

HOWTO run OmniOS under ESXi 5.1

and install VMware-Tools

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This HOWTO has been translated from German into English. However, the screen shots are from the localized German software versions. Nevertheless it shouldn't be too hard to match them with the English versions.

Required software:

1. VMware vSphere Hypervisor (ESXi) 5.1.0 with free licence
Build Number: 799733, Release Date: 10.09.2012
Source: https://my.vmware.com/web/vmware/info/slug/datacenter_cloud_infrastructure/vmware_vsphere_hypervisor_esxi/5_1#product_downloads
2. VMware vSphere Client 5.1.0
Build Number: 786111, Release Date: 10.09.2012
Source: https://my.vmware.com/web/vmware/info/slug/datacenter_cloud_infrastructure/vmware_vsphere_hypervisor_esxi/5_1#product_downloads
3. ESXi 5.1 update patch ESXi510-201212001
Build Number: 914609, Release Date: 20.12.2012
Source: <https://hostupdate.vmware.com/software/VUM/OFFLINE/release-368-20121217-718319/ESXi510-201212001.zip>
4. OmniOS stable release (omnios-33fdde4) OmniOS_Text_r151004.iso
Source: http://omnios.omniti.com/media/OmniOS_Text_r151004.iso

The installation was performed according to the following procedure and with the software versions listed above. It might be possible that a combination of other software versions works as well and that some of the described steps are not essentially necessary.

The HOWTO is made up of two major parts:

- I. **Upgrading the free ESXi 5.1 Hypervisor**
- II. **Installation of OmniOS as a Virtual Machine**

The described method is not the only possible way to update the ESXi Hypervisor. It does operate directly on the ESXi host via a command shell. Issuing wrong commands might render the ESXi Hypervisor inoperable. Special diligence is required and all actions are on your own risk.

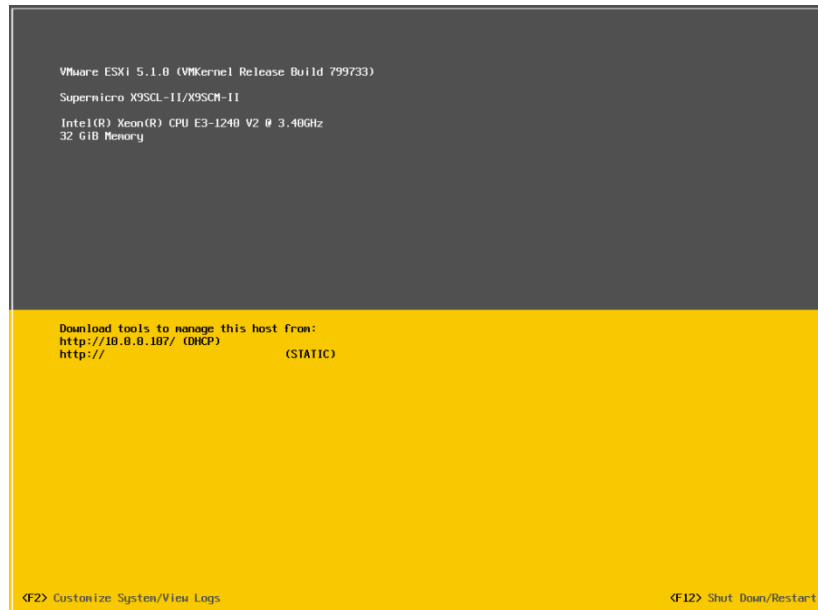
Prerequisites:

- a. The ESXi 5.1 Hypervisor is already installed and licenced on a host system.
It is assumed that the free of charge available licence from VMware for one physical server has been applied.
- b. The vSphere Client 5.1 software for managing the ESXi 5.1 host is already installed on a Windows PC.

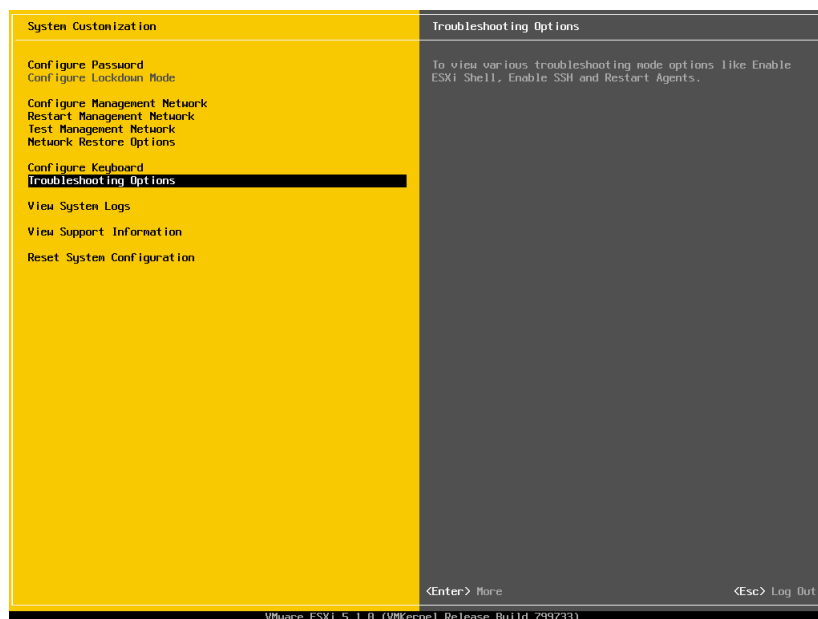
Expressions in angle brackets <> denote variables that have to be substituted by the appropriate values.

I. Upgrading the free ESXi Hypervisor

The free licenced ESXi 5.1 comes with some restrictions, e.g. the vSphere Update Manager (VUM) cannot be used to apply updates. Therefore the update is performed on the command line of a shell on the ESXi host. As a prerequisite the local shell access on the console terminal and / or the ssh access to the ESXi host have to be enabled.

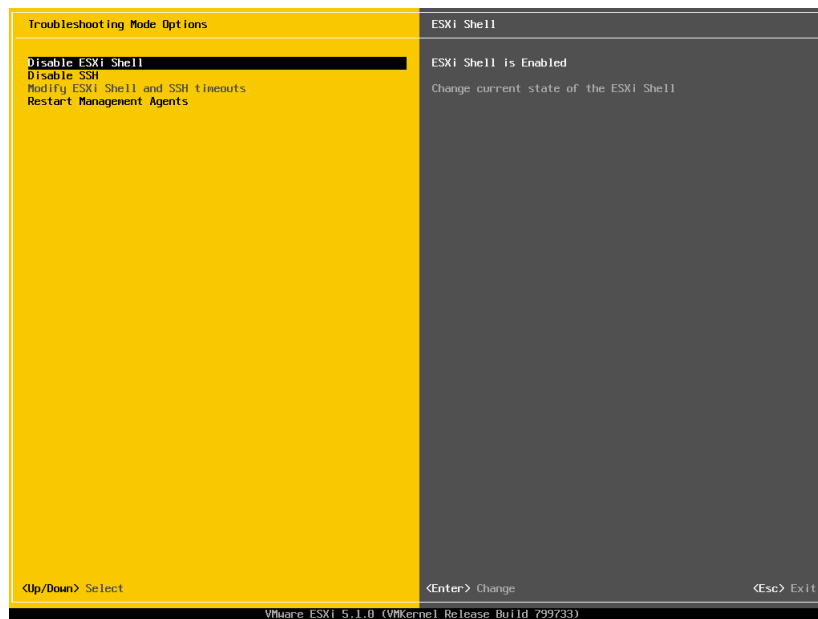


At the ESXi console on the start page Press <F2> and login as "root".



