



LINUX 

BECAUSE MICROSOFT IS FOR CAPITALISTS RUNNING DOS

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WELCOME TO CIALUG

- Hello to those on the livestream
- We are trying to record this as well...
- How is it going?
Thoughts/Feedback, future topics? Let me know
- <https://cialug.org> is our website
- Listserve
- Slack/IRC



Welcome



ABOUT ME

- Insert witty comment here
- By day a slinger of code, by night I still do computer things
- My actions are my own not those of my employer...
- I have a website!!
<http://denner.co>
- Twitter @adenner

LINUX NEWS

Unternehmen gegen Dollar

Polens Wirtschaftsminister Jerzy Hausner sagte gestern, die Stärke des Zloty sei ein großes Problem für die Exporteure des Landes. Diese Situation kann sich verschärfen, wenn die Zloty sinken sollte. Hausner sagte, die EZB-Kurs offen wiederholte gestern frühere Aussagen, wonach die Aufwertung der europäischen Gemeinwährung „unwillkommen“ sei. Analysten halten Eingriffe der Notenbank ab einem Euro-Kurs von 140 \$ für wahrscheinlich. Die EZB...



Index	29.10.	29.11.	%	Änd.	11.11.	10.11.	9.11.
S&P 500	1181,71	1182,65	0,08	0,08	1181,71	1181,71	1181,71
Nasdaq	2108,84	2101,97	-0,33	-0,33	2108,84	2108,84	2108,84
Dow Jones	10511,74	10522,71	0,10	0,10	10511,74	10511,74	10511,74
Russell 2000	635,29	633,16	-0,33	-0,33	635,29	635,29	635,29

WALL STREET

Ein enttäuschender Ausblick des weltgrößten Wertpapierhandelskonzerns Wall Mart hat den Hochmut auf eine Jahresmiserabilien einen Dämpfer verpasst. Die führenden Börsennotierten Aktien sind nach einem Kursgewinn von 1,1% im Mittwoch...

LINUX NEWS (A BRIEF OVERVIEW)

- Python 3.8 released Includes assignment operator... so much drama! Positional only argument and vector call mechanism
- Pypy 7.2 released arm64 bit support, python 3.6 no longer beta, 3.7 is next CFFI backend new, new json decoder
- Security updates
- RMS and GNU... more drama
- Tensor Flow v2.0 API breaking changes and the keras api support
- New version of RPM (4.15.0 is out) faster parallel builds new if statements in spec builds
- Librem 5 phone... fully free GNU/linux phone
- Sudo Security bug (see next page)

SU-DOH (CVE-2019-14287)

- Requires non standard config
- i.e sudoers file (allow bob to run program as any user except root):
 - Mybox bob = (all !root) /usr/bin/vi
- Bob can then run command
- Sudo -u #-l vi



CENTOS 8 IS FINALLY HERE

THE SEARCH FOR CENTOS 9 BEGINS

ANDREW DENNER

CIALUG OCTOBER 16, 2019

WHAT THE @*** IS CENTOS?

- “CentOS is a Linux distribution that provides a free, community-supported computing platform functionally compatible with its upstream source, Red Hat Enterprise Linux.” –Wikipedia answer!
- It’s not “Redhat” or at least legally...
- But is sponsored by redhat? And governed by them?
- So that makes it more “free” (at least as in beer)
- No support
- Is always playing catchup
- No certs, but redhat



HOW LONG DO I HAVE?

- Centos 6 EOL is 30 Nov 2020
- Centos 7 EOL is 30 June 2024
- Centos 8 EOL is 31 May 2029

A long-exposure photograph of a waterfall in a dense forest. The water is blurred, creating a soft, ethereal effect as it falls over moss-covered rocks. The surrounding foliage is vibrant green, with sunlight filtering through the trees. The scene is framed by a black overlay on the left side containing text.

WHAT'S NEXT? CENTOS STREAM

- Latest and greatest of everything, with updates several time a day
- Don't use for production!!
- Think of it as a “after Fedora but before RHEL” linux
- Old school Centos is not going anywhere

WHAT CHANGED

- Linux Kernel 4.18
- Yum is now based on DNF
- Git 2.18 as well as Mercurial 4.8 and Subversion 1.10
- Python 3.6 is now default, but not auto installed (you still can use python 2.7 but really?)
- Node.js 10.01 PHP 7.2 Ruby 5.26 and SWIG 3.0
- GCC 8.2 now with newer C++ language standards, optimizations warnings and hardware support
- MariaDB 10.3, MySQL8 Postgres 10 and Redis 5, Apache 2.4 and nginx 1.14
- Gnome 3.28 and Wayland (you still can use x.org if you need/want)
- Networking: nftables replaced iptables as well as firewalld daemon is using it as it's backend.
- No Docker (see next slide)



