



Red Hat Openshift Webinar

Virtual session | 12th February, 2021



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Housekeeping rules:

Participants are muted upon entry and during the event

Questions can be submitted via the Q&A section

All unanswered questions are going to be addressed in the last 10 minutes of each section.

This session is going to be recorded

ABOUT THIS WEBINAR

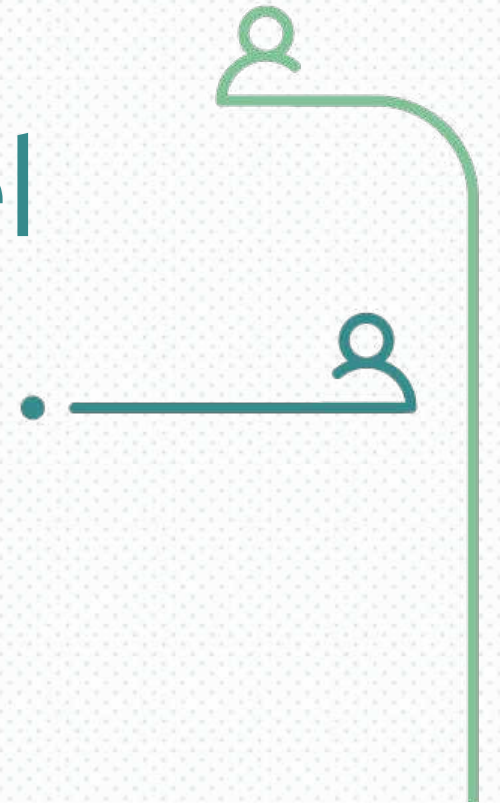
DEPLOYING CONTAINERIZED APPLICATIONS

- An introduction to Containers, Podman, Kubernetes and Red Hat OpenShift Platform.
- Demonstration - How Customers can use their knowledge transferred by Red Hat Learning in OpenShift Productive Clusters
- How Learning can be used to accelerate their Business with OpenShift, after completing the OpenShift Learning Path for Dev and Ops.

AGENDA

- Containers, Docker/Podman, Kubernetes/Openshift
 - Containers and The Kernel
 - Docker vs Podman
 - Kubernetes vs Openshift
- Demo - An Application Deployment throughout the Ages
 - Stand-alone App
 - Stand-alone Container
 - Deployed in a Cluster
- Let's talk about Openshift
- Red Hat Training for Containerization and Openshift
- Q&A

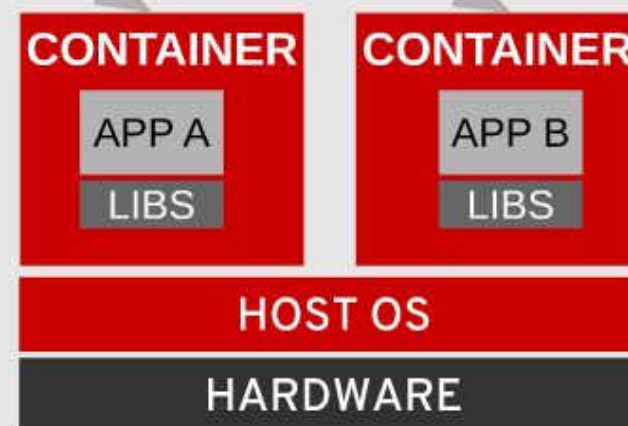
Containers and The Kernel



Traditional OS



Containers



Container versus operating system differences

Some technical details

What Are Containers ?

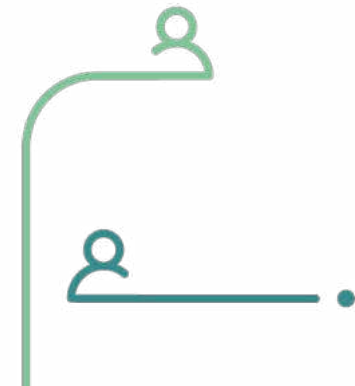
- Containers are processes on a Linux system
- PID tree in a Container
- The Linux system uses CGROUPS and NAMESPACES to manage resources for a Container
- The Linux System does not understand the concept of a 'Container'

Containers need a container runtime (like run-c, Cri-o or Docker) to operate

To build and maintain container images, we need Podman (or Docker)

