Question 1.

1. What are the Windows 2008 Server editions and describe their technical differences

- Foundation
- Standard
- Enterprise - Clustering
- Datacenter
- Web Server - IIS
- HPC - purely HPC, no other role can be used
- It varies in parameters like RDP, RAM, and then featury as hot replace RAM / CPU

2. What are the options for installing Windows 2008 Server and what are the types of roles the server can provide?

- Installation types are Core (CMD only) and Full (even with GUI) + combined with the previous question
- Role - File, Print, Application, Email, Domain Controller, DNS, DHCP, ...

3. Describe what a domain, a tree, a forest, and what types of relationships exist

Domain is a group of computers sharing a common directory database. It has a unique name and provides access to centralized user account and group accounts.
Domain Tree - Hierarchical Joining of Domains Created by Parent-Child Relationship, All domains in the domain tree share the same namespace
In case one or more domains share the same directory data, they are called LES.

4. What is Active Directory and the Global Catalog and what they are used for

AD

- Implement LDAP directory services
- Allows structured management of users, computers, and other resources
- Central policy administration, sw installation, DNS integration

Global catalog

- Contains a subset of attributes for all AD objects (read only)
- Lets you search for objects in different domains

- There is another "role" in DC

5. What functional levels does Windows 2008 Server offer for compatibility between different server OSs when implementing AD. For each level, describe what it allows and what its properties are

	Domain functional level	Forest functional level
Windows 2000 mixed		
Windows 2000 native	Universal groups; groups composition;SID history	
Windows Server 2003 interim		
Windows Server 2003	DC rename; selective authentication	Forest trust; domain renaming;ability to deploy RODC 2008; class deactivation in schema
Windows Server 2008	Fine-grained password policy; better encryption	
Windows Server 2008 R2	Better logon in AD FS	Recycle Bin in AD

6. What are the options for working with the domain from the command line. Focus on working with Active Directory objects

We can create a user, reset his password, delete it.

We can create groups, add a member to it, convert a group to another type, change its range, delete it, find it and its members.

Create a new computer account, add a PC to a group, reset a PC account, disable or enable a PC account

Create OU, delete it, find - user, contact, group, PC account, OU

7. By which domain command you install. What you need to run a domain. Which directories are used and what they contain.

All we need is the operating system that supports it and the DNS service installed. Installing it with the Add-WindowsFeature AD-Domain Services command from the powershelle Domain

component (DC, domain node) Organizational units (OU) - as folders, Common Name (CN, Objects) - users, groups, computers, printers

8. Describe individual types of groups in the domain in terms of scope and security. Jake are a good strategy for creating groups and assigning them to users and repairing them. Describe each strategy individually.

Security

Security - Used to grant access rights and permissions. It can be used as an email distribution group

Distribution - Can only be used with email applications. It can not be used to control permissions

Local - Groups are defined on the local computer. They can only be used on the computer

Range

Domain local - permissions for only one domain. Members can only be accounts (already and pc) and groups from the same domain.

Global - Permissions for objects in any domain within the forests. Only members and groups from the same domain (in which a group is defined) can be members.

Universal - Permissions in different domains in forests. Replicate at GC.

9. Describe the differences in the use of domains and workgroups. Jake Advantages and Disadvantages Use Domain Princes?

Domains - up to thousands of PCs, PCs can communicate with each other even if they are in different logical networks. Every computer and network user has its own set of security permissions that can be edited by a domain administrator. Good data sharing c domain. Complex for administration.

Workgroups - only a few 10 PCs, must be located on the same logical subnet. Every PC needs to be configured on its own - there is no centralization of management. Advantages - Scalability, Centralization of Administration, Authorization Delegation, DNS Integration

