



# The vEMan Compendium

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# 1. Introduction & Trademarks

vEMan - [v]Mware [E]SX [Man]ager is a tool which helps you managing ESX servers natively from within your Linux desktop without the need to use Windows vSphere® anymore!

It is based on the VMware CLI/SDK and/or other free great user-scripts but using a GUI on top.

This manual is a guide for Administrators using vEMan in the hope to be useful but without any guarantee to be full complete and failure free.

When not explicitly specified otherwise then in the context of this document „ESX“ always means: “ESX”, “ESXi”, “vSphere”.

vEMan is not published or pronounced by VMware Inc. vEMan is an Open Source project from a private person without any warranty or claim to bother VMware Inc. VMware, vSphere, ESX/ESXi, vCenter are trademarks by VMware Inc.

vEMan is and stays Open Source. I believe in OSS.

One last word for the introduction:

This guide is maybe not as current as e.g. the README, INSTALL or UPGRADE file coming with each version of vEMan. This guide provides some basic steps and more or less generic ones so if you struggle somewhere also check the directory ' docs/ ' and the above files within the vEMan installation directory.

## 2. Reasons for using vEMan

vEMan is obviously the best tool for you if:

- you have ESX(i) v3.x or 4.x
- you have vSphere v5.x – but haven't a vCenter or don't like the web-client in there
- you (nevertheless) want a native Linux vSphere client



### 3. Why you may not(!) want to use vEMan

If you use vCenter 5.x or above you could check if the integrated web-client is enough for you: <http://kb.vmware.com/kb/2005377>

But keep in mind that there are **caveats**: Not all features are available in the web client **AND** it can connect to vCenters only (see: <http://kb.vmware.com/kb/1006095>)

### 4. Requirements

If you still ;-) want/need vEMan check that you can met the following requirements:

1. VMware Perl Toolkit SDK installed and executable (\*)
2. VMware ovftool installed and executable (\*)

Besides the VMware requirements you need to have some standard Linux tools installed to get vEMan running:

3. netcat, yad (\*), a vncviewer (like tightvncviewer or similar), openssl, bash, grep, sed, python (v2.5 or higher)

(\*) Check the *README* file within the vEMan installation directory to find out how to download and install those tools.

*At the time of writing the recommended ovftool v2.0 was removed by VMware for an unknown reason – obviously because of the new v3 version - but if you do NOT want to deploy/import existing OVF/VMX appliances you can simply install ovftool v3 or higher. Check the README for up-to-date information about that.*

### 5. Setup / Installation

Installation is done with the following easy steps. This guide is very basic – I recommend that you read the file *INSTALL* coming with vEMan. After unpacking vEMan you find it directly there.

Here are the basics:



1. Read the README. Install the requirements described there.
2. Extract vEMan\_vX.x.x.tgz to e.g. /tmp or another temporary directory
3. Start vEMan installer ( simply execute ./vEMan or ./vEMan --init)
4. Read vEMan license agreement and accept or decline (not a surprise: you need to accept to be allowed to use vEMan)
5. Choose installation directory where vEMan should be installed
6. Doubleclick on the vEMan icon now available on your Desktop

Again at least for the pre-requirements you should read the INSTALL file which contains some useful tips and hints for you.

## 6. Step-by-Step Installation

1. Unpack vEMan and start the installation at the commandline with

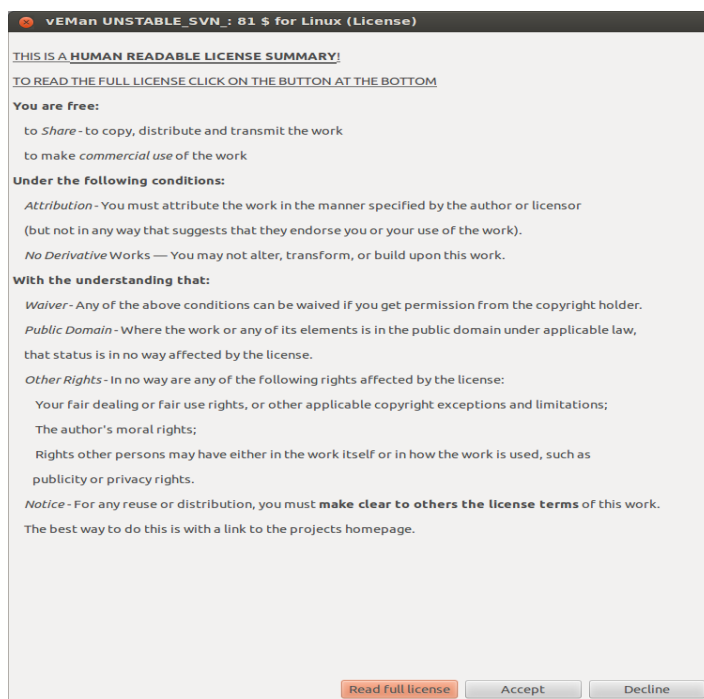
```
$> vEMan --init
```

(--init is normally optional but choose it to enforce the full setup)

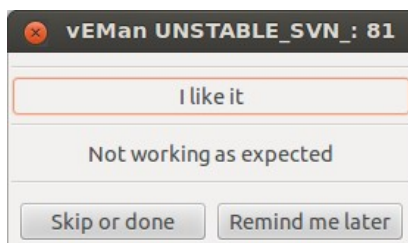
```
/tmp/vEMan-unpacked_v0.X.x/ $> ./vEMan --init
```



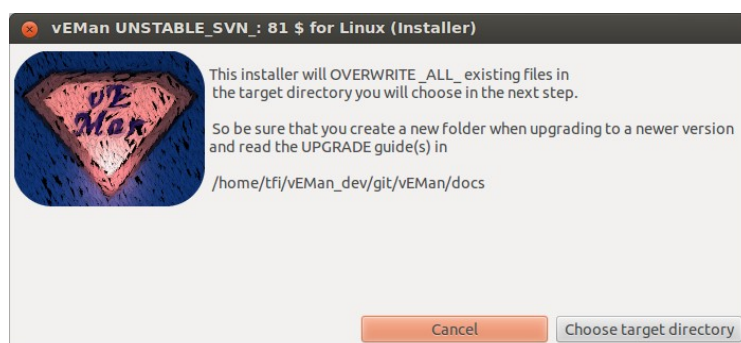
## 2. Read and accept the vEMan license



## 3. Rate vEMan (when you already know vEMan – otherwise please select 'Remind me later' and rate it next time when you have tested vEMan)