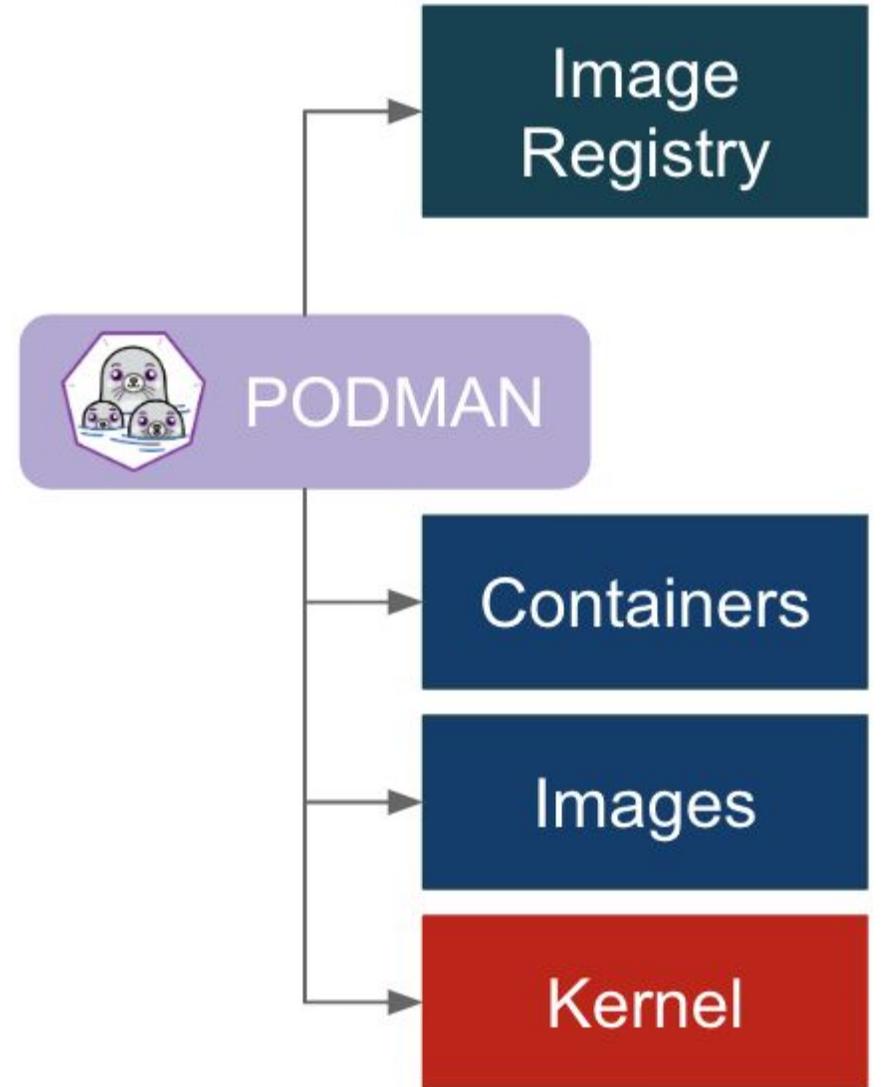
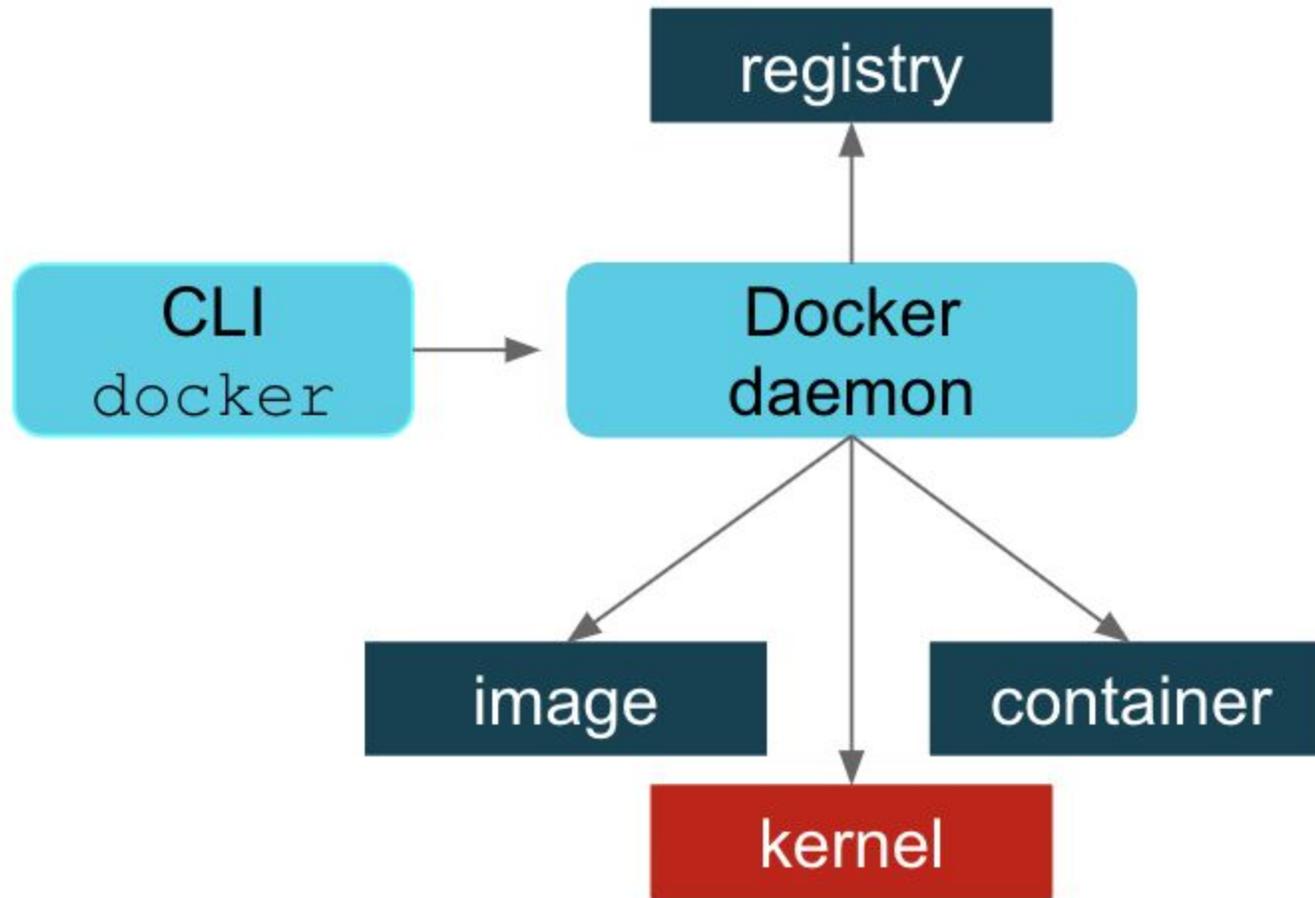
podman



