

Application of Software Restoration System in Computer Room Management

Yuzhao Liu*

College of Chemical Prevention, Beijing, 102205, China

Abstract: The computer laboratory of colleges and universities plays a key role in the scientific research and talent training of colleges and universities. The maintenance and management of computer room is relatively heavy. In recent years, the computer motherboard supports the development of restore function and network transmission function, which brings great convenience to the management and maintenance of computer room in colleges and universities. Among them, the representative is Tsinghua Tongfang's network with the transmission technology and Lenovo's network transmission technology, but in order to achieve the network with the transmission of this function, also need to meet a lot of conditions. This paper will mainly explore the management of college computer room cannot use the hardware network to restore the computer function.

Keywords: Software restore system, Computer room, Management

Publication date: September, 2019

Publication online: 30 September 2019

***Corresponding author:** Yuzhao Liu, 13671381973@139.com

1 Introduction

The computer room in colleges and universities is not only a platform for teachers and students to learn knowledge, but also an important laboratory for professional skills training in colleges and universities. In the efficient use of computer room in colleges and universities, there are also many security risks, which to a certain extent make the management and maintenance of computer room more difficult and more complex. The use of reasonable and scientific reduction system, the machine room security

maintenance, can effectively reduce the workload of room management, so that the room system becomes more secure^[1].

2 The problem in the maintenance of computer room software

(1)The users of the computer are relatively complex, and it is difficult to carry out maintenance work. In the case of college computer rooms, the users may be different students or professional teachers. When students use computers, they may intentionally or unintentionally infect the computer with a virus, which can paralyze the entire system of the computer, which can hinder the smooth development of teachers' classroom teaching. In order to make the computer room can be used efficiently, the classroom teaching of teachers cannot be affected. It is a very important link for relevant personnel to effectively prevent computer sabotage by professional teachers and students, intentionally or unintentionally, when managing the engine room^[2].

(2)The demand for computer use shows a diversified situation, and the workload of computer room maintenance and management is larger. At present, the computer room of colleges and universities often appears different professional teachers to use a computer laboratory phenomenon, because different professional courses will use many different types of teaching software, these software requires a certain level of environmental construction there are also some differences. In addition, professional teachers sometimes add other teaching needs in classroom teaching. How to maintain and manage computer laboratory efficiently to meet the classroom teaching needs of teachers in various professions is the main topic to be discussed at

this stage.

(3)The configuration of the computer in the computer room is not exactly the same. In the university room, there may be some computers due to hardware failure has replaced the internal hardware configuration, which may make the same computer in the room configuration is not exactly the same. Different brand of computer, different purchase batch, may lead to hardware driver differences, so that the same room computer drivers cannot achieve consistency. In addition, there may be a part of the computer in the room, it does not have the motherboard support network restore function^[3].

(4)College room updates and new software is very frequent, in the classroom teaching of teachers, may update and install the relevant teaching software.

3 How the software restore system works

Using software to restore a computer system requires control of the boot sector (MBR) portion of the computer's internal hard disk. The restore system uses program code to take over the boot sector of the hard disk site, if the hard disk site is written, then the written data will be assigned to the data area location of the hard disk (a blank, continuous disk space made in advance) this part of the hard disk area has no substantive significance, The file allocation table (FAT) inside the hard drive has not been modified. For the operation of the computer hard disk device is done with the restore software, this way needs to restart the computer after the immediate restoration, this restore will make the original in the data area of the files are no longer exist^[4].

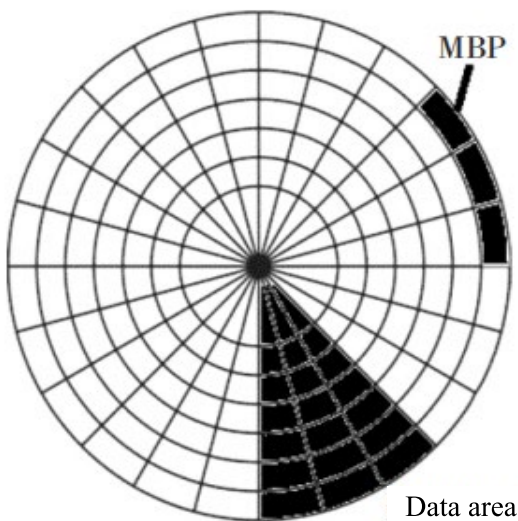


Figure 1. Hard drive boot sector (MBR)

With the rapid development of software restoration technology, the frequency of its use is also increasing. Use the software system to develop a restore point method to restore the state of a computer system at a point in the record. When a computer system fails and needs to be restored to the past system state, it is possible to use the restore point to cover the current state of the computer, so as to achieve the purpose of restoring the system. The principle of using software restoration technology for restoration is to restore the stored location of the computer hard disk, as a unit of the physical information on the hard disk, completely copied down, not only to copy the data on the hard disk, but also to clone the computer system of various information, including images, animations and sounds, even disk fragments can be fully copied. For example, Ghost technology enables a hard disk or a partition in a hard disk to be backed up directly to a file extension. gho file, called a mirror file. When a system restore is made, work is generally done based on the full recovery of a partition content^[5].

4 Solutions based on soft restore and network homogeneity

At present, whether there can be a restore system can be compatible with many types of computer hardware functions, but also with hardware restore functions. After a period of exploration, exploration, finally found a set of advanced programs with broad applicability, not only can carry out real-time restoration, multi-boot network torture and network restoration, but also can carry out information maintenance, remote management and bulk registration. Nan Jing Zhi Yuan Technology Co., Ltd. developed the room restore and maintenance system I recovery is one of the more advanced and representative works, this system provides two different original free restoration system, for education units and institutions for free use. With this restore system, the network can be transmitted, while the commercial licensed version can realize bulk registration and modification parameters, asset maintenance and other functions, its free version (educational version) software mainly has the following advantages:

1. The software is made available to institutions of higher learning free of charge, which can reduce or even avoid the instability of the reduction system and copyright issues.

