



Artix™ ESB

Release Notes

Version 5.0, July 2007

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New Features

The following features are new in Artix ESB 5.0:

- [New Java Runtime](#)
- [New Directory Structure](#)
- [Artix Designer](#)
- [New Single Command-line Tool](#)

New Java Runtime

Artix ESB 5.0 features a new Java runtime that supports the Java API for XML Web Services (JAX-WS), and JavaScript. It is aimed at developers who require a pure Java architecture and who want to work with the latest Java specifications.

The new runtime offers improved performance over our existing Java offering, which provides Java development support over the Artix C++ runtime via the Java Native Interface (JNI) and the older Java API for XML-based RPC (JAX-RPC) specification.

A new set of command line tools has been developed for the new runtime, and support for JAX-WS code generation and annotations is also provided in Artix Designer.

For details on developing Web services for the new runtime see [Developing Artix Applications with JAX-WS](#).

Artix ESB 5.0 still contains the C++ runtime, including JNI support, ensuring full backward compatibility with earlier versions of Artix.

[Table 1](#) shows the features available in the Java and C++ runtimes.

Table 1: *Artix ESB 5.0 Feature Comparison*

Feature	Java Runtime	C++ Runtime
Supported APIs		
JAX-RPC 1.1	No	Yes
JAXB 2.0	Yes	No
JAX-WS 2.0	Yes	No
WSDL 1.1	Yes	Yes
JCA Connector	Yes	Yes
.NET Connector	No	Yes, via Artix Connect
Development Language		
C++	No	Yes
Java	Yes	Yes
.NET	No	Yes
COBOL	Yes, via Artix Mainframe	
PL/I	Yes, via Artix Mainframe	
JavaScript	Yes	No
Development Tools		
Eclipse	Yes	Yes
Code generation	Yes, via WSDLGen	
Testing and scripting	Yes, via WSDLGen	
Microsoft Visual Studio	No	Yes

Table 1: *Artix ESB 5.0 Feature Comparison (Continued)*

Feature	Java Runtime	C++ Runtime
Bindings		
SOAP 1.1	Yes	Yes
SOAP 1.2	Yes	Yes
XML	Yes	Yes
CORBA	Yes	Yes
Fixed	Yes, via Artix Data Services	Yes
Tagged	Yes, via Artix Data Services	Yes
Tibco	Future release	Yes
FML	No	Yes
Colocated	Yes	Yes
SOAP with Attachments	Yes	Yes
MTOM/XOP	Yes	No
Transports		
HTTP	Yes	Yes
CORBA	Yes	Yes
IIOPTunnel	No	Yes
JMS	Yes	Yes
MQ	Yes, via JMS transport	Yes
Tibco	As intermediary, via Artix Router	Yes
Tuxedo	As intermediary, via Artix Router	Yes

Table 1: *Artix ESB 5.0 Feature Comparison (Continued)*

Feature	Java Runtime	C++ Runtime
FTP	Yes	Yes
RMI	As intermediary, via Artix Router	Yes
Services		
Locator	Yes	Yes
Session Manager	No	Yes
Peer Manager	Yes	Yes
WS-BPEL	Yes, via Artix Orchestration	
Security service	Yes	Yes
Routing service	Yes	Yes
JMS Broker	Yes	Yes
UDDI	Yes	Yes
Quality of Service Features		
Failover	Yes	Yes
Clustering	Yes	Yes
Load balancing	Yes	Yes
Container	Yes, via Spring framework, JBI	Yes, via Artix Container
High availability	No	Yes, via Berkley DB
Data Services	Yes, via Artix Data Services	Yes
Enterprise transformation	Yes, via Artix IO	Yes
WS-* Support		
WS-Addressing 1.0	Yes	Yes

Table 1: *Artix ESB 5.0 Feature Comparison (Continued)*

Feature	Java Runtime	C++ Runtime
WS-Atomic Transactions	No	Yes
WS-Coordination	No	Yes
WS-Reliable Messaging	Yes	Yes
Management/Monitoring		
BMC Patrol integration	Yes	Yes
Tivoli integration	Future release	Yes
CA-WSDM	No	Yes
JMX Instrumentation	Yes	Yes
Amberpoint Nano Agent	Yes	Yes
Containers		
JBI	Yes	No
Servlet (Apache Tomcat)	Yes	No
JEE	Yes	Yes, via Artix J2EE Connector
Spring	Yes	No
Security		
Kerberos	Yes	Yes
Siteminder	Yes	Yes
SSL	Yes	Yes
CSiv2	Yes	Yes
WS-Security	Yes	Yes
Single sign-on	Yes	Yes
CA eTrust	Yes	Yes

