

# **What's New in Conversion Agent**

SAP Conversion Agent by Informatica  
(Version 8.5)

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# Preface

*What's New in Conversion Agent* is written for users of previous Conversion Agent versions. It summarizes the new and enhanced features of the current version.

## Obtaining Conversion Agent Documentation

On Windows platforms, the Conversion Agent documentation is supplied as online help with the software. You can download PDF copies of the Conversion Agent manuals from:

[http://help.sap.com/saphelp\\_nw70/helpdata/en/43/fc39c16bfb025ee10000000a1553f7/content.htm](http://help.sap.com/saphelp_nw70/helpdata/en/43/fc39c16bfb025ee10000000a1553f7/content.htm)



# CHAPTER 1

## Version 8.x

This chapter describes the Conversion Agent features introduced in versions 8.5 and later, collectively known as 8.x. It includes the following versions:

- ◆ Version 8.5.5, 1
- ◆ Version 8.5.0, 2

## Version 8.5.5

### Transformation Capabilities

This version introduces the following transformation features. For more information about these features, see the *Conversion Agent Studio User Guide*.

#### PDF Forms Processing

The new PdfFormToXml\_1\_00 document processor converts PDF forms to XML. The processor supports forms conforming to the Adobe AcroForms standard, for example, forms created by Foxit and Open Office. The Studio has a feature for importing a PDF form to a new mapper project, while generating a schema for the XML form representation.

#### Support for Excel 2007 Input

The ExcelToDataXml document processor now supports input in the Excel 2007 XLSX format as well as the older XLS format. The processor can now output both raw and formatted versions of the same data.

### Operating System Support

Conversion Agent Engine now runs on SUSE Linux 10 on 64-bit platforms, in addition to other Linux, UNIX, and Windows platforms.

A Conversion Agent version supporting applications developed with the GCC4 compiler is now available on SUSE and Red Hat Linux systems. On Windows Server 2003 64-bit edition, Conversion Agent Engine now supports in-process in addition to out-of-process activation.

For more information, see the *Conversion Agent Administrator Guide*.

# Version 8.5.0

## Transformation Capabilities

This version introduces the following transformation features. For more information about these features, see the *Conversion Agent Studio User Guide*.

### PDF Table Support

In PDF source documents, tables can present difficult parsing problems. The new PdfToTxt\_4 document processor assists the parsing by letting you define the table structure graphically, for example, by dragging the column boundary markers.

### Dynamic Lookup Table

The LookupTransformer now supports dynamic construction of lookup tables. A transformation can extract the lookup data from its input, store the resulting table in a variable, and use the table for subsequent transformation operations.

### Multiple Inputs and Outputs

A transformation can now obtain its input from multiple documents, and it can generate multiple output documents. To define the inputs and outputs, use the new AdditionalInputPort and AdditionalOutputPort actions.

### Strict XML Validation

Serializers and mappers use the Xerces XML processor to validate their input against an XSD schema. There are now options for either strict or partial XML validation. Previously, only the partial validation was available.

### XSI Type Support

XML elements having the xsi:type attribute are now supported. The attribute permits an XML document to specify the precise element type, in situations where the XSD schema permits multiple types. A transformation can interpret an xsi:type attribute found in the input, and it adds xsi:type attributes where necessary to the output.

### User Log

You can use the new on\_fail property to generate user-defined log messages if any transformation component fails. For example, if an anchor does not find its source text, it can generate a user-defined information, warning, or error event. A custom logger can run a serializer that reports detailed event information. The custom messages are written to a user log that supplements the standard Conversion Agent event log.

## Operating System Support

Conversion Agent now runs on Linux Red Hat EL5 on x86 platforms, in addition to Windows, UNIX, and other Linux platforms. For more information, see the *Conversion Agent Administrator Guide*.

## Libraries

### Frequent Library Updates

Conversion Agent offers transformation libraries supporting industry-standard protocols. The libraries are now made available as independent packages that you can install in Conversion Agent Studio. This policy enables



more frequent library additions and updates, not necessarily tied to a particular Conversion Agent release. For more information, see *Conversion Agent Libraries*.

## New and Updated Libraries

New libraries supporting the CREST, FIX, IATA PADIS, NACHA, and Telekurs VDF industry standards have recently been released. In addition, several of the existing libraries such as ACORD AL3, BAI, EDIFACT, EDI-X12, and HIPAA have been updated and improved.

To obtain the new or updated libraries, contact SAP.



