

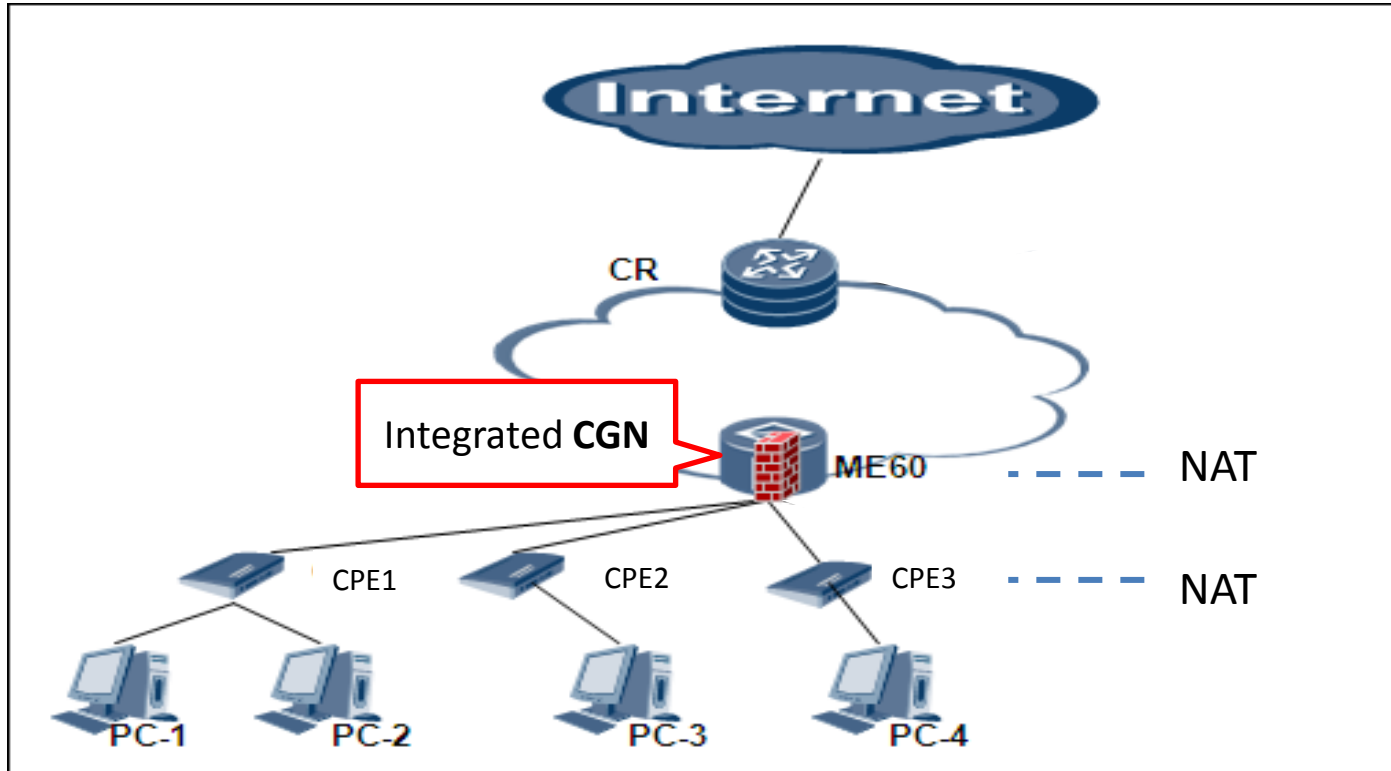
Experience from NAT44 Translation Testing

draft-li-sunset4-nat444-test-01

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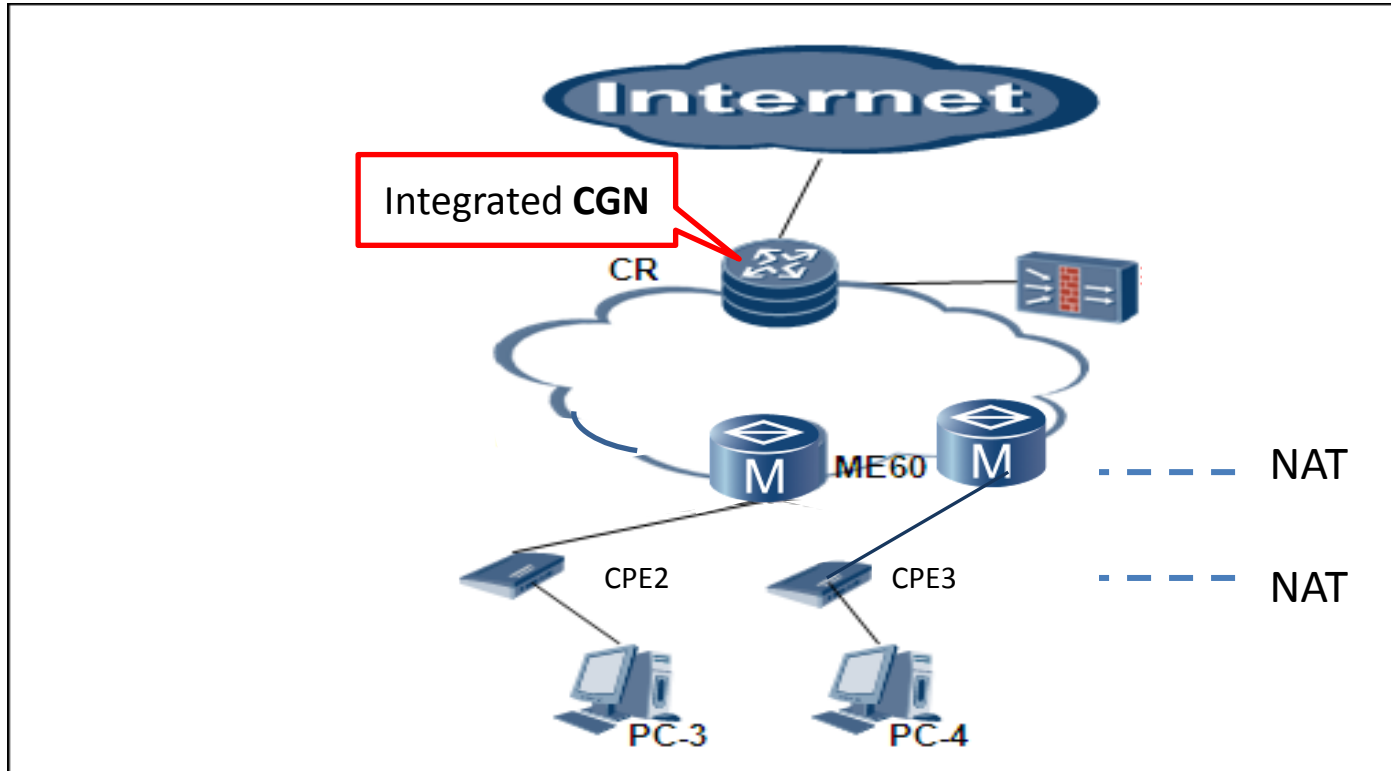
Test Environment



