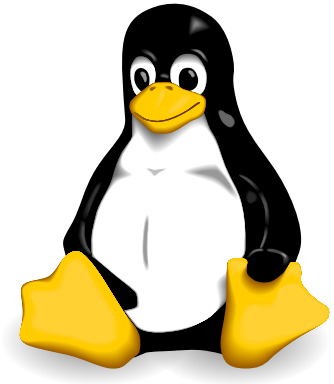


Introducción a Linux y el Software Libre.

Lima, Abril 2020

Lic. Clever Flores

clever@aulautil.com

aulaútil

Curso de Linux Essentials (LPI 010 - 160)

- ¿Qué es Linux?

- Linux es el sistema operativo más importante del mundo actual.

- Linux es el sistema operativo con el que mayoritariamente funciona Internet. 70% de servidores Web, 98% de Servidores DNS (Wikipedia) y mas del 90% de servidores de correo (securityspace).

Linux es el corazón de Android, el S.0. más usado del mundo, en más de 2,500 millones de dispositivos (Google I/O 2019).

* Como referencia windows 10 tiene mas de 900 millones (microsoft, nov 2019).

- Linux es el sistema operativo con que funciona el Cloud Computing:

- El cloud público: Amazon, Google Cloud Platform y hasta Microsoft Azure; donde mas del 50% de instancias son Linux. (Sasha Levin)

- El cloud privado: OpenStack, Kubernetes y Vmware Cloud.

- Linux hace funcionar a las grandes empresas de Internet: Google, Facebook, Youtube, WhatsApp, Twitter, Amazon, Uber Paypal, Wikipedia, etc

- Linux es el sistema operativo para las startups

- Linux es el sistema operativo de los super computadores con 100% de uso desde nov 2017. (top500.org)

- Con Linux se desarrolla el Internet de las cosas (IoT) y la robótica.

En conclusión:

“Linux es el sistema operativo, de hoy y mañana; motor de la transformación digital.”

¿Si Linux es tan importante; por qué no se enseña masivamente en los institutos y universidades de Perusalén?

Historia de Linux

Unix y el Lenguaje C

- En 1970, Dennis Ritchie y Ken Thompson crean UNIX, sistema operativo que da inicio la computación moderna y con el que se desarrolló TCP/IP e Internet.

- Para desarrollar UNIX, Dennis Ritchie crea en 1972 el lenguaje C, con el que se programó los sistemas operativos y lenguajes de programación que usamos hoy en día.

Ken Thompson y Dennis Ritchie

El Software Libre y GNU

- En 1983 Richard Stallman; hacker de Unix, crea el software libre y da inicio al proyecto GNU, cuyo objetivo era crear un sistema operativo libre mejor que Unix. Gnu Not Unix.

- El sistema operativo de GNU era muy ambicioso, por eso crearon primero las herramientas GNU: El compilador gcc, el intérprete bash, la librería de C glibc, emacs

Richard M. Stallman

La FSF y la GPL

- En 1985 Stallman crea la FSF; Fundación por el Software Libre.

- En 1989 Stallman publica la licencia GPL; Licencia Pública General; que crea los sustentos legales del Software Libre

- En 1991 publica la versión 2 de la GPL

Libertades de la GPL

- Libertad 0. Libertad de **usar** el programa como desees.

- Libertad 1. Libertad de estudiar y **modificar** el codigo fuente del programa; para ello es obligatorio la entrega del código fuente del programa.

Libertades de la GPL

- Libertad 2. Libertad de **copiar** y **distribuir** el programa; de forma gratuita o no.

- Libertad 3. Libertad de **publicar** versiones modificadas y distribuirlas entre los demás

El Copyleft

- El copyleft establece que el software compartido y distribuido, bajo software libre es de dominio público; evitando de esta forma que se apliquen derechos de autor y que el software pueda derivarse en software privativo (denominación del software comercial tradicional)

El Open Source

- El término Open Source fue acuñado por Eric Raymond en 1997 para representar de forma pragmática el acceso al código fuente como fin primordial del software.

- El Open Source se opone al copyleft, se preserva el derecho de autor (copyright) y podría derivar en software privativo.

La Open Source Initiative

- La Open Source Initiative (OSI, en español Iniciativa para el Código Abierto) es una organización dedicada a la promoción del código abierto. Fue fundada en febrero de 1998 por Bruce Perens y Eric S. Raymond. Aunque esta organización no fue muy activa como la FSF, su definición de Open Source ha logrado enorme popularidad.

Licencias Open Source

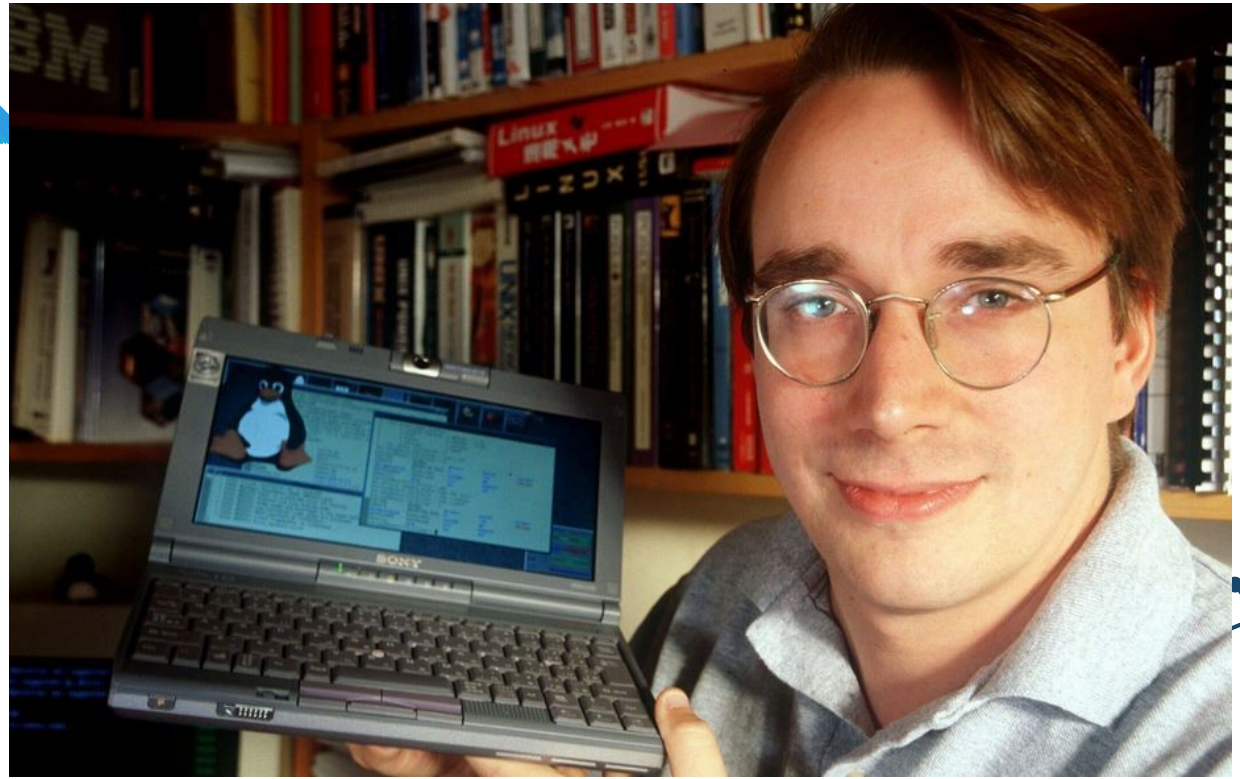
- La licencia más importante es la BSD (Berkeley Software Distribution) que fue creado para los desarrollos en UNIX de la Universidad de Berkley
FreeBSD es el S.O. más representativo.

- De BSD derivan la licencia Apache, MIT, PHP, etc.

Linus y Linux

- En 1991, en Helhinsky, Finlandia; Linus Tolvards inicia un desarrollo de un emulador de terminal de UNIX para su PC 386, el desarrollo inicial se hizo bajo Minix y se compiló con GCC.

- El 25 de Agosto de 1991, publica su código fuente de Linux en las redes usenet de minix.

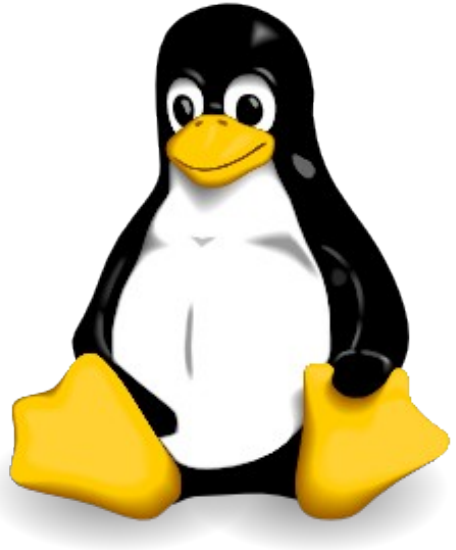


Linus Benedict Tolvards

GNU/Linux

- En 1992, Linux cambia su licencia a la GPL v2.

- Linux es sólo el kernel del sistema operativo; y es común que las versiones de los sistemas operativos Linux estén integrados con las herramientas GNU, por lo que se denominan GNU/Linux.