## CHAPTER 2

# Version 4.x

This chapter describes the Conversion Agent features introduced in versions 4.0 to 4.4, collectively known as 4.x. It includes the following topics:

- ◆ Overview, 5
- ◆ Enhanced Design and Configuration Environment, 5
- ◆ New Transformation Components, 6
- ◆ Improved Schema Support Features, 9
- ◆ Additional New Features, 10

## Overview

Conversion Agent 4.x introduced a major redesign from version 3.2. Version 4.x greatly enhanced the performance, functionality, and convenience of transformations. Among the 4.x features are:

- ◆ An all-new Studio design and configuration environment
- ◆ Many new transformation features
- ◆ Enhanced schema support
- ◆ Enhanced application integration capabilities via industry-standard libraries, a multilingual API, and operating system support

## Enhanced Design and Configuration Environment

Conversion Agent Studio, which is the design and configuration tool for transformations, is now integrated with the Eclipse development environment.

Eclipse is a versatile platform designed to support both Java development and plug-in development tools. Conversion Agent Studio works seamlessly within Eclipse, letting you develop Conversion Agent projects. You can use Conversion Agent projects either in conjunction with other projects that you develop in Eclipse, or independently of Eclipse.

The Eclipse platform is supplied with the Conversion Agent software. You do not need any previous experience with Eclipse in order to use Conversion Agent Studio.

For more information about using Conversion Agent Studio within the Eclipse environment, see *Using Conversion Agent Studio in Eclipse*.

## New Project Wizards

Conversion Agent Studio offers a set of wizards to help you set up new projects quickly with the typical options. There are wizards for parsers, serializers, blank projects, and other purposes.

For example, you can use the New Parser wizard to define the XSD schema, example source, formats, document processors, and default transformers.

## Guided Mode

Optionally, you can use the new guided mode to configure the IntelliScript of a transformation. In this mode, pressing the Enter key leads you through a logical sequence of properties. The mode displays screen tips that explain the meaning of each property.

## Embedded Help

A new feature of the Conversion Agent Studio environment is embedded, context-sensitive help. As you work in an editor, the help window automatically scrolls to the precise component and property that you are configuring. You can read the explanation of a component or property as you work, without leaving the Studio window.

The environment provides many other user-assistance and debugging tools. For example, by right-clicking text in an example source document, you can quickly find the corresponding anchor in the IntelliScript and the corresponding event in the event log, and vice versa.

# New Transformation Components

Conversion Agent 4 offers many new components that you can use in the IntelliScript configuration of a transformation.

For more information about the components described here, see the *Conversion Agent Studio User Guide*.

## Mappers: XML-to-XML Transformations

The introduction of the `Mapper` component completes the circle of format-to-format transformation capabilities. Conversion Agent now supports the following top-level transformation types:

Transformation	Description
Parsers	Convert any data format to XML.
Serializers	Convert XML to any data format.
Transformers	Modify existing data formats.
Mappers	Convert XML to XML.

Serializers and mappers now provide an option to select an example source document. You can use the example source for developing and testing a transformation in the same way as for parsers. Likewise, serializers and mappers now support document processors. For example, this feature allows serializers and mappers to process Excel or Word documents, which the processors convert to XML.

## Mapping Action and Anchors

Within a `Mapper`, you can nest the `Map` action, which was previously called `CopyValue`. You can nest mapper anchors, such as `AlternativeMappings`, `GroupMapping`, `RepeatingGroupMapping`, and `EmbeddedMapper`. The

concepts are analogous to the parsing and serialization anchors that are nested in `Parser` and `Serializer` components, respectively.

## Streamers

The new `Streamer` component splits a large source document into smaller portions that the software can process independently of each other. Streamers are useful in transformations that process very large inputs such as multi-gigabyte data streams. In addition to reducing memory requirements, a streamer enables a transformation to process each source segment as soon as it is available, rather than waiting until the entire source is received.

## Non-Sequential Access to Data

A transformation can use the new `LocatorByOccurrence` component to access multiple-occurrence data holders non-sequentially. The component can select occurrences in a preconfigured sequence or in a dynamically-defined sequence.

## Indexing: Keyed Transformations

The new `Key` and `LocatorByKey` components allow you to construct transformations that retrieve, match, and store records by keyed criteria. For example, you can match lists of employee records by the employee IDs. You can then select and output employee names.

The capabilities are similar to database joins and SQL `where` queries, but operate on loosely-structured source documents. In previous Conversion Agent versions, this type of transformation required a relatively complex configuration. In version 4, the transformations are easy to implement.

