Chapter 3

User Guide

This chapter presents the guidance to use the cluster-reserved nodes for regular simulation/emulation purposes.

3.1 Reservation System

Before using the cluster, a user is required to book the nodes needed and periods for dedicated usage of those nodes, via the reservation system at *http://202.45.128.129/calendar*. A snapshot of the reservation system is shown in Fig. 3.1.

Steps for making a reservation:

- Log in the reservation system. The user name and password are the same as your account in the cluster, which will be introduced in Sec. 3.2.
- Add a reservation entry by clicking the top right corner (±) of the time slot(s), in which you wish to use the cluster (Fig. 3.2). **You are strongly recommended to check whether your reservation conflicts with those of others.**
- You may edit your reservation entry following what is shown in Fig. 3.3.

There are two ways to access the reservation system from off-campus networks:

1. Start a remote desktop connection to your desktop in the office, then you may use the reservation system via remote desktop.
2. Build a ssh tunnel as follows:
   a) Open Terminal
   b) ssh -L 10002:ywu-gw:80 xxx@gatekeeper.cs.hku.hk (replace xxx with your CS user name)
   c) Open browser
   d) In the address bar, type: http://localhost:10002/calendar/
   (you can change 10002 in b) and d) to other available port number on your computer)

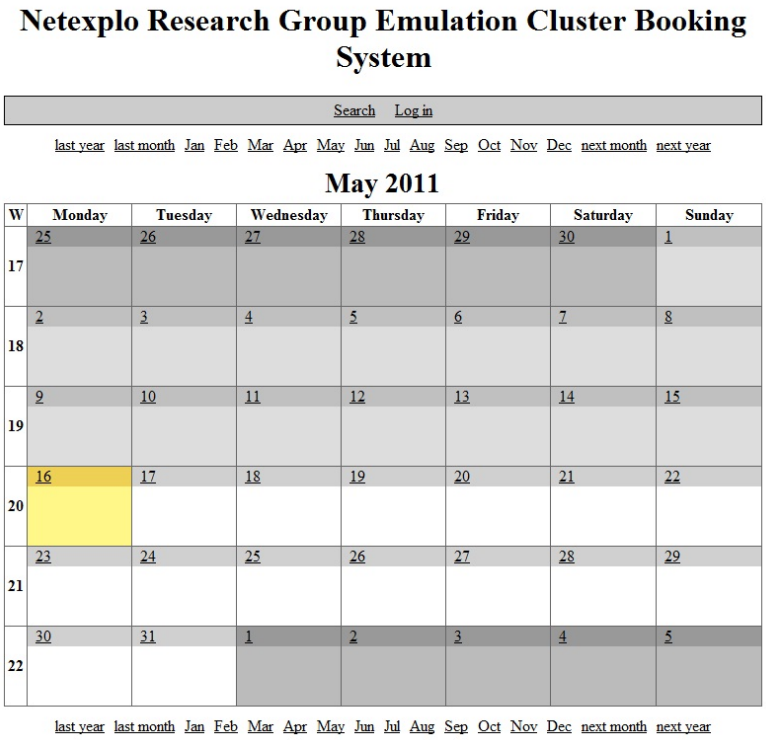

Figure 3.1: Cluster reservation system.

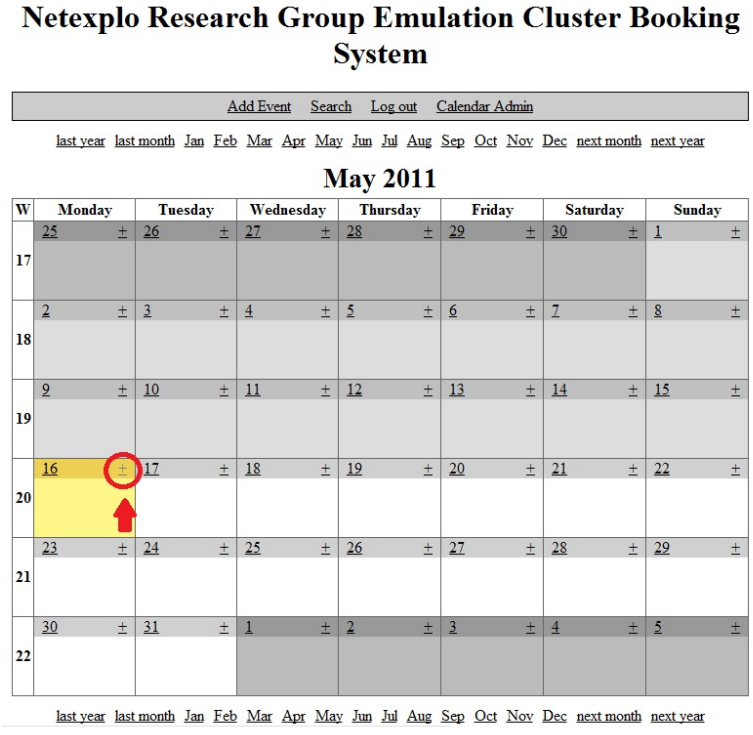

Figure 3.2: Cluster reservation system: making a reservation.

