[MS-OFFDI]:

Microsoft Office File Format Documentation Introduction

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Revision Summary

Date	Revision History	Revision Class	Comments
3/18/2009	1.0	Major	Initial Availability
7/13/2009	1.01	Major	Changes made for template compliance
8/28/2009	1.02	Editorial	Revised and edited the technical content
11/6/2009	1.03	Editorial	Revised and edited the technical content
2/19/2010	2.0	Editorial	Revised and edited the technical content
3/31/2010	2.01	Editorial	Revised and edited the technical content
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6/7/2010	2.03	Editorial	Revised and edited the technical content
6/29/2010	2.04	Editorial	Changed language and formatting in the technical content.
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9/27/2010	2.04	None	No changes to the meaning, language, or formatting of the technical content.
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7/16/2012	2.5	Minor	Clarified the meaning of the technical content.
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7/30/2013	2.7	Minor	Clarified the meaning of the technical content.
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Date	Revision History	Revision Class	Comments
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10/30/2014	2.8	None	No changes to the meaning, language, or formatting of the technical content.
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9/14/2016	2.8	None	No changes to the meaning, language, or formatting of the technical content.
9/19/2017	3.0	Major	Significantly changed the technical content.
4/27/2018	4.0	Major	Significantly changed the technical content.
8/28/2018	5.0	Major	Significantly changed the technical content.
4/22/2021	6.0	Major	Significantly changed the technical content.
8/17/2021	7.0	Major	Significantly changed the technical content.
8/16/2022	8.0	Major	Significantly changed the technical content.
4/16/2024	8.1	Minor	Clarified the meaning of the technical content.
8/20/2024	9.0	Major	Significantly changed the technical content.

Table of Contents

1 Introduction

This document introduces the persistence formats that are primarily used by the following product versions:

- Microsoft Excel 97
- Microsoft Excel 2000
- Microsoft Excel 2002
- Microsoft Office Excel 2003
- Microsoft Office Excel 2007
- Microsoft Excel 2010
- Microsoft Excel 2013
- Microsoft Excel 2016
- Microsoft Excel 2019
- Microsoft Excel 2021
- Microsoft Excel LTSC 2024
- Microsoft PowerPoint 97
- Microsoft PowerPoint 2000
- Microsoft PowerPoint 2002
- Microsoft Office PowerPoint 2003
- Microsoft Office PowerPoint 2007
- Microsoft PowerPoint 2010
- Microsoft PowerPoint 2013
- Microsoft PowerPoint 2016
- Microsoft PowerPoint 2019
- Microsoft PowerPoint 2021
- Microsoft PowerPoint LTSC 2024
- Microsoft Word 97
- Microsoft Word 2000
- Microsoft Word 2002
- Microsoft Office Word 2003
- Microsoft Office Word 2007
- Microsoft Word 2010
- Microsoft Word 2013

- Microsoft Word 2016
- Microsoft Word 2019
- Microsoft Word 2021
- Microsoft Word LTSC 2024

Each format consists of a set of data structures to which applications can read or write data, typically by writing a conforming stream of bytes to a file system as a stand-alone file.

In addition to introducing the persistence formats that are primarily used by these product versions, this document identifies related documents and specifications that provide more information about each format and how each format is implemented in each product version.

1.1 Glossary

This document uses the following terms:

animation: A record of synthetic, successive still images that produce an illusion of movement when played back.

document template: A file that serves as the basis for new documents.

drawing object: A shape, curve, line, WordArt, or other type of graphical object that can be inserted into a document.

embedded object: An object that is created by using one application and is hosted in a document that was created by using another application. Embedding an object, rather than inserting or pasting it, ensures that the object retains its original format. Users can double-click an embedded object and edit it with the toolbars and menus from the application that was used to create it. See also Object Linking and Embedding (OLE).

formula: A logical equation or function that produces a result in a spreadsheet application.

presentation: A collection of slides that are intended to be viewed by an audience.

slide: A frame that contains text, shapes, pictures, or other content. A slide is a digital equivalent to a traditional film slide.

slide show: A delivery of a sequence of presentation slides, typically to an audience.

table: A list that is defined in a workbook.

template: A file that contains pre-defined formatting including layout, text and graphics. It serves as the basis for new documents that have a similar look or purpose. See also form template (Microsoft InfoPath) and site template (SharePoint Products and Technologies).

workbook: A container for a collection of sheets.

