

Docker and Fedora

Arun S A G

Flock 2014, Prague

August 8, 2014



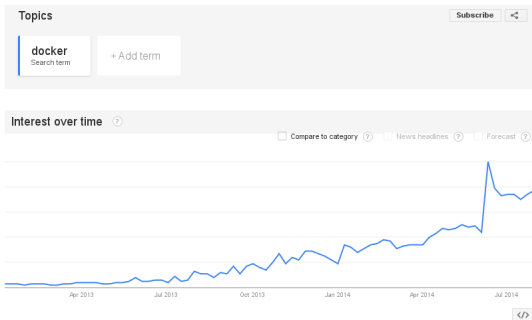
Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

What is docker?



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

What is docker?



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

What is docker?

- An Application launcher?



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

What is docker?

- An Application launcher?
- An open platform for distributed applications



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

What is a container?

- Cgroups for resource management



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

What is a container?

- Cgroups for resource management
- Namespaces for resource isolation



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

- Accessible at `/sys/fs/cgroup`



Cgroups

- Accessible at `/sys/fs/cgroup`
- Tools `systemd-cgls` , `systemd-cgtop`



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Cgroups

- Accessible at `/sys/fs/cgroup`
- Tools `systemd-cgls` , `systemd-cgtop`
- Limiting memory usage



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Cgroups

- Accessible at `/sys/fs/cgroup`
- Tools `systemd-cgls` , `systemd-cgtop`
- Limiting memory usage
- CPU share



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Cgroups

- Accessible at `/sys/fs/cgroup`
- Tools `systemd-cgls` , `systemd-cgtop`
- Limiting memory usage
- CPU share
- **Disk I/O**



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

- Mount namespaces



Namespaces

- Mount namespaces
- UTS namespaces



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Namespaces

- Mount namespaces
- UTS namespaces
- **IPC namespaces**



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Namespaces

- Mount namespaces
- UTS namespaces
- IPC namespaces
- PID namespaces



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Namespaces

- Mount namespaces
- UTS namespaces
- IPC namespaces
- PID namespaces
- Network namespaces



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Namespaces

- Mount namespaces
- UTS namespaces
- IPC namespaces
- PID namespaces
- Network namespaces
- User namespaces



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Table Of Contents

1 Comparison

2 Status of container/virt technologies in Fedora



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

- Almost no isolation



Chroots

- Almost no isolation
- Malicious process can break out of it



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Chroots

- Almost no isolation
- Malicious process can break out of it
- **Cannot be used as a sandbox**



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

Chroots

- Almost no isolation
- Malicious process can break out of it
- Cannot be used as a sandbox
- Works well for building rpms - mock



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

- Built on top of cgroups and namespaces



- Built on top of cgroups and namespaces
- Available via 'lxc' package on fedora



- Built on top of cgroups and namespaces
- Available via 'lxc' package on fedora
- **lxc-create, lxc-attach, lxc-* commands to create manage containers**



- Built on top of cgroups and namespaces
- Available via 'lxc' package on fedora
- lxc-create, lxc-attach, lxc-* commands to create manage containers
- **Not very integrated-packaged solution**



- yum install docker-io



- yum install docker-io
- Focuses on packaging - portable



- yum install docker-io
- Focuses on packaging - portable
- **Application centric**



- yum install docker-io
- Focuses on packaging - portable
- Application centric
- **Automatic build**



- yum install docker-io
- Focuses on packaging - portable
- Application centric
- Automatic build
- **Versioning**



- yum install docker-io
- Focuses on packaging - portable
- Application centric
- Automatic build
- Versioning
- **Component reuse**



Table Of Contents

1 Comparison

2 Status of container/virt technologies in Fedora



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

- Outstanding support for docker-io, docker-registry



- Outstanding support for docker-io, docker-registry
- Fedora docker images are available publicly



lxc

-  [RSS Feed](#)
-  [Fedora Community](#)
-  [Open Bugs](#)
-  [Package Database](#)
-  [Koji Buildsystem](#)
-  [Package Source](#)

3 updates found

ID	Update	Release	Type	Status	Request	Submitter	Submitted
FEDORA-2013-15893	lxc-0.9.0-2.fc19	Fedora 19		stable		thm	2013-09-04 18:18:41
FEDORA-EPEL-2013-11454	lxc-0.9.0-2.el6	Fedora EPEL 6		stable		thm	2013-09-04 18:18:06
FEDORA-2013-15896	lxc-0.9.0-2.fc20	Fedora 20		stable		thm	2013-09-04 18:16:38



Fedora Contributor Conference
August 6-9, 2014
Prague, Czech Republic

- Review request is at [rhbz#1020456](#)



- Review request is at [rhbz#1020456](#)
- **Vagrant-kvm plugin**



Questions?

