved since IPAC'18
- IT strategy, deployment and support for IPAC'19



IT Mission for 2019

- I.T. is the backbone of a JACoW conference.
- It should support and enable the delegates, staff, editors and attendees, without being a hindrance
- Provide a full environment that is ready for all users to simply turn up and begin working.
- Provide all I.T and technology facilities required at the conference
- Deploy an environment that is stable, seamless and contributes to the overall success of IPAC'19

Hardware Breakdown

- 31 Desktops (plus 2 spares)
- 6 27" iMacs (plus 1 spare)
- 4 i7 laptops
- 6 i5 laptops
- 2 17" MacBook Pro's
- 32 27" 2k LCD Displays (plus 2 spares)

Hardware Breakdown

- 3 HP M553DN PostScript Printers
- 1 HP OfficeJet MFP (general printing)
- 3 55" LED TV's with display stands
- 6 Apple iPads (Poster police, ask the moderator)
- 10 Motorola Radios (plus spare batteries)

Hardware Breakdown (Proc. Network)

- 3x 24 port gigabit switches (PoE, Managed)
- 3x 8 port gigabit switches (PoE, Managed)
- 4x 802.11ac Access Points
- 1x CloudKey Controller
- 1x EdgeRouter

Misc.

- 5 20m Cat6 Patch Leads
- 10 15m Cat6 Patch Leads
- 45 10m Cat6 Patch Leads
- 10 5m Cat6 Patch Leads
- 15 10 way power boards
- 10 4 way power boards
- ~50 reams of paper
- Extra toner!

Hardware Distribution

- Editorial Office: 23x HP Desktops, 3x iMacs, 3x printers
- Author Reception: 2x iMacs
- Speaker Ready: 2x i7 Laptops, 2x MacBook Pros
- Net Café/Paper Lounge: 2x HP Desktops, 2x iMacs, 1x printer
- Hot spares: 3x HP Desktops, 3x i7 Laptops, 3x MacBooks
- Displays: 3x dotting boards, 1x editorial stats
- File Server: 1x HP Workstation

Standard Software Environment

- Largely mirrors the IPAC18 software list
 - Windows 10 Enterprise x64
 - Office 2016 Professional x86
 - MikTeX, Texstudio, Texmaker
 - LibreOffice 6.x
 - Acrobat Professional DC
 - › With JACoW config and options in Distiller
 - PitStop Pro 2018 (Trial)
 - › With JACoW actions (mediabox etc)
 - Notepad++ and SublimeText
 - IE11, Edge, Chrome, Firefox
 - 7ZIP, UniExtract
 - IrfanView, GIMP, Paint.NET
 - Handbrake, VLC, VirtualDub, K-Lite Codecs
 - Automated backup software
 - Anti-virus software

Hire Costs

Items	Qty	Unit Cost per 2wks	Total
Desktops	33	\$194	\$6402
iMacs	7	\$338	\$2366
Laptops	4	\$154	\$616
MacBooks	2	\$296	\$592
Monitors	34	\$93	\$3162
Printers	4	\$145	\$580
Dot Boards	3	\$560	\$1680
iPads	6	\$124	\$744
Radios	10	\$105	\$1050
Freight	2	\$3107	\$6214
Setup	7	\$360	\$2520
Total Hire			\$28,027.57

- Desktop costs include upgrade to SSD plus imaging
- Laptop cost include upgrade cost to SSD plus imaging
- Negotiated 'spared' for discounted price as they were not imaged
- Printers included a full set of toner each – this will run out!

