Technology Update

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CTO

Wednesday 21st February 2024
LINX121

- 2024 Operations Approach
- Incidents
- LON1 Update
- Route Serves

2024 Operations Approach

2024 Operations Approach

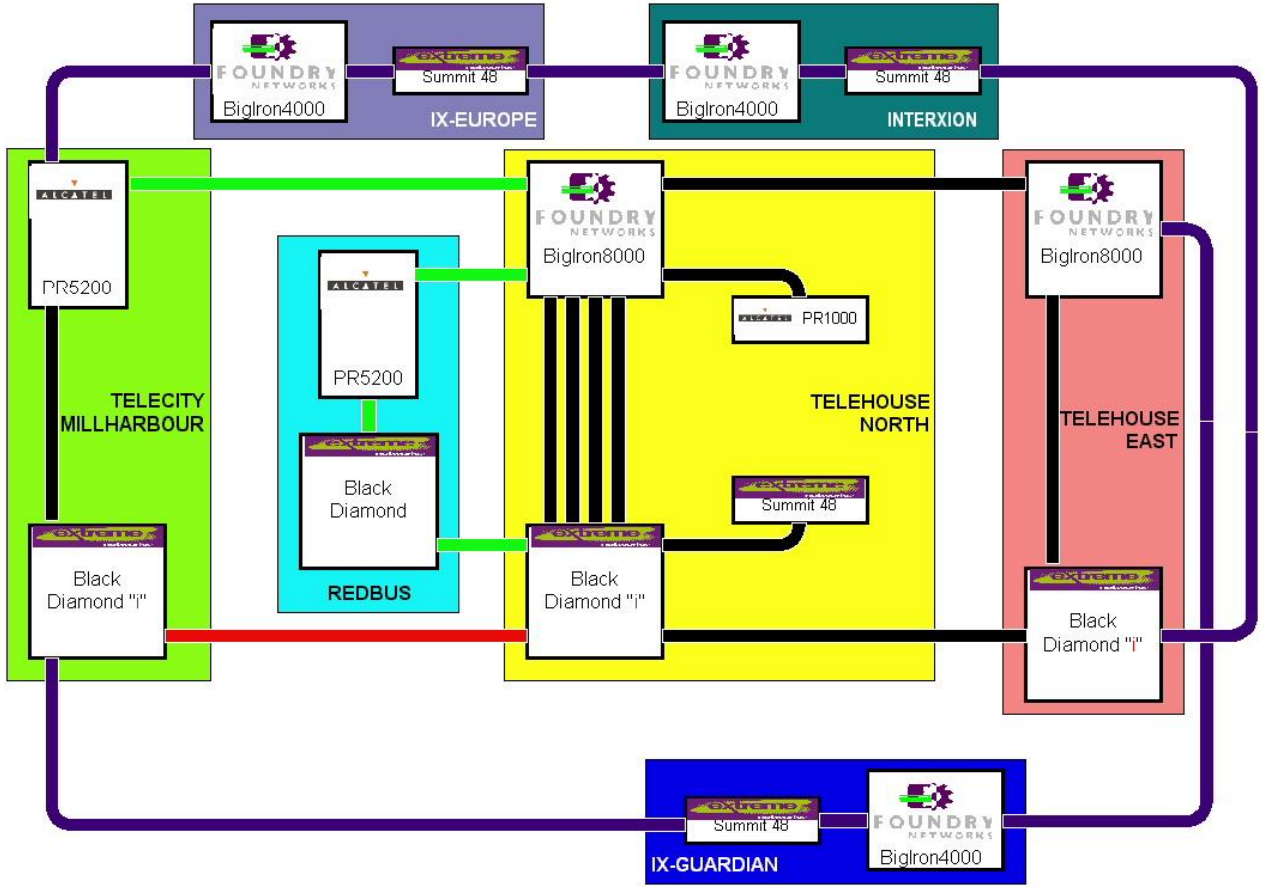
- Reflections from 2023 and how we present to the membership, on social media and at LINX events
- Evolution of LINX, our peering LANs and geographical presence
- New tools and communication

2024 Operations Approach

1994 — LON1, Telehouse North

2024 Operations Approach

- In 2001, 7 years on from launch, we had a single LAN, **LON1**, we had **7 locations** across London, and we had equipment in **7 PoPs**, and **16 network devices**



