# **Practical Exercise: Deploying API Manager on Kubernetes**

Training Objective

In this section you will learn how to deploy an all-in-one WSO2 API Manager on kubernetes.

Business Scenario

PizzaShack Limited needs to move their infrastructure from local deployment to a Kubernetes cluster deployment.

High-Level Steps

* Prerequisites
* Install the Helm Chart
* Deploy API Manager with APIM Analytics Cloud solution

Detailed Instructions

Prerequisites

1. Install [Git](https://git-scm.com/book/en/v2/Getting-Started-Installing-Git), [Helm](https://helm.sh/docs/intro/install/) and [Kubernetes client](https://kubernetes.io/docs/tasks/tools/install-kubectl/)

Sample Steps to install Kubernetes client.:

**Execute** brew install kubectl

**Install** VirtualBox

**Execute** brew install minikube

1. Set Up a [Kubernetes Cluster](https://kubernetes.io/docs/setup).

Here, you can use the minikube and set up a local cluster.

Increase the default resource allocation of minikube before you start minikube.

**Execute** minikube config set memory 5000

**Execute** minikube config set cpus 5

**Execute** minikube start

1. Install [NGINX Ingress Controller](https://kubernetes.github.io/ingress-nginx/deploy/).
2. Add the WSO2 Helm chart repository by executing the following command.

helm repo add wso2 https://helm.wso2.com && helm repo update

Install the Helm Chart

1. From this point onwards, KUBERNETES\_HOME will refer to a local copy of the [wso2/kubernetes-apim](https://github.com/wso2/kubernetes-apim/) Git repository. HELM\_HOME will refer to <KUBERNETES\_HOME>/simple.
2. Clone the Helm Resources for WSO2 API Manager Git repository using the following command.

git clone <https://github.com/wso2/kubernetes-apim.git>

1. Deploy Helm chart for WSO2 API Manager Single Node deployment.

For Helm version 2 -

helm install --dep-up --name <RELEASE\_NAME> <HELM\_HOME>/am-single --version 4.1.0-1 --namespace <NAMESPACE>

For Helm version 3 -

Deploy the Kubernetes resources using the Helm Chart  
helm install <RELEASE\_NAME> <HELM\_HOME>/am-single --version 4.1.0-1 --namespace <NAMESPACE> --dependency-update --create-namespace

The above steps will deploy the deployment pattern using WSO2 product Docker images available at DockerHub.

Deploy API Manager with APIM Analytics Cloud solution

1. Follow the instructions in this [document](https://apim.docs.wso2.com/en/4.2.0/observe/api-manager-analytics/configure-analytics/register-for-analytics/) to register and obtain the on-prem key for APIM Analytics.
2. The following example shows how to enable Analytics with the helm charts.

For Helm version 2

helm install --name <RELEASE\_NAME> wso2/am-single-node --version 4.1.0-1 --namespace <NAMESPACE> --set wso2.choreoAnalytics.enabled=true --set wso2.choreoAnalytics.endpoint=<CHOREO\_ANALYTICS\_ENDPOINT> --set wso2.choreoAnalytics.onpremKey=<ONPREM\_KEY>

For Helm version 3

helm install <RELEASE\_NAME> wso2/am-single-node --version 4.1.0-1 --namespace <NAMESPACE> --set wso2.choreoAnalytics.enabled=true

You will be able to see the Analytics data when you log into Choreo Analytics Portal. Please refer to this [document](https://github.com/wso2/kubernetes-apim/tree/v4.1.0.1/simple/am-single) for more details.

Expected Outcome

As a result of this exercise, WSO2 API Manager with APIM Analytics is deployed successfully in a local kubernetes cluster.