FTP64:
making FTP work through IPv6→IPv4 translators

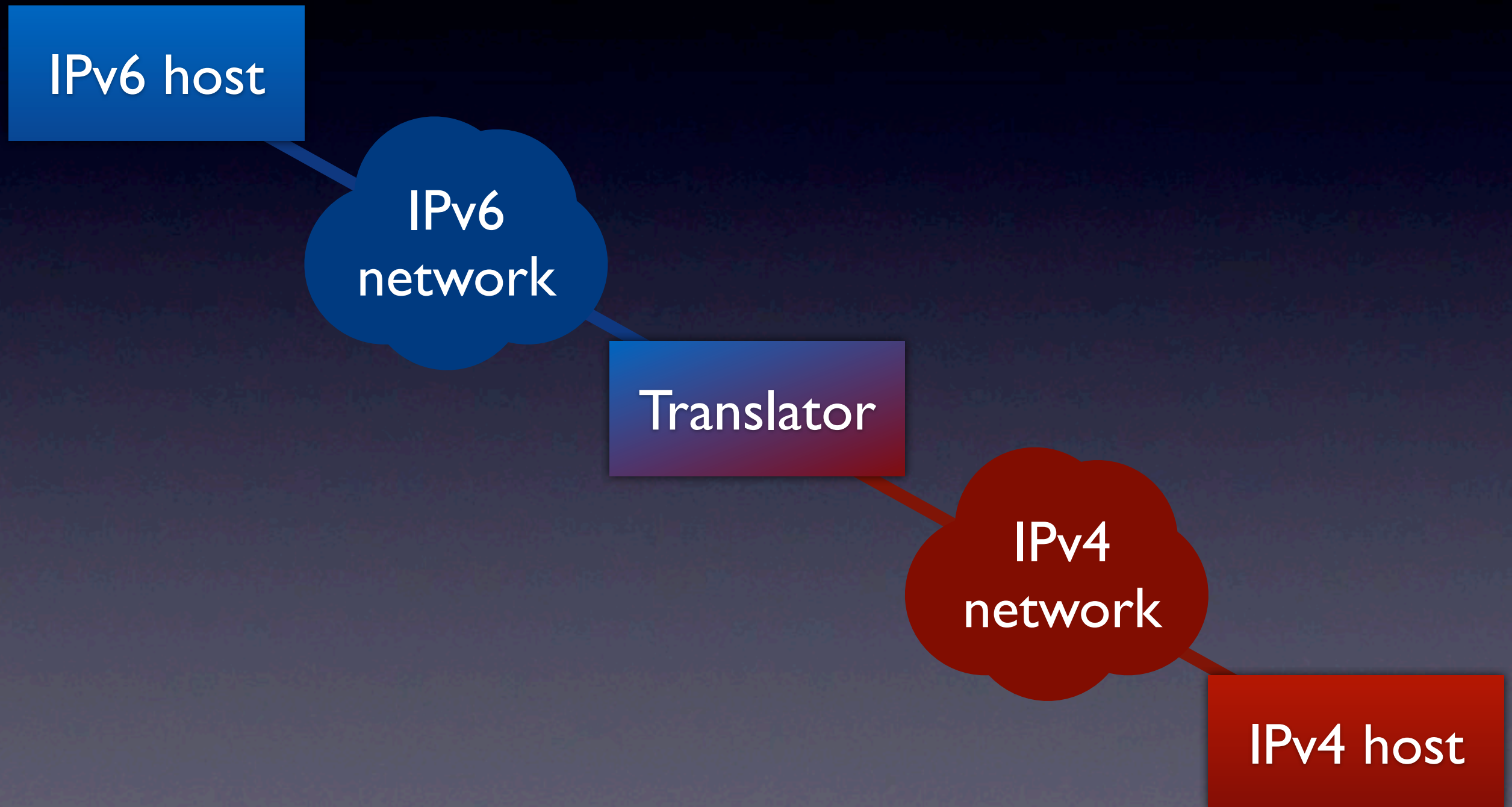draft-ietf-behave-ftp64-04

IETF-78, Maastricht, july 2010
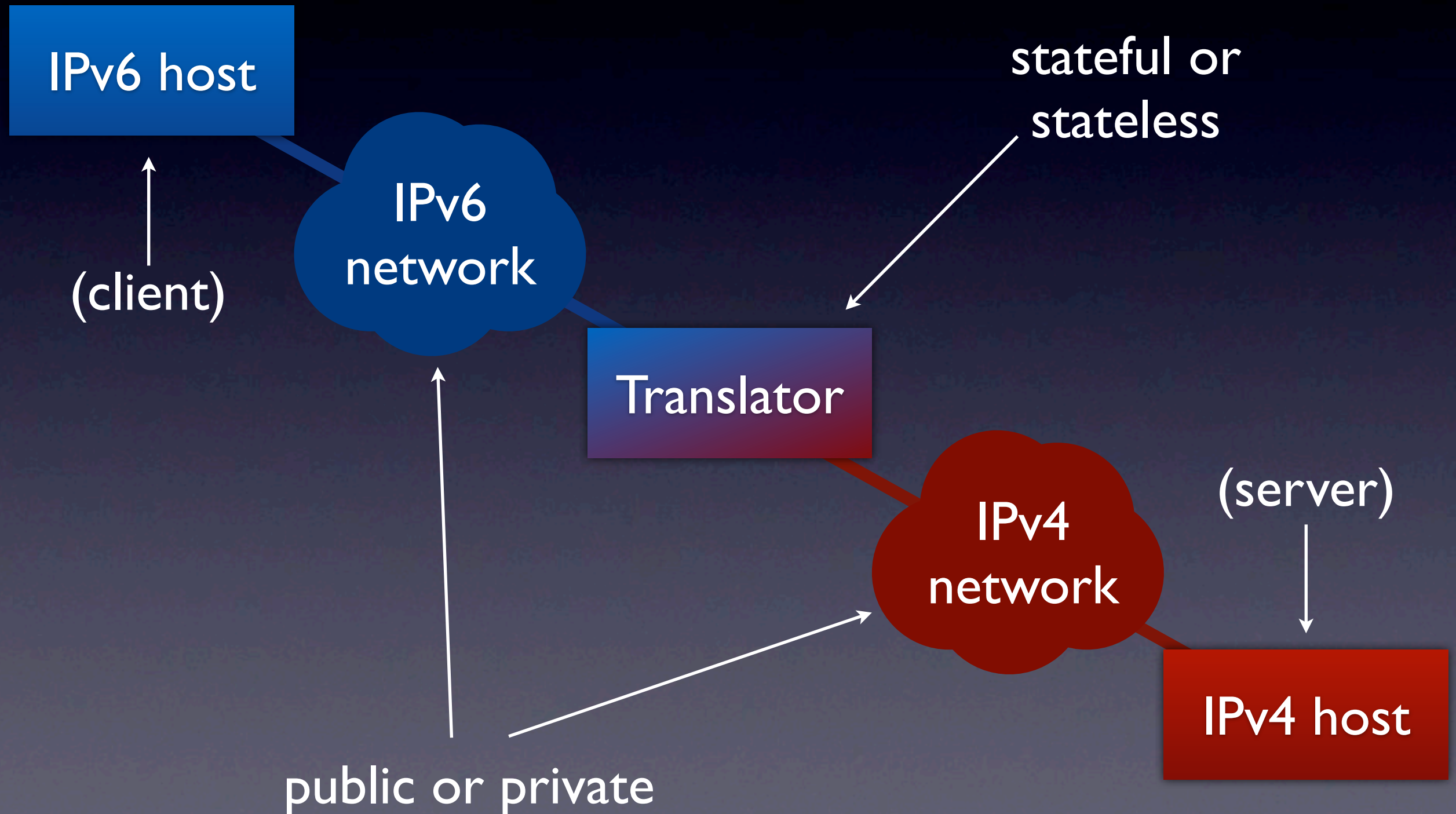
ftpext2 BoF

Iljitsch van Beijnum

IPv6→IPv4 translation

IPv6 host

IPv6 network

Translator

IPv4 network

IPv4 host

IPv6→IPv4 translation

IPv6 host

IPv6 network

(client)

stateful or stateless

Translator

(server)

IPv4 network

IPv4 host

public or private

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FTP and IPv6

- RFC 959 (1985):
  - passive mode (PASV): v4 address+port
  - active mode (PORT): v4 address+port
- RFC 2428 (1998):
  - passive mode (EPSV): only a port
  - active mode (EPRT): address family, address, port

Non-problem?

- If all clients and servers use EPSV FTP works without trouble through translators!

- Unfortunately:

  - EPSV works with 65% of servers

  - Windows CLI client only does EPRT

  - EPSV fails with timout with 6% of servers

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Possible solutions

1. Update servers to support EPSV

2. Update clients to fall back to PASV despite IPv4 address in 227 response

3. Implement application layer gateway in the translator

- The draft *recommends* 1 and 2 and *standardizes* 3.

BEHAVE charter

- "ALGs may be considered only for the most crucial of legacy applications."

- Basically:

  - standardize ALG

  - NOT say anything about servers and clients

- So current doc is a compromise

- Or separate clientserver doc?

Server recommendations

- Support EPSV
  - ability to switch off EPSV/EPRT
  - report whether EPSV available in FEAT
- Only use control channel address in PASV

Client recommendations

- Support passive mode (EPSV)

- After EPSV failure (5xx or timeout) retry with PASV

  - assume that address in 227 response is control channel remote address

- Don't use arguments with EPSV

ALG

- EPSV→PASV is easy
  - turn 227 into 229 ignoring IP address
- EPRT→PORT is harder with a stateful translator → could be left unimplemented
- Don't try to translate three-way FTP:
  - 425 Can't open data connection.

ALG (2)

- Stateful port 20 handling?
  - not too hard, but still in use?
- Go into transparent mode after AUTH
- ALGS command so client can query ALG status and enable/disable it

Both PORT and PASV

- RFC 959 allows a client to issue both PORT and PASV for the same transfer

- But:

  - PORT → server initiates data session

  - PASV → client initiates data session

Questions?