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LPIC 2-202 - Linux Network Professional (part 2)

Duration: 5 Days Course Code: LIN202

Overview:

LPIC-2 is the second certification in the multi-level professional certification program of the Linux Professional Institute (LPI). The LPIC-2 will validate the candidate's ability to administer small to medium–sized mixed networks. LPIC-2 exam 202 topicsDomain Name ServerWeb ServicesFile SharingNetwork Client ManagementE-Mail ServicesSystem Security

Target Audience:

Linux Professionals who want to prepare for the LPIC 202 exam.

Objectives:

- To become LPIC-2 certified the candidate must be able to:
- perform advanced system administration, including common tasks regarding the Linux kernel, system startup and maintenance;
- perform advanced Management of block storage and file systems as well as advanced networking and authentication and system security, including firewall and VPN;
- install and configure fundamental network services, including DHCP, DNS, SSH, Web servers, file servers using FTP, NFS and Samba, email delivery; and
- supervise assistants and advise management on automation and purchases.

Prerequisites:

LIN101 LIN102

Testing and Certification

LPIC 202: 202-450

Follow-on-Courses:

- LPIC-3 Mixed Environments
- LPIC-3 Security
- LPIC-3 Virtualization and Containerization
- LPIC-3 High Availability and Storage Clusters

Content:

Topic 207: Domain Name Server

207.1 Basic DNS server configuration

Description: Candidates should be able to configure BIND to function as a caching-only DNS server. This objective includes the ability to manage a running server and configuring logging.

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
- 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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- Squid 3.x configuration files, terms and utilities

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Description: Candidates should be able to set up a Samba server for various clients. This objective includes setting up Samba as a standalone server as well as integrating Samba as a member in an Active Directory. Furthermore, the configuration of simple CIFS and printer shares is covered. Also covered is a configuring a Linux client to use a Samba server. Troubleshooting installations is also tested.

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
- 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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
 Generate a server private key and CSR
- for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs

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Configure Virtual Hosting using SNI
 Awareness of the issues with Virtual

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Description: Candidates should be able to implement client e-mail management software to filter, sort and monitor incoming user e-mail.

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
- 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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- Squid 3.x configuration files, terms and utilities
- Access restriction methods
- Client user authentication methods
- Layout and content of ACL in the Squid

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configuration files
Nginx

- Access restriction methods
- Client user authentication methods
- Layout and content of ACL in the Squid configuration files
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
 Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier

- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address

- Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
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- Awareness of DHCPv6 and IPv6 Router Advertisements
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- Awareness of procmail
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- Basic TLS configuration for Dovecot
- Awareness of Courier

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- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage

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- Reverse Proxy
- Basic Web Server

user names

subnets

utilities

setup

queries

OpenLDAP

Directories

and size

Access Control

Distinguished Names

Changetype Operations

Schemas and Whitepages

Configuration files for postfix

syntax and operators

Awareness of procmail

and administration

Awareness of Courier

tools and utilities

Addresses (IPv6)

Pure-FTPd and vsftpd

routing tables.

Object IDs, Attributes and Classes

Basic TLS configuration for postfix

Awareness of sendmail and eximUnderstanding of Sieve functionality,

Use Sieve to filter and sort mail with

respect to sender, recipient(s), headers

Dovecot IMAP and POP3 configuration

iptables and ip6tables configuration files,

Tools, commands and utilities to manage

Private address ranges (IPv4) and Unique Local Addresses as well as Link Local

List and write filtering and rules that accept

or block IP packets based on source or

destination protocol, port and address

Save and reload filtering configurations

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Configuration files, tools and utilities for

Port redirection and IP forwarding

Basic TLS configuration for Dovecot

Basic knowledge of the SMTP protocol

TCP Wrappers

NFS tools and utilities

Awareness of NFSv4

Advertisements

Samba 4 documentation

Samba 4 configuration files

Mounting CIFS shares on Linux

NFS version 3 configuration files

Mount options on server and client

DHCP configuration files, terms and

Subnet and dynamically-allocated range

Awareness of DHCPv6 and IPv6 Router

PAM configuration files, terms and utilities

LDAP utilities for data management and

passwd and shadow passwords

Change user passwords

Querying the LDAP directory

Directory based configuration

Use sssd for LDAP authentication

Samba 4 tools and utilities and daemons

Mapping Windows user names to Linux

User-Level, Share-Level and AD security

Access restrictions to certain hosts and/or

- Save and reload filtering configurations
- Configuration files, tools and utilities for
- Pure-FTPd and vsftpd Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN

207.2 Create and maintain DNS zones

Description: Candidates should be able to create a zone file for a forward or reverse zone and hints for root level servers. This objective includes setting appropriate values for records, adding hosts in zones and adding zones to the DNS. A candidate should also be able to delegate zones to another DNS server.