Select „Troubleshooting Options“ and in the following menu activate „Enable ESXi Shell“ and / or „Enable SSH“.

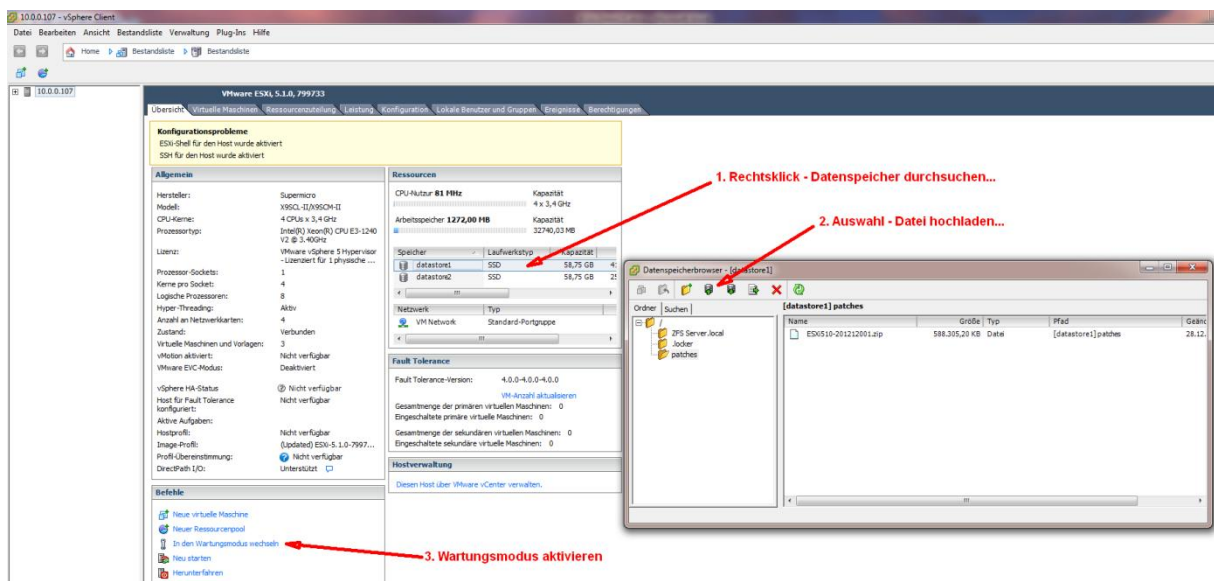
The screen should then look like this:



Return to the start page with pressing <ESC> twice.

Now it is possible to invoke a local command shell at the ESXi console by pressing <alt-F1> (return from there to the start page with <alt-F2>) if this option has been enabled and / or to access the ESXi host over the network via a ssh client like putty. The IP-address for this is shown on the start page of the ESXi console.

For updating the ESXi host the patch bundle has to be copied to a datastore on the host. This can be done with WinSCP or like shown here by uploading via the datastore browser of the vSphere Client (1.+ 2.).



Before performing the update the host has to be switched into maintenance mode (3.).

Login as “root” either on the local ESXi console or over the network via ssh.

This is where we did put the patch bundle:

```
~ # ls -l /vmfs/volumes/datastore1/patches/
-rw----- 1 root root 602424491 Dec 28 19:56 ESXi510-201212001.zip
~ #
```

The command:

```
esxcli software sources profile list -d <full-path-to-zip-file>
```

shows a list of all update profiles in the patch bundle:

```
~ # esxcli software sources profile list -d /vmfs/volumes/datastore1/patches/ESXi510-201212001.zip
Name                                     Vendor                        Acceptance Level
-----
ESXi-5.1.0-20121201001s-standard        VMware, Inc.                 PartnerSupported
ESXi-5.1.0-20121204001-standard        VMware, Inc.                 PartnerSupported
ESXi-5.1.0-20121201001s-no-tools       VMware, Inc.                 PartnerSupported
ESXi-5.1.0-20121204001-no-tools       VMware, Inc.                 PartnerSupported
~ #
```

You can find a very good introduction into the concept of update profiles and an overview of the patch process here:

<http://www.v-front.de/2012/11/are-esxi-5x-patches-cumulative.html>

In general the standard profile is what you want, i.e. the second profile from the list above. The first profile with the “s” in front of the hyphen does only contain security fixes and the profiles 3 and 4 are without the VMware-Tools.

