



Vienna Internet eXchange

Peering Landscape in Austria

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Who am I?

 Harald Michl

Staff member of Vienna University Computer Center (VUCC)

Teamleader of ACOnet/VIX

Chairing Austrian Academic Networker Group

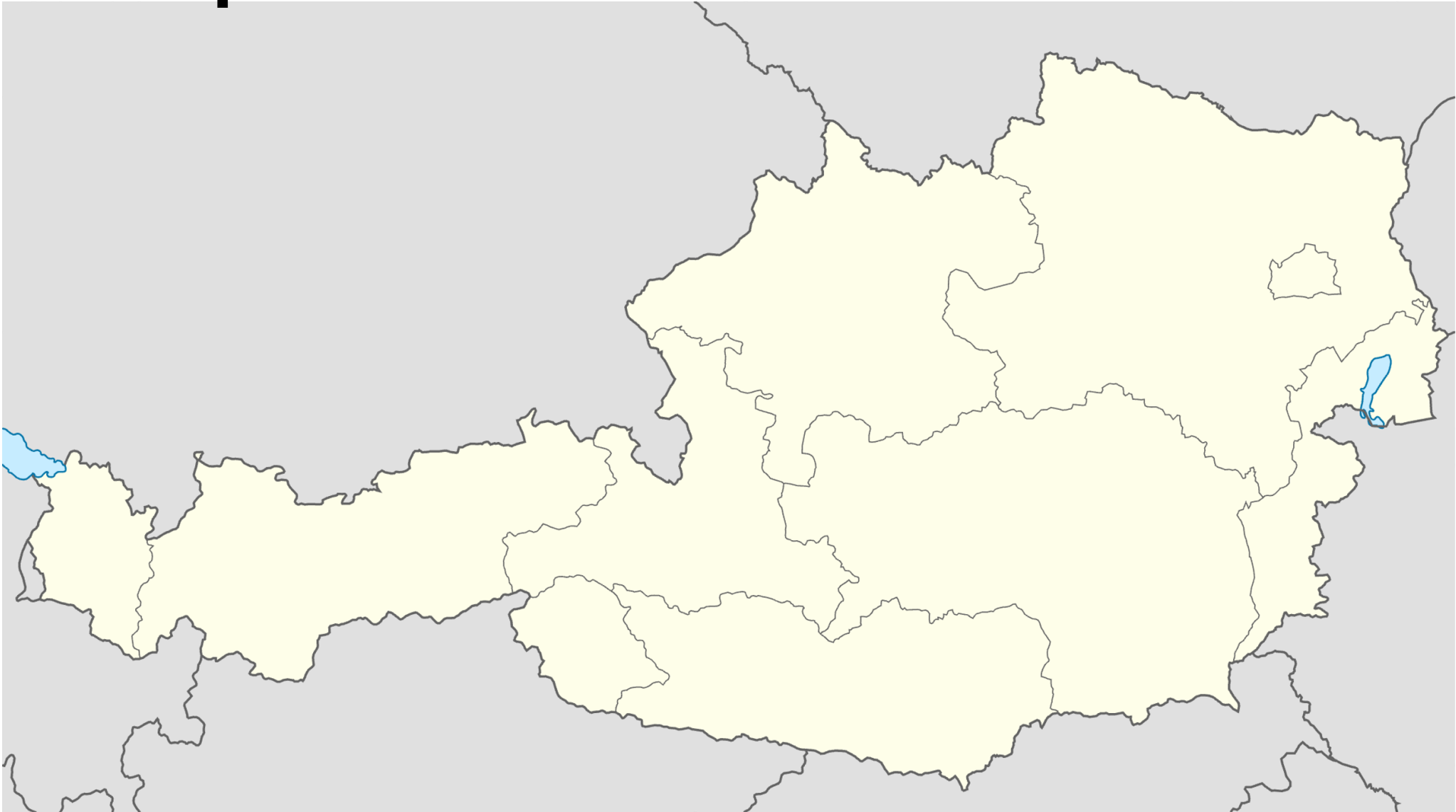
List-moderator of atnog mailinglist

Find me at GÉANT, Euro-IX, RIPE, EPF or Peeringday conferences

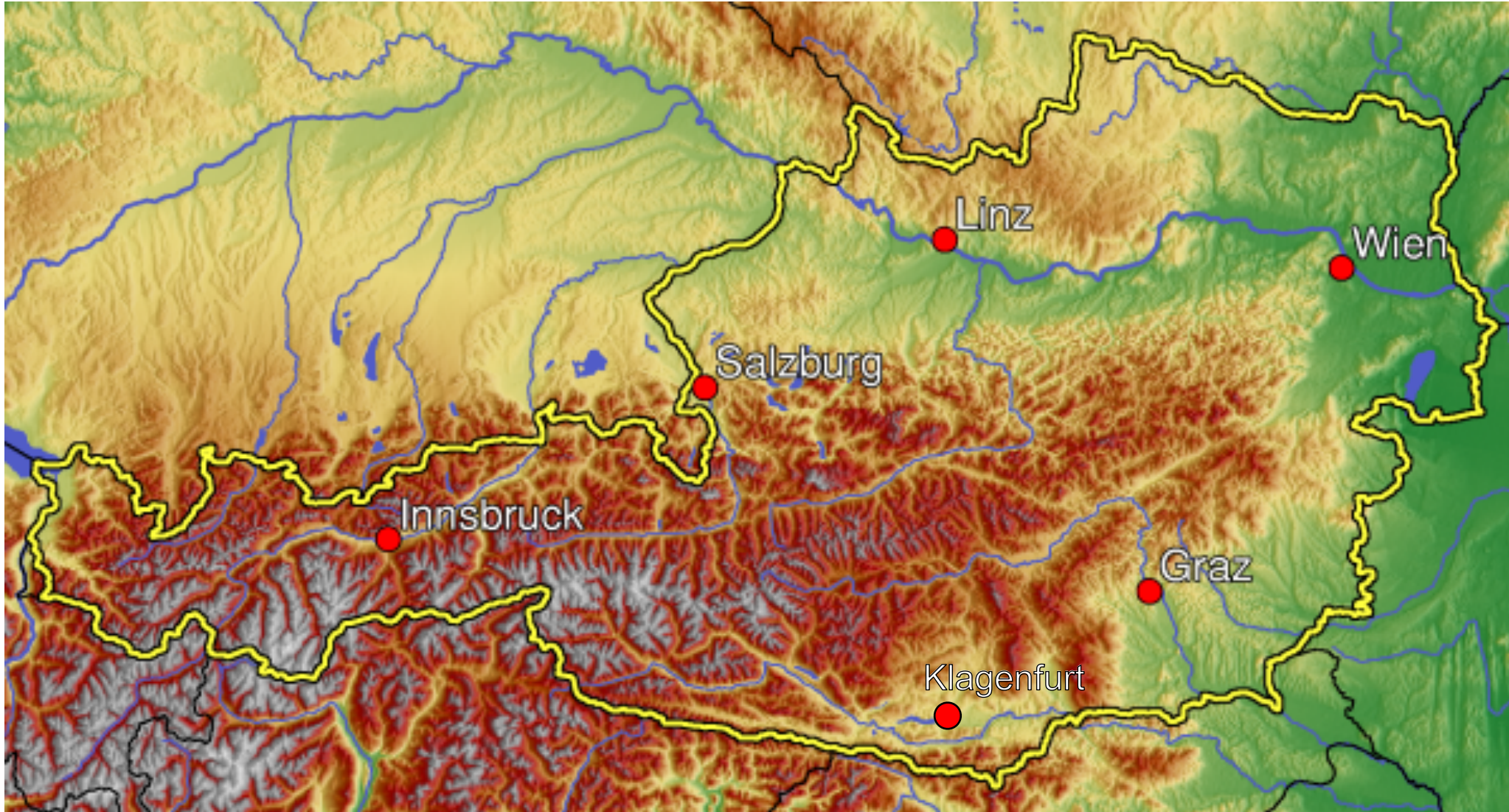




Map of Austria



Map of Austria





> Austrian IXPs

According to

https://www.peeringdb.com/advanced_search?country__in=AT&reftag=ix

Name A-Z ▾	~ Peak Traffic	Media Type	Country	City	Networks
<u>AAIX</u> Alpes Adria Internet eXchange		Ethernet	AT	Klagenfurt	21
<u>GraX</u> Grazer Internet eXchange		Ethernet	AT	Graz	5
<u>SAIX</u> Salzburg Internet eXchange - SAIX		Ethernet	AT	Salzburg	17
<u>Tirol-IX</u> Tirol-IX Internet Exchange		Ethernet	AT	Innsbruck/Tirol	10
<u>VIX</u> Vienna Internet Exchange		Ethernet	AT	Vienna	155
<u>VOIXP</u> Vienna Open Internet Exchange		Ethernet	AT	Vienna	4



