

## [MS-ISPAC-Diff]:

# Integration Services Project Deployment File Format

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## Revision Summary

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# 1 Introduction

The Integration Services Project Deployment file format is the file format for the Microsoft SQL Server Integration Services project deployment file. This file is a file type that is used to represent the packaged metadata of a data integration project.

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:

**globally unique identifier (GUID):** A term used interchangeably with universally unique identifier (UUID) in Microsoft protocol technical documents (TDs). Interchanging the usage of these terms does not imply or require a specific algorithm or mechanism to generate the value. Specifically, the use of this term does not imply or require that the algorithms described in [RFC4122] or [C706] must be used for generating the GUID. See also universally unique identifier (UUID).

**Integration Services (IS) package:** A module of a project. The module contains control flow and data flow, as specified in [MS-DTSX].

**Open Packaging Conventions (OPC) package:** A logical entity that holds a collection of parts, as specified in [ISO/IEC29500-2:2008].

**part:** A stream of bytes with a MIME content type and associated common properties, as described in [ISO/IEC29500-2:2008].

**project:** A collection of Integration Services (IS) packages that are developed and deployed as a unit.

**project manifest:** The metadata that describes the properties of a project as well as its contents.

**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 (Updated Section) 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.

[FIPS46-2] FIPS PUBS, "Data Encryption Standard (DES)", FIPS PUB 46-2, December 1993, <http://www.itl.nist.gov/fipspubs/fip46-2my.fit.edu/~gmarin/CSE5636/FIPS46-2DES.htm>

[MS-DTSX] Microsoft Corporation, "Data Transformation Services Package XML File Format".

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

## 1.2.2 Informative References

None.

## 1.3 Overview

This document specifies the file format for the SQL Server Integration Services project deployment file, a file type that is used to represent the packaged metadata of a data integration project.

The project deployment file is an implementation of Open Packaging Conventions (OPC). The project deployment file contains one or more Integration Services (IS) packages and one project manifest.

Each IS package is represented as one OPC part. The part is uniquely identified by a URI formatter part name. The part contains an IS package file in the .dtsx file format that is specified in [MS-DTSX]. The content type of the part is text/xml.

The project manifest is an OPC part of content type text/xml. A project deployment file is required to have a part that contains the project manifest. The project manifest contains metadata that describes the project properties, project parameter, and deployment metadata for each of the contained IS packages.

## 1.4 Relationship to Protocols and Other Structures

The project deployment file format can be used as a payload in protocols that support the transport of binary data.

## 1.5 Applicability Statement

The project deployment file format is applicable for use in a standalone representation of project metadata, for deploying a project from a client to a server, or for extracting a project from a server to a client.

## 1.6 Versioning and Localization

This document describes version 1.0 of the project deployment file format. There are no localization-dependent structures in the project deployment file format.

## 1.7 Vendor-Extensible Fields

Extensions to the file format that is specified in this document are not allowed. Tools that process this format do not have to preserve unrecognized structures when loading or persisting.

## 2 Structures

### 2.1 Project Deployment File

A project deployment file is an implementation of an Open Packaging Conventions (OPC) package. The file **MUST** contain the following parts:

- One part that contains a project manifest.
- Zero or more parts that contain an IS package.

### 2.2 IS Package

An IS package is stored as one OPC part in the project deployment file. The following rules apply to the package:

- The content type of the part **MUST** be text/xml.
- The part data stream **MUST** contain exactly one instance of a file in .dtsx format [MS-DTSX] representing one IS package.
- The part **MUST** have a unique part name within the Open Packaging Conventions (OPC) package.
- The part name URI **MUST NOT** contain the at sign (@).
- The part name URI **MUST** be a root URI; subfolders are not allowed.
- The part name file name extension **MUST** be .dtsx.

