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TRAINING SPECIALISTS OF THE TELECOMMUNICATION DIRECTION ON THE BASIS OF THE EQUIPMENT D-LINK

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The article states that the laboratory was the foundations of Radio Engineering and telecommunications hardware-based global manufacturer of D-Link. In this laboratory, you can simulate a variety of telecommunications systems, using both wired and wireless access technology. In the laboratory sessions in all the basic disciplines of the specialty RET. Also on the basis of the purchased equipment can organize specialized courses on administration of local area networks, followed by a certificate from the company D-Link.

Keywords: D-Link, telecommunications, programmable switch, wireless, ethernet, VLAN, web - browser.

In respect of innovative solutions rapid development of telecommunication technologies, emergence of new technical and software products demands continuous professional development and self-education in the production activity from experts of the direction of preparation 050719-RET. In this regard and taking into account the necessity of development hi-tech productions and leaving the raw orientation of economy, there is a great problem of uniform system creation of training in the field of informational technologies and telecommunications that will allow to provide development of telecommunication branch in the Republic of Kazakhstan [1].

Another problem in training specialists in the sphere of telecommunications is issued in practical part of training. In this branch it is especially important to provide laboratories with the latest equipment as there is a direct dependence between efficiency of implementation of training programs and extent of integration of corresponding informational communication technologies. Weakness of practical training specialists is concluded in limitation of production bases of practice within the Republic of Kazakhstan. Strength is caused by research of opportunities of development of modern technologies on the basis of various forms of interaction with telecommunication agencies [2].

Within the implementation of the priority national Education project for specialty 050719-RET the new laboratory "Networks of Wire Broadband Access" equipped with the most modern equipment of the world leader of the telecommunication industry of D-Link was created:

- Programmable switchboard of the second DES 3210 level;
- Programmable switchboard of the third DES 3810-28 level;
- Programmable switchboard of the third DES 3528 level;
- Programmable router of DFL 860E;
- Programmable router of DSR 250 with support of architecture of the IEEE 802.11 b g n standards;
- Non-programmable switchboards of the DES 1005 A series;
- Wireless points of access of DAP – 2310;
- Wireless - dual-band wifi DWA-160 USB adapters.
- Workstations.

By means of this equipment it is possible to build any intellectual wire and wireless networks with various type of complexity. Programmable switchboards of the DES series, such as, DES 3210, calculated for 10 ports Ethernet, DES 3810 - 28 calculated for 24 ports Ethernet, DES 3528 calculated for 24 Ethernet ports. It is possible to unite a set of workstations in one network with

application of modern functions of creation of telecommunication networks, and also to connect wire Ethernet a network with wireless and to carry out monitoring by these networks [3].

Let's give below a basic complex of laboratory works on the equipment D-Link which is stated above, corresponding to modern requirements of creation of new generation telecommunication networks:

- The VLAN setting on the basis of the IEEE 802.1Q standard;
- Protocol control of the binding tree STP, RSTP, MSTP;
- Control of protection function against formation of loops LoopBack Detection;
- Aggregation of channels;
- QoS control. Traffic prioritization. Pass-band management;
- Setting of WEP enciphering;
- Setting of Option Ethernet to WLAN Access;
- Setting of asymmetric VLAN;
- GVRP protocol control;
- Control of traffic segmentation.

Management of this equipment is carried out by the administrator of the network via the computer. There are three main types of management:

- Through the hyper terminal;
- Management on the command line with Telnet appendix use;
- Management through browser, Web management;

Hyper terminal represents the program of addition of Windows OS. Control is exercised through a console cable which connects the workstation and the switchboard (Fig.1).

