



How to set up a a real-time PC in a virtual machine?



Steps to install a virtual machine, example based on Oracle® VM VirtualBox®:

Prerequisites:

You will need

- An installation of Oracle® VM VirtualBox®
- An ISO file of the LABCAR-RTPC software

1. Enabling Intel Virtualization Technology in the PC/notebook BIOS

If you are using an Intel Multicore System, it is necessary to enable Intel Virtualization Technology (Intel VT) in the BIOS in order to run a dual-core based virtual machine.

The necessary steps vary depending on the PC manufacturer; the general actions are as follows:

- Power off the PC/notebook.
- Power on and enter the BIOS setup (common keys are e.g. , <F10>, <F2>).
- Select Config → CPU and enable the features "Intel Virtualization Technology" and "Intel VT-d Feature".
- Save changes and leave the BIOS settings.
- Power off the computer completely and reboot.



2. Configuring the Host-only Network

- Start Oracle VM VirtualBox®.
- Select File \rightarrow Preferences.
- Select **Network** in the "Host-only Networks" tab.

🔗 VirtualBox - Pref	erences
🧕 General	Network
🧼 Input	NAT Networks
🎯 Update	VirtualBox Host-Only Ethernet Adapter
🌏 Language	
Display	
Network	
Extensions	
Proxy	
	OK Cancel <u>H</u> elp

- Add (if not already present) a new host-only network by clicking the "+" symbol on the right hand side.
- To configure the host-only network click the screwdriver icon on the right.
- Set the IPv4 address to "192.168.40.240" and the IPv4 network mask to "255.255.255.0".

6	P Host-only	Network Details	? 💌
	Adapter	DHCP Server	
		IPv4 Address:	192.168.40.240
	IP	v4 Network Mask:	255.255.0.0
		IPv6 Address:	
	IPv6 Netw	ork Mask Length:	
			OK Cancel

• To finish the configuration of the network adapter click OK twice.



3. <u>Creating the virtual machine</u>

 Select Machine → New. The Create Virtual Machine window is opened.

G Create	Virtual Machine
Name Please d type of d be used Name: Type: Version:	and operating system noose a descriptive name for the new virtual machine and select the operating system you intend to install on it. The name you choose will throughout VirtualBox to identify this machine. ETAS RTPC Linux Debian (64-bit)
	Expert Mode Next Cancel

- Name the machine and choose type and version as shown above.
- Click Next.
- Set the memory size to at least 1024 MB. .

-?
Create Virtual Machine
Memory size
Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.
The recommended memory size is 768 MB.
1024 🖈 MB
4 MB 10240 MB
Next Cancel

Click Next. .



2 💌
Create Virtual Machine
Hard disk
If you wish you can add a virtual hard disk to the new machine. You can either create a new hard disk file or select one from the list or from another location using the folder icon.
If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.
The recommended size of the hard disk is 8,00 GB .
Do not add a virtual hard disk
Oreate a virtual hard disk now
Use an existing virtual hard disk file
ETAS-RTPC V6.2.0-DEV.vdi (Normal, 80,00 GB)
Create Cancel

- Select "Create a virtual hard disk now".
- Click **Create**.
- Enter a name for the virtual hard drive and set its size to 80 GB.

		? ×
0	Create Virtual Hard Disk	
F	File location and size	
	Please type the name of the new virtual hard disk file into the box below or dick of folder icon to select a different folder to create the file in.	n the
[ETAS RTPC	
	Select the size of the virtual hard disk in megabytes. This size is the limit on the ar file data that a virtual machine will be able to store on the hard disk.	mount of
,		80 GB
4	4,00 MB 2,00 TB	
	Create	Cancel

• Click **Create**. The virtual machine is created.







Before starting the virtual machine and installing ETAS RTPC, the network setting of the guest have to be configured.

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- Select Machine \rightarrow Settings.
- Select "Network".
- For "Attached to:" select "Host-only Adapter".

🥝 ETAS-RTPC -	Settings ? 🔀
General	Network
🛒 System	Adapter 1 Adapter 2 Adapter 3 Adapter 4
Display	Enable Network Adapter
Storage	Attached to: Host-only Adapter
Þ Audio	Name: VirtualBox Host-Only Ethernet Adapter
P Network	
🚫 Serial Por	ts
🏈 USB	
Shared F	olders
📰 User Inte	face
	OK Cancel Help

• Click OK.



4. Installing the LABCAR-RTPC Software

• Select **Storage**.

🥝 ETAS-RTPC - Settin	ngs	? 🗙
🦲 General	Storage	
🛒 System	Storage Tree	Attributes
Display	Controller: IDE	Optical Drive: IDE Secondary Master 🔹 🕥
C Storage	Empty	Live CD/DVD
Storage	Controller: SATA	Information
Audio 📦	ETAS-RTPC.vdi	Type:
P Network		Location:
🚫 Serial Ports		Attached to:
DSB		
Shared Folder	5	
User Interface		
	S 🔁 🕹 🖨	
		OK Cancel Help

- Select the DVD icon below "Controller: IDE".
- In the "Attribute" field click the DVD icon.

Attributes Optical Drive:	IDE Secondary Master 🔻	<u>_</u>	
	Live CD/DVD		Choose a virtual CD/DVD disk file
Information			Host Drive 'G:'
Type:		~	
Size:		3	Remove disk from virtual drive
Location:			
Attached to:	-		

• Select the corresponding host drive and sure that the ETAS RTPC installation disk is inserted in your DVD drive.

or

- Select "Choose Virual Optical Disk File..." and choose the file in the file selector window.
- Click **OK**.
- In the main window select Machine → Start. The installation of ETAS RTPC is now carried out as on a real PC.
- After a final reboot of the virtual machine the realtime PC can be accessed from a web browser on the host using the address <u>http://192.168.40.14</u>





- 1.) The installation of the RTPC software itself is described in the ETAS RTPC User's Guide Chapter 2.3.1 Installing ETAS RTPC on the Real-Time PC.
- In case the web interface of the RTPC (<u>http://192.168.40.14</u>) is not accessible, please check the status of the network adapter of the virtual machine. The network adapter / cable has to be connected:

Network Settings
Connect Network Adapter
Adapter 1 (Host-only Adapter)
IP: 192.168.40.14
Cable: Connected
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