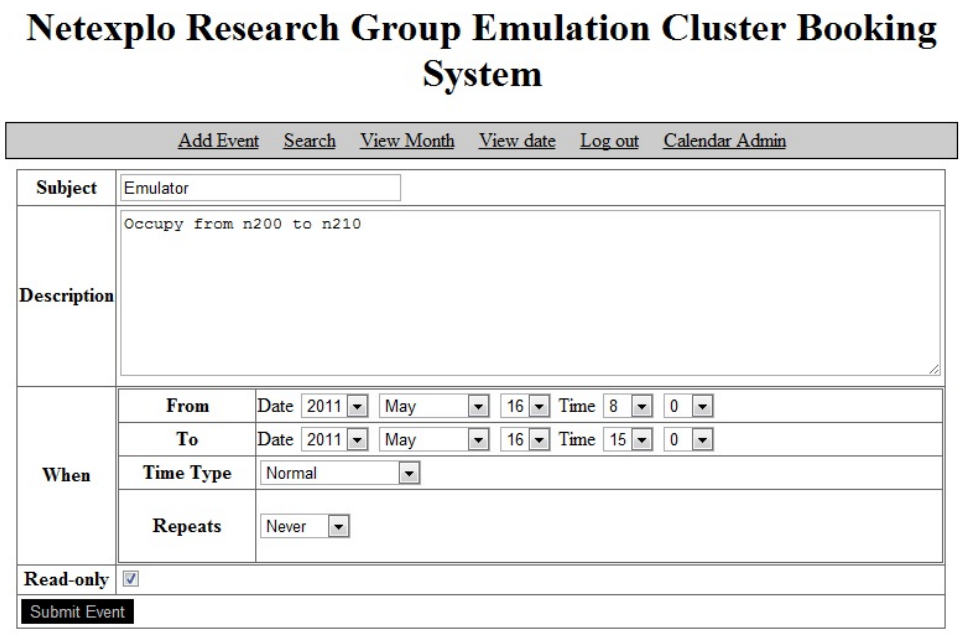

Figure 3.3: Cluster reservation system: editing a reservation.

3.2 How to Connect to the Cluster

Users can access the cluster via SSH to the entry node at IP address *202.45.128.129*. If you are not in HKU network, you should log in *gatekeeper.cs.hku.hk* using your CS account first.

Your username is the same as your CS account username, and the default password is "username"+1234. For example, Jian Zhao's username is *jzhao* and the initial password is *jzhao1234*. You are strongly recommended to change your password as soon as possible, which you can do in the following way:

[jzhao@n0]# passwd

3.3 How to Deploy your Program in the Cluster

There are currently 24 machines available in the cluster-reserved node group. Their hostnames are *n200, n201, ... n223*, respectively. If you wish to use node *n200*, you should first log in to the entry node via SSH, then type "ssh n200", and then you are logged in to node *n200*.

Please note: NEVER run any of your simulation/emulation programs on the entry node, which is only meant as an entrance for everyone to access the cluster and is installed with important services to be used by everyone. Running any program on the entry node will lead to significant performance downgrade of the cluster. Log in your reserved working nodes and run your program there instead.

If you wish to use multiple machines to run the same program, you can do it in the following fashion:

[jzhao@n0]# for((i=200;i<=223;i=i+1)) do ssh n$i program; done

3.4 Service and Software Available on Each Node

- Services: SSH, SVN, HTTP

- Software packages: gcc v4.1.2, Java v1.7.0, Python v2.5.1, Perl v5.8.8, Vim v7.1.135

Note: other needed software packages can be installed upon request.

3.5 How to Setup a SVN Server

If you wish to set up a SVN server on a machine allocated for your usage (*e.g.*, to maintain the simulation/emulation code you are developing), follow these steps:

1. Suppose that Jian wishes to create a repository for files in the /src directory on the machine. First create the directory "~/src" by:

   [jzhao@n0]# mkdir /src

2. Use the svnadmin command to create the SVN repository within this directory:

   [jzhao@n0]# svnadmin create /src

3. Edit the file svnserve.conf in ~/src/conf to:

   anon-access = none
   auth-access = write
   password-db = passwd

4. Add user & password into the file passwd in ~/src/conf:

   [users]
   jzhao = password

5. Start SVN server by:

   [jzhao@n0]# svnserver -d

3.6 SAMBA

You can also use the same username and password to log into the samba file system(address: `\\ywu-gw\`). Inside the samba file system, you can see your own private directory and a special directory called "share", which is used to store shared files like conference papers.

For Mac users:

- Go to Finder, click on Go -¿ Connect to Server. (or simply press cmd+K)
- Connect to our server by typing "`smb://ywu-gw/`" (without quotes).
- Log in and choose which directory to mount.

For Windows users:

- Open Windows Explorer
- Type "`\\ywu-gw\`"(without quotes), and press enter.
- Log in and you should be good to go

For Linux users:

- Google it.

Note that the "share" directory has sticky bit enabled, which means that a file can only be modified or deleted by its owner(uploader).

3.7 Matlab

Matlab is also available on the new server. After logging in, simply type matlab and you are good to go.

3.8 Recommended Websites on Linux

1. Basic knowledge of Linux: `http://linux.vbird.org`
2. Basic knowledge of Vim: `http://vimdoc.sourceforge.net/`
3. Advanced Shell Programming: `http://www.gnu.org/software/bash/manual/bashref.html`