MOZILLA THUNDERBIRD

Introduction:

Mozilla Thunderbird is a free, open source, cross-platform, email, news, and chat client developed by the **Mozilla Foundation**. The project strategy was modeled after that of the Mozilla firefox web browser.

Originally launched as ***Minotaur*** shortly after "*Phoenix*" (the original name for Mozilla Firefox). The project failed to gain momentum at the beginning. But later on the demand increased for a mail client to go with it, and then it was named as Thunderbird, and migrated to the new toolkit developed by the Firefox team.

Releases

Thunderbird development releases occur in three stages

		with correspondence to Firefox's stages
(i) Beta	--->	Beta
(ii) Earlybird and	--->	Aurora and
(iii) Daily	--->	Nightly

The release dates and Gecko versions are exactly the same as Firefox; for example,

Firefox 7 and Thunderbird 7 were both released on September 27, 2011, and were both based on Gecko 7.0.

Features:

Thunderbird is an email, newsgroup, news feed, and chat (XMPP, IRC, Twitter) client.
-It has **extensions** (Search engines are examples of functional extensions, Themes are also an example) and

(i) Functional Features:

1) Message management: Thunderbird can manage multiple email, newsgroup, and news feed accounts and supports multiple identities within accounts. Features such as quick search, saved search folders ("virtual folders"), advanced message filtering, message grouping, and labels help manage and find messages. On Linux-based systems, system mail (movemail) accounts are supported.

(i) Customizing the email:

- Mail account setup
- Personalized email address
- One- click address book
- Attachment reminder
- Multiple-channel chat
- Message archive
- Smart folders

(ii) File Activities:

- Large File Management

-Sharing of files by cloud based servers

2) Extensions and themes: Extensions allow the addition of features via the add-ons website that also features an update functionality to update the extensions. An example of a popular extension is Lightening, which adds calendar functionality to Thunderbird. Thunderbird supports a variety of themes for changing its overall look and feel. These packages of CSS and image files can be downloaded via the add-ons website at Mozilla Add-ons.

(i) Tabs and Search:

- Tabbed email

- Search the web

- Quick Filter toolbar

- Search tools

- Activity manager

- Add-ons manager

- Personalized themes

(ii) Non-Functional Features:

1)File formats supported: Thunderbird provides mailbox format support using plugins. The mailbox formats supported are:

- mbox– Unix mailbox format (one file holding many emails)
- maildir– known as maildir-lite (one file per email).

Thunderbird also uses 'Mork' and 'Mozstorage' (which is based on SQLite for its internal database. The current version of SeaMonkey, version 2.14.1, uses Mork for its indexes for both POP and IMAP mail folders.

2) Limits and known issues: The default mailbox format ("mbox") back end allows a mailbox up to very large sizes (64 bit or file system limit). If used in Local Folder mode, as is the case for POP3 email storage and other offline email stores, it has a usable limit of 4GB, with data corruption possible if this size is exceeded although Thunderbird tries to detect and prevent this.

An issue also exists related to very big filenames in some cases, since Thunderbird must rely on the local computer for filing system limitations, while external email (IMAP especially) can have nested email folders with arbitrary length paths and filenames that cannot be stored under their intended paths and names.

3) Junk filtering: Thunderbird incorporates spam filters, a whitelist based on the included address book, and can also understand classifications by server-based filters such as SpamAssasign.

4) Cross-platform support: Thunderbird runs on a variety of platforms. The primary distribution site has releases for

- Linux
- Windows

- OS X

5) Internationalization and localization: With contributors all over the world, the client is translated into more than 50 languages, although email addresses are currently limited to ASCII local parts.

6) Security: Thunderbird provides enterprise and government-grade security features such as SSL/TLSconnections to IMAP and SMTP servers. It also offers native support for secure email (digital signing and message encryption using certificates). Optional security protections also include disabling loading of remote images within messages, enabling only specific media types (sanitizer), and disabling JavaScript.

- Robust Privacy and Do Not Track

- Phishing Protection

- System updates

Work Flow:

(I) Background

Message flow:

- *For incoming messages*: - establishes connection with server (via accounts and the login manager) and validate user credentials. IMAP, POP3, NNTP, RSS – incoming message protocols used.

- *For outgoing messages:* - user composes the message and thunderbird establishes link with the server(links to account section). SMTP – outgoing message protocols used.

(II) Major components

1) Login Manager: The Login Manager is a component shared by Thunderbird and Firefox that stores username / password combinations in encrypted format.

2) Account Manager: The Account Manager is the root object of the server/folder/message hierarchy. It manages individual accounts on mail servers and the identity of users as used to send mail. Each message source (url+logininfo+protocol) is represented by an `Account` entity, and all accounts are managed**.**

3) Incoming Server: Each account has an associated incoming server that is implemented by the corresponding account protocol.

4) Identity: It contains all the personal outgoing mail information for a given person. Although all account types can have multiple associated identities by design, RSS do not need this entity, as does any other account that does not interact with compose code.

5) Address Book: The address book contains lists of people and all attributes associated with them such as their e-mail address, phone number, etc. It is the central repository of the user's contacts. Physical store of this entity is abook.mab file in the profile directory, and it is in Mork format.

