

Intel® XML Software Suite 1.0 for C/C++

Release Notes

Release Note Version: 317577-002US

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Overview

Intel® XML Software Suite for C/C++ is a collection of high-performance components for optimized XML processing.

There are four main components within the package:

- Intel® XML Parsing Accelerator - optimized XML parsing
- Intel® XML Schema Accelerator - optimized schema validation
- Intel® XSLT Accelerator - optimized transformation of XML documents using stylesheets
- Intel® XPath Accelerator - optimized XPath navigation

This package represents the production release of the 1.0 Suite. It is the first time Intel has offered these 4 components as an optimized and unified product. Earlier in 2007, the Intel® XML Parsing Accelerator for C/C++ was previously released for evaluations as a standalone library.

Compatibility

Intel® XML Software Suite 1.0 is compatible with the following industry standard interfaces:

- Simple API for XML (SAX) 2.0.2 Core - excluding SAX 2.0.2 extensions and helpers
- W3C* Document Object Model (DOM) Level 2 Core
- W3C* Document Object Model (DOM) Level 3 Core - a partial implementation, see [Known Limitations](#)

Conformance

Intel® XML Software Suite 1.0 conforms to the following W3C* XML recommendations:

- XML 1.0
- Namespaces in XML 1.0

- XML Schema 1.0
- XSLT 1.0
- XPath 1.0

Conformance is measured using the publicly available W3C* and OASIS test suites, indicating a superior 98% pass rate. Full details may be obtained by contacting your technical representative.

Upgrade Path

The API of Intel® XML Parsing Accelerator in Intel® XML Software Suite differs from the previous unified SAX interface of the Intel XML Parsing Accelerator 1.0 library: the new interface has been changed to use the SAX2 style (classified cluster of event handlers). This change requires applications using the old API to be modified and recompiled in order to use the new API. Usage of the new API is demonstrated in the `SAX2Print` example. All Intel XML Parsing Accelerator examples are located in the `examples/xpa` directory. For instructions on running the examples, please refer to the *User Guide* in the documentation directory.

This is the first release for all other components in the suite.

Evaluation Limitation

Please note that a free evaluation version of the product is available, which installs a subset of component libraries on a system. This version will expire after the expiration of the evaluation license.

Related Products and Services

Information on Intel software development products is available at <http://www.intel.com/software/products>. Some of the related products include:

- The Intel® XML Software Suite 1.0 is also available with an API for Java* environments. It can be obtained in the same manner as the C/C++ product.
- The [Intel® Software College](#) provides training for developers on leading-edge software development technologies. Training consists of online and instructor-led courses covering all Intel architectures, platforms, tools, and technologies.
- The [Intel® C++ and Fortran Compilers](#) are an important part of making software run at top speeds with full multithreading support for the latest Intel IA-32 (including 64-bit architectural extensions) and Itanium® processors.
- The [VTune\(TM\) Performance Analyzer](#) enables you to evaluate how your application is utilizing the CPU and helps you determine if there are modifications you can make to improve your application's performance.
- The [Intel® Performance Library Suite](#) provides a set of routines optimized for various Intel processors. The [Intel® Math Kernel Library](#) provides developers of scientific and engineering software with a set of linear algebra, fast Fourier transforms and vector math functions optimized for the latest Intel Pentium® and Intel Itanium processors. The [Intel® Integrated Performance Primitives](#) consists of cross-platform tools to build high performance software for several Intel architectures and several operating systems.

- The [Intel® Threading Analysis Tools](#) including the Intel® Thread Checker, Intel® Thread Profiler and [Intel® Threading Building Blocks](#) are the fastest way to thread your application correctly and unleash its true performance on Intel® multi-core processor systems.
- The [Intel® Cluster Tools](#) including the Intel® Cluster Toolkit for Linux*, the Intel® MPI Library for Linux*, the Intel® Trace Analyzer and Collector for Linux*, the [Intel® Math Kernel Library](#) Cluster Edition for Windows* and Linux* and the Cluster OpenMP for Intel® Compilers help to create, analyze, and optimize high-performance applications on clusters of Intel® processor-based systems.

