

Installation Guide

Allegro Network Multimeter Virtual Edition

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1. Important Information before Installation

The Allegro Virtual Edition is designed for 2 use cases. It can analyze pcap captures of unlimited sizes for forensic investigation or live traffic from virtual machines by a virtual Mirror Port or ERSPAN.

Be aware that an activated ring buffer can degrade the IO performance for all VMs. It is recommended to use one or many dedicated HDDs or SSDs for the ring buffer to prevent side effects to other VMs.

2. System Requirements

2.1 Hypervisor

The Allegro Virtual Edition supports all Virtualization Hypervisors that support 64bit x86 Linux virtualization. Allegro has tested the solution on:

- VMWare ESXi 6.7.0 or newer
- VMWare workstation (Windows, Linux)
- VMWare Fusion (Mac)
- VirtualBox (Windows, Linux, Mac)
- KVM (Linux)

This installation guide will focus on VMWare ESXi.

2.2 System Requirement of the Virtual Machine:

- x86 64bit Intel/AMD CPU with SSE4.2 support (since 2011)
- 4 CPU-Cores
- at least 2GB RAM for the In-Memory-DB, the more the better
- 20 GB free Disk space

3. Installation

3.1 Download VM Image

Download the newest VM image as a zip file from:

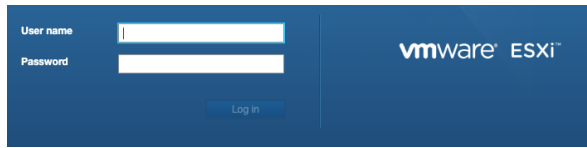
<https://support.allegro-packets.com/multimeter/vm-images/>

Please contact [Allegro Packets support](#) or your reseller for the password to the Allegro Virtual Edition installation zip archive.

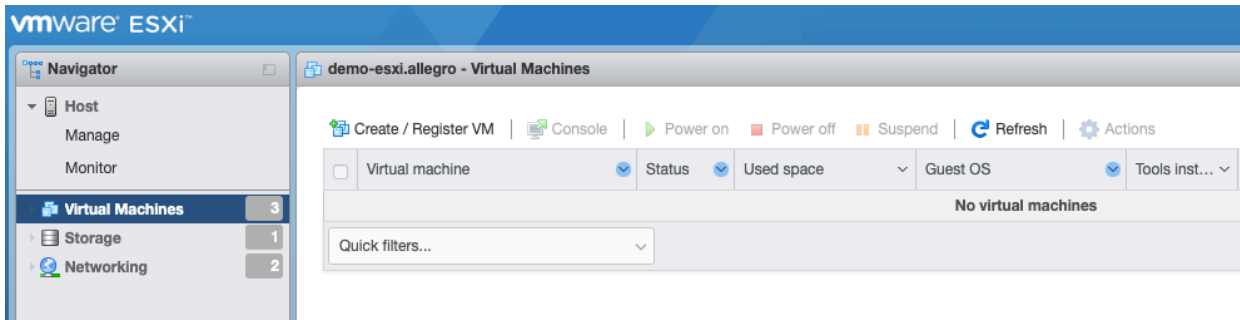
Extract the zip archive. It should contain the 3 files 'allegro-multimeter.ovf', 'allegro-multimeter.vmdk' and 'allegro-multimeter-virtualbox.ovf'.

3.2 OVF Deployment to VMWare ESXi

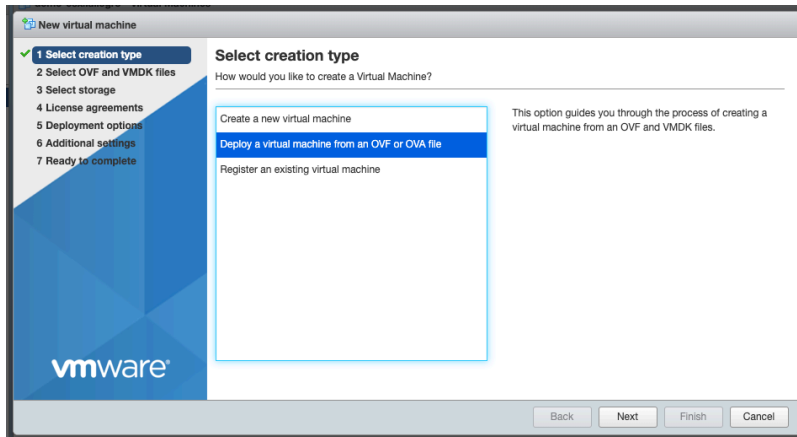
Log in to VMWare ESXi.



