PAPILLON-8 AFIS System Administrator Training

Course duration: 8,5 training days (or 12 calendar days)

Admission requirements to learners:
- Skillful PC user knowing computer equipment
- Knowledge of Linux OS fundamentals
- Certified PAPILLON-8 AFIS database administrator

Form of Classes	Qty	Hours
Lectures, lectures-presentations, lectures-demonstrations	19	19 h 10 min
Demonstrations and demonstration with practice	9	13 h 30 min
Practice	19	17 h 10 min
Testing/Exams	2	10 h 10 min
Meetings	2	2 h
TOTAL		62 h

Version 4

COURSE SYLLABUS

The plan of this course is scheduled with provision for coffee breaks and lunch hours.

Day	Topic / Subject	Description	Hours
1 **Sun**	**DAY OF ARRIVAL**	• Transfer from an airport/railway station to PAPILLON • Accommodation	
2 **Mon**	**OPENING SESSION**	• Completion of questionnaires • Safety rules talk • Fire safety instructions • Code of behaviour on the company premises	1 h 40 min
	ADMISSION TESTING (on topics covered in PAPILLON-8 AFIS Database Administrator training course)	• Instructions on the testing procedure • Written test • Practical tasks on troubleshooting (with GUI tools) • Analysis of the tasks fulfilled • Filling in the test protocol	3 h 10 min
	INTRODUCTORY LECTURE PAPILLON-8 AFIS System Administrator's Tasks	Goals and tasks of the Course Introduction to the Course and presenting the training aids *Administrator's tasks in servicing the AFIS:* • Monitoring of the system operation • System maintenance • Keeping the database in up-to-date status	1 h
	LECTURE-PRESENTATION PAPILLON AFIS Hardware and Software: System Architecture	• Conceptual and logical structure of PAPILLON AFIS (graphical scheme) • System configuration • Functions performed by each machine	40 min
	LECTURE Linux OS Basics: Key Notions and Principles	• Linux structure: kernel, modules, software, peripherals, terminals • Command line, characters, wildcards, file names, suffixes, file types	1 h
3 **Tue**	**LECTURE** Linux OS Basics: Key Notions and Principles (continued)	• File ownership, attributes and rights mask	40 min
	LECTURE Command Line Interface. Utilities.	• General format for issuing commands (utilities) • Types of utility • Long and short keys (options) • Command history • Pathnames: absolute (full) and relative • Keyboard shortcuts • Main filesystem directories • Redirection of input-output	40 min

	DEMONSTRATION Main Utilities of Linux OS	• Information utilities: *man, info*. • Utilities for operation with files: *ls, less, tail, cd, pwd, cp, mv, mkdir, du, ln, chmod, chown, grep, rm, split*. • Utilities for operation with archives: *zip, unzip, tar*.	2 h
	PRACTICE Main Utilities of Linux OS	Tasks on using the information utilities, utilities for working files and those for operation with archives. Tutor's guidance available.	40 min
	LECTURE Linux OS Basics: Key Notions and Principles (continued)	Processes, types of processes. Access to disks and disk partitions as file-devices. Structure of boot HDD. Procedure of booting the OS.	1 h 40 min
	DEMONSTRATION Main Utilities of Linux OS	• Utilities for working with processes: *ps, top, kill*. • Utilities for managing system resources: *df, fdisk, dmesg, mount, umount, mkfs, e2fsck, tune2fs*.	1 h 40 min
4 Wed	**PRACTICE** Main Utilities of Linux OS	Tasks on using the utilities for operation with processes and system resources. Tutor's guidance available.	40 min
	LECTURE Linux OS Basics: Key Notions and Principles (continued)	• Users and user groups • Protection against unauthorized access • Machine name • Domain name • IP address	1 h
	DEMONSTRATION Main Utilities of Linux OS	• Network utilities: *ping, traceroute, ifconfig, mii-tool, ssh, ssh-keygen, ssh-copy-id, scp, who, hosname, host, netstat, nmap, lsof, route* • Utilities for user management: *useradd, id, passwd, userdel, usermod, su*. • Others: *shutdown (halt, reboot), lspci, lsmod, modinfo, modprobe, rmmod, mc*.	1 h 40 min
	PRACTICE Main Utilities of Linux OS	Tasks on using the network utilities and those for user management and others. Tutor's guidance available.	40 min
	PRACTICE Main Utilities of Linux OS	Tasks on using the utilities to carry out scheduled preventive maintenance of the AFIS system. Tutor's guidance available.	3 h 20 min
5 Thu	**LECTURE** Linux OS: File System Tree and Contents of Its Directories. OS Services.	• Main directories of the file tree root • Directory used for operation of PAPILLON AFIS • Main services provided by the OS • Service management (*chkconfig*)	2 h
	LECTURE Linux-based PAPILLON-8 AFIS	Server: • Machine name, logging into Linux • Processes: *a8.lsd, a8.fs, a8.fm –n z,* • *a8.dbs, a8.ss, a8.dls, a8.octopus, pilotd, a8.svrf* • Starting of processes from command line with output of debugging information.	1 h