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
- 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
- BIND 9 configuration files

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- 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
- Awareness of DANE and related records
- Apache 2.4 configuration files, terms and utilities
- Apache log files configuration and content

routing tables.

- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
 OpenVPN

209.2 NFS Server Configuration

Description: Candidates should be able to export filesystems using NFS. This objective includes access restrictions, mounting an NFS filesystem on a client and securing NFS.

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
- 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
- BIND 9 configuration files

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- Configuring BIND to run in a chroot jail
- Split configuration of BIND using the

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- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN

Terms and Utilities:

- slapd
- slapd-config
- LDIF
- slapadd
- slapcat
- slapindex
- /var/lib/ldap/
- loglevel
- Conditions and comparison operators
- keep, fileinto, redirect, reject, discard, stop
- Dovecot vacation extension
- /etc/dovecot/
- dovecot.conf
- doveconf
- doveadm
- /proc/sys/net/ipv4/
- /proc/sys/net/ipv6/
- /etc/services
- iptables
- ip6tables

211.3 Managing Remote E-Mail Delivery

Description: Candidates should be able to install and configure POP and IMAP daemons.

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

BIND 9 configuration files, terms and

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- 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories

- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix

- forwarders statement
- Configuring and using transaction signatures (TSIG)
- Awareness of DNSSEC and basic tools
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
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- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
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- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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

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- Awareness of NFSv4
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords

utilities

utilities

clients

a commercial CA

intermediate CAs

utilities

Nginx

Hosting and use of SSL

Access restriction methods
Client user authentication methods

configuration files

Reverse Proxy

user names

subnets

utilities

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TCP Wrappers
 Awareness of NFSv4

NFS tools and utilities

Basic Web Server

Samba 4 documentation

Samba 4 configuration files

Mounting CIFS shares on Linux

- 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
- BIND 9 configuration files
- Configuring BIND to run in a chroot jail

Awareness of DNSSEC and basic tools

Awareness of DANE and related records

Apache 2.4 configuration files, terms and

Apache log files configuration and content

Client user authentication files and utilities

Access restriction methods and files

Configuration of maximum requests.

minimum and maximum servers and

Apache 2.4 virtual host implementation

Using redirect statements in Apache's

SSL configuration files, tools and utilities

Generate a self-signed Certificate

Configure Virtual Hosting using SNI

Awareness of the issues with Virtual

Security issues in SSL use, disable

Squid 3.x configuration files, terms and

Layout and content of ACL in the Squid

Samba 4 tools and utilities and daemons

Mapping Windows user names to Linux

User-Level, Share-Level and AD security
 NFS version 3 configuration files

Access restrictions to certain hosts and/or

Mount options on server and client

DHCP configuration files, terms and

Subnet and dynamically-allocated range

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insecure protocols and ciphers

Install the key and certificate, including

Generate a server private key and CSR for

(with and without dedicated IP addresses)

configuration files to customize file access

mod perl and PHP configuration

- Split configuration of BIND using the forwarders statement
- Configuring and using transaction signatures (TSIG)

- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN

207.3 Securing a DNS server

Description: Candidates should be able to configure a DNS server to run as a non-root user and run in a chroot jail. This objective includes secure exchange of data between DNS servers.

