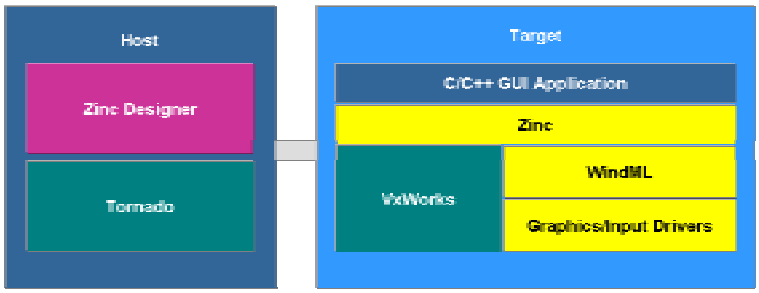
Zinc 6.0

Zinc Architecture



Once the domain of PC users only, graphical user interfaces (GUIs) are increasingly demanded by embedded device users as well. However, the unique and varied requirements of embedded devices have often made available GUI solutions unsuitable. These devices are characterized by their diversity: they are usually developed with specialized hardware under a cost-efficient economic model and used for a dedicated purpose. Therefore, a GUI solution for embedded devices has to address the special requirements unavailable with traditional, desktop GUI solutions.

Zinc ™ 6 from PSA fulfills the graphical requirements of embedded computers making it possible for a developer to build a rich, full-scale embeddable GUI on Wind River's VxWorks ® real-time operating system with low system overhead and rapid time to market.

Scalability and configurability

Almost every embedded design is unique, so an off-the-shelf software solution needs to be flexible in order to be adapted to a wide variety of hardware, and must include just those components required for a specific application. Zinc provides this scalability through its object-oriented design and its scalable architecture.

Resource efficient

Desktop GUI solutions are developed for systems with almost infinite memory that run on high-end processors. An embedded GUI solution must fit into systems with small memory footprints that run on processors with widely different performance criteria. Zinc was designed to run in low memory environments and its minimal footprint is roughly 350 KB.

Features

- Small memory footprint
- Scalable from 350KB to 750KB
- Easy porting to custom hardware
- High-performance graphical output
- Highly customizable
- Intuitive, complete C++ API
- Sophisticated event routing and model/view architectures
- Powerful visual design tool/GUI builder
- Full internationalization support
- Multithreading support
- Supports JPEG images

User interface objects

- Window, dialog window, scrolled window, MDI window, child window, message window
- Horizontal and vertical splitters, group, scroll bar
- Toolbar, pull-down menu, pop-up menu
- Buttons, radio buttons, check box
- Vertical list, horizontal list, combo box, spin control
- Table, tree list, notebook
- Bitmap, image, icon, progress bar, chart
- String, formatted string, text
- Integer, real, big number
- Date, time
- Status bar, prompt, generic
- File, print, help, and error common dialogs

System requirements

- WindML 2
- VxWorks 5.4
- Tornado 2.0

Zinc 6.0

Example of an interface built with Zinc.

Differentiable

Because most embedded devices serve a dedicated purpose, they also require customized user interfaces not a static, predefined look and feel that does not address unique GUI requirements. The appearance of Zinc objects can be customized, as can the manner in which they handle events, in an easy and intuitive way. The Zinc designer, a GUI builder for rapid prototyping, allows the integration of customized objects. These can then be used in the Zinc designer to quickly prototype the new look and feel of the GUI in a graphical way. For example JPEG images can be used to customize the appearance of a button.

Internationalization

Embedded devices must be able to use the same fundamental design in different countries, and the challenge is to have a GUI component with the same flexibility. Zinc provides integrated support for localized applications so that all UI texts are automatically translated and all date and number formats are changed. Zinc can be configured to use UNICODE 16-bit wide characters, which allows a seamless integration of non-western fonts, such as Asian fonts.

Easy to use

Embedded applications development is driven by strict deadlines and GUI solutions must address the same time-to-market issues as any other software component. Zinc was designed in an object-oriented way derivation of classes that make it easy to understand. The Zinc designer helps with building applications a graphical way on the development host even before the target hardware is available.

Optimized for multithreaded environment

Embedded systems often have no MMU and therefore do not support separate memory spaces and complete process models. Instead they provide only a multithreaded environment. Zinc 6 is optimized for a multithreaded environment. It is reentrant and provides all the necessary means to run multiple instances of Zinc applications without the need of a complete process model and different name/memory spaces.

A complete GUI solution

Zinc 6 provides a complete object-oriented, C++ application program interface (API) for the creation of GUIs and event-driven applications. Zinc is composed of GUI libraries, a visual design tool, hypertext-based on-line documentation, and numerous examples and tutorials. Zinc can easily be scaled and configured to meet the exact GUI requirements of a given application. Designed for memory constrained environments, Zinc can fit a complete configuration consisting of VxWorks and Zinc libraries in less than1MB of memory. Rounding out the Zinc feature set are portable file system support, help and error systems, and sophisticated model/view and event-routing architectures.

Professional Software Associates, Inc. (PSA)
2500 Mitchell Lake Road
Attica, MI 48412
1-810-724-5200 phone
1-810-724-5500 fax
info@psa-software.com

For additional contact information, please see our Web site at www.psa-software.com.