

第 VIII 部

**nautilus6 project: Research/
Development/Deployment of
mobility technologies in IPv6**

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第 1 章 Introduction

This document reports the activity of the Nautilus6 Working Group in 2008.

第 2 章 WIDE-KT Workshop Report

On 16th June 2008, WIDE and KT (Korea Telecom) had a workshop to introduce research topics and seek for the possibility of any collaborative activities between these two organizations at KT Research Laboratory, Seoul, Korea. In the workshop, we had a presentation introducing the activity of Nautilus6 Working Group.

During the presentation we introduced the following activities we had past.

- SHISA[191] project activity.
Mobile IPv6[91] and NEMO[37] Basic Support protocol stack for BSD operating systems.
- NEPL[57] activity.
NEMO Basic Support protocol stack developed based on the UMIP (Mobile IPv6 stack for Linux operating system developed by the USAGI project[192]).
- TARZAN project[228].
Fast Mobile IPv6 protocol stack for FreeBSD 5 operating system.
- LIES: the Inter Layer Information Exchange System[161].
The abstraction layer between the layer 2 and 3 to exchange handover related information.

- Nautilus6 home agent public operation service[9, 55].

The public home agent service operated by the Nautilus6 WG from late 2006.

- HAiku: Web based home agent operation support application[126].
- Homeguy: Live CD system for instant introduction of Mobile IPv6 client stack[127].
- Mobile IPv6 software packaging and distribution[125].

The Linux software packages (including both kernel and user space programs) that add a mobility function to existing user's system.

- The WIDE camp experiments report using NEMO BS to provide fault tolerancy and smooth handoff[162, 163].

The report about the WIDE camp network configurations that used a mobile route operating NEMO BS.

- Global HAHA experiment at Interop Tokyo 2008[187].
A prototype implementation of the Global HAHA mechanism was tested as a part of the ShowNet network at Interop Tokyo 2008[77]. Chapter 4 summarizes this activity.

第 3 章 IPSJ Seminar Report

We had a chance to summarize our activities and report them at the seminar held by Information Processing Society of Japan (IPSJ). The seminar was one of the series of seminars coordinated by IPSJ every year. This year's theme of the seminar was *Evolution of the Internet*, supported by the WIDE project. Our presentation was made as a third round in the series, held on

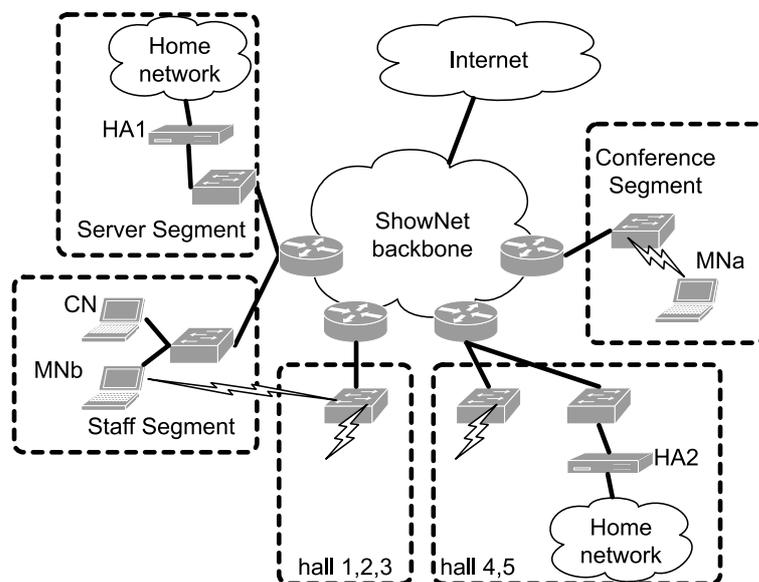


Fig. 4.1. The Global HAHA topology at Interop Tokyo 2008.

19th September 2008, the title of the third seminar was *Mobile and Wireless*. The detailed program of the seminar can be checked at the IPSJ web page¹ (in Japanese only). In this presentation, the similar topics listed in chapter 2 were introduced.

第 4 章 Contribution to the Global HAHA Experiment

In the Interop Tokyo 2008[77] exhibition, a trial operation of the Global HAHA mechanism was performed. We contributed the preparation and operation of the experiment.

In the experiment, two home agents were located in the ShowNet network, which is the showcase network of Interop Tokyo. To route all the packet sent to home addresses of mobile nodes, the same home network routing information was advertised from two different home network locations to the ShowNet. Figure 4.1 shows the overview of the topology.

There were 6 NetBSD SHISA based mobile nodes (operated natively), and several Linux

MIPL based mobile nodes (operated in virtual machines).

The detailed report about this experiment was written in [187].

第 5 章 Dual-Stack Mobile IPv6 Implementation for Linux

The DSMIP implementation work has seen great advancement this year with a first code release on May 30th. This release allowed us to request public comments and feedback about the implementation, and a new release is scheduled for the end of this year based on patches received through the newly setup mailing list.

A detailed description of this implementation was presented at Mobiarch workshop of SIGCOMM 2008[99] in August 2008.

1 <http://www.ipsj.or.jp/10jigyo/seminar/2008/>

第 6 章 Maintenance Activity

Though there have been few or no new developments on the MIPv6, NEMO BS, MCoA implementations, the maintenance effort has been continued this year. In particular, the mailing-list “support@ml.nautilus6.org” has had continuous activity — around 250 messages posted in 2008 so far — showing the interest of people in the WG’s implementations. There have also been several contributions from outside, in the form of patches submitted to the mailing-list. A new mailing-list “dsmip@ml.nautilus6.org” has been created to support the experimental DSMIP code released this year, and this list also had decent activity.

第 7 章 Summary

The Nautilus6 WG is in a closing phase now. The main activity of this year was to summarize all the past activities and to report the output publicly, and software/service maintenance, although some new actions, such as working on Global HAHA, DSMIP development exist.

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