

Advanced Linux administrator (code: LC-ADMIN-S)

Overview

Perfecting Linux system administration skills: a thorough survey of select, advanced server technologies.

This course is designed for people who:

- Are already at least an averagely advanced Linux administrators,
- Wish to further enhance their knowledge and professional skills of an administrator
- Are interested in particular services discussed during the course and their applications,
- Are willing to learn selected by us, interesting and useful new issues.

All classes are conducted using computers and are workshops in accordance with our motto: *Theory can be taught in practice.*

Duration

64h

Agenda

1. LVM: advanced configuration and administration
 - designing and implementing LVM-based solutions
 - lvm2 tools
 - device-mapper
 - place and data management
 - backups
 - data recovery
 - snapshots
 - selecting an appropriate file system
 - encrypted filesystems
2. Full virtualization. Paravirtualization.
 - XEN
 - possibilities
 - installation, preparing the server, server migration
 - handling and partitioning the hardware, performance analysis
 - configuration, designing virtual network infrastructure
 - user space tools, the console
 - migrating sessions-in-progress
3. System monitoring
 - SNMP protocol and SNMP support in Linux
 - snmpd daemon,
 - monitoring network devices.
 - Munin
 - trend tracking
 - implementation, configuration
 - troubleshooting performance problems using Munin
 - Nagios
 - state tracing
 - how does it work,
 - designing and preparing the implementation,
 - dependencies between hosts and services,

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- configuration of monitoring mechanisms (NRPE, NSCA, SNMP),
 - setup notification (user groups, notification via text messages and email),
 - custom plugins.; event handlers.
4. Backups and data security
- backup types
 - disk array
 - unstructured copy
 - full copy, incremental copy, differential copy
 - Creating simple file archives (zip, gzip, bzip2, lzma)
 - Rdiff-backup.
 - What hardware to use for backup data storage?
 - Backup system design; backup strategies; what is the minimal set of data to backup
 - Protecting data on customer's devices
5. Directory services, LDAP
- an introduction to directory services.
 - the LDAP protocol, searching the directory
 - public LDAP directories
 - an introduction to coherent authentication infrastructure design, using an LDAP directory.
 - dedicated client tools, examples of use (email client, access point)
 - OpenLDAP
 - installation and configuration
 - security (encrypted client-server communication)
 - folder replication
 - ApacheDS
 - setup and configuration
 - unique features
 - Typical directory authentication solutions:
 - Linux (PAM and NSS), typical system services
 - HTTP Server: Apache, Lighttpd
 - Email: Exim, Postfix, Dovecot, etc. (via SASL).
 - Administration
 - Migrating existing accounts to the directory
 - Overview of tools that facilitate administration of user accounts: phpldapadmin, LAM, migration-tools, smbldap-tools.
6. Samba as a domain controller
- an introduction to smb: theory, protocols, ports.
 - domain controller mode (PDC). Storing data and user profiles - an overview of available options.
 - storing database access rights in different formats.
 - standard (tdb), XML, smbpasswd, LDAP directory
 - samba database tools, migrating between different databases
 - Integrating LDAP with Samba
 - PAM, NSS
 - benefits of using a directory - cost-benefit analysis and implementation
 - setup, tuning and securing the server
 - user management scripts, automatic and manual
 - replication - case study (using OpenLDAP)
 - administration tools
 - Cooperating with an existing Windows 2008 server - samba as a domain client
 - working with Active Directory

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- authentication from an Active Directory server (samba as a domain client)
 - Kerberos - principles of operation, installation, configuration for a samba account
 - Winbind (description and configuration)
 - Migration strategy: Windows -> Samba
 - Samba for Linux clients
 - a comparison with NFS
 - CIFS protocol
 - Presentation and analysis of current and future solutions for providing interactions between Linux and Microsoft systems.
7. E-mail - Exim.
- anatomy, installation, configuration
 - delivering messages, manual control, testing, performance analysis
 - command-line tools
 - Exim Query Language, tailoring the system to suit your needs
 - Exim filters: the syntax
 - additional acls at different stages of processing
 - virtual domains and virtual accounts, different solutions for their storage (system, files, databases, LDAP)
 - authentication methods (authenticators, SASL)
 - limits (quotas)
 - encrypting the communication
 - implementing anti-spam and anti-virus in the early stages of mail processing
 - SpamAssassin - theory, configuration and learning
 - sa-exim
 - ClamAV
 - spf - generating records
 - dkim - digital signatures
 - configuring servers in a large network
 - information exchange between mail servers
 - greylisting: problems and solutions
 - configuring a complete, secure e-mail infrastructure based on Exim and Dovecot (IMAP and POP3), monitoring its work.
 - Example of using Exim as a spam gateway for Microsoft Exchange Server.
8. E-mail - postfix.
- Mail systems based on Postfix
 - design, installation, configuration
 - Postfix configuration, how does it work
 - maps, data sources
 - command line tools, server support
 - authentication
 - encryption of communications

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Target audience and prerequisites

The participants should have at least an intermediate knowledge of Linux administration and TCP/IP networks.

This course serves as a good followup to the Linux Administrator course, but completing that course is not necessary to benefit from this one.

Certificates

After the course we issue a certificate of attendance with a detailed list of acquired skills.

Additionally, there is also the possibility of certification exams Linux Professional Institute (LPI) . Because we are an authorized certification centre LPI exams can be passed easily from us after the course. Completion of this course allows you to obtain the title Advanced Level Linux Professional (LPIC-2) .

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Locations

- Warsaw (English) – Jasna 14/16A
- Online (English) – your home, office or wherever you want
- any other location (London, UK, EU) on request

Price

1290 EUR

The price includes:

- course materials,
- snacks, coffee, tea and soft drinks,
- course completion certificate,
- one-time consultation with the instructor after course completion.

Additional info

We are very concerned about full participation of all students; we encourage discussing the course requirements with the trainer or with our office if you have any doubts as to meeting them.