DNS Europe VGS User Manual

Contents

Critical Information - READ THIS NOW

A Virtual Grid Server (VGS) is exactly the same as a dedicated server except it has some unique benefits enabled by Grid Hosting and some minor complications related to it operating in a virtual environment.

The single most important difference between a physical server and your VGS is that you must **NEVER ATTEMPT TO UPDATE THE LINUX KERNEL** yourself.

If your server needs to be updated or patched, it is vital that DNS Europe Support do the update or apply the patch for you using the special procedure required for safely updating VGS Linux kernels.

Please contact support@dnseurope.net or call us on +44 (0)800 234 3246 to arrange for the update or patching.

Introduction

The purpose of the manual is to explain some basic commands for Linux to the non-specialist, to give them confidence to use Linux and their DNS Europe VGS.

The following sections should give some techniques that the user, more familiar with Windows or Mac, can use to manage and configure their Virtual Grid Server.

This manual concentrates on the CentOS (Community Enterprise Operating System) as this is one of the most widely used DNS Europe VGS deployments. It is based on Red Hat Enterprise Linux (RHEL) and is supported for seven years after release.

By the time you have practised the commands in this manual, you should have a sufficient understanding of Linux to operate your server at the most basic level but you can always call on DNS Europe support for help if needed.

To work through the exercises below, access to your VGS is required, as well as some useful tools to be downloaded from the internet. An internet connection is also required.

Tools for Managing your VGS

PuTTY (Windows)

PuTTY is a windows program used to remote manage Linux machines from the command line. It gives a window onto the Linux machine, and any commands typed into the Putty window are executed on the remote machine.

Putty is available from http://www.chiark.greenend.org.uk/~sgtatham/putty/

It is one executable file, so it can be run from a Windows desktop without needing to install it on the machine. It can be simply deleted afterwards if you are on a guest on some else's machine.
Putty is free of charge

WinSCP (Windows)

WinSCP is a program similar to Windows Explorer. It is a good program for those more used to Windows than they are to the command line.

It allows drag and drop copying to and from the desktop, as well as changing permissions on files, editing files, and running non interactive commands.

WinSCP is available from http://winscp.net/eng/index.php

Note that this program is installed into Windows, so it may not be suitable for installing on a guest PC.
WinSCP is free of charge

Terminal.app (Mac)

Mac OS X's built in terminal is a full featured shell client.

DirectAdmin Control Panel (Web Based)

Using the DirectAdmin Control Panel is easy way to host one or more web sites, together with their usual services: mail, ftp and dns.

It automates the tasks of creating/changing/deleting a domain, adding and to a certain extent configuring web service for the domain, setting up users and their ftp access and finally, giving them email accounts within that domain.

Also, it allows DA admin to configure to a certain extent the behaviour of the server on the lower level, such as starting/stopping services related to hosting or managing IP addresses, which are provided along with the service.

For detailed instructions and features of DA, please see: http://www.site-helper.com/

Webmin (Web based)

Webmin is the Swiss army knife of Linux administration for the Linux newbie. It also simplifies changes to be made to the system allows the configuration of Linux though a web based UI.

Webmin is a web based application. By default, it is installed on port 10,000 however we strongly recommend that the port is changed for security. e.g. DNS Europe typically installs Webmin on port 9009.

To access Webmin, type the URL of your server appended with ":10000" e.g. http://myserver.com:10000 or in some cases https://myserver.com:10000

If Webmin is installed after the operating system, the password is usually the same as the root password. However, if it is installed with the OS, then the password has to be set separately.

Concept of Linux

Linux is based on Unix which is a very mature operating system. Linux is known to be very robust, and suits "always on" applications as it can be run for many years without needing a reboot.

The stability is maintained by the mindset of most Linux developers. Most Linux programs only do one thing, but do it really well.

The make up of most operating systems is based on a layered model, and programs and functions only talk to their direct neighbours. E.G. -Hardware talks to the Kernel -The Kernel talks to applications.

In this way the kernel knows all about the hardware in a machine, and does not allow applications to talk directly to the hardware, which may cause a conflict.

Thus, whenever new hardware is added, it may be necessary to recompile the kernel, or compile the hardware drivers against the kernel so that they know how to interact with each other.

Why CentOS?

A quick Google will throw up a lot of Linux distributions which have their own positives and negatives. People are as loyal to their particular distribution as they are to their football team.

