

Web Content Guidelines for PlayStation®4

Version 6.20

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1 About This Document

This document provides information required in creating web content for the Internet Browser implemented on the PlayStation®4 system software such as client specifications, technical information, and guidelines. It is recommended for licensees to use the information in this document when creating applicable web content for the Internet Browser.

However, it is possible for Internet Browser client specifications to be changed for fixing bugs and improving quality. The content of this document is not guaranteed to be valid for future versions of the system software. In this document, the applicable version number ("X.XX or later") is noted whenever differences exist depending on the version of the system software.

2 Basic Specifications of the Internet Browser

This chapter describes the basic specifications of the Internet Browser.

Standard Web Specifications

The Internet Browser supports the following standard web specifications.

- partial HTML 5
- CSS 2.1 and partial CSS 3
- ECMAScript:
 - ECMAScript 5
 - ECMAScript 6 (ECMAScript 2015)
 - ECMAScript 2016
 - ECMAScript 2017
 - ECMAScript 2018 (some features are excluded)

Security

The Internet Browser complies with the following standard web specifications.

- TLS 1.0, 1.1, 1.2

Viewport

Viewport is not supported.

Image Formats

The Internet Browser supports the following image formats.

- BMP
- GIF / Animation GIF
- ICO
- JPEG
- PNG / APNG
- SVG 1.1

Vector Graphics

The `canvas` and `svg` elements are used to render vector graphics.

The following is an example.

```
<canvas id="mycanvas" width="600" height="400"></canvas>

<svg>
  <rect x="0" y="0" width="100" height="100" fill="blue">
</svg>
```

The `canvas` element only supports 2D contexts.

Media Playback

To play a video, use the `video` element.

```
<video src="myvideo.mp4"></video>
```

The video formats that can be played back are shown in the following.

Container Format

- MP4 or HLS

Video Format

- Codec: H.264
- Profile: Baseline Profile, Main Profile, or High Profile
- Level: 4.1 or lower
- Size: 1920x1080 or lower
- Framerate: 60fps or lower
- Bitrate: 20 Mbps or lower (however, if the video size is 1920x1080, 8 to 10 Mbps is recommended in order to prevent buffering)
- Progressive streams are recommended

Audio Format

- Codec: AAC-LC or HE-AAC v1
- Channels: 1 channel, 2 channels, 6 channels (AAC-LC only), or 7.1 channels (AAC-LC only)
- Sampling rate: 8000, 11025, 12000, 16000, 22050, 24000, 32000, 44100, or 48000 Hz
- Bitrate: 48 to 3456kbps

Note that only M3U8 files (used in HLS) that adhere to the following document are supported.

- <https://tools.ietf.org/html/draft-pantos-http-live-streaming-05>

For details on HLS, refer to the following document.

- <https://developer.apple.com/library/content/documentation/NetworkingInternet/Conceptual/StreamingMediaGuide/UsingHTTPLiveStreaming/UsingHTTPLiveStreaming.html>

(The above reference destinations have been confirmed as of November 15, 2018. Note that pages may have been subsequently moved or the contents modified.)

Note
Audio playback using the `audio` element is not supported.

User Agent

The user agent string provided by the Internet Browser on PlayStation®4 is as follows.

```
Mozilla/5.0 (PlayStation 4 x.xx) AppleWebKit/xxx.xx (KHTML, like Gecko)
```

- PlayStation 4 x.xx
This represents the platform name and the version of the system software.
- AppleWebKit/xxx.xx
This represents the build number of the WebKit engine.

Note
It is not recommended to use the user agent to distinguish the Internet Browser on PlayStation®4 from other web browsers. Websites making such distinctions and providing separate content by browser type have been reported to cause problems when the Internet Browser is updated. Either create the same content for the Internet Browser and other web browsers, or make it possible to directly check whether a required feature can be used.

Root Certificates

PlayStation®4 is embedded with the following root certificates and they are used in SSL connections of the Internet Browser.

