

# NetFront™ Browser SDK

A Porting and Development Kit for NetFront Browser, the World's Browsing Standard



NetFront™ Browser SDK is a porting and development kit for NetFront™ Browser, the world's leading Internet browser for embedded devices.

NetFront Browser SDK includes pre-packaged sample code, browser core binary, and documentation, so porting, customization, and testing of NetFront Browser to target devices is quick and easy.

NetFront Browser SDK can be mounted on a variety of information appliances including mobile devices, TVs, game terminals, set-top boxes, and car navigation systems. NetFront Browser SDK not only brings NetFront Browser to a variety of devices, it also facilitates the rapid development of HTML-based user interfaces for the browser.

# The Advantage | NetFront Browser SDK

## HTML+DirectConnect, an Optimal UI Development Solution for Information Appliances

The HTML browser is attracting attention not only as a tool to access the Internet, but also for building the UI on a device. NetFront Browser SDK includes DirectConnect, a technology that performs device monitoring and control from the browser side, enabling developers to present device control screens in HTML (using simple HTML authoring tools) resulting in shorter development cycles.



Examples of UI Construction

## Provides the Functions Necessary for the Development of DTVs, STBs, and more.

Supports half HD plus NTSC/PAL screen sizes  
Supports remote control  
Includes Flicker reduction technology  
Offers sample UIs optimal for DTVs and STBs

Supports the Net TV 2.0 specification\*  
Supports 4th MEDIA broadband video delivery service\*

Supports the new interactive television portal ActVila\*

©A separate contract with Plala Networks Inc. is required.  
\*These services target the Japanese market.

©A separate contract with Actvila Corporation is required.  
Please refer to the following URL for details:  
<http://actvila.jp/>  
\*These services target the Japanese market.

## New Functions

Ajax support  
Virtual Pointer  
Visual Bookmarks  
Linking with search engine sites and translation sites  
Supports RSS/Atom feed (The Reader application needs to be developed.)



Ajax Support



Visual Bookmarks

## Flexible Porting and Customization

The UI can be customized with the included UI editor.  
- The SDK package includes sample UIs (with source code) that offer standard browser functions, which can be customized with the UI editor.

Sample Peer for Linux®  
- Provides a sample WAVE Peer for various graphic middleware

## Realizes Powerful and Highly Functional Browsing

Tab Browsing  
- Multiple Web pages can be selected and displayed with tabs.  
Smart-Fit Rendering™/Just-Fit Rendering  
- Intelligently renders Web pages to fit the narrow screen widths of mobile devices, eliminating the need for horizontal scrolling  
Rapid-Render®  
- Accelerates browsing by incrementally rendering web pages during download.  
Supports a variety of plug-ins including Adobe® Flash® Lite and Adobe Reader® LE (optional)  
Supports the latest HTML standard specifications

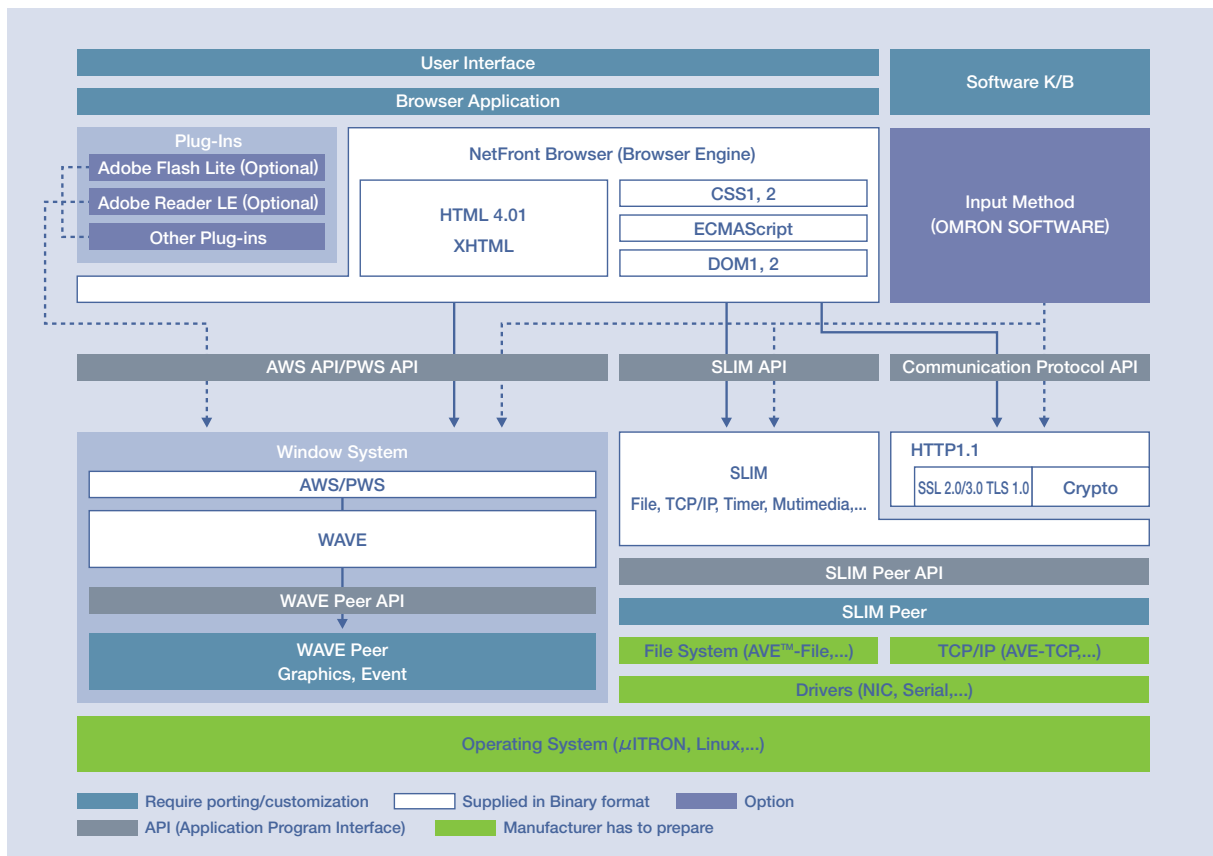
Supports various SSL root certificates  
- VeriSign - Go Daddy  
- Entrust - RSA  
- Thawte - SECOM Trust Systems  
- CyberTrust - Comodo  
- GlobalSign  
Includes sample data for various fonts  
- Bit-mapped fonts by Nippon Electric Co., Ltd. FontAvenue  
- Scalable fonts by Monotype Imaging iType2.2  
- Scalable fonts by LIM Corporation MobileType