Proceedings Office





Speaker Ready



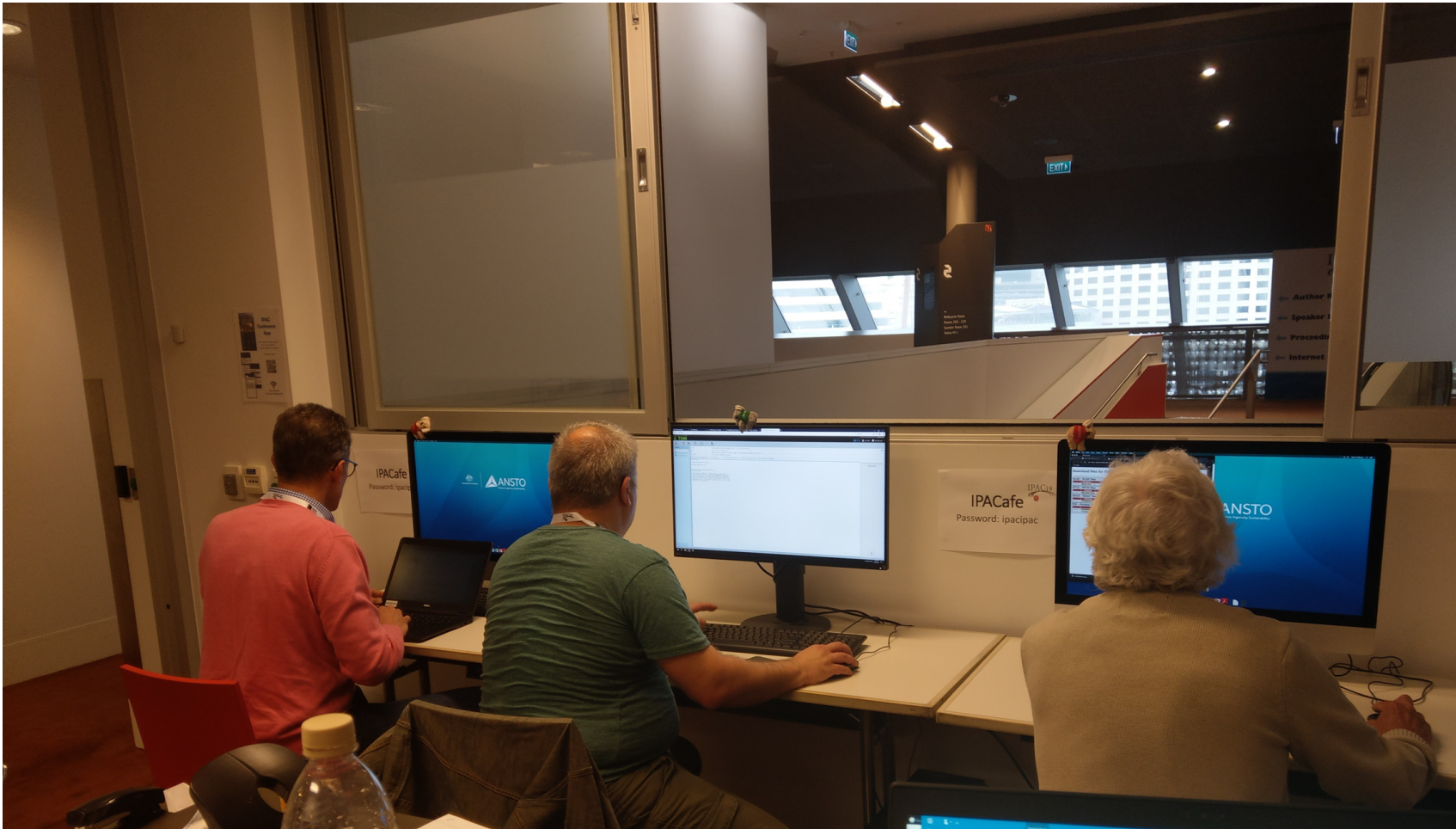
Speaker Ready



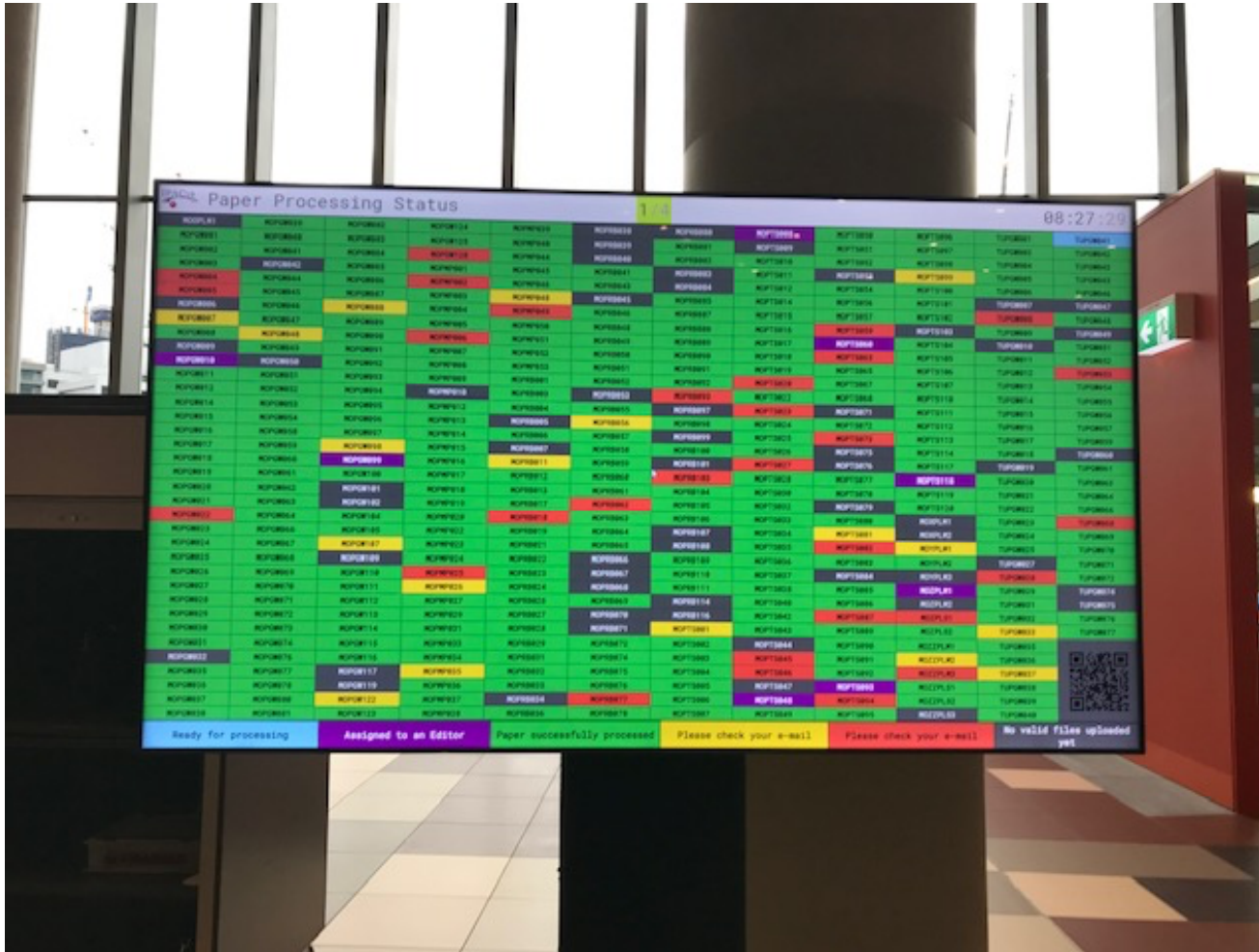
Author Reception



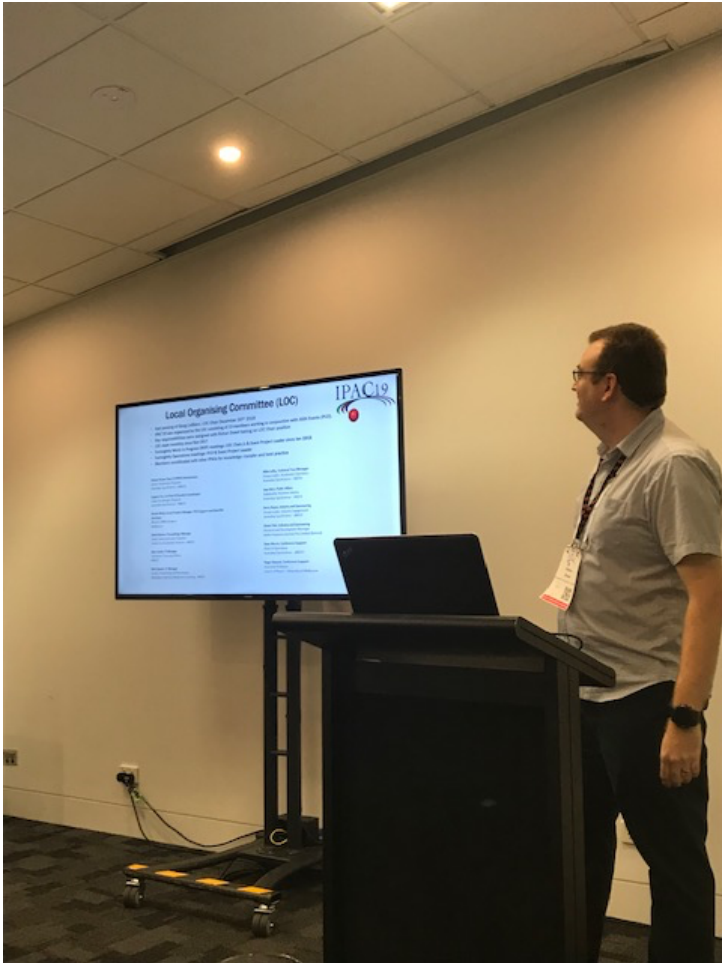
Paper Lounge/Net Cafe



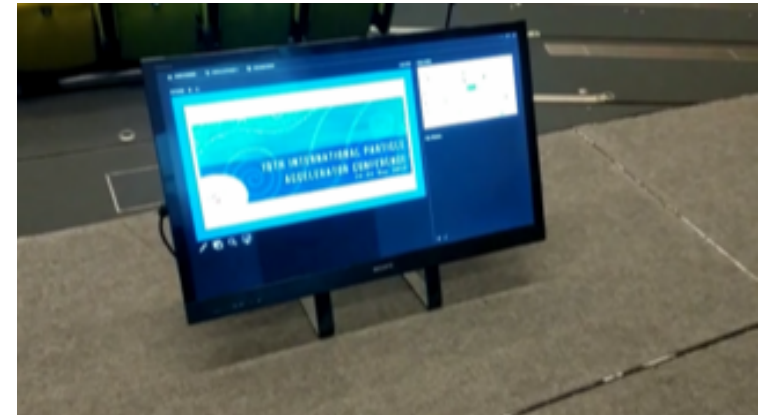
Dotting Boards



Meeting/Satellite Rooms



Plenary



Network Overview

- Hybrid solution utilising the venue's infrastructure
- Provisioned our own bandwidth to the venue's border network (1Gbps via AARNet/ANSTO)
- Crucial proceedings network kept separate with dedicated bandwidth (editorial and speaker ready)
- Guest network provided for general use
- Eduroam network provided for international academics
- Hidden 'Admin' network provided for misc. devices