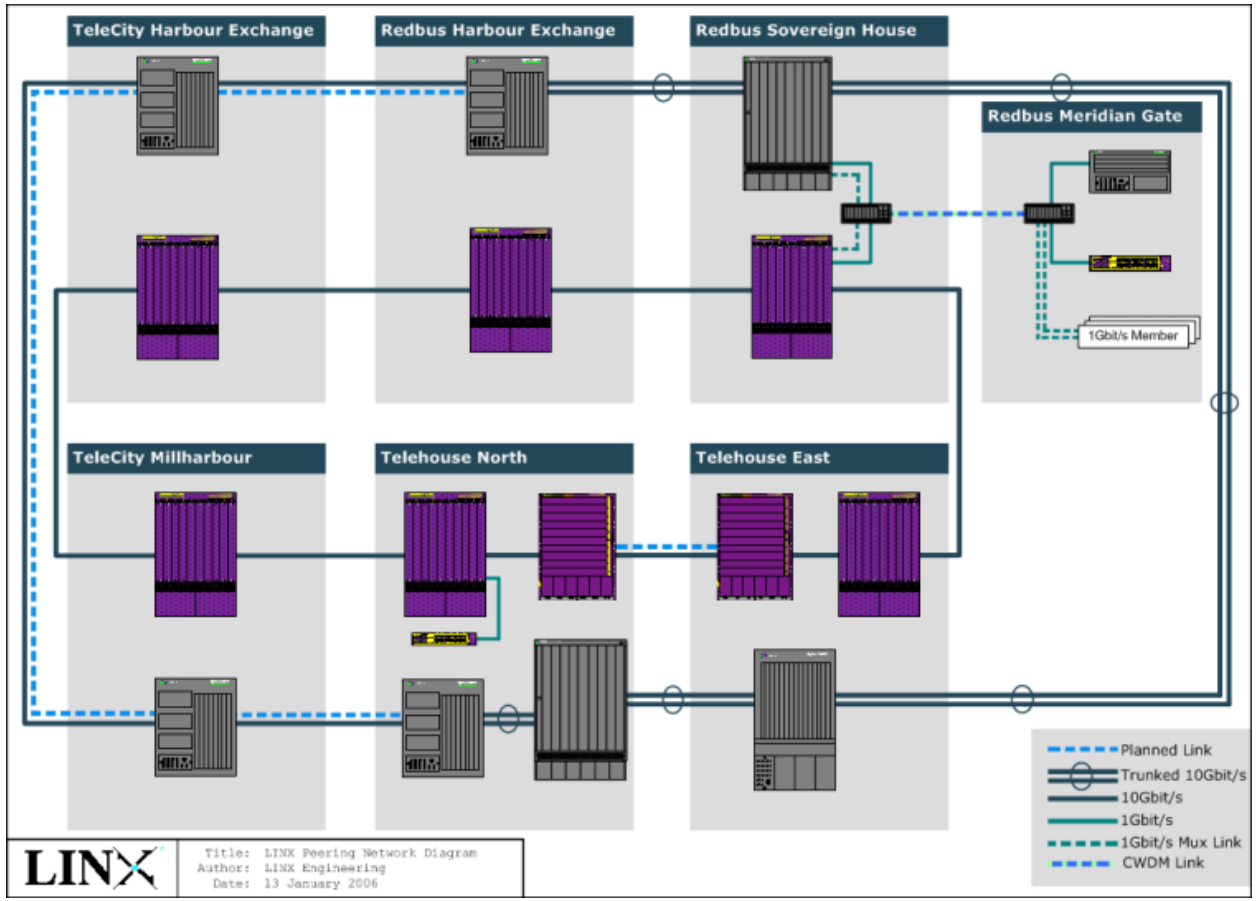
2024 Operations Approach

1994 — LON1, Telehouse North

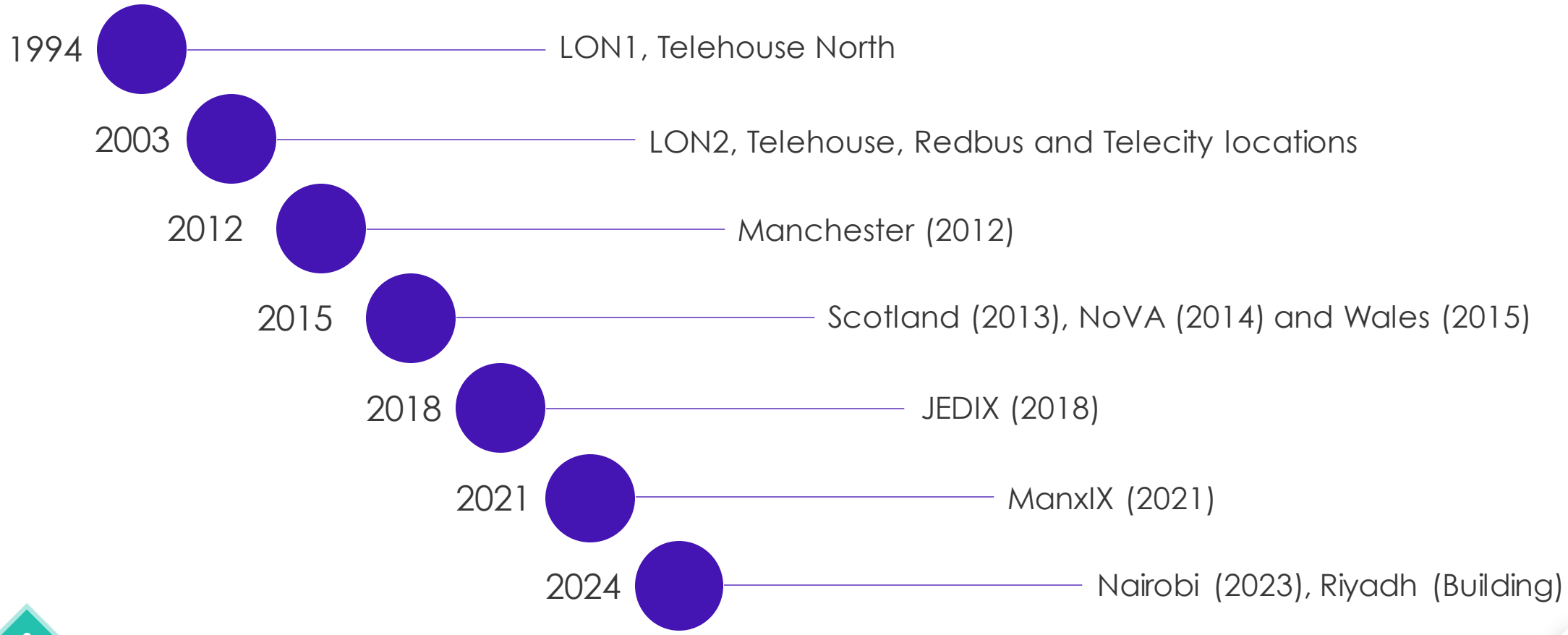
2003 — LON2, Telehouse, Redbus and Telecity locations

2024 Operations Approach

- In 2003 **LON2 launched**, by 2006 we had **2 LANs**, **7 locations** and **13 PoPs**



