

Oracle Business Integration

11.1.1.7.0 VirtualBox Appliance

Oracle SOA Suite with Oracle Service Bus
Oracle BPM Suite with Process Spaces
Oracle Event Processing

Introduction, Readme and Change Log

Build 3 – March 2014



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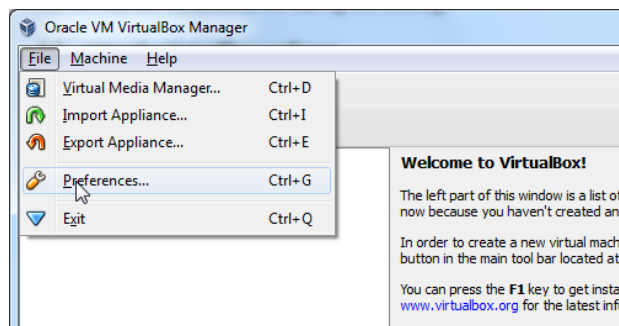
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IMPORTANT: This VirtualBox appliance is meant for evaluation and/or development purposes only and should not be used in production environments.

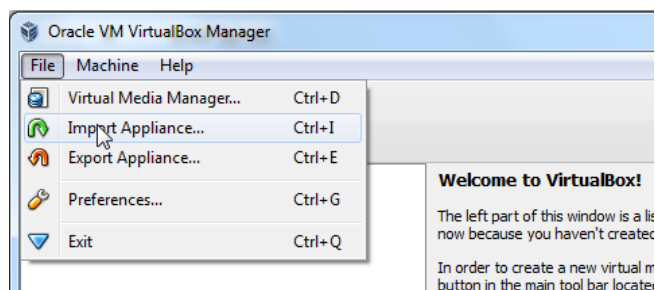
1 Using the virtual appliance

1.1 Install the appliance

- Ensure system requirements are met i.e. 64-bit machine with 8 GB RAM and 50 GB free disk space. Enable hardware virtualization in your PC BIOS (required).
- Download and install the latest Oracle VM VirtualBox.
- Download all parts of the archive i.e. files with names ending in .001, .002 etc.
- Download the .md5 checksum file, which contains the MD5 checksums of all the parts to test the integrity of the downloaded files. Use utilities such as `md5sum` on Linux, or any compatible Windows utility, for example <http://www.etree.org/md5com.html> / [Cygwin](#).
- Unzip the archive using latest WinZip or 7Zip. This should create a single file, ending in .ova – this is the virtual appliance that is ready for import.
- Start **VirtualBox** and set the import folder for the image. Go to **File→Preferences**



- Set the **Default Machine Folder** to a location of your choice with enough free disk space. This is where VirtualBox will store the virtual image you are about to import. Click **OK**
- Import the appliance (**File→Import Appliance ...**) and choose the .ova file saved earlier. You can change the name of the virtual machine if you wish.