What's New

Resolved Issues

The following issues in the Beta release of this product have been resolved.

Bug Number	Description
1620	Intel® XML Schema Accelerator does not support validation for elements with "fixed" attribute and the type of this element is Union or List.
1709	Intel® XML Schema Accelerator considers the string following $[a-zA-Z0-9-]^*$ as a valid language string. In fact, the specification requires the language to follow the pattern $[a-zA-Z]\{1,8\}(-[a-zA-Z0-9]\{0,8\})^*$. So, Intel XML Schema Accelerator takes a loose restriction on "language" string validation.
1734	Intel® XML Schema Accelerator does not check a requirement in specification: "no element has more than one attribute of type ID".
2189	When two elements or attributes belong to two disjoint atomic types according to W3C Schema specification on simple data type section, the internal implementation might trigger an error message.
2288	On Windows* OS, when using Intel® XSLT Accelerator, XSL transformation does not support a relative path well in XSLT document, such as "../..../.." or "\", etc. Please use an absolute file path or the file name under current directory in an XSLT file.
2343	If a XSL stylesheet contains <code>attributeset</code> instructions and transformation is repeated hundreds of times, an internal exception may be thrown.
2344	Calculation of nested global variables with depth of 3 or more may cause incorrect results when the compiled stylesheet is used for hundreds of times.
2395	Intel® XML Schema Accelerator cannot resolve URI filenames longer than 256 bytes. Please use shorter path and file names.
2456	Using EXSLT functions may get the result in different formats from Apache* Xalan* results, such as different precision or notations.

2481	If a XSL stylesheet contains external functions <code>str:split</code> , <code>str:tokenize</code> and transformation is repeated hundreds of times, an internal exception may be thrown.
2496	When using a badly formed XSL stylesheet or a wrong statement in XSLT, user code may suffer segment fault instead of an expected exception. Use valid XSLT stylesheets, which is more meaningful.
2561	Intel® XPath Accelerator does not completely enumerate all types when comparing two values. If they are of different types, the comparison result might be wrong.
2576	On Linux* OS running on the Intel® 64 architecture, using EXSLT functions <code>str:tokenize()</code> may cause signal 11 errors.
2717	If not initialized, the base URI of <code>DOMParser</code> will be set to undefined characters during the first <code>parse()</code> call.

System Requirements

Intel® XML Software Suite runs on Windows* and Linux* operating systems on IA-32 and Intel® 64 architectures. The package contains both static and dynamic libraries for each environment. The user may select which to use based on the application. For Linux* OS, two dynamic libraries are shipped that support the gcc compiler 3.3.3 or 3.4.2 and above respectively, and two static libraries that support the gcc compiler 3.3.3 or 3.4.2 respectively. See [Generic Limitations](#) for details on library usage, and the [Installation Guide](#) for a detailed list of supported environments.

The library runs best on a system based on either the Intel® Xeon® processor series, or the Intel® Pentium 4 processor. At least 1GB of RAM is recommended for optimal performance.

Documentation

For a complete list of documents distributed with the Intel® XML Software Suite, consult the [Documentation Index](#).

Known Limitations

The current version of Intel® XML Software Suite has several limitations that are grouped by component or relate to the suite as a whole.

Generic Limitations

Using Static Libraries on Windows* OS

When using the static libraries of Intel XML Software Suite on Windows* OS in a Visual Studio* development system, make the following changes:

1. Go **Project > Properties**. The **Property Pages** dialog box opens.
2. Define the `INTEL_XSS_USE_LIB` macro:
 1. Click **C/C++ folder > Preprocessor**.

