[MS-OREACTXML]:

Office Reaction Extensions to Office Open XML Structure

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation ("this documentation") for protocols, file formats, data portability, computer languages, and standards support. Additionally, overview documents cover inter-protocol relationships and interactions.
- **Copyrights**. This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you can make copies of it in order to develop implementations of the technologies that are described in this documentation and can distribute portions of it in your implementations that use these technologies or in your documentation as necessary to properly document the implementation. You can also distribute in your implementation, with or without modification, any schemas, IDLs, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications documentation.
- **No Trade Secrets**. Microsoft does not claim any trade secret rights in this documentation.
- **Patents**. Microsoft has patents that might cover your implementations of the technologies described in the Open Specifications documentation. Neither this notice nor Microsoft's delivery of this documentation grants any licenses under those patents or any other Microsoft patents. However, a given Open Specifications document might be covered by the Microsoft Open Specifications Promise or the Microsoft Community Promise. If you would prefer a written license, or if the technologies described in this documentation are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
- **License Programs**. To see all of the protocols in scope under a specific license program and the associated patents, visit the Patent Map.
- **Trademarks**. The names of companies and products contained in this documentation might be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights. For a list of Microsoft trademarks, visit www.microsoft.com/trademarks.
- **Fictitious Names**. The example companies, organizations, products, domain names, email addresses, logos, people, places, and events that are depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

Reservation of Rights. All other rights are reserved, and this notice does not grant any rights other than as specifically described above, whether by implication, estoppel, or otherwise.

Tools. The Open Specifications documentation does not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments, you are free to take advantage of them. Certain Open Specifications documents are intended for use in conjunction with publicly available standards specifications and network programming art and, as such, assume that the reader either is familiar with the aforementioned material or has immediate access to it.

Support. For questions and support, please contact dochelp@microsoft.com.

Revision Summary

Date	Revision History	Revision Class	Comments
3/3/2023	1.0	New	Released new document.
5/16/2023	1.1	Minor	Clarified the meaning of the technical content.

Table of Contents

1 Introduction

This document specifies elements and attributes for representing comment **reactions**, extending the XML vocabulary of WordprocessingML file format described in [ISO/IEC29500-1:2016]. The new elements and attributes are presented using the extensibility mechanisms described in [ISO/IEC29500-3:2015].

Sections 1.7 and 2 of this specification are normative. All other sections and examples in this specification are informative.

1.1 Glossary

This document uses the following terms:

reaction: A faster and simpler way for collaborators to interact and acknowledge to a comment.

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

1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the Errata.

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.

[ISO/IEC29500-1:2016] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 1: Fundamentals and Markup Language Reference", ISO/IEC 29500-1:2016, https://www.iso.org/standard/71691.html

[ISO/IEC29500-2:2012] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 2: Open Packaging Conventions", ISO/IEC 29500-2:2012, http://www.iso.org/iso/home/store/catalogue_ics/catalogue_detail_ics.htm?csnumber=61796

[ISO/IEC29500-3:2015] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 3: Markup Compatibility and Extensibility", https://www.iso.org/standard/65533.html

[ISO/IEC29500-4:2016] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 4: Transitional Migration Features", https://www.iso.org/standard/71692.html

[MS-DOCX] Microsoft Corporation, "Word Extensions to the Office Open XML (.docx) File Format".

[MS-OEXTXML] Microsoft Corporation, "Office Shared Extensibility in Office Open XML Structure".

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, https://www.rfc-editor.org/rfc/rfc2119.html

[XMLSCHEMA1/2] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures Second Edition", W3C Recommendation, October 2004, https://www.w3.org/TR/2004/REC-xmlschema-1-20041028/

[XMLSCHEMA2/2] Biron, P., and Malhotra, A., Eds., "XML Schema Part 2: Datatypes Second Edition", W3C Recommendation, October 2004, https://www.w3.org/TR/2004/REC-xmlschema-2-20041028/

1.2.2 Informative References

None.

1.3 Overview

The structures specified in this format provide an extended XML vocabulary for comment **reactions** in WordprocessingML document as described in [ISO/IEC29500-1:2016] and [MS-DOCX].

