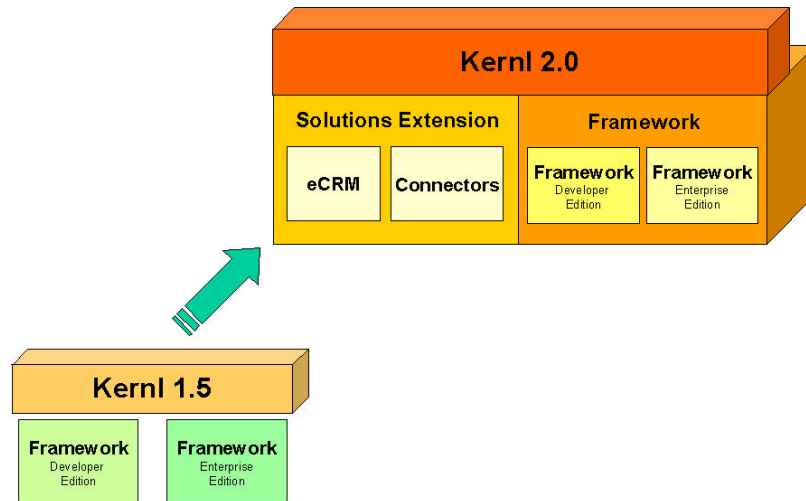


# What's new in Kernl 2.0

*A summary for those familiar with Kernl 1.5*

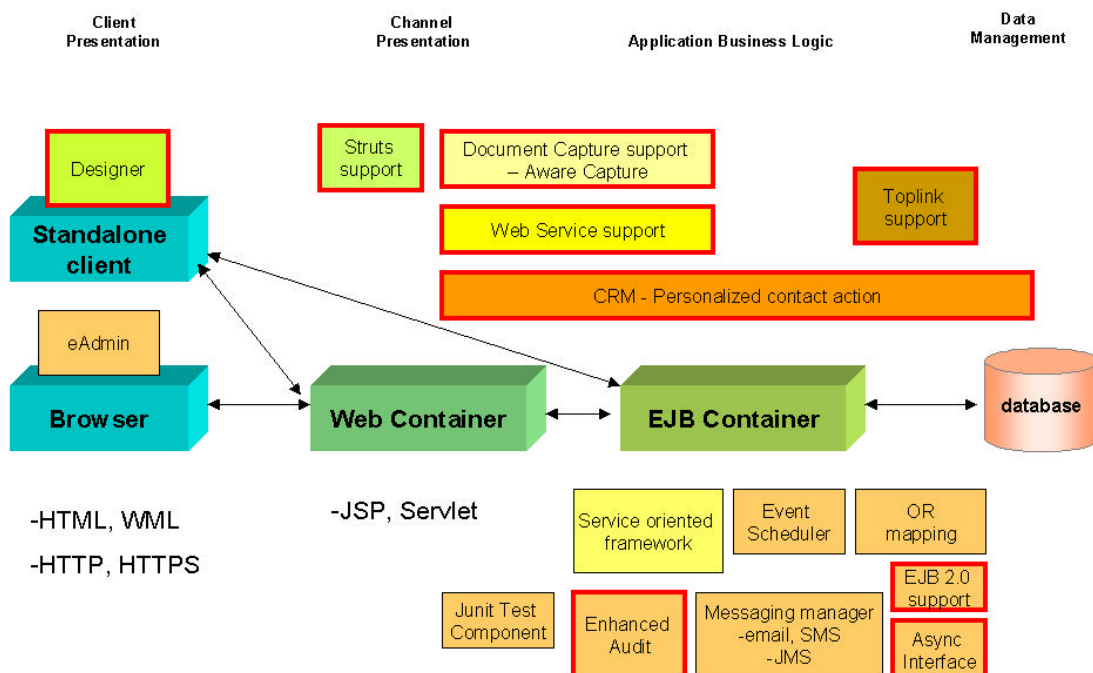
## Introduction

Kernl 2.0 contains significant enhancements over its predecessor, Kernl 1.5. This document describes them briefly. For more details, please refer to the Kernl 2.0 brochure and white paper.



