Implementation CORE switches

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What was the motivation?

- 82 of 196 ports were used for backbone network → about 42% capacity
- There wasn’t enough space for grow
- No possibility to connect new hypothetical locality
- Catalyst 6500 series has just 3bit hash algorithm for port-channel → needed 2, 4 or 8 port in one bundle (other quantity will not bring enough benefit)

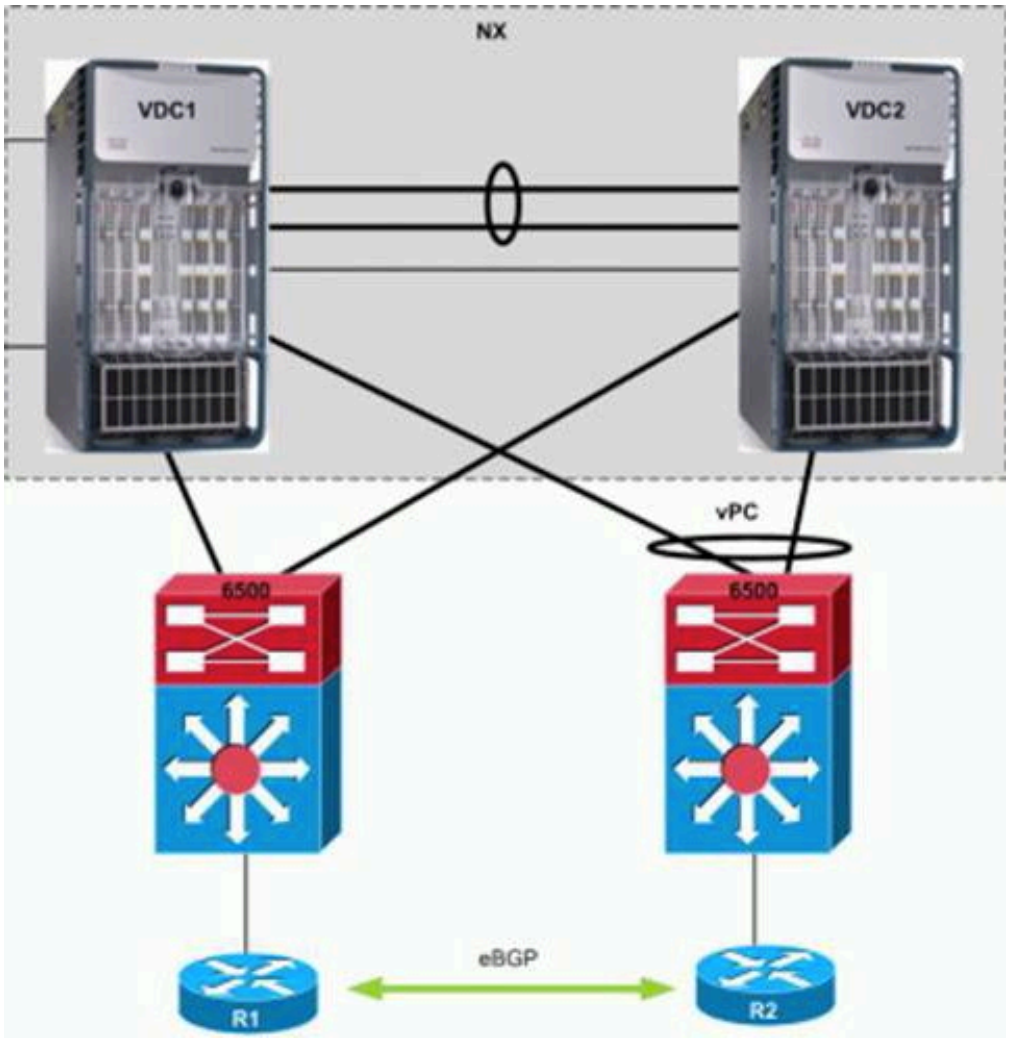
So what we can do?

