Email exchange over the Internet is done through the Simple Mail Transfer Protocol. This is a text-based communications protocol that lets different email systems talk to each other even if they would normally talk with proprietary protocols.

[Example 17-6](ch17.html#ch17ex06) shows what an SMTP conversation looks like.

**Example 17-6** An SMTP Conversation Between Two MTAs

[**Click here to view code image**](ch17_images.html#p17ex06a)

220 www.ertw.com ESMTP Postfix  
**HELO www.ertw.com**250 www.ertw.com  
**MAIL FROM: sean@ertw.com**  
250 2.1.0 Ok  
**RCPT TO: swalberg@gmail.com**  
250 2.1.5 Ok  
**DATA**

354 End data with <CR><LF>.<CR><LF>  
**Subject: Testing**  
  
**Hi Sean, just testing**  
**.**  
250 2.0.0 Ok: queued as 8E720731A  
**QUIT**  
221 2.0.0 Bye

In [Example 17-6](ch17.html#ch17ex06) you can see that the conversation is all readable instead of being some kind of binary protocol. The server prefixes all its responses with a number indicating a status code. The wording that follows the number is actually for humans, not other computers!

Understanding [SMTP](gloss01.html#gloss_389) is not necessary for the exam, but for real world troubleshooting it’s valuable to know the kind of information carried inside the protocol, and what’s in the email itself. For example, SMTP doesn’t care about the subject line. It just needs to know who sent the email, where it’s going, and the contents of the email. The final system is the one that cares about the contents.

###### Linux MTAs

Linux has a variety of MTAs. Each one still speaks SMTP, but what differs is how the software is configured and what extra features it can have. There are four MTAs relevant to the exam.

[*Sendmail*](gloss01.html#gloss_372) was once the most popular MTA on the Internet. It can speak a variety of protocols order to connect different email systems. Sendmail is less of an MTA than it is a system for building an MTA out of a language called M4, and is therefore incredibly complicated. This author, not fondly, remembers having a large book on his shelf that was needed to explain how to configure Sendmail. Other than the complexity, Sendmail’s main criticisms are that it puts too many responsibilities in a single process and has a history of security problems.

[*Postfix*](gloss01.html#gloss_313) is an MTA that came out of IBM Research and is still actively developed by the open source community. Postfix has extensive policy configuration to prevent spam and separates concerns into separate processes for security. Even though programs like sendmail had support for external filters such as Anti-Virus scanners bolted on, this external filtering functionality is a first-class citizen in the Postfix world.

[*Qmail*](gloss01.html#gloss_332) was written as a secure replacement to Sendmail. Like Postfix, the concerns are compartmentalized to prevent a successful compromise of one component from gaining access to other components. The configuration is fairly simple, perhaps even more so than Postfix. The source is now in the public domain, so the development seems to have fragmented and slowed down.

[*Exim*](gloss01.html#gloss_117) is another monolithic MTA, like Sendmail, but has a better security record. Exim is highly configurable without needing to devolve into the madness that is sendmail’s M4. At one point Exim was the default MTA in Debian, but the project has since switched to not offering an MTA in a standard installation.

Despite the variety of MTAs with their own configurations, there are some commonalities when it comes to some basic commands and functionality. Part of these commonalities are on the part of the MTA itself, and some are through work done by most distributions to ease the transition between MTAs.