

[MS-WORDSWCFW]: Word File Conversion Service Worker WCF Service Protocol Specification

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1 Introduction

This document specifies the Word File Conversion Service Worker WCF Service Protocol that is used to convert a document from one file format to another file format.

1.1 Glossary

The following terms are defined in [\[MS-GLOS\]](#):

Coordinated Universal Time (UTC)
HTTP (Hypertext Transfer Protocol)
HTTPS (Hypertext Transfer Protocol over Secure Sockets Layer)
Transmission Control Protocol (TCP)
XML (Extensible Markup Language)

The following terms are defined in [\[MS-OFSGLOS\]](#):

back-end database server
Boolean
GUID
HTML (HyperText Markup Language)
result set
SOAP (Simple Object Access Protocol)
SOAP action
SOAP body
SOAP fault
stored procedure
URL (Uniform Resource Locator)
WSDL (Web Services Description Language)
WSDL message
WSDL operation
XML namespace
XML namespace prefix
XML Schema

The following terms are specific to this document:

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as described in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

[MC-NMF] Microsoft Corporation, "[.NET Message Framing Protocol Specification](#)", October 2007.

[MS-WORDSSP] Microsoft Corporation, "[Word Services Stored Procedures Protocol Specification](#)", July 2009.

[MS-WORDSWCFQ] Microsoft Corporation, "[Word File Conversion Service Queue WCF Service Protocol Specification](#)", July 2009.

[MS-WSSFO] Microsoft Corporation, "[Windows SharePoint Services \(WSS\): File Operations Database Communications Protocol Specification](#)", April 2008.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.ietf.org/rfc/rfc2119.txt>

[RFC2616] Fielding, R., Gettys, J., Mogul, J., et al., "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2616, June 1999, <http://www.ietf.org/rfc/rfc2616.txt>

[RFC2818] Rescorla, E., "HTTP Over TLS", RFC 2818, May 2000, <http://www.ietf.org/rfc/rfc2818.txt>

[SOAP1.1] Box, D., Ehnebuske, D., Kakivaya, G., Layman, A., Mendelsohn, N., Nielsen, H. F., Thatte, S., and Winer, D., "Simple Object Access Protocol (SOAP) 1.1", May 2000, <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>

[SOAP1.2/1] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 1: Messaging Framework", W3C Recommendation, June 2003, <http://www.w3.org/TR/2003/REC-soap12-part1-20030624>.

[SOAP1.2/2] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 2: Adjuncts", W3C Recommendation, June 2003, <http://www.w3.org/TR/2003/REC-soap12-part2-20030624>.

[WSA1.0 Core] Gudgin, M., Ed., Hadley, M., Ed., and Rogers, Tony, Ed., "Web Services Addressing 1.0 - Core", W3C Recommendation 9 May 2006, <http://www.w3.org/TR/2006/REC-ws-addr-core-20060509/ws-addr-core.pdf>.

[WSDL] Christensen, E., Curbera, F., Meredith, G., and Weerawarana, S., "Web Services Description Language (WSDL) 1.1", W3C Note, March 2001, <http://www.w3.org/TR/2001/NOTE-wsdl-20010315>

[XMLNS] World Wide Web Consortium, "Namespaces in XML 1.0 (Second Edition)", August 2006, <http://www.w3.org/TR/REC-xml-names/>

[XMLSCHEMA1] Thompson, H.S., Ed., Beech, D., Ed., Maloney, M., Ed., and Mendelsohn, N., Ed., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/>

[XMLSCHEMA2] Biron, P.V., Ed. and Malhotra, A., Ed., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/>

1.2.2 Informative References

[MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)", March 2007.

[MS-OFSGLOS] Microsoft Corporation, "[Microsoft Office Server Master Glossary](#)", June 2008.

1.3 Protocol Overview (Synopsis)

This protocol enables a worker client to initiate document conversions on a worker server. The protocol enables the worker client to get a **GUID** to uniquely identify a worker server and start a document conversion on that worker server. The communication is always initiated by the worker client using different operations.

A typical scenario for using this protocol is an application that performs bulk conversion jobs on an existing set of files. Such an application could use an implementation of the queue service protocol, as specified in [\[MS-WORDSWCFQ\]](#) to create and maintain a list of conversion jobs and conversion items in those conversion jobs. The application could regularly poll the database of conversion items and perform the following tasks:

- Initiate the conversion items that have not been started, updating their status and identifying which worker server the conversion item has been assigned to.
- Restart or fail conversion items that have been in progress longer than a pre-determined threshold.

1.4 Relationship to Other Protocols

This protocol uses the **SOAP** messaging protocol for formatting requests and responses either as specified in [\[SOAP1.1\]](#) or as specified in [\[SOAP1.2/1\]](#) and [\[SOAP1.2/2\]](#). It transmits these messages using the **HTTP** protocol as specified in [\[RFC2616\]](#) or the **HTTPS** protocol as specified in [\[RFC2818\]](#) or the **TCP** protocol as specified in [\[MC-NMF\]](#).

The following diagram shows the underlying messaging and transport stack that the protocol uses:

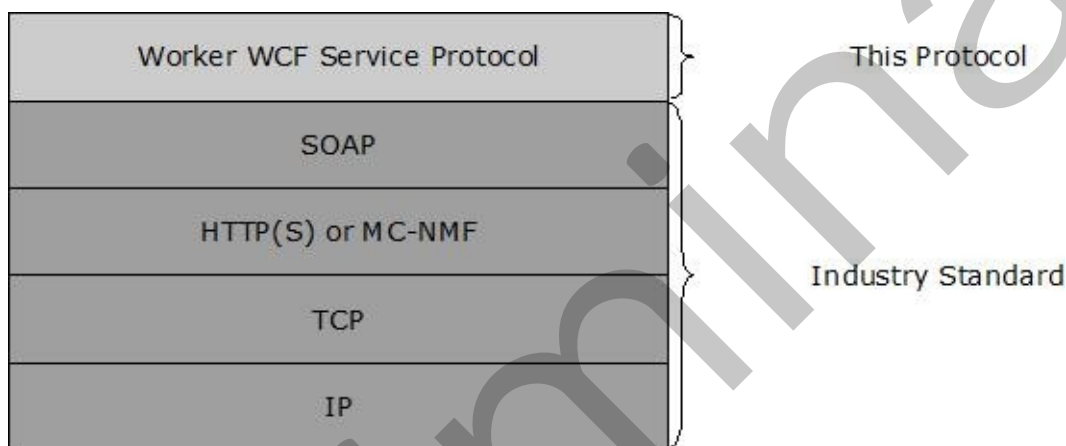


Figure 1: This protocol in relation to underlying messaging and transport stack protocols

Although this protocol is used to initiate, execute, and monitor conversion jobs, the creation of the conversion jobs is handled by the queue service protocol, as specified in [\[MS-WORDSWCFQ\]](#). The queue client constructs conversion jobs that are stored in the database by the queue server when the appropriate request **WSDL message** is sent. The worker client is responsible for initiating each conversion item that was stored in the database by the queue server. After the conversion item is finished, the worker server updates the status of the conversion item in the database and stores any output. The queue server, worker client, and worker server read from and write to the same queue database using the database protocol as specified in [\[MS-WORDSSP\]](#).

The following diagram shows the relationship between this protocol (the worker service), the queue service, and the database protocol. Dotted lines indicate interactions that are implementation-specific and not significant for interoperability in relation to these protocols.

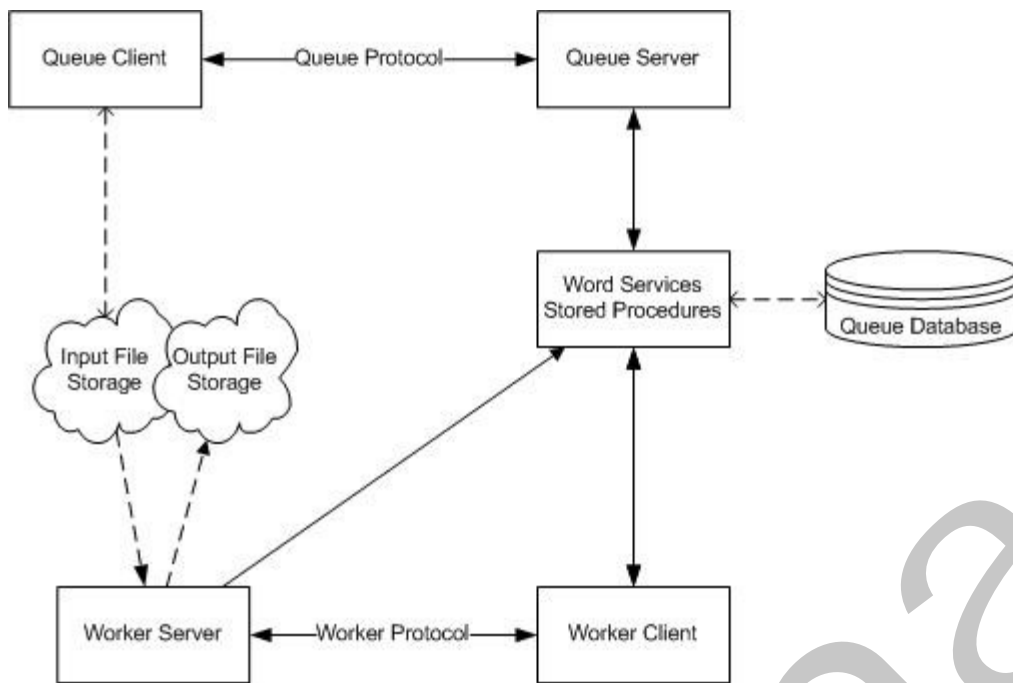


Figure 2: This protocol in relation to queue service and database protocol

1.5 Prerequisites/Preconditions

The worker client and worker server are required to use the same database protocol as the queue server.

This protocol assumes that the queue client provides the input and output locations of a conversion item as **URLs** that are in a format that is understood by the worker server.

This protocol assumes that authentication has been performed by the underlying protocols.

1.6 Applicability Statement

This protocol enables communication between a protocol server, which converts a document from one file format to another file format, and a protocol client which:

- Manages conversion jobs.
- Initiates conversion items.

1.7 Versioning and Capability Negotiation

This protocol uses multiple transports with SOAP as specified in section [2.1](#).

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

Protocol servers MUST support SOAP over HTTP, HTTPS, or TCP.

Protocol messages MUST be formatted as specified either in [\[SOAP1.1\]](#) (Section 4, SOAP Envelope) or in [\[SOAP1.2/1\]](#) (Section 5, SOAP Message Construct). Protocol server faults MUST be returned either using HTTP status codes as specified in [\[RFC2616\]](#) (Section 10, Status Code Definitions) or using **SOAP faults** as specified either in [\[SOAP1.1\]](#) (Section 4.4, SOAP Fault) or in [\[SOAP1.2/1\]](#) (Section 5.4, SOAP Fault).

All protocol messages are Internet messages, and MUST be transported using either HTTP or TCP bindings at the transport level.

2.2 Common Message Syntax

This section contains common definitions used by this protocol. The syntax of the definitions uses **XML Schema**, as defined in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), and Web Services Description Language as defined in [\[WSDL\]](#).