### 2.3 Project Manifest

The project manifest specifies the properties, parameters, and deployment information for a project. The project manifest is stored as a data stream in an OPC part of the project deployment file. The following rules apply to the project manifest:

- The part name **MUST** be @Project.manifest.
- The content type of the part **MUST** be text/xml.

#### 2.3.1 XML Namespace

The project manifest part contains an XML structure. The namespace URI for the project manifest XML structure is [www.microsoft.com/SqlServer/SSIS](http://www.microsoft.com/SqlServer/SSIS).

#### 2.3.2 Properties

The **Properties** element specifies a list of the Property elements.

The following is the child element of the **Properties** element.

Child elements
Property

The **Properties** element schema is specified by the **PropertiesType** type. The following is the XML schema definition of the **PropertiesType** type.

```

<xsd:complexType name="PropertiesType">
  <xsd:choice minOccurs="1" maxOccurs="unbounded">
    <xsd:element name="Property" type="PropertyType"/>
  </xsd:choice>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

```

### 2.3.3 Property

The **Property** element specifies the value of one property of an object such as a project, an IS package, or a parameter.

The **Property** element has a **Name** attribute of type **string** that specifies the name of the property.

The **Property** element schema is defined by the **PropertyType** type. The following is the XML schema definition of the **PropertyType** type.

```

<xsd:complexType name="PropertyType">
  <xsd:simpleContent>
    <xsd:extension base="xsd:string">
      <xsd:attribute name="Name" type="xsd:string" />
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>

```

### 2.3.4 Project

The **Project** element is the root element of the project manifest.

The **Project** element MUST have the following attribute.

Attribute	Type	Description
<b>ProtectionLevel</b>	String	Specifies the protection level of the project. The possible values are as follows: <ul style="list-style-type: none"> <li>▪ EncryptAllWithUserKey</li> <li>▪ EncryptAllWithPassword</li> <li>▪ EncryptSensitiveWithUserKey</li> <li>▪ EncryptSensitiveWithPassword</li> <li>▪ DontSaveSensitive</li> <li>▪ ServerStorage</li> </ul> All IS packages in the project MUST be serialized by using the same protection level as specified for the project.

The following child elements MUST be specified in the **Project** element.

Child elements
Properties
Parameters
Packages

<b>Child elements</b>
ConnectionManagers
DeploymentInfo

The following is the XML schema definition of the **Project** element.

```

<xsd:element name="Project">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="Properties" type="PropertiesType"
        minOccurs="1" maxOccurs="1"/>
      <xsd:element name="Parameters" type="ParametersType"
        minOccurs="1" maxOccurs="1"/>
      <xsd:element name="Packages" type="PackagesType"
        minOccurs="1" maxOccurs="1"/>
      <xsd:element name="ConnectionManagers" type="ConnectionManagersType"
        minOccurs="1" maxOccurs="1"/>
      <xsd:element name="DeploymentInfo" type="DeploymentInfoType"
        minOccurs="1" maxOccurs="1"/>
    </xsd:sequence>
    <xsd:attribute name="ProtectionLevel" type="xsd:string"/>
    <xsd:anyAttribute namespace="##other" processContents="skip" />
  </xsd:complexType>
</xsd:element>

```

The **Project** element MUST contain a **Properties** child element. The **Properties** child element, in turn, MUST contain a list of Property elements for each **Project** property that is listed in the following table.

Property	Value	Description
<b>ID</b>	Guid	Specifies the GUID that is assigned to the project.
<b>Name</b>	String	Specifies the name of the project.
<b>Description</b>	String	Specifies the description of the project.
<b>VersionMajor</b>	Positive integer	Specifies the major version of the project.
<b>VersionMinor</b>	Positive integer	Specifies the minor version of the project.
<b>VersionBuild</b>	Positive integer	Specifies the build version of the project.
<b>VersionComments</b>	String	Specifies comments for the version of the project.
<b>VersionGUID</b>	Guid	Specifies the GUID of the version of the project.
<b>CreationDate</b>	DateTimeOffset	Specifies the date, time, and time zone offset of the time when the project was created.

