

ODP REGIONAL NODE DEPLOYMENT QUICK GUIDE FOR TRAININGS

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1. Installation of images under VMware Player

IMPORTANT: Windows and Linux users should use VMware Player for most cases. If you are experiencing any problems on your Windows or Linux PC use Oracle VM VirtualBox (see 2).

Download and install VMware Player (<http://www.vmware.com/go/downloadplayer/>, free for personal use). Use this article http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2053973 from the VMware Knowledge Base to get more details on how to download and install the VMware Player.

2. Installation of images under VirtualBox

Download and install VirtualBox (<https://www.virtualbox.org/wiki/Downloads>). Use this article <https://www.virtualbox.org/manual/ch02.html> to get more details.

3. Downloading ODP regional node training images

Download following images:

For VMware Player:

- Image 1 – ODP Security, Portal, Database

Link to download: <ftp://nodc.meteo.ru/training/1-porta-db-vmware.zip> (1, 57 Gb)

(username: *odp-user* password: *odp-user2012*)

- Image 2 – ODP Service Bus, Integration Server

Link to download: <ftp://nodc.meteo.ru/training/2-is-soi-vmware.zip> (4 Gb)

(username: *odp-user* password: *odp-user2012*)

- Image 2 – ODP Data Provider

Link to download: <ftp://nodc.meteo.ru/training/3-dp-vmware.zip> (2,2 Gb)

(username: *odp-user* password: *odp-user2012*)

For VirtualBox:

Link to download: <ftp://nodc.meteo.ru/training/1-porta-db-vbox.zip>

(username: *odp-user* password: *odp-user2012*)

- Image 2 – ODP Service Bus, Integration Server

Link to download: <ftp://nodc.meteo.ru/training/2-is-soi-vbox.zip>

(username: *odp-user* password: *odp-user2012*)

- Image 2 – ODP Data Provider

Link to download: <ftp://nodc.meteo.ru/training/3-dp-vbox.zip>

(username: *odp-user* password: *odp-user2012*)

Unzip downloaded files to desired location (e.g. C:/TRAINING/VM/).

NOTICE: Each extracted image size is about 16 Gb each. Make sure you have enough disk space to extract them.

Table 1 – Virtual machines options

ODP component	Name and Location	Storage	Cpus (Processor Sockets*Processor Cores per Socket)	Memory	Comments
Portal Database	porta-db	16 Gb	2*2 (4)	2 GB	Domain name to be used: portal-test.oceandataportal.net
Integration Server Service Bus	is-soi	16 Gb	2*2 (4)	2 GB	Domain name to be used: is-test.oceandataportal.net
Data Provider	test_pd	16 Gb	2*2 (4)	2 GB	Domain name to be used: odp-test.oceandataportal.net

4. Running a virtual machine (common instructions for Windows)

4.1 Running images under VMware Player

Run VMware Player using desktop icon or from the Start menu (Fig.1).

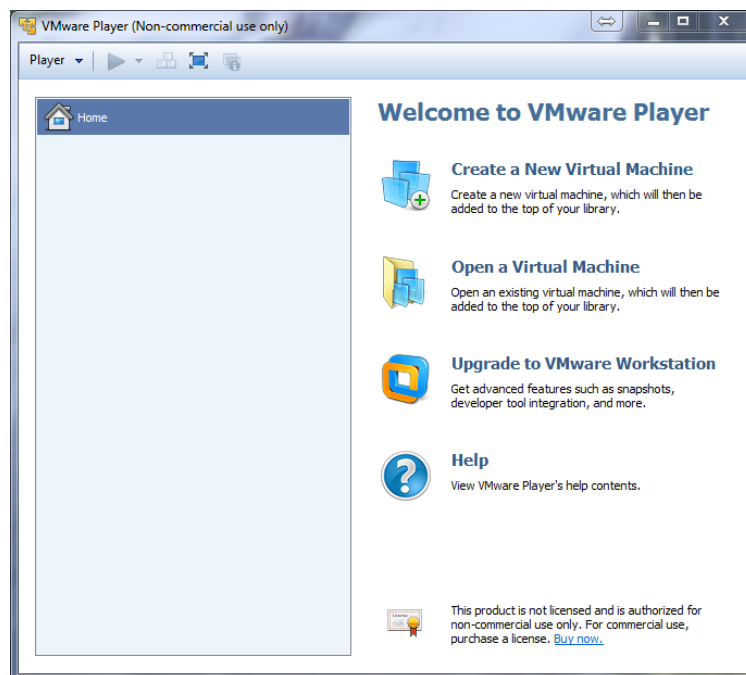


Figure 1 – Wmware Player main window

When following window (see fig.2) will appear offering you download and install WMware Workstation – version 10.0 or later - click ‘Skip this version’

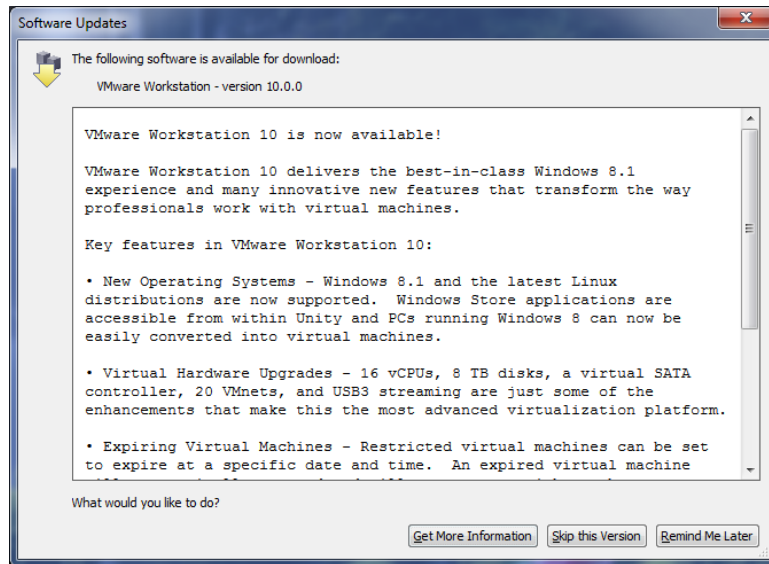


Figure 2 – Software Updates window

Using right mouse button click on the ‘Home’ icon in the WMware Player main window and select ‘Open a VM...’ dialog. Or use the ‘Open a Virtual Machine’ icon in the right side of the main window.



Open a Virtual Machine

Open an existing virtual machine, which will then be added to the top of your library.

VMWare Player will open you the browser window of your local PC to select and open downloaded virtual machine. Find the location with extracted images and open virtual machine configuration file using file browser from the dialog window. The order of the opening is not important. Make sure you have added all images (‘porta-db’, ‘is-soi’ and ‘test-pd’) downloaded according to the details given section 3 (see fig.3).

