

# Annual General Meeting 2019

## Agenda

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- Welcome, Barry Murphy Chair
- Secretary's Report, Nathan Brookfield
- Treasurer's Report, Dave Mill
- Technical Report, Tim Raphael
- Meeting Close, Dave Mill

*Followed by 100G Ring Project presented by Nathan Ward*

# Secretary's Report, Nathan Brookfield

## Secretary's Report

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- Please sign the attendance register if you haven't already
- Membership growth
  - March 2017 - 47
  - March 2018 - 52
  - March 2019 - 60
- Sponsorship of NZNOG



## Secretary's Report

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- Recent updates to by-laws  
*Updated to provide greater clarity regarding financial members in order to stand for committee elections*
- Changes to the Acceptable Use Policy  
*Updated to reflect NZ law*
- All documents are available on the NZIX website

# Treasurer's Report, Dave Mill

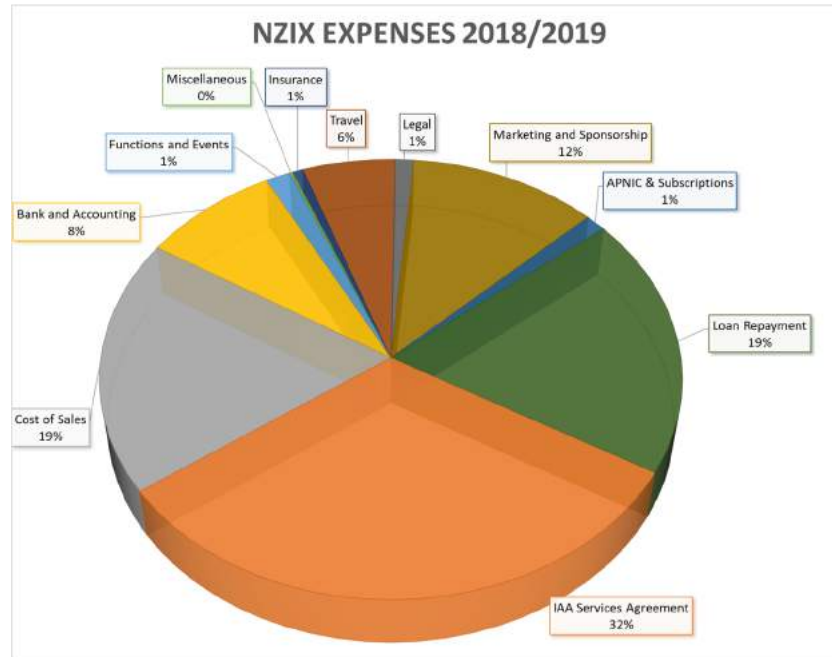
## Treasurer's Report

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- 2018/2019 financial year summary
  - **\$64,196** profit for the year
  - **\$145,862** cash at end of financial year (31 March 2019)
  - Total equity of **\$185,709** at end of financial year
  - IAA loan paid off in full – 2 November 2018
  - **DEBT FREE !!#@!**
- Fully audited financial statement hand-outs are available on request

# Treasurer's Report

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# Treasurer's Report

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## Statement of Financial Performance

New Zealand Internet Exchange Incorporated  
For the year ended 31 March 2019

	NOTES	2019	2018
<b>Members Contributions</b>			
Peering		267,561	218,225
<b>Total Members Contributions</b>		<b>267,561</b>	<b>218,225</b>
<b>Direct Costs</b>			
Peering - Data Centre/Co-location		33,336	32,770
Peering - Fibre/Interconnects		6,416	5,419
Peering - Remote Hands		150	-
Purchases		-	21,114
<b>Total Direct Costs</b>		<b>39,902</b>	<b>59,303</b>
<b>Gross Profit</b>		<b>227,659</b>	<b>158,922</b>
<b>Other Income</b>			
Interest Income		101	164
<b>Total Other Income</b>		<b>101</b>	<b>164</b>

