



Chapter X

Managing Online Computer Labs

Introduction

To keep an online computer lab fully operational is critical to the success of teaching online technology-based courses. Unlike a general purpose computer lab where heavy security measures are used to prevent users from damaging computer systems and network equipment, an online computer lab for teaching a technology-based course must release some of the security measures so that students can practice and perform an administrator's duty. That is, students and faculty members must be given the administrator's privilege to the computers and network equipment dedicated to them. For many students, this is the first time they are the administrators of network servers. You can expect that there will be many unintentional mistakes while performing the administrator's duty. Students will need help from the lab management team or the technical support personnel in the team to fix their problems and keep the hands-on process going. Some severe mistakes may cause a system to shut down without the ability to reboot. In such a case, the lab management team will need to help the students reinstall the entire system. Once upgrades to the operat-

ing system and application software are available, the lab management team will also need to install these upgrades in the lab. The content of a technology-based course will follow the change of technology on the market. Often, instructors will update the course content for each semester. These updates need to be done by the lab management team before a semester starts. Technical training is another task that will be carried out by the lab management team. Security related issues are also an important matter that should be dealt with by the lab management team. As we can see, the online computer lab maintenance tasks will keep the lab management team busy all year round. Since the security issues have been covered in a separate chapter, this chapter will focus on the maintenance tasks other than the security related tasks.

First, we will look into the issues related to daily maintenance of the online computer lab. Some general guidelines will be provided on how to manage the online computer lab and how to get help from the lab management team.

To assist the lab management, this chapter will investigate some of the lab management tools. These tools may include computer system diagnostic software, network management instruments, and so on. It will also discuss some general procedures for troubleshooting.

To prevent damage caused by a disaster such as a power outage or hurricane, this chapter will provide some information on system backup and recovery. The topics related to backup plans, system backup tools, and system backup processes will be discussed. This chapter will also provide some information on how to recover a system from a disaster.

The last topic of this chapter is about performance related issues. In general, working on a remote computer, the performance is slower than working on a local computer. It is important to maintain a computer lab in order to keep its full performance potential. The performance monitoring process and configuration tips will be discussed in this chapter.

Background

Personal computers are used in various online computer labs. The maintenance of computer hardware always deal with maintaining, upgrading, and troubleshooting personal computers (Minasi, Wempen, & Docter, 2005). The tasks in personal computer management may include memory upgrade, installation of communication devices, installation of video and sound cards, personal computer (PC) protection from viruses, capturing and editing video, power unit replacement and many other topics that are quite useful for online computer lab management. A+ certification is

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