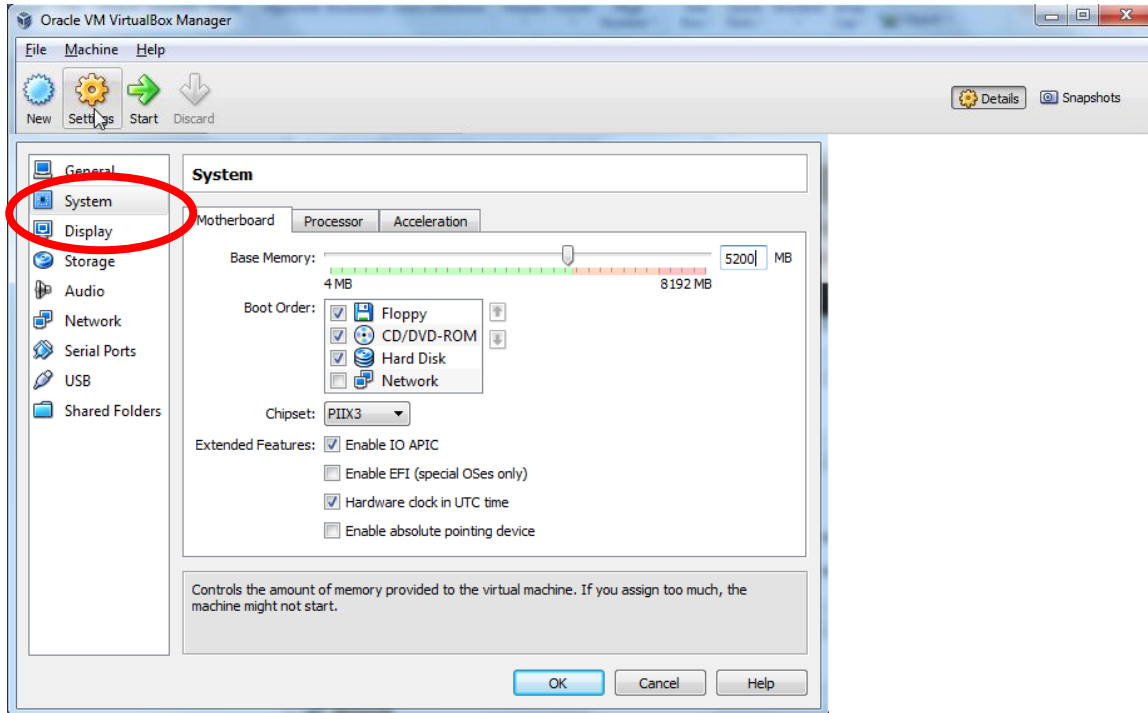


- Click **Import**. Read the license agreement and accept by clicking **Agree**. The import will take a few minutes.

1.2 Configure the virtual machine

Change memory settings

- With the appliance selected, click on **Settings** and then go to **System**.



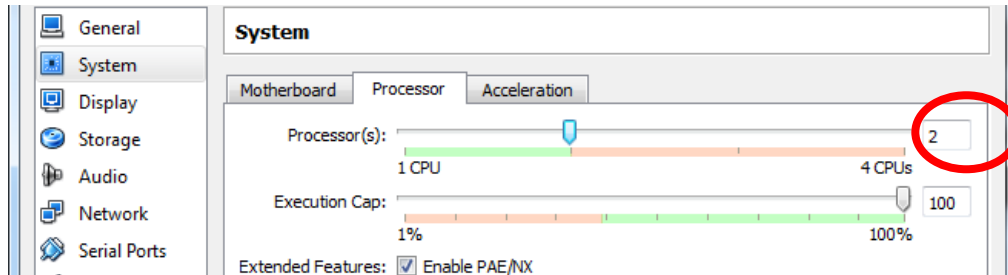
- Set the memory to the desired value depending on the intended use of the appliance. The seeded value is 5 GB. Note: You will get a “non-optimal settings” warning if you exceed the memory threshold for your host machine. You may ignore these warnings as long as you leave enough memory for the host OS e.g. minimum 1.5 GB for Windows. Also ensure no programs are running in the background e.g. email clients. Here are some typical usage configurations and related memory needs.
 - **Server Only:** WLS servers running in console mode with no graphical desktop. Run Firefox/Enterprise Manager and JDeveloper on a different physical machine and connect to the virtual machine over the network.
 - **Desktop:** Graphical desktop is started, with Firefox/Enterprise Manager and JDeveloper running within the VM. Useful for smaller, simpler demos.

VM Memory (MB)	Recommended for...	Servers that can be started...
5120	Server Only	DB + AdminServer
6144	Server Only	DB + AdminServer + UCM (or BAM, any one server)
6656 (8 GB m/c)	Desktop	DB + AdminServer + IDE + browser apps e.g. EM, Worklist
10240 (12 GB m/c)	Server Only	DB + AdminServer + all managed servers

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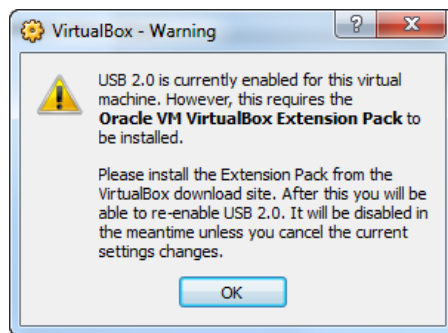
Change the number of CPUs

- Go to the “**Processor**” tab and enter the desired value. Leave it at the maximum value (recommended for laptops), or reduce it to limit the number of CPUs available to the virtual machine (e.g. use only 2 cores of a quad-core or larger machine).

