

INE 3010 Lab Manual

Technical Information for NSP A

Version 1.0

Table of Contents

- I. Address allocation
- II. Host Naming
- III. Network Diagrams

I. Address allocation

Enterprise Alpha Address MAP

Branch Office	IP Address Range	Domain Name and DNS Server IP	Router Interface IP to ISP / Netmask	Upstream ISP Router IP / Netmask
Hong Kong	10.2.2.0/24	hk.alpha.ine.cuhk.edu.hk 10.2.2.1	10.2.200.249/30	10.2.200.250/30
Shanghai	10.2.16.0/24	sh.alpha.ine.cuhk.edu.hk 10.2.16.1	10.2.205.249/30	10.2.205.250/30
Beijing	10.2.32.0/24	bj.alpha.ine.cuhk.edu.hk 10.2.32.1	10.2.210.249/30	10.2.210.250/30
Chengdu	10.2.64.0/24	cd.alpha.ine.cuhk.edu.hk 10.2.64.1	10.2.215.249/30	10.2.215.250/30

NSP A Address MAP

Region	Internal Network	Domain Name and DNS Server IP																											
Hong Kong	10.2.128.0/24	hk.nspa.ine.cuhk.edu.hk 10.2.128.1																											
<p>Core Router Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Router Interface IP</th> <th>Opposite Side IP</th> </tr> </thead> <tbody> <tr> <td>NSP Internal Network gw</td> <td>10.2.130.130/30</td> <td>10.2.130.129/30</td> </tr> <tr> <td>POP in IX</td> <td>10.2.130.249/30</td> <td>10.2.130.250/30</td> </tr> <tr> <td>NSP in Shanghai</td> <td>10.2.160.249/30 (s1)</td> <td>10.2.160.250/30</td> </tr> <tr> <td>NSP in Chengdu</td> <td>10.2.162.250/30 (s0)</td> <td>10.2.162.249/30</td> </tr> <tr> <td>NSP in Beijing</td> <td>10.2.168.250/30</td> <td>10.2.168.249/30</td> </tr> <tr> <td>Enterprise Network A gw</td> <td>10.2.200.250/30</td> <td>10.2.200.249/30</td> </tr> </tbody> </table> <p>POP Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Interface IP</th> </tr> </thead> <tbody> <tr> <td>Core Router</td> <td>10.2.130.250/30</td> </tr> <tr> <td>IX VLAN</td> <td>10.6.160.2/24</td> </tr> </tbody> </table>			Network Connected to	Router Interface IP	Opposite Side IP	NSP Internal Network gw	10.2.130.130/30	10.2.130.129/30	POP in IX	10.2.130.249/30	10.2.130.250/30	NSP in Shanghai	10.2.160.249/30 (s1)	10.2.160.250/30	NSP in Chengdu	10.2.162.250/30 (s0)	10.2.162.249/30	NSP in Beijing	10.2.168.250/30	10.2.168.249/30	Enterprise Network A gw	10.2.200.250/30	10.2.200.249/30	Network Connected to	Interface IP	Core Router	10.2.130.250/30	IX VLAN	10.6.160.2/24
Network Connected to	Router Interface IP	Opposite Side IP																											
NSP Internal Network gw	10.2.130.130/30	10.2.130.129/30																											
POP in IX	10.2.130.249/30	10.2.130.250/30																											
NSP in Shanghai	10.2.160.249/30 (s1)	10.2.160.250/30																											
NSP in Chengdu	10.2.162.250/30 (s0)	10.2.162.249/30																											
