# **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

Is = list files

Is -I | more = list files (a lot) and display in page mode

fdisk -I = 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	<ul> <li>– shutdown the CentOS and then reboot (-r)</li> </ul>
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- 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]# Is

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

ile Edit View Inventory Adr	ninistrat	ion Plug-ins Help
New	•	Virtual Machine Ctrl+N
Deploy OVF Template		Resource Pool. Ctrl+O
Export	•	Add Permission Ctrl+P
Report	· • [	localhost.k3nc.com VMware E5Xi, 4.1.0, 3484
Browse VA Marketplace		Getting Started Summary Virtual Machines
Print Maps	×	
Fxit		What is a Host?

Configuration		Virtual Machine Ver
Select the configuration f	or the virtual machine	
Configuration Vame and Location Jatastore Suest Operating System Create a Disk Ready to Complete	Configuration Typical Create a new virtual machine with the r C Custom Create a virtual machine with additional	nost common devices and configuration options.



#### Enter Name of VM ^

reate New Virtual Mach	ine						- 0
Datastore Select a datastore in wh	ich to store the virtual n	nachine files				Virtual Machine	Version
Configuration	Select a datastore in	n which to store the	virtual machine	e files:			
lame and Location	Name	Capacity	Provisioned	Free	Туре	Thin Provisioning	Acce
Guest Operating System	[datastore1]	460.75 GB	97.05 GB	363.70 GB	VMFS	Supported	Sing
ireate a Disk						0.01	
					(		
ALC: NO DECISION OF THE OWNER OF						308 30 10	1. 1.211

#### Default entry ^

Customers Datastore could appear different depending on installed drives

🖉 Create New Virtual Machin	•	<u>_</u> _×
Guest Operating System Specify the guest operatin	g system to use with this virtual machine	Virtual Machine Version: 7
Configuration Name and Location Datastore Guest Operating System Create a Disk Ready to Complete	Guest Operating System: Microsoft Windows Linux Solaris Other Version: CentOS 4/5 (64-bit) Identifying the guest operating system here allows the wiza the operating system installation.	and to provide the appropriate defaults for
Help		< Back Next > Cancel

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

Create New Virtual Machi	ne		
Create a Disk Specify the virtual disk si	ze and provisioning policy		Virtual Machine Versior
Configuration Name and Location Datastore Guest Operating System Create a Disk Ready to Complete	Datastore: Available space (GB): Virtual disk size: Allocate and commit sp The virtual disk file star Support clustering feat Selecting this option will	datastore 1 363.7 8 - GB - ace on demand (Thin Provisioning) ts small and grows as more virtual dis ures such as Fault Tolerance lincrease the time it takes to create t	k space is used. the virtual machine.
Help			Back Next > Cancel

**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)

🛃 192.168.1.22 - vSphere Client				
File Edit View Inventory Administrati	on Plug-ins Help			
🔄 🗈 🏠 Home 🕨 💦 Inve	ntory 🕨 🛐 Inventory			
Et et				
□ □ 192.168.1.22 → Annexe2 → Amprove2 → Aruba Amigopod Visitor Ma	localhost.k3nc.com VMware ESX Getting Started Summary Virtu Hardware	i, 4.1.0, 348481 Jal Machines Resource Allocation Performance Configura View: Datastores Devices	ration Lo al Users & Groups Events Permissions	
	Health Status	Datastores	Refresh Delete Add Storage	Rescan All
	Processors	Identification 🕢 Device	Capacity Free Type Last Update	Hardware
	Memory	🎯 datastore1 🛛 Local ATA Disk (t	460.75 GB 355.70 GB vmfs3 8/11/2011 11:03:25 A	M Unknown
	Storage     Networking     Storage Adapters     Network Adapters     Advanced Settings			

Right Click on the Datastore and select "Browse"

