[MS-DSEXPORT]:

Document Set Package Format

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 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 <u>Open</u> <u>Specifications Promise</u> or the <u>Microsoft Community Promise</u>. 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 <u>Patent Map</u>.
- 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 <u>dochelp@microsoft.com</u>.

Revision Summary

Date	Revision History	Revision Class	Comments	
7/13/2009	0.1	Major	Initial Availability	
8/28/2009	0.2	Editorial	Revised and edited the technical content	
11/6/2009	0.3	Editorial	Revised and edited the technical content	
2/19/2010	1.0	Minor	Updated the technical content	
3/31/2010	1.01	Editorial	Revised and edited the technical content	
4/30/2010	1.02	Editorial	Revised and edited the technical content	
6/7/2010	1.03	Editorial	Revised and edited the technical content	
6/29/2010	1.04	Editorial	Changed language and formatting in the technical content.	
7/23/2010	1.04	None	No changes to the meaning, language, or formatting of the technical content.	
9/27/2010	1.04	None	No changes to the meaning, language, or formatting of the technical content.	
11/15/2010	1.04	None	No changes to the meaning, language, or formatting of the technical content.	
12/17/2010	1.04	None	No changes to the meaning, language, or formatting of the technical content.	
3/18/2011	1.04	None	No changes to the meaning, language, or formatting of the technical content.	
6/10/2011	1.04	None	No changes to the meaning, language, or formatting of the technical content.	
1/20/2012	2.0	Major	Significantly changed the technical content.	
4/11/2012	2.0	None	No changes to the meaning, language, or formatting of the technical content.	
7/16/2012	2.0	None	No changes to the meaning, language, or formatting of the technical content.	
10/8/2012	3.0	Major	Significantly changed the technical content.	
2/11/2013	3.0	None	No changes to the meaning, language, or formatting of the technical content.	
7/30/2013	3.1	Minor	Clarified the meaning of the technical content.	
11/18/2013	3.1	None	No changes to the meaning, language, or formatting of the technical content.	
2/10/2014	3.1	None	No changes to the meaning, language, or formatting of the technical content.	
4/30/2014	3.1	None	No changes to the meaning, language, or formatting of the technical content.	
7/31/2014	3.1	None	No changes to the meaning, language, or formatting of the technical content.	

Date	Revision History	Revision Class	Comments	
10/30/2014	3.2	Minor	Clarified the meaning of the technical content.	
2/26/2016	4.0	Major	Significantly changed the technical content.	
6/23/2016	4.0	None	No changes to the meaning, language, or formatting of the technical content.	
7/15/2016	4.0	None	No changes to the meaning, language, or formatting of the technical content.	
9/14/2016	4.0	None	No changes to the meaning, language, or formatting of the technical content.	
7/24/2018	5.0	Major	Significantly changed the technical content.	
10/1/2018	6.0	Major	Significantly changed the technical content.	

Table of Contents

1	Introduction
1	.1 Glossary
1	.2 References
	1.2.1 Normative References
	1.2.2 Informative References
1	.3 Structure Overview (Synopsis)
1	.4 Relationship to Protocols and Other Structures
1	.5 Applicability Statement
1	.6 Versioning and Localization
_	.7 Vendor-Extensible Fields
_	
	Structures
2	.1 Property Manifest
	2.1.1 Namespaces
	2.1.2 Complex Types
	2.1.2.1 DSProperties
	2.1.2.1.1 Child Elements
	2.1.2.2 DSProperty
	2.1.2.2.1 Child Elements
2	.2 File Name Mapping
	2.2.1 Namespaces
	2.2.2 Complex Types
	2.2.2.1 FileNameMapping
	2.2.2.1.1 Child Elements
	2.2.2.2 OriginalFileName
	2.2.2.2.1 Attributes
2	Structure Examples
	.1 Property Manifest
	.2 File Name Mapping
	.2 File Name Mapping
3	
4	Security
4	.1 Security Considerations for Implementers
4	.2 Index of Security Fields 14
5	Appendix A: Product Behavior15
6	Change Tracking
7	Index

1 Introduction

The Document Set Package Format stores the contents of a document set that has been exported from a document library.

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:

- **content type**: A named and uniquely identifiable collection of settings and fields that store metadata for individual items in a SharePoint list. One or more content types can be associated with a list, which restricts the contents to items of those types.
- **content type identifier**: A unique identifier that is assigned to a **content type**.
- **document library**: A type of list that is a container for documents and folders.
- field internal name: A string that uniquely identifies a field in a content type or a SharePoint list.
- **URL encode**: The process of encoding characters that have reserved meanings for a Uniform Resource Locator (URL), as described in [RFC1738].
- **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 <u>dochelp@microsoft.com</u>. We will assist you in finding the relevant information.

