

# Will O'Neal

Will is a Mac Guy who wants reliable servers and nice vacations provided by a monthly recurring income stream. He thoroughly enjoys having fun.





Linux Servers:  
Admin them in a more  
“Mac-like” way.



# What are we going to cover?

- OS X Server: Where it's at
- Why Linux?
- Keep it simple
- Keep it secure
- Keep it monitored



# OS X vs. Linux

- OS X:
  - It's what we know and love
  - It works well enough, unless
    - you need easy redundancy
    - you need real server software
    - you need “real” server level support
    - you need up to date open source packages
    - you don't want stuff to break with simple OS updates



# OS X vs. Linux

- Linux:
  - If you want to be, you can b on your own
  - You can pay for real, server level, support
  - But are a TON of free resources
  - Don't ignore security



# Now that I have it, what can I do with it??

- Mail Servers
  - Main focus of this topic
- Web Servers
- OwnCloud Servers
- Minecraft Servers
- Docker containers
- & More



# Linux OSes

- Different Distributions
  - Pick one that runs the software you want to run
  - But who cares? We are going to focus on Ubuntu, because it is well documented, easily available, and well supported.

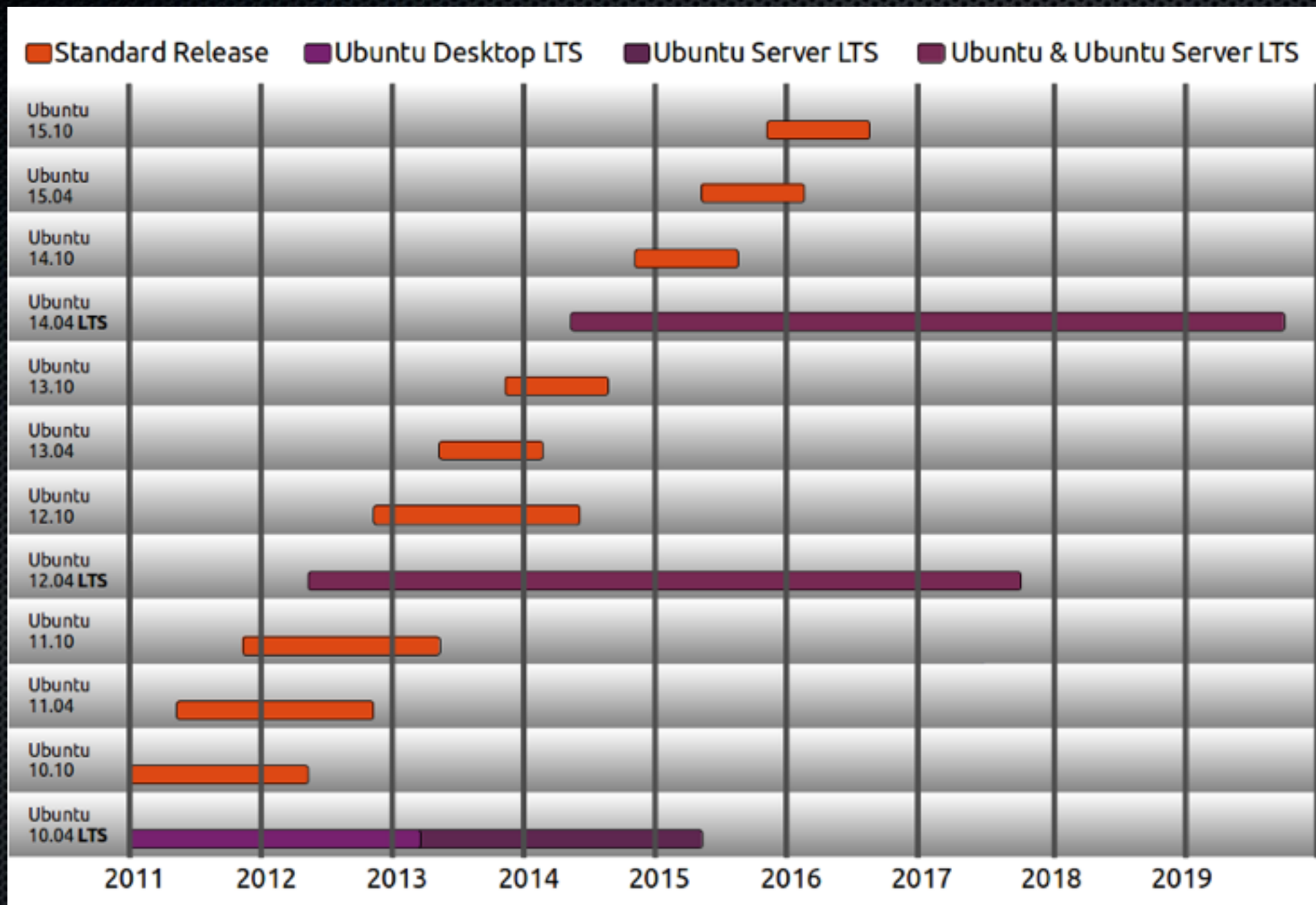


# Ubuntu LTS

- What's Ubuntu Long Term Solution (LTS)?
  - Five year support
  - Current version is 16.04 and it was just released
  - A new LTS version is released every two years
  - It's great because you know it will be supported for at least 5 years.



# Ubuntu LTS





# Providers

- In-house?
- Traditional providers
  - There are many to choose from. Let Me Google That For You.
- Linode (but not Digital Ocean, VPSie or VULTR)
  - Why?
    - Price, speed, and ease of use
- Specialized Providers
  - Built for your needs. LMGTFY
    - Drupal, WordPress, etc.



# Specialized Providers

- Built for your needs. LMGTFY
  - Drupal, WordPress, etc.
- Bitnami & Turnkey Linux
  - Single click deployment of MANY apps
  - Runs on Amazon Web Services, Microsoft Azure, Google's Cloud Platform
- But you are going to pay extra for simplicity



# Real World Planning

- Select your application & Platform
  - Figure out your requirements
    - Disk space
    - Ease of deployment
    - Overall cost
    - Access & Recovery
    - How to secure it
- Practice
  - Don't turn your first linux box into a customer's machine



# Real World Setup

- Order of install:
  - Set it up
  - Secure it
  - Monitor it
  - Manage it



# Why we chose Linode

- Because we wanted to do it our selves, inexpensively, Linode offers
  - Competitive pricing
  - Ease of getting yourself out of a bind
  - Monitoring
  - Backup
  - Most things are do it yourself, without having to wait for someone to push a button for you



# Let's Build a Linode

- Add a linode (choose a size and data center)
- Deploy an Image
  - For easy results, choose Ubuntu 16.04 LTS
  - But you can choose to torture yourself with OS patches and security updates
- Settings > Linode Label (enter new name and save)



[Linodes](#) » **Add a Linode**

## Select your plan

### Linode 1024

24GB DISK  
1 CPU Core  
2TB XFER  
.015/hr to \$10/mo

### Linode 2048

48GB DISK  
2 CPU Cores  
3TB XFER  
.03/hr to \$20/mo

### Linode 4096

96GB DISK  
4 CPU Cores  
4TB XFER  
.06/hr to \$40/mo

### Linode 8192

192GB DISK  
6 CPU Cores  
8TB XFER  
.12/hr to \$80/mo

### Linode 16384

384GB DISK  
8 CPU Cores  
16TB XFER  
.24/hr to \$160/mo

### Linode 32768

768GB DISK  
12 CPU Cores  
20TB XFER  
.48/hr to \$320/mo

### Linode 49152

1152GB DISK  
16 CPU Cores  
20TB XFER  
.72/hr to \$480/mo

### Linode 65536

1536GB DISK  
20 CPU Cores  
20TB XFER  
.96/hr to \$640/mo

### Linode 98304

1920GB DISK  
20 CPU Cores  
20TB XFER  
1.44/hr to \$960/mo

## Location

- ✓ Newark, NJ
- Fremont, CA
- Atlanta, GA
- Dallas, TX
- London, UK
- Tokyo, JP
- Singapore, SG
- Frankfurt, DE

**Add this Linode!**



# Linode Manager

4macsadmin my profile log out

Linodes

NodeBalancers

Account

Support

Documentation

Community

Dashboard

Remote Access

Linodes » (MACS Services) »

Deploy an Image

Image

Deployment Disk Size

Swap Disk

Root Password

64 bit Distributions - Recommended

Arch Linux 2015.08  
CentOS 7  
Debian 7  
Debian 8  
Fedora 22  
Gentoo 2014.12  
openSUSE 13.2  
Slackware 14.1  
Ubuntu 14.04 LTS  
Ubuntu 15.10  
Ubuntu 16.04 LTS

