Implementing DNS (2 days)

How to Understand and Implement DNS in a Multi-Vendor, Commercial Environment

Relevant Platforms:

- **Linux**
- **Unix**
- **FreeBSD**
- **Solaris**
- **Windows NT**
- **Windows 2000**
- **Windows XP**
- **Windows .NET**

You will learn how to

- Install and build BIND & Microsoft DNS
- Set-up a DNS Client
- Configure a DNS server on your chosen platform (UNIX, Linux or Windows)
- Create master zone files for forward and reverse lookups.
- Delegate name space to sub-domains.
- Interrogate the DNS system using dig, hosts and nslookup.
- Debug DNS configurations.
- Set-up Master, Slave, Caching only, and forwarding DNS servers.
- Configure basic DNS security.
- Troubleshoot DNS.
- Set-up DNS servers on the Internet.

Course Benefits

DNS is probably one of the most crucial applications on the modern Internet. Without it the names we commonly use to refer to servers, web-sites, e-mail servers and so on would not exist.

Despite DNS being in wide-spread use across the Internet, it is often misunderstood and incorrectly configured. This course teaches the operation and management of DNS in detail.

Who Should Attend

This course is ideal network administrators who are responsible for DNS, either on UNIX, Linux or Windows platforms.

A good knowledge of general networking concepts is assumed and TCP/IP in particular.

Course Contents

History of Naming Services

- TCP/IP Recap
- The Internet
- HOSTS.TXT
- Introduction of DNS
- Other name services (NIS, WINS, LDAP)

The Domain Name System

- Domain names
- FQDN
- The DNS hierarchy
- The DNS root
- Domains & subdomains
- Resolvers
- DNS Servers
- Resolving a name

Configuring DNS Clients

- UNIX & Linux
- The service switch file
- resolv.conf
- Windows NT, 2000 & .NET
- The local domain name
- The domain search list
- Defining nameservers
- Configuring via DHCP
- Basic tools; nslookup, dig & hosts
- Network capture of DNS

DNS Server Basics

- Server operation
- Resource Records
- Master files
- Masters and Slaves
- Zones and delegation
- Zone Transfers
- Query Types
- Caching
- Forwarding and Slave Servers

Configuring a DNS Server

- Basics – software configuration
- Basics – create master files
- BIND Server Configuration
- Creating master files in BIND
- Basic Resource Records
- SOA, A, PTR, CNAME, MX, HINFO
- loopback, localhost zones
- The root hints or cache file
- Windows Server Configuration
- Creating Zones in MS DNS
- Adding RR in MS DNS
- Basic BIND options
- Basic MS DNS options
- Monitoring DNS

DNS Basic Security

- Keeping up to date
- Multiple servers
- Using firewalls/filters
- ACLs
- Securing Recursive queries
- Securing Zone Transfers
- Split horizons
- DNS and firewalls

Dynamic DNS

- The operation of DDNS
- NOTIFY messages
- Configuring DDNS
- Incremental Zone transfers
- Integration with DHCP
- Use in Active Directory
- Security issues

DNS TSIG

- TSIG background
- Configuration of TSIG

DNSSEC

- Cryptographic techniques
- RR Types
- Chain of trust
- Creating keys
- Signing Zones
- Using the key
- Resigning a Zone

DNS and Active Directory

- Active Directory basics
- Domain names
- Domain controller RRs
- DNS as a service locator
- Secure dynamic updates
- Migrating from BIND to MS DNS

DNS & IPv6

- AAAA, PTR, A6 & DNAME RRs
- ip6.arpa. & ip6.int.
- A6 chains
- IPv6 in BIND and MS DNS

Practicals

During the course there will be many opportunities for hands-on work. Each module has detailed exercises or demonstrations associated with it. Every delegate has at least one server provided for their own use.

Practicals are run on a mixture of Linux and Windows, platforms. Delegates will have the opportunity to choose their preferred platform when booking.

Hands-On includes:

- Installing and building BIND
- Set-up a DNS client
- Interrogating DNS
- Network monitoring of DNS and understanding DNS messages
- Creating Zones and delegating authority
- Setting up mail server MX RR
- Tuning DNS
- Using DNSSEC and TSIG
- Implementing Dynamic DNS

The Trainers

All our trainers are practising network consultants with extensive experience with IPv6 networking on UNIX, and Windows in large commercial environments. They are ideally suited to bringing you the highest quality of training.

The Company

For further information about the training and our company see our web-site at www.erion.co.uk

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