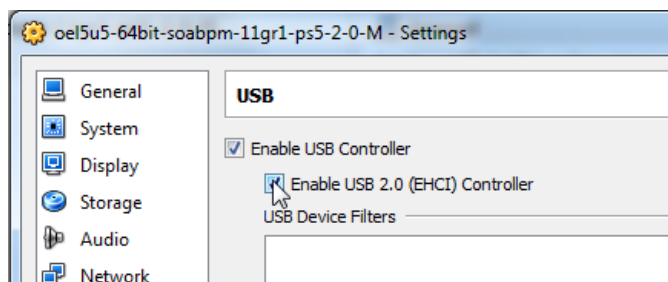


Handling errors related to USB 2.0

- If you see an error related to USB 2.0, either install the [Oracle VM Virtual Box extension](#) (available in the same location as the image), or disable USB 2.0:



- Go to **USB**

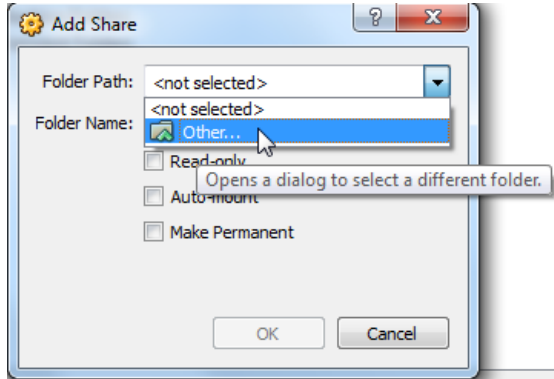


- Uncheck the box in front of “Enable USB 2.0 (EHCI) Controller” and click **OK**.

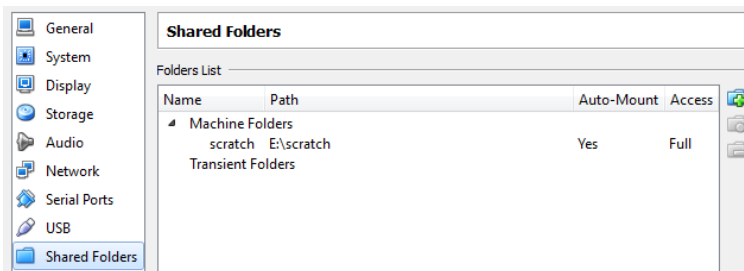
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Setup shared folders between the Virtual Machine and local disk

- To copy files between the image and a local disk, select Shared Folders on the VM settings and click on the + icon to add a new share



- Select **Auto-mount** and **Make Permanent**
- The folder name is what will be visible within the Linux machine under `/media/sf_<folder>`. In the example shown below, the `E:\scratch` folder on Windows will be visible within the virtual appliance under `/media/sf_scratch`. For best performance, copy frequently used files to the virtual machine disks e.g. under `/home/oracle`.



Configure network settings on local machine

When running the appliance in “Server Only” mode, you will need to run JDeveloper, Enterprise Manager and browser applications on your local host machine, connecting to the virtual machine over the network. This requires network setting changes on your local host machine.

- Edit your local machine’s **hosts** file and add **soabpm-vm** and **soabpm-vm.site** as aliases for your loopback address as shown below. The hosts file can be found in `/etc/hosts` (Linux) and `%WIN%\system32\drivers\etc\hosts` (Windows)

```
127.0.0.1 soabpm-vm soabpm-vm.site localhost
```

- Note: Using a loopback address will only work for NAT network mode (see below). If you

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change the VirtualBox network mode to Bridged, then run “`ifconfig`” within the VM to note the IP address assigned to the virtual machine `eth0` interface, and use that instead of 127.0.0.1.

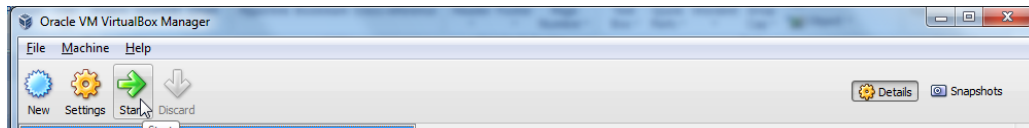
- If you are unable to connect to **soabpm-vm** from your local machine to the VM, change Network Proxy settings on your local machine to ensure that there are no conflicts with other machines on the network. For example, there may be another VM instance named **soabpm-vm** running on the corporate network, whose IP address is being used by the browser instead of your local machine loopback address. To avoid this, either turn off any Network Proxy, or ensure that **soabpm-vm**, **soabpm-vm.site**, **localhost** and **127.0.0.1** are bypassed from the proxy. This will force the IP address resolution to happen from your local machine **hosts** file instead of the corporate DNS.

