eXtyles® Custom
Server Implementation (SI)

Solution Overview

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Executive Summary

> As the need for increased productivity, faster delivery, and new electronic products — without a loss of quality or an increase in cost — becomes more pressing, publishers are faced with challenges unique to their rapidly changing environment. eXtyles provides powerful and flexible solutions to these problems through a suite of editorial and XML-production tools that are customized to meet the individual requirements of each publisher.

eXtyles SI (Server Implementation) brings a new level of automation to publishers who want to use eXtyles for unattended batch processing of Word files. With eXtyles SI, any regular eXtyles function that does not require user interaction can be run in an automated environment. Integration with a content management system (CMS) can readily be accomplished.

eXtyles SI extends Microsoft Word on a Windows server by providing an XML interface to automate eXtyles functions. eXtyles SI includes complete logging functions that allow a CMS or other server process to respond automatically to status messages reported by eXtyles.
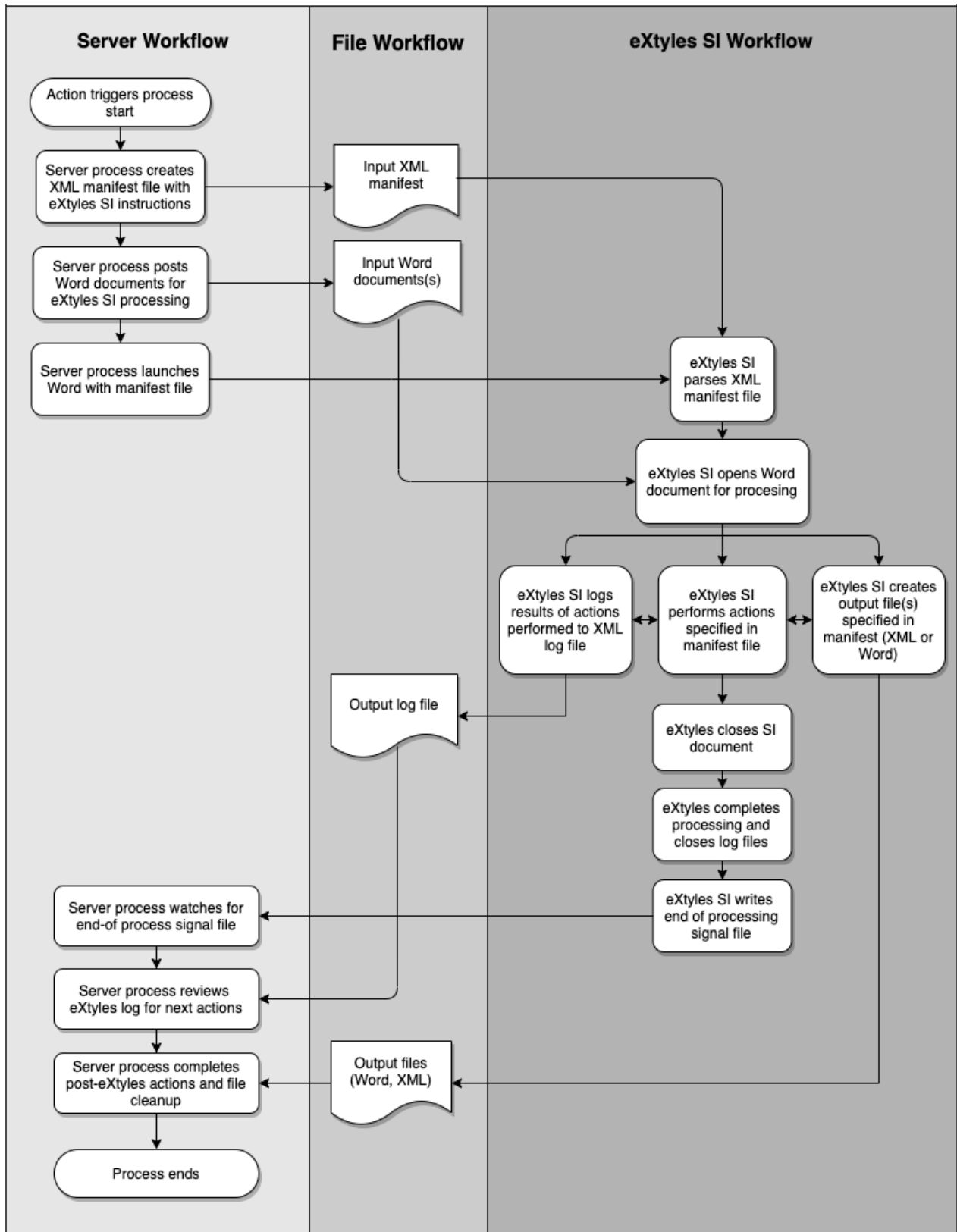
eXtyles SI can be effectively deployed in these scenarios:

- A publisher would like to convert a large volume of documents from Word to XML and run eXtyles Cleanup and Advanced Processes before the conversion.

- A publisher would like to run a series of quality checks on a Word document and send the results to a log file before loading the document into a CMS.

- A publisher would like editors to work only with the Word version of a document. Upon completing normal eXtyles use on the desktop, the document can be passed to eXtyles SI for XML conversion.

- A publisher would like to run a suite of eXtyles Advanced Processes on Word documents after paragraph styles have been applied before passing the documents to editors. The suite can be run in one step rather than discrete steps as is done with the eXtyles desktop interface.

eXtyles SI allows you to seamlessly integrate your CMS with an eXtyles workflow to achieve greater productivity and quality.

eXtyles SI Workflow

The following diagram illustrates the high-level flow of eXtyles SI processing:

eXtyles SI Feature Description

eXtyles SI extends Microsoft Word on a Windows server by providing an XML interface to automate eXtyles functions. With eXtyles SI, one or more Word documents can be submitted to eXtyles for automated batch server processing. The output can include one or more Word files and one or more XML files, depending on specific client requirements. eXtyles SI includes complete logging functions that allow a CMS or other server process to respond automatically to status messages reported by eXtyles.

For detailed information about the editorial and XML features of eXtyles, please refer to the eXtyles Product Overview, available at http://inera.com/extyles-products/extyles.

eXtyles SI File Interface

The eXtyles SI interface is file based to easily enable integration into server environments running multiple operating systems. eXtyles SI takes as input one or more Microsoft Word documents to be processed and an XML "manifest" file that describes the actions to be performed by eXtyles SI.