XML schema: A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by XML itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

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.

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

1.2.2 Informative References

[ECMA-376] ECMA International, "Office Open XML File Formats", https://www.ecma-international.org/publications-and-standards/standards/ecma-376/

[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

[MS-DOC] Microsoft Corporation, "Word (.doc) Binary File Format".

[MS-OE376] Microsoft Corporation, "Office Implementation Information for ECMA-376 Standards Support".

[MS-OI29500] Microsoft Corporation, "Office Implementation Information for ISO/IEC 29500 Standards Support".

[MS-OLEDS] Microsoft Corporation, "Object Linking and Embedding (OLE) Data Structures".

[MS-OODF13] Microsoft Corporation, "Office Implementation Information for ODF 1.3 Standards Support".

[MS-OODF14] Microsoft Corporation, "Office Implementation Information for ODF 1.4 Standards Support".

[MS-OODF2] Microsoft Corporation, "Office Implementation Information for ODF 1.1 Version 2 Standards Support".

[MS-OODF3] Microsoft Corporation, "Office Implementation Information for ODF 1.2 Standards Support".

[MS-OODF] Microsoft Corporation, "Office Implementation Information for ODF 1.1 Standards Support".

[MS-PPT] Microsoft Corporation, "PowerPoint (.ppt) Binary File Format".

[MS-XLSB] Microsoft Corporation, "Excel (.xlsb) Binary File Format".

[MS-XLS] Microsoft Corporation, "Excel Binary File Format (.xls) Structure".

[MSDN-COMPAC] Microsoft Corporation, "Microsoft Office Compatibility Pack for Word, Excel, and PowerPoint 2007 File Formats", Microsoft Download Center,

http://www.microsoft.com/downloads/details.aspx?familyid=941B3470-3AE9-4AEE-8F43-C6BB74CD1466&displaylang=en

[ODF1.2] OASIS, "Open Document Format for Office Applications (OpenDocument) Version 1.2", 29 September 2011, http://docs.oasis-open.org/office/v1.2/os/OpenDocument-v1.2-os.html

[ODF1.3] OASIS, "Open Document Format for Office Applications (OpenDocument) Version 1.3", 30 October 2020, https://docs.oasis-open.org/office/OpenDocument/v1.3/OpenDocument-v1.3-part1-introduction.html

[ODF1.4] OASIS, "Open Document Format for Office Applications (OpenDocument) Version 1.4", https://go.microsoft.com/fwlink/?linkid=2255466

[ODF] OASIS, "Open Document Format for Office Applications (OpenDocument) v1.1", 1 February 2007, http://docs.oasis-open.org/office/v1.1/OS/OpenDocument-v1.1-html/OpenDocument-v1.1.html

[RELAXNG] OASIS, Clark, J., Ed., and Makoto, M., Ed., "RELAX NG Specification", 3 December 2001, http://relaxng.org/spec-20011203.html

2 Microsoft Word Persistence Formats

Microsoft Word supports primarily four file formats:

- Word Binary File Format, as described in [MS-DOC]
- Ecma Office Open XML File Format, as described in [ECMA-376]
- Office Open XML File Format, as described in [ISO/IEC29500-1:2016]
- Open Document Format for Office Applications (OpenDocument), as described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4]

2.1 Word Binary File Format

2.1.1 Applicability

The Word Binary File Format, as described in [MS-DOC], is a persistence format that supports word-processing tasks for content in documents and **document templates**. These tasks include authoring and manipulating text, images, **tables**, and the layout of pages, and managing custom **XML schemas** that are associated with document content.

The Word Binary File Format is applicable to document content that is intended to flow across a set of pages and might be printed. It is also applicable to content that is to be presented as a stand-alone document or is contained within other documents as an **embedded object**, as described in [MS-OLEDS].

The Word Binary File Format is not applicable to content that is to be presented across various media and devices as an exact reproduction of a specific representation of that content.

2.1.2 Application and Versions

Users can create, open, or save files that conform to the Word Binary File Format, as described in [MS-DOC], by using Microsoft Word 97 or later.

2.1.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Word Binary File Format, as described in [MS-DOC], and were created by using a product version identified in section 2.1.2.