Configure network adapter settings for the VM

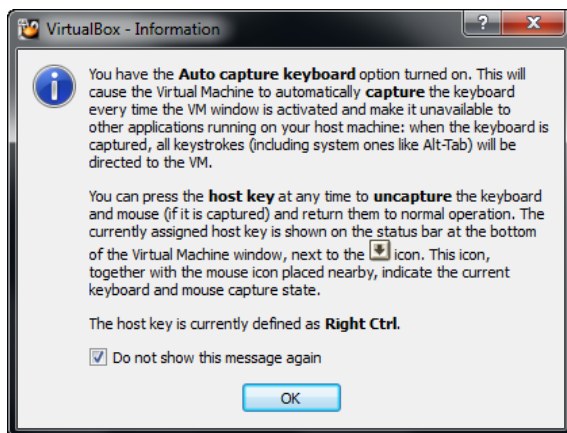
- The default network adapter configuration is set to NAT mode. If you wish to have the VM directly exposed to the external network for server-to-server communication with an external machine, you can change the network adapter to Bridged mode. This is only recommended for certain complex configurations such as running multiple virtual machines. For more details on this mode, refer to the VirtualBox documentation.

1.3 Start the appliance

- With the appliance selected, click on **Start**



- If this window pops up, check “Do not show this message again” and click **OK**

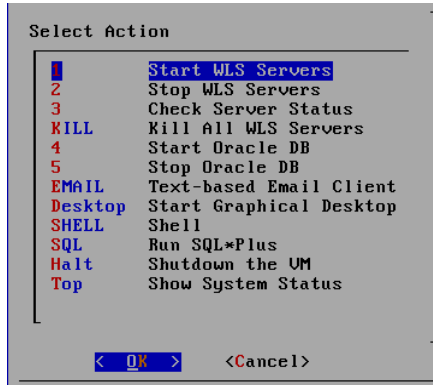


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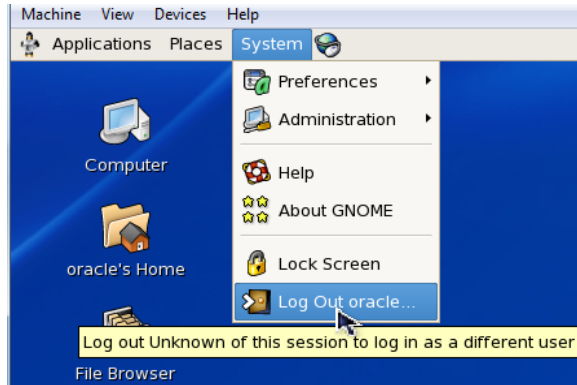
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TIP: Use **Right-Ctrl** to “unlock” the mouse and switch between the VBox and local system.

- Login as **oracle** with password as **oracle** (see Appendix for list of seeded credentials). After logging in, you will see a menu with various options.
- The VBox appliance is started in console/text mode by default to save memory. To start the desktop, choose “**Start Graphical Desktop**” and press **return**, which will start the Gnome desktop. This is only required to be done once to change seeded JVM settings for the WLS servers (see the next section).



- In order to return to text/console mode, log out of the graphical display. Go to **System → Log Out oracle**



1.4 Stop the appliance

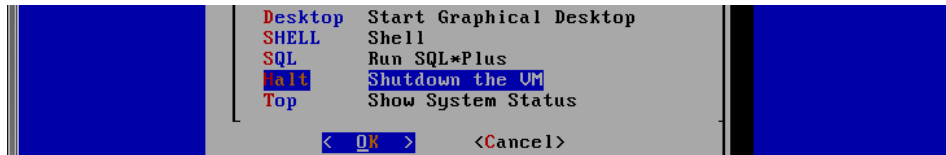
When you want to stop the appliance you have two options: shutting down the machine; or saving the machine state. Saving the machine state - similar to Windows “Hibernate” - is faster and can be useful for demos as you can leave everything running (servers, IDE, browsers etc).

Shutting down the image

- If you want to shut down the VBox completely from text/console mode, first **stop the WLS servers** (see next section). Check the server status to ensure all servers are down.