BYO Bandwidth

- Saving money is always fantastic. Through sponsorship/existing contracts, IPAC19 made significant savings
- Leverage existing infrastructure, but ensure crucial aspects are not put in the same bucket as the attendees.

Item	Option 1 (Venue)	Option 2 (Venue + NREN)
Internal Connectivity (Always Venue)	\$5,600	\$5,600
Internet Connectivity	\$40,000 / per 200gb / at 100mbps	\$0 (In-Kind Sponsorship) / Unlimited Usage / at 1gbps+

Using venue connectivity

\$20,000 per 100GB

@100mbps

\$20,000 x 5,400GB

@100mbps

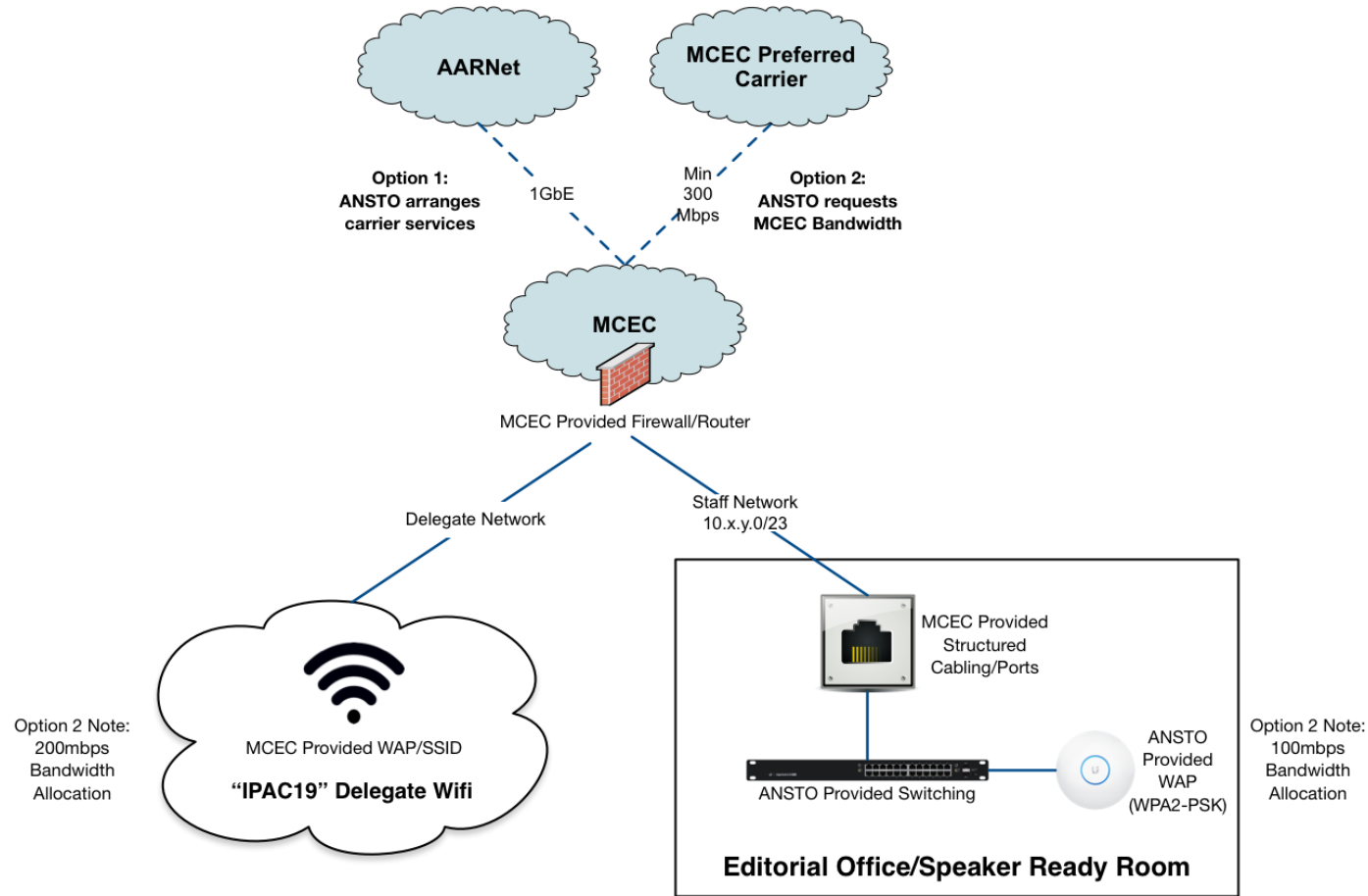
=\$108,000

BUT

5.4TB @ 300Mbps (peak)

