

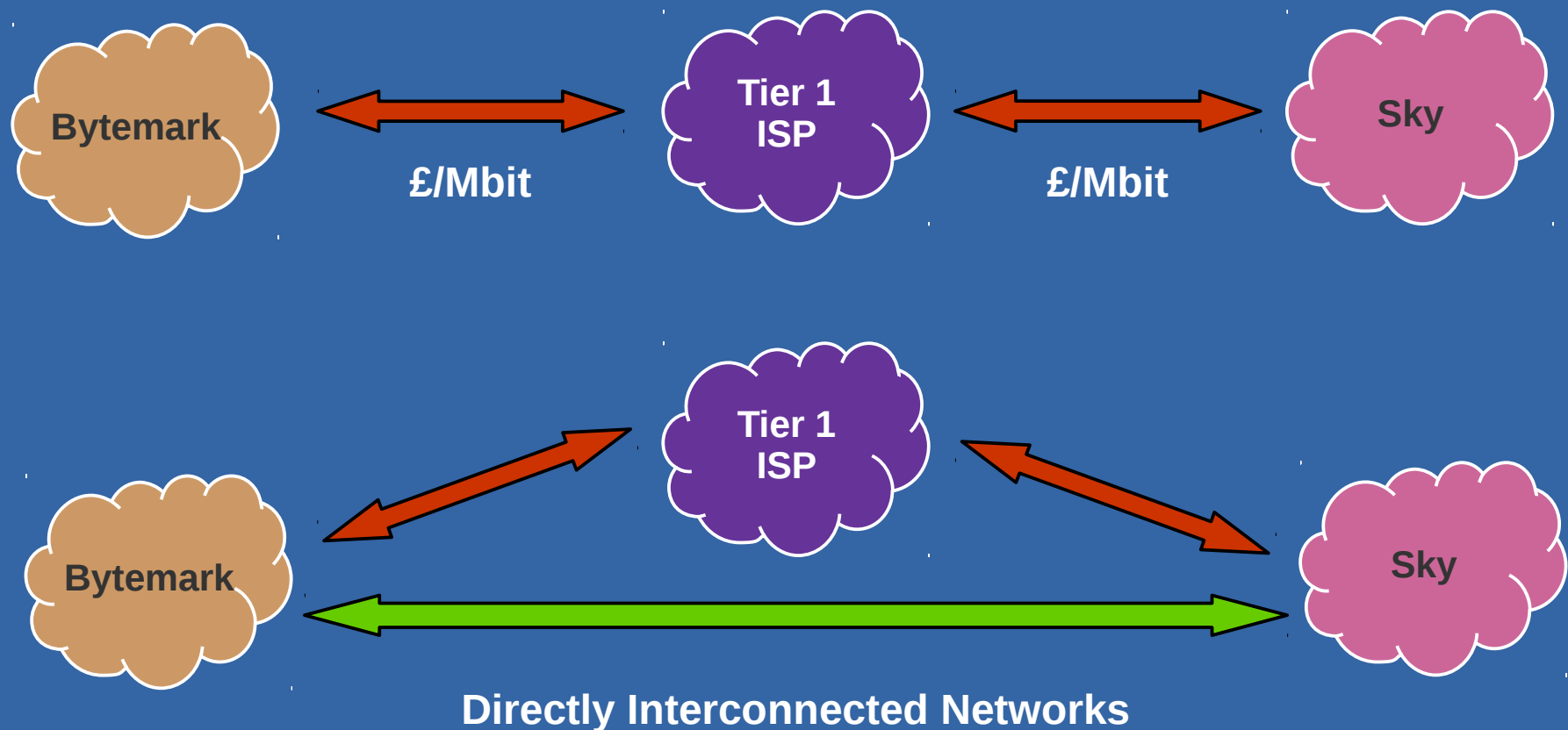
An Overview of Interconnection in Eur^Wthe UK

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Interwhat?

- The practice of directly interconnecting networks
- Cutting-out the Internet's middlemen



Why do we do it?

- Improve network reliability or quality
 - Reduce outages, peak-time congestion or latency
- It's often mutually beneficial
 - But not always – SFI is not a *right*
- Of the 5 largest consumer ISPs, 4 peer widely
 - The UK is quite lucky in this respect
- Most content companies can't peer fast enough
- The peering community can be very valuable

What do you need?

- **Your own AS number, from RIPE**
 - **And, ideally, some IP space you're permitted to announce. (You wouldn't steal a car, etc.)**
- **Some routers that speak BGP4**
 - **Ideally, one that can see the whole Internet**
 - **Usually, at least one 'IP transit' connection**
- **Some agreeable networks to peer with**
- **A cable for each one**

Oooooorr.... An Internet Exchange Point!

IXPs in the UK

- **Essentially a large switch – good ol’ Ethernet**
 - **May span more than one data centre**
 - **Facilitates one-to-many connectivity**
 - **Route servers facilitate ‘multi-lateral peering’**
- **Port speeds of 1G, 10G or 100G (or bundles thereof)**
 - **Some do 100Mbit, but... Please don’t**
- **Mutual organisations, member-owned**
- **The LINX Juniper LAN is the 10,000lb Gorilla.**
 - **LINX is big, globally – 3.2Tbit/sec of traffic**



Outside the UK...?

- **Practically every major European city has an IXP**
 - **AMS-IX in Amsterdam**
 - **DE-CIX in Frankfurt**
 - **France IX in Paris**
 - **BNIX in Brussels**
 - **INEX in Dublin**
- **'Long-line' IXP resellers can get you anywhere**
- **Not all will be mutual, some are commercial**
- **Attitude towards 'open' peering may differ to the UK**



In Summary

- **If you're selling Internet services, consider peering**
- **When done well, peering can provide benefits**
- **IXPs are almost certainly lurking nearby**
- **It's not just for those of us with expensive routers**

Thanks for listening! Questions?

More reading

bird.network.cz – a very capable BGP speaker, available for Linux

www.ams-ix.net/technical/specifications-descriptions/config-guide
– a useful guide for safely configuring common routers for interconnection

www.internetexchangemap.com – an IXP Map by Telegeography

www.euro-ix.net – IXP directory, by city. And another IXP Map!

www.peeringdb.com – a database of ISPs and their peering information

www.linx.net – for all inquires regarding the ‘local’ IXP, IX Manchester