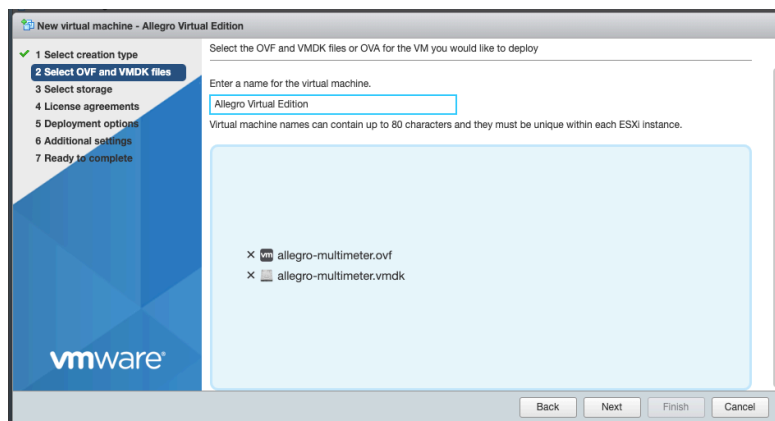
Once you have logged in, navigate to 'Virtual Machines'.



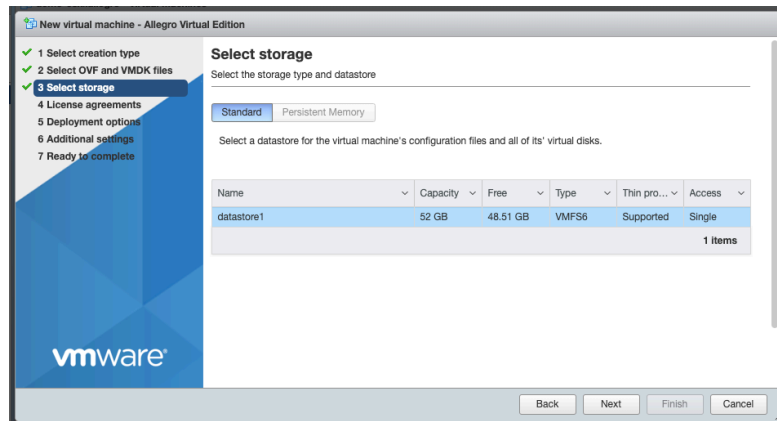
Create a new VM with 'Create / Register VM' and select the option 'Deploy a virtual machine from an OVF or OVA file'.



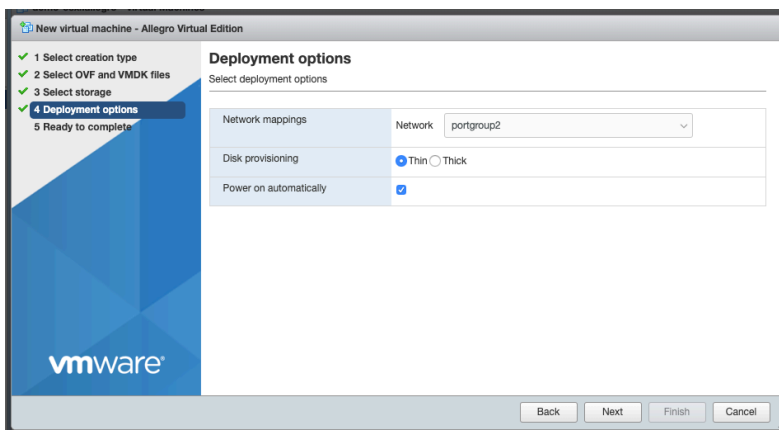
Press 'Next', use a preferred name for the Allegro and drag/drop the 2 files into the window and press 'Next'.



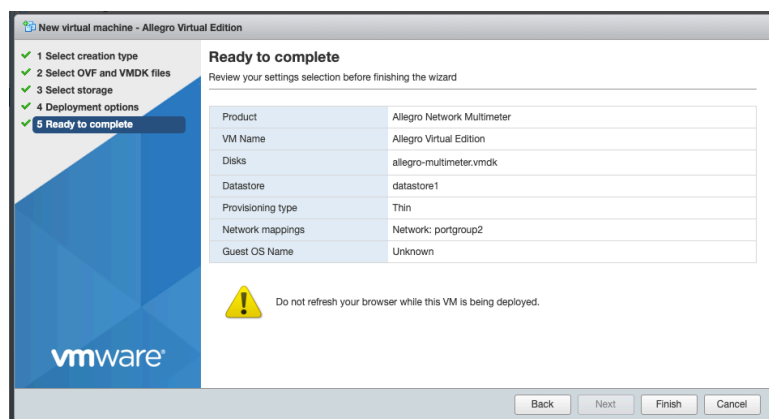
Select your data storage for the Allegro Virtual Edition. This storage will be used as the boot partition and to store the configuration of the Allegro Virtual Edition and does not require a high-speed disk. It will not store the packet ring buffer.