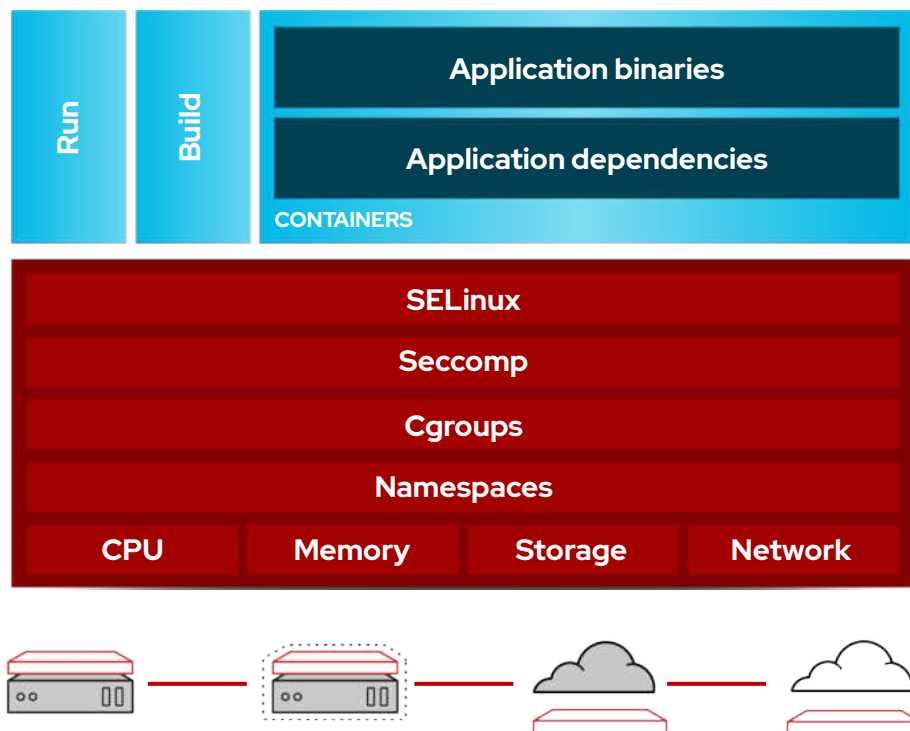
What Is Kubernetes and What About OpenShift ?

- Kubernetes is a complex framework to orchestrate Containers at scale
- OpenShift is Red Hat's solution to make Kubernetes into an Enterprise Solution



Containers are Linux

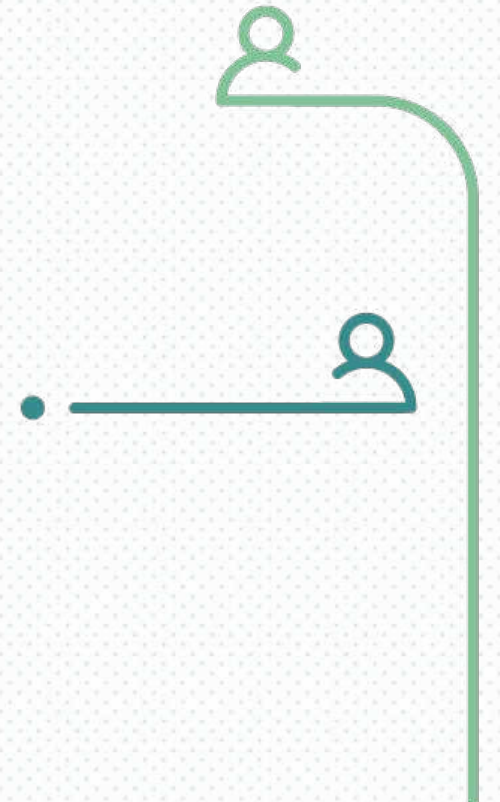
Linux is Red Hat Enterprise Linux



- ▶ **Consistency** across bare-metal, virtual, & cloud architectures
- ▶ **More secure** container isolation called on by the container runtime
- ▶ **Reliable service** for container start, manage, & stop
- ▶ **Container userspace** includes the libraries, apps, & services developers need