Table 1: *Artix ESB 5.0 Feature Comparison (Continued)*

Feature	Java Runtime	C++ Runtime
LDAP	Yes	Yes
Microsoft Active Directory	Yes	Yes'
SAF	Yes	Yes
TLS	Yes	Yes

New Directory Structure

The addition of a complete new Java runtime has resulted in changes to the Artix ESB installed directory structure

When you install Artix ESB 5.0, the following directories are created at the root level

Table 2: *The Artix ESB 5.0 Directory Structure*

Folder	Contents
conf	Details of installation options and applied patches
cxx_java	Everything relating to the Artix ESB C++ runtime, including libraries, tools, configuration files, and samples.
docs	The Artix ESB welcome page
etc	The Artix ESB license file.
java	Everything relating to the Artix ESB Java runtime, including libraries, tools, configuration files, and samples.
mainframe	Tools, samples, and code relating to Artix Mainframe.
tools	The <code>artix</code> single command-line tool, WSDLGen templates, and third-party tools used in Artix ESB development such as Apache Ant and Eclipse.
uninstall	The Artix ESB uninstaller program

New Single Command-line Tool

The Artix ESB Java and C++ runtimes share a number of command line tools. To make it easier to determine which version of the tools you are using, IONA has integrated a number of the tools into a single tool.

The new tool, `artix`, provides access to the C++ and JAX-WS code generators, the Artix ESB Java Runtime tool for adding a service to a WSDL document, the Artix ESB Java Runtime CORBA tools, and the DB service tools.

You can find the new `artix` tool under the `ArtixInstallDir/tools/bin` directory. To retrieve the list of supported tools, use the following command:

```
artix
```

To view the options for each tool run the following:

```
artix tool
```

Note: The JAX-RPC version of the Java code generator, the JAX-RPC version of the WSDL generator, and the Artix ESB C++ Runtime versions of the IDL tools are still available as part of Artix ESB.

See the [Artix ESB Command Reference](#) for details.

Artix Designer

Artix Designer has been updated to provide support for the new Java runtime.

Two new project types, JAX-WS Java First and JAX-WS WSDL First, have been added. Database connectivity is also supported in the new runtime.

Support for JAX-WS annotations is provided and the code generators have been updated to generate JAX-WS-compatible code as required.

See the Artix Designer online help for details.

New Environment Script

To set your environment for the Java runtime, run the following command:

```
ArtixInstallDir/java/bin/artix_java_env
```

Migration Notes

Users upgrading from Artix 4.x to 5.0 and who plan to use the new JAX-WS Java runtime should note the following.

Available Features

For a comparison of the features available in the new Java runtime and the C++ JNI compliant runtime, refer to [Table 1](#).

JDK Requirements

While the JAX-RPC runtime runs on JDK 1.4.x or higher, the new Java runtime requires JDK 1.5.x.

Migrating Applications

If you have existing Java applications that were written for previous versions of Artix and which you want to convert for the new Java runtime, you need to migrate the code from the JAX-RPC standard to JAX-WS.

For details on JAX-WS, see the JAX-WS FAQs at <https://jax-ws.dev.java.net/>.

For a description of how a team of Sun Microsystems developers migrated the WS-I sample application from JAX-RPC to JAX-WS, see the following JavaOne presentation:

<http://weblogs.java.net/blog/arungupta/archive/javaone/BOF-9162.pdf>

Migration Context APIs

The context APIs are the mechanism by which an application accesses/modifies metadata from a binding or a transport. This is an IONA proprietary interface and requires migration.

Migrating Handlers

Handlers provide the interception mechanism in Artix Java. The JNI-compliant runtime uses JAX-RPC handlers while the new Java runtime uses JAX-WS handlers. Any migration effort requires changes to the mechanism by which the intercepted data is accessed.

