

Research on Course Teaching Reform of Route Switching Technology

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Keywords: Routing switch, Router, Technology course, Teaching reform.

Abstract: Route switching technology is a practical course of computer network. This paper studies the reform of practical teaching of this course, puts forward the setting of practical teaching content of "route switching technology" course, and gives the specific method to complete the practical teaching task. It is of great significance to train senior applied talents of computer network.

1. Introduction

With the development of computer technology, the integration of computer technology and curriculum has become an important symbol of modern teaching. However, the application of computer technology in teaching is relatively lagging behind. This kind of lag phenomenon is reflected in the fact that teachers' application of information technology is mainly courseware production and computer-aided teaching. It does not really integrate computer technology into the whole teaching process. The routing and exchange course is a course on the basis of the preliminary network theory knowledge of computer network technology students to learn more about network theory knowledge [1]. Through this course, students have the ability to plan and build small and medium-sized campus networks, and to perform basic network failure analysis and elimination. At the same time, students should be trained to understand and master all the theoretical knowledge of routing and exchange courses; be able to select appropriate network equipment and be proficient in different network environments; be able to plan and implement a network that is small and medium-sized campus network [1]. How to use the system approach, take students as the center, make full use of modern technology and information resources, scientifically arrange all the links and elements in the teaching process, and realize the optimization of teaching becomes the main goal of the reform of routing and exchange courses.

2. The theoretical basis of computer network route switching technology

2.1 Routing technology.

During the use of the router, the internal routing Table indicates where the user's operating methods and user information are intended to be communicated. After receiving the data packet, the router will tear down the data packet through the data link layer, and interpret the IP address in the data packet, and then the routing Table searches the IP address to determine the transmission destination of the data information, such as Fig.1. Moreover, after determining the transmission destination, the router needs to pack and organize the data before forwarding the data. When the routing form does not find the transport address, the router will transfer the data to the previously transmitted location and discard the packet. In addition, the router can send link status to other routers to enable the delivery of data packets at the data link layer [2].

2.2 Mainstream router protocol technology.

Advanced password authentication router protocol and password authentication are technical manifestations of the router protocol. Password authentication mainly means that users need to use the correct password to log in to the relevant website during network use [2]. Password authentication has certain defects, and it faces a large network risk, and passwords are easily stolen. The Advanced Password Authentication Router Protocol uses advanced passwords to authenticate user information and ensure network security for user information. This is because the random initial value of

advanced password authentication is different, the security is higher, and it has certain protection against network attacks.

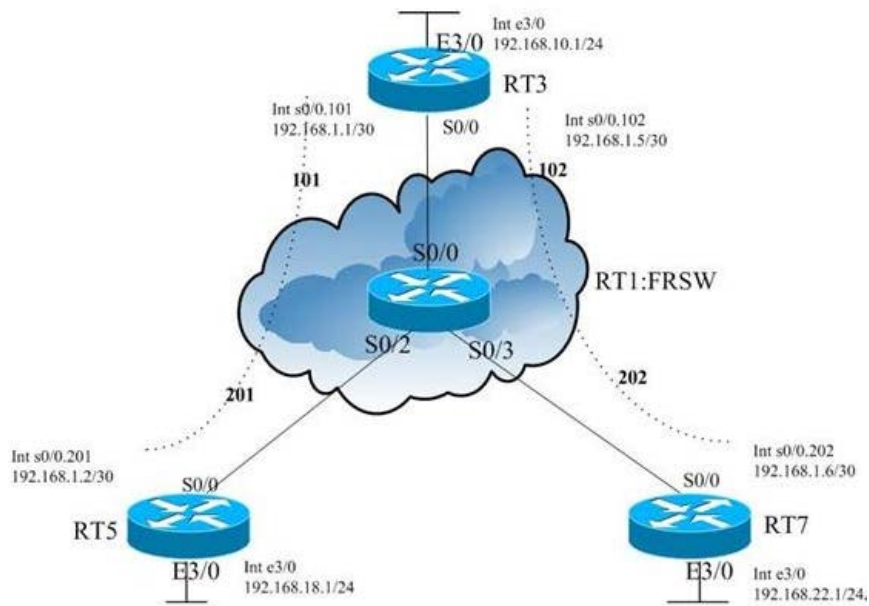


Fig.1 Routing technology

3. The characteristics of computer network route switching technology

3.1 Enhance the integrity of information.

The application of router switching technology in computer networks can effectively improve computer network information and enhance the integrity of computer network information. Specifically, the route switching technology can analyze the router technology in the way of information exchange, track the router system data and network data, strengthen the control of the data, improve the accuracy of the router data management, and achieve high-performance data monitoring. For example, during the operation of the computer network, the routing exchange technology can be used to convert the accounting information of the RMON port, and the router is not required to set the detector, which can effectively improve the data monitoring efficiency [2]. Moreover, the detection link can be avoided to avoid the detector access of the data management personnel in the data extraction, and the data extraction personnel can directly access the router information to extract the relevant data, prevent the loss phenomenon in the data feedback process, and further strengthen the overall data of the network system. Monitor and improve the accuracy of data management.