Red Hat Enterprise Linux gives consistency to containers

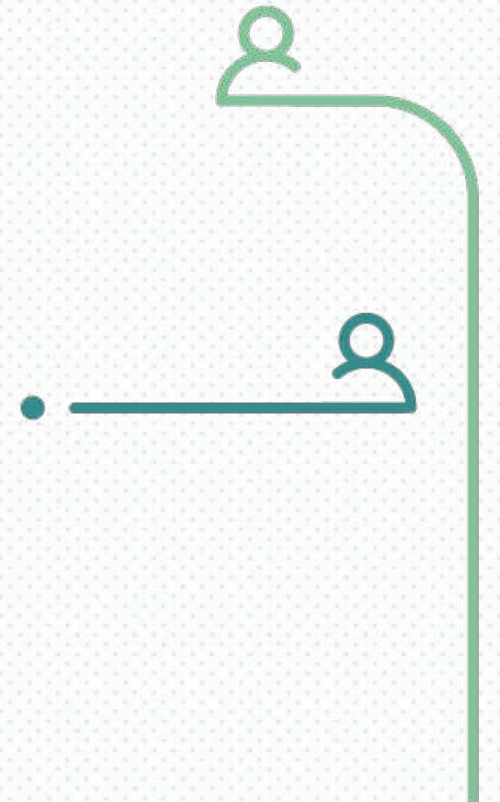
Docker vs Podman



Docker

Docker is a set of platform as a service (PaaS) products that use OS-level virtualization to deliver software in packages called containers.

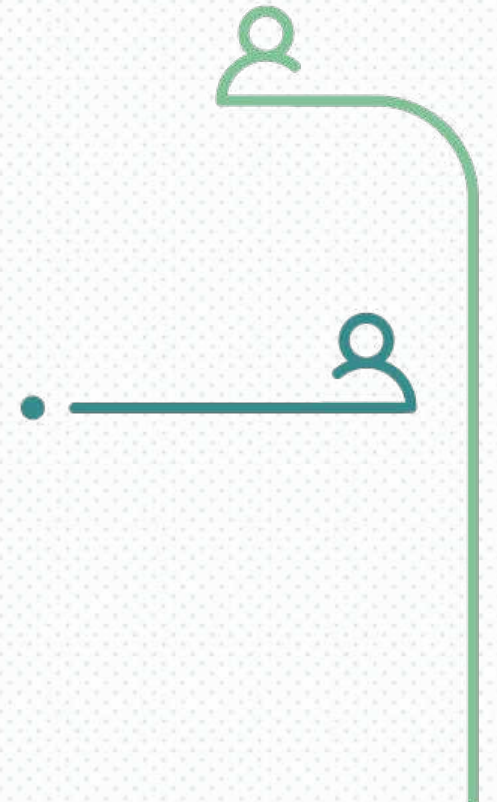
Source: [https://en.wikipedia.org/wiki/Docker_\(software\)](https://en.wikipedia.org/wiki/Docker_(software))



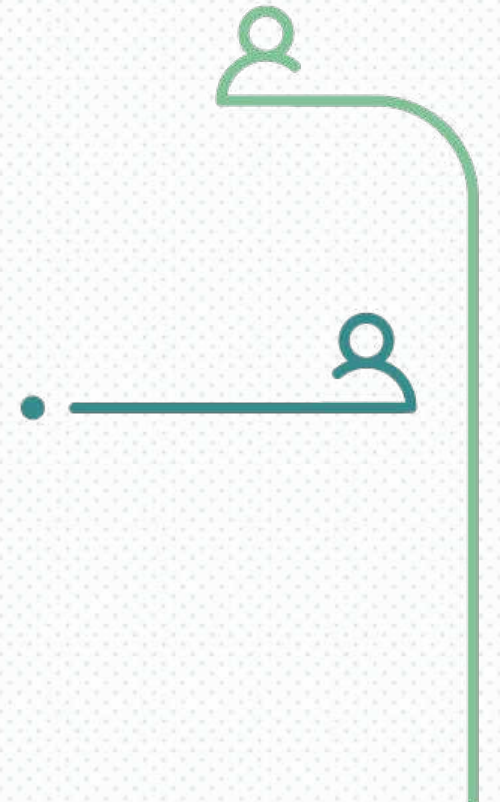
Podman

What is Podman? Podman is a daemonless container engine for developing, managing, and running OCI Containers on your Linux System. Containers can either be run as root or in rootless mode.