Migrating Configuration

The JNI-compliant runtime uses an IONA specific configuration model, while the new runtime uses Spring-based configuration. For details, see [Configuring and Deploying Artix Solutions, Java Runtime](#) and the Spring Frameworks reference documentation at:

<http://static.springframework.org/spring/docs/2.0.x/reference/index.html>

Differences in WSDL Model

There are schema and namespace differences for the JMS and HTTP transports used by the C++ and Java runtimes.

For details, compare the [Bindings and Transports, Java Runtime](#) and [Bindings and Transports, C++ Runtime](#) books.

Documentation Updates

The following changes have been made to the Artix ESB library in version 5.0:

- [New Java Runtime Books](#)
- [Renamed C++ Runtime Books](#)
- [Books Updated for New Java Runtime](#)

New Java Runtime Books

The following books are new to the library and relate to the Java runtime:

- Bindings and Transports, Java Runtime
- Developing Artix Applications with JAX-WS
- Developing Artix Applications with JavaScript
- Configuring and Deploying Artix Solutions, Java Runtime
- Managing Artix Solutions with JMX, Java Runtime
- Artix Configuration Reference, Java Runtime
- Artix JAX-WS API

Renamed C++ Runtime Books

The following books have been renamed, since they now relate to the C++ runtime only:

- Artix Bindings and Transports, C++ Runtime

- Developing Artix Applications with JAX-RPC
- Configuring and Deploying Artix Solutions, C++ Runtime
- Managing Artix Solutions with JMX, C++ Runtime
- Artix C++ Transactions Guide
- Artix JAX-RPC Transactions Guide
- Artix Configuration Reference, C++ Runtime
- Artix JAX-RPC API

Books Updated for New Java Runtime

The following books have been updated to take account of the new Java runtime:

- Getting Started with Artix
- Artix Technical Use Cases
- Building Service-Orientated Architectures with Artix
- Artix AmberPoint Integration Guide
- Artix BMC Integration Guide
- Artix Locator Guide
- Artix Security Guide
- Artix WSDLGen Guide

Known Issues

The following are known issues in Artix ESB 5.0:

- [Installer](#)
- [Artix Java Runtime](#)
- [Artix Designer](#)
- [WSDLGen](#)
- [Samples](#)
- [Artix J2EE Connector](#)

Installer

The following are known issues with the installer and uninstaller programs:

Installing in GUI mode on X-Windows When installing in GUI mode on Linux or UNIX systems, the installation fails if you have not set the `DISPLAY` environment variable.

Uninstaller does not remove some directories The uninstaller program does not remove the `mainframe` directory and its contents, as well as a number of WSDLGen-related files and directories under `cxx_java`. You need to remove these manually once the uninstaller has finished.

Artix Java Runtime

The following are known issues with the new Artix Java runtime:

TCP port not released after service removed from container When you undeploy a JAX-WS service from a Spring container, the TCP port is not released. You need to stop and restart the container to release the port.

wSDL2java and wSDL2dbservice generate invalid class names in build.xml

Running `artix wsd12java` with the `-ant` argument, adds invalid client and server class names to the `client` and `server` targets in the generated `build.xml` file. Similarly, `artix wsd12dbservice` creates an invalid client class name. You need to edit the `build.xml` so that the class names defined in the targets match the actual client and server class names before running the applications.

Database column names with underscores break code generation When creating a database service for the Java runtime, with either the command line or Artix Designer, avoid using column names that include underscores in your database schema. The code generator ignores underscores in column names, causing invalid types to be generated.

Artix Designer

The following are known issues with Artix Designer:

Generating two code artefacts in a JAX-WS project causes compilation errors

If you generate code in a JAX-WS project and then use the **Artix | Artix Tools** menu option to generate a second, different code artefact in the same project, duplicate types are generated, resulting in compilation errors.

To avoid this, in the Artix Tools window select the **Java Options** tab and clear the **Generate Types** option before running the second launch configuration.

To workaroud should this problem have occurred, delete the duplicate stub code packages for one of the artefacts—typically those that are displaying errors.

WSDL First projects cannot import WSDL from URL Importing WSDL from a URL while creating a JAX-WS WSDL First project fails. To workaroud, create an empty JAX-WS project and import the WSDL by selecting **File | New WSDL from URL**.

Java First interface restrictions The following Java interfaces are not supported in JAX-WS Java First projects:

- Interfaces with method signatures that throw exceptions.
- Interfaces that use `java.util.Vector` as a return type, or as a parameter in a method declaration.

