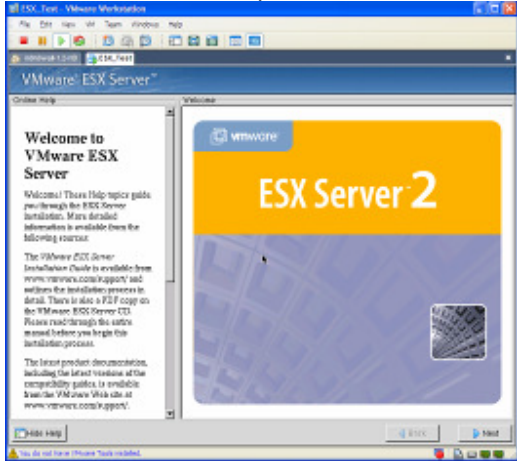


Installing ESX 2.5.2 to local disk

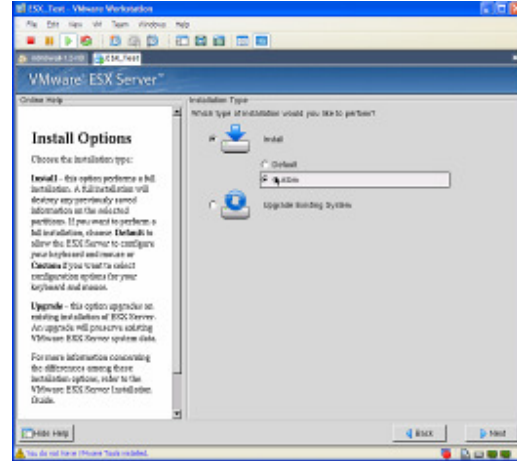
NOTE: This section is prescriptive and should be able to be followed by most IT technical staff.

NOTE: Before installing ESX Server either disconnect from the SAN or remove the server from all zones!

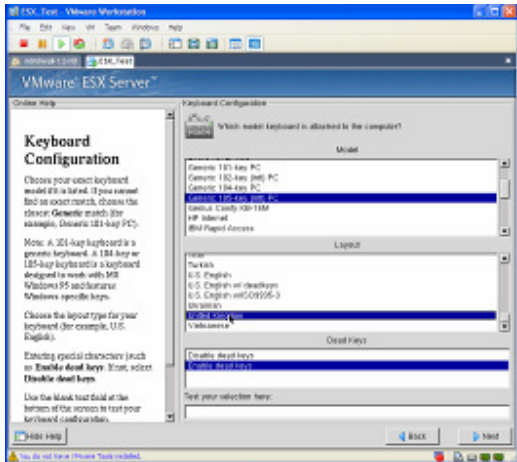
Boot from ESX 2.5.2 CD
Wait until GUI starts up and click next:



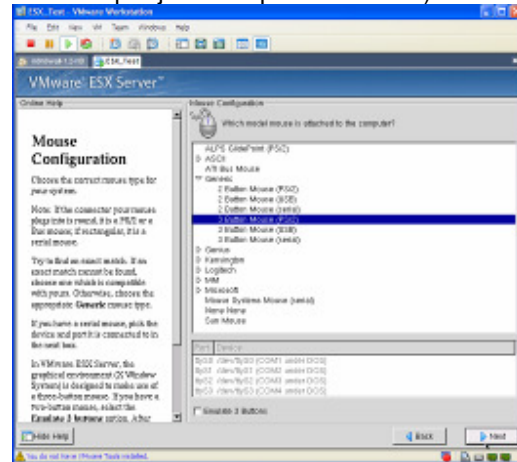
Select Custom install and click next:



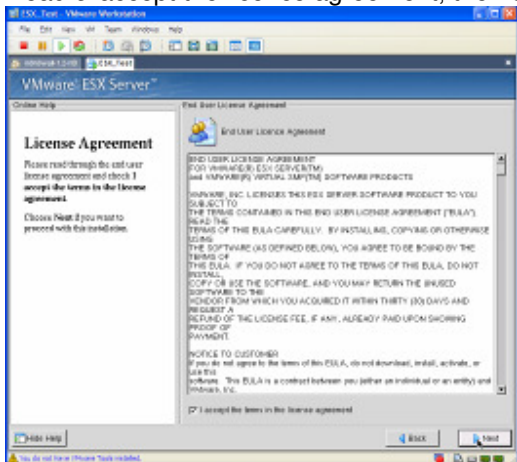
Select the correct keyboard layout and click Next:



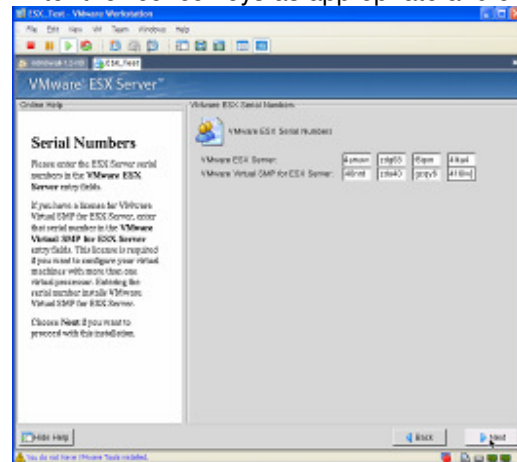
Select the correct mouse config. (although this is not really important, as the mouse isn't used or required beyond the GUI setup – just accept the defaults) and click Next:



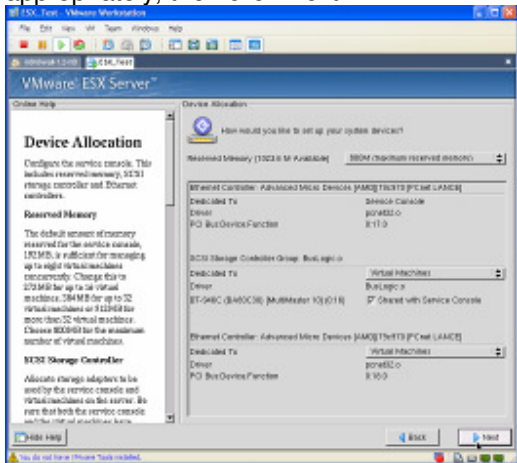
Read & accept the licence agreement, then click Next:



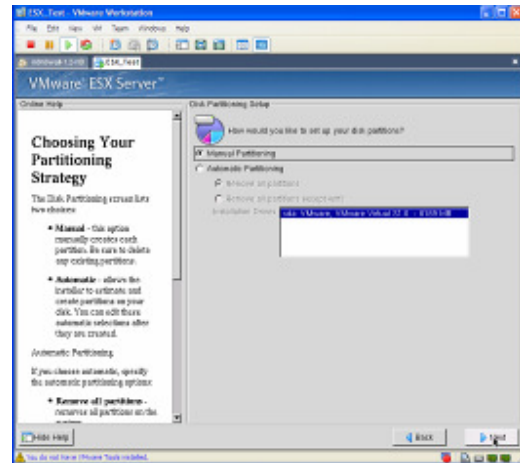
Enter the licence keys as appropriate and click Next:



Set reserved memory to 800mb and allocate devices appropriately, then click Next:



Select Manual Partitioning and click Next:



Set the partitions:

Mount Point	File System Type	Size (MB)	Additional Size Options	Force to Be a Primary Partition
/boot	ext3	50	Fixed size	Select
Not applicable	swap	1600	Fixed size	Select
/ (root)	ext3	1800	Fixed size	Select
/var	ext3	1600	Fixed size	Do not select ¹
/tmp	ext3	1024	Fixed size	Do not select
/home	ext3	1800	Fixed size	Do not select
/vmimages	ext3	Depends on usage; if unsure, start with 10000 (10GB)	Fixed size	Do not select
Not applicable	vmkcore	100	Fixed size	Do not select
Not applicable (automatically created as /vmfs/<volume_name>)	vmfs2	Rest of disk (or at least 2x Physical Memory if using SAN)	Fill to maximum allowable size (or fixed size if not using rest of disk)	Do not select

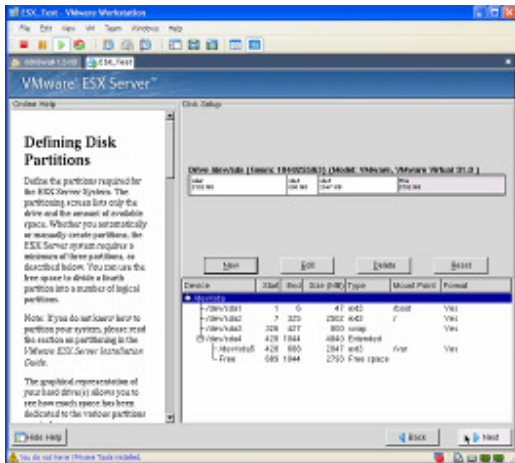
¹When you do not force the fourth partition (/var) to be a primary partition, an extended partition occupying the remainder of the disk is created, and /home and any subsequent partitions are created as logical partitions within the extended partition.