Key Knowledge Areas:

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- 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

- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory

 OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
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- Tools, commands and utilities to manage routing tables.
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- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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 OpenVPN

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setup

- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
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- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)

List and write filtering and rules that accept

or block IP packets based on source or

destination protocol, port and address

Save and reload filtering configurations

Configuration files, tools and utilities for

Understanding of passive vs. active FTP

OpenSSH configuration files, tools and

Login restrictions for the superuser and the

Managing and using server and client keys

to login with and without password

connection to remote host following

Locations and organizations that report

Tools and utilities to implement an

Tools and utilities to scan and test ports on

security alerts as Bugtraq, CERT or other

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configuration changes

Usage of multiple connections from multiple hosts to guard against loss of

Pure-FTPd and vsftpd

Awareness of ProFTPd

connections

normal users

utilities

a server

sources

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Port redirection and IP forwarding

- Awareness of dnsmasq, djbdns and PowerDNS as alternate name servers
- BIND 9 configuration files, terms and utilities
- Utilities to request information from the DNS
- Layout, content and file location of the BIND zone files
- Various methods to add a new host in the zone files, including reverse zones
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
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- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- Squid 3.x configuration files, terms and utilities
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- Client user authentication methods
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- Access restrictions to certain hosts and/or subnets
- Mount options on server and client
- TCP Wrappers

- Awareness of NFSv4
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range

Topic 210: Network Client Management

210.1 DHCP configuration

Description: Candidates should be able to configure a DHCP server. This objective includes setting default and per client options, adding static hosts and BOOTP hosts. Also included is configuring a DHCP relay agent and maintaining the DHCP server.

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
- 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
- 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
- Awareness of DANE and related records
 Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual

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intrusion detection system (IDS)

- Awareness of OpenVAS and Snort
- OpenVPN

Terms and Utilities:

- slapd
- slapd-config
- LDIF
- slapadd
- slapcat
- slapindex
- /var/lib/ldap/
- loglevel
- Conditions and comparison operators
- keep, fileinto, redirect, reject, discard, stop
- Dovecot vacation extension
- /etc/dovecot/
- dovecot.conf
- doveconf
- doveadm
- /proc/sys/net/ipv4/
- /proc/sys/net/ipv6/

Topic 212: System Security

212.1 Configuring a router

rules and averting attacks.

Key Knowledge Areas:

in BIND configuration files

utilities

files

utilities

DNS server

BIND zone files

BIND 9 configuration files

forwarders statement

Description: Candidates should be able to

configure a system to forward IP packet and

perform network address translation (NAT, IP

masquerading) and state its significance in

protecting a network. This objective includes

configuring port redirection, managing filter

BIND 9.x configuration files, terms and

Defining the location of the BIND zone files

Reloading modified configuration and zone

Awareness of dnsmasg, djbdns and

BIND 9 configuration files, terms and

Utilities to request information from the

Layout, content and file location of the

zone files, including reverse zones

Configuring BIND to run in a chroot jail

Split configuration of BIND using the

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Configuring and using transaction

Various methods to add a new host in the

PowerDNS as alternate name servers

/etc/services
iptables

ip6tables

setup

- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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

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- Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier

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- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage

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signatures (TSIG)

- Awareness of DNSSEC and basic tools
- Awareness of DANE and related records
- Apache 2.4 configuration files, terms and utilities
- Apache log files configuration and content
- Access restriction methods and files

Configuration of maximum requests,

minimum and maximum servers and

Apache 2.4 virtual host implementation

Using redirect statements in Apache's

SSL configuration files, tools and utilities

Generate a self-signed Certificate

Configure Virtual Hosting using SNI

Awareness of the issues with Virtual

Security issues in SSL use, disable

Client user authentication methods

Squid 3.x configuration files, terms and

Layout and content of ACL in the Squid

Samba 4 tools and utilities and daemons

Mapping Windows user names to Linux

User-Level, Share-Level and AD security

Access restrictions to certain hosts and/or

insecure protocols and ciphers

Install the key and certificate, including

Generate a server private key and CSR for

(with and without dedicated IP addresses)

