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

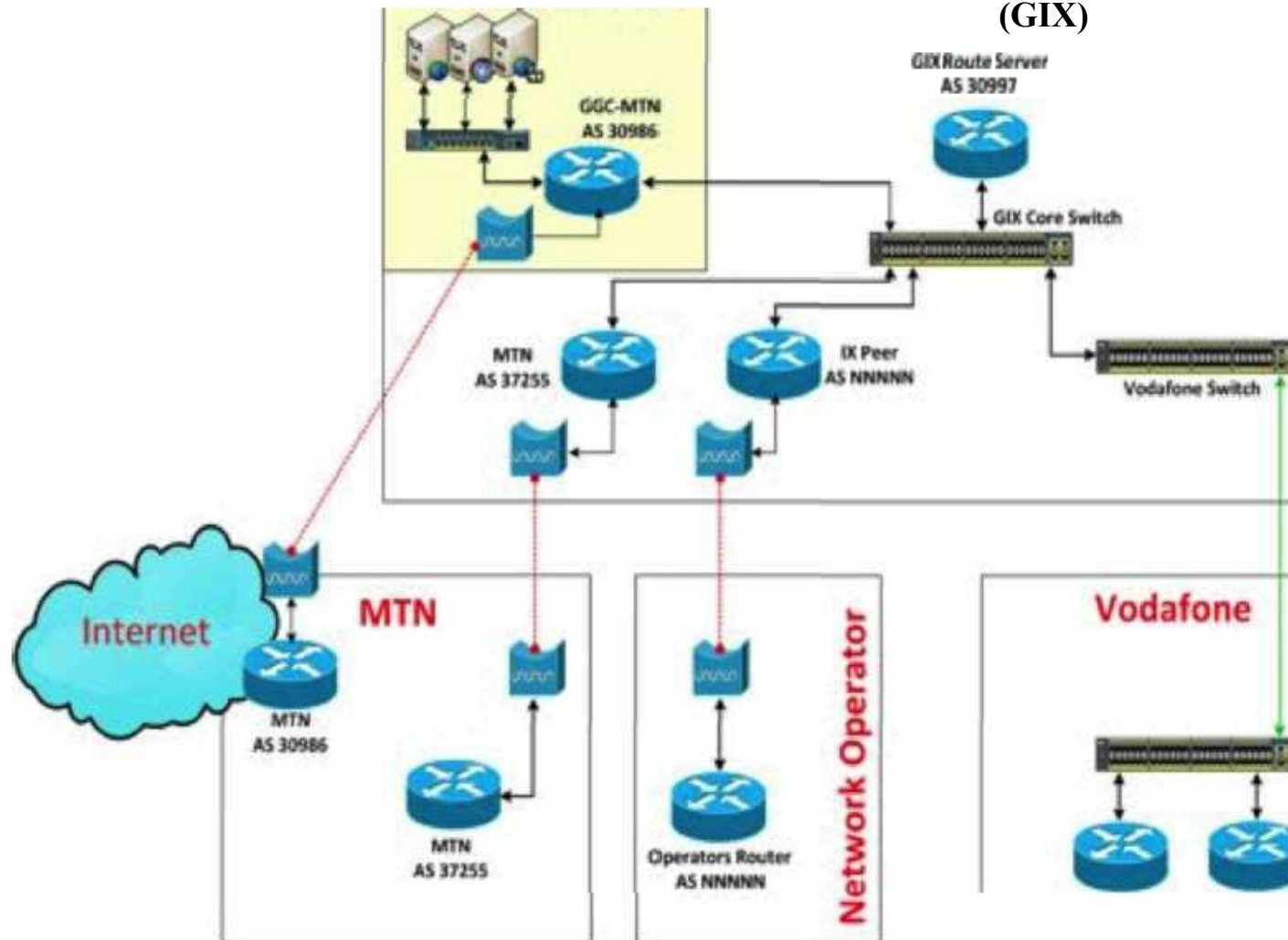Cisco 3650E (WS-C3560E-48TD-S) Core Switch

- Donated by ISOC

Cisco 3845 Route Server

- Loaned to GIXA byTeledata 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	IBurst
Gateway Services	DiscoveryTel
Teledata ICT	IS
Comsys	Vodafone
ESSLtd.	MTN (Afol, Internet Ghana)
KNET	Airtel
Busy Internet	GCNet
ZipNet	Google Cache