**Figure 1: Solutions Extension in Kernl 2.0**

Seen from the highest conceptual level, there is an additional element to Kernl's service-oriented framework. This addition is the Solutions Extension, which provides some core connectors that significantly round out the capabilities of Kernl in addressing the needs of enterprise application development. The original Kernl 1.5 framework is also enhanced with additional capabilities. These additions and enhancements are bordered in red in figure 2.



**Figure 2: Kernl 2.0 new or enhanced features shown in red boxes**

## CRM

Kernl 2.0 contains a CRM component packaged at the infrastructure level. This component comprises:

- Customer knowledge property sets for structuring databases into logical categories
- A Data Retrieval Manager to facilitate pulling the relevant structured data from databases
- Personalized Notification for contacting the customer directly, e.g. via e-mail or SMS

## Web Service Support

Web Services are XML-based building blocks and are quickly becoming the preferred tools for addressing the challenges of EAI, B2B and B2C. Because they are based on a de facto Web standard, using them enables distributed applications to be built faster and more simply than before. They also enable businesses to benefit from using the Internet as a means of interconnection.

Web Services can:

- Improve enterprise agility by abstracting the complexities of the back-office from front-end users
- Reduce complexity by wrapping functions or applications with standard interfaces
- Achieve rapid interoperability between systems by reducing the need for up-front system knowledge

In v2.0, Kernl's service-oriented framework exposes selected service beans in the form of Web Services.

## Document Capture Support

For document capture and scanning, Kernl uses Aware<sup>TM</sup> Capture from Cognixion Technologies. Aware<sup>TM</sup> Capture uses common interface standards (such as TWAIN) to drive a full range of scanners from low-end to high, allowing an organization's hardware to be scaled according to its document capture load. Fax systems can also be added as a means of acquiring images.

Incorporating machine vision and computer recognition technology such as OCR, OMR and barcode recognition, Aware<sup>TM</sup> Capture can classify and process standard, structured and unstructured documents. Kernl 2.0 receives captured documents using MQ Series messaging, or by an HTTP "post" action. Kernl may provide SOAP and XML interfaces in future releases.

## TopLink<sup>TM</sup> Support

TopLink<sup>TM</sup> improves the way developers build applications, making the applications portable across databases, schemas, and servers. Its solid object-relational and runtime features are required to build enterprise-quality applications. Toplink supports complex (1-n and n-m) database relationships and is able to call stored procedures or custom SQL.

Kernl 2.0 includes an adaptor to build service beans that use Toplink to provide persistence for business applications.

## Enhanced Audit Support

In addition to its use in the development cycle, a sufficiently rich logging package can also serve as an auditing tool. It provides the precise *context* about a run of the application and can be saved in persistent media to be studied at a later time.

The Kernl 2.0 audit manager enables the application to log messages and to debug errors very flexibly, such as based on:

**Category.** You can log categories such as date, user or component name.

**Log level.** Various log levels – fatal, critical, error, warning, info, debug, trace – can be set.

**Appender or output stream.** Logging data can be sent to console, to a database, or a file. Current appenders can be extended and new appenders can be added.

## EJB 2.0 Support

Kernl 2.0 supports message-driven beans.

## Struts Support

Struts is a front-end framework comprising classes, servlets and JSP tags for web applications. It also contains an extensive tag library and utility classes that work independently of the framework. Kernl 2.0 uses Struts to increase the abstraction between user interface and business logic. This way, designers can perform the maintenance changes to the JSP and HTML user-interface pages without affecting the business logic.

Its tag feature encourages code re-use and abstracts Java code from the JSP file. This feature enables easy integration with JSP-based development tools that allow authoring with tags.

However, Struts has some limitations. For example, it is time-consuming and tedious to develop complex web applications. Struts also lacks capabilities for validating form fields. To overcome these limitations, Kernl 2.0 provides an interface between Struts and a Kernl **page bean**, which enables output from business logic to flow back to the front-end for presentation purposes, and **regular expression** capabilities with which to validate user input.

## Designer 2.0

The Designer Tool in Kernl 2.0 has been upgraded to provide better support for WebLogic and WebSphere. The Designer Tool enables the developer to generate:

- Service beans
- Service EJBs
- Business objects

## Conclusion

Kernl 2.0 now, more than ever, provides you a robust, fully-rounded set of development tools for rapid application development in the enterprise context. Its combination of in-house technology and third-party plug-ins gives you power and speed, and clear return on investment.