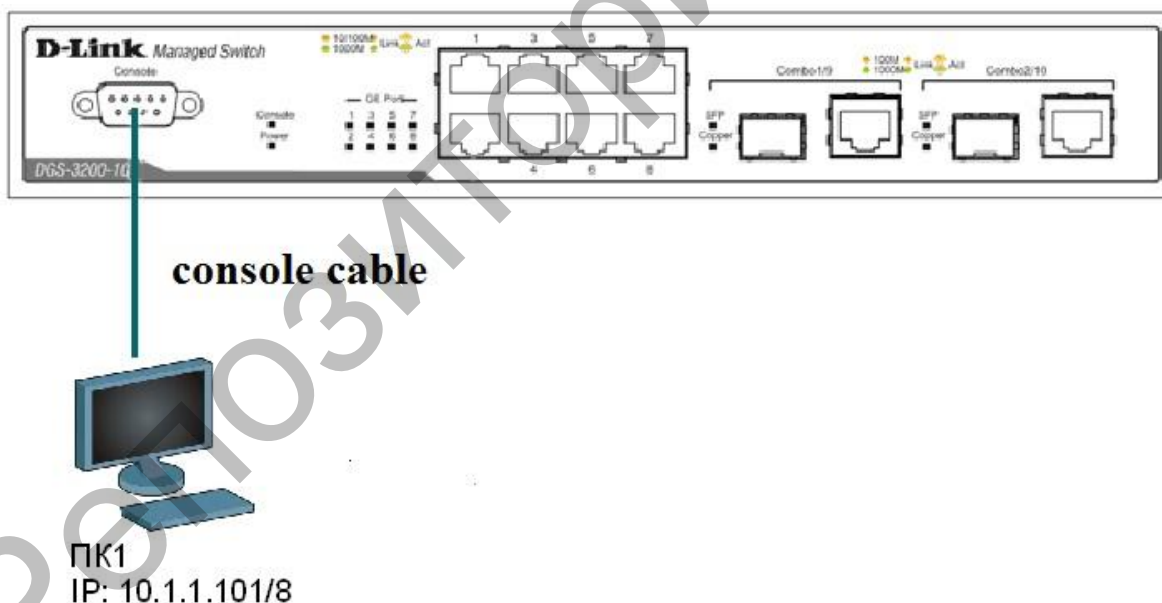


Fig.1. Scheme of switchboard management through a console cable.

After program opening the hyper terminal and introduction of characteristics of the equipment, the window management of the switchboard will be opened (Fig.2). In this window management commands of the device are entered.