2024 Operations Approach

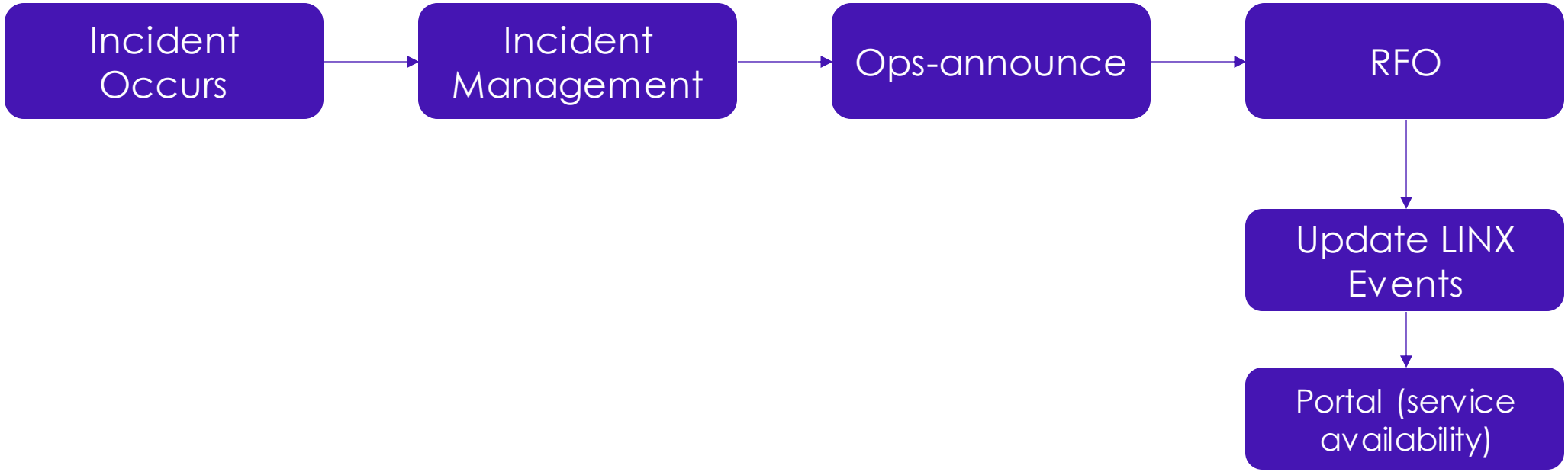


2024 Operations Approach

- In 2024, we have **10 LANs**, across many countries, covering **31 locations** and over **40 PoPs,** linking in some **49 buildings,** with well over **200 network devices.**

2024 Operations Approach

- Operations update covers mainly incidents and reason for outage (RFO) reports



2024 Operations Approach

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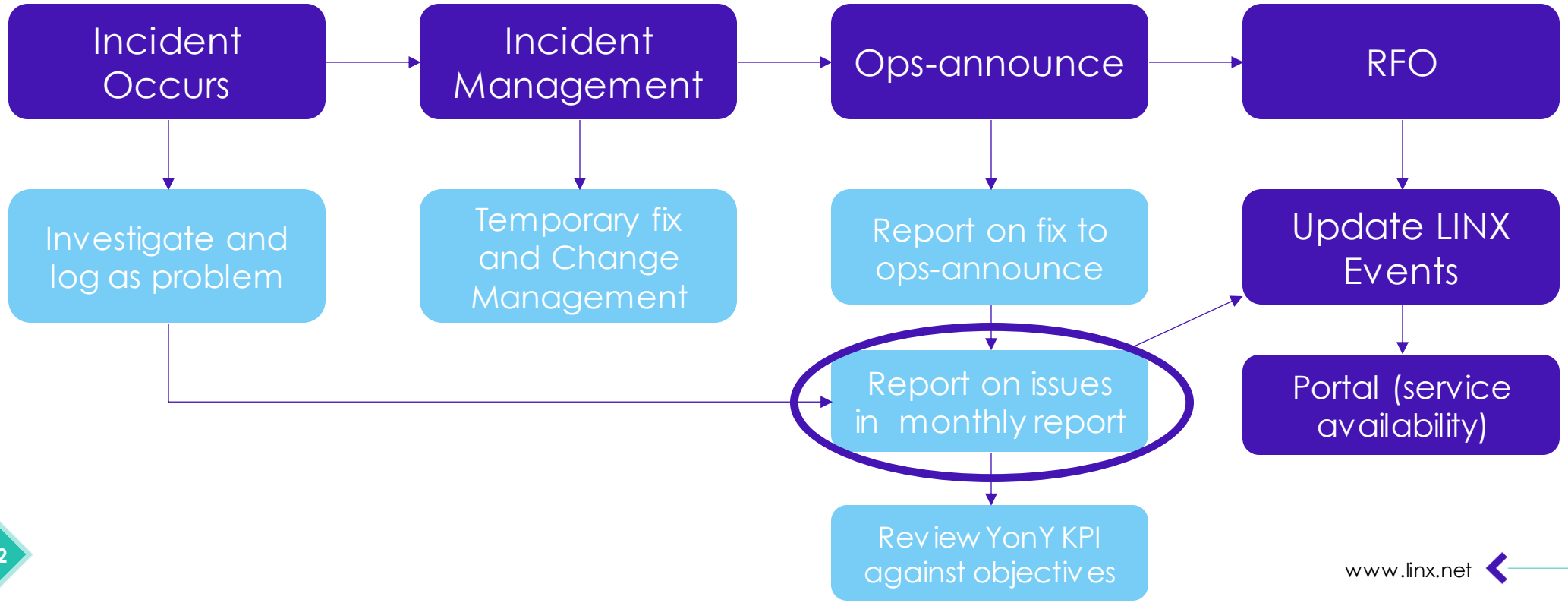