### 2.3.5 Packages

The **Packages** element specifies an ordered list of Package elements. The **Packages** element MUST contain a child **Package** element for each IS package in the project deployment file.

The following is the child element of the **Packages** element.



Child elements
Package

The **Packages** element schema is specified by the **PackagesType** type. The following is the XML schema definition of the **PackagesType** type.

```
<xsd:complexType name="PackagesType">
  <xsd:choice minOccurs="0" maxOccurs="unbounded">
    <xsd:element name="Package" type="PackageType" />
  </xsd:choice>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>
```

### 2.3.6 Package

The **Package** element specifies an IS package that is included in the project deployment file.

The **Package** element MUST have the following attributes.

Attribute	Type	Description
<b>EntryPoint</b>	Boolean	Specifies whether the IS package is a project entry point for execution. Possible values are: 1 – The IS package is an entry point. 0 – The IS package is not an entry point.
<b>Name</b>	String	Specifies the name of the IS package. This name MUST match the part name of the corresponding OPC part.

The **Package** element schema is specified by the **PackageType** type. The following is the XML schema definition of the **PackageType** type.

```
<xsd:complexType name="PackageType">
  <xsd:attribute name="EntryPoint" type="xsd:boolean" />
  <xsd:attribute name="Name" type="xsd:string" />
</xsd:complexType>
```

### 2.3.7 ConnectionManagers

The **ConnectionManagers** element specifies an ordered list of ConnectionManager elements. A **ConnectionManager** element MUST exist for each connection manager (.comgr) file that exists in the project deployment file.

The following is the child element of the **ConnectionManagers** element.

Child elements
ConnectionManager

The **ConnectionManagers** element schema is specified by the **ConnectionManagersType** type. The following is the XML schema definition of the **ConnectionManagersType** type.

```
<xsd:complexType name="ConnectionManagersType">
  <xsd:choice minOccurs="0" maxOccurs="unbounded">
    <xsd:element name="ConnectionManager" type="ConnectionManagerType" />
  </xsd:choice>
</xsd:complexType>
```

```

    </xsd:choice>
    <xsd:anyAttribute namespace="##other" processContents="skip" />
  </xsd:complexType>

```

### 2.3.8 ConnectionManager

The **ConnectionManager** element specifies an IS connection manager that is included in the project deployment file.

The **ConnectionManager** element MUST have the following attributes.

Attribute	Type	Description
<b>Name</b>	String	Specifies the name of the IS connection manager. This name MUST match the part name of the corresponding OPC part.

```

<xsd:complexType name="ConnectionManagerType">
  <xsd:attribute name="Name" type="xsd:string" />
</xsd:complexType>

```

### 2.3.9 DeploymentInfo

The **DeploymentInfo** element is an ordered list of PackageInfo elements. A **PackageInfo** element MUST be specified for each IS package that is included in the project.

The following is the child element of the **DeploymentInfo** element.

Child elements
PackageInfo

The **DeploymentInfo** element schema is specified by the **DeploymentInfoType** type. The following is the XML schema definition of the **DeploymentInfoType** type.

```

<xsd:complexType name="DeploymentInfoType">
  <xsd:choice minOccurs="0" maxOccurs="unbounded" >
    <xsd:element name="PackageInfo" type="PackageInfoType"/>
  </xsd:choice>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

```

### 2.3.10 PackageInfo

The **PackageInfo** element contains the metadata for an IS package that is contained in a project. The **PackageInfo** element MUST specify exactly one PackageMetadata element.

The following is the child element of the **PackageInfo** element.

