

Wifi Browser Quarter Testing Plan

CSCI 492, Winter 2022

Dylan Roy, Stephen Loudiana, Kevin McGrane

1 API Testing

The testing of the Wifi Browser API will utilize white box testing to ensure correctness at each step.

- Configuration Manipulation Testing
 - Create configuration file at correct location: `/home/$USER/TBD`
 - Add new network config to configuration file
 - Populate a network config in the configuration file with data
 - Populate the desired network config (out of many) in the configuration file with data
 - `conf_edit()` modifies an existing network configuration
 - `conf_delete()` removes a specified network config from the configuration file
 - Create a new configuration file in a specified location
 - Use a specified configuration (not the default location's)
 - Set the default configuration location
- Wifi Network Information Gathering
 - `list_available()` returns a list of networks¹
 - `list_configured()` returns a list of configured networks
 - `function` grabs correct key management protocol for a specified network¹
 - `hashPsk` hashes passkeys (hash against SSID and verify in testing)
 - `function` grabs correct EAP network information (pairwise, group, eap, phase2, etc.)¹
 - `hashPwd` hashes EAP passwords (check if password in configuration file different than provided, verify connection)
- `wpa_supplicant` Communication
 - Detect running `wpa_supplicant` process
 - Detect no `wpa_supplicant` process
 - Kill `wpa_supplicant`²
 - Start `wpa_supplicant` with a specified configuration file (and driver and interface)²
 - `wpa_supplicant` connects to a specified network using the API generated configuration file

¹ testing that requires a preconfigured wifi router in order to complete with consistency

² requires sudo privileges

2 CLI Testing

The testing of the Wifi Browser CLI will utilize white box testing to ensure correctness at each step.

- User commands are processed correctly
- Print list of available networks to stdout
- Print list of configured networks to stdout
- Connect to network of provided ssid (unsecured)
- Connect to secured network of provided ssid:
 - Prompt for passkey
- Connect to secured network of provided ssid and passkey
- Connect to EAP network of provided ssid:
 - Prompt for username
 - Prompt for password
- Connect to manually configured network
 - Prompt for ssid
 - Create a new network configuration using ssid; select as current configuration
 - Commands to add information to configuration
- Edit a configured network
 - Prompt for ssid
 - Focus network configuration of the specified ssid
 - Commands to edit/add information to the configuration
- Change default configuration file
- Use specified configuration file

3 TUI Testing

The testing of the Wifi Browser TUI will utilize white box testing to ensure correctness at each step.