Google Global Cache - enabling content

Thomas Volmer
Google Edge lead, EMEA
AfPIF 2017, Abidjan
Google is...

Search, Maps, Photos

Youtube, Play

G Suite, Drive

Android

Google Cloud Platform

...
Google builds...
African peering hubs & GGC

Maps from [peering.google.com](http://peering.google.com)

~70% of Africa traffic is exchanged in-continent, ~80% for Sub-Saharan Africa
Google Global Cache

Google Global Cache is hosted by ISPs. GGCs are machines inside ISP networks (and do not “peer”)

IXPs or wholesale providers are not natural targets for GGC

Google ships hardware and runs the GGC service, hosts provide O&M

Cache-fill traffic is a fraction of user-facing traffic
Cache sharing

Sharing a cache can make sense when we need to serve many small networks that would not justify hosting their own caches.

Sharing a cache does not necessarily make sense otherwise.

Most of the time, sharing the cost of hosting & filling the cache is a problem.

Finding a neutral party to host the cache is also difficult.
Autonomous shared caches

Autonomous caches using AS36040 (not ISP-hosted), can connect many peers

Relies on each peers to announce a default route to the cache, and use peers as transits

Each peers ends up with a “virtual cache”

Makes cache-sharing more easy (no cache-fill cost to share)

In testing now in two locations in Africa
Requirements for shared Google Global Cache

Sufficient addressable traffic shared with a large number of networks

A carrier neutral hosting location (ie. \textbf{anyone} can cheaply connect fiber or light up services to the location)

Enough networks able to peer at hosting location (IXPs can help aggregate)

Reliable and sufficient power

Technical know-how to install and maintain the cache hardware (swap optics, install configs etc...) with help from Google support
Google EMEA Team and means to contact us

Google runs AS15169, AS36040, AS43514, AS19527

10+ peering managers, technical planners and project managers in EMEA

Register your network and ASN onto [www.peeringdb.com](http://www.peeringdb.com) (ASN is a requirement)

Write to your peering manager or to [peering@google.com](mailto:peering@google.com) (NO SLA)

Preferred: apply online: [https://isp.google.com/partner_request/](https://isp.google.com/partner_request/)
Thank You - Questions?