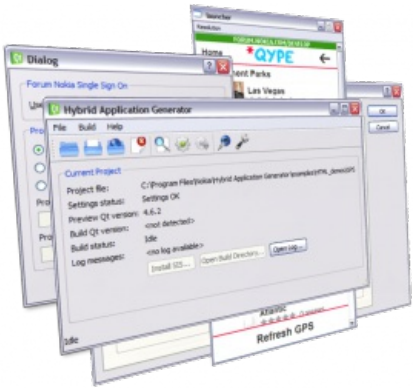
Hybrid Application Generator

This article needs to be updated: If you found this article useful, please fix the problems below then delete the {{ArticleNeedsUpdate}} template from the article to remove this warning.

31 Oct 2010

Reasons: hamishwillee (15 Aug 2011)
Would be useful to reverify with Nokia Web Tools as these have superseded Aptana. Also worth verifying that the project wiill work with latest versions of Qt

Introduction



This article introduces the Hybrid Application Generator (currently available as Alpha release), which allows developers to create native Qt applications that show HTML-based content, including applications that use JavaScript™ and Cascading Style Sheets (CSS).

What are hybrid apps?

Hybrid application in this context means an application that combines Qt with web technologies. With QtWebKit, Qt developers can create applications that have web UI, utilizing new powerful features of web, like HTML 5 and CSS 3. QtWebKit allows

- Intuitive use of network resources
- Easily embedding web content into an application
- Exposing QWidget to HTML and QObject to JavaScript
- Calling JavaScript from Qt and vice versa
- Content that may be enhanced with native controls

Hybrid applications enable developers to

- Use their web skills (HTML, CSS, JavaScript) to construct the UI
- Write JavaScript to access platform features
- Build a Qt application – a native application
- Create an application that works on all platforms where Qt is supported

Hybrid Application Generator

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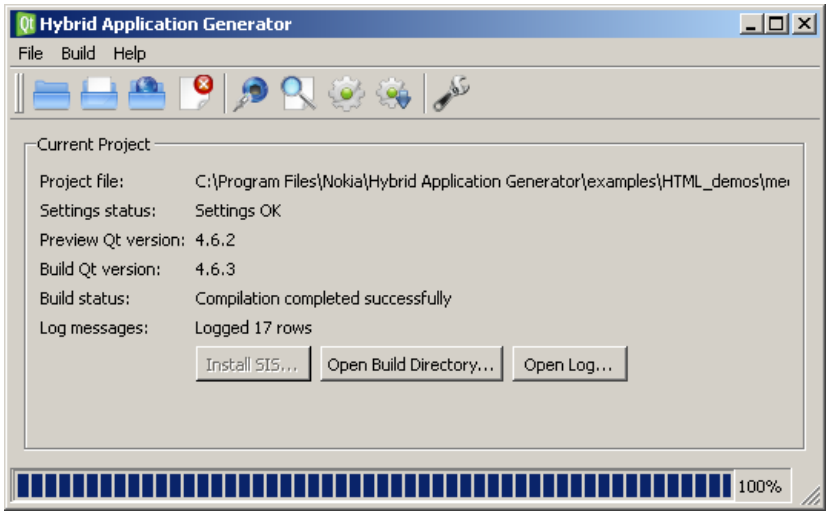


With the Hybrid Application Generator, web developers can easily develop Qt applications, without writing a single line of C++ code. Secondly, no SDK is needed for application development.

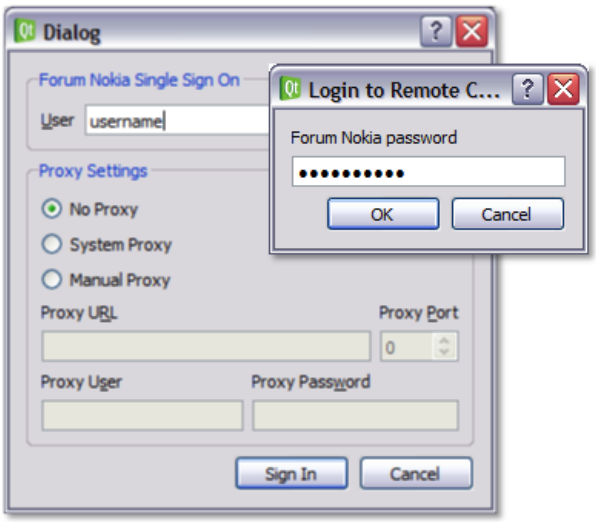
The hybrid application framework serves as an interface between JavaScript functionality (such as that found in Web Runtime widgets) and Qt APIs. For example, when your program requests the application to switch to full screen mode, the framework connects the JavaScript function call to relevant native platform functionality. Hybrid applications can target Symbian as well as Maemo devices.

The result is a system that allows developers to use web technologies to quickly create services that can then be converted to Qt applications to enable simple delivery and installation to a variety of mobile devices. However, unlike pure widget applications, hybrid applications retain the power and flexibility of native code.

