

# Supporting Document

## Mandatory Technical Document



PP-Module for Web Browsers

Version: 1.0

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**National Information Assurance Partnership**

## Foreword

This is a Supporting Document (SD), intended to complement the Common Criteria version 3 and the associated Common Evaluation Methodology for Information Technology Security Evaluation.

SDs may be “Guidance Documents”, that highlight specific approaches and application of the standard to areas where no mutual recognition of its application is required, and as such, are not of normative nature, or “Mandatory Technical Documents”, whose application is mandatory for evaluations whose scope is covered by that of the SD. The usage of the latter class is not only mandatory, but certificates issued as a result of their application are recognized under the CCRA.

### Technical Editor:

National Information Assurance Partnership (NIAP)

### Document history:

Version	Date	Comment
1.0	2024-10-25	Initial release as CC:2022 PP-Module

### General Purpose:

The purpose of this SD is to define evaluation methods for the functional behavior of web browser products.

### Acknowledgments:

This SD was developed with support from NIAP web browsers Technical Community members, with representatives from industry, government agencies, Common Criteria Test Laboratories, and members of academia.

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# 1 Introduction

## 1.1 Technology Area and Scope of Supporting Document

The scope of the PP-Module for Web Browsers is to describe the security functionality of web browsers products in terms of [CC] and to define functional and assurance requirements for them. The PP-Module is intended for use with the following Base-PP:

- Application Software, version 2.0.

This SD is mandatory for evaluations of TOEs that claim conformance to a PP-Configuration that includes the PP-Module for :

- web browsers, Version 1.0

As such it defines Evaluation Activities for the functionality described in the PP-Module as well as any impacts to the Evaluation Activities to the Base-PP(s) it modifies.

Although Evaluation Activities are defined mainly for the evaluators to follow, in general they also help developers to prepare for evaluation by identifying specific requirements for their TOE. The specific requirements in Evaluation Activities may in some cases clarify the meaning of Security Functional Requirements (SFR), and may identify particular requirements for the content of Security Targets (ST) (especially the TOE Summary Specification), user guidance documentation, and possibly supplementary information (e.g. for entropy analysis or cryptographic key management architecture).

## 1.2 Structure of the Document

Evaluation Activities can be defined for both SFRs and Security Assurance Requirements (SAR), which are themselves defined in separate sections of the SD.

If any Evaluation Activity cannot be successfully completed in an evaluation, then the overall verdict for the evaluation is a 'fail'. In rare cases there may be acceptable reasons why an Evaluation Activity may be modified or deemed not applicable for a particular TOE, but this must be approved by the Certification Body for the evaluation.

In general, if all Evaluation Activities (for both SFRs and SARs) are successfully completed in an evaluation then it would be expected that the overall verdict for the evaluation is a 'pass'. To reach a 'fail' verdict when the Evaluation Activities have been successfully completed would require a specific justification from the evaluator as to why the Evaluation Activities were not sufficient for that TOE.

Similarly, at the more granular level of assurance components, if the Evaluation Activities for an assurance component and all of its related SFR Evaluation Activities are successfully completed in an evaluation then it would be expected that the verdict for the assurance component is a 'pass'. To reach a 'fail' verdict for the assurance component when these Evaluation Activities have been successfully completed would require a specific justification from the evaluator as to why the Evaluation Activities were not sufficient for that TOE.

## 1.3 Terms

The following sections list Common Criteria and technology terms used in this document.

