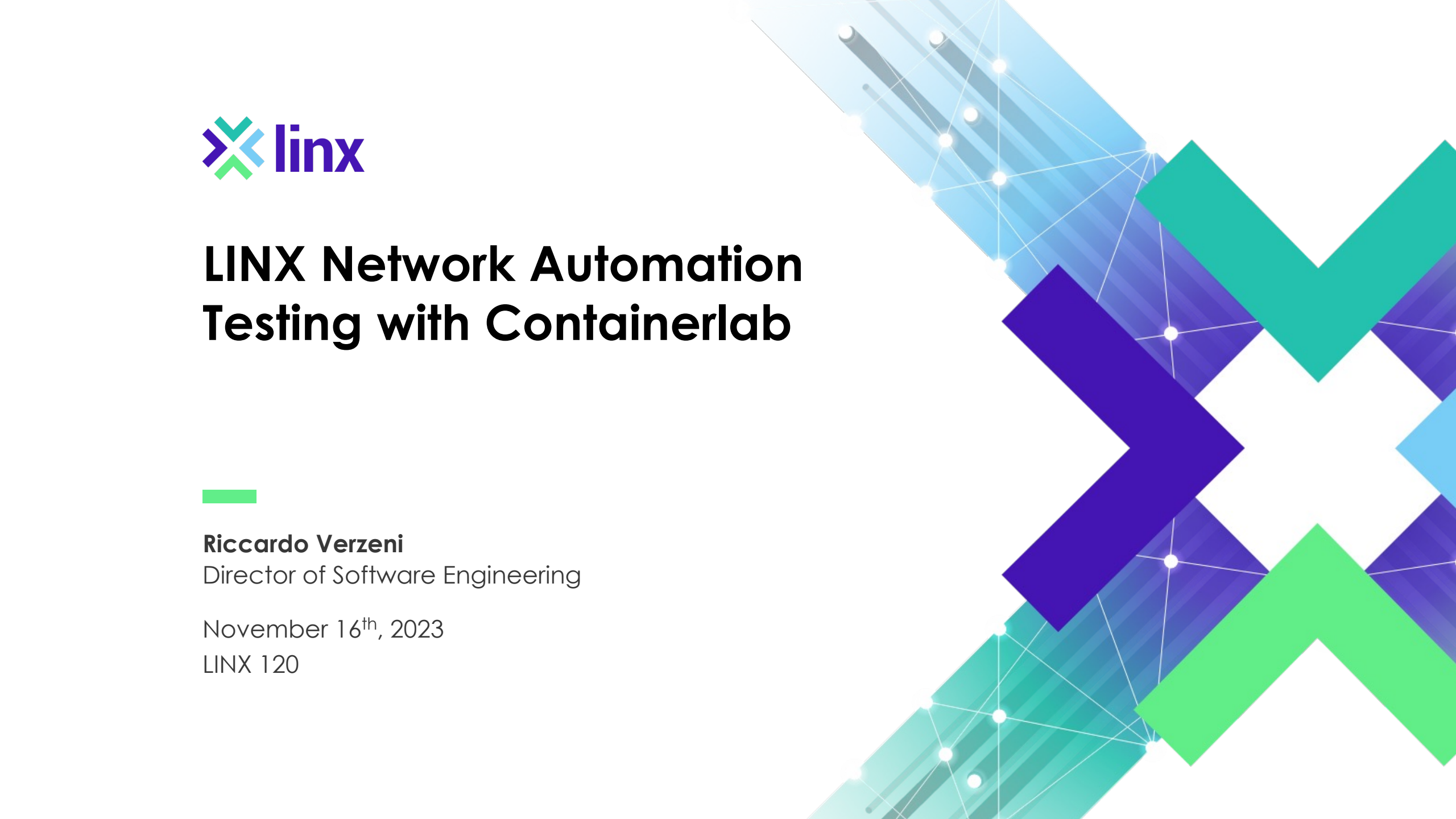

LINX Network Automation Testing with Containerlab

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Director of Software Engineering

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LINX 120

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- LINX Network Automation
- UAT environment
- UAT/DEV LANs setup with Containerlab
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- Future developments