File name extension	Typical usage
.doc	Microsoft Office Word 2003, Microsoft Word 2002, Microsoft Word 2000, or Word 97 document
.dot	Office Word 2003, Word 2002, Word 2000, or Word 97 **document template**

2.2 Ecma Office Open XML Document

2.2.1 Applicability

The Ecma Office Open XML File Format, as described in [ECMA-376], is a persistence format that supports the same types of word-processing tasks described in section 2.1.1. It additionally provides the following benefits:

- Improved interoperability and business process integration – The XML–based architecture and approval of the format as an international standard help ensure interoperability and integration between documents and technologies.
- Long-term archival protection – The format is documented and maintained by Ecma International instead of a single, specific vendor.

2.2.2 Application and Versions

By using Microsoft Word LTSC 2024, Microsoft Word 2021, Microsoft Word 2019, Microsoft Word 2016, Microsoft Word 2013 or Microsoft Word 2010, users can open document files that conform to the Ecma Office Open XML File Format, as described in [ECMA-376].

Users can create, open, or save conforming document files by using Microsoft Office Word 2007. In addition, if they install the Microsoft Office Compatibility Pack, as described in [MSDN-COMPAC], users can create, open, or save conforming document files by using Office Word 2003 Service Pack 1, Word 2002 Service Pack 3, or Word 2000 Service Pack 3.

2.2.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Ecma Office Open XML File Format, as described in [ECMA-376] and pursuant to the implementation notes that are cited in section 2.2.4 of this document, and were created by using a product version identified in section 2.2.2.

File name extension	Typical usage
.docx	Office Word 2007 XML-based document
.docm	Office Word 2007 macro-enabled document
.dotx	Office Word 2007 XML-based **document template**

2.2.4 Reference Information

The Ecma Office Open XML File Format is described in [ECMA-376]. That specification includes relevant normative text, markup samples, informative notes, and the associated schemas for the format. The associated schemas are available in **XML schema** (.xsd) format and Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the 2007 Microsoft Office system implementation of the Ecma Office Open XML File Format, as described in [ECMA-376] are described in [MS-OE376]. These notes describe how the 2007 Office system applications implement the format and they are organized according to sections of the Ecma Office Open XML File Format specification.

2.3 Office Open XML Document

2.3.1 Applicability

The Office Open XML File Format, as described in [ISO/IEC29500-1:2016], is a persistence format that supports the same types of word-processing tasks described in section 2.1.1. It additionally provides the following benefits:

- Improved interoperability and business process integration – The XML–based architecture and approval of the format as an international standard help ensure interoperability and integration between documents and technologies.
- Long-term archival protection – The format is documented and maintained by the International Organization for Standardization (ISO) instead of a single, specific vendor.

2.3.2 Application and Versions

By using Word 2010 and later, users can create, open, or save document files that conform to the Office Open XML File Format, as described in [ISO/IEC29500-1:2016] and pursuant to the implementation notes that are cited in section 2.3.4 of this document.

2.3.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Office Open XML File Format, as described in [ISO/IEC29500-1:2016] and pursuant to the implementation notes that are cited in section 2.3.4 of this document, and were created by using a product version identified in section 2.3.2.

File name extension	Typical usage
.docx	Word 2010 XML-based document
.docm	Word 2010 macro-enabled document
.dotx	Word 2010 XML-based **document template**

2.3.4 Reference Information

The Office Open XML File Format is described in [ISO/IEC29500-1:2016]. That specification includes relevant normative text, markup samples, informative notes, and associated schemas for the format. The associated schemas are available in **XML schema** (.xsd) format and Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the Microsoft Office 2010 suites and later implementations of the Office Open XML File Format, as described in [ISO/IEC29500-1:2016], are described in [MS-OI29500]. These notes describe how Office 2010 and later applications implement the format and they are organized according to sections of the Office Open XML File Format specification.

2.4 OpenDocument Text Document

2.4.1 Applicability

The Open Document Format for Office Applications (OpenDocument), as described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4] is an appropriate persistence format for performing word-processing tasks with documents that might need to be viewed or edited by using other applications or technologies that implement the OpenDocument format.

2.4.2 Application and Versions

By using Word 2010 or Microsoft Office Word 2007 Service Pack 2, users can create, open, or save document files that conform to the OpenDocument format, as described in [ODF] and pursuant to the implementation notes that are cited in section 2.4.4 of this document.

