

# LPIC2-202 (temario)

## Domain Name Server

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- Basic DNS server configuration
  - Key Knowledge Areas:
    - BIND 9.x configuration files, terms and utilities
    - Defining the location of the BIND zone files in BIND configuration files
    - Reloading modified configuration and zone files
    - Awareness of dnsmasq, djbdns and PowerDNS as alternate name servers
  - The following is a partial list of the used files, terms and utilities:
    - /etc/named.conf
    - /var/named/
    - /usr/sbin/rndc
    - kill
    - host
    - dig
- Create and maintain DNS zones
  - Key Knowledge Areas:
    - BIND 9 configuration files, terms and utilities
    - Utilities to request information from the DNS server
    - Layout, content and file location of the BIND zone files
    - Various methods to add a new host in the zone files, including reverse zones

- Terms and Utilities:
    - /var/named/
    - zone file syntax
    - resource record formats
    - dig
    - nslookup
    - host
  - Securing a DNS server
    - Key Knowledge Areas:
      - BIND 9 configuration files
      - Configuring BIND to run in a chroot jail
      - Split configuration of BIND using the forwarders statement
      - Configuring and using transaction signatures (TSIG)
      - Awareness of DNSSEC and basic tools
    - Terms and Utilities:
      - /etc/named.conf
      - /etc/passwd
      - DNSSEC
      - dnssec-keygen
      - dnssec-signzone
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## Web Services

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- Implementing a web server
  - Key Knowledge Areas:
    - Apache 2.x configuration files, terms and utilities
    - Apache log files configuration and content
    - Access restriction methods and files

- mod\_perl and PHP configuration
- Client user authentication files and utilities
- Configuration of maximum requests, minimum and maximum servers and clients
- Apache 2.x virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- Terms and Utilities:
  - access logs and error logs
  - .htaccess
  - httpd.conf
  - mod\_auth
  - htpasswd
  - AuthUserFile, AuthGroupFile
  - apache2ctl
  - httpd
- Apache configuration for HTTPS
  - Key Knowledge Areas:
    - SSL configuration files, tools and utilities
    - Ability to generate a server private key and CSR for a commercial CA
    - Ability to generate a self-signed Certificate from private CA
    - Ability to install the key and Certificate
    - Awareness of the issues with Virtual Hosting and use of SSL
    - Security issues in SSL use
  - Terms and Utilities:
    - Apache2 configuration files
    - /etc/ssl/, /etc/pki/
    - openssl, CA.pl
    - SSLEngine, SSLCertificateKeyFile, SSLCertificateFile, SSLCertificateChainFile
    - SSLCACertificateFile, SSLCACertificatePath
    - SSLProtocol, SSLCipherSuite, ServerTokens,

ServerSignature, TraceEnable

- Implementing a proxy server
    - Key Knowledge Areas:
      - Squid 3.x configuration files, terms and utilities
      - Access restriction methods
      - Client user authentication methods
      - Layout and content of ACL in the Squid configuration files
    - Terms and Utilities:
      - squid.conf
      - acl
      - http\_access
  - Implementing Nginx as a web server and a reverse proxy
    - Key Knowledge Areas:
      - Nginx
      - Reverse Proxy
      - Basic Web Server
    - Terms and Utilities:
      - /etc/nginx/
      - nginx
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## File Sharing

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- SAMBA Server Configuration
  - Key Knowledge Areas:
    - Samba 3 documentation
    - Samba configuration files
    - Samba tools and utilities
    - Mounting Samba shares on Linux
    - Samba daemons

- Mapping Windows usernames to Linux usernames
    - User-Level and Share-Level security
  - Terms and Utilities:
    - smbd, nmbd
    - smbstatus, testparm, smbpasswd, nmblookup
    - net
    - smbclient
    - /etc/smb/
    - /var/log/samba/
  - NFS Server Configuration
    - Key Knowledge Areas:
      - NFS version 3 configuration files
      - NFS tools and utilities
      - Access restrictions to certain hosts and/or subnets
      - Mount options on server and client
      - TCP Wrappers
      - Awareness of NFSv4
    - Terms and Utilities:
      - /etc/exports
      - exportfs
      - showmount
      - nfsstat
      - /proc/mounts
      - /etc/fstab
      - rpcinfo
      - mountd
      - portmapper
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# Network Client Management

