

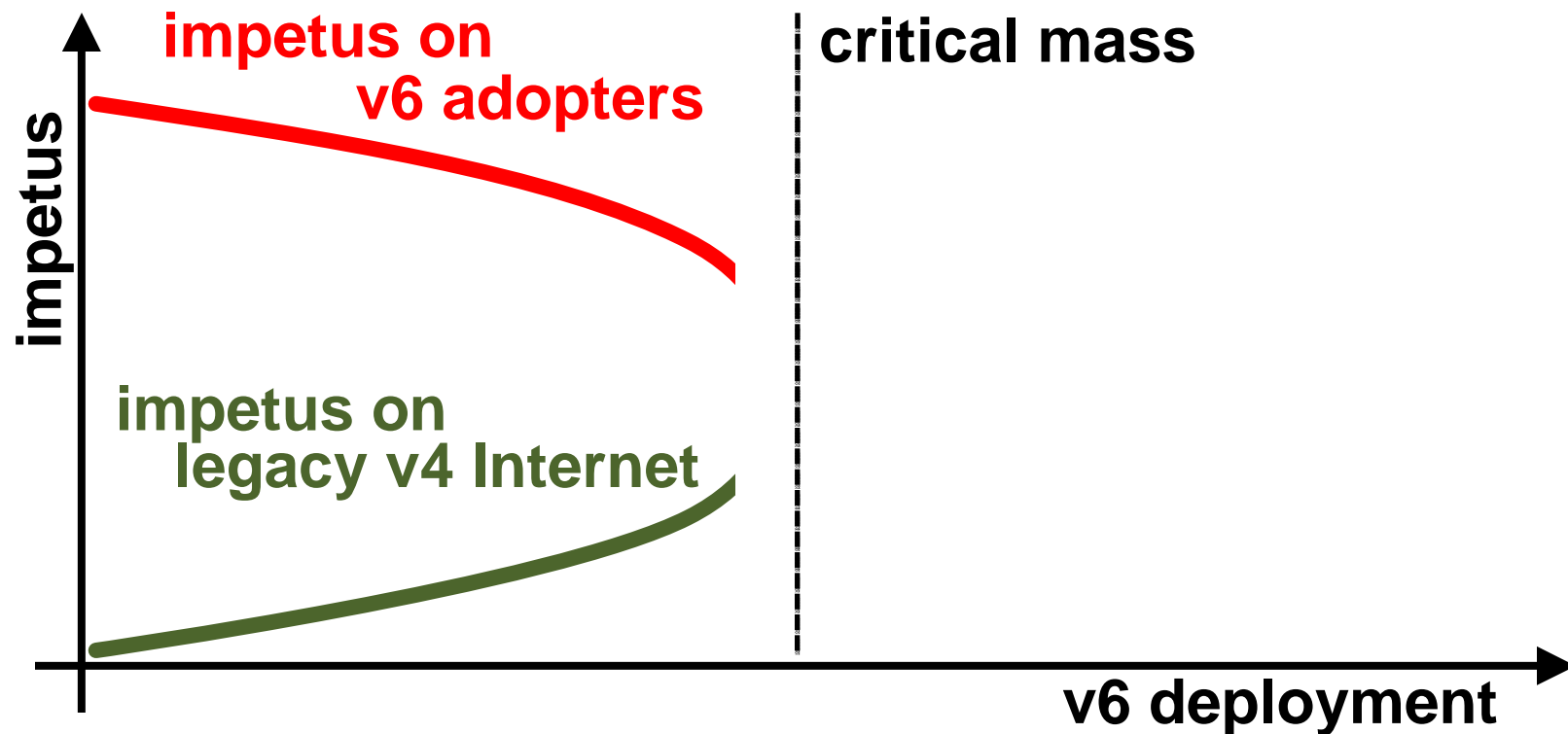
Virtual IPv6 Connectivity for IPv4-Only Networks

