

## Linux Containers Overview Demo

### Red Hat Summit 2015 Lightning Talk, Chris Negus

#### Demo RHEL Atomic Host

```
subscription-manager register --auto-attach
cat /etc/redhat-release
rpm -qa | less
yum install joe
atomic host status
atomic host upgrade
atomic <Tab><Tab>
```

#### Demo Docker

```
systemctl status docker
```

- **Search and pull images**

```
docker search rhel
docker pull rhel:latest
```

- **Run a simple bash container**

```
docker run -it rhel bash
  cat /etc/redhat-release
  ps      fails
  yum install -y procps net-tools iproute
  ps -ef
  ip a
  df -h
  exit
```

- **Check images and containers**

```
docker images
docker ps
docker ps -a
docker stop python_web
docker start python_web
```

- **Run Web server container:**

```
mkdir -p /var/www/html
echo "Server up and running" > /var/www/html/test.txt
restorecon -Rv /var/www
docker run -d -p 8000:8000 --name="python_web" \
  -w /var/www/html -v /var/www/html:/var/www/html rhel \
  /bin/python -m SimpleHTTPServer 8000
curl localhost:8000/test.txt
ps -ef | grep SimpleHTTP
docker ps
docker inspect python_web | less
docker exec -it python_web bash
```

- **Special privileged containers**

```
atomic install rhel7/rhel-tools
atomic info rhel7/rhel-tools
atomic run rhel7/rhel-tools
atomic run rhel7/rhel-tools ps -ef
atomic run rhel7/rhel-tools man docker
```

## Demo Kubernetes

- **Creating a Kubernetes Cluster to Run Docker Formatted Container Images**

<https://access.redhat.com/node/1353773>

- **Troubleshooting Kubernetes**

<https://access.redhat.com/articles/1432533>

### On master:

#### Check systemd services:

```
for SERVICES in etcd flannel kube-apiserver kube-controller-manager kube-scheduler;
do echo --- $SERVICES --- ; systemctl is-active $SERVICES ;
systemctl is-enabled $SERVICES ; echo "" ; done
```

#### Check kubernetes json or yaml files

```
kubectl create -f ... json or yaml file
```

Node definition files: **node1.json node2.json**

Replication controller files: **db-rc.yaml webserver-rc.yaml**

Service files: **db-service.yaml webserver-service.yaml**

Networking files: **flannel-config.json**

#### Check kubernetes features

```
kubectl get nodes
```

```
kubectl get service
```

```
kubectl get pod
```

```
kubectl get replicationcontroller
```

```
kubectl get endpoints
```

### On master, then on nodes:

```
curl http://10.20.52.2/index.html
```

```
curl http://10.20.52.2/cgi-bin/action
```

### On nodes:

```
for SERVICES in flannel docker kube-proxy.service kubelet.service; \
do echo --- $SERVICES --- ; systemctl is-active $SERVICES ; \
systemctl is-enabled $SERVICES ; echo "" ; done
```

```
docker ps
```

```
iptables -t nat -vnL | less
```

## Try out Docker Containers:

### Get Started with Docker Formatted Container Images on Red Hat Systems

<https://access.redhat.com/articles/881893>

### Try out RHEL Atomic Host:

### Getting Started with Red Hat Enterprise Linux Atomic Host

<https://access.redhat.com/articles/rhel-atomic-getting-started>

### Try out Kubernetes:

### Creating a Kubernetes Cluster to Run Docker Formatted Container Images

<https://access.redhat.com/node/1353773>

### Get more Atomic, Docker and Kubernetes Documentation:

<https://access.redhat.com/articles/rhel-atomic-documentation>