Setting Up a Basic Linux Network Namespace on Two Hosts and using Tunnel Interfaces

Introduction

This is a demonstration of how to create two namespaces on two Linux hosts, assign IP addresses, set up a GRE tunnel, and perform a ping test between them.

You can follow my GitHub repository, BuildNetWorkToCloud,
to see examples of automated network creation
using open-source tools

https://github.com/zenithsoul

Requirement

1) ------

2 Linux Hosts

2) ------

Ubuntu / Debian: iproute2
CentOS / RHEL / Fedora: iproute

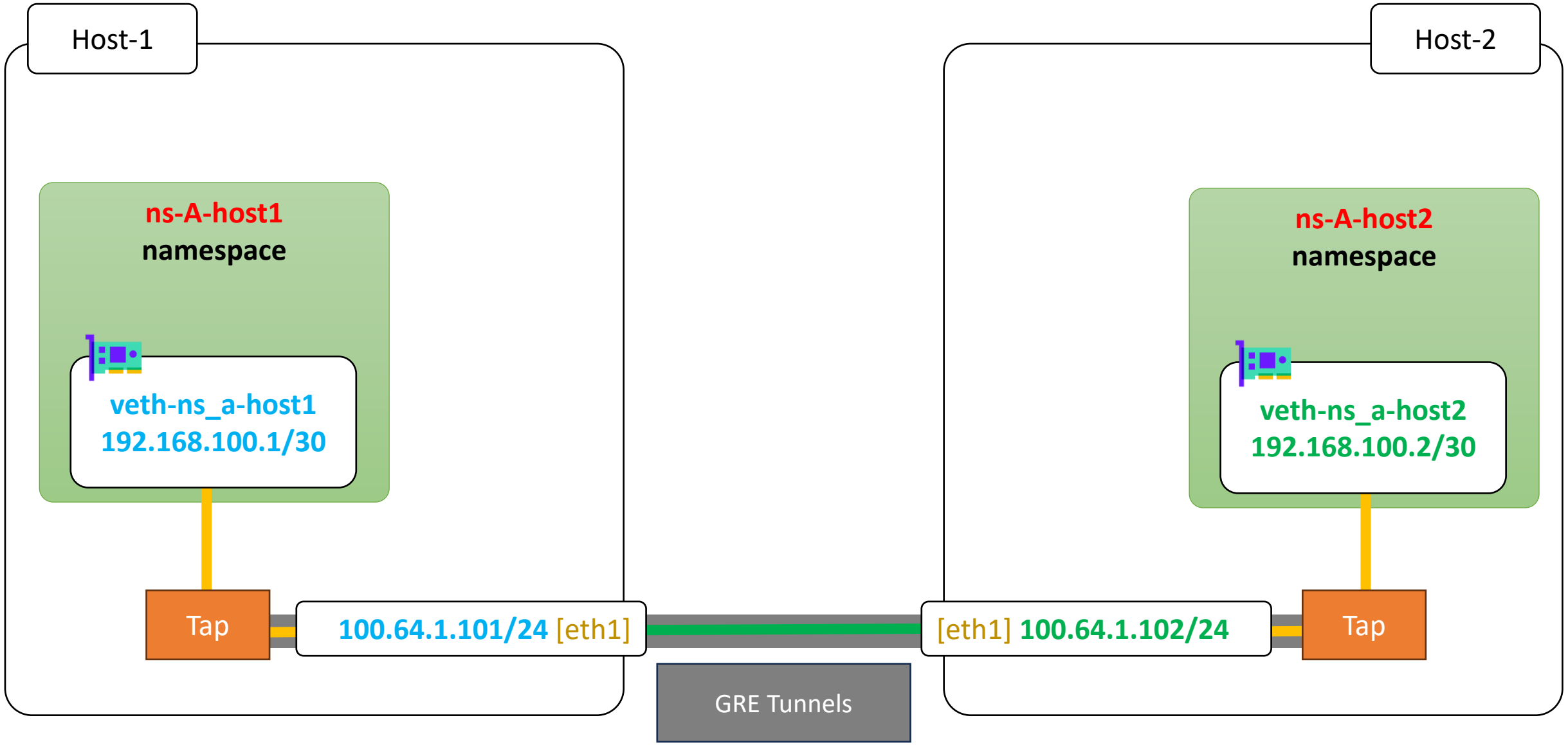
3) ------

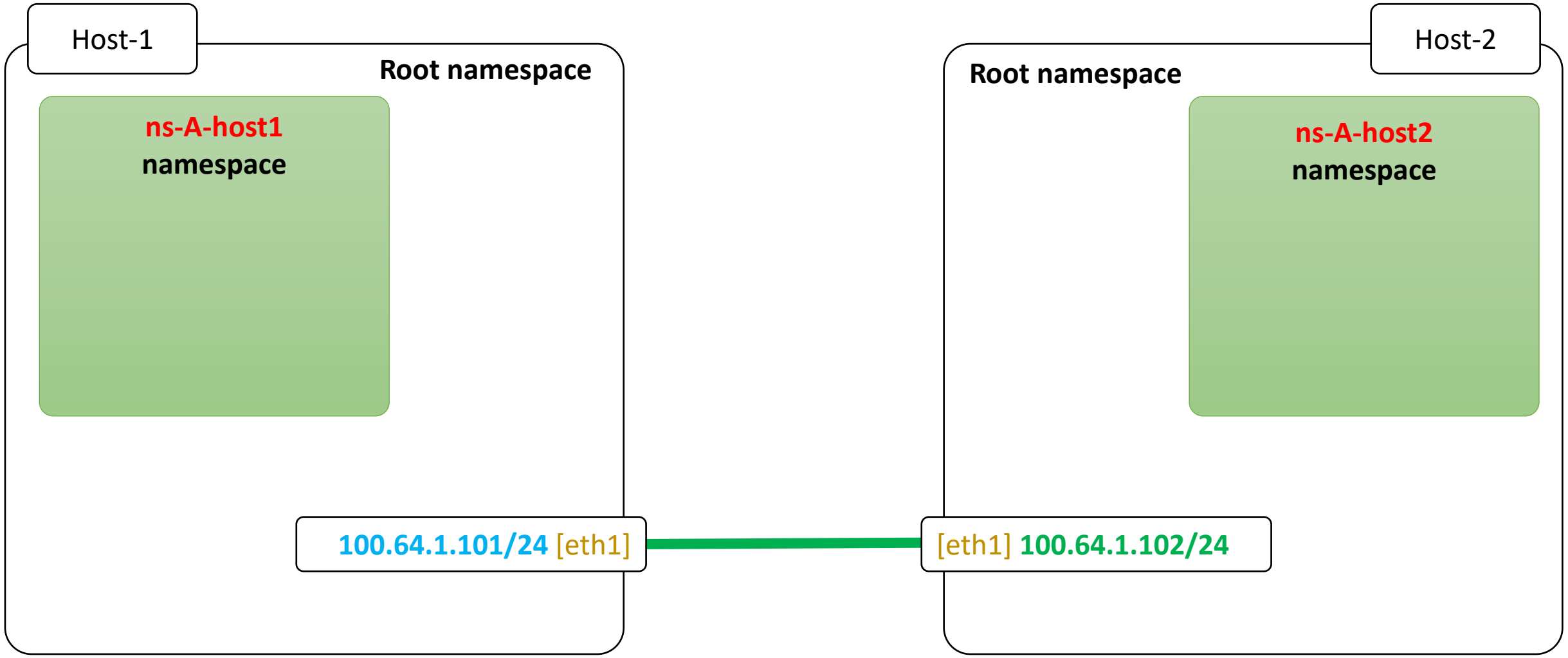
Run with root account

4) ------

Set the IP addresses according to my diagram. If you want to make changes,
don’t forget to update the IPs in the Linux command line.
If your network interface names are different, please adjust them to fit your setup.

