The Chinese University of Hong Kong
Department of Information Engineering

IERG 4841 Networking Laboratory II
Advance computer network design and setup
(Student Manual)

Lab 3: IPv6 Deployment

Due to the Internet rapidly developed at 90 century, IETF became aware of a global shortage of IPv4 addresses. An IPng (IP next generation) effort was started to solve these issues. IPv6 (IP version 6) was picked at 1995 as the final IPng proposal. The IPv6 base specification is specified in RFC2460.

- You have assigned 2set of /64 ipv6 global address. Please assign:
  - One set of /64 to DMZ zone
- Configure the ipv6 firewall rules at firewall such that:
  - The DMZ hosts are well protected, Only NS1 & NS2 DNS service and NS1 http/https service are opened for CUHK ipv6 hosts (2405:3000:3::/48).

References

- Linux man page of iptables
  (*http://linux.die.net/man/8/iptables*)
- Linux man page of ip6tables
  (*http://linux.die.net/man/8/ip6tables*)
- Linux IPv6 How-to
  (*http://www.tldp.org/HOWTO/Linux+IPv6-HOWTO/*)
- Windows IPv6 technology note
  (*http://technet.microsoft.com/en-us/network/bb530961.aspx*)

Appendix A

IPv6 address assignment for:

Group 1: 2405:3000:3:F602::/63

DC router: FE80::7:B4FF:FE00:0B00

Group 1 router: FD96:730D:4F8D:1001::21

Group 2: 2405:3000:3:F604::/63

DC router: FE80::7:B4FF:FE00:0C00

Group 2 router: FD96:730D:4F8D:1002::21

Group 3: 2405:3000:3:F606::/63

DC router: FE80::7:B4FF:FE00:0D00

Group 3 router: FD96:730D:4F8D:1003::21

Group 4: 2405:3000:3:F608::/63

DC router: FE80::7:B4FF:FE00:0E00

Group 4 router: FD96:730D:4F8D:1004::21

Group 5: 2405:3000:3:F60A::/63

DC router: FE80::7:B4FF:FE00:0F00

Group 5 router: FD96:730D:4F8D:1005::21

Group 6: 2405:3000:3:F60C::/63

DC router: FE80::7:B4FF:FE00:1000

Group 6 router: FD96:730D:4F8D:1006::21

Group 7: 2405:3000:3:F60E::/63

DC router: FE80::7:B4FF:FE00:1100

Group 7 router: FD96:730D:4F8D:1007::21

Group 8: 2405:3000:3:F610::/63

DC router: FE80::7:B4FF:FE00:1200

Group 8 router: FD96:730D:4F8D:1008::21

Group 9: 2405:3000:3:F612::/63

DC router: FE80::7:B4FF:FE00:1300

Group 9 router: FD96:730D:4F8D:1009::21

Group 10: 2405:3000:3:F614::/63

DC router: FE80::7:B4FF:FE00:1400

Group 10 router: FD96:730D:4F8D:100A::21

Group 11: 2405:3000:3:F616::/63

DC router: FE80::7:B4FF:FE00:1500

Group 11 router: FD96:730D:4F8D:100B::21

Group 12: 2405:3000:3:F618::/63

DC router: FE80::7:B4FF:FE00:1600

Group 12 router: FD96:730D:4F8D:100C::21

Appendix B: Setup and Connect to VPN Service

- If you are using IE Computing lab's PC, the VPN connection already setup for you.
  - For Windows 7 user, left click the network icon at notification area and select nlab vpn >> connect.
- If you are outside IE network, please setup the IPSec/L2TP VPN connection:
  - Hostname: vpn.ine.cuhk.edu.hk
  - Pre-Share Key: ipsec-vpn
  - Do not select unencrypted password (PAP) at encryption protocol.
  - Use your Windows Login-name with realm and password for authentication (ie. IEPCLAN\Username)
  - The Max connection time is 4 hours