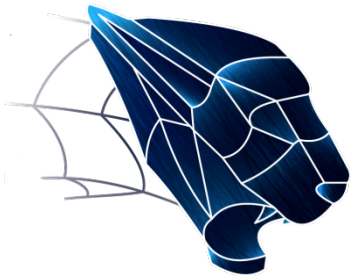
Reducing your network costs and improving its quality: tips & tricks

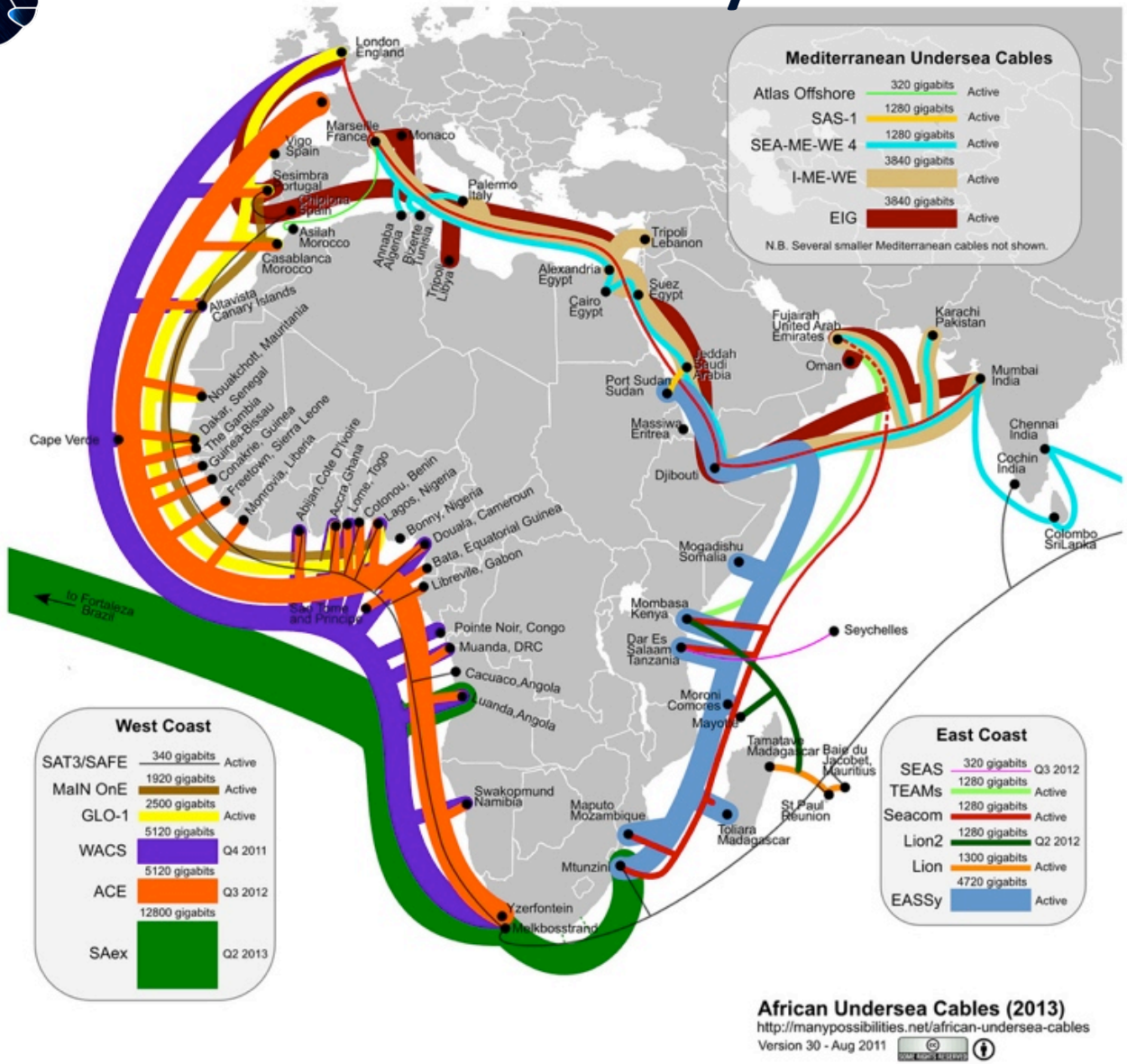
By:
Mathieu Paonessa



Agenda

- What is everybody doing now.
- What's wrong with that?
- How can you improve your connectivity?
- Benefits of having a router in Europe.
- What are the best places to host your router?
- How does colocation work in Europe?
- Mistakes that should be avoided.
- 8 easy steps to get started!