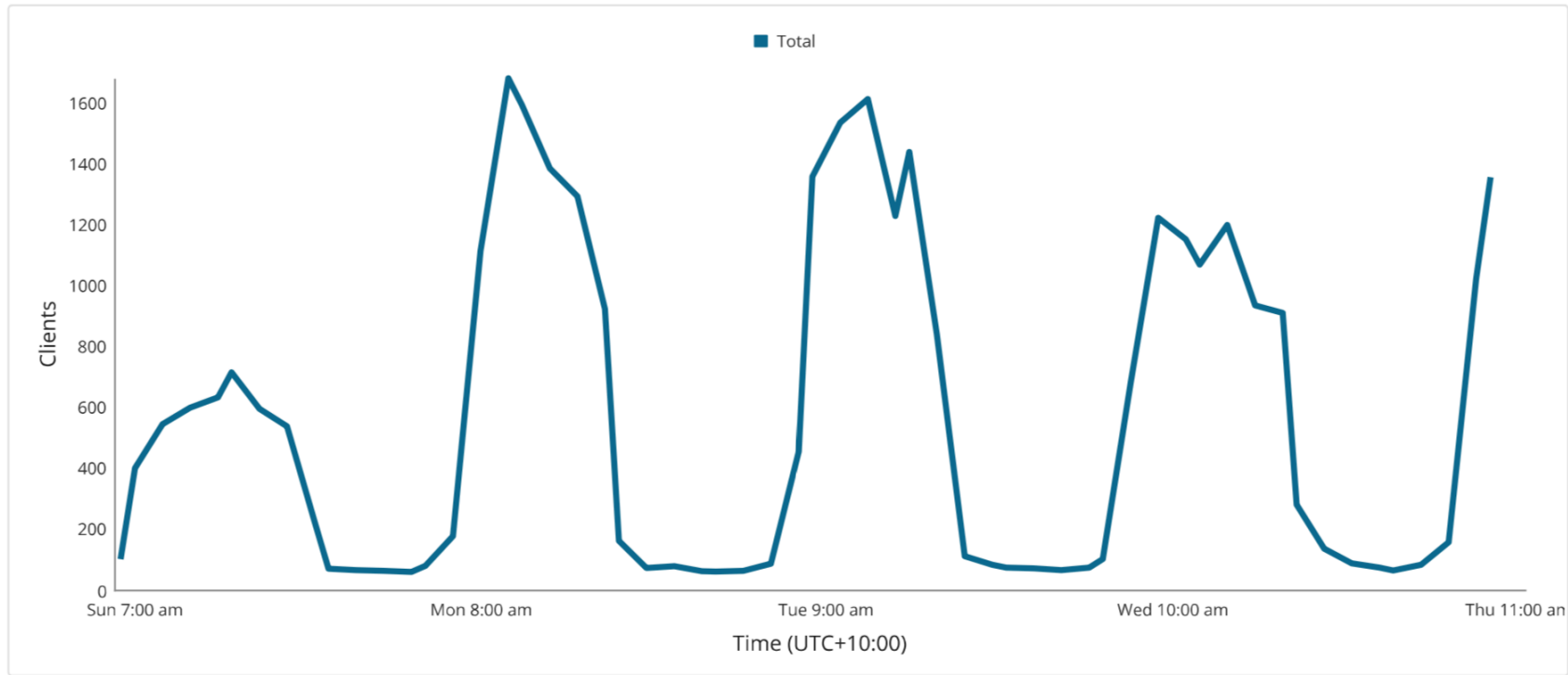
=\$324,000

Hybrid Network Solution



Client Stats

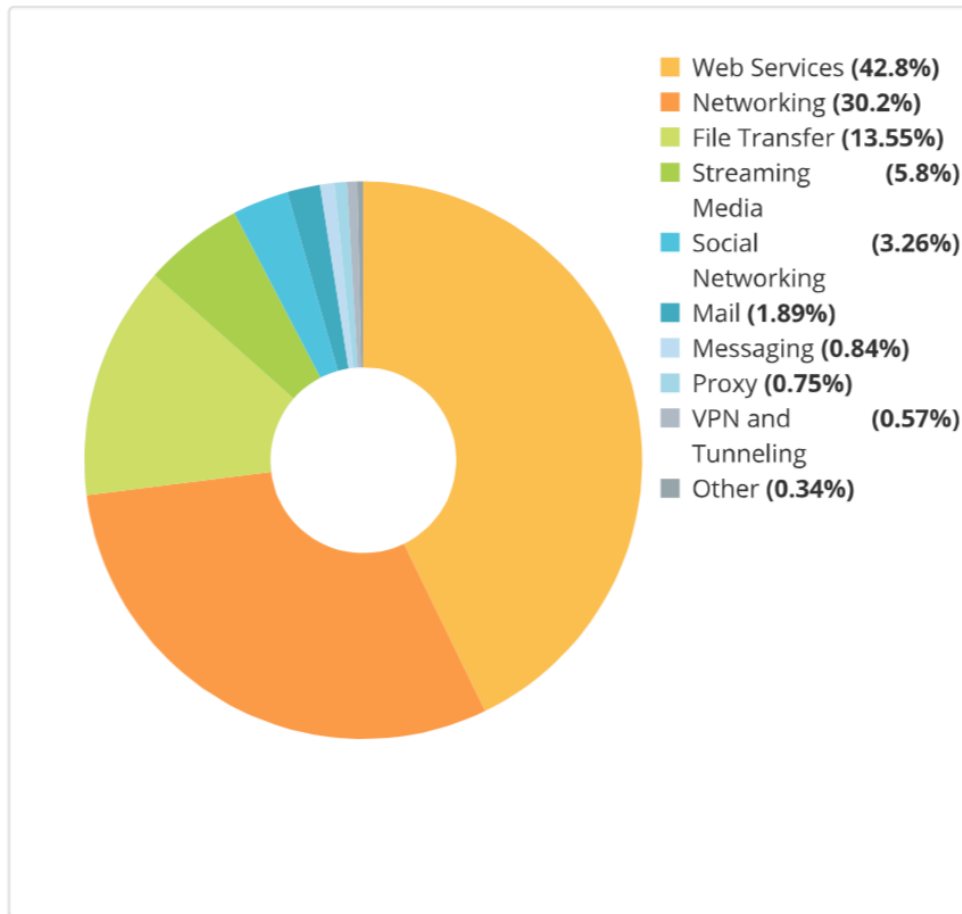