The Deployment options allow you to select the network mapping for the MGT port and the disk provisioning.



Please double-check all options in the next dialogue box and press Finish if everything is fine.

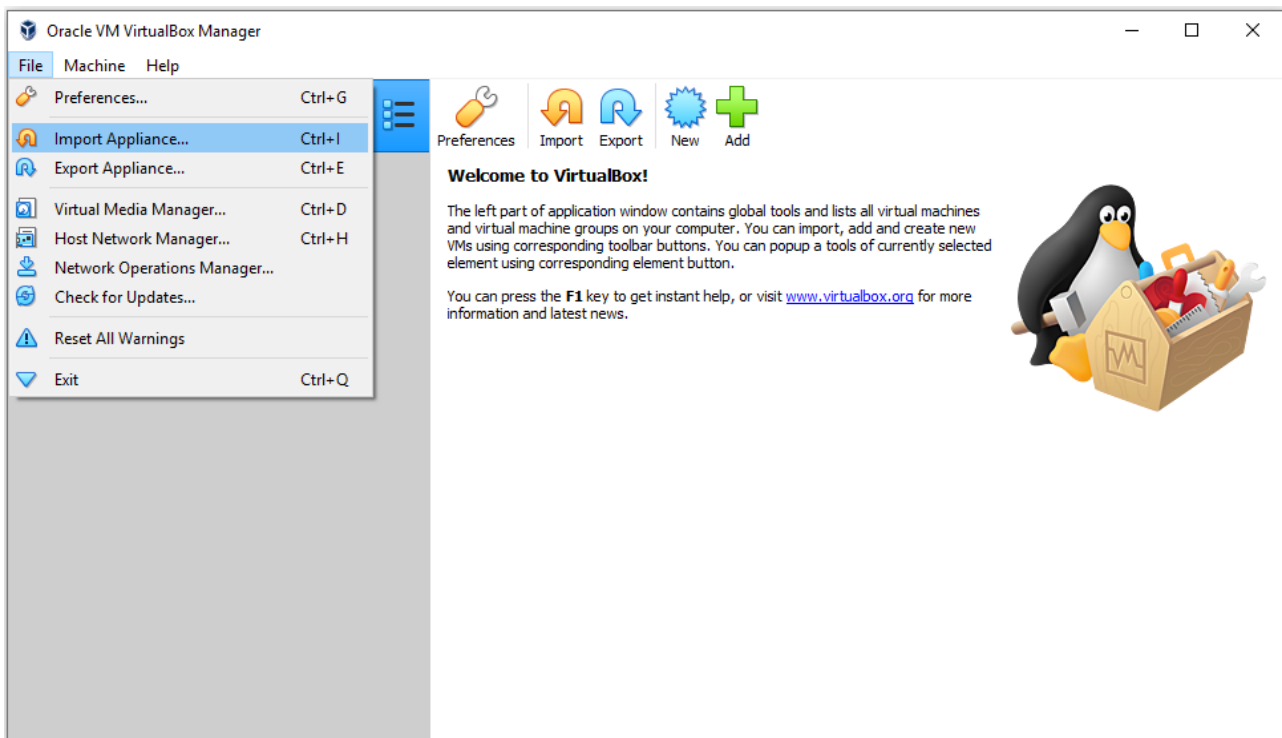


The upload and the import of the Allegro Virtual Edition will start. Please be patient until it is completed.