Before we perform the actual update it is possible to see what will be changed by using the update command with the „--dry-run“ option (watch out, double hyphen !).

```
esxcli software profile update -d <full-path-to-zip-file> --dry-run -p <profile-name>
```

```
~ # esxcli software profile update -d /vmfs/volumes/datastore1/patches/ESXi510-201212001.zip --dry-run -p ESXi-5.1.0-20121204001-standard
Update Result
Message: Dryrun only, host not changed. The following installers will be applied: [BootBankInstaller, LockerInstaller]
Reboot Required: true
VIBs Installed: VMware_bootbank_esx-base_5.1.0-0.9.914609, VMware_locker_tools-light_5.1.0-0.9.914609
VIBs Removed: VMware_bootbank_esx-base_5.1.0-0.0.799733, VMware_locker_tools-light_5.1.0-0.0.799733
VIBs Skipped: VMware_bootbank_ata-pata-and_0.3.10-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-atixp_0.4.6-4vmw.510.0.0.799733, VMware_bootbank_ata-pata-cmd64x_0.2.5-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-hpt3xn_0.3.4-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-pdc2027x_1.0-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-serverworks_0.4.3-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-sil680_0.4.8-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-via_0.3.3-2vmw.510.0.0.799733, VMware_bootbank_block-cciss_3.6.14-10vmw.510.0.0.799733, VMware_bootbank_ehci-ehci-hcd_1.0-3vmw.510.0.0.799733, VMware_bootbank_esx-dvfilter-generic-fastpath_5.1.0-0.0.799733, VMware_bootbank_esx-tboot_5.1.0-0.0.799733, VMware_bootbank_esx-xlibs_5.1.0-0.0.799733, VMware_bootbank_esx-xserver_5.1.0-0.0.799733, VMware_bootbank_ima-qla4xxx_2.01.3.1-1vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-devintf_39.1-4vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-msghandler_39.1-4vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-si-driv_39.1-4vmw.510.0.0.799733, VMware_bootbank_misc-cnric-register_1.1-1vmw.510.0.0.799733, VMware_bootbank_misc-drivers_5.1.0-0.0.799733, VMware_bootbank_net-be2net_4.1.255.11-1vmw.510.0.0.799733, VMware_bootbank_net-bnx2_2.0.15g.v50.11-1vmw.510.0.0.799733, VMware_bootbank_net-bnx2x_1.61.15.v50.3-1vmw.510.0.0.799733, VMware_bootbank_net-cnric_1.10.2j.v50.7-3vmw.510.0.0.799733, VMware_bootbank_net-e1000_8.0.3.1-2vmw.510.0.0.799733, VMware_bootbank_net-e1000e_1.1.2-3vmw.510.0.0.799733, VMware_bootbank_net-enic_1.4.2.15a-1vmw.510.0.0.799733, VMware_bootbank_net-forcedeth_0.61-2vmw.510.0.0.799733, VMware_bootbank_net-igb_2.1.11.1-3vmw.510.0.0.799733, VMware_bootbank_net-ixgbe_3.7.13.61ov-10vmw.510.0.0.799733, VMware_bootbank_net-nx-nic_4.0.558-3vmw.510.0.0.799733, VMware_bootbank_net-r8168_8.0.13.00-3vmw.510.0.0.799733, VMware_bootbank_net-r8169_6.011.00-2vmw.510.0.0.799733, VMware_bootbank_net-s2io_2.1.4.13427-3vmw.510.0.0.799733, VMware_bootbank_net-sky2_1.20-2vmw.510.0.0.799733, VMware_bootbank_net-tg3_3.110h.v50.4-4vmw.510.0.0.799733, VMware_bootbank_net-vmxnet3_1.1.3.0-3vmw.510.0.0.799733, VMware_bootbank_ohci-usb-ohci_1.0-3vmw.510.0.0.799733, VMware_bootbank_sata-ahci_3.0-13vmw.510.0.0.799733, VMware_bootbank_sata-ata-piix_2.12-6vmw.510.0.0.799733, VMware_bootbank_sata-sata-nv_3.5-4vmw.510.0.0.799733, VMware_bootbank_sata-sata-promis-e_2.12-3vmw.510.0.0.799733, VMware_bootbank_sata-sata-sil24_1.1-1vmw.510.0.0.799733, VMware_bootbank_sata-sata-sil_2.3-4vmw.510.0.0.799733, VMware_bootbank_sata-sata-svw_2.3-3vmw.510.0.0.799733, VMware_bootbank_scsi-aacraid_1.1.5.1-9vmw.510.0.0.799733, VMware_bootbank_scsi-adp94xx_1.0.8.12-6vmw.510.0.0.799733, VMware_bootbank_scsi-aic79xx_3.1-5vmw.510.0.0.799733, VMware_bootbank_scsi-bnx2i_1.9.1d.v50.1-5vmw.510.0.0.799733, VMware_bootbank_scsi-fnic_1.5.0.3-1vmw.510.0.0.799733, VMware_bootbank_scsi-hpsa_5.0.0-21vmw.510.0.0.799733, VMware_bootbank_scsi-lps_7.12.05-4vmw.510.0.0.799733, VMware_bootbank_scsi-lpfc820_8.2.3.1-127vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid-mbox_2.20.5.1-6vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid-sas_5.24-4vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid2_2.00.4-9vmw.510.0.0.799733, VMware_bootbank_scsi-mpt2sas_10.00.00.00-5vmw.510.0.0.799733, VMware_bootbank_scsi-mptsas_4.23.01.00-6vmw.510.0.0.799733, VMware_bootbank_scsi-mptspi_4.23.01.00-6vmw.510.0.0.799733, VMware_bootbank_scsi-qla2xxx_902.k1.1-9vmw.510.0.0.799733, VMware_bootbank_scsi-qla4xxx_5.01.03.2-4vmw.510.0.0.799733, VMware_bootbank_scsi-rste_2.0.2.0088-1vmw.510.0.0.799733, VMware_bootbank_uchi-usb-uchi_1.0-3vmw.510.0.0.799733
~ #
```

The actual update is performed by the same command without the „--dry-run“ option:

```
~ # esxcli software profile update -d /vmfs/volumes/datastore1/patches/ESXi510-201212001.zip -p ESXi-5.1.0-20121204001-standard
Update Result
  Message: The update completed successfully, but the system needs to be rebooted for the changes to be effective.
  Reboot Required: true
  VIBs Installed: VMware_bootbank_esx-base_5.1.0-0.9.914609, VMware_locker_tools-light_5.1.0-0.9.914609
  VIBs Removed: VMware_bootbank_esx-base_5.1.0-0.0.799733, VMware_locker_tools-light_5.1.0-0.0.799733
  VIBs Skipped: VMware_bootbank_ata-pata-amd_0.3.10-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-atiixp_0.4.6-4vmw.510.0.0.799733, VMware_bootbank_ata-pata-cmd64x_0.2.5-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-hpt3x2n_0.3.4-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-pdc2027x_1.0-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-serverworks_0.4.3-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-sil680_0.4.8-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-via_0.3.3-2vmw.510.0.0.799733, VMware_bootbank_block-cciss_3.6.14-10vmw.510.0.0.799733, VMware_bootbank_ehci-ehci-hcd_1.0-3vmw.510.0.0.799733, VMware_bootbank_esx-dvfilter-generic-fastpath_5.1.0-0.0.799733, VMware_bootbank_esx-tboot_5.1.0-0.0.799733, VMware_bootbank_esx-xlibs_5.1.0-0.0.799733, VMware_bootbank_esx-xserver_5.1.0-0.0.799733, VMware_bootbank_ima-qla4xxx_2.01.3-1-1vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-devintf_39.1-4vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-msghandler_39.1-4vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-si-driv_39.1-4vmw.510.0.0.799733, VMware_bootbank_misc-cnic-register_1.1-1vmw.510.0.0.799733, VMware_bootbank_misc-drivers_5.1.0-0.0.799733, VMware_bootbank_net-be2net_4.1.25.11-1vmw.510.0.0.799733, VMware_bootbank_net-bnx2_2.0.15g.v50.11-7vmw.510.0.0.799733, VMware_bootbank_net-bnx2x_1.61.15.v50.3-1vmw.510.0.0.799733, VMware_bootbank_net-cnic_1.10.2j.v50.7-3vmw.510.0.0.799733, VMware_bootbank_net-e1000_8.0.3.1-2vmw.510.0.0.799733, VMware_bootbank_net-e1000e_1.1.2-3vmw.510.0.0.799733, VMware_bootbank_net-enic_1.4.2.15a-1vmw.510.0.0.799733, VMware_bootbank_net-forcedeth_0.61-2vmw.510.0.0.799733, VMware_bootbank_net-igb_2.1.11.1-3vmw.510.0.0.799733, VMware_bootbank_net-ixgbe_3.7.13.6iov-10vmw.510.0.0.799733, VMware_bootbank_net-nx-nic_4.0.558-3vmw.510.0.0.799733, VMware_bootbank_net-r8168_8.0.13.00-3vmw.510.0.0.799733, VMware_bootbank_net-r8169_6.011.00-2vmw.510.0.0.799733, VMware_bootbank_net-s2io_2.1.4.13427-3vmw.510.0.0.799733, VMware_bootbank_net-sky2_1.20-2vmw.510.0.0.799733, VMware_bootbank_net-tg3_3.110h.v50.4-4vmw.510.0.0.799733, VMware_bootbank_net-vmxnet3_1.1.3.0-3vmw.510.0.0.799733, VMware_bootbank_ohci-usb-ohci_1.0-3vmw.510.0.0.799733, VMware_bootbank_sata-ahci_3.0-13vmw.510.0.0.799733, VMware_bootbank_sata-ata-piix_2.12-6vmw.510.0.0.799733, VMware_bootbank_sata-sata-nv_3.5-4vmw.510.0.0.799733, VMware_bootbank_sata-sata-promise_2.12-3vmw.510.0.0.799733, VMware_bootbank_sata-sata-sil24_1.1-1vmw.510.0.0.799733, VMware_bootbank_sata-sata-sil_2.3-4vmw.510.0.0.799733, VMware_bootbank_sata-sata-svw_2.3-3vmw.510.0.0.799733, VMware_bootbank_scsi-aacraid_1.1.5.1-9vmw.510.0.0.799733, VMware_bootbank_scsi-adp94xx_1.0.8.12-6vmw.510.0.0.799733, VMware_bootbank_scsi-aic79xx_3.1-5vmw.510.0.0.799733, VMware_bootbank_scsi-bnx2i_1.9.1d.v50.1-5vmw.510.0.0.799733, VMware_bootbank_scsi-fnic_1.5.0.3-1vmw.510.0.0.799733, VMware_bootbank_scsi-hpsa_5.0.0-21vmw.510.0.0.799733, VMware_bootbank_scsi-ips_7.12.05-4vmw.510.0.0.799733, VMware_bootbank_scsi-lpfc820_8.2.3.1-127vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid-mbox_2.20.5.1-6vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid-sas_5.34-4vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid2_2.00.4-9vmw.510.0.0.799733, VMware_bootbank_scsi-mpt2sas_10.00.00.00-5vmw.510.0.0.799733, VMware_bootbank_scsi-mptsas_4.23.01.00-6vmw.510.0.0.799733, VMware_bootbank_scsi-mptspi_4.23.01.00-6vmw.510.0.0.799733, VMware_bootbank_scsi-qla2xxx_902.k1.1-9vmw.510.0.0.799733, VMware_bootbank_scsi-qla4xxx_5.01.03.2-4vmw.510.0.0.799733, VMware_bootbank_scsi-rste_2.0.2.0088-1vmw.510.0.0.799733, VMware_bootbank_uhci-usb-uhci_1.0-3vmw.510.0.0.799733
~ #
```