High Level Design - Diagram



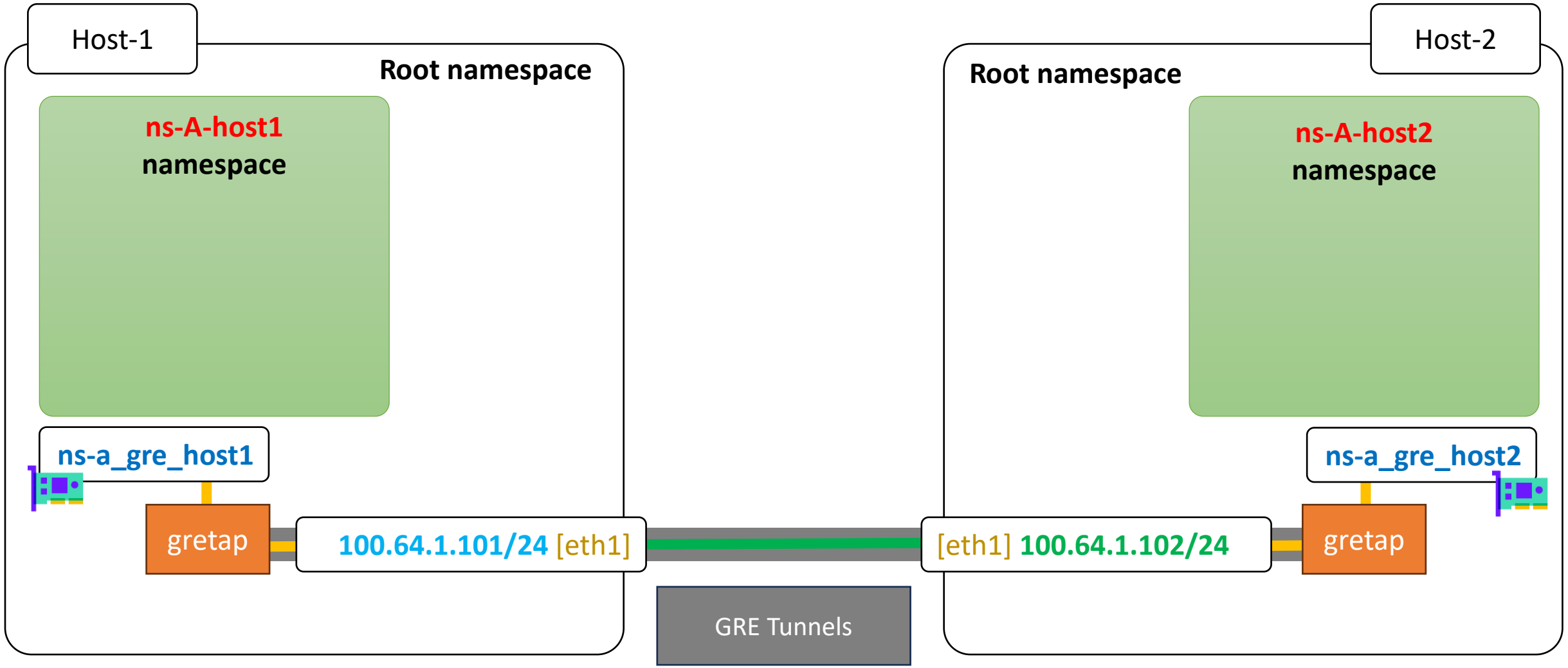


Create a namespace > ns-A-host1

Host-1 # ip netns add ns-A-host1

Create a namespace > ns-A-host2

Host-2 # ip netns add ns-A-host2

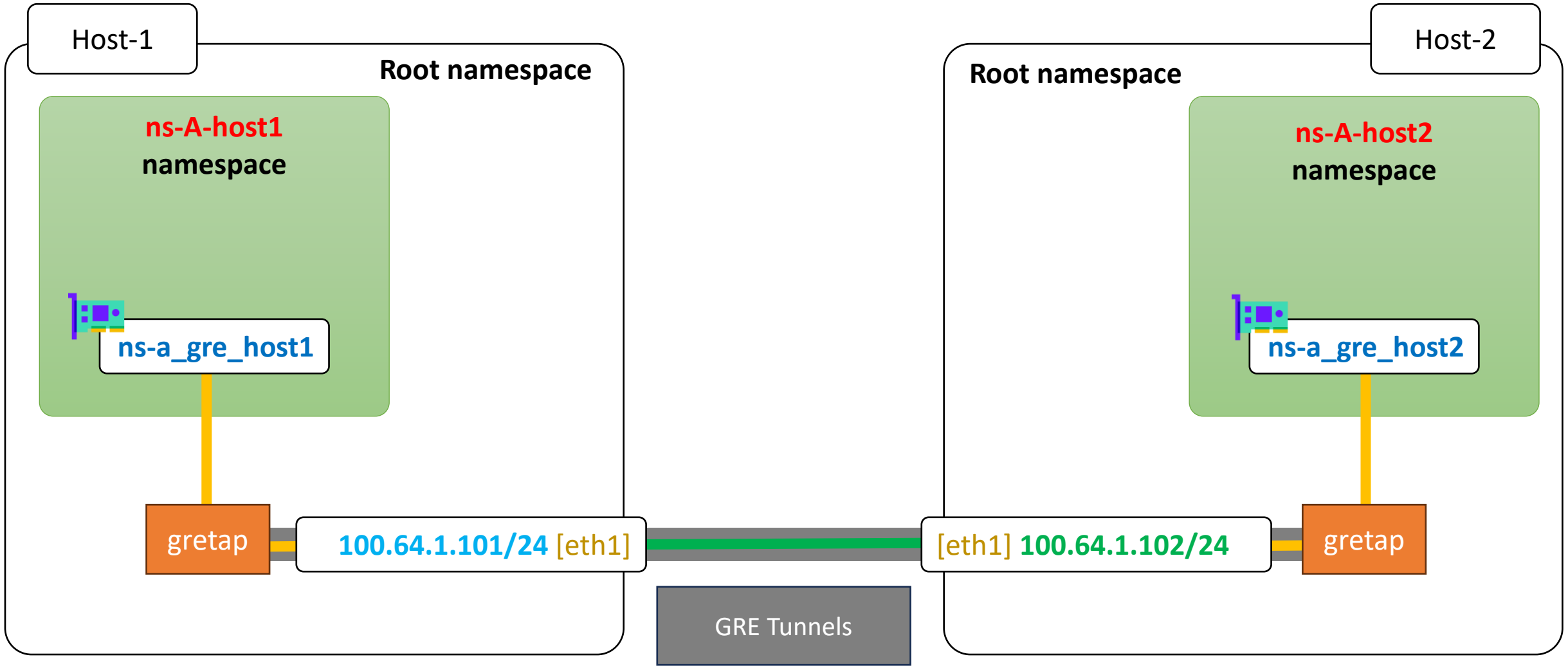


Create a GRETAP > ns-a_gre_host1

```
Host-1# ip link add ns-a_gre_host1 type gretap \
remote 100.64.1.102 \
local 100.64.1.101 dev eth1
```

Create a GRETAP > ns-a_gre_host2

```
Host-2 # ip link add ns-a_gre_host2 type gretap \
remote 100.64.1.101 \
local 100.64.1.102 dev eth1
```