Features

Remote Compilation

By enabling the remote compilation feature, you don't need to install local Symbian or Maemo SDKs(nor Nokia Qt SDK) to get the applications built.



Login to remote compilation only requires Nokia Developer account

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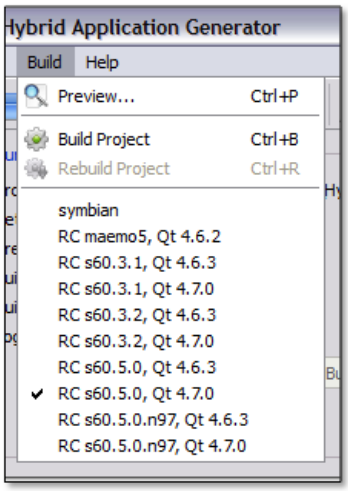
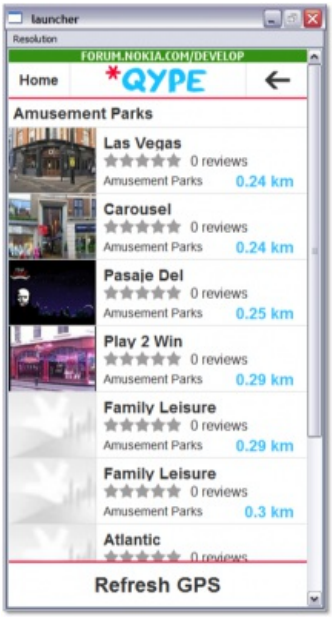


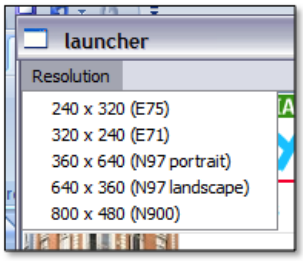
The remote compiler lists all the available build options from the server

Preview launcher

The preview launcher lets you to have a look on how the build result will appear on device.



Web content can be tested on the preview launcher without building



The preview launcher provides several device resolutions to test with

Settings

The settings are useful for quickly adjusting the release options.

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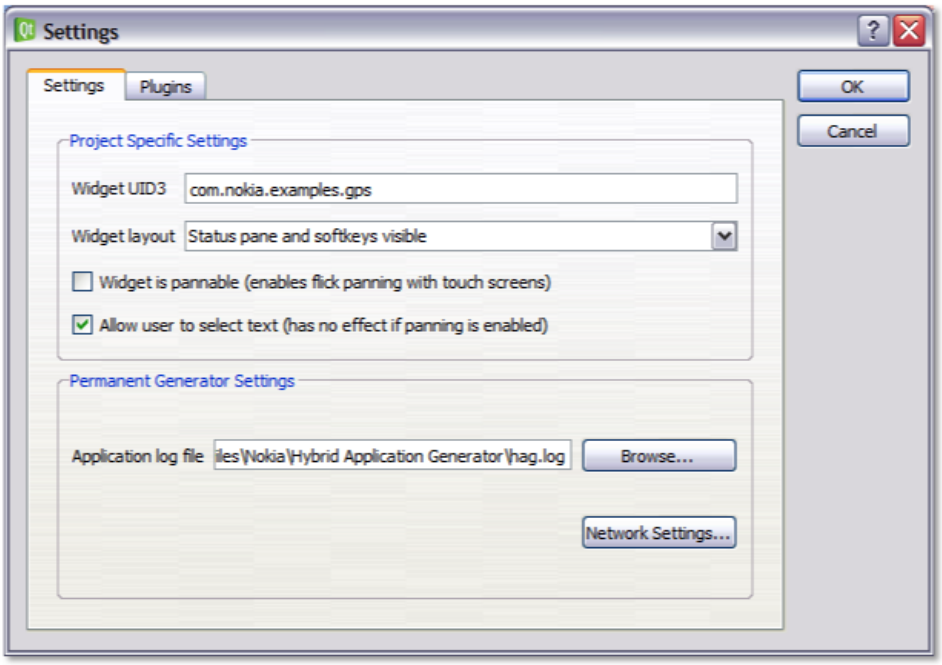
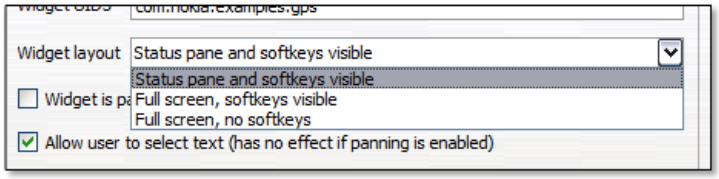


The settings view covers the needed adjustments according to the selected build option



Window options are used to select the screen layout in the application

Use cases and examples

Hybrid Application Generator can be used to create hybrid applications from WRT widgets, directories containing HTML content, or by grabbing live web pages.

The Alpha release comes with a few example applications, which demonstrate some of the different use cases:

BreakDown widget

BreakDown is a simple Breakout clone in JavaScript. The game uses motion sensors to control the paddle. Thus, you won't be able to preview this demo in your workstation – instead, you should make a Symbian build and install it to your device. The BreakDown demo works only with resolution 360x640 (for example, N97 in portrait mode).