Older Distributions

Arch Linux 2015.02  
CentOS 5.6  
CentOS 6.5  
Fedora 20  
Fedora 21  
Gentoo 2013-11-26  
openSUSE 13.1  
Slackware 13.37  
Slackware 13.37 32bit  
Ubuntu 12.04 LTS  
Ubuntu 15.04

Graphs

Backups

Settings

Extras

See also: [Deploying using StackScripts](#)



# Linode Manager

4macsadmin | my profile | log out

Linodes NodeBalancers Longview DNS Manager Account Support Documentation Community

Dashboard Remote Access Rebuild Rescue Resize Clone Graphs Backups Settings

Linodes » (MACS Services) » linode1818909



## Dashboard

Select	Configuration Profiles	Options
<input checked="" type="radio"/>	<a href="#">My Ubuntu 16.04 LTS Profile</a> (Latest 64 bit (4.5.0-x86_64-linode65))	<a href="#">Edit</a>   <a href="#">Remove</a>

Boot

[Rebuild](#) | [Deploy an Image](#) | [Create a new Configuration Profile](#)

## Disks

	<a href="#">Ubuntu 16.04 LTS Disk</a> (24320 MB, ext3)	<a href="#">Edit</a>   <a href="#">Remove</a>
	<a href="#">256MB Swap Image</a> (256 MB, swap)	<a href="#">Edit</a>   <a href="#">Remove</a>

[Create a new Disk](#)

## Host Job Queue [\(more\)](#)

Success	<b>Create Filesystem - 256MB Swap Image</b> Entered: 32 seconds ago - Took: 0 seconds	
Success	<b>Disk Create From Distribution - Ubuntu 16.04 LTS</b> Entered: 33 seconds ago - Took: 8 seconds	Setting password for root... done
Success	<b>Linode Initial Configuration</b> Entered: 4 minutes 58 seconds ago - Took: 0 seconds	

## Graphs

## Server Status

Your Linode is currently

**Powered Off**

## Network

- Transfer/mo: 2000 GB
- Incoming: 0 bytes
- Outgoing: 0 bytes
- Total: 0 bytes

You have used

**0%**  
of your monthly transfer

## Storage

- Total: 24576 MB
- Used: 24576 MB
- Free: 0 MB

You have allocated

**100%**  
towards disk images

## Backups

No - [Enable](#)

## Host

<b>newark1083</b>	<b>load</b>
KVM	low



## Network Access

### Public Network

**SSH Access** [ssh root@198.74.60.120](#)

[Getting Started Guide](#)

**Public IPs** 198.74.60.120 / 24 ( li557-120.members.linode.com )  
2600:3c03::f03c:91ff:fe55:62fc / 64  
[IP Add](#) | [IP Remove](#) | [IP Failover](#) | [IP Swap](#) | [Reverse DNS](#)

[Static Networking Guide](#)  
[IPv6 Networking Guide](#)

**Default Gateways** 198.74.60.1  
fe80::1

### DNS Resolvers

66.228.42.5  
96.126.106.5  
50.116.53.5  
50.116.58.5  
50.116.61.5  
50.116.62.5  
66.175.211.5  
97.107.133.4  
207.192.69.4  
207.192.69.5  
2600:3c03::5  
2600:3c03::6  
2600:3c03::7  
2600:3c03::8  
2600:3c03::9  
2600:3c03::b  
2600:3c03::c

### Private/LAN Network

**Private IPs** None - [Add a Private IP](#)

**Link-Local IP** fe80::f03c:91ff:fe55:62fc/64

## Console Access

**Lish via Ajaxterm** [Launch Lish Ajax Console »](#)

**Lish via SSH** [ssh -t 4macsadmin@lish-newark.linode.com linode1818909](#)

Lish listens on ports 22, 443, and 2200  
([Lish Guide & Fingerprints](#))

**Glish** [Launch Graphical Web Console »](#)

Equivalent to plugging a monitor and keyboard into your server.  
([Using Glish](#))



# Linode Manager

 4macsadmin | [my profile](#) | [log out](#)

[Linodes](#)

[NodeBalancers](#)

[Longview](#)

[DNS Manager](#)

[Account](#)

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[Rebuild](#)

[Rescue](#)

[Resize](#)

[Clone](#)

[Graphs](#)

[Backups](#)

[Settings](#)

[Extras](#)

[Linodes](#) » [\(MACS Services\)](#) » [linode1818909](#) » **Rebuild**

Rebuilding will **destroy all data**, wipe your Linode clean, and start fresh.

## Deploy an Image

Image

Ubuntu 14.04 LTS



Choosing a 64 bit distro is recommended.

See also: [Deploying using StackScripts](#)

Deployment Disk Size

4macs MB

750 MB min 24320 MB max

Swap Disk

256 MB



Root Password

.....



Rebuild



[Linodes](#) » [\(MACS Services\)](#) » [linode1818909](#) » **Rescue**

## Rescue Mode

Boots your Linode into Rescue Mode. Access it via the console.

/dev/sda

/dev/sdb

/dev/sdh

## Reset Root Password

Filesystem

Linode must be shut down

New Password



## Resize

### Choose your new plan

- ☐ ~~Linode 1024~~ (current plan)
- ☐ Linode 2048
- ☐ Linode 4096
- ☐ Linode 8192
- ☐ Linode 16384
- ☐ Linode 32768
- ☐ Linode 49152
- ☐ Linode 65536
- ☐ Linode 98304

[Resize this Linode Now!](#)

### How it works

#### 1. Linode is shut down and migrated

You will experience downtime while your Linode is migrated. We estimate **18 minutes** to migrate your Linode, but that may vary based on host and network load.

#### 2. Billing

Your account will be immediately charged (or credited) a prorated amount based upon the difference in cost and the number of days remaining in your billing cycle.

#### 3. Enjoyment

After the migration completes, you can take advantage of the new resources by resizing your disks.



[Linodes](#) » [\(MACS Services\)](#) » [linode1818909](#) » **Clone**

## Configuration Profiles

Select	Configuration Profiles	Kernel	Disks Attached
<input type="checkbox"/>	<a href="#">My Ubuntu 16.04 LTS Profile</a>	Latest 64 bit (4.5.0-x86_64-linode65)	2

Select

## Disks

Select	Disks	Type	Size
<input type="checkbox"/>	<a href="#">Ubuntu 16.04 LTS Disk</a>	ext3	24320 MB
<input type="checkbox"/>	<a href="#">256MB Swap Image</a>	swap	256 MB

