

## Common LINUX Commands

**top** = show mem installed and various process (PID), mem usage – free, used

**ifconfig** = show ethernet NIC card details (ip address, MAC addr, traffic details)

**chmod** = change access permissions on file, executables

**rm** “*filename*” = remove filename

**rmdir** “*directoryname*” = remove directory

**ls** = list files

**ls -l | more** = list files (a lot) and display in page mode

**fdisk -l** = list disk partitions on machine

**cat /proc/version** – show version running on machine

**uname -a** – show 32bit or 64bit version

**pwd** – print working directory, show directory path

**shutdown -r now**        – shutdown the CentOS and then reboot (-r)  
                             -    Shutdown and halt the OS (-h)  
                             -    Shutdown and power off (-P)

**Service --status-all**    - shows running services and TCP and UDP ports active

## UPGRADING AIRWAVE

(The hard way – the easy way – use the upgrade Airwave script in document)

- 1) Download the latest version of the Airwave **upgrade** code from the Airwave or Support web site (check if you need the 32 or 64 bit version) and download the correct upgrade package

- 2) The upgrade package will be a “tar.gz” file

Place the tar.gz file in the directory of your ftp server or point the ftp server to the directory containing the file

- 3) On the VM - login to the Airwave being upgraded via the console

- 4) While in the root directory type in “ftp”

At the ftp command line type in

ftp> open x.x.x.x

(where x.x.x.x is the IP address of the ftp server and the Airwave file)

ftp> get (*filename*) where *filename* is the complete name of the Airwave file

- 5) When the ftp is completed check that the file is in the directory

Example:

```
[root@localhost airwave]# ls
```

```
AMP-7.3.5-x86_64-cvs.tar.gz bin/ lib/ setuid-bin/ share/
```

- 6) Enter the Airwave upgrade script command

```
[root@localhost airwave]# start_amp_upgrade -v 7.3.5 -f /usr/local/airwave
```

Recommend you use the **-f** option and full path where the upgrade file is located

You should see the upgrade script starting...

```
[root@localhost airwave]# start_amp_upgrade -v 7.3.5 -f /usr/local/airwave
Upgrade script AMP-7.3.5-amp_upgrade was not found in local cache.
Upgrade package found in local cache.
Validating the upgrade package...
Upgrade package is OK.
Using upgrade script extracted from local package.
Upgrade package found in local cache.
Checking for any patches or modifications to the code
This process may take a few minutes...
No outstanding changes were found. Continuing with the upgrade.
```

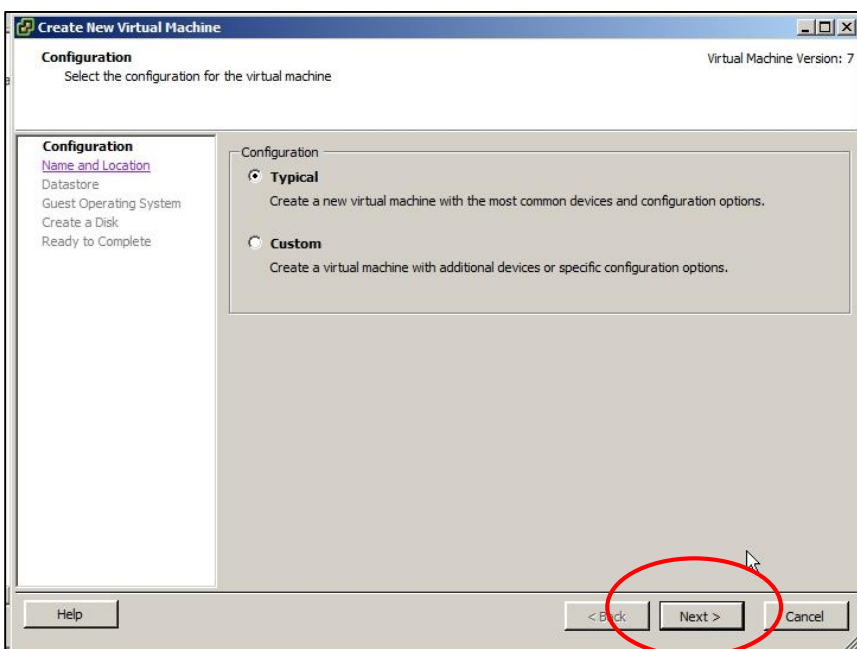
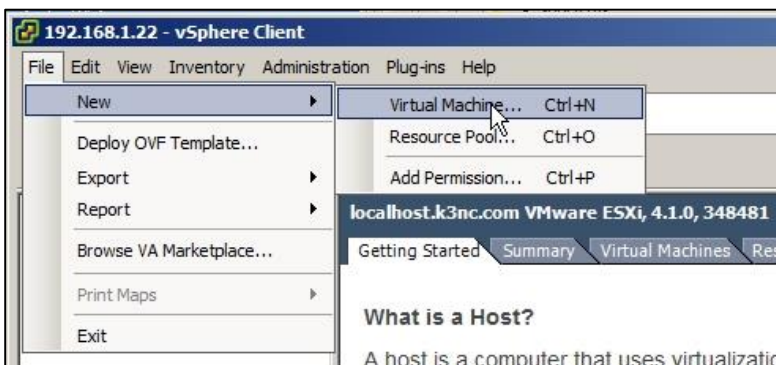
```
Validating the upgrade package...
Upgrade package is OK.
Upgrading AMP to version 7.3.5 from version 7.2.3...
Detailed log will be written to /tmp/AMP-7.3.5-upgrade.log
```