1.4 Relationship to Protocols and Other Structures

This specification is dependent on the structures and concepts defined in the following references:

- [ISO/IEC29500-1:2016] for baseline WordprocessingML persistence formats.
- [ISO/IEC29500-2:2012] for open packaging conventions.
- [ISO/IEC29500-3:2015] for markup compatibility and extensibility.
- [ISO/IEC29500-4:2016] for backwards compatibility considerations.
- [MS-DOCX] for WordprocessingML extensions.
- [MS-OEXTXML] for complex types for extension lists.

1.5 Applicability Statement

This document specifies a persistence format for extensions as described in [ISO/IEC29500-1:2016] for WordprocessingML document. The extensions specified in this document enable expressing comment reactions and are not applicable as a stand-alone file format. Each structure specified in this document is integrated with WordprocessingML document in a particular way as specified in the section for that structure. All structures are integrated into WordprocessingML document in a way that maintains compatibility with [ISO/IEC29500-1:2016] implementations. The extensions specified in this document do not require any other extensions to be used and do not prohibit any other extensions from being used in the same document.

1.6 Versioning and Localization

None.

1.7 Vendor-Extensible Fields

None.

2 Structures

2.1 http://schemas.microsoft.com/office/comments/2020/reactions

2.1.1 Elements

2.1.1.1 reactions

Target namespace: http://schemas.microsoft.com/office/comments/2020/reactions

The **reactions** element is a CT_CommentReactions element that specifies information for the reactions to a comment. It is the root element in an extension within the extension list of a CommentsExtensible part.

The following W3C XML Schema ([XMLSCHEMA1/2] section 2.1) fragment specifies the contents of this element.

```
<xsd:element name="reactions" type="CT_CommentReactions"/>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1/2] section 2.1).

2.1.2 Attributes

None.

2.1.3 Complex Types

2.1.3.1 CT_CommentReaction

Target namespace: http://schemas.microsoft.com/office/comments/2020/reactions

Referenced by: CT_CommentReactions

A complex type that specifies one type of reaction on a comment. A **CT_CommentReaction** element can be uniquely identified by attribute **reactionType** inside a CT_CommentReactions element.

A CT_CommentReactions element SHOULD include unique **CT_CommentReaction** elements.

Child Elements:

reactionInfo: A CT_CommentReactionInfo is a complex type that specifies information about the reaction user and time of the reaction. The set of reactionInfo elements subordinate to all reaction elements SHOULD be unique. If two or more reactionInfo elements subordinate to any reaction element have subordinate user elements with the same userId attribute, only one of these reactionInfo elements MUST be read and the previously encountered duplicate reactionInfo elements MUST be discarded.

extLst: A CT_ExtensionList ([MS-OEXTXML] section 2.1.3.2) element that specifies extensions for the **CT_CommentReaction**.

Attributes:

reactionType: An xsd:int ([XMLSCHEMA2/2] section 3.3.17) attribute that specifies the type of a **reaction**. Values MUST be greater than 0 and less than 2147483648. The value 1 represents a Like (Thumbs-Up). Any other value will be preserved with no visual representation.

The following W3C XML Schema ([XMLSCHEMA1/2] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_CommentReaction">
  <xsd:sequence>
    <xsd:element name="reactionInfo" type="CT CommentReactionInfo" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="extLst" type="oel:CT ExtensionList" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
  <xsd:attribute name="reactionType" type="xsd:int" use="required"/>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1/2] section 2.1).

2.1.3.2 CT_CommentReactionInfo

Target namespace: http://schemas.microsoft.com/office/comments/2020/reactions

Referenced by: CT_CommentReaction

A complex type that specifies the user who added the reaction and the time when the reaction was added.

Child Elements:

user: A CT_User is a complex element that specifies the user who added the reaction.

extLst: A CT_ExtensionList ([MS-OEXTXML] section 2.1.3.2) element that specifies extensions for the **CT_CommentReactionInfo**.

Attributes:

dateUtc: An xsd:dateTime ([XMLSCHEMA2/2] section 3.2.7) attribute that specifies date information when the reaction was added, the **dateUtc** attribute is defined to be in the UTC time zone.

The following W3C XML Schema ([XMLSCHEMA1/2] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_CommentReactionInfo">
  <xsd:sequence>
    <xsd:element name="user" type="CT User" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="extLst" type="oel:CT_ExtensionList" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
  <xsd:attribute name="dateUtc" type="xsd:dateTime" use="optional"/>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1/2] section 2.1).

2.1.3.3 CT_CommentReactions

Target namespace: http://schemas.microsoft.com/office/comments/2020/reactions

Referenced by: reactions

A complex type that specifies information for the reactions to a single comment.

Child Elements:

reaction: A CT_CommentReaction element that specifies information for a single reactions type.

The following W3C XML Schema ([XMLSCHEMA1/2] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_CommentReactions">
  <xsd:sequence>
    <xsd:element name="reaction" type="CT CommentReaction" minOccurs="1"
maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1/2] section 2.1).

2.1.3.4 CT_User

Target namespace: http://schemas.microsoft.com/office/comments/2020/reactions

Referenced by: CT_CommentReactionInfo

A complex type that specifies the identity details of a user.

Child Elements:

extLst: A CT_ExtensionList ([MS-OEXTXML] section 2.1.3.2) element that specifies extensions for the **CT_User**.

Attributes:

userId: A string ([XMLSCHEMA2/2] section 3.2.1) attribute that specifies the provider issued id for the user.

When interpreted in the context of WordprocessingML, refer to the **userId** attribute of **CT_PresenceInfo** ([MS-DOCX] section 2.5.3.6).

userName: A string ([XMLSCHEMA2/2] section 3.2.1) attribute that specifies the display name of the user.

When interpreted in the context of WordprocessingML, refer to the **author** attribute of **CT_PresenceInfo** ([MS-DOCX] section 2.5.3.5).

userProvider: A string ([XMLSCHEMA2/2] section 3.2.1) attribute that specifies the provider that produced the **userId**.

When interpreted in the context of WordprocessingML, refer to the **providerId** attribute of **CT_PresenceInfo** ([MS-DOCX] section 2.5.3.6).

The following W3C XML Schema ([XMLSCHEMA1/2] section 2.1) fragment specifies the contents of this complex type.