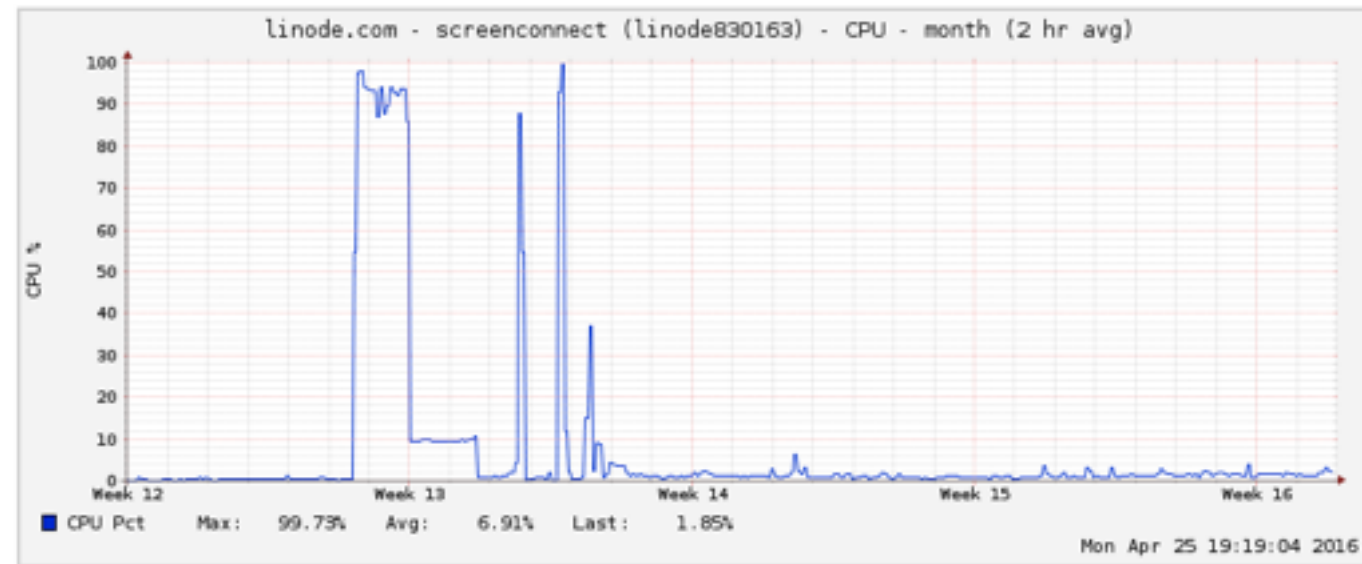
Select



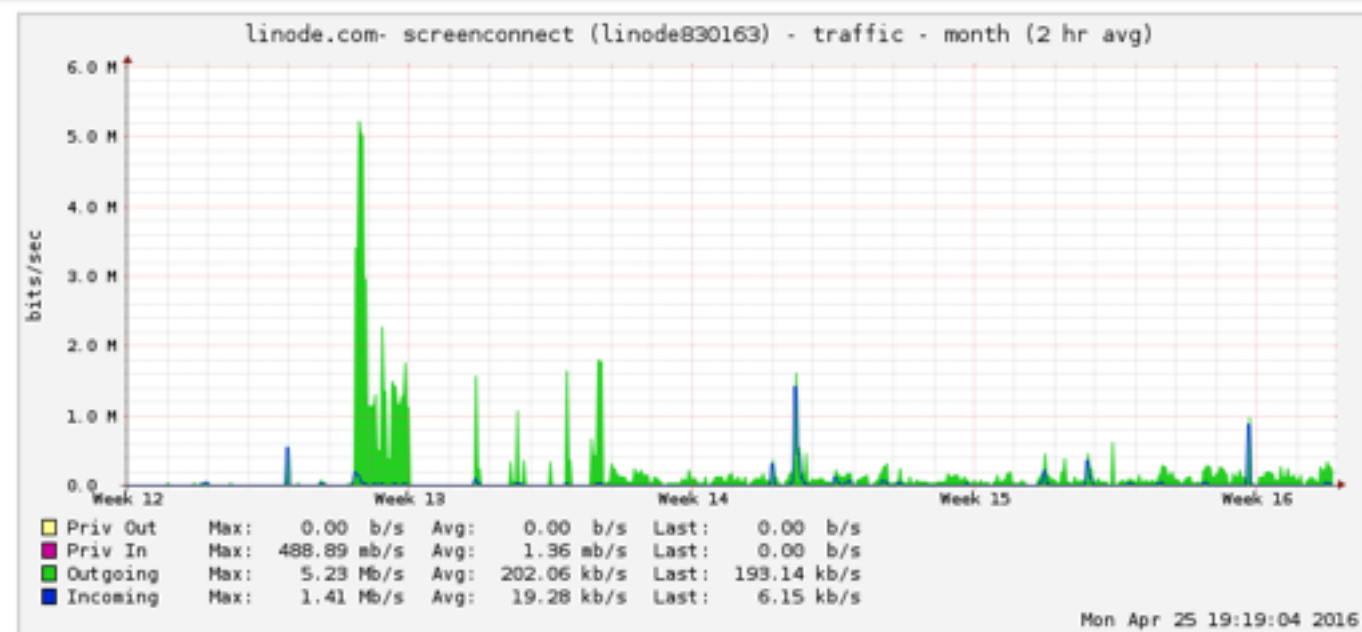
< 2015 2015 2015 2015 2015 2015 2015 2015 2016 2016 2016 LAST LAST  
MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR 30D 24H

## Last 30 Days

### CPU



### Network





Linodes » (MACS Services) » screenconnect » Backups

## Backups

### Schedule

Backup Window (GMT-5) 0200 - 0400

Weekly Backup Sunday

Save Changes

### Automatic Backups

Daily Backup From today  
Restore to...

Weekly Backup From yesterday  
Restore to...

Weekly Backup From 8 days ago  
Restore to...

### Manual Snapshot

Snapshot backup before upgrade  
From 416 days ago  
Restore to...

My New Snapshot Label

Take a New Snapshot Now

### Backup History

Type	Started	Finished	Duration	Status	Message
auto	2016-04-25 02:31:58	2016-04-25 02:34:03	2 minutes, 5 seconds	successful	
auto	2016-04-24 02:31:21	2016-04-24 02:33:30	2 minutes, 9 seconds	successful	
auto	2016-04-23 02:31:14	2016-04-23 02:33:23	2 minutes, 9 seconds	successful	
auto	2016-04-22 02:31:13	2016-04-22 02:33:22	2 minutes, 9 seconds	successful	
auto	2016-04-21 02:31:31	2016-04-21 02:33:39	2 minutes, 8 seconds	successful	
auto	2016-04-20 02:32:19	2016-04-20 02:34:27	2 minutes, 8 seconds	successful	
auto	2016-04-19 02:31:58	2016-04-19 02:34:06	2 minutes, 8 seconds	successful	
auto	2016-04-18 02:31:30	2016-04-18 02:33:39	2 minutes, 9 seconds	successful	
auto	2016-04-17 02:31:38	2016-04-17 02:33:41	2 minutes, 3 seconds	successful	
auto	2016-04-16 02:32:31	2016-04-16 02:34:39	2 minutes, 8 seconds	successful	

Cancel Backups



[Linodes](#) » [\(MACS Services\)](#) » [linode1818909](#) » **Settings**

## Settings

### Display Settings

**Linode Label**

Rename your Linode

**Display Group**

Group Linodes together on the Linodes tab using Display Groups!

### Shutdown Watchdog

#### Description

Lassie is a Shutdown Watchdog that monitors your Linode and will reboot it if it powers off unexpectedly. It works by issuing a boot job when your Linode powers off without a shutdown job being responsible.

To prevent a loop, Lassie will give up if there have been more than 5 boot jobs issued within 15 minutes.

**Lassie is currently**

### Email Alert Thresholds

#### Description

When an alert threshold is reached, an email is sent to all linode.com users that have the "access" privilege to this Linode.

Thresholds are compared to values once per hour, 15 minutes after the hour.

**CPU Usage** Enabled ☒ |  %

Average CPU usage over 2 hours exceeding this value triggers this alert.

**Disk IO Rate** Enabled ☒ |  IO Ops/sec

Average Disk IO ops/sec over 2 hours exceeding this value triggers this alert.

**Incoming Traffic** Enabled ☒ |  Mbit/s

Average incoming traffic over a 2 hour period exceeding this value triggers this alert.

**Outbound Traffic** Enabled ☒ |  Mbit/s

Average outbound traffic over a 2 hour period exceeding this value triggers this alert.

**Transfer Quota** Enabled ☒ |  %

Percentage of network transfer quota used being greater than this value will trigger this alert.



# Linode: IP and DNS

- Remote Access tab, and you'll see your server's IP address listed
- Add the IP to your DNS
- Set the reverse DNS
  - Remote Access » Reverse DNS
    - But only after you've added the details in your DNS
- Boot the Linode



# Linode: Hostname

- ssh to server
  - Click on the Remote Access tab
- Set the hostname:
  - Replace *hostname* with a fqdn of your choice.
  - `echo "hostname" > /etc/hostname`
  - `hostname -F /etc/hostname`



# Linode:Time Zone

- Set the time zone for the server with this command:
  - `dpkg-reconfigure tzdata`
  - follow the on screen messages
    - select your region, and time zone



# Security

- Now you have an unsecured linux server in a well known server farm, just waiting to be hacked
- Don't let your machine sit in this state for very long.
  - If you want to know why, install Watchman



# One directory to rule them all<sup>®</sup>




see how it works


Active Directory<sup>®</sup> and LDAP reimaged


**get started**  
10 users free forever


**request a demo**





**JumpCloud**


 **USERS**


 **SYSTEMS**


 **TAGS**


 **APPLICATIONS**

 **DIRECTORIES**


 **COMMANDS**


 **RADIUS**






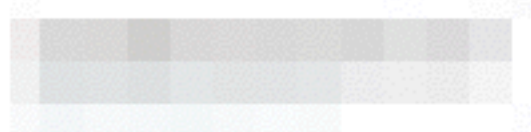





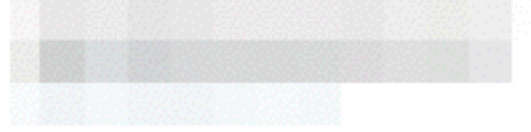
 **SETTINGS**

 **SUPPORT**

**Users** All your users at-a-glance

 **Search**

 4 users

<input type="checkbox"/>	Status	Last Name ▲	Email
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			



# Systems

All your systems at-a-glance

Search

+ 20 systems

	Status	System Name	OS	Primary Adapter IP	Last Contact
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago
<input type="checkbox"/>	✓		Ubuntu 14.04 x86_64		a few seconds ago

