

Persona Switcher

Software Requirements Specification

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Abstract: This document includes the requirements for *Persona Switcher* to be implemented by T³SNBN over the course of the Spring 2017 Semester. Dependencies such as the Browser Support for JavaDoc API act as constraints for T³SNBN to migrate *Persona Switcher* to a web-extension fully and directly; however, requirements for the agreed upon plan for partial migration to a web-extension are defined in this document. The document also defines requirements as taken from the ‘issues’ tab on the *Persona Switcher* Github repository.

Table of Contents

Introduction	4
Purpose	4
Scope	4
Definitions, acronyms, and abbreviations	4
References	5
Overview	5
Overall Description	5
Product Perspective	5
Product Functions	6
Design and Implementation Constraints	6
Browser Support for JavaScript API	6
Not a Restartless Add-On	7
Assumptions and dependencies	7
Specific Requirements	7
Functional Requirements	7
Top Priority	7
High Priority	8
Medium Priority	9
Low Priority	9
Non-Functional Requirements	10

1. Introduction

This section states the purpose of this document and gives a scope description of the project. References and definitions of terminology used in this document are also included in this section. This section ends with an overview of what the rest of the document will contain.

1.1 Purpose

The purpose of this Software Requirements Specifications (SRS) document is to define functional and non-functional requirements for updates to the *Persona Switcher* Firefox Add-on.

1.2 Scope

This document will provide requirements involved in migrating the *Persona Switcher* add-on to a web-extension based application in order to be forward compatible with future versions of Firefox and other web browsers.

This document will also provide requirements for testing *Persona Switcher*'s functionality and various bug fixes and enhancements as requested by the customer.

1.3 Definitions, acronyms, and abbreviations

Term	Definition
Customer	The customer in this document always refers to Dr. Beaty.
Legacy Add-on	An add-on to be deprecated within the near future
Web-Extension	A modern web based application
Bug	A current problem with the functionality of the software
Enhancements	Additional features to be implemented for the software
TBD	To be determined

1.4 References

- [1] Mozilla Developer Network. “Browser support for JavaScript APIs”. [Online]. Available: https://developer.mozilla.org/en-US/Add-ons/WebExtensions/Browser_support_for_JavaScript_APIs
- [2] Mozilla Blog. “Add-ons in 2017”. [Online]. Available: <https://blog.mozilla.org/addons/2016/11/23/add-ons-in-2017/>
- [3] Persona Switcher Github Issues Tab. [Online]. Available: <https://github.com/drsjb80/personaswitcher/issues>

1.5 Overview

The remainder of this document includes 2 chapters.

The second chapter contains an overall description of the requirements including constraints and assumptions for migrating *Persona Switcher* to a web-extension. This section also explains the need for migrating *Persona Switcher* to a web-extension and gives an overview

The third chapter provides the functional and non-functional requirements specification in detail for *Persona Switcher* as to be worked on by T³SNBN for the Spring 2017 semester.

2. Overall Description

This section gives an overview of the requirements to be implemented by T³SNBN including the perspective of migrating *Persona Switcher* to a web-extension and constraints that limit our options for fulfilling the customer's requirements.

2.1 Product Perspective

The application *Persona Switcher* is currently a Firefox add-on which is set to be deprecated at the end of 2017 with the update of Firefox 57 [2].

In order to make *Persona Switcher* compatible with future versions of Firefox it must be migrated to a web-extension. Due to reasons outlined in Section 2.3, “*Design and Implementation Constraints*”, we cannot migrate *Persona Switcher* to a web-extension

completely without losing functionality.

The accepted solution is updating *Persona Switcher* to be boot-strapped and embed a web-extension within it. The embedded web-extension doesn't directly share its scope with the embedding legacy add-on, but they can exchange messages using the messaging functions defined in the runtime API.

Requirements involving fixing bugs, adding enhancements, and migrating all possible functionality from legacy code to the extension would be focused on after the web-extension is embedded in *Persona Switcher* as outlined by priority in section 3 of this document.

2.2 Product Functions

Persona Switcher will maintain all current functionality during migration to a web-extension.

Any other enhancements can be briefly defined on the customers Github repository for *Persona Switcher* under the issues tab [3]. These requirements are further defined in section 3 of this document.

2.3 Design and Implementation Constraints

Browser Support for JavaScript API

Currently, *Persona Switcher* is using the LightweightThemeManager library to grab the available themes in Firefox and disable or enable them. The LightweightThemeManager library is part of the overlay architecture, which is being deprecated.

Generally, add-ons are referred to as extensions, but there are other add-ons that allow users to customize Firefox, such as lightweight themes. Since themes are a type of add-on, we can use the Management API [1] for web extensions to grab the themes and switch through them.

This would keep the functionality of *Persona Switcher* in a web extension; however, `getAll()` and `setEnabled()` from the Management API are not currently compatible with Firefox. These functions are required for migrating *Persona Switcher* to a web-extension, therefore we cannot migrate *Persona Switcher* completely.

The Browser support for JavaScript API [1] is in progress and not likely to have the functions we need to fully migrate “*Persona Switcher*” to a web-extension before the Spring 2017 semester is over. Therefore, we may be unable to fully migrate “*Persona Switcher*” to a web-extension.

Not a Restartless Add-On

The current version of *Persona Switcher* is not a restartless add-on. Therefore, we can not load the software as a temporary add-on in the Firefox browser. This requires us to install the add-on manually for testing using Firefox Developer.