NSP in Beijing	10.2.168.250/30	10.2.168.249/30																											
Enterprise Network A gw	10.2.200.250/30	10.2.200.249/30																											
Network Connected to	Interface IP																												
Core Router	10.2.130.250/30																												
IX VLAN	10.6.160.2/24																												
Region	Internal Network	Domain Name and DNS Server IP																											
Shanghai	10.2.172.0/24	sh.nspa.ine.cuhk.edu.hk 10.2.172.1																											
<p>Core Router Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Router Interface IP</th> <th>Opposite Side IP</th> </tr> </thead> <tbody> <tr> <td>NSP Internal Network gw</td> <td>10.2.132.130/30</td> <td>10.2.132.129/30</td> </tr> <tr> <td>POP in IX</td> <td>10.2.132.249/30</td> <td>10.2.132.250/30</td> </tr> <tr> <td>NSP in Hong Kong</td> <td>10.2.160.250/30 (s0)</td> <td>10.2.160.249/30</td> </tr> <tr> <td>NSP in Beijing</td> <td>10.2.164.249/30 (s1)</td> <td>10.2.164.250/30</td> </tr> <tr> <td>NSP in Chengdu</td> <td>10.2.170.249/30</td> <td>10.2.170.250/30</td> </tr> <tr> <td>Enterprise Network A gw</td> <td>10.2.205.250/24</td> <td>10.2.205.249</td> </tr> </tbody> </table> <p>POP Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Interface IP</th> </tr> </thead> <tbody> <tr> <td>Core Router</td> <td>10.2.132.250/30</td> </tr> <tr> <td>IX VLAN</td> <td>10.12.160.2/24</td> </tr> </tbody> </table>			Network Connected to	Router Interface IP	Opposite Side IP	NSP Internal Network gw	10.2.132.130/30	10.2.132.129/30	POP in IX	10.2.132.249/30	10.2.132.250/30	NSP in Hong Kong	10.2.160.250/30 (s0)	10.2.160.249/30	NSP in Beijing	10.2.164.249/30 (s1)	10.2.164.250/30	NSP in Chengdu	10.2.170.249/30	10.2.170.250/30	Enterprise Network A gw	10.2.205.250/24	10.2.205.249	Network Connected to	Interface IP	Core Router	10.2.132.250/30	IX VLAN	10.12.160.2/24
Network Connected to	Router Interface IP	Opposite Side IP																											
NSP Internal Network gw	10.2.132.130/30	10.2.132.129/30																											
POP in IX	10.2.132.249/30	10.2.132.250/30																											
NSP in Hong Kong	10.2.160.250/30 (s0)	10.2.160.249/30																											
NSP in Beijing	10.2.164.249/30 (s1)	10.2.164.250/30																											
NSP in Chengdu	10.2.170.249/30	10.2.170.250/30																											
Enterprise Network A gw	10.2.205.250/24	10.2.205.249																											
Network Connected to	Interface IP																												
Core Router	10.2.132.250/30																												
IX VLAN	10.12.160.2/24																												