		• Configuration files • Relevant sections in *papillon.ini* • Log files	
	PRACTICE Running of Processes from Command Line with Output of Debugging Information. Detection of Errors in Processes Running on the Server.	Tasks on running processes from the command line with output of debugging information, and on locating errors in the work of processes running on the server. Tutor's guidance available.	40 min
	LECTURE Linux-based PAPILLON-8 AFIS	Matcher: • Machine name, logging into Linux • Processes: *a8.fs, a8.fm, a8.dls, a8.octopus, a8.cvrf.* • Starting of processes from command line with output of debugging information • Configuration files • Relevant sections in *papillon.ini* • Log files	1 h
	PRACTICE Running of Processes from Command Line with Output of Debugging Information. Detection of Errors in Processes Running on Matchers	Tasks on running processes from the command line with output of debugging information, and on locating errors in the work of processes running on matchers. Tutor's guidance available.	40 min
	LECTURE Linux-based PAPILLON-8 AFIS	AFIS Workstation (client): • Machine name, logging into Linux • Processes: *q8.ppln, a8.fs, a8.octopus, fm* • Starting of processes from command line with output of debugging information • Configuration files • Relevant sections in *papillon.ini* • Log files MDS Workstation: • Machine name, logging into Linux • Processes: *l_scan, pilot, x7cvrf, p7lssvrf* • Starting of processes from command line with output of debugging information • Configuration files • Relevant sections in *papillon.ini* • Log files	1 h
	PRACTICE Running of Processes from Command Line with Output of Debugging Information. Detection of Errors in Processes Running on Clients	Tasks on running processes from the command line with output of debugging information, and on locating errors in the work of processes running on workstations. Tutor's guidance available.	1 h
6 **Fri**	**DEMONSTRATION** Maintenance of Equipment: Installation/Demounting. Repair.	• Safety rules and measures at installation and demounting of hardware equipment. • Replacement of polymeric membrane on live-scan devices	1 h 20 min

		• Replacement of UPS batteries	
	PRACTICE Hardware Maintenance	Tasks on maintenance of the AFIS equipment. Tutor's guidance available.	1 h
	LECTURE-DEMONSTRATION PAPILLON-8 AFIS Database Structure	• File *papillon.dbh* • Database partitions, segments, numeration. • Segment attributes (flags) • Setup of automatic creation of segments	1 h
	DEMONSTRATION AFIS Utilities	• *a8.fl* (control over automatic stations) • *a8.dbh* (selection of segments that match specified criteria) • *a8.preserv* (creation of system backups) • *a8.check* (check of database objects) • *a8.dbr* (diagnostics and recovery of index data) • *a8.ln* (operation with groups of mates) • *a8.recom* (work with candidate lists) • *a8.gen* (work with genotype files) • *tv8* (view of file tags) • *a8.mkseg* (creation of segments)	2 h
	PRACTICE AFIS Utilities	Tasks on working with the AFIS utilities. Tutor's guidance available.	1 h
	DEMONSTRATION Setting Up Print-out Forms	• Customization of print out text forms • Customization of tenprint printouts • Settings of print forms for identification cards	1 h
7 **Sat**	**PRACTICE** Setting Up Print-out Forms	Tasks on customization of print-out forms. Tutor's guidance available.	30 min
	DEMONSTRATION Database Operation: Activation of a Segment Downloaded from a Disk. Cross-matching.	• Download of a segment from an external media • Setup of the postponed search (from command line) • Creation of search inquiries	30 min
	PRACTICE Database Operation	Tasks on operation with the database. Tutor's guidance available.	30 min
	LECTURE-DEMONSTRATION Express ID Checks Module	• Setup of the Express ID Check system	30 min
	PRACTICE Express ID Checks Module	Tasks on setting up the module of Express Identity Checks. Tutor's guidance available.	30 min
	LECTURE-DEMONSTRATION Works with Linux OS: Check for Availability of Free Space in HDD Partitions and Disk Subsystems Used for Storing the Database. The *logrotate* Service.	• Check for the availability of free space on the AFIS server, Express ID Check server, matchers and operator workstations • Check for free space available on memboxes and disk subsystems • Rotation of log files • Using the *logrotate* command	30 min