Certificate
AddTrust AB
AddTrust External CA Root
AffirmTrust
AffirmTrust Commercial
AffirmTrust Networking
AffirmTrust Premium
AffirmTrust Premium ECC
Baltimore
Baltimore CyberTrust Root
Certplus
Class 2 Primary CA
Comodo CA Limited
AAA Certificate Services
Cybertrust, Inc.
Cybertrust Global Root
DigiCert Inc.
DigiCert™ High Assurance EV Root CA
DigiCert Assured ID Root CA
DigiCert Global Root CA
Digital Signature Trust Co.
DST Root CA X3
Entrust, Inc.
Entrust Root Certification Authority
Entrust Root Certification Authority - G2
Entrust.net
Entrust.net Secure Server Certification Authority
Entrust.net Certification Authority (2048)
Equifax
Equifax Secure Certificate Authority
Equifax Secure Inc.
Equifax Secure eBusiness CA-1
Equifax Secure Global eBusiness CA-1
GTE Corporation
GTE CyberTrust Global Root
GeoTrust Inc.
GeoTrust™ Global CA
GeoTrust Primary Certification Authority - G3
GeoTrust Primary Certification Authority
GlobalSign
GlobalSign (Serial Number: 04:00:00:00:00:01:0f:86:26:e6:0d)
GlobalSign (Serial Number: 04:00:00:00:00:01:21:58:53:08:a2)
GlobalSign nv-sa
GlobalSign Root CA (Serial Number: 04:00:00:00:00:01:15:4b:5a:c3:94)
GoDaddy.com, Inc.
Go Daddy Root Certificate Authority - G2
RSA Security Inc
RSA Security 2048 V3
SECOM Trust Systems CO.,LTD.
Security Communication RootCA2

Certificate
SECOM Trust.net
Security Communication RootCA1
SecureTrust Corporation
SecureTrust CA
Starfield Technologies, Inc.
Starfield Class 2 Certification Authority
Starfield Root Certificate Authority - G2
Starfield Services Root Certificate Authority
Starfield Services Root Certificate Authority - G2
StartCom Ltd.
StartCom Certification Authority
StartCom Certification Authority G2
Thawte Consulting cc
Thawte Premium Server CA
Thawte Server CA
Thawte Premium Server CA (Serial Number: 1)
The Go Daddy Group, Inc.
Go Daddy Class 2 Certification Authority
The USERTRUST Network
UTN-USERFirst-Hardware
Unizeto Sp. z o.o.
Certum CA
ValiCert, Inc.
ValiCert Class 1 Policy Validation Authority
ValiCert Class 2 Policy Validation Authority
ValiCert Class 3 Policy Validation Authority
VeriSign, Inc.
Class 3 Public Primary Certification Authority
Class 3 Public Primary Certification Authority - G2
VeriSign® Class 3 Public Primary Certification Authority - G3
VeriSign Class 3 Public Primary Certification Authority - G5
VeriSign Class 4 Public Primary Certification Authority - G3
VeriSign Universal Root Certification Authority
thawte, inc
thawte Primary Root CA
thawte Primary Root CA - G3

Cipher Suites

Cipher suites are used with the following priority in the Internet Browser (cipher suites are an encrypted communication algorithms used in SSL/TLS communication).

Priority	Cipher Suite
1	TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256
2	TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
3	TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA
4	TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA
5	TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA
6	TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA
7	TLS_DHE_RSA_WITH_AES_128_GCM_SHA256
8	TLS_DHE_RSA_WITH_AES_256_CBC_SHA
9	TLS_DHE_RSA_WITH_AES_128_CBC_SHA
10	TLS_RSA_WITH_AES_256_CBC_SHA256
11	TLS_RSA_WITH_AES_128_CBC_SHA256