Region	Internal Network	Domain Name and DNS Server IP																											
Beijing	10.2.144.0/24	bj.nspa.ine.cuhk.edu.hk 10.2.144.1																											
<p>Core Router Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Router Interface IP</th> <th>Opposite Side IP</th> </tr> </thead> <tbody> <tr> <td>NSP Internal Network gw</td> <td>10.2.134.130/30</td> <td>10.2.134.129/30</td> </tr> <tr> <td>POP in IX</td> <td>10.2.134.249/30</td> <td>10.2.134.250/30</td> </tr> <tr> <td>NSP in Shanghai</td> <td>10.2.164.250/30 (s0)</td> <td>10.2.164.249/30</td> </tr> <tr> <td>NSP in Chengdu</td> <td>10.2.166.249/30 (s1)</td> <td>10.2.166.250/30</td> </tr> <tr> <td>NSP in Hong Kong</td> <td>10.2.168.249/30</td> <td>10.2.168.250/30</td> </tr> <tr> <td>Enterprise Network A gw</td> <td>10.2.210.250/30</td> <td>10.2.210.249/30</td> </tr> </tbody> </table> <p>POP Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Interface IP</th> </tr> </thead> <tbody> <tr> <td>Core Router</td> <td>10.2.134.250/30</td> </tr> <tr> <td>IX VLAN</td> <td>10.28.160.2/24</td> </tr> </tbody> </table>			Network Connected to	Router Interface IP	Opposite Side IP	NSP Internal Network gw	10.2.134.130/30	10.2.134.129/30	POP in IX	10.2.134.249/30	10.2.134.250/30	NSP in Shanghai	10.2.164.250/30 (s0)	10.2.164.249/30	NSP in Chengdu	10.2.166.249/30 (s1)	10.2.166.250/30	NSP in Hong Kong	10.2.168.249/30	10.2.168.250/30	Enterprise Network A gw	10.2.210.250/30	10.2.210.249/30	Network Connected to	Interface IP	Core Router	10.2.134.250/30	IX VLAN	10.28.160.2/24
Network Connected to	Router Interface IP	Opposite Side IP																											
NSP Internal Network gw	10.2.134.130/30	10.2.134.129/30																											
POP in IX	10.2.134.249/30	10.2.134.250/30																											
NSP in Shanghai	10.2.164.250/30 (s0)	10.2.164.249/30																											
NSP in Chengdu	10.2.166.249/30 (s1)	10.2.166.250/30																											
NSP in Hong Kong	10.2.168.249/30	10.2.168.250/30																											
Enterprise Network A gw	10.2.210.250/30	10.2.210.249/30																											
Network Connected to	Interface IP																												
Core Router	10.2.134.250/30																												
IX VLAN	10.28.160.2/24																												
Region	Internal Network	Domain Name and DNS Server IP																											
Chengdu	10.2.152.0/24	cd.nspa.ine.cuhk.edu.hk 10.2.152.1																											
<p>Core Router Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Router Interface IP</th> <th>Opposite Side IP</th> </tr> </thead> <tbody> <tr> <td>NSP Internal Network gw</td> <td>10.2.136.130/30</td> <td>10.2.136.129/30</td> </tr> <tr> <td>POP in IX</td> <td>10.2.136.249/30</td> <td>10.2.136.250/30</td> </tr> <tr> <td>NSP in Beijing</td> <td>10.2.166.250/30 (s0)</td> <td>10.2.166.249/30</td> </tr> <tr> <td>NSP in Hong Kong</td> <td>10.2.162.249/30 (s1)</td> <td>10.2.162.250/30</td> </tr> <tr> <td>NSP in Shanghai</td> <td>10.2.170.250/30</td> <td>10.2.170.249/30</td> </tr> <tr> <td>Enterprise Network A gw</td> <td>10.2.215.250/30</td> <td>10.2.215.249/30</td> </tr> </tbody> </table> <p>POP Interface IP</p> <table border="1"> <thead> <tr> <th>Network Connected to</th> <th>Interface IP</th> </tr> </thead> <tbody> <tr> <td>Core Router</td> <td>10.2.136.250/30</td> </tr> <tr> <td>IX VLAN</td> <td>10.36.160.2/24</td> </tr> </tbody> </table>			Network Connected to	Router Interface IP	Opposite Side IP	NSP Internal Network gw	10.2.136.130/30	10.2.136.129/30	POP in IX	10.2.136.249/30	10.2.136.250/30	NSP in Beijing	10.2.166.250/30 (s0)	10.2.166.249/30	NSP in Hong Kong	10.2.162.249/30 (s1)	10.2.162.250/30	NSP in Shanghai	10.2.170.250/30	10.2.170.249/30	Enterprise Network A gw	10.2.215.250/30	10.2.215.249/30	Network Connected to	Interface IP	Core Router	10.2.136.250/30	IX VLAN	10.36.160.2/24
Network Connected to	Router Interface IP	Opposite Side IP																											
NSP Internal Network gw	10.2.136.130/30	10.2.136.129/30																											
POP in IX	10.2.136.249/30	10.2.136.250/30																											
NSP in Beijing	10.2.166.250/30 (s0)	10.2.166.249/30																											
NSP in Hong Kong	10.2.162.249/30 (s1)	10.2.162.250/30																											
NSP in Shanghai	10.2.170.250/30	10.2.170.249/30																											
Enterprise Network A gw	10.2.215.250/30	10.2.215.249/30																											
Network Connected to	Interface IP																												
Core Router	10.2.136.250/30																												
IX VLAN	10.36.160.2/24																												