### 1.3.1 Common Criteria Terms

Assurance	Grounds for confidence that a TOE meets the SFRs <a href="#">[CC]</a> .
Base Protection Profile (Base-PP)	Protection Profile used as a basis to build a PP-Configuration.
Collaborative	A Protection Profile developed by international technical communities and approved by

Protection Profile (cPP)	multiple schemes.
Common Criteria (CC)	Common Criteria for Information Technology Security Evaluation (International Standard ISO/IEC 15408).
Common Criteria Testing Laboratory	Within the context of the Common Criteria Evaluation and Validation Scheme (CCEVS), an IT security evaluation facility accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and approved by the NIAP Validation Body to conduct Common Criteria-based evaluations.
Common Evaluation Methodology (CEM)	Common Evaluation Methodology for Information Technology Security Evaluation.
Direct Rationale	A type of Protection Profile, PP-Module, or Security Target in which the security problem definition (SPD) elements are mapped directly to the SFRs and possibly to the security objectives for the operational environment. There are no security objectives for the TOE.
Extended Package (EP)	A deprecated document form for collecting SFRs that implement a particular protocol, technology, or functionality. See Functional Packages.
Functional Package (FP)	A document that collects SFRs for a particular protocol, technology, or functionality.
Operational Environment (OE)	Hardware and software that are outside the TOE boundary that support the TOE functionality and security policy.
Protection Profile (PP)	An implementation-independent set of security requirements for a category of products.
Protection Profile Configuration (PP-Configuration)	A comprehensive set of security requirements for a product type that consists of at least one Base-PP and at least one PP-Module.
Protection Profile Module (PP-Module)	An implementation-independent statement of security needs for a TOE type complementary to one or more Base-PPs.
Security Assurance Requirement (SAR)	A requirement to assure the security of the TOE.
Security Functional Requirement (SFR)	A requirement for security enforcement by the TOE.
Security Target (ST)	A set of implementation-dependent security requirements for a specific product.
Target of Evaluation (TOE)	The product under evaluation.
TOE Security Functionality (TSF)	The security functionality of the product under evaluation.
TOE Summary Specification (TSS)	A description of how a TOE satisfies the SFRs in an ST.

### 1.3.2 Technical Terms

Add-on	Capabilities or functionality added to an application. This term includes plug-ins, extensions, and other controls.
Administrator	The Administrator is responsible for management activities, including setting the policy that is applied by the enterprise on the browser. This administrator is likely to be acting remotely. If the platform is unmanaged by an enterprise, the user can act as the

	administrator.
Cross-Site Request Forgery (CSRF)	A vulnerability where an attacker gets a target user to execute a script with that user's privileges.
Cross-Site Scripting (XSS)	Injection of untrusted content into a vulnerable web application to render or execute that content on a victim's system.
Domain	A realm of administrative autonomy, authority or control on the internet (e.g., cnn.com).
Extension	A bundle of code added to the browser to add specific functionality that the browser does not provide by default.
HTML5	A new version of HTML that incorporates many new features that enrich the browsing experience.
HyperText Markup Language (HTML)	A language used by web servers to present content to browsers.
HyperText Transfer Protocol (HTTP)	A protocol for communicating on the web.
HyperText Transfer Protocol Secure (HTTPS)	A secure version of HTTP that runs over an encrypted channel (SSL/TLS).
JavaScript	A scripting language commonly integrated into webpages to generate dynamic, interactive content
Plug-in	A browser add-on to handle specific types of web content.
Pop-up	A piece of web code that causes a browser to open a window outside the window that is currently in focus.
Port	An application-specific construct that functions as a communications endpoint in a computer's host OS; in a web environment, port 80 is the default port for HTTP communications, although other ports can be used. In a web address, the port follows the domain or sub-domain name (e.g., http://www.cnn.com:80).
Protocol	A system of digital rules for data exchange within or between computers; in a web environment, the typical protocols are HTTP and HTTPS.
Sandbox	A security mechanism for separating running processes, most often used to run untrusted or vulnerable processes by reducing their privileges to such an extent that they should not be able to harm the host system.
Sensitive Data	Sensitive data may include all user or enterprise data or may be specific application data such as data transferred to submit a form or complete a transaction. Sensitive data must minimally include personally identifiable information (PII), credentials, and keys. Sensitive data is expected to be identified in the ST.
Sub-domain	An internet domain which is part of a primary domain, denoted by a prefix before the primary domain (e.g., news.cnn.com).
Tabs	A mechanism that allows a browser to display content from multiple websites in the same window.
Web Browser	An application that retrieves and renders content provided by a web server. The terms web browser, browser, and TOE are interchangeable in this document.