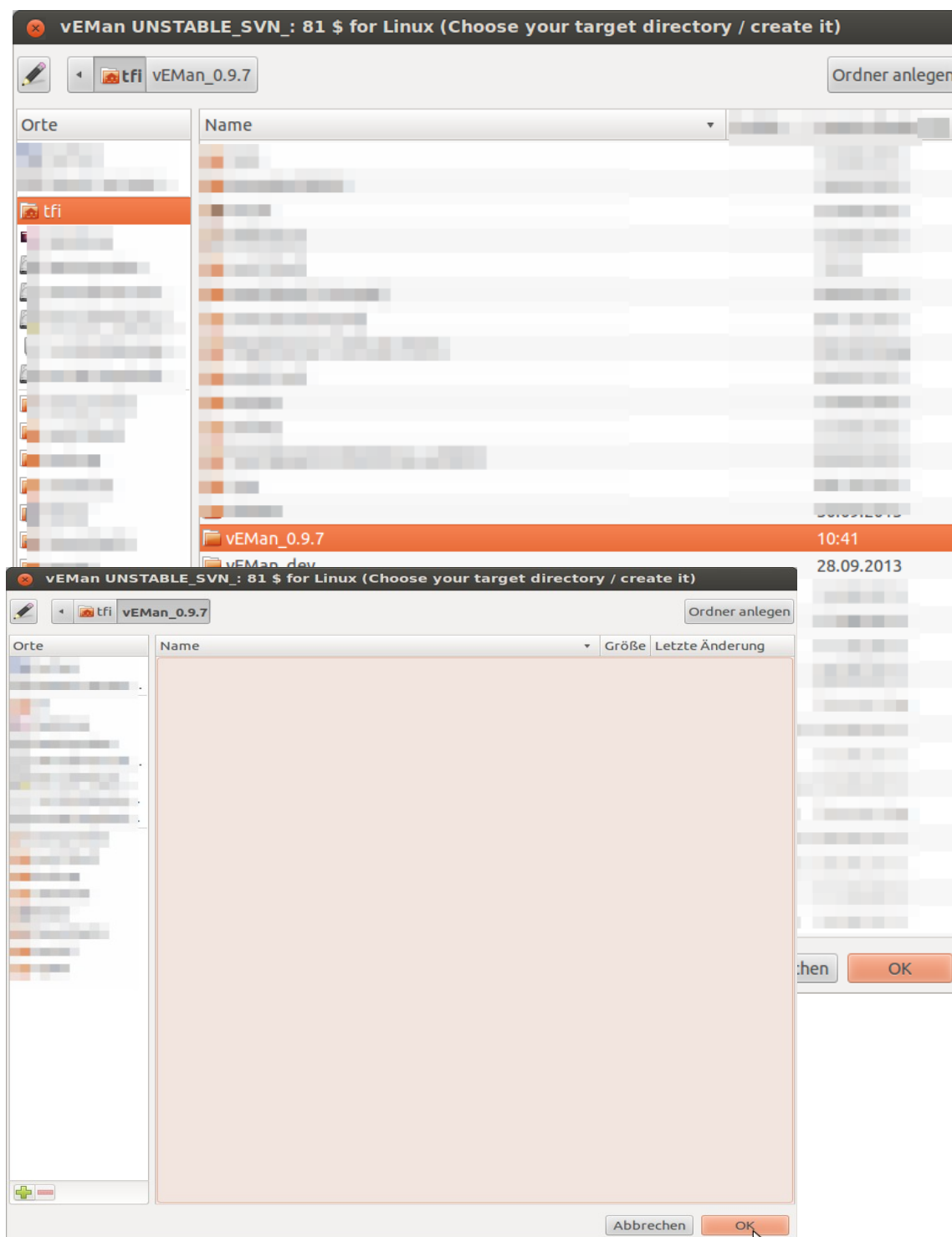


## 4. Read the installation / upgrade hint. Yes you can upgrade vEMan easily by choosing an existing installation directory of vEMan. I nevertheless recommend to install newer versions to an interim directory and test it first before overwriting the current one.



