VirtualBox 4.0 on SME Server v8 beta 6

From SME Server

Contents

Maintainer

CompSOS (http://www.compsos.com.au)

Support

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Description

Below are instructions on how to install VirtualBox version 4.1 on a fresh install SME Server v8 beta 6 and higher. Plus installing and configuring phpVirtualBox to control (create, edit, remove) your virtual machine on its web interface. In addition, scripts to automatically start the vbox service and the virtual machines in case of power failure can be found at the end of this article.

This has been tested using the following:

1. SME Server Release 8.0
2. VirtualBox-4.1-4.1.22_80657_el5-1
3. Kernel is 2.6.18-308.13.1.el5

Requirements

Computer with SME server version 8 beta 6 and higher installed.

Installation

1. Setup SME Server v8 beta 6.
2. Do a yum update.

```
yum upgrade
```

3. If any updates were applied, update and reboot the server.

```
signal-event post-upgrade
signal-event reboot
```

4. Check your current kernel.

```
uname -r
```

5. Install kernel-devel to get the latest development tree. Latest kernel at the time of writing is 2.6.18-308.13.1.el5.
   Use this command only if you have a PAE kernel installed:

```
yum clean all
yum install kernel-PAE-devel kernel-headers
yum info kernel-headers
```

   Otherwise,

```
yum install kernel-devel kernel-headers
```

6. Check if the compiler (GCC) is installed by issuing this command.

```
rpm –qa | grep gcc
```

   You will have an output, similar to this:

```
libgcc-4.1.2-52.el5_8.1
gcc-4.1.2-52.el5_8.1
```

   If not installed, install it.

```
yum install gcc
```

If you will get an error "No package gcc available. Nothing to do" then do this:

```
cd /tmp
wget ftp://ftp.mirrorservice.org/sites/sourceware.org/pub/gcc/releases/gcc-4.7.1/gcc-4.7.1.tar.gz
```

7. Update SME, and reboot again.

```
signal-event post-upgrade
signal-event reboot
```

8. Change your kernel boot options.
   Optionally, for best results with SME 8.x and earlier versions, modify /etc/grub.conf, adding divider=10 to the kernel boot options in order to reduce the idle CPU load with VirtualBox. For example, if your kernel boot line is:

```
kernel /vmlinuz-2.6.18-308.13.1.el5 ro root=/dev/main/root
```

   change it to:

```
kernel /vmlinuz-2.6.18-308.13.1.el5 ro root=/dev/main/root divider=10
```

   Reminder: if you subsequently update SME Server to use a newer kernel, you may need to change your kernel boot line to reflect the update.

9. Create a symbolic link.

   NOTE: Be careful if you cut-and-paste the command below. Pay particular attention to the dashes (-) and the backticks (`). There aren't any single quote marks in the command below - they are all supposed to be backticks.

```
ln -s /usr/src/kernels/`uname -r`-`uname -m` /lib/modules/`uname -r`/build
```

   Reminder: if you subsequently update SME Server to use a newer kernel, you may need to recreate the symbolic link.

10. Check that the symbolic link was properly created by doing a directory listing.

    NOTE: Be careful if you cut-and-paste the command below. In some terminal windows, from some browsers, the parts of the command in bold font do not paste correctly. Pay particular attention to the dashes (-) and the backticks (`). There aren't any single

quote marks in the command below - they are all supposed to be backticks.

```
ls -la /lib/modules/`uname -r`/build
```

11. Install the Fedora Epel repository using the instructions here (http://wiki.contribs.org/Epel) .
12. Install Dynamic Kernel Module Support (DKMS)

```
yum install --enablerepo=epel dkms
```

13. Install the VirtualBox repository using the instructions here (http://wiki.contribs.org/VirtualBox_Repository) .
14. Install **VirtualBox** (At the time of the last update to these instructions, the latest version was v4.1-4.1.22).

```
yum install --enablerepo=virtualbox VirtualBox-4.1
```

15. Review the VirtualBox installation log to ensure that the installation was successful.

```
tail /var/log/vbox-install.log
```

16. Remove the compiler install (for security best practices)

```
rpm -e gcc
```

17. Update SME, and reboot again

```
signal-event post-upgrade
signal-event reboot
```

18. Setup VirtualBox as a service so it starts automatically after a reboot. Copy the command below on putty console then hit Enter.

```
for file in $(ls /etc/rc5.d/S??vbox*); do cp "$file" /etc/rc7.d/. ;done
```

19. Create a *vbox.cfg* file on your /etc/vbox/.

```
nano /etc/vbox/vbox.cfg
```

vbox.cfg should have this content.

```
VBOXWEB_USER='root'
VBOXWEB_HOST=127.0.0.1
VBOXWEB_PORT=18083
```

Note: Without the vbox.cfg, vbox services on your rc7.d folder will not start.