There are advantages and disadvantages to them all, but, a choice as to be made, in this case, CentOS has been chosen.

CentOS is Redhat Linux with all the branding taken out. RHEL is not usually available free of charge, and requires an annual support fee, and as such, has lots of paid developers working on the system. Not surprisingly, this allows it to spend more money on the development and support of hardware, and has been adopted as the defacto distribution for servers.

Fedora Core is the hairy bleeding edge of RHEL. Older versions of Fedora Core cascade into RHEL, which in turn is released as CentOS.

CentOS is distributed completely free of charge, and is licensed under the GPL.

The reasons for choosing Centos, is that enjoys the same benefits of RHEL. RHEL updates are usually ported into CentOS within 72 hours of them becoming available.

CentOS is maintained for seven years after release, so the current 5.1 release is set to be supported until

2014.

For more information on Centos, see http://www.centos.org

The Command Line

With a Virtual Grid Server, it is not usually necessary to spend too long at the command line if you have DirectAdmin or Webmin installed. Most functions can be handled by your Control Panel and its GUI.

That said, for real power and effective use of a Linux server, you may occasionally need to dip in under the hood, but only long enough to configure the hardware, software and network and do any trouble shooting that may be required. After this time, most configurations are done via web pages.

Command Line applications and commands on the VGS are exactly the same as a Dedicated Linux server.

Accessing the System

The main method of accessing the server is via a protocol called SSH. Secure Shell. The commands and screen output is encrypted, so it is a secure method of connecting.

SSH is a TCP connection on port 22. For a public server, this may need to be changed to a non standard port.

SSH and Putty

A Note on SSH Security and your first connection to the server

SSH (or Secure SHell) uses randomly generated signature which is created the first time the server is started. When a client connects to the server's IP address for the first time, it is presented with a prompt to accept or deny server signature, so that further connections through SSH to thesame server are trusted.

The signature is used to create a random key which is used to encrypt the communication session between the server and client(s), and so if the server signature is changed, client's SSH application will deny access or at least warn the user that the signature has changed.

If the change has not been a consequence of some user action (like reinstalling the server, changing it's IP address etc) you should not blindly trust the new server signature, and if you are not certain what to do, you should contact our technical support.

Since the whole principle of securing SSH communication is based on Public Key Infrastructure (PKI), user should be familiar to a certain extent with it, in order to decide whether changed signature is a threatto his communication with the server (and the possibility of a compromised server, communications

channel etc) or not, and also how secure the channel really is and what compromises might happen.

Connecting with SSH

To access the command line from Windows, PuTTY has to be launched (see "Tools for Managing your VGS" above) .

When you open Putty, simply fill in the IP address or hostname and click open.

You will then be prompted for the username - usually root, press enter, then type the password.

As you are typing the password, there will be no screen output, so just keep typing and press enter.

If authenticated properly, then you will end up in your home directory. In the case of root, you will be in the /root directory

When first connecting to a Linux machine, you will get a prompt if you have never connected before. Accept this prompt. If you have connected to the machine before and you get this prompt, and then ensure that you have not been redirected to another machine.

To copy a command from the Windows desktop, right click and copy the text, click in the Putty window and right click. This will paste the contents of the clipboard into the remote machine at the command prompt.

To copy from the Putty window, simply highlight the text to be copied. This places the text on the windows clipboard. Right click to paste the text at the command prompt, or paste the contents into another Windows application

SSH and WinSCP

WinSCP is a program which gives you a window onto the remote machine.WinSCP also comes with its own internal text editor.

SSH

It is possible to SSH from one Linux machine to another. Simply type ssh ipaddress or ssh root@ipaddress.

SCP

Secure copy. Copy a file. Using the SCP protocol, copy files from one Linux machine to another.

The Linux File System

The Linux file system has a number of partitions. At its most simple, it contains three partitions:

- Boot - Used to boot the system
- Swap - Used to act as a swap space for RAM
- Main - The main file system

There is no need to worry about this too much. For the moment, just go with the options offered to your doing the install.

Linux File System Explained

Original article by Mayank Sarup mayank@freeos.com Posted: (2001/01/03 10:08:44 EST http://www.freeos.com/articles/3102)

The first thing that most new users shifting from Windows will find confusing is navigating the Linux file system. The Linux file system does things a lot more differently than the Windows file system. This article explains the differences and takes you through the layout of the Linux file system.