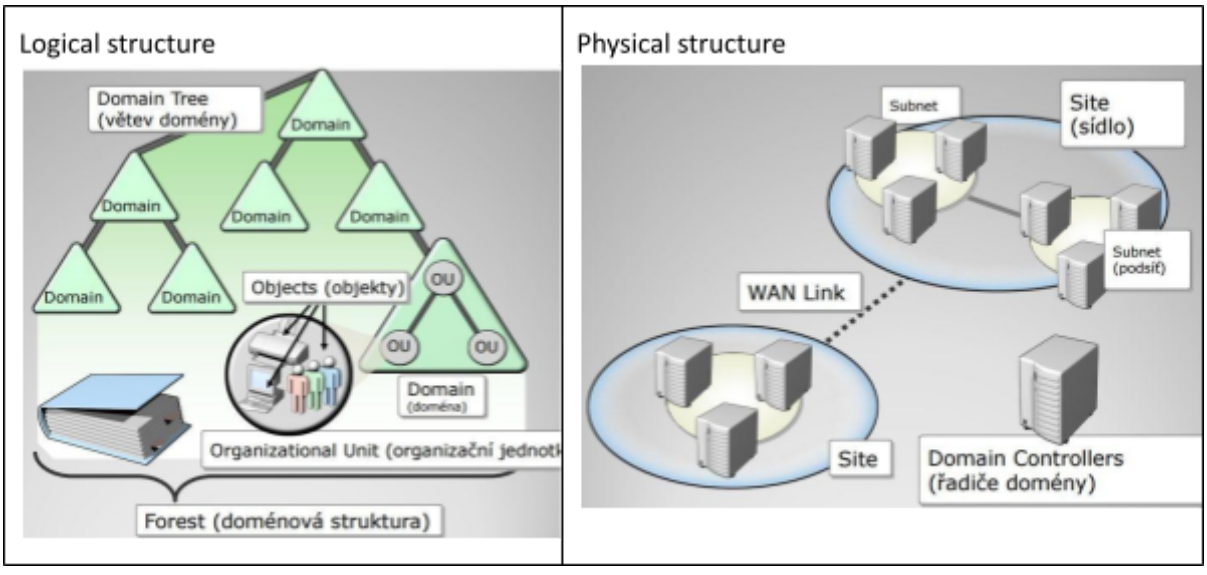
10. Describe the principles of UART virtualization and the UAC user credentials

Even though user admin is running the desktop and applications as a standard user. However, if the application requires administrative privileges, the user displays a dialog box where authorization of the user is required.
Always Warn, Warn - if the program wants to change the operating system settings to the same without screen shading, Turn off

11. Describe FSMO roles that are part of directory services

- Schema Master: The schema master schema master of the FSMO role is the domain controller responsible for updating the directory schema.
- Domain Naming Master: The FSMO domain name master domain holder is the domain controller responsible for making changes to the domain-based domain namespace across the forest.
- Infrastructure Master: The FSMO Infrastructure Master is the domain controller responsible for updating the SID and the distinguishing name in the domain link between domains.
- RID master server: RID master role holder FSMO is one domain controller responsible for processing RID pool requests from all domain controllers in a given domain.
- PDC Emulator: The FSMO primary domain controller emulator is the Windows domain controller that advertises as workstations, member servers, and domain controllers that use earlier versions of Windows as the primary domain controller.

12. describe what is the logic and physical structure of AD?



- a) Logical
- Organizational units ... a subset of domains that often correspond to the organization's business or management structure
- Domains ... groups of computers sharing a common directory database
- Domain trees ... one or more domains sharing a contiguous namespace
- Forests of domains ... one or more domain trees sharing shared directory information

b) Physical
- Subnet ... a network group with a specific IP address range and subnet mask
- Networks ... one or more subnets to configure access to directory service and replication

Question 2.

1. What is a file system? Name those you can use on Windows operating systems and specify their parameters.

specifies how to store files and access rights to them, how to name them, how to search for individual files, how to know who they are, etc.

FAT32

exFAT - substantially improved FAT removes limitations to 4GB files (suitable for large flashdiscs)

NTFS - ACL, Journaling, Transactions, Quotas, 255 UTF Characters for File Name

2. Are Jake protocols used for security in windows? Describe security setting principles using DACL and ACE

Kerberos V5 - standard protocol

NT LAN Manager (NTLM) - primary protocol for windows NT DACL - list 1 or more ACL above object

ACE - Allow / Deny for each activity above the user / group object

AD

3. Does Jake have opportunities to restore AD?

Repairs:

a) Rebuild (Reinstall), server upgrade to DC, Replication

b) Restore, restore to usable system state, manual configuration repair

c) Repair, use NTDSUTIL for db recovery, integrity check

Reboot:

a) Primary restore - there is no active DC, but only the last backup

b) Normal restore - there are replicas, we restore the system and then update it from existing DCs

c) Authoritate restore - All objects

4. What makes us use disk arrays?

Need for higher speed and reliability. Mainly that reliability.