The first 3 scenarios, ME60 with integrated CGN, two level NATs :

- 1) Distributed CGN topology: $PC-1 \leftrightarrow PC-2$, under the same CPE
- 2) Distributed CGN topology: $PC-1 \leftrightarrow PC-3$, under different CPEs
- 3) Public user and private user: $PC-3 \leftrightarrow PC-4$,
CPE2 accesses a private IP address from ME60; CPE3 accesses a public IPv4 address by PPP from ME60.

Test Environment



The 4th scenario, CR with integrated CGN, two level NATs :

- 4) Centralized CGN topology for NAT444 testing: $PC-3 \leftrightarrow PC-4$, CR with integrated CGN

Testbed Description

- ALG function can be closed and open.
- We tested 3 NAT cases:
 - Activation ALG
 - Deactivation ALG
 - Single ALG

Test Results -- IM

Test object	Login Server	Chat	Voice Chat	video chat	4 scenarios
Microsoft Messenger	normal	normal	normal	normal	all pass
Skype	normal	normal	normal	normal	all pass
Feixin(Fetion)	normal	normal	normal	normal	all pass
QQ	normal	normal	normal	normal	all pass
Aliwangwang	normal	normal	normal	normal	all pass

Remarks: Independent ALG

Test Results -- Web browsing

Test object	Access the web (4 scenarios)
www.google.com	Normal (all pass)
www.baidu.com	Normal (all pass)
www.yahoo.com	Normal (all pass)
www.sohu.com	Normal (all pass)
https://chatmodels.dmm.co.jp	Normal (all pass)

Remarks: Independent ALG

Test Results -- Online Game

Test object	Result (4 scenarios)
QQ online game	Normal(all pass)
World of Warcraft	Normal(all pass)
QQ farm	Normal(all pass)
Ourgame	Normal(all pass)
Kaixin network	Normal(all pass)

Remarks: Independent ALG

Test Results -- Downloading

Test object	Result (4 scenarios)	ALG
HTTP downloading	Normal(all pass)	Independent ALG
FTP downloading	Normal(all pass)	Dependent ALG
Bittorrent/eMule downloading	Normal(all pass)	Independent ALG
Xunlei downloading	Normal(all pass)	Independent ALG

Test Results -- Internet Video/Music

Test object	Result (4 scenarios)
PPStream	Normal (all pass)
Pplive	Normal (all pass)
Youku	Normal (all pass)
Others	Normal (all pass)

Others include Qiyi, Xunleikankan, Tudou, Baidu video, Sohu video, and 163 video.

Remarks: Independent ALG

Test Results -- Shopping Online

Test object	Result (4 scenarios)
Taobao	Normal (all pass)
360buy	Normal (all pass)
Dangdang	Normal (all pass)

Remarks: Independent ALG

Test Results -- Bank

Test object	Result (4 scenarios)
China Merchants Bank	Normal (all pass)

Remarks: Independent ALG

Test Results -- Same IP

Category	Test object	Result (3 scenarios)
IM	Microsoft Messenger	Normal(all pass)
Online gaming	QQ online gaming	Failed*
Internet video/music	Youku	Normal(all pass)
Shopping online	Taobao	Normal(all pass)
Bank	Industrial and commercial Bank of China	Normal(all pass)

* Same public IP users are forbidden to entry the same game room

Summary

- In all the applications aforementioned only FTP depends on ALG. We only test two levels NAT.
- QQ online gaming does not permit two users use the same external public IP address in the same game room.
- We didn't test when eMule, Bittorrent work as internal server. This needs support of PCP.
- When there are two level NATs, users can't set internal server, such as FTP server, in home network.

Next steps

- Is sunset4 interested in this draft?
- What would be the next steps to progress this draft?