Côte d'Ivoire Internet eXchange Point CI-IXP

(2006-2007)

REPORT

PARTNER

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I-Introduction

We have noted that the access to Internet is still slow in Côte d'Ivoire. This situation is due to the prohibitive price local Internet users have to pay to have access to it. The Network Information center of Côte d'Ivoire (NICCI) aims at acting on the Internet sector supply to stimulate demand. Therefore NICCI is considering to establish:

 -an Internet exchange point in Côte d'Ivoire (CIIXP)
 -a copy of the f.root-servers.net
 -a Data Center
 These three interdependent initiative aim at
 -connecting local ISP among themselves.
 -avoiding a useless use of the international playing band of the country by keeping the local Internet traffic at local level.
  -promoting the reductions average cost to have access to Internet thanks to a better tariffing and a better local traffic rate.
  -promoting the implementation of new multimedia services and the development of local contents.

I.1 Exchange point emplacement.

For neutrality reasons and in harmony with the different participants, the CIIXP will be located at the ICA site of Côte d'Ivoire Telecom. Every firm or ISP desiring to be connected to exchange point must be endowed with 2 Mbps with CIT. The technique staff of the set up equipment at the CI-IXP exchange point is in the hand of the technique staff of Côte d'Ivoire Telecom in collaboration with the different network administration of every entity connected to CI-IXP exchange point.

I.2 Management of the exchange point.

The management of the access point will be in the hands of the Internet access supplier association in Côte d'Ivoire (CI-ISPA) which is now being set up. The NIC intermediary agent is the existing administrative person in charge of the exchange point.

I.3 The customers of the exchange point.
 The main customers of the exchange are:
 - The ISP
 - The services firms and located solution

Other customers could link up.

II   Training and implementation of the exchange point

### II.1 Training presented by Afrispa held from 10 to 11 April 2007

Afrispa held a one day workshop on the training of Internet access supplier association in Côte d'Ivoire and two days technical training focused on exchanges points. The training held at LABTIC Abidjan allowed ISP engineers to appropriate internal sorting and routing technical(OSPF) and external necessary to the exchange point. Five trainers (Matali Shabazz,Jean Robert Hountomey,Olivier Nana Nzepa,Yaovi Atohoun,Didier Kasole) presented the training which was a great success.

II.2 Training and effective implementation of CIIXP presented by the NSRC (July 2007)

The second training was held by the NSRC at LABTIC Abidjan. The objective of that training presented by Alain Aina and Assi Eric, was actually to set up the exchange point. The training was held in a real environment with the sorting and routing and the cables offered by NSRC. The training ended in an exchange point functional in laboratory. The equipment were then deployed in the premises of Côte d'Ivoire Telecom with whom we have reached a partner agreement. The five ISP reprentatives to the exchange point contribute financially to its functioning.

