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## How To Install VMware Server On Debian Sarge

Version 1.0

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This tutorial provides step-by-step instructions on how to install the free VMware Server (version 1.0.1) on a Debian Sarge system.

VMware has just released version 1.0 of its free VMware Server. With VMware Server you can create and run guest operating systems ("virtual machines") such as Linux, Windows, FreeBSD, etc. under a host operating system. This has the benefit that you can run multiple operating systems on the same hardware which saves a lot of money, and you can move virtual machines from one VMware Server to the next one (or to a system that has the VMware Player which is also free). In this article we use Debian Sarge (3.1) as the host operating system.

I want to say first that this is not the only way of setting up such a system. There are many ways of achieving this goal but this is the way I take. I do not issue any guarantee that this will work for you!

### 1 Preliminary Note

I assume you have already set up a basic Debian Sarge system. You can set up your system as described on the **first two pages** of this tutorial: [The Perfect Setup - Debian Sarge \(3.1\)](#).

I use `192.168.0.100` as the IP address and `server1.example.com` as the hostname of my Debian Sarge system in this tutorial. If your Debian Sarge system does not have a static IP address you should now change its network configuration so that it will have a static IP address in the future:

```
vi /etc/network/interfaces
```

```
# /etc/network/interfaces -- configuration file for ifup(8), ifdown(8)

# The loopback interface
auto lo
iface lo inet loopback

# The first network card - this entry was created during the Debian installation
# (network, broadcast and gateway are optional)
auto eth0
iface eth0 inet static
    address 192.168.0.100
    netmask 255.255.255.0
    network 192.168.0.0
    broadcast 192.168.0.255
    gateway 192.168.0.1
```

(If you use a different gateway than `192.168.0.1`, change the gateway IP address in `/etc/network/interfaces`.)

Then restart your network:

```
/etc/init.d/networking restart
```

Edit `/etc/resolv.conf` and add some nameservers:

```
vi /etc/resolv.conf
```

```
search server
nameserver 145.253.2.75
nameserver 193.174.32.18
```

```
nameserver 194.25.0.60
```

Edit */etc/hosts* and add your new IP address:

```
vi /etc/hosts
```

```
127.0.0.1    localhost.localdomain localhost
192.168.0.100 server1.example.com  server1

# The following lines are desirable for IPv6 capable hosts
::1    ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts
```

## 2 Installing Required Packages

First we update our package database:

```
apt-get update
```

Now we install the packages required by VMware on our Debian Sarge system by running

```
apt-get install kernel-headers-`uname -r` libx11-6 libx11-dev x-window-system-core x-window-system xspece libxtst6 xlibs-dev
```

You will be asked a few questions to which you can answer as follows:

*Attempt to autodetect video hardware? <--*

*Select the desired X server driver. <--*

*Use kernel framebuffer device interface? <--*

*Please select the XKB rule set to use. <--*

*Please select your keyboard model. <--*

*Please select your keyboard layout. <--*

*Please select your keyboard variant. <--*

*Please select your keyboard options. <--*

*Please choose your mouse port. <--*

*Is your monitor an LCD device? <--*

*Please choose a method for selecting your monitor characteristics. <--*

*Enter your monitor's horizontal sync range. <--*

*Enter your monitor's vertical refresh range. <--*

*Select the video modes you would like the X server to use. <--*

*Please select your desired default color depth in bits. <--*

*Default printer resolution <--*

Most of these answers are not really important because we don't want to use the desktop on our Debian Sarge system. We will connect to the VMware Server from our workstation later on which can be a Windows or Linux system which has the VMware Server client package installed.

Next we create the directory `/var/vm` where we want to install our virtual machines later. The virtual machines require much disk space, make sure you have enough free space on your `/var` partition for the virtual machines.:

```
mkdir /var/vm
```

### 3 Getting VMware Server

The VMware server can be downloaded for free from the VMware website: <http://www.vmware.com/download/server/>

To run the VMware Server software you need a (free) serial number, that can be requested by clicking on the "Register now" button on the download page.