# Treasurer's Report

<b>Expenses</b>		
Accounting Fees	3,833	3,350
Audit Fees	2,475	2,516
Bank Fees	1,942	1,475
Functions & Events	3,223	3,363
General Expenses	406	255
Insurance	1,380	2,295
Interest Expense	7,412	1,131
Legal Expenses	2,440	7,312
Marketing & Sponsorship	24,556	8,684
Merchant Charges	281	256
Service Agreements (IAA)	67,941	25,567
Subscriptions	2,701	3,013
Travel	12,005	11,537
Exchange Loss	1,868	1,412
<b>Total Expenses</b>	<b>132,462</b>	<b>72,167</b>
<b>Net Profit Before Depreciation</b>	<b>95,297</b>	<b>86,919</b>
<b>Less Depreciation</b>		
Depreciation	31,101	46,807
<b>Total Less Depreciation</b>	<b>31,101</b>	<b>46,807</b>
<b>Less Non Deductible Expenses</b>		
Pre-Incorporation Costs	-	34,282
<b>Total Less Non Deductible Expenses</b>	<b>-</b>	<b>34,282</b>
<b>Net Profit for the Year</b>	<b>64,196</b>	<b>5,831</b>

# Treasurer's Report

## Balance Sheet

New Zealand Internet Exchange Incorporated  
As at 31 March 2019

	NOTES	31 MAR 2019	31 MAR 2018
<b>Assets</b>			
<b>Current Assets</b>			
Cash and Cash Equivalents		145,862	89,206
Income Tax Receivable	3	33	83
Prepayments		2,851	765
Trade Receivables		15,495	14,989
<b>Total Current Assets</b>		<b>164,242</b>	<b>105,043</b>
<b>Non-Current Assets</b>			
Fixed Assets		31,417	61,253
<b>Total Non-Current Assets</b>		<b>31,417</b>	<b>61,253</b>
<b>Total Assets</b>		<b>195,659</b>	<b>166,296</b>
<b>Liabilities</b>			
<b>Current Liabilities</b>			
GST Payable		6,257	5,691
Loans	4	-	31,564
Trade Payables		3,693	7,328
<b>Total Current Liabilities</b>		<b>9,950</b>	<b>44,783</b>
<b>Total Liabilities</b>		<b>9,950</b>	<b>44,783</b>
<b>Net Assets</b>		<b>185,709</b>	<b>121,513</b>
<b>Equity</b>			
Members Funds		185,709	121,513
<b>Total Equity</b>		<b>185,709</b>	<b>121,513</b>

## Treasurer's Report

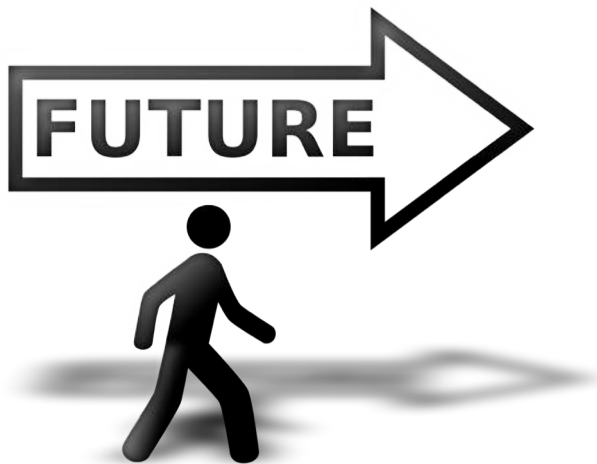
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- Formalities
  - Acceptance of audited financials presented
- Appointment of auditors for 2019/2020 financial year
  - Dan Hill  
Evolve Financial Consulting
  - Has audited our books for the past 3 years

# Treasurer's Report

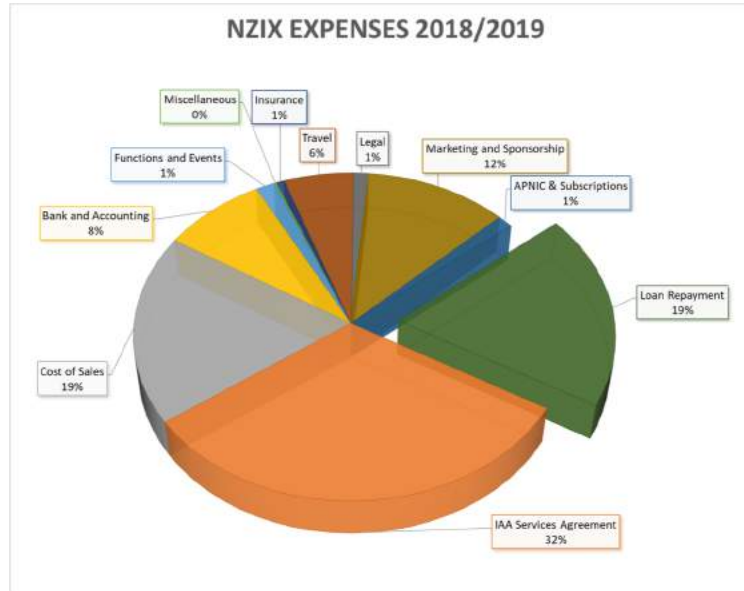
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Looking ahead...



