

ctys-uc-MeeGo(7)

Setup MeeGo

November 29, 2010

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1 General

The current document shows the basic installation of MeeGo, which is basically a derivative of RedHat(TM) Linux variant.

The following environment is used here:

- Debian-5.0.6 with VirtualBox-3.2.10
- CentOS-5.4 with kvm-83 / Qemu-0.9.1
- MeeGo-1.0.0

The current description is based on the Netbook edition for ia32/i386 architecture. Download the image:

`Netbooks/meego-netbook-ia32-1.0.0.20100524.1.img`

Additionally download the packages as required. For the installation and execution of ctys at least the 'openssh-server' is required.

- UnifiedSessionsManager - ctys-01.11.011

2 Setup of Host-OS and Hypervisor

The installation for the following variants has to be performed by the appropriate standard setup of the Host OS, which quite straight forward:

- Debian with VirtualBox
- CentOS with QEMU/KVM

3 Setup of the UnifiedSessionsManager

3.1 Install tgz BASE-Package + DOC-Package on Debian

1. Apply the standard installation procedure:

```
ctys-distribute -F 2 -P UserHomeCopy root@tst137
```

2. Open a Remote Shell by call of CLI plugin:

```
ctys -t cli -a create=1:tst137 root@tst137
```

3. Check the plugins states by calling ctys-plugins:

```
ctys-plugins -T all -E
```

3.2 Install rpm BASE-Package + DOC-Package on CentOS

The following steps are required for a RPM based setup on CentOS. The installation is relocatable, but located at '/opt', and installed locally by ctys-distribute(1) .

1. Install BASE package.

```
rpm -i ctys-base-01.11.011.noarch.rpm
```

2. Now install a a local version, here by copy. The PATH prefix is important here, particularly in case of updates. The path is resolved to it's actual path by eliminating any symbolic link, and used for consistent link of libraries.

```
/opt/ctys-01.11.011/bin/ctys-distribute -F 2 -P UserHomeCopy
```

3. Next the menu is setup.

```
ctys-xdg --menu-create
```

4. Now the help is available as either a Gnome or KDE menu. Alternatively could be called from the commandline.

3.3 Setup of the Gnome Menue

The setup of the Gnome Menu is quite simple, the contained tool **ctys-xdg(1)** sets up a standard menu by the call:

```
ctys-xdg --menu-create
```

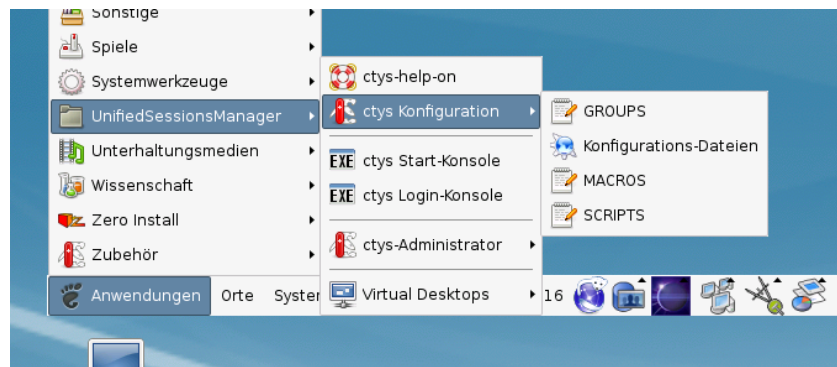


Figure 1: Create Menue

The call

```
ctys-xdg --menu-cancel
```

removes the installed files. For current version no checks for changed files is done.

The menus could be edited and extended by the call

```
ctys-xdg --menu-edit
```

which opens the related directories for modification of '*.menu', '*.desktop', and '*.directory' files.

4 Creation of the the Raw-VM

4.1 Creation of the Raw-VM with QEMU/KVM

The demo example VM is here named `tst139`, this is the hostname of GuestOS too.

1. Login into the machine where VirtualBox is installed.

```
ssh -X lab02
```

2. Change to the `vm` pool and create a directory and change into.

```
mkdir tst139
```

3. Call the install and configuration utility for VMs. Here some values are set by environment variables, a complete list including the actually assigned values could be displayed by the option **-levo**.

```
ARCH=i386 \
DIST=MeeGo \
DISTREL=1.0.0 \
OS=Linux \
OSREL=2.6 \
ctys-createConfVM -t qemu --label=tst138
```

This call creates a virtual image(hda.img), the call-wrapper(tyt139.sh), and the configuration file(tst139.ctys). The files are created from templates by assigning configuration values either from pre-configured default values, or interactive variation.

4. Once the set of files is created the virtual machine is prepared for startup. For some other systems complete installation routines are available, e.g. debian and CentOS. The current state could be checked now by the following call.

```
./tst138.sh --console=vnc --vncaccessdisplay=47 --print --check
```

4.2 Creation of the Raw-VM with VirtualBox

The creation of the raw VM is first step to be executed at the host operating system. This could be either performed locally or remote and requires the usage of the provided tools by VirtualBox(TM).