3.2 Increase the flexibility of your network environment.

The application of route switching technology in computer network technology can effectively enhance the security and flexibility of the network system. This is because the application of the routing switching technology in the computer network can be a security filter system of the official air pump router, automatically shielding unnecessary information, thereby enhancing the security of the network system and improving the operating efficiency of the router [3]. Moreover, the application of the route switching technology can enhance the stability and security of the router, so that the routing system is not easily damaged by the outside world. In addition, the route switching technology can use ASIC technology to process the router data packets, realize the tracking and investigation of the data direction and source of the router system, timely discover and solve the abnormal situation of the router system data, ensure the normal operation of the router, and avoid other devices to the router.

3.3 Optimize network service quality.

The application of routing switching technology in computer networks can effectively solve the

problems of router data instability, data buffering and data overload [1]. The switch can analyze and prioritize router system data to solve the problem of router usage caused by unstable data information. In turn, the user experience in routing switching technology is improved [3]. Moreover, the application of the router switching technology in the computer network can optimize the application design, so that the application designer can rationally design the application layer traffic according to the network service requirements, and select the application layer that conforms to the network system. In addition, the application of routing switching technology in computer networks enables network managers to fully utilize the features of routing switching technology to enhance control and management of the network.

4. The main reason for the teaching reform of the route switching technology course

The route switching technology course is a fine chemistry department of network technology courses. It embodies the practical connotation of modern network engineering technology teaching and has important and positive significance for strengthening students' practical work skills. With the continuous improvement and development of computer technology, the society is increasingly demanding professional staff who are proficient in route switching technology [4]. This route switching technology course can cultivate students' practical operation ability and master professional knowledge. In-depth study of network theory knowledge. By learning the route switching technology course, students can analyze basic network failures, send out work, and skillfully configure various operational skills such as network devices.

As one of the important branches of modern network technology, the route switching technology contains a lot of information security knowledge theory, which embodies the practical connotation of computer network engineering technology and occupies a certain position in the computer professional field. Because the practical skills of this subject are strong, it is the most meaningful and important role in how to better cultivate the excellent network technology professionals.

4.1 Can not stimulate students' interest in learning.

With the continuous improvement and development of computer technology, the basic theoretical knowledge of route switching technology courses is continuously systematic, and the requirements and difficulty of practical work are constantly improving. All these make it difficult for students to master this skillfully. The skills and skills of the subject, so most of the students gradually become tired of learning, or even give up learning. These negative situations of students bring certain difficulties and pressures to the teaching work of teachers and schools. If you want to improve this phenomenon and improve the teaching efficiency of route switching technology courses, you must pass a scientific, efficient and sustainable Reform strategies to reform [4].

4.2 The content of teaching is out of touch with social needs.

The speed of science and technology development in modern society is staggering. Therefore, the requirements of professional communication and switching technology professionals are constantly improving with the development of network technology, but the teaching content of the school is not based on social needs. Changes are updated in a timely manner, so students cannot meet the requirements of social jobs when they work. For example, the teaching content of the route switching technology course rarely mentions that the VoIP technology, multi-layer switching technology and other related expertise that are popular in the field of computer networks make it difficult for students to know the social routing and routing technology professionals [5]. The requirement is not conducive to the continuous improvement of students according to the requirements of the society.

5. The main measures of teaching reform in route switching technology course

5.1 Re-adjust the teaching content of the course.

According to the development trend of the whole computer network technology in today's society, the teaching content of the route switching technology course can be divided into two major

categories [4]: basic technology and advanced technology.