# Treasurer's Report

Previous financial year (2018/2019)



# Treasurer's Report

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Previous financial year (2018/2019)

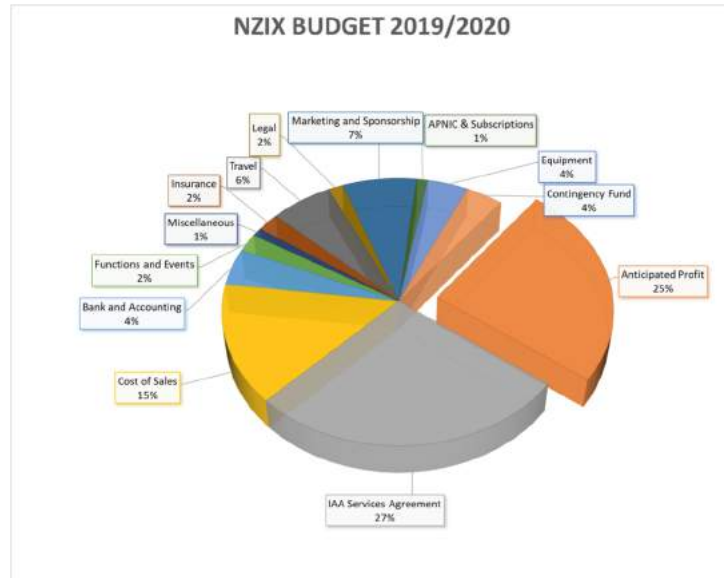
- **\$145,862** cash at end of year



(actual image supplied by bank...)

# Treasurer's Report

Current financial year (19/20) – 'Austerity' Budget





## Treasurer's Report

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- However....
  - Rugby World Cup 2019
  - Spark Sport / Akamai
  - Member demand for 40G / 100G
  - Until now we've had no resiliency from fibre cuts or switch failures

## Treasurer's Report

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Extra spend for this year:

- Building a 100G ring around our 3 existing pops
- Nathan Ward / SearchLight bought in as a contractor
- Capex      **\$72,000** switches  
                 **\$32,000** optics – Yes, 100G ER4s are expensive!  
                 **\$30,000** – install fees and contractor costs
- Moving in to Spark colo in MDR
- **AU\$50,000** loan arranged from IAA – **if required**

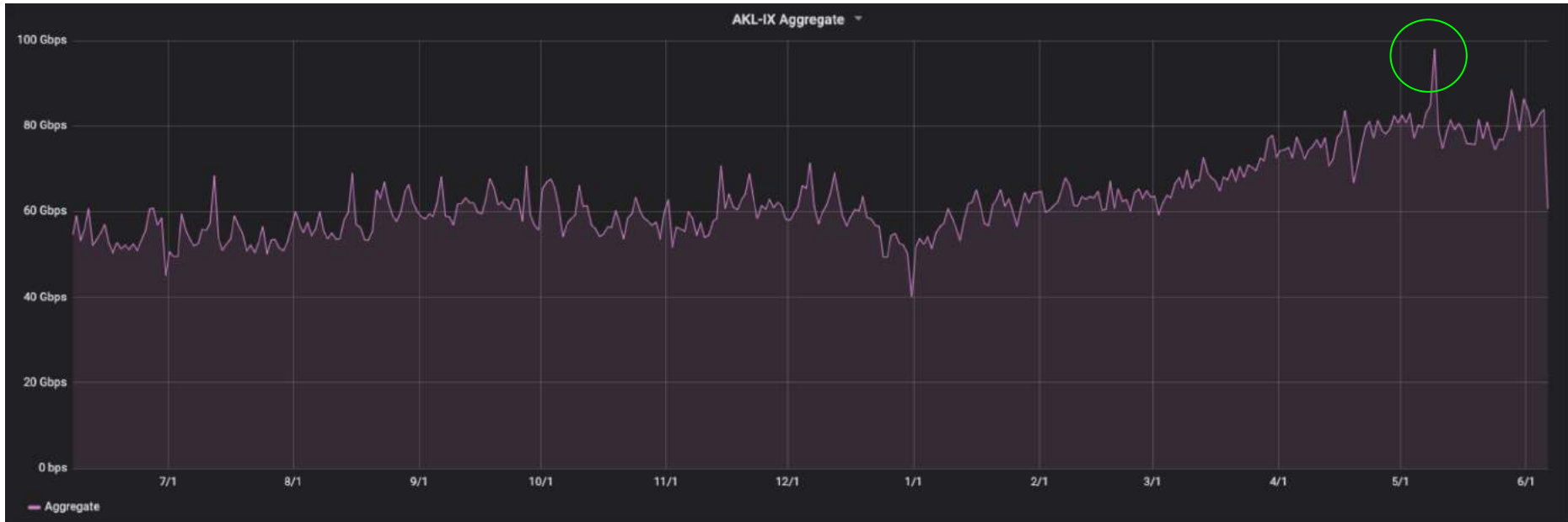
# Technical Report, Tim Raphael - IX Australia