## INSTALLING AIRWAVE on VM (ESXi 4.1)

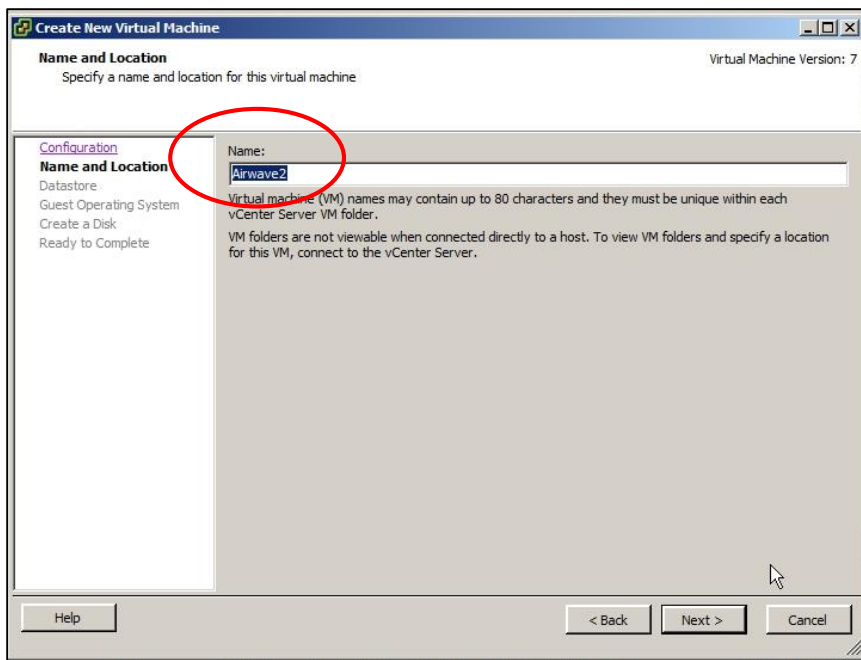
(example using Aruba SE Lab Server)