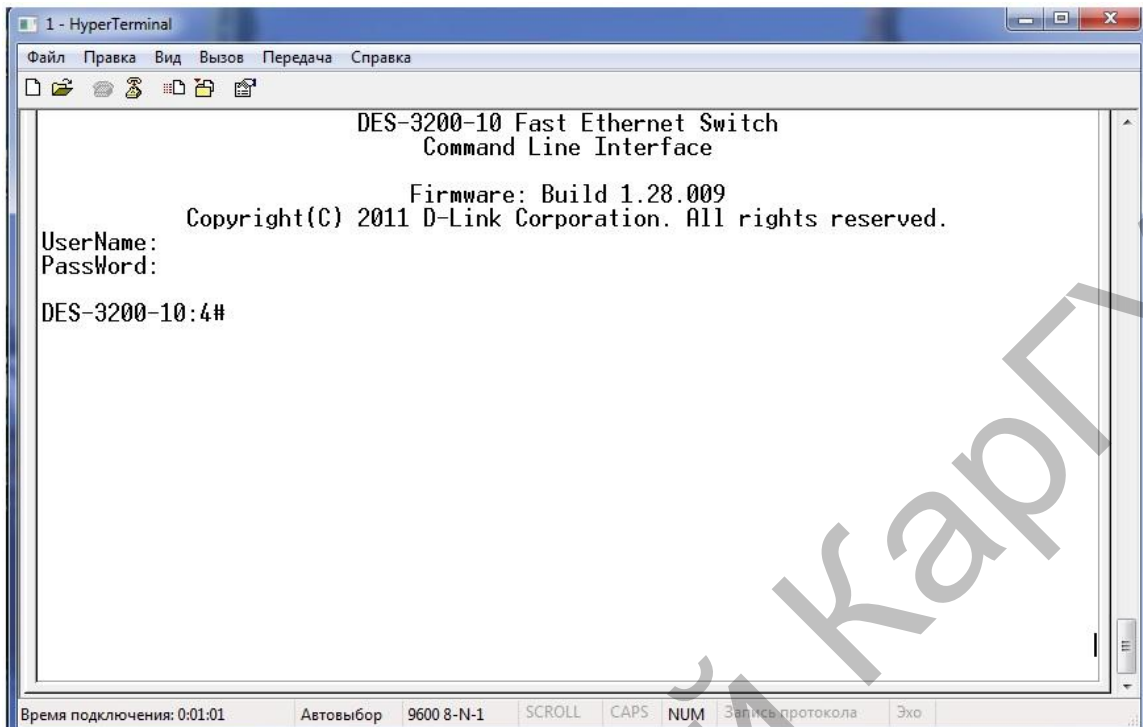


Fig.2. The Main Window management in the appendix the hyper terminal.

Switchboard management in the Telnet appendix and through Web-browser is carried out by means of cable Ethernet (Fig.3).

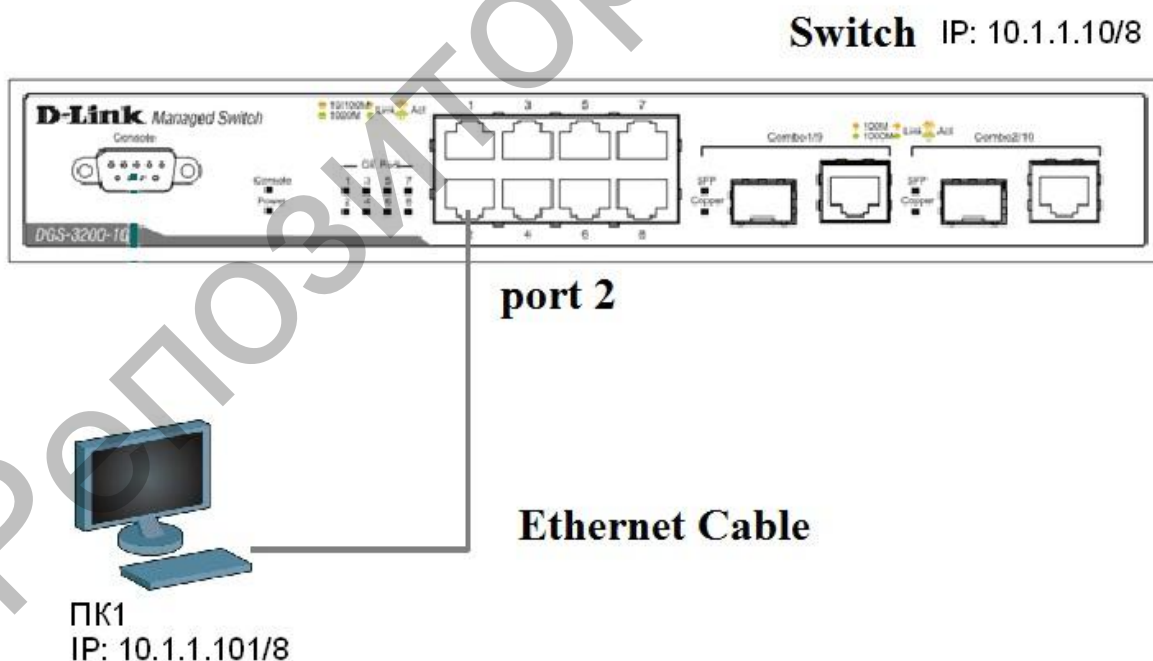


Fig.3. Scheme of switchboard management in Web and Telnet appendix.

Telnet control is exercised after removal of the command line cmd and entering the command telnet <ip that is the switchboard address (router). After that the window of the device management (Fig.4) will be opened [4].



