

Enterprise IP Management with Microsoft DNS and DHCP



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What Will You Learn?

- The history of Microsoft DNS
- DNS terminology, concepts and operations
- Common DNS resource records
- Microsoft DNS server and resolver (DNS client) configuration
- DNS extensions
(dynamic updates, incremental zone transfers, DNS Notify)
- Microsoft DNS Active Directory integration
- SRV record registration
- Basic Windows DNS Security
- Microsoft DNS and DHCP interaction
- WINS integration with Microsoft DNS
- DNS debugging tools and techniques
- DNS troubleshooting

Why is this Course Important for You and Your Organization?

The Domain Name System (DNS) is the heartbeat of the Internet, acting as a directory of host names and IP addresses in the same way that a telephone book acts as a directory of names and telephone numbers. Every time you access the Internet through a web browser, an FTP client, or an email program, you're relying on the proper operation of the Domain Name System. DNS is also inextricably tied to Active Directory. And, more often than not, that creates problems for Active Directory. In fact, studies show that 70% of Active Directory problems can be traced to DNS. In this class, you'll learn how to tackle your DNS issues with specific emphasis on Windows 2003 DNS and gain a greater understanding of the key interdependencies of DNS and Active Directory.

There are of course other reasons DNS is important:

- DNS is the world's largest distributed database system, comprising over one million servers operating as a single, worldwide database.
- Studies have shown that over 50% of DNS servers are misconfigured. This can diminish performance and render web sites and other Internet resources inaccessible.
- Misconfigured DNS Server can be a serious security threat.
- The Microsoft DNS Server software is increasingly being used as a key component in the Enterprise DNS infrastructure.

To guarantee the availability of Active Directory and Internet services, it's imperative for network professionals to understand DNS concepts and configuration.

Who Should Attend?

Network engineers, network planners, system administrators – anyone who has anything to do with designing and administering DNS and TCP/IP networks in a Windows 2003 Server environment. The Men & Mice *Enterprise IP Management with DNS and DHCP* course will give you a good understanding of this fundamental Internet/intranet service.

Why DNS Training with Men & Mice?

Men & Mice has specialized in DNS research, products and technology for 15 years. Our main focus is simplifying the management of DNS. The class material is written by some of the best DNS experts in the world and is updated regularly.

Hands-on sessions are part of this training where topics will be practiced in a sandbox Windows 2003 Server Domain environment.

Hands-on exercises include:

- Creating and verifying zones
- Managing and verifying DNS configuration
- Configuring administrative tools (DNS Management snap-in)
- Configuring and verifying slave zones, delegation and zone transfers
- Live Troubleshooting in the Training Network

Course Outline

Basic DNS Theory

- Nodes and Labels
- Domain Names
- Domains and Subdomains
- Delegation and Zones
- Primary Master and Slave Name Servers

DNS Protocol

- DNS Messages
- Resolvers
- Name Resolution
- Recursive and Iterative Queries
- Caching
- Roundtrip Time

DNS in Practice

- Generic Top-Level Domains
- Country-Code Top-Level Domains
- Organization of Top-Level Domains
- Registrars and Registries
- Root Name Servers

The Microsoft DNS Server

- A Brief History
- Basic Configuration of DNS Server
- File Based Zones vs. AD Integrated Zones

A Tour of the DNS Console

- Using and Customizing the DNS Console

Master File Format and Resource Records

- Resource Record Syntax
- A, AAAA, PTR, NS, MX, SRV, TXT, CNAME, and SOA Records in Detail
- Chain of Authority and Delegation
- Classless Reverse-Delegation using CNAME (RFC 2317)
- Mail Delivery Algorithm

Basic Name Server Configuration and Administration

- DNS Configuration
- Advanced Properties in Detail
- Logging and Monitoring
- Forwarding
- Creating Zones
- Zone Properties in Detail

Resolver Theory and Configuration

- The Local Domain Name
- The Search List
- Querying Name Servers
- Windows 2000/2003/XP Resolver Configuration
- Windows Network Registration
- DHCP Server Client Registration

Basic Name Server Security

- Single Points of Failure
- Filtering Traffic
- Restricting Recursive Queries
- Restricting Zone Transfers

DNSIND

- Dynamic Update Theory and Configuration
- NOTIFY Theory and Configuration
- Incremental Zone Transfer
- Theory and Configuration
- Aging and Scavenging Theory and Configuration

DHCP and DNS Integration

- Basic DHCP Behavior
- Basic DHCP Options
- Dynamic DNS update with DHCP

WINS Integration

- Configuring WINS Lookup

DNS and Active Directory

- DNS as a Location Broker
- Activating Active Directory
- Active Directory DNS Records
- Dynamic Updates in Active Directory Environment
- Application Partitions
- Active Directory as Zone Data Storage

Troubleshooting

- Microsoft Support Tools
- Third Party Tools
- Troubleshooting Techniques
- Common Mistakes