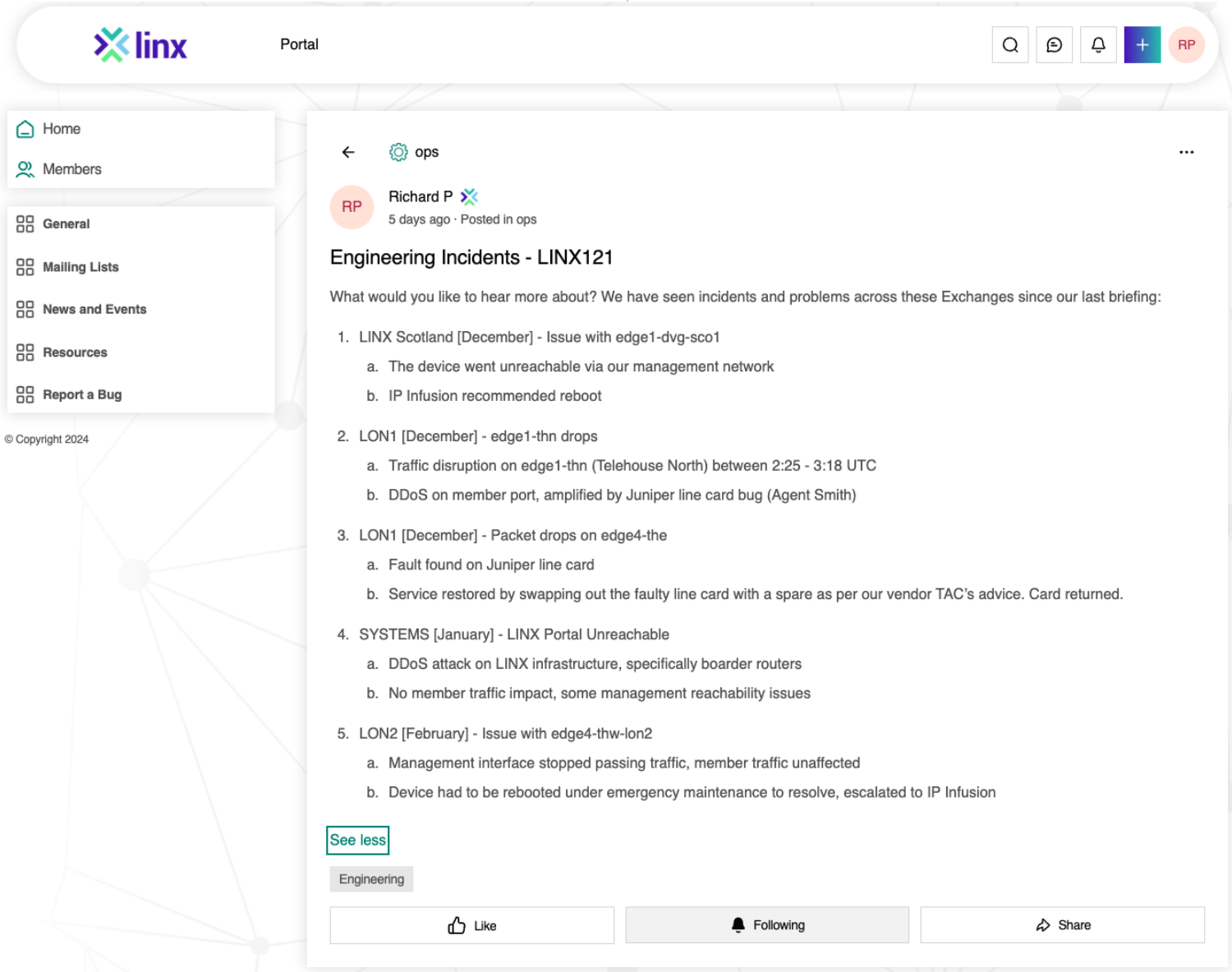
2024 Operations Approach

- Reflections from 2023 and how we present to the membership, on social media and at LINX events
- Evolution of LINX, our peering LANs and geographical presence
- New tools and communication..