draft-vogt-durand-virtual-ip6-connectivity

Christian Vogt and Alain Durand

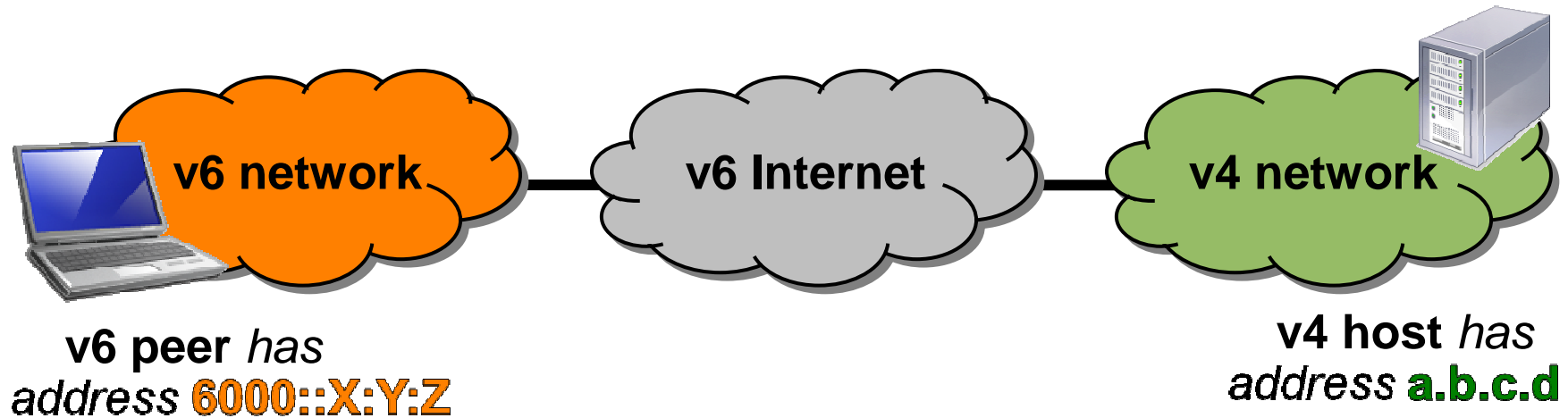
Behave working group meeting at IETF 75
Stockholm — July 2009

Impetus for Interworking Will Shift



- first backwards compatibility for v6 later forward compatibility for v6
- rest of Internet mostly v4
 - no incentive for v4 side to change
 - v6-only connectivity viable
 - desire to reach v6 customers

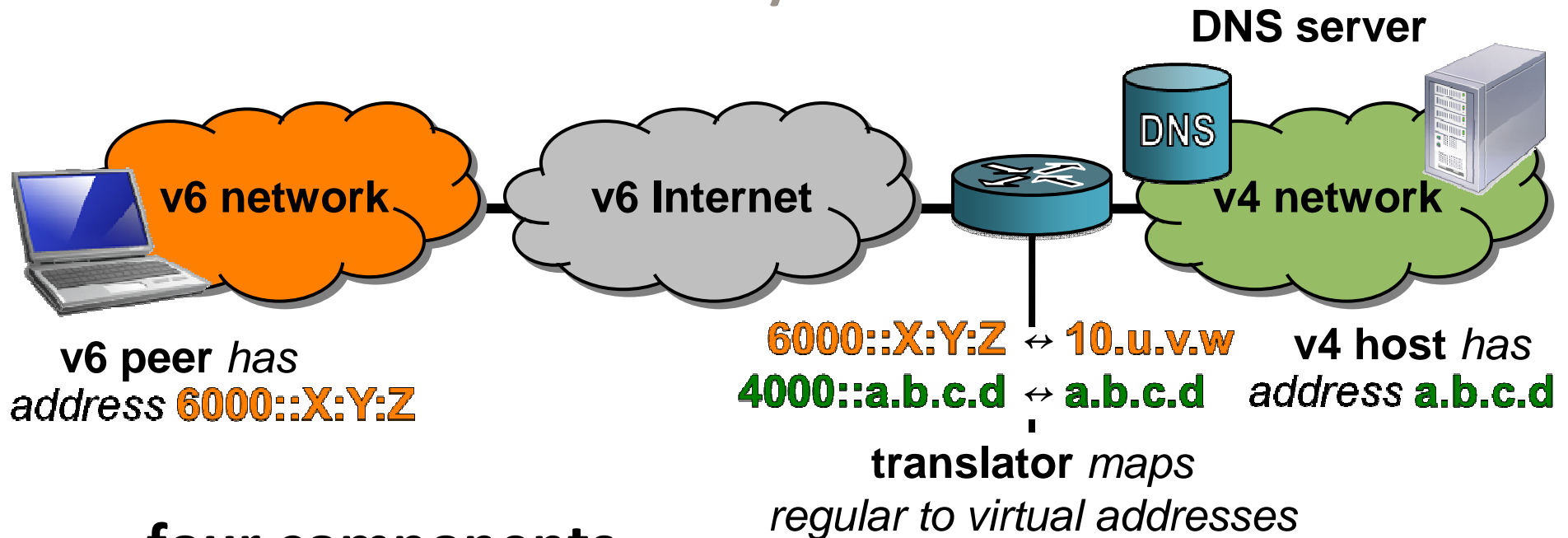
Our Proposal: Virtual v6 Connectivity for v4-Only Networks



requirements

1. for deployment in v4-only networks
2. no host changes
3. no new global v4 addresses