II. Host Naming

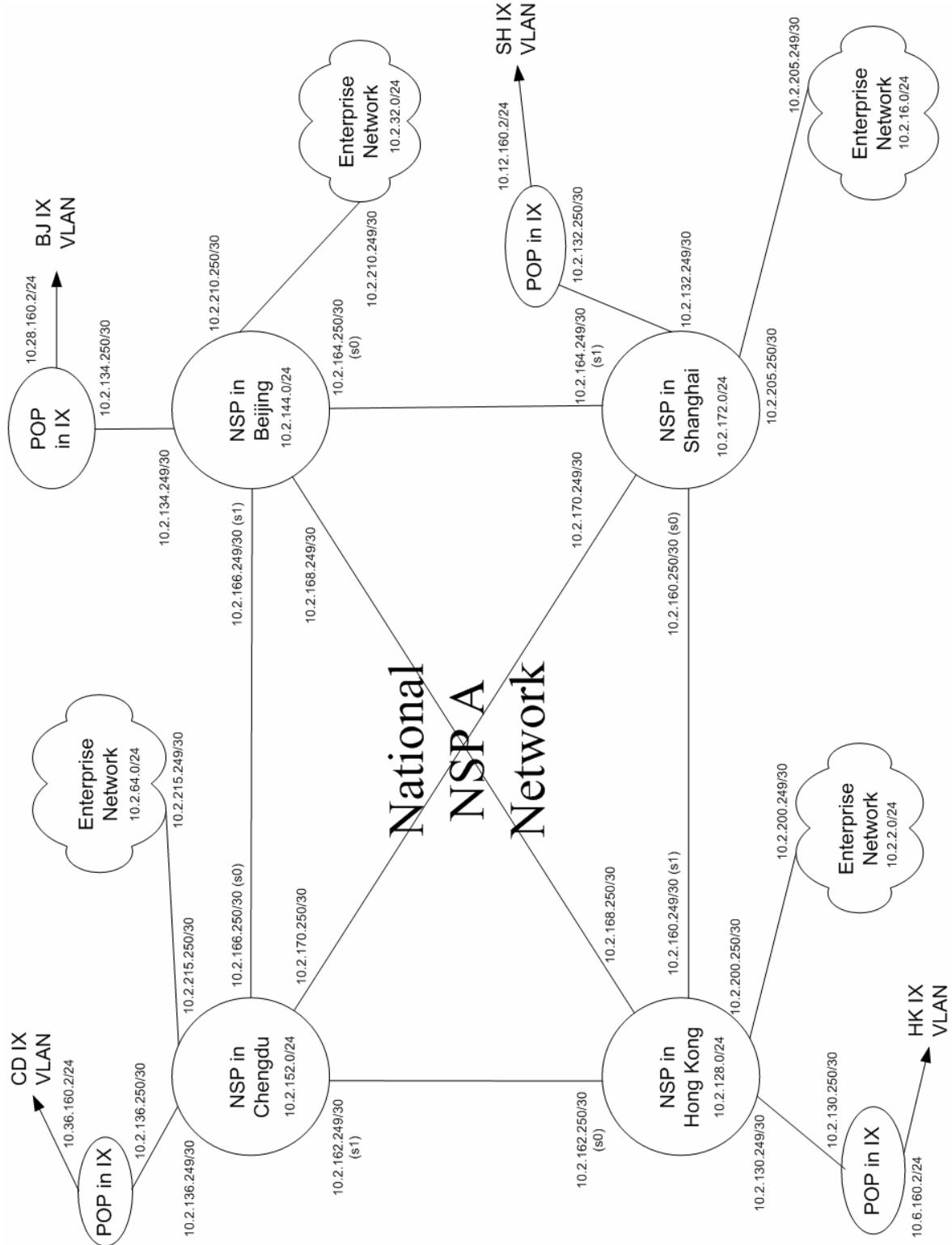
In order to facilitate your successors and headquarter to follow up your jobs, you are required to set the hostname of your servers as follow:

NSP A

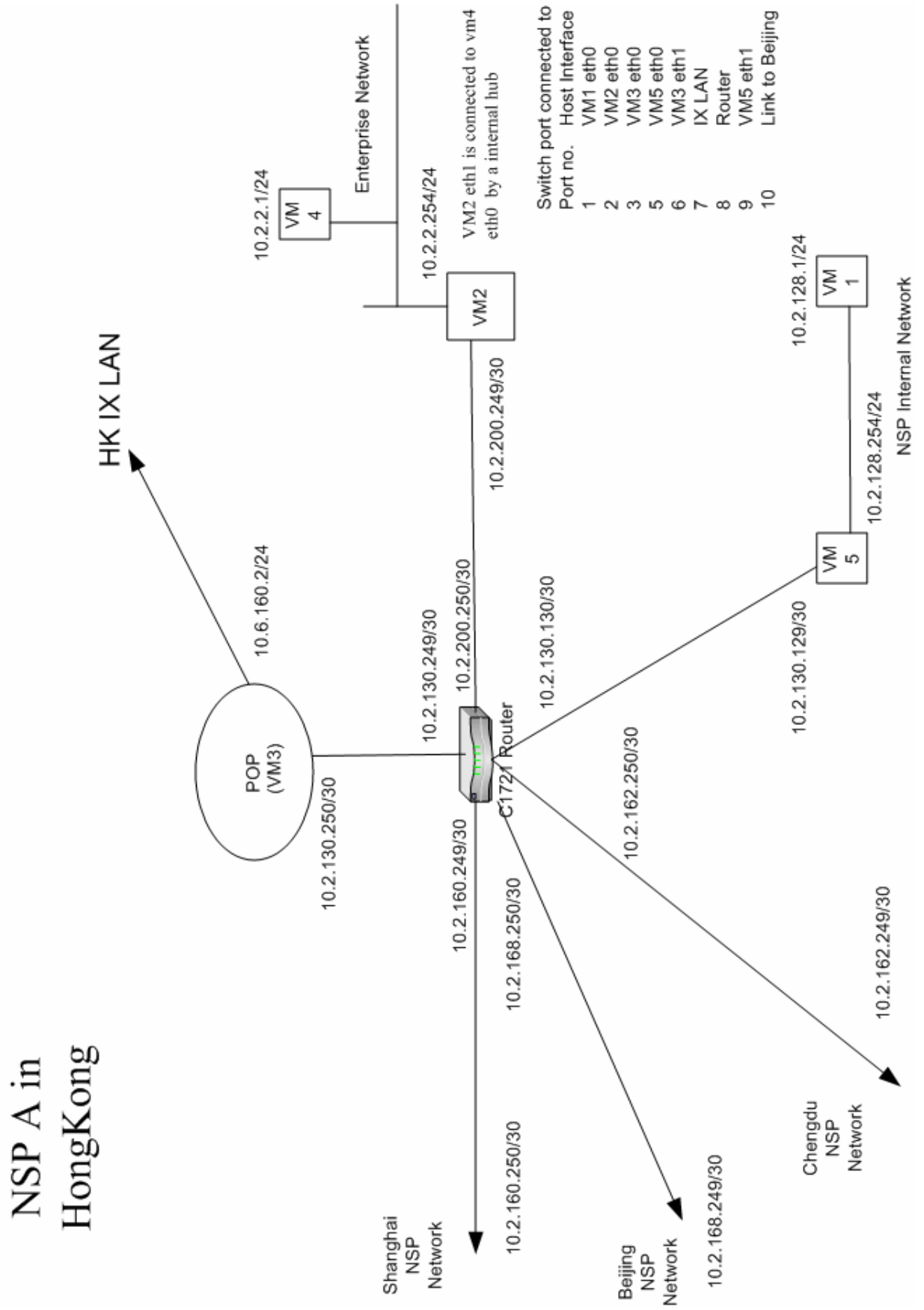
Branch Office	Server Hostname
Hong Kong	vms11-1 (NSP internal network server) vms11-2 (Enterprise network gateway) vms11-3 (POP) vms11-4 (Enterprise network server) vms11-5 (NSP internal network gateway) c2950-n1 (switch) c1721-n1 (router)
Shanghai	vms11-6 (NSP internal network server) vms11-7 (Enterprise network gateway) vms11-8 (POP) vms11-9 (Enterprise network server) vms11-10 (NSP internal network gateway) c2950-n2 (switch) c1721-n2 (router)
Beijing	Vms11-11 (NSP internal network server) vms11-12 (Enterprise network gateway) vms11-13 (POP) vms11-14 (Enterprise network server) vms11-15 (NSP internal network gateway) c2950-n3 (switch) c1721-n3 (router)
Chengdu	vms12-1 (NSP internal network server) vms12-2 (Enterprise network gateway) vms12-3 (POP) vms12-4 (Enterprise network server) vms12-5 (NSP internal network gateway) c2950-n4 (switch) c1721-n4 (router)

