**Not attached**

A virtual network adapter is installed in a VM, but the network connection is missing, much like when you unplug the Ethernet network cable when using a physical network adapter. This mode can be useful for testing. For example, you can enable this network mode for a short time to emulate unplugging the cable. When you disable the *Not Attached* mode by switching to another network mode, the network connection becomes available again. You can also check whether a DHCP client obtains the IP address correctly, whether the appropriate application can resume downloading after link interruption or packet loss, and so on.

Instead of using the *Not Attached* network mode, you can use any other network mode without ticking the *Cable Connected* checkbox. You can tick/untick the checkbox when a VM is in the running state (see the screenshot above). Don’t forget to hit *OK* to apply changes in the VM network configuration.

**NAT**

This network mode is enabled for a virtual network adapter by default. A guest operating system on a VM can access hosts in a physical local area network (LAN) by using a virtual NAT (Network Address Translation) device. External networks, including the internet, are accessible from a guest OS. A guest machine is not accessible from a host machine, or from other machines in the network when the *NAT* mode is used for VirtualBox networking. This default network mode is sufficient for users who wish to use a VM just for internet access, for example.

The IP address of the VM network adapter is obtained via DHCP and the IP addresses of the network used in this network mode cannot be changed in the GUI. VirtualBox has a built-in DHCP server and NAT engine. A virtual NAT device uses the physical network adapter of the VirtualBox host as an external network interface. The default address of the virtual DHCP server used in the NAT mode is 10.0.2.2 (this is also the IP address of the default gateway for a VM). The network mask is 255.255.255.0.

If you configure the network adapters of two or more VMs to use the *NAT* mode, each VM will obtain the 10.0.2.15 IP address in its own isolated network behind a private virtual NAT device. The default gateway for each VM is 10.0.2.2. In VirtualBox IP addresses are not changed when the *NAT* mode is used, as you can see below:

### ****NAT Network****

This mode is similar to the NAT mode that you use for configuring a router. If you use the NAT Network mode for multiple virtual machines, they can communicate with each other via the network. The VMs can access other hosts in the physical network and can access external networks including the internet. Any machine from external networks as well as those from a physical network to which the host machine is connected cannot access the VMs configured to use the NAT Network mode (similarly to when you configure a router for internet access from your home network). You cannot access the guest machine from the host machine when using the NAT Network mode (unless you are configuring port forwarding in global VirtualBox network settings). A built-in VirtualBox NAT router uses a physical network interface controller of the VirtualBox host as an external network interface (as is the case for the NAT mode).