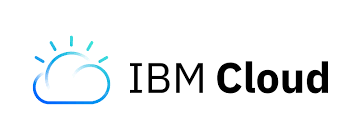
Docker Kubernetes Workshop Setup and Instructor’s Guide

IBM

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Table of Contents

[Purpose of this Lab 3](#_Toc505688428)

[Required Environment 4](#_Toc505688429)

[Starting the Lab 5](#_Toc505688430)

[Possible Issues 5](#_Toc505688431)

# Purpose of this Lab

The purpose of this lab is to introduce the concepts of containers using Docker and container orchestration using Kubernetes. It also introduces the use of IBM Cloud Private (ICP) as an Enterprise-level application operations platform based on Kubernetes

# Required Environment

This lab makes use of Cloud-hosted environments for Docker and ICP, so there is no requirement for attendees to locally install either of these environments. The Docker environment is hosted at the following location and can be access via SSH. A template has also been created for the Docker image, so you can create your own instance if desired. For the ICP image, you can use any standard ICP 2.1 image or environment.

**Docker Server IP Address**- 169.46.99.30

**SSH Port**= 2222

**Master Username** (with sudo privileges) = ibm

**Password**= IBMDem0s!

**Access command**= ssh [ibm@169.46.99.30](mailto:ibm@169.46.99.30) -p 2222

The master should only be used by you and not the attendees. It can be used to address setup or lab issues. For the attendees, special accounts (user01-user50) have been setup. These are the only accounts that should be used by attendees. The password for all these accounts is “**passw0rd**”.

The Docker environment has both the Docker and Kubernetes (kubectl) CLIs installed.

The ICP environment can be accessed via the following. Please note that while the SSH access credentials are listed, they will likely not be needed.

**ICP URL**- https://169.46.33.190:8443/

**ICP Login**= admin/admin

**SSH Login Username** (with sudo privileges) = ibm

**SSH Login Password**= IBMDem0s!

**IMPORTANT- Please note the following for the environment:**

* If you deploy your own instances of these environments, the IP addresses will be different.
* For the ICP environment, there are some limitations with Softlayer and Cloud Concierge that limit available open ports to support the use of NodePorts for Kubernetes/ICP services. Since Kubernetes typically automatically assigns these ports (within the 30000-33000 range), the port generated as part of the lab will need to be manually changed. The available ports are 30000-30050. This is also an issue when accessing the sample application running in ICP.

The best way to handle this is to assign each attendee their own port that they will use when they see “<your port>” in the lab. This will also ensure that attendees do not interfere with each other. We are working on seeing if we can just open up the entire range of ports, but that is not likely to happen in the first wave of using this lab.

Also, there is a step in the Kubernetes lab where the attendees have to manually modify a service in order to ensure that port number is correct.

# Starting the Lab

Before starting the lab, you will need to assign each attendee the following:

1. A Docker environment username (user01-user50). The password for all accounts is “passw0rd”
2. A port number for the ICP environment between 30000 and 30050.

However, attendees will require the following in their local environment:

* The ability to access SSH from a command line. For Mac and Linux environments, this is built in. For Windows, attendees can install and use Putty.
* A web browser. Firefox or Chrome is preferred.

# Possible Issues

* If a user is unable to login into their account, it may be an issue with the account setup (not all 50 accounts have been tested). If this happens, try re-setting the password for the account by doing the following:

1. Login to the Docker machine with the “ibm” account.
2. Run the following command to reset the password of the account:

~$ sudo passwd <username>

You will be promoted for a new password. Use “passw0rd”. You will be asked to re-enter the password. You can ignore the dictionary warning.