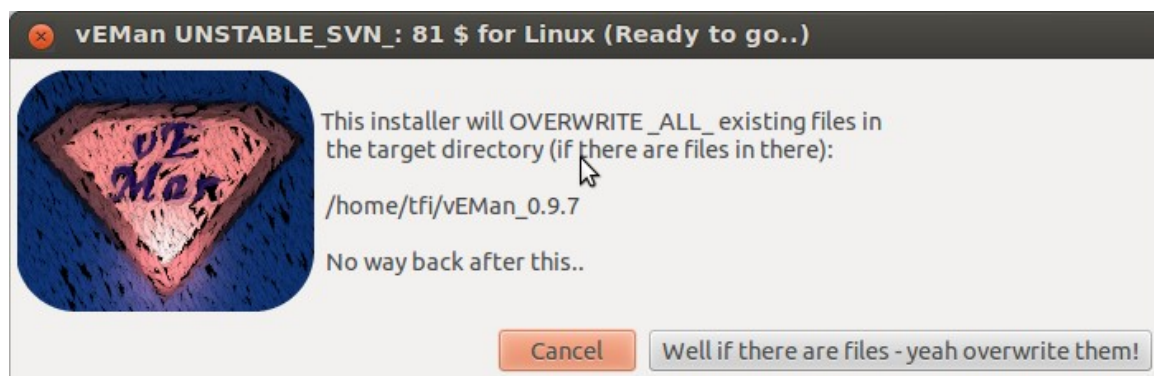


5. Choose the target directory where vEMan should be installed – you can create a new folder in that step too:

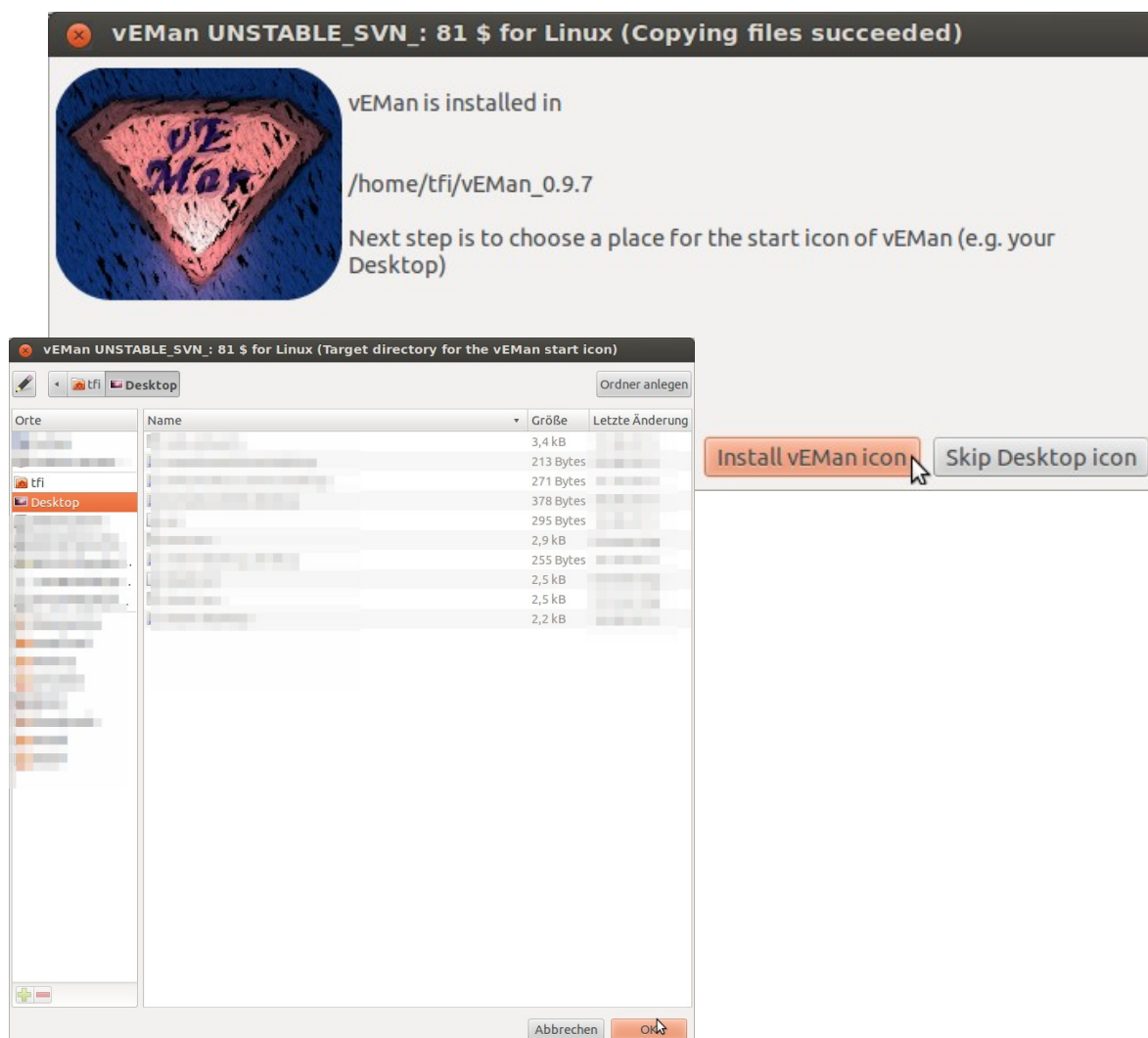




6. Accept the warning message and start the installation



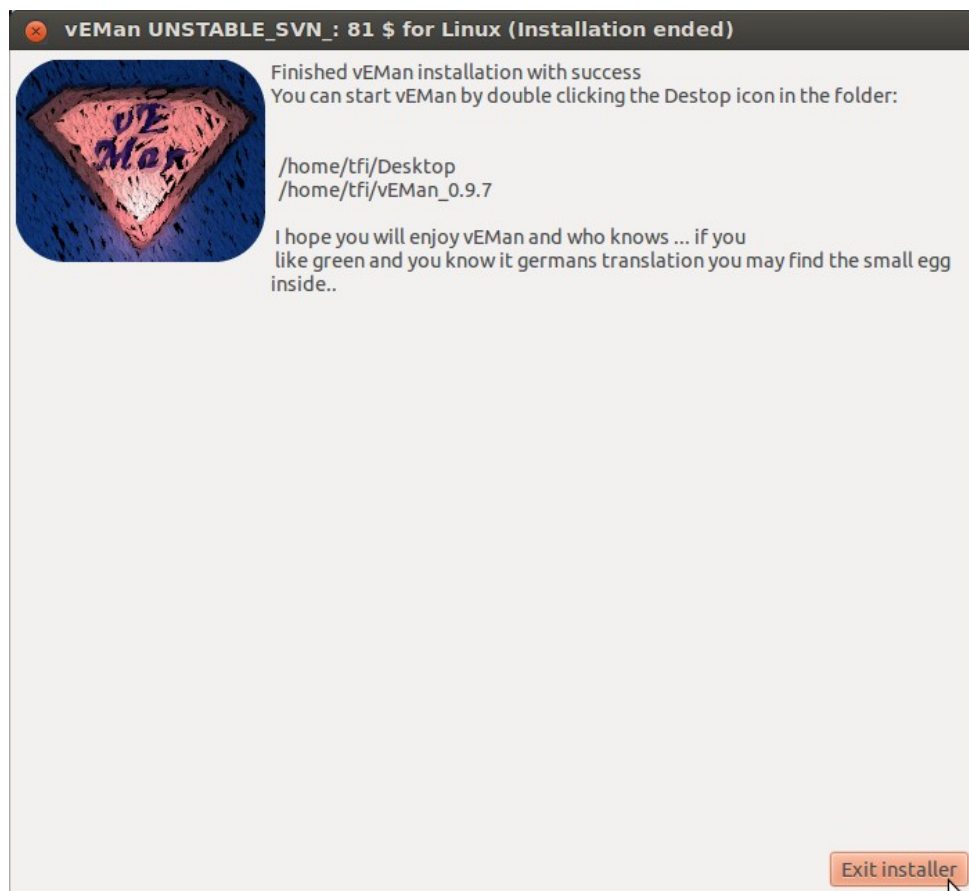
7. It is highly recommended to install the vEMan icon to ensure you can start vEMan easily with a double-click - but nevertheless you can skip that step if you want







## 8. Read the summary and exit the installer



## 7. Security

### 7.1 SSL-Cert validation

vEMan was programmed with security in mind. Unfortunately the main check of the connection between vEMan and an ESX server isn't secure yet. The connection will always beeing SSL encrypted which itself is very secure but vEMan doesn't check for the validation of the presented SSL certificate. You can check the certificate on your own by changing on the CLI and validate the certification file in vEMan's user directory.

```
~/vEMan/certs/[ip_or_dns-name].crt
```

### 7.2 Securing password hash

vEMan uses a SALT to hash the connection password and is shipped with a predefined one for your convenience but I recommend to change it once vEMan is installed.