USERS

SYSTEMS

TAGS

APPLICATIONS

DIRECTORIES


COMMANDS


RADIUS

SETTINGS


SUPPORT





**JumpCloud**




USERS




SYSTEMS




TAGS




APPLICATIONS




DIRECTORIES




COMMANDS




RADIUS



SETTINGS












SUPPORT




Search

+

10 commands

<input type="checkbox"/>	Name 	Command	System / Tag Count
<input type="checkbox"/>	Download & Install Kerio Connect <small>Launch Manually</small>	#edit url! cd /tmp; curl -O http://cdn.kerio	 2 Systems
<input type="checkbox"/>	add text to mail server login page <small>Launch Manually</small>	sed -i "107i /tmp/kerio.connect.login.page.:	 1 Tag
<input type="checkbox"/>	install watchman <small>Launch Manually</small>	wget -N https://macs.monitoringclient.com/di	 5 Systems
<input type="checkbox"/>	install watchman pt 2 <small>Launch Manually</small>	sudo dpkg -i MonitoringClient.deb	 1 System
<input type="checkbox"/>	jumpcloud <small>Launch Manually</small>	curl -s https://lv.linode.com/A3F95E96-D19A-	 1 System
<input type="checkbox"/>	set watchman group <small>Launch Manually</small>	sudo echo "Tech2000" > /var/tmp/ClientGroup-	 1 System
<input type="checkbox"/>	set watchman to auto update <small>Launch Manually</small>	sudo run-client --auto-update true	 19 Systems
<input type="checkbox"/>	update (1 of 2) <small>Launch Manually</small>	apt-get update	 14 Systems



34



Details

User Bindings

Display Name:

PT Management

Status:

Active, System Reporting

Last Contact:

a few seconds ago

Host Name:

Instance ID:

Unknown

Operating System:

Ubuntu 14.04

Architecture:

x86\_64

Primary Adapter IP:

Remote IP Address:

SSH Root Login:

☐ Allow

SSH Password Login:

☐ Allow

Multifactor Authentication:

☐ Enable

Public Key Authentication:

☒ Enable

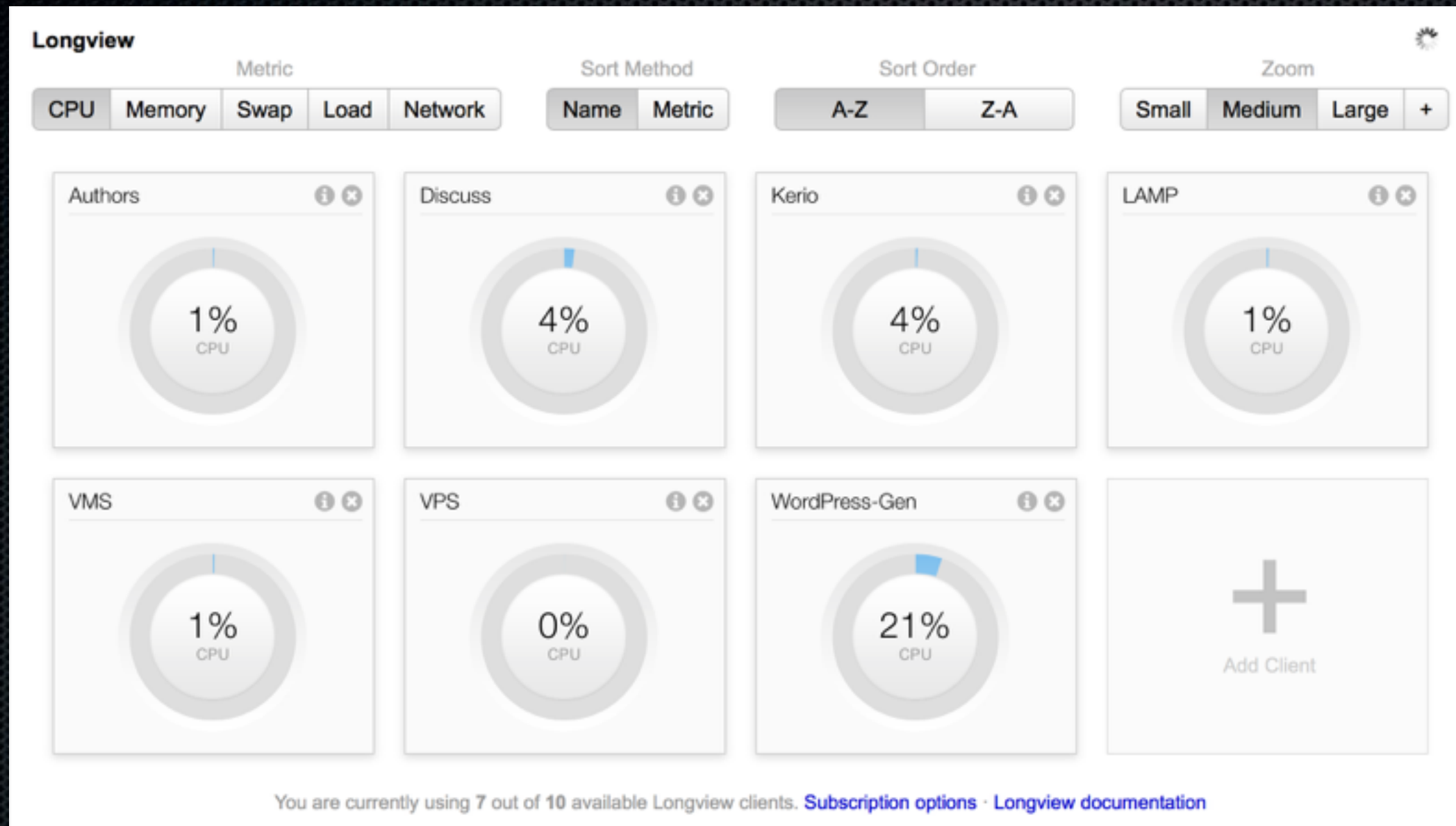


# Linode: Monitoring pt 1

- Longview
  - Press the “+” to add a client
  - Copy command to install Longview via the curl
  - Rename your Longview
    - the “i” icon for the new Longview