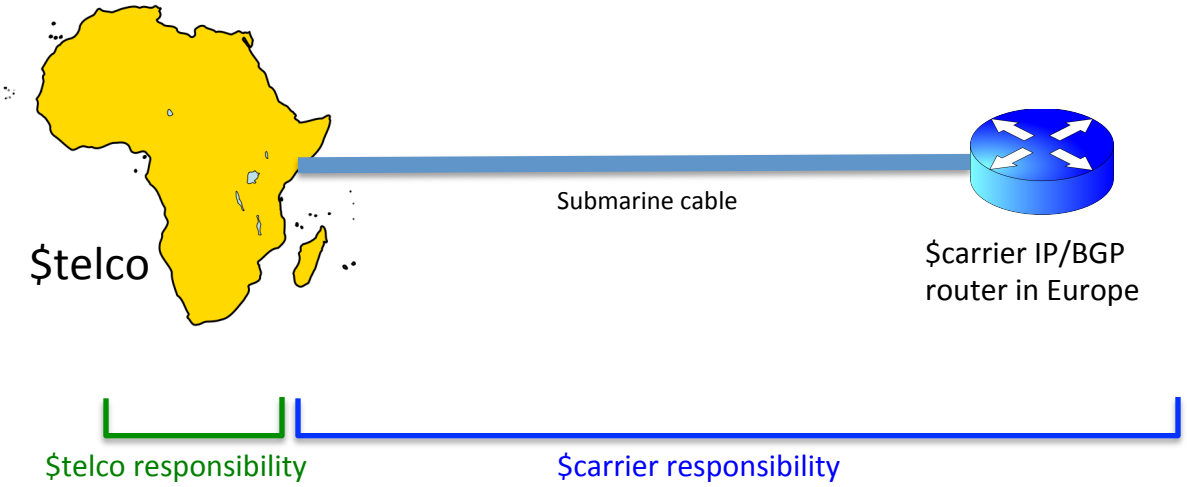
Current cable systems



What is everybody doing?

We see two main trends:

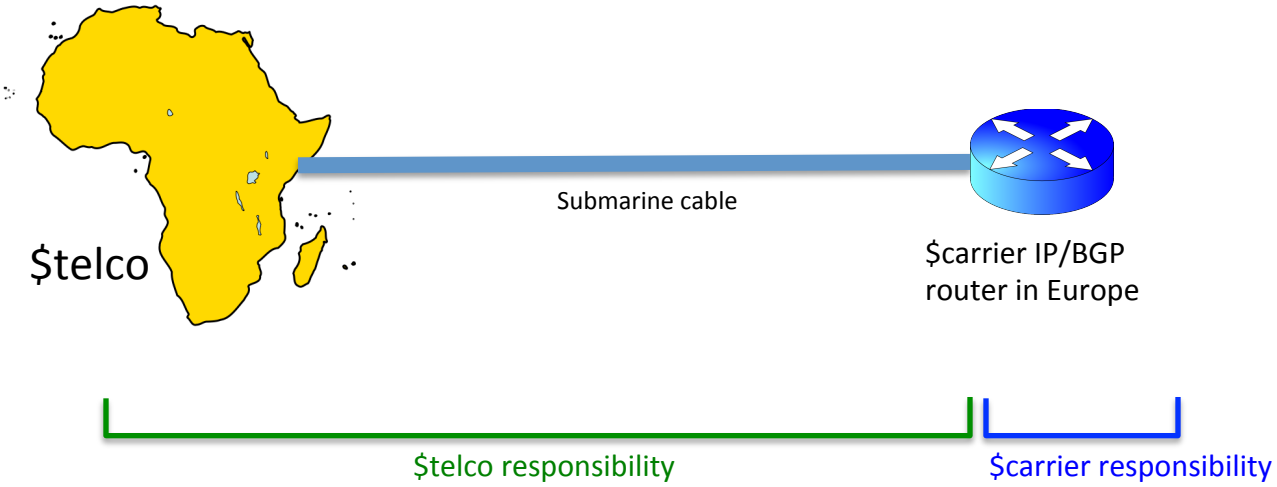
• $telco in Africa buys directly IP Transit from $carrier. $carrier takes care of the wet part and add its markup on it. $carrier IP router is located somewhere in Europe.