Create the new VM

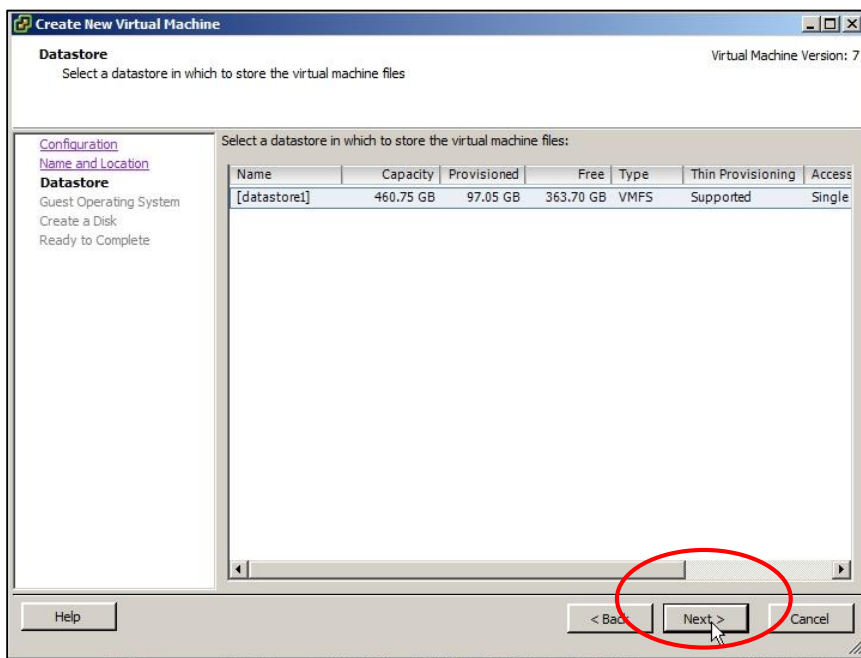
Example using VSphere



Default entry ^

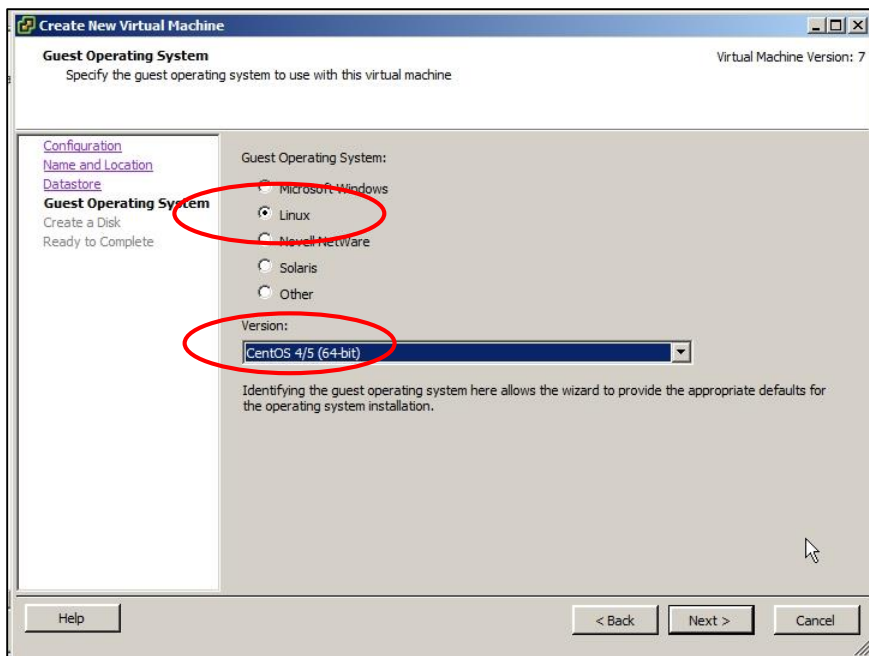


**Enter Name of VM ^**

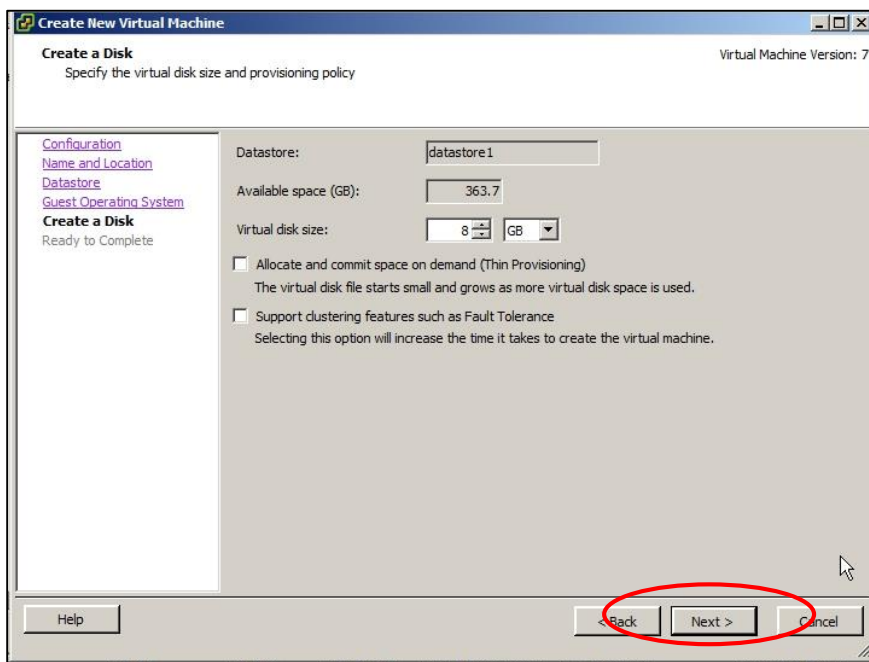


**Default entry ^**

Customers Datastore could appear different depending on installed drives

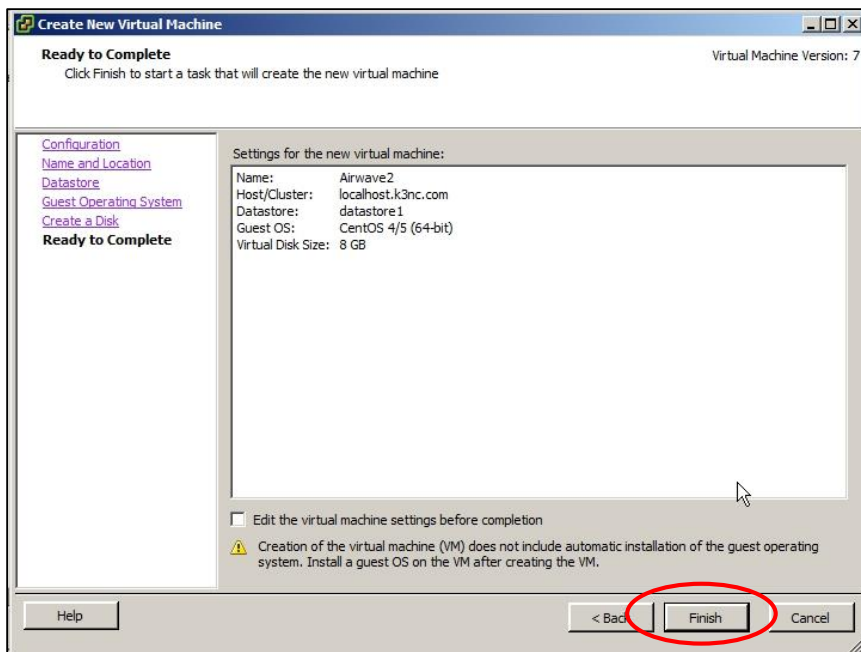


Select 'Linux' and then pull down CentOS 4/5 (64 bit) ^



