

# Classes and Structures

## Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

- ▼ **N** **FB** Primary location of FireBreath classes and utility functions
  - ▼ **N** **Npapi**
    - C** **Npa** Provides a **FB::BrowserHost** implementation for Npapi
      - piBrowserHost**
    - C** **NPO** Provides a **FB::JSObject** implementation that wraps a **NPObjct\***
      - bjectAPI**
    - C** **Npa** Provides a **D3d10AsyncDrawService** implementation for NPAPI
      - piAsyncDrawService**
  - ▼ **N** **DOM** These are convenience objects used to access and manipulate **DOM** objects. They should never be created directly; instead, get the **Window** object or the **Document** object from the **BrowserHost** or create it with **DOM::Element::create(obj)** (or similar)
    - C** **Doc** Abstraction for accessing and manipulating a **DOM Document**
      - ument**
    - C** **Ele** **DOM Element** wrapper
      - ment**
    - C** **Node** **DOM Node** wrapper
      - ode**
    - C** **Win** **DOM Window** abstraction for manipulating and accessing the javascript window object that the plugin is contained in
      - indow**
  - ▼ **N** **ActiveX**
    - ▼ **N** **AX**
      - DOM**
        - C** **D** ActiveX specific implementation of **DOM::Document**
          - ocument**
        - C** **E** ActiveX specific implementation of **DOM::Element**
          - lement**
        - C** **N** Provides an ActiveX specific implementation of **DOM::Node**
          - ode**
        - C** **W** ActiveX specific implementation of **DOM::Window**
          - indow**
      - C** **Act** Provides a **D3d10AsyncDrawService** implementation for ActiveX
        - iveXAsyncDrawService**
      - C** **Act** Provides a **BrowserHost** implementation for ActiveX
        - iveXBrowserHost**
      - C** **IDi** Provide a **JSObject** implementation to wrap a **IDispatch** ActiveX object
        - spatchAPI**
      - C** **Async** Asynchronous drawing service base class
        - DrawService**
      - C** **Brows** Browser-specific plugin base class
        - erPlugin**



**C** **Mouse** Fired when a mouse event occurs  
**Event**

**C** **Mouse** Fired when the mouse moves  
**MoveEvent**

**C** **Mouse** Fired when a mouse button event occurs  
**ButtonEvent**

**C** **Mouse** Fired when a mouse down event occurs  
**DownEvent**

**C** **Mouse** Fired when a mouse double click event occurs  
**DoubleClickEvent**

**C** **Mouse** Fired when a mouse up event occurs  
**UpEvent**

**C** **Mouse** Fired when the user moves the scrollwheel  
**ScrollEvent**

**C** **Mouse** Fired when the user moves mouse over the plugin  
**EnteredEvent**

**C** **Mouse** Fired when the user moves mouse away from the plugin  
**ExitedEvent**

**C** **Stream** Base class for all stream events  
**mEvent**

**C** **Stream** This event is fired when the given stream was created  
**mCreatedEvent**

**C** **Stream** This event is fired when a stream failed to open, e.g. the url was invalid or a seekable stream was requested while the server provided only a non-seekable stream  
**mFailedOpenEvent**

**C** **Stream** This event is fired when a stream has completed downloading  
**mCompletedEvent**

**C** **Window** Generic windows event. All windows events going through the winproc get first fired as a **WindowEvent** and then fired as the specific type, allowing you to handle them either way  
**WindowEvent**

**C** **X11Event** Generic X11 event  
**X11Event**

**C** **X11NativeGdkEvent** Class encapsulation for native Gdk event  
**X11NativeGdkEvent**

**C** **X11NativeGdkExposeEvent** Class encapsulation for native Gdk expose event  
**X11NativeGdkExposeEvent**

**C** **PluginEventSink** Plugin event sink; all objects that can receive **PluginEvent**s should inherit from this class. Most notably, **PluginCore** extends this class  
**PluginEventSink**

