

When to Use Open Source

Making the right decisions about open source and commercially licensed SOA software

Large corporations have traditionally relied on commercially licensed (“closed source”) software for mission-critical infrastructure, but open source solutions are increasingly common in enterprise architecture. As open source technologies have earned a reputation for reliability and performance, enterprise IT organizations now deploy a mix of open and closed source software with great success.

Open source software is developed collaboratively and is owned by a community rather than a single vendor. The source code is freely available, and users are permitted and encouraged to change, improve, and redistribute the software – subject to the terms of the open source license. The benefits of open source software include:

- ❑ **Code Transparency** – Enterprises enjoy full access to the source code of an open source solution, so their IT infrastructure isn’t running on a black box of proprietary code.
- ❑ **Standards Support** – Open source projects tend to be designed to support industry standards, and to interoperate with other open source and commercial technologies.
- ❑ **Cost savings** – Users do not pay a license fee to adopt open source software nor do they pay for updates, significantly reducing total cost of the project.
- ❑ **Vendor-neutrality** – True open source software is developed and owned by a developer community, so open source adopters are not locked in to a vendor’s platform by proprietary modules and technical prerequisites.
- ❑ **Innovation** – With a large community that includes end users contributing to the project, open source software provides a practical vehicle for the latest technology advancements.

Despite these benefits, deploying open source software can introduce some risk: open source solutions do not always have the support and services typically provided by commercial software vendors. In addition, open source projects tend to have rapid release cycles for new features, patches and other improvements appearing in a seemingly continuous process, rather than in the discrete release process characteristic of enterprise software vendors.

IONA Technologies has been serving Global 2000 for over 15 years and is committed to making its customers successful with both open and closed source software. IONA targets organizations with mission-critical applications and as a result all IONA solutions – both open and closed source – are fully supported and have certified release schedules to minimize risk.



IONA SOA Infrastructure Solutions

IONA offers both open source and commercially licensed SOA infrastructure products. Both product families are designed for mission-critical deployments, and both adhere strictly to IONA's philosophy of distributed SOA and standards-based development. IONA SOA products include:

FUSE - FUSE is IONA's open source family of SOA components. FUSE includes the FUSE ESB, the FUSE Services Framework, the FUSE Message Broker and the FUSE Mediation Router. The FUSE components are tested together, certified, and supported to combine the speed and innovation of open source software with the reliability and expertise of commercially provided enterprise services.

IONA Artix – Artix is IONA's commercially licensed SOA infrastructure suite. It is used in complex environments that host “ten of everything” including legacy systems and diverse middleware components, and have stringent qualities of service (QoS) requirements. Currently in its fifth major release, Artix is built on patented technology that has been deployed in demanding environments for over 10 years.

Differences Between FUSE and Artix

Both FUSE and Artix are distributed, standards-based, and built using IONA's unique plug-in architecture. Both are designed for and tested in mission-critical environments and are backed by professional services including support, training, and consulting. The key differences include support for complex environments, high availability and nonstandard connectivity:

	FUSE	Artix ESB
Target user	Organizations deploying mission-critical applications in a Java environment	Organizations deploying mission-critical applications in a complex, heterogeneous environment
Certified releases	Yes	Yes
Professional services	Yes	Yes
Environment support	Java, JMS, JCA, JBI, SOAP, Web services, HTTP, REST	Any transport, protocol, payload format, language, or development platform
Legacy system support	Can be extended with plug-ins	Out-of-the-box support for many third party packages including mainframes; can also be extended with plug-ins
Enterprise systems	Built-in security and management functionality	Built-in security and management functionality integrated with leading third party solutions
Enterprise Qualities of Service (QoS)	High performance, robustness, extensibility	High performance, robustness, extensibility, transaction support, high availability



FUSE Components

FUSE is a family of components for SOA development that are IONA's distributions of Apache projects. The components are tested together, certified, supported and include