### 4 Downloading The Software

To setup VMWare Server on Debian Sarge, we need the following packages from the VMware downloads page:

VMware Server for linux (Binary tar.gz)

Management Interface (Binary tar.gz)

We want to download the packages to our `/tmp` directory, therefore we go there:

```
cd /tmp
```

For downloading the software to your server, I recommend to use the linux commandline program `wget`. The `wget` syntax is as follows:

```
wget [URL of the VMware Server for linux binary tar.gz package]
```

```
wget [URL of the Management Interface binary tar.gz package]
```

## Unpacking the server tar.gz:

```
tar xvfz VMware-server-*.tar.gz
```

## Running the installer script:

```
cd vmware-server-distrib  
  
./vmware-install.pl
```

The installer asks you a few questions. Most of the time you can accept the default value:

*Creating a new installer database using the tar3 format.*

*Installing the content of the package.*

*In which directory do you want to install the binary files?*

*[/usr/bin] <--*

*What is the directory that contains the init directories (rc0.d/ to rc6.d/)?*

*[/etc] <--*

*What is the directory that contains the init scripts?*

*[/etc/init.d] <--*

*In which directory do you want to install the daemon files?*

*[/usr/sbin] <--*

*In which directory do you want to install the library files?*

*[/usr/lib/vmware] <--*

The path `"/usr/lib/vmware"` does not exist currently. This program is going to create it, including needed parent directories. Is this what you want?  
[yes] <--

In which directory do you want to install the manual files?  
[`/usr/share/man`] <--

In which directory do you want to install the documentation files?  
[`/usr/share/doc/vmware`] <--

The path `"/usr/share/doc/vmware"` does not exist currently. This program is going to create it, including needed parent directories. Is this what you want?  
[yes] <--

The installation of VMware Server 1.0.1 build-29996 for Linux completed successfully. You can decide to remove this software from your system at any time by invoking the following command: `"/usr/bin/vmware-uninstall.pl"`.

Before running VMware Server for the first time, you need to configure it by invoking the following command: `"/usr/bin/vmware-config.pl"`. Do you want this program to invoke the command for you now? [yes] <--

Making sure services for VMware Server are stopped.

Stopping VMware services:  
Virtual machine monitor done

You must read and accept the End User License Agreement to continue.  
Press enter to display it. <--

..... snip [LICENCE TEXT] .....

Do you accept? (yes/no) <--

*Configuring fallback GTK+ 2.4 libraries.*

*In which directory do you want to install the mime type icons?*

*[/usr/share/icons] <--*

*The path "/usr/share/icons" does not exist currently. This program is going to create it, including needed parent directories. Is this what you want?*

*[yes] <--*

*What directory contains your desktop menu entry files? These files have a .desktop file extension. [/usr/share/applications] <--*

*In which directory do you want to install the application's icon?*

*[/usr/share/pixmaps] <--*

*Trying to find a suitable vmmon module for your running kernel.*

*None of the pre-built vmmon modules for VMware Server is suitable for your running kernel. Do you want this program to try to build the vmmon module for your system (you need to have a C compiler installed on your system)? [yes] <--*

*Using compiler "/usr/bin/gcc". Use environment variable CC to override.*

*What is the location of the directory of C header files that match your running kernel? [/lib/modules/2.6.8-2-386/build/include] <--*

*[...]*

*Do you want networking for your virtual machines? (yes/no/help) [yes] <--*

*Configuring a bridged network for vmnet0.*

*The following bridged networks have been defined:*



*. vmnet0 is bridged to eth0*

*Do you wish to configure another bridged network? (yes/no) [no] <--*

*Do you want to be able to use NAT networking in your virtual machines? (yes/no)*  
*[yes] <--*

*Configuring a NAT network for vmnet8.*

*Do you want this program to probe for an unused private subnet? (yes/no/help)*  
*[yes] <--*

*Probing for an unused private subnet (this can take some time)...*

*The subnet 192.168.221.0/255.255.255.0 appears to be unused.*

*The following NAT networks have been defined:*

*. vmnet8 is a NAT network on private subnet 192.168.221.0.*

*Do you wish to configure another NAT network? (yes/no) [no] <--*

*Do you want to be able to use host-only networking in your virtual machines?*  
*[yes] <--*

*Configuring a host-only network for vmnet1.*

*Do you want this program to probe for an unused private subnet? (yes/no/help)*  
*[yes] <--*

