

Architectural Brief

The Ivory Web Services Architecture



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Introduction

Mainframe systems have been the backbone of most enterprises for decades. Their capability, scalability, and dependability are what those companies bet their business on. In fact, Gartner estimates that more than 70 percent of the world's data still resides on mainframe computers. Many of these systems and applications have been running in a highly tuned state for decades.

Due to the large investments in these systems, companies are now looking for ways to leverage these existing systems with their newer technologies without disturbing the underlying mainframe applications. With billions of dollars invested in these systems, it makes good business sense to reuse existing business functions as much as possible, and to avoid incurring the cost of changing them. In current terms, the goal of integration is to create business services from existing systems. Service Oriented Architecture (SOA) is based on creating components that can be reused and combined to form new systems and applications. For an enterprise to attempt an SOA implementation without including the mainframe would be an exercise in futility. Businesses have a wealth of information and applications deployed on mainframe systems. With the advent of new software technologies, mainframe systems will be able to participate as a true peer in the distributed enterprise network in an SOA environment.

Enterprises with mainframe infrastructure that seek to leverage a services architecture must implement technologies that translate mainframe applications for use with Internet-based services before they can take advantage. This can be done with powerful new development tools that automate the process of generating the necessary Extensible Markup Language (XML) structures to support Web service technology.

The Solution

GT Software's Ivory Web Services architecture provides a powerful answer to the equation. The Ivory solution enables development of a complete Web services architecture that allows legacy mainframe applications to communicate seamlessly with open systems platforms, including J2EE and .NET.

This comprehensive solution from GT Software consists of Ivory Studio and Ivory Server. Ivory Studio enables organizations to create and publish Web services from existing mainframe assets; Ivory Server provides high-performance Simple Objects Access Protocol (SOAP) processing for deployed Web services (SOAP defines conventions for invoking code using XML over HTTP). Combined, the GT Software product suite performs Web services and generates Web Services Description Language (WSDL) without the need to write new programs.

Ivory Studio: Web Service Creation Made Simple

With this powerful PC-based solution, developers can leverage any mainframe application and create a single, multi-function WSDL with advanced functionality.

Simple to learn and operate, Ivory Studio features a graphical user interface (GUI), enabling easy translation of standard Customer Information Control System (CICS) functions into SOAP services. No special skills, understanding of SOAP, XML, WSDL, or HTTP protocols are needed to learn Ivory, only a working knowledge of existing mainframe applications. Developers can learn how to use Ivory in less than a day.

The easy to use drag and drop GUI enables developers to define Web service inputs and outputs and then design the Web service using simple component icons with a few clicks of a mouse button. The end result is a graphical application design that includes all the appropriate instructions to begin using the Web service right away.

Ivory Studio can import copybooks and convert them to XML format. The solution also includes an integrated FTP client for importing copybooks and BMS macros from mainframe file systems and deploying Web services to the Ivory Server.



GT Software's solutions provide a complete, flexible, and non-programmatic foundation to leverage more value to enterprise systems and applications, and to take full advantage of today's Internet technologies.

Ivory Server: The Brawn of the Solution

This high-performance solution provides the brawn of the Ivory Web Services architecture. Ivory Server consists of a powerful SOAP processor and a central repository for WSDL discovery. Ivory Server exploits the CICS Transaction Server TCP/IP service processing routines thus eliminating the need for middle tier servers. By using CICS Transaction Server and the Ivory Process for Web Services, clients will achieve savings in equipment and operational expenses.

Ivory Server processes information published via Ivory Studio and then accesses IBM 3270 transactions or CICS COMMAREA applications directly in their native environment. The server receives SOAP requests and invokes the business rules previously defined in Ivory Studio to satisfy the request, then formats the SOAP response. Ivory Server provides SOAP processing via HTTP and/or HTTPS protocols.