

Container: Lecture 7

Pod Lab:

1. Install container packages-

```
[root@rhel9-test ~]#  
[root@rhel9-test ~]# dnf install -y @container-tools
```

2. To get help, use command shown-

```
[root@rhel9-test ~]# podman --help  
Manage pods, containers and images
```

3. We have several options to use with podman-

```
pause ← Pause all the processes in one or more containers  
play Play containers, pods or volumes from a structured file  
pod Manage pods  
port List port mappings or a specific mapping for the container  
ps List containers  
pull Pull an image from a registry  
push Push an image to a specified destination  
rename Rename an existing container  
restart Restart one or more containers  
rm Remove one or more containers  
rmi Removes one or more images from local storage  
run Run a command in a new container  
save Save image(s) to an archive  
search Search registry for image  
secret Manage secrets  
start Start one or more containers  
stats Display a live stream of container resource usage statistics  
stop Stop one or more containers  
system Manage podman  
tag Add an additional name to a local image  
top Display the running processes of a container  
unmount Unmounts working container's root filesystem  
unpause ← Unpause the processes in one or more containers
```

4. To create pod & verify, use command as shown-

```
[root@rhel9-test ~]# podman pod create  
2d48bffb360985d76cddb97b5112cd18a7747b39b020301f5a7678858ff7a8cf  
[root@rhel9-test ~]#  
[root@rhel9-test ~]# podman pod list  
POD ID          NAME                STATUS      CREATED          INFRA ID          # OF CONTAINERS  
2d48bffb3609    gallant_mahavira    Created     12 seconds ago   69c4a357a2d3      1  
[root@rhel9-test ~]#
```

5. Create pod with custom pod name & verify-

```
[root@rhel9-test ~]# podman pod create --name cricbuzz
278ba5d010f1389b3eb560e3af287f8fd54db7d21a07c6b2eaf727ead415c8c3
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod list
```

POD ID	NAME	STATUS	CREATED	INFRA ID	# OF CONTAINERS
278ba5d010f1	cricbuzz	Created	3 seconds ago	d5e0d86112fa	1
2d48bffb3609	gallant_mahavira	Created	About a minute ago	69c4a357a2d3	1

```
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod create --name espn
60cfd2501951869e33b435c6c42f72c57c5e2c446526bf225dc0a7343825d9cf
[root@rhel9-test ~]#
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod list
```

POD ID	NAME	STATUS	CREATED	INFRA ID	# OF CONTAINERS
60cfd2501951	espn	Created	2 seconds ago	59fdb6e6cb224	1
278ba5d010f1	cricbuzz	Created	45 seconds ago	d5e0d86112fa	1
2d48bffb3609	gallant_mahavira	Created	About a minute ago	69c4a357a2d3	1

```
[root@rhel9-test ~]#
```

6. To check list of running containers & under which pod they are running-

```
[root@rhel9-test ~]# podman ps -a --pod
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES	POD ID	POD NAME
69c4a357a2d3	localhost/podman-pause:4.2.0-1661171830		2 minutes ago	Created		2d48bffb3609-infra	2d48bffb3609	gallant_mahavira
d5e0d86112fa	localhost/podman-pause:4.2.0-1661171830		About a minute ago	Created		278ba5d010f1-infra	278ba5d010f1	cricbuzz
59fdb6e6cb224	localhost/podman-pause:4.2.0-1661171830		41 seconds ago	Created		60cfd2501951-infra	60cfd2501951	espn

```
[root@rhel9-test ~]#
```

7. To add a container in an existing pod & go inside using terminal using interactive shell-

```
[root@rhel9-test ~]# podman run -it --rm --pod cricbuzz fedora /bin/bash
Resolved "fedora" as an alias (/etc/containers/registries.conf.d/000-shortnames.conf)
Trying to pull registry.fedoraproject.org/fedora:latest...
Getting image source signatures
Copying blob 1842e4e4b562 done
Copying config 19c0ae4dd2 done
Writing manifest to image destination
Storing signatures
[root@cricbuzz /]#
```

Note: If we have multiple registry from where we can pull same image, it will give us option to select it.

8. Run few commands inside this container & then exit from it-

```
[root@cricbuzz /]# cat /etc/os-release
NAME="Fedora Linux"
VERSION="37 (Container Image)"
ID=fedora
VERSION_ID=37
VERSION_CODENAME=""
PLATFORM_ID="platform:f37"
PRETTY_NAME="Fedora Linux 37 (Container Image)"
```

```
[root@cricbuzz /]# uname -a
Linux cricbuzz 5.14.0-162.6.1.el9_1.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Sep 30 07:36:03 EDT 2022 x86_64 x86_64 x86_64 GNU/Linux
[root@cricbuzz /]#
[root@cricbuzz /]# uname -r
5.14.0-162.6.1.el9_1.x86_64
[root@cricbuzz /]#
[root@cricbuzz /]#
[root@cricbuzz /]#
[root@cricbuzz /]#
exit
[root@rhel9-test ~]#
```

9. Now we can again check list of running containers & under which pod they are running-

```
[root@rhel9-test ~]# podman ps -a --pod
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES	POD ID
PODNAME							
69c4a357a2d3	localhost/podman-pause:4.2.0-1661171830		5 minutes ago	Created		2d48bffb3609-infra	2d48bffb3609
gallant_mahavira							
d5e0d86112fa	localhost/podman-pause:4.2.0-1661171830		4 minutes ago	Up 59 seconds ago		278ba5d010f1-infra	278ba5d010f1
cricbuzz							
59fdb66cb224	localhost/podman-pause:4.2.0-1661171830		3 minutes ago	Created		60cfd2501951-infra	60cfd2501951
espn							

```
[root@rhel9-test ~]#
```