The SALT itself will be **not** enough to decrypt your session password! SALTing is more secure because your own password + the SALT password together are needed to decrypt.

Changing the SALT is needed once only and is very easy. Went over to the vEMan installation directory and open the file:

etc/sysvars\_vEMan.cfg

with your favourite editor. Search for the variable:

SALTPW=xxxxxxxxxxxxxxxxxxxxxxxxxxxx

and replace the SALT password with a new one. I recommend to use at least 16 chars (no special chars even if the most would work)

## 8. vEMan Directories & important files

### **docs/**

all important documentations

### **etc/**

#### **/sysvars\_vEMan.cfg**

system variables. Do not change anything other than the SALTPW (see 7.)

#### **/uservars\_vEMan.cfg**

user variables. Change them if needed (e.g. unusual VMware installation paths etc)

### **libs/**

vEMan libraries - see „Advanced Mode“ in this guide for details

### **pics/**

icons etc used in vEMan

### **vmapps/**

all tools provided by VMware vEMan builds on

### **~/vEMan/**

**/vEMan.log**: Debug logfile! Check this here first in trouble!

**/dstservers**: A list of previously visited ESX servers



~/.vEMan/certs/

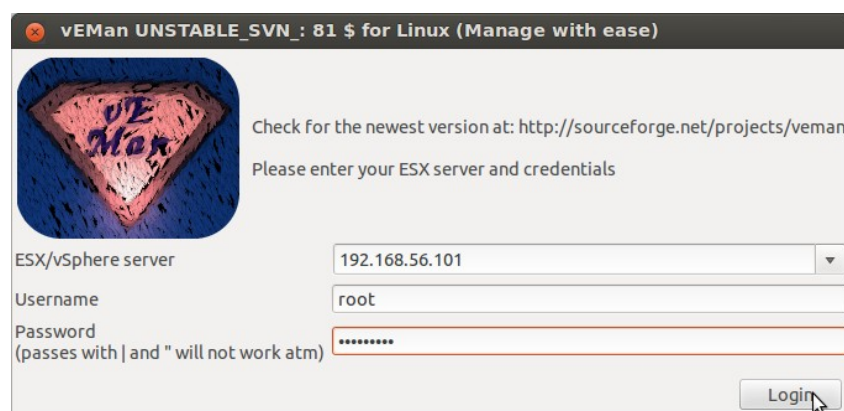
all ESX - SSL certificates

~/.vEMan/[ESX\_ip\_or\_dns\_name]

session data of a specific ESX server

## 9. Starting vEMan the first time

Once you have installed vEMan you can start it by double-clicking on the vEMan icon and you will see the vEMan login window



- Type in the IP-Adress or FQDN (DNS Name) of the ESX server
- If you have more than 1 ESX you may find it comfortable to choose a previously visited ESX from the drop-down list. vEMan remembers your last visited ESX and will display the latest you visit the next time starting up.
- Login with an administrator user.

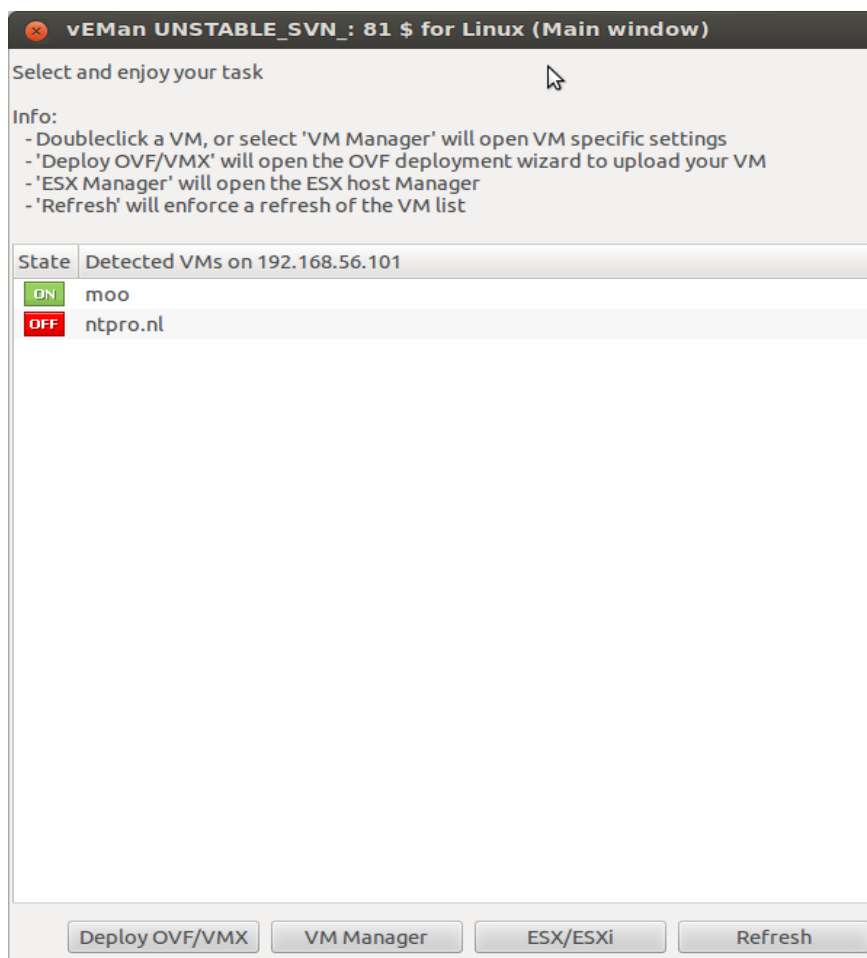
*For several operation in vEMan you need root privileges so either use "root" or a user with proper permissions. If you encounter a problem on any stage of using vEMan try with "root" first to check if that is a permission problem.*

## 10. Main window




After you logged in you will see the vEMan main window showing you all the VMs available for your current logged in user. vEMan will show you also those VMs inside a



Pool but as a flat list.