LINX Network Automation

- NCA

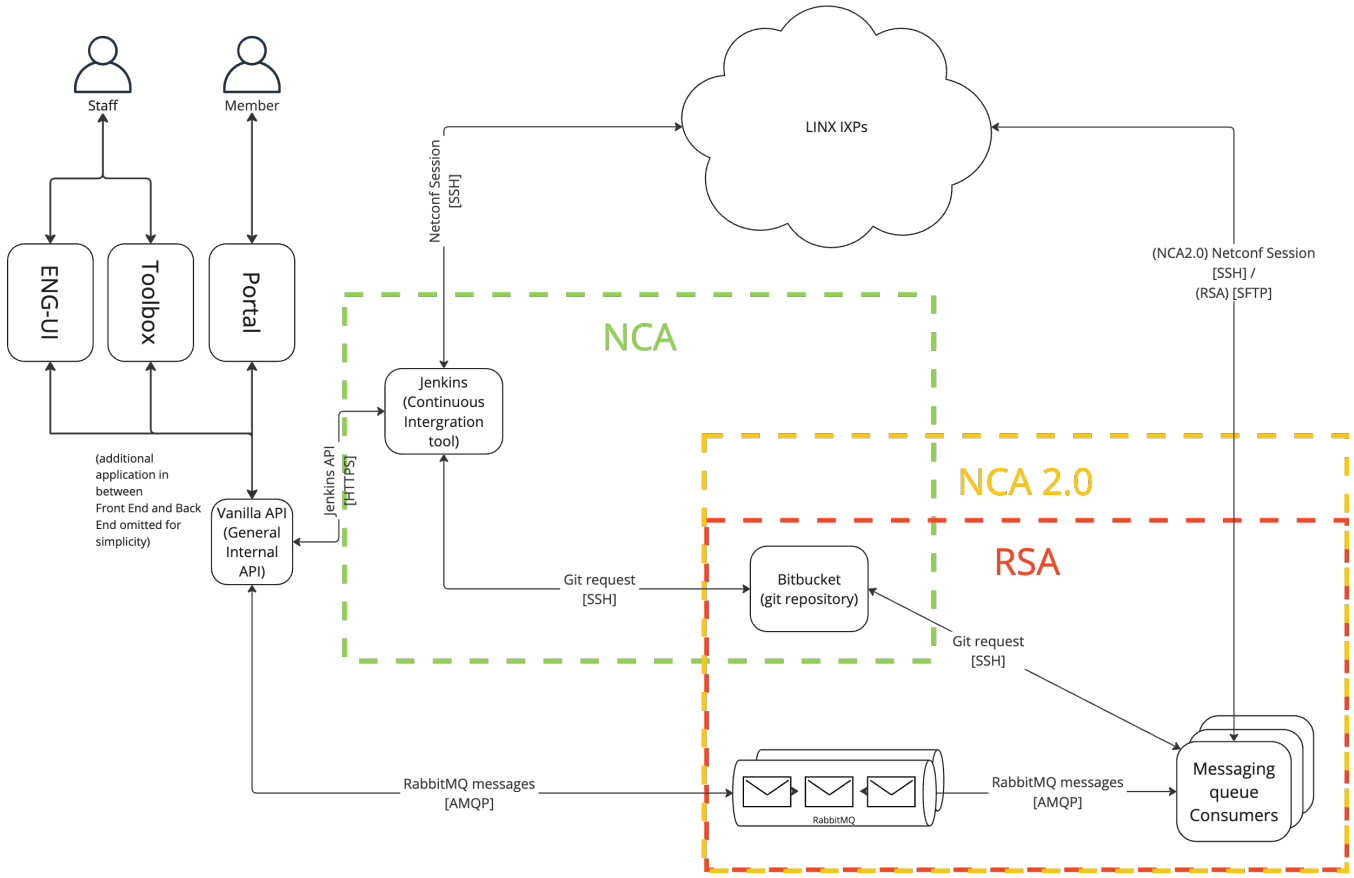
  Supervised, synchronous, multipurpose switch config management

- NCA 2.0

  Unsupervised, asynchronous, member facing switch config management.

- RSA

  Unsupervised, asynchronous, route server config management.