It can take several minutes until the command returns. During that time there is no output and you will see only your command line. Be patient !

Finally reboot the ESXi host and leave the maintenance mode.

Note:

In the command above it is also possible to apply a patch bundle with „install“ instead of „update“. In this case all the VIBs (VMware Installation Bundles) contained in the patch bundle will be installed, whose version differs from the version already installed on the host. This might result in replacing VIBs that have been installed before separately by older versions.

```
esxcli software profile install -d <full-path-to-zip-file> --dry-run -p <profile-name>
```

As an example the first lines of output from a dry run with the „install“ subcommand:

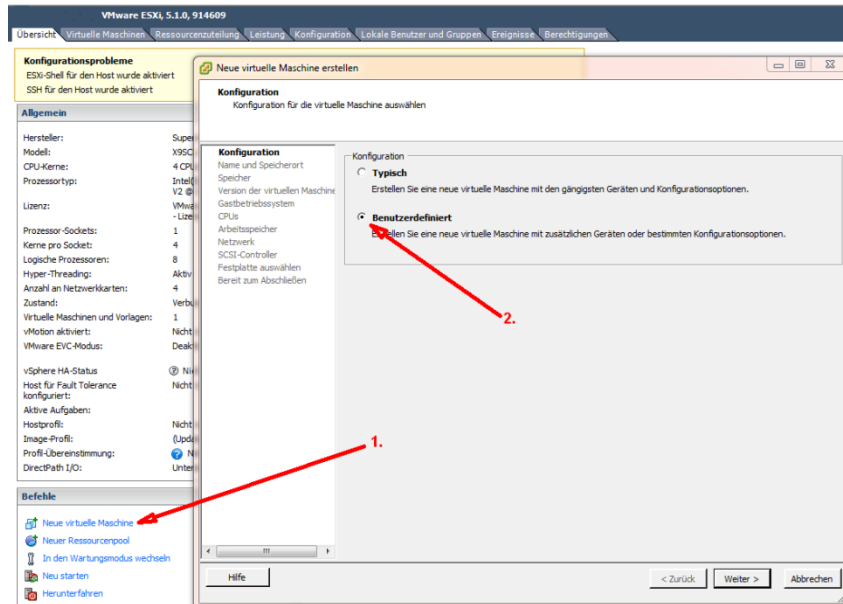
```
~ # esxcli software profile install -d /vmfs/volumes/datastore1/patches/ESXi510-201212001.zip --dry-run -p ESXi-5.1.0-20121204001-standard
Installation Result
  Message: Dryrun only, host not changed. The following installers will be applied: [BootBankInstaller, LockerInstaller]
  Reboot Required: true
  VIBs Installed: VMware_bootbank_esx-base_5.1.0-0.9.914609, VMware_bootbank_net-ixgbe_3.7.13.6iov-10vmw.510.0.0.799733, VMware_locker_tools-light_5.1.0-0.9.914609
  VIBs Removed: Intel_bootbank_net-ixgbe_3.11.32-10EM.500.0.0.472560, VMware_bootbank_esx-base_5.1.0-0.0.799733, VMware_locker_tools-light_5.1.0-0.0.799733
  VIBs Skipped: VMware_bootbank_ata-pata-amd_0.3.10-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-atiixp_0.4.6-4vmw.510.0.0.799733, VMware_bootbank_ata-pata-cmd64x_0.2.5-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-hpt3x2n_0.3.4-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-pdc2027x_1.0-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-serverworks_0.4.3-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-sil680_0.4.8-3vmw.510.0.0.799733, VMware_bootbank_ata-pata-via_0.3.3-2vmw.510.0.0.799733, VMware_bootbank_block-cciss_3.6.14-10vmw.510.0.0.799733, VMware_bootbank_ehci-ehci-hcd_1.0-3vmw.510.0.0.799733, VMware_bootbank_esx-dvfilter-generic-fastpath_5.1.0-0.0.799733, VMware_bootbank_esx-tboot_5.1.0-0.0.799733, VMware_bootbank_esx-xlibs_5.1.0-0.0.799733, VMware_bootbank_esx-xserver_5.1.0-0.0.799733, VMware_bootbank_ima-qla4xxx_2.01.3-1-1vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-devintf_39.1-4vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-msghandler_39.1-4vmw.510.0.0.799733, VMware_bootbank_ipmi-ipmi-si-driv_39.1-4vmw.510.0.0.799733, VMware_bootbank_misc-cnic-register_1.1-1vmw.510.0.0.799733, VMware_bootbank_misc-drivers_5.1.0-0.0.799733, VMware_bootbank_net-be2net_4.1.25.11-1vmw.510.0.0.799733, VMware_bootbank_net-bnx2_2.0.15g.v50.11-7vmw.510.0.0.799733, VMware_bootbank_net-bnx2x_1.61.15.v50.3-1vmw.510.0.0.799733, VMware_bootbank_net-cnic_1.10.2j.v50.7-3vmw.510.0.0.799733, VMware_bootbank_net-e1000_8.0.3.1-2vmw.510.0.0.799733, VMware_bootbank_net-e1000e_1.1.2-3vmw.510.0.0.799733, VMware_bootbank_net-enic_1.4.2.15a-1vmw.510.0.0.799733, VMware_bootbank_net-forcedeth_0.61-2vmw.510.0.0.799733, VMware_bootbank_net-igb_2.1.11.1-3vmw.510.0.0.799733, VMware_bootbank_net-ixgbe_3.7.13.6iov-10vmw.510.0.0.799733, VMware_bootbank_net-nx-nic_4.0.558-3vmw.510.0.0.799733, VMware_bootbank_net-r8168_8.0.13.00-3vmw.510.0.0.799733, VMware_bootbank_net-r8169_6.011.00-2vmw.510.0.0.799733, VMware_bootbank_net-s2io_2.1.4.13427-3vmw.510.0.0.799733, VMware_bootbank_net-sky2_1.20-2vmw.510.0.0.799733, VMware_bootbank_net-tg3_3.110h.v50.4-4vmw.510.0.0.799733, VMware_bootbank_net-vmxnet3_1.1.3.0-3vmw.510.0.0.799733, VMware_bootbank_ohci-usb-ohci_1.0-3vmw.510.0.0.799733, VMware_bootbank_sata-ahci_3.0-13vmw.510.0.0.799733, VMware_bootbank_sata-ata-piix_2.12-6vmw.510.0.0.799733, VMware_bootbank_sata-sata-nv_3.5-4vmw.510.0.0.799733, VMware_bootbank_sata-sata-promise_2.12-3vmw.510.0.0.799733, VMware_bootbank_sata-sata-sil24_1.1-1vmw.510.0.0.799733, VMware_bootbank_sata-sata-sil_2.3-4vmw.510.0.0.799733, VMware_bootbank_sata-sata-svw_2.3-3vmw.510.0.0.799733, VMware_bootbank_scsi-aacraid_1.1.5.1-9vmw.510.0.0.799733, VMware_bootbank_scsi-adp94xx_1.0.8.12-6vmw.510.0.0.799733, VMware_bootbank_scsi-aic79xx_3.1-5vmw.510.0.0.799733, VMware_bootbank_scsi-bnx2i_1.9.1d.v50.1-5vmw.510.0.0.799733, VMware_bootbank_scsi-fnic_1.5.0.3-1vmw.510.0.0.799733, VMware_bootbank_scsi-hpsa_5.0.0-21vmw.510.0.0.799733, VMware_bootbank_scsi-ips_7.12.05-4vmw.510.0.0.799733, VMware_bootbank_scsi-lpfc820_8.2.3.1-127vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid-mbox_2.20.5.1-6vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid-sas_5.34-4vmw.510.0.0.799733, VMware_bootbank_scsi-megaraid2_2.00.4-9vmw.510.0.0.799733, VMware_bootbank_scsi-mpt2sas_10.00.00.00-5vmw.510.0.0.799733, VMware_bootbank_scsi-mptsas_4.23.01.00-6vmw.510.0.0.799733, VMware_bootbank_scsi-mptspi_4.23.01.00-6vmw.510.0.0.799733, VMware_bootbank_scsi-qla2xxx_902.k1.1-9vmw.510.0.0.799733, VMware_bootbank_scsi-qla4xxx_5.01.03.2-4vmw.510.0.0.799733, VMware_bootbank_scsi-rste_2.0.2.0088-1vmw.510.0.0.799733, VMware_bootbank_uhci-usb-uhci_1.0-3vmw.510.0.0.799733
```