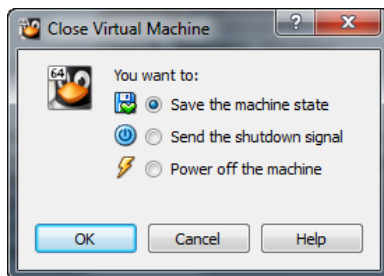
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- Choose **Shutdown the VM** and hit **return**

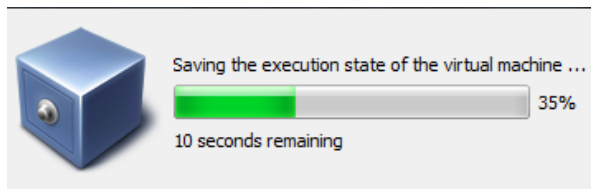


Saving the machine state

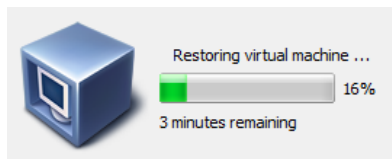
- Click on the **X (close)** at the top right of your VirtualBox window or right-click on the VM icon in the Windows taskbar. Select **Close** and the Close Virtual Machine dialog appears.



- Choose **“Save the machine state”** and Click **OK**



- The Oracle VM VirtualBox Manager shows the image as **“Saved”**. To restart the image, click on **Start** as you would also do after a shutdown, and it will restore to the same state, including all servers, IDE, browsers etc.



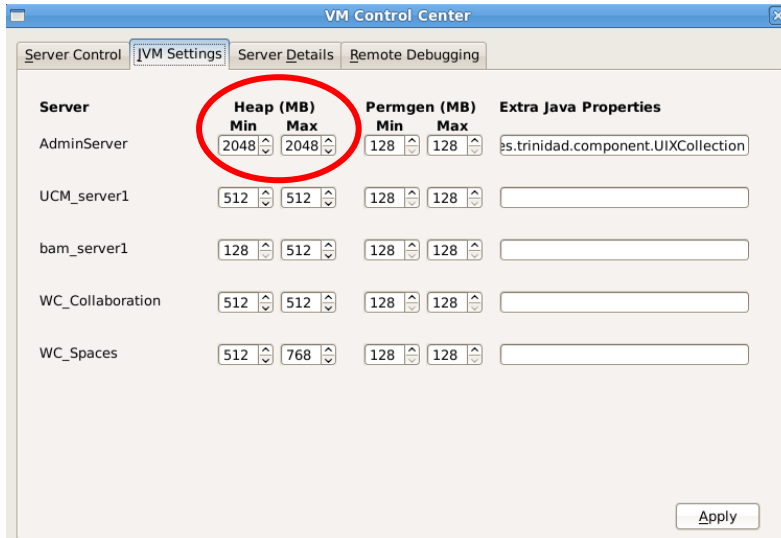
2 Managing the WLS Servers

2.1 Change seeded JVM settings for WLS servers

Servers in the domain are configured with their own heap settings. To change these settings, you need to login to the graphical desktop.

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- Start the VM Control Center, which is the *Manage WebLogic Servers* desktop icon.
- To change the heap size settings, go to **JVM Settings**



- Set heap size and Click **Apply**, then **OK**. For better performance, log off from the desktop as this releases a chunk of memory.

NOTE: If you start the servers using the WLS scripts, bypassing the control center command-line or GUI utilities, these memory settings will not be used.

2.2 Manage WLS servers in graphical desktop mode

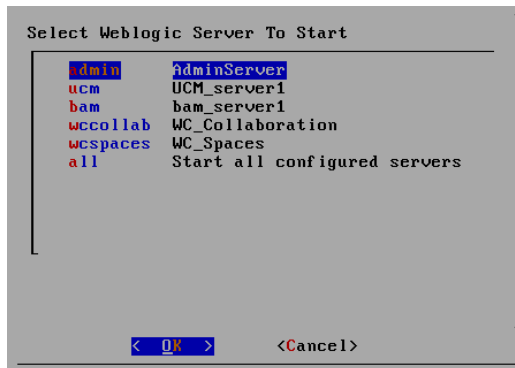
- To start the WLS servers, double-click on the “**Manage Weblogic Servers**” icon on the desktop if the **VM Control Center** is not already open. This will open the VM Control Center – the same interface used to set the JVM settings.
- In the Server Control tab, you can start all configured servers or a subset of servers. It is not recommended to start all the managed servers unless you have the physical memory and the VM memory settings have been configured correctly.
- Choose the server(s) you want to start and click **Start**. Check status messages on the right hand panel. The server is up when you see “**Admin Server is now running**”. It takes between 4 to 7 minutes to start AdminServer. You can now close the window.
- To check the status of the servers, click **Server Status** in the **VM Control Center**.
- To stop the servers, choose your server in the **VM Control Center** and click **Stop**. Confirm you want to stop the server(s) by clicking **Yes**. The SOA server is stopped when you see the message “**Admin Server ... has been shutdown**”.