LINX Network Automation

- Data Layer

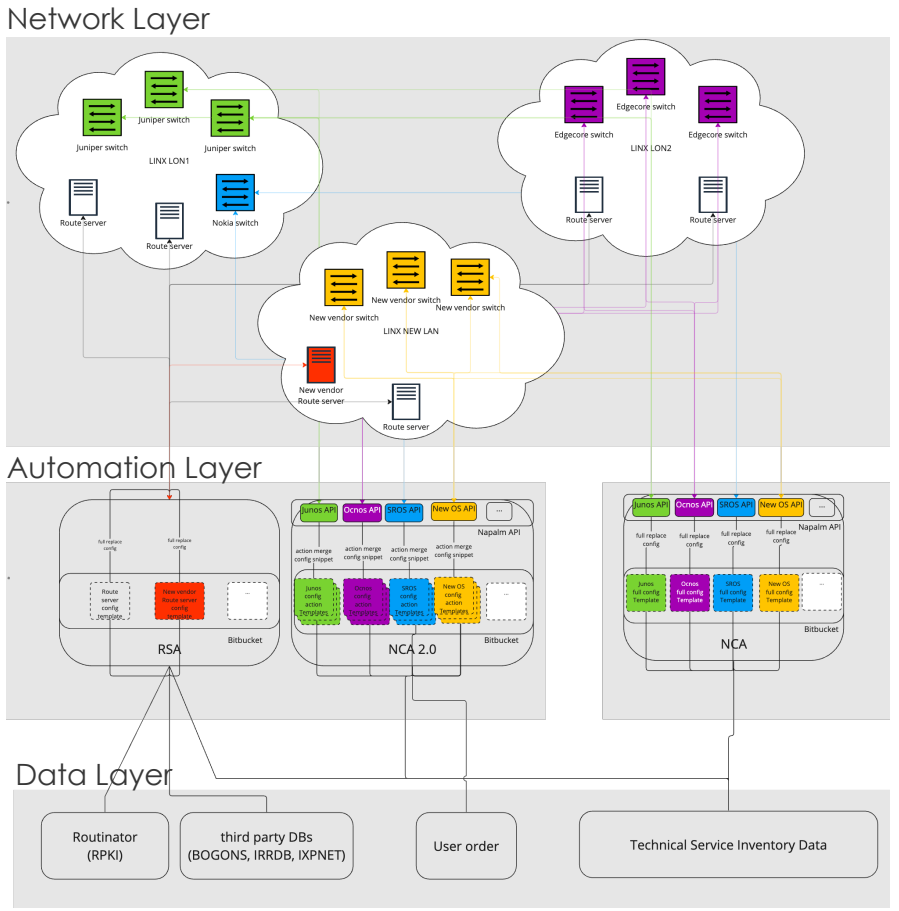
  The admin state of the network devices

