NAT64-CPE Mode Operation for Opening Residential Service

draft-chen-v6ops-nat64-cpe-01
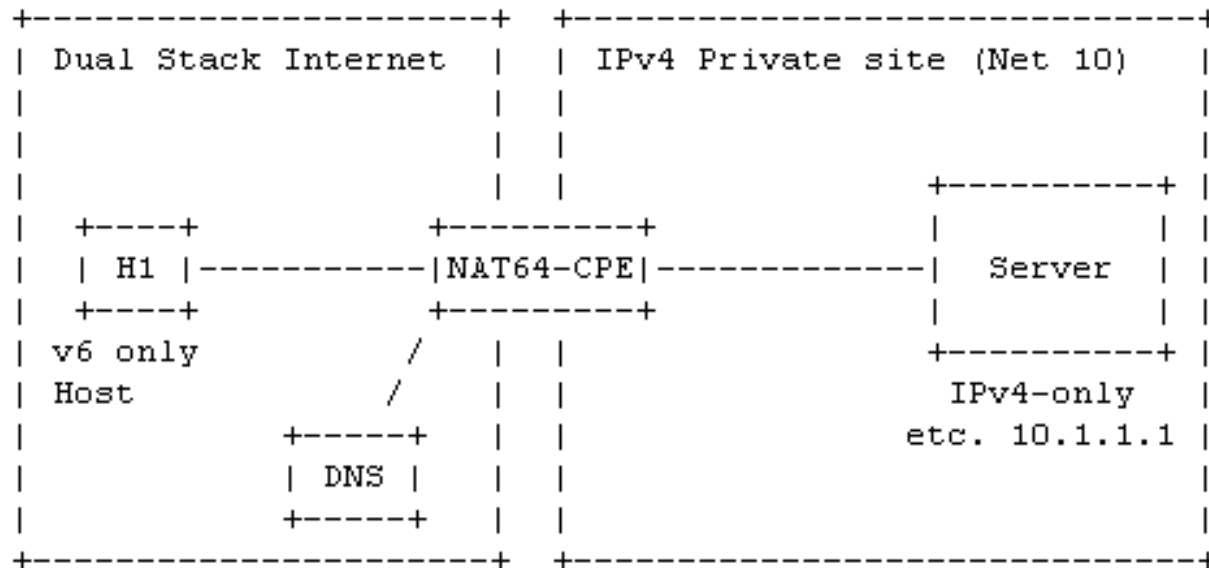
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NAT64-CPE Use Cases

- IPv6-only clients attached to a dual-stack network, but the destination server is running in a private site where there is NAT64-CPE on the data-path

- The NAT64-CPE would give the residential server opportunities to be accessed by remote hosts

```
+--------------------+   +------------------------------+
| Dual Stack Internet |   | IPv4 Private site (Net 10)  |
|                    |  | |                              |
|                    |  | |                              |
|                    |  | |           +---------+ |      |
|  +----+            +---------+       |         | |      |
|  | H1 |------------|NAT64-CPE|-------| Server  | |      |
|  +----+            +---------+       |         | |      |
| v6 only       /    |  |              +---------+ |      |
| Host         /     |  |              IPv4-only    |     |
|           +-----+  |  |              etc. 10.1.1.1 |    |
|           | DNS |  |  |                            |    |
|           +-----+  |  |                            |    |
+--------------------+   +------------------------------+
```

Use cases: remote users go through distant network to take care of house security via residential camera and manipulate household appliances remotely

Changes since IETF#79 (1)

- Add NAT64-CPE requirements into the draft
- General requirements
  - R1: NAT64-CPE SHOULD be decoupled with DNS64
  - R2: NAT64-CPE SHOULD be capable of port forwarding. PCP, UPnP and NAT-PMP are RECOMMENDED to be deployed along with NAT64-CPE
  - R3: NSP (Network-Specific Prefix) SHOULD be assigned to each NAT64-CPE for constructing ipv4-converted ipv6 addresses
  - R4: Each residential server SHOULD be represented by FQDN and stored as AAAA record along with ipv4-converted ipv6 address in DNS server. Dynamic updates in the domain name system MAY be applicable to reflect address renumbering of residential servers.

Changes since IETF#79 (2)

- WAN side requirements
  - NAT64-CPE SHOULD follow WAN side configuration described in draft-ietf-v6ops-ipv6-cpe-router-09

- LAN side requirements
  - When a residential server is attached to the LAN interface, NAT64-CPE SHOULD allocate private IPv4 addresses to the server depending on the server MAC address

Next Steps

- Survey Monkey statistics of IETF#79

	Abandon the draft	Move to RIR or *NOG	Move to another Working Group	Should be an individual document	Should be accepted as a working group document	Needs work; I will post my concerns to v6ops@ietf.org	Draft is ready for WGLC as an informational RFC	Draft is ready for WGLC as a BCP	Response Count
draft-chen-v6ops-nat64-cpe	26.1% (6)	0.0% (0)	4.3% (1)	8.7% (2)	52.2% (12)	17.4% (4)	0.0% (0)	0.0% (0)	23

- Should v6ops accept NAT64-CPE as work item and work on it?