	PRACTICE Check for Availability of Free Space in HDD Partitions and Disk Subsystems. The *logrotate* Service.	Tasks on checking the availability of free space in the HDD partitions and on log rotation. Tutor's guidance available.	20 min
	LECTURE-DEMONSTRATION Attaching an Additional HDD	• Attaching a new HDD • Disk partitioning • Setup of automatic mounting of disk partitions •	20 min
8	**Sunday**	**Day Off**	
9 Mon	**PRACTICE** Attaching an Additional HDD	Tasks on attaching a new HDD. Tutor's guidance available.	40 min
	LECTURE-DEMONSTRATION Application Software: *Pilot* Program Setup	• Customization of the *Pilot* application for different modes of operation	2 h
	PRACTICE Work with Application Software: *Pilot* Program Setup	Tasks on setting up the *Pilot* application software. Tutor's guidance available.	1 h
	LECTURE – DEMONSTRATION Data Transmission from Mobile Terminals	• Functional check of the GSM modem • Functional check of the *Pilot* application	1 h
	LECTURE-DEMONSTRATION Management of a Bulk Tenprint Entry Station	• Application of a Bulk Entry Station • Bulk entry technology • Sheetfed scanner: structure, operation principle and maintenance • Software • Working directories and configuration files • Background processes • Failure causes and troubleshooting	1 h 40 min
	PRACTICE Management of a Bulk Tenprint Entry Station	Tasks on administrating the workstation for bulk tenprint scanning. Tutor's guidance available.	1 h
10 Tue	**DEMONSTRATION** Check for Data Synchronization with Polyphem	• Check for data synchronization between AFIS and Polyphem databases • Check for correct download of text data to Polyphem database • Upkeep of the Polyphem database current and valid	1 h 40 min
	PRACTICE Check for Data Synchronization with Polyphem	Tasks on synchronizing the AFIS and Polyphem databases, and on checking the correctness of data downloaded in Polyphem. Tutor's guidance available.	40 min
	DEMONSTRATION Probable Failures on AFIS and Ways of Troubleshooting	• Grub loader: ways of recovery • Attaching the fingerprint scanner • Troubleshooting of the file system • Resizing the font on the AFIS screen	1 h 40 min
	PRACTICE Solving Problems in AFIS	• Recovery of the grub loader • Attaching the scanner	1 h

	Operation	• Resizing the font on the AFIS application screens	
	LECTURE Probable Faults in Operation of the AFIS Software	• Recovery of the operability of PAPILLON AFIS software in case of probable errors and bugs in its work.	1 h
	PRACTICE Preparation for Final Exam	Tutor's consultation on the trainees' demand and questions.	1 h 20 min
11 Wed	**FINAL EXAM** **(Part 1 – Theory)**	Instructions on the final examination procedure. Performing tasks specified on question cards (written part). Checking the tasks by the tutor. Filling in the exam report.	1 h
	FINAL EXAM **(Part 2 – Practice)**	Performing practical tasks on diagnostics and troubleshooting. Checking the tasks by the tutor. Filling in the exam report.	6 h
	CLOSING SESSION	Summarizing the outcome of the training. Giving certificates.	20 min
12 Thu	**DAY OF DEPARTURE**	• Check-out • Transfer from PAPILLON to an airport / railway station	