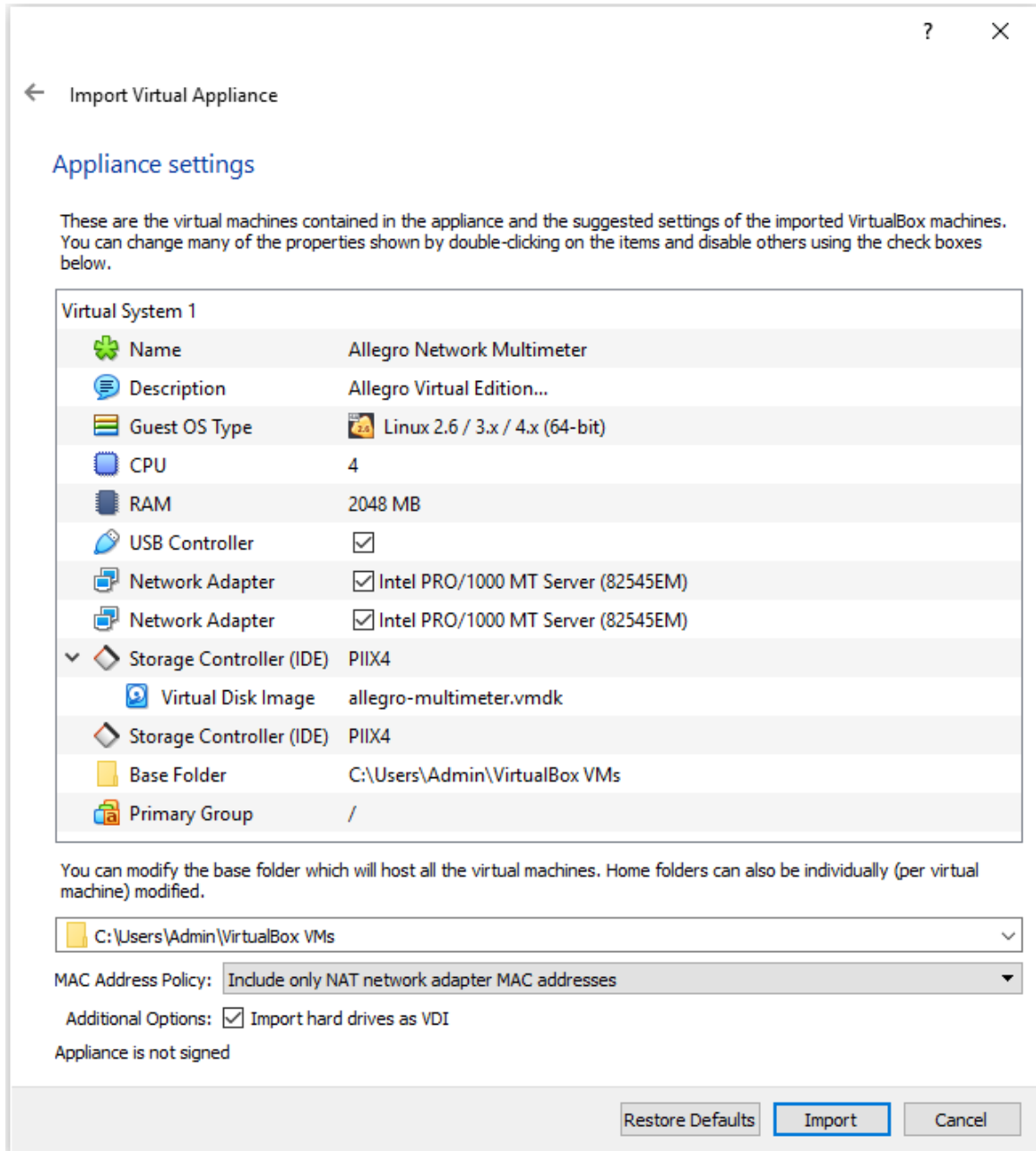
Task	Target	Initiator	Queued	Started	Result	Completed
Upload disk - allegro-multimeter.vmdk (1 of 1)	Allegro Virtual Edition	root	05/08/2019 11:43:34	05/08/2019 11:43:34		Running... 52 %
Import VApp	Resources	root	05/08/2019 11:43:26	05/08/2019 11:43:26		Running... 52 %

3.3 OVF Deployment to VirtualBox

Start VirtualBox and select from the menu 'File' → 'Import Appliance'.