Clients Over Time



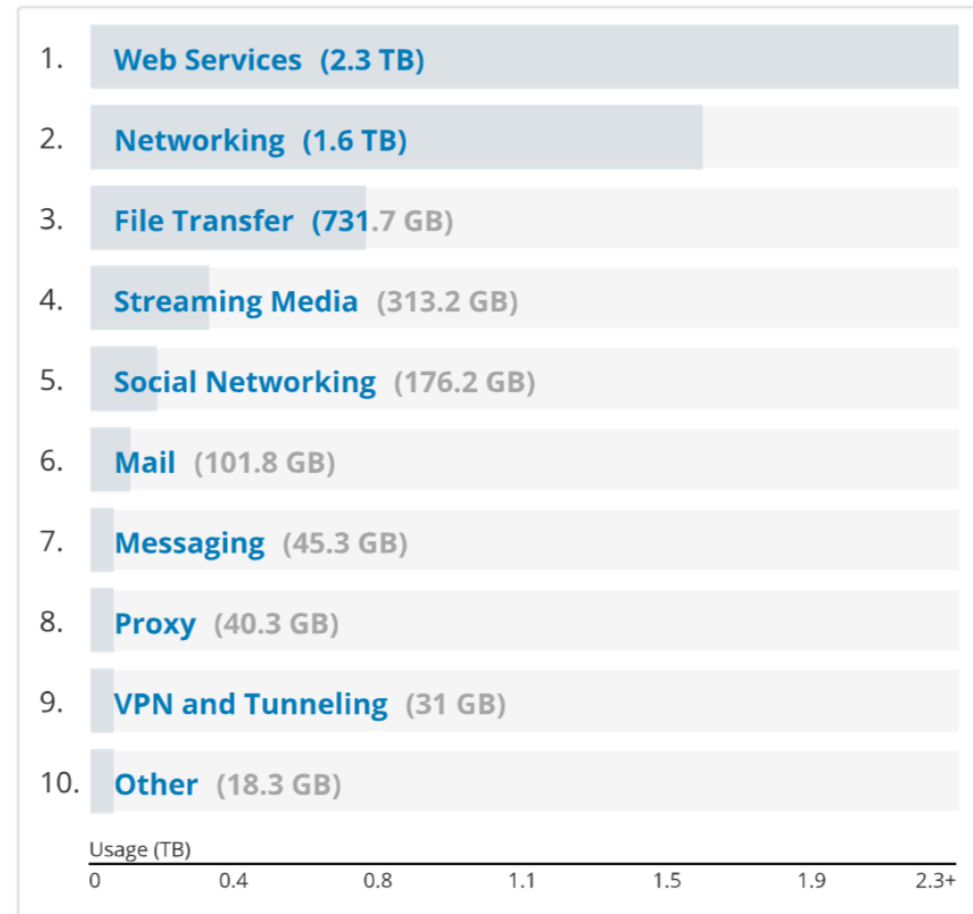
	Min	Max	Average
Client Count	59	1680	566.89

