

Internet
Association
of Australia

Member Forum 2023

August 2023



Agenda

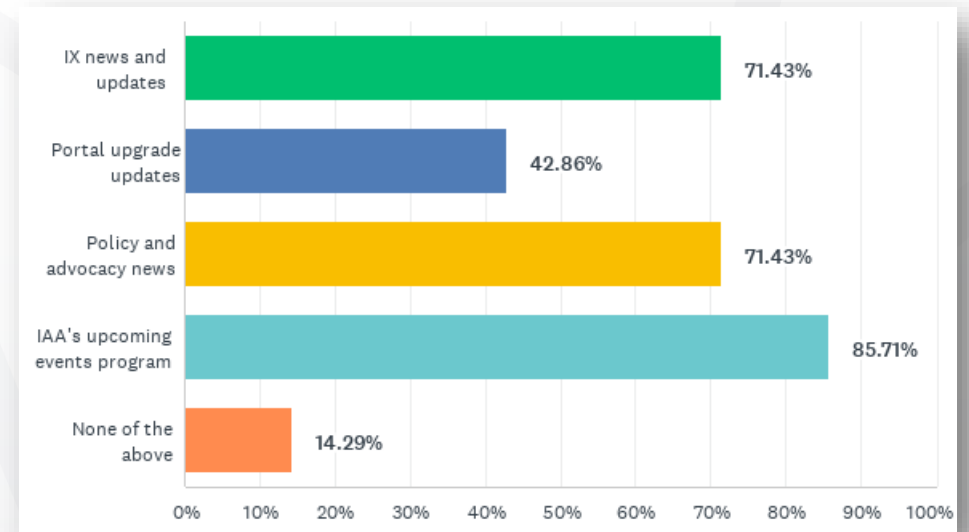
- Member Survey Feedback
- IX Update
- Portal Update
- Policy & Advocacy
- Events Program
- Open Forum - any other business?

Member Forum Survey Feedback

- Thank you to everyone (9) who took the time to give feedback!

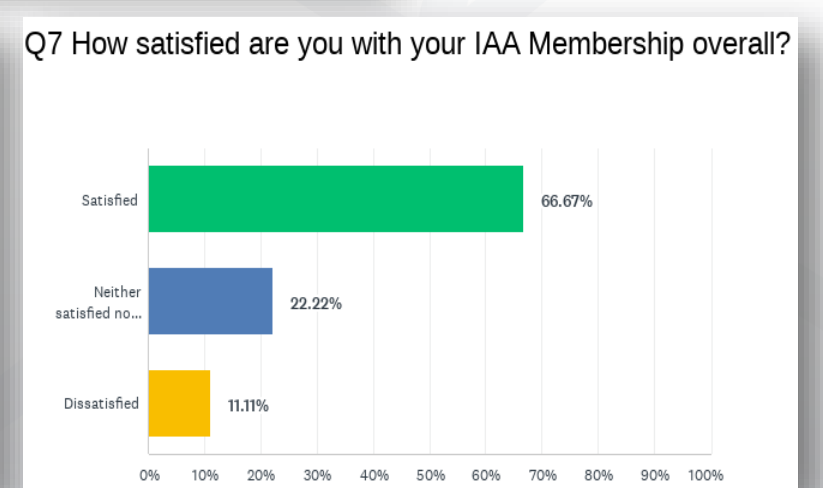
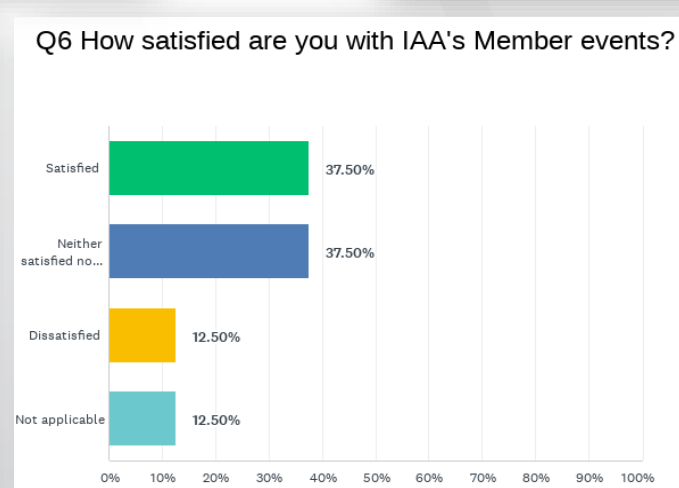
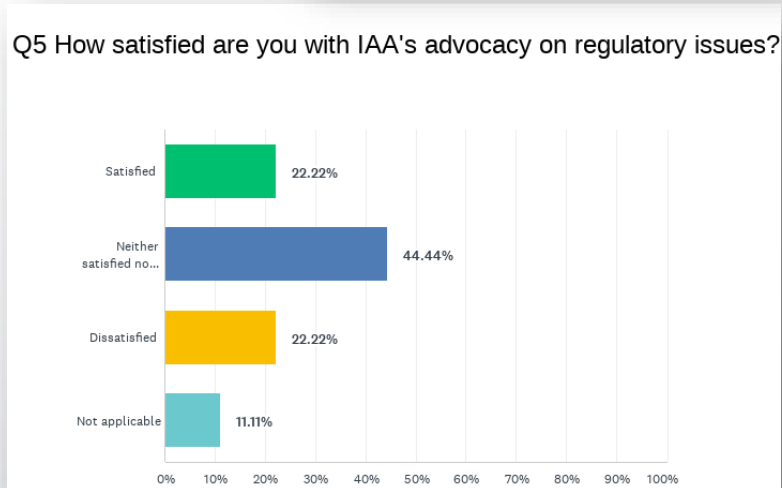
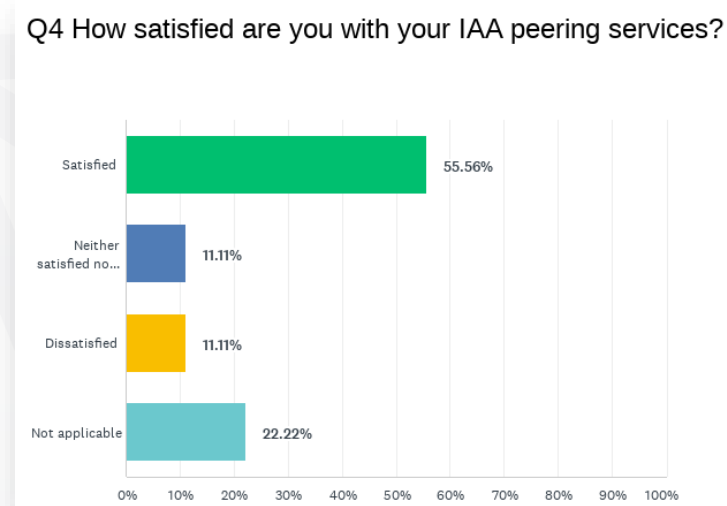
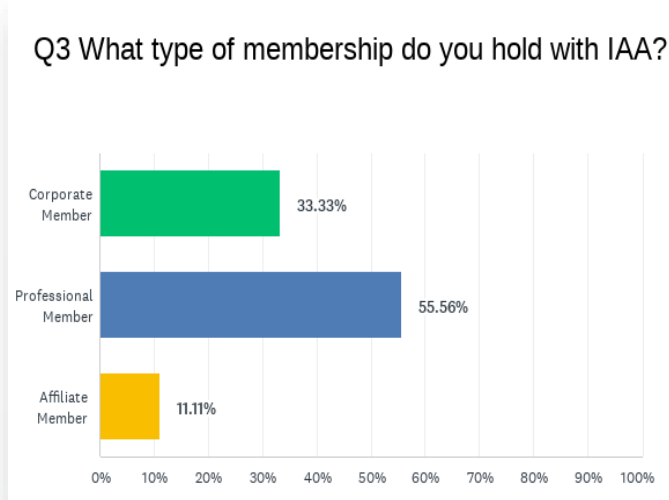
- Members asked for:

- IAA events and sponsorship program – past and upcoming
- WAIX renumbering
- HRM at APNIC
- ANZ activities to support the technical community and engagement
- Transparency and governance



- Is there anything else you would like to discuss today? Drop a comment now in the Q&A!

Member Forum Survey Feedback *contd.*



Member Forum Survey Feedback *contd.*

One helpful member gave us a full response on transparency and governance

Q2

Please share any other comments or questions that you'd like discussed at the IAA Member Forum.

The IXs priority within the organization should be higher, when one staff member is sick can cause communication timing issues with media finding out about something that members should have known first or at least was even coming.

Previous election results/voting counts are not available for members to view. Why?

No board/committee meeting minutes available to members. Why?

General lack of transparency within operations to members. Why?

Is IAA growing for the sake of growing? Why are more staff being taken on within the organization when the core functions have not changed in years?

Q3

Corporate Member

What type of membership do you hold with IAA?

Q4

How satisfied are you with your IAA peering services?

Satisfied,

Please tell us why you gave the rating above.:

IAA's peering services are excellent and that is 100% due to the effort of the individuals working on it. Not due to IAA as an organization.

Member Forum Survey Feedback *contd.*

Q5

How satisfied are you with IAA's advocacy on regulatory issues?

Neither satisfied nor dissatisfied,

Please tell us why you gave the rating above.:

IAA spends far too much energy on regulatory advocacy and not enough time creating frameworks to help members be compliant with regulations.

Q6

How satisfied are you with IAA's Member events?

Neither satisfied nor dissatisfied,

Please tell us why you gave the rating above. :

They're fine as an event. I don't think they are a core function of IAA however and should not be run.

Q7

How satisfied are you with your IAA Membership overall?

Neither satisfied nor dissatisfied,

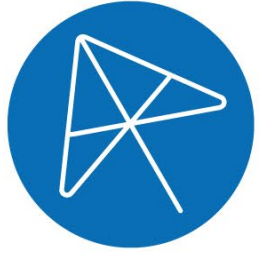
Please tell us why you gave the rating above. :

At a corporate level we would not be members if not for the IX service requiring it which you'll likely find is the majority of your member base. More effort needs to be put towards the IX services and organizational transparency.

How does IAA communicate with members?

- Bi-monthly newsletter
- Member News emails
- Social media – LinkedIn, Facebook and Twitter
- Survey Monkey
- During our events – both online and in person

- Are you missing out and not getting your emails? Are you subscribed? Send us an email to info@internet.asn.au and we can check and re-subscribe you if needed.
- The DevOps team are working on improving the functionality in our portal which will give members the ability to nominate their communication preferences.



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IX Update



IX Upgrades, Updates and Upheavals

- WA-IX
 - Renumbering well under way
 - Future: Moving into P2
- NSW-IX 400Gbps
 - New switches due end of month
 - Test program to commence
 - Aiming for RFS January
- SA-IX Changes
 - Billing to commence 50% off for first year
 - More traffic expected soon – Fastly
 - A1 from day 1
 - Bye bye Adam DC
 - Bye bye 132 Franklin (1 March 2024)

NEW Member discounts

- iVLL Price Review
 - Tender awarded
 - New pricing schedule with significant drops to most services
- NextDC Deal
 - New ports in a NextDC get:
 - 2mo free on 1-4 racks on a 36mo term
 - 3mo free 5+ racks on a 36mo term
 - Offer valid from August 9th to December 15th, 2023
 - Delayed service commencement of up to 90 days if required

Introducing...

- TAS-IX
 - Locations: Tasmanet DC3 and 7HOB
 - No iVLL services for now
 - Content
- Thank you to FSG for partnership
- FREE!!
 - for 12mo



Stay tuned for RFS date!