2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [\[XMLNS\]](#). Although this specification associates a specific **XML namespace prefix** for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

| Prefix | Namespace URI | Reference |
|--------|---|--|
| mowss | http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service | |
| ser | http://schemas.microsoft.com/2003/10/Serialization/ | |
| tns | http://tempuri.org/ | |
| xs | http://www.w3.org/2001/XMLSchema | [XMLSCHEMA1] [XMLSCHEMA2] |
| soap | http://schemas.xmlsoap.org/wsdl/soap/ | [SOAP1.1] |
| soap12 | http://schemas.xmlsoap.org/wsdl/soap12/ | [SOAP1.2/1] [SOAP1.2/2] |
| wsaw | http://www.w3.org/2006/05/addressing/wsdl | [WSA1.0 Core] |
| wsdl | http://schemas.xmlsoap.org/wsdl/ | [WSDL] |
| sp | http://schemas.datacontract.org/2004/07/Microsoft.SharePoint | |
| mows | http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server | |
| mowsc | http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions | |

2.2.2 Messages

None.

2.2.3 Elements

This specification does not define any common XML Schema element definitions.

2.2.4 Complex Types

This specification does not define any common XML Schema complex type definitions.

2.2.5 Simple Types

The following table summarizes the set of common XML Schema simple type definitions defined by this specification. XML Schema simple type definitions that are specific to a particular operation are described with the operation.

| Simple Type | Description |
|-------------|--|
| guid | A string representing a GUID or unique identifier. |

2.2.5.1 guid (from namespace <http://schemas.microsoft.com/2003/10/Serialization/>)

A string representing a GUID or unique identifier.

```
<xs:simpleType name="guid">
  <xs:restriction base="xs:string">
    <xs:pattern value="[\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{12}"/>
  </xs:restriction>
</xs:simpleType>
```

2.2.6 Attributes

This specification does not define any common XML Schema attribute definitions.

2.2.7 Groups

This specification does not define any common XML Schema group definitions.

2.2.8 Attribute Groups

This specification does not define any common XML Schema attribute group definitions.

2.3 XML Structures

This section contains common definitions used by this protocol. The syntax of the definitions uses XML Schema, as defined in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#).

This section contains namespaces, simple types, complex types, elements, and attributes used by this protocol when decoding the [ConversionJobSettings](#) type from **XML** for the [BeginConversion](#) **WSDL operation**.

2.3.1 Namespaces

This specification defines and references various XML namespaces using the mechanisms specified in [\[XMLNS\]](#). Although this specification associates a specific XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

| Prefix | Namespace URI | Reference |
|--------|--|--|
| xs | http://www.w3.org/2001/XMLSchema | [XMLSCHEMA1] [XMLSCHEMA2] |
| cs | http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings | |

2.3.2 Elements

The following table summarizes the set of common XML Schema element definitions defined by this section.

| Element | Description |
|--------------------|--|
| jobSettings | The jobSettings element represents a collection of preferred settings for all conversion items within a single conversion job. |

2.3.2.1 jobSettings (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **jobSettings** element represents a collection of preferred settings for all conversion items within a single conversion job. This element is functionally equivalent to and can be directly derived from the [ConversionJobSettings](#) type in the [BeginConversion](#) WSDL operation.

The protocol server MAY [<1>](#) ignore some or all of these preferences.

```
<xs:element name="jobSettings">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="revisionState" type="cs:CT_RevisionState"/>
      <xs:element name="updateFields" type="cs:CT_Boolean"/>
      <xs:element name="defaultLanguage" type="cs:CT_DefaultLanguage"/>
      <xs:element name="embedFonts" type="cs:CT_Boolean"/>
      <xs:element name="subsetEmbeddedFonts" type="cs:CT_Boolean"/>
      <xs:element name="doNotIncludeSystemFonts" type="cs:CT_Boolean"/>
      <xs:element name="compatibilityMode" type="cs:CT_CompatibilityMode"/>
      <xs:element name="addThumbNail" type="cs:CT_Boolean"/>
      <xs:element name="saveFormat" type="cs:CT_SaveFormat"/>
      <xs:element name="saveBehavior" type="cs:CT_SaveBehavior"/>
      <xs:element name="fixedFormatSettings" type="cs:CT_FixedFormatSettings"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

revisionState: Specifies a preference for the visibility of revision marking and comments in the output document. This element is functionally equivalent to and can be directly derived from the RevisionState child element of the ConversionJobSettings type.

updateFields: Specifies a preference for whether or not fields are automatically updated. This element is functionally equivalent to and can be directly derived from the UpdateFields child element of the ConversionJobSettings type.

defaultLanguage: Specifies a preference for the language used when resolving language-dependent ambiguities. This element is functionally equivalent to and can be directly derived from the DefaultLanguage child element of the ConversionJobSettings type.

embedFonts: Specifies a preference for whether fonts used within the document are obfuscated and saved within the output file. This element is functionally equivalent to and can be directly derived from the EmbedFonts child element of the ConversionJobSettings type.

subsetEmbeddedFonts: Specifies a preference for whether only characters required for a document are included in the embedded font. This element is functionally equivalent to and can be directly derived from the SubsetEmbeddedFonts child element of the ConversionJobSettings type.

doNotIncludeSystemFonts: Specifies a preference for whether common fonts are not included in the output file. This element is functionally equivalent to and can be directly derived from the DoNotEmbedSystemFonts child element of the ConversionJobSettings type.

compatibilityMode: Specifies a preference for the compatibility of the output document. This element is functionally equivalent to and can be directly derived from the CompatibilityMode child element of the ConversionJobSettings type.

addThumbNail: Specifies a preference for whether the output file is saved with an added thumbnail. This element is functionally equivalent to and can be directly derived from the AddThumbnail child element of the ConversionJobSettings type.

saveFormat: Specifies a preference for the file format of the document after it has been converted. This element is functionally equivalent to and can be directly derived from the OutputFormat child element of the ConversionJobSettings type.

saveBehavior: Specifies a preference for what overwrite behavior occurs when the output file already exists. This element is functionally equivalent to and can be directly derived from the OutputSaveBehavior child element of the ConversionJobSettings type.

fixedFormatSettings: Specifies a collection of additional preferences used for fixed formats such as PDF and XPS. This element is functionally equivalent to and can be directly derived from the FixedFormatSettings child element of the ConversionJobSettings type.

2.3.3 Complex Types

The following table summarizes the set of common XML Schema complex type definitions defined by this section.

| Complex Type | Description |
|-----------------|--|
| CT_BalloonState | The CT_BalloonState type represents a single ST_BalloonState value. |
| CT_Bookmarks | The CT_Bookmarks type represents a single ST_Bookmarks value. |
| CT_Boolean | The CT_Boolean type represents a single ST_Boolean value. |

| Complex Type | Description |
|------------------------|--|
| CT_CompatibilityMode | The CT_CompatibilityMode type represents a single ST_CompatibilityMode value. |
| CT_DefaultLanguage | The CT_DefaultLanguage type represents a single ST_DefaultLanguage value. |
| CT_FixedFormatSettings | The CT_FixedFormatSettings type represents a collection of additional preferences used for fixed formats such as PDF and XPS. |
| CT_OutputQuality | The CT_OutputQuality type represents a single ST_OutputQuality value. |
| CT_RevisionState | The CT_RevisionState type represents a single ST_RevisionState value. |
| CT_SaveBehavior | The CT_SaveBehavior type represents a single ST_SaveBehavior value. |
| CT_SaveFormat | The CT_SaveFormat type represents a single ST_SaveFormat value. |

2.3.3.1 CT_BalloonState (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_BalloonState** type represents a single [ST_BalloonState](#) value.

```
<xs:complexType name="CT_BalloonState">
  <xs:attribute name="val" use="required" type="cs:ST_BalloonState"/>
</xs:complexType>
```

val: An ST_BalloonState value.

2.3.3.2 CT_Bookmarks (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_Bookmarks** type represents a single [ST_Bookmarks](#) value.

```
<xs:complexType name="CT_Bookmarks">
  <xs:attribute name="val" use="required" type="cs:ST_Bookmarks"/>
</xs:complexType>
```

val: An ST_Bookmarks value.

2.3.3.3 CT_Boolean (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_Boolean** type represents a single [ST_Boolean](#) value.

```
<xs:complexType name="CT_Boolean">
  <xs:attribute name="val" use="required" type="cs:ST_Boolean"/>
</xs:complexType>
```


val: An ST_Boolean value.

2.3.3.4 CT_CompatibilityMode (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_CompatibilityMode** type represents a single [ST_CompatibilityMode](#) value.

```
<xs:complexType name="CT_CompatibilityMode">
  <xs:attribute name="val" use="required" type="cs:ST_CompatibilityMode"/>
</xs:complexType>
```

val: An ST_CompatibilityMode value.

2.3.3.5 CT_DefaultLanguage (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_DefaultLanguage** type represents a single [ST_DefaultLanguage](#) value.

```
<xs:complexType name="CT_DefaultLanguage">
  <xs:attribute name="val" use="required" type="cs:ST_DefaultLanguage"/>
</xs:complexType>
```

val: An ST_DefaultLanguage value.

2.3.3.6 CT_FixedFormatSettings (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_FixedFormatSettings** type represents a collection of additional preferences used for fixed formats such as PDF and XPS.

This type is functionally equivalent to and can be directly derived from the [FixedFormatSettings](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:complexType name="CT_FixedFormatSettings">
  <xs:sequence>
    <xs:element name="outputQuality" type="cs:CT_OutputQuality"/>
    <xs:element name="bookmarks" type="cs:CT_Bookmarks"/>
    <xs:element name="includeDocumentProperties" type="cs:CT_Boolean"/>
    <xs:element name="includeDocumentStructure" type="cs:CT_Boolean"/>
    <xs:element name="usePDFA" type="cs:CT_Boolean"/>
    <xs:element name="bitmapEmbeddedFonts" type="cs:CT_Boolean"/>
    <xs:element name="balloonState" type="cs:CT_BalloonState"/>
  </xs:sequence>
</xs:complexType>
```

outputQuality: Specifies a preference for the output quality of fixed formats such as PDF and XPS. This element is functionally equivalent to and can be directly derived from the **OutputQuality** child element of the FixedFormatSettings type.

bookmarks: Specifies a preference for the creation of bookmarks in fixed formats such as PDF and XPS. This element is functionally equivalent to and can be directly derived from the **Bookmarks** child element of the FixedFormatSettings type.

includeDocumentProperties: Specifies a preference to include document properties in fixed formats such as PDF and XPS. This element is functionally equivalent to and can be directly derived from the **IncludeDocumentProperties** child element of the FixedFormatSettings type.

includeDocumentStructure: Specifies a preference to include document structure tags in fixed formats such as PDF and XPS. This element is functionally equivalent to and can be directly derived from the **IncludeDocumentStructure** child element of the FixedFormatSettings type.

usePDFA: Specifies a preference to use the PDF/A format for the fixed format PDF. This element is functionally equivalent to and can be directly derived from the **UsePDFA** child element of the FixedFormatSettings type.

bitmapEmbeddedFonts: Specifies a preference to rasterize fonts when they cannot be embedded in fixed formats such as PDF or XPS. This element is functionally equivalent to and can be directly derived from the **BitmapEmbeddedFonts** child element of the FixedFormatSettings type.

balloonState: Specifies a preference for the visibility of markup balloons in fixed formats such as PDF and XPS. This element is functionally equivalent to and can be directly derived from the **BalloonState** child element of the FixedFormatSettings type.