2.4 Assumptions and dependencies

This project is dependent on the JavaScript APIs [1]. Although we will maintain all functionality of *Persona Switcher*, we may not be able to migrate all functionality to a web-extension. This is assuming the JavaScript API doesn't implement the required functions by the end of the Spring 2017 semester.

If the above is true and we are unable to finish migrating all functionality to a web-extension, it is an assumption that the customer may have to finish migrating *Persona Switcher* to a web-extension if he wants a complete, up to date, forward compatible product.

3. Specific Requirements

This section contains all of the requirements for "*Persona Switcher*". The requirements are organized by priority. Requirements that contain an Issue number correspond to an issue on the customer's Github repository [3].

Requirements involving unit testing are TBD as we continue to research how unit testing will be implemented in *Persona Switcher*. Other requirements involving testing are subject to change or become more well-defined as we learn more about testing an add-on. The "Test Plan" document will contain more specific information regarding the tools used for these requirements.

3.1 Functional Requirements

Top Priority

#	Title	Description
FR-1	Maintain Current Functionality	Maintain all current functionality of <i>Persona Switcher</i> with the exception of functionality specified as bugs or enhancements by

		the requirements in this document.
FR-2	Boot-Strapping	Update <i>Persona Switcher</i> to be Boot-Strapped.
FR-3	Embed a web-extension within <i>Persona Switcher</i>	Embed a web-extension within <i>Persona Switcher</i> .
FR-4	Migrate Functionality	Migrate as much functionality as the Browser Support for JavaScript API [1] allows from <i>Persona Switcher</i> to a web-extension.
FR-5	Unit Testing	TBD
FR-6	Automation Testing	The testing framework for Automation testing to <i>Persona Switcher</i> is TBD. This will test <i>Persona Switchers</i> current functionality to be maintained during migration. The goal of this testing is to avoid regression during migration of the software's functionality.

High Priority

#	Title	Description
FR-7	Issue #2 - Sort Personas Alphabetically	Add a feature to sort Personas alphabetically. This feature is potentially in place; however, the code is commented out.
FR-8	Issue #13 - Shortcut Key	Fix the bug involving the “ <i>Persona Switcher</i> Menu shortcut key” not working properly. Details TBD.
FR-9	Issue #14 - Changing MS Delay	Fix the bug described below: When a user selects “Preview Personas on menu selection with (ms) delay” in the options pane, it will allow the user to hover over a theme in the menu bar to preview the theme without actually selecting it.

		<p>For example, if ms is set to 1000ms, then the user can navigate to the main menu bar, scroll to <i>Persona Switcher</i>, and hover over a theme. The theme will change from the current to the new in 1 second.</p> <p>If a user initially sets the ms, then it works on the current tab and any new tabs opened.</p> <p>The bug occurs when the user goes back and changes the value of the ms delay.</p> <p>After the user has set an initial value and then decides to change the time interval, a new window (not a new tab) must be opened for the changes to occur. The changes would also occur if the user decided to quit out of Firefox and restart.</p> <p>The function works properly if the user decides to uncheck and recheck the box with the changed interval time.</p>
FR-10	Issue #16 - Create List Only on StartUp	<p>Create the list of personas on start up rather than repeatedly. This should aim to make <i>Persona Switcher</i> more efficient for users that have downloaded a large amount of personas.</p>

Medium Priority

#	Title	Description
FR-11	Issue #7 - Jump to Name via Keyboard	<p>Add functionality so that when a user navigates to the theme menu, the user can select the theme by hitting the first letter of a set theme.</p> <p>For example, if a user has a theme called “Earth from Space”, then the user can hit the “E” key to select that theme.</p>
FR-12	Issue #8 - Page Up and Down	Add functionality that allows the use of Page Up and Down to scroll through lists.
FR-13	Issue #9 - Mark Active Theme in List	<p>Add some sort of marker that indicates the theme currently being used in the following locations:</p> <ol style="list-style-type: none"> 1. Top menu screen where the Persona Switcher menu is

		<p>located. Shows all the themes that can be selected; however, there is no indicator of which theme is active.</p> <p>2. Top menu screen → Tools menu → Persona Switcher: the list of themes will be displayed. Currently there are no markers showing which theme is active.</p>
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Low Priority

#	Title	Description
FR-14	Issue #3 - Move “Default” to bottom of list	<p>Currently the default theme is listed at the top of each menu screen and the additionally loaded themes by the user are listed below that.</p> <p>Change functionality so that the default theme in the Persona switcher menu and under tools is listed at the bottom of the list.</p>
FR-15	Issue #4 - Quick Access to Settings	Add a feature to right click on the <i>Persona Switcher</i> icon to immediately open <i>Persona Switcher</i> settings.

3.2 Non-Functional Requirements

#	Title	Description
NFR-1	Language	JavaScript shall be used for migration and enhancements to <i>Persona Switcher</i> .
NFR-2	Thunderbird and Seamonkey	<i>Persona Switcher</i> will remain compatible with Thunderbird and Seamonkey..
NFR-3	Firefox	<i>Persona Switcher</i> will remain compatible with the Firefox web browser.
NFR-4	Firefox Developer	Running local versions of <i>Persona Switcher</i> for testing and debugging purposes will be done in Firefox Developer.

NFR-5	Unit Testing Environment	TBD
NFR-6	Automation Testing Environment	Automation testing will be done using a TBD environment as our testing environment.