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Name A-Z ▾	~ Peak Traffic	Media Type	Country	City	Networks
<u>AAIX</u> Alpes Adria Internet eXchange	800 Mbps	Ethernet	AT	Klagenfurt	21
<u>GraX</u> Grazer Internet eXchange	1 Gbps	Ethernet	AT	Graz	5
<u>SAIX</u> Salzburg Internet eXchange - SAIX	2,5 Gbps	Ethernet	AT	Salzburg	17
<u>Tirol-IX</u> Tirol-IX Internet Exchange	No public statistic	Ethernet	AT	Innsbruck/Tirol	10
<u>VIX</u> Vienna Internet Exchange	1,4 Tbps	Ethernet	AT	Vienna	155
<u>VOIXP</u> Vienna Open Internet Exchange	No public statistic	Ethernet	AT	Vienna	4



> IXP's with service in Austria

Non-Austrian IXPs with facilities in Austria

BiX (.hu)	NIX.CZ / NIX.SK
DE-CIX Munich (.de)	Peering.cz
FogIXP (.ch)	Rheintal IX (.li)
NetIX (.bg)	SOX Serbia (.rs)



> Datacenters / Facilities in Austria

According to

https://www.peeringdb.com/advanced_search?country__in=AT&reftag=fac

- 54 facilities listed
 - 28 of them in Vienna (52%)
- 453 network operators listed
(in summary, they can obviously be present in more than 1 facility)
 - 337 of them in Vienna (74%) –
without looking at the size of these operators...
 - 171 network operators in biggest facility (38%)



Some history about Austrian Internet



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64kbps line to Geneva

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- 1990 - First Internet connection at Vienna University-64kbps line to Geneva
- 1992 - EBONE pop at VUCC
 - Local ISPs get connections to VUCC to get upstream
 - Establishing an IXP gets an obviously good idea

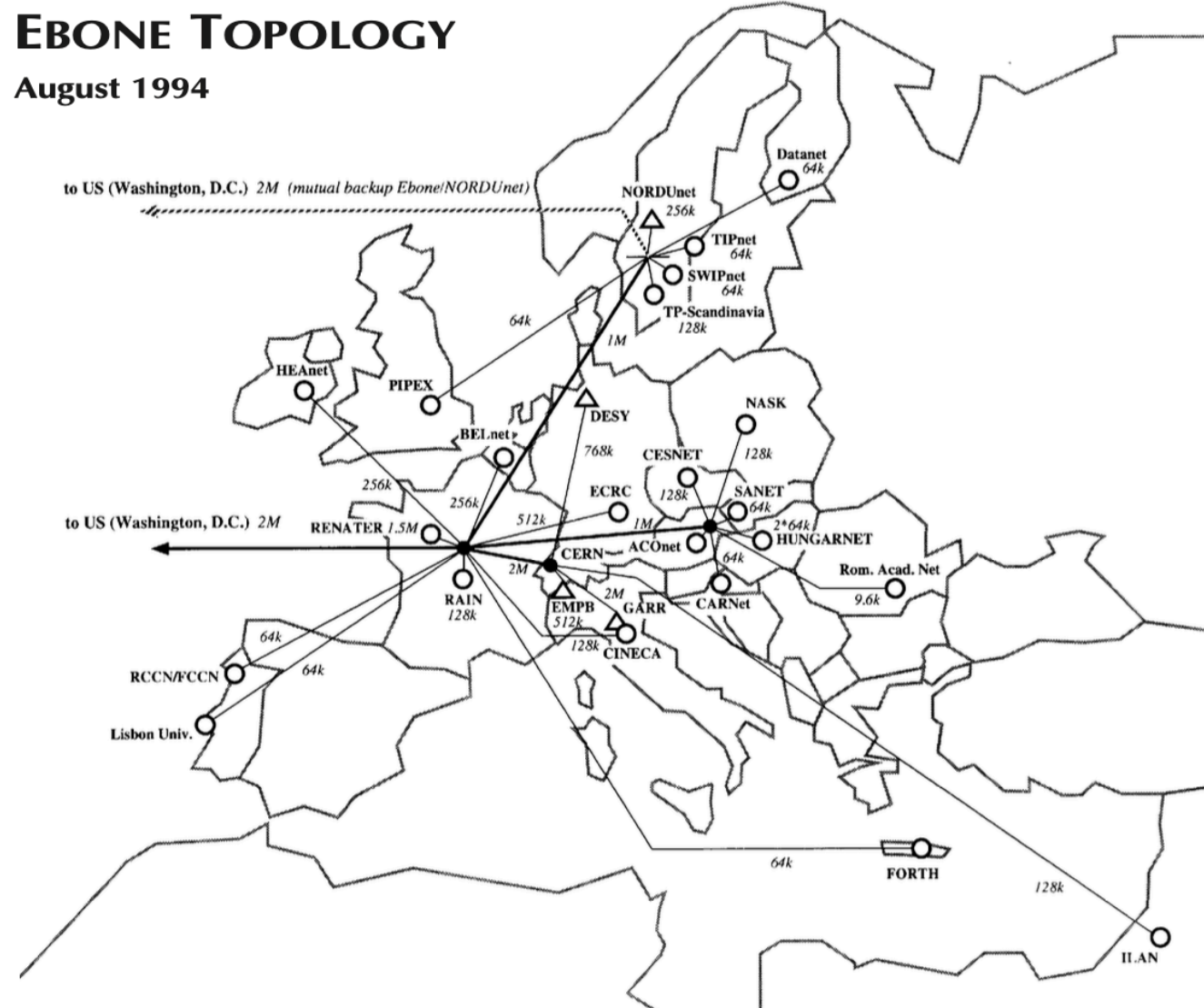
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- 1990 - First Intern 64kbps line to Ge
- 1992 - EBONE pc
 - Local ISPs get co
 - Establishing an I)