Using Word 2013 and later users can open document files that conform to the OpenDocument format, as described in [ODF] and create, open, or save document files that conform to the OpenDocument format, as described in [ODF1.2], and pursuant to the implementation notes that are cited in section 2.4.4 of this document. Using Word 2013 and later if a document file conforms to the OpenDocument format, as described in [ODF] and is modified, it will be saved as the OpenDocument format, as described in [ODF1.2].

Using Word 2021 and later users can open document files that conform to the OpenDocument format, as described in [ODF] and [ODF1.2], and create, open, or save document files that conform to the OpenDocument format, as described in [ODF1.3], and pursuant to the implementation notes that are cited in section 2.4.4 of this document. Using Word 2021 and later if a document file conforms to the OpenDocument format, as described in [ODF] and [ODF1.2] and is modified, it will be saved as the OpenDocument format, as described in [ODF1.3].

Using Word LTSC 2024 and later users can open document files that conform to the OpenDocument format, as described in [ODF], [ODF1.2], and [ODF1.3], and create, open, or save document files that conform to the OpenDocument format, as described in [ODF1.4] and pursuant to the implementation notes that are cited in section 2.4.4 of this document. Using Word LTSC 2024 and later if a document file conforms to the OpenDocument format, as described in [ODF], [ODF1.2], and [ODF1.3], and is modified, it will be saved as the OpenDocument format, as described in [ODF1.4].

2.4.3 File Name Extensions

Document files that conform to the OpenDocument format, as described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4], and pursuant to the implementation notes that are cited in section 2.4.4 of this document, and were created by using a product version identified in section 2.4.2 typically have an .odt (OpenDocument format document) file name extension.

2.4.4 Reference Information

The OpenDocument format is described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4]. That specification includes relevant normative text and informative notes. It also provides the associated schema in Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the Microsoft Office LTSC 2024 and later implementations of the OpenDocument format are described in [MS-OODF14]. Implementation notes for the Microsoft Office 2021 and later implementations of the OpenDocument format are described in [MS-OODF13]. Implementation notes for the Microsoft Office 2013 and later implementations of the OpenDocument format are described in [MS-OODF3]. Implementation notes for the Office 2010 implementation of the OpenDocument format are described in [MS-OODF2]. Implementation notes for the Microsoft Office 2007 Service Pack 2 (SP2) implementation of the OpenDocument format are described in [MS-OODF]. These notes describe how Office LTSC 2024, Office 2021, Microsoft Office 2019, Microsoft Office 2016,

Office 2013, Office 2010 and Office 2007 SP2 applications implement the format and they are organized according to sections of the OpenDocument format specifications.

3 Microsoft Excel Persistence Formats

Microsoft Excel supports primarily five file formats:

- Excel Binary File Format, as described in [MS-XLS]
- Office Excel 2007 Binary File Format, as described in [MS-XLSB]
- Ecma Office Open XML File Format, as described in [ECMA-376]
- Office Open XML File Format, as described in [ISO/IEC29500-1:2016]
- Open Document Format for Office Applications (OpenDocument), as described in [ODF], or [ODF1.2], [ODF1.3], or [ODF1.4]

3.1 Excel Binary File Format

3.1.1 Applicability

The Excel Binary File Format, as described in [MS-XLS], is a persistence format that supports authoring and manipulating content in **workbooks** and workbook **templates**. This content can include unstructured or semi-structured **tables** of numbers, text, and combinations of numbers and text, in addition to **formulas**, connections to external data sources, charts, and images.

The Excel Binary File Format is applicable to content that has a grid-based layout, including content that contains numeric data, structured data, and formulas. It is also applicable to content that is to be presented as a stand-alone workbook or is contained within other documents as an **embedded object**, as described in [MS-OLEDS].

3.1.2 Application and Versions

Users can create, open, or save **workbook** files that conform to the Excel Binary File Format, as described in [MS-XLS], by using Microsoft Excel 97 and later.

3.1.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Excel Binary File Format, as described in [MS-XLS], and were created by using a product version identified in section 3.1.2.

File name extension	Typical usage
.xls	Microsoft Office Excel 2003, Microsoft Excel 2002, Microsoft Excel 2000, or Excel 97 **workbook**
.xlt	Office Excel 2003, Excel 2002, Excel 2000, or Excel 97 workbook **template**

3.2 Office Excel 2007 Binary File Format

3.2.1 Applicability

The Office Excel 2007 Binary File Format, as described in [MS-XLSB], is a persistence format that supports the same types of tasks described in section 3.1.1. It is applicable to content that has a grid-based layout, including content that contains numeric data, structured data, and **formulas**. It is also applicable to content that is to be presented as a stand-alone workbook or is contained within other documents as an **embedded object**, as described in [MS-OLEDS].

