INFORMATION ON CONFIGURING SEVERAL NETWORK ADAPTERS IN THE SAME SUBNETWORK

This document will present several network topologies which involve the need to configure several network interfaces in the same subnetwork. Each scenario will be followed by specific setup instructions.

In the examples, Host 1 is used to denote the storage server, while Host 2 is the machine the storage server is in communication with.

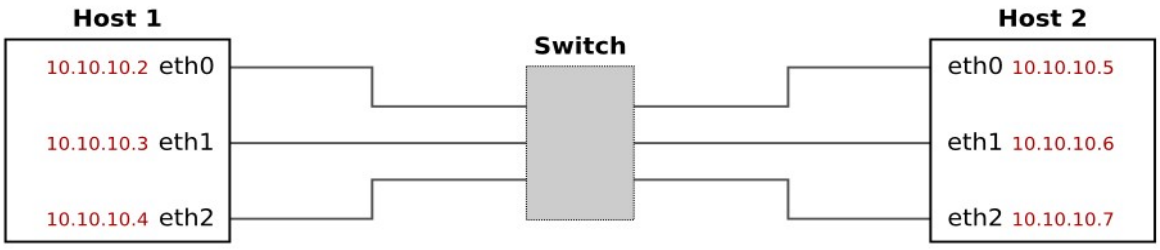
IMPORTANT NOTE

If possible, we recommend you to avoid topologies which require setting up NICs in the same subnetwork, as this may cause instability with some network services (such as volume replication). Also, routing problems may occur – for instance, a response to a packet sent via eth0 may be processed by eth1. If network performance needs to be improved, please consider using bonding or iSCSI multipathing scenarios instead.

Scenario 1.

DESCRIPTION:

Host 1 connects via a switch to Host 2. There are several network interfaces located in the same subnetwork in order to facilitate connectivity with this host.

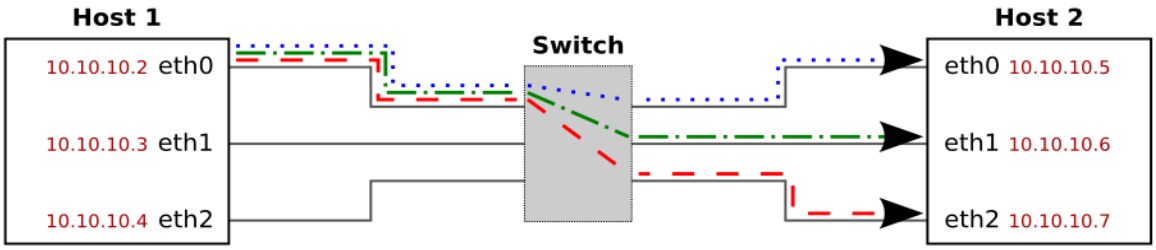


CONFIGURATION:

- Depending on the service being utilized, this scenario may or may not require static routing.
- In general, connections originating from Host 2 do not require static routing on Host 1, however it is recommended to configure routing on Host 1 side in order to provide better reliability.
- Connections originating from Host 1 require static routing. This is also valid if another storage server is Host 2.

POTENTIAL PROBLEMS:

If no static routing is configured, all connections initiated from Host 1 will utilize only the interface at the top of the routing table (in the example below, eth0).

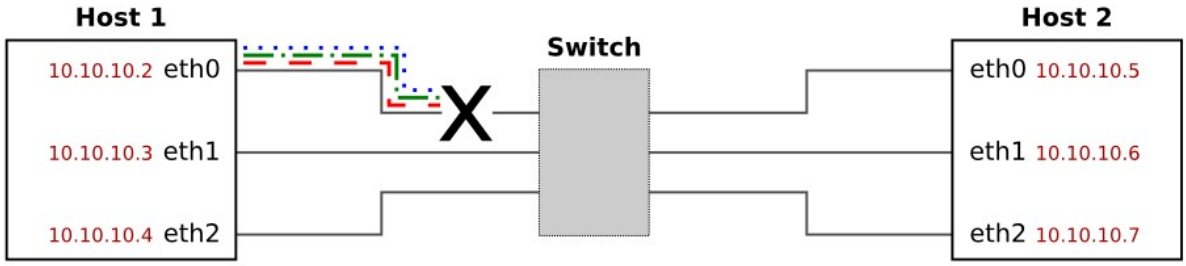


The routing table on Host 1 for this example is as follows*:

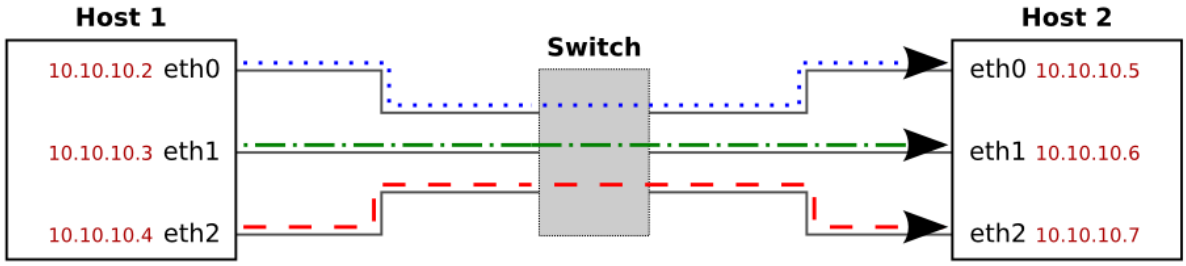
Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth0
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth1
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth2
127.0.0.0	0.0.0.0	255.0.0.0	U	0	0	0	lo

* In order to view the routing table please download logs from the GUI (Status->hardware->Logs). You can find the table in the tests.log file (please search for the “route -n” string).

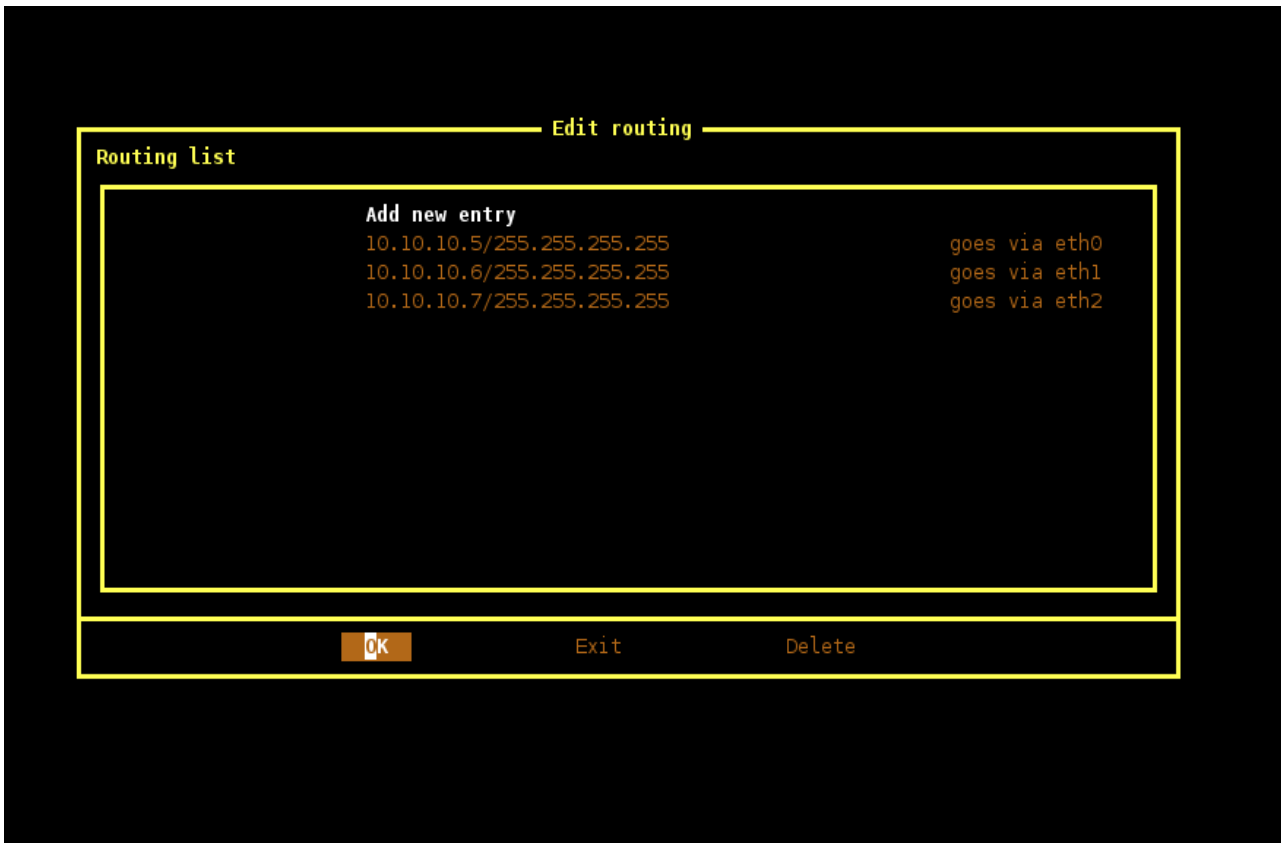
If the first interface in the routing table becomes unavailable, no outgoing connections will be made.