View: Datastores Devices	
Datastores	Refresh
Identification 🕢 Device	Capacity Free Type
datastore1 Local ATA	Disk 450 75 CP 255 70 CP mfo2
	Browse Datastore
	Rename
	Delete
	Bafrach
	Keiresh
	View: Datastores Devices Datastores Identification  Device datastore1 Local ATA

#### See the VM's listed on the Server

🛃 Datastore Browser - [datastore1]				_ 🗆 🗵
8 6 0 8 8 8 ×	0			
Folders Search	[datastore1] /			
	Name	Size Type	e Path	Modif
Aruba Amigopod Visitor Managel AMP-7.2.3-x86_64 Airwave2	<ul> <li>Aruba Amigopod Visitor Manag</li> <li>AMP-7.2.3-x86_64</li> <li>Airwave2</li> </ul>	Fold Fold Fold	er [datastore1]Arı er [datastore1]AM er [datastore1]Air	µba Amigopod Visitor 1P-7.2.3-x86_64 wave2
			<i>μ</i>	
<u> </u>	4			

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

🛃 Datastore Browser - [datastore1]					
6 G 🖸 🛢 🛢 🕏 🗙	0				
Folders Search	[datastore1] Airwave2				
	Name		Size	Туре	Path
Aruba Amigopod Visitor Manager	Airwave2.vmx		1.45 KB	Virtual Machine	[datastore1] Airwave2
AMP-7.2.3-x86_64	🚈 Airwave2.vmdk		8,388,608.00 KB	Virtual Disk	[datastore1] Airwave2
Airwave2	Airwave2.vmxf		0.26 KB	File	[datastore1] Airwave2
	Airwave2.vmsd		0.00 KB	File	[datastore1] Airwave2
		Ls.			
· · ·	•				Þ

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)

Datastore Browser - [datastore1]			
B K 🗗 🥵 🛢 🗟 🗙			
Folders Search Upload files to this data	astore store1 Airwave2		~
	Name	Size	Туре
	Airwave2.vmx	1.45 KB	Virtual Machine
	Airwave2.vmdk	8,388,608.00 KB	Virtual Disk
Airwave2	Airwave2.vmxf	0.26 KB	File
	Airwave2.vmsd	0.00 KB	File

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

📩 🛧 Favorites	📙 2011-04-29-Amigopod-VmwarePlayer-3.2.0
🚺 Downloads	📙 arduino-1.0-windows
📳 Recent Places	📙 Clearpass
🧱 Desktop	2011-10-19-Amigopod-VirtualAppliance-3.5.1-x86_64
💔 Dropbox	Amigopod Quick Start Guide 1.0
-	Amigopod_3.5.1_RN
Desktop	AMP-7.4.5-x86_64
	@ AMP-7.4.7-x86 64

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)

lardware Options Resources	
Show All Devices	Add Remo
Hardware	Summary
	1.1584.876.1723.583
Memory (edited)	8192 MB
Memory (edited) CPUs (edited)	8192 MB 4
Memory (edited) CPUs (edited) Video card	8192 MB 4 Video card

(**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...)

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

Airwave4
Getting Started Summary Resource Allocation Performance Events Console Permissions
APUBA®
networks
<ul> <li>To install AirWave, type install <enter>. THIS WILL COMPLETELY ERASE ALL DATA ON THE DRIVE!</enter></li> </ul>
– To upgrade from an earlier version of AirHave, type upgrade <enter>.</enter>
<ul> <li>To manually partition and set up disks, type manual <enter>.</enter></li> </ul>
[F1-Main] [F5-Rescue] boot: install_

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



#### **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.



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"



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)



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 currrent 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 filenam:	e 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 :lr/s/s1/s2 :map k s :abb s1 s %	replace (``substitute") (the first) s1 in this line by s2 2/g replace all instances of s1 in the line range Ir by s2 (Ir is of form `a,b', where a and b are either explicit line numbers, or . (current line) or \$ (last line) map the key k to a string of vi commands s (see below) 2 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.