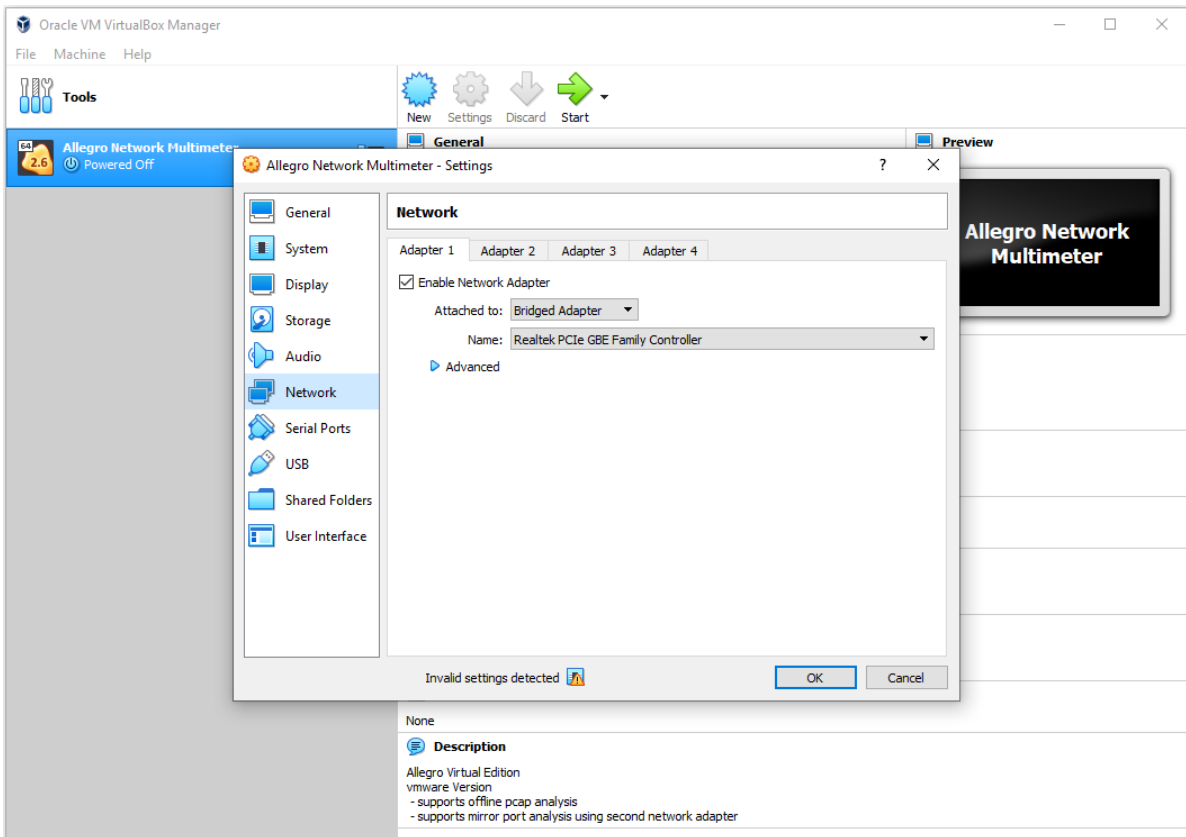


In the next dialogue box click on the directory button, navigate to the extracted zip archive and choose 'allegro-multimeter-virtualbox.ovf'. Click on 'Next'. A dialogue box with the virtual appliance settings will open.



Check the location of the virtual machine files. When finished click on 'Import'.

Now select the new virtual machine 'Allegro Network Multimeter'. Click on 'Settings' and select 'Network'. The Allegro Network Multimeter VirtualBox settings define by default two network adapters. One of them is used as the MGMT interface, the other is used as the measurement port. Make sure that for adapters 1 and 2, the correct name of the host network adapter is selected (e.g. for Windows: 'Realtek PCIe GBE Family Controller').

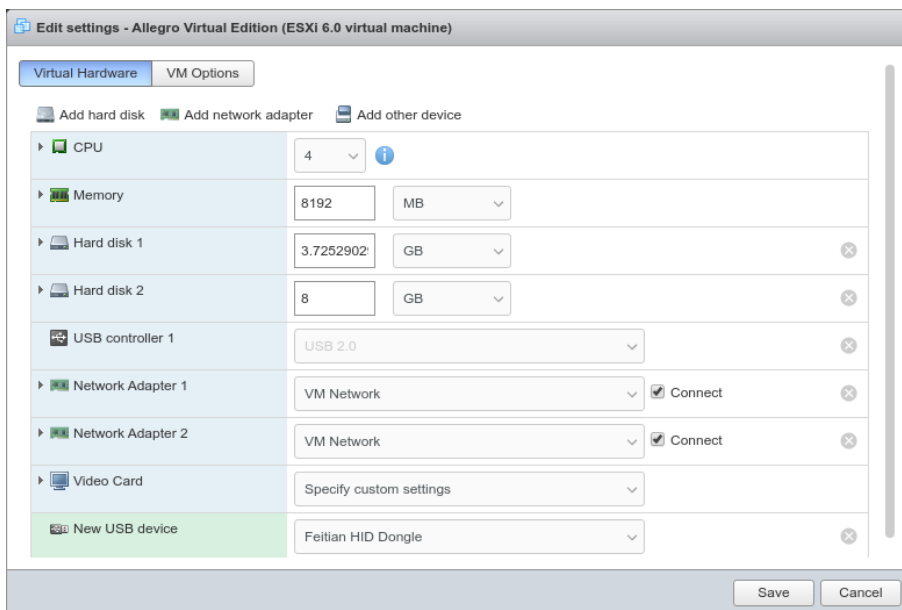


4. Install USB License Dongle

If the Allegro Virtual Edition is shipped with a USB License dongle, plug the dongle into an unused USB port of the VM host. The dongle must be connected to the virtual machine.

