Cloud Computing
Practical 2:
Getting started with vSphere

As discussed during week one Cloud Computing is a general term for anything that involves delivering hosted services over the Internet. These services are broadly divided into three categories:

- Infrastructure-as-a-Service **(IaaS),**
- Platform-as-a-Service (**PaaS)** and
- Software-as-a-Service (**SaaS).**
- The name cloud computing was inspired by the cloud symbol that's often used to represent the Internet in flow charts and diagrams.

https://youtu.be/txvGNDnKNWw

The importance of server virtualization:

https://youtu.be/jHcvNxGfqfs

Now we will discuss the VMware vSphere as they leverage the power of virtualization to transform datacenters into simplified cloud computing infrastructures and enables IT organizations to deliver flexible and reliable IT services. VMware vSphere virtualizes the underlying physical hardware resources across multiple systems and provides pools of virtual resources to the datacenter.

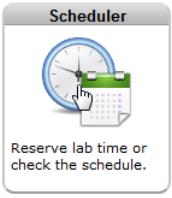
As a cloud operating system, VMware vSphere manages large collections of infrastructure (such as CPUs, storage, and networking) as a seamless and dynamic operating environment, and also manages the complexity of a datacenter. Users can access the VMware vSphere datacenter through clients such as the vSphere Client or Web Access through a Web browser.

In this week's practical we begin examining how to construct basic cloud infrastructure. We will be working with the VMware virtualization systems and completing practical tasks aligned with the VMware vSphere Install, Configure, and Manage certification curriculum. This week we begin by learning how to navigate and work in the vSphere Web Client, which is used for managing VMware virtualization infrastructure. Secondly, we will deploy and begin configuring a vCenter Server Appliance, a Linux virtual machine pre-configured which assists with automating and centralising control of vSphere controlled infrastructure.

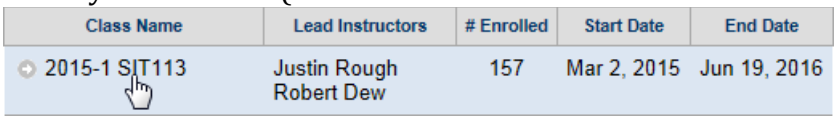
Begin by logging in to the NetLab system.

http://netlab.it.deakin.edu.au/

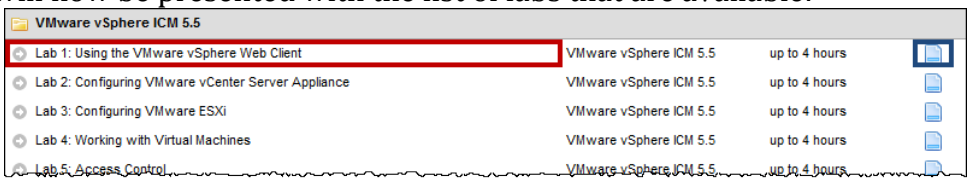
Once you have logged in, click on the Scheduler icon to begin work on your lab:



Click on the entry for this unit (SIT113:

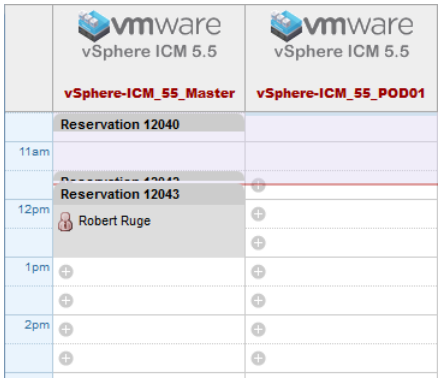


You will now be presented with the list of labs that are available:



To start working on a lab, click on the name of the lab on the left (red box). Note that you can also preview the instructions for a lab by clicking on the page icon on the right hand side (blue box).