1. Login into the machine where VirtualBox is installed.

```
ssh -X lab02
```

2. Execute the VirtualBox(TM) console.

```
VirtualBox
```

3. Create the VM, the machine is called here 'tst137'. The OS is 'Linux', the version is 'Linux 2.6'.



Figure 2: Create Virtual Machine

4. Set RAM to 512MByte.



Figure 3: Set virtual RAM

5. Create a virtual HDD, here 8GByte is chosen. When finished the raw VM is present and could be used as required, for basic functions of ctys no additional configuration is required.

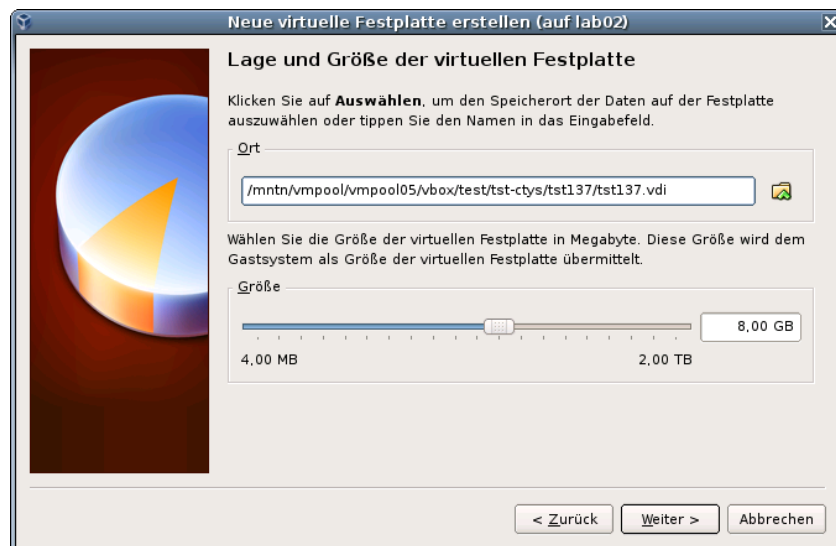


Figure 4: Create Virtual HDD

6. When additional information should be stored coallocated to the VM and scanned automatically into a database, than the tool **ctys-createConfVM(1)** should be applied. This generates additional detailed information related to the specific VM and the inherent guest OS.


```

        DHCP:
    NETMASK:
        TCP:
    GATEWAY:

    EDITOR:acue

        UUID:b1ff0d36-a552-41ce-be3c-4b3717c2e768 (c)

        DIST:debian (h)
    DISTREL:5.0.6 (h)
        OS:Linux (h)
    OSREL:2.6.26-2-amd64 (h)

        ARCH:x86_64 (h)
    ACCELERATOR:HVM (c)
        SMP:1 (c)
        MEMSIZE:512 (c)
    KBD_LAYOUT:de

    STARTERCALL:/usr/bin/VirtualBox

    DEFAULTBOOTMODE:HDD

    DEFAULTINSTTARGET:/mntn/vmpool/vmpool105/vbox/test/tst-ctys...
                        .../tst137/tst137.vdi
    HDDBOOTIMAGE_INST_SIZE:8192M

    VMSTATE:ACTIVE

```

Remember that this is a draft pre-display of current defaults.
 No consistency-checks for provided values are performed at this stage.
 Some missing values are evaluated at a later stage dynamically.

The following call generates the appropriate configuration

```

DIST=MeeGo \
DISTREL=1.0.0 \
OS=Linux \
OSREL=2.6 \
MAC=00:50:56:13:11:65 \
IP=172.20.2.241 \
ARCH=i386 \
ctys-createConfVM --label=tst137 -t vbox \

```

The result displayed with **-levo** is:

Not all values require to be set, some will be requested later by
 dialogue.
 Thus it is not necessary to have values assigned to the complete
 displayed set.

Actually used sources for default values:

```

no-marker = Pre-Set value, either from defaults configuration,
           or by commandline.

```

no-value = Either requested by dialog later, or the defaults of the finally called application are used.
 (g) = Dynamically generated.
 (c) = Read from actual configuration file, e.g. vmx-file.
 (h) = Used from current host as default.

Applicable modifications:

blue = By call option, defines dependency for others.
 green = By environment, 'could be set almost independent' from other values.
 cyan = By miscellaneous facilities, but is dependent from others.
 E.g. LABEL defines by convention the network 'hostname', thus the TCP/IP params.
 This could ..., but should not be altered!

Most of the missing values will be fetched during actual execution of this tool by dynamic evaluation.

