DNS cache server selection on the dual-stack home node

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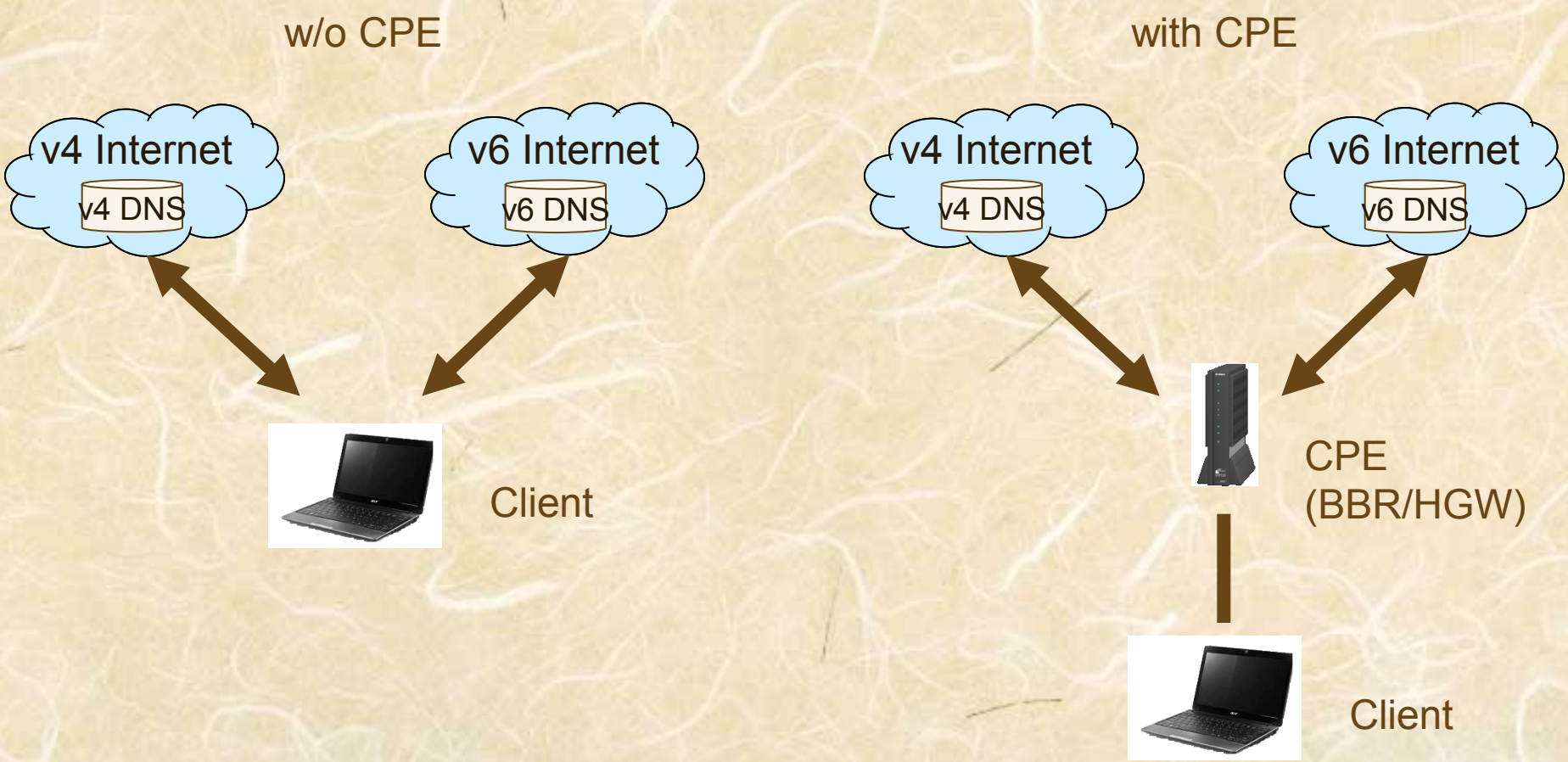
Typical Home Network Topology

- A client learns different DNS server by v4 and v6.
- A client can select a DNS server to refer.



Cache server selection (w/o CPE)

DNS cache server selection depends on client's behavior.

	Priority: v4DNS	Priority: v6DNS	Priority: query type	Priority: Both
query type: A	v4DNS	v6DNS	v4DNS	v4&v6 DNS
query type: AAAA	v4DNS	v6DNS	v6DNS	v4&v6 DNS

Cache server selection (w/ CPE)

CPE behave as a DNS Proxy
DNS cache server selection depends on CPE implements

	Priority: v4DNS	Priority: v6DNS	Priority: query type	Priority: Both	Priority: Transport protocol
query type: A	v4DNS	v6DNS	v4DNS	v4&v6 DNS	depends on client
query type: AAAA	v4DNS	v6DNS	v6DNS	v4&v6 DNS	Depends on client

Pros/Cons of DNS cache server selection

	Priority: v4DNS	Priority: v6DNS	Priority: query type	Priority: Both	Priority: Transport
Pros	Simple behavior	Simple behavior		Response is fast	CPE follows clients
Cons	- v4 trouble influence v6 - against promotion of ipv6	- v6 trouble influence v4	How to handle other query type	- Double query packet - DNS server is not same	

Summary

- DNS selection method on the clients and CPE are not unified now.

- Best selection method of DNS brings comfort to users.

- Stop returning AAAA answer when the transport protocol is v4.

- **Unify the selection method of the DNS cache server on clients and CPE in the dual stack home network.**