III   Results
3.1 Functional plan of the exchange point
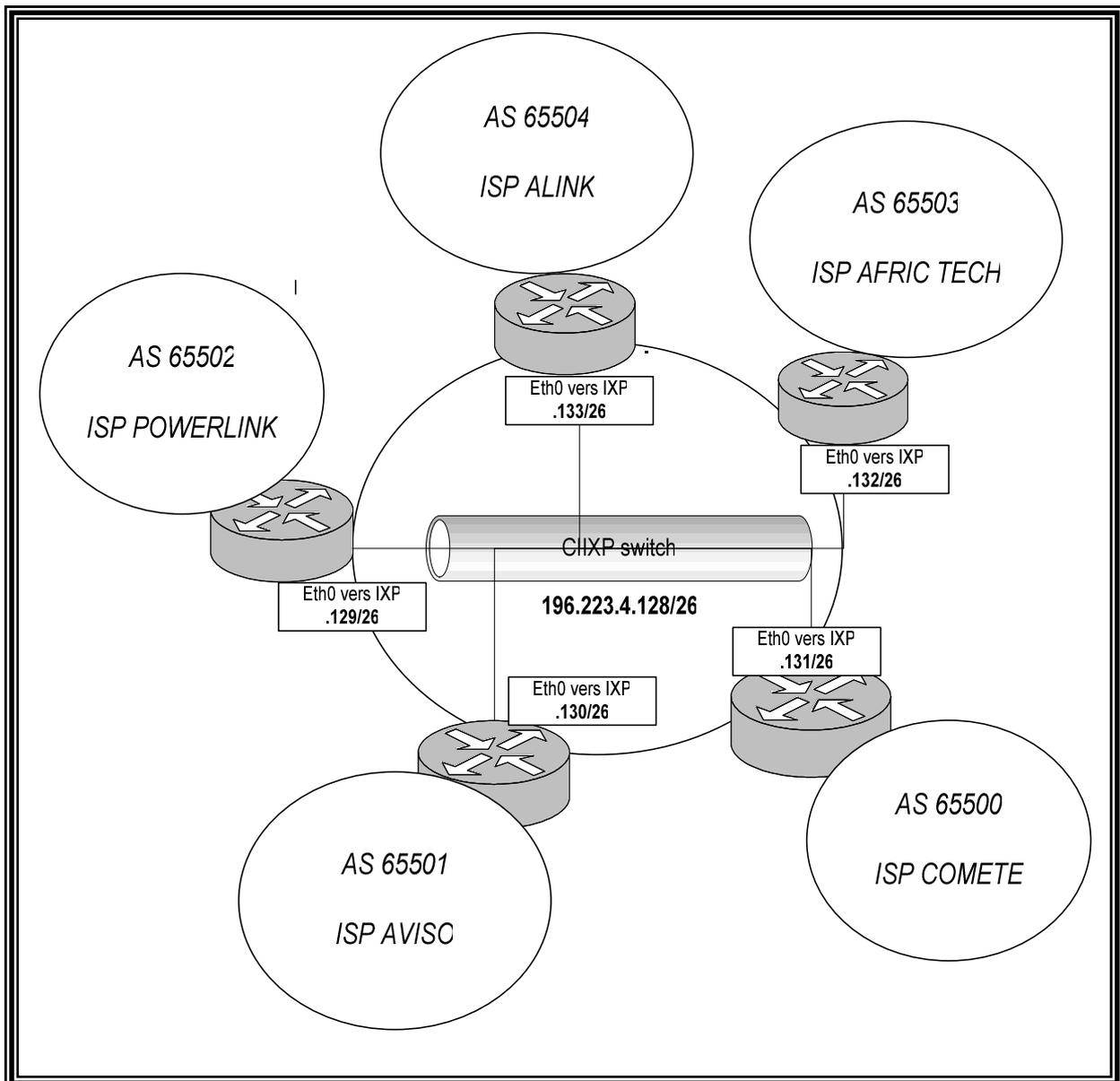
We'll present the architecture:

The functional structure of the exchange point is illustrated by the plan above. At the present time five ISP are connected to the exchange point. We are expecting three others. CI-ixp is an exchange point of "level 2"commutated local network used by different members. The exchange point "level 2" allows the implementation of many scenario and specially. flexible.

Each CI-IXP customer will supply a router (capable of performing BGP) linked to the exchange point platform, coined to sort and route every traffic local to local. That router will be connected to the switch of the platform supply by NSRC.

III.2 We have obtained from Afrinic IP(/24) addresses and an ASN sample for the exchange point in order to ensure the total independence of CI-IXP.

AfriNIC has approved the following PI/End-User Assignment to your organisation:

```
inetnum:      196.223.4.0 - 196.223.4.255
netname:      CIIXP
descr:        NIC-CI/CIISPA
country:      CI
org:          ORG-CdIE1-AFRINIC
admin-c:      CdI1-AFRINIC
tech-c:       CdI1-AFRINIC
status:       ASSIGNED PI
mnt-by:       AFRINIC-HM-MNT
changed:      hostmaster@afrinic.net 20070424
source:       AFRINIC
parent:       196.223.0.0 - 196.223.255.255
```

If you ever need to change the netname (or any other attributes) to something else, you must inform hostmaster@afrinic.net. Just reply to this message with details of the change.

Kind Regards,

AfriNIC HM Team.
www.afrinic.net
Hello,
This is to inform you that the Autonomous System Number 36946 has been assigned by AfriNIC to your organisation.