VAR name:Initial Value

```
C_SESSIONTYPE:VBOX
  LABEL:tst137
    MAC:00:50:56:13:11:65
    IP:172.20.2.241
  BRIDGE:
  DHCP:
  NETMASK:
  TCP:
  GATEWAY:

EDITOR:acue

UUID:b1ff0d36-a552-41ce-be3c-4b3717c2e768 (c)

DIST:MeeGo
DISTREL:1.0.0
  OS:Linux
  OSREL:2.6

  ARCH:i386
ACCELERATOR:HVM (c)
  SMP:1 (c)
  MEMSIZE:512 (c)
  KBD_LAYOUT:de

STARTERCALL:/usr/bin/VirtualBox

DEFAULTBOOTMODE:HDD

DEFAULTINSTTARGET:/mnt/vmpool/vmpool05/vbox/test/tst-ctys/...
...tst137/tst137.vdi
HDDBOOTIMAGE_INST_SIZE:8192M

VMSTATE:ACTIVE
```

Remember that this is a draft pre-display of current defaults.
No consistency-checks for provided values are performed at this stage.
Some missing values are evaluated at a later stage dynamically.

When the call is finished the file 'tst137.ctys' with additional configuration information is stored.

7. Add the install image as a bootable CD/DVD and set this as the boot device for the VM:

Netbooks/meego-netbook-ia32-1.0.0.20100524.1.img

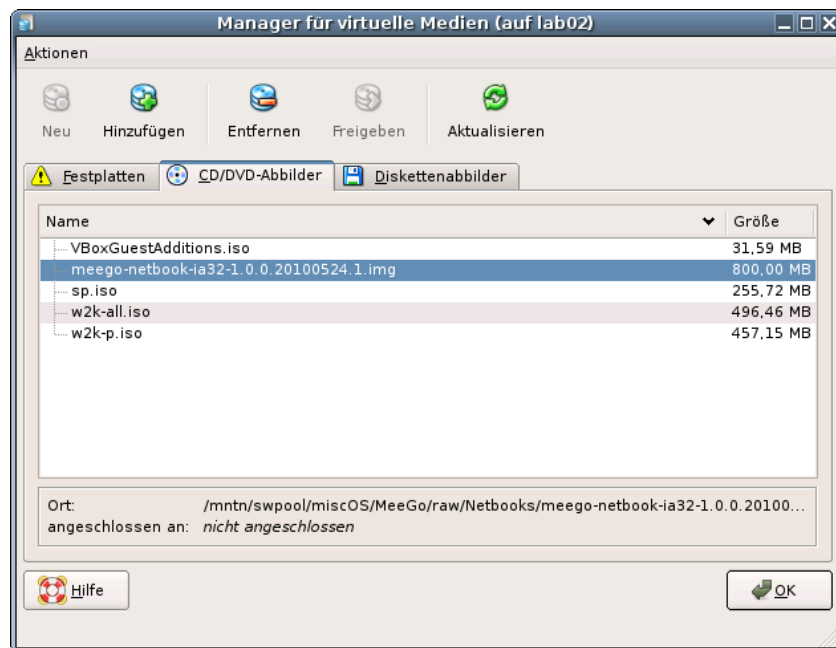


Figure 6: Register CD/DVD Install Sources

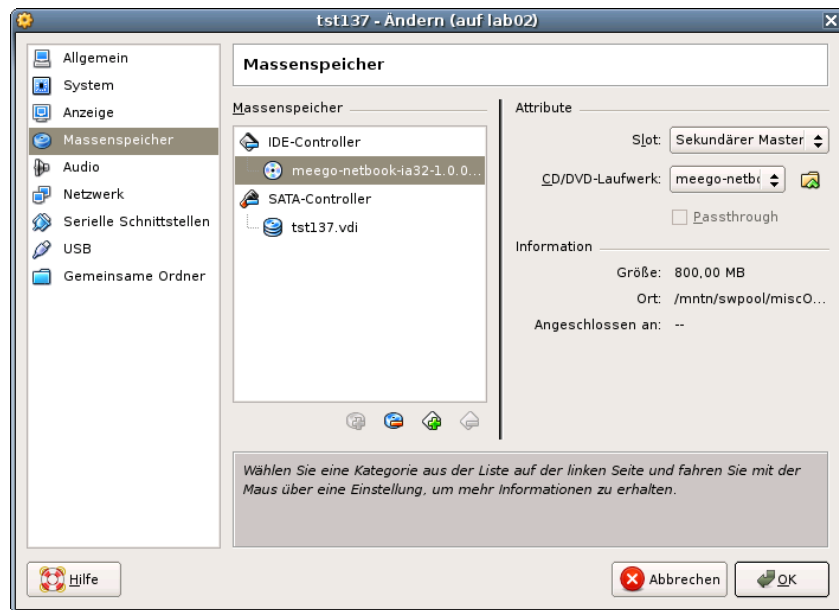


Figure 7: Connect CD/DVD Install Sources

8. Set PAE for virtual CPU.

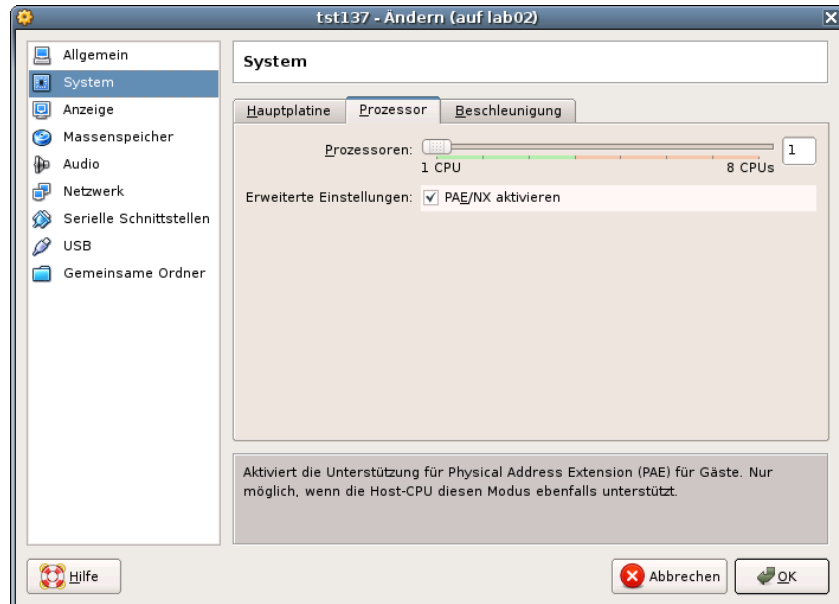


Figure 8: VirtualBox VCPU - PAE

5 Installation of the GuestOS - MeeGo

1. The start of the VMs of QEMU/KVM and VirtualBox vary slightly, even though the following native procedures within the GuestOS are identical.

(a) Start QEMU/KVM