10. We can verify pod list as shown-

```
[root@rhel9-test ~]# podman pod list
```

POD ID	NAME	STATUS	CREATED	INFRA ID	# OF CONTAINERS
60cfd2501951	espn	Created	4 minutes ago	59fdb66cb224	1
278ba5d010f1	cricbuzz	Running	5 minutes ago	d5e0d86112fa	1
2d48bffb3609	gallant_mahavira	Created	6 minutes ago	69c4a357a2d3	1

```
[root@rhel9-test ~]#
```

11. Previously, we had created pod first & then pulled image. This time we will create pod & pull image together as shown in image-

```
[root@rhel9-test ~]# podman run -dt --pod new:test_server -p 8080:80 nginx
✓ docker.io/library/nginx:latest
Trying to pull docker.io/library/nginx:latest...
Getting image source signatures
Copying blob 50c68654b16f done
Copying blob 5f63362a3fa3 done
Copying blob 88d3ab68332d done
Copying blob 40b838968eea done
Copying blob 3ed295c083ec done
Copying blob 3f4ca61aafcd done
Copying config 1403e55ab3 done
Writing manifest to image destination
Storing signatures
ff67ffa18980245df90e1d0ab2b3fdeb4d688a86d49953ad4a2209b7870e8d0c
[root@rhel9-test ~]#
```

Note: “nginx” was available in multiple registry. We had chosen one of that & green tick is suggesting that selection of registry done & hence image pull started.

12. Again verify the updated pod list-

```
[root@rhel9-test ~]# podman pod list
POD ID      NAME          STATUS      CREATED          INFRA ID      # OF CONTAINERS
1f9c4664c24c test_server    Running     8 seconds ago   5515b39491ff  2
60cfd2501951 espn          Created     6 minutes ago   59fdb6e6cb224  1
278ba5d010f1 cricbuzz      Running     7 minutes ago   d5e0d86112fa  1
2d48bffb3609 gallant_mahavira Created     8 minutes ago   69c4a357a2d3  1
[root@rhel9-test ~]#
```

13. To get details of a pod, use inspect option as shown-

```
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod inspect 1f9c4664c24c
```

14. Now stop test_server pod & verify it-

```
[root@rhel9-test ~]# podman pod stop test_server
1f9c4664c24c53dadffe396b182412b48bccbf9fcbaa6c053b7a1e40f7475ace
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod list
POD ID      NAME          STATUS      CREATED          INFRA ID      # OF CONTAINERS
1f9c4664c24c test_server    Exited      About a minute ago 5515b39491ff  2
60cfd2501951 espn          Created     8 minutes ago   59fdb6e6cb224  1
278ba5d010f1 cricbuzz      Running     8 minutes ago   d5e0d86112fa  1
2d48bffb3609 gallant_mahavira Created     10 minutes ago  69c4a357a2d3  1
[root@rhel9-test ~]#
```

15. Remove this pod & verify again-

```
[root@rhel9-test ~]# podman pod rm test_server
1f9c4664c24c53dadffe396b182412b48bccbf9fcbaa6c053b7a1e40f7475ace
[root@rhel9-test ~]#
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod list
```

POD ID	NAME	STATUS	CREATED	INFRA ID	# OF CONTAINERS
60cfd2501951	espn	Created	8 minutes ago	59fdb6e6cb224	1
278ba5d010f1	cricbuzz	Running	9 minutes ago	d5e0d86112fa	1
2d48bffb3609	gallant_mahavira	Created	10 minutes ago	69c4a357a2d3	1

```
[root@rhel9-test ~]#
```

16. Now we will stop all pods & then remove all-

```
[root@rhel9-test ~]# podman pod stop -a
278ba5d010f1389b3eb560e3af287f8fd54db7d21a07c6b2eaf727ead415c8c3
2d48bffb360985d76cddb97b5112cd18a7747b39b020301f5a7678858ff7a8cf
60cfd2501951869e33b435c6c42f72c57c5e2c446526bf225dc0a7343825d9cf
[root@rhel9-test ~]#
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod list
```

POD ID	NAME	STATUS	CREATED	INFRA ID	# OF CONTAINERS
60cfd2501951	espn	Created	9 minutes ago	59fdb6e6cb224	1
278ba5d010f1	cricbuzz	Exited	9 minutes ago	d5e0d86112fa	1
2d48bffb3609	gallant_mahavira	Created	10 minutes ago	69c4a357a2d3	1

```
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod rm -a
278ba5d010f1389b3eb560e3af287f8fd54db7d21a07c6b2eaf727ead415c8c3
2d48bffb360985d76cddb97b5112cd18a7747b39b020301f5a7678858ff7a8cf
60cfd2501951869e33b435c6c42f72c57c5e2c446526bf225dc0a7343825d9cf
[root@rhel9-test ~]#
[root@rhel9-test ~]#
[root@rhel9-test ~]# podman pod list
```

POD ID	NAME	STATUS	CREATED	INFRA ID	# OF CONTAINERS
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```
[root@rhel9-test ~]#
```

This is it for Lecture 7!!!