LINX Community

2024 Operations Approach

- LINX Community, full presentation tomorrow and member communication to follow
- Ideas on improving operational insights ..
  - Maintenances will be auto linked from our in-house operations tool to community, what you see in email will appear in community
  - Ability to join LAN groups
  - Ability to post, comment and respond to engineering posts
  - Ability to tell us what is important to you


linx
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General
Mailing Lists
News and Events
Resources
Report a Bug
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ops
RP
Richard P
5 days ago · Posted in ops
Engineering Incidents - LINX121
What would you like to hear more about? We have seen incidents and problems across these Exchanges since our last briefing:
1. LINX Scotland [December] - Issue with edge1-dvg-sco1
a. The device went unreachable via our management network
b. IP Infusion recommended reboot
2. LON1 [December] - edge1-thn drops
a. Traffic disruption on edge1-thn (Telehouse North) between 2:25 - 3:18 UTC
b. DDoS on member port, amplified by Juniper line card bug (Agent Smith)
3. LON1 [December] - Packet drops on edge4-the
a. Fault found on Juniper line card
b. Service restored by swapping out the faulty line card with a spare as per our vendor TAC's advice. Card returned.
4. SYSTEMS [January] - LINX Portal Unreachable
a. DDoS attack on LINX infrastructure, specifically boarder routers
b. No member traffic impact, some management reachability issues
5. LON2 [February] - Issue with edge4-thw-lon2
a. Management interface stopped passing traffic, member traffic unaffected
b. Device had to be rebooted under emergency maintenance to resolve, escalated to IP Infusion
See less
Engineering
Like
Following
Share

Incidents

Incidents

- DDoS attack on LINX, reported in some media channels, no impact to member traffic, LINX monitoring systems or data integrity.
- **Date:** 12/1/2024
- **Duration:** 20:00 through to 06:00 (13/1/2024)
- **Trouble Shooting:** Incident bridge formed, attack appeared to be directly on our boarder routers. The attack was a multi-source UDP flood on port 179. Bandwidth allocated for LINX staff traffic increased to help mitigate
- **Improvements:** Source a third-party DDoS mitigation solution to protect ourselves from DDoS attacks which saturate our uplinks for staff traffic.