## Lookup Tables

The new `LookupTable` and `LookupTransformer` components enable a transformation to retrieve keyed data from a predefined table. The table can be defined in the IntelliScript or in an external XML file.

## Revised Anchors

The `RepeatingGroup` anchor has a new property called `skip_failed_iterations`, which controls the behavior if an iteration fails. To preserve the behavior of existing version 3.2 projects, the default value of the property is `true`.

The `Alternatives` anchor and the `AlternativeSerializers` serialization anchor have a new `NameSwitch` option. The option allows a transformation to select an alternative dynamically by name.

By default, the `Content` anchor searches for data that matches the XSD type of its data holder. The new `disable_XSD_type_search` property allows the anchor to retrieve the data regardless of type. You can then use a transformer to convert the data to the required type.

## New and Revised Transformers

The following are some new transformers that are available:

Transformer	Description
<code>Base64Decode</code>	Converts the base64 MIME encoding to a binary string.
<code>Base64Encode</code>	Converts a binary string to the base64 MIME encoding.
<code>CDATADecode</code>	Decodes a <code>CDATA</code> section of an XML document.
<code>CDATAEncode</code>	Encodes a <code>CDATA</code> section of an XML document.

Transformer	Description
CreateUUID	Generates a UUID identifier.
DateFormatICU	Formats a date.
HebrewDosToWindowsTransformer	Converts Hebrew text from the MS DOS to Windows code page.
TransformationStartTime	Outputs the date and/or time at which the transformation started running.
TransformByParser	Runs a parser on the input text, replacing segments of the text.
TransformByProcessor	Runs a document processor on the input text, converting it to a new format.
TransformByService	Runs a Conversion Agent service on the input text.

The following transformer has been revised:

Transformer	Description
Resize	You can now specify the size and padding character dynamically, by storing the values in a data holder.

## Enhanced Flexibility of Actions

The concept of actions has been generalized and the use of actions is more flexible. You can now insert actions at any location in the `Contains` list of a parser, serializer, or mapper. The `action` property of parsers and groups no longer exists.

The actions are executed in the main sequence of anchors. You can set the timing of each action to the initial, main, or final phase, just as you can set the timing of anchors. To simulate the action behavior of previous versions, put the actions at the end of the anchor sequence and set their `phase` property to `final`.

Certain anchors and serialization anchors have been unified and redefined as actions. For example, the `SetContent` and `SetContentSerializer` components are now unified as the `SetValue` action. The `EnsureCondition` and `EnsureConditionSerializer` components are now unified as the `EnsureCondition` anchor.

The `UseActionsSerializer` no longer exists. You can nest the actions directly in a `GroupSerializer`, instead.

## New and Revised Actions

Conversion Agent 4 introduces the following new action components:

Action	Description
DateAddICU	Increments a date.
DateDiffICU	Returns the difference between two dates.
EnsureCondition	Evaluates a JavaScript expression. It replaces the version 3.2 <code>EnsureCondition</code> anchor and <code>EnsureConditionSerializer</code> serialization anchor.
SetValue	Fills a data holder with predefined content. It replaces the version 3.2 <code>SetContent</code> anchor and <code>SetContentSerializer</code> serialization anchor.
RunMapper	Runs a mapper.
Sort	Sorts the occurrences of a multiple-occurrence data holder.

The following actions have been revised:

Action	Description
AddEventAction	The values of the <code>severity</code> property have been renamed. A new <code>fatal error</code> severity level stops the transformation.
Map	Copies information between data holders. This was previously called the <code>CopyValue</code> action.
WriteValue	The <code>ODBCInsert</code> option has been removed. You can use <code>ODBCAction</code> to write to a database. A new option, <code>ExternalOutputWriter</code> , activates a custom component that writes the data. In the <code>OutputDataHolder</code> option, the <code>transformers</code> property is now empty by default. In previous versions, it contained the <code>HtmlProcessor</code> and <code>RemoveMarginSpace</code> transformers, which removed redundant whitespace from the output.

## New and Revised Document Processors

The `ExcelToXml` processor now has options to process selected worksheets and empty cells. `ExcelToXml` and `XmlToExcel` have options to support Excel validation criteria and VBA macro code. The new `ExcelToDataXml` processor generates a compact XML representation containing only the cell data and omitting the formatting information.