2.3.3.7 CT_OutputQuality (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_OutputQuality** type represents a single [ST_OutputQuality](#) value.

```
<xs:complexType name="CT_OutputQuality">
  <xs:attribute name="val" use="required" type="cs:ST_OutputQuality"/>
</xs:complexType>
```

val: An ST_OutputQuality value.

2.3.3.8 CT_RevisionState (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_RevisionState** type represents a single [ST_RevisionState](#) value.

```
<xs:complexType name="CT_RevisionState">
  <xs:attribute name="val" use="required" type="cs:ST_RevisionState"/>
</xs:complexType>
```

val: An ST_RevisionState value.

2.3.3.9 CT_SaveBehavior (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_SaveBehavior** type represents a single [ST_SaveBehavior](#) value.

```

<xs:complexType name="CT_SaveBehavior">
  <xs:attribute name="val" use="required" type="cs:ST_SaveBehavior"/>
</xs:complexType>

```

val: An ST_SaveBehavior value.

2.3.3.10 CT_SaveFormat (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **CT_SaveFormat** type represents a single [ST_SaveFormat](#) value.

```

<xs:complexType name="CT_SaveFormat">
  <xs:attribute name="val" use="required" type="cs:ST_SaveFormat"/>
</xs:complexType>

```

val: An ST_SaveFormat value.

2.3.4 Simple Types

The following table summarizes the set of common XML Schema simple type definitions defined by this section.

| Simple Type | Description |
|----------------------|---|
| ST_BalloonState | The ST_BalloonState type specifies a preference for the visibility of markup balloons in the document. |
| ST_Bookmarks | The ST_Bookmarks type specifies a preference for the creation of bookmarks in fixed formats such as PDF and XPS. |
| ST_Boolean | The ST_Boolean type specifies a preference to enable or disable a Boolean setting. |
| ST_CompatibilityMode | The ST_CompatibilityMode type specifies a preference for the compatibility of the output document. |
| ST_DefaultLanguage | The ST_DefaultLanguage type specifies a preference for the language used when resolving language dependent ambiguities. |
| ST_Empty | The ST_Empty type specifies a value to have an empty string. |
| ST_OutputQuality | The ST_OutputQuality type specifies a preference for the output quality of fixed formats such as PDF and XPS. |
| ST_RevisionState | The ST_RevisionState type specifies a preference for the visibility of revision marking and comments in the output document. |
| ST_SaveBehavior | The ST_SaveBehavior type specifies a preference for what overwrite behavior occurs when the output file already exists. |
| ST_SaveFormat | The ST_SaveFormat type specifies a preference for the file format of the output document. |

2.3.4.1 ST_BalloonState (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_BalloonState** type specifies a preference for the visibility of markup balloons in the document.

This type is functionally equivalent to and can be directly derived from the [BalloonState](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:simpleType name="ST_BalloonState">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="2"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_BalloonState:

| Value | mowsc:BalloonState Value | Meaning |
|-------|---------------------------|--|
| 0 | AlwaysUse | Prefer that balloons always display when present. |
| 1 | Inline | Prefer that balloons appear only when inline. |
| 2 | OnlyCommentsAndFormatting | Prefer that balloons appear only in comments and formatting. |

2.3.4.2 ST_Bookmarks (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_Bookmarks** type specifies a preference for the creation of bookmarks in fixed formats such as PDF and XPS.

This type is functionally equivalent to and can be directly derived from the [FixedFormatBookmark](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:simpleType name="ST_Bookmarks">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="2"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_Bookmarks:

| Value | mowsc:FixedFormatBookmark Value | Meaning |
|-------|---------------------------------|---|
| 0 | None | Prefer not to convert source document's bookmarks or headings into bookmarks. |
| 1 | Headings | Prefer to convert source document's headings into bookmarks. |

| Value | mowsc:FixedFormatBookmark Value | Meaning |
|-------|---------------------------------|---|
| 2 | Bookmarks | Prefer to convert source document's bookmarks into bookmarks. |

2.3.4.3 ST_Boolean (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_Boolean** type specifies a preference to enable or disable a Boolean setting.

This type is functionally equivalent to and can be directly derived from the **xs:boolean** type as specified in [XMLSCHEMA2](#).

```
<xs:simpleType name="ST_Boolean">
  <xs:restriction base="xs:string">
    <xs:enumeration value="True"/>
    <xs:enumeration value="False"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_Boolean:

| Value | xs:boolean Value | Meaning |
|-------|------------------|--|
| True | true | Specifies a preference to enable the setting. |
| False | false | Specifies a preference to disable the setting. |

2.3.4.4 ST_CompatibilityMode (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_CompatibilityMode** type specifies a preference for the compatibility of the output document.

This type is functionally equivalent to and can be directly derived from the [CompatibilityMode](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:simpleType name="ST_CompatibilityMode">
  <xs:restriction base="xs:integer">
    <xs:enumeration value="-1"/>
    <xs:enumeration value="0"/>
    <xs:enumeration value="11"/>
    <xs:enumeration value="12"/>
    <xs:enumeration value="14"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_CompatibilityMode:

| Value | mowsc:CompatibilityMode Value | Meaning |
|-------|-------------------------------|---|
| -1 | AlwaysUpgrade | Prefer document is upgraded in compatibility to the latest Word format available. |
| 0 | MaintainCurrentSetting | Prefer document maintains the compatibility mode specified in the file. |
| 11 | Word97To2003 | Prefer document is compatible with Microsoft® Office Word 2003. |
| 12 | Word2007 | Prefer document is compatible with Microsoft® Office Word 2007. |
| 14 | Word2009 | Prefer document is compatible with Microsoft® Word 2010 Technical Preview. |

2.3.4.5 ST_DefaultLanguage (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_DefaultLanguage** type specifies a preference for the language used when resolving language dependent ambiguities.

The value SHOULD [<2>](#) be an empty string as specified by the [ST_Empty](#) type.

The value MAY [<3>](#) be an **xs:integer** as specified in [\[XMLSCHEMA2\]](#).

```
<xs:simpleType name="ST_DefaultLanguage">
  <xs:union memberTypes="xs:integer cs:ST_Empty"/>
</xs:simpleType>
```

2.3.4.6 ST_Empty (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_Empty** type specifies a value to have an empty string.

This type is used by [ST_DefaultLanguage](#) to specify a preference to not explicitly specify the language used when resolving language-dependent ambiguities.

```
<xs:simpleType name="ST_Empty">
  <xs:restriction base="xs:string">
    <xs:enumeration value=""/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_Empty:

| Value | Meaning |
|-------|--|
| | Specifies that the protocol client does not have a preferred language for use when resolving language-dependent ambiguities. |

2.3.4.7 ST_OutputQuality (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_OutputQuality** type specifies a preference for the output quality of fixed formats such as PDF and XPS.

This type is functionally equivalent to and can be directly derived from the [FixedFormatQuality](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:simpleType name="ST_OutputQuality">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="1"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_OutputQuality:

| Value | mowsc:FixedFormatQuality Value | Meaning |
|-------|--------------------------------|--|
| 0 | Standard | Prefer to optimize for printing. |
| 1 | Minimum | Prefer to optimize for online reading. |

2.3.4.8 ST_RevisionState (from namespace

<http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_RevisionState** type specifies a preference for the visibility of revision marking and comments in the output document.

This type is functionally equivalent to and can be directly derived from the [RevisionState](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:simpleType name="ST_RevisionState">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="3"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_RevisionState:

| Value | mowsc:RevisionState Value | Meaning |
|-------|---------------------------|--|
| 0 | Final | Prefer to show the final document without revision marking or comments. |
| 1 | Original | Prefer to show the original document without revision marking or comments. |
| 2 | FinalShowingMarkup | Prefer to show the final document with revision marking and |

| Value | mowsc:RevisionState Value | Meaning |
|-------|---------------------------|--|
| | | comments. |
| 3 | OriginalShowingMarkup | Prefer to show the original document with revision marking and comments. |

2.3.4.9 ST_SaveBehavior (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_SaveBehavior** type specifies a preference for what overwrite behavior occurs when the output file already exists.

This type is functionally equivalent to and can be directly derived from the [SaveBehavior](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:simpleType name="ST_SaveBehavior">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="3"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ST_SaveBehavior:

| Value | mowsc:SaveBehavior Value | Meaning |
|-------|--------------------------|---|
| 0 | AppendIfPossible | Prefer to append to the file's version history if the output file already exists. If the location of the output file does not support version history, prefer to overwrite the existing file. |
| 1 | AlwaysOverwrite | Prefer to always overwrite the output file if it already exists. |
| 2 | AppendOnly | Prefer to append to the file's version history if the output file already exists. If the location of the output file does not support version history, prefer to do nothing. |
| 3 | NeverOverwrite | Prefer to do nothing if there is already a file at the output file location. |

2.3.4.10 ST_SaveFormat (from namespace <http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings>)

The **ST_SaveFormat** type specifies a preference for the file format of the output document.

This type is functionally equivalent to and can be directly derived from the [SaveFormat](#) type in the [BeginConversion](#) WSDL operation.

```
<xs:simpleType name="ST_SaveFormat">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0"/>
  </xs:restriction>
</xs:simpleType>
```



```

    <xs:maxInclusive value="11"/>
  </xs:restriction>
</xs:simpleType>

```

The following table specifies the allowable values for ST_SaveFormat:

| Value | mowsc:SaveFormat Value | Meaning |
|-------|------------------------|---|
| 0 | Automatic | The format of the output file is preferred to be determined by the file extension. |
| 1 | Document | The output file is preferred to be an Office Open XML document. |
| 2 | DocumentMacroEnabled | The output file is preferred to be an Office Open XML document with macros enabled. |
| 3 | Document97 | The output file is preferred to be an Microsoft® Office Word 2003 compatible binary document. |
| 4 | Template | The output file is preferred to be an Office Open XML document template. |
| 5 | TemplateMacroEnabled | The output file is preferred to be an Office Open XML document template with macros enabled. |
| 6 | Template97 | The output file is preferred to be an Office Word 2003 compatible binary document template. |
| 7 | MHTML | The output file is preferred to be a single file Web page. |
| 8 | PDF | The output file is preferred to be a PDF file. |
| 9 | RTF | The output file is preferred to be a Rich Text Format (RTF) document. |
| 10 | XML | The output file is preferred to be a Word XML document. |
| 11 | XPS | The output file is preferred to be an XPS file. |

2.3.5 Attributes

None.

2.3.6 Groups

None.

2.3.7 Attribute Groups

None.

3 Protocol Details

Except where specified, protocol clients SHOULD interpret HTTP status codes returned by the protocol server as specified in [\[RFC2616\]](#) section 10.

This protocol allows protocol servers to notify protocol clients of application-level faults using SOAP faults. Except where specified, these SOAP faults are not significant for interoperability, and protocol clients can interpret them in an implementation-specific manner.

This protocol allows protocol servers to perform implementation-specific authorization checks and notify protocol clients of authorization faults either using HTTP status codes or using SOAP faults as specified previously in this section.