Tab Browsing

# Module Diagram | NetFront Browser SDK

NetFront Browser SDK is constructed around a browser engine that analyzes and displays content. In order to operate NetFront Browser as an application, a UI must be constructed for the browser and the hardware-dependent part must be ported. NetFront Browser SDK also provides application programming interfaces (APIs) for NetFront Browser in the form of libraries for those requiring porting and implementation for each specific target systems.



**WAVE (Window-based Abstract Virtual Environment)**  
 WAVE is ACCESS' unique simple window manager that is optimized for embedded systems with limited hardware resources.  
**WAVE Peer**  
 WAVE Peer is a module that provides a drawing function and an event function, depending on the target system. If WAVE is used for the Window System, WAVE Peer also needs to be ported.  
**WAVE Peer API**  
 WAVE Peer API is an interface to execute the drawing and event process, depending on the target system. The WAVE Peer API is called by WAVE. If WAVE is used for the Window System, WAVE Peer API needs to be ported.  
**SLIM (Suite of Lightweight Internet Modules)**  
 SLIM libraries provide basic functionalities which are used by other modules, such as memory management, character manipulation, image decoding, and so on.  
**SLIM Peer API**  
 SLIM Peer API is an interface for the NetFront Browser to execute processes depending on the target system. The SLIM Peer API is called by the NetFront Browser. SLIM Peer API may need to be ported depending on the target system.

**AWS (Abstract Window System)**  
 AWS is an abstract Window System assumed to realize specific browser functions. AWS is implemented by WAVE or other Window Systems.  
**AWS API**  
 AWS API is an interface that executes a drawing process by using AWS. AWS API is called by the NetFront Browser (Engine). If WAVE is not used for the Window System, AWS API needs to be ported to an existing Window System.  
**PWS (Plate Window System)**  
 PWS is a new windowing system that enhances web browsing via support for Ajax and by improving the display of applications.  
**PWS API**  
 PWS API is an interface that executes a drawing process by using PWS. If WAVE is not used for the Window System, PWS API needs to be ported to an existing Window System.  
**Plug-Ins**  
 NetFront Browser supports Netscape-compatible plug-in interfaces.

