



Hochschule für Technik
und Wirtschaft Berlin

University of Applied Sciences

BACHELOR ARBEIT

FACHBEREIT 4: INTERNATIONALE MEDIENINFORMATIK

Thunderbird Add-on: One Time Pad Encryption

Student

Esteban LICEA

Mentor/Supervisor

Prof. Dr. Debora

WEBER-WULFF

April 5, 2022

1 Thesis Proposal

I intend to create a Thunderbird Add-on, what will fulfill one specific use case. Namely, Alice want to send an encrypted message to Bob, but Bob is clueless about encryption technology, and can't be bothered learning, installing, or setting up any type of keys. However, they converse regularly, so Alice can just whisper a one time password to him, or even via a telephone conversation—for an important message she wants to send him. Alice then would like to use a Thunderbird add-on, that will allow her to encrypt the message with that password, that Bob can later open with that same password. The message will be encrypted point-to-point.

MailExtensions are based on the WebExtension technology, which is also used by many web browsers. Such an extension is a simple collection of files which modify Thunderbirds appearance and behavior. It can add user interface elements, alter content, or perform background tasks. MailExtensions are created using standard JavaScript, CSS and HTML. Interaction with Thunderbird itself, like adding UI elements or accessing the users messages or contacts is done through special WebExtension APIs. ¹

MailExtensions are created using standard JavaScript, CSS and HTML

1. MailExtensions use stable WebExtension APIs, independent of Thunderbird's own code, and are therefore less likely to break when a new version of Thunderbird is released.
2. The WebExtension technology introduced a permission mechanism, and users have to acknowledge all permissions requested by add-ons before they can be installed. These permission requests enable users to know what an add-on is actually doing. This is a major improvement, as legacy add-ons always had the same privileges as Thunderbird itself, which many users were not aware of. More information can be found in the support article about Permission request messages for Thunderbird extensions.

The main configuration file of a MailExtension is a file called manifest.json, also referred to as the manifest. Besides defining some of the

¹<https://developer.thunderbird.net/add-ons/mailextensions>

extension's basic properties like name, description and ID, it also defines how the extension hooks into Thunderbird:

2 Methods

3 Methodology