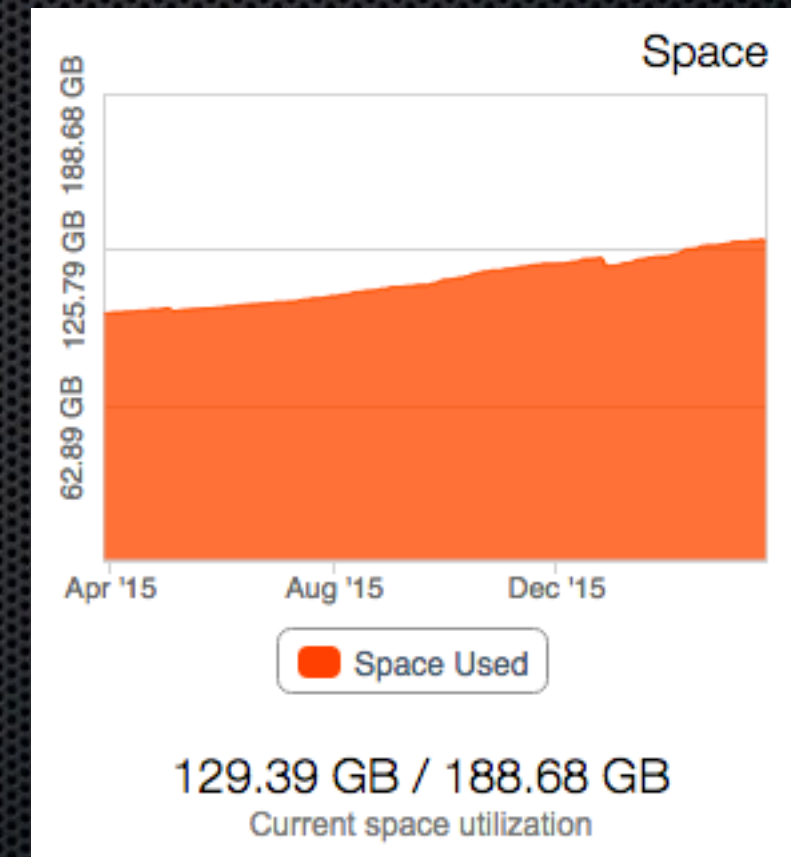
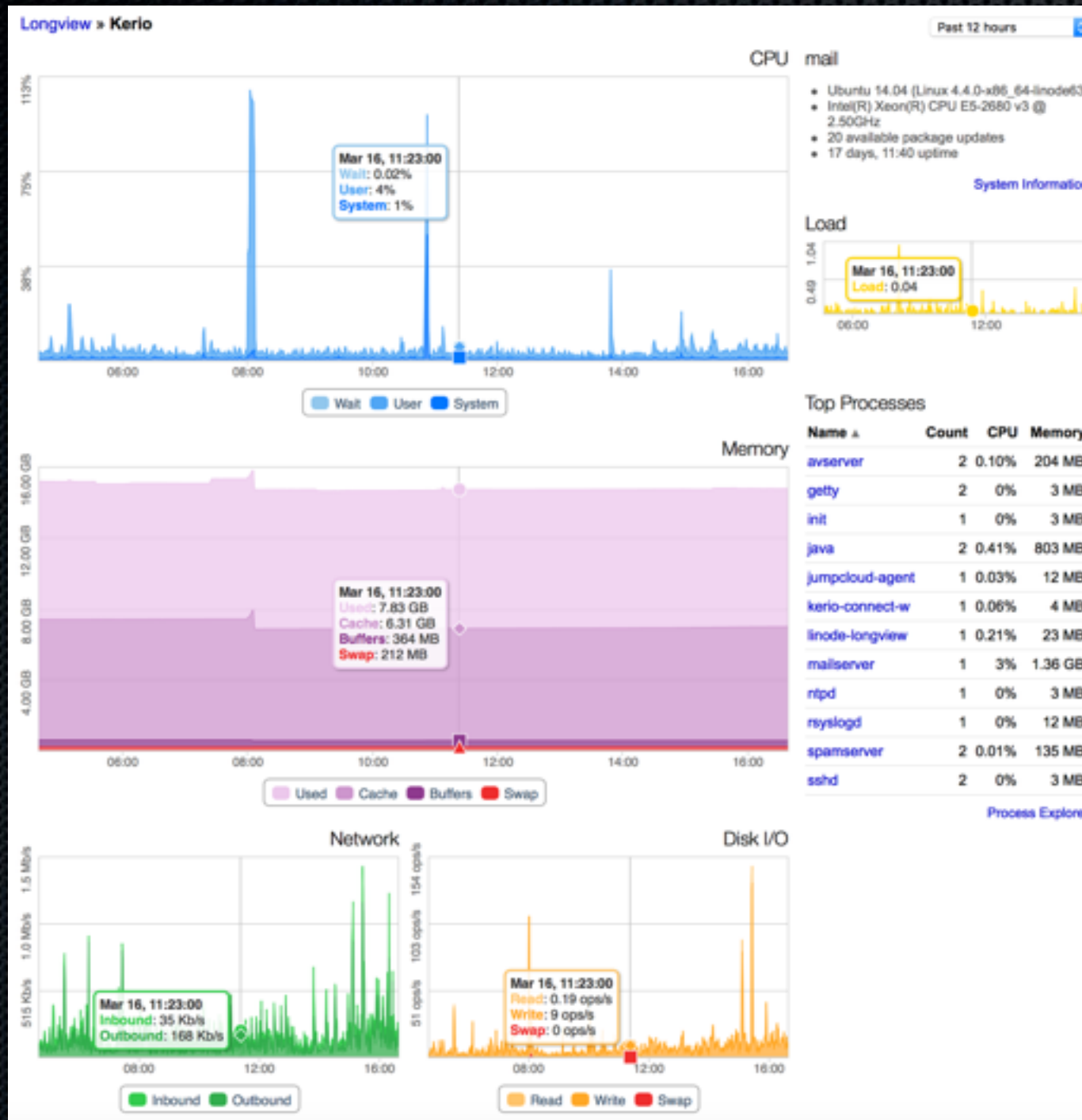


# Linode's Longview





# Linode's Longview





# Linode: Monitoring pt 2

- Watchman
  - Set the group
  - Install Watchman
    - Instructions are on your Watchman Installers page



# Computer Overview

[Actions](#)

All Clear



0 Muted Plugins



2 Expirations

Last User: xadmin

[Copy Specs](#)

Computer Name:

Group:

Serial Number: No Serial Found

## INTEGRATIONS

Monkey Box:

[View in MonkeyBox](#)

## TECH SPECS

Operating System: Ubuntu 14.04.4 LTS

Serial Number: No Serial Found

Installed RAM: 3.9 GB

Processor: Intel(R) Xeon(R) CPU E5-2680 v2 @ 2.80GHz 2800 (4 core 1 processor)

System MAC: F2:3C:91:89:F0:B7

Flash Version: Unknown

## REPORTING

Last Report: 2016-04-25 7:18 PM

Agent Version: 3.0.218

Uptime: 133 days 15 hours 58 minutes

First Report: 2014-11-30 10:42 AM

Watchman ID: 20141130-L27J-GXKGWA

## Plugin Results

[Notes \(0\)](#)[History](#)[Edit](#)

### Last Reboot

2016-04-25 7:18 PM

Last System Boot Time: 2015-12-14 at 02:19 (Monday)

[?](#) [Actions](#)

### Local IP Address

2016-04-25 7:18 PM

Primary IP: on eth0

[?](#) [Actions](#)

### Monitoring Agent

2016-04-25 7:18 PM

Monitoring Client version 3.0.218

The internal check of the client software reports no issues.

[?](#) [Actions](#)

### Network Errors

2016-04-25 7:18 PM

[2016-04-25] lo: 0 Send Errors, 0 Receive Errors; eth0: 0 Send Errors, 0 Receive Errors

[?](#) [Actions](#)

### RAM Errors

2016-04-25 7:18 PM

Memory: 3998MiB total, 1979MiB used, 2019MiB free

Swap: 255MiB total, 254MiB used, 1MiB free

[?](#) [Actions](#)

### Report Failed Logins

2016-04-25 7:18 PM

No new failed logins to report

[?](#) [Actions](#)

### Report Kerio Status

2016-04-25 7:18 PM

License:

License Expires: 31 Jan 2017

Subscription Expires: 31 Jan 2017

Licensed Users: 10000 (43 Local Used)

Company: Mid-Atlantic Computer Solutions

E-Mail: woneal@4macsolutions.com

[?](#) [Actions](#)

Key Directory, path, size:

Mailstore, /opt/kerio/mailserver/store, 89.16GB

Backups, /var/backup, does not exist.

Archives, /opt/kerio/mailserver/store/archive, 0.00GB

Logs, /opt/kerio/mailserver/store/logs/, 0.63GB

FullTextSearch, /opt/kerio/mailserver/store/fulltext, 1.97GB

Domains - Users (Total Storage, Public Folders):

adasafrica.com - 5 (15.25GB, 0.00GB)

docshutventure.com - 2 (0.00GB, 0.00GB)