- We started the tender for new switches or vendor
- We wanted to apply some kind of dual-star topology
- But our 6k5 doesn’t support VPLS
- We didn’t want to have one active core and one standing-by, running at any kind of L1 switching

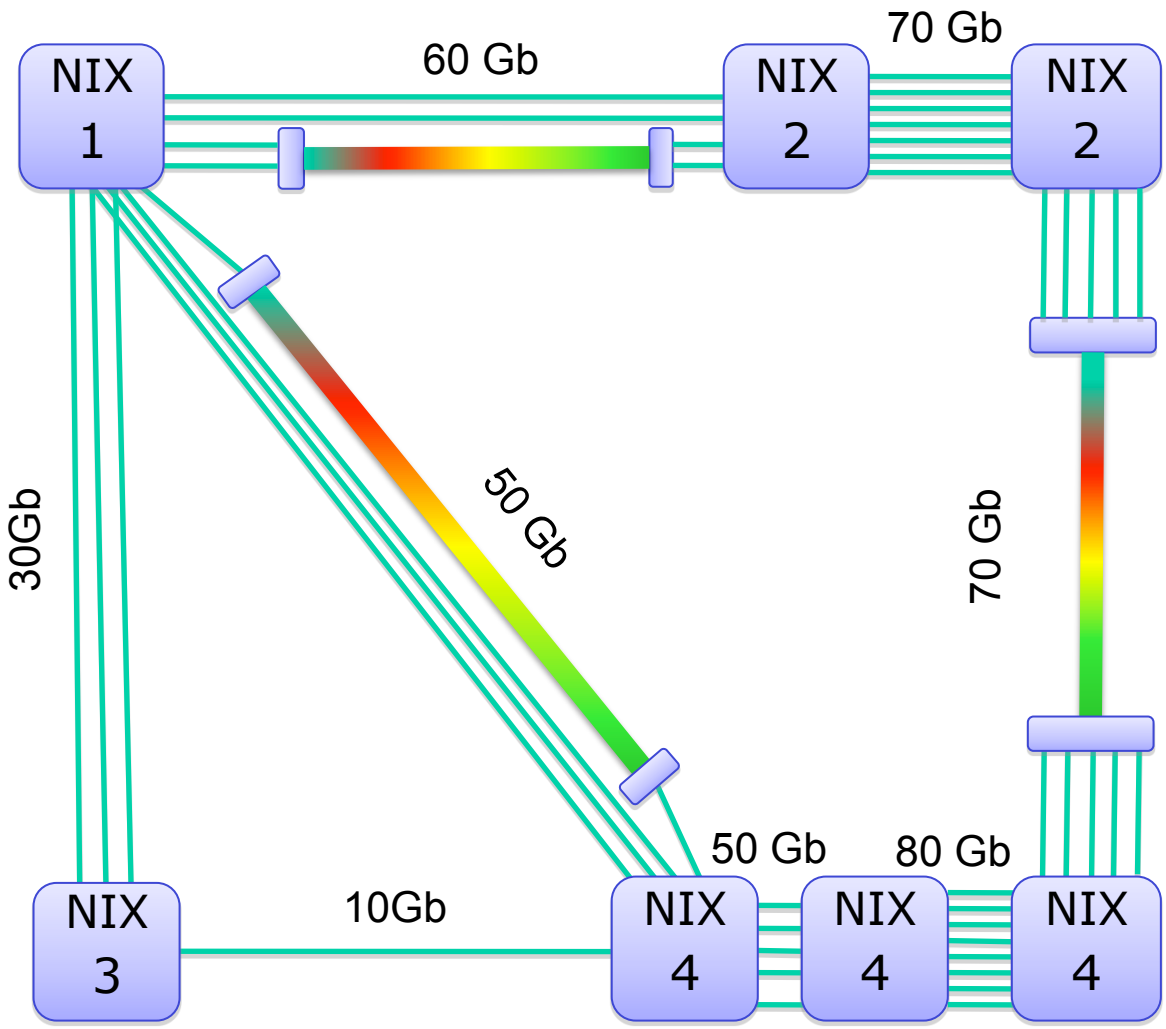