Child elements
PackageMetadata

The **PackageInfo** element schema is specified by the **PackageInfoType** type. The following is the XML schema definition of the **PackageInfoType** type.

```

<xsd:complexType name="PackageInfoType">

```

```

<xsd:sequence>
  <xsd:element name="PackageMetadata" type="PackageMetadataType"
    minOccurs="1" maxOccurs="1"/>
</xsd:sequence>
<xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

```

### 2.3.11 PackageMetadata

The **PackageMetadata** element contains the metadata for an IS package contained in the project, including the core IS package properties and the IS package parameters.

The **PackageMetadata** element MUST specify the following attribute.

Attribute	Type	Description
<b>Name</b>	String	Specifies the name of the IS package. This name MUST match the part name of the corresponding OPC part.

The **PackageMetadata** element MUST specify the following child elements.

Child elements
Properties
Parameters

The **PackageMetadata** element schema is specified by the **PackageMetadataType** type. The following is the XML schema definition of the **PackageMetadataType** type.

```

<xsd:complexType name="PackageMetadataType">
  <xsd:sequence>
    <xsd:element name="Properties" type="PropertiesType"
      minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Parameters" type="ParametersType"
      minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

```

The **PackageMetadata** element MUST contain a **Properties** child element. The **Properties** child element, in turn, MUST contain a list of Property elements for each **PackageMetadata** property that is listed in the following table.

Property	Value	Description
<b>ID</b>	Guid	Specifies the GUID that is assigned to the IS package.
<b>Name</b>	String	Specifies the name of the IS package.
<b>Description</b>	String	Specifies the description of the IS package.
<b>ProtectionLevel</b>	Integer	Specifies an integer value. The possible values are as follows. 0 - DontSaveSensitive 1 - EncryptAllWithPassword 2 - EncryptAllWithUserKey 3 - EncryptSensitiveWithPassword 4 - EncryptSensitiveWithUserKey

Property	Value	Description
		5 – ServerStorage
<b>VersionMajor</b>	Positive integer	Specifies the major version of the IS package.
<b>VersionMinor</b>	Positive integer	Specifies the minor version of the IS package.
<b>VersionBuild</b>	Positive integer	Specifies the build version of the IS package.
<b>VersionComments</b>	String	Specifies comments of the version of the IS package.
<b>VersionGUID</b>	Guid	Specifies the GUID of the version of the IS package.

### 2.3.12 Parameters

The **Parameters** element specifies an ordered list of Parameter elements that declare the parameters of a project or an IS package.

The following is the child element of the **Parameters** element.

Child elements
Parameter

The **Parameters** element schema is specified by the **ParametersType** type. The following is the XML schema definition of the **ParametersType** type.

```
<xsd:complexType name="ParametersType">
  <xsd:choice minOccurs="0" maxOccurs="unbounded">
    <xsd:element name="Parameter" type="ParameterType"/>
  </xsd:choice>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>
```

### 2.3.13 Parameter

The **Parameter** element specifies one parameter of a project or an IS package.

The **Parameter** element MUST have the following attribute.

Attribute	Type	Description
<b>Name</b>	String	Specifies the name of the parameter.

The following is the child element of the **Parameter** element.

Child elements
Properties

The **Parameter** element schema is specified by the **ParameterType** type. The following is the XML schema definition of the **ParameterType** type.

```
<xsd:complexType name="ParameterType">
  <xsd:choice minOccurs="0" maxOccurs="unbounded">
```

```

    <xsd:element name="Properties" type="PropertiesType"/>
  </xsd:choice>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

```

The **Parameter** element MUST contain a **Properties** child element. The **Properties** child element, in turn, MUST contain a list of Property elements for each **Parameter** property that is listed in the following table.