configuration files to customize file access

mod_perl and PHP configuration

clients

a commercial CA

intermediate CAs

utilities

Nginx

Hosting and use of SSL

Access restriction methods

configuration files

Reverse Proxy

user names

subnets

utilities

setup

queries

OpenLDAP

TCP Wrappers

NFS tools and utilities

Awareness of NFSv4

Advertisements

Basic Web Server

Samba 4 documentation

Samba 4 configuration files

Mounting CIFS shares on Linux

NFS version 3 configuration files

Mount options on server and client

DHCP configuration files, terms and

Subnet and dynamically-allocated range

Awareness of DHCPv6 and IPv6 Router

PAM configuration files, terms and utilities

LDAP utilities for data management and

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passwd and shadow passwords

Change user passwords

Querying the LDAP directory

Directory based configuration

Use sssd for LDAP authentication

Client user authentication files and utilities

OpenVPN

Topic 208: Web Services

208.1 Implementing a web server

Description: Candidates should be able to install and configure a web server. This objective includes monitoring the server's load and performance, restricting client user access, configuring support for scripting languages as modules and setting up client user authentication. Also included is configuring server options to restrict usage of resources. Candidates should be able to configure a web server to use virtual hosts and customize file access.

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
- 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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI

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routing tables.

- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
 Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
 OpenVPN
- 210.2 PAM authentication

Description: The candidate should be able to configure PAM to support authentication using various available methods. This includes basic SSSD functionality.

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
- 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
- BIND 9 configuration files

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- Configuring BIND to run in a chroot jail
- Split configuration of BIND using the

- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- Tools and utilities to scan and test ports on a server
- Locations and organizations that report security alerts as Bugtraq, CERT or other sources

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- Tools and utilities to implement an intrusion detection system (IDS)
- Awareness of OpenVAS and Snort
- OpenVPN

Terms and Utilities:

- slapd
- slapd-config
- LDIF

slapindex

slapadd
slapcat

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- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier

- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique

- forwarders statement
- Configuring and using transaction signatures (TSIG)
- Awareness of DNSSEC and basic tools
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
 Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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

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- Awareness of NFSv4
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements

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- PAM configuration files, terms and utilities
- passwd and shadow passwords

- /var/lib/ldap/
- loglevel
- Conditions and comparison operators
- keep, fileinto, redirect, reject, discard, stop
- Dovecot vacation extension
- /etc/dovecot/
- dovecot.conf
 doveconf

/proc/sys/net/ipv4/

/proc/sys/net/ipv6/

212.2 Securing FTP servers

Description: Candidates should be able to

configure an FTP server for anonymous

downloads and uploads. This objective

anonymous uploads are permitted and

BIND 9.x configuration files, terms and

Defining the location of the BIND zone files

Reloading modified configuration and zone

Awareness of dnsmasq, djbdns and

BIND 9 configuration files, terms and

Utilities to request information from the

Lavout, content and file location of the

zone files, including reverse zones

Configuring BIND to run in a chroot jail

Awareness of DNSSEC and basic tools

Awareness of DANE and related records

Apache 2.4 configuration files, terms and

Apache log files configuration and content

Client user authentication files and utilities

Access restriction methods and files
 mod_perl and PHP configuration

Configuration of maximum requests,

minimum and maximum servers and

Apache 2.4 virtual host implementation

Using redirect statements in Apache's

(with and without dedicated IP addresses)

configuration files to customize file access

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Split configuration of BIND using the

Configuring and using transaction

Various methods to add a new host in the

PowerDNS as alternate name servers

includes precautions to be taken if

configuring user access.

Key Knowledge Areas:

in BIND configuration files

utilities

files

utilities

DNS server

BIND zone files

BIND 9 configuration files

forwarders statement

signatures (TSIG)

utilities

clients

/etc/services

iptables
ip6tables

doveadm

Local Addresses as well as Link Local Addresses (IPv6)

- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for
- Pure-FTPd and vsftpd Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN

208.2 Apache configuration for HTTPS

Description: Candidates should be able to configure a web server to provide HTTPS.

