
CERN

# Internet Xchange Point - how you get your Internet data

CIXP

(CERN Internet eXchange Point)

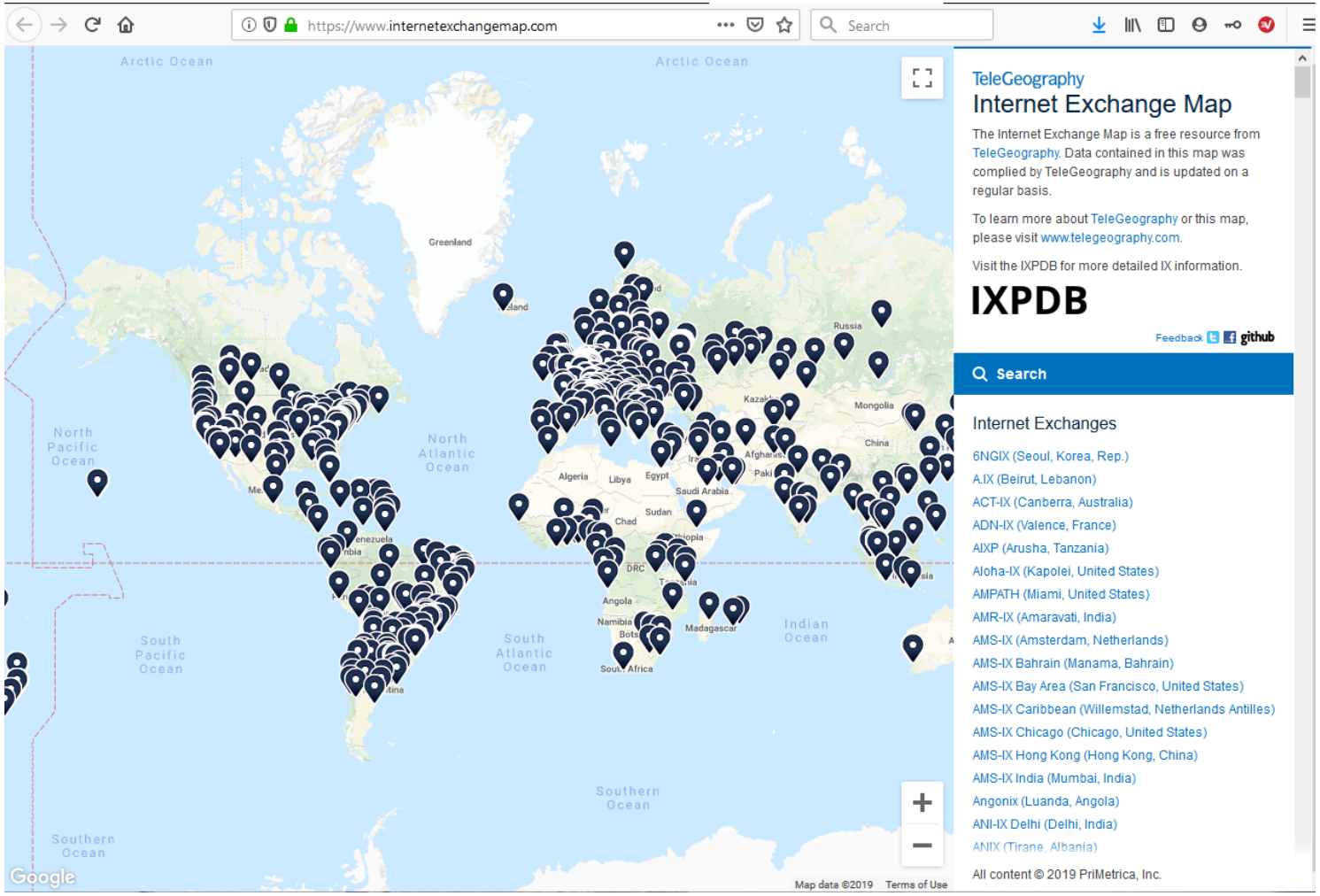
# The Internet

- The internet, as its name suggests, is made up of many distinct networks (Autonomous Systems)
- Global Tier1 networks make up the backbone of the Internet and they are all connected together
- Internet exchanges provide convenient places for these connections, as well as additional connections between smaller Internet Service Providers (ISPs)
- The core job of an Internet exchange is to forward Internet traffic. Exchanging traffic is called peering.