Fig.4. Main Window management in the Telnet appendix.

Control through Web – appendices is exercised by means of entering IP– device address into the address line IP. After that there is a web window– appendices of the device (Fig.5).

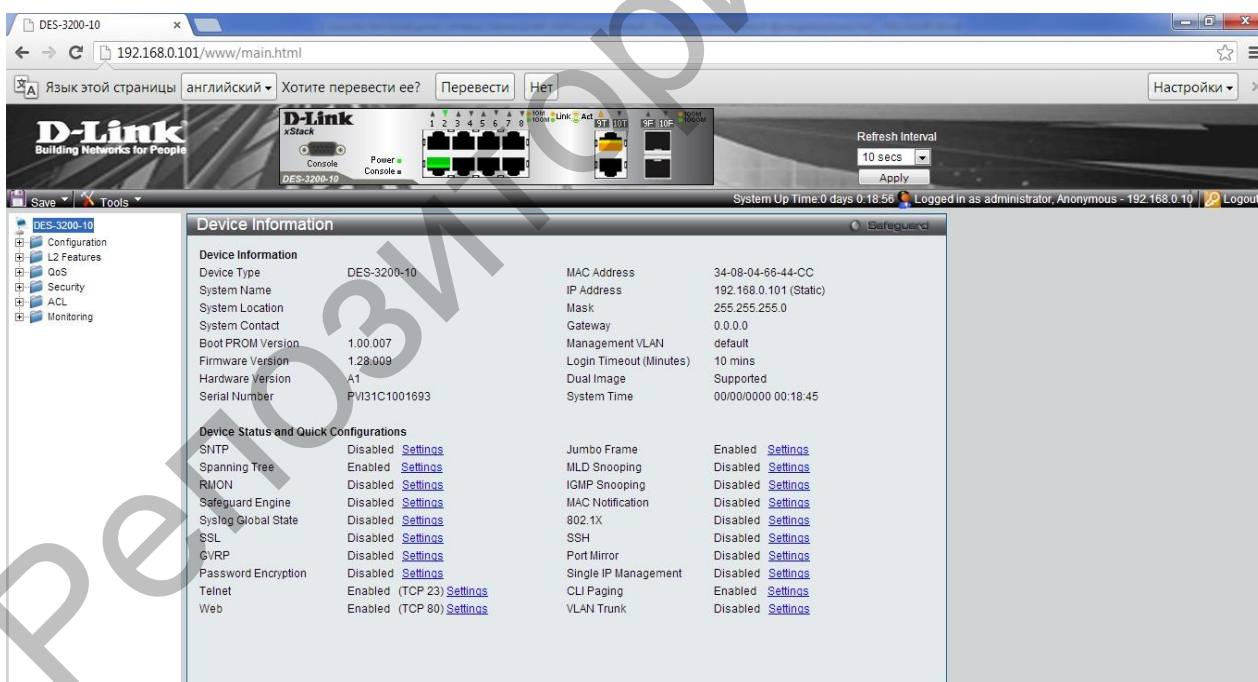


Fig.5. Main Window Web management in the appendix.

It is important to note that management in appendices hyper terminal and Telnet is carried out by means of introduction of commands, and Web management is based on a selection of this or that function in the main Web window of the browser. This set of the equipment is calculated on the training group consisting of 10 people.

Each laboratory work contains the installation scheme with the indication of workplaces number that it is calculated for.

By means of D-Link equipment it is possible to train on the main disciplines of specialty RET, and also to organize courses of system administrators of local networks.

Thus, at the department “Radio physics and electronics” together with the leader of the telecommunication industry D-Link, the systematized work on formation of qualitatively new, innovative information and educational environment providing training of specialists of a new formation with high level of professional mobility, possessing the innovative thinking, owning knowledge and abilities in the field of the latest technologies and capable to their application in science, telecommunications and in the business sphere is conducted by our staff purposefully.

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