On this system a new version of the network driver (net-ixgbe, version 3.11.32) was installed before. It would get replaced by the older driver version (net-ixgbe, version 3.7.13) from the patch bundle if the “install” subcommand would have been used.

II. Installation of OmniOS as a Virtual Machine

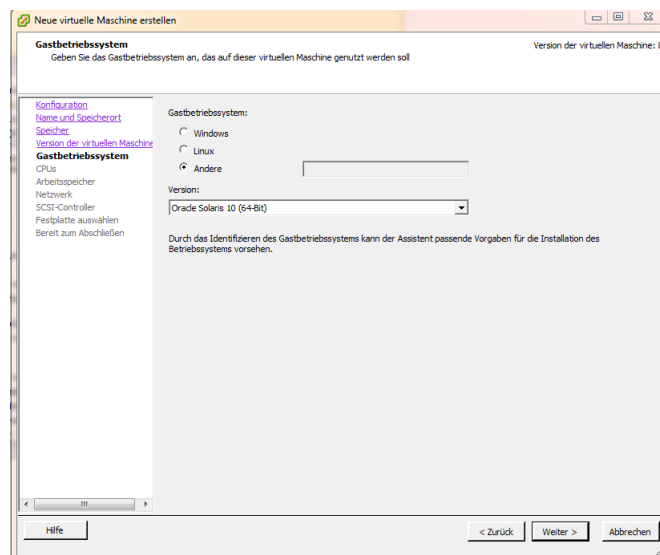
Copy the installer image OmniOS_Text_r151004.iso to a datastore on the ESXi host using WinSCP or upload the file with the datastore-browser of the vSphere Client.

In vSphere Client create a new Virtual Machine (1. + 2.).



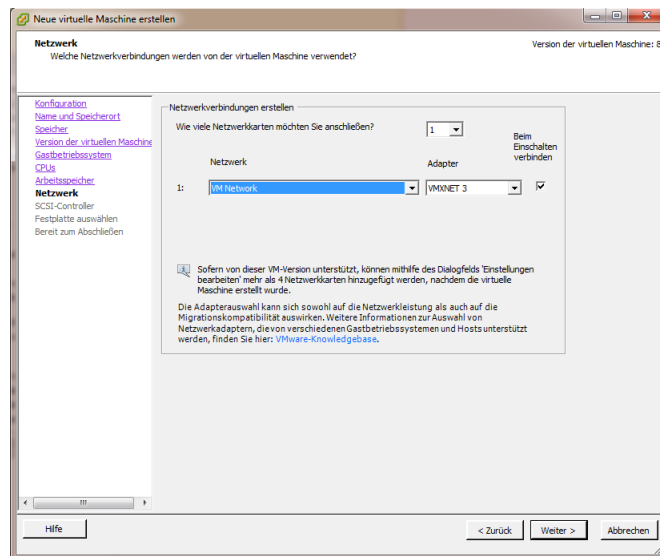
On the following pages chose a name for the VM, e.g. „OmniOS“, select the datastore for placing the VM files and select Virtual Machine version 8.