buildah

THE END OF DOCKER? (PODMAN AND BUILDAH)

- With docker there is a daemon process that runs as root (ignore rootless for now) responsible for everything
 - Single point of failure
 - Single owner of all child processes leading to orphans on failure
 - Security issues as well (has to run everything as root authority)
- Podman simply directly interacts with image registry and storage
- Linux kernel interactions via runC container runtime process (no daemon)
- Good news is it is drop in compatible with docker (they claim can just run alias docker=podman)



PODMAN CONT.



Added convenience --all for rm and rmi



Non root abilities (like rootless docker)

By default stores images and containers in home directory ~/.local/share/containers



Local image repo is /var/lib/containers (new OCI standard)



Images are compatible OCI (you can use quay.io, dockerhub, gitlab etc)



Registries are setup in registries.conf by default docker hub first



It makes move to K8 easier “podman generate kub”



BUILDDAH

- Podman build does work, but buildah is more powerful
- Can use bash scripts to build images, like how write docker file
- Fine grain image control of layers
- Out of scope to dive too deeply, this is another month's presentation



DEMOS

- <https://asciinema.org/a/4keUFlwG4B3V6PI875YB97BAg> installing podman-docker
- <https://asciinema.org/a/ILphyFuw2Qk3X7XTqvSwKyble> Pulling a “hello world” example of a docker image

HOW DO I UPGRADE?

HERE THERE BE DRAGONS



HOW DO I UPGRADE FROM CENTOS 7?

- Official answer is you don't!
- Why? Apparently no one cares enough to work on it (or is willing to put enough time into it)
- Redhat does support some migrations, i.e. using the Leapp app, but this is not supported for centos, and apparently almost no one cares... <https://bugs.centos.org/view.php?id=16116>
- That said, why not 🙄 Notes from one man's journey is at <https://cromwell-intl.com/open-source/rhel-centos-5-6-7-8/>
- Standard disclaimer “Don't do this on a machine you haven't backed up, care about, or is in production!”