Our solution

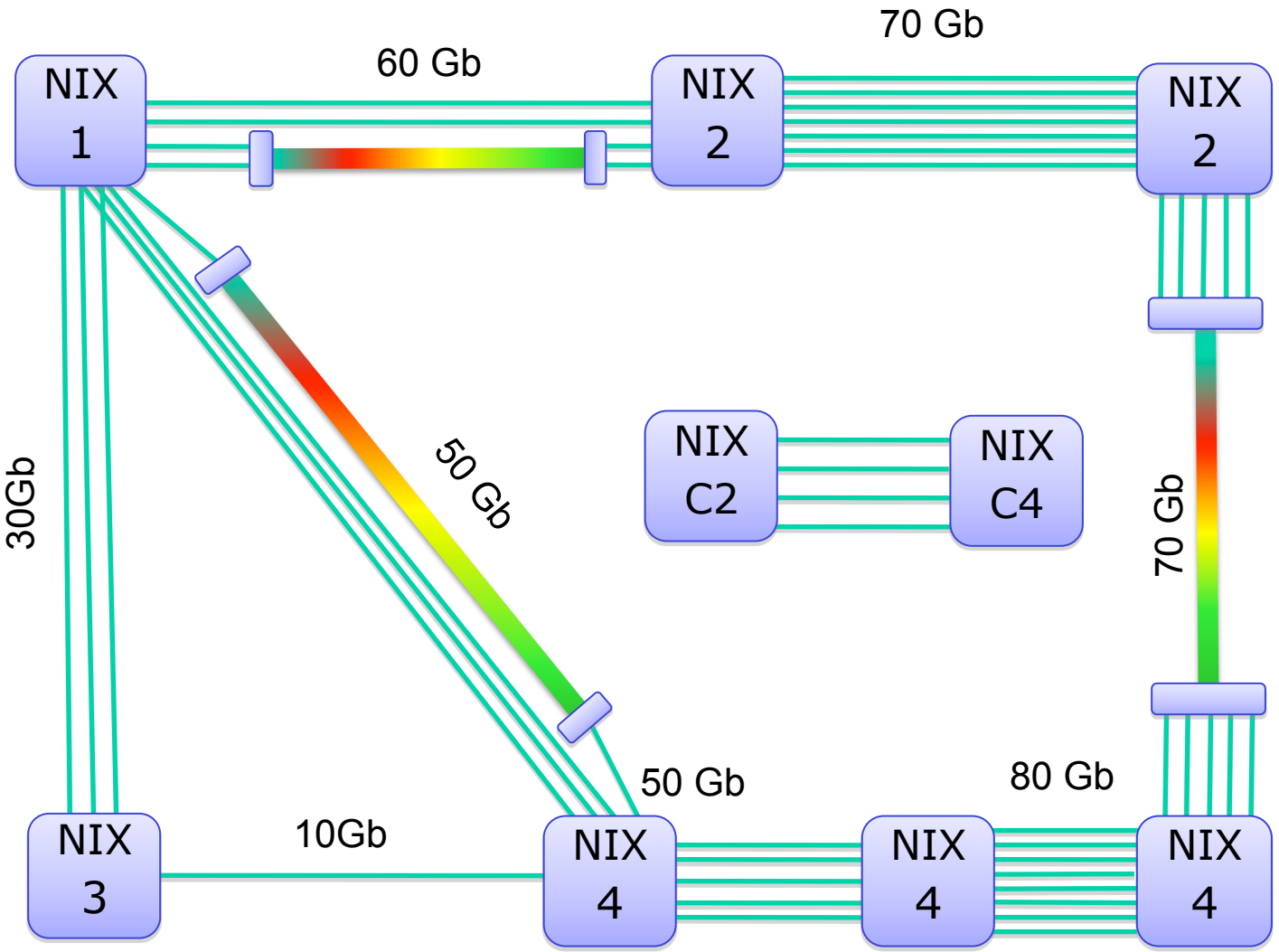
- We chose Cisco Nexus 7000 in 10 slot setup
- Nexus has vPC (virtual Port-Channel) → It allows to have dual active star topology
- From view of c6k5 it seems as standard LACP port-channel