20. Login to the server-manager page and create an iBay for **phpvbox**. For instructions on how to create and configure an ibay, please see the SME Server Administration manual. (http://wiki.contribs.org/SME_Server:Documentation:Administration_Manual:Chapter14)

    After creating the ibay, do not forget to assign a password.

21. Before we install **phpVirtualBox (http://code.google.com/p/phpvirtualbox/)** , make sure you first install **SOAP**.

```
yum install php-soap
```

As of 2012-09-03 a fresh sme8b6 with updates installed, the above line tries to install php-soap-5.3.3-13.el5.sme.1.x86_64. If yum complains about a missing dependency php-common-5.3.3-13.el5.sme.1, verify whether you have installed php-common-5.3 by issuing this command "rpm -qa | grep php-common". If so, you can obtain php-soap-5.3.3-1.el5.sme.6 by invoking "yum install --enablerepo smedev php-soap-5.3.3-1.el5.sme.6". Integration test passed.

To avoid this error message “PHP does not have the SOAP extension enabled” especially if you have no plan of restarting the server.

```
svc -t /service/httpd-e-smith/
```

22. Install **phpVirtualBox**

```
cd /tmp
wget `wget -q -O - http://phpvirtualbox.googlecode.com/files/LATEST.txt` -O phpvirtualbox-latest.
unzip phpvirtualbox-latest.zip
```

Note: at the time of the last update, the latest version was 4.1-8. Please adjust the following for later versions.

```
cd phpvirtualbox-4.1-8
cp –R * /home/e-smith/files/ibays/phpvbox/html
```

23. Create a **tmp** folder inside the /phpvbox/html folder.

```
cd /home/e-smith/files/ibays/phpvbox/html
mkdir tmp
chmod 777 tmp/
```

24. Create a config file using the example file provided.

```
cp config.php-example config.php
```

25. Open *config.php* (located on your /phpvbox/html/ folder). Uncomment some lines (by removing the '#' at the beginning of the line).

```
nano /home/e-smith/files/ibays/phpvbox/html/config.php
```

```
/* SOAP URL of vboxwebsrv (not phpVirtualBox's URL) */
var $location = 'http://127.0.0.1:18083/';
```

```
// Disable authentication
var $noAuth = true;
```

Set the consoleHost parameter to the hostname of the server running VirtualBox

```
// Host / ip to use for console connections
//var $consoleHost = 'host-name-of-the-server-running-virtualbox';
```

```
/* Enable advanced configuration items (normally hidden in the VirtualBox GUI)
 * Note that some of these items may not be translated to languages other than $
 */
var $enableAdvancedConfig = true;
```

```
// Authentication library.
//var $authLib = 'Builtin';
```

Change the tmp location as per below.

```
// Path
var $cachePath = '../tmp';
```

26. Disable authentication of *vboxwebsrv* (this is not recommended, but at this stage, this is the only setup that works). Login to the server's SSH and type this command.

```
vboxmanage setproperty websrvauthlibrary null
```

27. Install VirtualBox extension pack to enable support for USB 2.0 devices, VirtualBox RDP and PXE boot for Intel cards. Please install the extension pack with the same version as your installed version of VirtualBox!

    You can find the extension packs here. (http://www.virtualbox.org/wiki/Downloads) The following commands download and install the extension pack for VirtualBox 4.1.8.

```
wget http://download.virtualbox.org/virtualbox/4.1.8/Oracle_VM_VirtualBox_Extension_Pack-4.1.
vboxmanage extpack install Oracle_VM_VirtualBox_Extension_Pack-4.1.8-75467.vbox-extpack
```

28. Update SME, and reboot again

```
signal-event post-upgrade
signal-event reboot
```

29. Ensure that the extension pack is installed correctly. Open a console window, then

```
vboxmanage list extpacks
```

    At this point, VirtualBox should now be configured and running correctly. To check this, we will now log into the ibay we created for phpVirtualBox and attempt to create a new virtual machine. If you encounter problems, please recheck that you have setup VirtualBox as a service so it starts automatically after a reboot, and that your vbox.cfg file is configured correctly. To manage VirtualBox and any virtual machines, use the command line utility VBoxManage. See VBoxManage --help . For a list of available switches for VBoxManage, see this list (http://www.virtualbox.org/manual/ch08.html) .

