

NAPT

(SV8100 version 3.0 or higher)

NAPT, or **Network Address Port Translation**, is a method by which a private address or addresses and their TCP/UDP ports are translated into a single public address and its TCP/UDP ports. In the case of IP phones with the SV8100 it allows their connection to a public (internet) IP address which is then converted back to the private (non-internet) IP address on the customers network. The translation is available at the SV8100 end as well as at the remote IP Phone end of the connection if required. The feature is **NOT** available for IP-CCIS and Netlink connections.

Note: The new NAPT (Network Address Port Translation) requires a license pre-loaded to the CP00. License code 0031 must have a quantity of 1 and can be confirmed with CM 10-50-01 or via Pc-Pro or Web-Pro.

Note: This Cheat Sheet consists of 2 main parts “**CPU Setup**” and “**IP Terminal Setup**”. Both parts **MUST** be completed for the NAPT to function correctly.

CPU Setup

10-46: DT700 Server Information Setup

14 - NAT Mode

Step 1:
Enable command 10-46-14

Step 2:
Command **10-12-07** assign the routers WAN IP (Public) address the SV8100 resides behind.
Note: CM **10-12-06** is not required for NAPT to IP stations. This should only be selected when utilizing NAPT for SIP trunks to a provider. The public IP address **MUST** be static and should not change.

10-12: CD-CP00 Network Setup

01 - IP Address	<input type="text" value="0.0.0.0"/>
03 - Default Gateway	<input type="text" value="192.168.1.1"/>
06 - NAPT Router	<input type="checkbox"/>
07 - NAPT Router IP Address	<input type="text" value="15.0.0.6"/>
09 - IPLA IP Address	<input type="text" value="192.168.1.10"/>
10 - IPLA Subnet Mask	<input type="text" value="255.255.0.0"/>

10-58: DT700 Intranet Local Network Area Setup

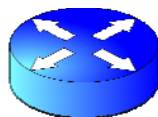
Area Table	IP Address	Subnet Mask
1	10.0.7.0	255.255.255.0
2	0.0.0.0	0.0.0.0

Optional Step 2a:

If there are other networks connected to this system that are not to be routed through the NAT translations then these networks must be identified in command 10-58.

An **example** of this would be if you had CCISoIP setup to a distant network that connected to the MAIN site through VPN. In this scenario you do not want the traffic for the VPN to run through the NAT translations so the destination address would be assigned.

Router Setup



Port Range Forwarding Port Triggering UPnP Forwarding						
Port Range						
Application	Start	End	TCP	UDP	IP Address	Enabled
signal	5080	5081		UDP	192.168.1.10	<input checked="" type="checkbox"/>
voicel	10020	10051		UDP	192.168.1.11	<input checked="" type="checkbox"/>
voice2	10052	10083		UDP	192.168.1.12	<input checked="" type="checkbox"/>

Step 3:

Port Forwarding must be done in the router that the SV8100 resides behind. The above screen shot is an example of a typical GUI setup available with most routers that can perform the NAPT function.

Ports **5080 & 5081** must be forwarded to the IP address in command **10-12-09**.

Ports **10020 – 10051** must be forwarded to the first IP address in command **84-26**.

Ports **10052 – 10083** must be assigned to the second IP address in command **84-26**.

The above example is for a 32IPLA. A 64IPLA or 128 IPLA would required the assignment of additional IP addresses and port numbers as defined in command 84-26.

IP Terminal Setup



Note: Terminals must be version 3.0.0.0 or higher to support the NAPT feature

The below settings are assigned via the configuration mode of the IP Terminal. They can also be set up via a GUI by browsing to the IP address of the terminal.

To enter this mode hold down the **MENU** key. The login is **ADMIN** and password **6633222**

Step 1:

(2) SIP Settings

(8) NAT Traversal

(1) NAT Traversal Mode

(1) **Disable:** *This disables the NAPT feature in the terminal*

(2) **Dynamic:**

This setting is used to automatically acquire the WAN IP address of the router that the IP terminal resides behind. Port forwarding may or may not be required in this local router.

(3) **Static:**

This setting would be used when the IP terminal could not acquire the WAN IP address of the router that it resides behind. Some routers do not support Dynamic NAT and these routers would require you to statically assign the routers WAN IP Address here.

Step 1 continued:

It is recommended to try **Dynamic** NAT first.

Note: *It is recommended to try using Dynamic NAT first and to leave this command unassigned. The reason for trying Dynamic NAT is the local router may not have a static IP address assigned and periodically receives a different Public IP address. With Dynamic NAT set the phones will update the change in address when it happens. With static NAT selected any change in the Public IP address would require the user to update the phone each time a change is detected.*



Step 2:**(2) SIP Settings****(8) NAT Traversal****(3) WAN Settings****(1) WAN Mate IP Address:**

Assign the **WAN IP address** that is assigned in command **10-12-07**.