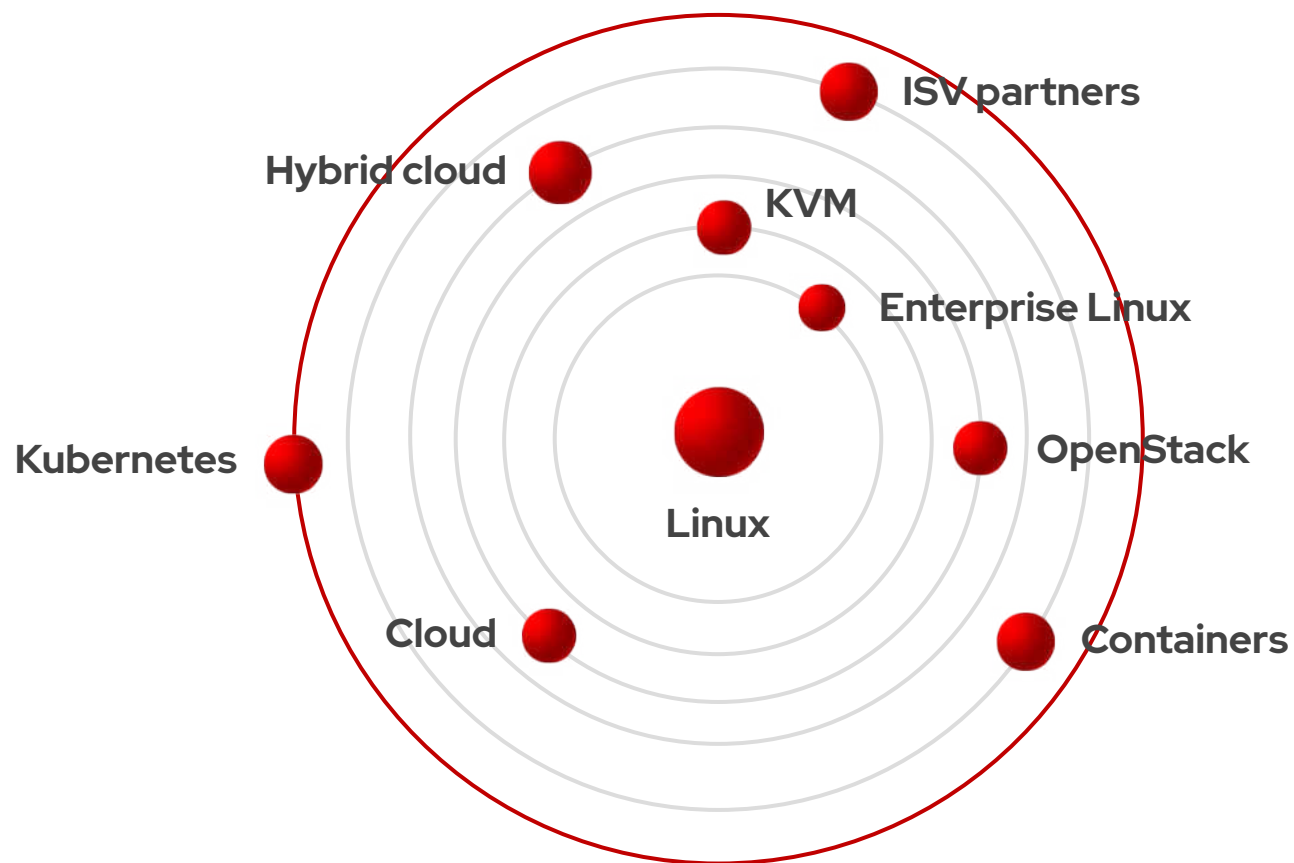
Source: <https://podman.io/>



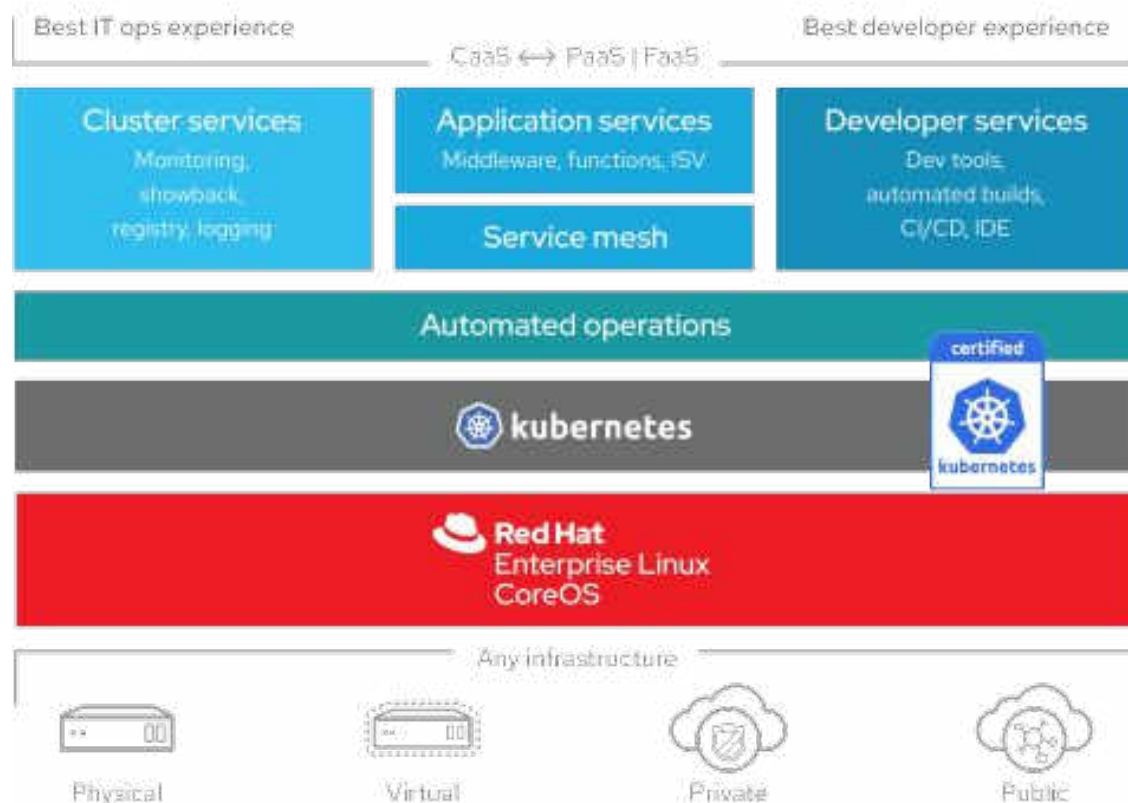
Kubernetes vs Openshift



Kubernetes depends on the Linux container OS



OpenShift 4 - A smarter Kubernetes platform