GIX Peers - Outreach

- Government MDAs ft--::il

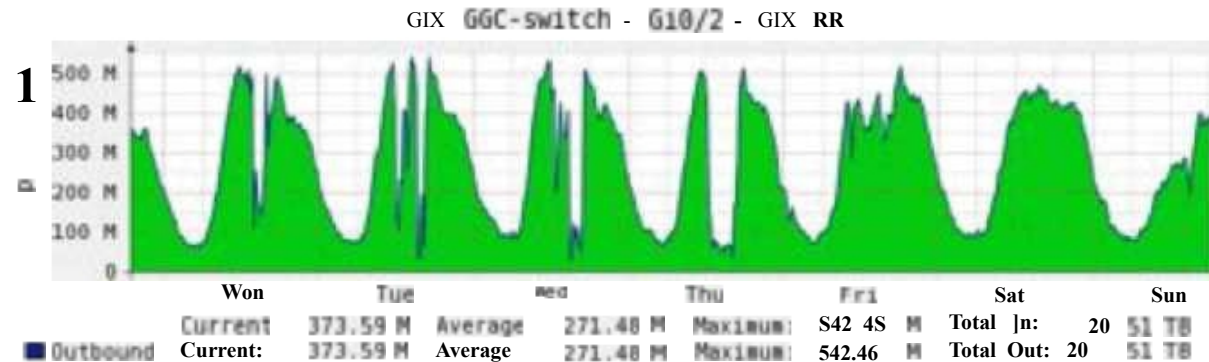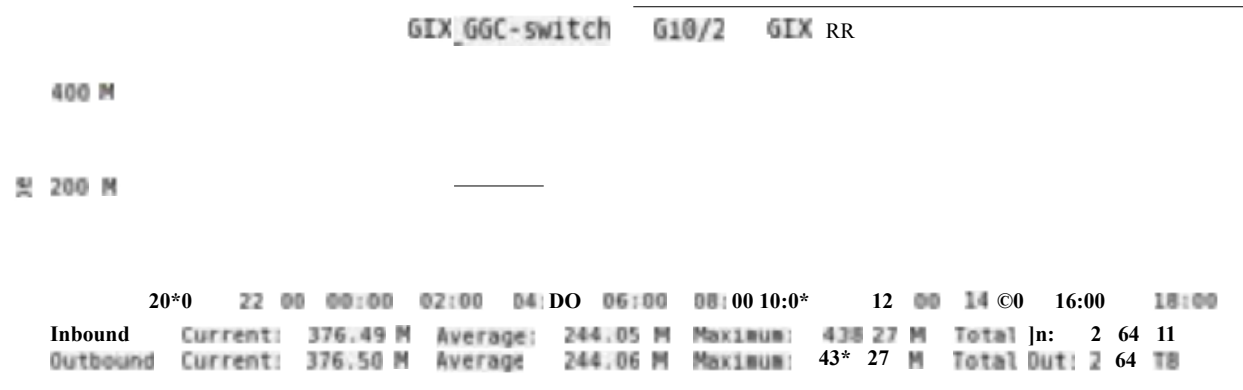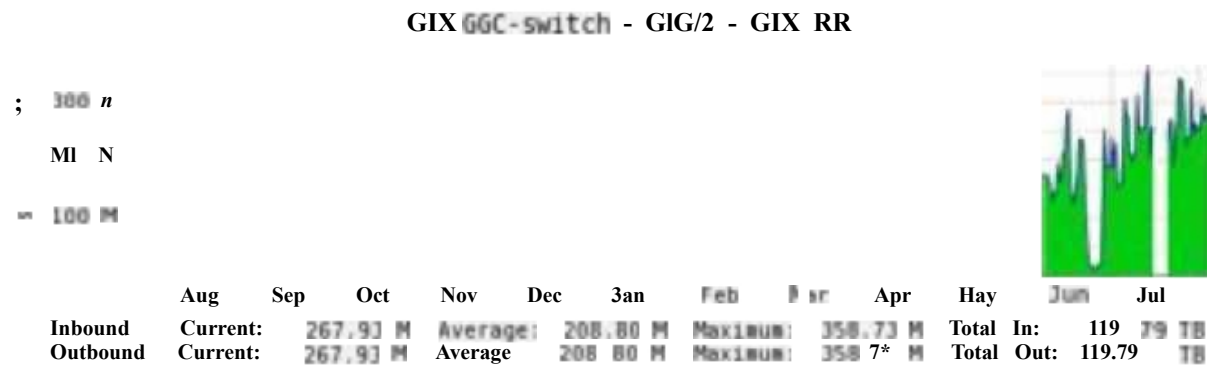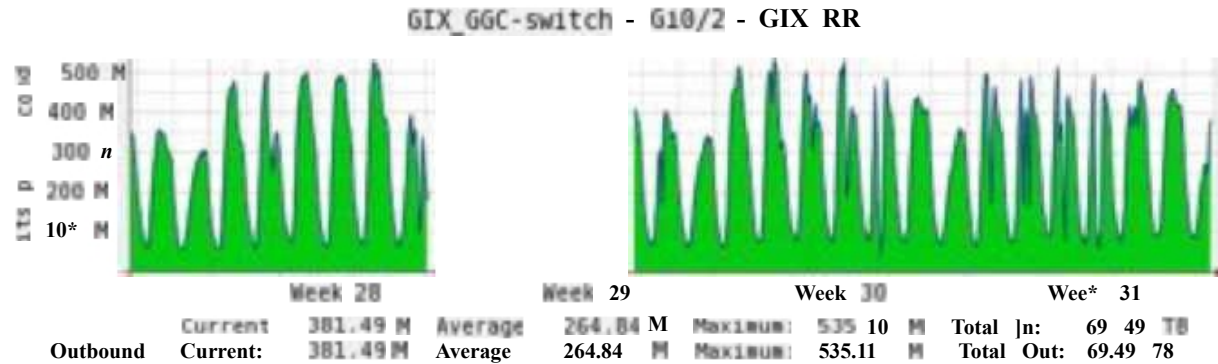Educational & Research Institutions