[ISO/IEC29500-2:2011] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 2: Open Packaging Conventions", ISO/IEC 29500-2:2011, 2011,

http://www.iso.org/iso/iso catalogue/catalogue tc/catalogue detail.htm?csnumber=59576

[MS-WSSCAML] Microsoft Corporation, "Collaborative Application Markup Language (CAML) Structure".

[MS-WSSTS] Microsoft Corporation, "Windows SharePoint Services".

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

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, <u>http://www.w3.org/TR/2009/REC-xml-names-20091208/</u>

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

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

1.2.2 Informative References

None.

1.3 Structure Overview (Synopsis)

This file format stores the contents of a document set outside a **document library**. A document set is a container for managing a collection of documents. Document sets allow the user to perform actions on a collection of documents such as synchronizing metadata across the documents and moving the document set to a different location. Document sets can be packaged to be moved to another location. This file format enables the document set to retain internal relationships and metadata properties. If the document set package is imported or moved to another location, it can be recreated as a document set.

1.4 Relationship to Protocols and Other Structures

The Document Set Package Format structure is implemented following specifications described in [ISO/IEC29500-2:2011]. It uses relationship parts and a content type part to describe the contents of the package.

1.5 Applicability Statement

This file format maintains the metadata properties and relationships of items in a document set so that it can be moved to a different **document library** and retain its relationships and properties. The internal structure of a document set package file is not used or modified outside the document library that contains the document set. The document set package file is intended as a storage mechanism so that document sets can be archived or moved to another location.

1.6 Versioning and Localization

This file format has no generic localization mechanism. Individual structures in this file format can have attributes that are specific to localization.

1.7 Vendor-Extensible Fields

This file format consists of a collection of mandatory files in a fixed format. Vendors can add their own application-specific files or properties to the package. Those files MUST have names that are unique within the package.

2 Structures

A Document Set Package Format structure is implemented as specified in [ISO/IEC29500-2:2011] and consists of several XML package parts, as well as files of an arbitrary format that are contained in the package. For the document set itself and for each of the files that it contains, a property manifest is required. The property manifest is a list of all of the metadata properties for the document set or file that it describes. The property manifest for the document set MUST be located at /Resources/Properties.xml. The property manifests for individual files in the document set MUST use the following naming convention: $/\text{Resources}/FilePath/FileName.extension}$ Properties.xml<1> where *FilePath* is the full path to the document, where the document set itself is the root and *FileName* is the name of the file to which the property manifest applies and *extension* is the extension of the file. For example, document.docx in the root of the document set would have a property manifest named document.docx Properties.xml and be placed in the Resources directory, and subfolder1/subfolder2/document.docx would also have a property manifest named document.docx Properties.xml but be placed in the Resources/subfolder1/subfolder2 directory. Additionally, each subfolder in the document set, will also have a property manifest located in /FolderProps/FolderPath/ Properties.xml where FolderPath is the full path to the folder starting from the root of the document set $\leq 2>$; for example a subfolder named subfolder2 with path subfolder1/subfolder2/ would have a manifest file /FolderProps/Subfolder1/subfolder2/ Properties.xml.

All file names including path inside the document set package MUST be **URL-encoded**. If a file in the document set has a file name which, when URL-encoded, has length greater than or equal to 200 characters, the file name MUST be shortened to a new file name for use within the document set package. The new file name MUST be unique within the document set package and MUST be URL-encoded. The original file extension SHOULD<3> be retained. A mapping of the new file name to the original file name MUST be stored in the package part /Resources/FileNameMapping.xml. If there are multiple mappings, they are all kept in that package part. If there are no mappings, then that package part is not required.

File and package part relationships are specified in [ISO/IEC29500-2:2011], section 9.3. A document set package MUST contain the following relationship types:

- http://microsoft.com/docset/MainProperties: Main property manifest package part, which describes the document set properties.
- http://microsoft.com/docset/FileProperties: Property manifest package parts.

A document set package MUST contain the following relationship type if any file name is shortened to a new file name because the URL-encoded file name is greater than or equal to 200 characters:

 http://microsoft.com/docset/FileNameMapping: Package part that contains file name mappings.

A document set package MUST contain the following relationship type if it contains files other than the parts required for the document set package:

• http://microsoft.com/docset/File: Files that are contained in the document set.

A document set package MUST contain the following relationship type if it contains subfolders:

• http://microsoft.com/docset/Folder: Subfolders that are contained in the document set.

