



Reinventing the IX

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Who am I?

The bad news:

Where I'm from



X

Where I live



=



Sorry in advance

The good news: I like peering :)

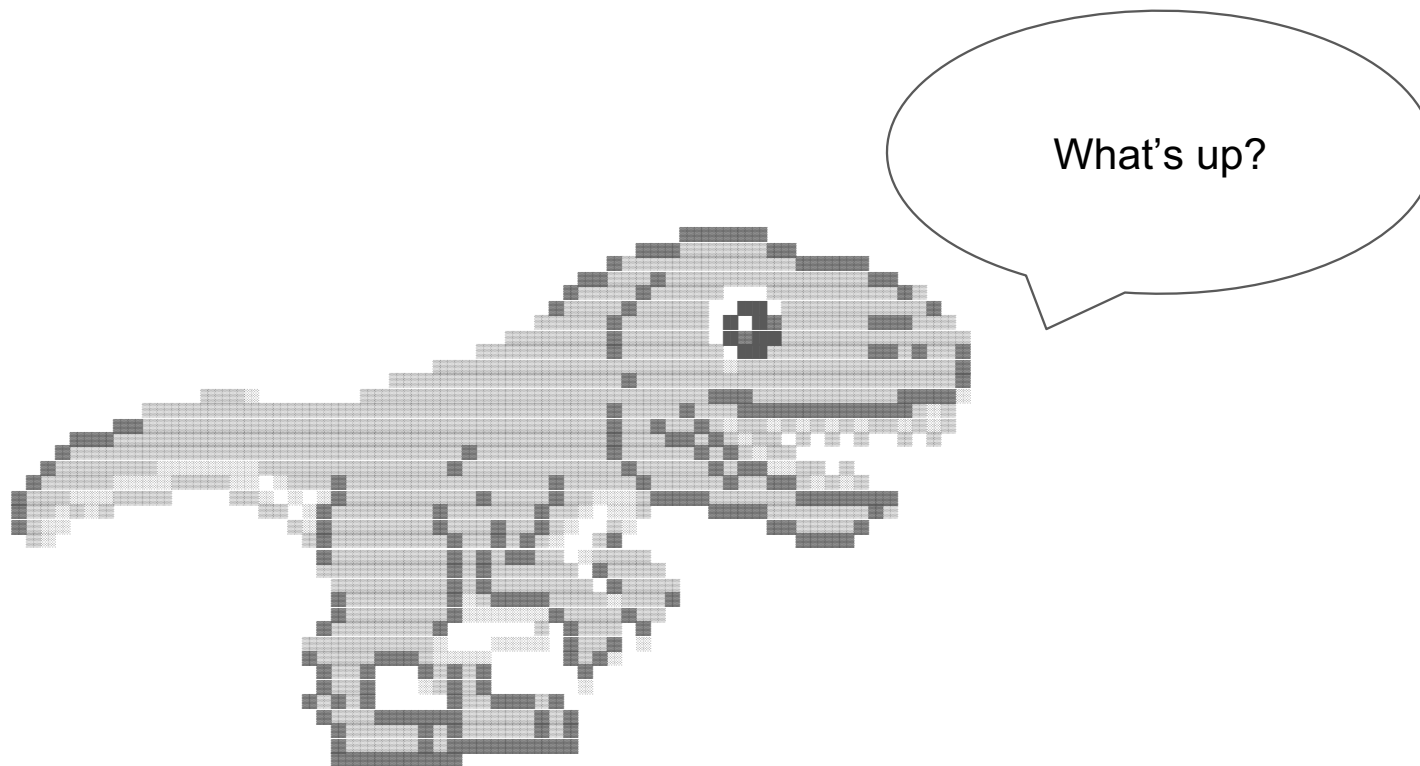
Internet

We're going to focus on this part



How did all this start?

It was all back in the early 90's



Simpler times

- Transit was expensive
- Interconnection between “Tier 1” networks ...was “bad”
- Small number of carrier hotels
- Internet exchanges were free (or cheap)



Where are we now?




**7 Layer
OSI Model**



**9 Layer
OSI Model**



Internet exchanges are losing their
competitive advantage



Transits have improved regional interconnection and lowered prices, while internet exchanges have refused the adoption of 95th percentile billing.*

* No part of this statement is universal

What does this mean?

- The quality of transit is improving
 - There remain some regions where interconnection is poor between transit providers
- Transit prices continue to fall
 - Even true in traditionally expensive markets
- IX operators need to find ways to remain competitive

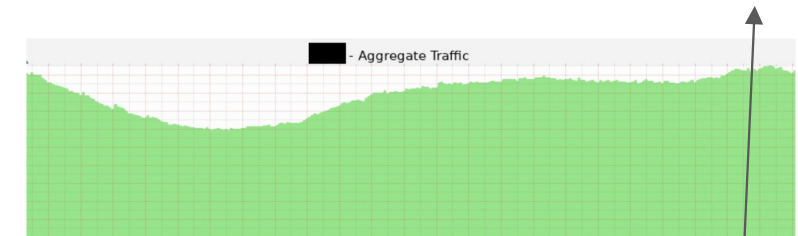
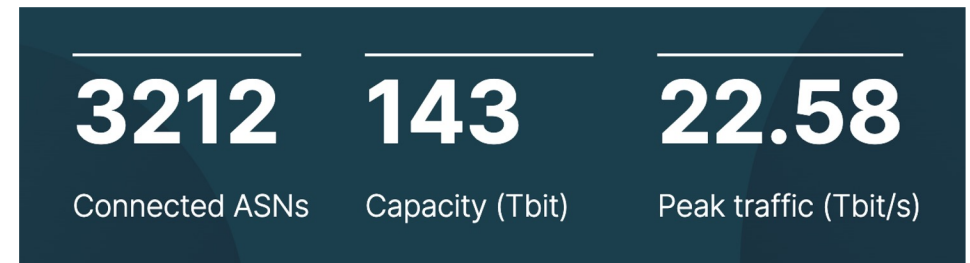
So what's the problem?

- Value of peering is rarely equal between two networks
- We're starting to hear more cases of large traffic swings
 - Content providers use IXs for their baseline traffic, with excess traffic being routed over transit
- This reduces the value in the IX for all networks
- We need to find a way to bring that traffic back to the IX
 - This is a commercial problem

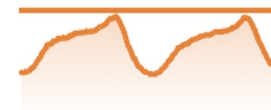
Distractions

We're starting to see some wild things come out of commercial IX operators!

- Paid peering with cloud onramps
- Providing transit
- Stratum-1 time servers



33.77 Tb/s
of peak daily exchange traffic
with average daily rate at 27.78
Tb/s



CURRENT
6.398 Tb/s

PEAK
12.724 Tb/s

ASNS
876

2282 ASNs
(Networks) from 1886
Organizations

None of these matter!



Where do we go?

Fixing this

For IXs:

- Back to the basics
- Flexible billing models
- Help networks with PNIs

For Networks:

- We're always going to have to solve for the "long tail"
- As cross connects get more expensive, consolidation is good
- Designated contact for introductions





Questions?

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