GNU/Linux

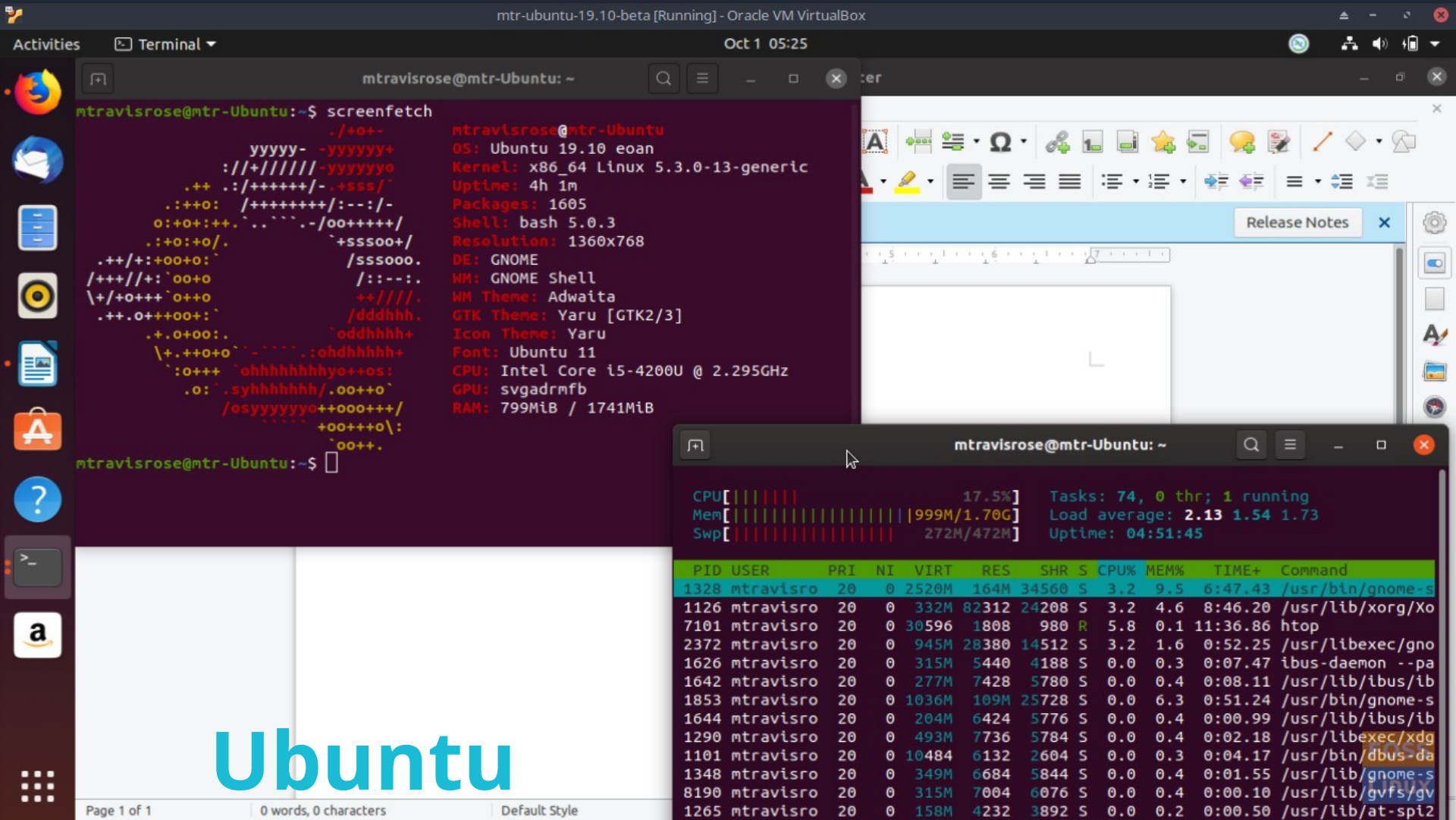
Uso de Linux en el mundo Digital

Linux en laptops y pcs

Debian
- Ubuntu Linux (gnome)
- Kubuntu Linux (kde)
- Xubuntu Linux (xfce)
- Linux Mint
- Elementary OS
- Knoppyx

Red Hat
- Fedora (gnome)
- OpenSuSE
- Mageia

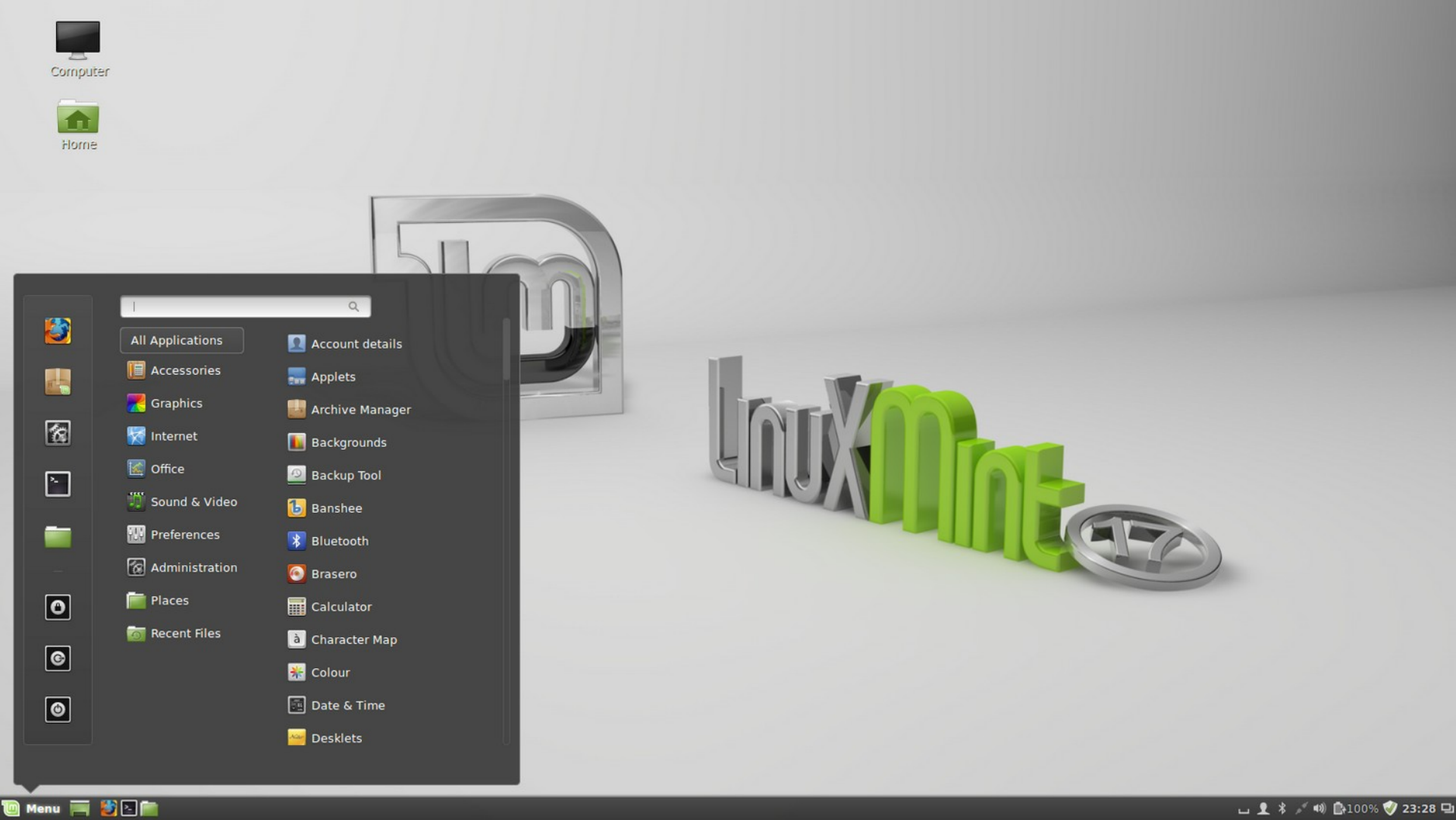
Otros
- Slackware
- Manjaro Linux
- Arch Linux


mtr-ubuntu-19.10-beta [Running] - Oracle VM VirtualBox
Activities
Terminal
Oct 1 05:25
mtravisrose@mtr-Ubuntu: ~
mtravisrose@mtr-Ubuntu:~$ screenfetch
mtravisrose@mtr-Ubuntu
OS: Ubuntu 19.10 eoan
Kernel: x86_64 Linux 5.3.0-13-generic
Uptime: 4h 1m
Packages: 1605
Shell: bash 5.0.3
Resolution: 1360x768
DE: GNOME
WM: GNOME Shell
WM Theme: Adwaita
GTK Theme: Yaru [GTK2/3]
Icon Theme: Yaru
Font: Ubuntu 11
CPU: Intel Core i5-4200U @ 2.295GHz
GPU: svgadrmfb
RAM: 799MiB / 1741MiB
mtravisrose@mtr-Ubuntu:~$
Release Notes
mtravisrose@mtr-Ubuntu: ~
CPU[17.5%] Tasks: 74, 0 thr; 1 running
Mem[999M/1.70G] Load average: 2.13 1.54 1.73
Swp[272M/472M] Uptime: 04:51:45
PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
1328 mtravisro 20 0 2520M 164M 34560 S 3.2 9.5 6:47.43 /usr/bin/gnome-s
1126 mtravisro 20 0 332M 82312 24208 S 3.2 4.6 8:46.20 /usr/lib/xorg/Xo
7101 mtravisro 20 0 30596 1808 980 R 5.8 0.1 11:36.86 htop
2372 mtravisro 20 0 945M 28380 14512 S 3.2 1.6 0:52.25 /usr/libexec/gno
1626 mtravisro 20 0 315M 5440 4188 S 0.0 0.3 0:07.47 ibus-daemon --pa
1642 mtravisro 20 0 277M 7428 5780 S 0.0 0.4 0:08.11 /usr/lib/ibus/ib
1853 mtravisro 20 0 1036M 109M 25728 S 0.0 6.3 0:51.24 /usr/bin/gnome-s
1644 mtravisro 20 0 204M 6424 5776 S 0.0 0.4 0:00.99 /usr/lib/ibus/ib
1290 mtravisro 20 0 493M 7736 5784 S 0.0 0.4 0:02.18 /usr/libexec/xdg
1101 mtravisro 20 0 10484 6132 2604 S 0.0 0.3 0:04.17 /usr/bin/dbus-da
1348 mtravisro 20 0 349M 6684 5844 S 0.0 0.4 0:01.55 /usr/lib/gnome-s
8190 mtravisro 20 0 315M 7004 6076 S 0.0 0.4 0:00.10 /usr/lib/gvfs/gv
1265 mtravisro 20 0 158M 4232 3892 S 0.0 0.2 0:00.50 /usr/lib/at-spi2
Ubuntu
Page 1 of 1
0 words, 0 characters
Default Style