## 2 Evaluation Activities for SFRs

The EAs presented in this section capture the actions the evaluator performs to address technology specific aspects covering specific SARs (e.g. ASE\_TSS.1, ADV\_FSP.1, AGD\_OPE.1, and ATE\_IND.1) – this is in addition to the CEM workunits that are performed in [Section 3 Evaluation Activities for SARs](#).

Regarding design descriptions (designated by the subsections labeled TSS, as well as any required

supplementary material that may be treated as proprietary), the evaluator must ensure there is specific information that satisfies the EA. For findings regarding the TSS section, the evaluator's verdicts will be associated with the CEM workunit ASE\_TSS.1-1. Evaluator verdicts associated with the supplementary evidence will also be associated with ASE\_TSS.1-1, since the requirement to provide such evidence is specified in ASE in the PP.

For ensuring the guidance documentation provides sufficient information for the administrators/users as it pertains to SFRs, the evaluator's verdicts will be associated with CEM workunits ADV\_FSP.1-7, AGD\_OPE.1-4, and AGD\_OPE.1-5.

Finally, the subsection labeled Tests is where the authors have determined that testing of the product in the context of the associated SFR is necessary. While the evaluator is expected to develop tests, there may be instances where it is more practical for the developer to construct tests, or where the developer may have existing tests. Therefore, it is acceptable for the evaluator to witness developer-generated tests in lieu of executing the tests. In this case, the evaluator must ensure the developer's tests are executing both in the manner declared by the developer and as mandated by the EA. The CEM workunits that are associated with the EAs specified in this section are: ATE\_IND.1-3, ATE\_IND.1-4, ATE\_IND.1-5, ATE\_IND.1-6, and ATE\_IND.1-7.

## **2.1 Application Software**

The EAs defined in this section are only applicable in cases where the TOE claims conformance to a PP-Configuration that includes the App PP.

### **2.1.1 Modified SFRs**

#### **2.1.1.1 Cryptographic Support (FCS)**

##### **FCS\_CKM\_EXT.1 Cryptographic Key Generation Services**

FCS\_CKM\_EXT.1

There is no change to the Base-PP EAs for this SFR when this PP-Module is claimed, aside from the fact that the materials for the selections that have been refined out of this SFR are not applicable.

##### **FCS\_HTTPS\_EXT.1/Client HTTPS Protocol**

There is no change to the Base-PP EAs for this SFR when this PP-Module is claimed.

##### **FCS\_RBG\_EXT.1 Random Bit Generation Services**

FCS\_RBG\_EXT.1

There is no change to the Base-PP EAs for this SFR when this PP-Module is claimed, aside from the fact that the materials for the selections that have been refined out of this SFR are not applicable.

#### **2.1.1.2 Trusted Path/Channels (FTP)**

##### **FTP\_DIT\_EXT.1 Protection of Data in Transit**

FTP\_DIT\_EXT.1

There is no change to the Base-PP EAs for this SFR when this PP-Module is claimed, aside from the fact that the materials for the selections that have been refined out of this SFR are not applicable.

## **2.2 TOE SFR Evaluation Activities**

### **2.2.1 User Data Protection (FDP)**

#### **FDP\_ACF\_EXT.1 Local and Session Storage Separation**

FDP\_ACF\_EXT.1.1

##### **TSS**

The evaluator shall ensure that the TSS describes how the browser separates local and session storage.

##### **Guidance**

The evaluator shall verify that the operational guidance documents the location on the file system that will be used for local storage and the location used for session storage.