Financial Institutions

Content Providers

Statistics - Total Traffic

Peak Traffic = 542 MB

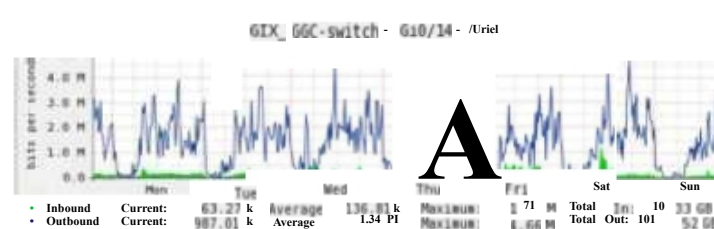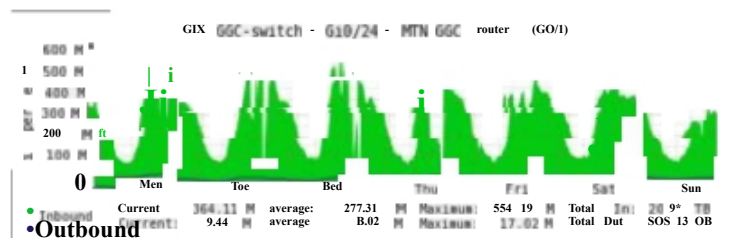# Statistics - Total Traffic

Peak Traffic = 542 MB

GIX_GGC-switch - G10/2 - GIX RR

	Current	381.49 M	Average	264.84 M	Maximum:	535 10 M	Total]n:	69 49 TB
Outbound	Current:	381.49 M	Average	264.84 M	Maximum:	535.11 M	Total Out:	69.49 78

GIX GGC-switch - GlG/2 - GIX RR

		Aug	Sep	Oct	Nov	Dec	3an	Feb	Ir	Apr	Hay	Jun	Jul
Inbound	Current:	267.93 M	Average:	208.80 M	Maximum:	358.73 M	Total In:	119 79 TB
Outbound	Current:	267.93 M	Average	208 80 M	Maximum:	358 7* M	Total Out:	119.79 TB

Statistics – Member Traffic
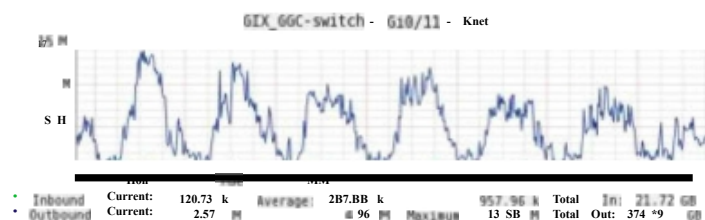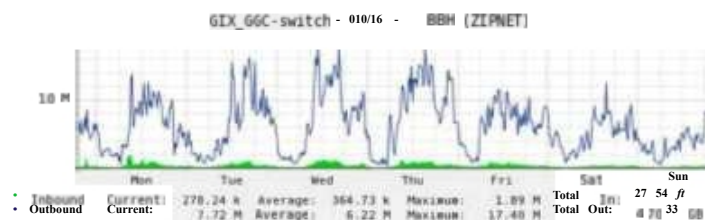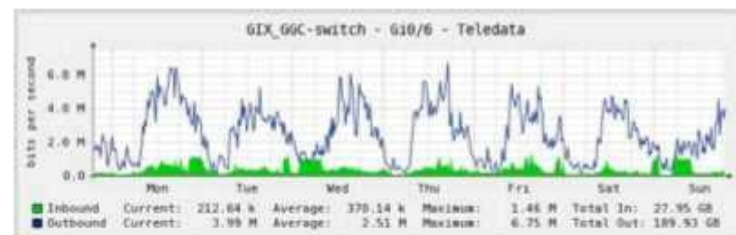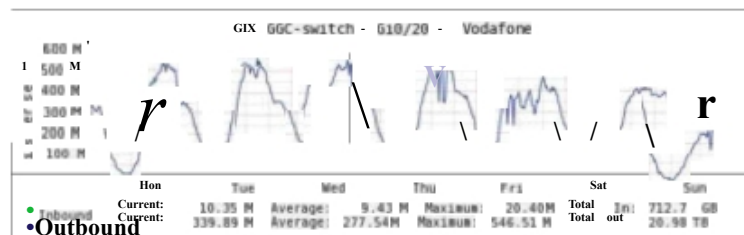
Future Projects

Root Servers

Monitoring Tools @ GIX

IPv6 deployment

GPS NTP Servers

Akamai Servers (Microsoft Update etc)

2nd Exchange Point in Ghana (Revive AIX)

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Thank You