To avoid this problem, please set up static routing for each interface.



This can be done under the system console by pressing CTRL+ALT+N and selecting Routing:



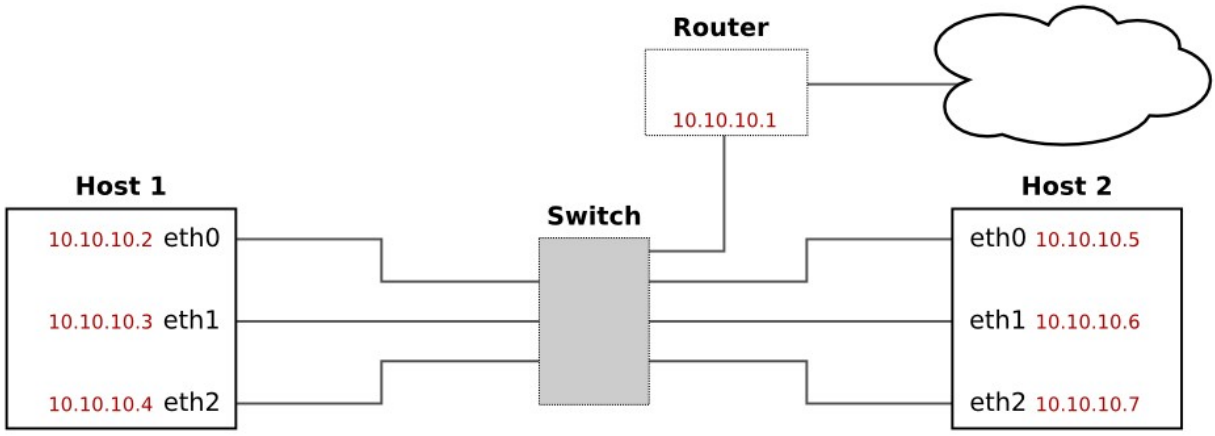
In our example, the static routing on Host 1 takes the following shape after it has been set up on each interface:

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.10.10.5	0.0.0.0	255.255.255.255	UH	0	0	0	eth0
10.10.10.6	0.0.0.0	255.255.255.255	UH	0	0	0	eth1
10.10.10.7	0.0.0.0	255.255.255.255	UH	0	0	0	eth2
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth0
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth1
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth2
127.0.0.0	0.0.0.0	255.0.0.0	U	0	0	0	lo

Scenario 2.