## Technical Report

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- 69 unique peers
- Aggregate peak in excess of 97.9Gbit/s on 9th May 2019
- Average nightly aggregate around 80Gbit/s
- 51,419 IPv4 Routes
- 24,759 IPv6 Routes

# Technical Report



# Technical Report

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	<i>2017</i>	<i>2018</i>	<i>2019</i>
Peers	64	70	77
Traffic Peak	20Gbit/s	60Gbit/s	98Gbit/s
IPv4 Routes	8,000	10,000	51,000
IPv6 Routes	700	1800	24,000

Meeting Close, David Mill

## Meeting Close

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- Thank you all for coming
- Please welcome Nathan Ward who will talk about our 100G Ring Project



# 100G Ring, Nathan Ward

# AKL-IX 100G Ring

NZIX AGM 2019

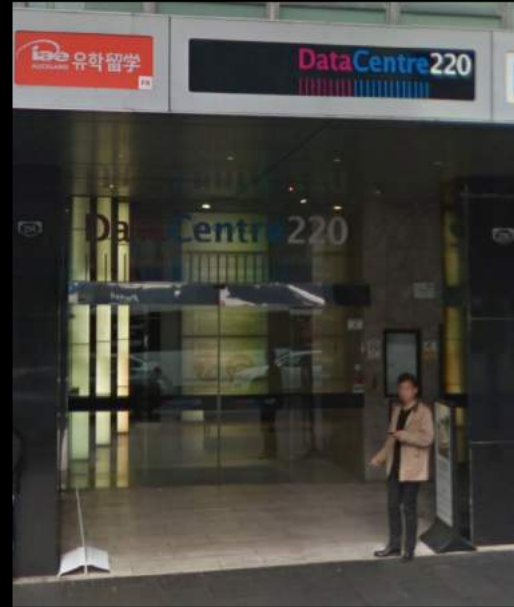
# State as of yesterday

- 3 sites
- 2 cross-town ~40G links
  - 4x10G CWDM, not 40G-LR4, with circulators
- “Hub” at MDR
  - ICABS
- 4 PEs (switches)
  - 220q 2 (akl1)
  - MDR 1 (akl3)
  - Vocus 1 (akl2)

# State as of yesterday

- 4 x Extreme X670 of various models
- VPLS, LDP, RSVP-TE, OSPF
- 4x10G LAGs between sites
- 2x40G LAGs between floors in 220