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2.3 Manage WLS servers in console mode

When starting the server in text mode, you will still make use of the changed memory settings (heap space) you set earlier.

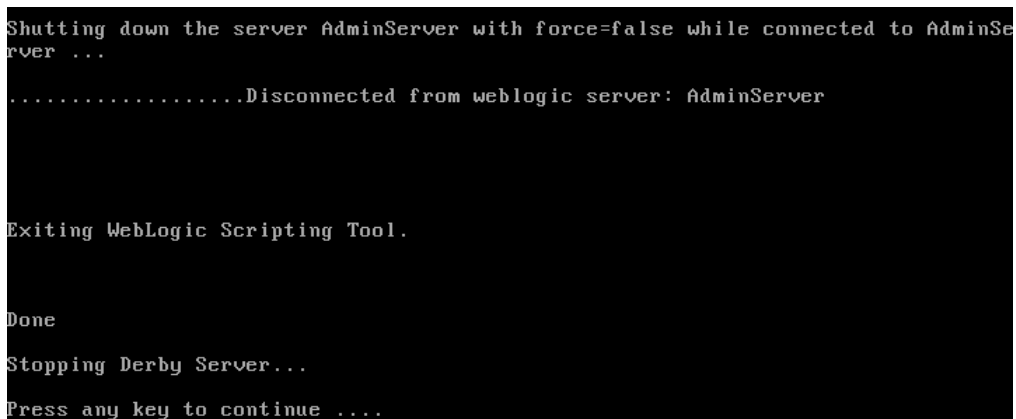
- To switch to console (text) mode from graphical desktop mode, log out first using **System → Log Out oracle...**
- “**Start WLS Servers**” is already selected (if not, select it) and hit **return**.
- Select the server(s) and hit **return** again.



- The server(s) are/is started when you see “**Press any key to continue**”



- To see the status of the server, choose **Check Server Status**
- To stop the server, choose **Stop WLS Servers**, choose the server(s) and click **return**. You will see “**Done**” when the server is stopped.



If you want to shut down the VBox completely from text/console mode, first **stop the servers** (check the status to ensure) and then use the option “**Shutdown the VM**”.

2.4 Manage WLS servers using command line scripts

Once in console/text mode, you can start a shell window and manage the WLS servers. To return back to the text menu, run **vmenu** from the command prompt.

Command line scripts are available in `/home/oracle/bin` directory to manage the WLS servers. These are **start-wls-server.sh**, **stop-wls-server.sh**, **check-server-status.sh**

NOTE: If you start the servers using the WLS scripts, bypassing the VM Control Center GUI or the VM command-line scripts, these memory settings will not be used.

3 Using Desktop Applications

You can choose between running JDeveloper and Enterprise Manager on your local machine or within the image. To decide on the configuration, refer to the VM memory-typical usage configuration table in the previous section. To use the local machine JDeveloper and Enterprise Manager, ensure that the network configuration is setup as explained in the previous section.

3.1 Start JDeveloper

- To start JDeveloper on the VM image, start it by double-clicking on the **JDeveloper** desktop shortcut icon on the left side of the desktop.

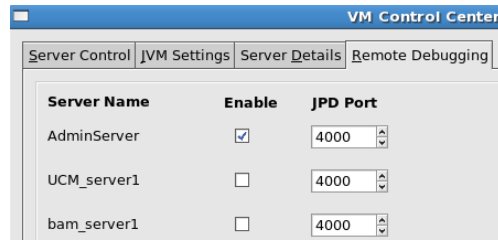
3.2 Start Enterprise Manager (Fusion Middleware Control, short EM)

- The AdminServer must be **Running** before you can use **EM**. Open a browser window and enter URL <http://soabpm-vm:7001/em> .
- Login with *weblogic/welcome1* (see Appendix for a list of all the credentials in the VM). EM periodically times out due to inactivity. Simply login again when prompted.