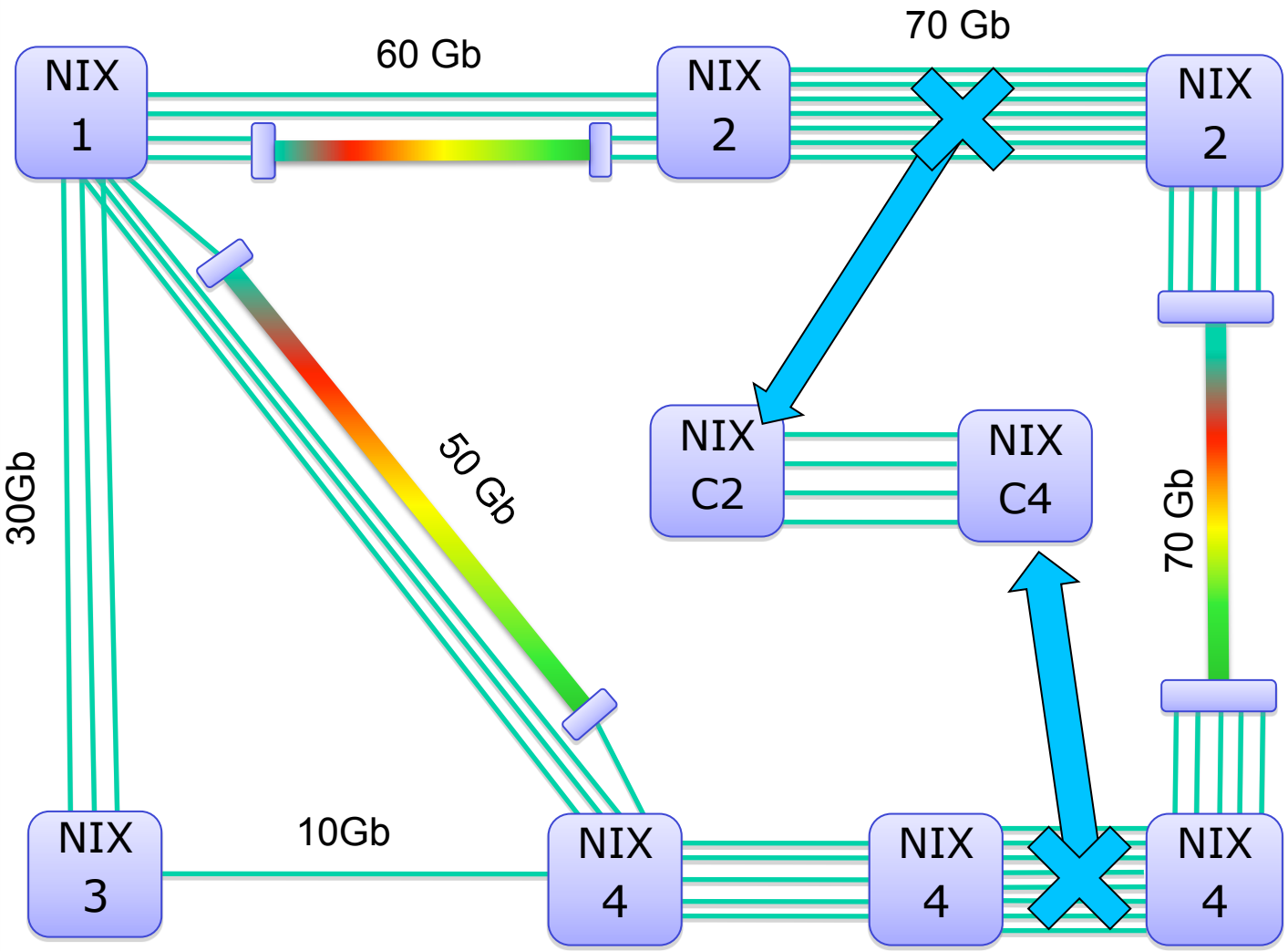
How does it look?

