

SA46T interoperability test report draft-matsuhira-sa46t-spec

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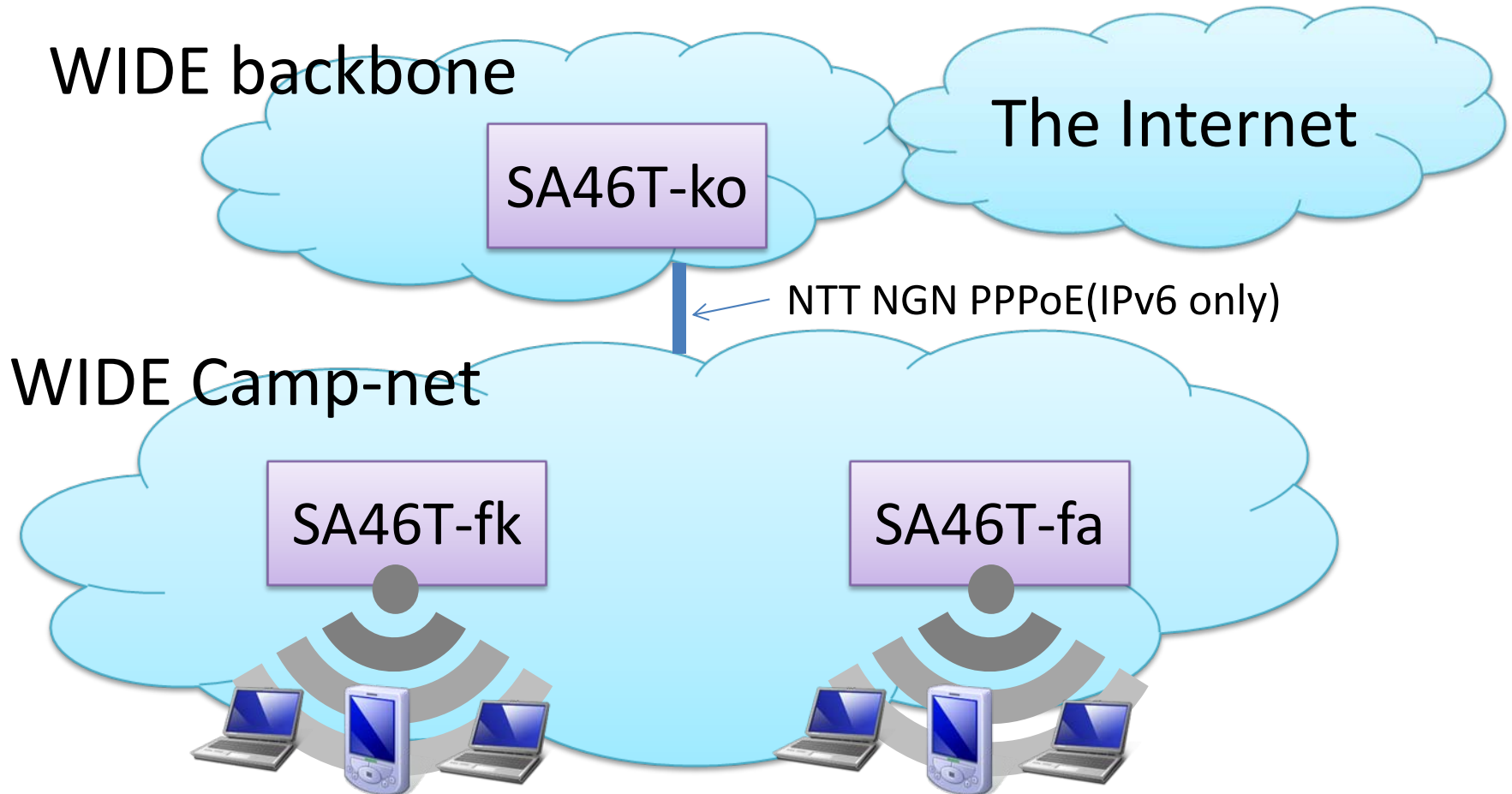
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83rd IETF, Paris

Overview

- Interoperability test between three implementations.
 - SA46T-ko: application by Keio University
 - SA46T-fk: kernel module by Fujitsu
 - SA46T-fa: application by Fujitsu
- These implementation were developed independently.
 - Evidence of "can implement"
 - This time, make evidence of "interoperable between different implementations"
- Done March 5 - 8, 2012 at WIDE camp
 - 171 people attended, maybe >250 hosts exists.
 - draft-hazeyama-widecamp-ipv6-only-experience-01.txt

Interoperability Test Network



In this camp, main experiment was living in IPv6 only environments. SA46T provide IPv4 service with global address to the participants.

Test items

- Basic reachability test
 - Ping command (default, short packet)
- ICMP MTU (no TCP MSS configuration)
 - ping with 1432Byte
 - ping with DF=ON + 1434Byte
 - Receive “Fragment needed”
 - ping with DF=OFF + 1434Byte
- UDP MTU test
 - almost same test as ICMP MTU test
 - Tested by KONAMI Digital Entertainment Co, Ltd.
- TCP MSS
 - TCP MSS with 1420Byte
- Real use
 - Provide IPv4 access environments for participants of WIDE camp

Result

- Well worked
 - No problem, very stable
 - Include VPN application (ex. IPsec without UDP/TCP)
 - Last resort for participants from industry to access to their company
 - No bug found in three implementation.
 - Some omission are found in draft-matsuhira-sa46t-spec
 - Next header, Hop Limit in IPv6 header
 - About 10 million packets were encapsulated at both SA46T-fa and SA46T-fk
- Difference of implementation around MTU handling are clear
 - SA46T-fa support both DF=ON, OFF
 - SA46T-fk support only DF=ON, this time
 - Thank's KONAMI digital entertainment Co. Ltd for UDP test tool.

Consideration

- MTU handling issue
 - Basically, fragmentation both DF=ON/OFF
 - ICMP filtering issue (Frag needed but DF set)
 - TCP MSS can apply only TCP, not UDP and M'cast
- This issue is related general tunneling, not only SA46T
- Understanding host behavior is needed
- IPv6 use PMTU Disc, will that work?

Next Step

- Fix omissions in draft-matsuhira-sa46t-spec
 - Next Header Value in IPv6 header
 - Hop Limit Value in IPv6 header
- Update draft-matsuhira-sa46t-spec

IPv4 Networks as IPv6 application

provided by SA46T

SA46T Packet Length value