The left column of the main window contains the detected state of each VM which can be:

-  = VM is powered on and running
-  = VM is powered off
-  = VM is powered on but suspended

The right column displays the name of each VM.

## 10.1 Actions

You can do several actions within the main window.

### 10.1.1 VM Manager

Doubleclick on a VM's name and the VM Manager is the same as selecting a VM's name and click on 'VM Manager'. Both will open the vEMan VM Manager.



vEMan UNSTABLE_SVN : 81 \$ for Linux (VM Manager)	
Type	Output
Name	moo
guestMemoryUsage	0 MB
noCPU	1
hostName	Not Known
memorySize	128
virtualDisks	1
cpuUsage	56 MHz
overallStatus	The entity is OK
vmPathName	[datastore1] moo/moo.vmx
template	0
guestId	Not Known
guestOS	Not Known
VMwareTools	VMware Tools has never been installed or has not run in the virtual machine.
ipAddress	Not Known
hostMemoryUsage	49 MB

ConsolePowerSnapshotsEditDelete this VMRefreshBack

The VM Manager itself contains all important information of the selected VM. You will see CPU / MEM usage and depending on if you have the VMware tool installed in the VM also IP address and more.

Besides that you can select several VM specific actions helping you to manage the VM.

*HINT: vEMan's conception is to provide a multi-window management. That means you can open several actions in the VM Manager in parallel like the console opener and the power manager the same time which can be very useful. Even it is well tested you should use it with care especially when you leave on action window open the same time you open a complete new VM Manager window. It could work but no guarantee.*

#### 10.1.1.1 Console

The Console displays the VM console directly on the ESX. It is based on VNC that means you need to have a vncviewer installed (as described in the INSTALL file).

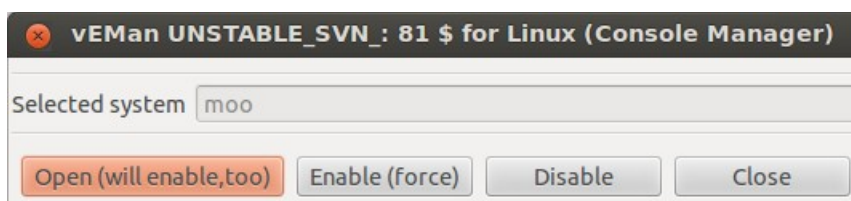


ESX will not have VNC access enabled normally but vEMan will do so automatically if you have proper permissions to edit the VMs settings file.

*HINT: If you have a firewall between you and the ESX or if you have enabled the local ESX firewall (is auto-enabled since vSphere 5.x) you need to check the following doc within the vEMan installation directory:*

→ docs/README\_ESX5.1

#### 1. Start the console



#### 2. Choose the mode:

**Open** => This opens the VNC console session. vEMan tries to detect if the option is already enabled on the ESX for this VM and if not vEMan will enable it for you.

**Enable (force)** => Sometimes I found that the automatically enablement does not work as expected or there were a lot of changes on the ESX or I know that the console option isn't already set. Then you can choose this mode. It will 'enforce' the console setting on the ESX which means ignores any previous VM console setting and overwrite it with a new one. Can be helpful in cases of trouble to use it.

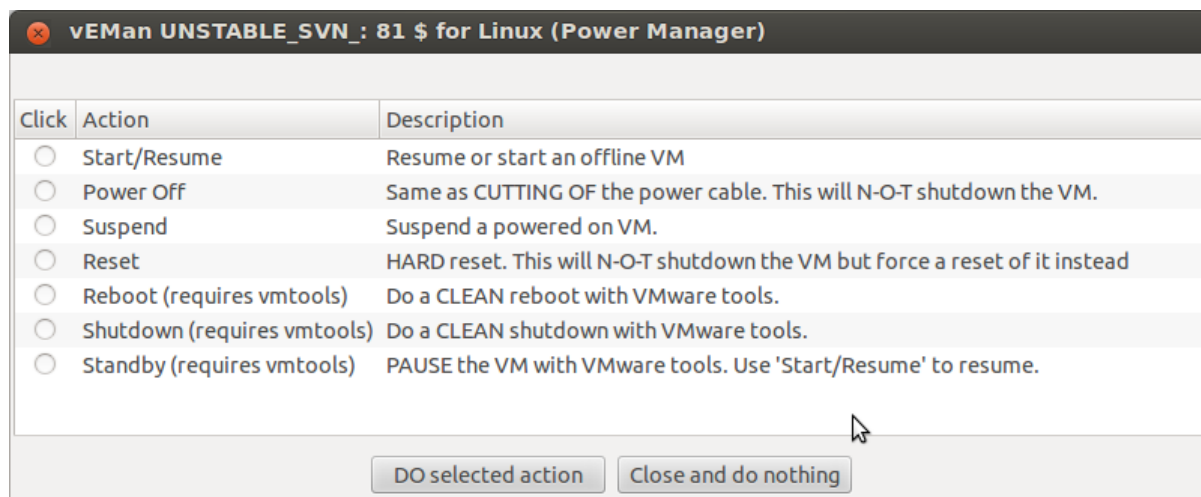
**Disable** => Deactivates the VM's console options on the ESX.

**Close** => Closes this action window

### 10.1.1.2 Power

The power management's options depending on the fact if you have the VMware tools installed or not (like it is always).