##### **Tests**

The evaluator shall obtain or create JavaScript-based scripts that store and retrieve information from local and session storage. The evaluator shall set up a web server with two or more webpages from different domains (e.g., test1.example.com and test2.example.com) with at least one of the domains served from

multiple ports (e.g., port 80 and port 443). The evaluator shall incorporate the scripts into the webpages. The webpages will be opened in a manner that creates a relationship allowing for a JavaScript object handle to refer from one window to the other (e.g., window.parent, window.opener, etc). The evaluator shall perform the following tests:

- Test FDP\_ACF\_EXT.1.1:1: The evaluator shall open both pages ensuring that they are loaded from the same domain using the same port. The evaluator shall verify that the script is unable to access session storage through a window relationship handle (e.g., window.opener.sessionStorage).
- Test FDP\_ACF\_EXT.1.1:2: The evaluator shall open both pages ensuring that they are loaded from different domains. The evaluator shall verify that the script is unable to access session storage through a window relationship handle (e.g., window.opener.sessionStorage).
- Test FDP\_ACF\_EXT.1.1:3: The evaluator shall open both pages ensuring that they are loaded from the same domain using different ports. The evaluator shall verify that the script is unable to access session storage through a window relationship handle (e.g., window.opener.sessionStorage).

## **FDP\_COO\_EXT.1 Cookie Blocking**

### **FDP\_COO\_EXT.1.1**

#### **TSS**

The evaluator shall ensure that the TSS describes how the browser blocks third-party cookies and when the blocking occurs (e.g., automatically, when blocking is enabled).

#### **Guidance**

The evaluator shall verify that the operational guidance provides a description of the configuration option for blocking of third-party cookies.

#### **Tests**

The evaluator shall perform the following tests that may require the developer to provide access to a test platform that provides the evaluator with tools that are typically not found on factory products:

- Test FDP\_COO\_EXT.1.1:1: The evaluator shall clear all cookies and then configure the browser so that storage of third-party cookies is allowed. The evaluator shall load a webpage that stores a third-party cookie. The evaluator shall navigate to the location where cookies are stored and shall verify that the cookie is present.
- Test FDP\_COO\_EXT.1.1:2: The evaluator shall clear all cookies and then configure the browser so that storage of third-party cookies is not allowed. The evaluator shall load a webpage that attempts to store a third-party cookie and shall verify that the cookie was not stored.

## **FDP\_SBX\_EXT.1 Sandboxing of Rendering Processes**

### **FDP\_SBX\_EXT.1.1**

#### **TSS**

The evaluator shall ensure that the TSS describes how the rendering of HTML and interpretation of JavaScript is performed by the browser in terms of the platform processes that are involved (with "process" being an active entity that executes code). For the processes that render HTML or interpret JavaScript, the evaluator shall examine the TSS to check that it describes how these processes are prevented from accessing the platform file system. The evaluator shall ensure that the TSS describes each platform-provided IPC mechanism, and details for each mechanism how the rendering process is unable to use it to communicate with non-browser processes. The evaluator shall also confirm that the TSS describes how IPC and file system access is enabled (if this capability is implemented); for instance, through a more privileged browser process that does not perform webpage rendering. The evaluator shall ensure that these descriptions are present for all platforms claimed in the ST.

For each additional mechanism listed in the third bullet of this component by the ST author, the evaluator shall ensure that the TSS:

- describes the mechanisms;
- has sufficient detail for the description of the mechanisms to determine that it contributes to the principle of least privilege being implemented in the rendering process; and
- has appropriate supporting information (or points to where such information exists) that provides context for understanding the claimed least privilege mechanisms.

Conditional: if "invoke platform-provided functionality" is selected the evaluator shall review the TSS and confirm it describes the mechanism used to invoke the platform-provided functionality.

#### **Guidance**

The evaluator shall verify that the operational guidance provides a description of the restrictions available on rendering processes. Additionally, if such mechanisms are configurable (for instance, if a user can choose which mechanisms to "turn on"), the evaluator shall ensure that the method for enabling and disabling the mechanisms are provided in the operational guidance, and the consequences of such actions are described.