Automated, full-stack installation from the container host to application services

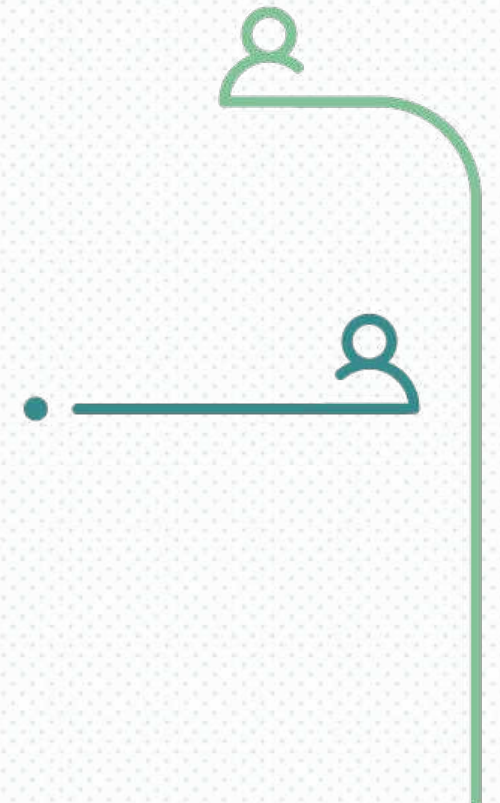
Seamless Kubernetes deployment to any cloud or on-premises environment