5. Name the basic types of disk fields to indicate the benefits, the inconveniences when to use

raid 0 - stripping - Linking multiple drives to one logical unit. in case of one disk failure, we lose everything

raid 1 - mirroring - the same content on two and more disks, we lose one on the other

raid 5 - at least 3 members, the capacity of one will kill self-repair codes that are stored on the members alternately (not all at one). a longer stretch of data is spread across multiple disks, so reading is faster. The downside is slower writing. Resistant to the failure of one of the disks

raid 6 - uses two parity disks, each of which is self-correcting code calculated in another way, the data is assertively stored on diskich. Read speed is comparable to RAID 5, but writing is slower than RAID 5, precisely because of the two sets of parity information. At least 4 disks are required.

6. How can I manage drives from a tool? Jake are different between the ordinary and dynamic beam and how dynamic can we use in the system?

diskmanager

diskpart

Dynamic volumes bring the ability to extend the storage space to more than one physical hard disk (regular disk partitions are limited to one disk and can not be changed easily).

7. What do you think of as a system state?

The Current computer configurations include:

Registry The COM + model registration class database

Boot files including system files

Database Certification Services

Active Directory Directory Service

SYSVOL directory

Information about the Cluster Services Directory of IIS metadata

System files that are protected by Windows

8. What is the difference between enhancing and archiving? What to back up and why?

We use backups if we need data in the near future. (reinstall the system)

We will use archiving if the data is accessed once for a long time. (archive documents at authorities)

9. How are deleted objects from AD and how to recover deleted objects?

The deleted object is not deleted with the database, the garbage collection will physically delete it from the database

Recover from backup (Adrestore.exe)

10. What are the options for sharing accounts within a workgroup domain. Please also describe the relevant security issues, basic commands and access formats.

net share, net use

8. What is the difference between enhancing and archiving? What to back up and why?

Distributed File System - Shows SMB sharing from multiple physical servers. Provides one (or more) virtual trees. It allows transparent access to various physical locations (networks, branches). Supports redundant storage. DFS-R performs replication of separate redundant copies

12. Explain what are user rights and permissions. Provide examples where they are used. And what are the differences between them.

- Rights - System actions (change of time, system settings, ...)
- Permission - Operations with Objects (Read / Write / ..)

Questions 3 and 4

1. Describe the principles of AGPM (advanced group policy management) and its integration into policy reports

The AGPM Archive provides offline storage for the GPO. Changes in GPOs are stored in the archive and do not affect the production environment until they are approved and put into production.

This results in lower risks and limitations of end-user outages caused by conflicting or incorrectly configured Group Policy objects. Integration in GPM in Change Contol

2. Describe the following services: DNS Client, Even Log, Local Disk Manager, Server Automatic Updates

DNS client - requests server for configuration information. Broadcast communication.

Event log - Records events that happen on your computer. Based on logs, the ability to trace activity, respond to events, and increase security.

Local disk manager - to manage logical volumes in Windows

Server automatic updates - allows downloading and distribution of security patches across the company via a central server.

3. What are the options for managing printers and printing devices. Name and describe individual variants of one or more printers

adding client printer drivers to the print server

updates or changes to printer drivers

removing printer drivers

Sharing the printer connected to your computer

Sharing the printer connected to the switch / hub

4. List the basic tools that are used to manage local PCs. For each tool, state what it is used for

MMC - Provides a dedicated snap-in for managing hardware, software and network services
CMD - Basic Commands, Running Programs, Primal Scripting, PowerShell - advanced commands, conditions, working with registers, services, performance monitoring, system configuration, firewall, computer ...

5. What is covered by security policies, how they are used, and what configuration options they offer

Group Policy can apply a variety of security features such as password complexity, folder and registry permissions, authentication protocols, communications encryption,
Account Policy - Password Policies, Account Lockout, Kerberos Module
Local Policies - Audit Policy, User Rights Assignment, Security Options Event Log - Set Application, System with Event Security Log
Restricted Groups - Membership in Security Groups System Services - Booting and Securing System Services

registry, system file, security site security, public key management, sw limitations, IP protocol security ...