Conditional: if "invoke platform-provided functionality" is selected the evaluator shall review the guidance document and confirm it describes how to configure the application to properly invoke the platform-provided functionality.

#### **Tests**

Conditional: if "implement functionality" is selected the evaluator shall perform the following test on each platform claimed in the ST:

- Test FDP\_SBX\_EXT.1.1:1: The evaluator shall inject shell code into a running browser rendering process. The shell code will be designed to modify or create a file on the system. The evaluator shall verify that the file was not modified as the browser process sandbox should not have permission to modify user or system files.

## **FDP\_SOP\_EXT.1 Same Origin Policy**

FDP\_SOP\_EXT.1.1

### **TSS**

The evaluator shall ensure that the TSS describes its implementation of a same origin policy and explains how it complies with RFC 6454. If the browser allows the relaxation of the same origin policy for subdomains in different windows or tabs, the TSS shall describe how these exceptions are implemented.

### **Guidance**

There are no guidance EAs for this component.

### **Tests**

The evaluator shall obtain or create scripts that can retrieve content from designated locations and shall set up a web server with two or more webpages representing different domains. The evaluator shall incorporate the scripts into the webpages. The evaluator shall associate each page with a different protocol or port and then perform the following tests:

- Test FDP\_SOP\_EXT.1.1:1: The evaluator shall open two or more browser windows or tabs and navigate to a different page on the website in each window or tab. The evaluator shall run the scripts and shall verify that the script that is running in one window or tab cannot access content that was retrieved in a different window or tab.
- Test FDP\_SOP\_EXT.1.1:2: The evaluator shall verify that the scripts cannot retrieve content from another window or tab at a different subdomain.

## **FDP\_STR\_EXT.1 Secure Transmission of Cookie Data**

FDP\_STR\_EXT.1.1

### **TSS**

The evaluator shall verify that the TSS describes the browser's support for the "secure" attribute of the set-cookie header in accordance with RFC 6265, including the required sending of cookies containing this attribute over HTTPS.

### **Guidance**

There are no guidance EAs for this component.

### **Tests**

The evaluator shall perform the following tests that may require the developer to provide access to a test platform that provides the evaluator with tools that are typically not found on factory products:

- Test FDP\_STR\_EXT.1.1:1: The evaluator shall connect the browser to a cookie-enabled test website implementing HTTPS and have the website present the browser with a "secure" cookie. The evaluator shall examine the browser's cookie cache and verify that it contains the secure cookie.
- Test FDP\_STR\_EXT.1.1:2: The evaluator shall reconnect to the cookie-enabled website over an insecure channel and verify that no "secure" cookie is sent.

## **FDP\_TRK\_EXT.1 Tracking Information Collection**

FDP\_TRK\_EXT.1.1

### **TSS**

The evaluator shall ensure that the TSS describes the browser's support for tracking information and specifies the tracking information that the browser allows websites to collect about the browser user.

### **Guidance**

The evaluator shall ensure that the operational guidance describes any notifications that the user will receive when tracking information is requested by a website and the options that the user has upon receiving the notification.

### **Tests**

The evaluator shall perform the following tests for each type of tracking information listed in the TSS:

- Test FDP\_TRK\_EXT.1.1:1: The evaluator shall configure a website that requests the tracking information about the user and shall navigate to that website. The evaluator shall verify that the user is notified about the request for tracking information and that, upon consent, the web browser retrieves the tracking information.
- Test FDP\_TRK\_EXT.1.1:2: The evaluator shall verify that the user is notified about the request for tracking information and that, when rejected, the browser does not provide the tracking information.

## **2.2.2 Security Management (FMT)**

### **FMT\_MOF\_EXT.1 Management of Functions Behavior**

FMT\_MOF\_EXT.1

FMT\_MOF\_EXT.1.1

### **TSS**

The evaluator shall verify that the TSS describes those management functions that can only be configured by the browser platform administrator and cannot be overridden by the user when set according to policy.