For starters, there is only a single hierarchal directory structure. Everything starts from the root directory, represented by '/', and then expands into sub-directories. Where DOS/Windows had various partitions and then directories under those partitions, Linux places all the partitions under the root directory by 'mounting' them under specific directories. Closest to root under Windows would be c:.

Under Windows, the various partitions are detected at boot and assigned a drive letter. Under Linux, unless you mount a partition or a device, the system does not know of the existence of that partition or device. This might not seem to be the easiest way to provide access to your partitions or devices but it offers great flexibility.

This kind of layout, known as the unified file system, does offer several advantages over the approach that Windows uses. Let's take the example of the /usr directory.

This directory off the root directory contains most of the system executables. With the Linux file system, you can choose to mount it off another partition or even off another machine over the network. The underlying system will not know the difference because /usr appears to be a local directory that is part of the local directory structure! How many times have you wished to move around executables and data under Windows, only to run into registry and system errors? Try moving c:/windows/system to another partition or drive. (No; Don't!!!)

Another point likely to confuse new users is the use of the frontslash '/' instead of the backslash '' as in DOS/Windows. So c:\windows\system would be /c/windows/system. Well, Linux is not going against convention here. Unix has been around a lot longer than Windows and was the standard a lot before Windows was. Rather, DOS took the different path, using '/' for command-line options and "\" as the directory separator.

To liven up matters even more, Linux also chooses to be case sensitive. What this means that the case,

whether in capitals or not, of the characters becomes very important. So this is not the same as THIS or ThIs for that matter. This one feature probably causes the most problems for new users.

Directories

Unix file system hierarchy is different from the one in windows in asuch a way that every folder in the hierarchy is located under the root, and some of them traditionally have special meaning (like /bin or/usr/bin) and are supposed to be accessed only by system administratorsand system processes, while others hold the programs any user can use (for example, C/C++ compiler).

Every user also has it's home directory, /home/username, where by default he can keep his files, preferences etc. For further explanations, please check Linux Users Guide located at http://www.linuxhq.com/guides/LUG/guide.html

Command Line Construction

Most Linux commands are formed in the same way: -Command - options Filename Below is a list of resources on the server to get information on a particular command.

Where to get help

-help or -h

Typing a command followed with --help will generally give a quick aide memoire on the command

man <<command>>

man stands for Manual. Type man followed by the command line for a complete guide to how the command works, and what it does. Press "q" to exit man, space to page down, and enter to go one line at a time.

apropos <<keyword>>

If you cannot remember the command, apropos followed by a keyword will return all commands that have that keyword in the command on in its description.

whatis <<keyword>>

Whatis is very similar to apropos.

Tab key

The tab key will auto-complete either a command or a filename, pressing it twice in succession will return all options.

File Navigation and Commands

There are a number of commands that are useful for navigating around the filesystem, and performing operations on the filesystem. There are usually a number of options with each command that change the output or behaviour of the command. Type <<command>> -h for more information of the command or man <<command>> to get a complete description.

ls

Like dir in Dos, it lists the current directory. It lists the contents of the current directory. With the --al switch, it displays the permissions and ownership of the files as well.

cd

Change Directory, type cd /path/to/directory cd / takes you to the root of the filesystem, while cd ~ takes you to your home directory. cd .. takes you up one directory level.11.3 # pwd
Tells you where you are in the directory system.

cp

copy, copies a file from one place to another, e.g cp file.txt ~ would copy the file.txt to your home directory. You can copy recursively, e.g the directory and all subdirectories using the --r switch

mv

Moves a file from one location to another. This is also a popular method of renaming a file. E.g. mv file.txt newfile.txt would rename file.txt to newfile.txt

mkdir

mkdir <<directory name>> make a new directory.

find

Find a file on the file system. This is memory intensive, so if the system is being used as a PBX, it may cause some voice quality issues. The usual syntax is find --name filename. Wildcards can be used such as * Note that the find command only looks in the current directory and all sub directories. So to search the

complete file system, you need to either do cd / to get to the root of the file system,, or find / -name name* to find all files that begin with name.

grep

Searches the contents of the files for the word stated - e.g. grep -i tom would find all files with the word "tom" in them.

rm

Remove a file, Note that there is no undelete command, or recycle bin in Linux, so when a file is deleted, it is gone for ever. A tip to ensure that there are no mistakes is to try the command substituting ls for rm. E.g. to remove all files that end in txt you may want to type rm *.txt but try the command ls *.txt to ensure that it does what you think it is going to do. The -r switch deletes all subdirectories and their files. The -f forces the delete, and does not prompt, so if you have a large directory and subdirectory to delete, then a valid command would be rm -rf * which would delete everything in the current directory.

touch

Create an empty file. E.g. touch newfile.txt will create a new file called newfile.txt in the current directory.