Kubuntu
Google Chrome
Navegador web Firefox
Konsole
12
Community Design
clever
Buscar...
Navegador web Firefox
Navegador web
Konsole
Terminal
Google Chrome
Navegador web
Dolphin
Gestor de archivos
ONLYOFFICE Desktop Editors
ONLYOFFICE Desktop Editors
Preferencias del sistema
Preferencias del sistema
Discover
Centro de software
Kate
Editor de texto avanzado
KSysGuard
Monitor del sistema
Telegram Web - Mozilla ...
Google Chrome
- : bash — Konsole
conferencia — Dolphin
Linux en la Transformac...
*[ubuntu] (exported)-1....
Gwenview
12:49


[Add New Post ‹ Full Versio...
Compressed - File Manager
Settings
09 Sep, 13:05
Settings
Settings
Customize your desktop
Personal
About Me
Appearance
Desktop
Language Support
Menu Editor
Notifications
Orage preferences
Panel
Preferred Applications
Theme Configuration
Window Manager
Window Manager Tweaks
Workspaces
Hardware
Additional Drivers
Bluetooth Manager
Display
Help
All Settings
Close
Compressed - File Manager
Go
Help
media/xubuntu/Windows7_OS/Users/Lenovo E440/Downloads/Compressed/
en_windows_10_pro_10240_x64_dvd
ImageUSB
apricity_os-08.2015-beta.iso
elementaryos-stable-0.3.1-amd64.20150903.iso
FreeNAS-9.3-STABLE-201509022158.iso
imageusb.zip
netinfo.zip
openSUSE-42.1-DVD-x86_64-Build0148-Media.iso
Pinguy_OS_14.04.3-LTS-Mini-x86-64.iso
12 items (10.9 GB), Free space: 340.3 GB
Xubuntu


Activities
Mon 14:54
Type to search...
Wi-Fi
Red Hat Guest
VPN
Red Hat
Battery
Fully Charged
Matthias Clasen
Accerciser
AisleRiot Solitaire
Audacious
Audacity
Bluetooth Trans...
Boxes
Brasero
Calculator
Cheese
Chess
Cockpit
Contacts
Corebird
Data Display De...
dconf Editor
DevAssistant
Dictionary
Documents
Emacs
Emacs Client
Evolution
Extreme Tux Ra...
Frequent
All
Fedora


Computer
Home
All Applications
Accessories
Graphics
Internet
Office
Sound & Video
Preferences
Administration
Places
Recent Files
Account details
Applets
Archive Manager
Backgrounds
Backup Tool
Banshee
Bluetooth
Brasero
Calculator
Character Map
Colour
Date & Time
Desklets
Menu
100%
23:28

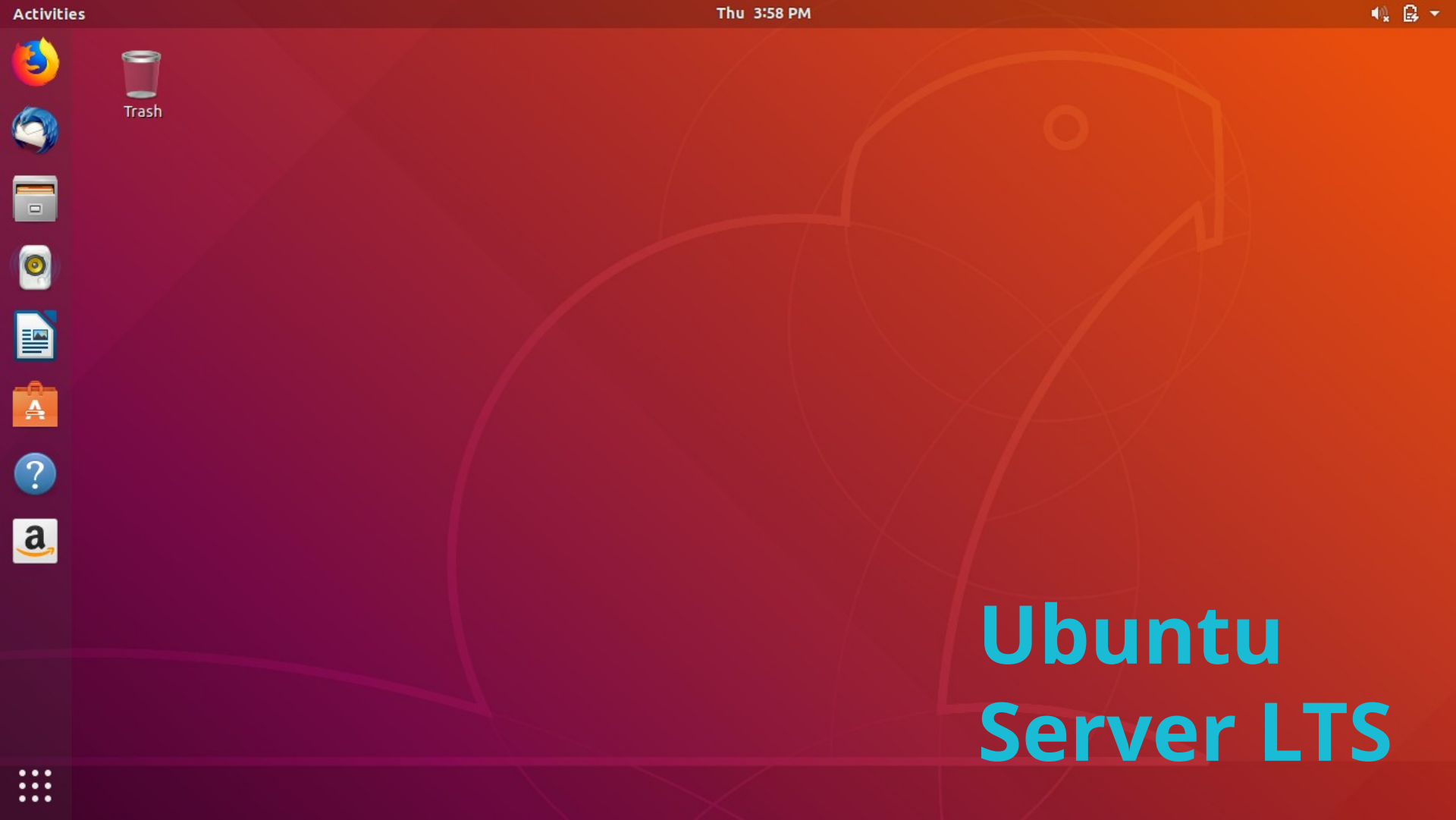
Linux en servidores

Debian
- Debian GNU/Linux
- Ubuntu Server LTS
- Zentyal

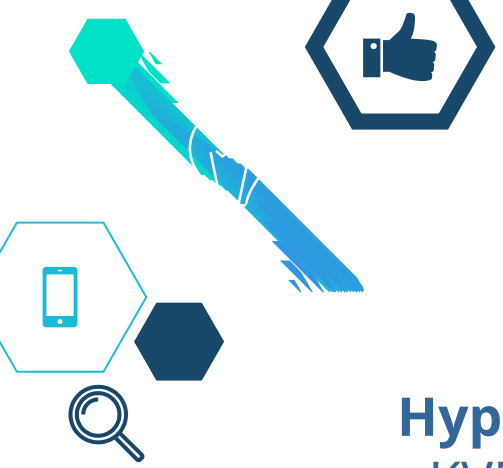
Red Hat
- Red Hat Enterprise Linux (RHEL)
  - CentOS Linux
  - Oracle Linux
  - Scientific Linux
  - NethServer
- Suse Enterprise Linux (SLES)