#### 1. Start the Power actions



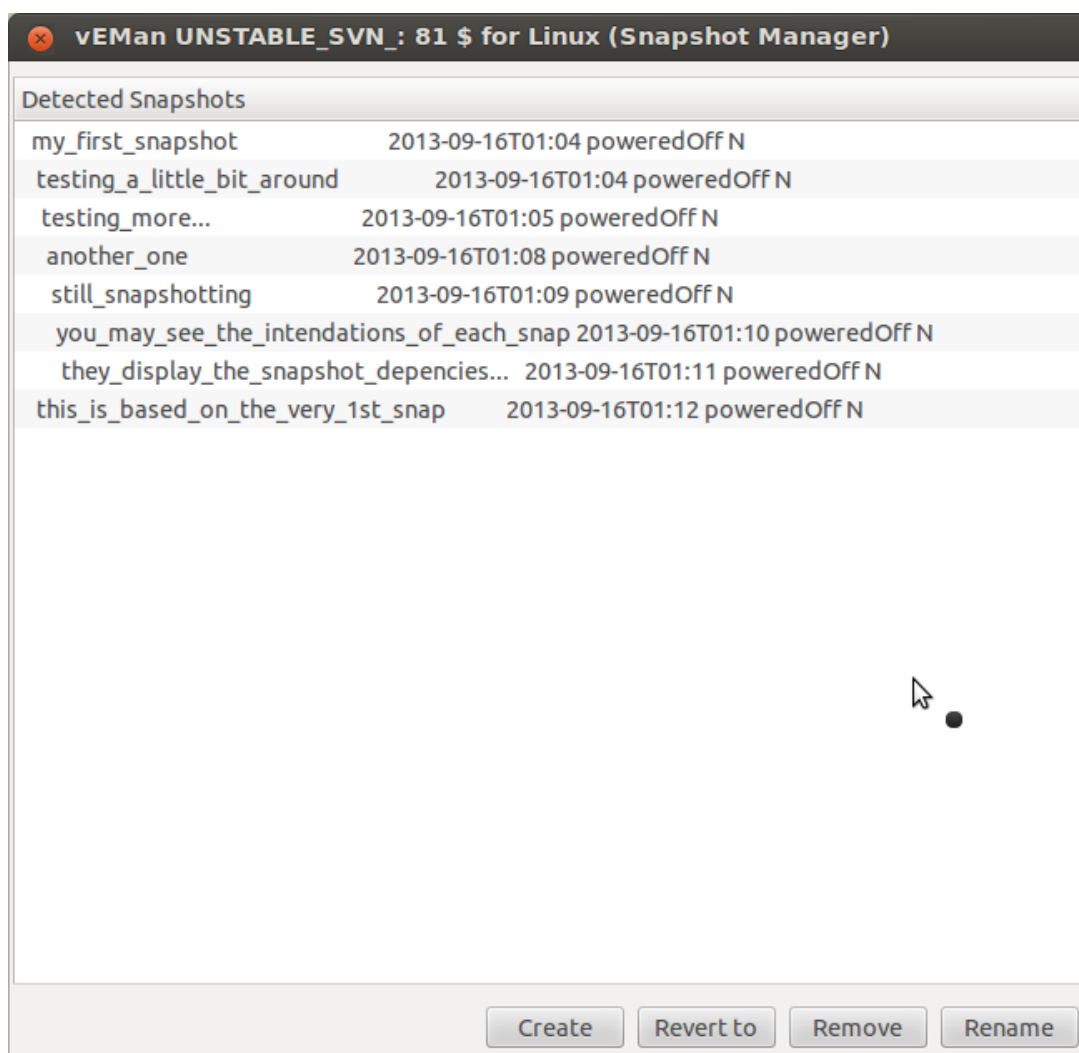


2. Choose one of the self-explanatory action and enjoy.

### 10.1.1.3 Snapshots

vEMan has a full Snapshot manager integrated which means you can create, revert, rename, delete a VM's snapshot easily.

1. Start the Snapshot Manager



2. Select the action you want:

**Create** => Create a new snapshot of the current state (always without Memory)

**Revert to** => Select a snapshot and revert to it



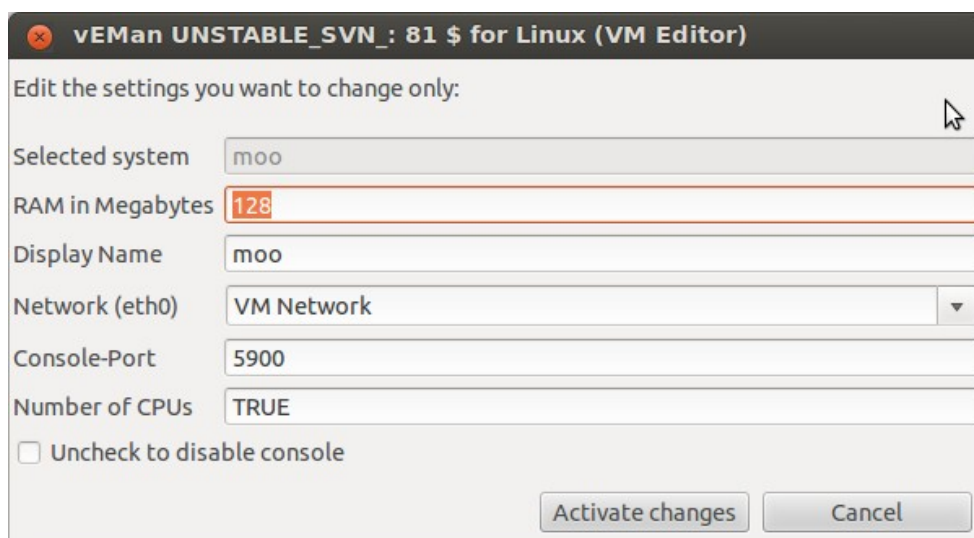
**Remove** => You can either remove the selected Snapshot only or the selected Snapshot and all of its children

**Rename** => Select a snapshot and rename it

#### 10.1.1.4 Edit

vEMan comes also with a VM Editor. That means you can edit the VM's settings like CPU, RAM and more.

1. Start the VM Editor

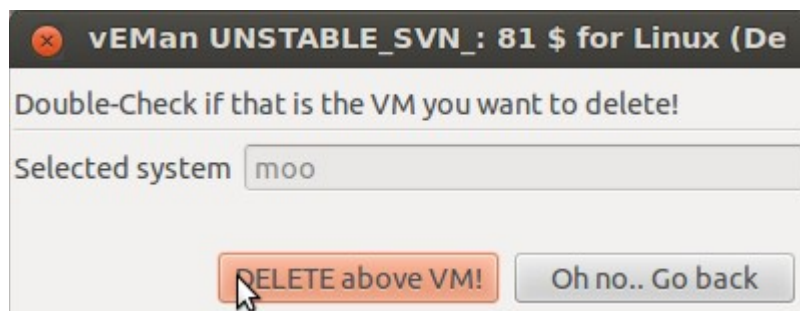


*(Hint: this screenshot shows an older dialog of the VM Editor and may look a little bit different as in the final vEMan version)*

2. Do your changes and activate them

#### 10.1.1.5 Delete this VM

You can completely delete the VM by choosing that option. You will be asked again if you want to delete that VM:







### 10.1.1.6 Refresh

The vEMan VM Manager displays useful information like usage of CPU, RAM and more. If you want to refresh that information you can simply click on the '**Refresh**' button and the VM Manager window will be reloaded with the up-to-date ESX information.