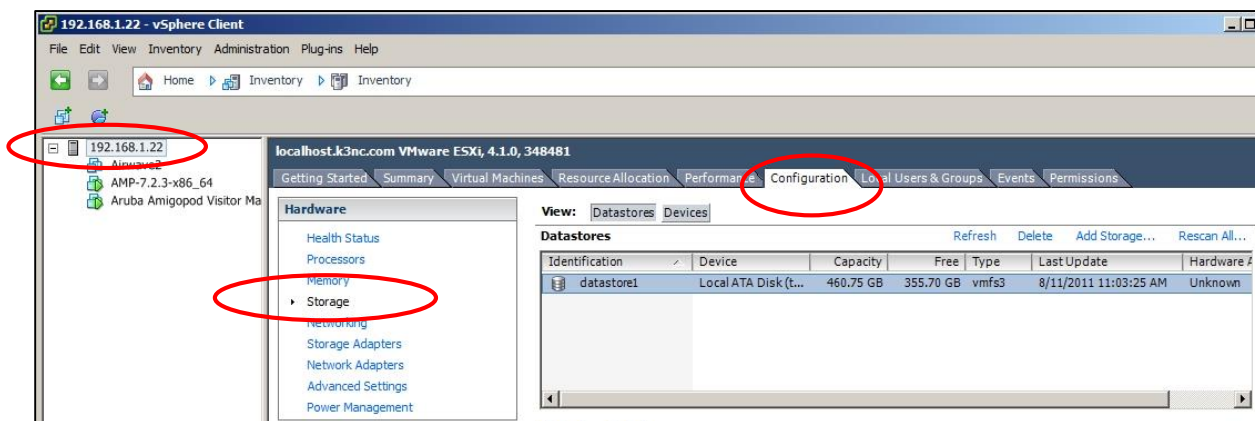
Default entry ^

Add the recommended disk size for the Airwave you are deploying

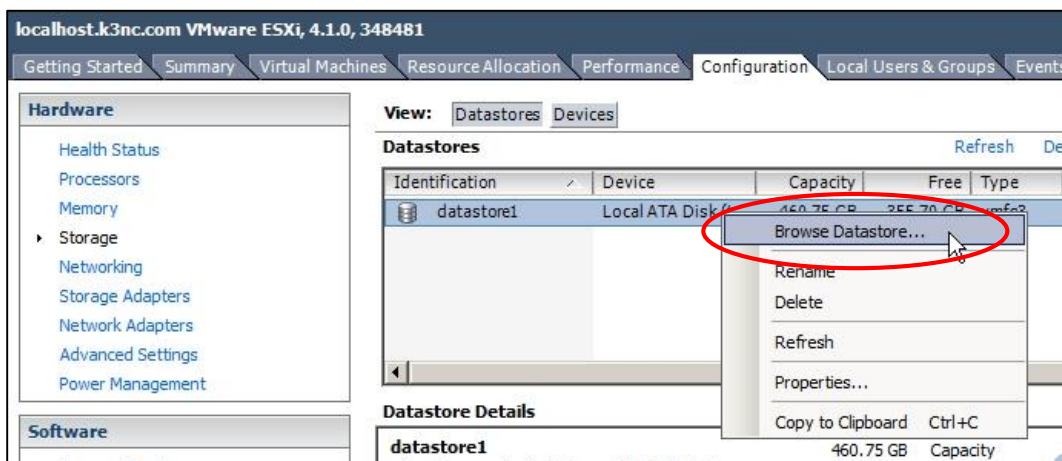


**Finish new guest OS on VM**

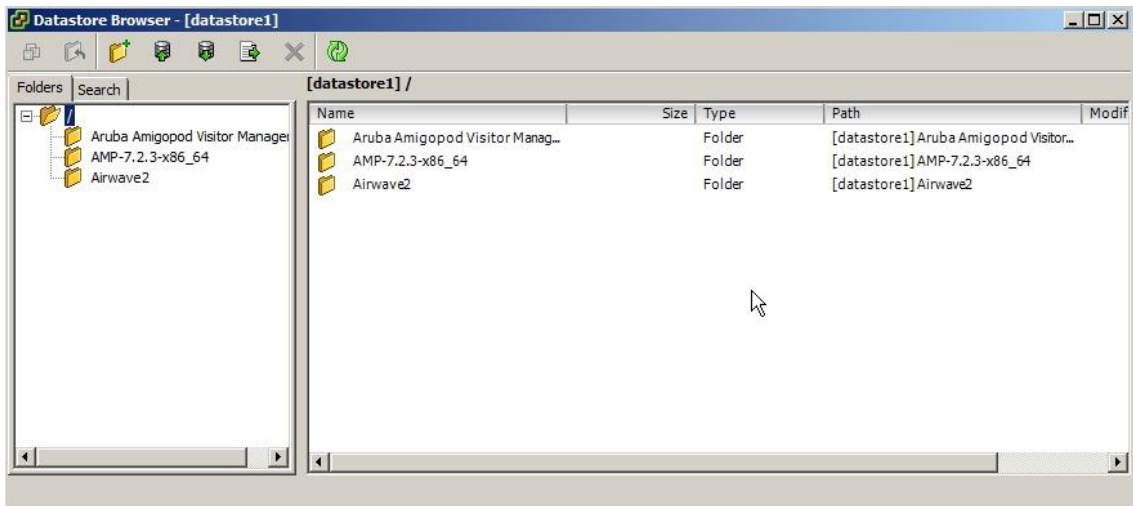
**NOW ADD THE AIRWAVE FILE (ISO) to the VM Datastore (for use by the new Airwave VM)**



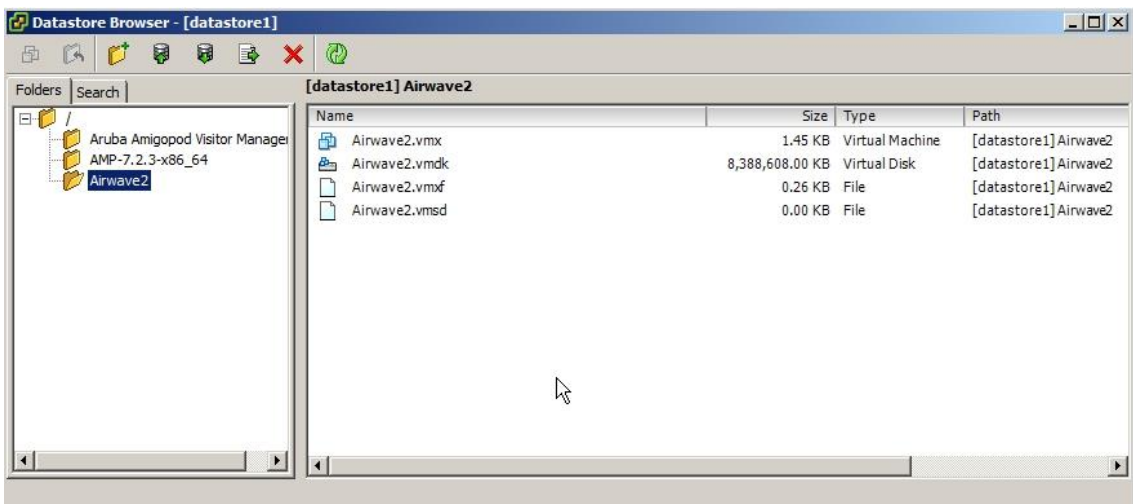
**Right Click on the Datastore and select "Browse"**