# Linode: Monitoring pt 3

- syslog - or System Logging
  - [papertrailapp.com](http://papertrailapp.com) will let you send your log files to them for parsing & storage
  - they will let you set up defined searches and the system will send you emails when something needs your attention



```

Apr 25 19:12:19 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: associa
Apr 25 19:12:19 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac RADIUS: starting acc
Apr 25 19:12:19 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac WPA: pairwise key ha
Apr 25 19:12:30 106.143 (U7P: ,0418d6027439,v3.2.7.2816) syslog: wevent.recv_msg(): EVENT_STA_LEAVE ath1: 2
Apr 25 19:12:30 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: sta_sta
Apr 25 19:12:30 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: disasso
Apr 25 19:13:35 l logger: Attempt to deliver to unknown recipient <lmattis@t2000inc.com>, from <uemlmm2_595416893
Apr 25 19:13:36 l logger: Attempt to deliver to unknown recipient <zafar.ghadar@t2000inc.com>, from <bounce-18682
Apr 25 19:15:05 l logger: Attempt to deliver to unknown recipient <smalomo@t2000inc.com>, from <www-data@ccb1.lea
Apr 25 19:18:16 acsolutions.com logger: Connection attempt to service SMTP from IP address 195.22.126.189 rejecte
Apr 25 19:18:30 l logger: HTTP/CardDav: User demison@t2000inc.com doesn't exist. Attempt from IP address 207.235.
Apr 25 19:18:30 l logger: HTTP/CardDav: User demison@t2000inc.com doesn't exist. Attempt from IP address 207.235.
Apr 25 19:22:12 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: associa
Apr 25 19:22:12 106.143 (U7P: ,0418d6027439,v3.2.7.2816) syslog: wevent.recv_msg(): EVENT_STA_JOIN ath1: 70:48:0f:
Apr 25 19:22:12 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac RADIUS: starting acc
Apr 25 19:22:12 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac WPA: pairwise key ha
Apr 25 19:22:20 106.143 (U7P: ,0418d6027439,v3.2.7.2816) syslog: wevent.recv_msg(): EVENT_STA_LEAVE ath1: 2
Apr 25 19:22:20 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: sta_sta
Apr 25 19:22:20 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: disasso
Apr 25 19:22:22 l logger: Attempt to deliver to unknown recipient <lmattis@t2000inc.com>, from <uemlmm3_683517444
Apr 25 19:27:43 i_Control KerioControl: IPS: Alert, severity: Blacklist, Rule ID: 1:2520074 ET TOR Known Tor Exit
Apr 25 19:29:28 106.143 (U7P: ,0418d6027439,v3.2.7.2816) syslog: wevent.recv_msg(): EVENT_STA_JOIN ath1: b8:09:8a:
Apr 25 19:29:28 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA b8:09:8a:ca:3b:2b IEEE 802.11: associa
Apr 25 19:29:28 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA b8:09:8a:ca:3b:2b RADIUS: starting acc
Apr 25 19:29:28 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA b8:09:8a:ca:3b:2b WPA: pairwise key ha
Apr 25 19:30:05 l logger: Attempt to deliver to unknown recipient <smalomo@t2000inc.com>, from <www-data@ccb1.lea
Apr 25 19:30:26 106.143 (U7P: ,0418d6027439,v3.2.7.2816) syslog: wevent.recv_msg(): EVENT_STA_LEAVE ath1: 2
Apr 25 19:30:26 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA b8:09:8a:ca:3b:2b IEEE 802.11: sta_sta
Apr 25 19:30:26 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA b8:09:8a:ca:3b:2b IEEE 802.11: disasso
Apr 25 19:32:34 acsolutions.com logger: Connection attempt to service SMTP from IP address 195.22.126.189 rejecte
Apr 25 19:33:02 l logger: HTTP/CardDav: Invalid password for user kbroe@t2000inc.com. Attempt from IP address 96.
Apr 25 19:33:02 l logger: HTTP/CardDav: Invalid password for user kbroe@t2000inc.com. Attempt from IP address 96.
Apr 25 19:37:17 106.143 (U7P: ,0418d6027439,v3.2.7.2816) syslog: wevent.recv_msg(): EVENT_STA_JOIN ath1: 70:48:0f:
Apr 25 19:37:17 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: associa
Apr 25 19:37:17 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac RADIUS: starting acc
Apr 25 19:37:17 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac WPA: pairwise key ha
Apr 25 19:37:43 106.143 (U7P: ,0418d6027439,v3.2.7.2816) syslog: wevent.recv_msg(): EVENT_STA_LEAVE ath1: 2
Apr 25 19:37:43 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: sta_sta
Apr 25 19:37:43 106.143 (U7P: ,0418d6027439,v3.2.7.2816) hostapd: ath1: STA 70:48:0f:ae:e7:ac IEEE 802.11: disasso
Apr 25 19:42:33 l logger: HTTP/WebDav: User rvanalastine@t2000inc.com doesn't exist. Attempt from IP address 68.2
Apr 25 19:42:36 l logger: HTTP/CardDav: User @ doesn't exist. Attempt from IP address 68.203.29.69.
Apr 25 19:42:39 l logger: HTTP/CardDav: User rvanalastine@t2000inc.com doesn't exist. Attempt from IP address 68.
Apr 25 19:42:42 l logger: HTTP/CardDav: User @ doesn't exist. Attempt from IP address 68.203.29.69.
Apr 25 19:42:46 l logger: HTTP/CalDav: User rvanalastine@t2000inc.com doesn't exist. Attempt from IP address 68.2
Apr 25 19:42:50 i_Control KerioControl: IPS: Packet drop, severity: Blacklist, Rule ID: 1:2400007 ET DROP Spamhau
172.98.114.196
Apr 25 19:45:05 l logger: Attempt to deliver to unknown recipient <smalomo@t2000inc.com>, from <www-data@ccb1.lea
Apr 25 19:46:13 l logger: Connection attempt to service SMTP from IP address 192.162.101.80 rejected: access from
Apr 25 19:47:05 acsolutions.com logger: Connection attempt to service SMTP from IP address 195.22.126.189 rejecte

```



# Paid Control Panels

- Why?
  - Base server config
  - Services Configuration
  - Scripted Installers
  - User Access
  - Database Configuration
  - Security
- Industry Standards:
  - cPanel, Plesk, InterWorx, zPanel, ISPConfig
- Free options



# Free Control Panels

- Light, fast, and secure with modern interface
  - [ServerPilot.io](http://ServerPilot.io)
  - [webmin.com](http://webmin.com) / [virtualmin.org](http://virtualmin.org)
  - Sentora <http://sentora.org>
  - Webuzo
  - VestaCP



# Types of Services

- Nginx Web Server
- Apache Web Server (as backend)
- Bind DNS Server
- Exim or other mail server
- Antivirus Antispam
- Dovecot POP3/IMAP Server or others
- MySQL Database Server
- FTP Server
- Firewall and automatic banning
- ... and others



# ServerPilot.io

The screenshot shows the 'Apps' management page in the ServerPilot.io dashboard. The browser address bar shows 'manage.serverpilot.io/#apps'. The page has a sidebar with navigation links: Servers, Apps, Account, Support, and Log out. A green '+ Create App' button is in the top right. A light blue banner states 'We now offer free SSL certificates! [Learn more.](#)'. Below this is a search bar labeled 'Search Apps'. The main content is a table with columns: APP, SERVER, DISK, and MEMORY. It lists five apps: 'authors' (0 MB disk, 0 MB memory), 'images' (0.34 MB disk, 0 MB memory), 'pagewatch' (7.7 MB disk, 0 MB memory), 'phpq' (0.71 MB disk, 0 MB memory), and 'redirect' (21 MB disk, 0 MB memory). All apps show '0 processes'.

APP	SERVER	DISK	MEMORY
<b>authors</b> <small>authors.mactech.com</small>	authors.mactech.com	0 MB	0 MB <small>0 processes</small>
<b>images</b> <small>images.mactech.com</small>	vps.xplain.com	0.34 MB	0 MB <small>0 processes</small>
<b>pagewatch</b> <small>pagewatch.mactech.com</small>	vps.xplain.com	7.7 MB	0 MB <small>0 processes</small>
<b>phpq</b> <small>forms.mactech.com</small>	lamp.xplain.com	0.71 MB	0 MB <small>0 processes</small>
<b>redirect</b> <small>redirect.mactech.com</small>	vps.xplain.com	21 MB	0 MB <small>0 processes</small>



# VestaCP

The screenshot displays the VestaCP web interface in a browser window. The address bar shows the URL `vps.xplain.com:8083/list/user/`. The interface includes a top navigation bar with various links like 'ClipOneNote', 'KM', 'SipNumCart', etc., and a secondary navigation bar with 'VESTA', 'Packages', 'IP', 'Graphs', 'Statistics', 'Log', 'Updates', 'Firewall', and 'Server'. The main content area is titled 'USER' and shows a summary of system resources: 1 user, 1 domain, 1 database, 1 mail domain, 7 cron jobs, and 3 backups. Below this, a table lists the details for the 'admin' user, including their role as 'System Administrator', bandwidth usage (0 mb), disk usage (2 mb), and various system settings like email, package, SSH access, and name servers.

