The Peering Scene in Ghana

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Agenda

Background
Objectives
Achievements
Equipment
IX Peers
Traffic Statistics
Future Projects
Background

Ghana started off with two (2) IXs in 2005

- **GIX** located at Kofi Annan was established by **GiSPA**.
- **AIX** located at Vodafone was established with resources from **AfNOG**.

Both **IXes** were established as **non-profit** entities

**Initial membership**

- **GIX** (Ecoband, GS Telecom, Internet Ghana & KNet)
- **AIX** (Ghana Telecom, NCS, AfOL, NetAfrique and later Teledata and IDN)

**Currently**

- **GIX** has 15 members
- **AIX** has 3 members
Objectives

Keeping local traffic local
Enhance user experience
Reduce overall cost in providing Internet services
Promote and encourage the creation of local content
Create opportunity for content and other VAS providers
Building technical capacity (a.k.a. Clue)
Achievements

Reduced latency between providers from ~500ms to ~25ms
Reduced cost of Internet transit for ISPs
GoogleCache@IX has improved user experience for Google sites.
Better IP coverage for end users.
— Customer VPNs between different ISPs via IX
Equipment

Cisco 3650E (WS-C3560E-48TD-S) Core Switch
- Donated by ISOC

Cisco 3845 Route Server
- Loaned to GIIXA by Teledata ICT
Connectivity Diagram

Google Cache

Ghana Internet Exchange (GIX)
GIX Peers - Present

16 Members
- 11 ISPs
- 3 Telcos
- 1 Government Agency
- 1 Content Provider

Ecoband
Gateway Services
Teledata ICT
Comsys
ESSLtd.
KNET
Busy Internet
ZipNet

IBurst
DiscoveryTel
IS
Vodafone
MTN (Afol, Internet Ghana)
Airtel
GCNet
Google Cache
GIX Peers - Outreach

- Government MDAs
- Educational & Research Institutions
- Financial Institutions
- Content Providers
Statistics - Total Traffic

Peak Traffic = 542 MB
Statistics - Total Traffic

Peak Traffic = 542 MB

Outbound
- Current: M 281.49 M
- Average: M 264.84 M
- Maximum: M 535.11 M
- Total Out: 69.49 TB

Inbound
- Current: M 267.93 M
- Average: M 208.80 M
- Maximum: M 358.73 M
- Total In: 119 TB

Outbound
- Current: M 267.93 M
- Average: M 208.80 M
- Maximum: M 358.73 M
- Total Out: 119.79 TB
Statistics - Member Traffic
Future Projects

Root Servers
Monitoring Tools @ GIX
IPv6 deployment
GPS NTP Servers
Akamai Servers (Microsoft Update etc)
2^{nd} Exchange Point in Ghana (Revive AIX)
Thank You