- Automation Layer

  Consumes the admin state and applies it to the network devices

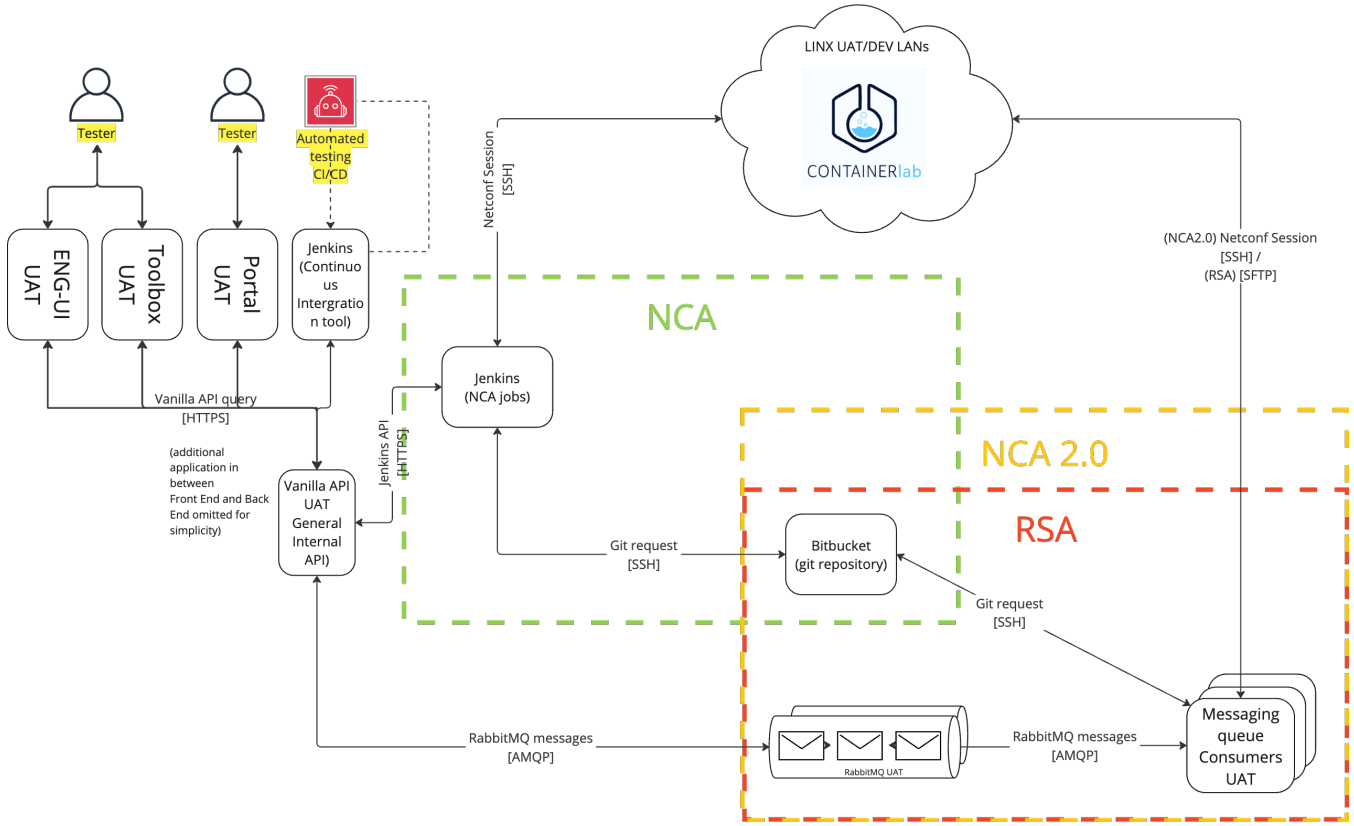
- Network Layer

  All LINX LANs network devices

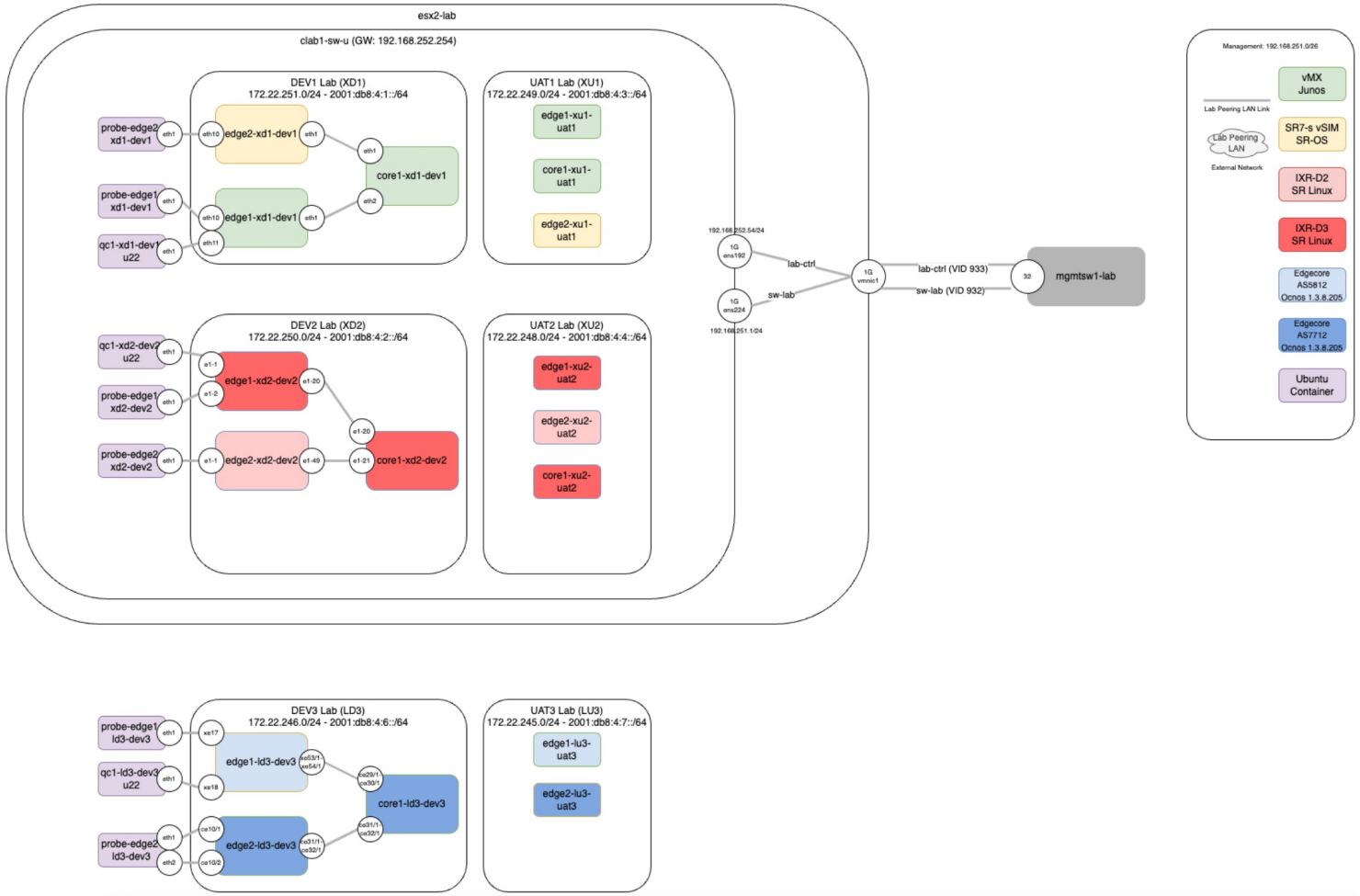


UAT environment

- The UAT (User Acceptance Testing) environment consists of a mirror like replica of each production component
- The testing can be performed manually or automatically triggered whenever a code change is introduced
- LINX LANs simplified replicas (UAT/DEV Lans) are built with Containerlab



LINX UAT/DEV LANS



Pros and Cons

PROS

- Containerlab provides a fast and low-cost switches/fabrics setup for all LINX network automation supported vendors.
- Dedicated environments for testing. No need to compete for the same resources between Network and Software Engineering teams.
- Software engineers can easily modify the setup (new hardware, new links) autonomously.