Route Server Replacement Program

- Dell EMC PowerEdge R350 server (1 RU)
- VMware ESXi 7 hypervisor
 - vSwitch with two attached physical NICs in teaming configuration
 - Explicit-order failover on link down detection
 - Attached to different peering switches for redundancy
- Ubuntu 22.04 guest OS
 - Management virtual interface and IX virtual interface
 - IX virtual interface in own network namespace

Route Server Architecture

- BIRD 2.0.7 route server
 - Process runs in IX network namespace
- Why network namespaces?
 - Single BIRD process in separate network namespace = no other processes accessible via IX interface
 - Reduced attack surface, theoretically impossible to gain control over the route server from the IX fabric

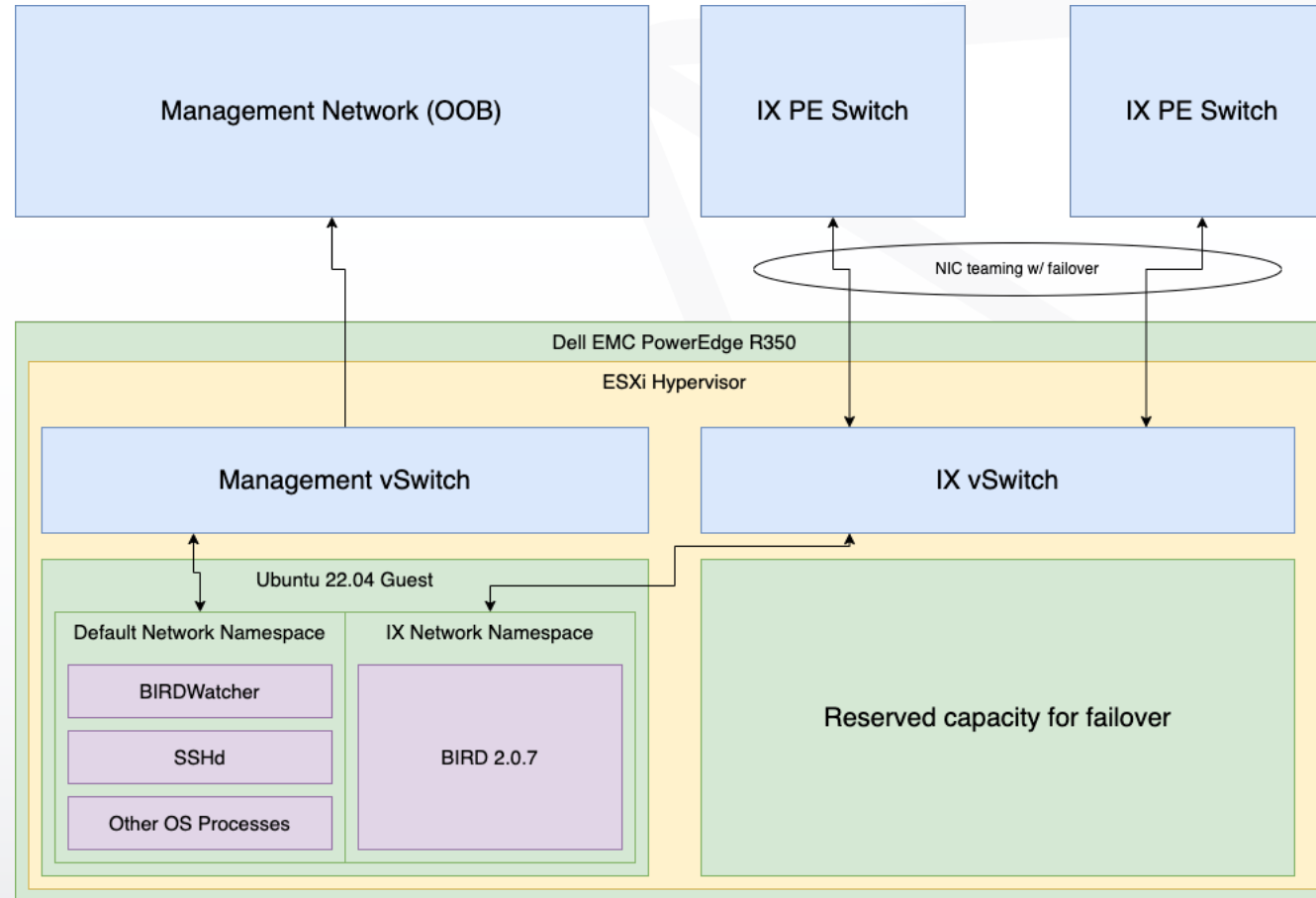
Route Server Architecture *contd*

- Why virtual machines?
 - RS1 and RS2 hypervisors for each IX grouped together in a vCenter-managed cluster
 - Route server VM can be quickly migrated to another host in the same cluster in the event of hardware failure or other requirement
 - Could move to container-based solution in the future (e.g. Kubernetes)

Route Server Architecture *contd*

- BIRDWatcher API for looking glass interface
- SNMP monitoring via ESXi hypervisor
- Management connectivity via ZPE OOB network
- Configuration generated automatically by ARouteServer
 - Scheduled generate + push jobs in Ansible AWX
 - All IX route servers updated daily
 - RS1 @ 9 AM AEST
 - RS2 @ 2 PM AEST