Otros
- Slackware
- Gentoo Linux
- Vmware ESX


1 2
txgvnn@Debian enp0s25:() wlp3s0:(192.168.0.192) 2% 1.30G (17%) 41% 96% Friday 16 Nov 18:37 EN
[@author TxGVNN]
* weather.sh
Hanoi, Vietnam
Partly cloudy
28-31 °C
15 km/h
10 km
3.7 mm
* example.sh
Put your shell to ~/.i3/bin/daemon.d in order to
show the output here
18:36@TIME *
November 2018
Su Mo Tu We Th Fr Sa
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30
DISK *
< 8 % - 5.13G/63.6G > /
< 8 % - 5.13G/63.6G > /home
< 0 % - 0B /3.81G > swap
HACKER NEWS *
Big List of Naughty Strings (1
Quietly, Japan has established itself as a power in the aerospace industry (2
C Portability Lessons from Weird Machines (3
Orangutans are the only great apes besides humans to 'talk' about the past (4
PSA: Firefox Nightly now with experimental Wayland support (5
The scientists who make apps addictive (6
Sipeed MAIX: inexpensive, crowd-funded RISC-V module (7
Designing 2D graphics in the Japanese industry (8
Singapore to test facial recognition on lampposts, stoking privacy fears (9
Type inference (10
Amateur Mathematician Finds Smallest Universal Cover (11
Why Sleep Apnea Patients Rely on a CPAP Machine Hacker (12
The Free Coffee Test, or Lefkowitz's Law of Corporate Financial Health (2013) (13
Ask HN: Are any of you IEEE members? (14
Prosecutors Have Prepared Indictment of Julian Assange, a Filing Reveals (15
Plans Revealed for Enormous Particle Collider in China (16
GPS mapping application in uLisp (17
Sony Venice Full Frame Digital Cinematography Camera (18
Ask HN: Does Shareware still work in 2018? (19
The US military is testing stratospheric balloons that never have to come down (20
Debian


Activities
Thu 3:58 PM
Trash
Ubuntu
Server LTS


Applications
Places
Fri Sep 19, 00:25
pmu
Home
Documents
Downloads
Music
Pictures
Videos
Computer
Airtel
Browse Network
home
Trash
Airtel
CentOS 8
[Edit Post — WordPress.com - Mozilla Fire...
1 / 4



Virtualización

Hypervisores
- KVM
- Xen
- ESXi
- LXC, LXD
- Docker
- OpenVZ

Bare Metal y Cluster
- Vmware Vcenter
- Proxmox
- Red Hat Enterprise Virtualization
- Ovirt
- Citrix Server
- Xen Server

PROXMOX Virtual Environment 6.0-5 Search

Server View

- Datacenter (lab6)
  - pve1
    - 101 (wp-ct-lab)
    - lab-storage (pve1)
    - local (pve1)
    - local-zfs (pve1)
    - prova (pve1)
  - pve2
    - 102 (Debian10.atlante.local)
    - 100 (Debian8)
    - lab-storage (pve2)
    - local (pve2)
    - local-zfs (pve2)
    - prova (pve2)
  - pve3
    - lab-storage (pve3)
    - local (pve3)
    - local-zfs (pve3)
    - prova (pve3)

Node 'pve1'

Reboot

- Search
- Summary
- Notes
- Shell
- System
  - Network
  - Certificates
  - DNS
  - Hosts
  - Time
  - Syslog
- Updates
- Firewall
- Disks
  - LVM
  - LVM-Thin
  - Directory
  - ZFS
- Ceph
  - Configuration
  - Monitor
  - OSD
  - CephFS
  - Pools
  - Log
- Replication
- Task History
- Subscription

Health

Status

HEALTH_OK

Severity	Summary
No Warnings/Errors	

Status

OSDs

	In	Out
Up	6	0
Down	0	0

Total: 6

Services

Monitors

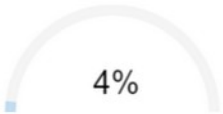
pve1: ✔ pve2: ✔ pve3: ✔

Managers

pve1: ✔ pve2: ✔ pve3: ✔

Performance

Usage



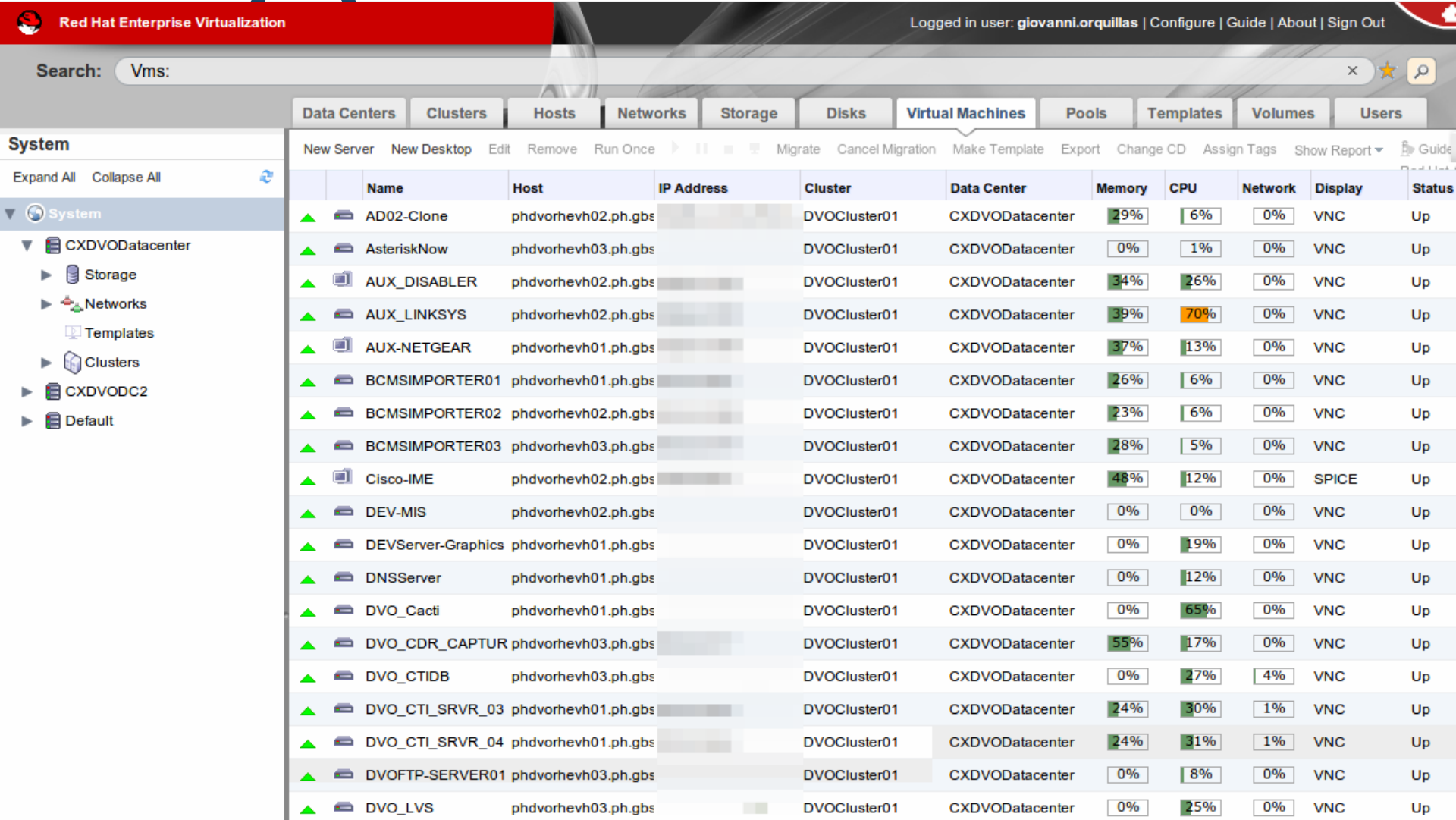
100.95 GiB of 2.70 TiB

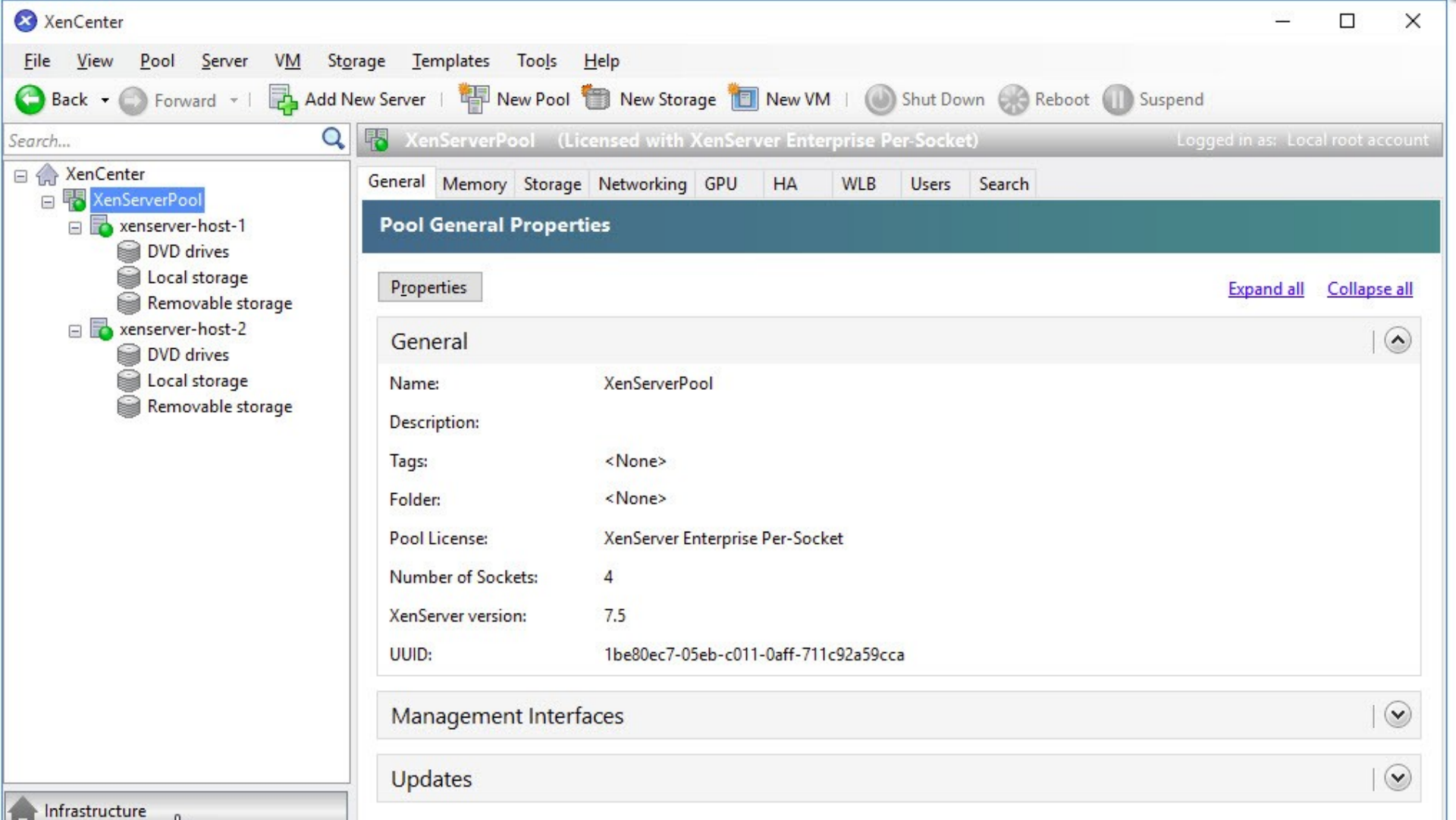
Reads:

Writes:

IOPS: Reads:

IOPS: Writes:


Red Hat Enterprise Virtualization
Logged in user: giovanni.orquillas | Configure | Guide | About | Sign Out
Search: Vms:
Data Centers
Clusters
Hosts
Networks
Storage
Disks
Virtual Machines
Pools
Templates
Volumes
Users
System
Expand All
Collapse All
System
CXDVODatacenter
Storage
Networks
Templates
Clusters
CXDVODC2
Default
New Server
New Desktop
Edit
Remove
Run Once
Migrate
Cancel Migration
Make Template
Export
Change CD
Assign Tags
Show Report
Guide
Name
Host
IP Address
Cluster
Data Center
Memory
CPU
Network
Display
Status
AD02-Clone phdvorhevh02.ph.gbs DVOCluster01 CXDVODatacenter 29% 6% 0% VNC Up
AsteriskNow phdvorhevh03.ph.gbs DVOCluster01 CXDVODatacenter 0% 1% 0% VNC Up
AUX_DISABLER phdvorhevh02.ph.gbs DVOCluster01 CXDVODatacenter 34% 26% 0% VNC Up
AUX_LINKSYS phdvorhevh02.ph.gbs DVOCluster01 CXDVODatacenter 39% 70% 0% VNC Up
AUX-NETGEAR phdvorhevh01.ph.gbs DVOCluster01 CXDVODatacenter 37% 13% 0% VNC Up
BCMSIMPORTER01 phdvorhevh01.ph.gbs DVOCluster01 CXDVODatacenter 26% 6% 0% VNC Up
BCMSIMPORTER02 phdvorhevh02.ph.gbs DVOCluster01 CXDVODatacenter 23% 6% 0% VNC Up
BCMSIMPORTER03 phdvorhevh03.ph.gbs DVOCluster01 CXDVODatacenter 28% 5% 0% VNC Up
Cisco-IME phdvorhevh02.ph.gbs DVOCluster01 CXDVODatacenter 48% 12% 0% SPICE Up
DEV-MIS phdvorhevh02.ph.gbs DVOCluster01 CXDVODatacenter 0% 0% 0% VNC Up
DEVServer-Graphics phdvorhevh01.ph.gbs DVOCluster01 CXDVODatacenter 0% 19% 0% VNC Up
DNSServer phdvorhevh01.ph.gbs DVOCluster01 CXDVODatacenter 0% 12% 0% VNC Up
DVO_Cacti phdvorhevh01.ph.gbs DVOCluster01 CXDVODatacenter 0% 65% 0% VNC Up
DVO_CDR_CAPTUR phdvorhevh03.ph.gbs DVOCluster01 CXDVODatacenter 55% 17% 0% VNC Up
DVO_CTIDB phdvorhevh03.ph.gbs DVOCluster01 CXDVODatacenter 0% 27% 4% VNC Up
DVO_CTI_SRVR_03 phdvorhevh01.ph.gbs DVOCluster01 CXDVODatacenter 24% 30% 1% VNC Up
DVO_CTI_SRVR_04 phdvorhevh01.ph.gbs DVOCluster01 CXDVODatacenter 24% 31% 1% VNC Up
DVOFTP-SERVER01 phdvorhevh03.ph.gbs DVOCluster01 CXDVODatacenter 0% 8% 0% VNC Up
DVO_LVS phdvorhevh03.ph.gbs DVOCluster01 CXDVODatacenter 0% 25% 0% VNC Up


XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
Search...
XenServerPool (Licensed with XenServer Enterprise Per-Socket)
Logged in as: Local root account
XenCenter
XenServerPool
xenserver-host-1
DVD drives
Local storage
Removable storage
xenserver-host-2
DVD drives
Local storage
Removable storage
Infrastructure
General Memory Storage Networking GPU HA WLB Users Search
Pool General Properties
Properties
Expand all Collapse all
General
Name: XenServerPool
Description:
Tags: <None>
Folder: <None>
Pool License: XenServer Enterprise Per-Socket
Number of Sockets: 4
XenServer version: 7.5
UUID: 1be80ec7-05eb-c011-0aff-711c92a59cca
Management Interfaces
Updates

Linux en otros usos

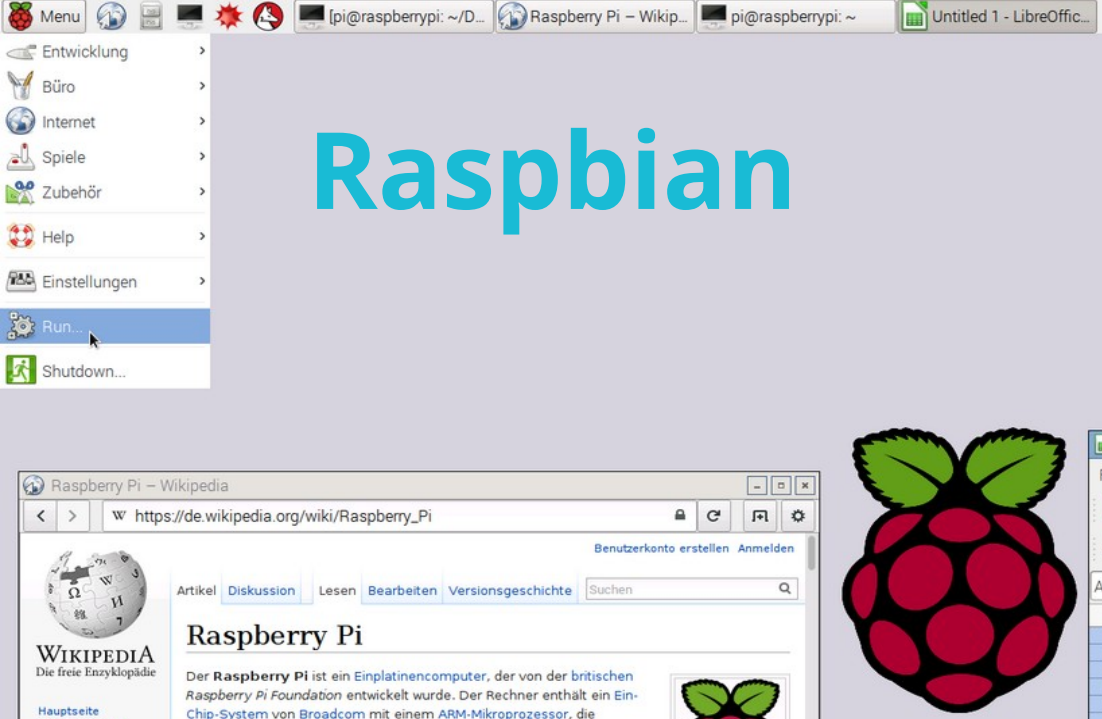
Smartphones, Smartv
- Android (kernel)
- webOS (LG)
- Tizen (samsung)
- HarmonyOS (huawei)

