

IP Addressing with References (IPREF)

draft-augustyn-intarea-ipref-01
IETF 117 San Francisco 2023

IPREF Key Features

- End-to-end address space traversal
 - over NAT, NAT6, cross protocol IPv4/IPv6
 - highly scalable, commercially viable
- IPREF Addresses publishable via DNS
 - services reachable at IPREF addresses
 - no need for assigning global IP addresses
- Compatibility path for specialized protocols

IPREF Impact on IPv6

- Speed up deployment of IPv6 Internet
- Focus IPv6 on the Internet
 - not trying to be everything to everyone
 - connecting networks (not necessarily IPv6)
- Dramatically lower costs and risks of adopting IPv6 Internet
- Spur secondary economic activity around Internet and private networks

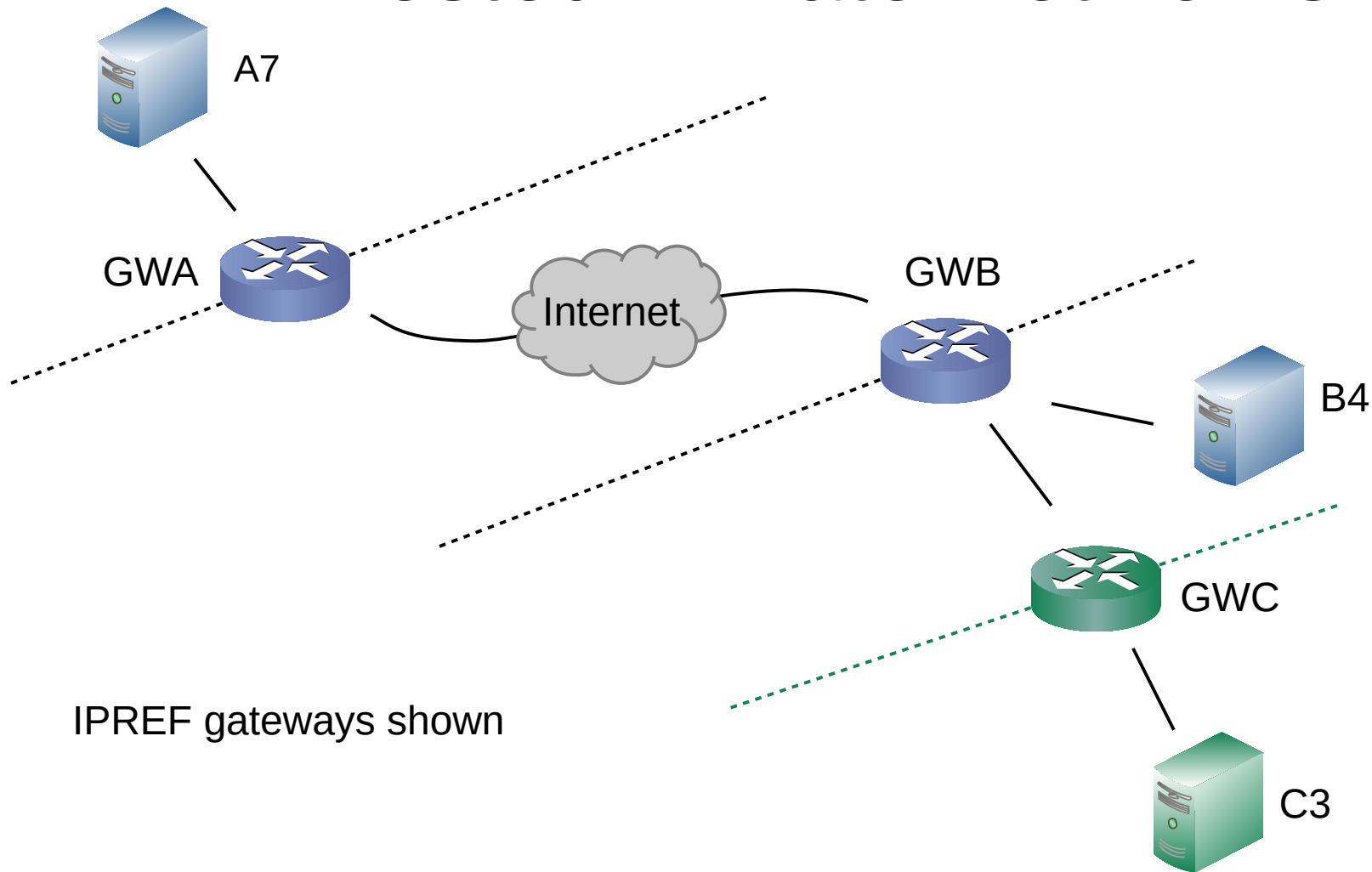
“Shortage of IP Addresses”

- Historical term, no longer accurate
- A misnomer
 - there is no shortage of IP(v4) addresses
 - there is more of them than 2^{32} due to hierarchy
 - something else is a problem
- Real problem: address space traversal
 - partial solution: assign global IP addresses
 - complete solution: IPREF

IPREF Impact on IPv4

- Yes, IPREF makes IPv4 Internet possible...
- ...but IPv6 Internet will prevail
 - flat is better than hierarchical
 - a mere prospect of a threat will make IPv6 focus
 - hosts don't know what protocol peers run anyway
 - can reach services located on either IPv4 or IPv6
- Keep IPv4 for as long as convenient
- Do away with dual stacks

Nested Private Networks



IPREF gateways shown

The End