Diagram





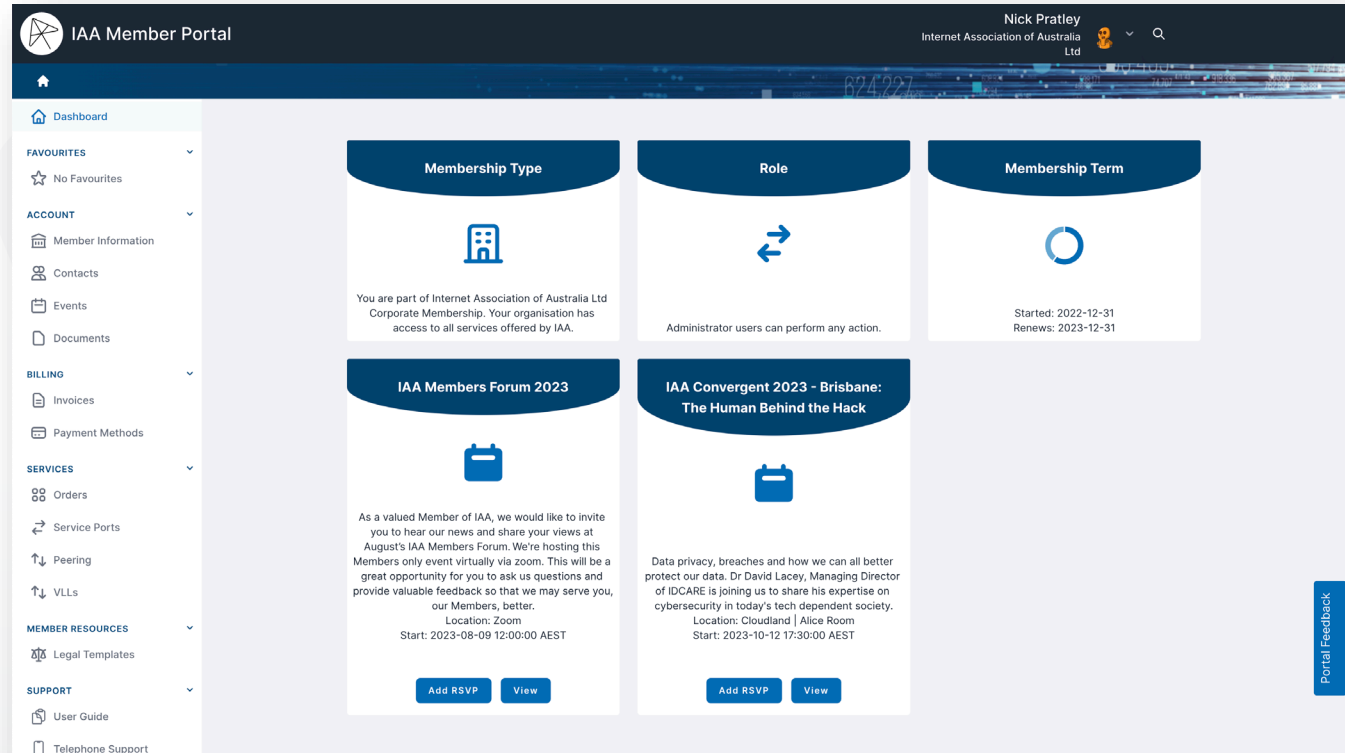
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Portal Update



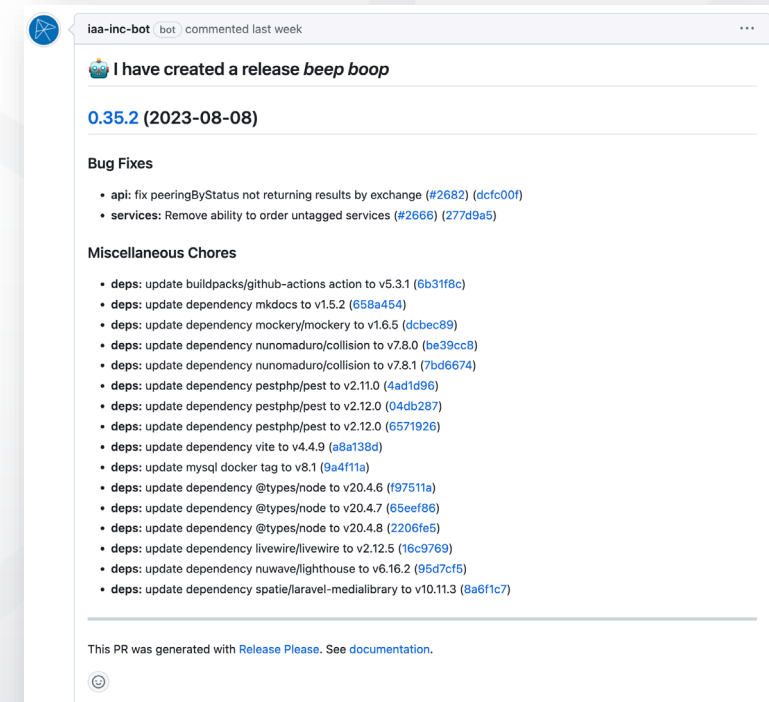
Portal – The Stack

- Frontend – TALL Stack
 - Tailwind CSS
 - Alpine JS
 - Laravel
 - Livewire
 - Yes, it's PHP – but 8.2 is nice.
- Backend
 - Laravel Nova – Admin
 - Laravel Horizon – Jobs
 - Laravel Telescope – Debugging Assistant



Portal – Behind The Scenes

- Lots of GitHub Actions
 - Mend Renovate for dependency management. Each package update gets an automatic pull request – tests are run and auto merged on success
 - Release Please for release automation
 - automatic versions
 - changelogs
 - releases
 - Heroku Buildpacks for containers
- Full test and CICD suite
 - 453 tests, 62.5% code coverage
 - 85% coverage across payments



Portal – Behind The Scenes *contd*

- Kubernetes Cluster
 - Entirely managed as GitOps with Flux and Renovate
 - Looking to replace Flux with ArgoCD – does anyone have thoughts on it?
 - Portal built into 3 containers
 - Scheduler
 - Runs every minute as a k8s job, schedules things
 - Worker
 - 1 instance running for async things
 - Emails, automatic payments, etc
 - Web
 - 1 instance, can scale – but no need
 - DB & Storage
 - Postgres, Redis and Minio

```
→ ~ kubectl get pods -n iaa-portal
```

NAME	READY	STATUS	RESTARTS	AGE
ixportal-laravel-cronjob-28191535-v5tz2	0/1	Completed	0	2m35s
ixportal-laravel-cronjob-28191536-g74kb	0/1	Completed	0	95s
ixportal-laravel-cronjob-28191537-74t22	0/1	Completed	0	35s
ixportal-laravel-web-8879c5797-kxhrr	1/1	Running	0	6d7h
ixportal-laravel-workers-7f9c66f987-h4nfc	1/1	Running	0	6d7h
ixportal-postgresql-0	1/1	Running	0	337d
ixportal-redis-master-0	1/1	Running	0	337d
minio-74bd5f94b-75282	1/1	Running	0	337d

Portal – New Feature – Member Resources

- IAA engaged Arnotts Technology Lawyers to develop legal templates for all IAA members to use for free, including:
 - Privacy Policy
 - Mutual NDA
 - Hardship Policy
 - Etc.
- Designed to help you be compliant with requirements from govt
- Want any others? Let us know.