Links / shortcuts

The concept of shortcuts is available in Linux using the ln command. Make a link from a directory to a file or directory.

wget

Downloads a file from the internet using http. E.g. wget www.mysite.com/filename.txt

Disk Usage

du

Shows the contents, directory and file sizes.

df

Shows the current disk usage. Note that if a hard drive becomes full. Linux will cease to work, and may become inaccessible to SSH. Where you are running an FTP site, it may be a good idea to put the FTP site on it's own partition so that it's becoming full does not cause problem with the operating system.

Editing and Reading Files

There are a large number of text editors available. We will cover Nano in this document, as it is easy for the beginner to use, with plenty of help.

Note that files created in Windows applications such as Notepad or WordPad may not work on Linux systems because of the non standard way the Windows puts carriage returns and line breaks into files. Additionally, files that are moved via a Windows using the FTP ascii protocol may also be damaged because of this line feed issue. I would advise that all files are edited and moved within Linux.

In most files, the "#" denotes that the following characters are simply comments. However, in Asterisk Dial plans, # means include the named file. Comments are denoted by a semi-colon ";"

Other file types are commented differently:

```
<!--Thisn is an html comment-->
```

// This is a PHP comment for a single phrase

/* this comments out several lines in PHP code */

Nano

Nano is a GPL'd text editor for use at the Linux command line. To open or create a new file, type nano -w filename.txt The -w switch helps the system to read punctuation and make it more readable.
When done editing type CTRL X Y Enter

WinSCP

WinSCP can be used for editing files in a familiar Windows interface, simply right click on the file to edit, and click edit. Save when done.

cat

Cat lists the entire contents of a file in one go.

less

Lists the contents of a file one page at a time. Press q to exit. E.g. less myfile.txt

tail

Lists the last 10 lines of a file. There are switches to change this value. Tail --f logfilename shows the log

in realtime.

head

Lists and displays the top 10 lines of a file.

File Ownership and Permissions

Every file is owned by one of the users on the system. Depending on the permissions assigned to that file depends on whether a file can be viewed, edited and executed.

The Basics

Typing ls -al shows all the files and directories, with their ownership. There are 10 entries showing the permissions. For example: --rw-r--r--1 root root 23237 Feb 13 17:56 install.log drwxr-xr-x 2 root root 4096 Feb 14 00:08 centos-cd1

The first letter can be a:--= file -d = directory -l = link

The next sections total 9 characters, and can be divided into three.

-1,2,3 = Owner permissions -4,5,6 = Group Permisions -7,8,9 = Others -Everyone else

Each section can have read, write and execute permissions. (r x and w)

Chmod

(Parts reproduced from http://www.freeos.com/articles/3127/ By Mayank Sarup)

The command chmod modifies the permissions. It uses a system of numbers to apply the permissions.

At its simplest, you can add execute permissions to a file simply by typing chmod +x somefile, which would add executable permissions to somefile.

There is another way in which you can specify the file permissions. The permission bits r,w and x are assigned a number.

-r=4 -w=2 -x=1

Now you can use numbers, which are the sum of the various permission bits.

E.g -rwx will be 4+3+1 = 7. rx becomes 4+1 = 5. The chmod command now becomes chmod xyz filename where x,y and z are numbers representing the permissions of user, group and others

respectively. Each number is the sum of the permissions to be set and are calculated as given above.

Chmod 644 somefile -6 = 4 + 2 = rw -4=r -4=r

As you can see, the permissions for somefile are being set to -rwr-r-. This is a simpler and quicker way of setting the file permissions. Refer to the table below as a quick reference.

Tip: The easiest way to set the permissions is to right click on the file or directory in WinSCP, select properties. You can then tick the permission you want to allow.