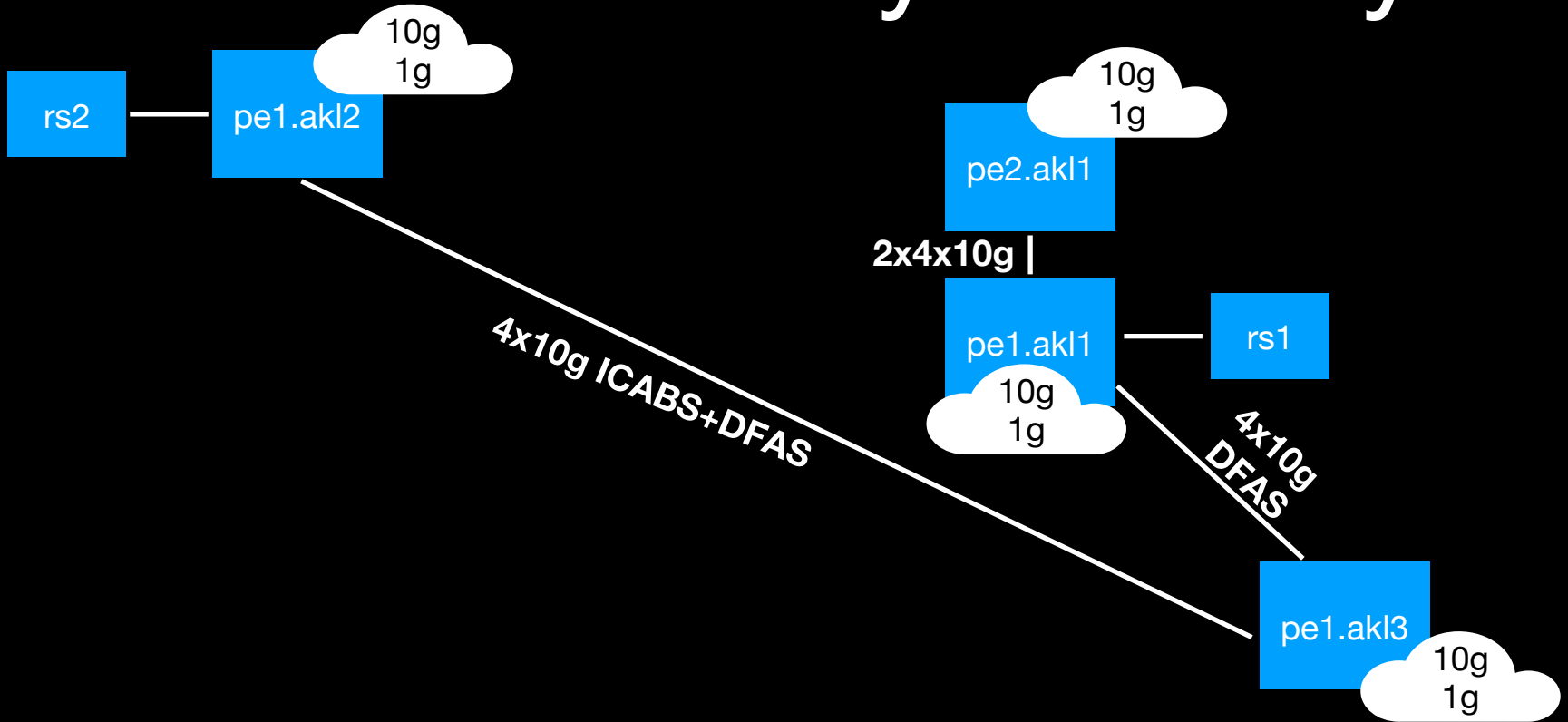
# 3 sites



# 3 sites



# State as of yesterday



# What

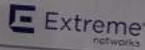
- 40g->100g core
- New switches
  - 3 prod, 1 spare
  - Extreme X870
- Remove some current switches
- Complete the ring
- Offer 40G and 100G member ports
- Move to Spark rack in MDR



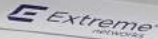
# Why

- “Member demand”
  - Some people like ball sports ㄝ\_(ツ)\_ㄝ/





## Obtaining Extreme Networks Product Documentation



## Obtaining Extreme Networks Product Documentation

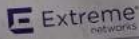
Hardware and software documentation for Extreme Networks products is available from the Extreme Networks website at:

[www.extremenetworks.com/support/documentation/](http://www.extremenetworks.com/support/documentation/)