EBONE TOPOLOGY

August 1994



Legend:

- EBS (Ebony Boundary System) location
- RBS (Regional Boundary System) location
- △ Peering relation with other network
- Ebony / D-GIX backbone lines
- Ebony access lines

net

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net



- 1990
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- 2000 – Change of technology within city: copper → fiber

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- 2000 – Change of technology within city: copper → fiber
- 2005 – consolidation of ISP-market, CDN networks appear



VIX in numbers...

- Founded in 1996 and run by Vienna University Computer Center
- 3 sites
 - University (Neues Institutsgebäude)
 - Digital Realty – since 2001
 - NTT – since 2015
- Treat everybody equal – same contracts for all
- Public pricing –
<https://www.vix.at/en/participants-partners/how-to-join-vix/costs>
- Traffic peak ~1.4 Tbps / 175 connected AS
- All information at www.vix.at



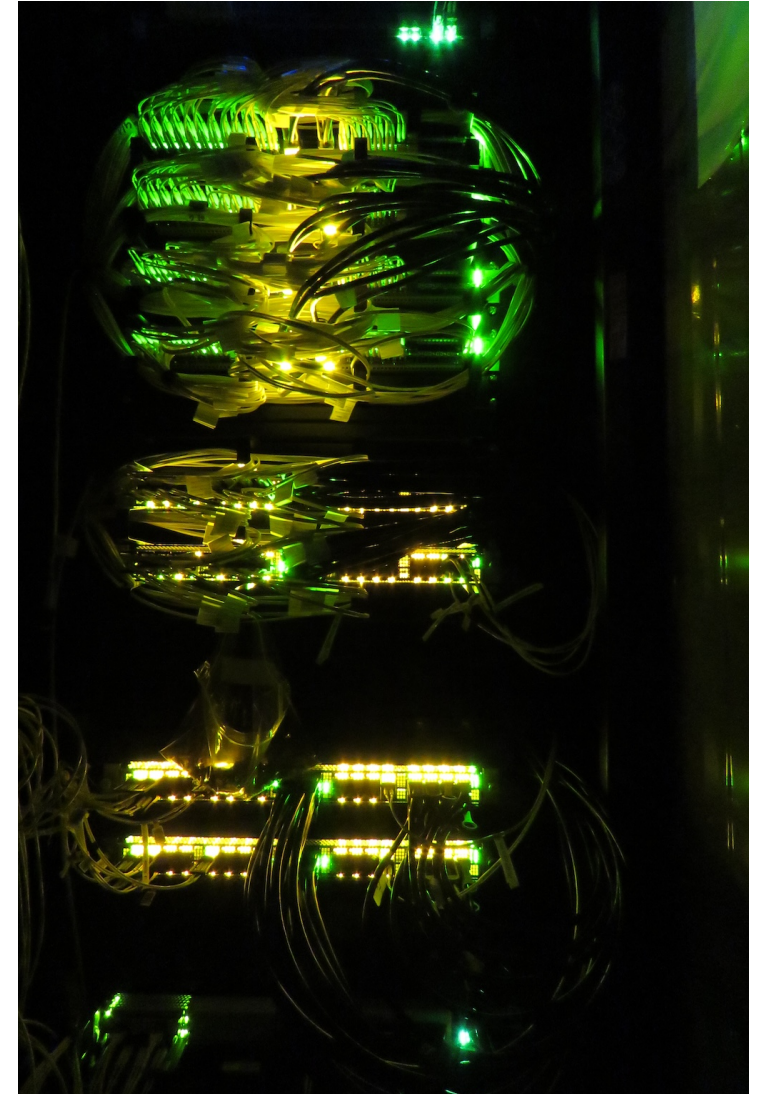
Actual platform (7th)