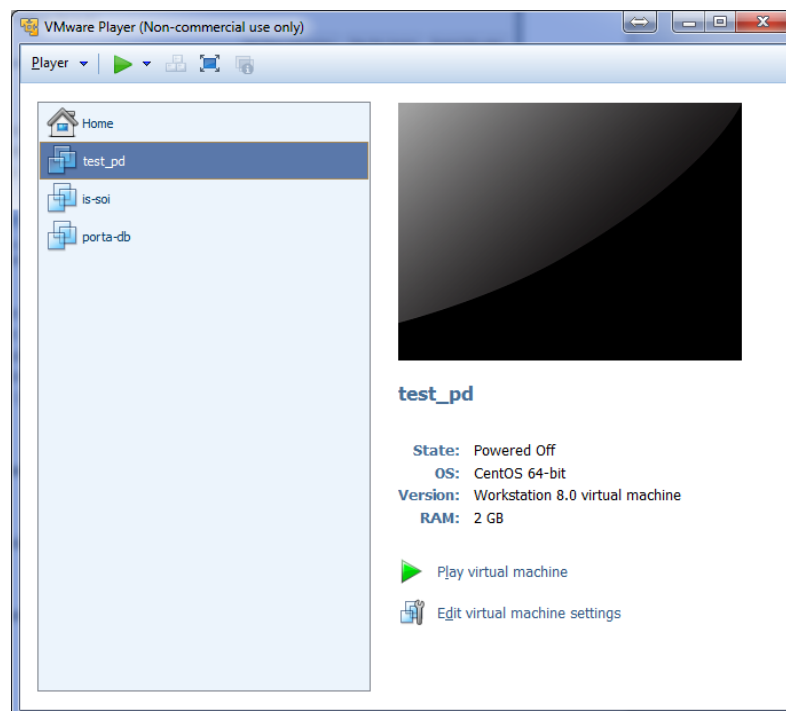


Figure 3 - WMware Player main window with added virtual machines

- **'porta-db'** image contains following ODP components – Portal, Security and core database (PostgreSQL) used by most of the components.
- **'is-soi'** image includes ODP Service Bus and ODP Integration Server.

These 2 images together are representing regional node for the training needs.

- **'test_pd'** image includes latest version of the Data Provider 2.0, created specifically for training needs.


Running order is following:

1. Porta-db
2. Is-soi (at least 30 seconds pause after the run of 'porta-db' vm)
3. Test_pd

To power on virtual machines for VMware Player:

- Click on the virtual machine name in the main VMware Player window. After clicking virtual machine should be highlighted with dark blue color.

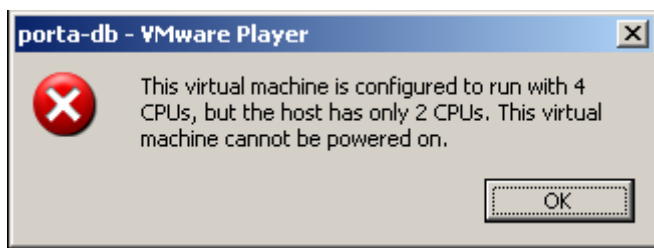
- Use  button from the top menu, or

- Use  [Play virtual machine](#) icon in the right down corner of main window


In the right down corner of the VMware Player main window click on 'Play virtual machine icon'.

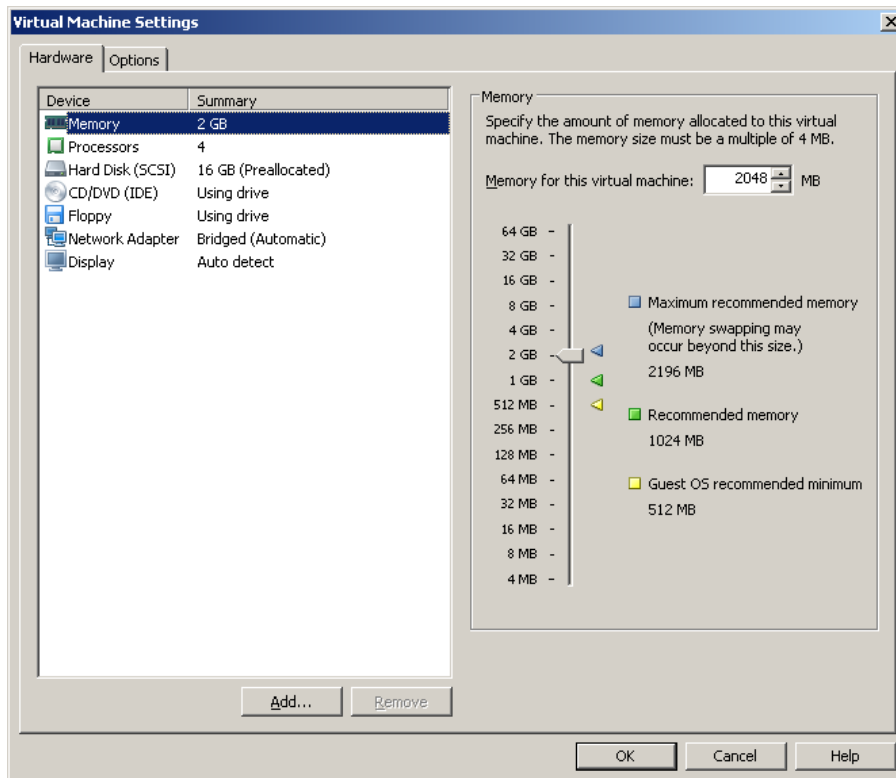
At the first run of the image you will be prompted with following dialog window (fig.4). Click 'I copied it' button.

While trying to run the virtual machine you can be prompted with following message:

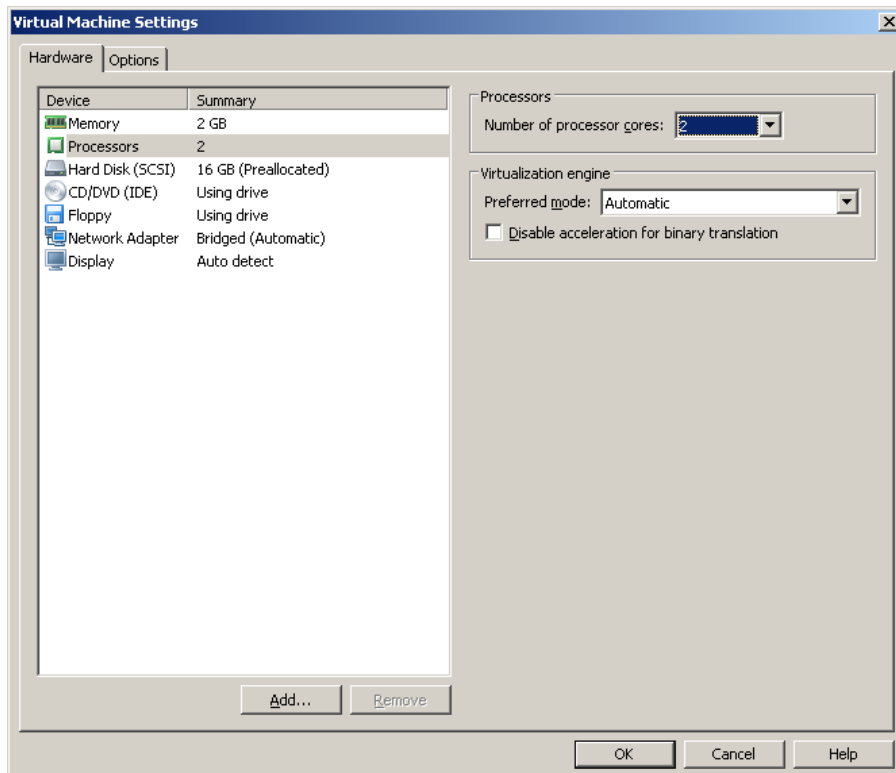


Click "Ok" and in the main VMware Player window select virtual machine from the list and then

click on the “  [Edit virtual machine settings](#) ” icon in the right down corner. This will open settings of the selected virtual machine.



