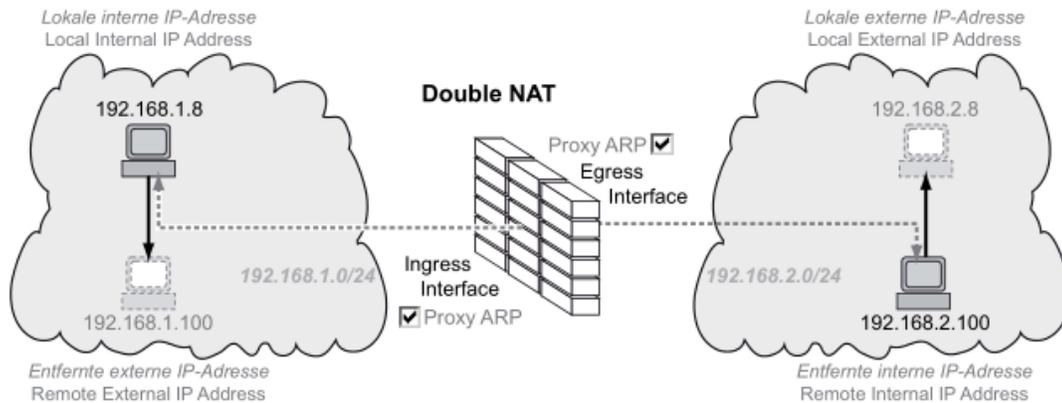


Double NAT with EAGLE One

Prerequisite: The Double NAT feature can only work when the firewall is configured to allow the IP traffic between the two subnets.

Double NAT: Mode of Operation



The Double NAT feature is used to establish Ethernet communication between two devices in different subnets without using Default Gateway entries. The Eagle router will simulate a virtual device in both subnets and manipulate source and destination addresses in the Ethernet packets. The addresses of the virtual devices need to be vacant in both subnets. A good way to avoid duplicate addresses is to use only the addresses .1 to .127 in the internal subnet and the addresses .128 to .254 in the external subnet.

Routing Configuration

The screenshot shows the Hirschmann HiView GUI for Router Mode configuration. The interface is divided into several sections:

- Router Mode:** Password is default.
- Internal Interface (Port 1):** Protocol: DHCP . Local IP Address: 192.168.1.1, Netmask: 255.255.255.0. Use VLAN Tag: . VLAN ID: 1.
- External Interface (Port 2):** Protocol: DHCP . Local IP Address: 192.168.2.1, Netmask: 255.255.255.0. Use VLAN Tag: . VLAN ID: 1. Default Gateway: 0.0.0.0.
- Secondary IP Interfaces:** A table with columns: Port, IP Address, Netmask, Use VLAN Tag, VLAN ID, Active.
- Buttons:** Set, Reload, New, Delete Entry, Help.

Numbered callouts in the image indicate the following steps:

1. Router Mode selected in the left sidebar.
2. IP Address and Netmask fields for the Internal Interface.
3. IP Address and Netmask fields for the External Interface.
4. The Set button.

Configuration via GUI:

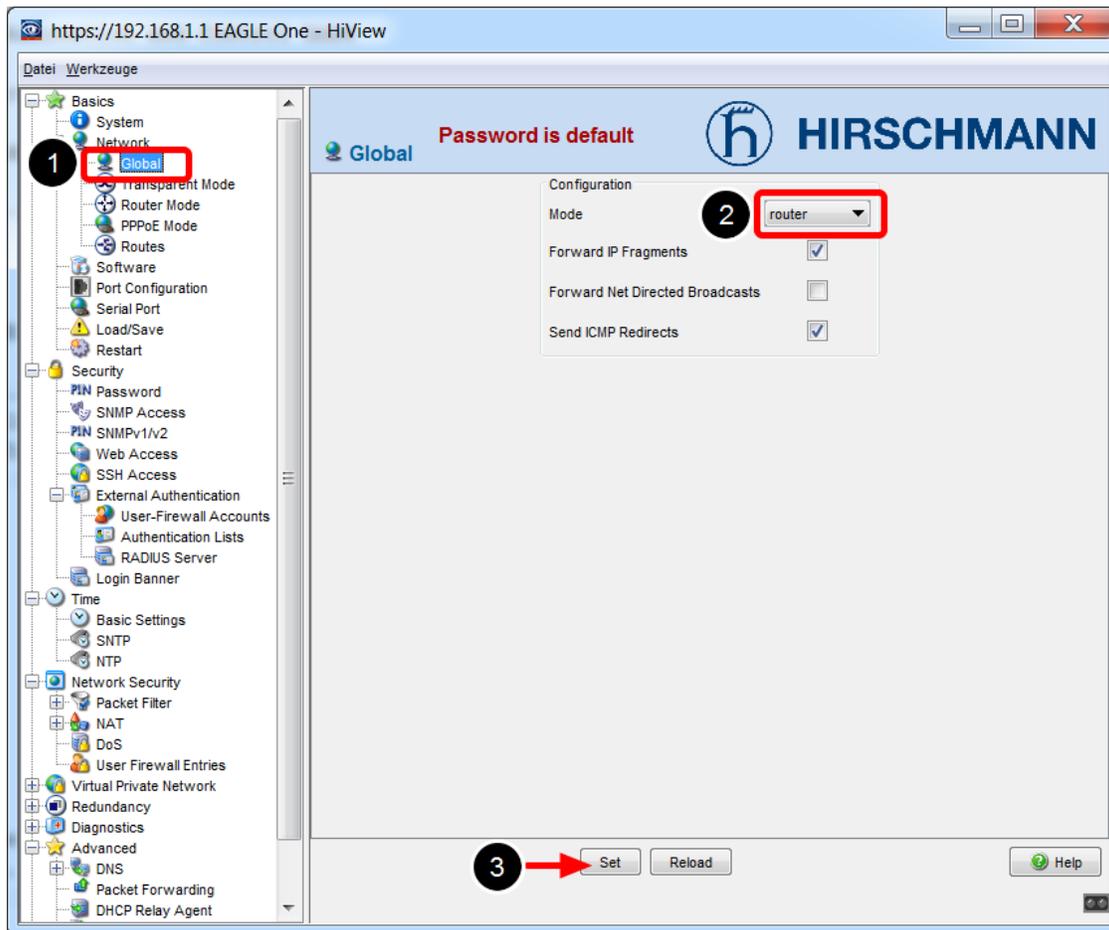
1. Navigate to the dialog "Basics -> Network -> Router Mode"
2. Enter an IP address and a netmask for the internal interface. The address must be in the same subnet as the devices connected to the internal port.
3. Enter an IP address and a netmask for the external interface. The address must be in the same subnet as the devices connected to the external port.
4. Click button "Set" to save changes.