Portal – The Future

- Laravel Nova is just not working
 - We've hit the limit of what we can accomplish with Nova
 - "Can you do this?" "No, sorry – Nova doesn't let us" - I feel like I say this too much
 - Meant to be a "developer interface to your data", not an admin panel for staff – whoops
 - Replace with Filament
- Frontend tables are Filament already
 - Finish the rest of the pages and components
 - Will lead to a more consistent design all around for data display, and less CSS / HTML to care about
- Meilisearch
 - Let's be honest, our search sucks. We are looking to index all data in Meilisearch for consumption from the frontend and backend portals

Portal – The Future *contd*

- Alerts and better marketing lists
 - Service events and alerts in the portal
 - We are going to fix marketing comms
 - More control over what you can opt in and out of
- Billing and Payments
 - We keep hitting weird loopholes with Xero that don't seem important for them to fix (some have been on Xero Central for ~10 years)
 - Bringing in house, portal will generate invoices, and store them in Xero for accounting purposes only – easier for staff when you need VLL speed changes
 - Replace PayWay with Stripe for Credit Card processing
 - Do you want to see bank payments? Researching Go Cardless and BPay options to add to portal
- Metrics
 - Bringing more metrics and graphs into the portal
 - Optical DOM, service graphs, VLL usage, route server info
 - Anything else you want to see in here?

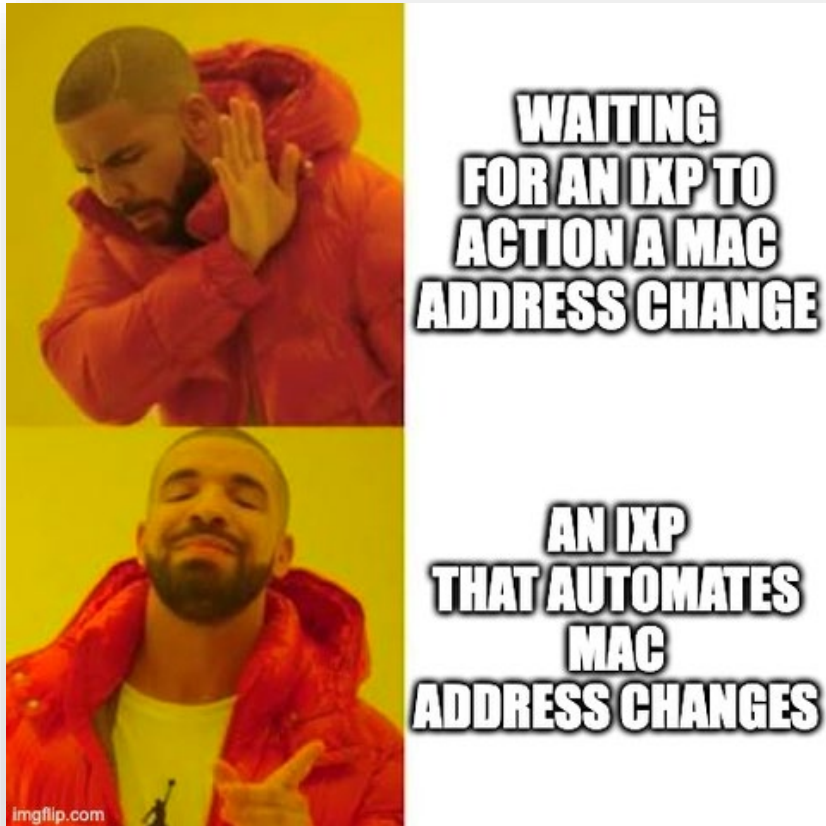
Portal – Questions?

1. Does anyone have thoughts on ArgoCD?
2. Do you want or care for Bank / PayTo / BPay payment options?
3. What other metrics, graphs or information would you find useful in the portal?
4. Anything else you want to know?

Hit me up, nick@ix.asn.au!

One more thing...

