ENABLING WEB BROWSER EXTENSIONS TO PERFORM ASYNCHRONOUS BLOCKING OPERATIONS

BACKGROUND

A browser extension is a set of computer instructions that is provided to a web browser in order to provide the web browser with additional functionality, such as the ability to block advertisements and modify webpage content. One way that web browsers accommodate browser extensions is by providing application programming interfaces (API) that enable browser extensions to monitor certain types of events, such as when a web browser receives a webpage from the Internet, and take certain actions, such as block the webpage from being rendered by the web browser if the browser extension determines that the webpage meets a predefined condition that warrants blocking the webpage. However, current web browser architecture is such that browser extensions are not able to perform asynchronous blocking operations.

SUMMARY

In one aspect of the present disclosure a method is provided for enabling a web browser extension to perform an asynchronous blocking operation, the method including configuring a web browser to receive from a web browser extension an extension-provided callback function and an indicator, where the extension-provided callback function is configured to perform an asynchronous blocking operation, where the indicator indicates that the extension callback function relates to an asynchronous blocking operation, where the extension-provided callback function is configured to receive a web-browser-provided callback function as a parameter of the extension-provided callback function, and where the extension-provided callback function is configured to call the web-browser-provided callback function after performing the asynchronous blocking operation, and configuring the web browser to call the extension-provided callback function with the web-browser-provided callback function as a parameter of the extension-provided callback function call if the indicator indicates that the extension callback function relates to an asynchronous blocking operation.

In an example the method further includes configuring the web browser to call the extension-provided callback function with the web-browser-provided

callback function as a parameter of the extension-provided callback function call only after determining that the extension is authorized to perform asynchronous blocking operations.

In an example the method further includes configuring the web browser to receive the extension-provided callback function and the indicator in a request associated with an event that is detectable by the web browser.

In an example the method further includes configuring the web browser to call the call the extension-provided callback function responsive to the web browser detecting the event.

BRIEF DESCRIPTION OF THE DRAWINGS

Aspects of the invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the appended drawings in which:

Fig. 1A is a simplified conceptual illustration of a system for enabling web browser extensions to perform asynchronous blocking operations, constructed and operative in accordance with an embodiment of the invention; and

Fig. 1B is a simplified action diagram illustration of an exemplary method of operation of the system of Fig. 1A, operative in accordance with an embodiment of the invention.

DETAILED DESCRIPTION

Reference is now made to Fig. 1A, which is a simplified conceptual illustration of a system for enabling web browser extensions to perform asynchronous blocking operations, constructed and operative in accordance with an embodiment of the invention, and additionally to Fig. 1B, which is a simplified action diagram of an exemplary method of operation of the system of Fig. 1A, operative in accordance with an embodiment of the invention.. In the system of Fig. 1A and method of Fig. 1B, a web browser 100 is configured to incorporate the functionality of conventional web browsers, such as those based on the Google™ Chromium™ architecture, and is additionally configured to operate as is described hereinbelow. Web browser 100 may be hosted by any computing device, such as by a computer 102 that is connected to a computer network 104, such as the Internet. Web browser 100 includes a web browser extension 106 that is configured to perform an