Note: This is the WAN Address of the router the SV8100 resides behind.

(2) WAN SIP Mate Port:

Change this to **5080**

Note: This is the port number assigned in command **10-46-06**

(3) WAN Self IP Address:

If the phone is set to **Static NAT**, then assign the **WAN IP Address** of the router that the IP Phone resides behind.

Note: If the phone is set to Dynamic NAT, leave this set to 0.0.0.0

**Step 3:**

Save all the settings and allow the phone to reset and test.

The IP terminal should then come online and have speech path in both directions on a call in progress.

If the phone does not come online or speech path is missing, forwarding may be required in the router that the IP terminal resides behind. **Go to step 4** for direction on router port forwarding for the IP Terminal.

Port Range Forwarding Port Triggering UPnP Forwarding						
Port Range						
Application	Start	End	TCP	UDP	IP Address	Enabled
Sinal	5060	5061		UDP	192.168.4.10	<input checked="" type="checkbox"/>
Voice	3462	3463		UDP	192.168.4.10	<input checked="" type="checkbox"/>
	0	0		Both	192.168.4.0	<input type="checkbox"/>

Step 4:

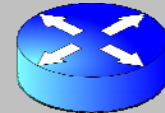
Apply a static IP address to the IP terminal if it is currently assigned as DHCP. DHCP can cause a possible change in IP Address for the IP station which will render the static port routing void if the address in the terminal changes.

Ports **5060 & 5061** must be forwarded to the IP address of the IP terminal.

Ports **3462 & 3463** must be forwarded to the IP address of the IP terminal.

Save all settings and allow the terminal to reset and come online to test.

If the terminal still does **NOT** operate correctly **continue on to Step 5**.

**Step 5:**

(2) SIP Settings

(8) NAT Traversal

(1) NAT Traversal Mode

(3) **Static:** Change the IP phone to Static NAT



Step 6:**(2) SIP Settings****(8) NAT Traversal****(3) WAN Settings**

- (3) WAN Self IP Address:** *Assign the WAN IP address of the router that the IP terminal resides behind.*



Save all the settings and reset the IP Phone.

Multiple IP Phones behind the same NAT

Step 1:**(1) Network Settings****(6) Advanced Settings****(5) Self Port Settings****(1) RTP Self Port:**

*At default this is assigned to port **5060**. The First IP phone on this local LAN can use this port. The second IP phone would need to be changed to port **5062**, the third IP phone would be changed to **5064**, the fourth IP phone would be changed to **5066**, etc, etc.*

(2) SIP Self Port:

*At default this is assigned to port **3462**. The first IP phone on this local LAN can use this port. The second IP phone would need to be changed to port **3464**, the third IP phone would be changed to **3466**, the fourth IP phone would be changed to **3468**, etc, etc.*



Save these settings and reset the IP phone. If the first IP phone came online using Dynamic NAT then the other phones should follow also using Dynamic NAT. If Port Forwarding was required in the router (no Dynamic NAT) then you must forward these new ports in the router to the IP phone ([see step 1a below](#)).

Port Range Forwarding Port Triggering UPnP Forwarding						
Port Range						
Application	Start	End	TCP	UDP	IP Address	Enabled
signal	5060	5061		UDP	192.168.4.10	<input checked="" type="checkbox"/>
voice	3462	3463		UDP	192.168.4.10	<input checked="" type="checkbox"/>
signal	5062	5063		UDP	192.168.4.11	<input checked="" type="checkbox"/>
voice	3464	3465		UDP	192.168.4.11	<input checked="" type="checkbox"/>
	0	0			192.168.4.0	<input type="checkbox"/>
	0	0			192.168.4.0	<input type="checkbox"/>

Optional Step 1a:

Apply a static IP address to the IP terminal if it is currently assigned as DHCP. DHCP can cause a possible change in IP Address for the IP station which will render the static port routing void if the address in the terminal changes.

Ports **5060 & 5061** must be forwarded to the IP address of the 1st IP terminal.

Ports **3462 & 3463** must be forwarded to the IP address of the 1st IP terminal.

Ports **5062 & 5063** must be forwarded to the IP address of the 2nd IP terminal.

Ports **3464 & 3465** must be forwarded to the IP address of the 2nd IP terminal.

Additional IP terminals would continue on following the port pattern shown above.

After completing the forwarding assignments in the router reset the IP phones.