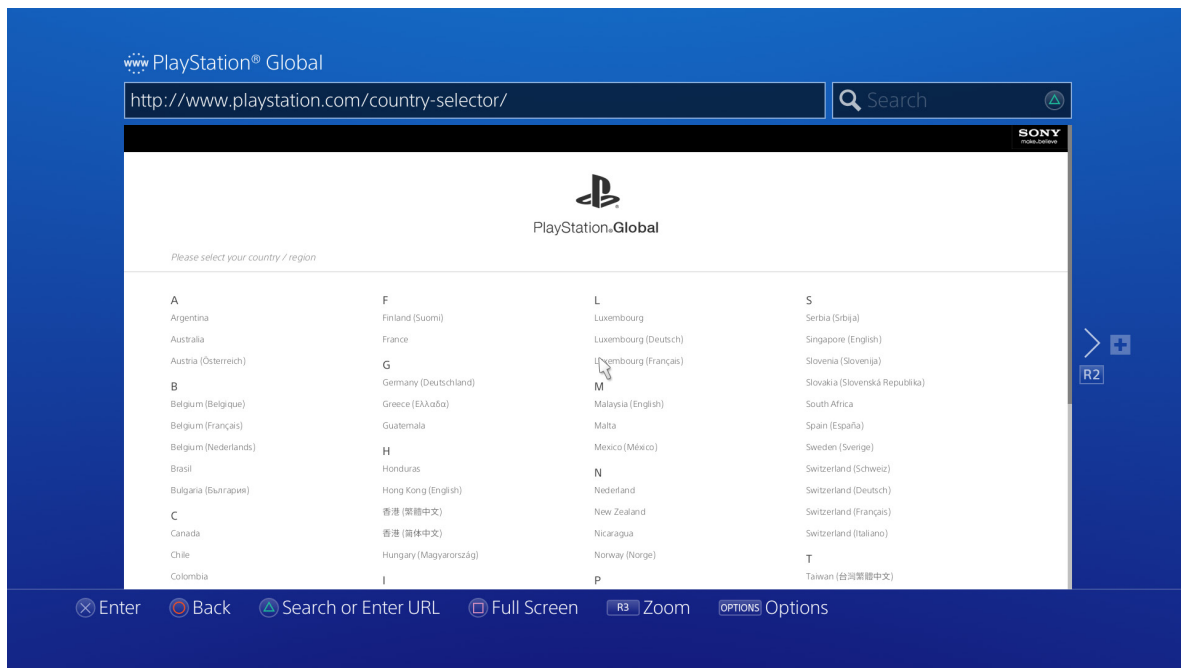
Priority	Cipher Suite
12	TLS_RSA_WITH_AES_256_CBC_SHA
13	TLS_RSA_WITH_AES_128_CBC_SHA
14	SSL_RSA_WITH_3DES_EDE_CBC_SHA

Window Size

The size of the window displayed by the Internet Browser for showing web content differs between standard display and full-screen display, as follows.

- Standard: width 1540 pixels, height 754 pixels
- Full screen: width 1920 pixels, height 1080 pixels

Figure 1 Example of Standard Display of Web Content



On full-screen display, display of web content is spread over the entire screen and content at the edges may be hidden by the screen peripherals on some displays. When creating web content, consider a full-screen display and avoid displaying important information near the peripherals. This extra space is called the "safety zone".

Control of the Mouse Cursor

The position of the mouse cursor cannot be set from the web page. The moving position cannot arbitrarily be changed for mouse cursor operation using the directional keys as well.

Downloads and Uploads

The downloading and uploading of files are not supported.

3 Events

Input Operation Events

Input Devices

The Internet Browser supports the following devices.

- DUALSHOCK®4 wireless controller
- USB/Bluetooth® keyboard

Use the DUALSHOCK®4 wireless controller to operate the onscreen mouse cursor. The cursor can be moved with the left stick. Clicks can be made with the Enter button (either the circle button or cross button depending on the region). It is also possible to jump to elements that can be clicked using the directional keys. Other buttons will be assigned to features unique to the Internet Browser.

For details, refer to the PlayStation®4 User's Guide.