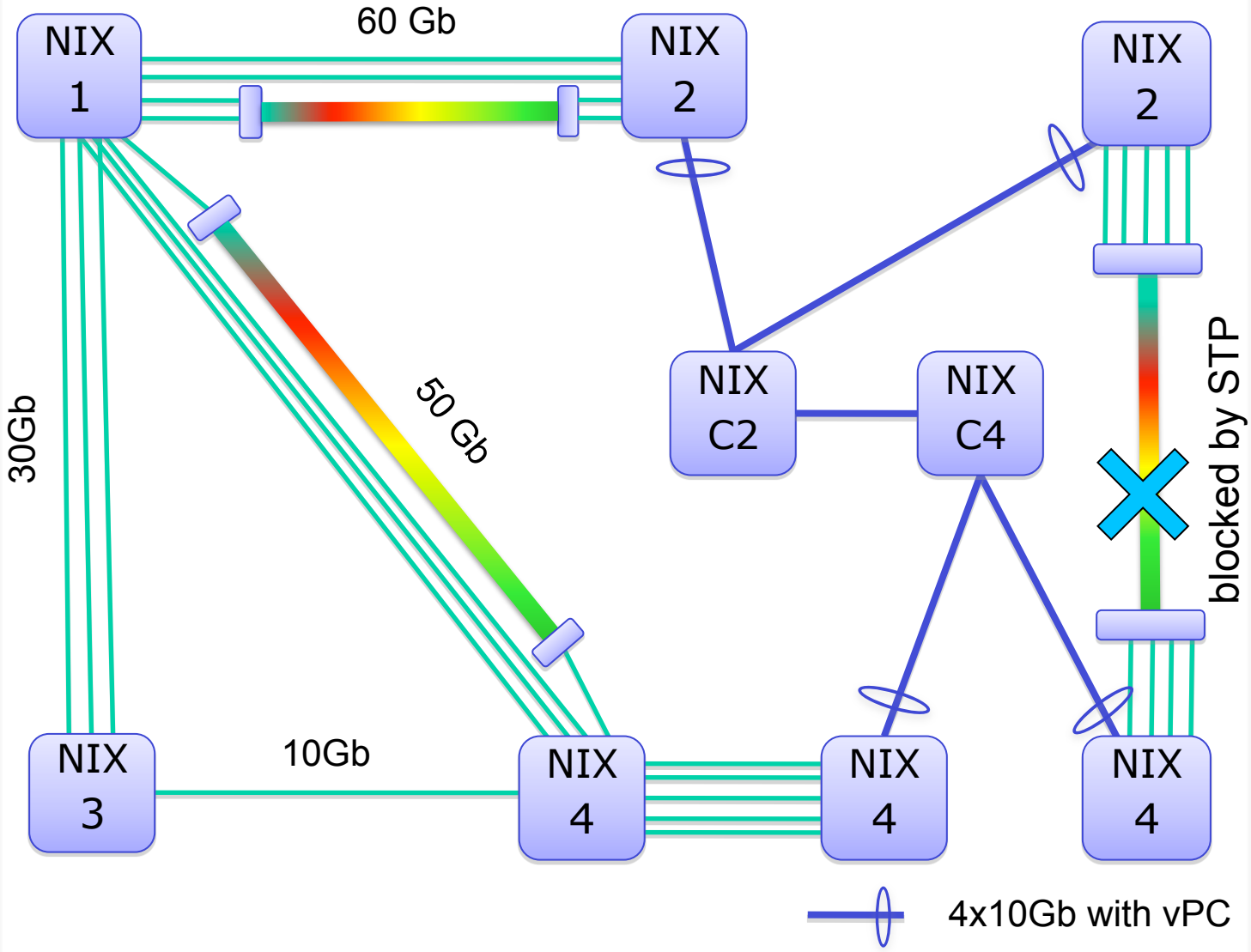


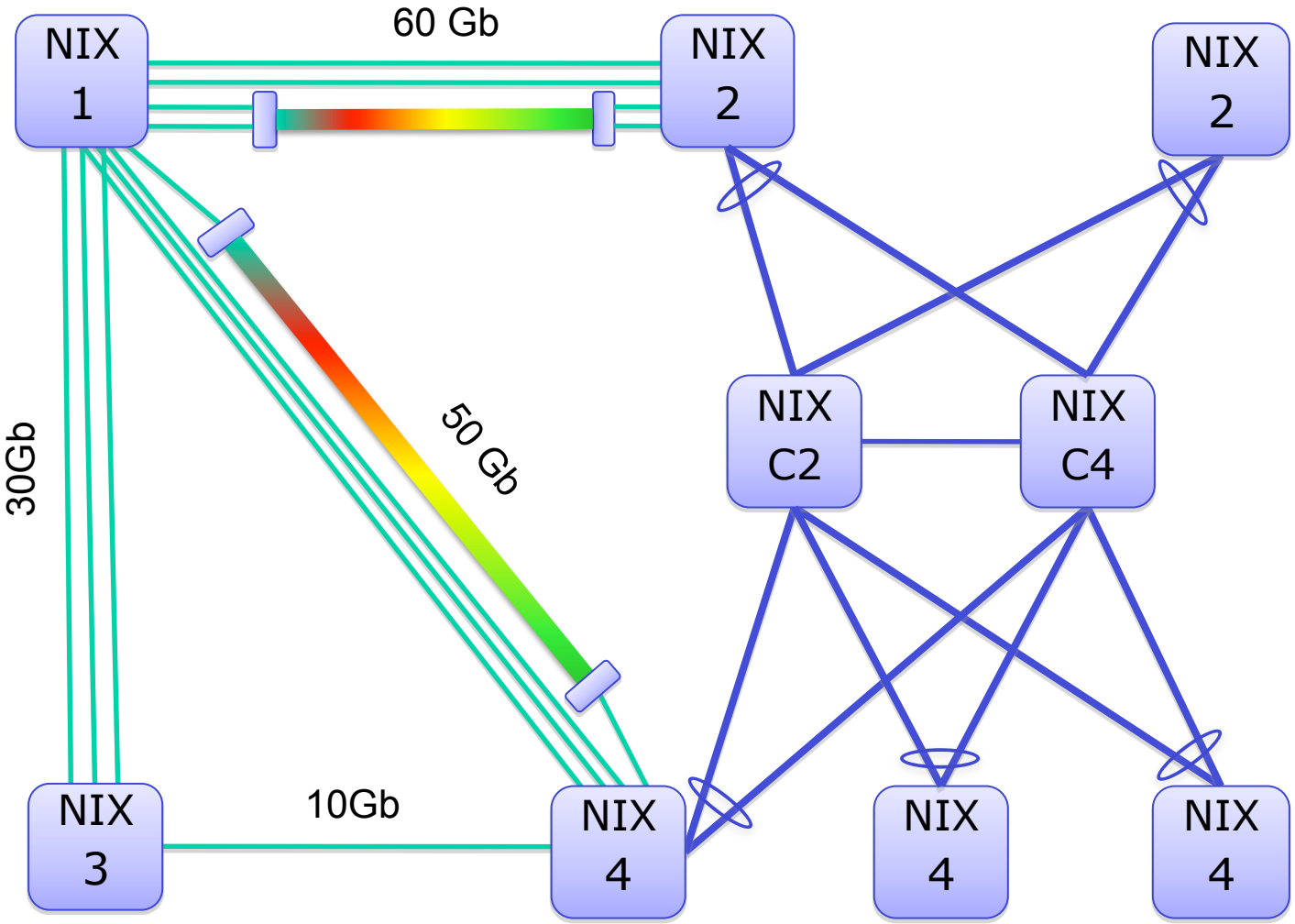
Initial state



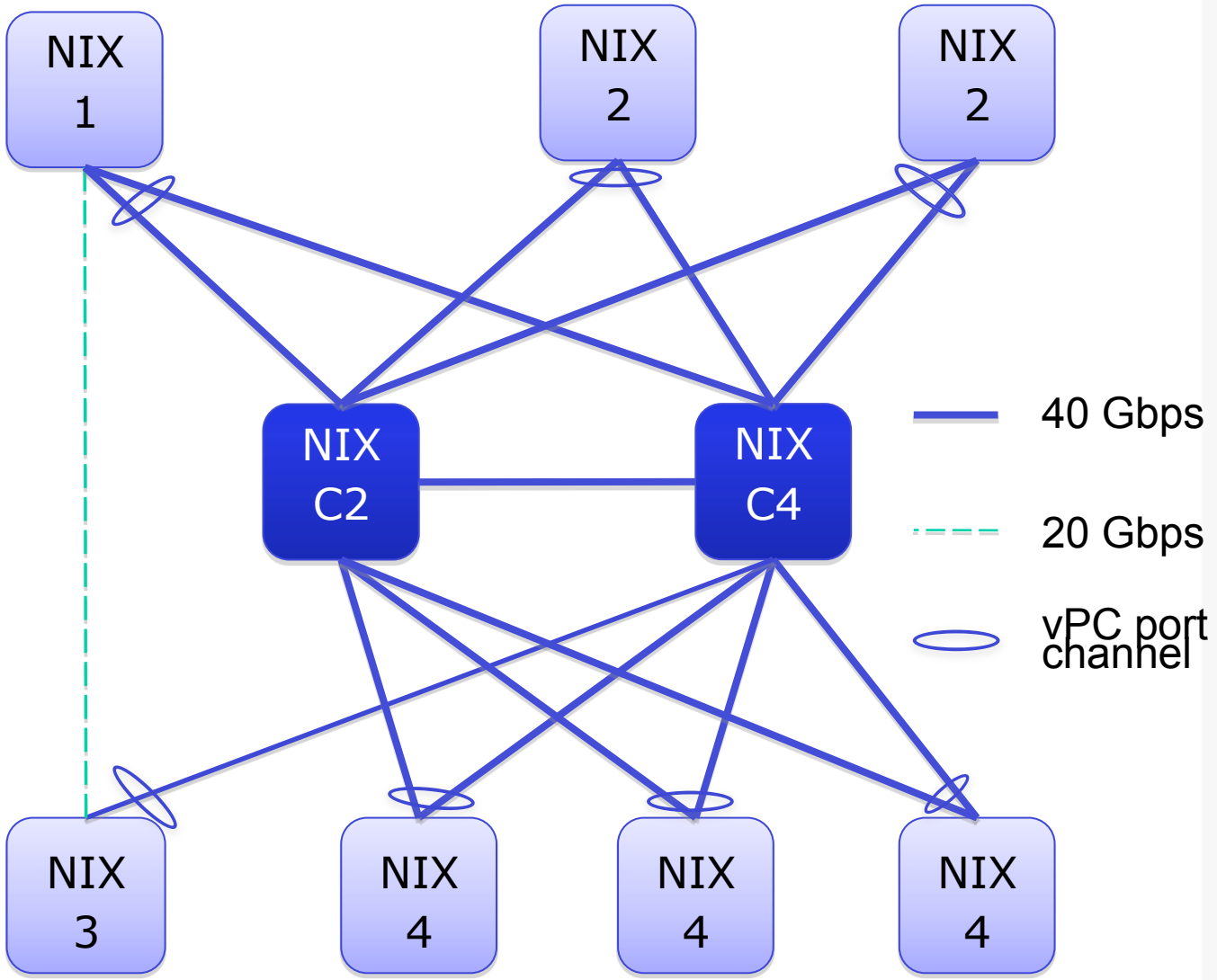

NIX
1
60 Gb
NIX
2
70 Gb
NIX
2
30Gb
50 Gb
NIX
C2
NIX
C4
70 Gb