### 10.1.1.7 Back

If you want to go back to the vEMan main window you can close the VM Manager by clicking on the '**Back**' button.

## 10.1.2 Deploy OVF / VMX

vEMan can import OVF and VMX files. Those can be locally stored but can also be stored on a Webserver.

1. In the vEMan main window to deploy a VM click on “Deploy OVF / VMX”

vEMan UNSTABLE\_SN: 81 \$ for Linux (Deploy OVF/VMX)

OVF/VMX source (type in URL or browse to local file)

Target ESX server

Target 'Network Name'

Target 'Data Storage'

Autoaccept EULA ☒ EULA will be AUTO-accepted

☐ Power on after deployed

2. Type /select or browse for the needed information:
  - *Source path* (local file or / Webserver URL)
  - *Target ESX* (will be prefilled and must be the ESX you're currently logged in)
  - *Network Name* (vEMan tries to autodetect available networks)
  - *Data storage* (vEMan tries to autodetect available storages)
3. After all required information was set you will see a progress bar showing you the state of the deployment.
4. Afterwards you will see the vEMan main window again with you new deployed VM. If you not see you new VM simply click on “Refresh” in the vEMan main window.



### 10.1.3 ESX / ESXi

The ESX Manager is a powerful tool not showing you only useful information of the ESX but also gives you the possibility manage users on your ESX.

#### 1. Start the ESX Manager

The screenshot shows a window titled "vEMan UNSTABLE\_SVN\_: 81 \$ for Linux (Host Manager)". Below the title bar, a message states: "Current information is queried live from the ESX. This can take a moment." Below this is a table with two columns: "Property" and "Current value".

Property	Current value
BootTime	2013-09-15T09:16:21.843925Z
Cpu Model	Intel(R) Core(TM) i7-3632QM CPU @ 2.20GHz
Cpu Speed	8772 Mhz
Cpu Usage	275 Mhz
Maintenance mode	0
Physical Memory	2099 MB
Memory Usage	878 MB
Reboot Required	0
Software on host	VMware ESXi 5.1.0 build-799733

At the bottom right of the window are three buttons: "Refresh", "Users", and "Return to vEMan".

#### 2. Select an action

Refresh => Refreshes the ESX information like CPU usage etc.

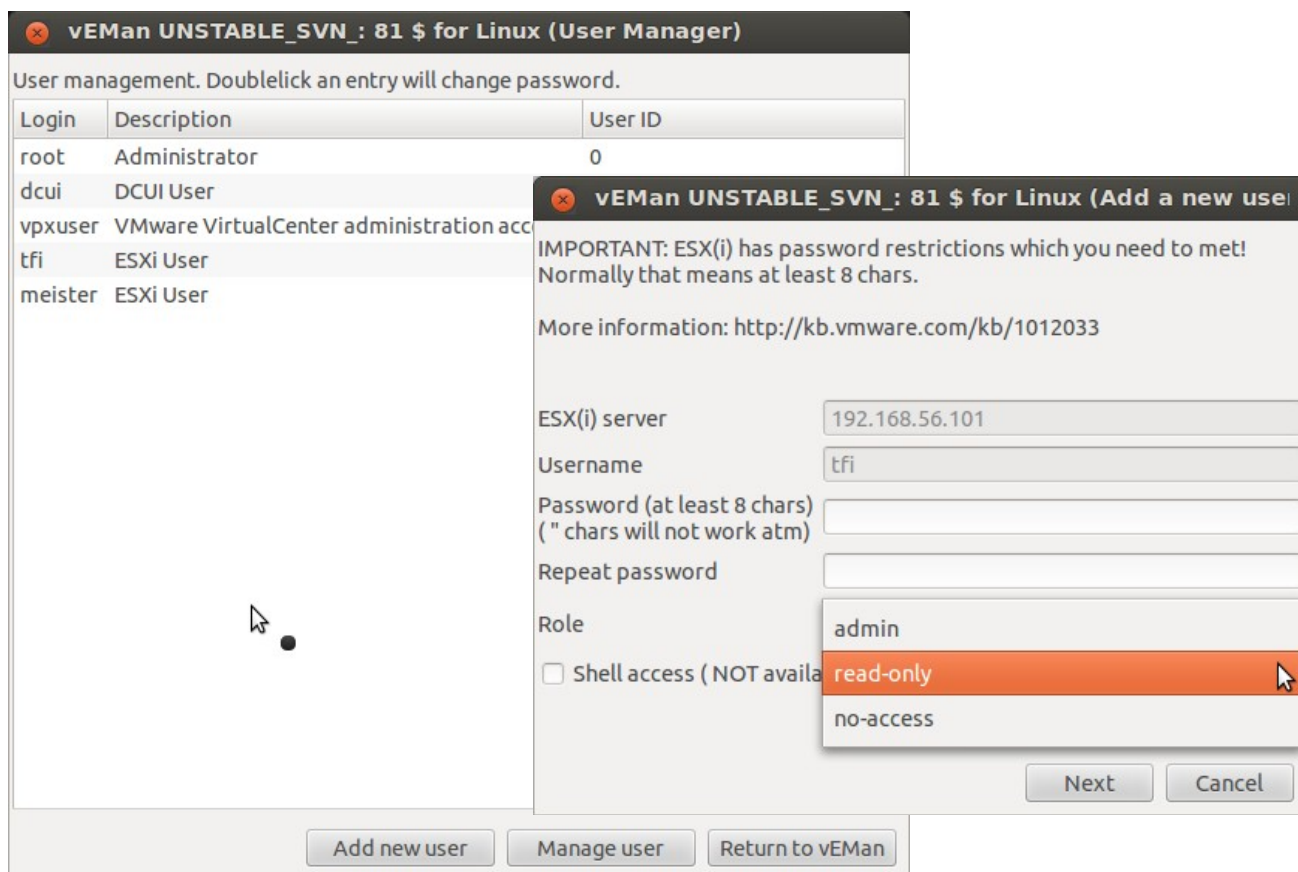
Users => Will open the ESX user manager

Return to vEMan => well as it is named...