The start facilities of the plugin QEMU offer several options. Here the manual local start of the wrapper script is choosen. The first start of MeeGo is proceeded with the SDL console, this has some advantages for the later required 'quick-pressing' of the ESC key for the display of the boot menuue. The option **-instmode** sets the bootdevice, here a preconfigured CD/DVD-image for boot.

```
./tst138.sh --console=sdl --print --instmode
```

An alternate call for the start of the remote installation is:

```
ctys -t qemu \  
-a create=1:tst138,id:${TST138}/tst138.ctys,instmode,console:sdl\  
app2
```

This starts the same by transforming to the target host 'app2' and calling the previous wrapper script.

(b) Start VirtualBox

The start of the VM could be proceeded either by calling VirtualBox, or by the VBOX plugin. But both require in current version the pre-configuration of the appropriate install procedure. Either by mounted install media like a CD/DVD-image, or by usage of PXE for network based installation. The folloing call starts the VirtualBox console.

VirtualBox

The following call call for the starts the remote VM with a VirtualBox console:

```
ctys -t vbox \  
-a create=1:tst137,id:${TST137}/tst138.ctys,console:vbox\  
app2
```

2. Now boot the VM and choose 'Installation Only'.

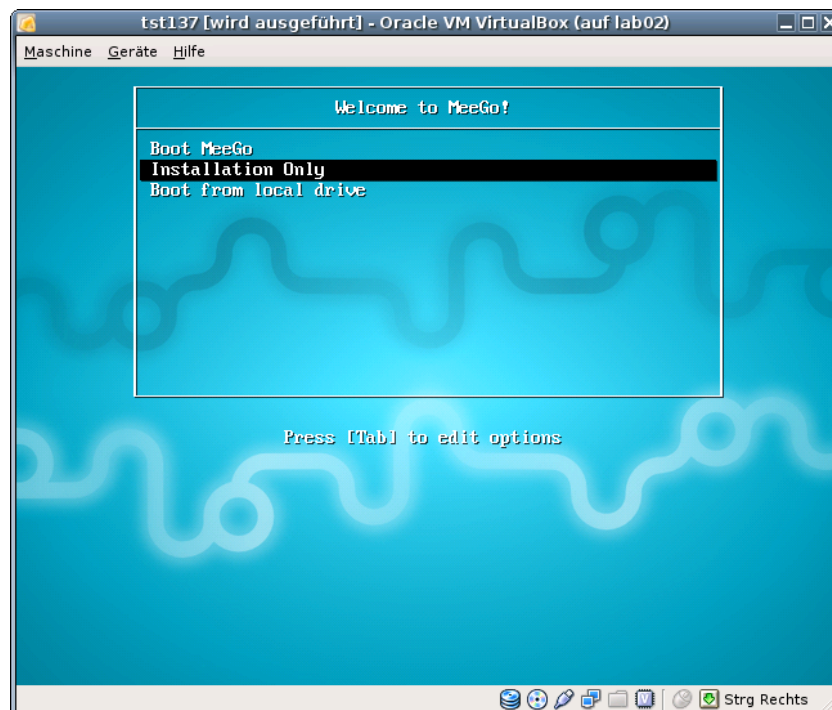


Figure 9: Install Menue

After some seconds the MeeGo screen occurs. The install procedure is quite similar to the RHEL based distributions.