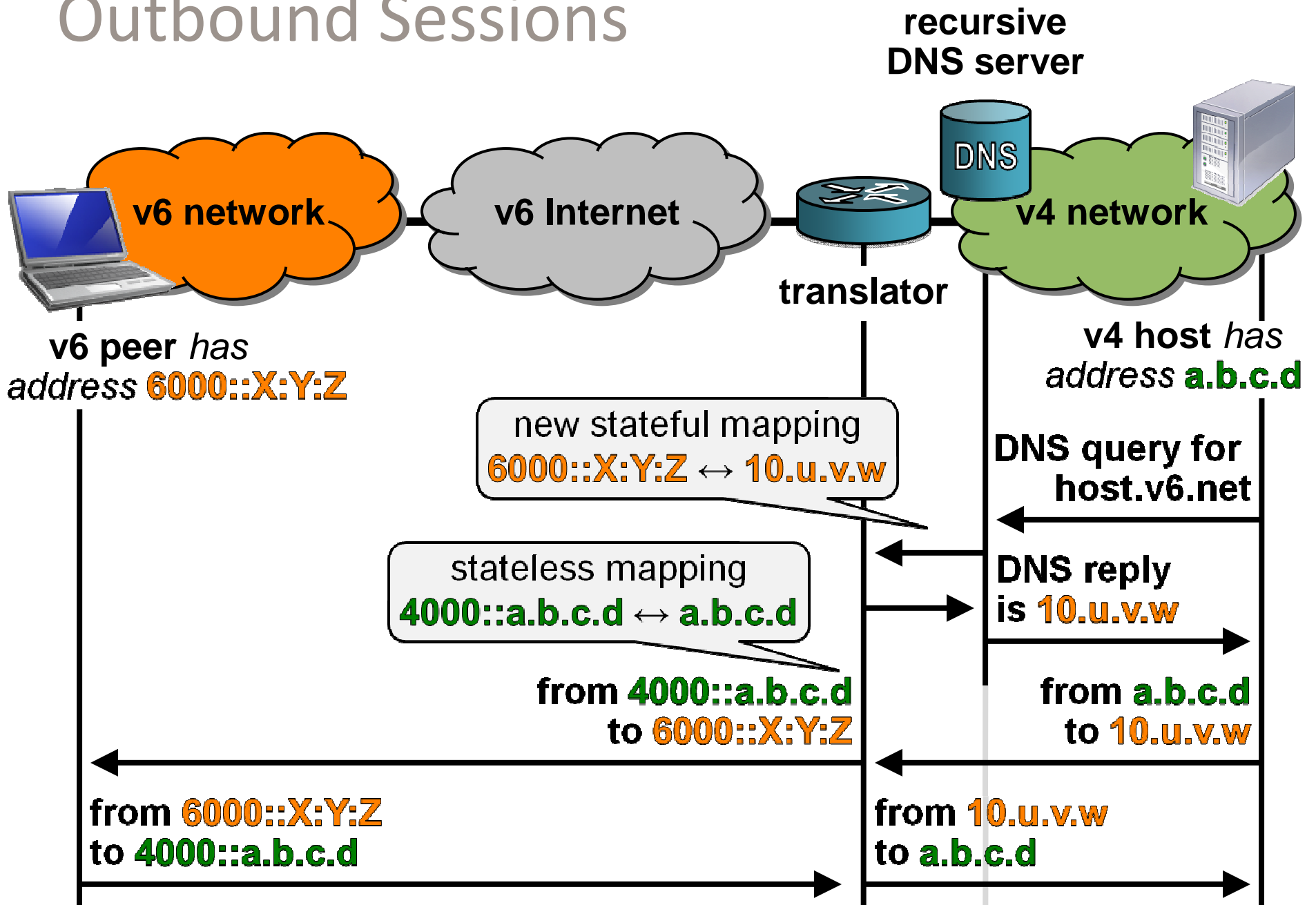
Our Proposal: Virtual v6 Connectivity for v4-Only Networks



