Windows Server 2012, Part 3 of 6: AD and IP Addresses

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Prerequisites: The course assumes that students have some familiarity with Microsoft Windows, basic networking concepts, and a fundamental understanding of computer hardware.

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Course description: When you start learning about Active Directory, you know you're really getting into the meat of Windows network administration. In this course we'll be starting from scratch, defining Active Directory and going on a tour of the graphical user interface, looking at the database itself, objects in the database, and the tools you use to configure it. We'll be looking at the Active Directory hierarchy, with its forests, domains, and Organizational Units, or OUs. Next, we'll talk about how to promote servers to be domain controllers, a process which has changed significantly in Windows Server 2012. Finally, we'll be covering how to perform both basic Active Directory administration as well as some advanced concepts, tools, and techniques. Next we'll be taking an exam-centric view of IP addressing. We'll talk about IP version 4 addresses in the context of address blocks, and how the size of an address block varies with the subnet mask. Then we'll give you tricks to help you quickly determine the address block size you need for a given network. Finally, we'll be looking at the basics of IP version 6, what these addresses look like, the different categories of IPv6 addresses, and how to tell them apart.

Course outline:

AWS Domain Controller
- Introduction
- Active Directory Basics
- Active Directory Names
- Demo: Active Directory GUI
- Demo: SysVol
- Active Directory Hierarchy
- Demo: Organizational Unit
- Active Directory: Forest
- Active Directory: Domains
- Domain Controller Basics
- Promoting a Server to a DC
- Demo: Promoting a Server
- Demo: Verifying Promotion
- Promoting with PowerShell
- Dcpromo: Still Required With...
- Summary

Objects
- Introduction
- Joining a Computer to a Domain
- Demo: DNS Server
- Demo: Joining Using the GUI
- Demo: Joining Using Sconfig
- Demo: Djoin.exe
- Demo: RedirCMP.exe
- Finding AD Objects
- Demo: Find Objects - GUI
- Demo: Find Objects - PowerShell
- Demo: Filter Operators
- User Accounts
- Demo: New User - GUI
- Demo: New User - PowerShell
- Demo: New User - DSAdd
- Demo: SID
- Demo: Add a User to a Group
- Demo: Modify User Properties
- Demo: Add a User to an ACL
- Summary

Groups
- Introduction
- Group Accounts
- Demo: New Group
- Universal Groups
- Demo: Global Catalog Server
- Default Admin Groups in AD
- Demo: Admin Groups
- Summary

Special Domain Controllers
- Introduction
- Global Catalog Servers
- Demo: Creating a GC
- Operations Master Roles
- Demo: Operations Master Roles
- NTDSUTIL
- Demo: NTDSUTIL
- Summary

IPV4
- Introduction
- Interpreting IPv4: Computer #1
- Interpreting IPv4: Computer #2
- Interpreting IPv4: Computer #3
- Determining ID Lengths in IPv4
- Subnet Mask: Two Notations
- Subnet Mask: Address Block Size
- Routers Divide Address Blocks
- Address Blocks: Basics
- Network ID/Subnet Mask Example
- Smaller Address Blocks
- Larger Address Blocks
- Practice Question #1
- Practice Question #2
- Practice Question #3
- Practice Question #4
- Summary

IPV6
- Introduction
- Intoducing IPv6
- Structure of an IPv6 Address
- What an IPv6 Address Looks Like
- Global IPv6 Addresses
- Link-Local Addresses
- Unique Local Addresses
- Summary