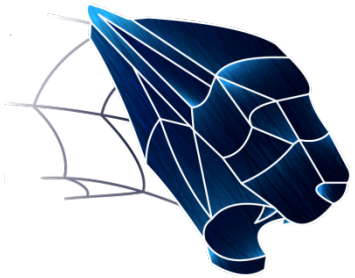


What is everybody doing?

We see two main trends:

•$telco in Africa buys capacity on a submarine cable all the way to Europe and ask $carrier to sell IP transit on it. The submarine capacity is directly connected on $carrier IP router.



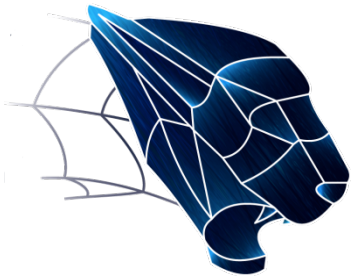


What's wrong with that?

- 100% of your traffic is transit so you pay for all of it.

- $carrier is most of the time a tier1 telco. They are interconnected with other tier1 in big cities such as London, Amsterdam, Paris, Frankfurt… This can be quite far from where your cable lands.

- If you want to have IP diversity with multiple $ carrier, you need multiple circuits.

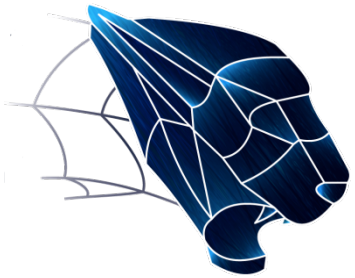


What's wrong with that?

• If you want to reach $telco from Africa that lands on the same cable/site but buy from different $carrier, you'll endup both paying for this traffic that will probably go accross Europe (if not worst).

•If you are uplinked to two different $carrier and that $carrier #1 has better routes that $carrier #2, you'll have to do dirty things like deaggregation to split evenly your traffic.

•What if you want to peer with other $telco?



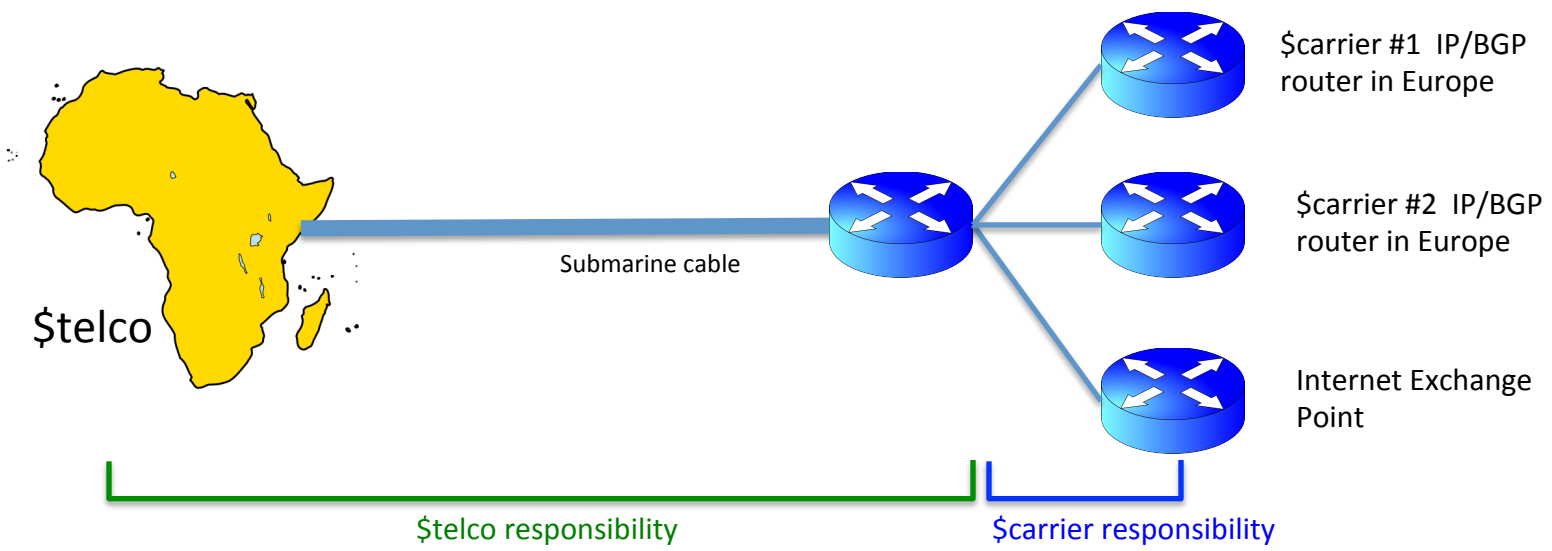
How can you improve your connectivty?