THE INSTALL PROCESS



CentOS Linux 8.0.1905

Install CentOS Linux 8.0.1905

Test this media & install CentOS Linux 8.0.1905

Troubleshooting



Press Tab for full configuration options on menu items.

Automatic boot in 47 seconds...

```
[ OK ] Stopped target Remote File Systems (Pre).
[ OK ] Stopped dracut mount hook.
[ OK ] Stopped dracut pre-mount hook.
[ OK ] Stopped dracut initqueue hook.
      Stopping Open-iSCSI...
[ OK ] Stopped target System Initialization.
[ OK ] Stopped target Local Encrypted Volumes.
[ OK ] Stopped Create Volatile Files and Directories.
[ OK ] Stopped target Local File Systems.
[ OK ] Stopped target Local File Systems (Pre).
[ OK ] Stopped target Swap.
[ OK ] Stopped Apply Kernel Variables.
[ OK ] Started Plymouth switch root service.
[ OK ] Stopped Open-iSCSI.
      Stopping Device-Mapper Multipath Device Controller...
      Stopping iSCSI UserSpace I/O driver...
[ OK ] Closed Open-iSCSI iscsid Socket.
[ OK ] Stopped iSCSI UserSpace I/O driver.
[ OK ] Started Setup Virtual Console.
[ OK ] Closed Open-iSCSI iscsiui Socket.
[ OK ] Stopped Device-Mapper Multipath Device Controller.
[ OK ] Stopped udev Wait for Complete Device Initialization.
[ OK ] Stopped udev Coldplug all Devices.
[ OK ] Stopped dracut pre-trigger hook.
      Stopping udev Kernel Device Manager...
[ OK ] Stopped udev Kernel Device Manager.
[ OK ] Stopped Create Static Device Nodes in /dev.
[ OK ] Stopped Create list of required static device nodes for the current kernel.
[ OK ] Stopped dracut pre-udev hook.
[ OK ] Stopped dracut cmdline hook.
[ OK ] Closed udev Kernel Socket.
[ OK ] Closed udev Control Socket.
      Starting Cleanup udevd DB...
[ OK ] Started Cleanup udevd DB.
[ OK ] Reached target Switch Root.
      Starting Switch Root...
```

Starting installer, one moment...

[anaconda11:main* 2:shell 3:log 4:storage-log 5:program-log Switch tab: Alt+Tab | Help: F1

WELCOME TO CENTOS LINUX 8.0.1905.

What language would you like to use during the installation process?

English	English >	English (United States)
Afrikaans	Afrikaans	English (United Kingdom)
አማርኛ	Amharic	English (India)
العربية	Arabic	English (Australia)
অসমীয়া	Assamese	English (Canada)
Asturiano	Asturian	English (Denmark)
Беларуская	Belarusian	English (Ireland)
Български	Bulgarian	English (New Zealand)
বাংলা	Bangla	English (Nigeria)
		English (Hong Kong SAR China)

LOCALIZATION

 **Keyboard**
Getting list of layouts... **Language Support**
English (United States) **Time & Date**
Americas/New York timezone

SOFTWARE

 **Installation Source**
Local media **Software Selection**
Server with GUI

SYSTEM

 **Installation Destir**
Automatic partitioning sele **KDUMP**
Kdump is enabled **Network & Host M**
Not connected **SECURITY POLICY**
No content found

Quit

Begin Installation

We won't touch your disks until you click 'Begin Installation'.

TIME & DATE

Done

CENTOS LINUX 8.0.1905 INSTALLATION

us

Help!

Region: Americas

City: Chicago

Network Time

OFF



00:06



24-hour

AM/PM

10

15

2019

You need to set up networking first if you want to use NTP

[Done](#) us[Help!](#)

 **Ethernet (enp0s3)**
Intel Corporation 82540EM Gigabit Ethernet Controller

+ -

**Ethernet (enp0s3)**

ON

Connected

Hardware Address 08:00:27:25:D6:E6

Speed 1000 Mb/s

IP Address 10.0.2.15/24

Default Route 10.0.2.2

DNS 10.0.0.1,10.2.0.1

[Configure...](#)

Host Name: localhost.localdomain

[Apply](#)

Current host name: localhost

Done

us

Help!

