

# Quickstart

*with F&S Development Machine*

Version 1.4  
(2020-05-04)



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# About This Document

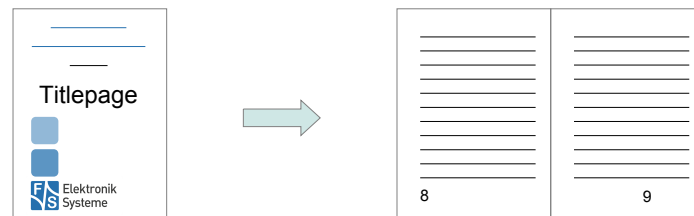
This document describes how to configure and setup the F&S Development Machine with virtual Box. The F&S Development Machine is configured for the following architectures fsimx6, fsimx6sx, fsimx6ul and fsimx7ulp.

## Remark

The version number on the title page of this document is the version of the document. It is not related to the version number of any software release. The latest version of this document can always be found at <http://www.fs-net.de>.

## How to Print This Document

This document is designed to be printed double-sided (front and back) on A4 paper. If you want to read it with a PDF reader program, you should use a two-page layout where the title page is an extra single page. The settings are correct if the page numbers are at the outside of the pages, even pages on the left and odd pages on the right side. If it is reversed, then the title page is handled wrongly and is part of the first double-page instead of a single page.



## Typographical Conventions

We use different fonts and highlighting to emphasize the context of special terms:

File names

### *Menu entries*

```
Board input/output
```

Program code

```
PC input/output
```

Listings

```
Generic input/output
```

Variables



# History

Date	V	Platform	A,M,R	Chapter	Description	Au
2017-01-01	1.0	Linux	A	All	Initial document generation	PH
2017-04-10	1.1	Linux	M	All	Modify different chapters because of reworking the user tool	PH
2017-05-05	1.2	Linux	M	All	Made some small changes	PH
2019-12-10	1.3	Linux	M	All	Setup document for Fedora 27	PJ
2020-05-04	1.4	Linux	M	All	Add new layout for document	PJ

V        Version  
A,M,R    Added, Modified, Removed  
Au        Author





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# 1 Welcome



## What's it all about?

"F&S Development Machine – Fedora 27" is a VirtualBox Appliance based on Fedora 27 provided by F&S.

It contains the installed Board Support Packages for fsimx6, fsimx6sx and fsimx6ul. The F&S toolchain is installed, the source code is extracted and ready to run. System packages that are needed are installed too.

## Why should I use it?

Because it saves time. A lot of configuration is already done. Compilation has been tested and is working out of the box. Missing packages are installed etc.. Just a few points that belong to your decision can't be done beforehand. For example if you want to have 'your favorite IDE'. By default Qt Creator, vim, emacs, and pluma are preinstalled. Besides that we try to keep the image as small as possible.

## When should I not use it?

There are just two cases not to use this virtual machine. First when you are going for a native development machine. Second when you absolutely want to go with 'your favorite distribution' and it's not Fedora.



Import the Appliance

## 2 Import the Appliance

Let's import our new virtual machine. If you haven't downloaded yet log in at our website <https://www.fs-net.de/> and download F\_S\_Development\_Machine-Fedora\_27\_V1.X.ova. Open your VirtualBox Manager and click:

File → Import Appliance

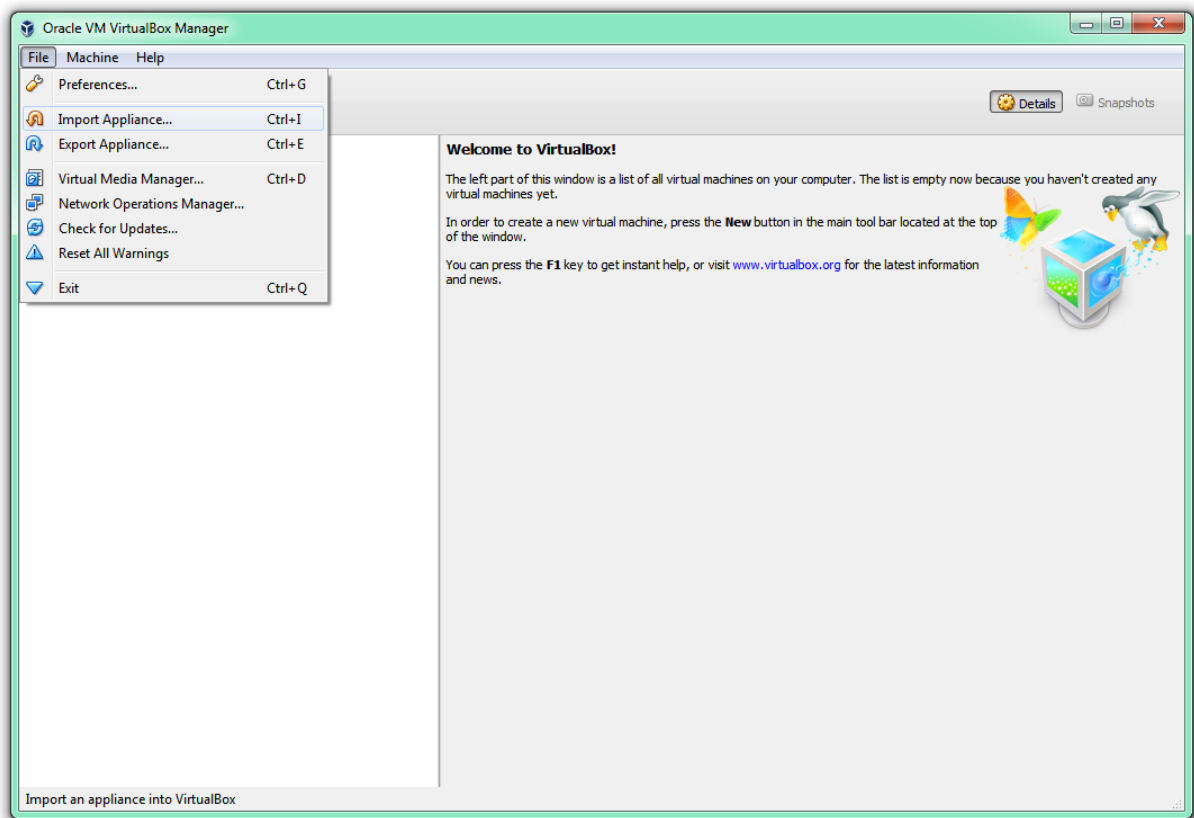


Figure 1: Import the Appliance

Select your downloaded F\_S\_Development\_Machine-Fedora\_27\_V1.X.ova file in the dialog and click next.