3.2.2 Application and Versions

By using Microsoft Office Excel 2007 and later users can create, open, or save **workbook** files that conform to the Office Excel 2007 Binary File Format, as described in [MS-XLSB]. In addition, if they install the Microsoft Office Compatibility Pack, as described in [MSDN-COMPAC], users can create, open, or save conforming workbook files by using Office Excel 2003 Service Pack 1, Excel 2002 Service Pack 3, or Excel 2000 Service Pack 3.

3.2.3 File Name Extensions

Workbook files that conform to the Excel Binary File Format, as described in [MS-XLSB], and were created by using a product version identified in section 3.2.2 typically have an .xlsb (Excel 2007 binary workbook) file name extension.

3.3 Ecma Office Open XML Spreadsheet

3.3.1 Applicability

The Ecma Office Open XML File Format, as described in [ECMA-376], is an appropriate persistence format for spreadsheets that require the functionality described in section 3.1.1, as described in [MS-XLS]. It additionally provides the following benefits:

- Standard syntax – The format uses a documented, standard syntax for **formulas** in spreadsheets.
- Improved interoperability and business process integration – The XML–based architecture and approval of the format as an international standard help ensure interoperability and integration between documents and technologies.
- Long-term archival protection – The format is documented and maintained by Ecma International instead of a single, specific vendor.

3.3.2 Application and Versions

By using Microsoft Excel 2010 and later users can open spreadsheet files that conform to the Ecma Office Open XML File Format, as described in [ECMA-376].

Users can create, open, or save conforming spreadsheet files by using Microsoft Office Excel 2007 Service Pack 2, Microsoft Office Excel 2007 Service Pack 1, or Office Excel 2007. In addition, if they install the Microsoft Office Compatibility Pack, as described in [MSDN-COMPAC], users can create, open, or save conforming spreadsheet files by using Office Excel 2003 Service Pack 1, Excel 2002 Service Pack 3, or Excel 2000 Service Pack 3.

3.3.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Ecma Office Open XML File Format, as described in [ECMA-376] and pursuant to the implementation notes that are cited in section 3.3.4 of this document, and were created by using a product version identified in section 3.3.2.

File name extension	Typical usage
.xlsx	Office Excel 2007 XML-based **workbook**
.xlsm	Office Excel 2007 macro-enabled workbook
.xltx	Office Excel 2007 XML-based workbook **template**

3.3.4 Reference Information

The Ecma Office Open XML File Format is described in [ECMA-376]. That specification includes relevant normative text, markup samples, informative notes, and the associated schemas for the format. The associated schemas are available in **XML schema** (.xsd) format and Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the 2007 Microsoft Office system implementation of the Ecma Office Open XML File Format, as described in [ECMA-376], are described in [MS-OE376]. These notes describe how the 2007 Office system applications implement the format and they are organized according to sections of the Ecma Office Open XML File Format specification.

3.4 Office Open XML Spreadsheet

3.4.1 Applicability

The Office Open XML File Format, as described in [ISO/IEC29500-1:2016], is an appropriate persistence format for spreadsheets that require the functionality described in section 3.1.1, and the interoperability and archival benefits of using an open, standard format. It additionally provides the following benefits:

- Standard syntax – The format uses a documented, standard syntax for **formulas** in spreadsheets.
- Improved interoperability and business process integration – The XML–based architecture and approval of the format as an international standard help ensure interoperability and integration between documents and technologies.
- Long-term archival protection – The format is documented and maintained by the International Organization for Standardization (ISO) instead of a single, specific vendor.

3.4.2 Applications and Versions

By using Excel 2010 and later users can create, open, and save spreadsheet files that conform to the Office Open XML File Format, as described in [ISO/IEC29500-1:2016] and pursuant to the implementation notes that are cited in section 3.4.4 of this document.

3.4.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Office Open XML File Format, as described in [ISO/IEC29500-1:2016] and pursuant to the implementation notes that are cited in section 3.4.4 of this document, and were created by using a product version identified in section 3.4.2.

