

# NANOG 100G Forwarding Challenges



**Moderators:**

**Ted Seely, Sprint**

**Igor Gashinsky, Yahoo!**

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# Our Guests

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- Joel Goergen – Force 10
- Dave Tsiang – Cisco
- Aris Wong - Foundry



# Agenda

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- Intro
- Need for 100G
- Discuss challenges in building 100G
- Q & A



# The Boxes

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Backplanes  
and  
Fabrics  
Joel Goergen

Forwarding  
ASIC  
Challenges  
Dave Tsaing

QOS  
&  
Policing  
Aris Wong



# Why Are we here?

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- We needed 100G a year ago
- Standard not ready until '09
- Significant challenges in building hardware to support it



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## IX Operators:

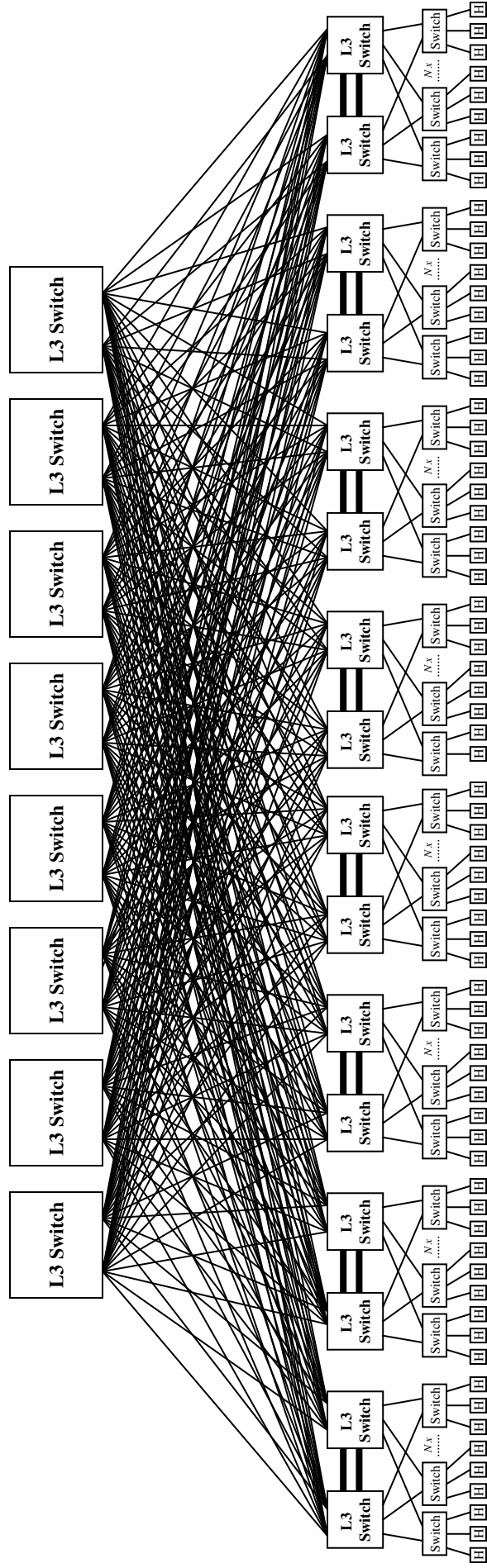
- Need 200G today
- Projecting needing 400G by end of '09
- Already at 16x10G LAG
- Moving to 32x10G LAG
- Major issues with ECMP and LAG

# I'm currently building this...

\*\* 8 way ECMP w/ 2x10GE LAGs\*\*

\*\* Way too many paths \*\*

\*\* Way too many cables \*\*



L3 Switch <10GE> L3 Switch  
L3 Switch <GE> Switch  
Host <GE> Switch



# But what I'd like to build is this...

\*\* Real need for at least 80GE today (ideally more) \*\*

\*\* Better mix of link speeds \*\*

\*\* Keep ECMP to 2 paths \*\*