MeeGo.com web page

This is a grab of the MeeGo.com site showing MeeGo architecture. The purpose of the demo is to show an example of a hybrid application made out of a web page. The page still allows normal navigation via hyperlinks.

Menu example web page

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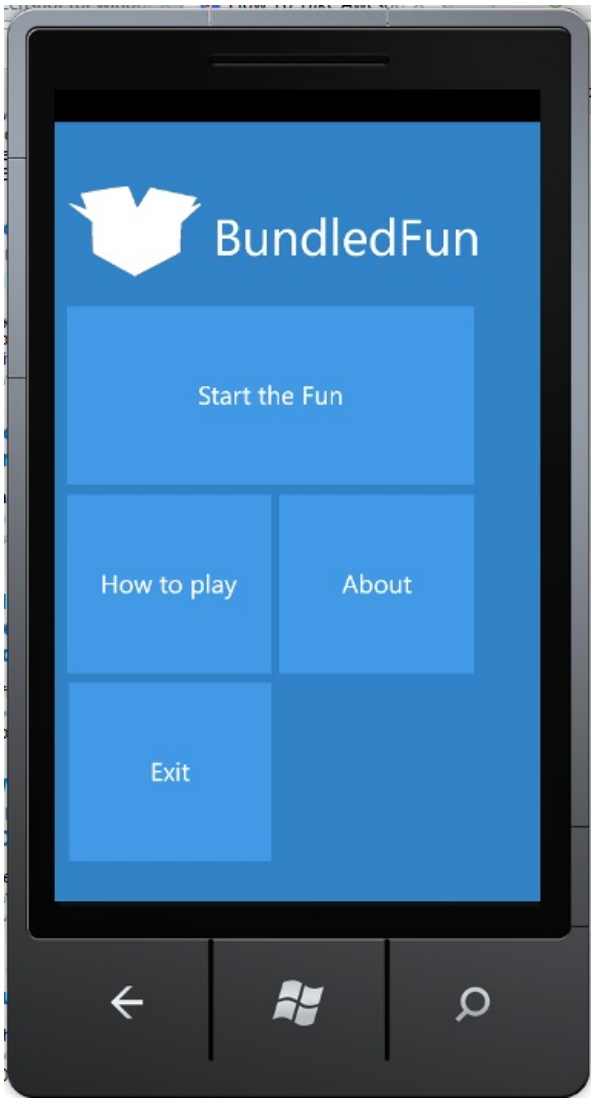
This example demonstrate adding two menu items to the application's menu, accessible via the left soft key. In preview mode, the items will be shown in the window's menu bar.



GPS example web page

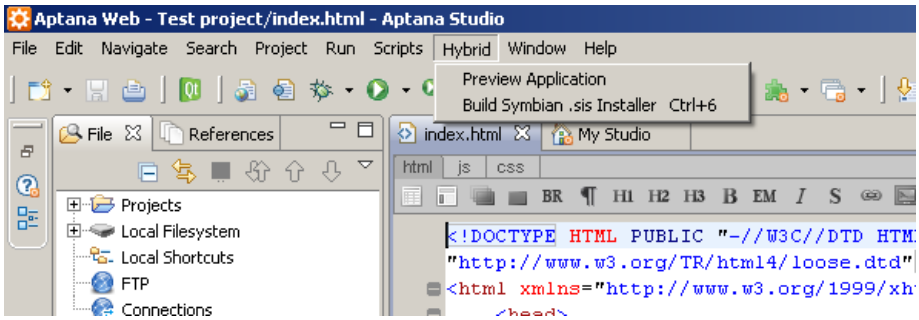
This example takes the current GPS location and shows an alert box containing the device's latitude, longitude, and altitude.

File:Gps.jpg

IDE Integration

Hybrid Application Generator has a command-line interface that can be used to provide functionality to e.g. third party IDEs. An example of Aptana Studio 2.0 integration is available at Hybrid Application Generator pages at Nokia Developer Wiki.

To enable the plugin, copy the .jar file to Aptana Studio plugins directory and restart Aptana. New functionality should appear: an icon to the Aptana toolbar, and a new menu for creating an application of the current project.



The Aptana integration is still experimental and can be used only with local SDKs. Remote generator support is a planned feature for upcoming releases.

Download

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Download the Hybrid Application Generator Alpha (**hybrid.zip** in root of Media:QtHybrid.zip). The package includes User's Guide with the installation and system requirements instructions. Currently we're offering the installer only for windows.

Download the Aptana Studio 2.0 plugin Media:QtHybrid.zip - /files/com.nokia.hag_1.0.0.201005031455.jar . This is a .jar file that should be copied to the Aptana plugin folder.

The project is open source. Get the full source code and start contributing from Media:QtHybrid.zip

Also please feel free to provide feedback about the project and its documentation on the project's space.

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