



The Faculty of:	Faculty of Electrical and Computer Engineering
Field of study:	Electrical Engineering
Speciality:	
Study degree (BSc, MSc):	Full time studies

COURSE UNIT DESCRIPTION

Course title:	Linux in modern company
Lecturer responsible for course: dr. Kazimierz Lal	
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Department : Department of Computer and Control Engineering	

Semester	Weekly load	Type of classes				Number of ECTS credits
		L Lectures	C Theoretical Classes	Lb Laboratory	P Project	
8	3	30			15	

Course description
<p>Lecture: Linux like a younger Unix "brother": history, distributions, short instalation examples (Unix, Linux), init and system processes, run levels, modes, configuration files, chkconfig/ntsysv. System logs (syslog, /var/log/messages), at and cron commands. Programs instalation and instalation problems: RPM, DEB and source. Sources patching.</p> <p>Filesystems: types, mounting, access rights, repair, block and character devices, links, masks, directory and files structure, low level disk access, inode, /proc, suid, chroot, quota. Text terminal: shell, ssh (keys generating), telnet, scp.</p> <p>Leading into the operating system Linux. The installation and the configuration of SUSE-Linux systems in the SLED version and SLES the Linux as the operating system for personal and portable computers. Linux – base for Internet www servers, ftp and the e-mail. Linux – in the soil of the file server and the application server.</p> <p>Linux of the real time (RT-Linux) - tool for automation (systems of steering of the real time), of metrology (systems of collecting and the data processing measuring) and of telecommunications (VoIP systems) versions built in of operating system the Linux as the base of the company software for contemporary devices of the household and professional devices.</p> <p>Integration of Linuxa and operating systems Microsoft.</p> <p>Firewall: security politics, packet filters, iptables, rules, security scripts, masquerading (SNAT and DNAT).Linux server configuration: Apache2 (directives, virtual servers, certification generating, user homepage, access passwords, error pages).</p> <p>Linux server configuration: proFTPD (directives, limited transfer, commands, ftp client). Linux server</p>

configuration: DHCP (dhcpd.conf, lease, IP with MAC, dhcp client).

Linux server configuration: DNS (zone files, access control lists, reverse zone, servers: cache DNS, authoritative and forwarding, master and slave servers, nslookup, host, dig). Linux server configuration: Postfix (aliases, configuration, conservation, mail boxes, restrictions, client - mail).

Linux server configuration: Samba (section parameters, demons). Linux server configuration: Proxy (Squid).

Linux in supercomputers – techniques and technologies klastrowe.

Techniques and technologies providing with the data security.

Legality of the software – v.3 General Public License.

Classes:

Laboratory:

Project:

Preparation of projects on the chosen or invented theme in 1 or 2 students project groups.

Objectives of the course

Student should obtain theoretical knowledge and practical understanding of Linux network operating system administration and configuration. Possibility of practical configuration Linux network services. Helpful materials <http://trak.prz-rzeszow.pl/>.

Examination method

Preparation of theoretical or practical project about Linux network operating system.

Bibliography

Lal K., Rak T., Kościółek S.: SUSE Linux Enterprise Server. Administracja usługami serwera. Księga eksperta, HELION, 2008; Rak T.: Tworzenie sieci komputerowej. Ćwiczenia praktyczne, HELION, 2006; Lal K., Rak T.: Linux. Komendy i polecenia. Praktyczne przykłady, HELION, 2005; Lal K., Rak T.: Linux a technologie klastrowe, MIKOM, 2005; Lal K., Rak T.: Wprowadzenie do użytkowania systemów Unix i Linux, OFICYNA WYDAWNICZA POLITECHNIKI RZESZOWSKIEJ, Materiały pomocnicze, Rzeszów, 2004; Lal K., Rak T.: Po prostu własny serwer internetowy, HELION, 2002; Mitnick K., Simon W. L.: Sztuka podstępu. Łamałem ludzi, nie hasła, Helion, 2003; <http://dug.net.pl/texty/przeplyw.pdf>; <http://linuxnews.pl>; <http://www.linux.pl>.

Lecturer signature

Head of Department signature

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