IoT y Embebidos
- Raspbian
- Fedora
- Ubuntu
- Tizen
- Alpine Linux

Seguridad
- Kali Linux
- Parrot OS
- Tails OS

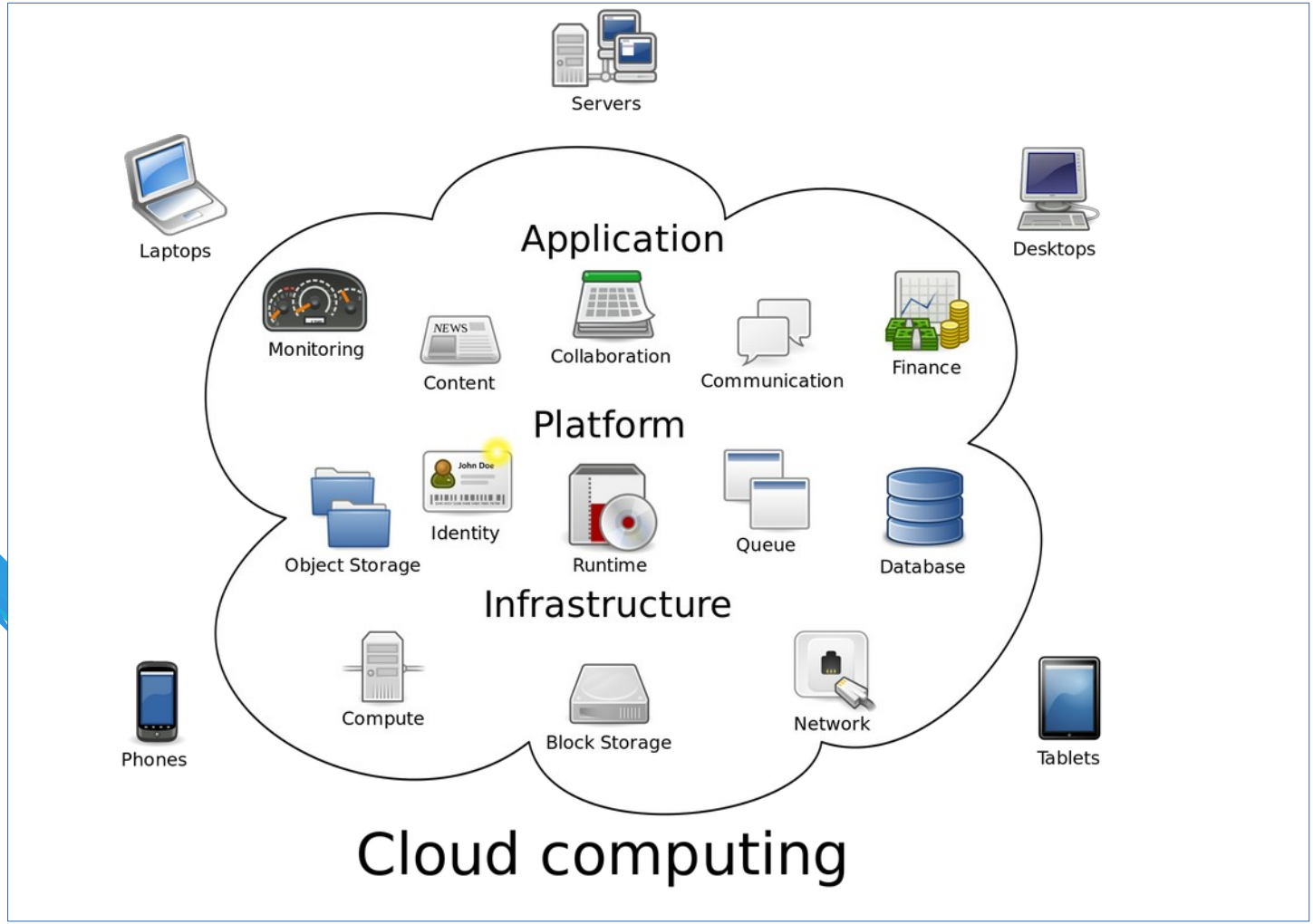

Applications
Places
Fri 04:21
1
Favorites
01 - Information Gathering
02 - Vulnerability Analysis
03 - Web Application Analysis
04 - Database Assessment
05 - Password Attacks
06 - Wireless Attacks
07 - Reverse Engineering
08 - Exploitation Tools
09 - Sniffing & Spoofing
10 - Post Exploitation
11 - Forensics
12 - Reporting Tools
13 - Social Engineering Tools
14 - System Services
Usual applications
cewl
crunch
hashcat
john
johnny
medusa
ncrack
ophcrack
pyrit
rainbowcra...
rcracki_mt
wordlists
Kali Linux
Activities Overview

Raspbian


Menu
[pi@raspberrypi: ~/D...
Raspberry Pi – Wikip...
pi@raspberrypi: ~
Untitled 1 - LibreOffic...
19:15
Entwicklung
Büro
Internet
Spiele
Zubehör
Help
Einstellungen
Run...
Shutdown...
pi@raspberrypi: ~
Datei Bearbeiten Reiter Hilfe
pi@raspberrypi ~ $ screenfetch
pi@raspberrypi
OS: Unknown 8.0 jessie
Kernel: armv6l Linux 4.1.7+
Uptime: 1h 12m
Packages: 1113
Shell: bash 4.3.30
Resolution: 1920x1200
DE: LXDE lxpanel 0.7.2
WM: OpenBox
GTK Theme: Not Found [GTK2], Not Found [GTK3]
Icon Theme: Not Found
Font: Not Found
CPU: ARMv6-compatible rev 7 (v6l) @ 700MHz
RAM: 171MB / 434MB
pi@raspberrypi ~ $
Raspberry Pi – Wikipedia
https://de.wikipedia.org/wiki/Raspberry_Pi
Benutzerkonto erstellen Anmelden
WIKIPEDIA
Die freie Enzyklopädie
Artikel Diskussion Lesen Bearbeiten Versionsgeschichte
Suchen
Raspberry Pi
Der Raspberry Pi ist ein Einplatinencomputer, der von der britischen Raspberry Pi Foundation entwickelt wurde. Der Rechner enthält ein Ein-Chip-System von Broadcom mit einem ARM-Mikroprozessor, die Grundfläche der Platine entspricht etwa den Abmessungen einer Kreditkarte. Der Raspberry Pi kam Anfang 2012 auf den Markt; sein großer Markterfolg wird teils als Revival des bis dahin weitgehend bedeutungslos gewordenen Heimcomputers zum Programmieren und Experimentieren angesehen.[1]
Logo der Raspberry-Pi-Stiftung
Der im Vergleich zu üblichen Personal Computern sehr einfach aufgebaute Rechner wurde von der Stiftung mit dem Ziel entwickelt, jungen Menschen den Erwerb von Programmier- und Hardwarekenntnissen zu erleichtern. Entsprechend niedrig wurde der Verkaufspreis angesetzt, der je nach Modell nur etwa 20 bis 35 USD beträgt.
Raspberry Pi 2 Model B
Als Betriebssystem kommen vor allem angepasste Linux-Distributionen mit grafischer Benutzeroberfläche zum Einsatz, das neueste Modell unterstützt auch Windows 10 in einer speziellen Internet-of-Things-Version. Eine native Festplatten-Schnittstelle ist nicht vorhanden, stattdessen werden SD-Speicherkarten als Bootmedium verwendet. Als Massenspeicher können
Hauptseite
Themenportale
Von A bis Z
Zufälliger Artikel
Mitmachen
Artikel verbessern
Neuen Artikel anlegen
Autorenportal
Hilfe
Letzte Änderungen
Kontakt
Spenden
Drucken/exportieren
Buch erstellen
Als PDF herunterladen
Druckversion
Werkzeuge
Links auf diese Seite
Änderungen an
Untitled 1 - LibreOffice Calc
File Edit View Insert Format Tools Data Window Help
Nimbus Sans L
10
A1:C22
X
Y1
Y2

Linux y el Cloud Computing

Most Valuable IT Certifications, 2019 (Source: Global Knowledge Study, 15 Top-Paying Certifications for 2019)	
Certification	**Annual Salary**
1. Google Cloud Certified Professional Cloud Architect	$ 139,529
2. PMP® - Project Management Professional	$ 135,798
3. Certified ScrumMaster	$ 135,441
4. AWS Certified Solutions Architect - Associates	$ 132,840
5. AWS Certified Developer – Associate	$ 130,369
6. MCSE: Server Infrastructure	$ 121,288
7. ITIL® Foundation	$ 120,566
8. CISM - Certified Information Security Manager	$ 118,412
9. CRISC - Certified in Risk and Information Systems Control	$ 117,395
10. CISSP - Certified Information Systems Security Professional	$ 116,900
11. CEH - Certified Ethical Hacker	$ 116,306
12. Citrix Certified Associate - Virtualization (CCA-V)	$ 113,442
13. Security+	$ 110,321
14. Network+	$ 107,143
15. CCNP Routing and Switching	$ 106,957


Servers
Laptops
Desktops
Application
Monitoring
Content
Collaboration
Communication
Finance
Platform
Identity
Object Storage
Runtime
Queue
Database
Infrastructure
Compute
Block Storage
Network
Phones
Tablets
Cloud computing

¿Qué es el Cloud?

Es un paradigma que permite ofrecer servicios de computación a través de Internet o en una red propia; estos servicios son:

-Infraestructura como servicio (IaaS), ej: Amazon AWS, Google Cloud Platform, Microsoft Azure, Open Stack.

-Plataforma como Servicio (PaaS), Ej: Heroku, SQL Azure, OpenShift.

