Systems & Network Training

Definitive DNS for engineers

A 3 day Hands on training course

⭐ Description

This three-day hands on DNS training course studies both the UNIX BIND and the Microsoft (MS DNS) implementations. The course starts with the big picture of how DNS works, then client configuration. Primary and secondary servers are then configured, progressing to DDNS, subdomains and security issues. Hands on sessions follow all sections ensuring that troubleshooting techniques are used throughout the course. Students choose whether to use Windows or UNIX for the hands on sessions.

👍 Key outcomes

By the end of the course delegates will be able to:

✔ Describe the architecture of DNS.

✔ Explain how DNS works.

✔ Install, configure, maintain and troubleshoot DNS.

Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.

Details

Who will benefit?
Technical staff wanting to learn DNS including Network personnel and System administrators.

Prerequisites
UNIX Fundamentals (or Windows knowledge)
TCP/IP foundation for engineers

Duration: 3 days

Customer rating: ★★★★★

Generic training	Small class sizes	Hands On training	Our courseware	Customise your course
Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".	We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.	The majority of our courses use hands on sessions to reinforce the theory.	We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.	Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.
"Friendly environment with expert teaching that teaches the why before the how." G.C. Fasthosts	*"Excellent course. The small class size was a great benefit..."* M.B. IBM	*"Not many courses have practice added to it. Normally just the theoretical stuff is covered."* J.W. Vodafone	*"Comprehensive materials that made the course easy to follow and will be used as a reference point."* V.B. Rockwell Collins	*"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."* S.R. Qinetiq

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Course content

What is DNS?

Hostnames, Name resolution, host files, host file problems, What is DNS? The DNS namespace, TLDs, gTLDs, registering domains, Nameservers, how DNS works. Hands on: Testing DNS servers on the Internet.

DNS clients

Ways to use DNS, dynamic and static configuration, multiple nameservers, domain name, searchlist, resolution issues, testing the configuration. Hands on: Client configuration.

DNS server software

Implementations, Microsoft, BIND, daemons and services, installation, starting and stopping servers. Hands on: Setting up a DNS server.

DNS zone files

What is a zone, Zone file overview, Forward zones, Reverse zones, Resource records, A records, PTR, CNAME, Root hints, local zone file. BIND and Microsoft configuration. Hands on: Server configuration files.

DNS and applications

MX records, Mail server load balancing, SPF, SRV records, VoIP and SRV, Microsoft and SRV, NAPTR. Hands on: Testing records with dig and nslookup.

DNS slaves and other servers

DNS server types, Server resilience, Slaves, Zone transfers, SOA records, Serial numbers, recommendations, polling based zone transfers, NOTIFY, AD integration, DNS caching, Negative caching, TTL, Caching only servers. Hands on: Masters, slaves and zone transfers.

The DNS protocol

The DNS stack, DNS port numbers, DNS queries, The DNS header, header section format, question format, other section format. Hands on: Troubleshooting DNS with Wireshark.

Dynamic DNS

DHCP, DDNS, IXFR, WINS integration. Hands on: Dynamic DNS.

Subdomains

Root servers, root server selection, Authority, delegation, NS records, subdomain with and without delegation, reverse delegation. Hands on: Delegation, setting up a subdomain server.

DNS security

Restricting queries, DNS and firewalls, Split DNS, forwarders, internal root servers, the use of proxy servers, DNSSEC, TSIG. Hands on: Hardening a DNS server.

DNS and IPv6

What is IPv6, IPv6 addressing, IPv6 DNS issues, AAAA, IPv6 reverse delegation.

Troubleshooting DNS

Problem solving, DNS troubleshooting, Zone file checking, Some common errors, Log files, tools, nslookup, dig, host, DNS design, performance, load balancing. Hands on: Putting it all together.

Summary

Useful books, Internet sites, RFCs.

Appendix: ENUM

What is ENUM, How ENUM works, NAPTR.

Step back

TCP/IP foundation for engineers → Definitive DNS for engineers

Step forward

Definitive DNS for engineers → Advanced DNS for engineers

Definitive DNS for engineers → Total SMTP for engineers