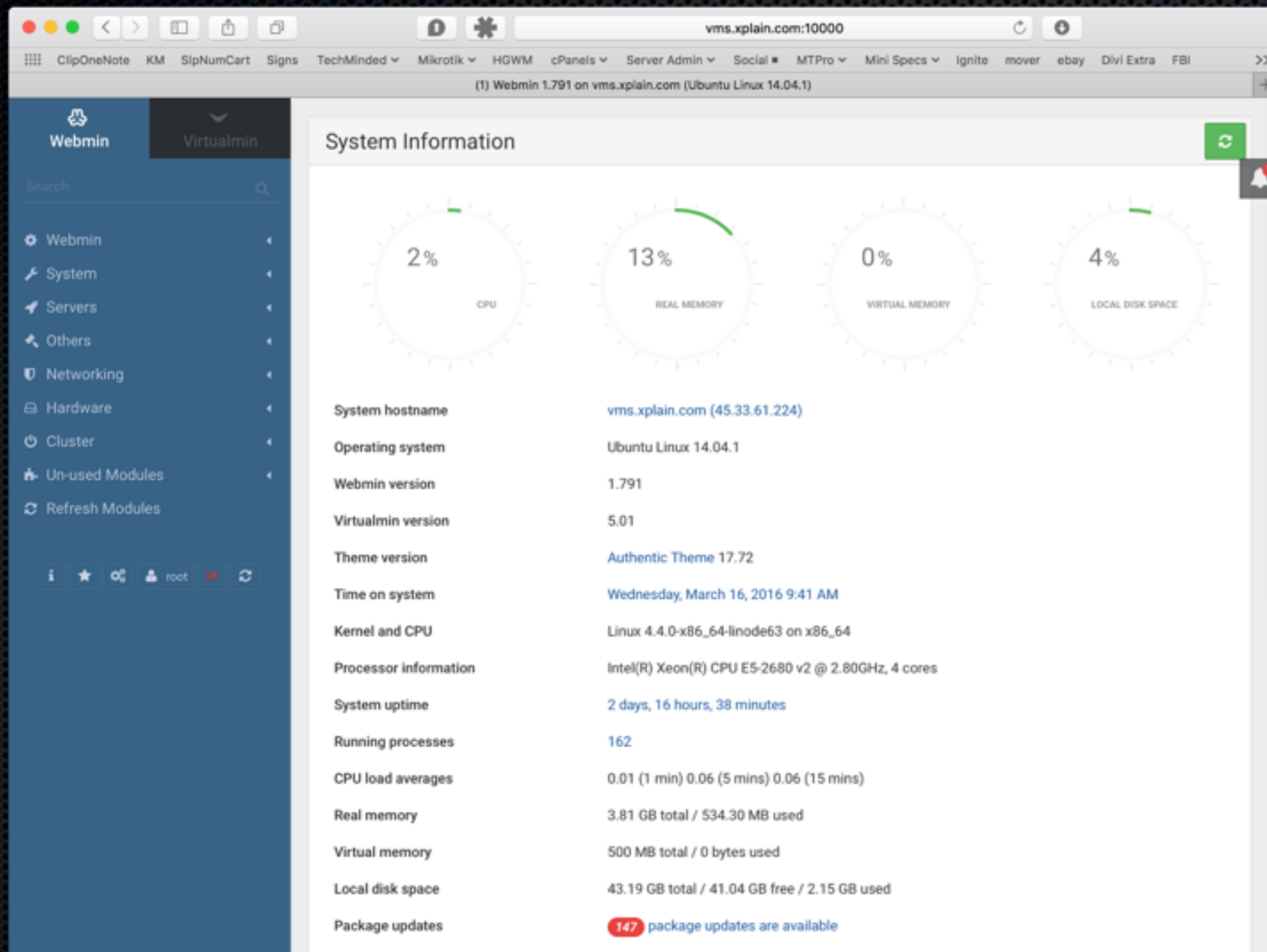
USER	WEB	DNS	MAIL	DB	CRON	BACKUP
users: 1	domains: 1	domains: 0	domains: 1	databases: 1	jobs: 7	backups: 3
suspended: 0	aliases: 1	records: 0	accounts: 0	suspended: 0	suspended: 0	
	suspended: 0	suspended: 0	suspended: 0			

admin	
System Administrator	
Bandwidth	0 mb
Disk:	2 mb
Web: 1 mb	Databases: 0 mb
Mail: 0 mb	User Directories: 1 mb
Web Domains:	1 / 100
DNS Domains:	0 / 100
Mail Domains:	1 / 100
Databases:	1 / 100
Cron Jobs:	7 / 100
Backups:	3 / 3
Email:	netadmin@xplain.com
Package:	default
SSH Access:	bash
IP Addresses:	1
Name Servers:	ns1.localhost.ltd ns2.localhost.ltd

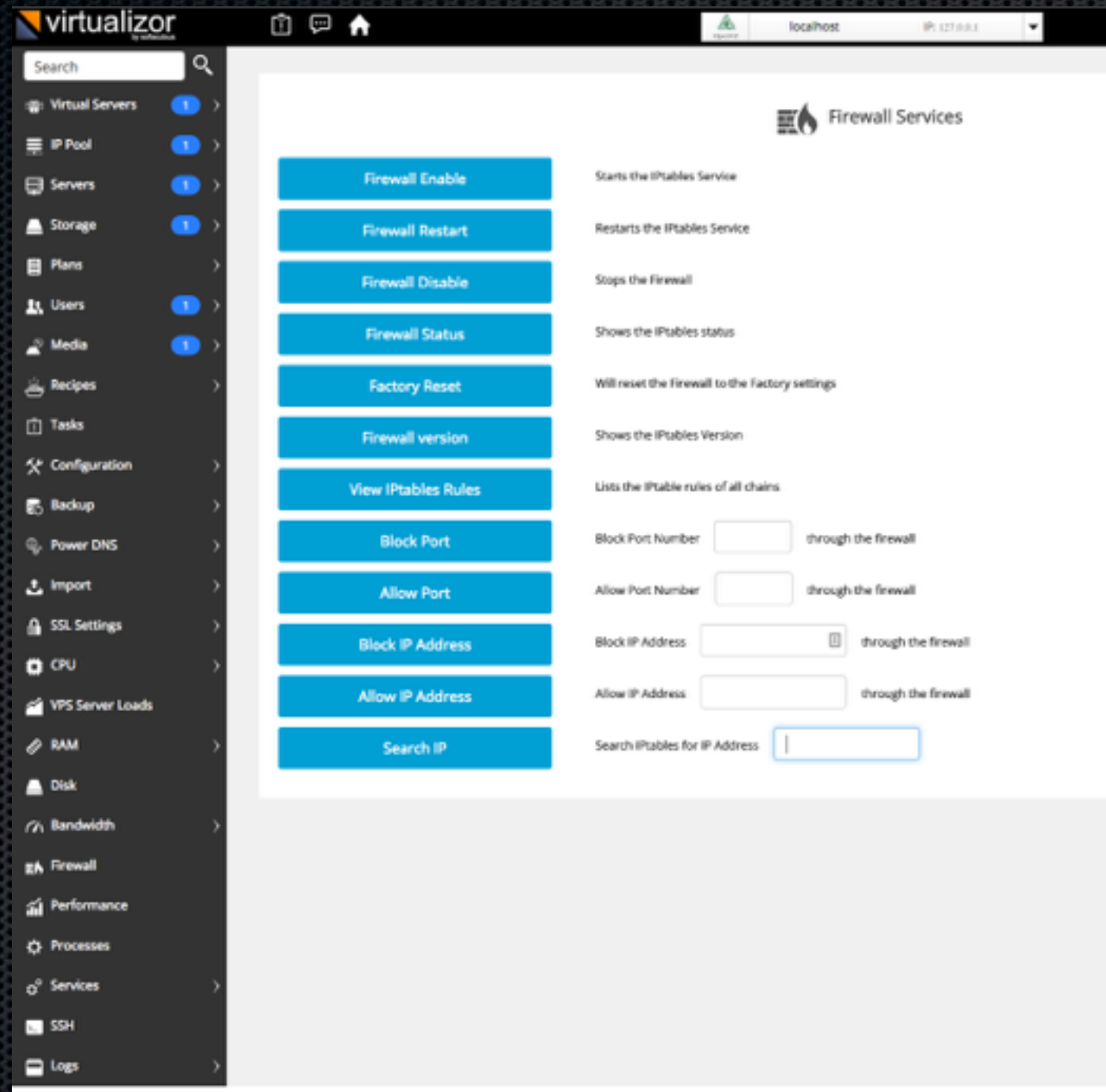


# webmin





# virtualizor





# Or choose none...

- Remember...
  - Ask yourself why?
- And if none, you need to remember
  - Updates and Security Patches
  - Prevent password and root login
  - Firewall
  - Monitoring



# Auto-Updates

- `sudo apt-get install unattended-upgrades`
- `sudo dpkg-reconfigure -p low unattended-upgrades`



# Check the Schedule

```
mactech@someserver:~$ cat /etc/apt/apt.conf.d/10periodic
APT::Periodic::Update-Package-Lists "1";
APT::Periodic::Download-Upgradeable-Packages "0";
APT::Periodic::AutocleanInterval "0";

mactech@someserver:~$ cat /etc/apt/apt.conf.d/20auto-upgrades
APT::Periodic::Update-Package-Lists "1";
APT::Periodic::Unattended-Upgrade "1";
```

Note: The 1 means it will update every day. 7 is weekly



# Forcing Updates

- Find available updates, and force an upgrade now:  
`sudo apt-get update`  
`sudo apt-get dist-upgrade`
- Testing it?
  - list available updates  
`sudo apt-get -u upgrade`
  - simulate update process  
`sudo apt-get -s upgrade`
- Brute Force Testing
  - `sudo reboot now`
  - you should not see updates now



# Firewall

Configure the firewall

Typical ports you may want to open:

```
sudo ufw allow ssh  
sudo ufw allow 80/tcp  
sudo ufw allow 443/tcp  
sudo ufw allow 25/tcp  
sudo ufw show added  
sudo ufw enable
```



# Disable Access

Disable password access for root

```
sudo passwd -l root
```



# Service Updates

- Keep them up to date.
- SSL, Apache, Nginx, MySQL, php updates are a must
- Beyond the scope of this presentation
- Make sure it's being done