    Finally,

30. Open a terminal window to the SME Server and create a directory to store the virtual machine images.

```
mkdir -p /opt/VMs
```

31. Download the VirtualBox Guest Additions iso for later installation into your virtual machine guests.

```
mkdir -p /var/lib/VirtualBox/addons
cd /var/lib/VirtualBox/addons
wget http://download.virtualbox.org/virtualbox/4.1.2/VBoxGuestAdditions_4.1.2.iso
```

32. Using a web browser, Go to http://yourdomain.com/phpvbox and connect to the phpVirtualBox web application.
    - From the menu provided, go to select File->Preferences.
    - Select the "General" tab.
    - Change the Default Machine Folder to:

      ```
      /opt/VMs
      ```

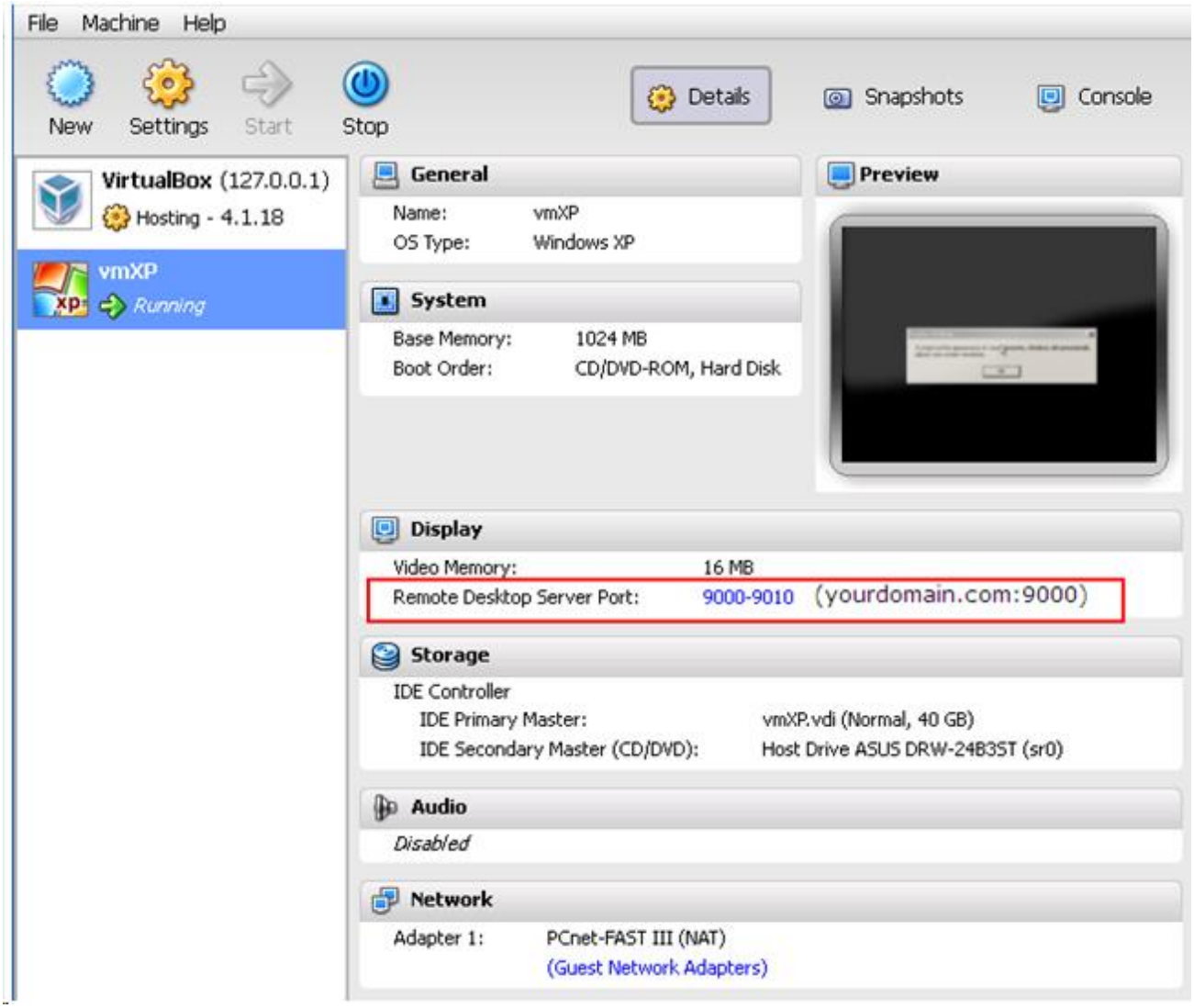
    At this point, VirtualBox should now be configured and running correctly. If you encounter problems, please recheck that you have setup VirtualBox as a service so it starts automatically after a reboot, and that your vbox.cfg file is configured correctly. To manage VirtualBox and any virtual machines, use the command line utility VBoxManage. See VBoxManage --help . For a list of available switches for VBoxManage, see this list.