```
<xsd:complexType name="CT_User">
  <xsd:sequence>
    <xsd:element name="extLst" type="oel:CT ExtensionList" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
  <xsd:attribute name="userId" type="xsd:string" use="required"/>
  <xsd:attribute name="userName" type="xsd:string" use="required"/>
  <xsd:attribute name="userProvider" type="xsd:string" use="required"/>
</xsd:complexType>
```

See section 5.1 for the full W3C XML Schema ([XMLSCHEMA1/2] section 2.1).

2.1.4 Simple Types

None.

3 Structure Examples

3.1 CommentsExtensible part showing Like reactions for two comments

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<w16cex:commentsExtensible
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions"
xmlns:w16cex="http://schemas.microsoft.com/office/word/2018/wordml/cex"
xmlns:w16="http://schemas.microsoft.com/office/word/2018/wordml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006" mc:Ignorable="w14
w15 w16se w16cid w16 w16cex w16sdtdh cr wp14">
    <w16cex:commentExtensible w16cex:durableId="27627B9E" w16cex:dateUtc="2022-10-
17T10:50:00Z">
        <w16cex:extLst>
            <w16:ext w16:uri="{CE6994B0-6A32-4C9F-8C6B-6E91EDA988CE}">
                <cr:reactions
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions">
                    <cr:reaction reactionType="1">
                        <cr:reactionInfo dateUtc="2022-10-18T06:16:20Z">
                            <cr:user userId="bob@contoso.com" userProvider="O365"
userName="Bob"/>
                        </cr:reactionInfo>
                        <cr:reactionInfo dateUtc="2022-11-01T06:48:06Z">
                            <cr:user userId="carlos@contoso.com " userProvider="O365"
userName="Carlos"/>
                        </cr:reactionInfo>
                    </cr:reaction>
                </cr:reactions>
            </w16:ext>
        </w16cex:extLst>
    </w16cex:commentExtensible>
    <w16cex:commentExtensible w16cex:durableId="27627BA1" w16cex:dateUtc="2022-10-
17T10:49:00Z">
        <w16cex:extLst>
            <w16:ext w16:uri="{CE6994B0-6A32-4C9F-8C6B-6E91EDA988CE}">
                <cr:reactions
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions">
                    <cr:reaction reactionType="1">
                        <cr:reactionInfo dateUtc="2022-11-02T10:58:25Z">
                            <cr:user userId="carlos@contoso.com " userProvider="O365"
userName="Carlos"/>
                        </cr:reactionInfo>
                    </cr:reaction>
                </cr:reactions>
            </w16:ext>
        </w16cex:extLst>
   </w16cex:commentExtensible>
</w16cex:commentsExtensible>
```