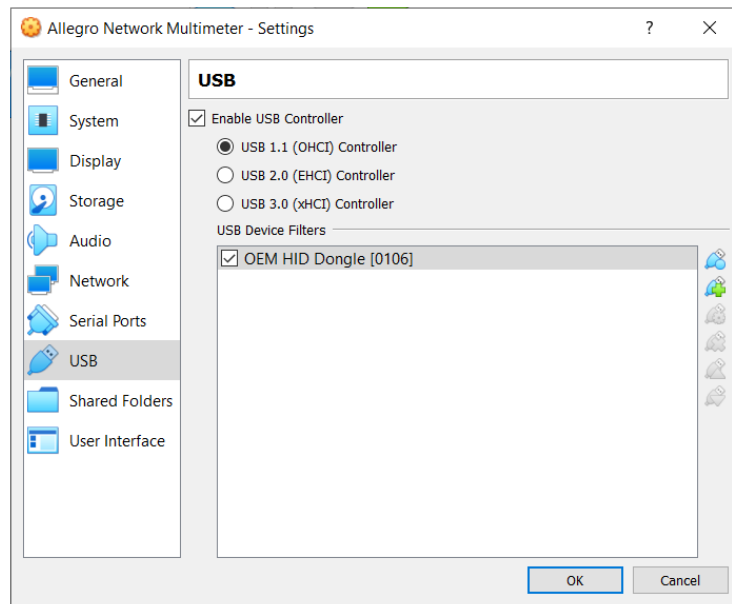
4.1 Vmware ESXi

When powered off, press 'Edit' in the Vmware ESXi host and click on 'Add other device'. Choose 'USB device'. A new entry at the bottom of the hardware list appears. Select 'Feitian HID Dongle' or similar.



4.2 VirtualBox

In the settings dialogue box please click on 'USB' and use the second button on the right to add an USB device. Select 'OEM HID Dongle' from the list.



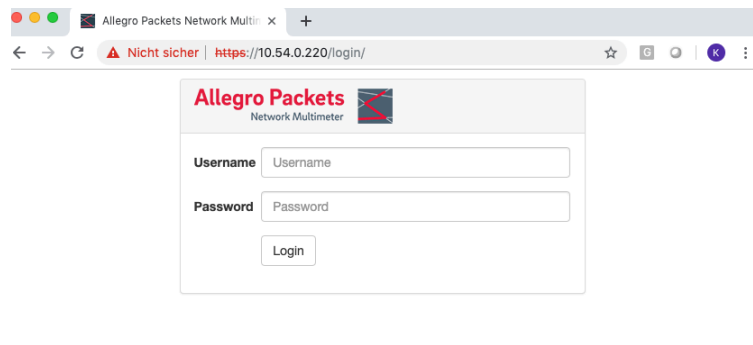
5. Powering on the Virtual Machine

Power on the virtual machine when the import has been successfully completed. The Allegro Virtual Edition will boot, prepare the installation and reboot once.

The VM will seek an IP Address via DHCP on the MGT port. Please check the console output for an assigned IP address.

```
Allegro Virtual Edition
Allegro Network Multimeter (2.3.0-501-g81f67e9) on allegro-MM-60d1
2019-05-08 09:52:05 +0000
management interfaces
  ethernet (connected)
    ipv4 address      10.54.0.220/24
    ipv4 gateway      10.54.0.254
    ipv4 dns           10.54.0.254
    ipv6 address      fe80::20c:29ff:fe82:5888/64
Please connect with http to the IP address.
If DNS resolution works, https://allegro-MM-60d1/ shall work.
For DHCP Server mode (default for WIFI), use https://allegro/
Press Shift+R for configuration reset and an automatic firmware update.
Make sure the Multimeter has access to the Internet via management interface.
Press Shift+S for a static IP on ethernet interface.
This setting will not be saved and is valid only until power-off.
```

You can now connect now to the IP address with your browser, in our case <https://10.54.0.220/>. The browser will show a certificate warning. Accept it to move to the login screen.



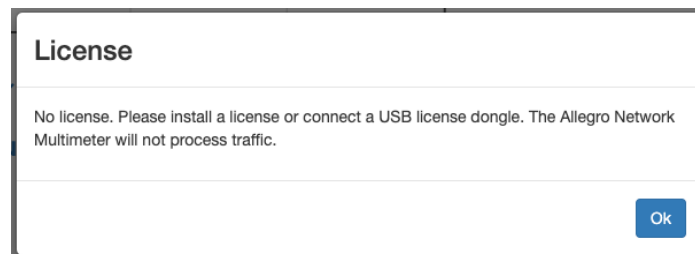
Use as credentials as user 'admin' and password 'allegro'.

6. License

If the Allegro Virtual Edition was shipped with an USB License dongle and was properly installed, the License is installed and the Allegro should work fine.