Click on the “Processors” item and in the right side of the window in the “Number of processors cores:” provide value “2”.



Click “OK” to save changes.

Try to power on virtual machine again using instructions provided before.

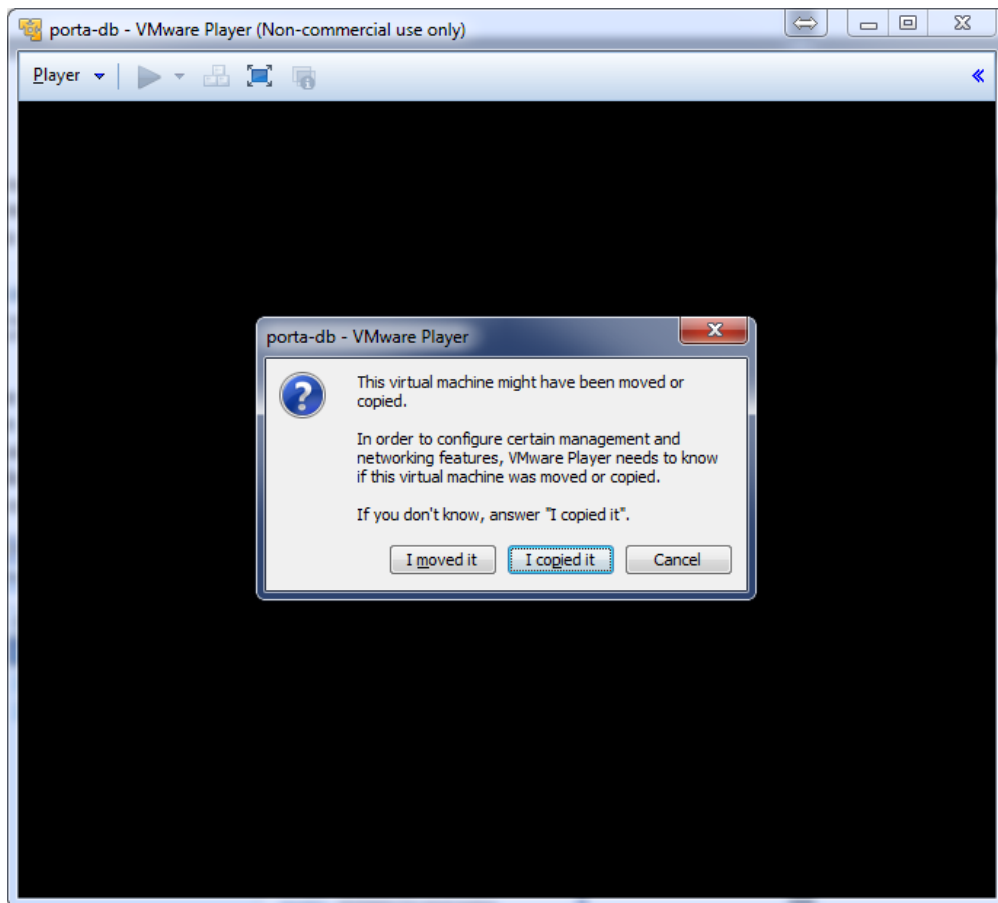


Figure 4 – Running virtual machine first time.

Operating system (CentOS 6.3 x86_64) in the virtual machine will start to load. Ignore all messages offering you to download additional VMware products like VMware Tools (see fig.5). Click on 'Remind Me Later' button.

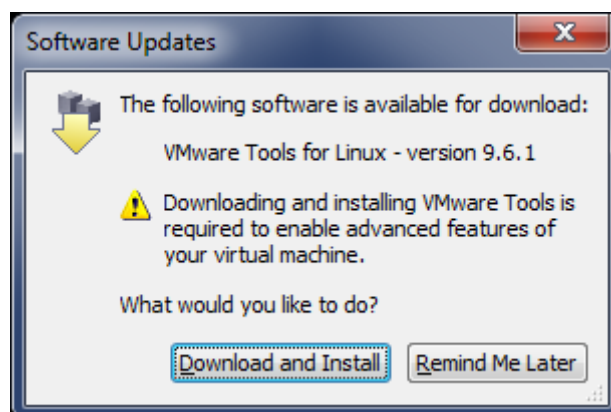


Figure 5 –Software updates window

Virtual machine will boot its operating system. After the OS booting will be completed you will be prompted to enter login for the user (fig. 6)

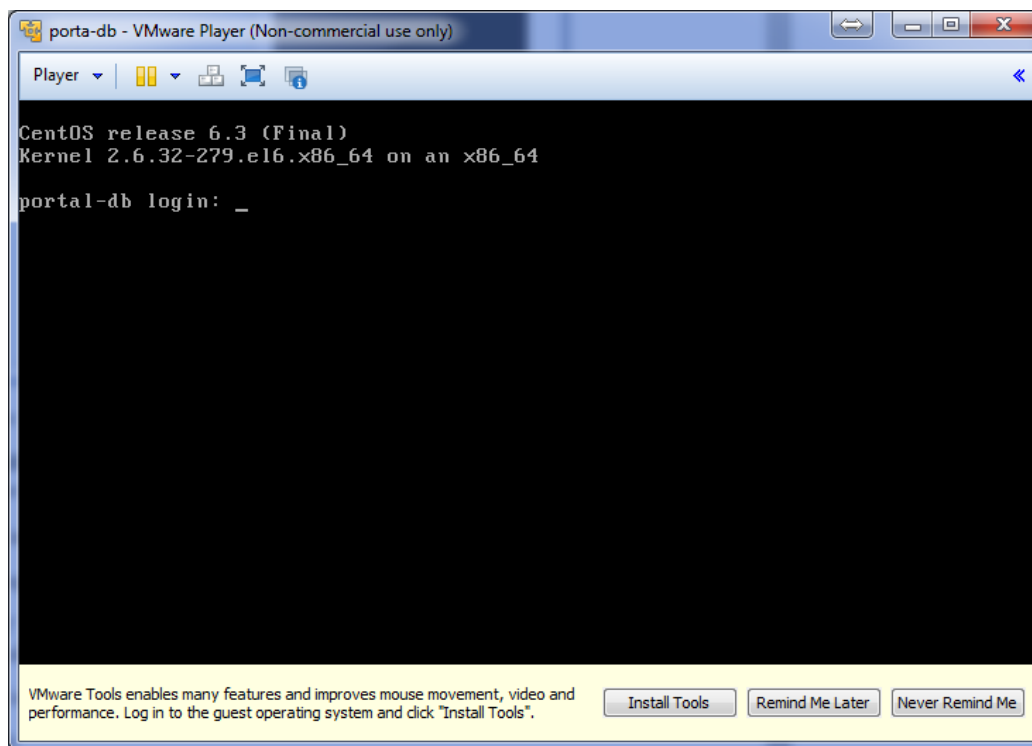


Figure 6 – Virtual machine log in window

If following dialog ‘WMware Tools enables many features and improves...’ will be shown click ‘Never Remind Me’ button.