Chown

In addition to the file permission, you can also modify the owner and group of the file. The chown program is used here and its syntax is very simple. You need to be the owner of a file or root to do this.
chown new-owner somefile

Or to change the owner and the group recursively

chown --R Group:Owner /path/to/directory

chgrp

To change group, user the chgrp command. Syntax is similar to chown. You will need to be the owner of the file and also belong to the same group as the file, or you should be root.
chgrp new-grp somefile

Services

Services on a Linux system are often known as Daemons. They typically run in the background and are launched at boot time.

Typically, daemons end with a d as in sshd for the SSH service or Daemon. Services can be stopped, started, restarted and the status queried:

Service <<Daemon Name>> status | start | stop |restart

chkconfig

To start services automatically at boot time, the chkconfig command is used.

However, we need to know which run level is used. Normally this is three for our purposes.

The run levels for CentOS are as follows:

0 -Halt
1 -Single user
2 -Not used/User definable
3 -Full multi-user, console logins only
4 -Not used/User definable
5 -Full multi-user, with display manager console logins
6 -Reboot

/etc/rc.d/rc.local

This file is like the windows startup folder. Processes and scripts can be launched from here at the end of the boot process.

Stopping services and processes

Usually an active session, such as a find, which is taking a long time can be stopped pressing CTRL C

However sometimes, it is impossible to stop a service, so something more dramatic has to be used. This is the Linux equivalent of CTRL-ALT-DEL in Windows

The first thing to discover is the process ID, or the PID.

ps aux

Shows a list of running processes, with the PID and some other metrics

kill

Kills the process. Kill 235 where 235 is the PID to kill

kill -9

Force kills the process kill -9 235 force kills the PID

top

Shows the running processes with the most processor intensive at the top. This displays in real-time.

Reboot and Shut-down

reboot

Reboots the Server

shutdown -h now

Usage: shutdown \-akrhHPfnc \-t secs time [warning message]*

-a: use /etc/shutdown.allow
-k: don't really shutdown, only warn.
-r: reboot after shutdown.
-h: halt after shutdown.
-P: halt action is to turn off power.
-H: halt action is to just halt.
-f: do a 'fast' reboot (skip fsck).
-F: Force fsck on reboot.
-n: do not go through "init" but go down real fast.
-c: cancel a running shutdown.
-t secs: delay between warning and kill signal.

* the "time" argument is mandatory! (try "now") **

Pipe

Pipe Command |

The pipe command allows the output of one command to be piped into the input of another command.

Redirect Output

The > symbol redirects output from a command to another destination such as a file so you can analyse the contents at your leisure.

e.g. ls -al > list.txt willl send the output of ls -al to a the text file; list.txt

>

Appends to the end of an existing file.

>>

Clears the file first.

Compression

In order to compress a file, or amalgamate a large number of files into one large file, the following commands can be used, or a directory or file can be compressed using the WinSCP utility.

Strictly speaking, TAR, derived from tape archive is not really used for compression. The same extraction command will work. Note that unTAR'ing a TAR file extracts the files into the same directory tree in which they were stored beginning at the location from which the command is executed. Thus, if /var/myfile.txt is included in the archive, then extracting the archive from the root directory would place the file in /var while extracting the archive from /junk would place the file in /junk/var.

There's another beauty and curse to tarballs. They preserve the ownership and permissions of the original files which are included in the archive. This includes the ownership and permissions of the original directory structure as well. If you are creating a tarball, be mindful of the consequences of creating a tarball with a directory structure with ownership and permissions which may differ from those on target systems.

Creating a Tarball is a two stage process. First all the files are put into a TAR file, and then they are compressed using a compression utility such as Gzip or Bzip.

tar

Strictly speaking, TAR, derived from the words Tape ARchive is not really used for compression. It simply rolls a number of files into one big file (Tarball)

The most popular command is tar --zxfv filename.tar.gz to extract the files from an existing archive.

To archive and compress a file the following sequence is used:

tar -cf filename.tar /etc/myfile.conf /var/lib/asterisk/agi-bin/somefile.php

We can check that the tarfile is acceptable by executing tar -tf filename.tar

Then we compress the tar file with: gzip filename.tar This returns a file called filename.tar.gz. .tar.gz and .tgz are used interchangeably

Tip: For untarring a file, do it from the command line - tar zxfv filename.tar.gz. To tar and compress a file, it is easiest, and less prone to error if you do it from within WinSCP. Select the directories to be compressed, rightclick and select Tar.

gzip

As above

bzip

bzip --czvf filename.tar filename but using the bzip compression algorithm

zip & unzip

If a compressed file ends with the zip extension, use unzip to decompress.