3.2 CommentsExtensible part showing Like reactions for one comment and an unknown reaction type for other comment

The reactionType=2 is a valid value in following example but does not currently have any meaning.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<w16cex:commentsExtensible
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions"
xmlns:w16cex="http://schemas.microsoft.com/office/word/2018/wordml/cex"
xmlns:w16="http://schemas.microsoft.com/office/word/2018/wordml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006" mc:Ignorable="w14 w15
w16se w16cid w16 w16cex w16sdtdh cr wp14">
```

```
<w16cex:commentExtensible w16cex:durableId="27627B9E" w16cex:dateUtc="2022-10-17T10:50:00Z">
        <w16cex:extLst>
            <w16:ext w16:uri="{CE6994B0-6A32-4C9F-8C6B-6E91EDA988CE}">
                <cr:reactions
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions">
                    <cr:reaction reactionType="1">
                        <cr:reactionInfo dateUtc="2022-10-18T06:16:20Z">
                            <cr:user userId="bob@contoso.com" userProvider="O365"
userName="Bob"/>
                        </cr:reactionInfo>
                        <cr:reactionInfo dateUtc="2022-11-01T06:48:06Z">
                            <cr:user userId="carlos@contoso.com " userProvider="O365"
userName="Carlos"/>
                        </cr:reactionInfo>
                    </cr:reaction>
                </cr:reactions>
            </w16:ext>
        </w16cex:extLst>
    </w16cex:commentExtensible>
    <w16cex:commentExtensible w16cex:durableId="27627BA1" w16cex:dateUtc="2022-10-
17T10:49:00Z">
        <w16cex:extLst>
            <w16:ext w16:uri="{CE6994B0-6A32-4C9F-8C6B-6E91EDA988CE}">
                <cr:reactions
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions">
                    <cr:reaction reactionType="2">
                        <cr:reactionInfo dateUtc="2022-11-02T10:58:25Z">
                            <cr:user userId="carlos@contoso.com " userProvider="O365"
userName="Carlos"/>
                        </cr:reactionInfo>
                    </cr:reaction>
                </cr:reactions>
            </w16:ext>
        </w16cex:extLst>
    </w16cex:commentExtensible>
</w16cex:commentsExtensible>
```

3.3 CommentsExtensible part showing multiple Like reactions by same user having different name for a comment

The userId attribute of a user element identifies a reactionInfo uniquely inside a reactions element. Any duplicate reactionInfo inside same reactions element will be dropped. In the following example, we have a duplicate reactionInfo element.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<w16cex:commentsExtensible
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions"
xmlns:w16cex="http://schemas.microsoft.com/office/word/2018/wordml/cex"
xmlns:w16="http://schemas.microsoft.com/office/word/2018/wordml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006" mc:Ignorable="w14
w15 w16se w16cid w16 w16cex w16sdtdh cr wp14">
    <w16cex:commentExtensible w16cex:durableId="27627B9E" w16cex:dateUtc="2022-10-
17T10:50:00Z">
        <w16cex:extLst>
            <w16:ext w16:uri="{CE6994B0-6A32-4C9F-8C6B-6E91EDA988CE}">
                <cr:reactions
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions">
                    <cr:reaction reactionType="1">
                        <cr:reactionInfo dateUtc="2022-10-18T06:16:20Z">
                            <cr:user userId="bob@contoso.com" userProvider="O365"
userName="Bob"/>
```

```
                        </cr:reactionInfo>
                        <cr:reactionInfo dateUtc="2022-11-01T06:48:06Z">
                            <cr:user userId="bob@contoso.com " userProvider="O365"
userName="Carlos"/>
                        </cr:reactionInfo>
                    </cr:reaction>
                </cr:reactions>
            </w16:ext>
        </w16cex:extLst>
    </w16cex:commentExtensible>
</w16cex:commentsExtensible>
```