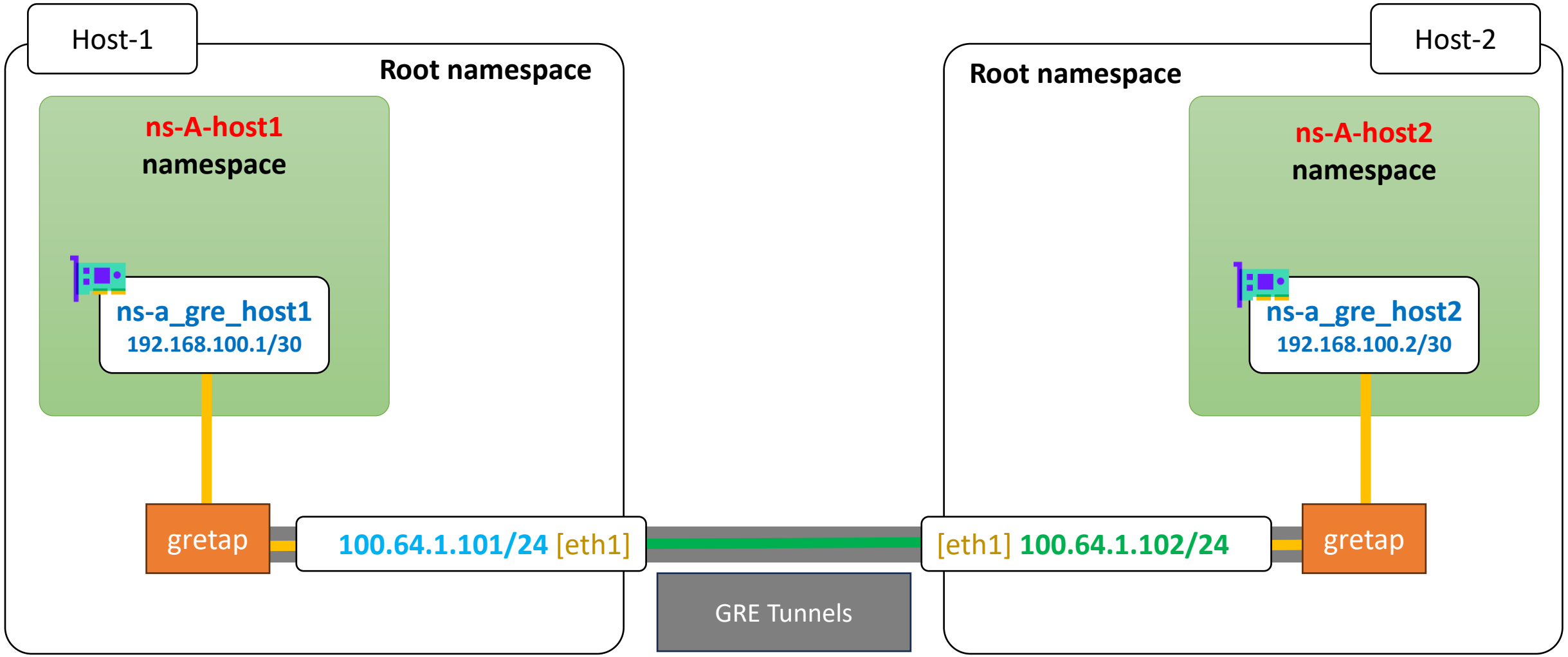


Assign ns-a_gre_host1 interface to ns-A-host1

Host-1 # ip link set ns-a_gre_host1 netns ns-A-host1

Assign ns-a_gre_host2 interface to ns-A-host2

Host-2 # ip link set ns-a_gre_host2 netns ns-A-host2



Assign IP to `ns-a_gre_host1` **interface**

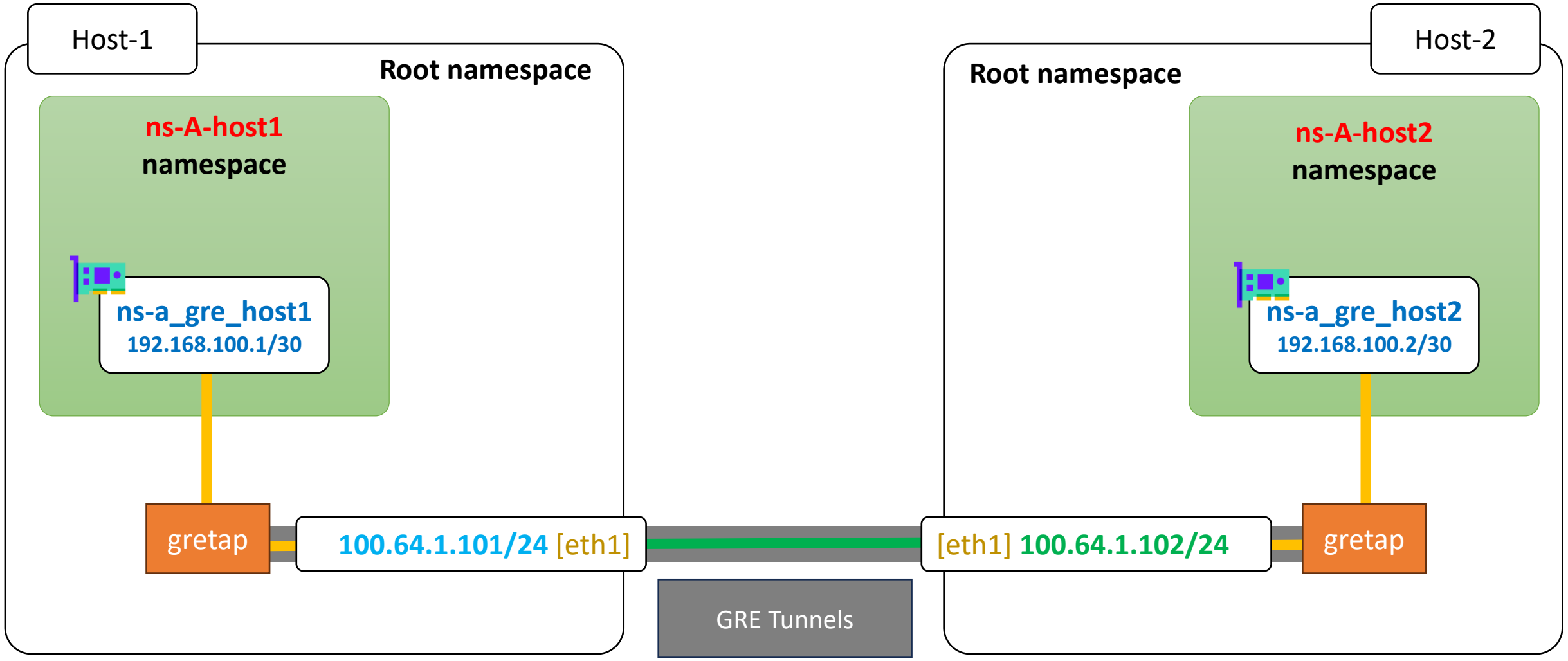
```
Host-1 # ip netns exec ns-A-host1 \
ip addr add 192.168.100.1/30 dev ns-a_gre_host1

Host-1 # ip netns exec ns-A-host1 ip link set ns-a_gre_host1 up
```

Assign IP to `ns-a_gre_host2` **interface**

```
Host-2 # ip netns exec ns-A-host2 \
ip addr add 192.168.100.2/30 dev ns-a_gre_host2

Host-2 # ip netns exec ns-A-host2 ip link set ns-a_gre_host2 up
```



Ping from ns-A-host1 > ns-A-host2

Host-1 # ip netns exec ns-A-host1 ping -c 4 192.168.100.2

Ping from ns-A-host2 > ns-A-host1

Host-2 # ip netns exec ns-A-host2 ping -c 4 192.168.100.1