**Lesson 2 Lesson-End Project**

**Fetch Cluster-Specific Configuration**

**Project agenda:** To obtain cluster-specific configuration on a running cluster

**Description:** Your team lead has requested you to connect to the Kubernetes cluster and provide the following cluster details:

1. Available nodes and their IP addresses
2. Supported API versions on the server
3. Status of the control plane and CoreDNS
4. Status of Pods with the kube-system namespace

**Tools required:** kubeadm, kubectl, kubelet, and Docker

**Prerequisites:** kubeadm, kubectl, kubelet, and Docker must be installed

**Expected deliverables:** A Kubernetes cluster with high availability enabled

**Steps to be followed:**

1. Setting up the cluster
2. Listing available nodes and their IP addresses
3. Identifying API versions that are supported
4. Examining the control plane and CoreDNS status
5. Checking the status of the Pods with kube-system namespace

**Step** **1**: **Setting up the cluster**

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| **Note:** Refer Demo 1 of Lesson 2 to set up the Kubernetes cluster |

**Step 2: Listing available nodes and their IP addresses**

1. Run the command given below to list the available nodes and their status in the cluster:

**kubectl get nodes**

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| **Note:** The Kubernetes cluster has been successfully configured and is ready to use |

1. Run the command given below to get information about the nodes, including the IP addresses:

**kubectl get nodes -o wide**

**Graphical user interface

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**Step 3: Identifying API versions that are supported**

1. Run the command given below to discover the cluster's available resources and their versions:

**kubectl api-versions**

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To check the versions of **kubeadm** and **kubectl**, use the commands given below:

**kubeadm version**

**kubectl version**

Graphical user interface, text

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**Step 4: Examining the control plane and CoreDNS status**

1. To view the configuration details of a Kubernetes cluster, use the command given below:

**kubectl config view**

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1. Use the command given below to check the status of the **control plane** and **CoreDNS**:

**kubectl cluster-info**

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| **Note:** This command helps to identify the path where the **control plane** and **CoreDNS** are running. |

**Step 5: Checking the status of the Pods with kube-system namespace**

1. Run the command given below to list all available Pods in the **kube-system** namespace:

**kubectl get pods -n kube-system**

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As seen in the screenshot above, there are multiple Pods available with the **kube-system** namespace.