*Probing for an unused private subnet (this can take some time)...*

*The subnet 192.168.211.0/255.255.255.0 appears to be unused.*

*The following host-only networks have been defined:*

*. vmnet1 is a host-only network on private subnet 192.168.211.0.*

*Do you wish to configure another host-only network? (yes/no) [no] <--*

*[...]*

*Please specify a port for remote console connections to use [902] <--*

*Restarting internet superserver: inetd.*

*Configuring the VMware VmPerl Scripting API.*

*Building the VMware VmPerl Scripting API.*

*Using compiler "/usr/bin/gcc". Use environment variable CC to override.*

*Installing the VMware VmPerl Scripting API.*

*The installation of the VMware VmPerl Scripting API succeeded.*

*Generating SSL Server Certificate*

*In which directory do you want to keep your virtual machine files?*

*[/var/lib/vmware/Virtual Machines] <--*

*Please enter your 20-character serial number.*

*Type XXXXX-XXXXX-XXXXX-XXXXX or 'Enter' to cancel: <--*

*Starting VMware services:*

*Virtual machine monitor done*

*Virtual ethernet done*

```
Bridged networking on /dev/vmnet0 done
Host-only networking on /dev/vmnet1 (background) done
Host-only networking on /dev/vmnet8 (background) done
NAT service on /dev/vmnet8 done
```

*The configuration of VMware Server 1.0.1 build-29996 for Linux for this running kernel completed successfully.*

That's it, the VMware Server is installed on our Debian Sarge system. On to the next step...

## 5 Installing The VMware Management Interface

The VMware Management Interface is a Web-based management tool that allows you to

- monitor the state of virtual machines and the VMware Server host on which they are running.
- control (power on, suspend, resume, reset and power off) the virtual machines on that host.
- view details about each virtual machine, including system summary, hardware information, any connected users and a log of recent events.

**(Please note:** it cannot be used to create virtual machines. To do this, you must install the VMWare console (available for Windows and Linux) on a client PC.)

```
cd /tmp

tar xvfz VMware-mui-*.tar.gz

cd vmware-mui-distrib

./vmware-install.pl
```

Again, you are asked a few questions. Most of the time you can accept the default values:

*Creating a new installer database using the tar3 format.*

*You must read and accept the End User License Agreement to continue.*

*Press enter to display it. <--*

*... license text ...*

*Do you accept? (yes/no) <--*

*Thank you.*

*Installing the content of the package.*

*In which directory do you want to install the binary files?*

*[/usr/bin] <--*

*What is the directory that contains the init directories (rc0.d/ to rc6.d/)?*

*[/etc] <--*

*What is the directory that contains the init scripts?*

*[/etc/init.d] <--*

*In which directory do you want to install the VMware Management Interface files? [/usr/lib/vmware-mui] <--*

*The path "/usr/lib/vmware-mui" does not exist currently. This program is going to create it, including needed parent directories. Is this what you want?*

*[yes] <--*

*In which directory would you like to install the documentation files?*

*[/usr/lib/vmware-mui/doc] <--*

*The path "/usr/lib/vmware-mui/doc" does not exist currently. This program is*

*going to create it, including needed parent directories. Is this what you want?*  
*[yes] <--*

*The installation of VMware Management Interface 1.0.1 build-29996 for Linux completed successfully. You can decide to remove this software from your system at any time by invoking the following command:*  
*"/usr/bin/vmware-uninstall-mui.pl".*

*Before running VMware Management Interface for the first time, you need to configure it by invoking the following command:*  
*"/usr/bin/vmware-config-mui.pl". Do you want this program to invoke the command for you now? [yes] <--*

*Configuring httpd.conf to run Apache as:*  
*User: www-data and Group: nogroup*

*Set the number of minutes before a http session times out. (This is the length of time before someone connecting to VMware Management Interface will be logged out) [60] <--*

*Generating SSL Server Certificate*

*Starting httpd.vmware: done*  
*The configuration of VMware Management Interface completed successfully.*