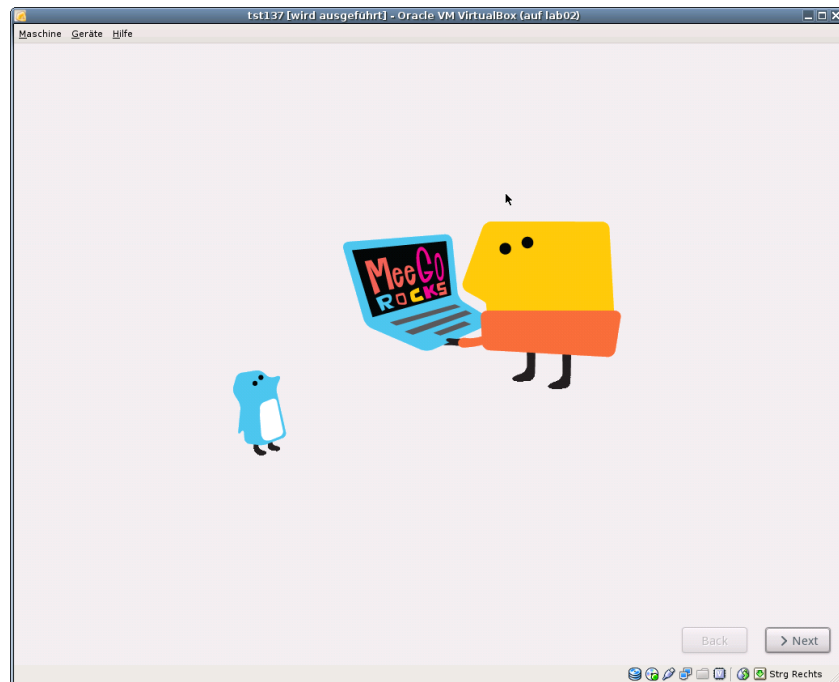


Figure 10: MeeGo Screen

3. When the HARDDISK error is displayed just press init again. In this description the default is choosed.

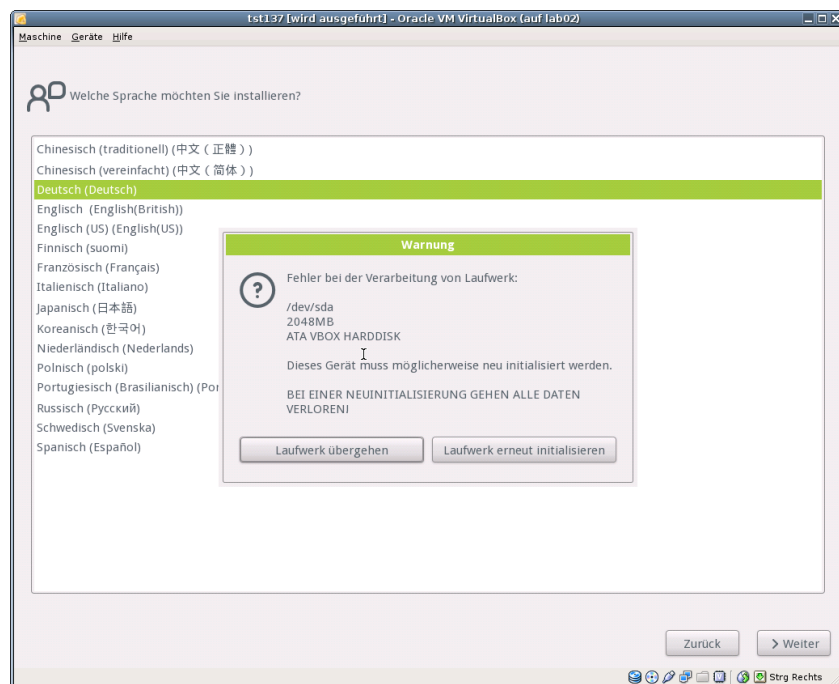


Figure 11: HDD-Init

4. Once the installation is complete, unmount the CD/DVD image and reboot.

(a) QEMU/KVM

In order to reboot just shutdown and boot again without the 'instmode' option. The shutdown could be proceeded by the 'quit' command within the monitor. The **monitor mode** is entered e.g. by **Ctrl-Alt-2**. One possible call is:

```
ctys -t qemu \
  -a create=l:tst138,id:${PWD}/tst138.ctys,console:sdl \
  app2
```

(b) VirtualBox

Simply reboot without mounted install media. In case of a fresh start the call could look like:

```
ctys -t vbox \
  -a create=l:tst137,id:${PWD}/tst137.ctys,console:vbox \
  app2
```

The default console is here RDP.

5. Press ESC once immediately when the display mode first changes, the boot menu should now occur. If this fails just repeat it. Once the boot menu is visible press TAB and edit the boot parameters. Remove the keyword 'quiet' and append 'init 3'.