- ❑ **FUSE ESB** - Based on Apache ServiceMix, FUSE ESB provides a standardized methodology, server, and tools to deploy integration components. FUSE ESB was built from the ground up to support the JBI specification (JSR 208) and provides a structured environment to manage and deploy the components that developers create using FUSE Services Framework and FUSE Mediation Router as well as additional JBI-compliant components like BPEL.
- ❑ **FUSE Message Broker** - Based on Apache ActiveMQ, FUSE Message Broker is a cost-effective and flexible messaging platform for reliably executing transactions and moving data, efficiently scaling operations, and connecting processes across heterogeneous database and application environments.
- ❑ **FUSE Services Framework** - Based on Apache CXF, FUSE Services Framework provides the ability to create web services on an existing or new application. Specifically, Java developers can use JAX-WS, JavaScript, REST, or POJOs to create web services for a client or server endpoint.
- ❑ **FUSE Mediation Router** - Based on Apache Camel, FUSE Mediation Router makes it easy for Java developers to quickly implement integration patterns using a code-first approach using simple POJOs. The API maps to the easy to understand Enterprise Integration Patterns so a developer with minimal integration skills can quickly create integration components with routing, mediation, and other integration capabilities.

Artix Components

Artix comprises a comprehensive suite of products to streamline, modernize and lower the operating costs of complex and heterogeneous IT environments. The suite includes

- ❑ **Artix ESB** – connects any service consumer with any service provider using any middleware by deploying, managing and securing a SOA without requiring a centralized hub
- ❑ **Artix Registry/Repository** – a phonebook-style listing of all available services with automatic provisioning and monitoring of services, to maximize reuse and ensure continued adherence to enterprise policies
- ❑ **Artix Orchestration** - facilitates the composition of fine-grained functionality into reusable services using BPEL to create business-level services
- ❑ **Artix Data Services** – a metadata management, data modeling, transformation and integration toolkit to abstract data services from the underlying transport and integration infrastructure
- ❑ **Artix Mainframe** – a service-enablement engine that extends mainframe systems to integrate with off-host systems without the additional expense of running all applications on the mainframe



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- ❑ **SOA Management provided by AmberPoint** - governs and manages a SOA implementation by monitoring the health of Artix endpoints

Using FUSE and Artix

A service-oriented architecture is not a product that one can buy – it is an approach to enterprise architecture, systems integration and business process management that connects technologies in new ways. For this reason, most enterprise SOA projects grow incrementally from pilot projects and expand in a network of SOA-connected systems and businesses. In this process, enterprises typically employ both open and closed source software, selecting the technology that is best suited for each task.

IONA supports the incremental approach to implementing SOA, and has designed its commercial and open source product lines for interoperability to facilitate a hybrid architecture comprising both open source and commercial software components. For example, an enterprise may employ both the Artix ESB and the FUSE ESB, or the organization may employ Artix components in conjunction with the FUSE ESB or FUSE Message Broker. Similarly, the Artix ESB may communicate with JMS clients via the FUSE Message Broker.

The decision of which solution to employ in a specific function will depend on the requirements of the applications and enterprise architecture. IONA's FUSE open source products are employed in hundreds of organizations where connectivity via standard Java and Web services specifications is required.

Organizations typically use Artix for the most demanding enterprise requirements, and when connectivity among highly diverse platforms and middleware is required.

Business considerations may also influence the choice of open source software. Open source solutions are ideal for deployments that would be cost-prohibitive for commercially licensed software. Similarly, open source technologies work well for proof-of-concept development.



Open and Closed Source with IONA

Whether an organization chooses to use open or closed source software – and most likely the organization will use both – IONA has a solution to fit its needs. All IONA solutions are thoroughly tested and validated for performance and quality of service; and all are backed with the same level of professional support, services and training to ensure success.

Both FUSE and Artix are built on mature technology that is deployed in many of the world's most demanding environments. For this reason, IONA customers - including BellSouth, Raymond James & Associates, Marconi, and DHL (Deutsche Post) – have chosen IONA as their partner to support their mission-critical SOA requirements.

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