Autoscaling of cloud resources

One-click updates for platform, services, and applications

DEMO TIME

Application Deployment throughout the Ages



DEMO

Linux
Container
OpenShift



To replay yourself:

git clone <http://github.com/rmegens/rha-2020-demos.git>

Traditional Application Deployment

```
[root@flannel demo1]# cat setup_web.sh
#!/bin/bash
# setup simple web site for demo1

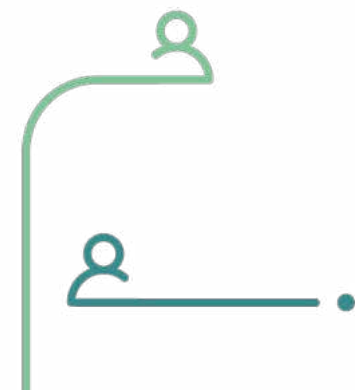
# install apache2
yum install httpd -y

# enable and start httpd service
systemctl enable httpd
systemctl start httpd

# open firewall
firewall-cmd --add-service=http --permanent
firewall-cmd --reload

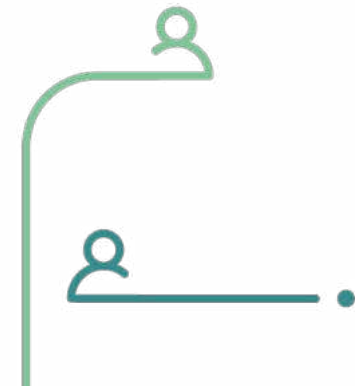
# copy index page
cp ~/rha-2020-demos/demo1/files/index.html /var/www/html/index.html
chmod 0664 /var/www/html/index.html

# show results
systemctl status httpd
firewall-cmd --list-all
curl http://localhost
[root@flannel demo1]#
```



Stand-alone container Application

```
[root@rh8demo demo2]# #podman build -t rha-myweb:latest .  
[root@rh8demo demo2]# #podman run -d --name myweb rha-myweb  
[root@rh8demo demo2]# #podman inspect myweb --format "IP Address: {{ .NetworkSettings.IPAddress }}"  
[root@rh8demo demo2]# #curl http://${podman inspect myweb --format "{{ .NetworkSettings.IPAddress }}"}  
[root@rh8demo demo2]#
```



Application Deployment in Openshift

```
[rmegens@rmegens demo3]$ oc login -u developer -p developer https://api.crc.testing:6443 [25/487]
Login successful.

You don't have any projects. You can try to create a new project, by running

    oc new-project <projectname>

[rmegens@rmegens demo3]$ oc new-project webinar202009291
Now using project "webinar202009291" on server "https://api.crc.testing:6443".

You can add applications to this project with the 'new-app' command. For example, try:

    oc new-app django-psql-example

to build a new example application in Python. Or use kubectl to deploy a simple Kubernetes application:

    kubectl create deployment hello-node --image=gcr.io/hello-minikube-zero-install/hello-node

[rmegens@rmegens demo3]$ oc new-app httpd-http://github.com/rmegens/rha-2020-demos --context-dir=demo3/files$
--name my-webapps2i
--> Found image d9163e7 (2 months old) in image stream "openshift/httpd" under tag "2.4" for "httpd"

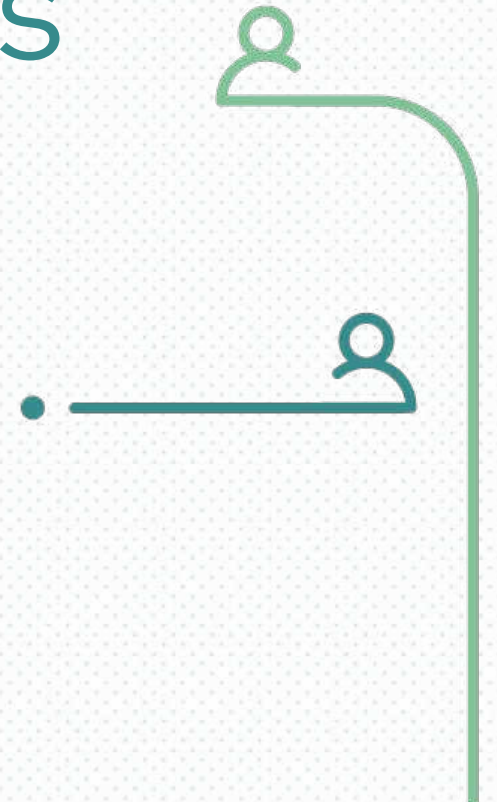
    Apache httpd 2.4
    -----
    Apache httpd 2.4 available as container, is a powerful, efficient, and extensible web server. Apache sup
```