Select „Oracle Solaris 10 (64-bit)“ as the guest OS:

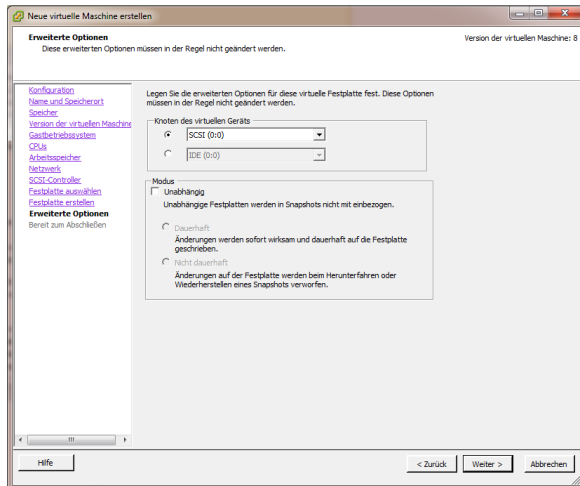
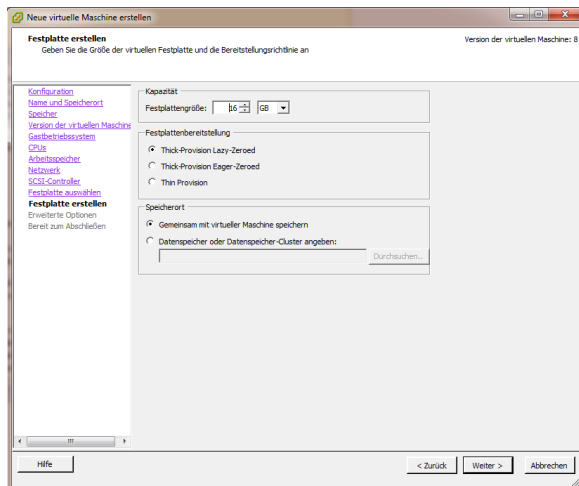


Next specify the number of CPUs, Cores and the amount of main memory.

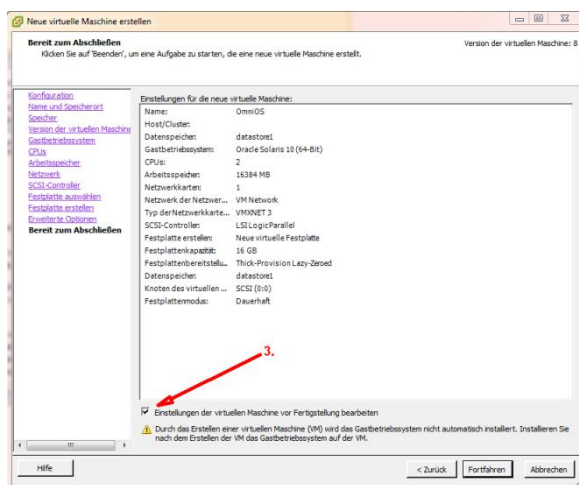
Select „VMXNET 3“ as the network adapter:



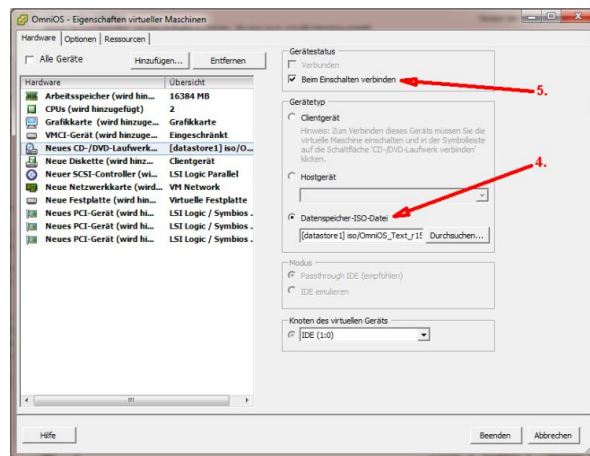
For the SCSI controller use „LSI Logic Parallel“ and chose to create a new virtual disk. Regarding the disk size it is not necessary to go with the 16GB shown below. The OmniOS Installer will later propose a minimum of 2.1GB and recommend 4.1GB.



On the summary page select to modify the settings before creating the VM (3.):



In the following dialog select the CD-/DVD-drive and specify to use an ISO-image. As the source chose the OmniOS_Text_r151004.iso file on the ESXi datastore (4.). Also select to connect the drive when powering on the VM (5.):

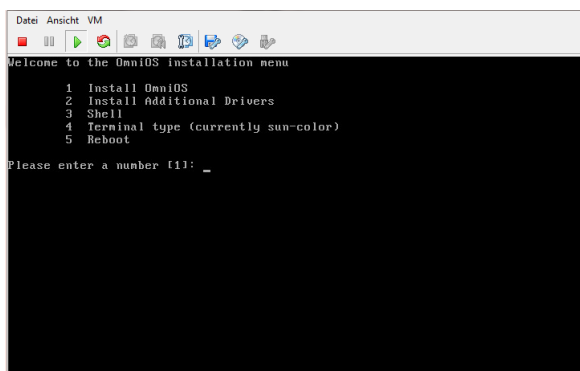


In the example above also 3 PCI-devices have been configured which is not required.

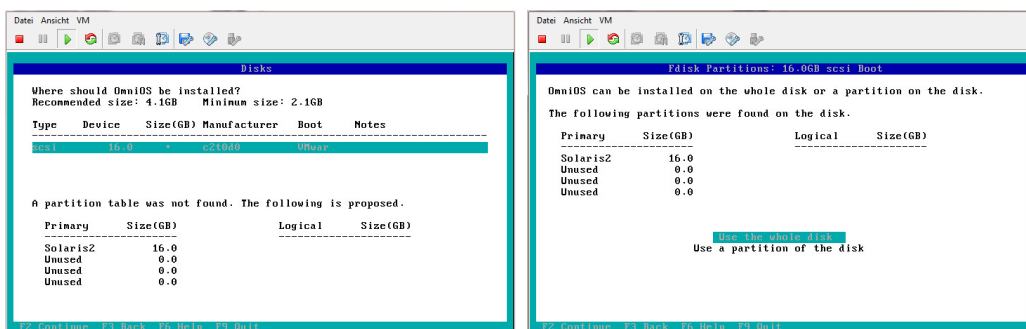
Finish the VM creation.

To start the installation select the VM in the inventory on the left side of the vSphere Client, right click and "Launch Console". Press the start button on the VM console window.

This should start the OmniOS installer of the ISO-image which was previously connected to the CD-drive. Make your selection for the keyboard layout and chose option 1 to install OmniOS:

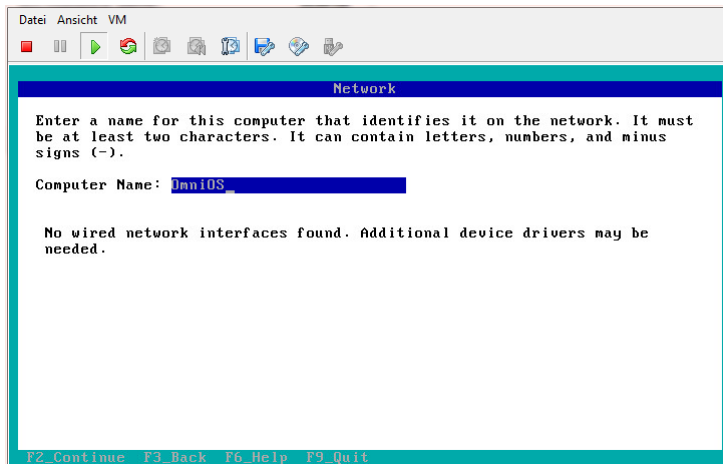


Select to use the whole virtual disk for the installation:



Continue with <F2> (instead of <Enter>).