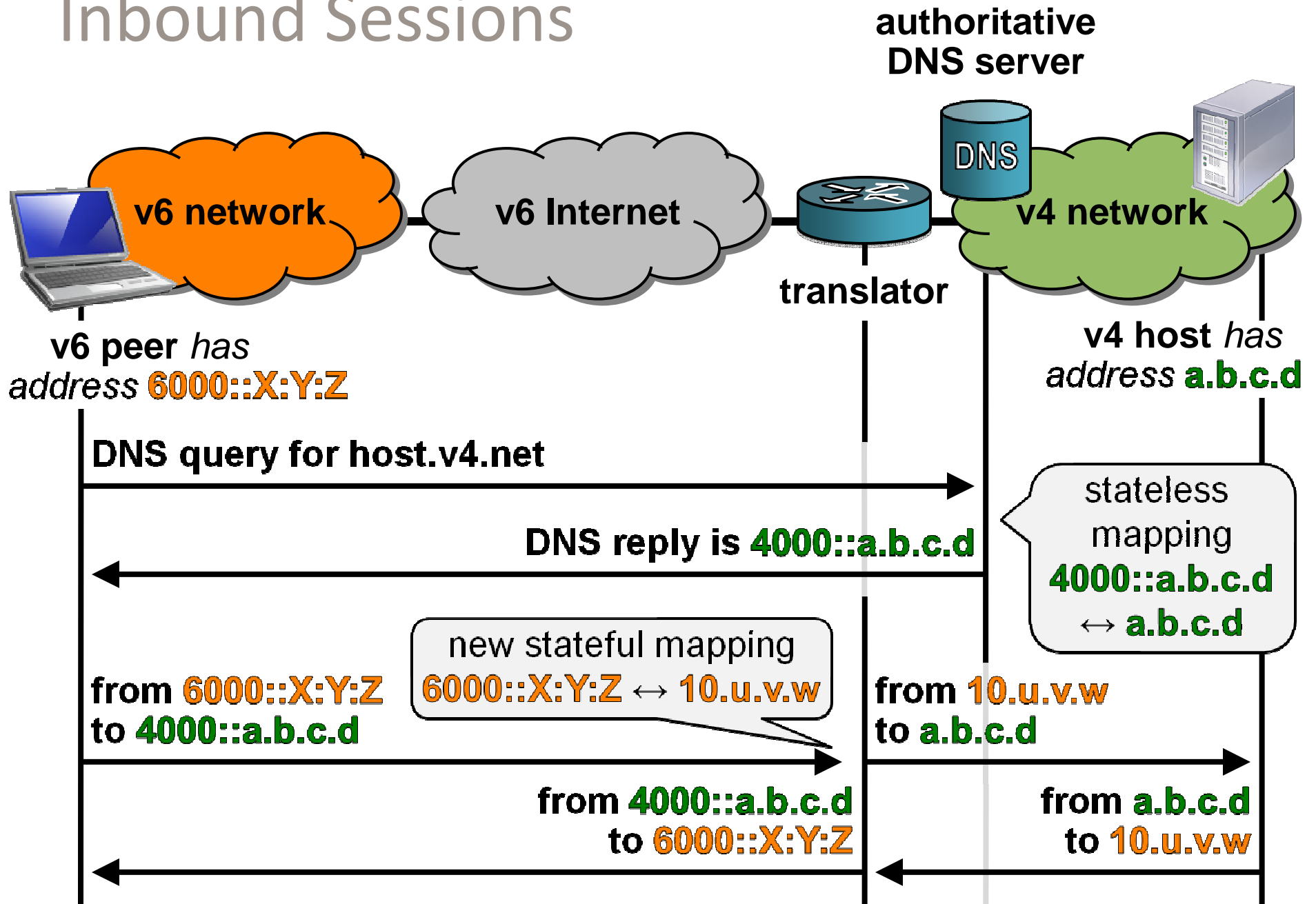
four components

1. virtual v6 addresses externally for v4 hosts
2. virtual v4 addresses internally for v6 peers
3. IP protocol translators
4. mapping support in DNS servers

Outbound Sessions



Inbound Sessions



Challenges

- no reverse DNS for virtual addresses
 - possible solution: DNS servers "unmap" addresses
- vulnerability to virtual v4 address exhaustion
 - possible solution: prioritize outbound sessions
- no end-to-end DNSSEC support for v4 hosts
 - possible solution: require recursive DNS server

Conclusion

- impetus for interworking will shift to v4 side
- Virtual IPv6 Connectivity first technique for this
 - for deployment in v4-only networks
 - requires no host changes
 - requires no new global v4 addresses
- add to IPv6 transition toolbox?