The serial number of the Allegro Virtual Edition would be e.g. 'dongle: 1234567890' and is displayed in the serial number box under 'Settings' → 'License upload'. If it is not shown there although the dongle has been installed properly, please contact Allegro Packets support.

If the Allegro Virtual Edition was not shipped with an USB License dongle, follow the following steps. In the web interface a warning is shown that the Allegro Virtual Edition does not yet have a license.



Navigate to 'Settings' → 'License upload' and send the system serial number to testlicense@allegro-packets.com.

Allegro Packets will issue a test License that can be installed by the 'Upload new License button'.

Once the test License is applied, it will show the License details similar to this output:

License details

License State	valid
Bandwidth	unlimited
Memory	1024 GB
1G Interfaces	1
License Expiration	2019-06-01

The VM is now ready to process pcap files.

7. Pcap Processing

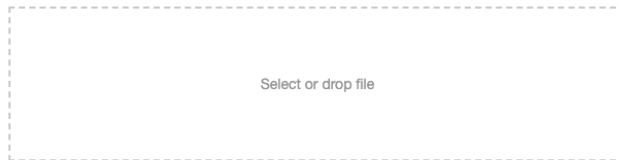
To process pcap files navigate to 'Generic' → 'Pcap analysis'

PCAP analysis

? Manual

The pcap processing mode allows to upload and analyze a pcap file instead of the ethernet ports. It uses the timestamps of the packets in the pcap file instead of the current time. The pcap file will not be stored on disk. If selected in the analyze pcap dialog, packets of the pcap file will be stored in the packet ringbuffer.

Start new PCAP processing



Analyze pcap

Status

No upload in progress

Drop a pcap file onto the web page and press 'Analyze pcap'. The Allegro VM will process this pcap in real-time when it is uploaded to the VM.

You can begin browsing the pcap immediately after setup.

8. Setup Storage for the Packet Ring Buffer

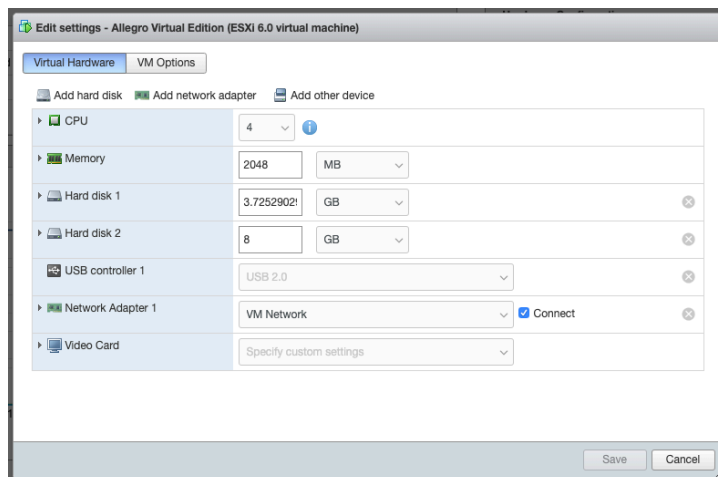
By default, the Allegro Virtual Edition does not capture the packets to the ring buffer and does not allow the extraction of pcap files.

WARNING: Since the ring buffer can cause high disk loads when recording packets to disk, it is recommended to use dedicated HDDs or SSDs for the ring buffer, even when attached by USB3. If the ring buffer is used on the same disk as other critical processes such as a database, the Allegro Virtual Edition can reduce the disk performance.

You need to power off the Allegro in order to attach a new HDD.