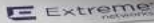
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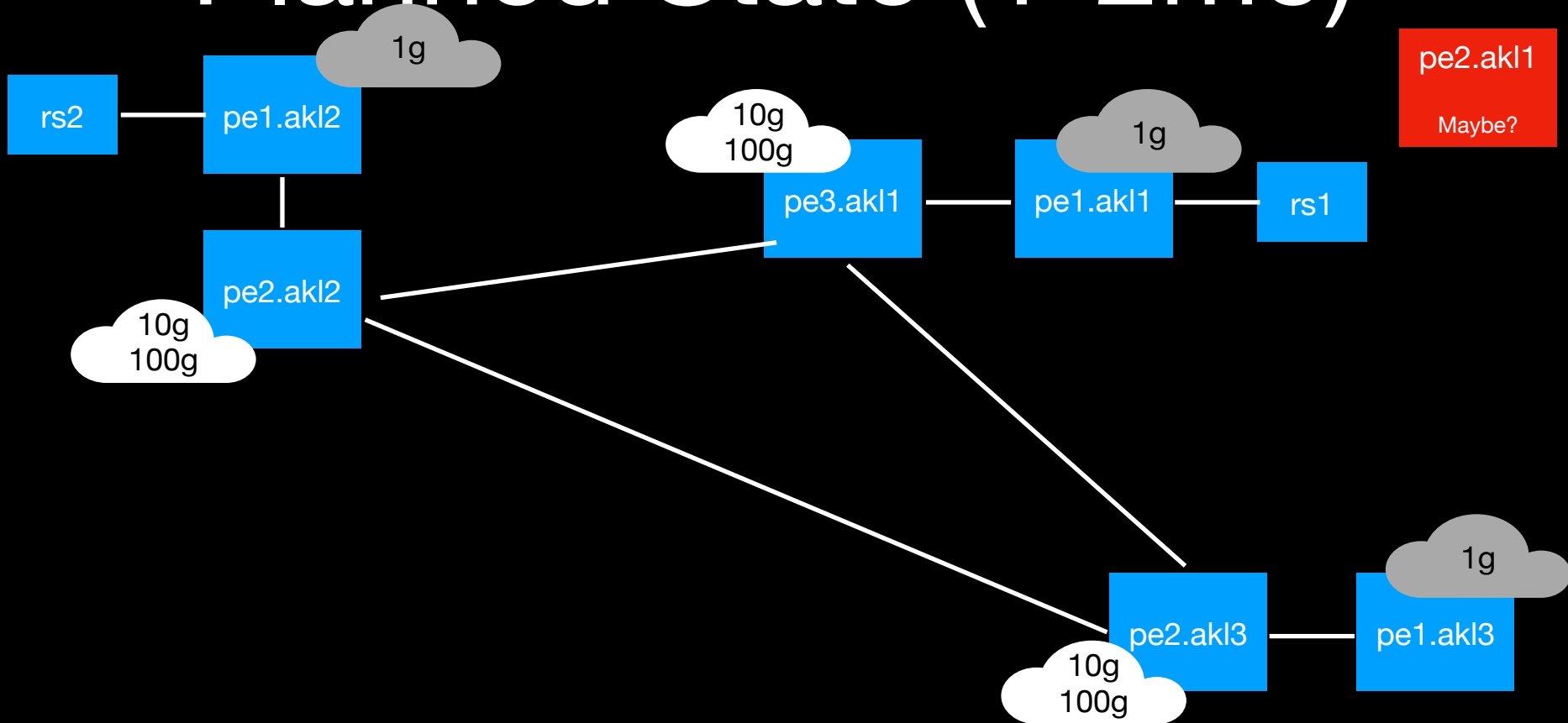
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