Incidents

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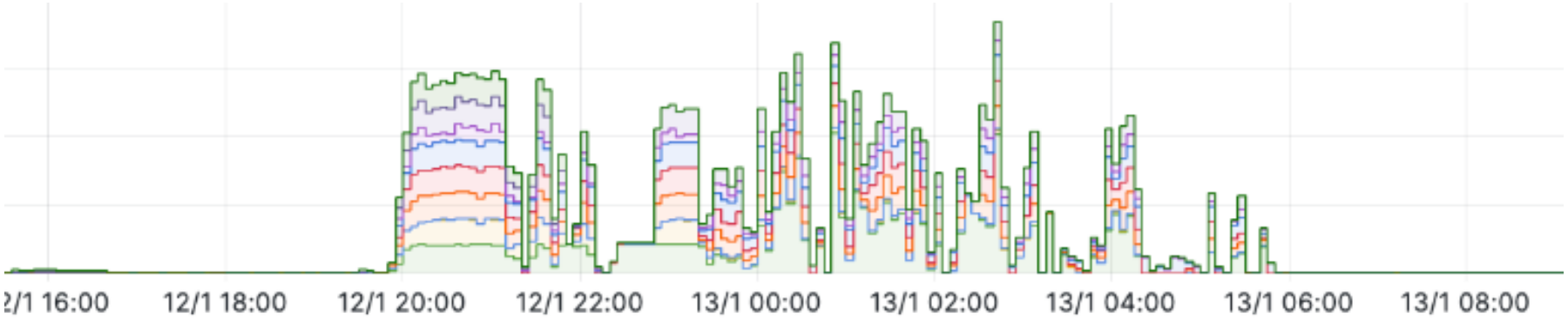
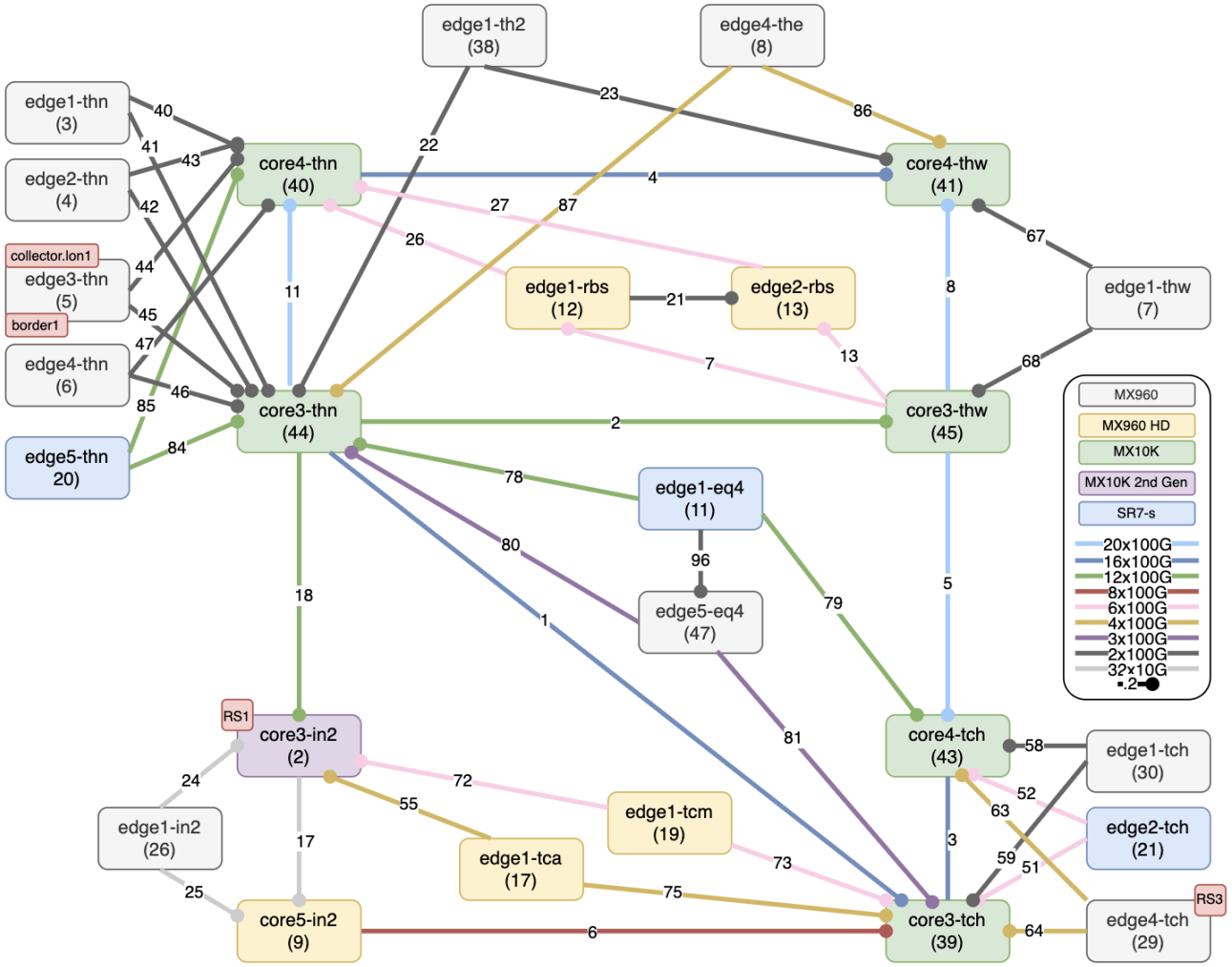


LON1 Update

LON1 Update

- At LINX119 we gave an update on the need to replace the legacy Juniper MX960 devices
- This project started in 2023 with the actual change work starting in January 2024 and it will run through to June 2024
- The goal is to allow for us to increase our delivered capacity whilst maintaining our space footprint, reducing our cost for support and for power on a per GB delivered basis
- This returns value to the membership