3.1 Server Details

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

The worker server reads and writes data to a queue database which resides on a **back-end database server**. The queue database is also used by the worker client (section [3.2](#)) and the queue server (as specified in [\[MS-WORDSWCFQ\]](#) section 3.1). Both services read from and write to the queue database using the database protocol as specified in [\[MS-WORDSSP\]](#).

Conversion Job: A logical group of conversion items that share the same conversion settings. Conversion jobs are constructed by the queue client and maintained in the database server by the queue server. A conversion job contains one or more conversion item(s).

Conversion Item: A single conversion from one input file to one output file. A conversion item is maintained in the database server by the queue server, the worker client, and the worker server.

Conversion Item State: The status of a conversion item. The conversion item state is specified by the [ConversionItemState](#) type and specified by the corresponding enumeration values in [\[MS-WORDSSP\]](#) section 2.2.1.1. A conversion item is considered not finished if its state has a value of **NotStarted** or **InProgress**.

Input File: The URL of the source file for a conversion item. The URL MUST be provided by the queue client and MUST be in a format that the worker server understands and can use to retrieve the input file.

Output File: The URL of the output file from a conversion item. The URL MUST be provided by the queue client and MUST be in a format that the worker server understands and can use to store the output file.

AppManager Identifier: A unique identifier of a worker server instance. A worker client communicates with one or more worker server instances and uses the AppManager identifier to distinguish them from each other. The worker client calls the [GetId](#) WSDL operation on each worker server instance to obtain the AppManager identifier for that worker server instance.

The worker server operates on a table of conversion jobs and another table of conversion items in those conversion jobs in conjunction with the worker client and queue server. The database tables are used in the following ways:

- The queue client initiates a request WSDL message to the queue server for an operation that adds conversion jobs or cancels existing conversion items within a conversion job. As part of that operation, the queue server synchronously makes the requested change or changes to the database and returns the appropriate response WSDL message.
- The queue client initiates a request WSDL message to the queue server for an operation requesting a list of conversion jobs or the status of conversion items in a conversion job. The queue server synchronously retrieves the requested data from the database and returns the appropriate response WSDL message with the requested data.
- The worker client polls the database for a batch of conversion items that have not finished. This includes both conversion items that have not been started and conversion items that were started by a previous batch and are already in progress. Based directly on conversion items in the database and their status, the worker client synchronously updates the status of those conversion items in the database. This update includes changing the state of a conversion item to in progress or failed. For each conversion item that is changed to in progress, the worker client sends a request WSDL message to the worker server to asynchronously convert that conversion item.
- The worker server receives a request from a worker client to convert a conversion item, and will initiate an internal operation to perform an asynchronous conversion of the conversion item and then return the appropriate response WSDL message. The worker server synchronously updates the status of the conversion item in the database when the internal operation has finished.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

This specification includes the following WSDL operations:

| WSDL Operation | Description |
|-----------------|---|
| GetId | This operation is used to get the AppManager identifier that uniquely identifies the current instance of the protocol server. |
| BeginConversion | This operation is used to initiate the conversion of a conversion item. |

3.1.4.1 GetId

This operation is used to get the AppManager identifier that uniquely identifies the current instance of the protocol server.

```
<wsdl:operation name="GetId">
  <wsdl:input wsaw:Action="http://tempuri.org/IWorkerApp/GetId"
    message="tns:IWorkerApp_GetId_InputMessage"/>
  <wsdl:output wsaw:Action="http://tempuri.org/IWorkerApp/GetIdResponse"
    message="tns:IWorkerApp_GetId_OutputMessage"/>
</wsdl:operation>
```

The protocol client sends a **GetId** request WSDL message and the protocol server MUST return a **GetId** response WSDL message, as follows:

- The protocol server MUST return a GUID that uniquely identifies the current instance of the server.

3.1.4.1.1 Messages

3.1.4.1.1.1 IWorkerApp_GetId_InputMessage

The requested WSDL message for a **GetId** WSDL operation.

The **SOAP action** value is:

```
http://tempuri.org/IWorkerApp/GetId
```

The **SOAP body** contains a **GetId** element.

3.1.4.1.1.2 IWorkerApp_GetId_OutputMessage

The response WSDL message for a **GetId** method.

The SOAP action value is:

```
http://tempuri.org/IWorkerApp/GetId
```

The SOAP body contains a **GetIdResponse** element.

3.1.4.1.2 Elements

3.1.4.1.2.1 GetId

The input data for a **GetId** WSDL operation.

```
<xs:element name="GetId"/>
```

3.1.4.1.2.2 GetIdResponse

The result data for a **GetId** WSDL operation.

```
<xs:element name="GetIdResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="1" name="GetIdResult" type="ser:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetIdResult: A GUID value that uniquely identifies the current instance of the server.

3.1.4.2 BeginConversion

This operation is used to initiate the conversion of a conversion item.

```
<wsdl:operation name="BeginConversion">
  <wsdl:input wsaw:Action="http://tempuri.org/IWorkerApp/BeginConversion"
    message="tns:IWorkerApp_BeginConversion_InputMessage"/>
  <wsdl:output wsaw:Action="http://tempuri.org/IWorkerApp/BeginConversionResponse"
    message="tns:IWorkerApp_BeginConversion_OutputMessage"/>
</wsdl:operation>
```

The protocol client sends a **BeginConversion** request WSDL message, as follows:

- The **jobData** element MUST NOT have a null value.
- The **item** element MUST NOT have a null value.

The protocol server initiates the asynchronous conversion of the specified conversion item.

The protocol server MUST update the state of the conversion item in the database as described in section [3.1.6](#).

The protocol server MUST return a **BeginConversion** response WSDL message.

3.1.4.2.1 Messages

3.1.4.2.1.1 IWorkerApp_BeginConversion_InputMessage

The requested WSDL message for a **BeginConversion** WSDL operation.

The SOAP action value is:

```
http://tempuri.org/IWorkerApp/BeginConversion
```

The SOAP body contains a **BeginConversion** element.

3.1.4.2.1.2 IWorkerApp_BeginConversion_OutputMessage

The response WSDL message for a **BeginConversion** method.

The SOAP action value is:

```
http://tempuri.org/IWorkerApp/BeginConversion
```

The SOAP body contains a **BeginConversionResponse** element.

3.1.4.2.2 Elements

3.1.4.2.2.1 BeginConversion

The input data for a **BeginConversion** WSDL operation.

```
<xs:element name="BeginConversion">
```

```

<xs:complexType>
  <xs:sequence>
    <xs:element minOccurs="1" name="jobData" type="mowss:ConversionJobData"/>
    <xs:element minOccurs="1" name="item" type="mowss:ConversionItemInternal"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

jobData: A [ConversionJobData](#) value that specifies the conversion data for this conversion job. The conversion data is used for converting a conversion job's conversion items.

item: A [ConversionItemInternal](#) value that specifies data for a conversion item that is needed to perform this conversion.

3.1.4.2.2.2 BeginConversionResponse

The result data for a **BeginConversion** WSDL operation.

```

<xs:element name="BeginConversionResponse"/>

```

3.1.4.2.3 Complex Types

3.1.4.2.3.1 ConversionJobData (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service>)

This complex type contains information for a conversion job.

```

<xs:complexType name="ConversionJobData">
  <xs:sequence>
    <xs:element minOccurs="0" name="m_partitionId" type="ser:guid"/>
    <xs:element minOccurs="0" name="m_rawPartitionId" type="ser:guid"/>
    <xs:element minOccurs="1" name="m_settings" type="mowsc:ConversionJobSettings"/>
    <xs:element minOccurs="0" name="m_userToken" type="sp:SPUserToken"/>
  </xs:sequence>
</xs:complexType>

```

m_partitionId: This element is not used and MUST be ignored.

m_rawPartitionId: This element is not used and MUST be ignored.

m_settings: A [ConversionJobSettings](#) value that provides a collection of preferred settings for all conversion items within a single conversion job.

m_userToken: An [SPUserToken](#) value that provides user credentials for accessing the input and output files in the conversion job.

3.1.4.2.3.2 ConversionJobSettings (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This complex type specifies a preference for a collection of settings for all conversion items within a single conversion job.

The protocol server MAY [<4>](#) ignore some or all of these preferences.

```
<xs:complexType name="ConversionJobSettings">
  <xs:sequence>
    <xs:element minOccurs="0" name="AddThumbnail" type="xs:boolean"/>
    <xs:element minOccurs="0" name="CompatibilityMode" type="mowsc:CompatibilityMode"/>
    <xs:element minOccurs="0" name="DefaultLanguage"/>
    <xs:element minOccurs="0" name="DoNotEmbedSystemFonts" type="xs:boolean"/>
    <xs:element minOccurs="0" name="EmbedFonts" type="xs:boolean"/>
    <xs:element minOccurs="1" name="FixedFormatSettings" type="mowsc:FixedFormatSettings"/>
    <xs:element minOccurs="0" name="OutputFormat" type="mowsc:SaveFormat"/>
    <xs:element minOccurs="0" name="OutputSaveBehavior" type="mowsc:SaveBehavior"/>
    <xs:element minOccurs="0" name="RevisionState" type="mowsc:RevisionState"/>
    <xs:element minOccurs="0" name="SubsetEmbeddedFonts" type="xs:boolean"/>
    <xs:element minOccurs="0" name="UpdateFields" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

AddThumbnail: Specifies a preference for whether the output file is saved with an added thumbnail.

CompatibilityMode: Specifies a preference for the compatibility of the output document.

DefaultLanguage: Specifies a preference for the language used when resolving language-dependent ambiguities.

This value SHOULD [<5>](#) be null.

DoNotEmbedSystemFonts: Specifies a preference for whether common fonts are not included in the output file.

EmbedFonts: Specifies a preference for whether fonts used within the document are obfuscated and saved within the output file.

FixedFormatSettings: Specifies a collection of additional preferences used for fixed formats such as PDF and XPS.

OutputFormat: Specifies a preference for the file format of the document after it has been converted.

OutputSaveBehavior: Specifies a preference for what overwrite behavior occurs when the output file already exists.

RevisionState: Specifies a preference for the visibility of revision marking and comments in the output document.

SubsetEmbeddedFonts: Specifies a preference for whether only characters required for a document are included in the embedded font.

UpdateFields: Specifies a preference for whether fields are automatically updated.

3.1.4.2.3.3 FixedFormatSettings (from namespace

<http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This complex type specifies a collection of additional preferences used for fixed formats such as PDF and XPS.

The protocol server MAY [6](#) ignore some or all of these preferences.

```
<xs:complexType name="FixedFormatSettings">
  <xs:sequence>
    <xs:element minOccurs="0" name="BalloonState" type="mowsc:BalloonState"/>
    <xs:element minOccurs="0" name="BitmapEmbeddedFonts" type="xs:boolean"/>
    <xs:element minOccurs="0" name="Bookmarks" type="mowsc:FixedFormatBookmark"/>
    <xs:element minOccurs="0" name="IncludeDocumentProperties" type="xs:boolean"/>
    <xs:element minOccurs="0" name="IncludeDocumentStructure" type="xs:boolean"/>
    <xs:element minOccurs="0" name="OutputQuality" type="mowsc:FixedFormatQuality"/>
    <xs:element minOccurs="0" name="UsePDFA" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

BalloonState: Specifies a preference for the visibility of markup balloons in the document.