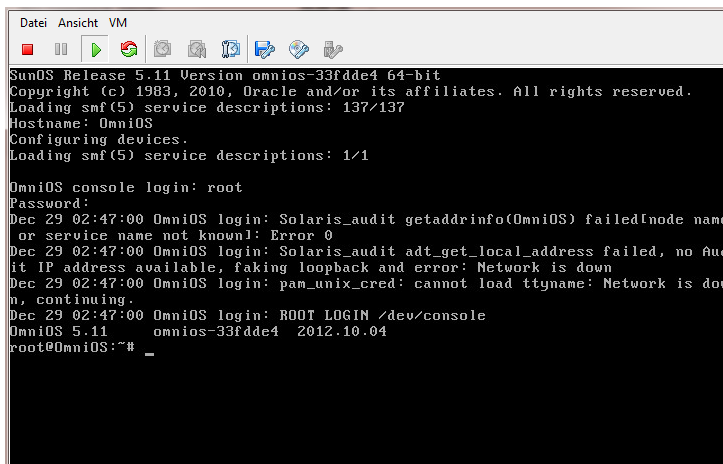
In the dialog for entering the computer name we get the information that no wired network interface was found. This is because the network driver for the previously selected VMXNET3 adapter will only be available after installing the VMware-Tools later.



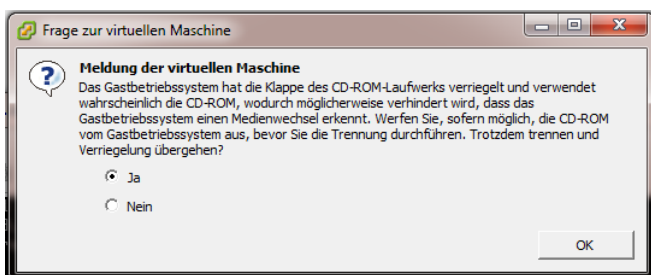
After selecting the timezone the installation starts.

Round about 2 minutes later it has finished and we reboot with <F8>.

Login as „root“ without password:



Next in the VM settings (VM console window menu bar: „VM“ --> „Modify settings...“) select the CD-/DVD-drive and uncheck „connected“ and „connect at power on“. Answer the following question with „Yes“:



On the OmniOS command line activate the hotplug service with:

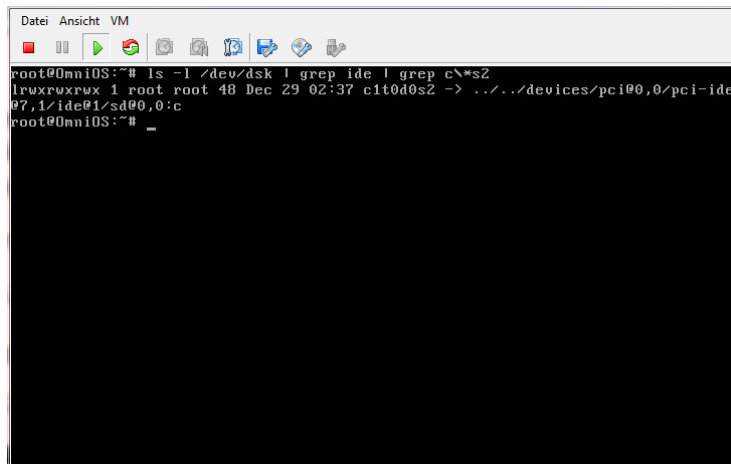
```
svcadm enable hotplug
```

Start the installation of the VMware-Tools by selecting „VM“ --> „Guest“ --> „VMware Tools installation/update“ from the menu bar of the VM console window. The VMware-Tools CD has to be mounted manually.

For this enter:

```
ls -l /dev/dsk | grep ide | grep c\*s2
```

to search for the device of the virtual CD-drive.

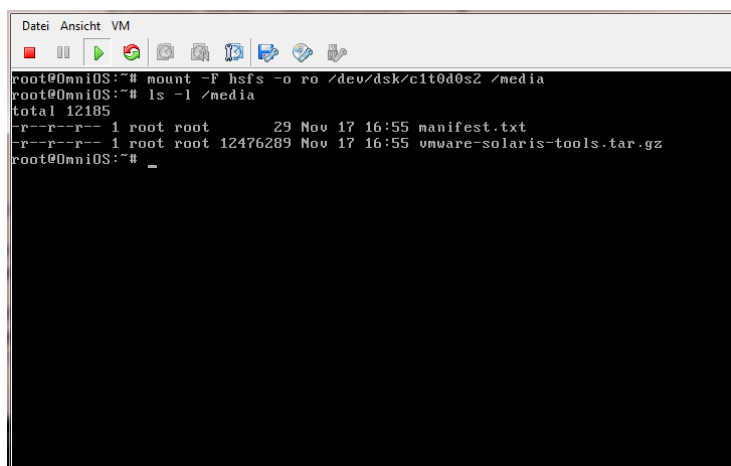


```
root@0mniOS:~# ls -l /dev/dsk | grep ide | grep c\*s2
lrwxrwxrwx 1 root root 48 Dec 29 02:37 c1t0d0s2 -> ../../devices/pci00,0/pci-ide
07,1/ide01/sd00,0:c
root@0mniOS:~# _
```

The device-node „c1t0d0s2“ does represent the slice to be mounted. This might differ from case to case and has to be adjusted in the following.

Mount the CD-drive with:

```
mount -F hsfs -o ro /dev/dsk/<device-node> /media
```



```
root@0mniOS:~# mount -F hsfs -o ro /dev/dsk/c1t0d0s2 /media
root@0mniOS:~# ls -l /media
total 12185
-r--r--r-- 1 root root      29 Nov 17 16:55 manifest.txt
-r--r--r-- 1 root root 12476289 Nov 17 16:55 vmware-solaris-tools.tar.gz
root@0mniOS:~# _
```

Unpack the VMware-Tools:

```
cd /root
```

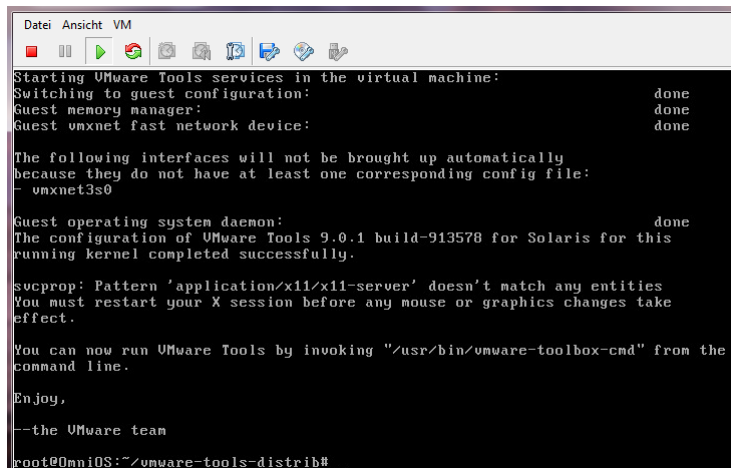
```
tar xzf /media/vmware-solaris-tools.tar.gz
```

and start the installation with:

```
cd vmware-tools-distrib
```

```
perl ./vmware-install.pl
```

Answer all questions with their default by pressing <Enter>.



```
Datei Ansicht VM
Starting VMware Tools services in the virtual machine:
Switching to guest configuration: done
Guest memory manager: done
Guest vmxnet fast network device: done

The following interfaces will not be brought up automatically
because they do not have at least one corresponding config file:
- vmxnet3s0

Guest operating system daemon: done
The configuration of VMware Tools 9.0.1 build-913578 for Solaris for this
running kernel completed successfully.

svcprop: Pattern 'application/x11/x11-server' doesn't match any entities
You must restart your X session before any mouse or graphics changes take
effect.

You can now run VMware Tools by invoking "/usr/bin/vmware-toolbox-cmd" from the
command line.

Enjoy,

--the VMware team
root@OmniOS:~/vmware-tools-distrib# _
```

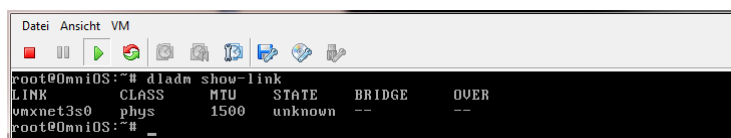
At the end you should have successfully installed the VMware-Tools version 9.0.1 build-913578 for Solaris in the OmniOS Virtual Machine.