1. What is an application pool and what is it used for?

With the app pool, the app runs separately. Running separately from inetinfo. It distributes applications so that they can not affect other applications on the server

2. How to run multiple virtual www servers on one machine. Name and describe each variation with respect to ISS options

If we want to run multiple www servers, it must have a different address or at least a port, but we can also run the next page as a subnet of a server already running eg neco.com/necodalsiho

3. Describe which configuration files exist in IIS 7 7.x and what are the dependencies between them

4. Describe the network topologies available in windows HPC and its benefits and disadvantages

Enterprise network - Common fire network (domain) Private network - Dedicated network for communication of nodes Application network - Computer data exchange network Application depends on application type

High throughput (> 1Gbps) is important

5. Describe PKI and CA

PKI - Public Key Infrastructure is the management and distribution of cryptographic keys and certificates

CA - Certificate Authority is a public document that contains these attributes: Version, Algorithm, Who Issued it, Validity, Subject, Public Key, Electronic Signature, and Cryptographic Imprint

6. Describe in which types of nodes can servers occur within HPC?

Head Node - splits tasks + holds SQL DB

Computer Node - Computing Server

Broker Node - Communication interface for SOA (service Oriented Architecture) applications

7. What is a cluster and describe two basic purposes.

Cluster - A cluster of collaborative servers that we approach as one system

Basic purposes - load distribution, automatic recovery in case of failure (compliance with SLA - availability to some%)

8. How to run multiple virtual www servers on one machine. Name and describe each variant with respect to the IIS

WWW server = Web Site

It is then possible to have multiple Web Sites in one IIS and must be distinguished at least in one host name, IP address, port

9. Describe the following Netlogon, Network connections, Print spooler, Security Accounts Manager, Computer Browser

Netlogon - Maintains connection between PC and DC for user authentication and service Network connections - Maintains objects in network folder + RDP Print spooler - Maintains print job queue and interaction with printer Security accounts manager - Service that only notifies, that it is ready, otherwise it has access to the SAM file (which holds the passwords) Computer browser - distributes the workgroup list, domains and servers

Question 5.

1. What are the differences between the DNS zone integrated in AD and the zone stored in a text file?

The difference is that it is integrated into AD, so it is stored directly in the AD database and not in a text file

2. What types of DNS zones exist?

Primary

Secondary

Stub zone

Ordinary (data in text file)

AD Integrated (data in AD database)

3. What is DNS, how does translation of names work?

It is used to translate domain names into IP addresses or vice versa.

The PC asks for the DNS server and either either answers or asks for the DNS server to record the address.

4. What is the difference between iterative translation, forwarding (recursive) iterative

All the way from the highest domain to the authoritative answer

Forwarding One port is redirected to one device at a time

5. How the DNS cache works

If the DNS server often queries the parent server to an address, it stores it in memory to speed up the next query to the same address.

6. Describe what types of records exist in the DNS database

A - IPv4 host;

AAAA - IPv6 host

CNAME - alias

MX - Mail Exchanger

SRV - Locator Service

PTR - pointer (reverse translation)

SOA - the start of authority defines some parameters of the

NS - name server zone

7. What is the difference between Forward and Reverse Lookup Areas and why it is worthwhile to set the reversing zone.

Forward - I know DNS name, I want IP (A record)

Reverse - I know IP, I want the DNS name (PTR record)

Email servers refuse to release emails that do not have reverse DNS

8. Why is it necessary to monitor the systems and what the monitoring system brings us

In order to determine the system status and prevent problems and malfunctions. We can monitor the load of CPU, Disk, Network, ... or temperature too. We can also set monitoring for some specific moments.

9. What are the advantages and disadvantages of using a command line while managing an OS?

A command line that is more demanding on the user's ability, but allows us to run scripts, and so we can do a lot of tasks very quickly. But if we want to do something simple, it's sometimes faster to use a GUI.

10. Name and describe the different scripting options in the OS on the Windows platform

BAT, COM - CMD
PS1 powershell

11. What does a dynamic DNS update mean?

Automatically update the DNS record from the dns server whenever a change occurs, so there is no need for manual file zoning - I use DNS client computers

12. What is powershell and what does the basic properties have?

A scripting language that has access to .NET libraries
In general, like any other shell, it is to chain commands through the beep (|) and swap the result of the first command into the second command