In the main area of the window, you will see a grid, which is where you book in a POD of equipment:



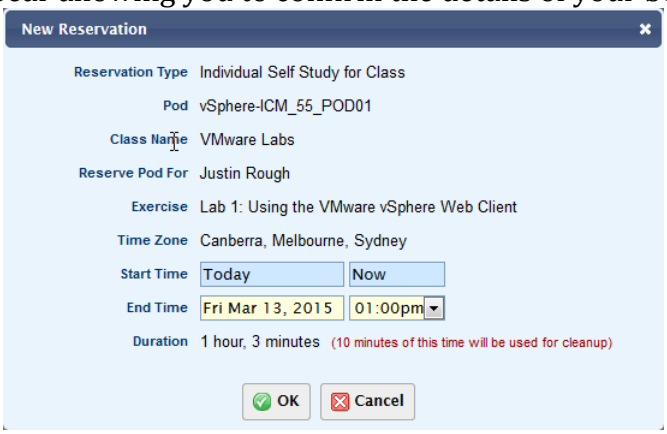
In this panel, you can see a number of features:

- The different PODs of equipment available to you are displayed as columns – in this example, there are two: vSphere-ICM_55_Master and vSphere-ICM_55_POD01 (you will see a much larger number of PODs);
- The different times are shown as rows, where:
  - The purple shaded area indicates time that has passed;
  - The thin red line shows the current time on the calendar;
  - The grey shaded area shows where a POD of equipment is already being used by another user (or booked by that user for a future time); and

- The white shaded area shows where POD of equipment is available for use.

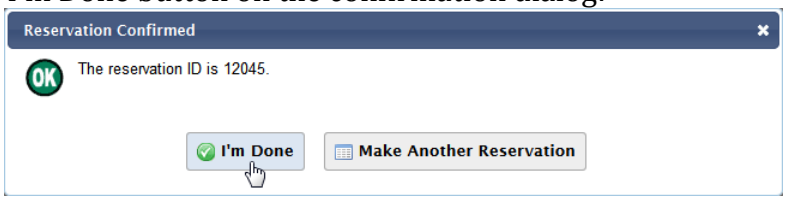
Start by choosing a POD that is available, and clicking in the white area where you wish to book in a time. Note that to start work on a POD immediately, you need to click immediately below the red line.

A dialog will appear allowing you to confirm the details of your booking:

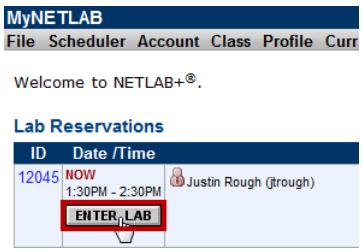


Update the end time as required to give you adequate time to complete the lab, then click on the **OK** button. Note that your booking will finish 10 minutes before the End Time indicated to allow NetLab to prepare the system for the next booking.

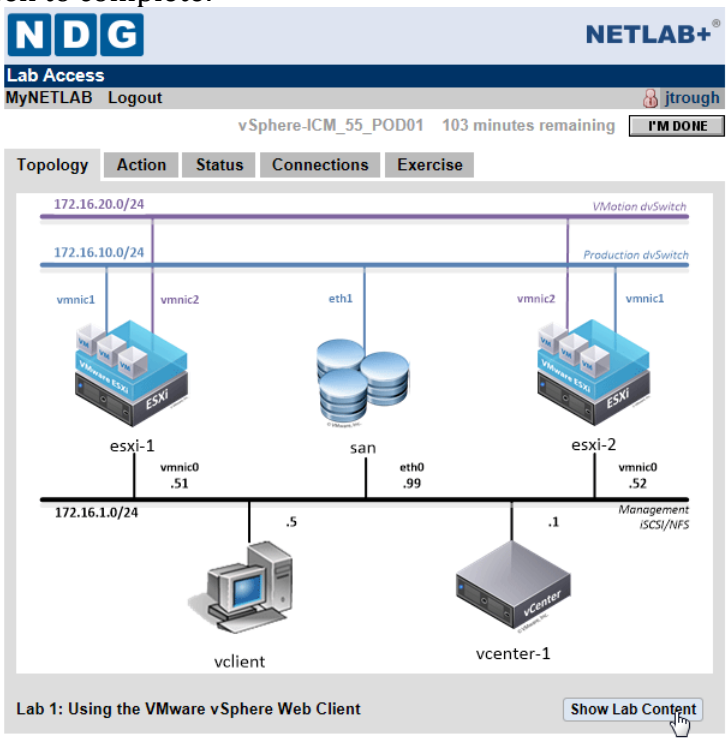
Click on the I'm Done button on the confirmation dialog:



The system will now return you to your home page, which now shows the lab booking you have just created (and any future bookings). Once your booking time starts, the system will add a button ENTER LAB to access the lab. Click on this link to begin work.