File name extension	Typical usage
.xlsx	Excel 2010 XML-based **workbook**
.xlsm	Excel 2010 macro-enabled workbook
.xltx	Excel 2010 XML-based workbook **template**

3.4.4 Reference Information

The Office Open XML File Format is described in [ISO/IEC29500-1:2016]. That specification includes relevant normative text, markup samples, informative notes, and associated schemas for the format. The associated schemas are available in **XML schema** (.xsd) format and Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the Microsoft Office 2010 suites and later implementations of the Office Open XML File Format, as described in [ISO/IEC29500-1:2016], are described in [MS-OI29500]. These notes describe how Office 2010 and later applications implement the format and they are organized according to sections of the Office Open XML File Format specification.

3.5 OpenDocument Spreadsheet Document

3.5.1 Applicability

The Open Document Format for Office Applications (OpenDocument), as described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4] , is an appropriate persistence format for performing tasks with spreadsheets that might need to be viewed or edited by using other applications or technologies that implement the OpenDocument format.

3.5.2 Application and Versions

By using Excel 2010 or Office Excel 2007 SP2, users can create, open, or save spreadsheet files that conform to the OpenDocument format, as described in [ODF] and pursuant to the implementation notes that are cited in section 3.5.4 of this document.

By using Microsoft Excel 2013 and later, users can open spreadsheet files that conform to the OpenDocument format, as described in [ODF] and create, open, or save spreadsheet files that conform to the OpenDocument format, as described in [ODF1.2], and pursuant to the implementation notes that are cited in section 3.5.4 of this document. By using Excel 2013 and later, if a document file that conforms to the OpenDocument format, as described in [ODF] is modified, it will be saved as the OpenDocument format, as described in [ODF1.2].

By using Microsoft Excel 2021 and later, users can open spreadsheet files that conform to the OpenDocument format, as described in [ODF] and [ODF1.2], and create, open, or save spreadsheet files that conform to the OpenDocument format, as described in [ODF1.3], and pursuant to the implementation notes that are cited in section 3.5.4 of this document. By using Excel 2021 and later,

if a document file that conforms to the OpenDocument format, as described in [ODF] and [ODF1.2], and is modified, it will be saved as the OpenDocument format, as described in [ODF1.3].

By using Microsoft Excel LTSC 2024 and later, users can open spreadsheet files that conform to the OpenDocument format, as described in [ODF] and [ODF1.2], [ODF1.3], and create, open, or save spreadsheet files that conform to the OpenDocument format, as described in [ODF1.4], and pursuant to the implementation notes that are cited in section 3.5.4 of this document. By using Excel LTSC 2024 and later, if a document file that conforms to the OpenDocument format, as described in [ODF], [ODF1.2], and [ODF1.3], and is modified, it will be saved as the OpenDocument format, as described in [ODF1.4].

3.5.3 File Name Extensions

Spreadsheet files that conform to the OpenDocument format, as described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4], and pursuant to the implementation notes that are cited in section 3.5.4 of this document, and were created by using a product version identified in section 3.5.2 typically have an .ods (OpenDocument format spreadsheet) file name extension.

3.5.4 Reference Information

The OpenDocument format is described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4]. That specification includes relevant normative text and informative notes. It also provides the associated schema in Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the Microsoft Office LTSC 2024 and later implementations of the OpenDocument format are described in [MS-OODF14]. Implementation notes for the Microsoft Office 2021 and later implementations of the OpenDocument format are described in [MS-OODF13]. Implementation notes for the Microsoft Office 2013 and later implementation of the OpenDocument format are described in [MS-OODF3]. Implementation notes for the Office 2010 implementation of the OpenDocument format are described in [MS-OODF2]. Implementation notes for the Microsoft Office 2007 Service Pack 2 (SP2) implementation of the OpenDocument format are described in [MS-OODF]. These notes describe how Office 2021, Microsoft Office 2019, Microsoft Office 2016, Office 2013, Office 2010 and Office 2007 SP2 applications implement the format, and they are organized according to sections of the OpenDocument format specification.

4 Microsoft PowerPoint Persistence Formats

Microsoft PowerPoint supports primarily four file formats:

- PowerPoint Binary File Format, as described in [MS-PPT]
- Ecma Office Open XML File Format, as described in [ECMA-376]
- Office Open XML File Format, as described in [ISO/IEC29500-1:2016]
- Open Document Format for Office Applications (OpenDocument), as described in [ODF], [ODF1.2], [ODF1.3] and [ODF1.4]

4.1 PowerPoint Binary File Format

4.1.1 Applicability

The PowerPoint Binary File Format, as described in [MS-PPT], is a persistence format that supports tasks for authoring and manipulating content in **presentations** and presentation **templates**. Such content includes **slides**, **drawing objects**, text, images, transitions, and **animations**.