Property	Value	Description
<b>ID</b>	Guid	Specifies the GUID that is assigned to the parameter.
<b>Description</b>	String	Specifies the description of the parameter.
<b>Required</b>	Boolean	Specifies whether the value is required. <ul style="list-style-type: none"> <li>▪ True specifies that the parameter is required.</li> <li>▪ False specifies that the parameter is not required.</li> </ul>
<b>Sensitive</b>	Boolean	Specifies whether the value is sensitive. <ul style="list-style-type: none"> <li>▪ True specifies that the parameter is sensitive.</li> <li>▪ False specifies that the parameter is not sensitive.</li> </ul>
<b>DefaultValue</b>	String	Specifies the serialized value of the parameter. If the project protection level is EncryptSensitiveWithPassword or EncryptSensitiveWithUserKey, the value MUST be encrypted by using a triple Data Encryption Standard (DES) encryption algorithm [FIPS46-2] that uses the corresponding encryption key. The encrypted value then MUST be encoded by using base64 encoding.
<b>DataType</b>	Integer	Specifies the data type. The possible values are as follows. <ul style="list-style-type: none"> <li>3 - Boolean</li> <li>5 - SByte</li> <li>6 - Byte</li> <li>9 - Int32</li> <li>10 - UInt32</li> <li>11 - Int64</li> <li>12 - UInt64</li> <li>13 - Single</li> <li>14 - Double</li> <li>16 - DateTime</li> <li>18 - String</li> </ul>

