# Systems & Network Training

# Total SMTP and email for engineers

A 3 day `Hands on` training course

## ★ Description

A hands on course focusing on the workings of email systems and the standard protocols that they use. The course is not specific to any particular implementation, but some vendor specifics are noted. Linux and Microsoft machines are used in hands on sessions to reinforce the theory of major sessions. The course concentrates on troubleshooting and interworking using network sniffing and protocol inspection rather than "which buttons to push".

## 👍 Key outcomes

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

✔ Describe and explain. SMTP; MIME; POP3; IMAP; PGP, GPG, S/MIME; SPF, DKIM, DMARC

✔ Configure mail routing.

✔ Secure email systems.

## 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 responsible for email systems.

**Prerequisites**
TCP/IP foundation for engineers.
Definitive DNS for engineers.

**Duration:** 3 days

**Customer rating:** ★★★★★

| Generic training | Small class sizes | Hands On training | Our courseware | Customise your course |
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| 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 |

# Total SMTP and email for engineers

## Course content

### SMTP architecture
What is SMTP, email before SMTP, SMTP history, the different protocols, clients, servers. Email composition, transmission, delivering emails, storing and reading emails. MUAs, MTAs, POP3, IMAP, SMTP, DNS, webmail.
Hands on exercise: Setting up MTAs and MUAs and sending a simple email using telnet.

### The SMTP protocol
SMTP protocol stack, SMTP headers, HELO, SMTP mail, MAIL FROM, RCPT TO, DATA, SMTPUTF8, 8BITMIME, TURN, EHLO, ETRN, 3 digit replies.
Hands on exercise: Analysing SMTP packets on a network.

### DNS and SMTP
SMTP forwarding, SMTP relays, interoperation, how SMTP uses DNS, MX records.
Hands on exercise: Setting up mail relays.

### SMTP headers
IMF data, From, to, cc, bcc, sender and recipient headers, message Ids, received trails, in-reply-to, received-SPF, mail list headers.
Hands on exercise: Using clients to analyse details from mail headers, including true originators and path of emails.

### MIME
Email attachments, MIME versions, content type headers, encoding, base 64, binary data, multi part headers, troubleshooting attachments.
Hands on exercise: Analysing MIME headers and attachments.

### POP3
What is POP3, where to use POP3, authorisation, transactions, POP3 commands: USER, PASS, STAT, LIST, RETR, DELE.
Hands on exercise: Setting up a POP3 server, analysing POP3 packets on a network.

### IMAP and IMAPS
What is IMAP, where to use IMAP, authorisation, mailbox structure, IMAP commands: LOGIN, AUTHENTICATE, LIST, CREATE, Examine (message flags), SELECT, STORE.
Hands on exercise: Setting up an IMAP server and analysing IMAP packets on a network.

### Interoperation
Mail gateways, addressing, Exchange, sendmail.

### Email security
Basics, Transport level: STARTTLS. Content: PGP/GPG, mail signing and encryption, S/MIME, digital certificates, secure email submission.
Hands on exercise: Setting up and using a PGP key, configure MTAs to use TLS.

### Email authentication and spam prevention
Mail relays, grey listing, block list & RBL, DNSBL (Real-time Black hole List), White list, SPF, Domain Keys Identified Mail (DKIM), Author Domain Signing Practices (ADSP), Abuse Report Format (ARF), Domain-based Message Authentication, Reporting and Conformance (DMARC).
Hands on exercise: Relay spamming and the blocking spamming.

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**Step back**

TCP/IP foundation for engineers

**Total SMTP and email for engineers**

**Step forward**

Definitive DNS for engineers

LINUX professional part 2 LPIC-2