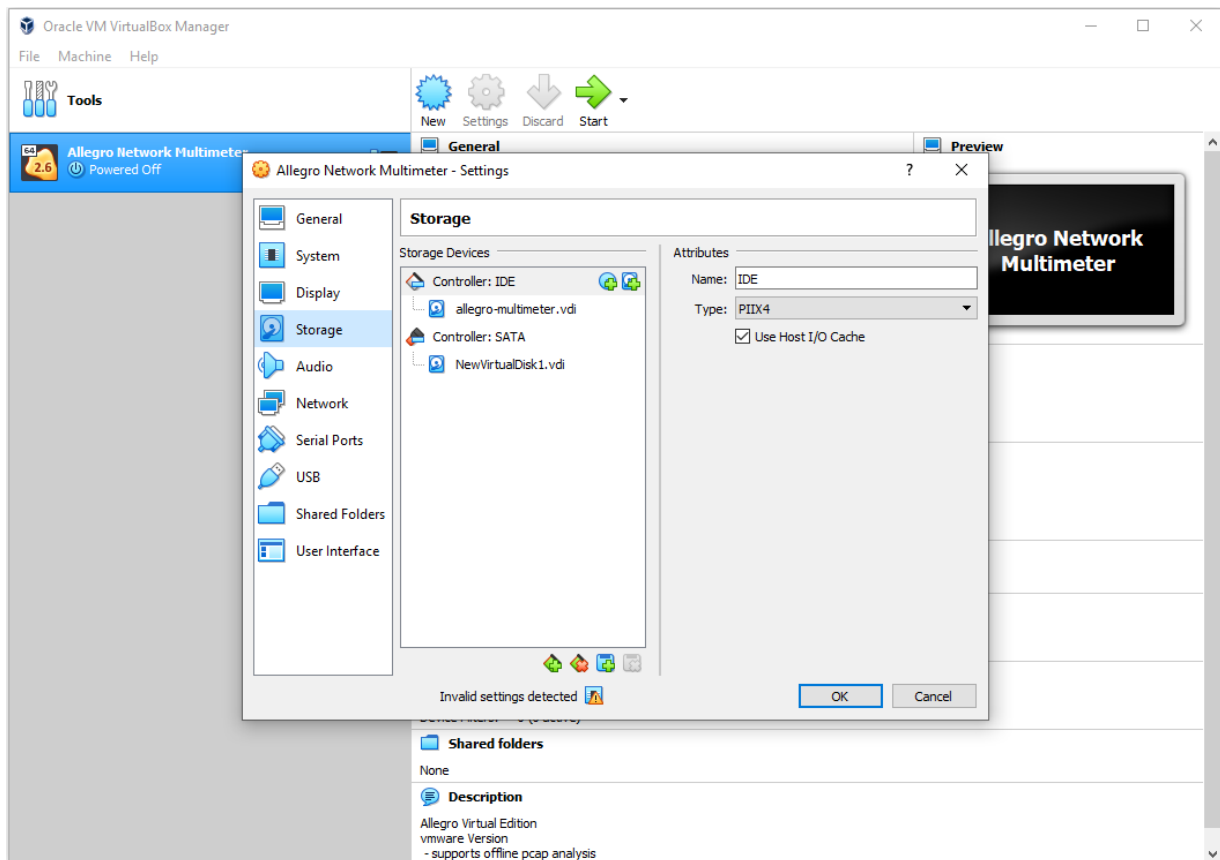
8.1 Vmware ESXi

When powered off, press 'Edit' in the Vmware ESXi host and add a new HDD.



8.2 VirtualBox

Please go to the 'Storage' page. Add a virtual SATA controller and a hard disk attached to it. Choose either an existing one or create a new one.



9. Advanced Configuration

9.1 Management Interface Configuration

You can configure the management interfaces by accessing the web interface at 'Settings' → 'Management interfaces'. The available options are described in the online manual which can be accessed via the web interface.

9.2 Configuration Reset and Firmware Update

The **Configuration Reset** restores the configuration to the factory settings.

1. Web interface: Go to menu 'Settings' → 'Administration' and click on 'Reset system configuration'. All settings including the network configuration will be reset to factory default.
2. Boot menu: Follow the instruction in the section **Factory Reset**.
3. Keyboard: Attach a keyboard to a USB port, a monitor to one of the HDMI ports and press 'Shift+R'. After the successful reset and update, the Allegro Network Multimeter will switch off. Otherwise, it will stay powered on. Check for error messages on the monitor.

9.3 Firmware Update Notification

Update information via email

With each release, Allegro Packets will send you an email with release notes and a link to download the update. If you want to be added to this mailing list, please use the support form at allegro-packets.com/support and include your Allegro serial number ('Info' → 'System Info' → 'System ID').

Using the Allegro web interface

Start your Allegro and click 'Settings' on the left side of the menu and then 'Firmware updates'. Click on 'Check for new firmware' and the Allegro will tell you if a new version is available for download. If so, you can choose to download it directly to the device. In addition, this page provides an overview of all versions available. To start the new version, click on 'Activate'.

9.4 Factory Reset

The Factory reset will clear the entire system installation and restore the firmware to the version that was originally shipped with the Allegro Network Multimeter.

- Power on the Allegro Virtual Edition.
- After initialization a boot menu appears. Select 'Factory reset' and press Enter or select 'Configuration reset' to reset the configuration settings only while keeping the current firmware installation.
- The Allegro Virtual Edition will boot, reset everything to Factory settings, and reboot again.
- The Allegro Virtual Edition is now reset to Factory settings.

10. Manual

The device manual can be accessed from the web interface. Each web section contains a button to access context-specific documentation, the complete manual can be opened by clicking on the 'Manual' link in the menu.

Getting help:

If you have any questions regarding the Allegro Network Multimeter, please feel free to contact us:
allegro-packet.com/support.