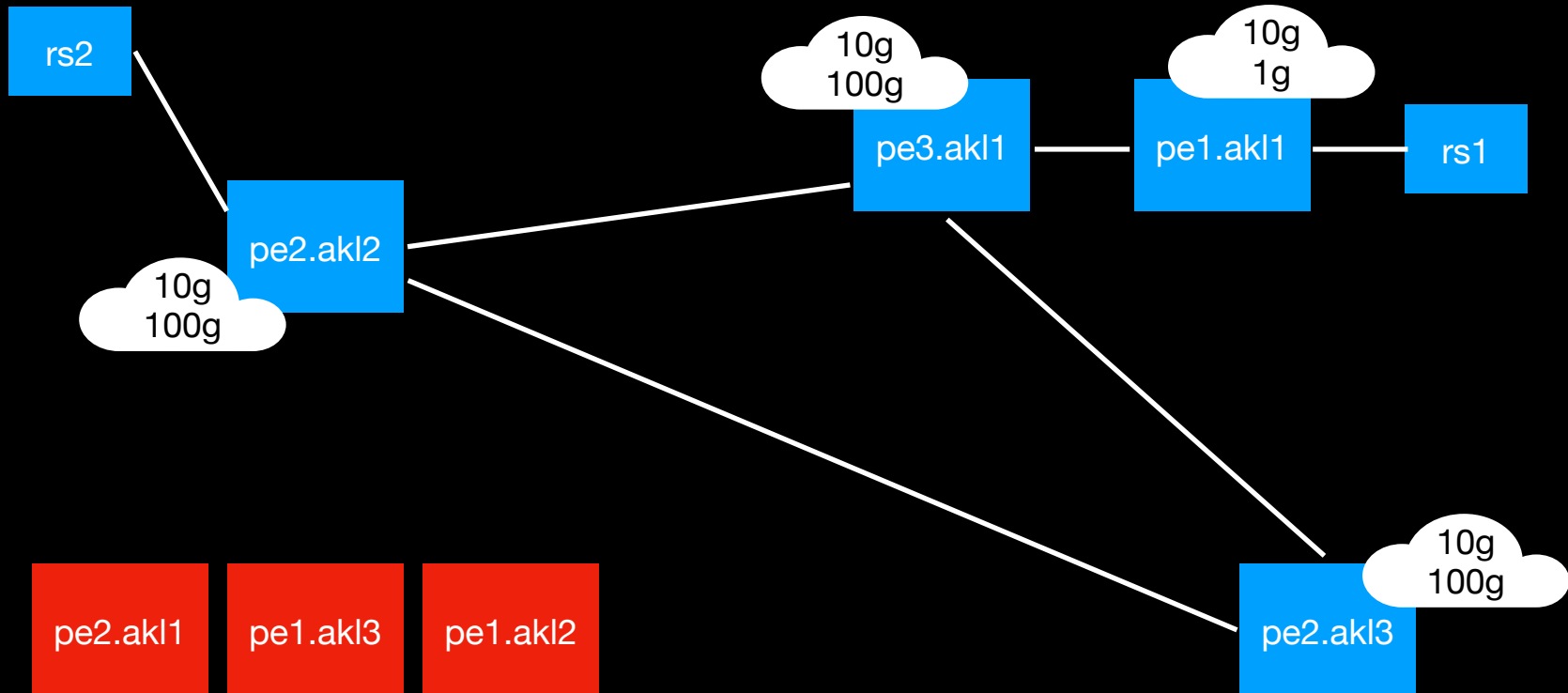
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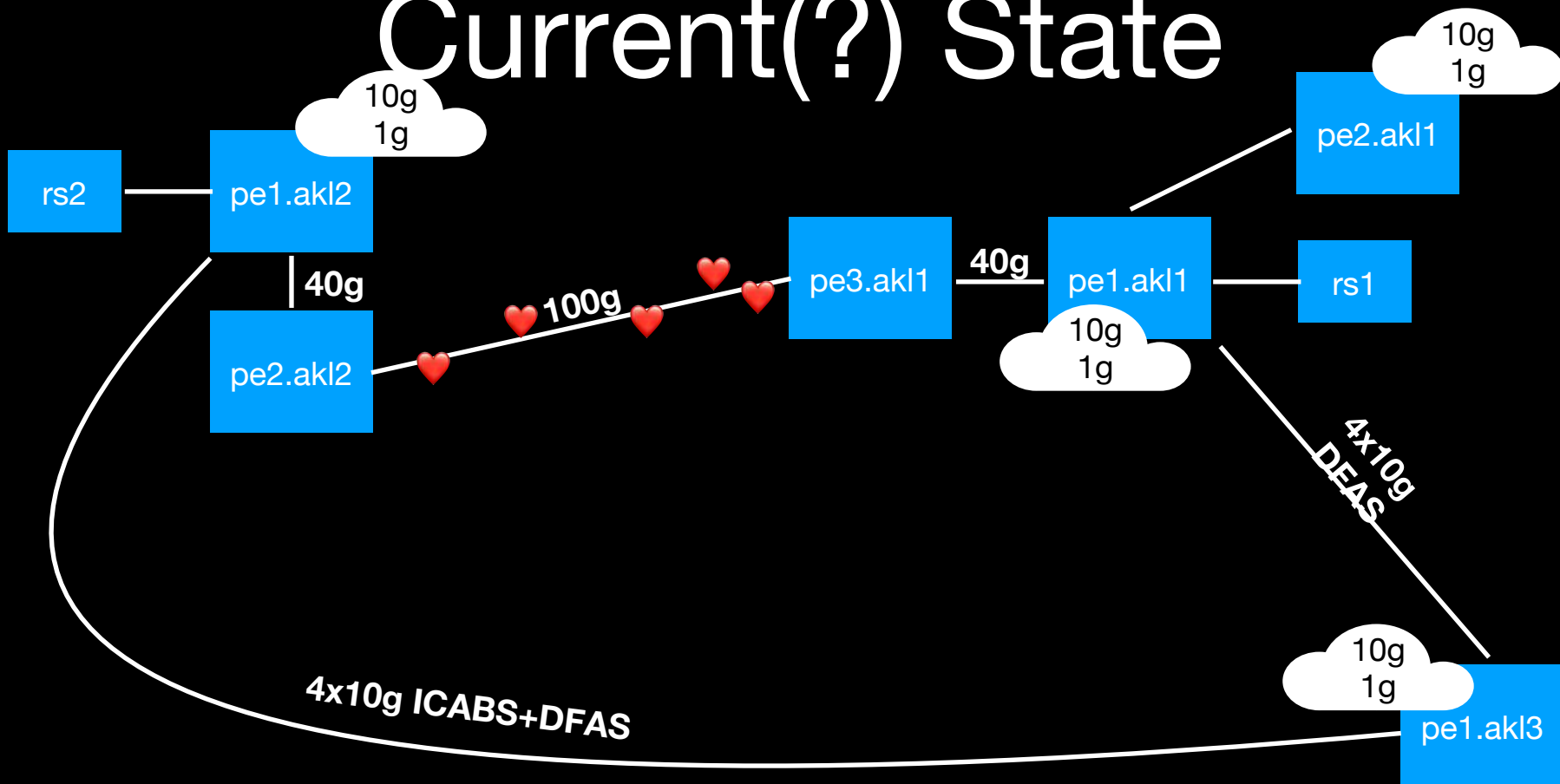
# Planned State (1-2mo)