Portal – Network Automation

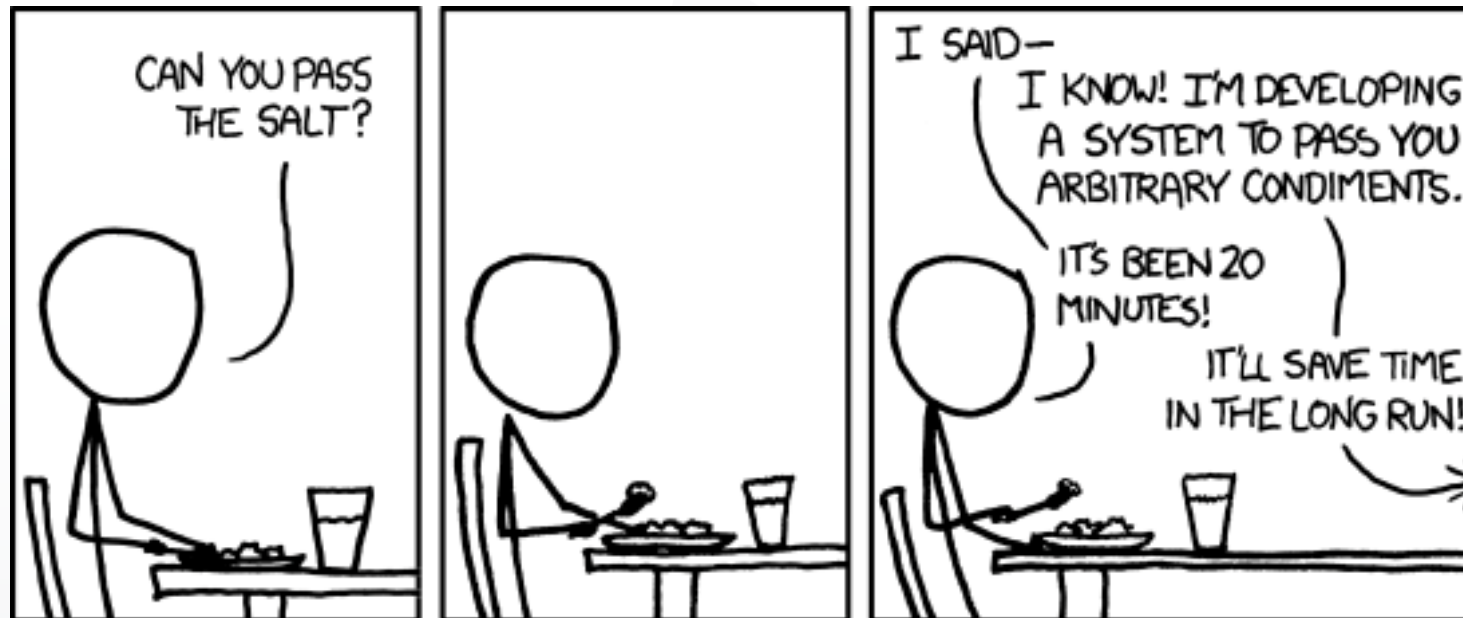


Matt Kobayashi, 2023



https://twitter.com/acontios_net/status/1679499010757783557

Portal – The Magic Behind Network Automation



Portal – The Magic Behind Network Automation

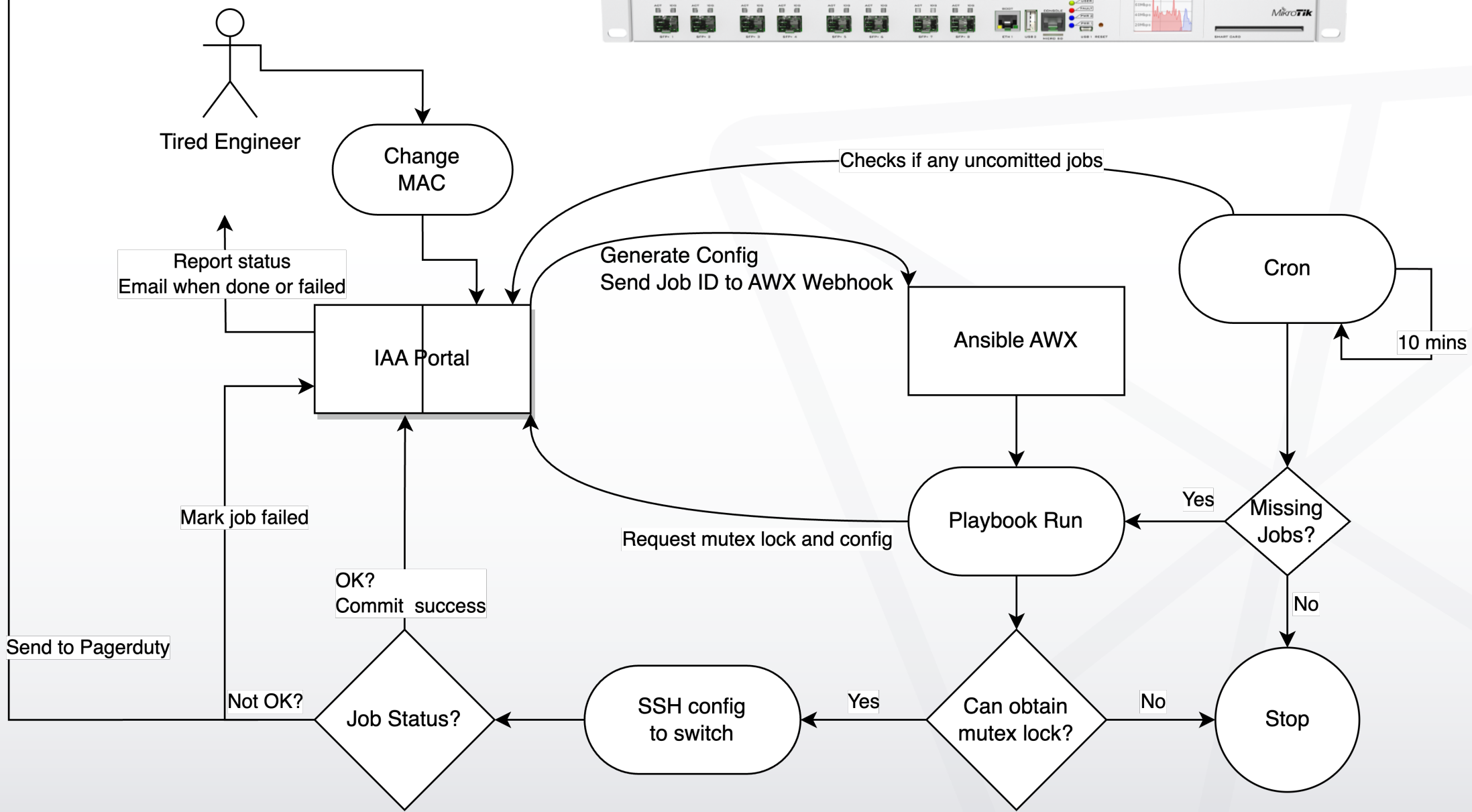
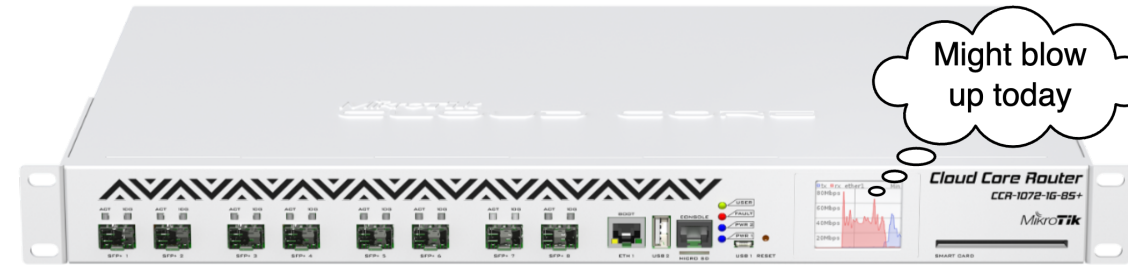
- The biggest problem to solve with brown field automation

STATE CONSISTENCY

- How can you feel comfortable deploying changes automatically, is the data in my database correct? Has someone deployed config without documenting it etc.?
- You do things twice! We are deploying Nautobot, which pulls state from our portals API, generates config for switches top down, and validates that against what lives on the switches. Consistency will be checked every other hour, and if anything is not right, engineers will be alerted to resolve.