IMPORTANT: While clicking to at the virtual machine log in window you mouse cursor will dissappear and you will not be able to make any actions outside this window without using ‘CTRL + ALT’ key. Working mode inside the virtual machine window is only keyword-based (no mouse controls are available).

Following usernames and passwords are created in the OS of the virtual machine:

- 1) Login: **jboss** password: **jboss**
- 2) Login: **root** password: **compaq**

IMPORTANT: Use superuser account (**root**) only where it is required according to this guide. For all other purposes (start and stop services, etc.) use only **jboss** user.

After successful login console window should look like one shown on figure 7.

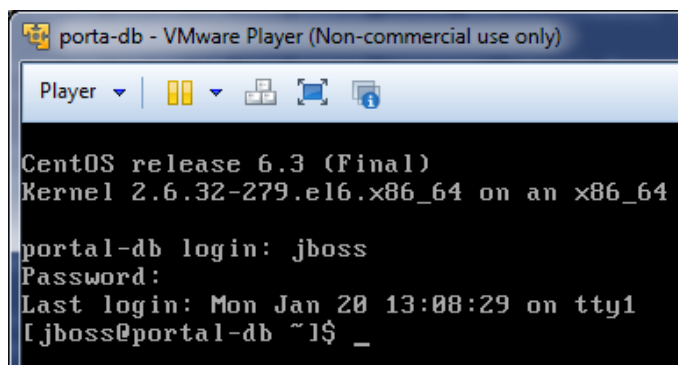


Figure 7 – Successful login window

4.2 Running under VirtualBox

Run Oracle VM VirtualBox using desktop icon or from the Start menu (fig.8).



Figure 8 – VirtualBox main window

Click “File” -> “Import Appliance...” in the top left menu. You will see following window (fig. 9).

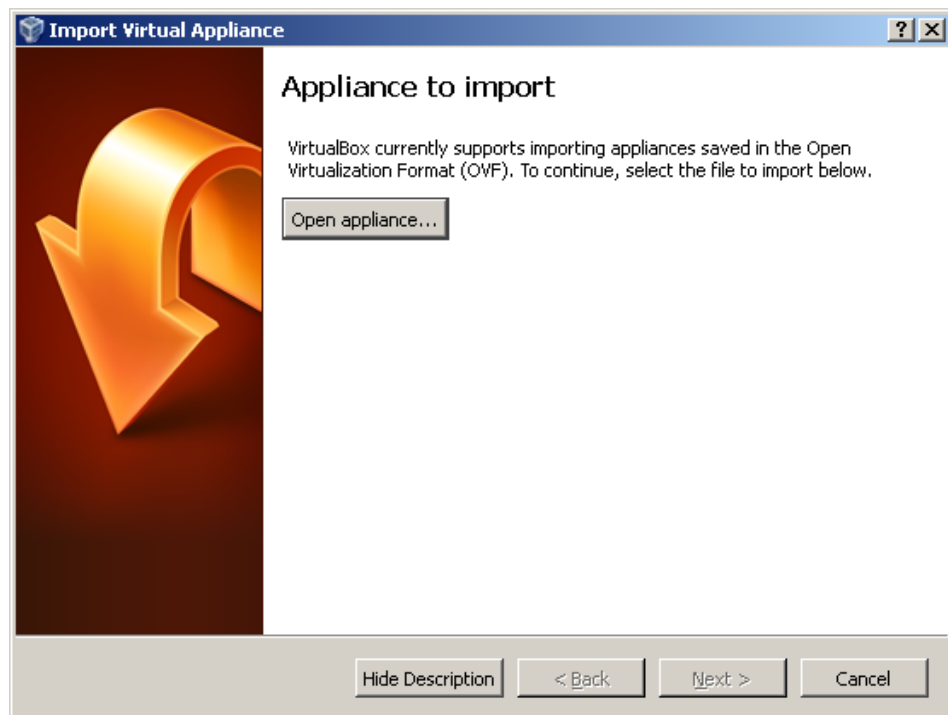


Figure 9 – Import appliance window

Click on “**Open appliance...**” button. VirtualBox will open you a browser window of your local PC to select and open downloaded virtual machine. Find the location with extracted images and open virtual machine configuration using file browser from the dialog window. The order of the opening of virtual machines is not significant. After opening required image file click “**Next**” button to continue with “Appliance settings” window (fig.10).

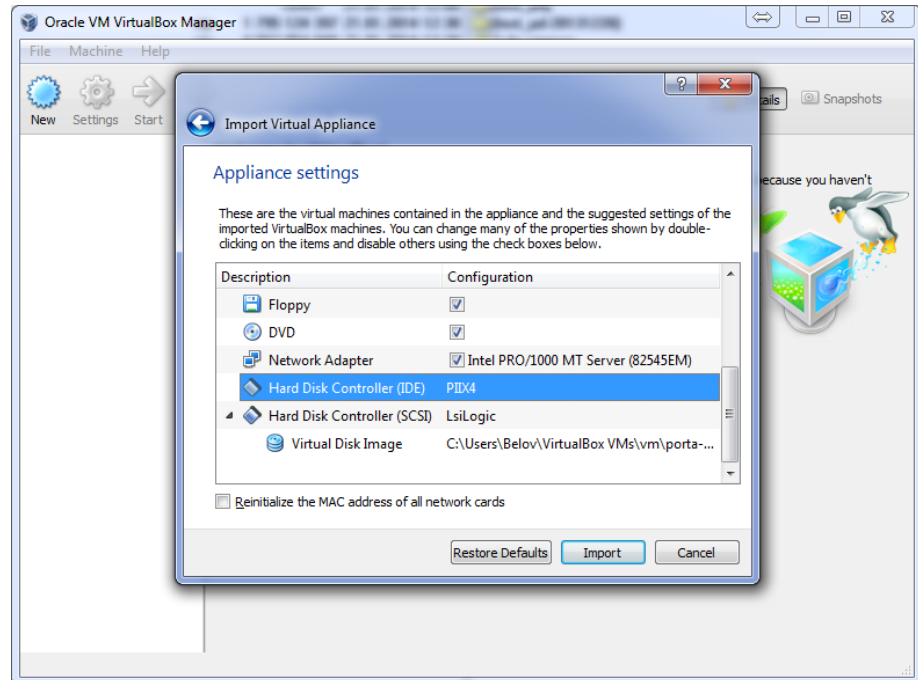


Figure 10 – Imported appliance settings window

This page allows to edit virtual machine configuration (CPU, RAM, etc.). **IMPORTANT:** Changing virtual machine configuration parameters may cause component unoperability. Please use the provided parameter values. Then click “**Import**” button. VirtualBox will start importing process of the virtual machine (fig.11)

