Windows Server - Active Directory Internals and Troubleshooting

Course code: GOC171

This five-days instructor led course presents advanced and troubleshooting topics in the Active Directory. Students will learn internals of Active Directory operation, logical structure of domains and forests, FSMO roles, LDAP objects and attributes, their security and searches, details about client and logon interactions, how to optimize DNS, the internals behind RODC technology as well as everything about AD replication and database maintainance. Students will obtain hands-on experience how to (not)create and repair both common as well as exceptional issues and their causes, such as the lingering objects, USN rollback, corrupted authentication or how wil perform several disaster recovery operations including direct NTDS.DIT editing. The course assumes previous knowledge based on the content of MOC 6425 course. The course is taught by trainers who are certified on Microsoft Certified Master Directory Services (MCM: Directory).

At course completion students will be able

Understand Active Directory database and operational internals

Troubleshoot various AD replication, attribute, security and client interactions issues

Plan, design and deploy complex Active Directory environments under high secure concerns

Prerequisities

Knowledge in extent of the courses which are listed in the bellow sections Previous Courses and Related Courses

Good understanding of Active Directory and Group Policy

Good understanding of TCP/IP and DNS technologies

Course outline

Active Directory network services such as LDAP, Kerberos, NTLM, SMB, DCOM and GC

Design considerations for multimaster replication

Supported, not-supported and/or not-recommanded scenarios and role combinations

Storage and attribute capacity limits and data planning

Domains, forests, schema and global catalogue

Schema master and domain naming master

Attribute types and values, secure attributes and logon related attributes

Schema extensions and corruption

Security principals such as users, groups, computers, trusts and managed service accounts

Complex attribute LDAP searches and detailed search syntax

Object and attribute permissions, permission delegation and scripting

Delete operations, tombstones, recycle bin, reanimation and restore

Client interactions, finding DC, protocol transports and constraints

Optimizing DC location and resolving temporary issues or design errors

AD DNS integration, dynamic update and security, aging and scavenging

Optimizing DNS name resolution for clients and DCs

RODC principles, operation and troubleshooting

Planning for secure AD deployments

Replication principles, attribute changes and conflicts

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Sites, IP subnets, replication and client DC location

Planning FSMO roles, sites, subnets for optimal replication and client DC location

Detecting and resolving USN rollback, tombstone lifetime and Kerberos authentication issues

AD database internals and structure, tables and indexes

Database maintainance, backup, restore, autoritative restore and virtual environments

Preparation for Microsoft certification

Most Microsoft certification exams do not require students to attend an official MOC course in order to pass the exam. This applies to all certifications except for MCM

Official Microsoft MOC courses as well as our own GOC courses are good ways of preparation for Microsoft certifications such as MCP, MTA, MCSA, MCSE or MCM

This does not mean that official MOC courses would serve as the only necessary praparation. The primary goal of an MOC course is to provide for sufficient theoretical knowledge and practical experience to effectively work with the related product

MOC courses usually cover most of the topics required by their respective certification exams, but often do not give every topic the same amount of time and emphassis as may be required to completelly pass the exam

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