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
- 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
- BIND 9 configuration files

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- 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
- Awareness of DANE and related records
- Apache 2.4 configuration files, terms and utilities

- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
 OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN

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- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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

setuc

queries

OpenLDAP

Directories

and size

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Access Control

Distinguished Names

Changetype Operations

Schemas and Whitepages

Configuration files for postfix

syntax and operators

Awareness of procmail

Object IDs, Attributes and Classes

Basic TLS configuration for postfix

Awareness of sendmail and exim

Basic knowledge of the SMTP protocol

Understanding of Sieve functionality,

Use Sieve to filter and sort mail with

respect to sender, recipient(s), headers

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Awareness of NFSv4

Advertisements

 DHCP configuration files, terms and utilities

Subnet and dynamically-allocated range

Awareness of DHCPv6 and IPv6 Router

PAM configuration files, terms and utilities

LDAP utilities for data management and

passwd and shadow passwords

Change user passwords

Querying the LDAP directory

Directory based configuration

Use sssd for LDAP authentication

- 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories

- Object IDs, Attributes and Classes
- Configuration files for postfix

210.3 LDAP client usage

Description: Candidates should be able to perform queries and updates to an LDAP server. Also included is importing and adding items, as well as adding and managing users.

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
- 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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- Squid 3.x configuration files, terms and utilities

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- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
 Configuration files, tools and utilities for
- Pure-FTPd and vsftpd Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- Tools and utilities to scan and test ports on a server

security alerts as Bugtraq, CERT or other

Locations and organizations that report

Tools and utilities to implement an

intrusion detection system (IDS)

Awareness of OpenVAS and Snort

Description: Candidates should be able to

objective includes managing keys and

over SSH and manage the SSH login.

BIND 9.x configuration files, terms and

Defining the location of the BIND zone files

Reloading modified configuration and zone

Awareness of dnsmasq, djbdns and

PowerDNS as alternate name servers

BIND 9 configuration files, terms and

Utilities to request information from the

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configure and secure an SSH daemon. This

configuring SSH for users. Candidates should

also be able to forward an application protocol

212.3 Secure shell (SSH)

Key Knowledge Areas:

in BIND configuration files

utilities

files

utilities

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sources

OpenVPN

- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN

208.3 Implementing a proxy server

Description: Candidates should be able to install and configure a proxy server, including access policies, authentication and resource usage.

Key Knowledge Areas:

LIN202

- 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

- Access restriction methods
- Client user authentication methods
- Layout and content of ACL in the Squid configuration files
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
 Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding

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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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities

Generate a self-signed Certificate

Configure Virtual Hosting using SNI

Awareness of the issues with Virtual

Security issues in SSL use, disable

Client user authentication methods

Souid 3.x configuration files, terms and

Layout and content of ACL in the Squid

Samba 4 tools and utilities and daemons

Mapping Windows user names to Linux

User-Level, Share-Level and AD security

Access restrictions to certain hosts and/or

insecure protocols and ciphers

intermediate CAs

utilities

Nginx

Hosting and use of SSL

Access restriction methods

configuration files

Reverse Proxy

user names

subnets

utilities

setup

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TCP Wrappers

NFS tools and utilities

Awareness of NFSv4

Basic Web Server

Samba 4 documentation

Samba 4 configuration files

Mounting CIFS shares on Linux

NFS version 3 configuration files

Mount options on server and client

DHCP configuration files, terms and

Subnet and dynamically-allocated range

Awareness of DHCPv6 and IPv6 Router

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Install the key and certificate, including

Generate a server private key and CSR for a commercial CA

- Awareness of dnsmasq, djbdns and PowerDNS as alternate name servers
- 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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range

- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
 OpenVPN

210.4 Configuring an OpenLDAP server

Description: Candidates should be able to configure a basic OpenLDAP server including knowledge of LDIF format and essential access controls.

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
- 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
- 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

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Awareness of DANE and related records

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Advertisements

- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail

Awareness of Courier

tools and utilities

Addresses (IPv6)

Pure-FTPd and vsftpd

Awareness of ProFTPd

connections

normal users

utilities

a server

sources

routing tables.

Dovecot IMAP and POP3 configuration and administration

iptables and ip6tables configuration files,

Tools, commands and utilities to manage

Local Addresses as well as Link Local

List and write filtering and rules that accept

or block IP packets based on source or

destination protocol, port and address

Save and reload filtering configurations

Configuration files, tools and utilities for

Understanding of passive vs. active FTP

OpenSSH configuration files, tools and

Login restrictions for the superuser and the

Managing and using server and client keys

to login with and without password

multiple hosts to guard against loss of

Tools and utilities to scan and test ports on

security alerts as Bugtraq, CERT or other

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Locations and organizations that report

Tools and utilities to implement an

intrusion detection system (IDS)

Awareness of OpenVAS and Snort

connection to remote host following

configuration changes

Usage of multiple connections from

Port redirection and IP forwarding

Private address ranges (IPv4) and Unique

Basic TLS configuration for Dovecot

setup

- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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

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- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR
- for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords

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Querying the LDAP directory

- OpenVPN
- 212.4 Security tasks

Description: Candidates should be able to receive security alerts from various sources, install, configure and run intrusion detection systems and apply security patches and bugfixes.