2. Software can be installed, updated and uninstalled in the operating system environment, without relying

on the computer motherboard BIOS and other features of the settings, you cannot add related program modules in the BIOS.

3. Using the software for system restoration, with the type of computer and brand without cover, different batches, different types of computers, but also to achieve unified management.

4. The software can make use of the Internet, update the internal protection machine dog patch package, but also real-time updates and system upgrades.

5. The software does not occupy the expansion slot, nor does it differ from the computer hardware system, not only supports laptop use, but also supports desktop computer use.

6. If you have this restore system installed in your computer, you will be able to partition the hard disk in your computer, make real-time restores and protection on your system, and provide a variety of functions such as setting up manual restore, timed restore, and preventing hard disk damage.

7. The accused and the main control of the computer can use the boot elf this application, set more complex, multiple power-on instructions. The administrator of the room can use the boot-on elf function to remotely modify the system settings inside the accused computer from the computer's master computer.

8. The use of this software, only need to update, maintain, install one of the operating system environment of one of the computers, you can complete the maintenance, installation and update of all computers in the university computer room, and provide effective information and partition list, torture, policy settings and sector-by-sector torture and other functions.

9. This restore system supports the counterpart function of various types of network cards on the market, and also includes a variety of network cards manufactured using motherboard integration.

10. This restore system uses the network transmission method, dynamic compensation, in the network speed can reach a hundred megabits of the environment, its speed can reach more than 10 MB/S, in the network speed can reach gigabit environment, its torture speed can reach more than 40 MB/S.

11. This software has remote management and maintenance tools, room administrators can send files to all computer clients in the university room, set up different channels, send short messages, maintain and manage the computer environment in the room, network settings and so on.

12. The software makes it easier for computers to be networked without having to manually enter or by plugging in^[6].

5 Specific deployment of computer network restore

In view of the different characteristics of computer room, when restoring computer network system, it can be implemented with targeted deployment:

5.1 In identical cases of hardware configuration within the entire computer room computer

In this case, the management and maintenance of the room is more convenient. The management of the computer room uses the software of Recovery to carry out the work of network communication, modify the ip address and computer name of each computer in the university room. The administrator of the room needs to make a USB stick about the start of the I recovery system after the first installation of the software, and then the computer needs to start from this USB stick every day, thus directly into the receiving end of the software system network, which will make the future computer room management and maintenance work very convenient, Only with the help of the master computer, we can make all the computers in the computer room enter the system network mode of the same transmission at the same time, can improve the management and maintenance efficiency of the university computer room.

5.2 When there are differences in the hardware configuration of college computer room

In this case, the daily maintenance of the room management staff is not small difficult, need to protect other systems and networks, the steps are mainly: First, set the network restore to manual restore mode, using I recovery software for network transmission. Secondly, the software system after the end of the network transmission, let the entire computer in the room to restart, in this into the computer's operating system, and then automatically set up the machine hardware driver. Finally, the room administrator should use the Internet, into the desktop of each computer, the use of manual means, open the relevant software restore system, to restore the Shadow Defender, so that the computer will enter the protection mode. After the above operation, as long as you do not manually restore the computer's operating system, you can always run well^[7].

5.3 Bulk registration

Bulk registration can enable the computer to achieve the registration of the recording template, in the computer's main control end, play the corresponding registration tasks, can enable the computer in the room to complete the relevant tasks of software registration together. This function for the computer system to register the software has brought a great convenience, which is one of its advantages.

6 Using software such as electronic classrooms to improve the quality of teachers' classroom teaching

Using the electronic classroom this software, can enable students between the desktop computer and the teacher's computer desktop, to achieve file transmission, broadcast and other effective functions, but also enable teachers to the student's computer, effective management and monitoring. Teachers can remotely manipulate the student's computer and have access to the student's computer, which can effectively boost the student's attention.

7 Conclusion

The computer room in colleges and universities can say that students will learn the theory into an important platform for practical application. Therefore, the scientific and efficient management and maintenance of computer rooms, it is particularly important. In

order to better play the advantages of the university computer room function, the management personnel of the computer room should study hard and master the cutting-edge computer room management technology, strengthen their sense of responsibility, and contribute to the efficient management of the computer room in the university.

References

- [1] Xiong WY, Huang Y, Jia LK. Application of software restoration system in computer room management[J]. Technology and markets, 2018.
- [2] Li CL. The application of Lenovo hard disk protection system in public room management [J]. Information and Computers (Theoretical Version), 2018, 405(11):110–2.
- [3] Wang JS. The management and maintenance of the engine room in the higher vocational colleges and universities[J]. Zhi Fu Magazine, 2018(3):242.
- [4] Wang ZH. Talking about the importance of college room environment in computer room management[J]. Information Systems Engineering, 2017(11):61.
- [5] Wang SH, Talking about the management and maintenance of the computer room in colleges and universities[J]. Computer knowledge and technology, 2018, 14(16):261–3.
- [6] Peng QG, Li SQ. Research and practice on the efficient maintenance of computer system based on protection card[J]. Gui Yang College Journal: Natural Science Edition, 2018, 13(03):22–25.
- [7] Su Run M. How to strengthen the management and system maintenance of the enterprise computer room[J]. Information recording material, 2018(4).