NOTE: An installation with many different kinds of virtual machines, running many different guest operating systems, needs more space in /vmimages than in an installation in which all the virtual machines are alike.

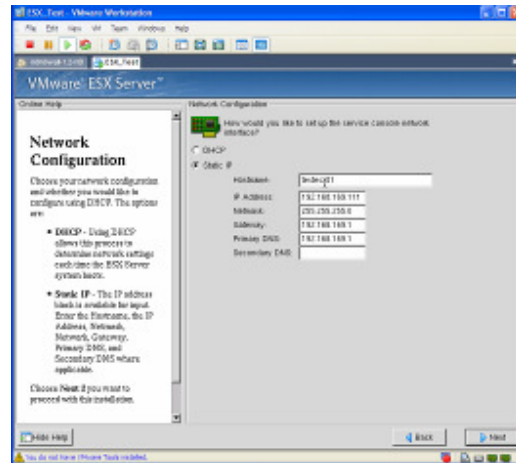
NOTE: If you plan to use vmsnap and vmres for backup and restore, note that /vmimages also serves as the default backup directory on both the local and remote ESX Server hosts for the backup snapshot script vmsnap.pl.

Important: ESX Server should not be installed on a machine with an attached disk array that is greater than or equal to 1TB. For a workaround, see www.vmware.com/support/kb/enduser/std_adp.php?p_faqid=1639.

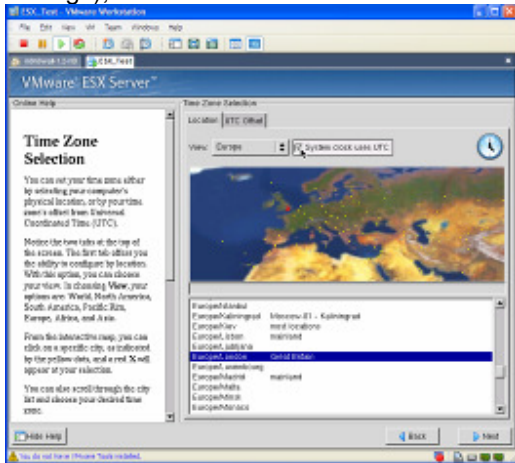
Click Next when finished:



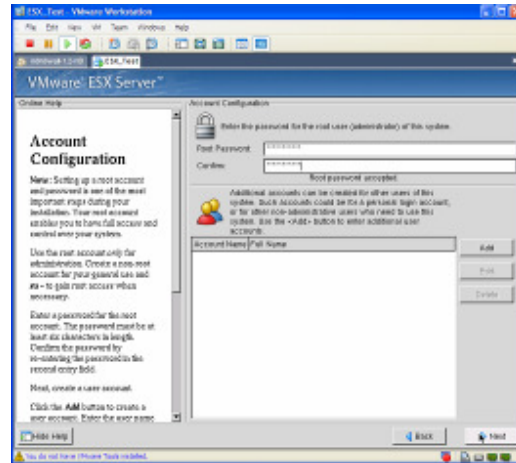
Configure hostname (not FQDN) and IP details then click Next:



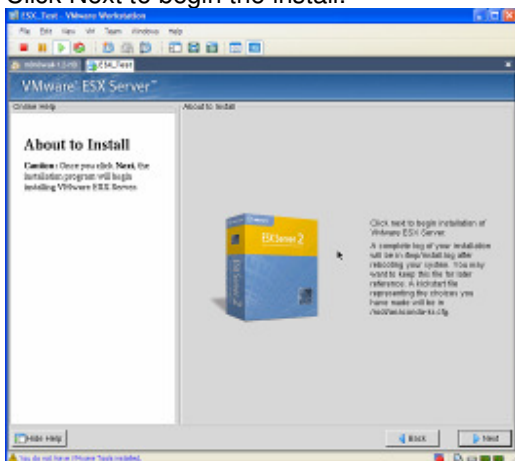
Set the Time Zone and system clock settings (The system clock should be set to use GMT (UTC) with no daylight savings), Click Next:



Set the root password, Click Next:



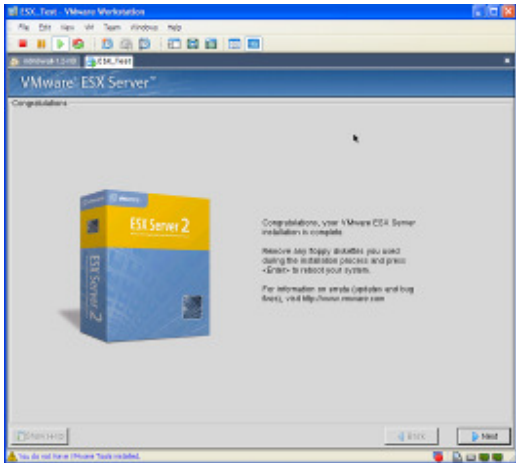
Click Next to begin the install:



The install runs:



Once the install has finished, click Next. The server will reboot:



Install Patch 4

NOTE: This content of this section assumes that the person following these instructions has moderate knowledge of *nix system administration.

The patch is available for download along with the installation instructions below from:
<http://www.vmware.com/download/esx/esx-252-200602-patch.html> (221.3 MB)

1. Power off all virtual machines and shut down your server.
2. Restart your system.
3. At the **LILLO Boot Menu**, select the option appropriate for your system.
 - For a boot-from-SAN installation, select **esx-san-safe**.
 - For all other installations, select **linux-up**.
4. Log in as root into the ESX Server service console, in Linux mode.
5. Download the tar file into the temporary directory /tmp on the service console.
6. Change your working directory to /tmp.
7. Verify the integrity of the package:

```
# md5sum esx-2.5.2-21059-upgrade.tar.gz
```

The md5 checksum output should match the following:
90900eb0a824ce9b9a427c77383eae72 esx-2.5.2-21059-upgrade.tar.gz

8. Extract the compressed tar archive:

```
# tar -xvzf esx-2.5.2-21059-upgrade.tar.gz
```
9. Change to the newly created directory /tmp/esx-2.5.2-21059-upgrade:

```
# cd esx-2.5.2-21059-upgrade
```
10. Run the installer:

```
# ./upgrade.pl
```
11. The system updates have now been installed. A reboot prompt displays:
Reboot the server now [y/n]?

This update will not be complete until you reboot the ESX Server. If you enter N, to indicate that you will not reboot at this time, ESX Server displays the warning message "Please reboot the server manually. Your virtual machines will not run properly until this is done." If you see this message, you must manually reboot the server to complete the driver update.

Configure NTP

NOTE: This content of this section assumes that the person following these instructions has moderate knowledge of *nix system administration.

NOTE: Determine the hostname and IP address of each NTP (time) server for ESX Server to synchronize with prior to continuing. Good candidates are non virtualised AD domain Controllers or a specialist NTP time source, such as a GPS Time Server.

A list of open access NTP servers is maintained at this address:
www.eecis.udel.edu/~mills/ntp/servers.html.

To configure NTP on the Service Console, follow these steps:

Log on to the console as the root user.

Edit the file /etc/ntp.conf.

The comments in ntp.conf explain the purpose of each section.

Find the section titled # --- OUR TIMESERVERS -----

Copy the existing restrict and server example lines:

```
# restrict mytrustedtimeserverip mask 255.255.255.255 nomodify notrap noquery
# server mytrustedtimeserverip
```

Remove the # character from the two newly copied lines so they are no longer treated as comments.

Update both the new lines with the IP address of the NTP server. Repeat this section to add more time servers, if needed.

NOTE: There must be *both* a restrict and a server line in this section for each NTP server.

Save the file.

Edit the file /etc/ntp/step-tickers. In this file, list the host name of the NTP servers entered above.

Add each NTP server to /etc/hosts to minimize the impact of DNS lookup failures during NTP synchronization.

To see the offset (in seconds) between the local clock and the source clock, run:

```
ntpdate -q time_server_name_or_ip_address
```

NOTE: If the correction resulting from synchronizing the local clock with the time server is large enough, it could affect the operating systems or applications running in virtual machines when they synchronize their clocks with the ESX Server they are running on.

To enable the ntp daemon to autostart when the server is rebooted, run:

```
chkconfig --level 345 ntpd on
```

To (re)start it now without rebooting, run:

```
service ntpd restart
```

To set the local hardware clock to the NTP synchronized local system time, run:

```
hwclock --systohc
```

To watch the status of the ntpd process, run:

```
watch ntpq -p
```

Press Ctrl-c to stop watching the process. Note the information in the following columns:

The character in the first column indicates the quality of the source. * indicates the source is the current reference.

remote lists the IP address or host name of the source.

when indicates how many seconds have passed since the source was polled.

poll indicates the polling interval. This value increases depending on the accuracy of the local clock.

reach is an octal number that indicates reachability of the source. A value of 377 indicates the source has answered the last eight consecutive polls.

offset is the time difference between the source and the local clock in milliseconds. polls.