Now MeeGo should boot and the console login should occur. The default password for the root account is 'meego'.

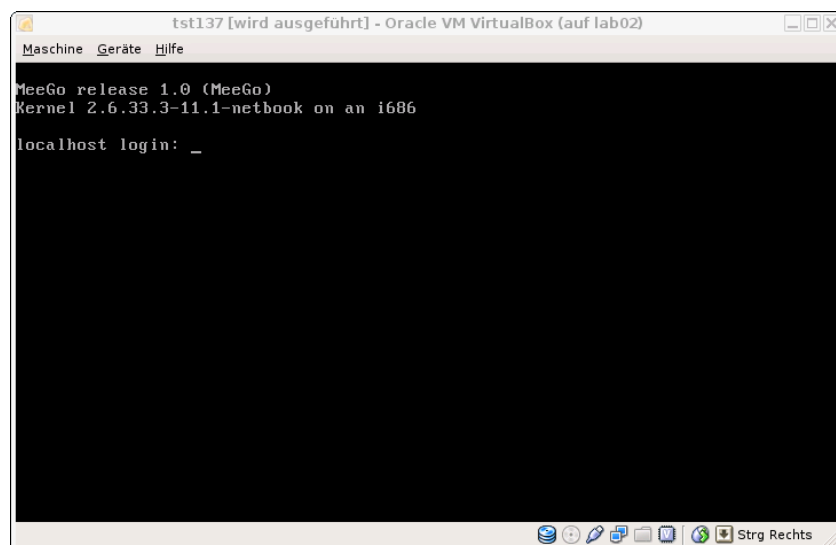


Figure 12: MeeGo ASC-II Console

- Set in the inittab the default boot level to 3. Edit '/etc/resolv.conf' and set your nameserver.
- Edit '/boot/extlinux/extlinux.conf' and change:
 - Remove 'quiet'
 - Comment 'menu hidden'

- Comment 'menu auto...'

In level 3 install the patched library 'libglx.so' by replacing '/usr/lib/xorg/modules/extensions/libglx.so'. And change the mode to 'u+x,g+x,o+x'. Change mode for '/usr/bin/Xorg' to '+s'.

The required patch and/or library is available from

'<http://202.112.3.1/libglx.so>'.

REMARK: This is not the author's link, download is on your own responsibility. Anyhow, the personal test worked in a test-environment and seems to be OK.

6. Reboot and start **twm** by calling **startx** from the ASC-II console.

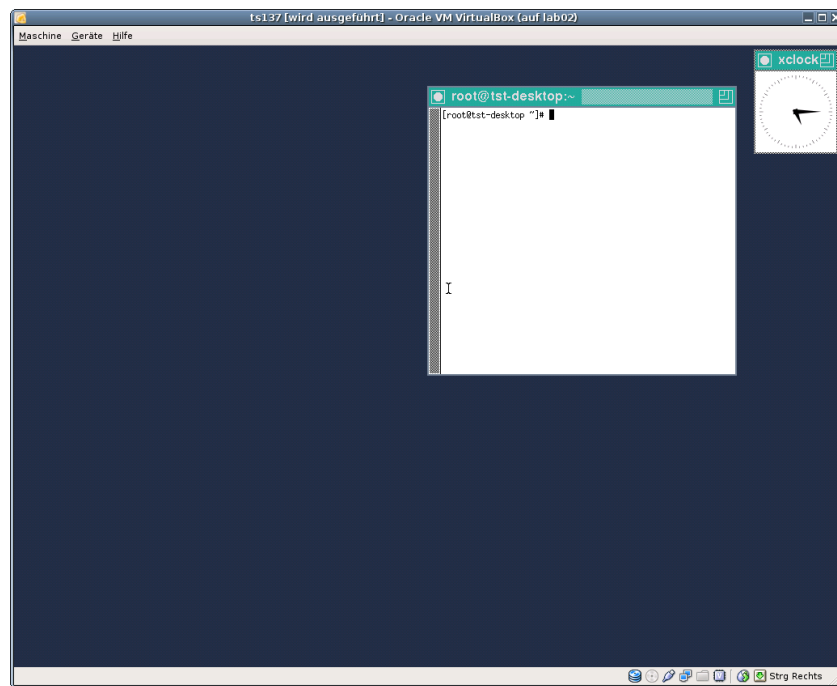


Figure 13: MeeGo X11 twm

7. Call 'firstboot' from within an xterm, and set basic configurations, particularly your keyboard.
8. **For VirtualBox only:**
Install the **VBoxGuestAdditions** and patch the **/etc/init.d/vboxadd-service** by extending


```
if [ -f /etc/redhat-release ]; then
```

to

```
if [ -f /etc/redhat-release -o -f /etc/meego-release ]; then
```
9. Reboot. Either set init level to 5, or call from command line 'init 5'.