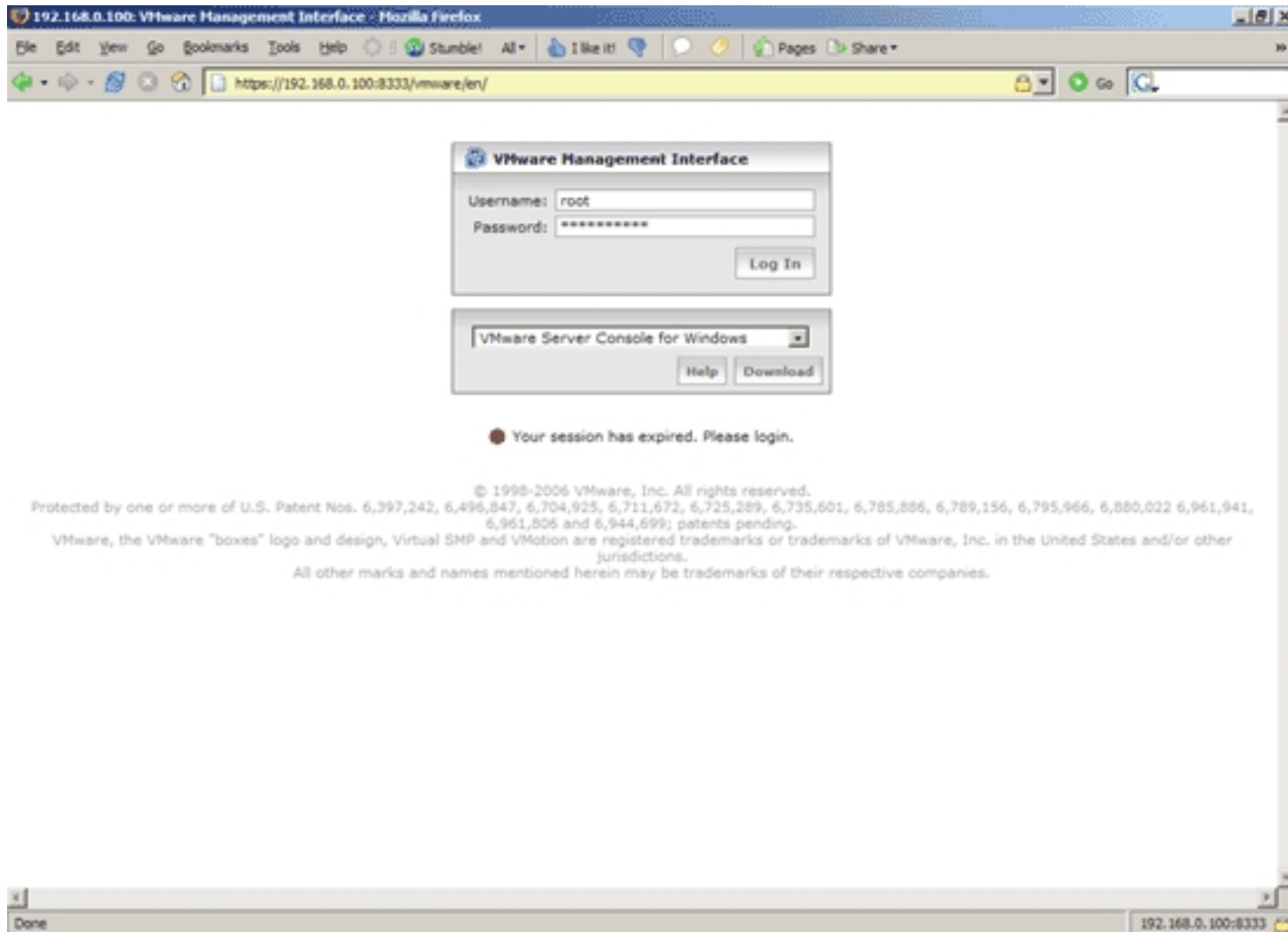
The VMware Management interface is now installed on your system.

