**RedHat Cheat Sheets**

Chapter 1: Introducing Container Technology

* Describe the difference between container applications and traditional deployments.
* Describe the basics of container architecture.
* Describe the benefits of orchestrating applications and OpenShift Container Platform.

Chapter 2: Creating Containerized Services

* Create a database server from a container image.

Chapter 3: Managing Containers

* Manage a container's life cycle from creation to deletion.
* Save container application data with persistent storage.
* Describe how to use port forwarding to access a container.

Chapter 4: Managing Container Images

* Search for and pull images from remote registries.
* Export, import, and manage container images locally and in a registry.

Chapter 5:

* Describe the approaches for creating custom container images.
* Create a container image using common ‘Containerfile’ commands.

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| sudo podman images |
| command to list the available images |

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| sudo podman search {image name} |
| command to search for image |

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| --- |
| sudo podman pull {image-name} |
| command to download the image |

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| sudo podman run {image-name} |
| command to run the image |
| -d => to run a container as a background service.  **sudo podman run -d rhscl/httpd-24-rhel7:2.4-36.8** |
| -it => to starts a Bash terminal inside the container(view file system)  **sudo podman run -it ubi7/ubi:7.7 /bin/bash** |

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| sudo podman inspect -l |
| Show All info about the latest running container |

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| sudo podman inspect my-httpd-container |
| Show All info about the specific container |

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| sudo podman inspect -l -f "{{.NetworkSettings.IPAddress}}" |
| Show All info about the latest running container |

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| sudo podman ps |
| displays the container ID and names for all actively running containers: |
| You can specify a custom name using  **sudo podman run --name my-httpd-container rhscl/httpd-24-rhel7** |
| -a => List all local containers including the stopped ones  **sudo podman ps -a** |

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| sudo podman stop {image-name} |
| Stop a specific container. |
| -a => stop all containers  **sudo podman stop -a** |

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| sudo podman restart {image-name} |
| Restart a container |

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| sudo podman rm {image-name} |
| Remove a specific container. |
| -a => remove all containers  **sudo podman rm -a** |

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| --- |
| sudo podman rm {image-name} |
| Remove a specific container. |
| -a => remove all containers  **sudo podman rm -a** |

Multiple Choice Questions – REDHAT-3:

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| **1.** | **Which two options are examples of software applications that might run in a container? (two)** | |
| **A** | **A database-driven Python application accessing services such as a MySQL database, a file transfer protocol (FTP) server, and a web server on a single physical host.** |
| **B** | **A Java Enterprise Edition application with an Oracle database, and a message broker running on a single VM.** |
| C | An I/O monitoring tool responsible for analyzing the traffic and block data transfer. |
| D | A memory dump application tool capable of taking snapshots from all the memory CPU caches for debugging purposes. |
| **2.** | **Which two of the following use cases are best suited for containers? (Choose two.)** | |
| **A** | **A software provider needs to distribute software that can be reused by other companies in a fast and error-free way.** |
| B | A company is deploying applications on a physical host and would like to improve its performance by using containers. |
| **C** | **Developers at a company need a disposable environment that mimics the production environment so that they can quickly test the code they develop.** |
| D | A financial company is implementing a CPU-intensive risk analysis tool on their own containers to minimize the number of processors needed. |
| **3.** | **Which three kinds of applications can be packaged as containers for immediate consumption? (Choose three.)** | |
| **A** | **Web Server** |
| **B** | **A blog software, such as WordPress** |
| **C** | **A database** |
| D | A local file system recovery tool |
| E | A virtual machine hypervisor |
| **4.** | **A company is migrating their PHP and Python applications running on the same host to a new architecture. Due to internal policies, both are using a set of custom made shared libraries from the OS, but the latest update applied to them as a result of a Python development team request broke the PHP application. Which two architectures would provide the best support for both applications? (Choose two.)** | |
| **A** | **Deploy each application to different VMs and apply the custom-made shared libraries individually to each VM host.** |
| **B** | **Deploy each application to different containers and apply the custom-made shared libraries individually to each container.** |
| C | Deploy each application to different VMs and apply the custom-made shared libraries to all VM hosts. |
| D | Deploy each application to different containers and apply the custom-made shared libraries to all containers. |
| **5.** | **Which three of the following Linux features are used for running containers? (Choose three.)** | |
| **A** | **Namespaces** |
| **B** | **Security-Enhanced Linux** |
| **C** | **Control Groups** |
| D | Integrity Management |
| **6.** | **Which of the following best describes a container image?** | |
| **A** | **A file-system bundle that contains all dependencies required to execute the process inside the container.** |
| B | A virtual machine image from which a container is created. |
| C | The container’s index file used by a registry. |
| D | A runtime environment where an application will run. |
| **7.** | **Which three of the following components are common across container architecture implementations? (Choose three.)** | |
| **A** | **Container runtime** |
| **B** | **Container images** |
| **C** | **Container registries** |
| D | Container permissions |