**Guidance**

The evaluator shall verify that the operational guidance includes instructions for a browser platform administrator to configure the functions listed in FMT\_MOF.1.1.

**Tests**

The evaluator shall perform the following tests:

- Test FMT\_MOF\_EXT.1.1:1: The evaluator shall verify that functions perform as intended by enabling, disabling, and configuring the functions.
- Test FMT\_MOF\_EXT.1.1:2: The evaluator shall create policies that collectively include all management functions controlled by the browser platform administrator and cannot be overridden by the user as defined in FMT\_MOF.1.1. The evaluator shall apply these policies to the browser, attempt to override each setting as the user, and verify that the browser does not permit it.

The following EAs correspond to specific management functions.

**Function 1**

**TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 2 [CONDITIONAL]**

**TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 3 [CONDITIONAL]**

**TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 4 [CONDITIONAL]**

**TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 5**

**TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 6 [CONDITIONAL]**

**TSS**

There are no additional TSS evaluation activities for this management function.



**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 7 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 8 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 9 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 10 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 11 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 12 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 13 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 14 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 15 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 16 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 17 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 18 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 19 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 20 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 21 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 22 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

**Function 23 [CONDITIONAL]****TSS**

There are no additional TSS evaluation activities for this management function.

**Guidance**

There are no additional Guidance evaluation activities for this management function.

**Tests**

There are no test activities for this management function.

## 2.2.3 Protection of the TSF (FPT)

**FPT\_ADD\_EXT.1 Add-ons****FPT\_ADD\_EXT.1.1****TSS**

The evaluator shall ensure that the TSS lists the types of signed add-ons that the browser supports. The TSS shall describe how the browser handles unsigned add-ons, add-ons from an untrusted source, and add-ons from an unverified source.

**Guidance**

If "provide the user with the option to discard" is selected, the evaluator shall examine the operational guidance to verify it provides configuration instructions for each of the supported add-on types. The operational guidance shall also describes the alert that the browser displays to the user when unsigned, untrusted, or unverified add-ons are encountered and the actions the user can take.

**Tests**

The evaluator shall perform the following test for each mobile code type specified in the TSS:

- Test FPT\_ADD\_EXT.1.1:1: The evaluator shall construct or obtain a correctly signed add-on and show that it is accepted and executes. The evaluator shall then construct or obtain three unacceptable add-ons: the first add-on is unsigned; the second add-on has an untrusted signature (e.g., creating the signature by using an unexpected key or by manual modification of a legitimate signature); the third add-on has a trusted signature but has its contents modified (e.g., by using a hex editor). The evaluator shall then attempt to load these add-ons and observe that either they are rejected, or that the user is

prompted to accept or reject them, depending on the selections made in FPT\_MCD\_EXT.1.2. If the user has the ability to accept or reject the add-on, the evaluator shall verify that the add-on is not executed after being rejected.

## **FPT\_AON\_EXT.1 Support for Only Trusted Add-ons**

FPT\_AON\_EXT.1.1

### **TSS**

The evaluator shall verify that the TSS describes whether the browser is capable of loading trusted add-ons.

### **Guidance**

The evaluator shall verify that the operational guidance includes instructions on loading trusted add-on sources.

### **Tests**

The evaluator shall perform the following tests:

- Test FPT\_AON\_EXT.1.1:1: The evaluator shall create or obtain an untrusted add-on and attempt to load it. The evaluator shall verify that the untrusted add-on is rejected and cannot be loaded.
- Test FPT\_AON\_EXT.1.1:2: The evaluator shall create or obtain a trusted add-on and attempt to load it. The evaluator shall verify that the trusted add-on loads.