The PowerPoint Binary File Format is applicable when the primary format for presentation content is electronic. It is also applicable to content that is to be presented as a stand-alone document or is contained within other documents as an **embedded object**, as described in [MS-OLEDS].

4.1.2 Application and Versions

Users can create, open, or save files that conform to the PowerPoint Binary File Format, as described in [MS-PPT], by using Microsoft PowerPoint 97 and later.

4.1.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the PowerPoint Binary File Format, as described in [MS-PPT], and were created by using a product version identified in section 4.1.2.

File name extension	Typical usage
.ppt	Microsoft Office PowerPoint 2003, Microsoft PowerPoint 2000, or PowerPoint 97 **presentation**
.pot	Office PowerPoint 2003, PowerPoint 2000, or PowerPoint 97 presentation **template**
.pps	Office PowerPoint 2003, PowerPoint 2000, or PowerPoint 97 **slide show**

4.2 Ecma Office Open XML Presentation

4.2.1 Applicability

The Ecma Office Open XML File Format, as described in [ECMA-376], is an appropriate persistence format for **presentation** content that requires the functionality described in section 4.1.1. It additionally provides the following benefits:

- Improved interoperability and business process integration – The XML–based architecture and approval of the format as an international standard help ensure interoperability and integration between documents and technologies.
- Long-term archival protection – The format is documented and maintained by Ecma International instead of a single, specific vendor.

4.2.2 Application and Versions

By using Microsoft PowerPoint 2010 and later, users can open **presentation** files that conform to the Ecma Office Open XML File Format, as described in [ECMA-376].

Users can create, open, or save conforming presentation files by using Microsoft Office PowerPoint 2007 Service Pack 2, Microsoft Office PowerPoint 2007 Service Pack 1, or Microsoft Office PowerPoint 2007. In addition, if they install the Microsoft Office Compatibility Pack, as described in [MSDN-COMPAC], users can create, open, and save conforming presentation files by using Office PowerPoint 2003 Service Pack 1, Microsoft PowerPoint 2002 Service Pack 3, or PowerPoint 2000 Service Pack 3.

4.2.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Ecma Office Open XML File Format, as described in [ECMA-376] and pursuant to the implementation notes that are cited in section 4.2.4 of this document, and were created by using a product version identified in section 4.2.2.

File name extension	Typical usage
.pptx	Office PowerPoint 2007 XML-based **presentation**
.pptm	Office PowerPoint 2007 macro-enabled presentation
.potx	Office PowerPoint 2007 XML-based presentation **template**
.ppsx	Office PowerPoint 2007 XML-based **slide show**

4.2.4 Reference Information

The Ecma Office Open XML File Format is described in [ECMA-376]. That specification includes relevant normative text, markup samples, informative notes, and the associated schemas for the format. The associated schemas are available in **XML schema** (.xsd) format and Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the 2007 Microsoft Office system implementation of the Ecma Office Open XML File Format, as described in [ECMA-376], are described in [MS-OE376]. These notes describe how the 2007 Office system applications implement the format and they are organized according to sections of the Ecma Office Open XML File Format specification.

4.3 Office Open XML Presentation

4.3.1 Applicability

The Office Open XML File Format, as described in [ISO/IEC29500-1:2016], is an appropriate persistence format for **presentation** content that requires the functionality described in section 4.1.1. It additionally provides the following benefits:

- Improved interoperability and business process integration – The XML–based architecture and approval of the format as an international standard help ensure interoperability and integration between documents and technologies.
- Long-term archival protection – The format is documented and maintained by the International Organization for Standardization (ISO) instead of a single, specific vendor.

4.3.2 Application and Versions

By using PowerPoint 2010 and later, users can create, open, or save **presentation** files that conform to the Office Open XML File Format, as described in [ISO/IEC29500-1:2016] and pursuant to the implementation notes that are cited in section 4.3.4 of this document.