BitmapEmbeddedFonts: Specifies a preference for bitmapping fonts if the fonts cannot be embedded.

Bookmarks: Specifies a preference for the creation of bookmarks.

IncludeDocumentProperties: Specifies a preference for whether document properties are saved to the output file.

IncludeDocumentStructure: Specifies a preference for whether document structure tags are saved to the output file.

OutputQuality: Specifies a preference for the output quality.

UsePDFA: Specifies a preference for whether PDF outputs use the PDF/A format.

3.1.4.2.3.4 SPUserToken (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.SharePoint>)

The **SPUserToken** type provides user credentials for accessing the input and output files.

```
<xs:complexType name="SPUserToken">
  <xs:sequence>
    <xs:element name="m_token" type="xs:base64Binary"/>
  </xs:sequence>
</xs:complexType>
```

m_token: A variable-length structure associated with a user. The format is specified in [\[MS-WSSFO\]](#) section 2.2.4.9.

3.1.4.2.3.5 ConversionItemInternal (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service>)

This complex type contains information for a conversion item.

```
<xs:complexType name="ConversionItemInternal">
  <xs:sequence>
    <xs:element minOccurs="0" name="AppManId" type="ser:guid"/>
    <xs:element minOccurs="0" name="CompleteTime" type="xs:dateTime"/>
  </xs:sequence>
</xs:complexType>
```



```

<xs:element minOccurs="1" name="ConversionId" type="xs:unsignedInt"/>
<xs:element minOccurs="1" name="InputFile" type="xs:string"/>
<xs:element minOccurs="1" name="JobId" type="ser:guid"/>
<xs:element minOccurs="0" name="MessageDetails" type="xs:string"/>
<xs:element minOccurs="0" name="MessageId" type="xs:int"/>
<xs:element minOccurs="1" name="OutputFile" type="xs:string"/>
<xs:element minOccurs="0" name="RestartCount" type="xs:int"/>
<xs:element minOccurs="0" name="StartTime" type="xs:dateTime"/>
<xs:element minOccurs="0" name="State" type="mows:ConversionItemState"/>
</xs:sequence>
</xs:complexType>

```

AppManId: This element is not used and MUST be ignored.

CompleteTime: This element is not used and MUST be ignored.

ConversionId: The identifier of the conversion item within the conversion job.

InputFile: The string representing the location of the source file.

JobId: The GUID for the conversion job to which the conversion item belongs.

MessageDetails: This element is not used and MUST be ignored.

MessageId: This element is not used and MUST be ignored.

OutputFile: The string representing the location of the destination file indicating where the converted file will be placed.

RestartCount: This element is not used and MUST be ignored.

State: This element is not used and MUST be ignored.

3.1.4.2.4 Simple Types

3.1.4.2.4.1 CompatibilityMode (from namespace

<http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This simple type specifies a preference for the compatibility of the output document.

```

<xs:simpleType name="CompatibilityMode">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Word97To2003"/>
    <xs:enumeration value="Word2007"/>
    <xs:enumeration value="Word2009"/>
    <xs:enumeration value="MaintainCurrentSetting"/>
    <xs:enumeration value="AlwaysUpgrade"/>
  </xs:restriction>
</xs:simpleType>

```

The following table specifies the allowable values for CompatibilityMode:

| Value | Meaning |
|------------------------|---|
| Word97To2003 | Prefer document is compatible with Microsoft® Office Word 2003. |
| Word2007 | Prefer document is compatible with Microsoft® Office Word 2007. |
| Word2009 | Prefer document is compatible with Microsoft® Word 2010 Technical Preview. |
| MaintainCurrentSetting | Prefer document maintains the compatibility mode specified in the file. |
| AlwaysUpgrade | Prefer document is upgraded in compatibility to the latest Word format available. |

3.1.4.2.4.2 BalloonState (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This simple type specifies a preference for the visibility of markup balloons in the document.

```
<xs:simpleType name="BalloonState">
  <xs:restriction base="xs:string">
    <xs:enumeration value="AlwaysUse"/>
    <xs:enumeration value="Inline"/>
    <xs:enumeration value="OnlyCommentsAndFormatting"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for BalloonState:

| Value | Meaning |
|---------------------------|--|
| AlwaysUse | Prefer that balloons always display when present. |
| Inline | Prefer that balloons appear only when inline. |
| OnlyCommentsAndFormatting | Prefer that balloons appear only in comments and formatting. |

3.1.4.2.4.3 FixedFormatBookmark (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This simple type specifies a preference for the creation of bookmarks in fixed formats such as PDF and XPS.

```
<xs:simpleType name="FixedFormatBookmark">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="Headings"/>
    <xs:enumeration value="Bookmarks"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for FixedFormatBookmark:

| Value | Meaning |
|-----------|---|
| None | Prefer not to convert source document's bookmarks or headings into bookmarks. |
| Headings | Prefer to convert source document's headings into bookmarks. |
| Bookmarks | Prefer to convert source document's bookmarks into bookmarks. |

3.1.4.2.4.4 FixedFormatQuality (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This simple type specifies a preference for the output quality of fixed formats such as PDF and XPS.

```
<xs:simpleType name="FixedFormatQuality">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Standard"/>
    <xs:enumeration value="Minimum"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for FixedFormatQuality:

| Value | Meaning |
|----------|--|
| Standard | Prefer to optimize for printing. |
| Minimum | Prefer to optimize for online reading. |

3.1.4.2.4.5 SaveFormat (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This simple type specifies a preference for the file format of the document after it has been converted.

```
<xs:simpleType name="SaveFormat">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Automatic"/>
    <xs:enumeration value="Document"/>
    <xs:enumeration value="DocumentMacroEnabled"/>
    <xs:enumeration value="Document97"/>
    <xs:enumeration value="Template"/>
    <xs:enumeration value="TemplateMacroEnabled"/>
    <xs:enumeration value="Template97"/>
    <xs:enumeration value="HTML"/>
    <xs:enumeration value="MHTML"/>
    <xs:enumeration value="PDF"/>
    <xs:enumeration value="RTF"/>
    <xs:enumeration value="XML"/>
    <xs:enumeration value="XPS"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for SaveFormat:

| Value | Meaning |
|----------------------|---|
| Automatic | The format of the output file is preferred to be determined by the file extension. |
| Document | The output file is preferred to be an Office Open XML document. |
| DocumentMacroEnabled | The output file is preferred to be an Office Open XML document with macros enabled. |
| Document97 | The output file is preferred to be an Microsoft® Office Word 2003 compatible binary document. |
| Template | The output file is preferred to be an Office Open XML document template. |
| TemplateMacroEnabled | The output file is preferred to be an Office Open XML document template with macros enabled. |
| Template97 | The output file is preferred to be an Office Word 2003 compatible binary document template. |
| HTML | The output file is preferred to be an HTML document. |
| MHTML | The output file is preferred to be a single file Web page. |
| PDF | The output file is preferred to be a PDF file. |
| RTF | The output file is preferred to be a Rich Text Format (RTF) document. |
| XML | The output file is preferred to be a Word XML document. |
| XPS | The output file is preferred to be an XPS file. |

3.1.4.2.4.6 SaveBehavior (from namespace <http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This simple type specifies a preference for what overwrite behavior occurs when the output file already exists.

```
<xs:simpleType name="SaveBehavior">
  <xs:restriction base="xs:string">
    <xs:enumeration value="AppendIfPossible"/>
    <xs:enumeration value="AlwaysOverwrite"/>
    <xs:enumeration value="AppendOnly"/>
    <xs:enumeration value="NeverOverwrite"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for SaveBehavior:

| Value | Meaning |
|------------------|---|
| AppendIfPossible | Prefer to append to the file's version history if the output file already exists. If the location of the output file does not support version history, prefer to overwrite the existing file. |

| Value | Meaning |
|-----------------|--|
| AlwaysOverwrite | Prefer to always overwrite the output file if it already exists. |
| AppendOnly | Prefer to append to the file's version history if the output file already exists. If the location of the output file does not support version history, prefer to do nothing. |
| NeverOverwrite | Prefer to do nothing if there is already a file at the output file location. |

3.1.4.2.4.7 RevisionState (from namespace

<http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions>)

This simple type specifies a preference for the visibility of revision marking and comments in the output document.

```
<xs:simpleType name="RevisionState">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Final"/>
    <xs:enumeration value="FinalShowingMarkup"/>
    <xs:enumeration value="Original"/>
    <xs:enumeration value="OriginalShowingMarkup"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for RevisionState:

| Value | Meaning |
|-----------------------|--|
| Final | Prefer to show the final document without revision marking or comments. |
| FinalShowingMarkup | Prefer to show the final document with revision marking and comments. |
| Original | Prefer to show the original document without revision marking or comments. |
| OriginalShowingMarkup | Prefer to show the original document with revision marking and comments. |

3.1.4.2.4.8 ConversionItemState (from namespace

<http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server>)