eXtyles SI Manifest File

The XML manifest file is at the heart of the communication of client requirements to eXtyles SI. This XML format file contains the actions to be executed by eXtyles on any given document. The following is an annotated example of an eXtyles SI manifest file:

```
<?xml version='1.0' encoding='UTF-8'?>
<!DOCTYPE eXtylesManifest SYSTEM 'c:\Program Files\eXtyles\DTD\eXtylesSIManifest.dtd'>

<!-- Each manifest should have a unique system ID. -->

<eXtylesManifest id='DEMO-ID-12345'>

<!-- Open a log file. The LogFileName attribute is optional. If not provided, eXtyles creates a unique
name based on the date/time when the log file is opened. -->

   <LogFileOpen LogFilePath='c:\My Documents\eXtyles\LogFiles\'
           LogFileName='DEMO-ID-12345.xml'/>

<!-- <LogMessage> elements allow eXtyles SI clients to write log messages directly. This architecture
makes control of messages available to server process, allowing for flexibility in reading and
analyzing logs. -->
```

```xml
    <LogMessage MessageNumber='20001' MessageClass='800'>Starting
            eXtyles SI Processing </LogMessage>
    <LogMessage MessageNumber='20002' MessageClass='800'>Opening File
            DEMO-FILE-12345.doc</LogMessage>

<!-- Open the specified Word document. -->

    <WordDocument WordFilePath='c:\My Documents\eXtyles\WordInput\'
            WordFileName='DEMO-FILE-12345.doc' Enabled='1'>

<!-- Each DocumentInformationField is a key/value metadata pair from the application calling eXtyles.
Metadata that must appear in an output XML file from eXtyles SI can be specified here and passed
through by an eXtyles export filter. -->

            <DocumentInformation Enabled='1'>
                    <DocumentInformationField Key='ManifestID' Value='DEMO-ID-12345'/>
                    <DocumentInformationField Key='WordFilePath'
                    Value='c:\My Documents\eXtyles\WordInput\'/>
                    <DocumentInformationField Key='WordFileName' Value='DEMO-FILE-12345.doc'/>
                    <DocumentInformationField Key='Publisher' Value='DEMO'/>
                    <DocumentInformationField Key='PublisherName' Value='Demo Publisher'/>
                    <DocumentInformationField Key='JournalID' Value='JDEMO'/>
                    <DocumentInformationField Key='JournalName' Value='J Demo.'/>
                    <DocumentInformationField Key='ArticleType' Value='Original Article'/>
                    <DocumentInformationField Key='ArticleID' Value='DEMO-12345'/>
            </DocumentInformation>

<!-- Execute eXtyles Activate and Normalize. Note: with Enabled attributes, sections of processing can
be disabled for test purposes. The default is 1 if not specified. -->

            <Activate Enabled='1'/>

<!-- CleanUp and PostProcessCleanUp can be coded as empty elements (e.g., <CleanUp/>), or they can be
explicitly coded with separate open and close tags to specify overrides to the default settings. -->

            <CleanUp Enabled='1'/>

<!-- Run eXtyles AutoRedact function, based on Publisher and JournalID values set in Document
Information metadata. -->

            <AutoRedact Enabled='1'/>

<!-- Run one or more eXtyles Advanced Processes. The optional Param attribute can be used to pass
information to Advanced Processes. -->

            <AdvancedProcesses Enabled='1'>
                    <LogMessage MessageNumber='20004' MessageClass='800'>Starting
                            Advanced Processes for DEMOFILE12345.doc</LogMessage>
                    <Process ProcessName='ParseBib' Param='RestructRef="no"'/>
                    <Process ProcessName='PubmedAP'/>
                    <Process ProcessName='CrossRef'/>
                    <LogMessage MessageNumber='20005' MessageClass='800'>Completed
                            Advanced Processes for DEMOFILE12345.doc</LogMessage>
            </AdvancedProcesses>

<!-- Run an eXtyles export filter. The filter is specified as an eXtyles TRT file. -->
```

```
            <Export ExportFilterName='XML.trt'
                    ExportFilePath='c:\My Documents\eXtyles\XML\' Enabled='1'/>

<!-- SaveWordDocumentCopy saves a copy of the Word file in the current state. This element allows
multiple Word files to be saved from a given process, each preserving the Word file in a specific
state. -->

            <SaveWordDocumentCopy WordFilePath='c:\My Documents\eXtyles\Markup\'
                    WordFileName='DEMOFILE12345.doc' Enabled='1'/>

<!-- PostProcessCleanUp can be used to prepare a file for PDF creation or import into a desktop
publishing application. -->

            <PostProcessCleanUp Enabled='1'/>

            <LogMessage MessageNumber='20006' MessageClass='800'>Completed Processing
                    File DEMOFILE12345.doc</LogMessage>

<!-- Save Word document being processed in final form and then close file. -->

    </WordDocument>

    <LogMessage MessageNumber='20007' MessageClass='800'>Closed File
                    DEMOFILE12345.doc</LogMessage>
    <LogFileClose/>

<!-- Open a second log file and emit a message to signal that processing is complete. This log file is
used for file synchronization with the server process. -->

    <LogFileOpen LogFilePath='c:\My Documents\eXtyles\LogFiles\'
            LogFileName='DEMO-ID-12345-SIGNAL.xml'/>
    <LogMessage MessageNumber='20008' MessageClass='800'>Completed eXtyles SI
                    Processing </LogMessage>
    <LogFileClose/>
</eXtylesManifest>
```

eXtyles SI Output Files

The output from eXtyles SI is one or more Word or XML files from each Word document that is submitted for processing, depending on the desired workflow.

For example, eXtyles SI might create two Word documents, one with all Advanced Processes complete and an additional file in which eXtyles Post-Processing Cleanup has been run before automatic PDF creation. Alternatively, eXtyles SI might create two XML files – a full-text XML file with the document content and a header XML file containing metadata. In all cases, the specific output files are controlled by the manifest file that is passed to eXtyles SI.

eXtyles SI Log File

eXtyles SI includes complete logging functions that allow a CMS or other server process to respond automatically to status messages reported by eXtyles. eXtyles SI log files record all actions. Each message contains a date and time stamp, a unique message number, a message class, and the text of the message.