Figure 14: Welcome MeeGo on VirtualBox

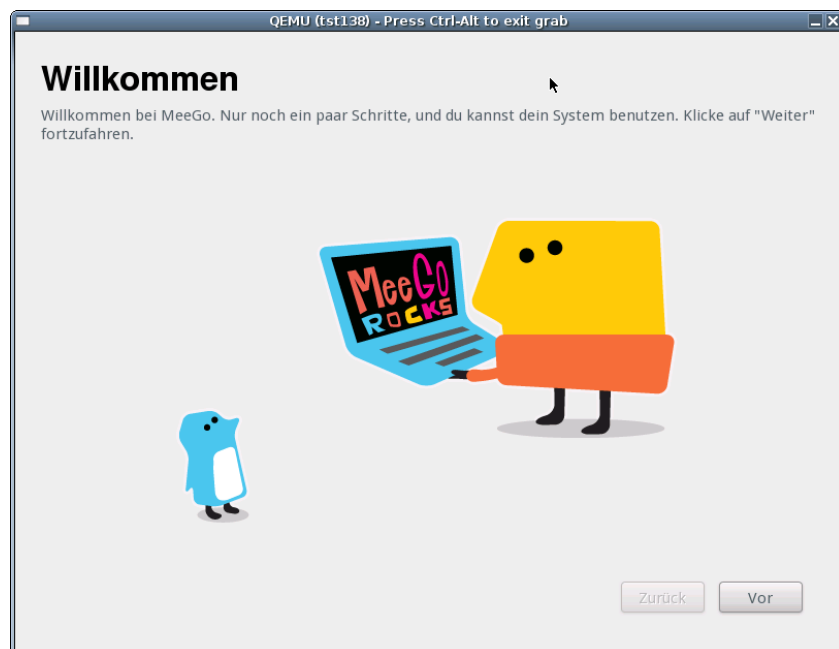


Figure 15: Welcome MeeGo on QEMU/KVM

Anyhow, for me the installation currently does not work stable with the original 'moblin-dm'. VirtualBox installation works 'sometimes'(?), Qemu doesn't work at all. But the twm based X11 desktop works perfectly, so basically some drivers must be in place. So I am going to solve this later, and additionally installing than

the SDK packages too.

The target for now is to show the integration, therefore the current state is fine.

6 Creation of the Inventory - cacheDB

In case of a common mounted NFS filesystem for the pool VMs for simplicity just change into the directory of the VM on any machine. Call for the first check `ctys-vdbgen(1)` with the `-stdio` option for display only.

```
ctys-vdbgen --append --base=$PWD --stdio -- lab02
```

When the result is displayed correctly just call

```
ctys-vdbgen --append --base=$PWD -- lab02
```

The following output should be displayed:

Prepare execution-call:

```
Require DB-PATH,      USE: DEFAULT_DBPATHLIST="/homen/acue/.ctys/db/default"
Require DB-PATH,      USE: -o => "/homen/acue/.ctys/db/default"
APPEND mode           : ON(1)
STDIO mode off        : OFF(0)
Set TYPE scope        ADD: DEFAULT="-t ALL"
Preload TYPE set      ADD: DEFAULT="-T ALL"
For splitted operations ADD: DEFAULT="-b sync,seq "
Nameservice cache     OFF: DEFAULT="-c off "
Data cache            OFF: DEFAULT="-C off "
```

```
Resulting ENUMERATE   ADD: DEFAULT="-a enumerate=...
...matchvstat:active%disabled%empty,machine,\
b:/mntn/vmpool/vmpool05/vbox/test/tst-ctys/tst137 \
-C off -c off -T ALL "
```

```
-> generate DB(may take a while)...
```

```
-----
START:08:38:35
```

```
-----
END:08:39:03
DURATION:00:00:28
```

```
-----
RET=0
-----
```

Cached data:

```
Mode:                APPEND
Pre-Appended:        834 records
Appended:            1 records
Fetched Records Raw:  records
Fetched Records Unique:  records
Final:              835 records
```

```
-----
...finished.
```

This shows that only one entry is appended to the existing database with 834 VM-Entries. Now check the database entry by calling:

```
ctys-vhost tst137
```

The following result should be displayed:

label	stype	accel	distro	distrorel	os	osrel	PM	if	TCP
tst137	VB0X		MeeGo	1.0.0	Linux	2.6	lab02	0	172.20.2.241

7 Graphical Start of the Virtual Machine

Now call the menu item for start of the VM 'tst137'.