See the VM's listed on the Server

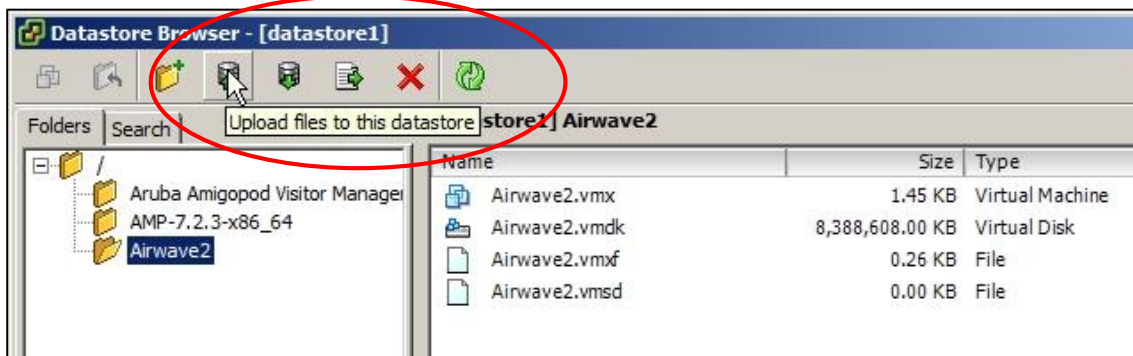


Click on and open the new VM (Airwave2 in this example)



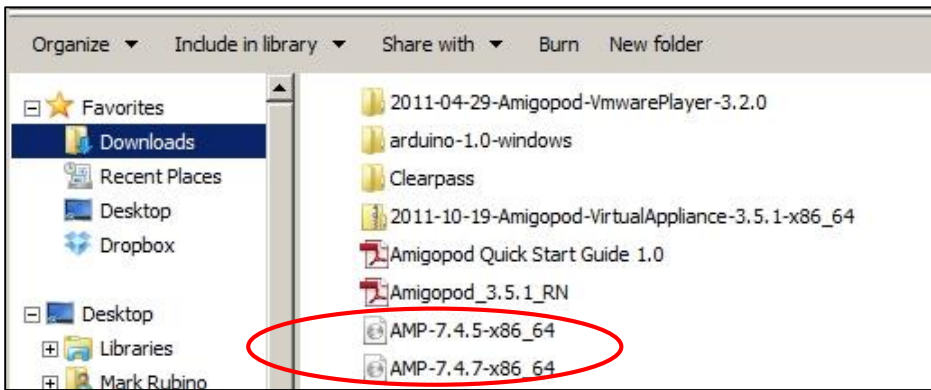
Select "Upload files to this datastore"

(The existing files seen may be in there from the original Airwave server install "AMP-7.2.3-x86\_64")



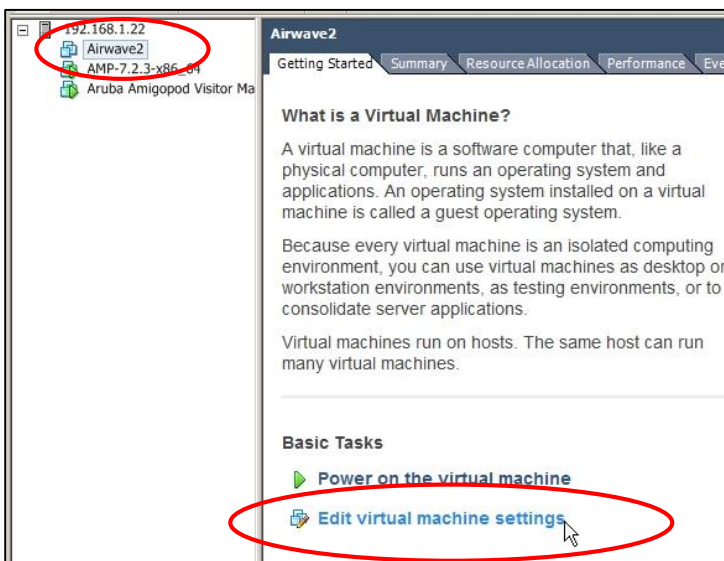


Browse to, select and upload the Airwave “iso” file from where the file was originally downloaded to

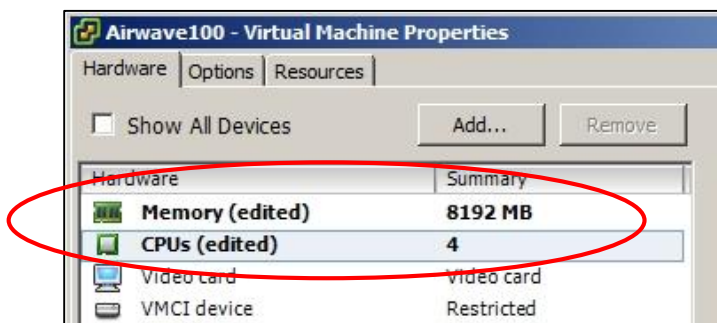


Ensure that the ISO file has been uploaded to the new Airwave VM datastore (you should see the “Uploading” pop-up)

Now go back to the VSphere Client, select the Airwave2 and “Edit virtual machine settings”



You may at this point check the number of CPU's and Memory allocated to the new VM (the default VM guest setup may be set for minimums) – check the Airwave Server Sizing Doc and make the changes recommended – 8gig mem, 4 cpu's)