LON1 Update



- 2023 topology, LON1, router view only

LON1 Update

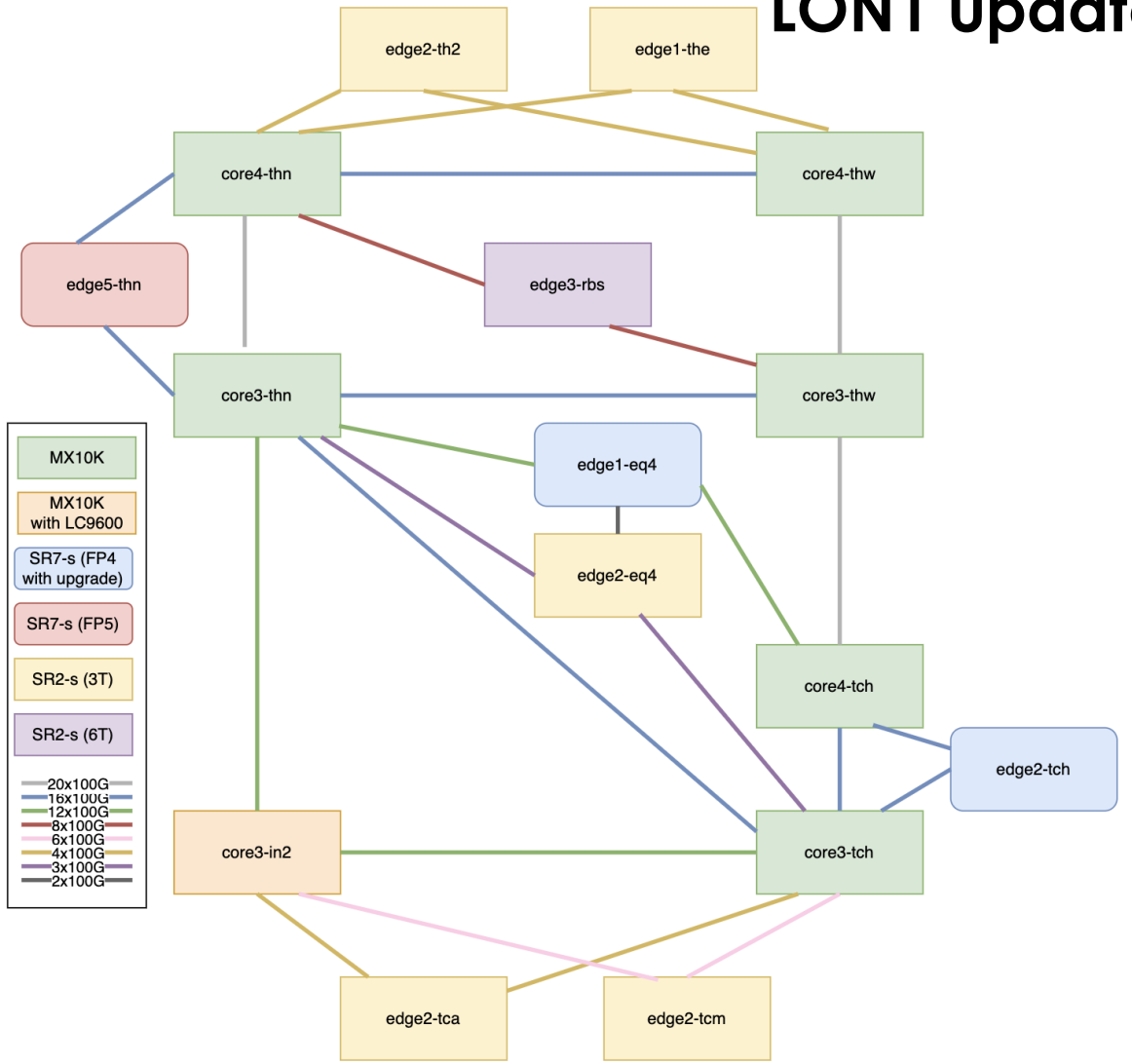
- Maintenance work completed
  - THW
  - TCH
  - IN2 (all members migrated at this site, ISL move to be completed end of next week)
- Maintenance work planned
  - Maintenance next Thursday night after LINX meeting, that will migrate IN2 fibre and decommission the MX960s where we have migrated members
    This will remove 5xMX960s from the network
  - After that we will concentrate on THN, edge1-thn migration last week Feb/early March

LON1 Update

Planning

- **March**
  - Upgrade of THN SR7 chassis and deployment of FP5 cards
    Further member migrations in THN - moving 1G/10G members to the MX10Ks and 100G members to the SR7
- **April**
  - Complete THN migrations
  - Begin deployment of SR-2se's (enables 400G at these sites)
    - RBS migration
    - TCM migration
    - TCA migration
- **May**
  - THE migration
  - TH2 migration
  - EQ4 migration
- **June**
  - Snagging and documentation clean up, ISO readiness

LON1 Update



- Target 2024 topology, LON1, router view only

Route Serves

Route Serves

- All OpenBGPd route-servers have now been upgraded to v8.3
  - Lab testing for use on LON1 currently underway (8.3)
- BIRD2 upgrades have started with LINX Wales completed.
  - SCO1, LON2 and LON1 maintenances to follow soon
- Remotely Triggered Black Hole (RTBH) will be available once all BIRD upgrades are completed
- Alice Looking-Glass has been upgraded to version 6 and tested with BIRDv2 and OpenBGPd 8.3 successfully

linx

Thank you