-Software como Servicio (SaaS).
Ej: SalesForce, Gsuite, Office 365

- El Cloud Computing puede ser de 3 tipos:
  - Cloud Público, Ej: Amazon AWS, Azure, Google Cloud Platform, RackSpace, Huawei Cloud.
  - Cloud Privado, Ej: OpenStack, Vmware vCloud, Microsoft Cloud.
  - Híbrido

Linux y el Cloud

- La Infraestructura como servicio (IaaS), permite gestionar la infraestructura de T.I. (servidores, redes, almacenamiento, etc) a través de internet; mediante el pago por uso (cloud público), o en infraestructura propia (cloud privado) o una combinación de ambos (cloud híbrido)

Linux y el Cloud

- En el Cloud público, Amazon Web Services (AWS) es el líder del mercado.
AWS fue creado con Xen y Linux.
Linux se usa como S.O. base de la mayor parte de infraestructura de cloud, tanto públicos como privados. Linux incluso se usa mayoritariamente en Azure. z

Amazon Web Services

Compute

- **EC2** — Virtual Servers in the Cloud
- **EC2 Container Service** — Run and Manage Docker Containers
- **Elastic Beanstalk** — Run and Manage Web Apps
- **Lambda** — Run Code in Response to Events

Storage & Content Delivery

- **S3** — Scalable Storage in the Cloud
- **CloudFront** — Global Content Delivery Network
- **Elastic File System** — Fully Managed File System for EC2
- **Glacier** — Archive Storage in the Cloud
- **Snowball** — Large Scale Data Transport
- **Storage Gateway** — Hybrid Storage Integration

Database

- **RDS** — Managed Relational Database Service
- **DynamoDB** — Managed NoSQL Database
- **ElastiCache** — In-Memory Cache
- **Redshift**

Developer Tools

- **CodeCommit** — Store Code in Private Git Repositories
- **CodeDeploy** — Automate Code Deployments
- **CodePipeline** — Release Software using Continuous Delivery

Management Tools

- **CloudWatch** — Monitor Resources and Applications
- **CloudFormation** — Create and Manage Resources with Templates
- **CloudTrail** — Track User Activity and API Usage
- **Config** — Track Resource Inventory and Changes
- **OpsWorks** — Automate Operations with Chef
- **Service Catalog** — Create and Use Standardized Products
- **Trusted Advisor** — Optimize Performance and Security

Security & Identity

- **Identity & Access Management** — Manage User Access and Encryption Keys
- **Directory Service** — Host and Manage Active Directory
- **Inspector** — Analyze Application Security
- **WAF**

Internet of Things

- **AWS IoT** — Connect Devices to the Cloud

Game Development

- **GameLift** — Deploy and Scale Session-based Multiplayer Games

Mobile Services

- **Mobile Hub** — Build, Test, and Monitor Mobile Apps
- **Cognito** — User Identity and App Data Synchronization
- **Device Farm** — Test Android, iOS, and Web Apps on Real Devices in the Cloud
- **Mobile Analytics** — Collect, View and Export App Analytics
- **SNS** — Push Notification Service

Application Services

- **API Gateway** — Build, Deploy and Manage APIs
- **AppStream** — Low Latency Application Streaming
- **CloudSearch** — Managed Search Service
- **Elastic Transcoder** — Easy-to-Use Scalable Media Transcoding
- **SES** — Email Sending and Receiving Service

Resource Groups

A resource group is a collecti
resources that share one or m
Create a group for each proje
application, or environment in
account.

Create a Group | Ta

Additional Resources

Getting Started

Read our documentation or vi
training to learn more about A

AWS Console Mobile App

View your resources on the g
AWS Console mobile app, av
Amazon Appstore, Google Pl
iTunes.

AWS Marketplace

Find and buy software, launch
Click and pay by the hour.

AWS re:Invent Announcem

Explore the next generation o
capabilities. See what's new

Service Health

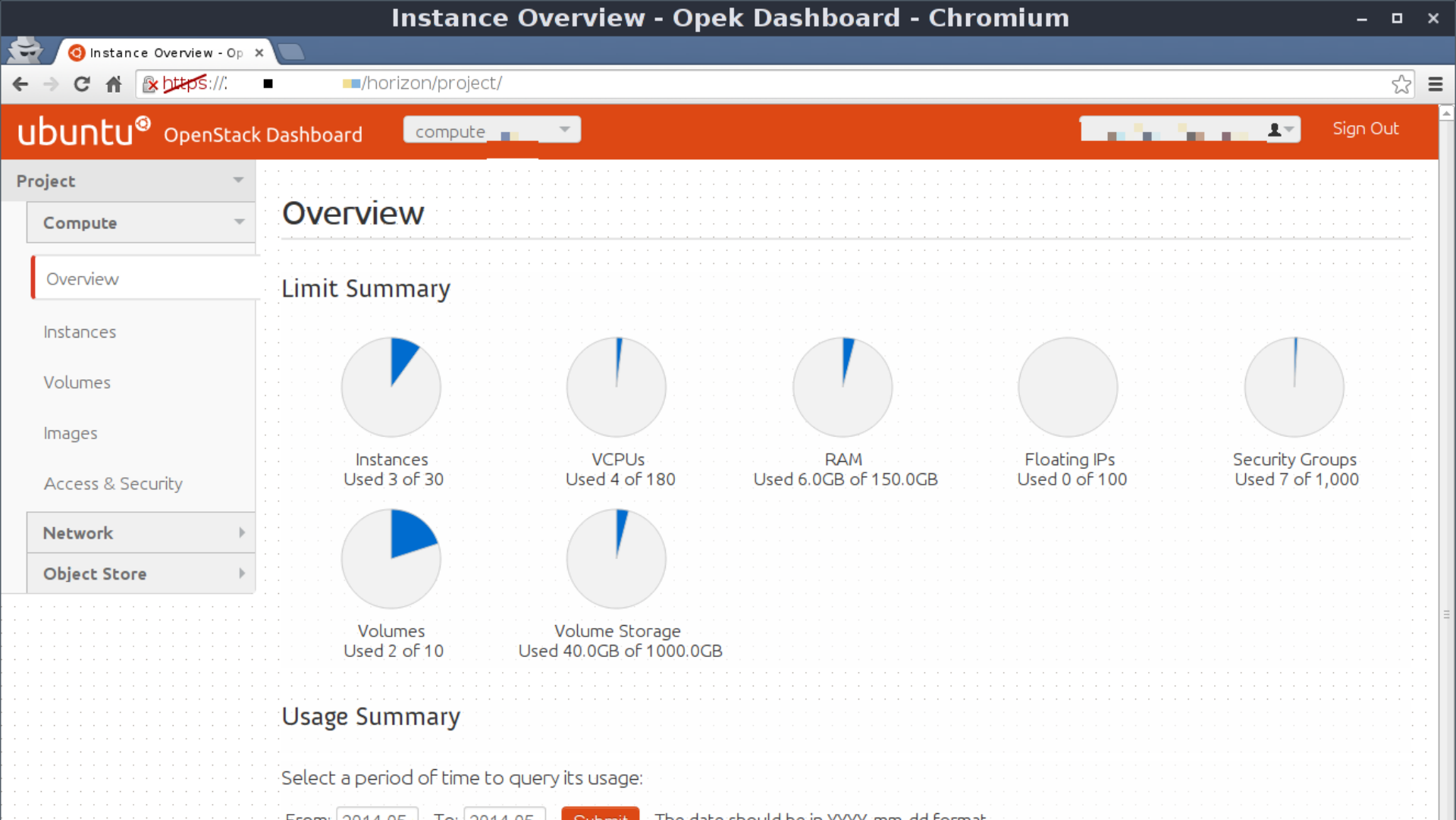
Linux y el Cloud

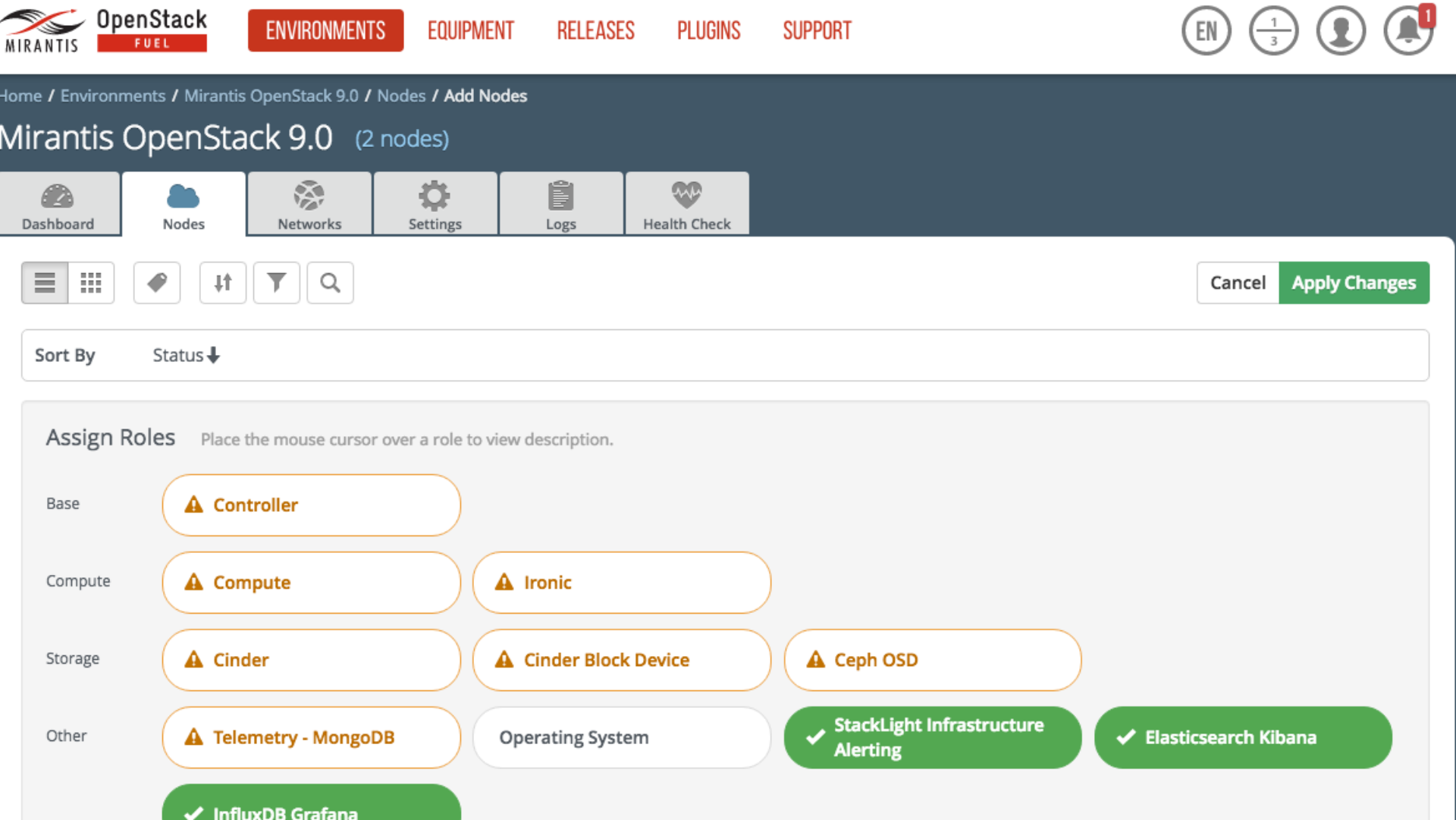
- Para crear una infraestructura de Cloud Privado, OpenStack es la solución más usa usada y la que mejor proyección tiene y se desarrolla con Ubuntu Linux.