33. Download the VirtualBox Guest Additions ISO for later installation into your Guests Virtual Machine.

```
mkdir -p /opt/VMs/addons
cd /opt/VMs/addons
wget http://download.virtualbox.org/virtualbox/4.1.8/VBoxGuestAdditions_4.1.8.iso
```

Creating a Virtual Machine

1. Using a web browser, go to http://yourdomain.com/phpvbox to create your virtual machine.
    - Create a new virtual machine (e.g. vmXP)
    - Enable network card (either NAT or Bridged) so you can connect to your new VM console.



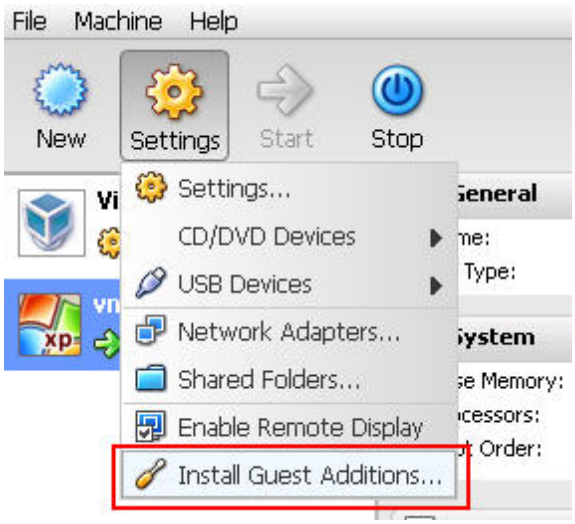
2. Even when the extension is installed, the VRDP server is disabled by default. On console:

```
vboxmanage modifyvm "vmXP" --vrde on
```

3. Ensure you are connected to the server's internal network, then open a Remote Desktop client program.
   - On Windows, open an RDP client (run -> mstsc) then type your server's hostname:port number (e.g. myserver:9000), or your Server's (not your Guest) IP address followed by colon then the port number as shown on above image (Remote Desktop Server Port under Display) (e.g. 192.168.100.1:9000).

     NOTE: No need to change to port number to 9000 (as per above) in your Windows registry (HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\TerminalServer\WinStations\RDP-Tcp\PortNumber). It will still be using port 3389 even though phpVirtualBox is using port 9000.

4. Install the VirtualBox Guest Additions ISO into your newly setup VM.



Access VM outside the Network

1. On SME Server Manager page, on **Port Forwarding** left menu, open port **9000** (as per Remote Desktop Server Port under Display) using your desired Source Port:

   Protocol: TCP
   Source Ports: 33900
   Destination IP: 192.168.100.1 *(which is also the localhost)*
   Destination Port: 9000
   Allow Hosts: <you can leave it blank, or place your Public IP so only your IP can access the VM)
   Rule Comment: <eg. vmXP for SOS>

2. Now you can access your VM thru RDP using this hostname *domain.com:33900*

Automatically Start Virtual Machine

1. Edit your **vbox** file on /etc/sysconfig/

   ```
   nano /etc/sysconfig/vbox
   ```

   vbox code should look like this:

   ```
   # Virtual box machines to autostart
   # Example to start 2 machines
   #       VBOX_AUTOSTART = "MachineName1 MachineName2"

   VBOX_AUTOSTART="vmXP"
   ```