III. Network Diagrams

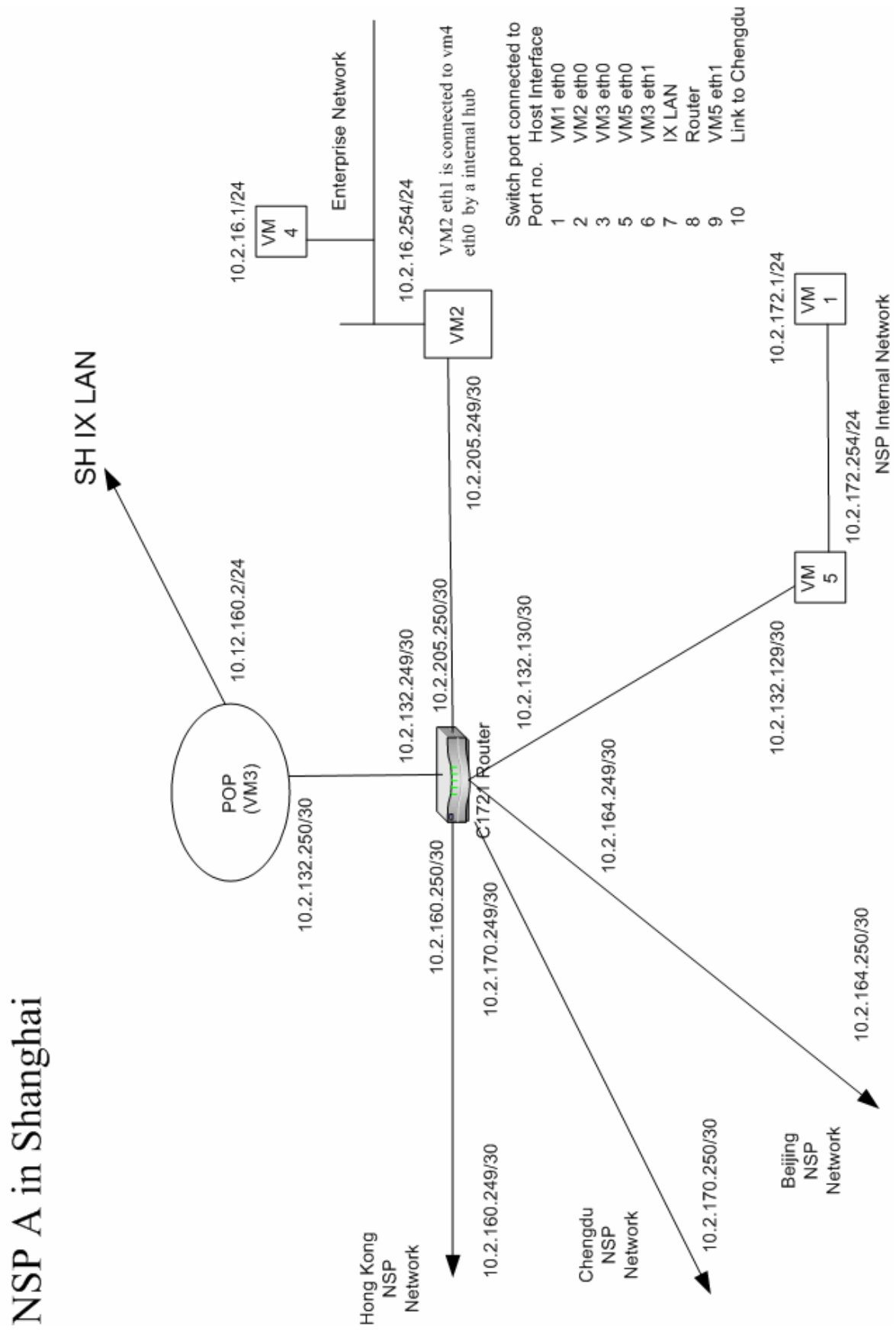
Network Diagram of NSP A



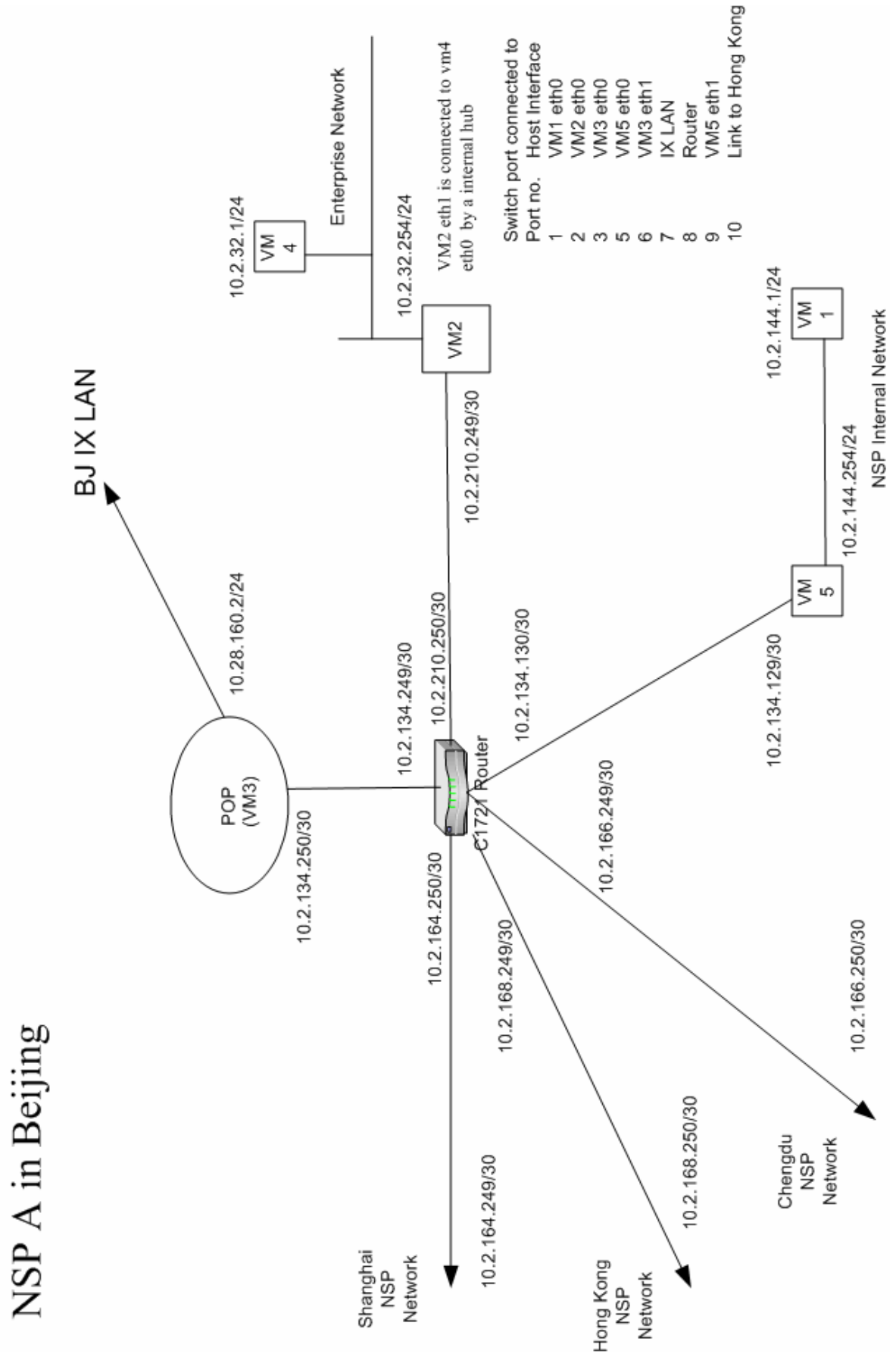
Network Diagram of the NSP A in Hong Kong Region



Network Diagram of the NSP A in Shanghai Region



Network Diagram of the NSP A in Beijing Region



Network Diagram of the NSP A in Chengdu Region