The AfriNIC whois database shows the following information:
```
aut-num:      AS36946
as-name:      CIIXP
descr:        CIIXP
org:          ORG-CdIE1-AFRINIC
admin-c:      CdI1-AFRINIC
tech-c:       CdI1-AFRINIC
mnt-by:       AFRINIC-HM-MNT
changed:      hostmaster@afrinic.net 20070424
```

The listed above lines show the good functioning of CIIXP.

CIIXP_AVISO>sh ip bg
CIIXP_AVISO>sh ip bgp su
CIIXP_AVISO>sh ip bgp summary

BGP using 10318 total bytes of memory
9 received paths for inbound soft reconfiguration
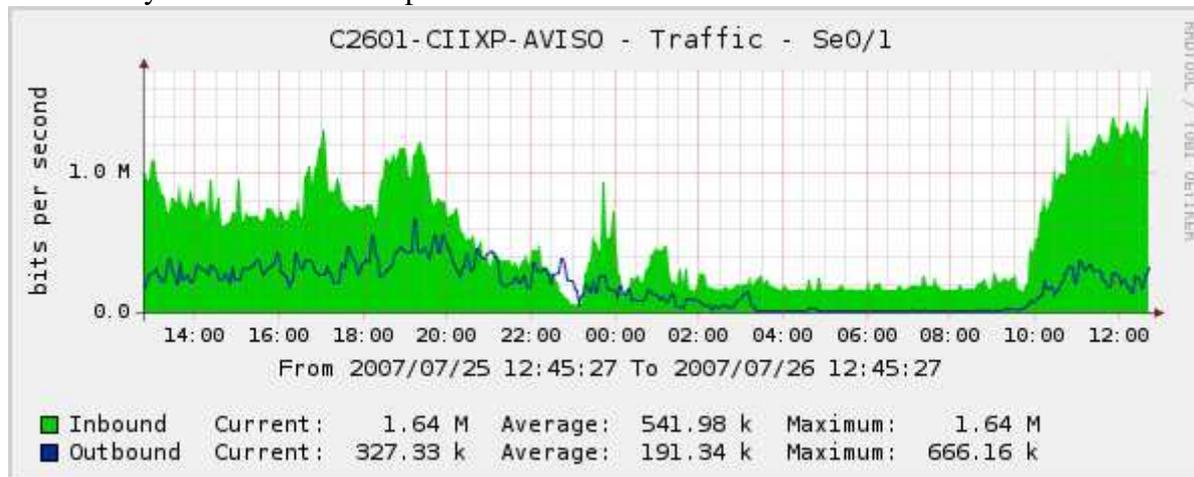BGP activity 83/21 prefixes, 169/98 paths, scan interval 60 secs