4.3.3 File Name Extensions

The following table lists file name extensions and descriptions of files that conform to the Office Open XML File Format, as described in [ISO/IEC29500-1:2016] and pursuant to the implementation notes that are cited in section 4.3.4 of this document, and were created by using a product version identified in section 4.3.2.

File name extension	Typical usage
.pptx	PowerPoint 2010 XML-based **presentation**
.pptm	PowerPoint 2010 macro-enabled presentation
.potx	PowerPoint 2010 XML-based presentation **template**
.ppsx	PowerPoint 2010 XML-based **slide show**

4.3.4 Reference Information

The Office Open XML File Format is described in [ISO/IEC29500-1:2016]. That specification includes relevant normative text, markup samples, informative notes, and the associated schemas. The associated schemas are available in **XML schema** (.xsd) format and Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the Microsoft Office 2010 suites and later implementations of the Office Open XML File Format, as described in [ISO/IEC29500-1:2016], are described in [MS-OI29500]. These notes describe how Office 2010 and later applications implement the format and they are organized according to sections of the Office Open XML File Format specification.

4.4 OpenDocument Presentation Document

4.4.1 Applicability

The Open Document Format for Office Applications (OpenDocument), as described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4], is an appropriate persistence format for **presentations** that might need to be viewed or edited by using other applications or technologies that implement the OpenDocument format.

4.4.2 Application and Versions

By using PowerPoint 2010 or Office PowerPoint 2007 SP2, users can create, open, or save **presentation** files that conform to the OpenDocument format, as described in [ODF] and pursuant to the implementation notes that are cited in section 4.4.4 of this document.

By using Microsoft PowerPoint 2013 and later, users can open presentation files that conform to the OpenDocument format, as described in [ODF] and create, open, or save presentation files that conform to the OpenDocument format, as described in [ODF1.2], and pursuant to the implementation notes that are cited in section 4.4.4 of this document. By using Microsoft PowerPoint 2016 or PowerPoint 2013, if a document file conforms to the OpenDocument format, as described in [ODF] is modified, it will be saved as the OpenDocument format, as described in [ODF1.2].

By using Microsoft PowerPoint 2021 and later, users can open presentation files that conform to the OpenDocument format, as described in [ODF] and [ODF1.2], and create, open, or save presentation files that conform to the OpenDocument format, as described in [ODF1.3], and pursuant to the implementation notes that are cited in section 4.4.4 of this document. By using PowerPoint 2021 and later, if a document file conforms to the OpenDocument format, as described in [ODF] and [ODF1.2] is modified, it will be saved as the OpenDocument format, as described in [ODF1.3].

By using Microsoft PowerPoint LTSC 2024 and later, users can open presentation files that conform to the OpenDocument format, as described in [ODF], [ODF1.2], and [ODF1.3], and create, open, or save presentation files that conform to the OpenDocument format, as described in [ODF1.4], and pursuant to the implementation notes that are cited in section 4.4.4 of this document. By using PowerPoint LTSC 2024 and later, if a document file conforms to the OpenDocument format, as described in [ODF], [ODF1.2] , and [ODF1.3], is modified, it will be saved as the OpenDocument format, as described in [ODF1.4].

4.4.3 File Name Extensions

Presentation files that conform to the OpenDocument format, as described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4], and pursuant to the implementation notes that are cited in section 4.4.4 of this document, and were created by using a product version identified in section 4.4.2 typically have an .odp (OpenDocument format presentation) file name extension.

4.4.4 Reference Information

The OpenDocument format is described in [ODF], [ODF1.2], [ODF1.3], and [ODF1.4]. That specification includes relevant normative text and informative notes. It also provides the associated schema in Relax NG (.rng) format, which is described in [RELAXNG].

Implementation notes for the Microsoft Office LTSC 2024 and later implementations of the OpenDocument format are described in [MS-OODF14]. Implementation notes for the Microsoft Office 2021 and later implementations of the OpenDocument format are described in [MS-OODF13]. Implementation notes for the Microsoft Office 2013 and later, implementations of the OpenDocument format are described in [MS-OODF3]. Implementation notes for the Office 2010 implementation of the OpenDocument format are described in [MS-OODF2]. Implementation notes for the Microsoft Office 2007 Service Pack 2 (SP2) implementation of the OpenDocument format are described in [MS-OODF].

These notes describe how Office 2007 SP2 and later applications implement the format and they are organized according to sections of the OpenDocument format specification.

5 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
1 Introduction	Updated list of supported products.	Major

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