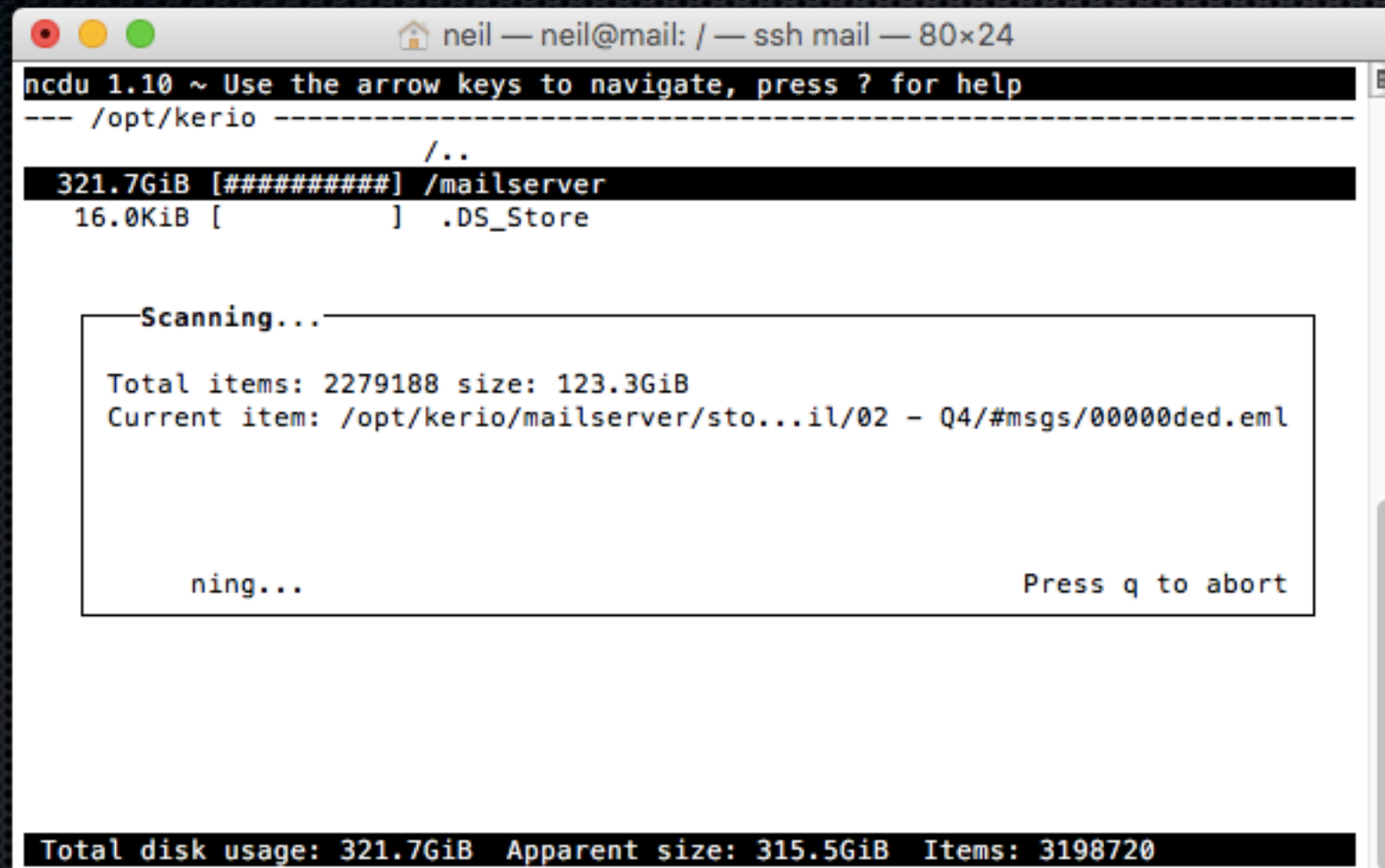


# Tools and Utilities

- ncurses
  - gui emulation for text interfaces
    - helpful for managing your machines
- apt-get install ncdu
- apt-get install mtr



# ncdu



```
ncdu 1.10 ~ Use the arrow keys to navigate, press ? for help
--- /opt/kerio ---
      /..
321.7GiB [#####] /mailserver
16.0KiB [          ] .DS_Store

Scanning...
Total items: 2279188 size: 123.3GiB
Current item: /opt/kerio/mailserver/sto...il/02 - Q4/#msgs/00000ded.eml

ning...                               Press q to abort

Total disk usage: 321.7GiB Apparent size: 315.5GiB Items: 3198720
```



# ncdu

```
woneal — root@mail: /opt/kerio/mailserver/store/mail — ssh xadmin@mail.ospgbl...
ncdu 1.10 ~ Use the arrow keys to navigate, press ? for help
--- /opt/kerio/mailserver/store/mail -----
34.4GiB [#####] /
18.6GiB [#####] /
16.6GiB [#####] /
14.1GiB [#####] /
441.3MiB [ ] /
980.0KiB [ ] /
592.0KiB [ ] /
92.0KiB [ ] /
92.0KiB [ ] /
88.0KiB [ ] /
80.0KiB [ ] /
76.0KiB [ ] /
44.0KiB [ ] /
44.0KiB [ ] /
28.0KiB [ ] /
4.0KiB [ ] /

Total disk usage: 84.1GiB Apparent size: 83.2GiB Items: 422241
```



# ncdu

```
neil — neil@mail: / — ssh mail — 80x24
ncdu 1.10 ~ Use the arrow keys to navigate, press ? for help
--- /opt/kerio/mailserver/store/backup -----
/..
2.0GiB [#####] C20160227T190203Z.11.zip
2.0GiB [##### ] C20160227T190203Z.1.zip
2.0GiB [##### ] ncdu help 1:Keys 2:Format 3>About
2.0GiB
2.0GiB      C Sort by items (ascending/descending)
2.0GiB      d Delete selected file or directory
2.0GiB      t Toggle dirs before files when sorting
2.0GiB      g Show percentage and/or graph
2.0GiB      a Toggle between apparent size and disk usage
2.0GiB      c Toggle display of child item counts
2.0GiB      e Show/hide hidden or excluded files
2.0GiB      i Show information about selected item
2.0GiB      r Recalculate the current directory
2.0GiB      q Quit ncdu
2.0GiB
2.0GiB                                     Press q to continue
2.0GiB [##### ] C20160227T190203Z.9.zip
2.0GiB [##### ] F20160305T080103Z.27.zip
2.0GiB [##### ] F20160305T080103Z.28.zip
Total disk usage: 145.8GiB Apparent size: 145.8GiB Items: 120
```



# mtr

```
ssh root@198.74.60.120 — -ssh -l root 198.74.60.120 — 100x35

My traceroute [v0.86]
ubuntu (0.0.0.0) Tue Apr 26 17:34:49 2016
Keys: Help Display mode Restart statistics Order of fields quit

Host      Loss%  Snt  Last  Avg  Best  Wrst StDev
1. router2-nac.linode.com 0.0%  291  0.7  0.6  0.5  1.9  0.1
2. 173.255.239.2          0.0%  291  0.7  0.8  0.6  2.1  0.2
3. 207.99.109.69          0.0%  291  0.8  1.7  0.4  12.8  2.8
4. 0.e1-1.tbr1.tl9.nac.net 0.0%  291  10.8 3.7  1.5  12.7  3.4
5. 0.e1-3.tbr2.tl9.nac.net 0.0%  291  1.5  2.6  1.4  22.1  2.9
6. ae-30.r08.nycmny01.us.bb.gin.ntt.net 0.0%  291  3.1  2.2  1.8  5.2  0.4
7. lag-17.ear2.NewYork1.Level3.net 78.6% 291 54464 52695 51162 55082 866.7
8. b.resolvers.Level3.net 0.0%  291  1.5  1.5  1.4  2.0  0.0
```



# Useful Links

- <https://www.linode.com>
- <https://www.digitalocean.com>
- <https://wiki.ubuntu.com/LTS>
- <http://serverpilot.io>
- <https://vestacp.com>
- <http://www.webmin.com>
- <http://jumpcloud.com>



# Cloud Based Storage

- Storing files in Cloud as primary storage isn't backup
- 3-2-1 still applies, even to the Cloud
  - Have 3 copies of your data
  - Store on 2 different media types
  - Store 1 backup offsite (offsite = cloud in this case)
- Backup client machine that's synced to cloud
- Cloud-based data transfer and backup (briefly)
  - <https://mover.io>
  - <https://www.multicloud.com>
  - <http://www.cloudsfer.com>
  - <http://www.otixo.com>



# Questions?



SpeakerName  
SpeakerEmailAddr