If you create a Java First project based on an unsupported interface, the generated WSDL is still JAX-WS compliant. You can then use the WSDL as the source for a WSDL First project.

Java First type restrictions Java First projects support the following basic types:

- `int`
- `long`
- `double`
- `float`
- `String`
- User-defined types that use the above types in their method declaration

The following types are unsupported:

- `array`
- `java.lang`
- `java.util`

If you create a Java First project based on code that includes unsupported types, the generated WSDL is still JAX-WS compliant. You can then run `artix wsdl2java` to generate Java code based on this WSDL.

CORBA Web Services project creates spurious server launch configuration

Creating a CORBA Web Services project adds a spurious server launch configuration under the Java Applications node in the Run dialog. You can ignore this configuration, as no server is generated by this project type.

Problem launching help When working in a Java JAX-WS project, there may be times when launching the online help fails with an error.

To workaround:

1. In a text editor, open the `manifest.mf` file at the following location:

```
ArtixInstallDir/tools/eclipse/plugins/org.apache.cxf_2.0-IONA/  
META-INF
```

2. Add the following line to the file:

```
Eclipse-BuddyPolicy: global
```

3. Save the `manifest.mf` file and relaunch the help.

JAR created by JAX-WS packaging on Windows cannot be deleted When you package a JAX-WS service on Windows for deploying to the Artix Spring container or Apache Tomcat, a JAR file is generated as part of the packaging process. You cannot delete this file without closing and reopening the project or, failing that, restarting Artix Designer.

Launching JAX-WS database service server In a JAX-WS database service project, launching the generated server fails if the path to the DB config file contains spaces. To workaround:

1. Select **Run | Run**.
2. Select the launch configuration for the server.
3. Click the **Arguments** tab.
4. In the Program Arguments field enclose the path the DB config file in quotes.

Installation directory on Windows Artix Designer fails to launch on Windows if Artix is installed in a directory beginning with the letter "u". This is an issue with Eclipse, which sees the `\u` character combination as indicating a Unicode character.

Launching a secure client as a JAX-RPC application fails When you create a Java JAX-RPC client using a basic Web services project with security enabled, launching the client as a Java application from the Run window fails. Launch the client by selecting **Run | External Tools | External Tools** instead.

WSDLGen

The following are known issues with WSDLGen:

Type and portType naming clash causes compilation error Generating code based on a WSDL file containing `type` and `portType` elements with the same name results in a compilation error. To workaround, ensure that there are no such naming clashes in your WSDL before running WSDLGen.

Unsupported XML Schema types Not all XML Schema types are supported in WSDLGen. For details of the unsupported types in the C++ and Java runtimes, see the [WSDLGen Guide](#).

Samples

The following are known issues in the Artix samples:

Java runtime: Security Authentication In the Security Authentication sample for the Java runtime, running `ant client.wssup.none` to run the client configured to send no credentials using SOAP headers fails on Windows with the error:

```
Syntax: java Client <path-to-wsdl-file> <protocol> <username>
<password>
```

To workaround, edit the `build.xml` by adding `param3` and `param4` attributes with dummy values to the `cxfrun` element in the `client.wssup.none` target, as shown:

```
<target name="client.wssup.none"
  description="Run the client configured to send no credentials
  using SOAP (WS-Security) headers."
  depends="build">
  <property name="param" value=""/>
  <cxfrun classname="demo.hw.client.Client"
    jvmarg1="-Dcxf.config.file=etc/client.xml"
    param1="${basedir}/wsdl/hello_world.wsdl"
    param2="NONE"
    param3="dummy"
    param4="dummy"/>
</target>
```

Java runtime: Inbound JCA Integration In the `\integration\jca\inbound` demo, the `activate` Ant target only updates the `ejb_servants.properties` file in `ArtixInstallDir/java/etc` if there is no `GreeterBean` entry. Therefore, if you

run the demo more than once, the file is not updated and JBOSS does not create the GreeterService. To workaround, update the `ejb_servants.properties` file's timestamp either using the `touch` command on UNIX or by opening and saving the file on Windows.