2. In the Preprocessor property page, add `INTEL_XSS_USE_LIB` to preprocessor definitions.
3. Use the same runtime library as the built static library.
 1. Click **C/C++** folder > **Code Generation**.
 2. In the Code Generation property page, in Runtime Library, select compile option `/MT`.
4. Set up the environment to ignore `libmmt.lib` and `libirc.lib` linkage:
 1. Click **Linker** folder > **Input**.
 2. In the Input property page, add `libmmt.lib` and `libirc.lib` to the list of ignored libraries.

Note:

Different versions of Microsoft Visual Studio* use different Microsoft standard C++ runtime libraries. To accommodate this, please follow these simple linking rules:

- On IA-32 architecture, link the static library against the runtime library of the Microsoft Visual C++* .NET 2003 version
- On Intel® 64 architecture, link the static library against the runtime library of the Microsoft Visual C++* .NET 2005 version

Using Static Libraries on Linux* OS

When using static libraries of Intel XML Software Suite on Linux* OS, please be aware that only versions 3.3.3 or 3.4.2 of the gcc compiler are supported. The libraries are not tested and may not work on other gcc versions, such as the gcc compiler 4.1.2.

You may get warning and/or error messages when linking the libraries of the suite; for details, see the [Installation Guide](#), section *C++ Compiler Support on Linux* OS*.

Limitations of the gcc 3.3.3 Environment

The libraries compatible with gcc 3.3.3 might cause a core dump when processing malformed XML data leading to exception handling. This issue occurs only on Red Hat Enterprise Linux* 3.0 and SUSE* Linux Enterprise Server 9 with gcc 3.3.3 installed in the default configuration. To avoid this problem, it is recommended that you install gcc 3.4.2 or `libstdc++.so.6`, and use the original `libintel-xss.so` library, which is dynamically linked to `libstdc++.so.6`.

Intel® XML Parsing Accelerator

DOM Level 3 Support

Intel® XML Parsing Accelerator support of the W3C* DOM Level 3 Core recommendation is limited to the following:

- `Attr.isId()`
- `Element.setIdAttribute(name, isId)`
- `Element.setIdAttributeNS(namespaceURI, localName, isId)`
- `Element.setIdAttributeNode(idAttr, isId)`
- `Node.textContent()`

- `Node.isSameNode(other)`
- `Node.lookupPrefix(namespaceURI)`
- `Node.isDefaultNamespace(namespaceURI)`
- `Node.lookupNamespaceURI(prefix)`
- `Node.isEqualNode(arg)`

DOM Level 2 Core Partial Compatibility

Intel® XML Parsing Accelerator supports W3C* DOM Level 2 Core recommendation with the following limitations:

- UTF-8 encoded 8-bit unit sequence type is used for DOM strings instead of UTF-16.
- Entity reference nodes that have not existed in the XML document cannot be resolved.
- When used solely as a namespace definition, the `getSpecified` property in the DOM interface `Attr` is not supported.

SAX 2.0.2 Partial Compatibility

Intel® XML Parsing Accelerator supports SAX 2.0 interfaces with the following limitations:

- In the event handler interface, structures `Attributes2`, `DeclHandler`, `EntityResolver2`, `ErrorHandler`, `XMLFilter` are not supported.
- In the event handler interface, methods `Locator2.getColumnNumber()`, `XMLReader.get/setFeature()`, `XMLReader.get/setProperty()`, `ContentHandler.ignorableWhitespace()` are not supported.
- Namespace is supported only by tag solution, please refer to the API documentation for details.

Intel® XML Schema Accelerator

The current version of Intel® XML Schema Accelerator does not support PSVI (post-schema-validation info set).

Intel® XSLT Accelerator

The current version of Intel® XSLT Accelerator has the following limitations:

Encoding

The UTF-8, US-ASCII, ISO-8859-1, UTF-16(UTF-16le), UTF-16BE, UTF-32(UTF-32LE), and UTF-32BE encoding names in the XML declaration of stylesheets are supported in this release.