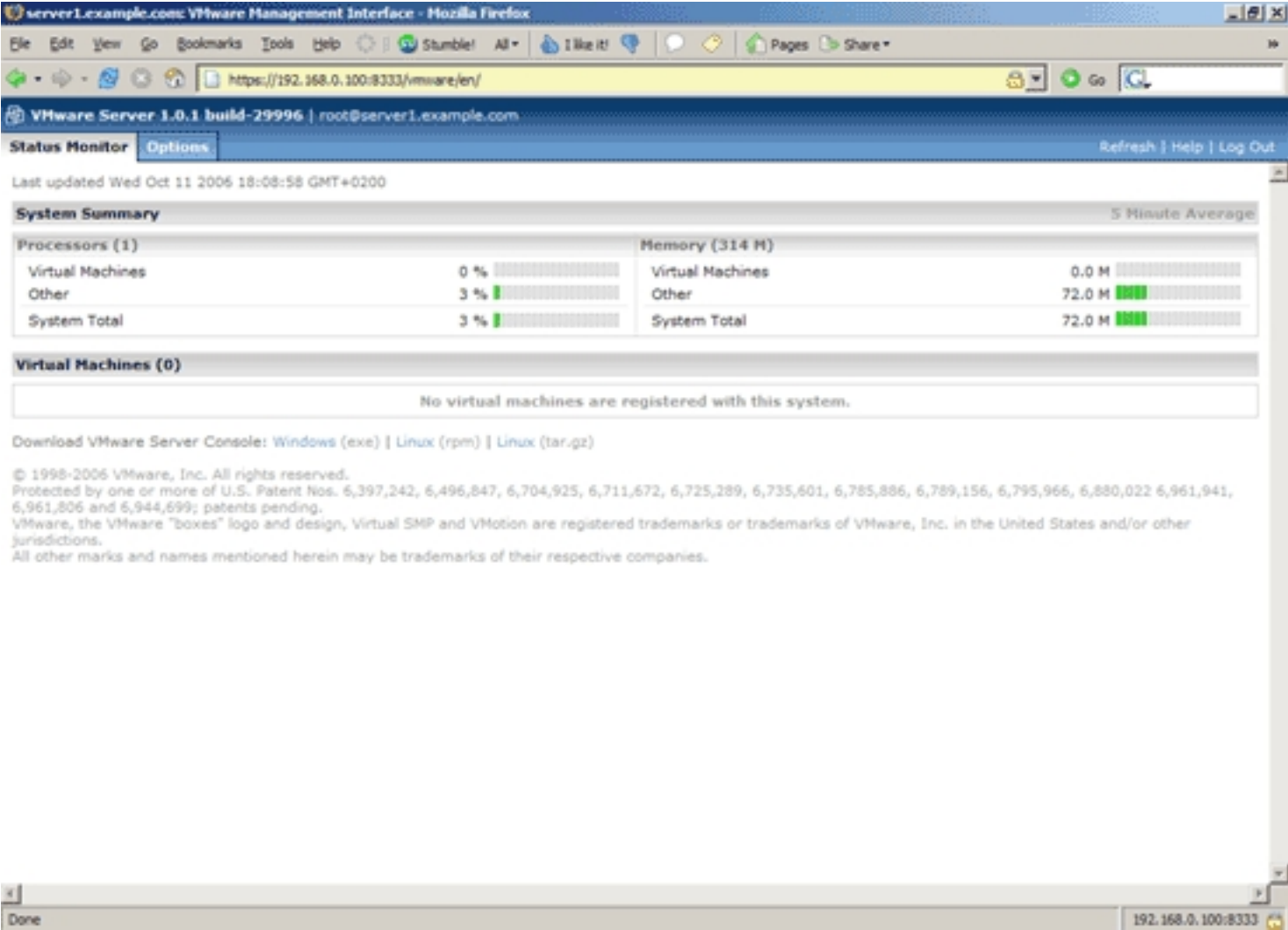
You will now be able to login the the VMware management interface with the URL:

*https://192.168.0.100:8333/*

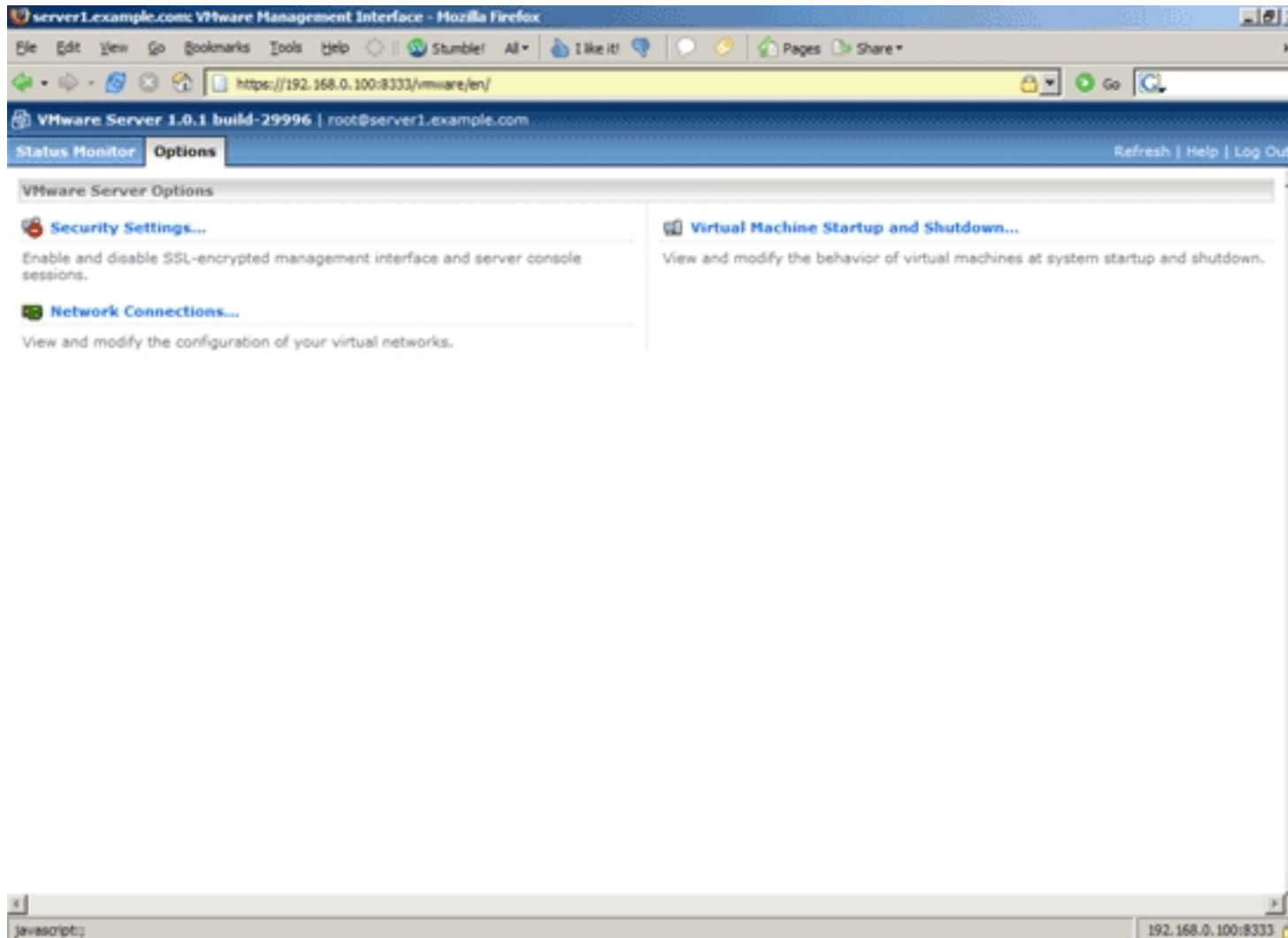
To login use the username *root* and the password of your root system user.

This interface shows status information of the installed VM instances and you are able to start and stop VM instances:









To create new VM instances, use the VMware Server client package which is available as Linux and Windows GUI application.

There are many ready-to-run appliances for the VMware server available, for example the [ISPConfig](#) webhosting appliance based on the HowtoForge [Perfect Setup for Debian 3.1](#):