C++ runtime: Secure Container on HP In the Secure Container sample for the C++ runtime, the `deploy_cxx_plugin` script does not have execute permission on HP. You need to run the following before using it:

```
chmod +x deploy_cxx_plugin
```

Artix J2EE Connector

On Linux systems you need to set the `LD_PRELOAD` environment variable in the shell that runs the application server to point to `libit_jni_preload.so`, as follows:

```
$ export LD_PRELOAD=libit_jni_preload.so
```

Fixed Bugs

The following bugs have been closed in Artix ESB 5.0:

Table 3: *Bugs Fixed in Artix ESB 5.0*

Bug #	Description
69609	gcc 3.4 compiler outputs warnings when including Artix header file <code>it_bus/ext_types.h</code>
70780	Artix Designer wizards not processing some WSDL constructs correctly
70835	When you compile WSDL (<code>wsdltojava</code>) which uses the same labeled type (for example, <code>Request</code> and <code>Request</code>) but in different namespaces, the generated Java code has two imports for the different types, but the same object class name.
70999	WSDL to Java compiler incorrectly maps <code>xsd:boolean</code> to <code>Boolean</code> for optional attributes that have a default attribute
71069	Artix Designer should save previous details entered

Table 3: *Bugs Fixed in Artix ESB 5.0 (Continued)*

Bug #	Description
71139	Cannot register a type factory representing a type in a separate XSD at runtime and send that type in an <code>anyType</code>
71155	Coredump in HTTPS
71159	FML error followed by a crash when running Tuxedo client
71165	Artix Designer fails to create a basic web services project when the WSDL is copied and contains XSD imports
71175	Artix fails to map <code>java.lang.Integer.MAX_VALUE</code> to an enumeration
71178	<code>wSDLtojava</code> fails to generate code from schema with circular imports
71201	Code generator <code>wSDLtojava</code> produces Java code that doesn't compile from a "valid" XSD
71211	Modify copybook generation to avoid exceeding level 48
71212	Modify WSDL/CORBA validators to detect recursive types
71213	COBOL writer generates invalid periods in column 73
71214	Artix Designer crashes with stack overflow on reading very large WSDL
71219	<code>wSDLtojava</code> generates a <code>TypeFactory</code> which is too large to compile
71233	Missing namespace declaration in server response
71237	Artix loses some schema attribute values in the conversion from XML to Java
71241	Artix generates SOAP request/reply messages with namespace prefix definitions for unused namespaces
71258	Coredump in Artix router
71259	Conversion from XML to Java then back to XML generates wrong double values

Table 3: *Bugs Fixed in Artix ESB 5.0 (Continued)*

Bug #	Description
71273	Artix router throwing SoapFaultExceptions on initial invocation after disconnect when using locator_client plug-in to resolve endpoints
71274	Problem with WSDL-first projects which contain fault information when applying size edits
71284	WSDLGen errors in Java method header of impl class
71299	See 71241
71301	dbconfigtowsdl equivalent for Eclipse does not generate deployment descriptor
71333	iSF Security Server requires iiop_tls

Reporting Problems

Contact customer support at <http://www.iona.com/support/contact/>

Other Resources

If you need further help please use the following resources:

- Artix TechZone (<http://www.iona.com/devcenter/artix>) is a free online forum where IONA developers, your peers and other professionals come to share tips on Artix Web Services development. Visit the Artix TechZone today to start making the most of your Artix development experience.
- IONA University (<http://www.iona.com/info/services/ps/>) delivers practical and insightful courses that cover technical and product issues as well as standards-based best practices gleaned from real-world projects.
- IONA Professional Services (<http://www.iona.com/info/services/consulting/>) provide product expertise and consulting solutions that empower end-users, system integrators and software vendors with the knowledge to fully leverage IONA products. Together, IONA consultants and products equip you with a single platform for integrating and developing extremely reliable, scalable, and secure e-Business systems.

- IONA Security Mailing List (security-alert@iona.com): The mailing list provides security updates associated with all IONA products. To receive security updates from IONA send mail to listserver@iona.com with no subject and the body text `subscribe security-alert youremail`.

Note: Please do not post queries to this e-mail alias; it has been set up only to notify you of security alerts.

- Online Documentation (<http://www.iona.com/support/docs/index.xml>): The latest updates to the Artix documentation are posted on-line.
- Knowledge base articles (<http://www.iona.com/support/index.xml>): A database that contains practical advice on specific development issues, contributed by IONA developers, support specialists, and customers.