NOTE: As ntpd successfully polls NTP servers, the kernel automatically sets the hardware clock to the system clock time periodically. Run `man hwclock`. See the section "Automatic Hardware Clock Synchronization By the Kernel" for more information.

Additional documentation for NTP is available at:
www.ntp.org/documentation.html.

A valid `/etc/ntp.conf`:

```
# Prohibit general access to this service.
restrict default ignore

# Permit all access over the loopback interface. This could
# be tightened as well, but to do so would effect some of
# the administrative functions.
restrict 127.0.0.1

# -- CLIENT NETWORK -----
# Permit systems on this network to synchronize with this
# time service. Do not permit those systems to modify the
# configuration of this service. Also, do not use those
# systems as peers for synchronization.
restrict 192.168.1.0 mask 255.255.255.0 notrust nomodify notrap

# --- OUR TIMESERVERS -----
# or remove the default restrict line
# Permit time synchronization with our time source, but do not
# permit the source to query or modify the service on this system.

restrict 130.88.200.98 mask 255.255.255.255 nomodify notrap noquery
server 130.88.200.98
restrict 130.88.200.4 mask 255.255.255.255 nomodify notrap noquery
server 130.88.200.4
restrict 130.88.203.12 mask 255.255.255.255 nomodify notrap noquery
server 130.88.203.12

# --- NTP MULTICASTCLIENT ---
#multicastclient # listen on default 224.0.1.1
# restrict 224.0.1.1 mask 255.255.255.255 notrust nomodify notrap
# restrict 192.168.1.0 mask 255.255.255.0 notrust nomodify notrap

# --- GENERAL CONFIGURATION ---
#
# Undisciplined Local Clock. This is a fake driver intended for backup
# and when no outside source of synchronized time is available. The
# default stratum is usually 3, but in this case we elect to use stratum
# 0. Since the server line does not have the prefer keyword, this driver
# is never used for synchronization, unless no other other
# synchronization source is available. In case the local host is
# controlled by some external source, such as an external oscillator or
# another protocol, the prefer keyword would cause the local host to
# disregard all other synchronization sources, unless the kernel
# modifications are in use and declare an unsynchronized condition.
#
server 127.127.1.0 # local clock
fudge 127.127.1.0 stratum 10

#
# Drift file. Put this in a directory which the daemon can write to.
# No symbolic links allowed, either, since the daemon updates the file
# by creating a temporary in the same directory and then rename()'ing
# it to the file.
#
driftfile /etc/ntp/drift
broadcastdelay 0.008

#
# Authentication delay. If you use, or plan to use someday, the
# authentication facility you should make the programs in the auth_stuff
# directory and figure out what this number should be on your machine.
#
authenticate yes

#
# Keys file. If you want to diddle your server at run time, make a
# keys file (mode 600 for sure) and define the key number to be
# used for making requests.
#
# PLEASE DO NOT USE THE DEFAULT VALUES HERE. Pick your own, or remote
# systems might be able to reset your clock at will. Note also that
# ntpd is started with a -A flag, disabling authentication, that
# will have to be removed as well.
#
keys /etc/ntp/keys
```

The associated valid `/etc/ntp/step-tickers` file:

```
ntp2b.mcc.ac.uk
ntp2c.mcc.ac.uk
ntp2d.mcc.ac.uk
```

Configure NICs on Blade Servers

NOTE: This content of this section assumes that the person following these instructions has moderate knowledge of *nix system administration.

1. Login to the ESX Console (Not via SSH) as root.
2. Run `vmkpcidivv -i`
3. Accept the defaults until you reach the entry detailing the Service Console NIC which will be assigned to the Service Console only (denoted with a [c]. Change this to [s])
4. Accept remaining defaults
5. When prompted to commit changes, accept by pressing the enter key.
6. Reboot the server.

NOTE: This will cause the boot process to slow due to this NIC being shared between the SC and the VMs.

Perform Post-Installation configuration steps on the server

NOTE: This section is prescriptive and should be able to be followed by most IT technical staff.

1. Use a web browser to access <http://servername>
2. login as root.
3. On the console follow the instructions next to the two warnings (Virtual Switches and Swap)