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
- 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

Split configuration of BIND using the

Configuring and using transaction

Awareness of DNSSEC and basic tools

Awareness of DANE and related records

Apache 2.4 configuration files, terms and

Apache log files configuration and content

Client user authentication files and utilities

Access restriction methods and files

Configuration of maximum requests,

minimum and maximum servers and

Apache 2.4 virtual host implementation

Using redirect statements in Apache's

Generate a self-signed Certificate

Install the key and certificate, including

Configure Virtual Hosting using SNI
 Awareness of the issues with Virtual

Security issues in SSL use, disable

Squid 3.x configuration files, terms and

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insecure protocols and ciphers

(with and without dedicated IP addresses)

configuration files to customize file access

SSL configuration files, tools and utilities

Generate a server private key and CSR for

mod_perl and PHP configuration

- Various methods to add a new host in the zone files, including reverse zones
- BIND 9 configuration files
 Configuring BIND to run in a chroot jail

forwarders statement

signatures (TSIG)

utilities

clients

a commercial CA

intermediate CAs

utilities

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Hosting and use of SSL

Access restriction methods

OpenVPN

208.4 Implementing Nginx as a web server and a reverse proxy

Description: Candidates should be able to install and configure a reverse proxy server, Nginx. Basic configuration of Nginx as a HTTP server is included.

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
- 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
- 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
- Awareness of DANE and related records
- Apache 2.4 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- Squid 3.x configuration files, terms and utilities
- Access restriction methods

LIN202

- Client user authentication methods
- Layout and content of ACL in the Squid

- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- Tools and utilities to scan and test ports on a server
- Locations and organizations that report security alerts as Bugtraq, CERT or other sources

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- Tools and utilities to implement an intrusion detection system (IDS)
- Awareness of OpenVAS and Snort OpenVPN

Terms and Utilities:

slapd

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- . slapd-config
- LDIF

- Client user authentication methods
- Layout and content of ACL in the Squid configuration files
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication

Change user passwords

OpenLDAP

Directories

and size

Access Control

Distinguished Names

Changetype Operations

Schemas and Whitepages

Configuration files for postfix

syntax and operators

Awareness of procmail

and administration

Awareness of Courier

tools and utilities

Addresses (IPv6)

routing tables.

Object IDs, Attributes and Classes

Basic TLS configuration for postfix

Awareness of sendmail and exim

Basic knowledge of the SMTP protocol

Understanding of Sieve functionality,

Use Sieve to filter and sort mail with

respect to sender, recipient(s), headers

Dovecot IMAP and POP3 configuration

iptables and ip6tables configuration files,

Tools, commands and utilities to manage

Private address ranges (IPv4) and Unique

List and write filtering and rules that accept

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or block IP packets based on source or

Local Addresses as well as Link Local

Port redirection and IP forwarding

Basic TLS configuration for Dovecot

Querying the LDAP directory

Directory based configuration

LDAP utilities for data management and queries configuration files

- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
 Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP
- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages
- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd

LIN202

- slapadd
- slapcat
- slapindex
- /var/lib/ldap/
- loglevel
- Conditions and comparison operators
 keep, fileinto, redirect, reject, discard,
- stop
- Dovecot vacation extension
- /etc/dovecot/
- dovecot.conf
- doveconf
- doveadm
- /proc/sys/net/ipv4/
- /proc/sys/net/ipv6/
- /etc/services
- iptables
- ip6tables

Topic 211: E-Mail Services

211.1 Using e-mail servers

Description: Candidates should be able to manage an e-mail server, including the configuration of e-mail aliases, e-mail quotas and virtual e-mail domains. This objective includes configuring internal e-mail relays and monitoring e-mail servers.