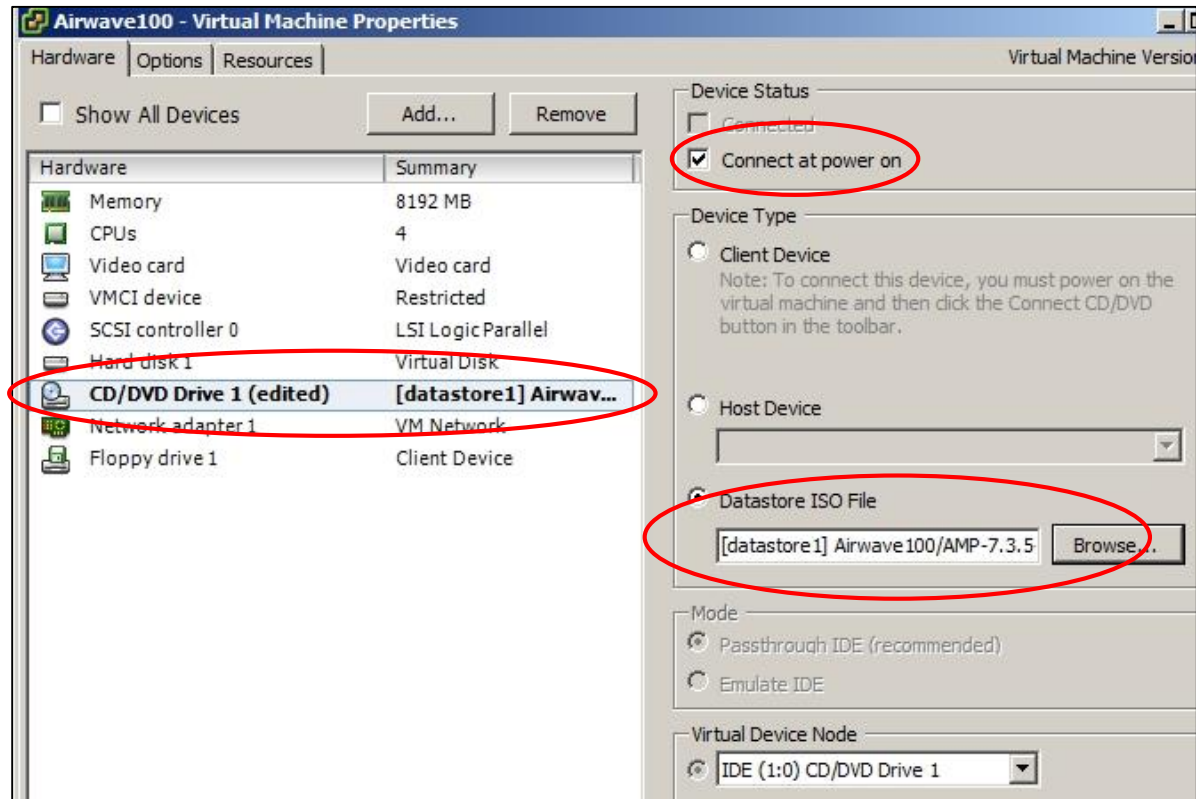


(NOTE - In the SE lab server there is a total of 8Gig memory – if you assign all 8Gig to one guest OS you will effectively take it away from any others...)

Now go to the CD/DVD drive  
Check "Connect at power on"

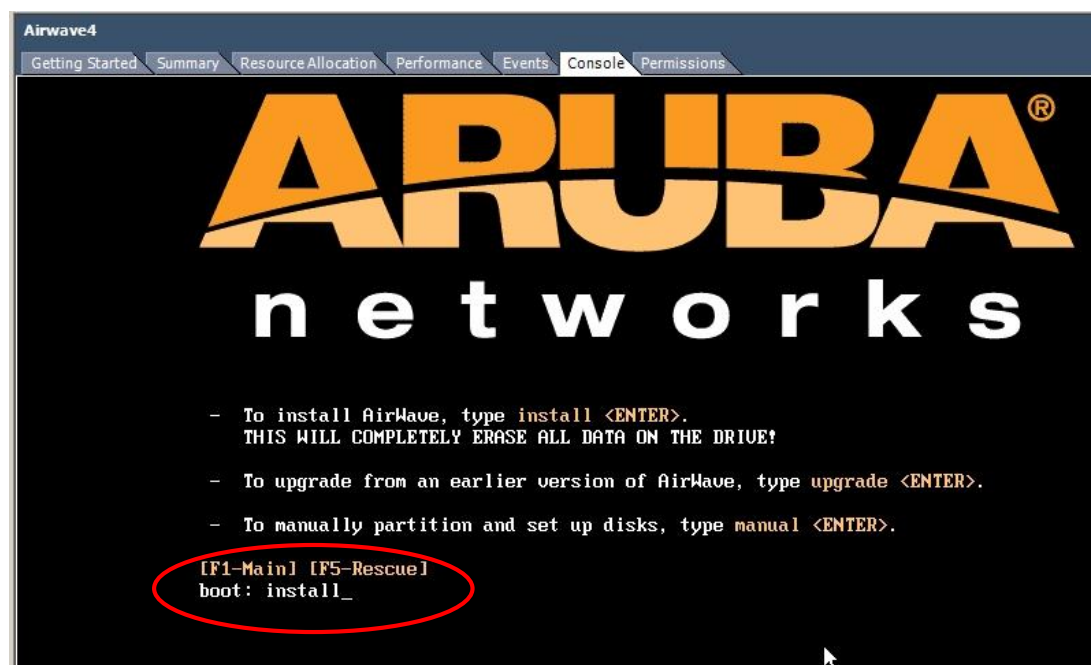
Select "Datastore ISO file"

Browse to and select the AMP-7.3.5-x86\_64.iso you had added to the new VM Datastore folder