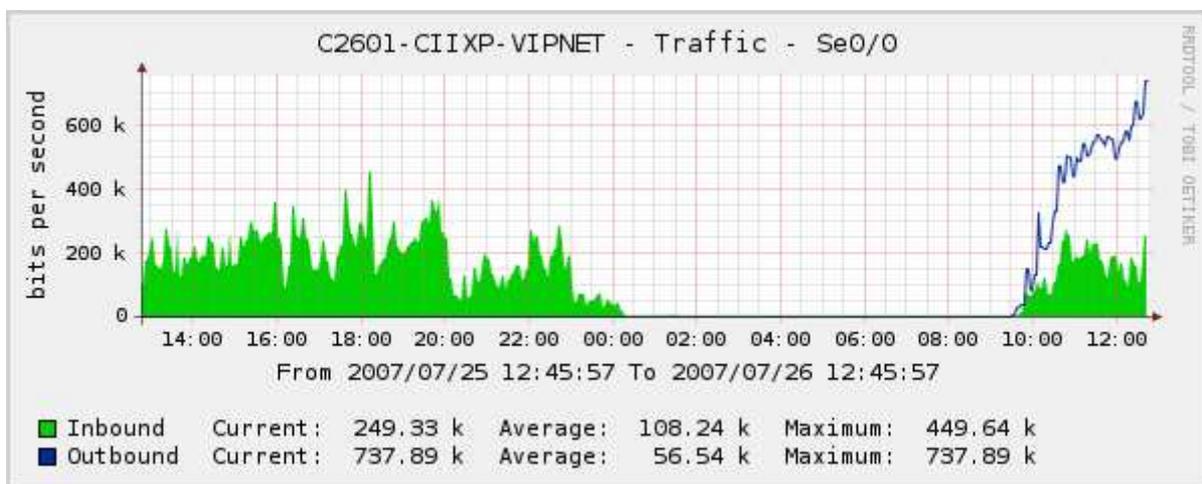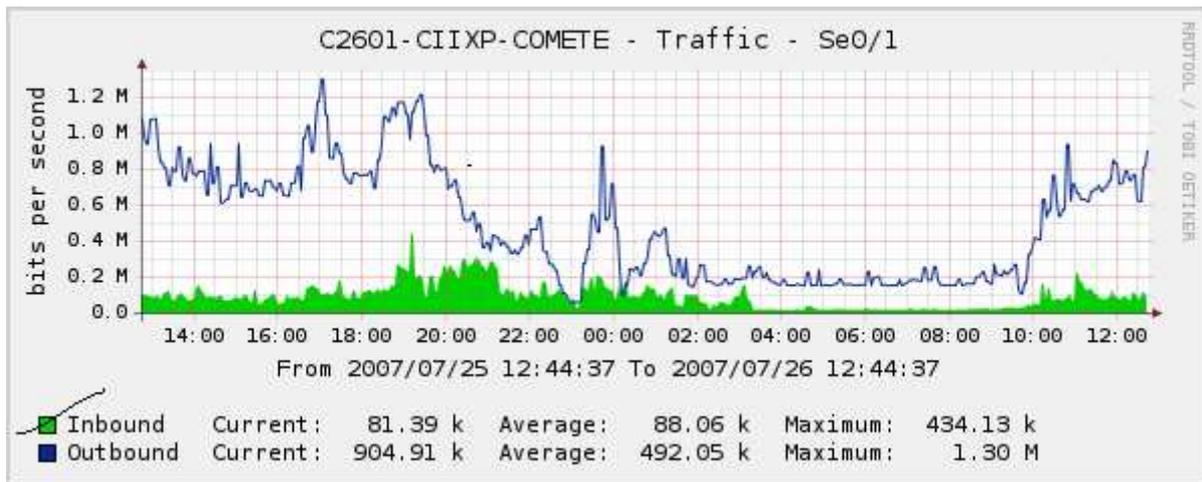| Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.79.79.14	4	65501	45380	45291	237	0	0	4w1d	53
196.223.4.129	4	65502	45279	45284	237	0	0	4w3d	2
196.223.4.131	4	65500	33733	33727	237	0	0	3w2d	6
196.223.4.132	4	65503	45275	45284	237	0	0	4w3d	1
196.223.4.133	4	65504	0	0	0	0	0	never	Active

CIIXP_AVISO>sh ip bgp
BGP table version is 237, local router ID is 196.223.4.130 Status codes: s suppressed, d damped, h history, * valid, > best, i - internal, r RIB-failure, S Stale Origin codes: i - IGP, e - EGP, ? – incomplete

Network	Next Hop	Metric	LocPrf	Weight	Path
*> 10.79.79.16/30	196.223.4.131	120		0	65500 i
*> 41.207.11.0/26	196.223.4.129	120		0	65502 i
*> 41.207.12.128/26	196.223.4.129	120		0	65502 i
*>i41.207.16.0/24	213.136.96.102	20	100	0	i
*>i41.207.17.0/24	213.136.96.102	20	100	0	i
*>i41.207.18.0/24	213.136.96.102	20	100	0	i
*>i41.207.19.0/24	213.136.96.102	20	100	0	i
*>i41.207.192.0/21	213.136.96.102	20	100	0	i

CIIXP_AVISO>

Some analyses of the terminal point

C2601-CIIXP-COMETE - Traffic - Se0/1

From 2007/07/25 12:44:37 To 2007/07/26 12:44:37

	Current:	Average:	Maximum:
Inbound	81.39 k	88.06 k	434.13 k
Outbound	904.91 k	492.05 k	1.30 M

C2601-CIIXP-VIPNET - Traffic - Se0/0

From 2007/07/25 12:45:57 To 2007/07/26 12:45:57

	Current:	Average:	Maximum:
Inbound	249.33 k	108.24 k	449.64 k
Outbound	737.89 k	56.54 k	737.89 k

Acknowledgements