ABSTRACT
The limited size and structure of the Internet address spaces of IPv4 have caused difficulties in coping with fast growing number of Internet users. IPv6 is a feasible solution for the problems identified with IPv4. It not only provides larger address spaces but also support security, mobility, and quality of service. However, before a complete deployment of IPv6 become reality, two network protocols IPv4 and IPv6 will co-exist and inter-working between them is important. The transition from IPv4 to IPv6 will be lengthy, while network devices supporting both protocols are required. NAT-PT is designed for these devices that allows IPv6 network to communicate with IPv4 network. In this thesis, a fast address search algorithm is proposed. The algorithm improves the efficiency of searching mapping table entries. Compared to the original NAT-PT reference design, the proposed new method is faster and flexible.

Keywords : IPv6 ; NAT-PT

Table of Contents

1.1 研究背景與動機
1.2 研究目的
1.3 研究方法與流程

2.1 IPv6的概述
2.2 IPv6與IPv4的差異
2.3 IPv4到IPv6的過渡時期
2.4 NAT-PT轉換技術
2.5 NAT-PT的運作流程

3.1 程式的簡介
3.2 程式的評估方式
3.3 最佳化之研究

4.1 實驗方法
4.2 環境建置
4.3 數據分析

5.1 結論
5.2 未來發展

REFERENCES

http://www.ipv6.or.kr/, ETRI/PEC: Linux-based Userspace NAT-PT.