3.3 Set up servers for remote debugging

The VM Control Center allows you to run any of the servers in the configured domain in debug mode, ideal for running a step-through debug session in your JDeveloper. To enable:

- Start the VM Control Center by clicking on the **Manage Weblogic Servers** and click on the **Remote Debugging** tab



- Select **Enable** for the server you would like to run in remote debugging mode
- Optionally, you can change the port. If you change the port number, and you will be connecting to the server from outside the virtual machine, you will need to add a new port-forwarding entry in the virtual machine (Devices→Network Adapters→Port Forwarding). The default port 4000 is already set up for port-forwarding. If you will be running more than one server in this mode, make sure you use different port numbers, and configuring the VM NAT port forwarding for those ports.
- Restart the server that you enabled for remote debugging. The server will wait for you to start your debug session in JDeveloper and connect to the server. Until you do that, the server will not start up

4 Starting Event Processing

- *Note:* Oracle Event Processing design-time functionality requires use of Oracle Event Processing IDE for Eclipse 3.7 (Indigo), which is not installed due to licensing restrictions. Please refer to the Appendix on downloading and installing this component. Once installed, you can use Eclipse to configure the server and start Oracle Event Processing.
- To start Oracle Event Processing without Eclipse, run the **startwlevs.sh** script under `/oracle/oephome/user_projects/domains/ocep_domain/defaultserver`.
- You can access the admin tool once it's running at `http://soabpm-vm:9002/wlevs` with credentials **wlevs/wlevs**.

5 APPENDIX: VirtualBox Appliance Seeded Configuration

5.1 Installed Software

<i>Software</i>	<i>Version</i>
Oracle Enterprise Linux (64-bit)	EL 6 Update 4
Oracle Database Express Edition (XE) 11g Release 2	11.2.0
Oracle SOA Suite 11g	11.1.1.7.0
Oracle BPM Suite 11g	11.1.1.7.0
Oracle Event Processing 11g	11.1.1.7.0
Oracle Service Bus 11g	11.1.1.7.0
Oracle Webcenter Content (Enterprise Content Management)	11.1.1.7.0
Oracle Webcenter Suite 11g	11.1.1.7.0
Oracle JDeveloper	11.1.1.7.0
JRockit JVM (used for WLS servers)	1.6.0_37-R28.2.5-4.1.0
Sun Java SDK	1.6.0_45 (JDK 6 update 45)
SOA Suite PO Processing Tutorial/Demo	PS5
BPM Sales Quote Tutorial/Demo	PS4
BPM PS6 Workshop	PS6
BPM Case Management Demo (EURent)	PS6

5.2 Virtual Machine Settings

- Hostname is **soabpm-vm.site** with **2 CPU** and **5GB** memory
- Remote Desktop display is also enabled at port **3389**
- Default network mode is **NAT** which should provide an IP address of 10.0.2.15
- SSH port 22 on the VM is forwarded to **port 2222** on the host
- All other ports are forwarded with the same port numbers using **NAT port-forwarding**

5.3 Oracle WebLogic Server Domain (dev_soasuite) Setup

<i>Domain Template</i>	<i>Server</i>	<i>Port</i>	<i>Notes</i>
Oracle BPM Suite for developers	AdminServer	7001	Configured to use UCM for attachments
Oracle SOA Suite for developers	AdminServer	7001	
Oracle Service Bus for developers	AdminServer	7001	
Oracle Enterprise Manager	AdminServer	7001	
Oracle Business Activity Monitoring	bam_server1	9001	Disabled by default. Enable using OEM.
Oracle UCM – Content Server	UCM_server1	16200	RIDC Port 4444
Oracle Webcenter Spaces	WC_Spaces	8888	Configured for Process Spaces
Oracle Webcenter Discussion Server	WC_Collaboration	8890	
Node Manager		5556	

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5.4 Application URLs (also available on the Firefox bookmarks toolbar)

<i>Application</i>	<i>Port / URL</i>
WebLogic Server Console	http://soabpm-vm:7001/console
Enterprise Manager	http://soabpm-vm:7001/em
BPM Workspace	http://soabpm-vm:7001/bpm/workspace
BPM Composer	http://soabpm-vm:7001/bpm/composer
WebCenter Content Server	http://soabpm-vm:16200/cs
BAM Console	http://soabpm-vm:9001/OracleBAM
WebCenter Spaces	http://soabpm-vm:8888/webcenter/spaces
WebCenter Discussion Server Console	http://soabpm-vm:8890/owc_discussions/admin
WebCenter Discussion Server	http://soabpm-vm:8890/owc_discussions
Event Processing Admin	http://soabpm-vm:9002/wlevs

