Ethernet Exchange

..BUT WHAT DOES IT DO?

Remco van Mook

October 9, 2009

The Secret NOT Working Group

NOT

Thank God they only show up once each meeting

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PRESS RELEASE

October 6, 2009

Equinix Developing First Carrier-Neutral Ethernet Exchange Solutions; Selects Alcatel-Lucent Service Router Technology

Global Network Interconnection Services Leader to Leverage Top Ethernet Technology to Deliver Platform Enabling Seamless Exchange of Carrier Ethernet

Key highlights:
• Developing first global carrier-neutral Ethernet services platform
• Will create new and expanded Ethernet service opportunities for carriers

EQUINIX

A brief history

Warning

Artistic license ahead!

EQUINIX

A brief history

In the 1990s

the words "Carrier" and "Ethernet"
fit together like "Honest" and "Politician"

"Ethernet is a LAN technology, and not even a good one"

Senior telecom network architect

"You can't even route or assign addresses"

Another senior telecom network architect

EQUINIX

A brief history (2)

At the turn of the century

"But why do our customers want it?"

And, moving past 2001

"And, why do these people pay ten times less for interfaces?"

Introducing the Metro Ethernet Forum

"Let's redo all Carrier things using Ethernet as a protocol"

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A brief history (3)

1. Set up a new standards body

2. Deal with Quality

3. Deal with the UNI

4. Deal with the NNI   ← you are here

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What is an NNI anyway?

Wikipedia

"Network to Network Interface, or NNI for short, is an interface which specifies signaling and management functions between two networks. NNI circuit can be used for interconnection of either signalling (e.g. SS7), IP (e.g. MPLS) or ATM networks. Basically NNI is used for interconnection of P (class 4 or higher provider core) routers in signaling or GMPLS networks. NNI can be used for interconnection of two VoIP nodes. In GMPLS case that could be Back-to-Back or eBGP or mixed NNI connection scenarios depends on what type of VRF exchange is used for interconnection. In case of Back-to-Back VRF it is necessary to create VLANs and subsequently sub-interfaces (VLAN headers and DLCI headers for Ethernet and Frame Relay network packets) on the each interface used for the NNI circuit. In case of eBGP NNI interconnection P routers are taught how to dynamically exchange VRF records without VLAN creation. In cases of mixed or full-mesh scenarios, other NNI types are possible. Note that there could be different encapsulation types for NNI interconnection, but Ethernet (GigE) and Frame Relay are basically used."

Which is a lot of complicated language for

Peering!

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The Ethernet Exchange

Ethernet is easy

Carrier Ethernet is harder

Interdomain Carrier Ethernet is a challenge

Multiple Interdomain Carrier Ethernet is .. complicated.

The Ethernet Exchange

- Is an effort to scale NNIs from *1:1* to *m:n*

- Moving from private interconnects to a shared platform

- It's not just forwarding packets

- But also translating identifiers, quality definitions, SLAs
  - 802.1p/q/ad/ag/ah/Qay, DSCP mappings, MPLS-TE, VPLS, VLL

- It is a pilot we're doing with Alcatel-Lucent and a number of carriers

- Has less traffic on it than you would think

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Thank You.