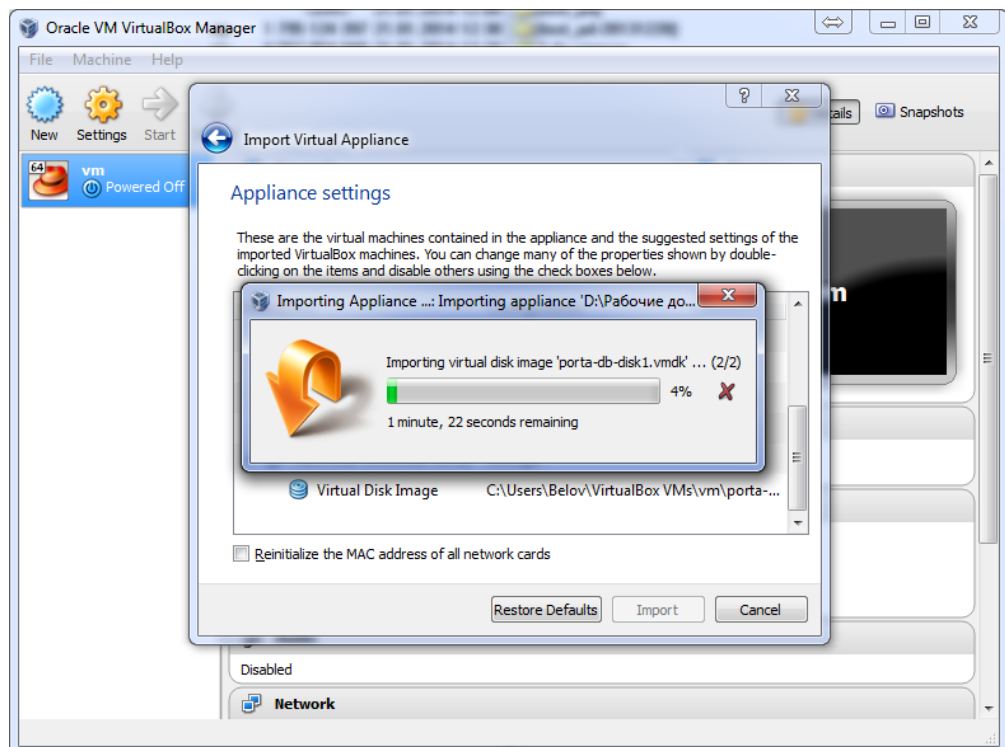


Figure 11 – Import process

Make sure you have added all images ('porta-db', 'is-soi' and 'test-pd') downloaded according to the details given section 3.

- '**porta-db**' image contains following ODP components – Portal, Security and core database used by most of the components.
- '**is-soi**' image includes ODP Service Bus and ODP Integration Server.

These 2 images together are representing regional node for the training needs.

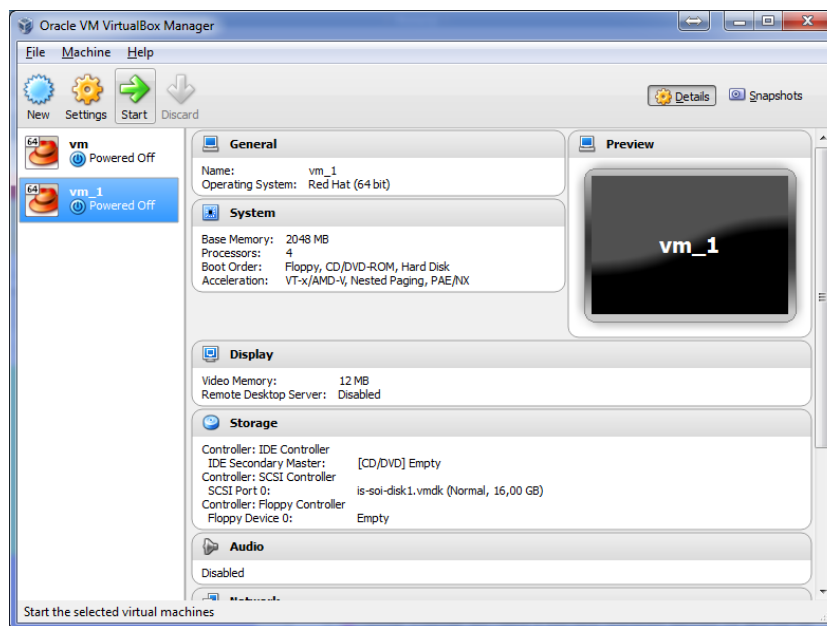
- '**test_pd**' image includes latest version of the Data Provider 2.0, created specifically for training needs.

Running order is following:

4. Porta-db
5. Is-soi (at least 30 seconds pause after the run of 'porta-db' vm)
6. Test_pd

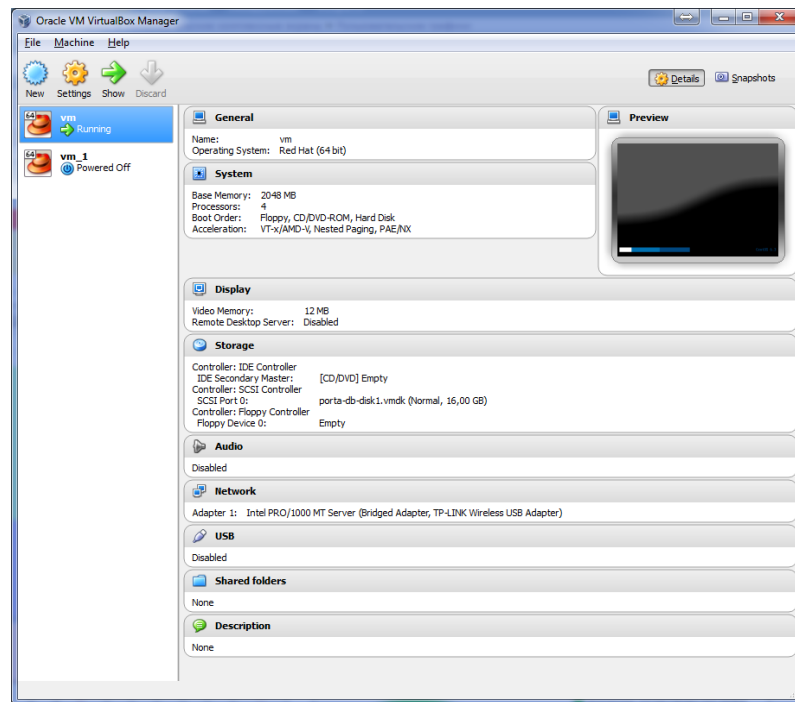
To power on virtual machines for VirtualBox:

- Click on the virtual machine name in the main VirtualBox window. After clicking it should be highlighted with dark blue line.



- Use “Start” button from the top menu.
- Click “OK” on the “Virtual Box – Information” window that will appear after clicking “Start” button.

Loading process should be shown at the Preview window, positioned in the right top corner of the main window.