The product supports external entities only with UTF-8 and UTF-16 encodings; supplying an external entity in a different encoding results in an error.

Identity Transformation

The output encoding of identity transformation is always UTF-8.

Threading

The library is validated with about 150 application threads to successfully execute transformation and show adequate response. The most performance-efficient threading

configuration is the thread number equal to the number of logical CPUs.

Thread Safety

Objects `TransformFactory`, `Templates` and `Transformer` and corresponding configuration (setter and getter) methods are not expected to be thread-safe. The following methods are thread-safe:

- `TransformFactory.newInstance()`
- `TransformerFactory.releaseInstance()`
- `TransformFactory.newTemplates()`
- `Templates.newTransformer()`
- `Transformer.transform()`

For details on thread safety, please refer to the *User Guide*.

EXSLT

The Intel® XML Software Suite provides a compliant implementation of the following EXSLT extension modules:

- Common functions
- Dates and times
- Math
- Sets
- Strings

The EXSLT specification, <http://www.exslt.org>, defines Core and Other functions for each module. Only Core functions are required for compliance. For a listing of the Other functions which may be provided in this product, please refer to the user guide. Some of these are declared to be unstable by the specification and should be used with caution. As an example, the number type used in the EXSLT specification follows the definition in XPath 1.0, which is a double-precision 64-bit format IEEE 754 value. For the `date:duration()` function this limits precision. The result returned by `date:duration()` may not be accurate enough to hold all significant digits.

Redirect

The following output encodings are supported for the Apache* Xalan* redirect extension: UTF-8, US-ASCII, ISO-8859-1, UTF-16(UTF-16LE), UTF-16BE, UTF-32(UTF-32LE), UTF-32BE.

Conformance

- Using `namespace::axis` in XPath may get unexpected result. Please refer to Namespace Axis Compatibility of Intel(R) XPath Accelerator for details.
- Using a format other than decimal in `xsl:number` might product unexpected results.

Intel® XPath Accelerator

The current version of Intel® XPath Accelerator has the following limitations:

DOM Input

There is no support for 3rd party DOM node implementations derived from `com.intel.xml.parsers.dom.Node`.

Type Conversion

Type conversion is not supported for user-defined objects returned by external functions or passed by variable resolver. The empty string & is always returned for a conversion to string.

Namespace Axis Compatibility

For performance reasons, namespace nodes of an element are not copied to its descendants. The expressions querying in-scope namespace nodes of an element may return incorrect results, and expressions with multiple namespace queries in a single expression will get undefined results.

For example, querying the following XML document can produce incorrect results:

```
<a xmlns:ns1=http://www.my.com>
<b/>
</a>
```

- Query `/a/b/namespace::ns1` returns the correct result `ns1`, but this namespace node is from element `a`.
- Query `/a/b/namespace::ns1/..` returns incorrect `a`, and the correct answer is `b`.
- Query `count(//namespace::*)` returns the wrong number `2`, the correct answer is `4` including the default namespace nodes.

Thread Safety

The `XPath` and `XPathExpression` objects are not expected to be thread-safe, and cannot be shared by multiple threads. If a programmer is creating a multi-threading application, they should make sure that each thread creates its own `XPath` or `XPathExpression` object. However, the following methods are expected to be thread-safe:

- `XPathFactory.newInstance()`
- `XPathFactory.releaseInstance()`
- `XPathFactory.newXPath()`
- `XPathFactory.releaseXPath()`

Other

The following transformer output properties are ignored:

- `transformer.setOutputProperty(OutputKeys.MEDIA_TYPE, media_type_property)`
- `transformer.setOutputProperty(OutputKeys.VERSION, version_property)`

Known Issues

ID	Description
719	Intel® XSLT Accelerator: The attribute specified on the literal result element does not override an attribute specified in the attribute set.
1230	Intel® XSLT Accelerator: The function <code>xs1:number</code> may generate an incorrect alphabetic sequence for Greek numbers.