Log file message classes provide especially valuable information. Processes that call eXtyles SI can act on specific message classes. For example, if an exported document fails to parse, the message will be class number 301. Any time this class is detected, the calling process can follow up, perhaps by sending an email to the last person who checked the file into a CMS.

The following is an abbreviated example of an eXtyles SI log file:

```
<?xml version="1.0" encoding="UTF-8"?>

<eXtylesLog>

<LogEvent date="3/21/2005" time="1:10:34 PM" class="800" number="20002">
Starting eXtyles SI Processing</LogEvent>

<LogEvent date="3/21/2005" time="1:10:34 PM" class="800" number="20003">
Opening File References.txt</LogEvent>

<LogEvent date="3/21/2005" time="1:10:34 PM" class="800" number="3601">
Started Activation</LogEvent>

<LogEvent date="3/21/2005" time="1:10:34 PM" class="401" number="3113">
The document 'References.txt' uses format '2'. It will be re-saved in native Word format.</LogEvent>

<LogEvent date="3/21/2005" time="1:10:35 PM" class="800" number="3603">
Started Cleanup</LogEvent>

<LogEvent date="3/21/2005" time="1:10:38 PM" class="800" number="3609">
Started Advanced Processing: ParseBib</LogEvent>

<LogEvent date="3/21/2005" time="1:10:51 PM" class="800" number="3609">
Started Advanced Processing: PubmedAP</LogEvent>

<LogEvent date="3/21/2005" time="1:10:58 PM" class="602" number="6114">
One journal reference was not matched on Medline.</LogEvent>

<LogEvent date="3/21/2005" time="1:11:13 PM" class="800" number="3612">
Saved XML conversion to C:\My Documents\References.XML</LogEvent>

<LogEvent date="3/21/2005" time="1:11:13 PM" class="800" number="3613">
Used export TRT: C:\Program Files\eXtyles\Common\XML.trt</LogEvent>

<LogEvent date="3/21/2005" time="1:11:13 PM" class="800" number="3618">
Saved copy of Word file to c:\My Documents\ReferencesMarkup.doc</LogEvent>

<LogEvent date="3/21/2005" time="1:11:13 PM" class="800" number="3605">
Started Post-Processing Cleanup</LogEvent>

<LogEvent date="3/21/2005" time="1:11:15 PM" class="800" number="20008">
Closed File References.txt</LogEvent>

<LogEvent date="3/21/2005" time="1:11:15 PM" class="800" number="20009">
Completed eXtyles SI Processing</LogEvent>
```

```
</eXtylesLog>
```

eXtyles SI Synchronization

eXtyles SI processing requires synchronization of the client workflow system with the eXtyles SI process flow. eXtyles SI uses a file-based paradigm for system synchronization. When eXtyles SI processing is complete, an additional log file, the signal file, is written by eXtyles SI. This file signals the calling process that eXtyles SI has completed all processes.

Conclusions

eXtyles SI brings a new level of automation to publishers who want to use eXtyles for unattended batch processing of Word files. With eXtyles SI, you can seamlessly integrate your CMS with an eXtyles workflow to achieve greater productivity and quality.

The Inera team will work closely with your organization to ensure that eXtyles SI is optimally integrated to meet your specific needs. For more information about eXtyles SI, please contact Elizabeth Blake at lblake@inera.com or at +1-617-932-1566.

Software and Hardware Requirements and Recommendations

For the most up-to-date software and hardware requirements and recommendations, see our FAQ on eXtyles Installation.

About Inera | An Atypon Company

Since 1992, our team of seasoned publishing and software professionals have pooled a unique set of skills to help transform publishing workflows.

Our eXtyles and Edifix editorial and XML tools allow publishers of scholarly journals and books, standards, and government documents to automate the most time-consuming aspects of publication. We're also actively engaged in standards development (NLM/JATS, STS, and BITS), cross-publisher initiatives such as Crossref, and board membership in key organizations such as SSP and NISO.

Our holistic approach, combining great software and industry leadership, delivers unparalleled results for our customers and partners and has made us a global leader in publishing technology.

Since 2019, Inera has continued our focus on developing state-of-the art publishing workflow solutions as part of the team at Atypon, which develops end-to-end publishing technologies including the online publishing and web development platform Literatum.