Demos vs Red Hat Courses

DEMO1 -----> RH134 - RH294

DEMO2 -----> DO080 - DO180

DEMO3 -----> DO180 - DO280 - DO288





Red Hat® OpenShift® Learning Path

OPENSIFT LEARNING PATH (ADMIN)

DO080 | 1-2 hours | Recommended

Containers, Kubernetes and Red Hat OpenShift Technical Overview.



DO180 | 3 days | Recommended

Red Hat OpenShift I Containers and Kubernetes.

DO280 | 3 days | Recommended

Red Hat OpenShift Administration II Operating a Production Kubernetes cluster



DO285 | 5 days | combined

NEW COURSE COMING SOON!

DO322 | 3 days | Recommended

Red Hat OpenShift Installation Lab



EX280 | 3 hours | Required

Red Hat Certified Specialist in OpenShift Administration exam



DO380 | 4 days | Recommended

Red Hat OpenShift Administration III Scaling Kubernetes deployments in the enterprise

OPENSIFT LEARNING PATH (DEVELOPER)

DO080 | 1-2 hours | Recommended

Containers, Kubernetes and Red Hat OpenShift Technical Overview.



DO288 | 4 days | Recommended

Red Hat OpenShift development II
Containerizing Applications



DO283 | 3 days | Recommended

Red Hat application development:
Implementing Microservice Architectures



Microservices

DO295 | 5 days | combined



DO180 | 3 days | Recommended

Red Hat OpenShift I
Containers and Kubernetes.

EX288 | 3.5 hours | Required

Red Hat Certified Specialist in OpenShift development exam



NEW COURSE COMING SOON

DO378 | 4 days | Recommended

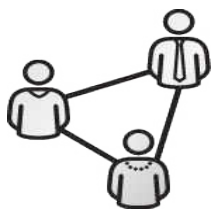
Red Hat Cloud-Native Microservices development with Quarkus





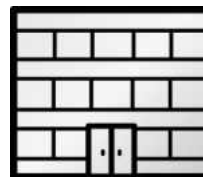
Learning Modalities

WAYS TO TRAIN



Virtual Training

Live instructor-led online training with the same high-quality, hands-on labs you'd find in our classrooms



Onsite Training

Private On-site training delivered virtually to your organisation only



Online Learning Courses or RHLS

From 90 days of access to course content to Unlimited access for a year. Our courses offer hands on labs – all available online, at your pace, and your schedule.

RED HAT LEARNING SUBSCRIPTION

A prescriptive, reliable, learning solution for rapid skills transformation on Red Hat technologies

Simple, flexible, on-demand training









- 24x7 access globally, available offline
- Self-paced, unlimited access to Red Hat courses
- Access to content currently in development
- Updated content pushed as early releases
- Content spanning the entire Red Hat product portfolio
- Early access to completed chapters of courses



Red Hat Learning Subscription

Red Hat Learning Subscription

A prescriptive, reliable, learning solution for rapid skills transformation on Red Hat technologies

	 Online Red Hat courses	 Hands-on labs	 Instructor videos	 Video courses	 Expert seminars	 Instructor office hours	 Learning paths	 Certification exams
BASIC	X	X	X	X				
STANDARD	X	X	X	X	X	X	X	X
DEVELOPER	X	X		X			X	X(3)

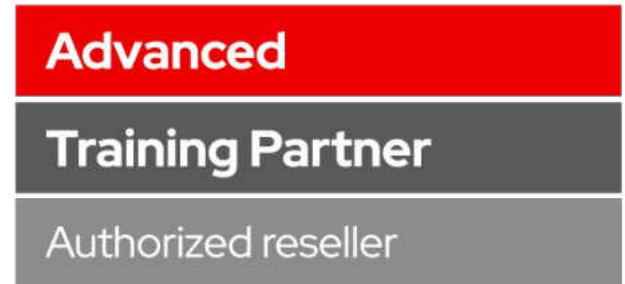


Red Hat Learning Subscription – What's what?