5.5 User Login IDs and Passwords

<i>Component</i>	<i>Usernames</i>	<i>Password</i>
Administrative Login	weblogic	welcome1
BPM Workspace	weblogic, demo community (jcooper, jstein etc)	welcome1
DB schema	sys (as SYSDBA), system, dev_soainfra, dev_orabam, dev_mds, dev_ocs, dev_orasdpn, dev_discussions, dev_webcenter	welcome1
OEP Visualizer	wlevs	wlevs
DB SOA demo schema	soademo	soademo
DB BPM demo schema	quote	quote
OS Login	root, oracle	oracle

5.6 Additional Recommended Software

<i>Software</i>	<i>Location</i>	<i>Notes</i>
Oracle Enterprise Pack for Eclipse (OEPE) 11.1.1.8.0	http://www.oracle.com/technetwork/rk/developer-tools/eclipse/downloads/oepe-11118-521475.html	Recommended for Oracle Service Bus IDE based design-time. The All-In-One installers include Eclipse.
Oracle Event Processing IDE for Eclipse	http://docs.oracle.com/cd/E28280_01/dev.1111/e14301/ide_intro.htm#CEPED421	Needed for OEP design-time e.g. event processing network, CQL or Java code. Requires Eclipse 3.7 to be installed separately (refer to link).
Apache James 2.3.2	http://james.apache.org/download.cgi#Apache_James_2.3.2_is_the_stable_version http://wiki.apache.org/james/JamesQuickstart	If you need an email server in the VM to receive BPM task notifications. Thunderbird is already configured for POP3 port 110. Create the demo community users (e.g. jcooper) by following the wiki quickstart link.

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6 Change Log

Build 3 – March 2014

- Fixed JDeveloper Integrated Server JVM issue (Thanks to Paul Anderson). If any OOM issues with building ADF apps, replace “sun_jvm” with “jrocket” in setDomainEnv.sh under /home/oracle/.jdeveloper* and /oracle/jdevhome, then recreate local domain
- VNC Server disabled to fix the VirtualBox Host Auto-resize issue->use RDP instead
- Firefox java plug-in issue fixed and JDEV_USER_DIR moved to /oracle/jdev_user_dir
- Patches applied: 16747214, 14698557, 16181381, 16732261, 16697063, 16220718, 16942588 (Frevvo fix MLR contains 16879011, 16448541, 16884145)

Build 2 – May 2013

- Software packages updated to Oracle Enterprise Linux 6 Update 4, JDK6 Update 45
- TigerVNC Server configured to auto-start desktop 1 with 1280x800 resolution
- BPM PS6 Workshop lab setup – schema, email server SOA config, GetLOV REST Service
- BPM Process Spaces configured
- BPM Case Management EURent demo deployed
- Moved OEP Eclipse under /opt for Legal compliance with open source
- Firefox java plugin installed
- Bug Fixed:
 - JDev compilation issues due to older incompatible Java version
 - Enabled JDev deployments from outside VM (WLS External Listen Address)
 - Incorrect Eclipse persistence jar file
 - Database password expiring (set policy for unlimited lifetime)
 - WLS Servers heap size settings (setSOADomainEnv.sh)
 - Networking not starting in Console mode (NetworkManager)
 - WLS servers getting killed on logout (OEL6 SIGHUP fix)

Build 1 – April 2013

- Oracle Enterprise Linux 6 64-bit Update 3 (optimized 3 disks for cloning)
- Oracle Database Express Edition (XE) 11g Release 2 11.2.0
- Oracle SOA Suite 11g 11.1.1.7.0
- Oracle BPM Suite 11g 11.1.1.7.0 (configured to use UCM for attachments)
- Oracle Event Processing 11g 11.1.1.7.0
- Oracle Service Bus 11g 11.1.1.7.0
- Oracle Webcenter Content (Enterprise Content Management) 11.1.1.7.0
- Oracle Webcenter Suite 11g 11.1.1.7.0
- Oracle JDeveloper 11.1.1.7.0
- JRockit JVM (used for WLS servers) 1.6.0_37-R28.2.5-4.1.0
- Sun Java SDK 1.6.0_38 (JDK 6 update 38)
- SOA Suite PO Processing Tutorial/Demo PS5
- BPM Suite Sales Quote Tutorial/Demo PS4
- Apache James Email Server 2.3.2 and Eclipse IDE (Oracle Event Processing) 3.7 (Indigo)