### 3 Structure Examples

The following is an example of a typical project manifest for a project deployment file, including all the mandatory elements and examples of property, parameter, and connection manager declarations.

```
<Project ProtectionLevel="EncryptSensitiveWithUserKey">
  <Properties>
    <Property Name="ID">{dd0733bd-0382-4511-91d3-ed34210d5469}</Property>
    <Property Name="Name">DWLoad</Property>
    <Property Name="VersionMajor">1</Property>
    <Property Name="VersionMinor">0</Property>
    <Property Name="VersionBuild">1</Property>
    <Property Name="VersionComments">
</Property>
    <Property Name="CreationDate">06/22/2010 01:13:02 -07:00</Property>
    <Property Name="CreatorName">MYDOMAIN\user1</Property>
    <Property Name="CreatorComputerName">MyServer</Property>
    <Property Name="OfflineMode">0</Property>
    <Property Name="Description">
</Property>
  </Properties>
  <Packages>
    <Package Name="MasterControl.dtsx" EntryPoint="1" />
    <Package Name="LoadCustomerDim.dtsx" EntryPoint="1" />
    <Package Name="LoadProductDim.dtsx" EntryPoint="1" />
    <Package Name="LoadSalesFact.dtsx" EntryPoint="1" />
    <Package Name="Cleanup.dtsx" EntryPoint="1" />
  </Packages>
  <Parameters />
  <ConnectionManagers>
    <ConnectionManager Name="Love.conmgr" />
  </ConnectionManagers>
  <DeploymentInfo>
    <PackageInfo>
      <PackageMetaData Name="MasterControl.dtsx">
        <Properties>
          <Property Name="ID">{169F8551-25AA-4D90-B9FD-39C8F1A0E363}</Property>
          <Property Name="Name">MasterControl</Property>
          <Property Name="VersionMajor">1</Property>
          <Property Name="VersionMinor">0</Property>
          <Property Name="VersionBuild">3</Property>
          <Property Name="VersionComments">
</Property>
          <Property Name="VersionGUID">{D95E1FD4-E1BC-4BD3-84BD-7ECE2C48C2EF}</Property>
          <Property Name="PackageFormatVersion">4</Property>
          <Property Name="Description">
</Property>
          <Property Name="ProtectionLevel">1</Property>
        </Properties>
        <Parameters>
          <Parameter Name="DWPassword">
            <Properties>
              <Property Name="ID">{21B7E59E-62B5-44E8-AF1C-FF7A8A78B225}</Property>
              <Property Name="CreationName">
</Property>
              <Property Name="Description">
</Property>
              <Property Name="IncludeInDebugDump">0</Property>
              <Property Name="Required">1</Property>
              <Property Name="Sensitive">1</Property>
              <Property Name="DefaultValue"
Sensitive="1">AQAAANCMnd8BFdERjHoAwE/Cl+sBAAAT1admM5G+EmCVt6OOLna+QAAAAACAAAAAADZgAAwAAAAABA
AAACyXjYXsjUrMnUPBsJleDKAAAAAASAAACgAAAAEAAAADZUUCbG8oqLjVx1OamH8CJAAAAAmDJujhbCxEtBq6FiRAVz
q3BGVACvLGW30PkgIdkSv5woRpotOhXZyCkMZsP6kJvt/FKvdIXwF/qDfY//ijG/ahQAAAAimi6gM1Fu1RSRzUFMK2WSO
dk75w==</Property>
            </Properties>
          </Parameter>
        </Parameters>
      </PackageMetaData>
    </PackageInfo>
  </DeploymentInfo>
</Project>
```

```

</Parameter>
<Parameter Name="DWServer">
  <Properties>
    <Property Name="ID">{1D86BA36-9FAC-43BA-9784-CCF54C502E8A}</Property>
    <Property Name="CreationName">
</Property>
    <Property Name="Description">
</Property>
    <Property Name="IncludeInDebugDump">0</Property>
    <Property Name="Required">1</Property>
    <Property Name="Sensitive">0</Property>
    <Property Name="DefaultValue">DevDWSRV</Property>
    <Property Name="DataType">18</Property>
  </Properties>
</Parameter>
<Parameter Name="DWUser">
  <Properties>
    <Property Name="ID">{76C82FBC-B4A7-4FE7-9CDA-DAF2446DF85A}</Property>
    <Property Name="CreationName">
</Property>
    <Property Name="Description">
</Property>
    <Property Name="IncludeInDebugDump">0</Property>
    <Property Name="Required">1</Property>
    <Property Name="Sensitive">0</Property>
    <Property Name="DefaultValue">DevAcct</Property>
    <Property Name="DataType">18</Property>
  </Properties>
</Parameter>
<Parameter Name="RunCleanup">
  <Properties>
    <Property Name="ID">{9E54B3C5-F3CF-42A6-8427-994D15C5B6E8}</Property>
    <Property Name="CreationName">
</Property>
    <Property Name="Description">
</Property>
    <Property Name="IncludeInDebugDump">0</Property>
    <Property Name="Required">0</Property>
    <Property Name="Sensitive">0</Property>
    <Property Name="DefaultValue">0</Property>
    <Property Name="DataType">9</Property>
  </Properties>
</Parameter>
</Parameters>
</PackageMetaData>
<PackageMetaData Name="LoadCustomerDim.dtsx">
  <Properties>
    <Property Name="ID">{7CDBB704-93D6-43B8-B2BD-EBEA57862072}</Property>
    <Property Name="Name">LoadCustomerDim</Property>
    <Property Name="VersionMajor">1</Property>
    <Property Name="VersionMinor">0</Property>
    <Property Name="VersionBuild">1</Property>
    <Property Name="VersionComments">
</Property>
    <Property Name="VersionGUID">{7962C979-1C76-4EE1-BD90-B33A12687A67}</Property>
    <Property Name="PackageFormatVersion">4</Property>
    <Property Name="Description">
</Property>
    <Property Name="ProtectionLevel">1</Property>
  </Properties>
<Parameters />
</PackageMetaData>
<PackageMetaData Name="LoadProductDim.dtsx">
  <Properties>
    <Property Name="ID">{A502C05C-A08A-4A76-A960-15F37F070DA5}</Property>
    <Property Name="Name">LoadProductDim</Property>
    <Property Name="VersionMajor">1</Property>
    <Property Name="VersionMinor">0</Property>
    <Property Name="VersionBuild">1</Property>
    <Property Name="VersionComments">