This simple type specifies the state of a conversion item.

```
<xs:simpleType name="ConversionItemState">
  <xs:restriction base="xs:string">
    <xs:enumeration value="NotStarted"/>
    <xs:enumeration value="InProgress"/>
    <xs:enumeration value="Canceled"/>
    <xs:enumeration value="Succeeded"/>
    <xs:enumeration value="Failed"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for ConversionItemState:

| Value | Meaning |
|------------|--|
| NotStarted | The conversion item has not started. |
| InProgress | The conversion item is in progress. |
| Canceled | The conversion item has been canceled. |
| Succeeded | The conversion item has succeeded. |
| Failed | The conversion item has failed. |

3.1.5 Timer Events

None.

3.1.6 Other Local Events

When a conversion initiated by [BeginConversion](#) completes, the protocol server MUST update the state of the conversion item by calling the **proc_ConversionItemStateSet** **stored procedure**, as specified in [\[MS-WORDSSP\]](#) section 3.1.5.3. The following table specifies the parameter values for the stored procedure.

| Parameter | Value |
|-----------------|---|
| @JobId | This MUST be the conversion job identifier specified by the JobId child element of ConversionItemInternal in the BeginConversion request WSDL message. |
| @ConversionId | This MUST be the conversion item identifier specified by the ConversionId child element of ConversionItemInternal in the BeginConversion request WSDL message. |
| @State | If the conversion succeeded, this value MUST be 3. If the conversion failed, this value MUST be 4. |
| @CompleteTime | This value MUST be the date and time the conversion finished in Coordinated Universal Time (UTC) . |
| @MessageId | If the conversion succeeded, this value MUST be 0. If the conversion failed, this value represents an application-defined failure code. |
| @MessageDetails | This value MUST be null. |

3.2 Client Details

3.2.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

The worker client reads and writes data to a queue database which resides on a back-end database server. The queue database is also used by the worker server (section [3.1](#)) and the queue server (as specified in [\[MS-WORDSWCFQ\]](#) section 3.1). Both services read from and write to the queue database using the database protocol as specified in [\[MS-WORDSSP\]](#).

Conversion Job: A logical group of conversion items that share the same conversion settings. Conversion jobs are constructed by the queue client and maintained in the database server by the queue server. A conversion job contains one or more conversion items.

Conversion Item: A single conversion from one input file to one output file. A conversion item is maintained in the database server by the queue server, the worker client, and the worker server.

Conversion Item State: The state of a conversion item. The conversion item state is specified by the [ConversionItemState](#) type and specified by the corresponding enumeration values in [\[MS-WORDSSP\]](#) section 2.2.1.1. A conversion item is considered not finished if its state has a value of **NotStarted** or **InProgress**.

Input File: The URL of the source file for a conversion item. The URL MUST be provided by the queue client and MUST be in a format that the worker server understands and can use to retrieve the input file.

Output File: The URL of the output file from a conversion item. The URL MUST be provided by the queue client and MUST be in a format that the worker server understands and can use to store the output file.

Batch: A group of conversion items managed by the worker client. A batch consists of any number of conversion items that are either not started or in progress. The conversion items are not limited to a single conversion job.

AppManager Identifier: A unique identifier of a worker server instance. A worker client communicates with one or more worker server instances and uses the AppManager identifiers to distinguish them from each other. The worker client calls the [GetId](#) WSDL operation on each worker server instance to obtain the AppManager identifier for that worker server instance.

Restart Count: The number of times a conversion item has been restarted by the worker client.

Maximum Restart Count: An application-defined value that specifies the maximum number of times to restart the conversion of a conversion item before deciding that the conversion has failed.

Conversion Time: The duration the conversion of a conversion item has been executing.

Maximum Conversion Time: An application-defined value that specifies the maximum conversion time before the conversion of a conversion item is restarted by the worker client.

The worker client operates on a table of conversion jobs and another table of conversion items in those conversion jobs in conjunction with the worker server and queue server. The database tables are used in the following ways:

- The queue client initiates a request WSDL message to the queue server for an operation that adds conversion jobs or cancels existing conversion items within a conversion job. As part of that operation, the queue server synchronously makes the requested change or changes to the database and returns the appropriate response WSDL message.
- The queue client initiates a request WSDL message to the queue server for an operation requesting a list of conversion jobs or the status of conversion items in a conversion job. The queue server synchronously retrieves the requested data from the database and returns the appropriate response WSDL message with the requested data.
- The worker client polls the database for a batch of conversion items that have not finished. This includes both conversion items that have not been started and conversion items that were started by a previous batch and are already in progress. Based directly on conversion items in the database and their status, the worker client synchronously updates the status of those

conversion items in the database. This update includes changing the state of a conversion item to in progress or failed. For each conversion item that is changed to in progress, the worker client sends a request WSDL message to the worker server to asynchronously convert that conversion item.

- The worker server receives a request from a worker client to convert a conversion item, and will initiate an internal operation to perform an asynchronous conversion of the conversion item and then return the appropriate response WSDL message. The worker server synchronously updates the status of the conversion item in the database when the internal operation has finished.

3.2.2 Timers

The **ConversionBatchTimer** controls the frequency at which the worker client manages a new batch of conversion items.

3.2.3 Initialization

The worker client **MUST** maintain a list of worker server instances it communicates with.

The worker client **MUST** call the [GetId](#) WSDL operation on each worker server instance at least once before calling the [BeginConversion](#) WSDL operation.

The worker client **MUST** use the GUID value returned from the GetId response WSDL message to uniquely identify each worker server instance.

3.2.4 Message Processing Events and Sequencing Rules

None.

3.2.5 Timer Events

When the **ConversionBatchTimer** fires, the worker client **MUST** retrieve a new batch of conversion items by calling the **proc_ConversionItemBatchGet** stored procedure, as specified in [\[MS-WORDSSP\]](#) section 3.1.5.1. The following table specifies the parameter values for the stored procedure.

| Parameter | Value |
|-----------------------------|--|
| @NumberOfConversionsInBatch | This value MUST be the maximum number of conversion items to return in the batch. |
| @InProgressThreshold | This value MUST be the minimum date and time at which conversion items that are in progress are not included in the batch. This value MUST be in Coordinated Universal Time (UTC). |

If the **proc_ConversionItemBatchGet** stored procedure returns an empty **result set**, the worker client **MUST** terminate batch processing until the next **ConversionBatchTimer** fires. Otherwise, the worker client **MUST** process each conversion item in the batch returned by the result set based on its conversion item state, as specified in the following table.

| State | Behavior |
|------------|--|
| NotStarted | The conversion item MUST be assigned to a worker server instance. |
| InProgress | The worker client MUST determine if the conversion item needs to be restarted or not. A conversion item MUST be restarted if the AppManager identifier is invalid or if the worker |

| State | Behavior |
|-------|--|
| | <p>server instance identified by the AppManager identifier is no longer in the worker client's list of worker server instances. A conversion item SHOULD be restarted if the conversion time has exceeded the maximum conversion time.</p> <p>If a conversion item needs to be restarted, the worker client MUST increment the restart count. If the incremented restart count exceeds the maximum restart count, the conversion item state MUST be set to Failed and MUST NOT be restarted. Otherwise, the conversion item MUST be assigned to a worker server instance.</p> |

The worker client MUST update the conversion items in the batch by calling the **proc_ConversionItemBatchUpdate** stored procedure, as specified in [\[MS-WORDSSP\]](#) section 3.1.5.2. The **@BatchXml** must be the list of conversion items encoded as XML according to the XML Schema as specified in [\[MS-WORDSSP\]](#) section 2.2.6.4.1. The following table specifies the contents of each **ci** element.

| Element Name | Behavior |
|--------------|--|
| jobId | This MUST contain the conversion job identifier of the conversion item. |
| convId | This MUST contain the conversion item identifier. |
| appmanId | If the conversion item is being started or restarted this MUST contain the AppManager identifier of the worker server instance the conversion item is being assigned to. |
| restartCnt | This MUST contain the restart count of the conversion item. |
| state | <p>If the conversion item is being started or restarted, this MUST contain a value of 1.</p> <p>If the conversion item has failed, this MUST contain a value of 4.</p> |

If there are no conversion items in the batch that are being started or restarted, the worker client MUST terminate batch processing until the next **ConversionBatchTimer** fires. Otherwise, the worker client MUST initiate the conversion of each conversion item by sending the [BeginConversion](#) WSDL message to the worker server instance assigned to that conversion item.

3.2.6 Other Local Events

None.

4 Protocol Examples

The following examples demonstrate the lifecycle of the protocol client and protocol server. This begins with initialization in section 4.1, followed by the protocol client processing a conversion item batch in section 4.2, and ending with the protocol client initiating and the protocol server executing the document conversion in section 4.3.

4.1 Initialization

First, the protocol client is initializing, by calling [GetId](#) on each protocol server instance it uses. In this example, the protocol client has only one instance of a protocol server.

4.1.1 Request

The following is an example of the request WSDL message the protocol client sends:

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetId xmlns="http://tempuri.org/">
    </s:Body>
  </s:Envelope>
```

4.1.2 Response

The protocol server receives the request, performs any necessary server-side initialization, and returns an AppManager identifier of 55A74B6A-C626-4AF7-9866-A3701874364E to identify itself. The following is an example of the response WSDL message the protocol server might send:

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetIdResponse xmlns="http://tempuri.org/">
      <GetIdResult>55A74B6A-C626-4AF7-9866-A3701874364E</GetIdResult>
    </GetIdResponse>
  </s:Body>
</s:Envelope>
```

4.2 Batch of Conversion Items

In this example, the protocol client processes a batch as a result of the **ConversionBatchTimer** event firing. The protocol client has already performed the initialization in section 4.1 and has previously processed one or more batches. The protocol client has one instance of a protocol server it is using to perform the conversions. The AppManager identifier used to uniquely identify that protocol server instance is 55A74B6A-C626-4AF7-9866-A3701874364E.

4.2.1 Get Conversion Items

The first step is for the protocol client to get the batch of conversion items from the database. The protocol client can only process four conversion items in a batch and wants to include conversion items that have been in progress since before 2:00PM on 2009-06-04.

4.2.1.1 Stored Procedure Call

The protocol client retrieves the batch of conversion items by calling the **proc_ConversionItemBatchGet** stored procedure. The following table is an example of the parameters used when calling the stored procedure.

| Parameter | Value |
|-----------------------------|------------------|
| @NumberOfConversionsInBatch | 4 |
| @InProgressThreshold | 2009-06-04 14:00 |

4.2.1.2 Stored Procedure Result Set

The following table is an example of the result set returned by the stored procedure.

| Field Name | Row 1 | Row 2 |
|--------------|---|---|
| JobId | E66580F8-1696-4B80-A571-DA8B8C59071D | E66580F8-1696-4B80-A571-DA8B8C59071D |
| ConversionId | 4 | 5 |
| State | 1 | 0 |
| InputFile | http://server/loremipsum/Nunc viverra imperdiet enim.pdf | http://server/loremipsum/Pellentesque habitant morbi.docx |
| OutputFile | http://server/loremipsum/Nunc viverra imperdiet enim.docx | http://server/loremipsum/Pellentesque habitant morbi.pdf |
| RestartCount | 2 | 0 |
| AppManager | 55A74B6A-C626-4AF7-9866-A3701874364E | NULL |
| StartTime | 2009-06-04 13:00 | |

4.2.2 Assign and Update Conversion Items

The following table is an example of how the protocol client might interpret each conversion item in the result set.

| Row | Status |
|-----|--|
| 1 | Conversion item 4 in conversion job E66580F8-1696-4B80-A571-DA8B8C59071D is still in progress, but has been in progress since 1:00PM on 2009-06-04. This conversion item has been restarted twice already. This protocol client has defined a maximum restart count of 2, so this conversion item will be marked as failed, and not restarted. |
| 2 | Conversion item 5 in conversion job E66580F8-1696-4B80-A571-DA8B8C59071D is has not been started. This conversion item will be started and assigned to the worker server instance with an AppManager identifier of 55A74B6A-C626-4AF7-9866-A3701874364E. |

4.2.2.1 Stored Procedure Call

The protocol client updates the state of each conversion item in the database. It does this by calling the **proc_ConversionItemBatchUpdate** stored procedure. The following is an example of the value of the @BatchXml parameter:

```
<batch xmlns="http://schemas.microsoft.com/office/server/word/2008/11/batchUpdate">
  <ci>
    <jobId val="E66580F8-1696-4B80-A571-DA8B8C59071D" />
    <convId val="4" />
    <appmanId val="55A74B6A-C626-4AF7-9866-A3701874364E" />
    <restartCnt val="2" />
    <state val="4" />
  </ci>
  <ci>
    <jobId val="E66580F8-1696-4B80-A571-DA8B8C59071D" />
    <convId val="5" />
    <appmanId val="55A74B6A-C626-4AF7-9866-A3701874364E" />
    <restartCnt val="0" />
    <state val="1" />
  </ci>
</batch>
```

4.2.2.2 Stored Procedure Result Set

The following table is an example of the result set returned by the stored procedure., which contains information on the conversion job needed to initiate the conversion.

| Field Name | Row 1 |
|-------------|---|
| JobId | E66580F8-1696-4B80-A571-DA8B8C59071D |
| JobSettings | <jobSettings xmlns="http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings"> <revisionState val="2" /> <updateFields val="False" /> <defaultLanguage val="" /> <embedFonts val="False" /> <subsetEmbeddedFonts val="False" /> <doNotIncludeSystemFonts val="True" /> <compatibilityMode val="0" /> <saveFormat val="9" /> <saveBehavior val="0" /> <fixedFormatSettings> <outputQuality val="0" /> <bookmarks val="0" /> <includeDocumentProperties val="True" /> <usePDFA val="False" /> <bitmapEmbeddedFonts val="True" /> <balloonState val="2" /> </fixedFormatSettings> </jobSettings> |

| Field Name | Row 1 |
|-------------|--------------------------------------|
| | </jobSettings> |
| UserToken | NULL |
| PartitionId | 0C37852B-34D0-418E-91C6-2AC25AF4BE5B |

4.2.3 Dispatch Conversion Items

The protocol client now initiates the conversion of each conversion item. In this example, there is only one conversion item to be converted. See section [4.3](#) for an example of how the protocol client might start the conversion.

4.3 Starting a Conversion Item

In this example, the protocol client initiates the conversion of a single conversion item. This example continues from the example in section [4.2](#).

4.3.1 Request

The protocol client sends the following request WSDL message:

```
<s:Envelope
  xmlns:s="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:mowss="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service"
  xmlns:mowsc="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Convertio
ns"
>
  <s:Body>
    <BeginConversion xmlns="http://tempuri.org/">
      <jobData>
        <mowss:m_settings>
          <mowsc:AddThumbnail>false</mowsc:AddThumbnail>
          <mowsc:CompatibilityMode>MaintainCurrentSetting</mowsc:CompatibilityMode>
          <mowsc:DoNotEmbedSystemFonts>true</mowsc:DoNotEmbedSystemFonts>
          <mowsc:EmbedFonts>false</mowsc:EmbedFonts>
          <mowsc:FixedFormatSettings>
            <mowsc:BalloonState>OnlyCommentsAndFormatting</mowsc:BalloonState>
            <mowsc:BitmapEmbeddedFonts>true</mowsc:BitmapEmbeddedFonts>
            <mowsc:Bookmarks>None</mowsc:Bookmarks>
            <mowsc:IncludeDocumentProperties>true</mowsc:IncludeDocumentProperties>
            <mowsc:IncludeDocumentStructure>true</mowsc:IncludeDocumentStructure>
            <mowsc:OutputQuality>Standard</mowsc:OutputQuality>
            <mowsc:UsePDFA>false</mowsc:UsePDFA>
          </mowsc:FixedFormatSettings>
          <mowsc:OutputFormat>PDF</mowsc:OutputFormat>
          <mowsc:OutputSaveBehavior>AppendIfPossible</mowsc:OutputSaveBehavior>
          <mowsc:RevisionState>FinalShowingMarkup</mowsc:RevisionState>
          <mowsc:SubsetEmbeddedFonts>false</mowsc:SubsetEmbeddedFonts>
          <mowsc:UpdateFields>false</mowsc:UpdateFields>
        </mowss:m_settings>
      </jobData>
    </item>
    <mowss:ConversionId>5</mowss:ConversionId>
  </s:Body>
</s:Envelope>
```

```

        <mowss:InputFile>http://server/loremipsum/Pellentesque habitant
morbi.docx</mowss:InputFile>
        <mowss:JobId>E66580F8-1696-4B80-A571-DA8B8C59071D</mowss:JobId>
        <mowss:OutputFile>http://server/loremipsum/Pellentesque habitant
morbi.pdf</mowss:OutputFile>
    </item>
</BeginConversion>
</s:Body>
</s:Envelope>

```

4.3.2 Response

The protocol server receives the request and starts the asynchronous conversion of the conversion item. The protocol server then sends the following response WSDL message:

```

<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <BeginConversionResponse xmlns="http://tempuri.org/">
    </s:Body>
</s:Envelope>

```

4.3.3 Stored Procedure Call

When the conversion completes, the protocol server updates the conversion item state in the database. It does this by calling the **proc_ConversionItemStateSet** stored procedure. The following table is an example of the parameters used when calling the stored procedure.

| Parameter | Value |
|-----------------|--------------------------------------|
| @JobId | E66580F8-1696-4B80-A571-DA8B8C59071D |
| @ConversionId | 5 |
| @State | 3 |
| @CompleteTime | 2009-06-04 14:31 |
| @MessageId | 0 |
| @MessageDetails | NULL |

5 Security

5.1 Security Considerations for Implementers

This protocol does not introduce any additional security considerations beyond those that apply to its underlying protocols.

5.2 Index of Security Parameters

| Security Parameter | Section |
|--------------------|-----------------------------|
| User Token | 3.1.4.2.3.4 |

6 Appendix A: Full WSDL

For ease of implementation, the full **WSDL** is provided as follows.

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions
  name="WordServiceApplication"
  targetNamespace="http://tempuri.org/"
  xmlns:mows="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server"
  xmlns:mowsc="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions"
  xmlns:mowss="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service"
  xmlns:ser="http://schemas.microsoft.com/2003/10/Serialization/"
  xmlns:sp="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint"
  xmlns:tns="http://tempuri.org/"
  xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
  xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
>
  <wsdl:types>
    <xs:schema targetNamespace="http://tempuri.org/Imports">
      <xs:import namespace="http://tempuri.org/" />
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
      <xs:import namespace="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint" />
      <xs:import
        namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service" />
      <xs:import
        namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server" />
      <xs:import
        namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions"
        />
    </xs:schema>
    <xs:schema targetNamespace="http://tempuri.org/" elementFormDefault="qualified">
      <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/"
        schemaLocation="schemas.microsoft.com.2003.10.Serialization.xsd" />
      <xs:import
        namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service"
        schemaLocation="Microsoft.Office.Word.Server.Service.xsd" />
      <xs:element name="BeginConversion">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" name="jobData" type="mowss:ConversionJobData" />
            <xs:element minOccurs="1" name="item" type="mowss:ConversionItemInternal" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="BeginConversionResponse" />
      <xs:element name="GetId" />
      <xs:element name="GetIdResponse">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="1" name="GetIdResult" type="ser:guid" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:schema>
  </wsdl:types>

```



```

    <xs:schema targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/"
attributeFormDefault="qualified" elementFormDefault="qualified">
    <xs:simpleType name="guid">
        <xs:restriction base="xs:string">
            <xs:pattern value="\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{12}" />
        </xs:restriction>
    </xs:simpleType>
</xs:schema>
<xs:schema targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint"
elementFormDefault="qualified">
    <xs:complexType name="SPUserToken">
        <xs:sequence>
            <xs:element name="m_token" type="xs:base64Binary" />
        </xs:sequence>
    </xs:complexType>
</xs:schema>
<xs:schema
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Service"
elementFormDefault="qualified">
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
    <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server" />
    <xs:import
namespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions"
/>
    <xs:import namespace="http://schemas.datacontract.org/2004/07/Microsoft.SharePoint" />
    <xs:complexType name="ConversionItemInternal">
        <xs:sequence>
            <xs:element minOccurs="0" name="AppManId" type="ser:guid" />
            <xs:element minOccurs="0" name="CompleteTime" type="xs:dateTime" />
            <xs:element minOccurs="1" name="ConversionId" type="xs:unsignedInt" />
            <xs:element minOccurs="1" name="InputFile" type="xs:string" />
            <xs:element minOccurs="1" name="JobId" type="ser:guid" />
            <xs:element minOccurs="0" name="MessageDetails" type="xs:string" />
            <xs:element minOccurs="0" name="MessageId" type="xs:int" />
            <xs:element minOccurs="1" name="OutputFile" type="xs:string" />
            <xs:element minOccurs="0" name="RestartCount" type="xs:int" />
            <xs:element minOccurs="0" name="StartTime" type="xs:dateTime" />
            <xs:element minOccurs="0" name="State" type="mows:ConversionItemState" />
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="ConversionJobData">
        <xs:sequence>
            <xs:element minOccurs="0" name="m_partitionId" type="ser:guid" />
            <xs:element minOccurs="0" name="m_rawPartitionId" type="ser:guid" />
            <xs:element minOccurs="1" name="m_settings" type="mowsc:ConversionJobSettings" />
            <xs:element minOccurs="0" name="m_userToken" type="sp:SPUserToken" />
        </xs:sequence>
    </xs:complexType>
</xs:schema>
<xs:schema
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server"
elementFormDefault="qualified">
    <xs:simpleType name="ConversionItemState">
        <xs:restriction base="xs:string">
            <xs:enumeration value="NotStarted" />
            <xs:enumeration value="InProgress" />
            <xs:enumeration value="Canceled" />
            <xs:enumeration value="Succeeded" />
        </xs:restriction>
    </xs:simpleType>

```

```

        <xs:enumeration value="Failed" />
    </xs:restriction>
</xs:simpleType>
</xs:schema>
<xs:schema
targetNamespace="http://schemas.datacontract.org/2004/07/Microsoft.Office.Word.Server.Conversions" elementFormDefault="qualified">
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/" />
    <xs:complexType name="ConversionJobSettings">
        <xs:sequence>
            <xs:element minOccurs="0" name="AddThumbnail" type="xs:boolean" />
            <xs:element minOccurs="0" name="CompatibilityMode" type="mowsc:CompatibilityMode" />
            <xs:element minOccurs="0" name="DefaultLanguage" />
            <xs:element minOccurs="0" name="DoNotEmbedSystemFonts" type="xs:boolean" />
            <xs:element minOccurs="0" name="EmbedFonts" type="xs:boolean" />
            <xs:element minOccurs="1" name="FixedFormatSettings" type="mowsc:FixedFormatSettings" />
            <xs:element minOccurs="0" name="OutputFormat" type="mowsc:SaveFormat" />
            <xs:element minOccurs="0" name="OutputSaveBehavior" type="mowsc:SaveBehavior" />
            <xs:element minOccurs="0" name="RevisionState" type="mowsc:RevisionState" />
            <xs:element minOccurs="0" name="SubsetEmbeddedFonts" type="xs:boolean" />
            <xs:element minOccurs="0" name="UpdateFields" type="xs:boolean" />
        </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="CompatibilityMode">
        <xs:restriction base="xs:string">
            <xs:enumeration value="Word97To2003" />
            <xs:enumeration value="Word2007" />
            <xs:enumeration value="Word2009" />
            <xs:enumeration value="MaintainCurrentSetting" />
            <xs:enumeration value="AlwaysUpgrade" />
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="FixedFormatSettings">
        <xs:sequence>
            <xs:element minOccurs="0" name="BalloonState" type="mowsc:BalloonState" />
            <xs:element minOccurs="0" name="BitmapEmbeddedFonts" type="xs:boolean" />
            <xs:element minOccurs="0" name="Bookmarks" type="mowsc:FixedFormatBookmark" />
            <xs:element minOccurs="0" name="IncludeDocumentProperties" type="xs:boolean" />
            <xs:element minOccurs="0" name="IncludeDocumentStructure" type="xs:boolean" />
            <xs:element minOccurs="0" name="OutputQuality" type="mowsc:FixedFormatQuality" />
            <xs:element minOccurs="0" name="UsePDFa" type="xs:boolean" />
        </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="BalloonState">
        <xs:restriction base="xs:string">
            <xs:enumeration value="AlwaysUse" />
            <xs:enumeration value="Inline" />
            <xs:enumeration value="OnlyCommentsAndFormatting" />
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="FixedFormatBookmark">
        <xs:restriction base="xs:string">
            <xs:enumeration value="None" />
            <xs:enumeration value="Headings" />
            <xs:enumeration value="Bookmarks" />
        </xs:restriction>
    </xs:simpleType>

