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DevOps Engineer Diploma

DevOps Engineer Diploma

OpenShift Labs
Lab 14

OpenShift LimitRange and CronJob Management

Lab Objectives

- Creating and Managing OpenShift Projects
- Defining and Applying LimitRanges for Resource Management
- Automatically Applying CPU and Memory Limits to Pods
- Creating and Managing CronJobs in OpenShift
- Verifying Resource Allocation and CronJob Execution
- Viewing and Analyzing Job Logs in OpenShift

▯ Lab Scenario

As a **Cluster Administrator**, you must create a new project where:

- Every **Pod** automatically receives **CPU** and **memory requests/limits**.
- Users can run jobs on a timed schedule (for example, a **log rotation** or **backup task**).

▯ Step 1 – Create a New Project

- Create a new project named **limitrange-lab**.

▯ Step 2 – Define a LimitRange

Inside this project, create a **LimitRange** that:

- Limits **CPU** to **1 core max** and **100m min**.
- Limits **Memory** to **1Gi max** and **128Mi min**.
- Applies **default limits**: **500m CPU** and **512Mi Memory**.
- Applies **default requests**: **200m CPU** and **256Mi Memory**.

▯ Step 3 – Verify the LimitRange

Check that:

- The **LimitRange object** exists.
- The values for **min**, **max**, and **default** are correctly displayed.

▯ Step 4 – Test with a Pod

- Create a simple **nginx Pod** without specifying any resource limits.
- Verify if the **default CPU** and **memory values** were automatically applied.

▯ Step 5 – Create a CronJob

- Create a **CronJob** that runs every minute and executes a simple shell command.
  - For example, the command should print the **current date** and a message like **"Task executed"**.

� Step 6 – Verify the CronJob

Check:

- The **CronJob object** exists.
- It is scheduled to run every minute.
- A **Job** is being created successfully.

� Step 7 – View Job Logs

- Display the **logs** of the latest job created by your **CronJob** to confirm that it ran successfully.

� Deliverables

Each student should provide:

- A screenshot of the `oc describe limitrange` output.
- A screenshot showing the **Pod's auto-applied resources**.
- A screenshot of the **CronJob creation** and **job list**.
- A screenshot of the **job logs output**.

You are Welcome