

# Assignment 1 – Virtualization and OpenStack

## 1 Introduction

The purpose of this assignment is to give you an understanding of virtualization and OpenStack. You will be asked to carry out a series of practical tasks.

**Note:** an essential part of the assignment will be to document the procedures by which you completed each task from beginning to end. Each task should be described in a series of numbered steps. In addition, for each task, you should provide legible screen shots as evidence that you have actually worked through the task. (Screen shots are normally placed at the most important stages/steps in any task). The documentation should be laid out like a professional user's manual, aimed at the novice technician (someone who knows little of such procedures). At the end of the assignment you will be required to submit the document. **Each group only needs to submit one report. Please submit your report as a .pdf file** or you might lose marks for this reason.

## 2 Tasks

### Task 1

Install VMware workstation for windows/Linux or VMware Fusion for MacOS. Create bear-metal virtual machine (without any operating system) named **ESXi1** in VMware workstation/Fusion, and then install VMware ESXi hypervisor on **ESXi1**.

### Task 2

Use web host client or vSphere client to remotely connect to ESXi server (**ESXi1**) and create a virtual machine **VM2** on **ESXi1**. You need to install a guest operating system (Windows or Linux) on **VM2** from the web host client or vSphere client.

### Task 3

Export **VM2** as an .ovf file and a .vmdk file. Repeat Task 2 to create another ESXi server **ESXi2** and deploy **VM2** on **ESXi2** by using its ovf and vmdk files exported from **ESXi1**.

### Task 4

Create a virtual machine named **OpenStack1** and install a guest operating system (CentOS-7 Minimal is suggested) and deploy OpenStack (PackStack utility is allowed to use) on **OpenStack1**.

### Task 5

Log into the OpenStack Dashboard as the Admin user and create a project named **BDIC2019** and create a user named **CCxyz** for **BDIC2019**. Use **CCxyz** to log into the OpenStack and finish the following operations:

- Download the image (CirrOS) and import it into the system.
- Create a Network and Router

- Launch an instance by using the image added and test its network connectivity with ping.

### **Task 6**

Find two **OpenStack Alternatives**, briefly describe the difference and state the pros and cons (600 words).