**POWER ON** the VM and go to the VM Console  
After 1 min you should see the Aruba Airwave install splash screen

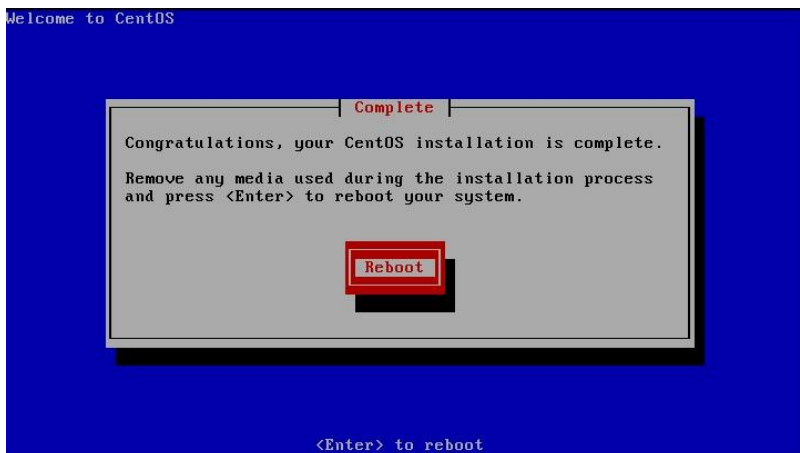
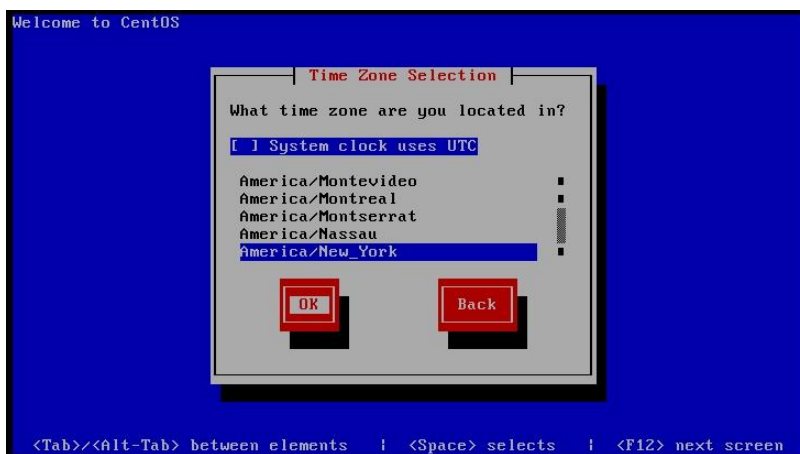
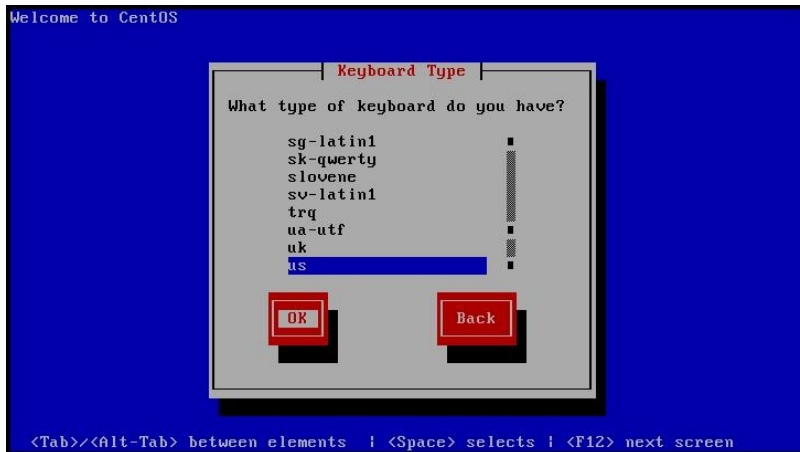
Type in "install" and hit enter





As the install progresses you will see CentOS screens as the install continues

Enter / answer the setting screens as they are displayed

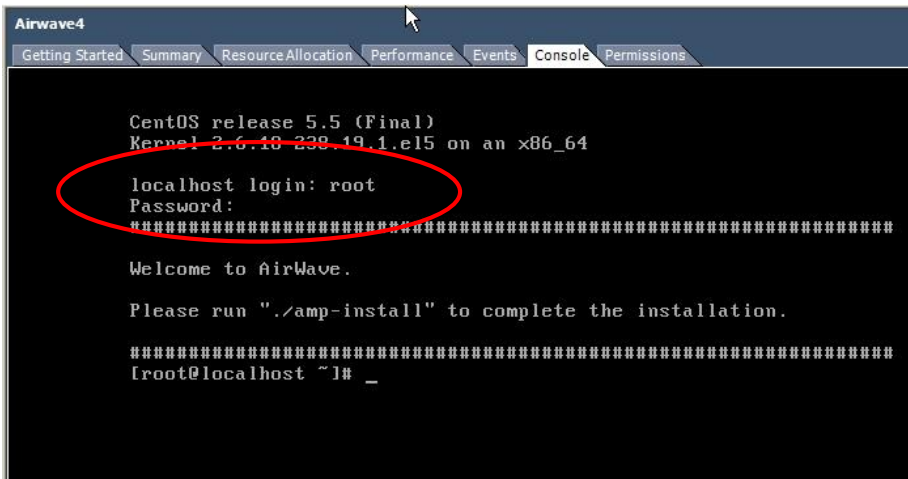


CentOS install should take approximately 5 – 7 minutes until **REBOOT** is seen

When the CentOS installation / reboot is completed the console should present the next step – the Airwave software install

Login = root

Password = admin



```
Airwave4
Getting Started Summary Resource Allocation Performance Events Console Permissions

CentOS release 5.5 (Final)
Kernel 2.6.18-238.19.1.el5 on an x86_64

localhost login: root
Password:
#####

Welcome to AirWave.

Please run "./amp-install" to complete the installation.

#####
[root@localhost ~]# _
```