Download Stats

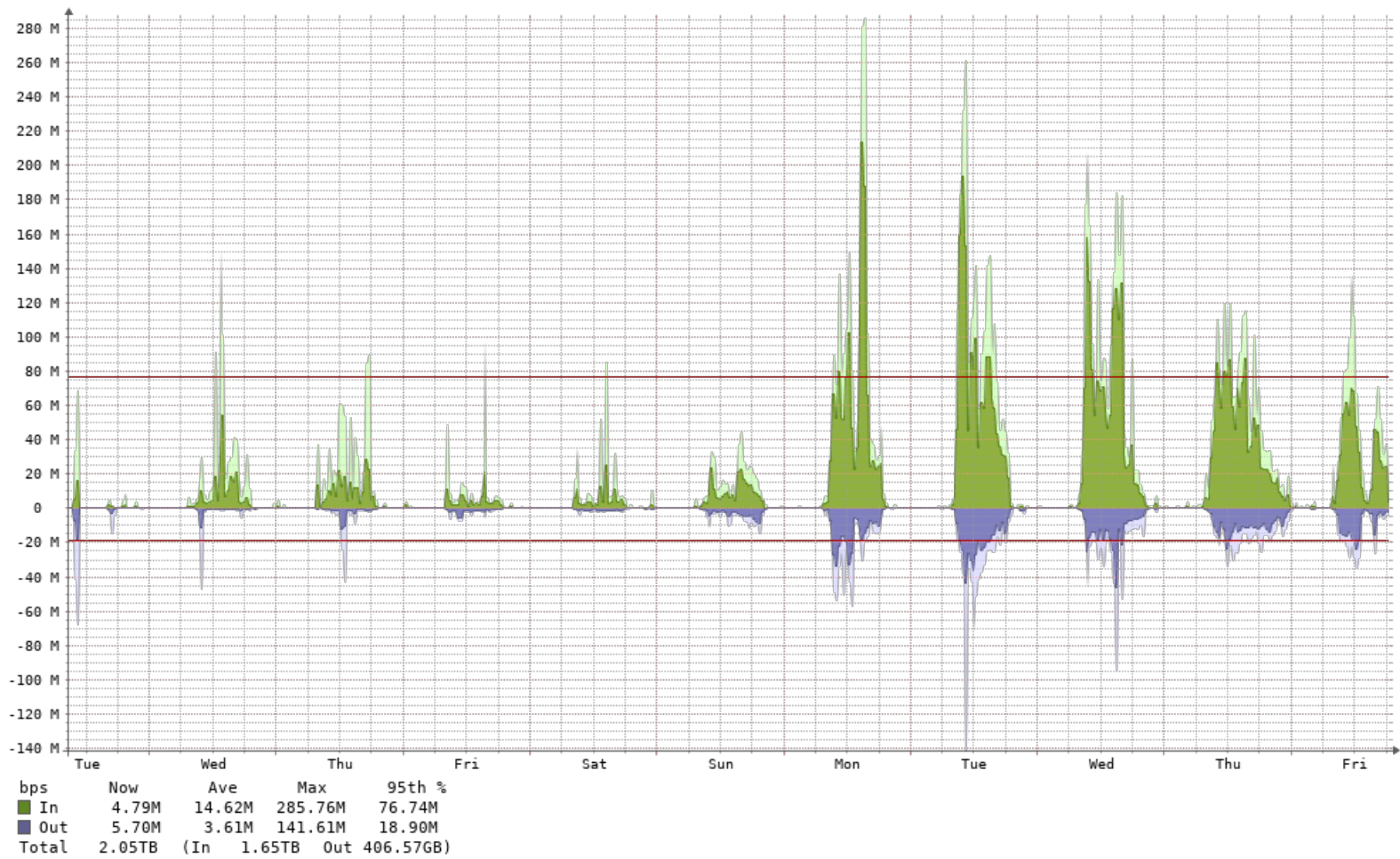
Top Application Categories by usage



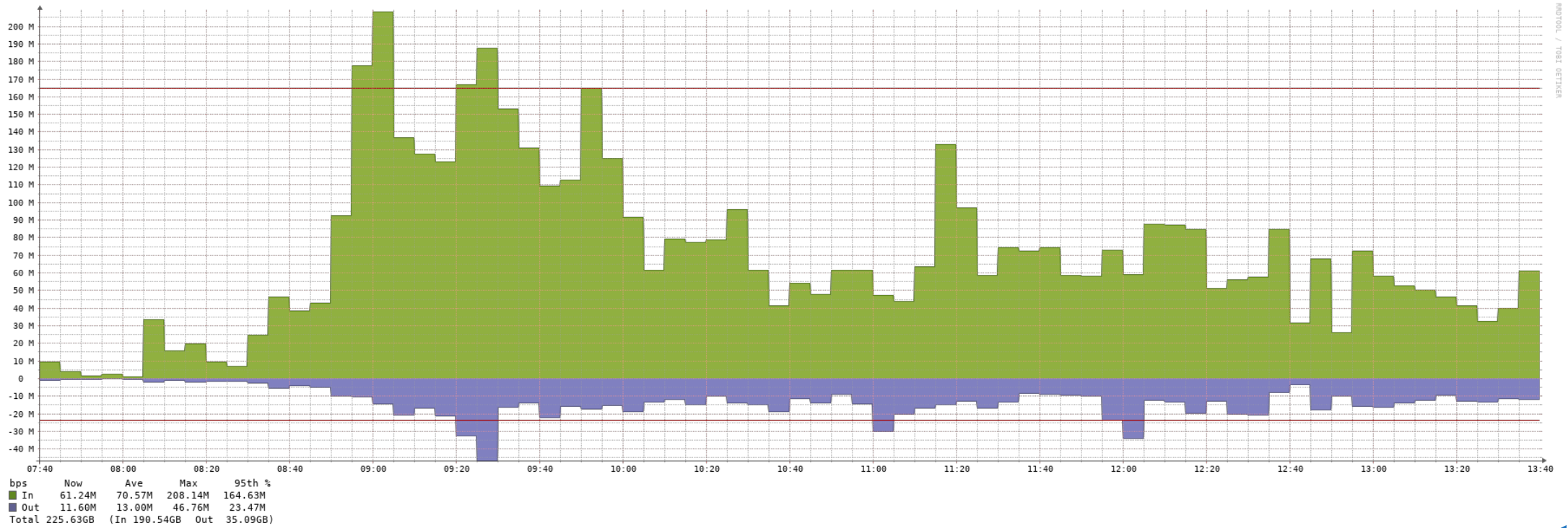
Top Application Categories by usage



10-day bandwidth stats



Typical daily bandwidth



What went wrong?

- Venue restrictions on plenary room machines
- Re-negging on guarantees around setup
- Losing network configs mid-way through setup
- Out of date venue machines
- Incorrect network setups (yep, venue again)
- Paper and toner usage
- Software usage
- Geographical internet latency

What went wrong

- Furniture was late...
- IT Hardware was late...
- IT Hardware was fresh out of battle
- Power inadequacies in the proceedings office
- Link to ANSTO down for maintenance
- Presentation manager needing to hound the venue staff
- Adobe licensing – this is important

Recommendations

- Good hardware – good displays!
 - Minimum requirements to be addressed
- Keep spares – equipment WILL fail
- Keep your operating environment current
- Segregate the proceedings network
- Make sure the network is robust (managed, no daisy chains)
- Spread out your display screens
- Radios are super useful
- Make sure every area is up and running before proceedings start

Lessons learnt

- Test test test your software setup
- Don't rely on the venue's promises
- Keep spares of everything
- Established app works very well – ask the moderator
- You WILL use a lot of consumables
- Good wi-fi, fast machines, clear/large displays
- Consider individual preferences of editors/staff

Lessons learned

- Be careful of the up-sell – these things add up
- Ensure your registration system and SPMS is integrated from day 1