## **FPT\_DNL\_EXT.1 File Downloads**

FPT\_DNL\_EXT.1.1

### **TSS**

The evaluator shall ensure that the TSS describes the behavior of the browser when a user initiates the download of a file.

### **Guidance**

The evaluator shall ensure that the operational guidance describes the dialog box that appears when a download is initiated and the implications of the options presented by the dialog box.

### **Tests**

The evaluator shall perform the following test:

- Test FPT\_DNL\_EXT.1.1:1: The evaluator shall navigate to a website that hosts files for download including executables and shall attempt to download and open at least three of these files. The evaluator shall verify that the browser always presents a dialog box with the option to either download the file to the file system or to discard the file.

## **2.3 Evaluation Activities for Optional SFRs**

### **2.3.1 User Data Protection (FDP)**

#### **FDP\_PST\_EXT.1 Storage of Persistent Information**

FDP\_PST\_EXT.1.1

### **TSS**

The evaluator shall verify that the TSS describes how the browser operates without storing persistent user data to the file systems.

### **Guidance**

There are no additional Guidance evaluation activities for this element.

### **Tests**

The evaluator shall perform the following test that may require the developer to provide access to a test platform that provides the evaluator with tools that are typically not found on factory products:

- Test FDP\_PST\_EXT.1.1:1: The evaluator shall operate the browser for as much time as is needed to ensure that a wide variety of browser functionality has been exercised. The evaluator shall then examine the browser and the underlying platform to ensure that no files have been written to the file system other than the exceptions identified in FDP\_PST\_EXT.1.1.

## **2.4 Evaluation Activities for Selection-Based SFRs**

### **2.4.1 Protection of the TSF (FPT)**

#### **FPT\_AON\_EXT.2 Trusted Installation and Update for Add-ons**

FPT\_AON\_EXT.2.1

### **TSS**

The evaluator shall verify that the TSS states that the browser will reject add-ons from untrusted sources.

### **Guidance**

The evaluator shall verify that the operational guidance includes instructions on how to configure the browser with trusted add-on sources.

### **Tests**

The evaluator shall perform the following tests:

- Test FPT\_AON\_EXT.2.1:1: The evaluator shall create or obtain an add-on signed by a trusted source and attempt to install it. The evaluator shall verify that the signature on the add-on is valid and that the add-on can be installed.
- Test FPT\_AON\_EXT.2.1:2: The evaluator shall create or obtain an add-on signed with an invalid certificate and attempt to install it. The evaluator shall verify that the signed add-on is rejected and cannot be installed.
- Test FPT\_AON\_EXT.2.1:3: The evaluator shall create or obtain an add-on signed by a trusted source, modify the add-on without re-signing it, and attempt to install it. The evaluator shall verify that the signed add-on is rejected and cannot be installed.

## **2.5 Evaluation Activities for Objective SFRs**

### **2.5.1 Cryptographic Support (FCS)**

#### **FCS\_STS\_EXT.1 Strict Transport Security**

FCS\_STS\_EXT.1.1

##### **TSS**

The evaluator shall ensure that the TSS documents how the browser supports HSTS.

##### **Guidance**

The evaluator shall ensure that the operational guidance contains instructions on how to use HSTS.

##### **Tests**

The evaluator shall perform the following tests:

- Test FCS\_STS\_EXT.1.1:1: The evaluator shall connect to an HSTS-compliant website while running a network protocol analyzer to monitor the traffic. The evaluator shall examine the captured network traffic and verify that a Strict Transport Security header is received and that there is a directive for the max-age of the HSTS relationship.
- Test FCS\_STS\_EXT.1.1:2: The evaluator shall reconnect to the HSTS website again over HTTP and shall verify that the session is redirected to HTTPS.
- Test FCS\_STS\_EXT.1.1:3: The evaluator shall reconnect to the HSTS website after the max-age has expired, and verify that the website and browser reestablish an HSTS relationship.
- Test FCS\_STS\_EXT.1.1:4: The evaluator shall update the website's HSTS information, and verify that when the browser reconnects to the website, that information is updated by the browser.