- Put an IP router in a colocation facility where the submarine cable lands.

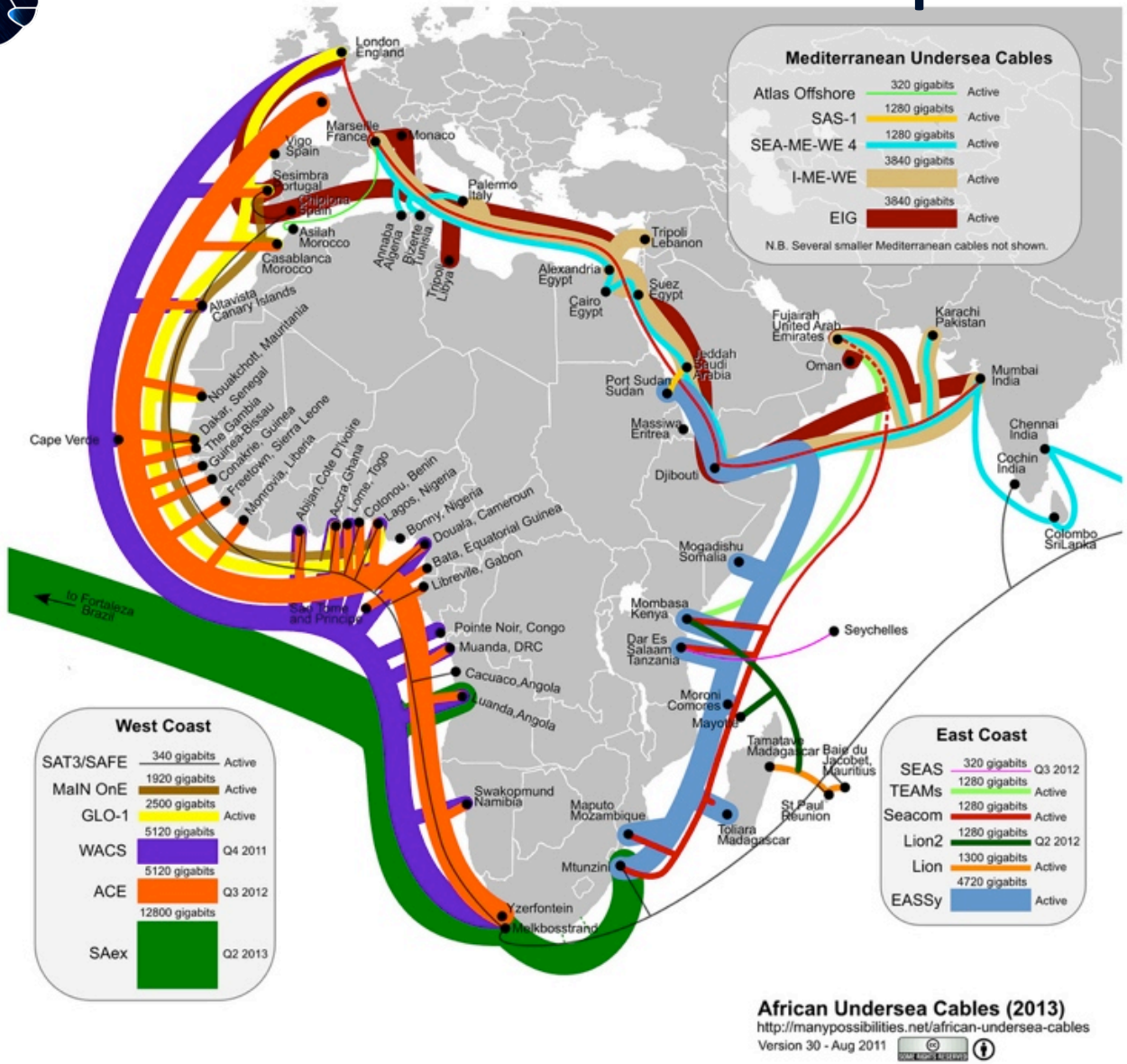
- Buy IP transit from one of the multiple $carrier available in this colo. More $carrier means more competition driving the cost of bandwidth down!