**C** **PluginEventSource** Base class for any object, such as **BrowserStream** or **PluginWindow**, that needs to fire events to a **PluginEventSink** object (such as a **PluginCore** derived plugin class)  
**PluginEventSource**

**C** **PluginWindow** **PluginWindow** is the base class for all **PluginWindow** objects  
**PluginWindow**

**C** **HttpStreamResponse** Data structure to hold the response to an HTTP Get request  
**HttpStreamResponse**

**C** **SimpleStreamHelper** Helper class for making simple HTTP requests  
**SimpleStreamHelper**

**C** **Timer** **Timer** Utility  
**Timer**

**C** **Timer** `TimerService` Utility Service

**C** **WinMe** Creates a message window. Don't touch this if you don't understand what you are doing  
`MessageWindow`

**C** **Catch** When used as a parameter on a `JSAPIAuto` function this matches 0 or more variants – in other words, all other parameters from this point on regardless of type  
All

**C** **Metho** Used by `FB::JSAPISimple` to store information about a method  
`dInfo`

**C** **Prope** Used by `FB::JSAPISimple` to store information about a property  
`rtyInfo`

**C** **Prope** Used by `FB::JSAPIAuto` to store property implementation details, created by `FB::`  
`rtyFuncutors` `make_property()`

**C** **Async** This class is used by `BrowserHost` for the `BrowserHost::AsyncHtmlLog` method  
`LogRequest`

**C** **Brows** Browser host base class  
`erHost`

**C** **JSAPI** JavaScript API class – provides a javascript interface that can be exposed to the browser

**C** **scope** Provides a helper class for locking  
`d_zonelock`

**C** **JSAPI** `JSAPI` class with automatic argument type enforcement  
Auto

**C** **JSAPI** JavaScript API base class implementation – provides basic functionality for C++ `JSAPI` objects  
Impl

**C** **JSAPI** JavaScript API Wrapper – this can wrap any type of `JSAPI` object and be passed back to any browser that  
Proxy

**C** **JSAPI** Simple `JSAPI` implementation for those who for whatever reason don't want to use `JSAPIAuto`  
Simple

**C** **scrip** Exception type; when thrown in a `JSAPI` method, a javascript exception will be thrown  
`t_error`

**C** **inval** Thrown by a `JSAPI` object when the argument(s) provided to a `SetProperty` or `Invoke` call are found to be invalid. `JSAPIAuto` will throw this automatically if the argument cannot be `convert_cast` to the type expected by the function  
`id_arguments`

**C** **objec** Thrown by a `JSAPI` object when a call is made on it after the object has been invalidated  
`t_invalidated`

**C** **inval** Thrown when an `Invoke`, `SetProperty`, or `GetProperty` call is made for a member that is invalid (does not exist, not accessible, only supports `Get` or `Set`, etc)  
`id_member`

**C** **JSObj** Wraps a Javascript Object  
`ect`

**C** **SafeQ** Basic thread-safe queue class  
`ueue`

**C** **TypeI** Bidirectional map between an identifier and a variant  
DMap

**C** **URI** Data structure for dealing with `URI` strings

**C** **bad\_v** Thrown when `variant::cast<type>` or `variant::convert_cast<type>` fails because the type of the value stored in the variant is not compatible with the operation  
`ariant_cast`

**C** **varia** Accepts any datatype, used in all interactions with javascript. Provides tools for getting back out the type you put in or for coercing that type into another type (if possible)  
nt

**C** **Plugin**  
**nEventMacCarbon** Mac OS X Carbon specific implementation of **PluginEventManager**

**C** **Plugin**  
**nEventMacCocoa** Mac OS X Cocoa specific implementation of **PluginEventManager**

**C** **Plugin**  
**nWindowlessWin** Windows specific implementation of **PluginWindow**

**C** **Plugin**  
**nWindowWin** Windows specific implementation of **PluginWindow**

**C** **Plugin**  
**nWindowX11** X11 specific implementation of **PluginWindow**

**C** **Content**  
Fired when DPI settings change (e.g. when moving webbrowser window between Retina and non-Retina displays)