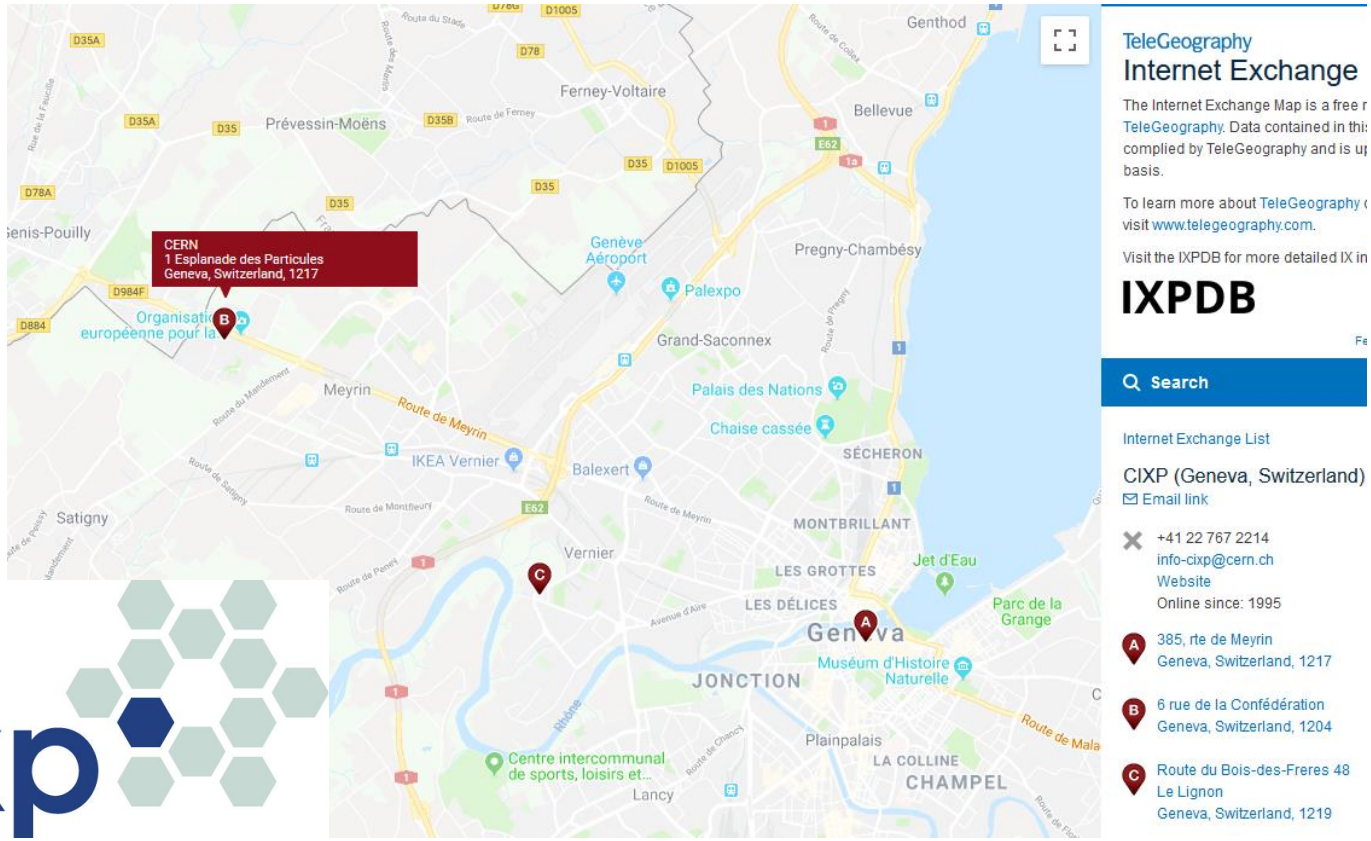
# Peering

- The idea of peering is to reduce the number of different networks (the number of “hops”) that traffic has to traverse to reach its destination. This both improves performance and reduces transit costs. By enabling traffic to take a shorter path to many ISP networks, an IXP can improve the efficiency of the Internet, resulting in a better service for the end user.
- If you live in the Geneva region and wish to connect to a service in the region (e.g. a web server), the chances are that your traffic will go via the CIXP, rather than going all the way to Berne or Paris & back (depending on your provider).