- Get. Everything. In. Writing. – this is important!
- Don't be afraid to push the the venue/suppliers to deliver on what was promised

Future Considerations – Current Process

- Installed windows 10 English 64-bit.
- Make sure to apply all updates.
- Installed Jacow Software packages:
 - LibreOffice 6.x
 - Acrobat Professional DC
 - › With JACoW config and options in Distiller
 - PitStop Pro 2017 (Trial)
 - › With JACoW actions (mediabox etc)
 - Notepad++ and SublimeText
 - IE11, Edge, Chrome, Firefox
 - 7ZIP, UniExtract
 - IrfanView, GIMP, Paint.NET
 - Handbrake, VLC, VirtualDub, K-Lite Codecs
- Install Office 2016 (32-bit)
- Make sure to apply all updates.
- Installed Barcode font
- Added DotJavascript
- Set javascript execution enabled
- Followed <http://www.jacow.org/uploads/Editors/Acrobat9PitStop10.pdf>
- Enabled rule grid
- Word Setup - Disable scaling of documents, Embed fonts (all documents)
- Install codec packs
- Run through Dave's 59 page setup document
- Pray this all worked – nobody wants a room full of angry editors

Future considerations – utopia?



Base PC:
Windows/Office

Run JaCOW
MagicScript™

Editorial Bliss!

Future considerations

- Automation of setup
 - Start with clean Windows/Office install
 - Automated scrips
 - Updated repo of template, JavaScript, DOT JS
 - Bolt/chocolatey (Johan's magic)
- Pre-baked environments for quick bootstrapping of proceedings office
- BYoD Options for ΘP experienced editors?

Don't be afraid to reach out!



Thanks!

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Australian Government



ANSTO



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