# Planned State (long)



# Current(?) State



# State as of now(?)

- 3 sites
- 2 cross-town ~40G links
- 1 cross-town 100G link
- 6 switches
  - 220q 3 (akl1)
  - MDR 1 (akl3)
  - Vocus 2 (akl2)

# State as of ~ few weeks

- 3 sites
- 3 cross-town 100G links
- RQ Chorus DFAS
- 7 switches
  - 220q 3 (akl1)
  - MDR 2 (akl3)
  - Vocus 2 (akl2)




# Bits for you all

- We're going to very soon plan migrations
  - Some? 10g members to new switches
- Batches 2-3 windows per site
  - 1-2 day
  - 1-2 night
  - What do you prefer?

# Technical Interests

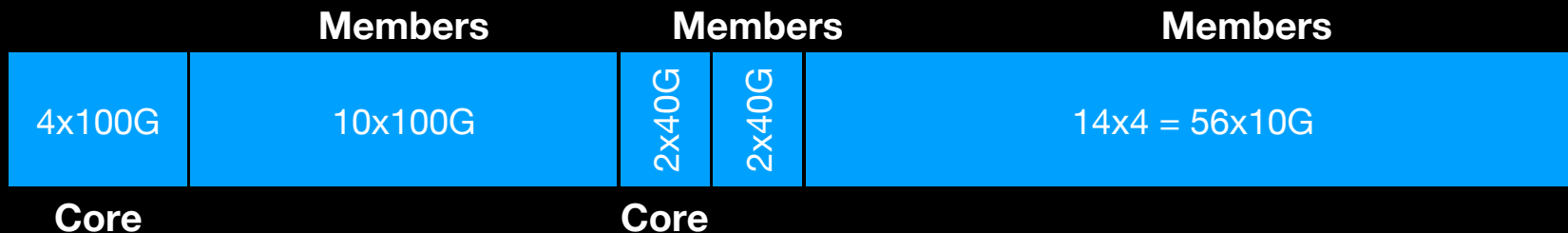
- Current network is LDP over lots of parallel RSVP-TE over 4x10G LAGs
- 100G network is LDP over RSVP-TE
  - 2 TE paths built between each 100G PE + ECMP
  - No LAGs

# Technical Interests

- 2 links are 100G ER4
  - Vocus - MDR
  - Vocus - 220
  - 
- 10G members are 40G-PLR4 with breakout cables

# Technical Interests

- Extreme X870 switches
- 32xQSFP28
- QSFP28 holes can do 100G or 40G
- QSFP breakout to 10G (PLR)



# Stuff to know

- Couple of fibre risk points
  - Harbour bridge is the major, few other little ones
  - Better than no diversity - as it was yesterday
- Right now, mostly 4x10G - single failure means 3x10G
  - Now, if an optic fails it's a bigger hit
    - Technically

# Future

- Double up the 100G links
  - Between 220q and MDR first
- Triple up the 100g links
- Quadru.. :-)
- Move more 10G peers
  - Try to retire 1G at MDR/Vocus

# Communities

- Route-servers don't add any communities at the moment
- Should they?
- “route received from peer at site X”
- “route received from peer on PE Y”