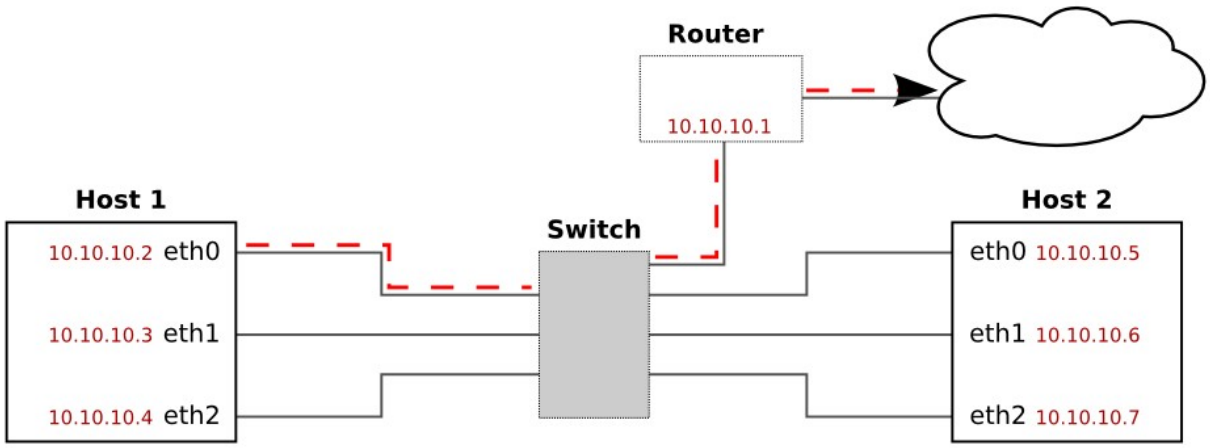
DESCRIPTION:

Host 1 connects via a switch to Host 2. There are several network interfaces located in the same subnetwork in order to facilitate connectivity with this host, as well as an interface dedicated to WAN access.



CONFIGURATION:

- It is highly recommended to configure the WAN interface in a different subnetwork than the rest of the interfaces, in which case this scenario is similar to Scenario 1., and the same setup rules apply.
- However, please note that contrary to Scenario 1., this scenario always requires a gateway to be set up on the WAN interface (please see image below).
- Please refer to the "Potential problems" section for Scenario 1. for issues that can also appear when implementing this scenario.



In order to set the gateway, please press CTRL+ALT+N under the system console and select the interface. Then, select "Gateway."

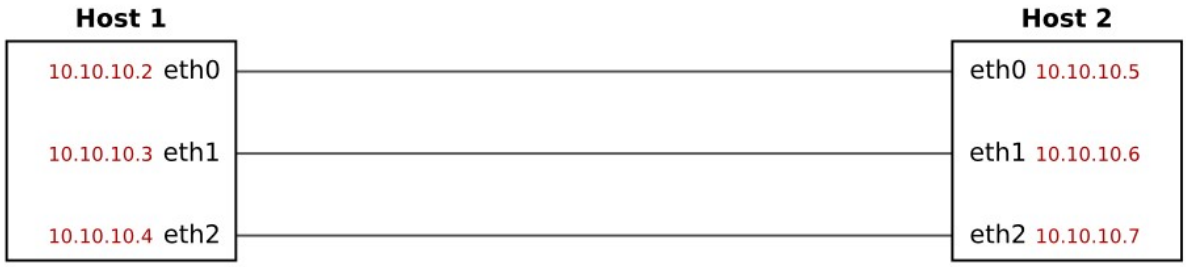
In our example, the routing table on Host 1 should be as follows:

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.10.10.1	0.0.0.0	255.255.255.255	UH	0	0	0	eth0
10.10.10.5	0.0.0.0	255.255.255.255	UH	0	0	0	eth0
10.10.10.6	0.0.0.0	255.255.255.255	UH	0	0	0	eth1
10.10.10.7	0.0.0.0	255.255.255.255	UH	0	0	0	eth2
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth0
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth1
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth2
127.0.0.0	0.0.0.0	255.0.0.0	U	0	0	0	lo
0.0.0.0	10.10.10.1	0.0.0.0	UG	0	0	0	eth0

Scenario 3.