The basic technology part mainly includes the terminology related to the route switching technology, the configuration of the equipment base, and the functions commonly used by the equipment. The teaching process also allows the students to freely install and configure, and train the students' hands-on ability while cultivating their Independent thinking ability to prepare for future network troubleshooting. The advanced technology part is to further study the advanced features of the route switching technology based on the students' proficiency in basic technology [5]. Basically master the design of various types of multi-layer switching networks, improve the ability of network faults to improve a level, and students have stronger Hands-on ability and professional routing exchange technology skills. In addition, the teaching content in the textbook can increase the more popular technical content in the society, such as multi-layer switching technology, VoIP technology and QoS technology, while the content that is relatively backward or has been eliminated can be deleted, such as X in the wide area network [5]. 25 technology and ISDN technology. You can also choose textbooks with high professionalism and authority, such as the CCNA Study Guide. The author of this book believes that the content is rich, and the emphasis on skills and practice is very beneficial to students' learning.

In addition, because the professional knowledge of the route switching technology course is complicated, boring and difficult to learn, and the skill requirements are high, the institution can appropriately extend the course time of the course and have sufficient time for the students to digest and absorb the teaching content. This move will allow students to master the route switching technology more proficiently.

5.2 Increase the proportion of practical teaching.

As mentioned at the beginning, the route switching technology course is a more practical subject, requiring students to have a strong hands-on ability. Therefore, in order to better develop students' hands-on ability and professional skills, the proportion of practical teaching in daily teaching should be increased to create hands-on opportunities and time for students, for example, to allow students to personally configure switches, routers, etc., or Linking to the WAN, etc., allows students to apply the theoretical knowledge of books in practice. Traditional teaching methods students passively accept knowledge, without hands-on practice, students have no way to deeply understand and apply theoretical knowledge in textbooks [6]. Only by strengthening practical teaching and focusing on cultivating students' practical ability and practical thinking can they help them find the skills of learning route exchange technology courses more quickly and have certain technical skills. In addition, the route exchange technology course is a practical subject, so in the whole teaching process, practical teaching should be the main teaching method. Therefore, such a teaching method can make students more familiar with the equipment, so that understanding and digesting the theoretical knowledge will become a breeze. Of course, the premise is that students must have a certain foundation for the knowledge of network skills and related basic skills, so that they can form better professional skills under the guidance of teachers.

5.3 Finding a suiTable teaching method.

The traditional “cramming” teaching method can no longer meet the development requirements of the times. In addition, the current teaching system is based on students as the main body of the teaching process [6]. Therefore, it is necessary to carry out teaching reform on the route switching technology course. What we have to do is to stimulate students' interest in the course of learning, and to gradually and gradually let the students integrate and integrate the relevant knowledge to understand and digest. Teachers should pay attention to the design of knowledge points according to the teaching order when preparing lessons [6]. From the simple start, form a knowledge chain, so that students can complete each stage of learning step by step. For example, in a certain knowledge point, students are required to implement the Internet, and this knowledge point includes how to configure DHCP, DNS, FIP and WEB, subnetting, configuring dynamic routing and implementing other knowledge points such as VLAN. If you want students to learn and grasp the realization of the Internet, they must first learn other knowledge points, which require teachers to arrange according to

the progress of the teaching design.

5.4 Change the assessment method.

In order to enable students to skillfully apply the theoretical knowledge, teachers can appropriately increase the proportion of practice scores and reduce the proportion of written examinations [7]. Through practice, students have the opportunity to practice repeatedly, to keep knowledge points deeper in their minds, and to master them skillfully. For example, before conducting a routing protocol configuration experiment, the teacher can let the students first understand and understand the subnet-related information, so that students can fully understand the IP planning of the subnet when conducting experiments, and the experiment can get twice the result with half the effort. Secondly, in the daily teaching process, teachers also need to appropriately reduce the difficulty of knowledge points according to the degree of acceptance and digestion of students' knowledge points, and timely understand the difficulties and problems that students may encounter during the student process, and adjust if necessary.

The way and content of teaching, so many aspects of thinking and analysis in the position of students, can better stimulate students' interest in learning. Again, there are some teaching knowledge that is too difficult or too complicated to properly reduce the difficulty [7]. For example, OSI reference model and TCP/IP model, TCP and UDP, there are some similarities between the two, which makes it difficult for students to distinguish. Therefore, it is possible to reduce the difficulty of the question during the study, or to make the students thoroughly understand the key points in the classroom through the curriculum design. Through such assessment changes, students can prevent students from cheating in the examination process, and can also encourage students to be motivated in daily learning, and avoid the occurrence of undesirable phenomena such as students rushing to the front of the exam.

6. Summary

This paper starts from the characteristics and requirements of computer network professional practice teaching, reasonably selects the practical teaching content of the course "routing and exchange technology", and gradually forms a perfect practical teaching system by improving the practical teaching method, and continuously researches in the practice teaching link. Exploration and improvement have important practical significance for cultivating computer network application-oriented senior talents.

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