

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

- Online (English) – your home, office or wherever you want
- Warsaw (English) – Jasna 14/16A
- 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.