# Map of Internet Exchanges



# CERN Internet eXchange Point
# https://cixp.net

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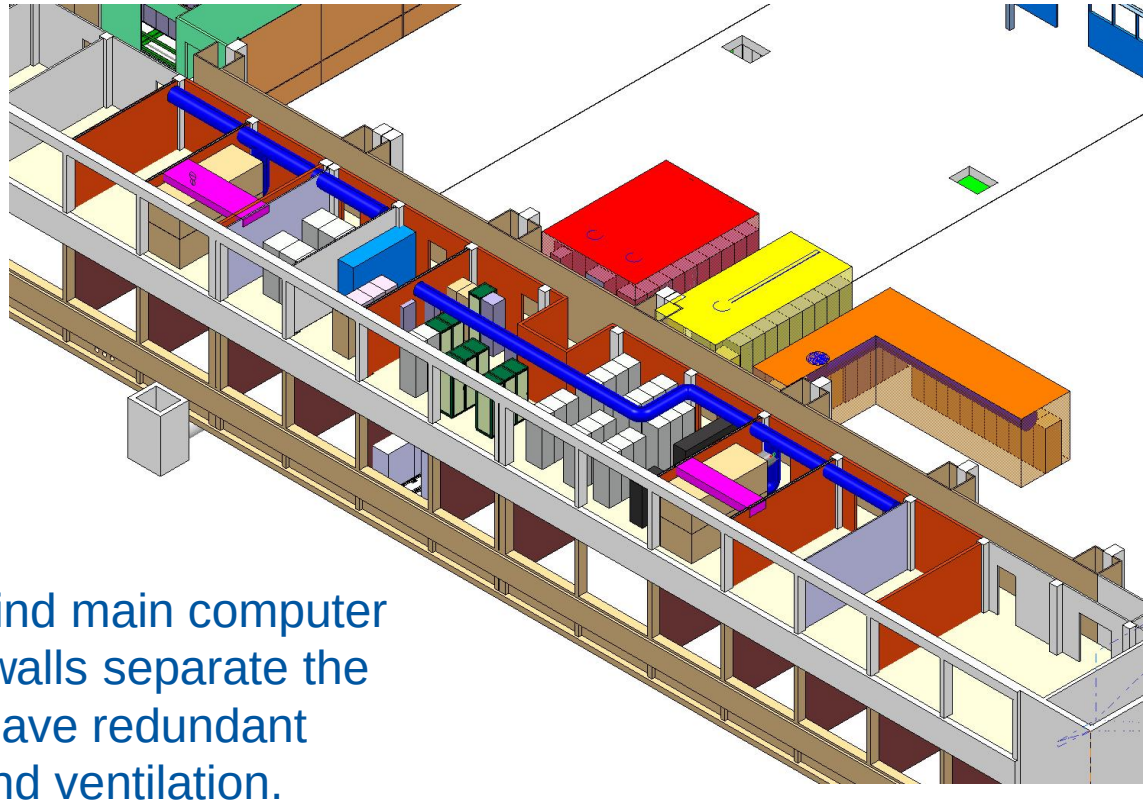
# History

- 1989: the first pan-European internet backbone was established through CERN
- 1990: the first T1 (155Mbps) connection to NSFnet in the USA was made.
- 1996: CIXP formally established January 1st
- 2001: founding member of Euro-IX
- 2004: CIXP hosts a mirror instance of the K-root Internet root name server.