- If there is an IXP in this colo, start peering and exchange free traffic with other networks.

How can you improve your connectivty?



Where are the best places?

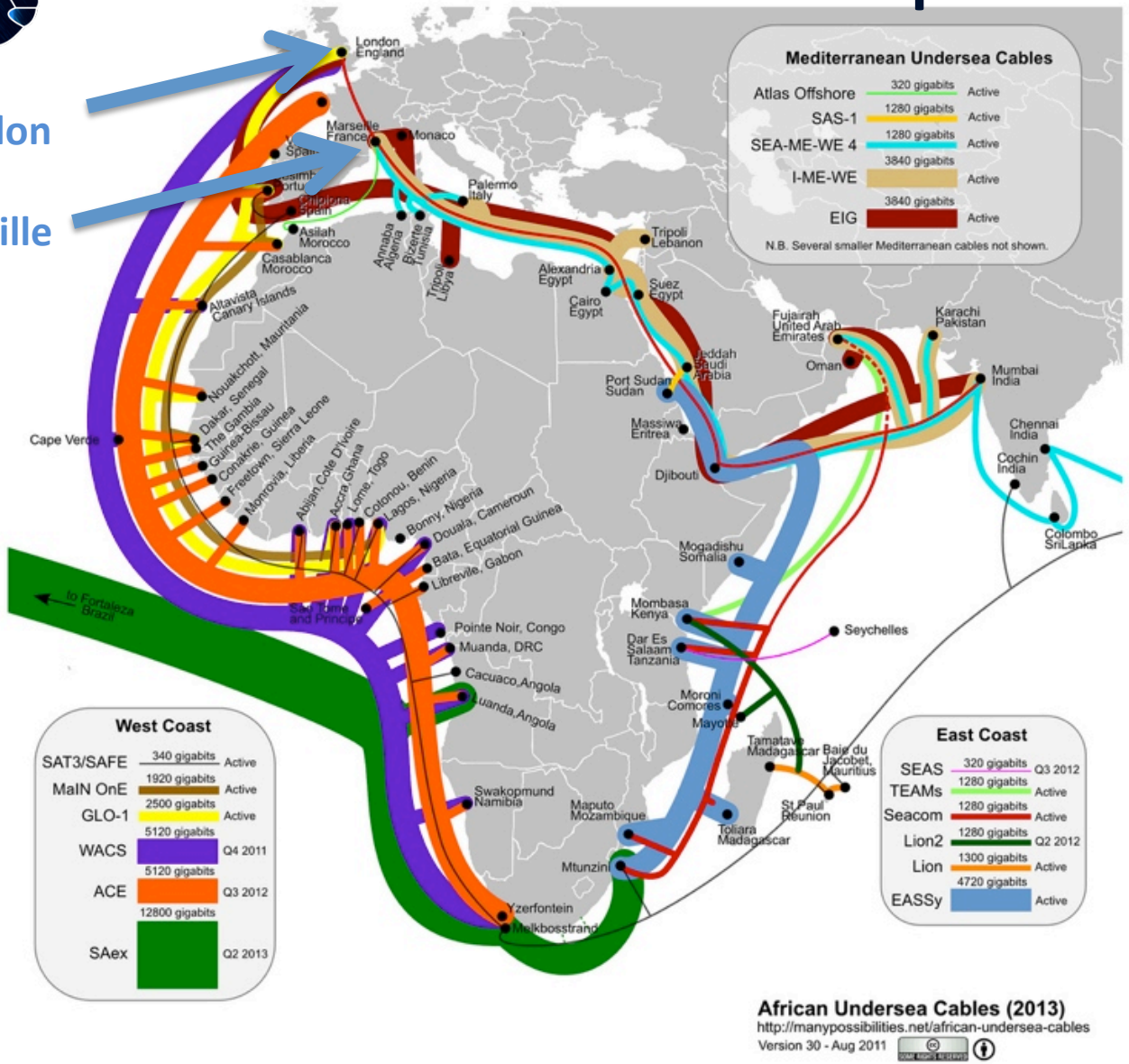


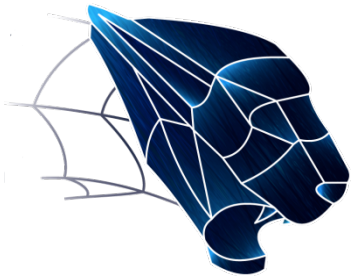
African Undersea Cables (2013)
http://manypossibilities.net/african-undersea-cables
Version 30 - Aug 2011

Where are the best places?

London

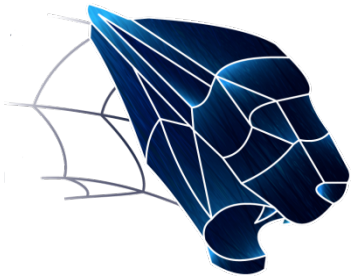
Marseille





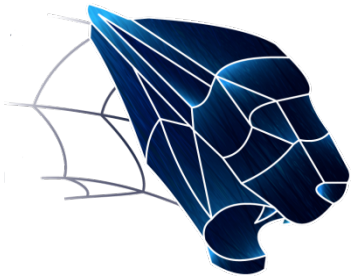
London or Marseille?

London	Marseille
- If you have capacity on GLO1 or WACS.	- If you have capacity on SMW4, IMEWE, Seacom, EIG.
- IXP: LINX, Lonap.	- IXP: FranceIX.
- Main $carrier available.	- Main $carrier available.
- If you are an english speaking country, may be you have more traffic here?	- If you are a french speaking country, may be you have more traffic here?



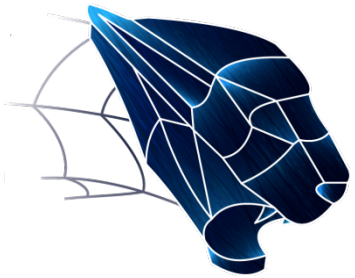
How does colocation works in Europe?

- Go to a carrier neutral facility: you don't want to be tight to a specific carrier.
- Get a rack (most common is 600mm x 1000mm these days) to put your router.
- Some colo will give you a bundled price (rack + power), some will separate them. If you want DC power, be carefull some don't offer it.
- Be very carefull with cross connects: some colo are charging monthly fee for them. If you have a lot of cross connects, that can be quite some money.



How does colocation works in Europe?

- Choose a colo where you can have remote hands & eyes service: your team is very far away, you want to have someone doing basic task remotely for you.
- Ask for the price of remote hands & eyes and what's included with it.
- Get the list of carriers and IXP available in your colo. This info is easily available on http://www.peeringdb.com/



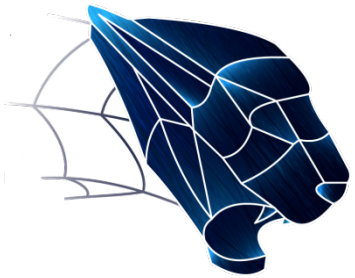
Mistakes you should avoid

- This guy is giving me a very good deal to go to his colo but there's no $carrier available or IXP there.

- I'm going to save millions of $, I'm buying a STM64 right away to push my 200Mbps of traffic!

- I don't need a facility with remote hand services: routers never brake.

- I'm buying IP transit on a very long term contract. IP transit prices drop every year. Try to get a better deal every year to lower your costs or get more bandwidth for the same price.



