



acontis technologies GmbH

SOFTWARE

Hypervisor-Network-RtosVnet-Guide

acontis Real-time Hypervisor Network RtosVnet Setup

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Table of Contents

1	Introduction	4
1.1	Prerequisites	4
2	Setup Guests	5
2.1	Host	5
2.2	RT-Linux	5
2.3	Linux I (UBUNTU)	5
2.4	Linux II (UBUNTU)	7
2.5	Final IP configuration	8
3	Validate Network	9
3.1	Host	9
3.2	RT-Linux	9
3.3	Linux I (UBUNTU)	10
3.4	Linux II (UBUNTU)	10

1 Introduction

This guide describes setting up a private network with 2 running Linux (UBUNTU) guest VM instances (Linux I (UBUNTU) + Linux II (UBUNTU)), a RT-Linux instance (RTOS) and the Hypervisor Host (Host), each pinging the others through the virtual network.

This manual will guide you through the following steps:

- Using virtual adapter RtosVnet
- Setting up the IP addresses for each instance/guest.
- Adjust additional settings
- Ping each instance/guest

Caution: This guide describe **only** a small aspect therefore the prerequisites are important! (See Chapter *Prerequisites*)

Hint: The private network addresses used in this guide are in the range of 192.168.157.XXX.

1.1 Prerequisites

- PC/IPC running the RTOSVisor.
 - 2 configured Linux (UBUNTU) guests. Please checkout [Hypervisor-LinuxGuest-Guide](#).
 - 1 configured RT-Linux guest. Please checkout the [Hypervisor Quickstart Guide](#) if not yet done.
- already used (as default pre-configured) IP addresses (RtosVnet):
 - Hypervisor Host: 192.168.157.1
 - RT-Linux: 192.168.157.2

2 Setup Guests

Important: Always start RTOS as **first** guest, as this will create the *initial* instance of RtosVnet!

2.1 Host

No setup required, as this guide uses the **default** IP address (192.168.157.1) of the Host.

2.2 RT-Linux

No setup required, as this guide uses the **default** IP address (192.168.157.2) of the RTOS.

2.3 Linux I (UBUNTU)

2.3.1 Linux I Host-side guest configuration

Attention: This changes **must** be done on the Host side for the Linux (UBUNTU) guest!

Open configuration script of ubuntu and edit the `rtosvnet_nw` value.

```
$ cd /hv/guests/examples/ubuntu  
$ gedit ./usr_guest_config.sh
```

Search the following line:

```
# Private RtosVnet network between RTOS and GP-OS  
export rtosvnet_nw=0
```

and change it to:

```
# Private RtosVnet network between RTOS and GP-OS  
export rtosvnet_nw=1
```

Hint: Changes to the other values of the RtosVnet config section **only** needed if different IP ranges or names are required!

2.3.2 Linux I Guest-side configuration

Attention: These changes **must** be done inside the running Linux (UBUNTU) guest!

Caution: To start the Linux I (UBUNTU) guest with a loaded RtosVnet instance, the Rtos (RT-Linux) **must** be started before!

- start RT-Linux

```
$ cd /hv/guests/examples/rt-linux
$ hv_guest_start -view
```

- start Linux I (UBUNTU) guest

```
$ cd /hv/guests/examples/ubuntu
$ hv_guest_start -view
```

Switch into UBUNTU guest and goto Settings -> Network and edit the ens10 adapter.

Goto IPv4 tab and edit the following values:

- IPv4 Method: manual
- Address: 192.168.157.10
- Netmask: 255.255.255.0

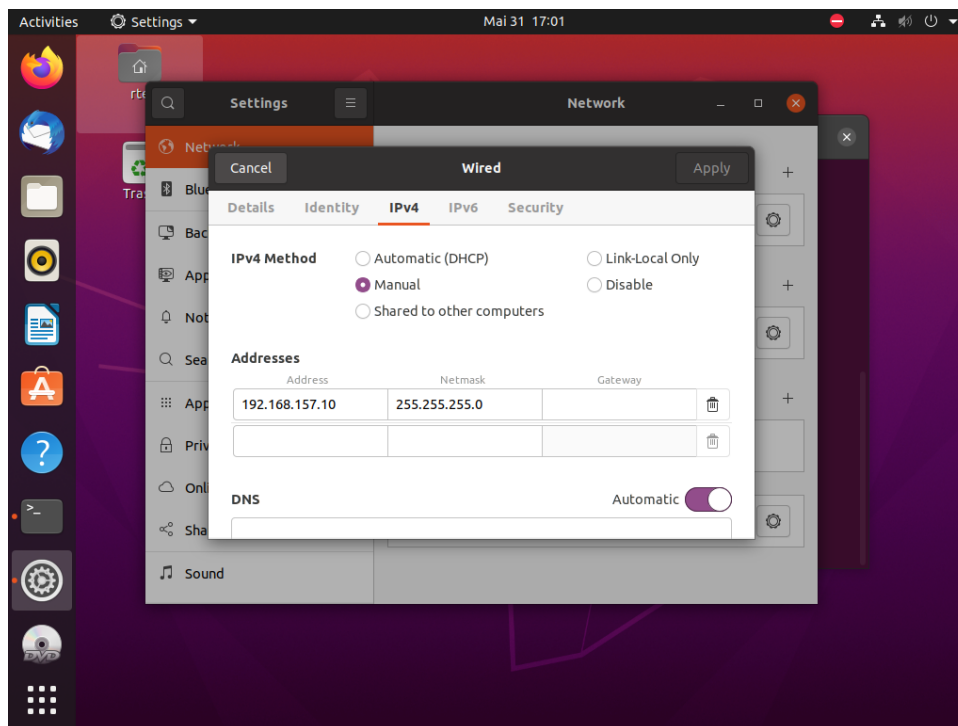


Fig. 2.1: Linux guest I (UBUNTU) network config settings dialog.

2.4 Linux II (UBUNTU)

2.4.1 Linux II Host-side guest configuration

Attention: This changes **must** be done on the host side for the Linux (UBUNTU) guest!

Open the appropriate guest configuration script of the ubuntu2 guest and edit the `rtosvnet_nw` value.

```
$ cd /hv/guests/examples/ubuntu2
$ gedit ./usr_guest_config.sh
```

Search the following line:

```
# Private RtosVnet network between RTOS and GP-OS
export rtosvnet_nw=0
```

and change it to:

```
# Private RtosVnet network between RTOS and GP-OS
export rtosvnet_nw=1
```

Hint: Changes to the other values of the RtosVnet config section **only** needed if different IP ranges or names are required!

2.4.2 Linux II Guest-side configuration

Attention: This changes **must** be done in running Linux (UBUNTU) guest!

Caution: To start the Linux II (UBUNTU) guest with a loaded RtosVnet instance, the Rtos (RT-Linux) **must** be started before!

- start RT-Linux (**if not yet started!**)

```
$ cd /hv/guests/examples/rt-linux
$ hv_guest_start -view
```

- start Linux II (UBUNTU) guest

```
$ cd /hv/guests/examples/ubuntu2
$ hv_guest_start -view
```

Switch into UBUNTU guest and goto Settings -> Network and edit the `ens10` adapter.

Goto IPv4 tab and edit the following values:

- IPv4 Method: `manual`
- Address: `192.168.157.11`

- Netmask: 255.255.255.0

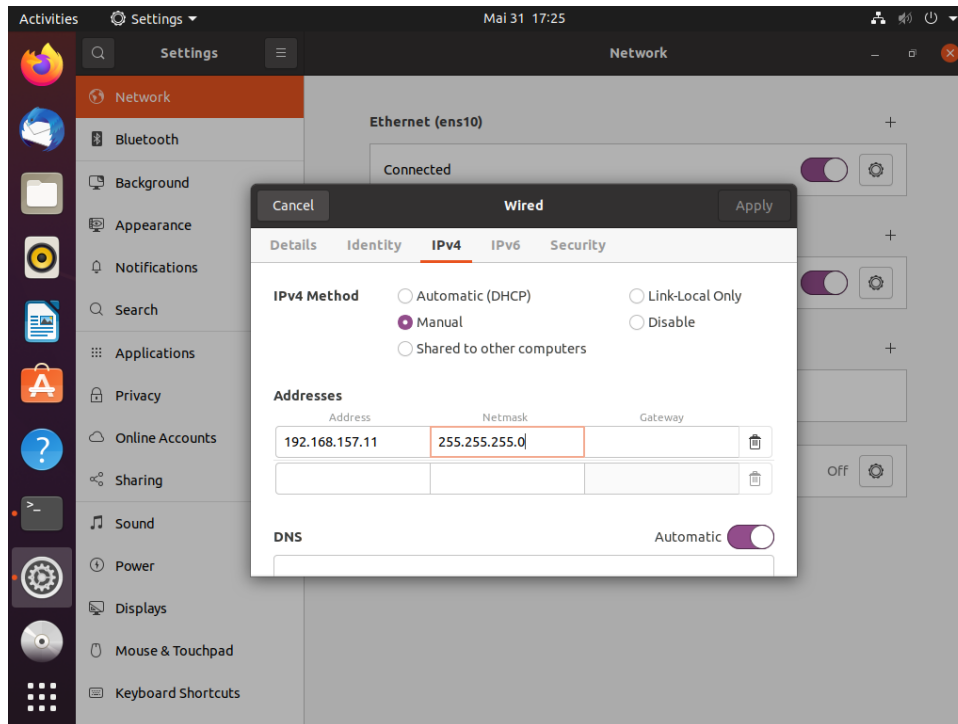


Fig. 2.2: Linux guest II (UBUNTU) network config settings dialog.

2.5 Final IP configuration

- Host: 192.168.157.1
- RT-Linux: 192.168.157.2
- Linux I (UBUNTU): 192.168.157.10
- Linux II (UBUNTU): 192.168.157.11

3 Validate Network

3.1 Host

Open a shell (right click on desktop and select *'Open Terminal here'* or press CTRL + ALT + T) on the Host and enter the following commands.

Attention: Each destination **must** be ping-able!

- Ping Host (**self**)
`$ ping 192.168.157.1`
- Ping RT-Linux
`$ ping 192.168.157.2`
- Ping Linux I (UBUNTU)
`$ ping 192.168.157.10`
- Ping Linux II (UBUNTU)
`$ ping 192.168.157.11`

3.2 RT-Linux

Switch to console of RT-Linux and enter the following commands.

Attention: Each destination **must** be ping-able!

- Ping Host
`$ ping 192.168.157.1`
- Ping RT-Linux (**self**)
`$ ping 192.168.157.2 -c 5`
- Ping Linux I (UBUNTU)
`$ ping 192.168.157.10`
- Ping Linux II (UBUNTU)
`$ ping 192.168.157.11`

3.3 Linux I (UBUNTU)

Switch into Linux I (UBUNTU) guest and open a shell (right click on desktop and select *'Open Terminal here'* or press CTRL + ALT + T) and enter the following commands.

Attention: Each destination **must** be ping-able!

- Ping Host
\$ ping 192.168.157.1
- Ping RT-Linux
\$ ping 192.168.157.2
- Ping Linux I (UBUNTU) (**self**)
\$ ping 192.168.157.10
- Ping Linux II (UBUNTU)
\$ ping 192.168.157.11

3.4 Linux II (UBUNTU)

Switch into Linux II (UBUNTU) guest and open a shell (right click on desktop and select *'Open Terminal here'* or press CTRL + ALT + T) and enter the following commands.

Attention: Each destination **must** be ping-able!

- Ping Host
\$ ping 192.168.157.1
- Ping RT-Linux
\$ ping 192.168.157.2
- Ping Linux I (UBUNTU)
\$ ping 192.168.157.10
- Ping Linux II (UBUNTU) (**self**)
\$ ping 192.168.157.11