

RED HAT
JMMIT

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RHEL ATOMIC HOST

Introduction and Quickstart

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AGENDA

define a problem

propose a solution

containers explained - quickly

RHEL Atomic Host and Kubernetes Introductions

atomic upgrades and rollbacks - demo

extending Atomic Host with containers - demo

introducing a Kubernetes cluster - demo

conclusions and q&a



DEFINING THE PROBLEM

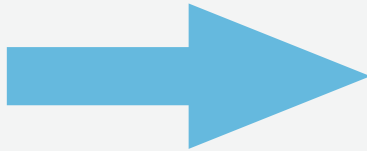
"we need more apps faster!
and spend less money!"



The Business

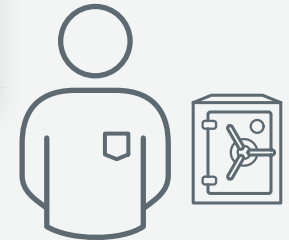


Development



The Thunderdome

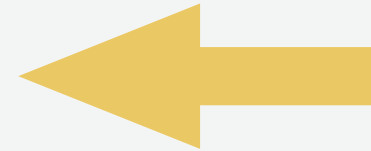
"we have to be
compliant and secure!
and spend less money!"



Security/Compliance



Operations



PROPOSING THE SOLUTION

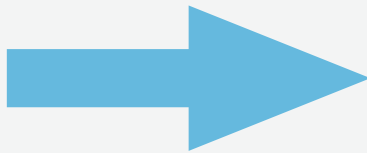
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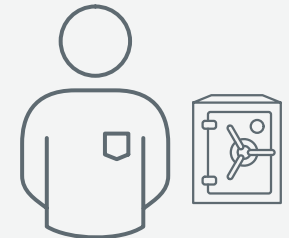


Development



Dev Ops
Happy Land

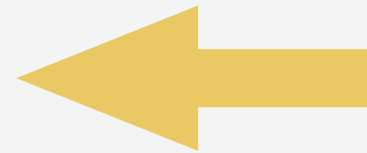
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Security/Compliance



Operations



CONTAINED IN 60 SECONDS

Modern Linux containers use an established set of Linux kernel tools to better isolate applications.

- kernel control groups (cgroups)

- SELinux

- kernel namespaces

Containers are already Standard Procedure for many of the biggest IT shops, and are far from new.

- Google launches around 2,000,000,000 containers per week with their in-house solution

- Google has been working on this for a decade.



PROJECT ATOMIC

features and highlights

Atomic is a specialized implementation of RHEL with a small footprint. It is heavily optimized to run docker containers in a clustered environment.

It's designed to be a key component in your new hybrid clouds (Hi, Openstack!)

SELinux

Docker

kubernetes

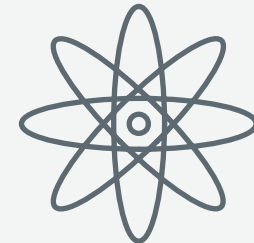
rpmtree

systemd

atomic upgrades and rollbacks (get the name now?)

it's all about the container

lets you make clusters of your new containers



A FEW NUTS AND BOLTS

It's RHEL. Just very specialized.

ABI and kABI are preserved

**except for docker and kubernetes*

Containerized apps enjoy ABI stability

Hardware and Hypervisor certifications are inherited from RHEL 7

So are all of the CCP requirements and certification

ISV certification - subject to the container that's running

Lifecycle - 3 years



KUBERNETES IN A FLASH

Kubernetes is the orchestration tool that Atomic Hosts uses to scale our container workloads. There are 3 work units that we are going to talk about today.

PODS

The basic building block. A pod is a collection of one or more tightly coupled containers. They are deployed on the same host and environment.

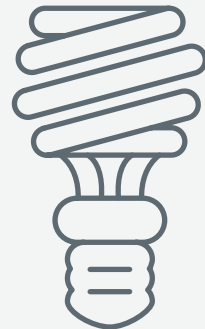
Think of everything you would normally run in its own VM.


SERVICES

The front door. A service defines which containers will be used, which ports will be available and other options. When you access a service, it handles all of the internal routing to the proper container(s) to get the work done.

REPLICATION CONTROLLERS

Similar to a pod, but it also contains information required to scale out multiple copies of the same pod horizontally.



A person wearing blue nitrile gloves is holding a small, intricate electronic component, possibly a microchip or sensor, between their fingers. The background is a blurred laboratory or workshop setting. The entire image is overlaid with a semi-transparent teal gradient, which is darker in the top-left and bottom-right corners and lighter in the center. The text is centered over the image.

LIVE DEMO TIME
PLEASE CROSS YOUR
FINGERS



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Q&A

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