1533	Intel® XSLT Accelerator: When an XML document is transformed to DOMResult, the left angle bracket, ampersand, and other delimiters defined in the XML specification are always escaped independent of the value of the disable-output-escaping setting.
1934	Uninstall limitation for Linux* OS: In certain cases, the uninstall procedure does not remove installation folders completely and leaves empty folder(s). The issue occurs when the installation procedure created two levels of new folders, for example: install into /intel/xslt/1.1, when /intel, /xslt and /1.1 did not exist before the install.
2949	Intel XML Schema Accelerator: the parser will report an error if an XML file contains an external DTD file with location specified by HTTP URL. The parsing error is due to the failure to resolve HTTP link and, subsequently, inability to retrieve DTD content.

Technical Support

To receive technical support for the tools provided in this product and technical information including FAQ's and product updates, you need to register for an Intel Premier Support account at the [Registration Center](#).

To register for an account, please visit the Intel® Registration Center web site at <http://www.intel.com/software/products/registrationcenter/index.htm>. If you have forgotten your password, please email a request to: quadsupport@mailbox.intel.com. Please do not email your technical issue to this email address.

Submitting Issues

If you have questions or problems getting started with the Intel® XML Software Suite please contact support at <https://registrationcenter.intel.com/support/>.

Note:

Please notify your support representative prior to submitting source code where access needs to be restricted to certain countries to determine if this request can be accommodated.

To submit an issue via the Intel® Premier Support website, please perform the following steps:

1. Ensure that Java* and JavaScript* are enabled in your browser.
2. Go to <http://premier.intel.com>.
3. Type in your Login and Password. Both are case-sensitive.
Once you have logged in, the left channel will always have links to the various features of the tool.
4. Submit your issue by following these steps:
 1. Click **Submit Issues** in the left channel.
 2. Select the product type from the **Product Type** dropdown box. For Intel® Software Products, choose **Development Environment** (tools, SDV, EAP) as the product type.

Please note that Intel Premier Support product type is for reporting problems with the Premier Support site itself and not for product support.

3. Select the product, for which you want to submit the issue from the **Product Name** dropdown box.
4. Enter a headline-type description of the problem or question in the **Issue Title** box.
5. Enter a detailed question, or a detailed problem description in the **Question** box. See the guidelines after this list for requirements applicable to a problem statement.
6. Select **Request Type** from the dropdown box, such as, Documentation Error, Feature Request, or Problem Report.
7. Complete the submission process by clicking **Submit Issue** or **Submit Issue/Upload Files**, if you have a file to attach with the issue, such as a test case, or a screenshot.

After submitting the issue, you will get an issue number that will enable you to track your problem.

Please follow these guidelines when forming your problem report or product suggestion:

1. Describe your difficulty or suggestion:
For problem reports, please be as specific as possible, so that the problem can be reproduced. Please include a small test case if possible. Think about what you would need if you were trying to understand the other person's environment to help them solve a problem.
2. Describe your system configuration information:
This description must contain sufficient information for engineering to characterize the problem, such as a description of the hardware and operating system used, versions of all software related to the problem, and an accurate description of the steps needed to reproduce the problem. Be sure to include everything that may be relevant to your concern.

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Third-Party Attributions

This product includes software developed at the Apache Software Foundation (<http://www.apache.org/>).

Portions of this software were originally based on the following:

- dtoa module, <http://src.opensolaris.org/source/xref//sfw/usr/src/cmd/gcc/gcc-3.4.3/libjava/java/lang/dtoa.c>
- Google Open Source threading tools, <http://sourceforge.net/projects/goog-perftools>
- W3C DOM Level 2, (c) 1994-2000, World Wide Web Consortium, <http://www.w3.org/>
- Xalan-J
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 - voluntary contributions made by Ovidiu Predescu (ovidiu@cup.hp.com) on

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