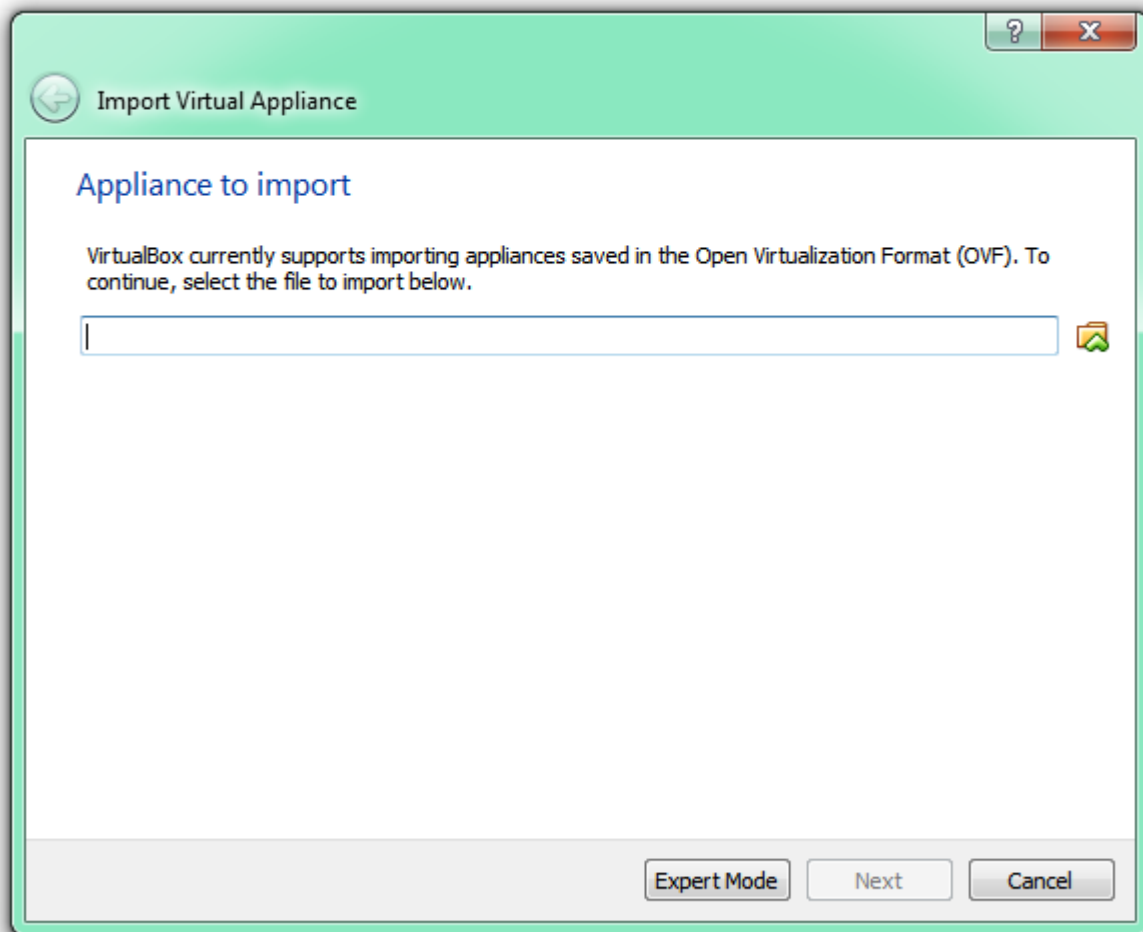


Figure 2: Choose the \*.ova file

When you have done this you can see all the details of the virtual machine like name, version and the hardware configuration. First check if the hardware settings for CPU and RAM correspond to your needs and to the performance of your host machine. Second you can adjust the name if you have imported an appliance with this name before or if you want to use another name.