## External Components

External components, such as custom document processors and custom transformers, now support their own properties. The properties are displayed in the IntelliScript. A transformation can use the properties to pass configuration options or data to the components. For more information, see the *Conversion Agent Engine Developer Guide*.

## Simplified Data-Holder Management

Serializers now detect the XML elements that they must load automatically. The `corresponding_schema` and `enforce_corresponding_schema` properties of serializers no longer exist.

Similarly, the `force_single_instance_of` property of version 3.2 parsers is no longer needed.

To define the XML elements that a transformation loads or creates explicitly, you can use the `source` and `target` properties and the `Locator` component.

# Improved Schema Support Features

Conversion Agent offers enhanced XSD schema support, including XML validation and namespaces.

## Valid XML Generation

Conversion Agent uses XSD schemas for enhanced guidance of XML generation. The default project configuration ensures that Conversion Agent always generates valid XML, according to the XSD schemas attached to a project.

The validation is controlled by properties of the transformation project. For more information about the project properties, see the *Conversion Agent Studio User Guide*.

## Improved XML Namespace Support

Conversion Agent 4 supports both named and unnamed XML namespaces more smoothly than previous versions.

Namespaces are assigned in the schema. In Conversion Agent Studio, you can edit the namespace aliases. The Schema view displays namespaces in a convenient navigator interface.

For more information, see the *Conversion Agent Studio User Guide*.

## Namespace of Variables

The namespace of variables has been renamed. The new name is `www.Local-Project.com/Variables`.

## Supported XSD Features

The following XSD elements and attributes, which were subject to limitations in Conversion Agent 3.2, are now fully supported. For more information about the XSD support, see the *Conversion Agent Studio User Guide*.

```
abstract
substitutionGroup
use="prohibited"
```

## Project Copies of XSD Schemas

When you add an XSD schema to a project, Conversion Agent copies the schema to the project folder. The copy and the original are not linked. For more information, see the *Conversion Agent Studio User Guide*.

# Additional New Features

In addition to the features described above, Conversion Agent 4 provides new capabilities in several areas.

## New Terminology

Some of the Conversion Agent terminology has been revised for clarity, or to make the terms consistent with those used in the Eclipse development environment. The most important changes are as follows:

- ◆ Conversion Agent workspaces are now called projects.
- ◆ The term workspace is now used for the location where Eclipse stores a set of Conversion Agent projects.
- ◆ Conversion Agent services are now deployed, rather than published.
- ◆ Conversion Agent services are stored in the Conversion Agent repository, rather than the services database location.

## Operating System Support

The version 4 Conversion Agent Engine runs on Microsoft Windows and on UNIX-type platforms such as Sun Solaris, IBM AIX, Linux, and HP-UX. Conversion Agent Studio runs on Microsoft Windows.

For more information about specific platforms, see the *Conversion Agent Administrator Guide*.



## 64-Bit Support and Conversion Agent Server

Conversion Agent 4 supports 64-bit environments on UNIX-type platforms. On some platforms, Conversion Agent is available as a native 64-bit application. On other platforms, you can enable 64-bit support by using the Conversion Agent Server.

The Server allows an application to invoke Conversion Agent Engine out-of-process. This can improve stability by improving the isolation of applications.

For more information, see the *Conversion Agent Administrator Guide* and the *Conversion Agent Engine Developer Guide*.

## API Language Support

The Conversion Agent API is now supported in Java, C, C++, .NET, and COM versions. A new Web Service API supports the use of Conversion Agent services over the Internet.

API applications can pass service parameters to a transformation. Variables defined within the transformation are initialized with the external values passed in the API call.

For more information, see the *Conversion Agent Engine Developer Guide* and the API references for each language.

## Setup

The Conversion Agent setup has been streamlined. A Java Runtime Environment is now installed with the setup. On UNIX-type platforms, the environment variables have been simplified. For more information, see the *Conversion Agent Administrator Guide*.

## Multiple Configurations

By using the Configuration Editor, you can support multiple Conversion Agent configurations on the same computer. For example, multiple users or applications can load Conversion Agent Engine with different service locations, JREs, or other options. For more information, see the *Conversion Agent Administrator Guide*.

## Libraries

Expanded Conversion Agent libraries are now available. The libraries cover messaging standards such as ACORD, several EDI versions, HIPAA, HL7, and SWIFT. The libraries contain predefined parsers, serializers, and XSD schemas that support the respective standards.

A new version of the EDI-X12 library supports rigorous validation of EDI message data according to the X12 specification.

For more information, see *Conversion Agent Libraries*.



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