Networking

In order to set up a machine on a network, you will need the following information.

-The IP address -Netmask -Gateway -DNS server

Please note that the command netconfig has been deprecated, which is a fancy way of saying they've replaced it with something else.

ifconfig

Shows the current IP addresses of every interface, note that a physical interface can have more than one IP address.

system-config-network

A text based GUI to set the IP address of any interface. This utility writes to:-/etc/sysconfig/network-scripts/ifcfg-eth0 in the case of network interface known as eth0. It can be manually edited if necessary. With a fixed IP address the file should look like this:

DEVICE=eth0 ONBOOT=yes BOOTPROTO=static IPADDR=192.168.3.200 NETMASK=255.255.255.0 GATEWAY=192.168.3.254

Type service network restart to set the changes. Be careful you do not lock your self out with a typing error.

resolv.conf

The file containing the details of how to resolve an domain name to an IP address. To add a nameserver, type nano --w /etc/resolv.conf and add the line:

Nameserver 1.2.3.4
Where 1.2.3.4 is the DNS server. Often, but not always, the gateway/router doubles up as the DNS Server
Ping some internet domain names in order to check that DNS resolution is working.

hostname

Sets the name of the server.

ifdown

Stop the interface, e.g. ifdown eth0

ifup

Bring the interface back up again.

ping

Send a packet to a host and measure the time it takes to make the round trip. E.g. ping www.google.com

traceroute

Trace the route to a host. E.g. traceroute www.google.com

mtr

mtr is a very useful command combining ping and traceroute in the same command. It shows the live status of the path to a host. e.g. mtr www.google.com

Network Security & Firewalls

There is no substitute for having a good firewall, but Linux contains IP tables that filter and manipulate packets.

Iptables

IP tables are are found in /etc/sysconfig/iptables they can be managed by hand editing them, or it is much easier via Webmin (if installed). Open Webmin and navigate to Networking then Linux Firewall. Otherwise simply contact Support with your request.

Installing & Updating Software

There are a number of ways of getting software on the server, the following are methods are described below.

Compiling from source

In many cases, programs can be compiled from source. That is to say that there is machine readable source code, and using development tools on the server, software can be compiled and installed. Generally, the software is untarred to /usr/src/<package-name>. Within the unzipped directory will be a readme file, or install.txt which should be read before proceeding to see if there is anything special that needs to be done.

In general, the commands are as follows:

make clean

Clean up any failed or previous installs.

./configure

Checks and configures the package ready for compiling and installation, and ensures that all the dependencies are in place. If the there is hardware to be installed, there is a very good chance that you will need the kernel sources. (yum install kernel-devel)

Watch the output for any errors. If there are dependencies missing, then these may have to be installed first, probably from the yum repositiory

make

Compile the program.

make install

Install the program

yum

Use the CentOS repository, and other repositories to install and update software. E.g.

1. Yum update updates the entire operating system. **NEVER USE THIS COMMAND ON A DNS EUROPE VGS, IT WILL BREAK THE SERVER.** Instead, contact Support and request that we apply whatever patches you require or update the server as needed.
2. yum search <package name> search for a package.
3. yum install <package name>
4. yum --y install <package name> ; installs programs without any further prompt

rpm

Many programs, e.g. webmin come as an rpm, or a pre-compiled binary, so that the program does not

have to be compiled on the machine.

The usual command is rpm -iv <package name>

If the package is available on the yum repository, it is usually better to install it from there. The RPM package may not be specific to your own Linux distribution.

Logs

There are a large number of logs on the system, which can give good information on any problems, who has accessed the machine, and what they have done with them. To view them, you can use less, tail, cat, and other similar commands as listed above. A few of the more important logs are below.

/var/log/messages

Contains general system logging

/var/log/dmesg

Contains hardware loading information

logrotate

Logs can get quite large, so it is important to do some housekeeping to ensure that the file system does not become full. This is usually done for you. But if not, read the man logrotate.