2. Edit your vbox file located on /etc/init.d/

   ```
   #!/bin/sh
   ```

```
#
# chkconfig: - 91 35
# description: Starts and stops vbox autostart VMs.

### BEGIN INIT INFO
# Provides: vbox
# Required-Start: $network $named $vboxdrv
# Required-Stop: $network $named
# Default-Start:
# Default-Stop: 0 1 2 3 4 5 6
# Short-Description: Autostart some Virtual Box VMs
# Description: Autostart some Virtual Box VMs that are mentioned in /etc/sysconfig/vbox file
# Written by Alex Amiryan
### END INIT INFO

. /etc/rc.d/init.d/functions

MANAGE_CMD=vboxmanage

[ -r /etc/sysconfig/vbox ] && . /etc/sysconfig/vbox

prog=$"Virtual Box Machines"

start()
{
        echo -n $"Starting $prog: "
        RETVAL=0

        for vbox_name in ${VBOX_AUTOSTART}
        do
            SERVS=1
            echo -n "${vbox_name} "
            daemon $MANAGE_CMD startvm "${vbox_name}" -type headless >/dev/null 2>&1
            RETVAL=$?
            [ "$RETVAL" -eq 0 ] || break
        done
        if [ -z "$SERVS" ]; then
            echo -n "no virtual machines configured "
            failure
            RETVAL=6
        else
            if [ "$RETVAL" -eq 0 ]; then
                success $"vbox startup"
                touch /var/lock/subsys/vbox
            else
                failure $"vbox start"
            fi
        fi
        echo
        return "$RETVAL"
```

```
}

stop()
{
        echo -n $"Shutting down $prog: "
        for vbox_name in ${VBOX_AUTOSTART}
        do
            echo -n "${vbox_name} "
            runuser root -c "$MANAGE_CMD -q controlvm "${vbox_name}" savestate" >/dev/null 2>&
        done
        RETVAL=$?
        [ "$RETVAL" -eq 0 ] && success $"vbox shutdown" || \
            failure $"vbox shutdown"
        echo
        [ "$RETVAL" -eq 0 ] && rm -f /var/lock/subsys/vbox
        return "$RETVAL"
}

status()
{
        for vbox_name in ${VBOX_AUTOSTART}
        do
            echo -n "${vbox_name} "
            $MANAGE_CMD showvminfo "${vbox_name}"|grep "^State:\s*.*$"
        done
}

case "$1" in
  start)
        start
        ;;
  stop)
        stop
        ;;
  restart|force-reload)
        stop
        start
        ;;
  status)
        status
        ;;
  *)
        echo "Usage: $SCRIPTNAME {start|stop|restart|force-reload|status}" >&2
        exit 3
        ;;
esac
```

Upgrading VirtualBox

1. Remove installed VirtualBox.

```
yum remove VirtualBox-4.1
```

2. Install the latest VirtualBox, as of this date it is VirtualBox 4.2.

```
yum install --enablerepo=virtualbox VirtualBox-4.2
```

3. Re-create a **vbox.cfg** file on your /etc/vbox/.

```
nano /etc/vbox/vbox.cfg
```

vbox.cfg should have this content.

```
VBOXWEB_USER='root'
VBOXWEB_HOST=127.0.0.1
VBOXWEB_PORT=18083
```

4. Install VirtualBox extension pack, you can find the extension packs here (http://www.virtualbox.org/wiki/Downloads) .

```
wget http://download.virtualbox.org/virtualbox/4.2.0/Oracle_VM_VirtualBox_Extension_Pack-4.2.
vboxmanage extpack install Oracle_VM_VirtualBox_Extension_Pack-4.2.0-80737.vbox-extpack
```

5. Test if your VirtualBox upgrade is successful by starting your existing virtual machine.

```
vboxheadless –s vmXP
```

OR

```
/etc/init.d/vbox start
```

Upgrading phpVirtualBox

1. Make a directory to save your existing phpVirtualBox folder.

```
mkdir –p /tmp/phpvirtualbox-4.1.22
```

2. Change directory to your phpvbox ibay then copy all of your phpVirtualBox files.

```
cd /home/e-smith/files/ibays/phpvbox/html/
cp –R * /tmp/phpvirtualbox-4.1.22
```

3. Download the latest phpVirtualBox to /tmp/ folder.

```
cd /tmp
wget http://phpvirtualbox.googlecode.com/files/phpvirtualbox-4.2-0b.zip
unzip phpvirtualbox-4.2-0b.zip
cd phpvirtualbox-4.2-0b
yes | cp -R * /home/e-smith/files/ibays/phpvbox/html/
```

4. Rename *config.php.example* to *config.php* and edit the configuration file as per above.

```
mv config.php-example config.php
```

5. Restart vboxwebservice

```
/etc/init.d/vboxweb-service restart
```

6. Download the latest VBox Guest Additions and install to your Guest VM.

```
cd /opt/VMs/
wget http://download.virtualbox.org/virtualbox/4.2.0/VBoxGuestAdditions_4.2.0.iso
```

Troubleshooting

1. PhpVirtualBox throws an error *attribute does not exist* or *method 'getVDENetwork' does not exist in the object*.

   Solution: Check config.php file located on /home/e-smith/files/ibays/phpvbox/html/ and comment out the line *var $enableVDE = true;*

```
#var $enableVDE = true;
```

2. Virtual machine with a guest Windows XP installed takes too long to load.

   Solution: The Windows XP disk you might have used is slipstreamed with Intel ICH9 or ICH10. Uninstall *iastor.sys* on Safe Mode. Once you restart, it will reinstall it for you. *Iastor.sys* is an Intel Matrix storage manager, used to access RAID drives system driver file.

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