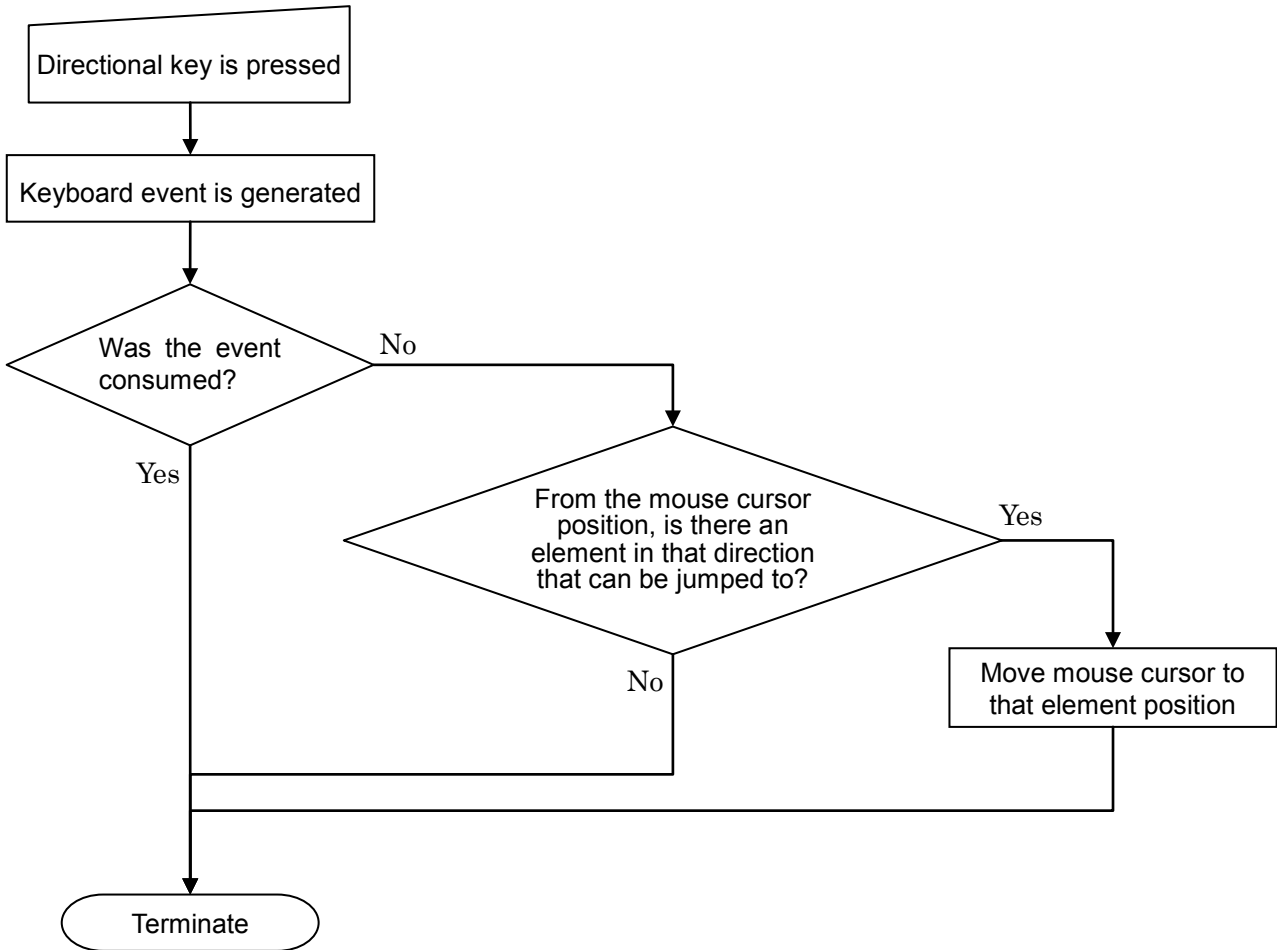
Input Operation Obtainment

Given the above-described input device operations, general mouse events and keyboard events will be generated. Web content cannot individually obtain information of various buttons and the touchpad of the DUALSHOCK®4 wireless controller.

Directional Key Behavior

The directional keys of the DUALSHOCK®4 wireless controller are usually used to jump the mouse cursor to a nearby element that can be clicked. When a directional key is used for this purpose, a keyboard event is generated and the processing indicated in Figure 2 is carried out. Wherever this jump of the mouse cursor to a nearby element that can be clicked is not desired in your web content, the `preventDefault` method must be explicitly called when a keyboard event is generated to prevent the jump.

Figure 2 Directional Key Behavior



Window Focus Events

Multiple windows can be opened at the same time on the Internet Browser. When switching between these windows, the `onfocus/onblur` event is generated for the window object. The same `onblur` event is generated when the PS button is pressed to return to the home screen.

Focus Events of the Character Input Field

The software keyboard or the USB/Bluetooth® keyboard is used to input characters to the Internet Browser; however, in either case, character input cannot be started just by setting the focus on the `input` element or `textarea` element (and generating the `onfocus` event). To start character input, one of the following operations is required from the user.

- Click the mouse on the character input field
- Press the Enter key while the focus is on the character input field

Moreover, the focus will be kept on the character input field when the software keyboard is closed. To release this focused state, the user must click the mouse on another element or explicitly remove the focus with a script. Note the `onchange` event for an element of the character input field will only be generated when the focus is removed from that element - and not just when the software keyboard is closed.

Event When a Window Is Unloaded

The Internet Browser does not support the `window.onbeforeunload` event. Required processing for when a window is unloaded (when leaving a displayed page) must be carried out in advance each time a window is unloaded.

4 Software Keyboard

This chapter describes the behavior of the software keyboard upon entering characters to the Internet Browser.

Role of the Done Key

The Done key on the software keyboard serves the role of the Enter key (key code 13). Because of this, the Enter key event is generated when the Done key is pressed for the character input field of the `input` element placed on the form and the form is submitted. When the Done key is pressed for the character input field of the `textarea` element, the software keyboard just closes and the Enter key event is not issued. The Enter key event is also not issued when the user presses the return button (cross button or circle button depending on the region) to close the software keyboard.

Language Specification with the lang Attribute

The software keyboard supports multiple languages, but the Internet Browser displays the software keyboard in the language specified by the `lang` attribute of the `input` element. When there is no language specification or when the specified language is not supported, the display language setting of the PlayStation®4 system will be used.

