The Maclean IMAP Server Engine
Specification

Organization
Here is a simplified diagram that shows the major components of an IMAP server built using the Engine:

IMAP clients send connection requests that are handled by the Listener. The Listener initializes TCP sessions and hands them off to the Engine to be run as IMAP sessions. The Mailbase Manager provides the Engine with a standardized view of the underlying Mailstore.

Platforms
While parts of it have been ported to other operating systems, the Engine as a whole currently runs on Windows and Linux. Both 32- and 64-bit builds are supported.

For Windows, we support Windows 2003 SP2, 2008, 2012, 7, 8.1 and 10. For Linux, stock sources are adapted for Ubuntu and we will provide versions for other contemporary Linux distributions to order.

Ports of the Engine to other platforms will be performed as time allows and demand dictates.
## Supported Standards

<table>
<thead>
<tr>
<th>RFC</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3501</td>
<td>IMAP Version 4rev1</td>
<td>Base spec for the current version of IMAP.</td>
</tr>
<tr>
<td>2177</td>
<td>IDLE command</td>
<td>Extension that facilitates notifications of new mail arriving and other changes to the current mailbox.</td>
</tr>
<tr>
<td>2221</td>
<td>Login Referrals</td>
<td>Advises client when a user’s account has moved to a different server</td>
</tr>
<tr>
<td>2342</td>
<td>NAMESPACE</td>
<td>Support for multiple message stores.</td>
</tr>
<tr>
<td>2359</td>
<td>UIDPLUS extension</td>
<td>Enhancements for better synchronization.</td>
</tr>
<tr>
<td>2595</td>
<td>LOGINDISABLED</td>
<td>Option to disallow LOGIN command (in favour of secure authentication methods).</td>
</tr>
<tr>
<td>2791</td>
<td>ID extension</td>
<td>Allows client and server to identify each other.</td>
</tr>
<tr>
<td>3516</td>
<td>BINARY extension</td>
<td>Allows client to send and receive MIME parts in binary.</td>
</tr>
<tr>
<td>3691</td>
<td>UNSELECT command</td>
<td>Extension for better control over mailboxes.</td>
</tr>
<tr>
<td>4551</td>
<td>Conditional STORE</td>
<td>Extension for coordinating updates.</td>
</tr>
<tr>
<td>4731</td>
<td>ESEARCH</td>
<td>Extended SEARCH responses.</td>
</tr>
<tr>
<td>5161</td>
<td>ENABLE</td>
<td>Client enabling of relevant extensions.</td>
</tr>
<tr>
<td>5162</td>
<td>QRESYNC</td>
<td>Quick Mailbox Resynchronization.</td>
</tr>
<tr>
<td>5255</td>
<td>LANGUAGE</td>
<td>LANGUAGE command.</td>
</tr>
<tr>
<td>5819</td>
<td>LIST-STATUS</td>
<td>STATUS responses in extended LIST command.</td>
</tr>
</tbody>
</table>
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Features
The Maclean IMAP Server Engine boasts the following features:

- Complete implementation of the base IMAP spec (RFC 3501) including such little-used elements as PREAUTH.
- Support for selected obsolete IMAP elements (pre-4rev1) that are still used by some clients (such as FETCH BODY[0]).
- Optional thread pooling (see below).
- Support (optional) for Unicode mailbox names.
- Optional caching for IMAP ENVELOPE and BODYSTRUCTURE data.
- Optional caching for full message texts.
- Optional session transcription.
- Optional internal logging system or hooks for an external logger.
- SSL/TLS using OpenSSL.
- Support for the following authentication methods: Plain, CRAM-MD5, DIGEST-MD5, NTLM (used by Microsoft Outlook) and OAuth 2.0.
- Support for X- and “backdoor” commands
- Can coexist with other programs that use the mailstore simultaneously, for example WebMail clients (subject to Mailbase Manager provisions).
- Code that is optimized using sophisticated profilers.
- Support for user-readable text in multiple languages (currently Windows only).

Extensions
The IMAP extensions listed in the table on the previous page are supported:

Special Provisions
In addition to conventional hierarchical mailstores, the Engine supports:

- Read-only message stores. (Yes, you can serve from CD-ROM or DVD.)
- “Flat” (non-hierarchical) mailstores.
- Inbox-only stores.

Thread Pooling
The engine can be built to use threads in either of two ways.

The first threading model uses one thread per IMAP session. This is the simpler organization and is appropriate for servers that support modest loads. It will be required in situations where an IMAP session owns resources related to the mailstore that must belong to threads.

The second model uses thread pooling. A small number of worker threads are created and dispatched internally to handle events. With this sophisticated organization, a server
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should easily support thousands of concurrent sessions with minimal system overhead. (Currently thread pooling is supported for Windows only.)

Limitations
The Engine currently lacks the following:

- Support for the ACL extension.
- Capability to operate as an IMAP proxy.

In the Works
We have added full support for the Quick Mailbox Resync extension but this has yet to be proven in a production system.

Statistics
We have customers easily supporting over 1,000 concurrent users on a Windows server.

We provide over 1.5MB of IMAP-specific source code, 400KB of message-parsing code and about 500KB of logging and other support code.

History
Work started in 1999. The first product built using the Engine was released in February 2001. The Engine was offered as an OEM product starting in 2002. Thus it has had over fifteen years in which to become a truly mature piece of software. We continue to find bugs but, except for some in new additions, they are rare and minor. (Only one in the years between 2013 and 2017.)

Pricing
Our standard licensing terms are US$25,000. This buys you full source code, manuals, samples and developer support for one year. You get unlimited rights to use the Engine in any number of products and/or services. A stripped-down version designed for voicemail applications is offered for US$15,000. The thread-pooling code is an optional add-on at US$10,000. We may be prepared to offer other terms to educational and non-profit entities.

Customization
We can provide all forms of customization including ports to other platforms, embeddable versions and versions localized for non-English users.

Notes
This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org/)
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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).