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| **8.** | **What is a container in relation to the Linux kernel?** | |
| **A** | **An isolated process with regulated resource access.** |
| B | A virtual machine. |
| C | A set of file-system layers exposed by UnionFS. |
| D | An external service providing container images. |
| **9.** | **Which of the following are Podman features (Choose two.)** | |
| **A** | **Manage containers, container images and interact with registries.** |
| **B** | **Podman uses the same command patterns as Docker.** |
| C | Manage operating system configuration and permissions to execute virtual machines. |
| D | Execute a daemon on the local machine to run containers. |
| **10.** | **Which three kinds of applications can be packaged as containers for immediate consumption? (Choose three.)** | |
| **A** | **Lack of automation increases response time to problems.** |
| **B** | **Containers do not manage internal application failures.** |
| **C** | **Containers are not load-balanced.** |
| D | Containers are easily orchestrated in large numbers. |
| E | Containers are heavily-isolated, packaged applications. |
| **11.** | **Which two of the following statements are correct regarding Kubernetes? (Choose two.)** | |
| **A** | **Kubernetes is a container orchestration system.** |
| **B** | **Kubernetes simplifies management, deployment, and scaling of containerized applications.** |
| C | Kubernetes is a container. |
| D | Kubernetes can only use Docker containers. |
| E | Applications managed in a Kubernetes cluster are harder to maintain. |
| **12.** | **What features does OpenShift offer that extend Kubernetes capabilities? (Choose two.)** | |
| **A** | **Routes to expose services to the outside world.** |
| **B** | **An integrated development workflow.** |
| C | Operators and the Operator Framework. |
| D | Self-healing and health checks. |
| **13.** | **Which three of the following statements are true regarding Red Hat OpenShift v4? (Choose three.)** | |
| **A** | **OpenShift provides additional features to a Kubernetes infrastructure.** |
| **B** | **OpenShift simplifies development incorporating a Source-to-Image technology and CI/CD pipelines.** |
| **C** | **OpenShift simplifies routing and load balancing.** |
| D | Kubernetes and OpenShift are mutually exclusive. |
| E | OpenShift hosts use Red Hat Enterprise Linux as the base operating system. |
| **14.** | **Which of the following options is an advantage of using the stand-alone S2I process as an alternative to Containerfiles?** | |
| **A** | **Reuses high-quality builder images.** |
| B | Requires no additional tools apart from a basic Podman setup. |
| C | Creates smaller container images with fewer layers. |
| D | Automatically updates the child image as the parent image changes (for example, with security fixes). |
| E | Creates images compatible with OpenShift, unlike container images created from Docker tools. |
| **15.** | **Which method for creating container images is recommended by the containers community?** | |
| **A** | **Adding new runtime libraries.** |
| **B** | **Adding internal libraries to be shared as a single image layer by multiple container images for different applications.** |
| C | Setting constraints on a container’s access to the host machine’s CPU. |
| **16.** | **Which method for creating container images is recommended by the containers community?** | |
| **A** | **Run commands from a Containerfile and push the generated container image to an image registry.** |
| B | Run the podman build command to process a container image description in YAML format. |
| C | Run commands inside a basic OS container, commit the container, and then save or export it as a new container image. |
| D | Create the container image layers manually from tar files. |