Configuration via CLI:

1. Connect to V.24 and log in
2. Type "enable" to enter privileged mode
3. Type the following commands:

```
!*(Hirschmann EAGLE One) #network router param int ip-address 192.168.1.1
!*(Hirschmann EAGLE One) #network router param int netmask 255.255.255.0
!*(Hirschmann EAGLE One) #network router param ext ip-address 192.168.2.1
!*(Hirschmann EAGLE One) #network router param ext netmask 255.255.255.0
```

Activate the Router Mode



1. Navigate to the dialog "Basics -> Network -> Global"
2. Select "Router" from listbox "Mode"
3. Click button "Set"

Create the Entries in the NAT Table

https://192.168.1.1 EAGLE One - HiView

1:1 NAT Password is default

Index	Description	Active	Internal Network	External Network	Netmask	FTP	Invert Direction	Double-NAT	Error
1		<input checked="" type="checkbox"/>	192.168.1.8	192.168.2.8	32	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2		<input checked="" type="checkbox"/>	192.168.1.100	192.168.2.100	32	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Buttons: Set, Reload, Create, Remove, ↑, ↓, Duplicate, Help

For each pair of devices, two table entries need to be created. The first entry translates the IP address of the device in the internal network to a virtual IP address in the external network and vice versa. The second entry translates the IP address of the device in the external network to virtual IP address in the internal network and vice versa. Be sure to activate "Invert Direction" for the second entry!

1. Navigate to the dialog "Network Security -> NAT -> 1:1 NAT"
2. Click button "Create" twice
3. Enter the addresses as explained above. Make sure the checkbox "Active" is tagged for both entries
4. Click button "Set" to save changes

Save Configuration to the Non Volatile Memory

The screenshot shows the Hirschmann HiView web interface for an EAGLE One device. The browser address bar displays `https://192.168.1.1 EAGLE One - HiView`. The left sidebar contains a tree view with categories like Basics, Network, and Security. The 'Load/Save' option is selected and highlighted with a red box. The main content area is titled 'Load/Save' and includes a 'Password is default' warning. Below this, the 'NVM and ACA Status' section is highlighted with a red box, showing 'Non-volatile memory (NVM) status' as 'Ok' and 'AutoConfiguration Adapter (ACA) status' as 'absent'. To the right, there are settings for 'Undo Modifications of Configuration', including a 'Watchdog IP Address' field set to '0.0.0.0' and a 'Period to undo while Connection is lost [s]' field set to '600'. Below these are two tables: 'Configuration in non-volatile memory (NVM)' and 'Configuration on the AutoConfiguration Adapter (ACA)'. The NVM table has one entry: 'config' with a modification date of '2015-01-01 09:21:32' and an 'Active' checkbox checked. The ACA table is empty. To the right of each table are buttons for 'Copy from PC', 'Copy to PC', 'Show', 'Delete', 'Activate', and 'New'. At the bottom of the page, there are buttons for 'Set', 'Reload', 'Save to NVM+ACA' (highlighted with a red arrow), and 'Restore from NVM'. A 'Help' button is also present in the bottom right corner.

This step is needed to make sure the configuration isn't lost after a reboot.

1. Navigate to the dialog "Basics -> Load/Save"
2. Click button "Save to NVM+ACA"
3. Make sure the NVM status is "OK"