DESCRIPTION:

Host 1 connects directly to Host 2. There are several network interfaces located in the same subnetwork in order to facilitate connectivity with this host.

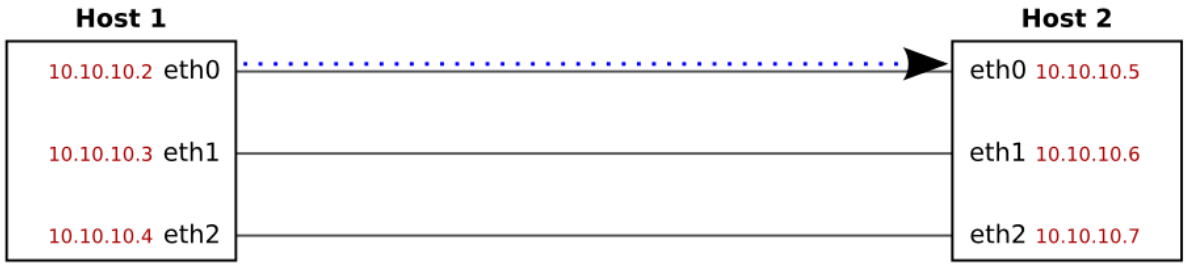


CONFIGURATION:

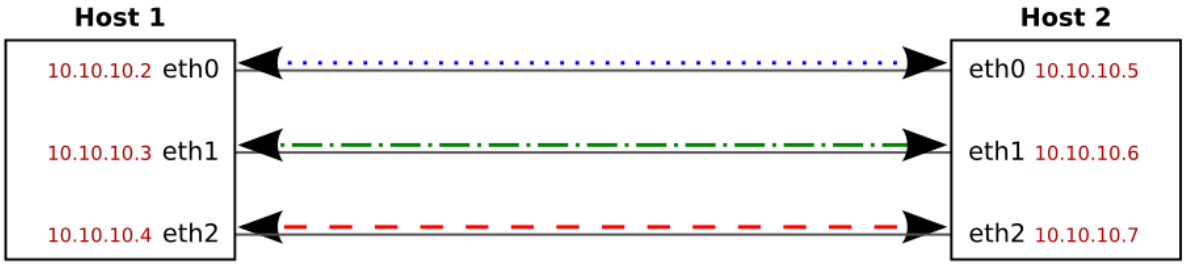
- This scenario requires static routing to be set up on Host 1 and depending on the operating system, on Host 2 as well.
- Each remote IP needs to have a local output interface assigned. This rule is valid for both hosts.

POTENTIAL PROBLEMS:

Without static routing, all connections initiated from Host 1 will take place over the interface at the top of the routing table (in the example below, eth0).



To avoid this problem, please set up static routing for each interface.



In our example, the routing table on Host 1 should be as follows:

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.10.10.5	0.0.0.0	255.255.255.255	UH	0	0	0	eth0
10.10.10.6	0.0.0.0	255.255.255.255	UH	0	0	0	eth1
10.10.10.7	0.0.0.0	255.255.255.255	UH	0	0	0	eth2
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth0
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth1
10.10.10.0	0.0.0.0	255.255.255.0	U	0	0	0	eth2
127.0.0.0	0.0.0.0	255.0.0.0	U	0	0	0	lo

HINTS:

1. In order to view the routing table please download logs from the GUI (Status->hardware->Logs). You can find the table in the tests.log file (please search for the "route -n" string). Further releases will include the possibility to view the table directly over the GUI, as well as to reorder table entries.

2. You can configure static routing under the system console (press CTRL+ALT+N and select "Routing"). In order to set up routing to a specific host, please enter the 255.255.255.255 netmask.