Crontab

The crontab is a way of making timed events happen on a regular basis. They are also known as cron jobs.

Cron jobs are easiest set up in DirectAdmin or Webmin (if installed).

Crontabs can also be viewed and edited using crontab command at the command line. Once in crontab, the editing commands are the same as Vi editor, which is another text editor supplied with Linux, and is about as user friendly as a cornered rat. So we would urge you to use DirectAdmin or Webmin for adding and editing.

Users and Groups

Users

Users are people, and processes that have access to things on the system

Groups

A group is a collection of users to make administration easier.

sudo

It is not necessarily desirable to have root as the main access to system. If hackers get access to the system, they can go everywhere. Additionally, it is possible to make a mistake on the system. By being a non root user, some of these mistakes can be mitigated.

To set up a sudo user:-# adduser myusername # passwd myusername <password>

To edit the sudoers file to run sudfo commands, nano /etc/sudoers and add the following line:
-myusername ALL=(ALL) ALL

Now simply execute commands as the root user by typing:sudo <command>...

Alternatively, you can log on as root type: "sudo -" then enter the password.

sudo -i gives you complete root access without needing to prefix commands with sudo.

Network Services

The server runs a few of the following services.

NTP

A time server. Linux can get its time from the internet, and act as a time server for devices on your network. For this to happen, ntpd must be running (service ntpd status) and port 123 udp must be open on the firewall
To force the computer to set the right time.

service ntpd stop
ntpdate 1.pool.ntp.org
service ntpd start

Tip: Before commencing the installation of Linux, check that the hardware clock in BIOS is set to the right time and date, otherwise installation of packages may fail.

DNS

Domain Name resolution. Linux can be a domain name server. The easiest way to set this up is in webmin. Click on servers, then Bind.DNS Server, and set it up with the default values offered by Webmin. Port 53 must be open to allow DNS queries

DHCP

DHCP, Dynamic Domain Name Server. Port 67 UDP must be open to deliver IP addresses to it clients. This can be set up and started in Webmin easily. If you wish to run a DHCP server on your machine, ensure that you start it as a service. Refer to chkconfig instructions above.

TFTP

A TFTP server is what a phone and other devices use to get their configuration. Run these commands to get it running: -# yum -y install tftp-server # /sbin/chkconfig --level 345 xinetd on # /sbin/chkconfig --level 345 tftp on # service xinetd restart To check it is running: -netstat -nulp|grep 69

You should see a result that includes a line that looks similar to the following:

udp 0 0 0.0.0.0:69 0.0.0.0:*

Option 66

Option 66 in the DHCP configuration is the setting that tells TFTP enabled devices where to find the TFTP server.

Sendmail / Postfix

These programs are both popular programs for sending mail. Setting them up via DirectAdmin or Webmin is the best option for those with little Linux experience.

Apache

The web server, that delivers web pages. The Daemon is called httpd. To restart apache, type httpd --k restart

In general, the files for the webserver are held in /var/www/html.

Apache is managed via the DirectAdmin control panel if installed.

PHP

PHP is a language that when combined with Apache and MySQL allows interactivity with the web page. Adding, removing and displaying records from a database.

MySQL

MySQL is one of the most popular database systems. It can handle many millions of records. If you have Apache and PHP installed, the database can be viewed via phpMyAdmin. See www.phpmyadmin.net. Do however note the licensing of MySQL. It is undergoing change due to a commercial buyout by SUN Microsystems.

Hardware

NOTE: Since your server is a Grid based Virtual Grid Server, hardware commands many give odd outputs. Please direct any question about hardware and physical layer requirements to support@dnseurope.net .

lspci

Show the interrupts on the system, add --v for more information

cat /proc/interrupts

As above, but from a different source

Getting Help

Now you have read this document, you should have enough information and tools to be able to do basic Linux installs, configuration and maintenance, on your DNS Europe VGS, as well as search for further information should you need to.

The purpose of the above is not to give you a complete overview of Linux, but just enough to get you started, and carry out basic commands with an understanding of what you are doing in the context of operating your VGS.

Additional help and resources, like our comprehensive Knowledge Base can be found at http://www.dnseurope.net/support/ .

If you have any questions at all, please either e-mail us at support@dnseurope.net or call us on +44 (0)800 234 3246

DNS Europe Grid Hosting Support Team
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