```

```

<xs:simpleType name="FixedFormatQuality">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Standard" />
    <xs:enumeration value="Minimum" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SaveFormat">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Automatic" />
    <xs:enumeration value="Document" />
    <xs:enumeration value="DocumentMacroEnabled" />
    <xs:enumeration value="Document97" />
    <xs:enumeration value="Template" />
    <xs:enumeration value="TemplateMacroEnabled" />
    <xs:enumeration value="Template97" />
    <xs:enumeration value="HTML" />
    <xs:enumeration value="MHTML" />
    <xs:enumeration value="PDF" />
    <xs:enumeration value="RTF" />
    <xs:enumeration value="XML" />
    <xs:enumeration value="XPS" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SaveBehavior">
  <xs:restriction base="xs:string">
    <xs:enumeration value="AppendIfPossible" />
    <xs:enumeration value="AlwaysOverwrite" />
    <xs:enumeration value="AppendOnly" />
    <xs:enumeration value="NeverOverwrite" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="RevisionState">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Final" />
    <xs:enumeration value="FinalShowingMarkup" />
    <xs:enumeration value="Original" />
    <xs:enumeration value="OriginalShowingMarkup" />
  </xs:restriction>
</xs:simpleType>
</xs:schema>
</wsdl:types>
<wsdl:message name="IWorkerApp_BeginConversion_InputMessage">
  <wsdl:part name="parameters" element="tns:BeginConversion" />
</wsdl:message>
<wsdl:message name="IWorkerApp_BeginConversion_OutputMessage">
  <wsdl:part name="parameters" element="tns:BeginConversionResponse" />
</wsdl:message>
<wsdl:message name="IWorkerApp_GetId_InputMessage">
  <wsdl:part name="parameters" element="tns:GetId" />
</wsdl:message>
<wsdl:message name="IWorkerApp_GetId_OutputMessage">
  <wsdl:part name="parameters" element="tns:GetIdResponse" />
</wsdl:message>
<wsdl:portType name="IWorkerApp">
  <wsdl:operation name="BeginConversion">
    <wsdl:input wsaw:Action="http://tempuri.org/IWorkerApp/BeginConversion"
      message="tns:IWorkerApp_BeginConversion_InputMessage" />
    <wsdl:output wsaw:Action="http://tempuri.org/IWorkerApp/BeginConversionResponse"
      message="tns:IWorkerApp_BeginConversion_OutputMessage" />
  </wsdl:operation>
</wsdl:portType>

```

```

        </wsdl:operation>
        <wsdl:operation name="GetId">
            <wsdl:input wsaw:Action="http://tempuri.org/IWorkerApp/GetId"
message="tns:IWorkerApp_GetId_InputMessage" />
            <wsdl:output wsaw:Action="http://tempuri.org/IWorkerApp/GetIdResponse"
message="tns:IWorkerApp_GetId_OutputMessage" />
        </wsdl:operation>
    </wsdl:portType>
    <wsdl:binding name="WordServer-Endpoint-Worker-http" type="tns:IWorkerApp">
        <soap:binding transport="http://schemas.xmlsoap.org/soap/http" />
        <wsdl:operation name="BeginConversion">
            <soap:operation soapAction="http://tempuri.org/IWorkerApp/BeginConversion"
style="document" />
            <wsdl:input>
                <soap:body use="literal" />
            </wsdl:input>
            <wsdl:output>
                <soap:body use="literal" />
            </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="GetId">
            <soap:operation soapAction="http://tempuri.org/IWorkerApp/GetId" style="document" />
            <wsdl:input>
                <soap:body use="literal" />
            </wsdl:input>
            <wsdl:output>
                <soap:body use="literal" />
            </wsdl:output>
        </wsdl:operation>
    </wsdl:binding>
    <wsdl:binding name="WordServer-Endpoint-Worker-net.tcp" type="tns:IWorkerApp">
        <soap12:binding transport="http://schemas.microsoft.com/soap/tcp" />
        <wsdl:operation name="BeginConversion">
            <soap12:operation soapAction="http://tempuri.org/IWorkerApp/BeginConversion"
style="document" />
            <wsdl:input>
                <soap12:body use="literal" />
            </wsdl:input>
            <wsdl:output>
                <soap12:body use="literal" />
            </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="GetId">
            <soap12:operation soapAction="http://tempuri.org/IWorkerApp/GetId" style="document" />
            <wsdl:input>
                <soap12:body use="literal" />
            </wsdl:input>
            <wsdl:output>
                <soap12:body use="literal" />
            </wsdl:output>
        </wsdl:operation>
    </wsdl:binding>
</wsdl:definitions>

```

7 Appendix B: Full Conversion Job Settings XML Schema

For ease of implementation, the full XML Schema specified in section 2.3 is provided as follows.

```
<?xml version="1.0"?>
<xs:schema
  targetNamespace="http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings"
  xmlns:cs="http://schemas.microsoft.com/office/server/word/2007/12/conversionSettings"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified"
>
  <xs:simpleType name="ST_Boolean">
    <xs:restriction base="xs:string">
      <xs:enumeration value="True" />
      <xs:enumeration value="False" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="CT_Boolean">
    <xs:attribute name="val" use="required" type="cs:ST_Boolean" />
  </xs:complexType>
  <xs:simpleType name="ST_RevisionState">
    <xs:restriction base="xs:integer">
      <xs:minInclusive value="0" />
      <xs:maxInclusive value="3" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="CT_RevisionState">
    <xs:attribute name="val" use="required" type="cs:ST_RevisionState" />
  </xs:complexType>
  <xs:simpleType name="ST_Empty">
    <xs:restriction base="xs:string">
      <xs:enumeration value="" />
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ST_DefaultLanguage">
    <xs:union memberTypes="xs:integer cs:ST_Empty" />
  </xs:simpleType>
  <xs:complexType name="CT_DefaultLanguage">
    <xs:attribute name="val" use="required" type="cs:ST_DefaultLanguage" />
  </xs:complexType>
  <xs:simpleType name="ST_CompatibilityMode">
    <xs:restriction base="xs:integer">
      <xs:enumeration value="-1" />
      <xs:enumeration value="0" />
      <xs:enumeration value="11" />
      <xs:enumeration value="12" />
      <xs:enumeration value="14" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="CT_CompatibilityMode">
    <xs:attribute name="val" use="required" type="cs:ST_CompatibilityMode" />
  </xs:complexType>
  <xs:simpleType name="ST_SaveFormat">
    <xs:restriction base="xs:integer">
      <xs:minInclusive value="0" />
      <xs:maxInclusive value="11" />
    </xs:restriction>
  </xs:simpleType>
```

```

    </xs:restriction>
</xs:simpleType>
<xs:complexType name="CT_SaveFormat">
  <xs:attribute name="val" use="required" type="cs:ST_SaveFormat" />
</xs:complexType>
<xs:simpleType name="ST_SaveBehavior">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0" />
    <xs:maxInclusive value="3" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="CT_SaveBehavior">
  <xs:attribute name="val" use="required" type="cs:ST_SaveBehavior" />
</xs:complexType>
<xs:simpleType name="ST_OutputQuality">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0" />
    <xs:maxInclusive value="1" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="CT_OutputQuality">
  <xs:attribute name="val" use="required" type="cs:ST_OutputQuality" />
</xs:complexType>
<xs:simpleType name="ST_Bookmarks">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0" />
    <xs:maxInclusive value="2" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="CT_Bookmarks">
  <xs:attribute name="val" use="required" type="cs:ST_Bookmarks" />
</xs:complexType>
<xs:simpleType name="ST_BalloonState">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="0" />
    <xs:maxInclusive value="2" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="CT_BalloonState">
  <xs:attribute name="val" use="required" type="cs:ST_BalloonState" />
</xs:complexType>
<xs:complexType name="CT_FixedFormatSettings">
  <xs:sequence>
    <xs:element name="outputQuality" type="cs:CT_OutputQuality" />
    <xs:element name="bookmarks" type="cs:CT_Bookmarks" />
    <xs:element name="includeDocumentProperties" type="cs:CT_Boolean" />
    <xs:element name="includeDocumentStructure" type="cs:CT_Boolean" />
    <xs:element name="usePDFa" type="cs:CT_Boolean" />
    <xs:element name="bitmapEmbeddedFonts" type="cs:CT_Boolean" />
    <xs:element name="balloonState" type="cs:CT_BalloonState" />
  </xs:sequence>
</xs:complexType>
<xs:element name="jobSettings">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="revisionState" type="cs:CT_RevisionState" />
      <xs:element name="updateFields" type="cs:CT_Boolean" />
      <xs:element name="defaultLanguage" type="cs:CT_DefaultLanguage" />
      <xs:element name="embedFonts" type="cs:CT_Boolean" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```
<xs:element name="subsetEmbeddedFonts" type="cs:CT_Boolean" />
<xs:element name="doNotIncludeSystemFonts" type="cs:CT_Boolean" />
<xs:element name="compatibilityMode" type="cs:CT_CompatibilityMode" />
<xs:element name="addThumbNail" type="cs:CT_Boolean" />
<xs:element name="saveFormat" type="cs:CT_SaveFormat" />
<xs:element name="saveBehavior" type="cs:CT_SaveBehavior" />
<xs:element name="fixedFormatSettings" type="cs:CT_FixedFormatSettings" />
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>
```

8 Appendix C: Product Behavior

The information in this specification is applicable to the following product versions. References to product versions include released service packs.

- Microsoft® Office 2010 Technical Preview

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. The new behavior also applies to subsequent service packs of the product unless otherwise specified.

Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that product does not follow the prescription.

[<1> Section 2.3.2.1:](#) Office 2010 Technical Preview ignores preferences that cannot be used in combination with each other. For example, if the **embedFonts** setting is false, the **doNotIncludeSystemFonts** setting is ignored.

[<2> Section 2.3.4.5:](#) Office 2010 Technical Preview uses an integer value instead of an empty string. Implementers should ignore this value in Office 2010 Technical Preview as Office 2010 will represent this information differently.

[<3> Section 2.3.4.5:](#) Office 2010 Technical Preview uses an integer value instead of an empty string. Implementers should ignore this value in Office 2010 Technical Preview as Office 2010 will represent this information differently.

[<4> Section 3.1.4.2.3.2:](#) Office 2010 Technical Preview ignores preferences that cannot be used in combination with each other. For example, if the **EmbedFonts** setting is false, the **DoNotEmbedSystemFonts** setting is ignored.

[<5> Section 3.1.4.2.3.2:](#) Office 2010 Technical Preview uses values other than null. Implementers should ignore this element as Office 2010 will implement this feature differently than Office 2010 Technical Preview.

[<6> Section 3.1.4.2.3.3:](#) Office 2010 Technical Preview ignores preferences that cannot be used in combination with each other. For example, if the **UsePDFA** setting is false, the **BitmapEmbeddedFonts** setting is ignored and fonts that cannot be embedded are always bitmapped.

9 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

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