Also as specified in [ISO/IEC29500-2:2011], the content type of each package part and file MUST be defined in /[Content_Types].xml. A document set package can have but does not require all of the following content types be present. No other content types are allowed.

text/xml: XML package parts

- application/vnd.openxmlformats-package.relationships+xml: Relationship parts
- application/octet-stream: Files

2.1 Property Manifest

A property manifest is a list of metadata properties and their values. One property manifest describes the properties of the document set itself, and additional property manifests describe the properties of the files and folders within the document set. A separate property manifest is required for each file and folder within the document set. Thus, if a document set contains two files and one subfolder, there are four property manifests: one for the document set, two for the files (one for each file), and one for the folder. Each property manifest for a file or the document set MUST be located at /Resources/. Each property manifest for a folder MUST be located at /FolderProps/

The root element of the property manifest is defined as follows:

```
<xs:element name="Properties" type="DSProperties" />
```

2.1.1 Namespaces

This specification defines and references 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 a specific XML namespace prefix is implementation-specific and not significant for interoperability.

The following table described these namespaces.

Prefix	Namespace URI	Reference
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1] [XMLSCHEMA2]
(none)	urn:deployment-manifest-schema	

2.1.2 Complex Types

2.1.2.1 DSProperties

The **DSProperties** complex type specifies the **content type** name, **content type identifier**, and properties of the document set or file. This type is defined as follows:

2.1.2.1.1 Child Elements

ContentType: The **content type identifier** of the document set or file. It MUST be formatted as specified in [MS-WSSCAML] section 2.3.1.4.

ContentTypeName: The name of the content type of the document set or file, as specified in [MS-WSSCAML] section 2.4.1.

Property: A property of the document set or file, as specified in [MS-WSSTS] section 2.1.2.9. Lookup field values are ignored on import so it does not matter if they are exported.

2.1.2.2 DSProperty

The **DSProperty** complex type specifies the name and value of a property. This type is defined as follows:

```
<xs:complexType name="DSProperty">
  <xs:sequence>
      <xs:element name="Name" type="xs:string" />
      <xs:element name="Value" type="xs:string" />
      <xs:element name="Type" type="xs:string" />
      </xs:sequence>
</xs:complexType>
```

2.1.2.2.1 Child Elements

Name: The field internal name of the property.

Value: The value of the property, which is a value appropriate for the Type as specified in [MS-WSSTS] section 2.3.

Type: The type of the property, as specified in [MS-WSSTS] section 2.1.2.9.1.

2.2 File Name Mapping

The file name mapping XML document specifies the list of documents from the document set whose names within the document set package have been shortened so as not to exceed the 200 character limit when encoded. For each such document, the file name mapping XML document contains an entry that maps the name of the document in the document set package to the original name of the document in the document set.

The root element of the file name mapping is defined as follows:

```
<xs:element name="Files" type="FileNameMapping" />
```

2.2.1 Namespaces

File name mapping does not require a namespace.

2.2.2 Complex Types

2.2.2.1 FileNameMapping

The **FileNameMapping** complex type specifies the mapping from shortened file names to full, original file names, as follows.

```
<xs:complexType name="FileNameMapping">
    <xs:sequence>
        <xs:any minOccurs="0" maxOccurs="unbounded">
        </xs:any>
```

```
</xs:sequence> </xs:complexType>
```

2.2.2.1.1 Child Elements

The **xs:any** part specifies a single mapping from a shortened file name to the original file name. The name of each **xs:any** part MUST be the shortened file name and the type of the **xs:any** part MUST be **originalFileName**.

2.2.2.2 OriginalFileName

The **OriginalFileName** complex type specifies the original file name. This type is defined as follows:

```
<xs:complexType name="originalFileName">
    <xs:attribute name="originalFileName" type="xs:string" use="required" />
</xs:complexType>
```

2.2.2.2.1 Attributes

OriginalFileName: The original name of the file.

3 Structure Examples

3.1 Property Manifest

The following is an example of a property manifest with content type "Document Set A" and three properties.

```
<Properties>
 <ContentType>0x0120D5200079D38D8510120240BF8C36A3DFF2A81C</ContentType>
 <ContentTypeName>Document Set A</ContentTypeName>
 <Property>
   <Name>ContentTypeId</Name>
    <Value>0x0120D5200079D38D8510120240BF8C36A3DFF2A81C</Value>
    <Type>ContentTypeId</Type>
  </Property>
 <Property>
    <Name> ModerationComments</Name>
    <Value></Value>
    <Type>Note</Type>
 </Property>
 <Property>
    <Name>FileLeafRef</Name>
    <Value>Example</Value>
    <Type>File</Type>
 </Property>
</Properties>
```

3.2 File Name Mapping

The following is an example of a file name mapping with two mappings.

```
<Files>
<_____File___1792867176.docx originalFileName="examplefilename.docx" />
<____File___1940293843.docx originalFileName="examplefilename2.docx" />
</Files>
```

3.3 Manifest and binary locations

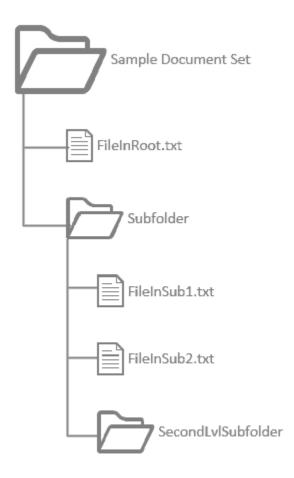


Figure 1: Document set file structure.