#### 10.1.3.1 ESX User Manager

vEMan has a simple user management for the ESX inside.

To do so click on the 'Users' button and you will get a list of available users.



Several actions are available:

*Double-click* an username => Manage a user (change password and/or his role)

**Manage user** (selection needed) => same as double-click

**Delete user** (selection needed) => *Not yet implemented. Will delete the selected user*

**Add new user** => Will add a new user

#### 10.1.4 Refresh

To ensure best performance vEMan uses cache files for state and other available VM information. If at some state you want to manually force a refresh of this cache (e.g. because you stay in the main window only and want to check if a VM's state changes) you can use the button 'Refresh'. This will flush the cache and recheck the VM information directly from the ESX.



## 11. Upgrade

Upgrading vEMan is easy and totally hazard-free.

The full upgrade details can be found in the fresh unpacked vEMan directory. Checkout that you read the UPGRADE file carefully and also check /docs/ directory to find out more.

I highly recommend to upgrade this way (basic guideline – details in the UPGRADE file):

1. Rename your current vEMan folder to ensure nothing gets accidentally overwritten
2. Unpack the new vEMan version in a temporary directory
3. start the vEMan installer at the commandline with  

```
$ > ./vEMan --init
```

  
(the init option is optional but enforces the initial setup mode)
4. Check UPGRADE file for migrating your old settings to the new vEMan version  
(optional normally not needed)
5. If the new vEMan version works as expected you can delete the folder you renamed in 1) or if you run in problems with the new version you can easily switch back to the previous version.
6. If you're running into problems you can take a look into docs/TROUBLE file on details for troubleshooting vEMan.

## 12. Advanced mode

Even if the reason for creating vEMan was to have a graphical interface and do **not** want to use the commandline anymore you can start vEMan from the commandline.

That is useful to gather debug information or if you want to start a specific library of vEMan.

vEMan is build completely modular that means that each (logical) function is a single



library file. That way it is possible to start e.g. the VM Manager directly from the commandline..

**Nevertheless: This operation mode may isn't totally bug-free and should be used with care.**

To check out the current available functions of the vEMan CLI mode:

`./vEMan --help`

```
/tmp/vEMan-unpacked_v0.X.x/ $> ./vEMan --help
DEBUG: User variable file /home/tfi/vEMan_dev/git/vEMan/etc/uservars_vEMan.cfg found.
DEBUG: User variable file /home/tfi/vEMan_dev/git/vEMan/etc/uservars_vEMan.cfg included successfully.
DEBUG: System variable file /home/tfi/vEMan_dev/git/vEMan/etc/sysvars_vEMan.cfg included successfully.
DEBUG: included >F_MKCFG< successfully
DEBUG: included >F_PARENTF< successfully
DEBUG: included >F_HELP< successfully
DEBUG: included >F_VERSION< successfully
DEBUG: included >F_MSG< successfully
DEBUG: included >F_LICENSE< successfully
DEBUG: included >F_INSTALLER< successfully
DEBUG: included >F_ERR< successfully
DEBUG: included >F_REVIEWER< successfully

vEMan - an unofficial [V]Mware® [E]SX(i) [Man]ager for Linux
Version: UNSTABLE_SVN_: 81 $

Usage information:
    Besides a 'normal' run it is also possible to start vEMan by commandline.
    That is normally not needed but can be very handy when it comes to open
    a specific module only or troubleshooting an issue.

vEMan --help|-h|help    = Displays this help message
vEMan --version|-V      = Displays the version of vEMan
vEMan --init            = Will enforce initial startup (display license, restart the installer,..)
vEMan --rate|-R         = Rate/Review vEMan - I want your feedback!

vEMan [<MODULE NAME>]   = Run vEMan with a specific module
                        (This is an untested new feature atm! You may run into other problems when
                        executing vEMan this way..)

Available modules are:
F_INSTALLER,F_LICENSE,F_CHKPWR,F_CHKESXVER,F_MGUSR,F_ADDUSR,F_MSG,F_CHGUSR,F_USERMGR,F_REVIEWER,
F_NOTREADY,F_SCANNET,F_SCANDS,F_HOSTMGR,F_SAVEOVFSET,F_VERSION,F_HELP,F_SNAPMGR,F_VMEDITOR,F_VMMGR,
F_POWERACT,F_MAINLOOP,F_ACTIONS,F_AUTH,F_CHKCFG,F_CONSOLEMGR,F_CRTCOOKIE,F_CRTVMLIST,F_DEPLOY,
F_DEPLVMX,F_DETECTVNC,F_DISABLEVNC,F_ENABLEVNC,F_ERR,F_ESXMGR,F_GETCFG,F_GETFREEPORT,F_GETVMMA,
F_GETVMPATH,F_LOGIN,F_MKCFG,F_MKOVFCFG,F_OPENCONSOLE,F_POWER,F_SELECTVM,F_SPACECONV,F_SUSPEND,
F_PARENTF,F_DEC,F_DELETEVM
```



## 13. Thanks

vEMan wouldn't be here if not other users out there would have created many cool commandline based tools for managing ESX servers.

First of all thanks to VMware providing an open API to access and manage their products. Without that vEMan wouldn't be possible!

VMware guys also provide a lot of CLI code around their API which are mainly used in vEMan, thanks dudes!

Big thanks goes to:

- ananasik – the creator of “YAD” without that vEMan had used zenity for the GUI and that is so unbelievably limited in features that I'm very glad that yad exists!
- VMware again for providing so much commandline tools
- Canonical for Ubuntu and the Debian World – the world is a better place with them..
- ... the Open Source world. I believe in OSS.

## 14. License

vEMan is licensed with the Creative Commons license “Attribution-NoDerivs 3.0 Unported” (CC BY-ND 3.0)

<http://creativecommons.org/licenses/by-nd/3.0/>

The full license of vEMan is always shipped within the vEMan installer and needs to be accepted by the user when installed the first time.

You can find a copy in the vEMan installation directory named:

LICENSE           => A short human-readable license description

LICENSE\_FULL    => The full CC BY-ND 3.0 license