3.4 CommentsExtensible part showing Like reaction for different users with same name on a comment

In the following example, we have two different reactionInfo elements.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<w16cex:commentsExtensible
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions"
xmlns:w16cex="http://schemas.microsoft.com/office/word/2018/wordml/cex"
xmlns:w16="http://schemas.microsoft.com/office/word/2018/wordml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006" mc:Ignorable="w14 w15
w16se w16cid w16 w16cex w16sdtdh cr wp14">
    <w16cex:commentExtensible w16cex:durableId="27627B9E" w16cex:dateUtc="2022-10-
17T10:50:00Z">
        <w16cex:extLst>
            <w16:ext w16:uri="{CE6994B0-6A32-4C9F-8C6B-6E91EDA988CE}">
                <cr:reactions
xmlns:cr="http://schemas.microsoft.com/office/comments/2020/reactions">
                    <cr:reaction reactionType="1">
                        <cr:reactionInfo dateUtc="2022-10-18T06:16:20Z">
                            <cr:user userId="bob@contoso.com" userProvider="O365"
userName="Bob"/>
                        </cr:reactionInfo>
                        <cr:reactionInfo dateUtc="2022-11-01T06:48:06Z">
                            <cr:user userId="otherbob@othercontoso.com" userProvider="O365"
userName="Bob"/>
                        </cr:reactionInfo>
                    </cr:reaction>
                </cr:reactions>
            </w16:ext>
        </w16cex:extLst>
    </w16cex:commentExtensible>
</w16cex:commentsExtensible>
```

4 Security

4.1 Security Considerations for Implementers

None.

4.2 Index Of Security Fields

None.

5 Appendix A: Full XML Schema

Schema name	Prefix	Section
http://schemas.microsoft.com/office/comments/2020/reactions Schema	None.	5.1

5.1 http://schemas.microsoft.com/office/comments/2020/reactions Schema

```
<xsd:schema xmlns:oel="http://schemas.microsoft.com/office/2019/extlst"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" blockDefault="#all"
xmlns="http://schemas.microsoft.com/office/comments/2020/reactions"
targetNamespace="http://schemas.microsoft.com/office/comments/2020/reactions"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xsd:import id="oel" namespace="http://schemas.microsoft.com/office/2019/extlst"
schemaLocation="officeextlst.xsd"/>
  <xsd:complexType name="CT_User">
    <xsd:sequence>
      <xsd:element name="extLst" type="oel:CT ExtensionList" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
    <xsd:attribute name="userId" type="xsd:string" use="required"/>
    <xsd:attribute name="userName" type="xsd:string" use="required"/>
    <xsd:attribute name="userProvider" type="xsd:string" use="required"/>
  </xsd:complexType>
  <xsd:complexType name="CT CommentReactionInfo">
    <xsd:sequence>
      <xsd:element name="user" type="CT_User" minOccurs="0" maxOccurs="1"/>
      <xsd:element name="extLst" type="oel:CT_ExtensionList" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
    <xsd:attribute name="dateUtc" type="xsd:dateTime" use="optional"/>
  </xsd:complexType>
  <xsd:complexType name="CT_CommentReaction">
    <xsd:sequence>
      <xsd:element name="reactionInfo" type="CT_CommentReactionInfo" minOccurs="0"
maxOccurs="unbounded"/>
      <xsd:element name="extLst" type="oel:CT_ExtensionList" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
    <xsd:attribute name="reactionType" type="xsd:int" use="required"/>
  </xsd:complexType>
  <xsd:complexType name="CT_CommentReactions">
    <xsd:sequence>
      <xsd:element name="reaction" type="CT CommentReaction" minOccurs="1"
maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:element name="reactions" type="CT_CommentReactions"/>
</xsd:schema>
```

6 Appendix B: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

- Word for the web

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is 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 the product does not follow the prescription.

7 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements.
- A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact dochelp@microsoft.com.

Section	Description	Revision class
2.1.3.4 CT_User	Updated "userProvider" to "providerId".	Minor

8 Index