The languages supported by the Internet Browser are as follows.

lang attribute	Description
ar	Arabic
da	Danish
de	German
cs-CZ	Czech
el-GR	Greek
en, en-US	English (United States)
en-GB	English (United Kingdom)
es	Spanish (Spain)
es-419	Spanish (Latin America)
fi	Finnish
fr	French (France)
fr-CA	French (Canada)
hu-HU	Hungarian
id-ID	Indonesian
it	Italian
ja	Japanese
ko	Korean
nl	Dutch
no	Norwegian
pl	Polish
pt, pt-PT	Portuguese (Portugal)
pt-BR	Portuguese (Brazil)
ro-RO	Romanian
ru	Russian
sv	Swedish
th-TH	Thai
tr	Turkish
vi-VN	Vietnamese
zh, zh-Hans	Chinese (simplified)

lang attribute	Description
zh-Hant	Chinese (traditional, Taiwan)
zh-Hant-HK	Chinese (traditional, Hong Kong)

Panel Specification with the type Attribute

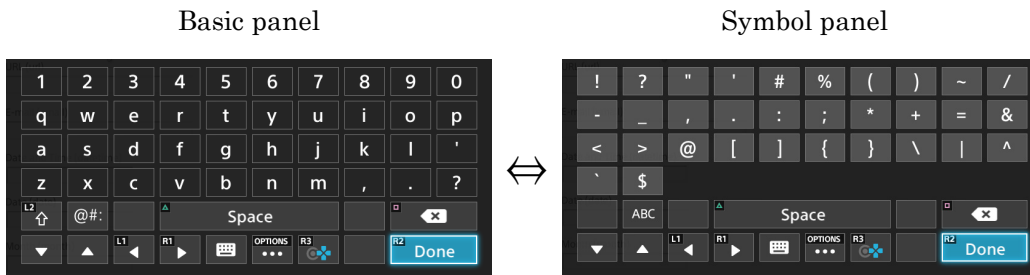
The software keyboard has panels supporting various input modes. The Internet Browser selects the appropriate browser according to the value specified to the type attribute of the input element. Examples of when the language is English are given below.

type="text", "search", "datetime", "date", "month", "week", "time", "datetime-local", "color"

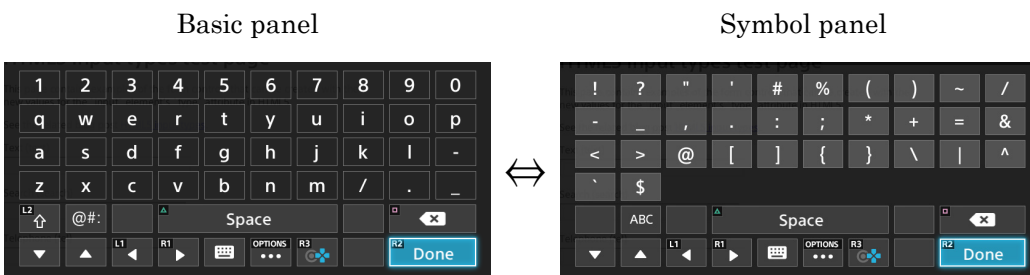


* Example when the automatic capitalization on the keyboard is enabled and when the first character is input

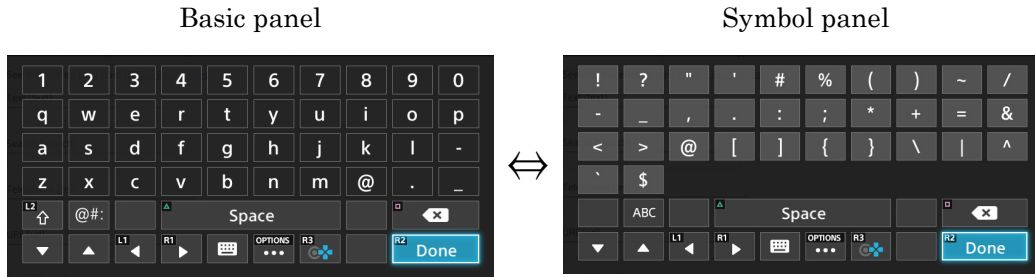
type="tel"



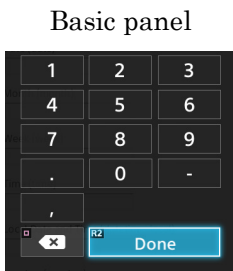
type="url"



type="email"



type="number"



* Only the basic panel