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- DHCP configuration
  - Key Knowledge Areas:
    - DHCP configuration files, terms and utilities
    - Subnet and dynamically-allocated range setup
  - Terms and Utilities:
    - dhcpd.conf
    - /var/log/daemon.log and /var/log/messages
    - dhcpd.leases
    - arp
    - dhcpd
- PAM authentication
  - Key Knowledge Areas:
    - PAM configuration files, terms and utilities
    - passwd and shadow passwords
  - Terms and Utilities:
    - /etc/pam.d/
    - pam.conf
    - nsswitch.conf
    - pam\_unix, pam\_cracklib, pam\_limits, pam\_listfile
- LDAP client usage
  - Key Knowledge Areas:
    - LDAP utilities for data management and queries
    - Change user passwords
    - Querying the LDAP directory
  - Terms and Utilities:
    - ldapsearch
    - ldappasswd
    - ldapadd
    - ldapdelete
- Configuring an OpenLDAP server
  - Key Knowledge Areas:
    - OpenLDAP
    - Access Control
    - Distinguished Names

- Changetype Operations
  - Schemas and Whitepages
  - Directories
  - Object IDs, Attributes and Classes
  - Awareness of System Security Services Daemon (SSSD)
  - Terms and Utilities:
    - slapd
    - slapd.conf
    - LDIF
    - slapadd
    - slapcat
    - slapindex
    - /var/lib/ldap/
    - loglevel
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## E-Mail Services

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- Using e-mail servers
  - Key Knowledge Areas:
    - Configuration files for postfix
    - Basic knowledge of the SMTP protocol
    - Awareness of sendmail and exim
  - Terms and Utilities:
    - Configuration files and commands for postfix
    - /etc/postfix/
    - /var/spool/postfix/
    - sendmail emulation layer commands
    - /etc/aliases
    - mail-related logs in /var/log/
- Managing Local E-Mail Delivery

- Key Knowledge Areas:
    - procmail configuration files, tools and utilities
    - Usage of procmail on both server and client side
  - Terms and Utilities:
    - ~/.procmailrc
    - /etc/procmailrc
    - procmail
    - mbox and Maildir formats
  - Managing Remote E-Mail Delivery
    - Key Knowledge Areas:
      - Courier IMAP and Courier POP configuration
      - Dovecot configuration
    - Terms and Utilities:
      - /etc/courier/
      - dovecot.conf
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## System Security

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- Configuring a router
  - Key Knowledge Areas:
    - iptables configuration files, tools and utilities
    - Tools, commands and utilities to manage routing tables.
    - Private address ranges
    - Port redirection and IP forwarding
    - List and write filtering and rules that accept or block datagrams based on source or
    - Destination protocol, port and address

- Save and reload filtering configurations
  - Awareness of ip6tables and filtering
- Terms and Utilities:
  - /proc/sys/net/ipv4/
  - /etc/services
  - iptables
- Securing FTP servers
  - Key Knowledge Areas:
    - Configuration files, tools and utilities for Pure-FTPd and vsftpd
    - Awareness of ProFTPd
    - Understanding of passive vs. active FTP connections
  - Terms and Utilities:
    - vsftpd.conf
    - important Pure-FTPd command line options
- Secure shell (SSH)
  - Key Knowledge Areas:
    - OpenSSH configuration files, tools and utilities
    - Login restrictions for the superuser and the normal users
    - Managing and using server and client keys to login with and without password
    - Usage of multiple connections from multiple hosts to guard against loss of connection to remote host following configuration changes
  - Terms and Utilities:
    - ssh
    - sshd
    - /etc/ssh/sshd\_config
    - /etc/ssh/
    - Private and public key files
    - PermitRootLogin, PubKeyAuthentication, AllowUsers, PasswordAuthentication, Protocol
- Security tasks
  - Key Knowledge Areas:

- Tools and utilities to scan and test ports on a server
  - Locations and organizations that report security alerts as Bugtraq, CERT or other sources
  - Tools and utilities to implement an intrusion detection system (IDS)
  - Awareness of OpenVAS and Snort
- Terms and Utilities:
  - telnet
  - nmap
  - fail2ban
  - nc
  - iptables
- OpenVPN
  - Key Knowledge Areas:
    - OpenVPN
  - Terms and Utilities:
    - /etc/openvpn/
    - openvpn