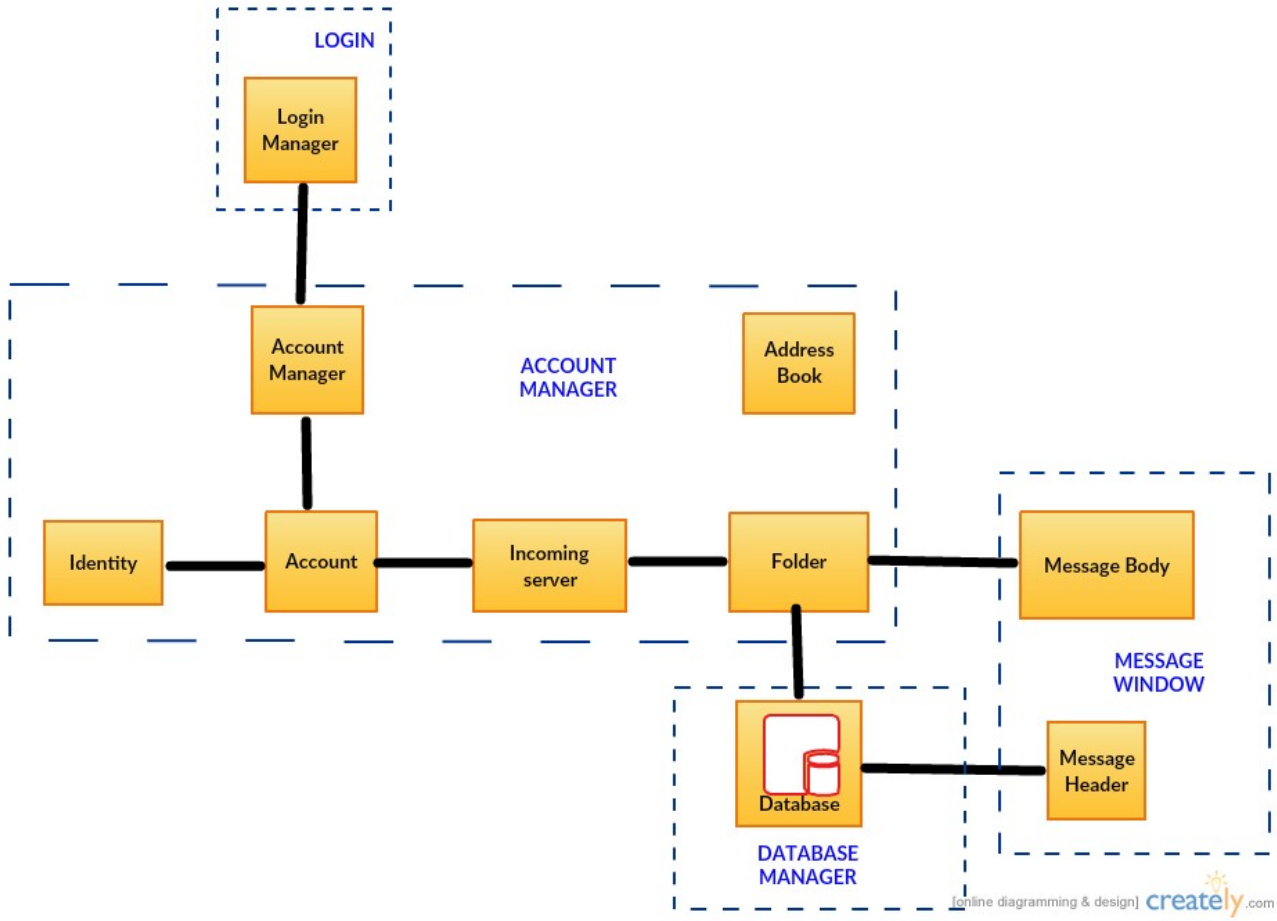
6) Folder: Thunderbird uses a folder-based hierarchical representation to organize messages. It is the logical entity that contains message contents belong to the same hierarchical level. Message content consists of message headers and message body including attachments. These two entities are stored in different physical stores to improve the system performance.

7) Account: Every account has a root folder, which may have several subfolders (each potentially

with their own subfolders, ad infinitum) which are actual folders on the hosting operating system.

8) Database (Global Database): This entity represents the physical store of message. Each "Folder" (in the Thunderbird sense) which can contain messages is represented by two files (in the OS sense): the messages themselves (headers and bodies, in human-readable mbox format) are in one file ("folder" name without extension), while a second file (msf file in Morkformat) indexes them for fast access to a given message. It has a global Database 'Gloda' - functionality enables searching across multiple accounts for specific message parameters (such as email address, the existence of an attachment, receipt within a time range, etc).

Design Architecture:



My Design:

Thunderbird is a powerful desktop email client that is great for using with multiple email accounts, fast registration and offers powerful organization and browsing tools. There are a few things that can be improved:

1) The mobile version of thunderbird sync is quiet slow, and it has a lot of synchronization problems. This feature can be improved.

2) Though thunderbird has very good features gmail is more preferred than thunderbird. This is because googles search is faster. Thunder bird is slow. This feature can also be loooked upon to make it even more faster and better.

3) The interface elements can also be improved.