50 Gb
80 Gb
NIX
3
10Gb
NIX
4
NIX
4
NIX
4


NIX
1
60 Gb
NIX
2
70 Gb
NIX
2
30Gb
50 Gb
NIX
C2
NIX
C4
70 Gb
NIX
3
10Gb
NIX
4
NIX
4
NIX
4

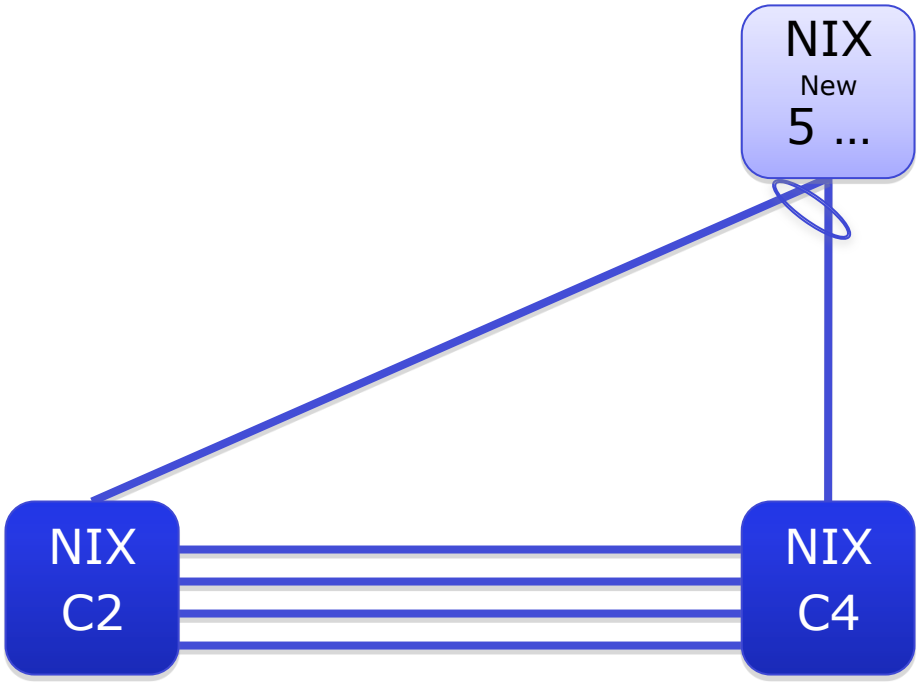

NIX
1
60 Gb
NIX
2
NIX
2
30Gb
50 Gb
NIX
C2
NIX
C4
blocked by STP
NIX
3
10Gb
NIX
4
NIX
4
NIX
4
4x10Gb with vPC


NIX
1
60 Gb
NIX
2
NIX
2
50 Gb
30Gb
NIX
C2
NIX
C4
NIX
3
10Gb
NIX
4
NIX
4
NIX
4

Current state



Future – new PoPs



Future plans

- SUP2T → 8x 10GE line rate for c6500's

or

- New platform for access switches

- Need of re-addressing the peering segment

  From /24 to /22

Thank you!

- Any questions?
- **tm@nix.cz**