Software Test Plan
TauNet Client Application v1.0

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1. Purpose

The purpose of this document is to plan a series of tests that can be performed in order to ensure the robustness and proper functioning of the TauNet client application. It is important to note that no test plan can be completely comprehensive, but that it is our goal to validate and verify the most common use cases and ensure reliability in these cases to the best of our abilities.

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2. Self Tests

Self tests involve any tests that can be performed on a single Raspberry Pi by communicating with itself via the application's receive and send commands.

2.1. Installation

Using the repository from the GitHub website on a fresh install of Raspbian, ensure that the installation instructions provided in the README.md result in a working application and that no error messages or other such roadblocks are encountered on the path from the uninstalled to the installed-and-working TauNet application.

2.2. Missing Client Table

Ensure that the client table is *not* installed. Run both the send and receive commands and ensure that both commands terminate gracefully with a single error message indicating that the client table file is missing.

2.3. Sending and Receiving Messages

Ensure that the client table is properly installed with a client in the list that refers to our own local hostname or machine IP. Begin the receive message and ensure that the receive message binds to the proper hostname and IP and begins to listen for incoming messages.

In a separate terminal, use the send command to send some messages to ourselves. Ensure that the send command runs and terminates gracefully and that the currently running receive command displays the incoming messages as they are sent appropriately.

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3. Community Tests

These tests involve connecting to and communicating with external TauNet clients.

3.1. Sending Messages

Ensure that the client table is properly installed with a list of one or more external clients listening for incoming TauNet messages on separate other Raspberry Pi machines. Send a few messages to each machine and verify that the other clients received all the messages and that the messages are properly encoded and encrypted.

3.2. Receiving Messages

Ensure that the client table is properly installed. Launch the receive command and allow it to listen for incoming messages. Have one or more of the external clients message you and verify that the messages are properly decoded and decrypted, and that each message displays correctly.