CONS

- Sometimes some switch metrics (E.g: operation status, light levels and in/out interface errors) are not simulated correctly. When that happens, those virtual fabrics cannot be used for testing specific automation use cases and their testing falls back to physical devices.

Future developments

- We are currently considering implementing more complex test scenarios. Incorporating generated traffic in the virtual fabric to more accurately test already automated processes, like quarantine testing.
- We are of the opinion that this will be vital for the safe deployment of upcoming automation scenarios, such as network self-healing.

Thank you

linx

Any questions?

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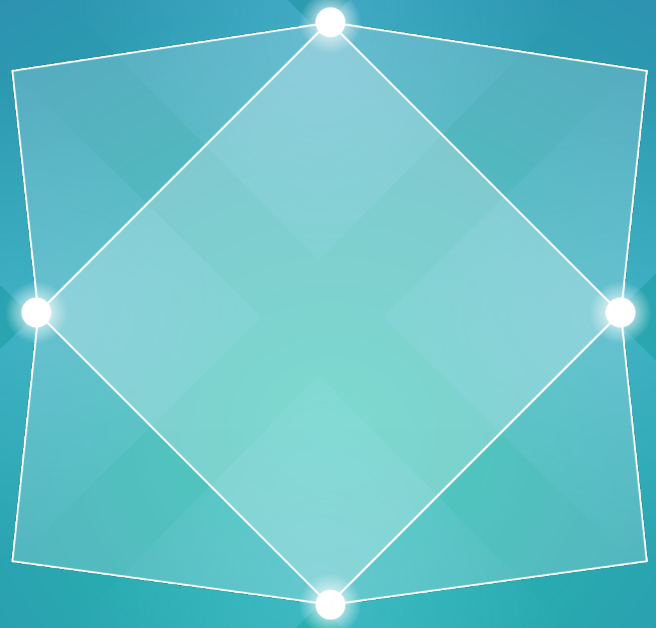
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