### **2.5.2 Protection of the TSF (FPT)**

#### **FPT\_INT\_EXT.1 Interactions with Application Reputation Services**

FPT\_INT\_EXT.1.1

##### **TSS**

The evaluator shall ensure that the TSS describes the browser's use of application reputation services in detecting malicious applications.

##### **Guidance**

The evaluator shall ensure that the operational guidance describes the browser's support for use of an application reputation service, including which services the browser supports by default (if any) and whether additional services can be configured. The operational guidance shall include steps for how to configure the application reputation service.

##### **Tests**

The evaluator shall perform the following test:

- Test FPT\_INT\_EXT.1.1:1: The evaluator shall configure the browser to enable the use of one or more application reputation services per the operational guidance. The evaluator shall initiate a connection with a website that attempts to download an application to the browser while sniffing the network traffic using a network protocol analyzer. The evaluator shall inspect the captured network traffic and shall verify that the browser initiates a connection to the configured application reputation service or services before initiating the download.

#### **FPT\_INT\_EXT.2 Interactions with URL Reputation Services**

FPT\_INT\_EXT.2.1

##### **TSS**

The evaluator shall ensure that the TSS describes the browser's use of a URL reputation service in detecting malicious websites.

##### **Guidance**

The evaluator shall ensure that the operational guidance describes the browser's support for use of URL reputation services, including which services the browser supports by default (if any) and whether additional services can be configured. The operational guidance shall include steps for how to configure the URL reputation service.

**Tests**

The evaluator shall perform the following tests:

- Test FPT\_INT\_EXT.2.1:1: The evaluator shall configure the browser to enable the use of one or more URL reputation services per the operational guidance. The evaluator shall initiate a connection with a known-good website while sniffing the network traffic using a network protocol analyzer. The evaluator shall inspect the captured network traffic and shall verify that the browser initiates a connection to the configured URL reputation service or services.
- Test FPT\_INT\_EXT.2.1:2: The evaluator shall configure the browser to enable the use of one or more URL reputation services per the operational guidance. The evaluator shall initiate a connection with a known-malicious website that is identified by one or more of the URL reputation services while sniffing the network traffic using a network protocol analyzer. The evaluator shall verify that a warning appears alerting that the website is known to be malicious and the browser is not allowed to connect. The evaluator shall inspect the captured network traffic and shall verify that the browser initiates a connection to the configured URL reputation service or services and retrieves an updated list of malicious URLs with the tested website being on the list.

**2.6 Evaluation Activities for Implementation-dependent SFRs**

The PP-Module does not define any implementation-dependent requirements.

**3 Evaluation Activities for SARs**

The PP-Module does not define any SARs beyond those defined within the base App PP to which it must claim conformance. It is important to note that a TOE that is evaluated against the PP-Module is inherently evaluated against this Base-PP as well. The App PP includes a number of Evaluation Activities associated with both SFRs and SARs. Additionally, the PP-Module includes a number of SFR-based Evaluation Activities that similarly refine the SARs of the Base-PPs. The evaluation laboratory will evaluate the TOE against the Base-PP and supplement that evaluation with the necessary SFRs that are taken from the PP-Module.

**4 Required Supplementary Information**

This Supporting Document has no required supplementary information beyond the ST, operational guidance, and testing.

**Appendix A - References**

Identifier	Title
[CC]	Common Criteria for Information Technology Security Evaluation -
	• <a href="#">Part 1: Introduction and General Model</a> , CCMB-2017-04-001, Version 3.1 Revision 5, April 2017.
	• <a href="#">Part 2: Security Functional Components</a> , CCMB-2017-04-002, Version 3.1 Revision 5, April 2017.
	• <a href="#">Part 3: Security Assurance Components</a> , CCMB-2017-04-003, Version 3.1 Revision 5, April 2017.