# Specification | NetFront Browser SDK

**[Overview of Specifications]**

HTML 4.01, XHTML 1.1, XHTML Basic  
 DOM1, DOM2  
 CSS 1.0, CSS 2.0  
 ECMAScript (ECMA-262 3rd Edition)  
 XMLHttpRequest  
 HTTP 0.9/1.0/1.1  
 SSL 2.0, SSL 3.0, TLS 1.0  
 http:, https:, file:  
 GIF87a, GIF89a, Animated GIF, JPEG,  
 Progressive JPEG, PNG, MNG, BMP  
 Cookies (Expires, Path, Domain, Name, Secure)  
 US-ASCII, Shift JIS, EUC-JP, UTF-8/16,  
 ISO-2022-JP, EUC-KR, ISO-8859-1, GB2312, Big5  
 Graphic 24-bit RGB color

**[Content of the Package]**

NetFront Browser engine modules  
 NetFront Browser application modules  
 NetFront Browser standard UI source programs  
 ACCESS SSL modules  
 ACCESS encryption modules  
 WAVE window manager modules  
 WAVE software keyboard application  
 UI editor  
 AVE™-TCP v6.1 kernel library modules  
 AVE-TCP v6.1 configuration section source programs  
 Software keyboard supporting predictive  
 conversion (binary)  
 Multilingual AdvancedWnn by OMRON SOFTWARE  
 kana-kanji conversion modules (sample binary)

Bit-mapped fonts by Nippon Electric Co., Ltd.  
 "FontAvenue" sample data  
 "iType2.2" scalable font sample data by  
 Monotype Imaging  
 "Mobile Type" scalable font sample data  
 by LIM Corporation

**Only for the Win32 Environment**

Sample source program of  
 NetFront Browser Win32 Peer  
 Sample source program of environment-  
 dependent parts for Windows  
 The NetFront Browser simulator,  
 "Frontbed" for Win32

**Reference Implementation Peer Section  
 Sample Source Program**

For the Linux SDL Environment  
 For the Linux GTK+ Environment  
 For the Sigma Designs Inc. Envision8634  
 environment

**[Required Environment]**

**The Win32 Environment**

Development Environment  
 - Microsoft Visual Studio 6.0 Service Pack 6  
 OS  
 - Microsoft Windows 2000 Professional  
 - Microsoft Windows XP Professional

**The Linux SDL Environment**

Development Environment  
 - Compiler/linker: gcc 3.2.2-5  
 - Make tool: make 3.79.1-17

OS  
 - Redhat Linux 9.0  
 - Ubuntu 6.10  
 CPU  
 - x86 series

**The Linux GTK+ Environment**

Development Environment  
 - Compiler/linker: gcc 3.2.2-5  
 - Make tool: make 3.79.1-17  
 OS  
 - Redhat Linux 9.0  
 - Ubuntu 6.10  
 CPU  
 - x86 series

**The Envision8634 Environment**

Development Environment  
 - Compiler/linker: SMP8634 SDK version  
 2.7.127.0 (by Sigma Designs, Inc.)  
 - Make tool: GNU Make 3.80 (provided  
 with Fedora Core 5)  
 - Storage NFS Server for Envision8634  
 (provided with Fedora Core 5)  
 OS  
 - μCLinux  
 CPU  
 - SMP8634

\*Other platforms are supported individually by recompilation.  
 Please contact our sales department or our distributor for details.

## Other SDK

**NetFront Browser DTV Profile BML Edition SDK**

A BML browser porting development kit for digital television and set-top boxes that is compliant with the data broadcasting specifications as defined by the Association of Radio Industries and Businesses (ARIB).

**NetFront Living Connect SDK**

A DLNA porting development kit that supports all information devices including mobile phones, digital cameras, HDD recorders, and printers, as well as digital television and set-top boxes.



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**ACCESS CO., LTD.**  
 Hirata Bldg. 2-8-16 Sarugaku-cho, Chiyoda-ku,  
 Tokyo 101-0064 Japan  
 PHONE +81-3-5259-3511 FAX +81-3-5259-3544  
 E-mail: adinfo@access.co.jp

**ACCESS Systems Europe GmbH**  
 Essener Strasse 5 TZU-IV D-46047 Oberhausen, Germany  
 PHONE +49-208-8290-6464  
 FAX +49-208-8290-6465

**ACCESS (Beijing) CO., LTD. (爱可信(北京)技术有限公司)**  
 Floor 3, China Data Kingdom Mansion  
 No.1 North Wajiang Road, Chaoyang District, Beijing 100102, China  
 PHONE +86-10-64396000  
 FAX +86-10-64396001

**Developer**

**ACCESS CO., LTD. Taipei Office**  
 Suite105, 17F/B, No.167, Tun Hwa N.Rd., Taipei, 10549, Taiwan  
 PHONE +886-2-2717-1999 EXT. 1151-3  
 FAX +886-2-2717-2199

**ACCESS SEOUL CO., LTD.**  
 8F/9F, PAXTOWER, 231-13, Nonhyun-Dong, Gangnam-Gu,  
 Seoul, 135-010, Korea  
 PHONE +82-2-513-2000  
 FAX +82-2-513-2010

**ACCESS Systems Americas, Inc.**  
 1188 East Arques Avenue, Sunnyvale CA 94085 U.S.A.  
 PHONE +1-408-400-3000  
 FAX +1-408-400-1500

<http://www.access-company.com>