**NOTE - At this time VMware requires installation of the VMware Tools**

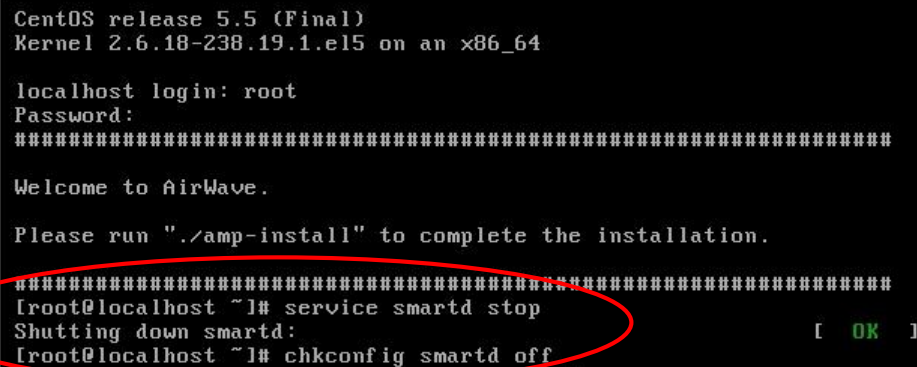
To install VMware Tools in a Linux guest operating system

By default, AirWave runs the Linux 'smartd' service for detecting physical disk errors using the S.M.A.R.T. protocol. However, virtual disks do not support the S.M.A.R.T. protocol, so the AirWave smartd service will fail at startup.

The service can be disabled by running the following commands at the AirWave command line:

```
service smartd stop
chkconfig smartd off
```

The first command stops smartd on the active system while the second prevents the service from starting in the future.



```
CentOS release 5.5 (Final)
Kernel 2.6.18-238.19.1.el5 on an x86_64

localhost login: root
Password:
#####

Welcome to AirWave.

Please run "./amp-install" to complete the installation.

#####
[root@localhost ~]# service smartd stop
Shutting down smartd:
[root@localhost ~]# chkconfig smartd off [ OK ]
```

Now to install VMware Tools on AirWave, perform these steps:

Please follow the procedure below to install the VMware tools on AirWave.

1. From the VMware vSphere, select the desired VMware instance from the Inventory list.
2. Select Inventory > Virtual Machine > Guest > Install/Upgrade VMwareTools.
3. Run the following commands at the AirWave console:  

```
mkdir /media/cdrom
mount /dev/cdrom /media/cdrom
tar -xvzf /media/cdrom/VMware*.tar.gz -C /tmp /tmp/vmware-tools-distrib/vmware-install.pl --default
```
4. Reboot the virtual machine once the VMware Tools install is complete.

After installation of the VMware Tools and a reboot login to the Airwave console  
At the console enter "./amp-install"

```

Airwave4
Getting Started Summary Resource Allocation Performance Events Console Permissions

CentOS release 5.5 (Final)
Kernel 2.6.18-238.19.1.el5 on an x86_64

localhost login: root
Password:
#####
Welcome to AirWave.
Please run "./amp-install" to complete the installation.
#####
[root@localhost ~]# _

```

Follow the instructions on the console screen to completed the Airwave install

Enter the Airwave:

IP address  
Netmask  
Gateway  
DNS server  
Name of your Airwave

Configuration and install should take approximately 10 – 15 minutes to install (8Gig memory, 4 CPU's)

```

STEP 8: Changing default root password.
It is strongly recommended that you change the default 'root' password.
Please use a password that you consider to be safe, secure, and memorable.

Changing password for user root.
New UNIX password:
Retype new UNIX password:
passwd: all authentication tokens updated successfully.

CONGRATULATIONS! AMP is configured properly.
To access AMP web console, browse to https://192.168.1.59
Login with the following credentials:
Username: admin
Password: admin

For additional support, contact your Value Added Reseller or
AirWave directly by phone at +1 408 419-4089 (US Toll-Free
866-WiFi-AMP) or by email at support@airwave.com.

You have new mail in /var/spool/mail/root
[root@localhost ~]# _

```

Reboot the Airwave VM once more from the console, then check the vSphere Client

Ensure the Airwave VM is up and running – accessible and controllable from the vSphere Client

## VI commands

So, you should also learn at least some of these other frequently-used vi commands:

h	move cursor one character to left
j	move cursor one line down
k	move cursor one line up
l	move cursor one character to right
w	move cursor one word to right
b	move cursor one word to left
0	move cursor to beginning of line
\$	move cursor to end of line
nG	move cursor to line n
control-f	scroll forward one screen
control-b	scroll backward one screen
i	insert to left of current cursor position (end with ESC)
a	append to right of current cursor position (end with ESC)
dw	delete current word (end with ESC)
cw	change current word (end with ESC)
r	change current character
~	change case (upper-, lower-) of current character
dd	delete current line
D	delete portion of current line to right of the cursor
x	delete current character
ma	mark current position
d`a	delete everything from the marked position to here
`a	go back to the marked position
p	dump out at current place your last deletion (`paste")
u	undo the last command
.	repeat the last command
J	combine (`join") next line with this one
:w	write file to disk, stay in vi
:q!	quit VI, do not write file to disk,
ZZ	write file to disk, quit vi
:r filename	read in a copy of the specified file to the current buffer
/string	search forward for string (end with Enter)
?string	search backward for string (end with Enter)
n	repeat the last search (`next search")
:s/s1/s2	replace (`substitute") (the first) s1 in this line by s2
:lr/s/s1/s2/g	replace all instances of s1 in the line range lr by s2 (lr is of form `a,b', where a and b are either explicit line numbers, or . (current line) or \$ (last line)
:map k s	map the key k to a string of vi commands s (see below)
:abb s1 s2	expand the string s1 in append/insert mode to a string s2 (see below)
%	go to the "mate," if one exists, of this parenthesis or brace or bracket (very useful for programmers!)

All of the `:' commands end with your hitting the Enter key. (By the way, these are called "ex" commands, after the name of the simpler editor from which vi is descended.)

The a command, which puts text to the right of the cursor, does put you in insert-text mode, just like the i command does.