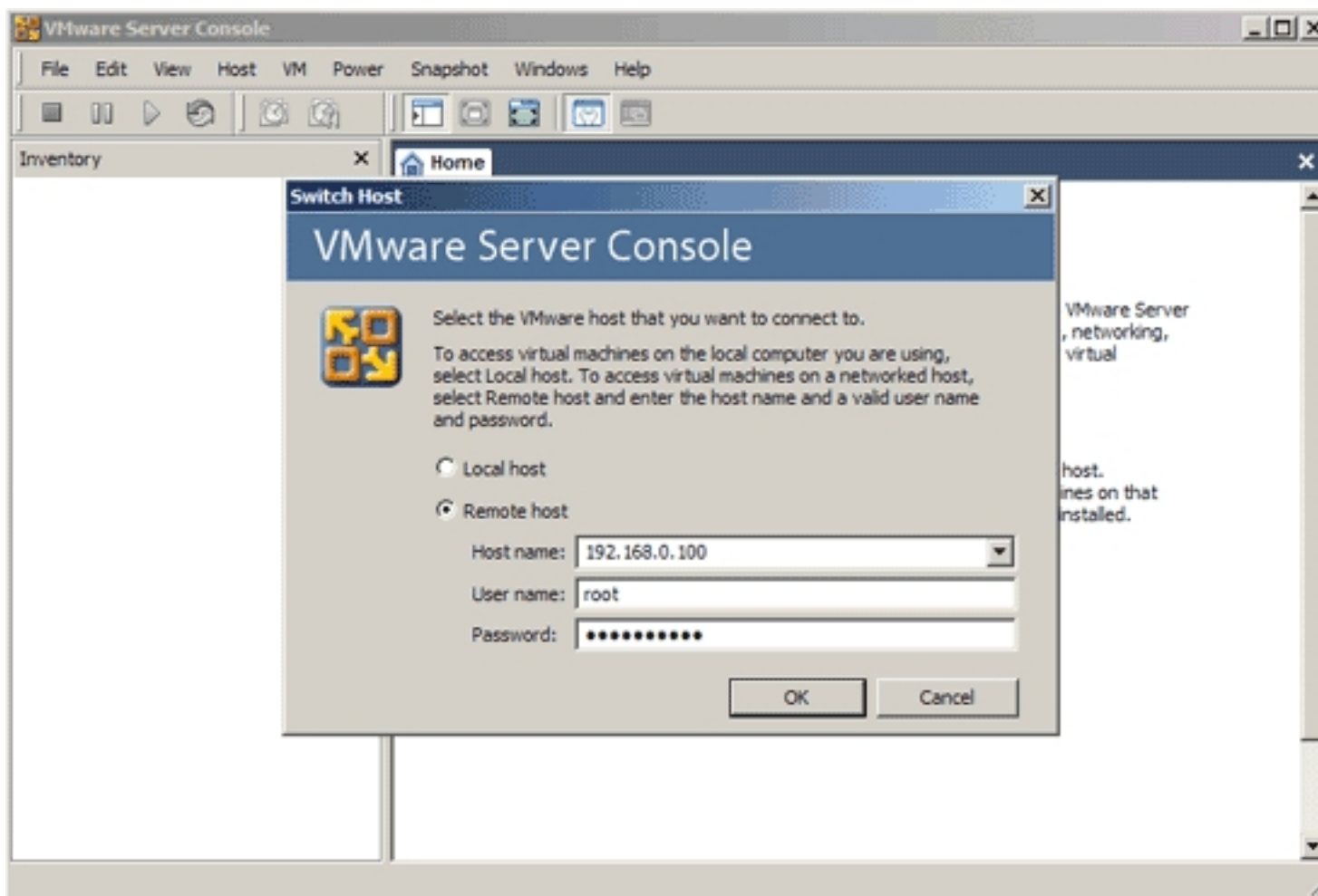
<http://www.vmware.com/vmtn/appliances/directory/342>

Many other appliances can be found in the VMWare Appliances directory:

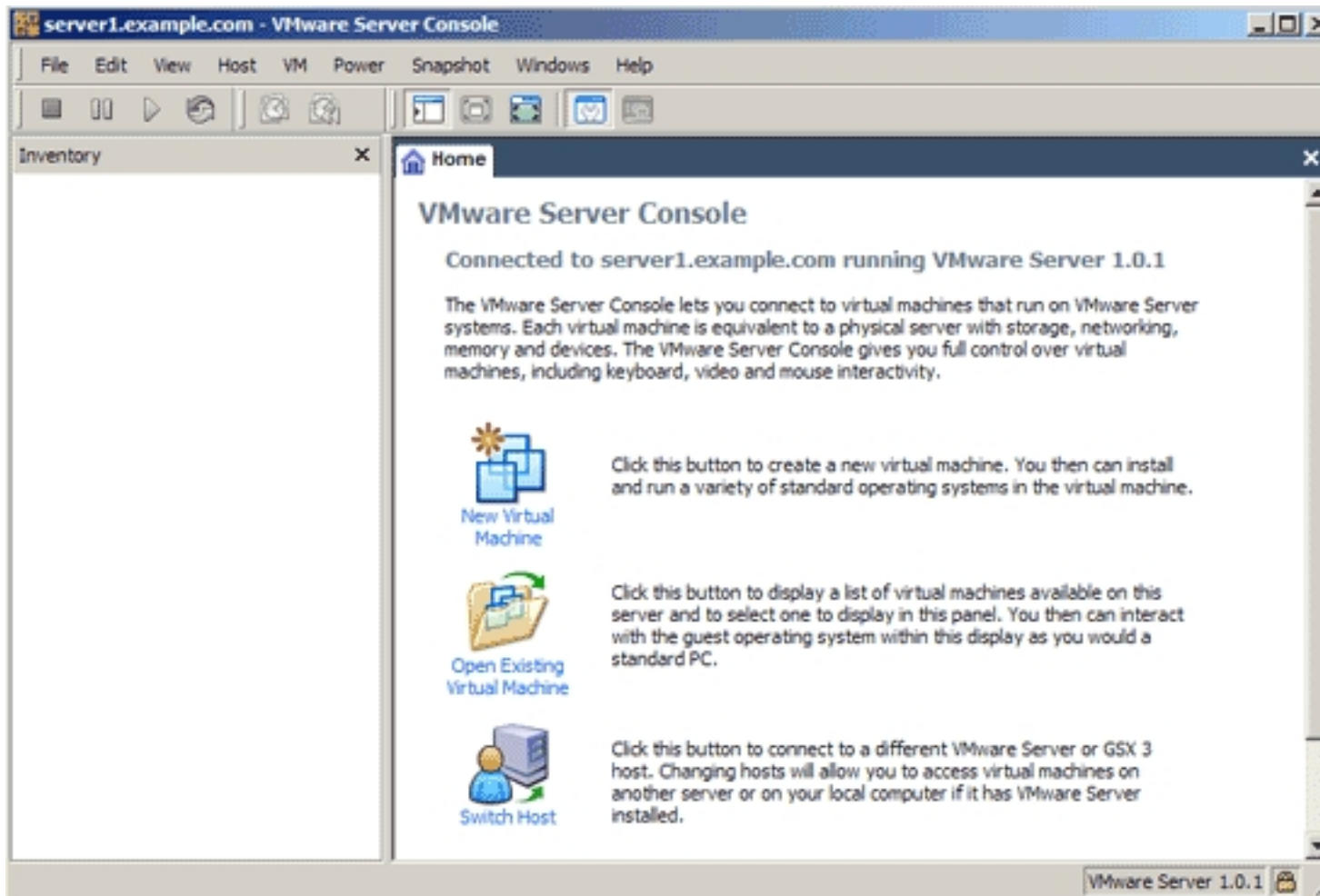
<http://www.vmware.com/vmtn/appliances/>

## 6 Creating A Virtual Machine

We use the VMWare Server client package for Linux or Windows to create a new virtual machine on our VMware server. You can download the appropriate package for your workstation operating system (Windows/Linux) on <http://www.vmware.com/download/server>. I'm using Windows on my workstation. To install the Windows package, just download the VMWare Server client for Windows package (it is a zip file), unzip it, and run the VMware-console .exe file. Afterwards, just start the VMware Server console. It detects all available VMware Servers in your network; select the one to which you want to connect (in our case it's our Debian Sarge system with the IP address `192.168.0.100`):



Login to your server with the IP address or hostname, the user `root` and the root password.



Click on *New Virtual Machine* and follow the whizard. The wizard asks you to select:

- Operating system (Linux, Windows, Novell Netware, Solaris or other operating system)
- Operating system version
- Location and virtual machine name. The folder `/var/vm` that we created in the setup is preselected.

- Networking: If you want the virtual machine to be part of the same network than the server itself, select *bridged networking*.  
If you want to use a virtual NAT, select *Network address translation*.
- Enter the size of your virtual harddisk. I recommend to disable the option that creates the virtual harddisk in full size instantly, the harddisk will then grow with the data that you store inside up to the max. size you selected.
- After you finished the VM creation wizard, put the boot disk of the operating system you want to install in the CD / DVD drive of your server and start the VM.

All trademarks belong to their respective owners. We thank VMware Inc. for the permission to write this Howto.

## 7 Links

- VMware Server: <http://www.vmware.com/products/server>
- Debian: <http://www.debian.org>
- VMware Appliance Directory <http://www.vmware.com/vmtn/appliances/>