Base Environment

- Server with GUI**
An integrated, easy-to-manage server with a graphical interface.
- Server**
An integrated, easy-to-manage server.
- Minimal Install**
Basic functionality.
- Workstation**
Workstation is a user-friendly desktop system for laptops and PCs.
- Custom Operating System**
Basic building block for a custom CentOS system.
- Virtualization Host**
Minimal virtualization host.

Add-Ons for Selected Environment

- Client tools for connecting to a backup server and doing backups.
- GNOME Applications**
A set of commonly used GNOME Applications.
- Headless Management**
Tools for managing the system without an attached graphical console.
- Internet Applications**
Email, chat, and video conferencing software.
- Office Suite and Productivity**
A full-purpose office suite, and other productivity tools.
- Remote Desktop Clients**
None
- Smart Card Support**
Support for using smart card authentication.
- Legacy UNIX Compatibility**
Compatibility programs for migration from or working with legacy UNIX environments.
- Container Management**
Tools for managing Linux containers
- Development Tools**
A basic development environment.

[Done](#) us[Help!](#)

Device Selection

Select the device(s) you'd like to install to. They will be left untouched until you click on the main menu's "Begin Installation" button.

Local Standard Disks

16 GiB



ATA VBOX HARDDISK

sda / 16 GiB free

Disks left unselected here will not be touched.

Specialized & Network Disks

[Add a disk...](#)

Disks left unselected here will not be touched.

Storage Configuration

 Automatic Custom I would like to make additional space available.[Full disk summary and boot loader...](#)1 disk selected; 16 GiB capacity; 16 GiB free [Refresh...](#)

LOCALIZATION

**Keyboard***English (US)***Language Support***English (United States)***Time & Date***Americas/Chicago timezone*

SOFTWARE

**Installation Source***Local media***Software Selection***Workstation*

SYSTEM

**Installation Destination***Automatic partitioning selected***KDUMP***Kdump is enabled***Network & Host Name***Wired (enp0s3) connected***SECURITY POLICY***No content found*[Quit](#)[Begin Installation](#)

We won't touch your disks until you click 'Begin Installation'.

USER SETTINGS

**Root Password***Root password is set***User Creation***Administrator adenner will
be created* Downloading packages

[Done](#) us[Help!](#)

The root account is used for administering the system. Enter a password for the root user.

Root Password:

 Weak

Confirm:



The password fails the dictionary check - it does not contain enough DIFFERENT characters You will have to press **Done** twice to confirm it.

Done

 us

Help!

Full name User name

Tip: Keep your user name shorter than 32 characters and do not use spaces.

 Make this user administrator Require a password to use this accountPassword  WeakConfirm password 

Advanced...



The password fails the dictionary check - it does not contain enough DIFFERENT characters You will have to press **Done** twice to confirm it.

Done

us

Help!

Full name adenner

ADVANCED USER CONFIGURATION

Home directory: /home/adenner

User and Group IDs

 Specify a user ID manually:

1000

-

+

 Specify a group ID manually:

1000

-

+

Group Membership

Add user to the following groups:

wheel

Example: wheel, my-team (1245), project-x (29935)**Tip:**

You may input a comma-separated list of group names and group IDs here. Groups that do not already exist will be created; specify their GID in parentheses.

Cancel

Save Changes



The password fails the dictionary check - it does not contain enough DIFFERENT characters You will have to press Done twice to confirm it.

USER SETTINGS

**Root Password***Root password is set***User Creation***Administrator adenner will
be created* Installing liborcus.x86_64 (319/1583)

USER SETTINGS

**Root Password***Root password is set***User Creation***Administrator adenner will
be created*

Complete!

CentOS Linux is now successfully installed and ready for you to use!
Go ahead and reboot to start using it!

Reboot

LICENSING



License Information

License not accepted

QUIT

FINISH CONFIGURATION



Please complete items marked with this icon before continuing to the next step.

[Done](#) us[Help!](#)

License Agreement:

CentOS 8 Linux EULA

CentOS 8 Linux comes with no guarantees or warranties of any sorts, either written or implied.

The Distribution is released as GPLv2. Individual packages in the distribution come with their own licences. A copy of the GPLv2 license is included with the distribution media.

 I accept the license agreement.

 **adenner**

Not listed?



- 
- <https://developers.redhat.com/blog/2019/02/21/podman-and-buildah-for-docker-users/>
 - <https://centos.org/>
 - <https://buildah.io/>
 - <https://podman.io/>
 - https://opensource.com/article/19/2/how-does-rootless-podman-work?extIdCarryOver=true&sc_cid=701f2000010H7JAAW