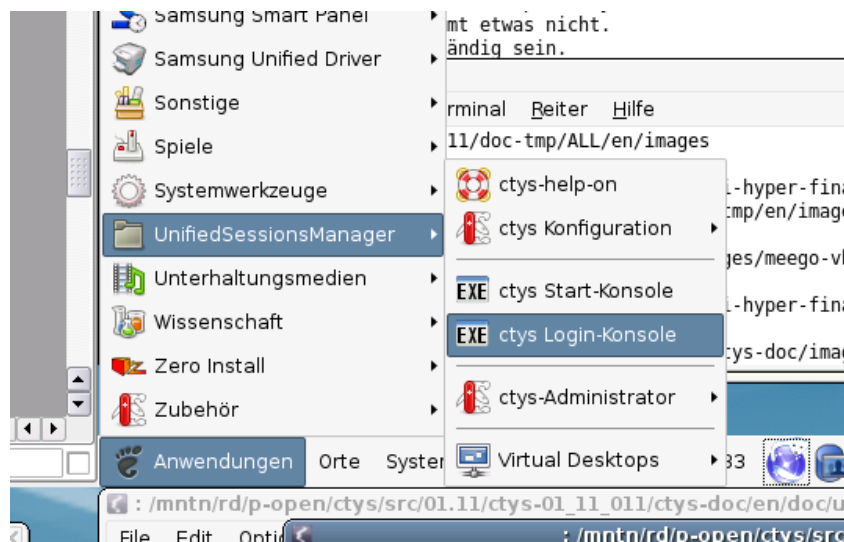


Figure 16: MeeGo Start Menue

The created cacheDB record for thr VM 'tst137' is now automatically visible in the list of startable virtual machines.

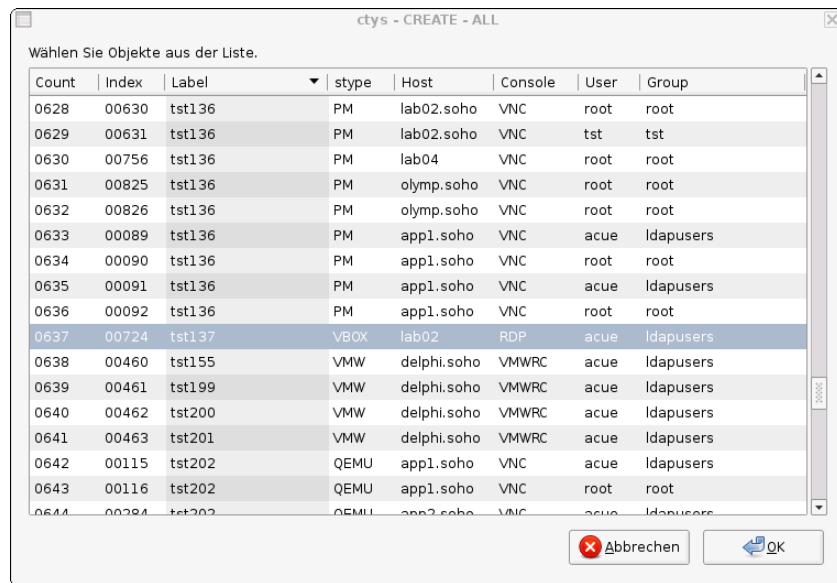


Figure 17: MeeGo VM Selection

Confirm the selected entry.

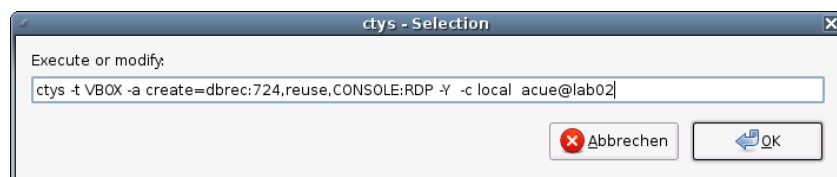


Figure 18: MeeGo Call Confirmation

8 Manage the VM

8.1 Prepare MeeGo

1. Set yum repository in '/etc/yum.repo.d/'
2. Install the following additional Packages:
 - (a) openssh-server
 - (b) make
 - (c) gcc
 - (d) kernel-devel
 - (e) kernel-netbook-devel

8.2 Install UnifiedSessionsManager in GuestOS - MeeGo

Apply standard procedure:

```
ctys-distribute -F 2 -P UserHomeCopy root@tst137
```

8.3 Open a Remote Shell

Call CLI plugin:

```
ctys -t cli -a create=1:tst137 root@tst137
```

8.4 Check Plugins States

Call ctys-plugins:

```
ctys-plugins -T all -E
```

8.5 Open a Remote X11-Terminal

ffs.

8.6 Open a Remote VNC-Desktop

ffs.

9 SEE ALSO

ctys(1) , *ctys-CLI(1)* , *ctys-configuration-VBOX(7)* , *ctys-createConfVM(1)* , *ctys-distribute(1)* , *ctys-groups(1)* , *ctys-macros(1)* , *ctys-plugins(1)* , *ctys-uc-VBOX(7)* , *ctys-vdbggen(1)* , *ctys-vhost(1)* , *ctys-VNC(1)* , *ctys-X11(1)*

For System Tools:

MeeGo(TM): [<http://meego.com>]

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Sourceforge.net: <<http://sourceforge.net/projects/ctys>>
Berlios.de: <<http://ctys.berlios.de>>
Commercial: <<http://www.i4p.com>>



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