- Arista 7280 switches – 3 different flavours
- Infinera Groove G30 Metro WDM system
- Grow as you need
 - leave-switches for customers
 - Inter-site link-capacity
 - New interface speeds (Customers & Core)



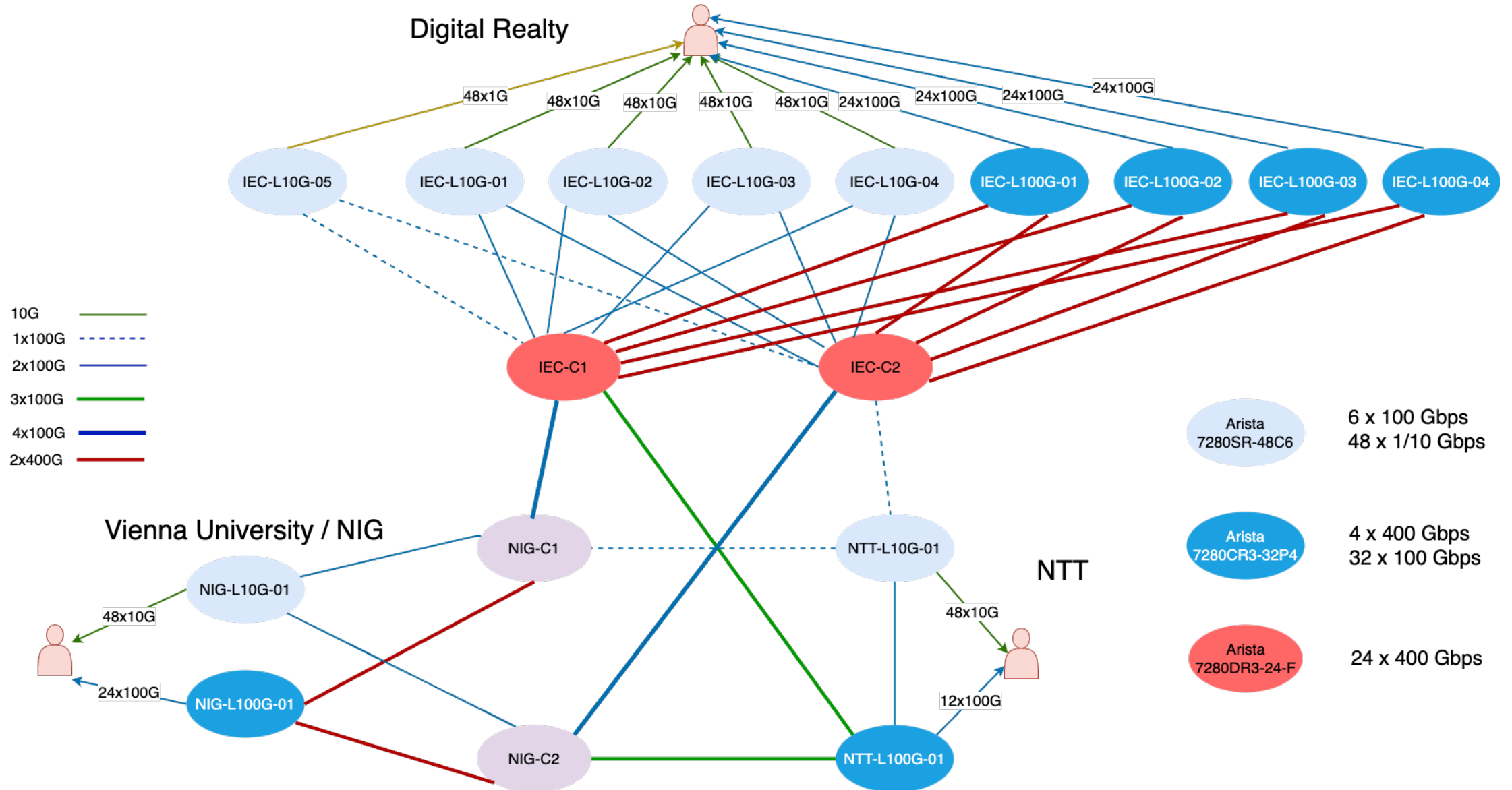
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Current topology





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> Thank you!

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> Thank you!

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