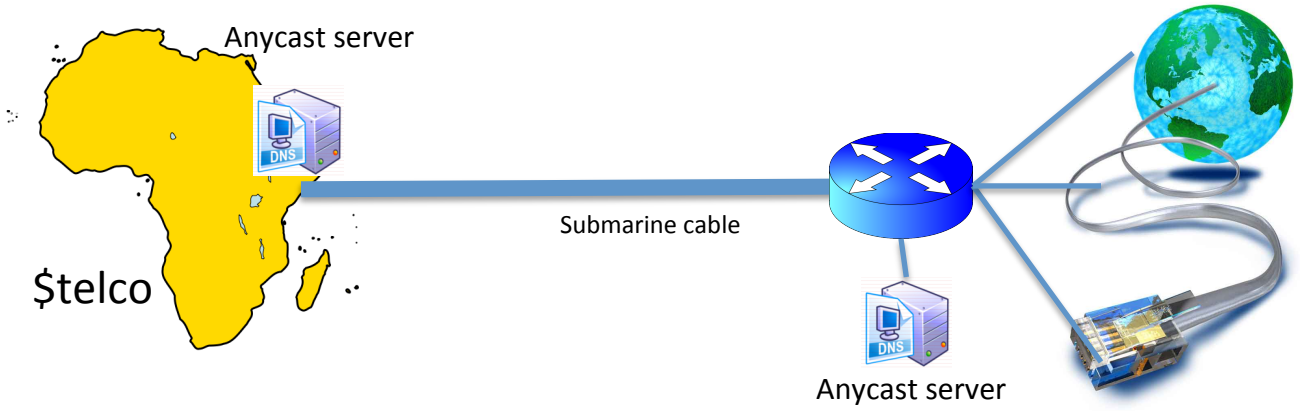
Tricks that don’t cost much (and clearly reduce OPEX)

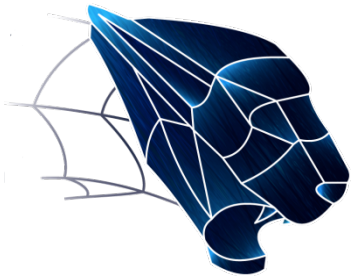
• You now have a POP in Europe, why not putting services here to improve your network and services?

• Install a secondary / anycast DNS server.

• Why not having an anycast service instance there so global users visit your website or access your MX at your cheap bandwidth location and your local user get the content direclty in your country? You’ll improve the user experience and reduce your bandwidth usage on your submarine cable link.

Tricks that don’t cost much (and clearly reduce OPEX)





Let’s get started!

1 – Do some research on the best cable system / european colocation facility for you.

2 – Buy capacity on a submarine cable system.

3 – Buy a rack in a carrier neutral colocation facility.

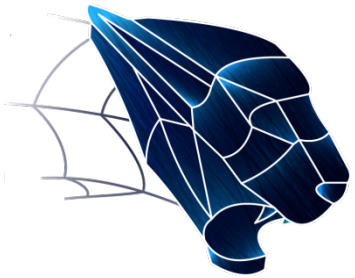
4 – Preconfigure your IP router and ship it there!

5 – Connect to the IXP of your choice and start peering.

6 – Buy IP transit from the carrier you are interested in.

7 – Enjoy your cost effective and lower latency network!

8 – Don’t forget to get me a good beer for all those tips & tricks ;-)

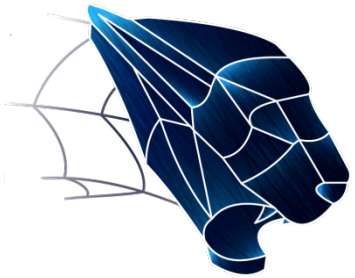


That's it?
All problem solved?

Of course not!

This presentation was only intended to help you lower your network cost and improve performance on a short / medium time range.

Then what are the possible path for the future?

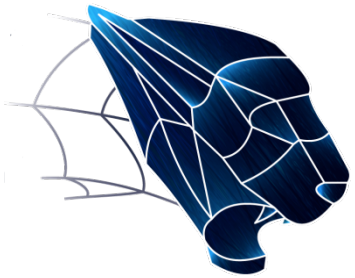


Improving network interconnections

Promote local IXP all over Africa!

Try to keep the traffic local to Africa to develop services and the economy.

Try to host content in your country and install some caching systems / CDNs so you can lower your bandwidth usage.



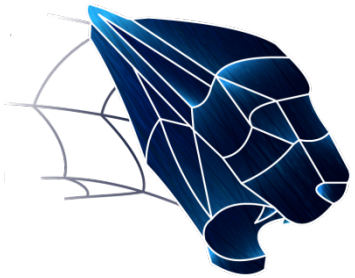
I had a dream…

African country are nearly uniquely linked by submarine cable systems.

Why can't a regional IXP using one of those cable be built so that traffic between two network operating in two different African countries flow directly between them and don't go back to Europe?

Billing could be made out of flow statistics between two peers and cost of the bandwidth would be shared between the two peers.

Need cable consortium and political support!



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Any Questions?