## Import the Appliance

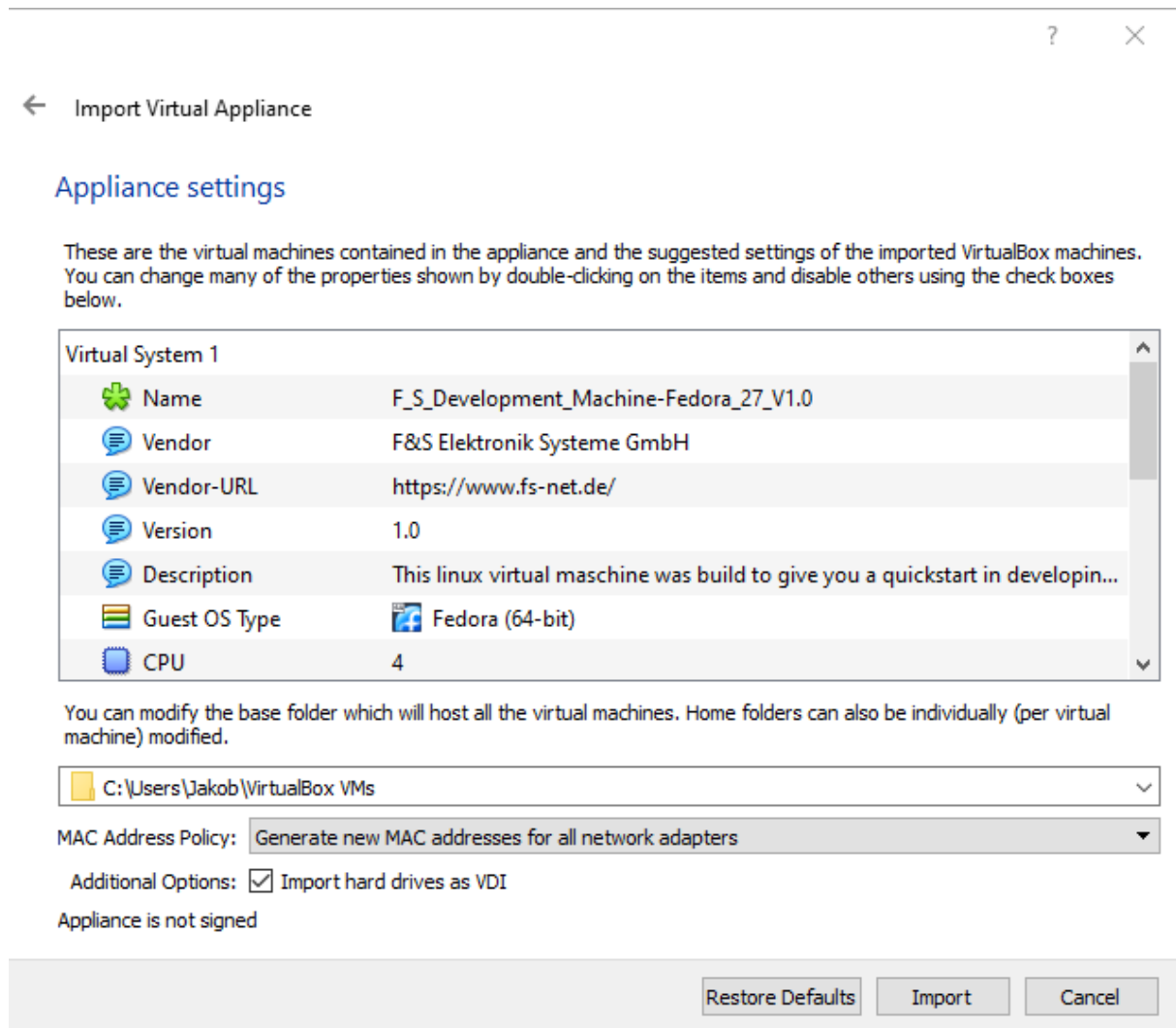


Figure 3: Adjust appliance settings

Don't forget to Change the MAC Address Policy to *Generate new MAC addresses for all network adapters*.

Now there is nothing left except for clicking on `Import`. Depending on your machine it will take about 10 minutes.

### Note:

After import of the appliance check the system configuration and if necessary customize it, e.g. virtual CPU's, RAM, network settings ...

## 3 Using the Virtual Machine

### 3.1 Boot your VM

After importing start your virtual machine by selecting it on the left and clicking on Show.

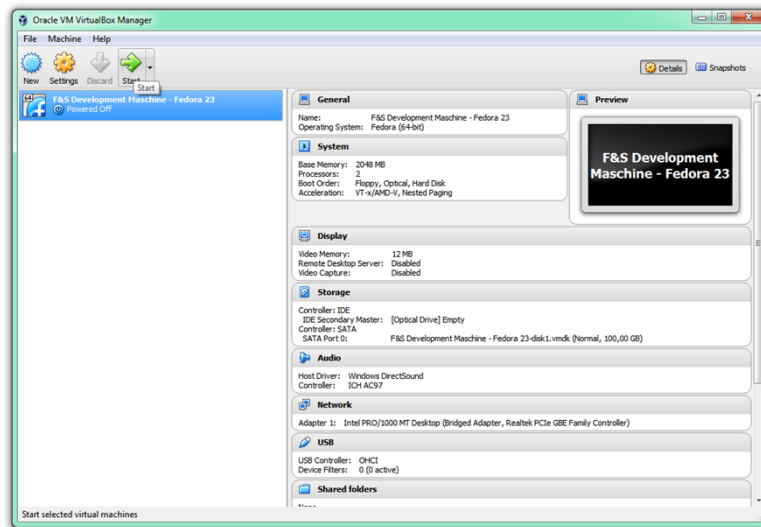


Figure 4: Boot your VM

### 3.2 Login

After boot you will be asked for the login. Use the user `developer` and log in with password `developer`.