For the shown document set structure, the resulting export file would contain the manifests and binaries in the following locations:

\FileInRoot.txt - File Binary
_rels\.rels - Relationships file describing contents of package
\Subfolder\FileInSub1.txt - File Binary
\Subfolder\FileInSub2.txt - File Binary
\Resources\Properties.xml - Document set properties manifest
\Resources\FileInRoot.txt_Properties.xml - File properties manifest
\Resources\Subfolder\FileInSub1.txt_Properties.xml - File properties manifest
\Resources\Subfolder\FileInSub2.txt_Properties.xml - File properties manifest
\FolderProps\Subfolder_Properties.xml - Folder properties manifest
\FolderProps\Subfolder\SecondLvlSubfolder_Properties.xml - Folder properties manifest

The property manifest sample in section 3.1 applies. The content of the relationship file is as follows:

<Relationship Type="http://microsoft.com/docset/Folder"

Target="/FolderProps/Subfolder/SecondLvlSubfolder/ Properties.xml" Id="R7bbfda245f624285" />

4 Security

4.1 Security Considerations for Implementers

None.

4.2 Index of Security Fields

None.

5 Appendix A: 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.

- Microsoft SharePoint Server 2010
- Microsoft SharePoint Server 2013
- Microsoft SharePoint Server 2016
- Microsoft SharePoint Server 2019

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.

<1> Section 2: FilePath MUST be empty for SharePoint Server 2010.

<2> Section 2: Folders are not allowed inside document sets in SharePoint Server 2010, so no property files for folders will be contained within the package.

<3> Section 2: SharePoint Server 2010 does not retain the original file extension.

6 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 <u>dochelp@microsoft.com</u>.

Section	Description	Revision class
5 Appendix A: Product Behavior	Updated list of supported products.	Major

7 Index

Applicability 6

с

<u>Change tracking</u> 16 <u>Common data types and fields</u> 7 Complex type <u>DSProperties</u> 8 <u>DSProperty</u> 9 <u>FileNameMapping</u> 9 <u>OriginalFileName</u> 10

D

Data types and fields - common 7 Details <u>common data types and fields</u> 7 <u>DSProperties complex type</u> 8 <u>DSProperty complex type</u> 9 <u>file name mapping</u> 9 <u>FileNameMapping complex type</u> 9 <u>OriginalFileName complex type</u> 10 <u>property manifest namespaces</u> 8 <u>property manifest structure</u> 8 <u>DSProperties complex type</u> 8 <u>DSProperty complex type</u> 9

Е

Examples <u>File Name Mapping</u> 11 <u>Manifest and binary locations</u> 12 <u>Property Manifest</u> 11

F

<u>Fields - security index</u> 14 <u>Fields - vendor-extensible</u> 6 <u>File name mapping</u> 9 <u>File Name Mapping example</u> 11 <u>FileNameMapping complex type</u> 9

G

Glossary 5

Ι

<u>Implementer - security considerations</u> 14 <u>Index of security fields</u> 14 <u>Informative references</u> 6 <u>Introduction</u> 5

L

Localization 6

М

Manifest and binary locations example 12

Ν

<u>Namespaces - property manifest</u> 8 <u>Normative references</u> 5

0

<u>OriginalFileName complex type</u> 10 <u>Overview (synopsis)</u> 6

Ρ

Product behavior 15 Property Manifest example 11 Property manifest namespaces 8 Property manifest structure 8

R

References 5 informative 6 normative 5 Relationship to protocols and other structures 6

S

Security <u>field index</u> 14 <u>implementer considerations</u> 14 Structures <u>DSProperties complex type</u> 8 <u>DSProperty complex type</u> 9 <u>file name mapping 9</u> <u>FileNameMapping complex type</u> 9 <u>OriginalFileName complex type</u> 10 <u>overview</u> 7 <u>property manifest</u> 8 <u>property manifest namespaces 8</u>

Т

Tracking changes 16

V

<u>Vendor-extensible fields</u> 6 <u>Versioning</u> 6