

NMRProcFlow Installation Guide

This document describes how to install a virtual machine embedding the NMRProcFlow software on Oracle VM VirtualBox

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1- Virtual Machine (VM)

Characteristics of the NMRProcFlow Virtual Machine

- Distribution: CentOS 7.9 (Kernel 3.10)
- Memory: 4 Go (this parameter value can be modified in your virtualization software)
- 4 logical cores (this parameter value can be modified in your virtualization software)
- Thin provisioned system disk of 8 Go
- Network interface: NAT
- Docker CE 20.10.7
- Warning: Keyboard is AZERTY by default
 - After logging, the '**loadkeys us/loadkeys fr**' commands allow you respectively to switch to a QWERTY/AZERTY keyboard
- Default '*root*' password: *tomtom* (*to;to; if you have a QWERTY keyboard*)

2-System requirements

The installation and functionalities of the VM were successfully implemented based on the following items:

- Host machine under Windows 10 Proc (64bits)
- "Virtualization Technology" activated in the BIOS
- Host machine with a minimum of 4 Go RAM and 2 physical cores
- Host machine with a minimum of 20 Go disk free space
- You need to have Administrator privileges on the host machine
- Oracle VM VirtualBox 6.1.22

Other configurations may actually work well (i.e. with updated versions of the various elements or with Mac OS 10.11) but we cannot guarantee that the installation will run smoothly.





3- Disable the Hyper-V feature (Windows 10 Pro only)

On Windows 10 Pro, you have to disable the Hyper-V feature otherwise the virtual machine platforms do not work in 64-bit mode. Proceed as follow:



See

https://ugetfix.com/ask/how-to-disable-hyper-v-in-windows-10/ https://www.poweronplatforms.com/enable-disable-hyper-v-windows-10-8/



4- Virtualization enabled

You need to make sure that your PC supports virtualization. To do this, click on an area without an icon in the taskbar, and with the right mouse click, select "Task Manager".



You should normally see the information about the virtualization, and whether or not it is enabled. If this is not the case, then you should check with your hardware vendor for information on how to enable virtualization at the BIOS level. If not, go and take a look at https://2nwiki.2n.cz/pages/viewpage.action?pageld=75202968.



5- Installation procedures

There are two ways to proceed with the installation of the virtual machine containing NMRProcFlow software.

- 1. The first approach uses scripts, which further automates the installation.
- 2. The second approach is more manual, i.e. you have to perform the different steps yourself.

It is advisable to proceed according to the first approach. If something doesn't work properly, then you have to follow the second approach in order to see what went wrong with the first approach.

Before installation

Whichever approach you choose you must first download the latest version of the virtual machine which can be retrieved at:

https://nmrprocflow.org/themes/ova/npflow_vbox_vdi_x64.7z

Download the zipped virtual disk file (VDI - 7z) then unzip it in your workspace. To unzip, install first the 7zip tool (<u>https://www.7-zip.org/download.html</u>).

After unzipping the 7z file, you should have 4 files as shown below:



Warning: It is to be noted that these files should not be removed after the installation. So, you should take care to save it on a safe place on your disk.

Then proceed with the actual installation according to the chosen approach.

6- Automated installation

6.1- Creation of the Virtual Machine

To install the virtual machine, click on 'npflow_createVM.bat'.

NMRProcFlow – version 1.4		June 2021
npflow-dist	 busybox.exe npflow_createVM.bat npflow_startVM.bat npflow_vbox_vdi_x64.vdi 	run

If '*Windows Defender*' is active, you should normally see a screen telling you that the script in question may be dangerous. To run it anyway (that's the goal), you have to click on '*More info*', then '*Run anyway*' as shown below:



Then, a window will open.



Once the creation is finished, just press any key and the window will close.

6.2- Start of the Virtual Machine

To start the virtual machine, just click on 'npflow_startVM.bat'. Then a window opens asking you to wait until the virtual machine is fully started.