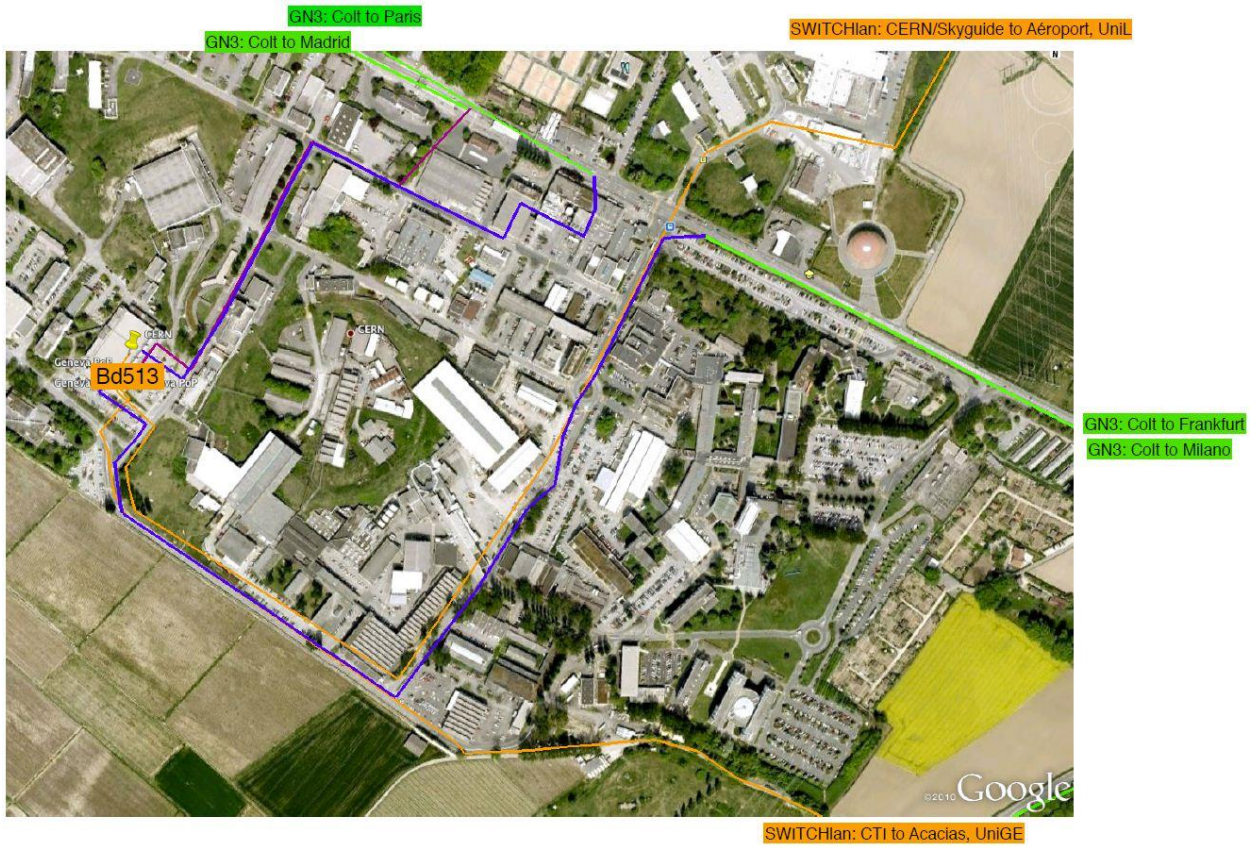
# Telecom critical area



Corridor lies behind main computer room. Fireproof walls separate the facilities, which have redundant power, cooling and ventilation.

# Diverse fibre routes

Multiple fibre paths connect the computer centre to the outside world. By having redundant paths and multiple operators, reliability is increased!



# Neutral Exchange

- At the CIXP, we provide hosting facilities (power, cooling and fibre connectivity) to a number telecom companies, ranging from global Tier1s (e.g. GlobalCrossing, GTT Communications, Deutsche Telekom, Orange), to national ISPs (Swisscom, Init7, UPC, VTX) and more local ones (Infomaniak, K-Net, Adeli).
- Those companies exchange network traffic either through the CIXP switch, or using private inter-connects (provided by CERN).


swisscom
upc
colt
vtx
GASCOM
The Speed of Light
Sunrise
infomaniak
Init7
orange
gtt
bics
ADELI
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
ip max
SIEA
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nts
colocate
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Bien plus que de la Fibre !


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