## Using the Virtual Machine

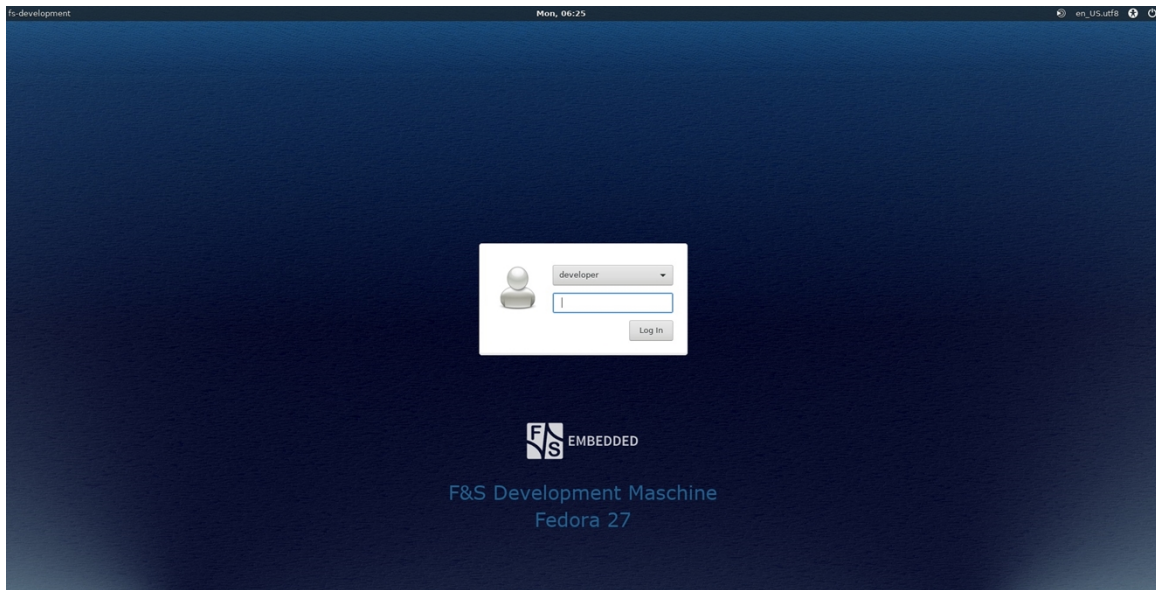


Figure 5: Login with password developer

### 3.3 Directory Structure

The `fsimx6`, `fsimx6sx`, `fsimx6ul` and `fsimx7ulp` releases are located in the home directory of `developer`. There are also the two FreeRTOS releases for `fsimx6sx` and `fsimx7ulp` located.

Inside the releases you will find, documentation, binaries, source code etc.. Links to the releases are on the desktop too.

If you want to build the system please take a look at the “LinuxOnFSBoards\_eng.pdf” document in the `docs` folder of your preferred release.

#### Note:

The release `fsimx6-B2019.08` needs the `fs-toolchain-7.4-armv7ahf`, the newer releases `fsimx6ul-B2019.11` and `fsimx6sx-B2019.11` needs `fs-toolchain-8.3-armv7ahf`.

The default toolchain is `fs-toolchain-8.3-armv7ahf`.

You can switch the toolchain by open a terminal and execute “`settoolchain`”. Then you can select your Toolchain.

### 3.4 TFTP Server

There is a TFTP Server that starts automatically when booting. Simply lay your files in the `/tftpboot/` folder.

### **3.5 NFS Server**

An NFS Server is starting automatically when booting. It uses the directories `/download` and `/rootfs`. You can put your files there or mount a root file system image as loop back device. Please consult the 'First Steps' manual for detailed information.

### **3.6 Keyboard Layout**

You can change your keyboard layout in the top panel on the right. By default it says `en` here.

### **3.7 Guest Addition**

The Guest Addition is already installed on the virtual machine. Features like shared folder or a shared clipboard can be activated in the settings when the virtual machine is not running.

**Note:**

The Guest Addition depends on the version of VirtualBox Manger. So maybe you have to install a new version of Guest Addition.



## 4 Appendix

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## Important Notice

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