Once the virtual machine is started, just press any key and the window will close. Then Go to section "Using NMRProcFlow".

Note1: If the virtual machine does not start correctly or fails due to an error, you may be forced to restart your PC (Welcome to the MS Windows world), then after restarting, try again. It is very likely that the problem will be solved.

Note2: A good advice would be to create a shortcut of the 'npflow_startVM.bat' file and to move it to your desktop. In this way, you could easily start the application.



7- Creation of the VM within Oracle VM VirtualBox

You need to create a virtual machine directly in VirtualBox, except the virtual disk. The latter, already created (i.e. included in the compressed archive that obviously you should to unzip), will have to be connected to the virtual machine newly created. Some parameters will have to be adjusted and then normally, everything should work well.

• Creation of the new virtual machine:

Oracle VM VirtualBox Fichier Machine Aide	Gestionnaire de machines
vele Configuration of	ublier Démarrer, Bienvenue dans VirtualBox ! La partie gauche de cette fenêtre affiche la liste des machines virtuelles de votre ordinateur. Cette liste es Pour créer une nouvelle machine virtuelle cliquez sur le bouton Créer en haut de cette liste. 2 2 1 le site de VirtualBox www.virtualbox.org (en a
	Crée une machine virtuelle Nom et système d'exploitation Veuillez choisir un nom pour la nouvelle machine virtuelle et sélectionner le type de système d'exploitation que vous envisagez d'y installer. Le nom que vous choisirez sera repris au travers de VirtualBox pour identifier cette machine. Nom : npflow
	Type : Linux Version : Red Hat (64-bit)
	Mode expert Suivant Annuler

Choose 'Linux' as Type, and 'Red Hat (64-bit)' as Version. Of course, your computer has to be a 64-bit OS. Then, click to the 'Continue' button.



NMRProcFlow – version 1.4

G Crée une machine virtu	elle
Taille de la mémoin Choisissez la quantité de m La quantité recommandée	e émoire vive en méga-octets alloués à la machine virtuelle. est de 1024 MO. 2048 👻 Mio
4 Mio	16384 Mio
	Suivant Annuler

Choose at least **1024Mo**; but **2048Mo** is better.

Crée une machine virtuelle Crée une machine virtuelle Disque dur SI vous le souhaitez, vous pouvez ajouter un disque dur virtuel à la nouvelle machine. Vous pouvez soit créer un nouveau disque, soit en choisir un de la liste ou d'un autre emplacement en utilisant licône dossier. Si vous avez besoin d'une configuration de stockage plus complexe, vous pouvez sauter cette étape et modifier les réglages de la machine une fois celle-ci crée. La taille du disque dur recommandée est de 8.00 Gio. Ne pas ajouter de disque dur virtuel Créer un disque dur virtuel	
Vide Créer Annuler	
Choisissez un fichier de disque dur virtuel Choisissez un fichie	alMach 🔎
Viganset Induvedu dösster	Sélectionn un fichier afficher.
Workdir • • • • • • • • • • • • • • • • • • •	ue dur v 🔻

Instead of creating a new virtual disk, it is at this step that we have to connect the virtual disk embedded in the ZIP file (or 7z). Browse your file tree on your disk looking for where you've unpacked the virtual disk (i.e. the downloaded file).





Then, click to the 'Create' button.