PagerDuty

WAKE UP!



Portal – Network Automation *contd*

- What can you do?
 - MAC and VLAN changes for all services
 - VLL provisioning and speed changes
 - Service migrations between owned ports
 - Convert Extended Reach to Peering
 - Convert ports to LACP, add bundle members
 - AS-SETs and Route Limit updates
- When can you do it?
 - End of August – Alpha Launch
 - Config generated magically, still checked and applied by humans – expect small delays for now, whilst we iron out any bugs – Please submit all changes in portal, and email / call to book a time!

Portal – Network Automation

Migrate Service to New Port

Complete this form to request a migration to an existing port you own

Peering: peering
peering_inZy3sh Live Primary Peering

Service Port: Test Port 3 Exchange: DEV-IX [View](#)

VLAN: 123 10 Gbps
 \$0.00 AUD AS7606

New Port *

New VLAN *

New MAC Address *
Please use your routers Layer 3 MAC Address. This must be unique.

This feature is currently in Beta. Each request is manually checked and approved by one of our network engineers to ensure accuracy and validity of the automated change. As such there may be a longer delay between submission and actioning of your request. If you require the change to be completed ASAP, please call our support desk on [+61892004980](tel:+61892004980).

Convert port to LACP bundle

Complete this form to request conversion to LACP bundle before ordering additional ports.

Test Port 3
port_8EFKpDk Live [View](#)

NextDC S1 (Development IX)- 4 Eden Park Drive 1 x 10 G \$350.00 AUD Allocated

⚠ An outage is required to convert this port to an LACP bundle. When you submit this request your port will be drained using BCP214 compliant filters, LACP enabled and then the BCP214 filters removed. During the Network Automation Beta Period, these changes will not happen automatically. A member of the IAA team will be in contact with you to arrange a suitable time for this change to occur once you submit this change request.

A member of the IAA team will be in contact with you to arrange a suitable time for this change to occur.

Agreement I agree to the above warning and wish to proceed with this change to enable LACP on this service.

This feature is currently in Beta. Each request is manually checked and approved by one of our network engineers to ensure accuracy and validity of the automated change. As such there may be a longer delay between submission and actioning of your request. If you require the change to be completed ASAP, please call our support desk on [+61892004980](tel:+61892004980).

Add Ports to LACP Bundle

Complete this form to request additional switch ports on LACP bundle.

Test Port 3
port_8EFKpDk Live [View](#)

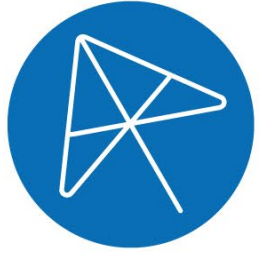
NextDC S1 (Development IX)- 4 Eden Park Drive 1 x 10 G (LACP) \$350.00 AUD A

Number of Ports * OLD MRC: \$350.00
 NEW MRC: \$1,400.00

Add additional ports at the same speed to your Port service. This option will make changes to the billing of this service. An estimate is provided upon change

i By submitting this request you agree to any billing changes applicable to your service. There is a 7 day cross-connect grace period before the new billing will commence. Once ports have been assigned to your service the relevant LOA documents will be sent to your email and the automatic configuration will be applied to your service.

This feature is currently in Beta. Each request is manually checked and approved by one of our network engineers to ensure accuracy and validity of the automated change. As such there may be a longer delay between submission and actioning of your request. If you require the change to be completed ASAP, please call our support desk on [+61892004980](tel:+61892004980).



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Public Policy and Advocacy



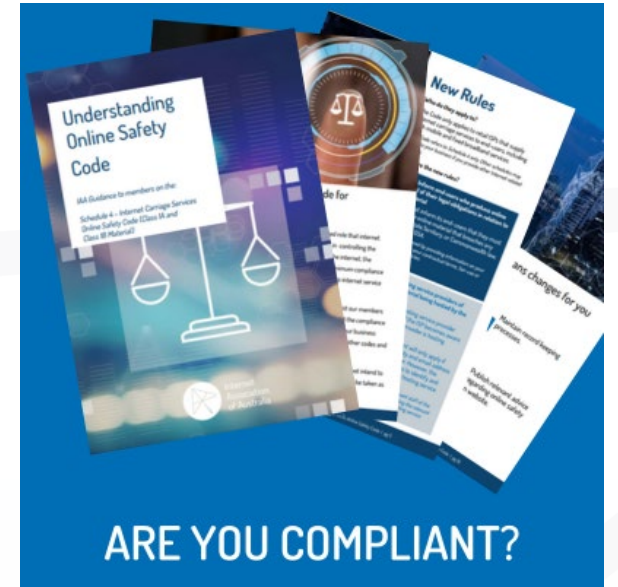
Public Policy and Advocacy

- 27 Submissions
 - NBN Co Special Access Undertaking
 - Security of Critical Infrastructure
 - Online defamation
 - Privacy
- Industry Events
 - NetThing 2022
 - Cybersecurity conferences
 - Comms Day Policy Forum



Public Policy and Advocacy

- Industry Representation
 - Interception Consultative Committee
 - Telecommunications Security
 - Risk and Resilience Expert Panel
 - Aus – Internet Governance
- Educational Material
 - Online Safety Code – Internet Carriage Services



Public Policy and Advocacy

- Are we covering the areas that members are interested in?
- Are there any other areas that are a priority to members?
- Is there anything else you want to know?
- Is there anything else you would like us to do?
- Is there anything else you would like to discuss today?