To see full size window use “Show” button from the top menu. Virtual machine will boot its operating system (CentOS 6.3). After it will boots up you will be prompted to enter login for the user (fig. 12)

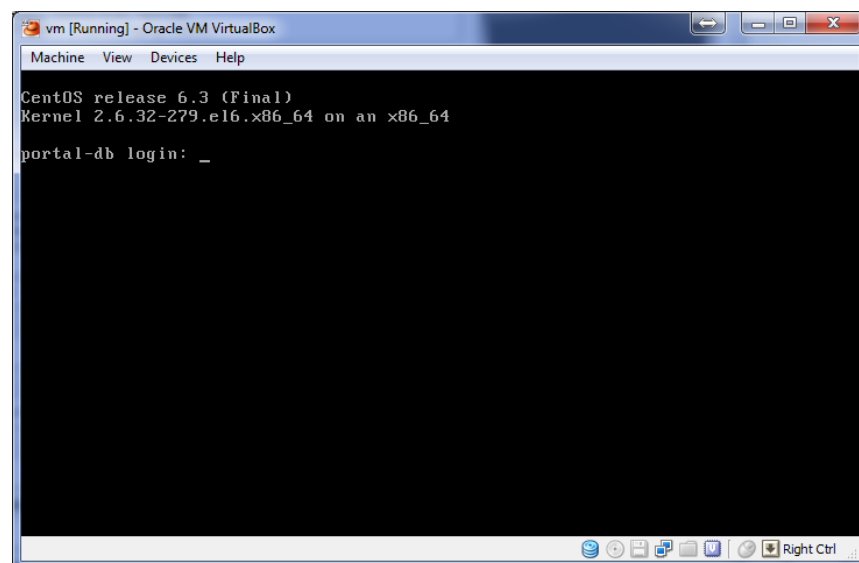


Figure 12 – Virtual machine log in window

IMPORTANT: While clicking to the virtual machine log in window you mouse cursor will dissappear and will not be able to make any actions outside this window without pressing right ‘CTRL’ key. Working mode inside the virtual machine window is only keyword-based (no mouse controls are available).

Following usernames and passwords are created in the OS of the virtual machine:

- 1) Login: **jboss**
- Password: **jboss**
- 2) Login: **root**

password: **compaq**

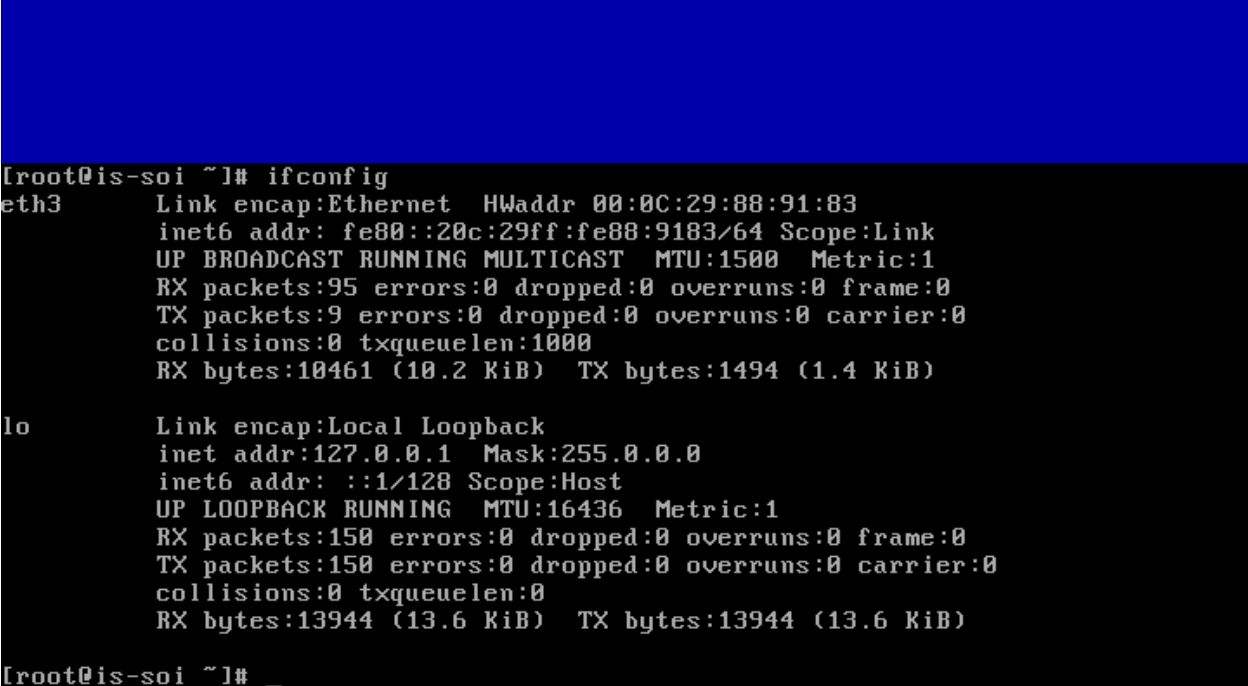
IMPORTANT: Use superuser account (**root**) only where it is required according to this guide. For all other purposes (start and stop services, etc.) use only **jboss** user.

5. Reconfiguring network interfaces

To reconfigure the network interfaces you should first power on virtual machines.

Log in into the console of powered on virtual machine as root user with the provided password.

Type following command “ifconfig” in the virtual machine console. You will see following window:



```
[root@is-soi ~]# ifconfig
eth3      Link encap:Ethernet  HWaddr 00:0C:29:88:91:83
          inet6 addr: fe80::20c:29ff:fe88:9183/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:95 errors:0 dropped:0 overruns:0 frame:0
          TX packets:9 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:10461 (10.2 KiB)  TX bytes:1494 (1.4 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:150 errors:0 dropped:0 overruns:0 frame:0
          TX packets:150 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:13944 (13.6 KiB)  TX bytes:13944 (13.6 KiB)

[root@is-soi ~]# _
```

IMPORTANT: Pay attention to the “**eth**” line to remember the name of the Ethernet-based interface (**eth3** in example). This will be used to configure properly your virtual machine network interface.

To begin configuring the network interface type following command «**system-config-network-tui**» by using terminal user interface and press <Enter>.

Following window should appear (fig. 13).