• Adjusting some parameters:

Now, the VM is created. We have to adjust some parameters concerning the network configuration. Proceed as shown below:

Oracle VM VirtualBox - Gestionnaire de machines	the or Did to Kinke or The Prove Col	
Fichier Machine Aide		😧 Détails 🞯 Instantanés
Affow © Exerte 1 Solution - Paramètre	Systeme Control Memore vive : 2048 Mo. Ordre d'amorpage : Disquette, Optique, Disque dur	npflow
2 C C C C C C C C C C C C C	Réseau 3 Carte 1 Carte 2 Carte 3 Carte 4 ♥ Activer la carte réseau 4 Mode d'accès réseau NAT Nom : 5 ♥ ♀ Avancé Type de carte : Intel PRO/1000 MT Desktop (82540EM) ♥ Mode Promiscuité : Refuser Adresse MAC : 080027/BCFCB € ♥ Câble branché Redirection de ports 6	
	OK Cancel	



Nom	Protocole	IP hôte	Port hôte	IP invité	Port invité		
Rule 1	тср	127.0.0.1	8080		80	<u>ه</u>	Tw
Rule 2	TCP	127.0.0.1	2222		22		
2	Fill as ind	licated					

• Start your virtual machine

Fichier Machine Aide		
Nouvelle Configuration Oublier	Démarrer	Détails 💿 Instantanés
npflow-docker-64bit	📃 Général	Prévisualisation
	Nom : npflow-docker-64bit Système d'exploitation : Red Hat (64-bit)	
	Système	
	Mémoire vive : 2048 Mo	npflow-docker-64bit
	Ordre d'avrogage : Disquette, Optique, Disque dur Accélération : VT-x/AMD-V, Pagination imbriquée, PAE/NX , Paravirtualisation KVM	
	I Affichage	
	Mémoire vidéo : 12 Mo Serveur bureau distant : Désactivé Capture vidéo: Désactivée	
	Stockage	
	Contrôleur : SATA Controller Contrôleur : SCSI Controller	# (humored 170,000 cm)



8- Using NMRProcFlow

• Once the VM is started, the VM console will appear as shown below:

Carlow [En fonction] - Oracle VM VirtualBox	
Fichier Machine Écran Entrée Périphériques Aide	
waiting	
MMKVIEW GOCKER IMAGE: CHECK ANG RUN ha140780a2920d0ah1de06acedc37e19a931cddd91f85h5c1c4eaeae97296744	
docker.io/nmrprocflow/nmrview latest 2697b8953170	2 weeks
ago 562.9 MB	
NMRspec docker image: check and run	
08b384839360e0469e7cec7809c1356272b2667da7107b65420ac4e88a0f2833	4 1
aocker.10/nmrprocifow/nmrspec latest foafafillesc	4 days a
Purge sessions with no activities since 3 days Before: 0 OK	
Starting shiny-server:OK	
Starting apache2 server	
SSH Connection :	
ssh -p 2222 root@127.0.0.1	
UKL Application (in your Internet Browser)	
httn://localhost:8080/nnflow/	
	_
	CTRL DROITE

- **Note 1**: After starting, you should always wait for the URL application to appear in the console so that the various processes have time to start.
- Note 2: To switch between the VirtualBox linux console and the Windows environment, press the right [Crtl] key.
- Start your web browser to access the NMRProcFlow interface with the following URL (*JavaScript* functionalities must be enabled within your web browser).
 - http://localhost:8080/npflow/
- You will see the NMRProcFlow interface started:





- Note 1: Sometimes you have to (re) try one minute after the launch, because the connection is not yet established. Just a problem of connection search a bit long (depending on your configuration).
- Note 2: When starting the interface, NMRProcFlow will create a new work session and its identifier will appear in the URL box of your web browser. You can bookmark the corresponding URL of your work session so that you could retrieve your session in the same state as you had left it, even if you had previously closed your web browser and/or restarted your VM or your PC.
- Note 3: The accumulation of work sessions can rapidly saturate the disk space of your VM. In order to avoid this, it is therefore necessary to clean periodically. A cleaning process has been implemented to purge sessions without activities after 3 days.





9- Stop NMRProcFlow

To stop properly the virtual machine, you have to click on 'File' in the menu on the top of the window application, as shown below:



Select "Close", then "Send the shutdown signal" then click on the "OK" button. In this way, the virtual machine will properly close both services and applications and especially NMRProcFlow.