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
- 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
- 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
- Awareness of DANE and related records
 Apache 2.4 configuration files, terms and utilities
- Apache log files configuration and content
- Access restriction methods and files
- mod_perl and PHP configuration

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destination protocol, port and address

- Save and reload filtering configurations
 Configuration files, tools and utilities for
- Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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

Description: Candidates should be able to

create secure point-to-point or site-to-site

BIND 9.x configuration files, terms and

Defining the location of the BIND zone files

Reloading modified configuration and zone

Awareness of dnsmasq, djbdns and

BIND 9 configuration files, terms and

Utilities to request information from the

Layout, content and file location of the

zone files, including reverse zones

Configuring BIND to run in a chroot jail

Awareness of DNSSEC and basic tools

Awareness of DANE and related records

Apache 2.4 configuration files, terms and

Apache log files configuration and content

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Split configuration of BIND using the

Configuring and using transaction

Various methods to add a new host in the

PowerDNS as alternate name servers

configure a VPN (Virtual Private Network) and

OpenVPN

connections.

utilities

files

utilities

DNS server

BIND zone files

BIND 9 configuration files

forwarders statement

signatures (TSIG)

utilities

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Key Knowledge Areas:

in BIND configuration files

212.5 OpenVPN

- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN

Topic 209: File Sharing

209.1 SAMBA Server Configuration

- Client user authentication files and utilities
- Configuration of maximum requests, minimum and maximum servers and clients
- Apache 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
- DHCP configuration files, terms and utilities
- Subnet and dynamically-allocated range setup
- Awareness of DHCPv6 and IPv6 Router Advertisements
- PAM configuration files, terms and utilities
- passwd and shadow passwords
- Use sssd for LDAP authentication
- LDAP utilities for data management and queries
- Change user passwords
- Querying the LDAP directory
- OpenLDAP

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- Directory based configuration
- Access Control
- Distinguished Names
- Changetype Operations
- Schemas and Whitepages

- 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 2.4 virtual host implementation (with and without dedicated IP addresses)
- Using redirect statements in Apache's configuration files to customize file access
- SSL configuration files, tools and utilities
- Generate a server private key and CSR for a commercial CA
- Generate a self-signed Certificate
- Install the key and certificate, including intermediate CAs
- Configure Virtual Hosting using SNI
- Awareness of the issues with Virtual Hosting and use of SSL
- Security issues in SSL use, disable insecure protocols and ciphers
- 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
- Nginx
- Reverse Proxy
- Basic Web Server
- Samba 4 documentation
- Samba 4 configuration files
- Samba 4 tools and utilities and daemons
- Mounting CIFS shares on Linux
- Mapping Windows user names to Linux user names
- User-Level, Share-Level and AD security
- 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
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Directory based configuration

Distinguished Names

Changetype Operations

Schemas and Whitepages

Object IDs, Attributes and Classes

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OpenLDAP

Directories

training@globalknowledge.qa

Access Control

- Directories
- Object IDs, Attributes and Classes
- Configuration files for postfix
- Basic TLS configuration for postfix
- Basic knowledge of the SMTP protocol
- Awareness of sendmail and exim
- Understanding of Sieve functionality, syntax and operators
- Use Sieve to filter and sort mail with respect to sender, recipient(s), headers and size
- Awareness of procmail
- Dovecot IMAP and POP3 configuration and administration
- Basic TLS configuration for Dovecot
- Awareness of Courier
- iptables and ip6tables configuration files, tools and utilities
- Tools, commands and utilities to manage routing tables.
- Private address ranges (IPv4) and Unique Local Addresses as well as Link Local Addresses (IPv6)
- Port redirection and IP forwarding
- List and write filtering and rules that accept or block IP packets based on source or destination protocol, port and address
- Save and reload filtering configurations
- Configuration files, tools and utilities for Pure-FTPd and vsftpd
- Awareness of ProFTPd
- Understanding of passive vs. active FTP connections
- 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
- 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
- OpenVPN
- 211.2 Managing E-Mail Delivery

Weight: 2

- Configuration files for postfix
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Further Information:

For More information, or to book your course, please call us on Head Office Tel.: +974 40316639 training@globalknowledge.qa www.globalknowledge.com/en-qa/

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