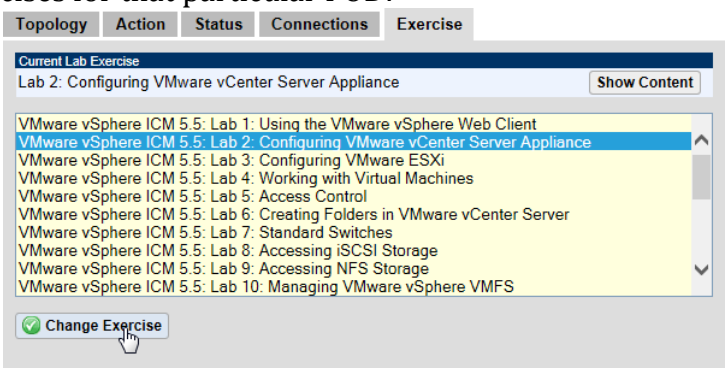
You will now be shown the virtual machines and network associated with the lab you have chosen to complete:



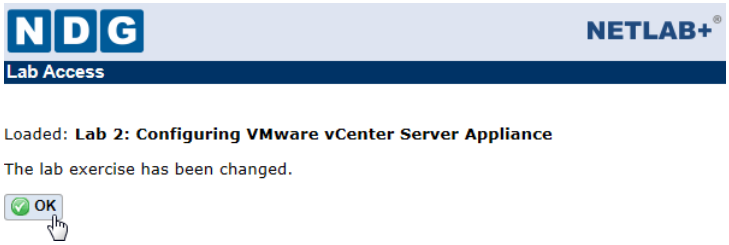
There are a number of important elements on this screen:

- Clicking the I'M DONE button (top right) is used when you have completed working on the lab task and will end your booking, freeing the equipment POD for use by others;
- Clicking the Exercise tab (mid-screen, towards the top), is used to change from one lab task to the next (see below);
- Clicking on the labelled images (esxi-1, san, esxi-2, vclient, and vcenter-1) will open a new window for you to control that particular device/VM; and
- Clicking the Show Lab Content button (bottom right) will open a new window containing instructions for completing the lab.

If you complete the work for a lab task, you can change exercise using the Exercise tab indicated above. Changing on the Exercise tab will show you a list of available exercises for that particular POD:

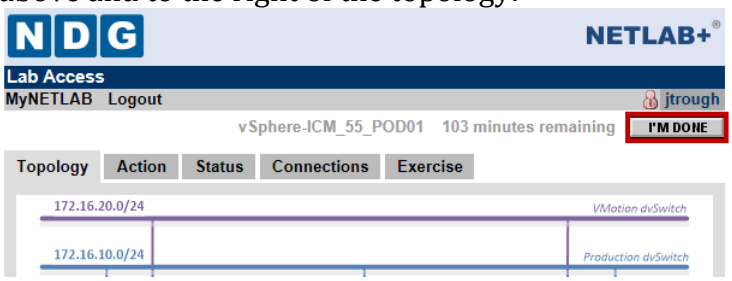


Select the lab task that you wish to switch to, then click on the **Change Exercise** button. The system will then perform any necessary reconfiguration before displaying a confirmation message:



Clicking the **OK** button will return you to the topology to begin the new lab task.

Once you have completed work all on the POD, make sure you click on the I'M DONE button above and to the right of the topology:



Lab Tasks

In this week's practical, you are required to complete the first two lab tasks:

- Lab 1: Using the VMware vSphere Web Client; and
- Lab 2: Configuring VMware vCenter Server Appliance.

Following the instructions above, start by booking in a POD to complete Lab 1. The instructions for the lab tasks can be found by clicking on the **Show Lab Content** button as explained above. Upon completing Lab 1, switch to Lab 2 by using the Exercise tab (explained above).
Once you have completed both lab tasks, feel free to explore the different VMs and the vSphere Web Client in particular to gain more experience with the system.
Make sure you follow the lab steps very carefully, otherwise you will encounter problems and be unable to complete the lab tasks.