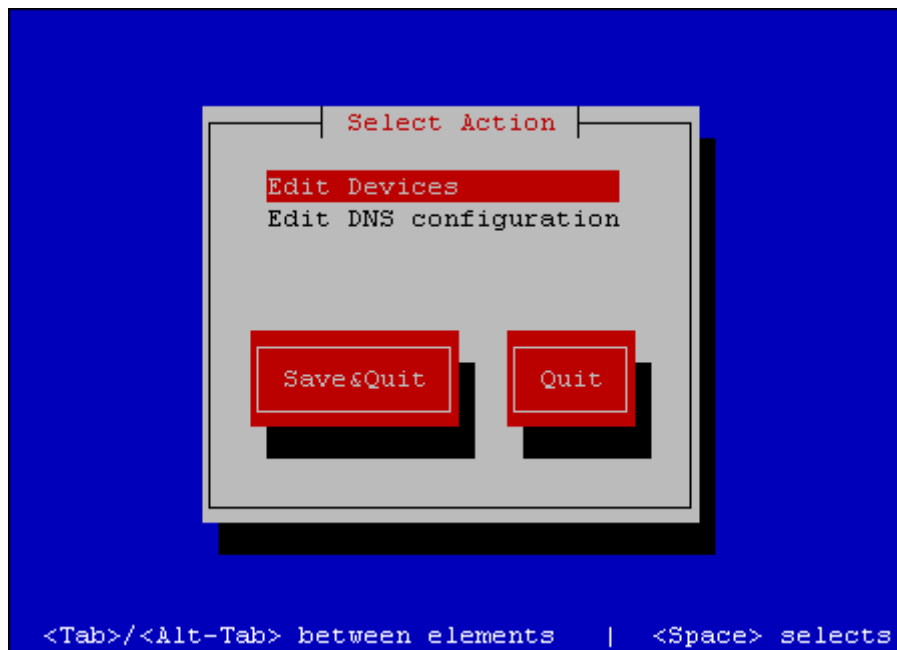


Figure13 – Network configuration. Action selection menu

Select the menu item «**Edit Devices**» using Tab key for navigation (fig.14) and press <Enter>.

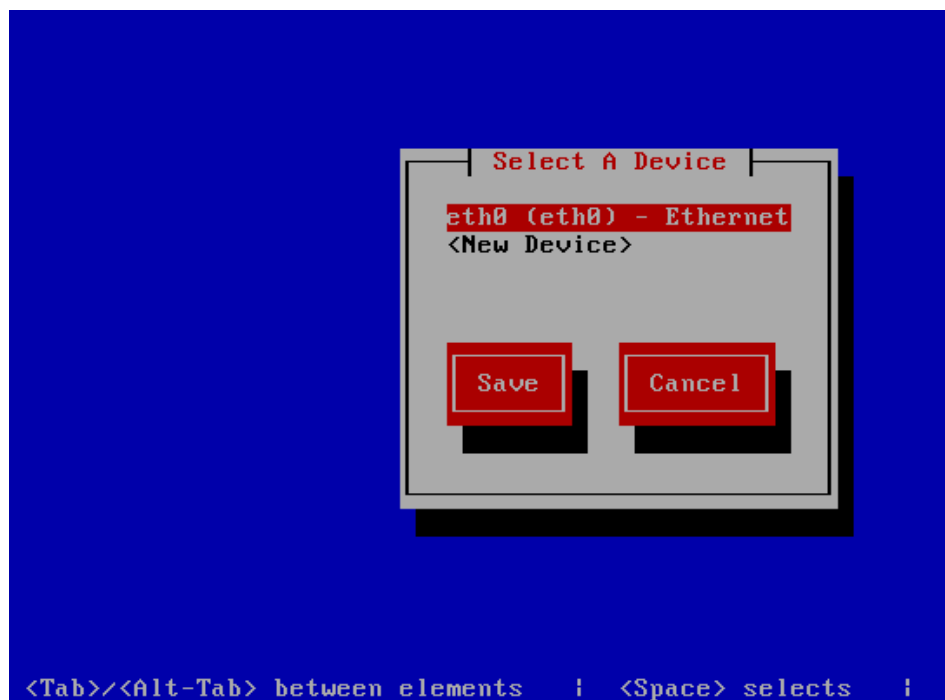


Figure14 – Network configuration. Device selection menu

Among the presented list of devices (can differ from the one presented on figure 14) choose Ethernet and press <Enter>. This will open a network configuration window (fig. 15)

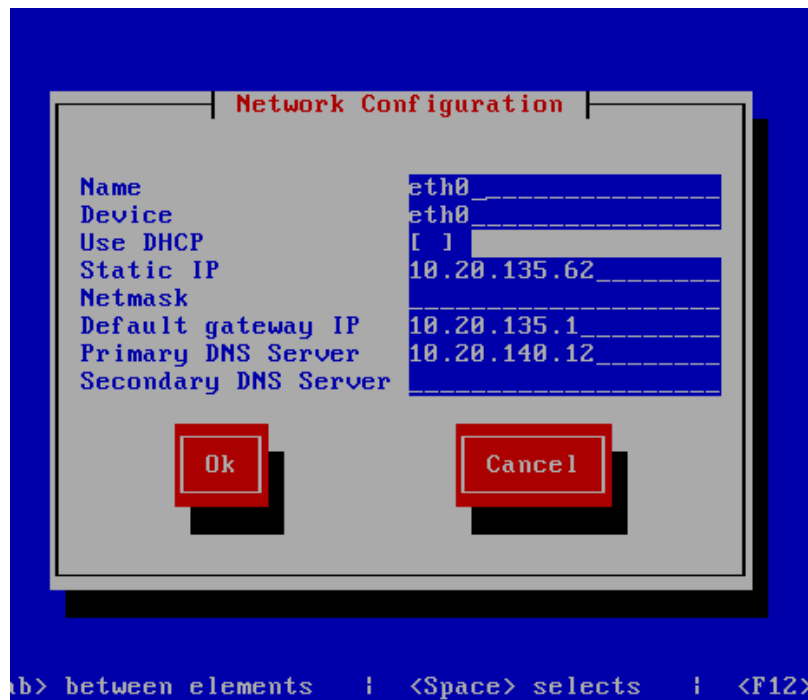


Figure15 – Network configuration window

Using TAB key navigate from one line to another. Specify following parameters:

- Name - generic name of Ethernet-based interface (can be left unchanged or replaced by any name)
- Device – device name of Ethernet-based interface that you have identified using command “ifconfig” (eth3 in example case)
- Use DHCP – *no changes at this option*
- Static IP – LAN IP address for selected virtual machine. Should be real IP address from the network.
- Netmask – mask of the LAN network (usually 255.255.255.0) (should be retrieved from your network administrator)
- Default gateway IP – IP address of the gateway (should be retrieved from your network administrator)
- Primary DNS Server – domain name server to be used for virtual machine to resolve the DNS names.
- Secondary DNS Server - *no changes at this option*

After making all required changes use TAB key to select OK and press <Enter>. If have properly specified Ethernet interface name you will see the name of the network device and specified name (fig.16).