- Drop a comment now in the Q&A!



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Events



Past Events

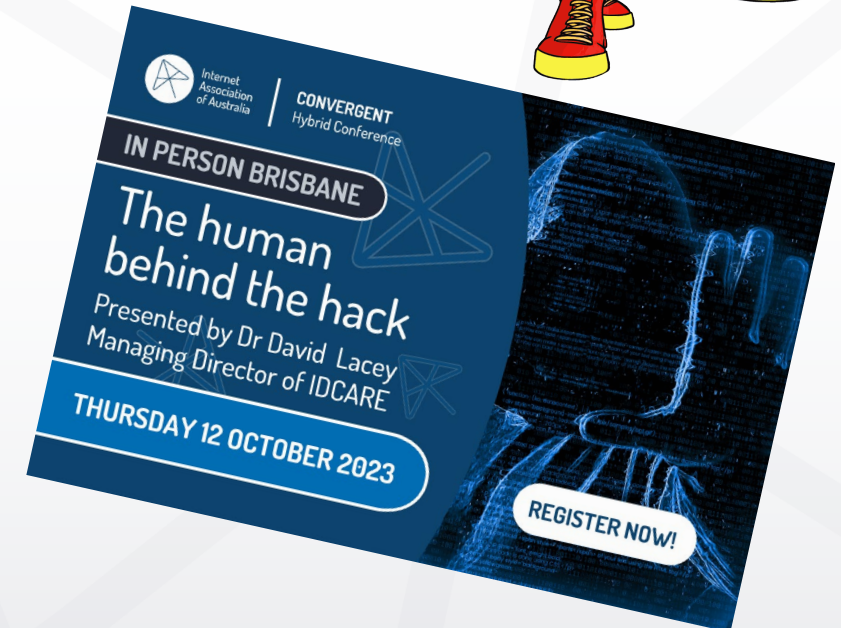
Event	Location	Date	Attendance
IAASystems 2021	Sydney	Apr-22	19
Lawful Intercept on the Cheap	Online	Aug-22	19
IAASystems 2022	Melbourne	Aug-22	26
IAA AGM 2022	Perth	Oct-22	29
WA-IX 25th Anniversary Celebration	Perth	Oct-22	53
Keep Ukraine Connected	Online	Nov-22	20
2022 Perth End of Year Member Event	Perth	Nov-22	31
2022 Sydney End of Year Member Event	Sydney	Dec-22	n/a
2022 Adelaide End of Year Member Event	Adelaide	Dec-22	15
2022 Melbourne End of Year Member Event	Melbourne	Dec-22	18
2022 Brisbane End of Year Member Event	Brisbane	Dec-22	23
IAA Convergent 2023 - Malicious Domains: Where they are, and what we can do about them	Online	Mar-23	38
IAA Convergent 2023 - RPKI and ROV training in Partnership with APNIC Academy Training	Adelaide	Apr-23	11
IAA Convergent 2023 - Can I trust my clock? Why NTP is a fail	Melbourne	May-23	19
IAA Convergent 2023 - Online: Can I trust my clock? Why NTP is a fail	Online	Jun-23	24
NSW-IX 10th Anniversary Celebration	Sydney	Jun-23	33
IAA Convergent 2023 - RPKI and ROV training in Partnership with APNIC Academy Training	Canberra	Jul-23	14
IAA Convergent 2023 - RPKI and ROV training in Partnership with APNIC Academy Training	Sydney	Jul-23	11



Upcoming Events



Event	Location	Date
IAASystems 2023	Gold Coast	Sep-23
IAA Convergent 2023 - Extreme Lighting Displays (<i>working title</i>)	Online	Sep-23
IAA Convergent 2023 - TBC	Perth	Sep-23
IAA Convergent 2023 - The Human Behind the Hack	Brisbane	Oct-23
IAA Convergent 2023 - The Human Behind the Hack	Online	Nov-23
IAA AGM 2023	Sydney/Online	Nov-23
2023 Sydney End of Year Member Event	Sydney	Nov-23
2023 Adelaide End of Year Member Event	Adelaide	Nov-23
2023 Melbourne End of Year Member Event	Melbourne	Nov-23
2023 Perth End of Year Member Event	Perth	Nov-23
2023 Brisbane End of Year Member Event	Brisbane	Dec-23



Sponsorships

Event	Level
Apricot 2022	Platinum
AusNOG 2022	Gold
WITWA Conference & Awards 2022	Silver
Peering DB 2022	Gold
CommsDay Summit 2022	In-kind
Cyber Security for Government Summit	In-kind
DIGITAL GOVT 2022- Government Digital Transformation 2022	In-kind
NetThing 2022	Panel
Enex Communications Industry Boat Cruise 2022	Association
Exito Cyber Security Conference Sydney	In-kind
Apricot 2023	Bronze
Peering DB 2023	Gold
Digital Transformation Live 2023	In-kind
CyberOZ 2023	In-kind
State of the Social	In-kind
<i>Future - NetThing 2023</i>	<i>Notebooks/Pens</i>
<i>Future - APriGF</i>	<i>In-kind</i>
<i>Future - AusNOG 2023</i>	<i>Sponsor</i>
<i>Future - BSides Canberra 2023</i>	<i>Bronze</i>
<i>Future - WITWA Conference & Awards 2023</i>	<i>Bronze</i>
<i>Future - Apricot 2024</i>	<i>Bronze</i>
<i>Future - Peering DB 2024</i>	<i>Gold</i>
<i>Future - Digital Transformation Live 2024</i>	<i>In-kind</i>



Where to now for sponsorship and events?

- The Board approved a 5-year event and sponsorship plan in 2022
- This led to the re-invigoration of our in-person events and growing them to be educational as well as networking
- The next step is to expand the duration of these in-person events
- *What would members like to see? What events would members attend?*

Open forum – any other business?

Is there anything else you would like to discuss today? Drop a comment now in the Q&A!



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Thank you for coming!

We hope to see you again soon.