The message from „svcprop“ can be safely ignored, because the OmniOS VM doesn't have a X-server installed. Therefore all components of the VMware-Tools dealing with the integration of the user interface, i.e. graphics, mouse etc. don't apply to the OmniOS server distribution which is purely text based..

The message regarding „vmxnet3s0“ shows that a network driver was installed successfully for the VMXNET 3 adapter but still needs to be configured in another step.

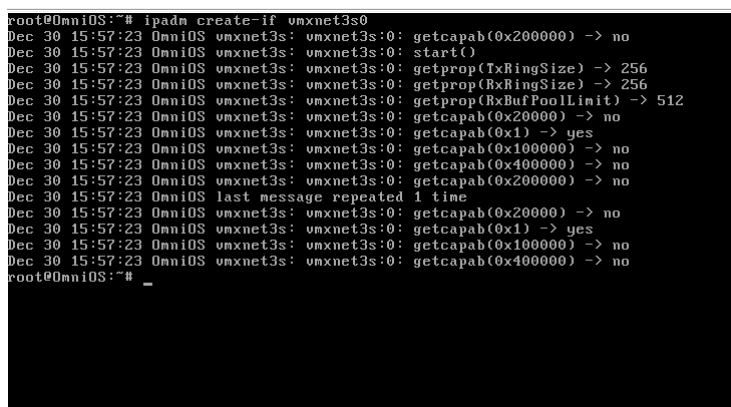
Do this according http://napp-it.org/downloads/omnios_en.html point 4.:

dladm show-link



```
Datei Ansicht VM
root@OmniOS:~# dladm show-link
LINK      CLASS    MTU    STATE    BRIDGE    OVER
vmxnet3s0  phys     1500   unknown  --        --
root@OmniOS:~# _
```

ipadm create-if vmxnet3s0



```
Datei Ansicht VM
root@OmniOS:~# ipadm create-if vmxnet3s0
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x200000) -> no
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: start()
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getprop(TxRingSize) -> 256
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getprop(RxRingSize) -> 256
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getprop(RxBufPoolLimit) -> 512
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x200000) -> no
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x1) -> yes
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x100000) -> no
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x400000) -> no
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x200000) -> no
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: last message repeated 1 time
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x200000) -> no
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x1) -> yes
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x100000) -> no
Dec 30 15:57:23 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x400000) -> no
root@OmniOS:~# _
```

Now the following message will start to be posted permanently to the console and /var/adm/messages:




```
root@OmniOS:~# Dec 30 15:59:50 OmniOS last message repeated 1 time
Dec 30 15:59:50 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x200000) -> no
Dec 30 15:59:50 OmniOS vmxnet3s: vmxnet3s:0: getcapab(0x200000) -> no
```

Despite spamming the log it looks like this does not indicate a noteworthy problem. You will find the same message in /var/adm/messages after installing the VMware-Tools in the OpenIndiana 151a5 desktop distribution. It just doesn't stand out because the console is covered by the X-server graphics window. The cause of this message is therefore not OmniOS specific but indicates a general flaw of the VMXNET 3 network driver under Illumos. In case that noticeable problems would show up it is always possible to change the configuration of the VM and use the E1000 network adapter instead. In this case you can completely follow point 4. under http://napp-it.org/downloads/omnios_en.html for the configuration of the network interface.

Proceed with setting the IP-address:

```
ipadm create-addr -T static -a <IP-address>/24 vmxnet3s0/v4
```

Now the output of **dladm show-link** and **dladm show-phys** should look like this:



```
root@OmniOS:~# dladm show-link
LINK      CLASS  MTU  STATE  BRIDGE  OVER
vmxnet3s0 phys   1500 up      --      --
root@OmniOS:~# dladm show-phys
LINK      MEDIA      STATE  SPEED  DUPLEX  DEVICE
vmxnet3s0 Ethernet  up     10000  Full   vmxnet3s0
root@OmniOS:~#
```

Set the default route:

```
route -p add default <Gateway-IP-address>
```

Specify the nameserver:

```
echo 'nameserver <Nameserver-IP-address>' >> /etc/resolv.conf
```

and activate DNS:

```
cp /etc/nsswitch.dns /etc/nsswitch.conf
```

For enabling ssh access you need to set a password for „root“ first :

```
passwd root
```

and then change the entry in sshd_config from „no“ to „yes“:

```
cd /etc/ssh
```

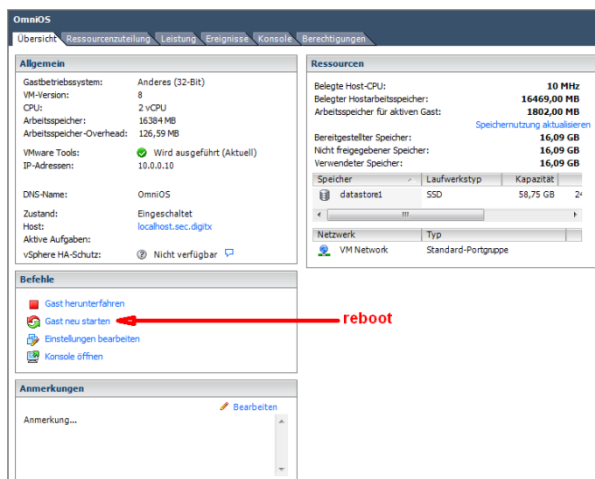
```
cp sshd_config sshd_config.orig
```

```
sed 's/PermitRootLogin no/PermitRootLogin yes/' sshd_config > sshd_config.new
```

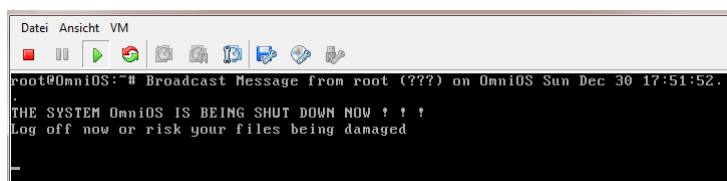
```
mv sshd_config.new sshd_config
```

Finally sshd needs to reread its configuration file. This can be accomplished by sending it the SIGHUP Signal or by a reboot.

A proper reboot can now be initiated from the vSphere Client thanks to the installed VMware-Tools.



It is announced on the console and other connected terminal sessions:



Finally it is now possible to access the server via a ssh client like putty.

