

# System Administration for Beginners

Week 5 Homework

October 13, 2008

## 1 Introduction

This homework will deal with packages installation and basic configuration. Everyone should know how to install and configure Apache using the two different methods we covered in class. That will not be the only thing to install your server, however. Unless you are working on a server that will be dedicated to only one task, it is most likely that you will have to install other packages, daemons, and other utilities to make your life as a system administrator easier, or life for users harder.

## 2 Submission

As usual, please submit your homework to us at `cardi+decal@ocf.berkeley.edu` and `jchu+decal@ocf.berkeley.edu`. All that is necessary in your submission are your names, inst logins, project group number, and the answers. Please read each section of this homework carefully to understand what needs to be submitted.

Each project group needs to submit only one writeup, but it behooves you to make sure you either work on the homework as a group and understand the process of installing and configuring the software.

**NOTE** Some of the URLs have been shortened to the form `http://something.ocf` for brevity; simply add on `.berkeley.edu` to the end if you aren't on campus.

## 3 Homework

### 3.1 Ganglia

Ganglia is a “a scalable distributed monitoring system for high-performance computing systems such as clusters . . .” Although we do not exactly have state of the art cluster technology, all virtual servers are located on one main server.

Your task is to install the package Ganglia, located at <http://ganglia.sourceforge.net> and add your system to the monitoring website. The configuration file for Ganglia that you will want to use is located here:

```
http://www.ocf/sysadmin-class/2008-fall/beginning/gmond.conf
```

To check whether or not you have completed this section, you can visit the Ganglia monitoring system by going to <http://decal.ocf:30780/ganglia>. Click on the “Beginning” cluster; if you see your project server name (in the form of `bXX`, where `XX` is your group number), then you’ve completed this section.

**NOTE** During the install process, Ganglia will ask if you would like to build it with `gmetad`. It is not necessary to compile Ganglia with `gmetad` for this assignment.

**HINT** You may find that, like in your lab, you will not be able to complete the configure process due to missing files, tools, or libraries. Most of the time, you will need to install the development package relating to the missing file. For example, if the configure process says `libapr` is missing, install `libapr-dev`. Use `apt-cache search` to figure out the correct package name to install.

### 3.1.1 Submission

It is not necessary to submit anything for this section of the homework. You can verify that you have completed it successfully by going to the Ganglia monitoring website on `decal`.

## 3.2 sudo

In earlier lectures, we discussed the concepts of regular users, root users, and super-users. By default, Debian does not come with the `sudo` package, but does come with the **APT** system that was discussed in detail this week. Remember that working as the root user is sometimes hazardous if you are unsure of what you are doing.

Install the `sudo` package using the APT system and add an entry to the `sudoers` file that grants everyone on the `wheel` group full sudo access. Then add everyone to the group `wheel`. You can test this out by running `sudo -l` as a normal user.

**NOTE** There is a specific command you need to run to edit the `sudoers` file. Try reading the `man` page for `sudo` for more information.

### 3.2.1 Submission

Describe the process that you took to install `sudo`, add users to the group `wheel`, and how you gave full sudo access to the group `wheel`. Then, answer these questions:

1. What is the command syntax for `sudo`? That is, if I wanted to run a certain command that required root privileges and I only had `sudo` access, how would I do it?
2. How can I pull up a root shell using `sudo`? Essentially this would be the same as me running as root user, even though I do not have the root password.
3. I want to allow the user `nubsysadmin`, a beginning system administrator, access to a program `requiresrootprivs` that requires root privileges. What is the exact line in the `sudoers` file that I would input?
4. I don't remember where I placed the `sudoers` file. What command can I use to edit the `sudo` privileges of another user? Do I need to be a root user or can I use `sudo` to do this?