- **Online Courses** – Traditional e-learning environment with picture, text display with voice over.
- **Video Classes** – Youtube style learning, Recorded in HD with Whiteboarding and screen demo's
- **Hands on Labs** – Access to the same Lab environment you would access via classroom training – All linked to courses and modules
- **Instructor videos** – Short knowledge nuggets with more than 1,000 available. These instructor videos are recorded in high-definition
- **Expert Seminars** – one- to two-hour videos are presented by industry thought leaders and expert practitioners as conversations about innovative technologies and practices, based on real-world use cases and scenario
- **Instructor office hours** – Get answers and guidance with direct access to curriculum experts via chat facility.
- **Learning paths** – Information on gaining certification and the best routes of learning to achieve a desired certification
- **Certification exams** – Up to five attempts and two retakes on certifications on standard , 3 attempts through Developer

OSEC – Red Hat Advanced Training Partner

- OSEC has been Red Hat Certified Training Partner since 2009
- Since 2019 OSEC has become **Red Hat Training Reseller**
- Full Red Hat Training courses offer on **osec.pl** (<https://osec.pl/courses>)
- All modalities - Virtual Training during the Covid's pandemic
- Red Hat Learning Subscription
- ISO Quality Management System Certification PN-EN ISO 9001:2015-10
- Prizes:
 - EMEA Director's Award FY2019
 - Certified Training Partner of the Year FY19 - Eastern Europe & Russia
 - Certified Training Partner of the Year FY18 - Eastern Europe & Russia
 - Fastest Growing Training Partner FY17 – Eastern Europe & Russia
 - Training Partner of the Year FY17 – Eastern Europe & Russia



OSEC – Red Hat Business Partner

- For 11 years we have specialized in supporting projects that originate from Open Source
- OSEC is also Red Hat Premier Solution Provider and CCSP
- Our offer of IT Services (<https://osec.pl/uslugi-it>)
- OSEC Forum - <https://osecforum.pl/>
- Barcamps and webinars - <https://osec.pl/barcamp>
- Contact: osec@osec.pl



Premier

Business Partner

Solution Provider

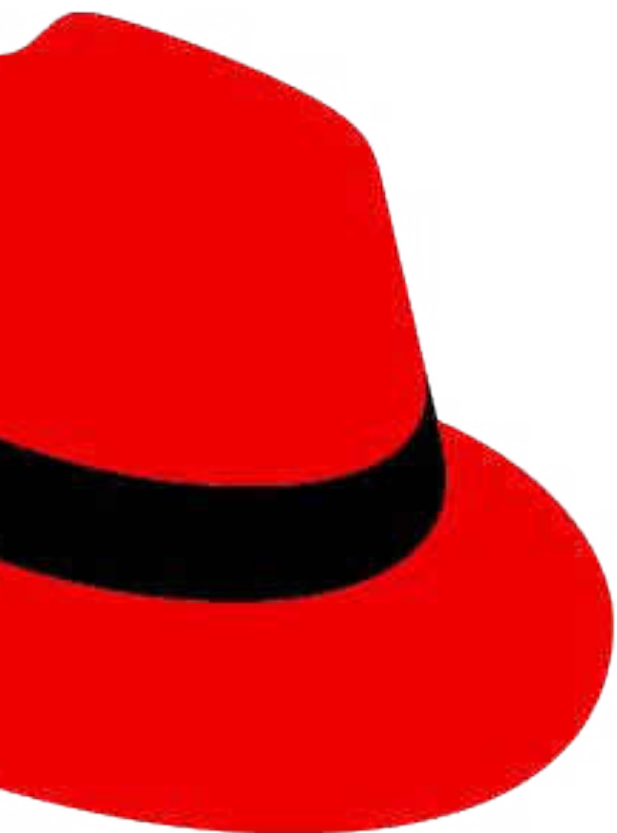
Datacenter infrastructure
Cloud infrastructure



Ready

Business Partner

Certified Cloud and
Service Provider



$Q + A$

Thank you!

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.



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