Hay varios proveedores de OpenStack como Red Hat, SuSE, Mirantis, RackSpace, HP, IBM, etc.

Linux y el Cloud

- Grandes empresas han migrado y o brindan servicios cloud con Open Stack como son:
  AT&T, Paypal, Verizon, IBM, HP, Red Hat, Intel, RackSpace, Cisco, Dell, Mirantis, EMC, Symantec, etc.


Instance Overview - Opek Dashboard - Chromium
Instance Overview - Op
https://
/horizon/project/
ubuntu OpenStack Dashboard
compute
Sign Out
Project
Compute
Overview
Instances
Volumes
Images
Access & Security
Network
Object Store
Overview
Limit Summary
Instances
Used 3 of 30
VCPUs
Used 4 of 180
RAM
Used 6.0GB of 150.0GB
Floating IPs
Used 0 of 100
Security Groups
Used 7 of 1,000
Volumes
Used 2 of 10
Volume Storage
Used 40.0GB of 1000.0GB
Usage Summary
Select a period of time to query its usage:


MIRANTIS
OpenStack
FUEL
ENVIRONMENTS
EQUIPMENT
RELEASES
PLUGINS
SUPPORT
EN
Home / Environments / Mirantis OpenStack 9.0 / Nodes / Add Nodes
Mirantis OpenStack 9.0 (2 nodes)
Dashboard
Nodes
Networks
Settings
Logs
Health Check
Cancel
Apply Changes
Sort By
Status
Assign Roles
Place the mouse cursor over a role to view description.
Base
Controller
Compute
Compute
Ironic
Storage
Cinder
Cinder Block Device
Ceph OSD
Other
Telemetry - MongoDB
Operating System
StackLight Infrastructure Alerting
Elasticsearch Kibana
InfluxDB Grafana

Linux y Contenedores

- No hace mucho se desarrolló una nueva tecnología de virtualización ligera basada en Linux que son los contenedores: lxc, docker, lxd.

- Se pueden crear clusters de contenedores sobre máquinas virtuales, VPS o baremetal con kubernetes y openshift.

Pods - Kubernetes Dashboard

localhost:8001/api/v1/namespaces/kube-system/services/https:kubernetes-dashboard:/proxy/#!/pod?namespace=kube-system

kubernetes

Search

+ CREATE

Workloads > Pods

- Nodes
- Persistent Volumes
- Roles
- Storage Classes

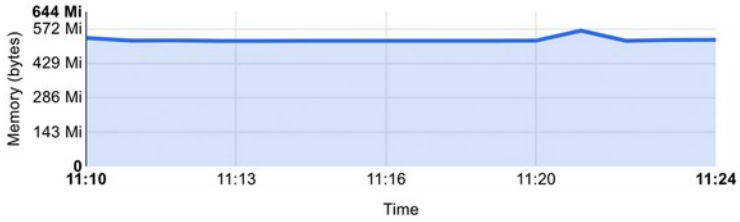
Namespace

kube-system

- Overview
- Workloads
  - Cron Jobs
  - Daemon Sets
  - Deployments
  - Jobs
  - Pods
  - Replica Sets
  - Replication Controllers
  - Stateful Sets
- Discovery and Load Balancing

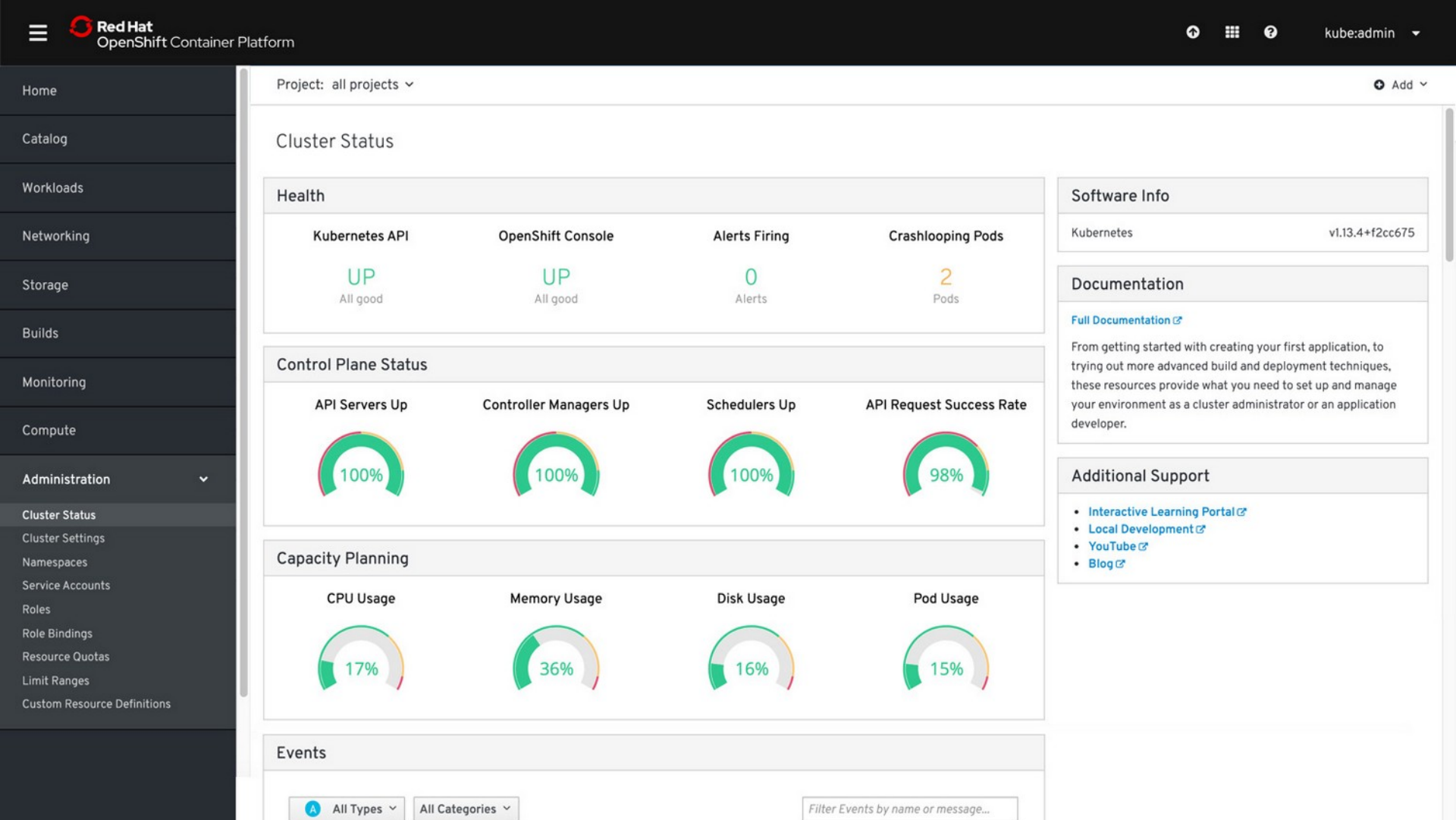
CPU usage

Memory usage



Pods

Name	Node	Status	Restarts	Age	CPU (cores)	Memory (bytes)
kubernetes-dashboard-7b9c7b	minikube	Running	0	27 minutes	0	19.746 Mi
heapster-qhq6r	minikube	Running	0	27 minutes	0	18.004 Mi
influxdb-grafana-77c7p	minikube	Running	0	27 minutes	0	43.926 Mi
kube-scheduler-minikube	minikube	Running	0	20 hours	0.01	11.930 Mi
etcd-minikube	minikube	Running	0	20 hours	0.015	58.445 Mi


Red Hat
OpenShift Container Platform
kube:admin
Home
Catalog
Workloads
Networking
Storage
Builds
Monitoring
Compute
Administration
Cluster Status
Cluster Settings
Namespaces
Service Accounts
Roles
Role Bindings
Resource Quotas
Limit Ranges
Custom Resource Definitions
Project: all projects
Add
Cluster Status
Health
Kubernetes API
UP
All good
OpenShift Console
UP
All good
Alerts Firing
0
Alerts
Crashlooping Pods
2
Pods
Control Plane Status
API Servers Up
100%
Controller Managers Up
100%
Schedulers Up
100%
API Request Success Rate
98%
Capacity Planning
CPU Usage
17%
Memory Usage
36%
Disk Usage
16%
Pod Usage
15%
Events
All Types
All Categories
Filter Events by name or message...
Software Info
Kubernetes
v1.13.4+f2cc675
Documentation
Full Documentation
From getting started with creating your first application, to trying out more advanced build and deployment techniques, these resources provide what you need to set up and manage your environment as a cluster administrator or an application developer.
Additional Support
Interactive Learning Portal
Local Development
YouTube
Blog