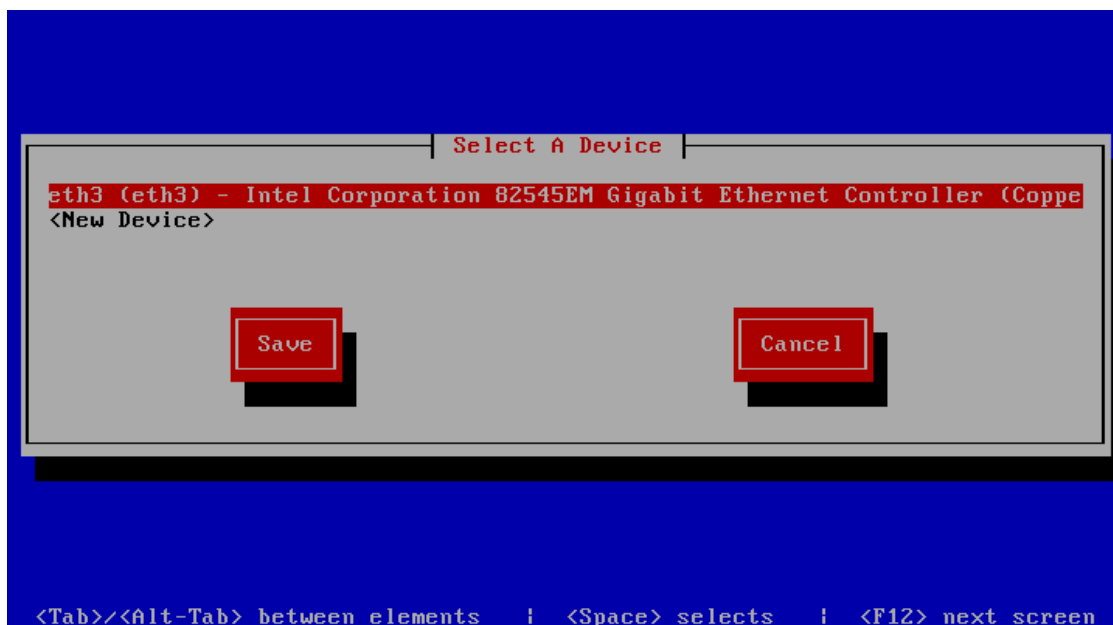


Figure16 – Network configuration. Binded device view

Use TAB key to select “Save” and press <Enter>. You will be returned to the action selection window (fig. 13). Use TAB key to select “Save&Quit”and press <Enter>.

Upon completion of the settings, restart the network interfaces using following command: «**service network restart**». You will see following messages (fig.17)

```

[root@is-soi ~]# service network restart
Shutting down interface eth3: Device state: 3 (disconnected)
[ OK ]
Shutting down loopback interface:
[ OK ]
Bringing up loopback interface:
[ OK ]
Bringing up interface eth3: Active connection state: activated
Active connection path: /org/freedesktop/NetworkManager/ActiveConnection/2
[ OK ]

```

Figure17 – Network configuration restart.

If any of the actions will result “Failed” message this means that something was not configured properly and you should try actions listed in section 5 once again.

6. Components networking

When completing network configuration for all virtual machines it is mandatory to change associated host names for each of them in every virtual machine.

For example our machines have following IP addresses:

Porta-db - 192.168.10.2

Is-soi - 192.168.10.3

Test_pd - 192.168.10.3

Each of the VMs have corresponding domain name (virtual domain name):

Porta-db - portal-test.oceandataportal.net

Is-soi - is-test.oceandataportal.net

Test_pd - odp-test.oceandataportal.net

This means that we can associate portal-test.oceandataportal.net with 192.168.10.2, is-test.oceandataportal.net with 192.168.10.2 and odp-test.oceandataportal.net with 192.168.10.3 accordingly.

All host name – IP address configurations are stored in /etc/hosts file on every VM.

To edit this file use following actions (for every downloaded VM):

1. Power on virtual machine
2. Log in as root
3. Type following command: “vi /etc/hosts”
4. Press “i” key to enable edit mode
5. Specify IP addresses of the VMs which corresponds domain names listed above
6. To save the edits you have made:
 - a. Press <Esc>.
 - b. Type “:wq”
 - c. Press <Enter>.

Use this like <http://www.washington.edu/computing/unix/vi.html> to get more about VI usage.

To enable access to all virtual machines from PCs or laptops the same actions needs to be done in the system hosts file. For some operating systems like Windows XP, 2003 this can be done simply opening and editing hosts file (located in %WINDOWS%/system32/drivers/etc/) from administrator login. For later verions of Windows (like Windows 7) it is better to copy original hosts file to another location, make a modifications and copy it back using admistrator login.

Add following lines to the hosts file of PC (all trainees and trainers should have this action made):

```
<IP address of potra-db> portal-test.oceandataportal.net  
<IP address of is-soi> is-test.oceandataportal.net  
<IP address of test_pd> odp-test.oceandataportal.net
```

For example it will look like:

```
192.168.10.2 portal-test.oceandataportal.net  
192.168.10.3 is-test.oceandataportal.net  
192.168.10.4 odp-test.oceandataportal.net
```

7. Components management

7.1 Restart VW

To restart VM you should be logged in as root. If you are running as another user (e.g. jboss) use “su” command and type password for the root.

Type following command: “**shutdown –r now**”

7.2 Shutdown VM

To shutdown VM you should be logged in as root. If you are running as another user (e.g. jboss) use “su” command and type password for the root.

Type following command: “**shutdown –h now**”

IMPORTANT: To shutdown VM try to avoid using buttons from the VMware Player or VirtualBox as this is force shutdown and file system may be damaged.

7.3. Start/stop components

All VMs are using JBoss application server to run its ODP components.

Following table includes list of application server locations for each of the components

VM name	Component name	Path	Commands
Porta-db	ODP Portal	/opt/portal/jboss-portal-2.7.2	<ul style="list-style-type: none"> – cd /etc/init.d to start: <ul style="list-style-type: none"> – service jboss_init_redhat.sh start to stop: <ul style="list-style-type: none"> – service jboss_init_redhat.sh stop Alternative command to start: sh /opt/portal/jboss-portal-2.7.2/bin/jboss_init_redhat.sh start To stop: sh /opt/portal/jboss-portal-2.7.2/bin/jboss_init_redhat.sh stop
Porta-db	ODP Security	/opt/portal/apache-tomcat-6.0.29	<ul style="list-style-type: none"> – cd /etc/init.d to start: <ul style="list-style-type: none"> – service tomcat.sh start to stop <ul style="list-style-type: none"> service tomcat.sh stop Alternative command to start: sh /opt/portal/apache-tomcat-6.0.29/bin/startup.sh To stop: sh /opt/portal/apache-tomcat-6.0.29/bin/shutdown.sh
Is-soi	ODP Integration Server	/opt/is/jboss-4.2.3.GA	<ul style="list-style-type: none"> – cd /etc/init.d to start: <ul style="list-style-type: none"> – service jboss_init_redhat_is.sh start to stop: <ul style="list-style-type: none"> – service jboss_init_redhat_is.sh stop Alternative command to start: sh /opt/is/jboss-4.2.3.GA/bin/jboss_init_redhat.sh start To stop: sh /opt/is/jboss-4.2.3.GA/bin/jboss_init_redhat.sh stop
Is-soi	ODP ServiceBus	/opt/soi/jboss-5.1.0.GA	<ul style="list-style-type: none"> – cd /etc/init.d to start: <ul style="list-style-type: none"> – service jboss_init_redhat_soi.sh start to stop:

			<pre>- service jboss_init_redhat_soi.sh stop</pre> <p>Alternative command to start: sh /opt/is/jboss-5.1.0.GA/bin/jboss5_init_redhat.sh start</p> <p>To stop: sh /opt/is/jboss-5.1.0.GA/bin/jboss5_init_redhat.sh stop</p>
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7.4 Access to components

ODP Portal <http://portal-test.oceandataportal.net:8080/>

ODP Integration Server <http://is-test.oceandataportal.net:8080/iserv2/>

ODP Service Bus <http://is-test.oceandataportal.net:8080/jboss/ws/>