```

```

    </Property>
    <Property Name="VersionGUID">{B3DF69C4-309F-400B-8850-87FFE481AD95}</Property>
    <Property Name="PackageFormatVersion">4</Property>
    <Property Name="Description">
    </Property>
    <Property Name="ProtectionLevel">1</Property>
  </Properties>
</Parameters />
</PackageMetaData>
<PackageMetaData Name="LoadSalesFact.dtsx">
  <Properties>
    <Property Name="ID">{D6794D56-2A03-43C0-B47E-69F43DA13C42}</Property>
    <Property Name="Name">LoadSalesFact</Property>
    <Property Name="VersionMajor">1</Property>
    <Property Name="VersionMinor">0</Property>
    <Property Name="VersionBuild">1</Property>
    <Property Name="VersionComments">
    </Property>
    <Property Name="VersionGUID">{9E2587D4-765C-44D5-B9FD-1C0BD4C3E2CC}</Property>
    <Property Name="PackageFormatVersion">4</Property>
    <Property Name="Description">
    </Property>
    <Property Name="ProtectionLevel">1</Property>
  </Properties>
</Parameters />
</PackageMetaData>
<PackageMetaData Name="Cleanup.dtsx">
  <Properties>
    <Property Name="ID">{D30FBC74-FD46-4918-8908-D33707426F30}</Property>
    <Property Name="Name">Cleanup</Property>
    <Property Name="VersionMajor">1</Property>
    <Property Name="VersionMinor">0</Property>
    <Property Name="VersionBuild">2</Property>
    <Property Name="VersionComments">
    </Property>
    <Property Name="VersionGUID">{A18DA090-0A36-4289-85F8-FD5E5C6B3E66}</Property>
    <Property Name="PackageFormatVersion">4</Property>
    <Property Name="Description">
    </Property>
    <Property Name="ProtectionLevel">1</Property>
  </Properties>
  <Parameters>
    <Parameter Name="Date">
      <Properties>
        <Property Name="ID">{A4A0E563-A0F3-4C82-8378-5785E9F142E6}</Property>
        <Property Name="CreationName">
        </Property>
        <Property Name="Description">
        </Property>
        <Property Name="IncludeInDebugDump">0</Property>
        <Property Name="Required">0</Property>
        <Property Name="Sensitive">0</Property>
        <Property Name="DefaultValue">1899-12-30T00:00:00-08:00</Property>
        <Property Name="DataType">16</Property>
      </Properties>
    </Parameter>
    <Parameter Name="FullCleanup">
      <Properties>
        <Property Name="ID">{65E8AE90-50EB-495F-BED3-67CF648372BC}</Property>
        <Property Name="CreationName">
        </Property>
        <Property Name="Description">
        </Property>
        <Property Name="IncludeInDebugDump">0</Property>
        <Property Name="Required">0</Property>
        <Property Name="Sensitive">0</Property>
        <Property Name="DefaultValue">>false</Property>
        <Property Name="DataType">3</Property>
      </Properties>
    </Parameter>
  </Parameters>

```



```
</Parameters>  
</PackageMetaData>  
</PackageInfo>  
</DeploymentInfo>  
</Project>
```

## **4 Security**

### **4.1 Security Considerations for Implementers**

The project deployment file can contain sensitive information, such as deployment configurations that define user names and passwords that are used to access data sources.

When sensitive values are present in a project or its IS packages, the user is advised to use the appropriate protection level for serialization, as described in this document and in [MS-DTSX].

### **4.2 Index of Security Fields**

None.

## 5 Appendix A: XML Schema Definition

The following is the complete XML schema definition for the project deployment file format.

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="www.microsoft.com/SqlServer/SSIS"
  elementFormDefault="qualified"
  xmlns="www.microsoft.com/SqlServer/SSIS"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
>
  <xsd:element name="Project">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="Properties" type="PropertiesType"
          minOccurs="1" maxOccurs="1"/>
        <xsd:element name="Parameters" type="ParametersType"
          minOccurs="1" maxOccurs="1"/>
        <xsd:element name="Packages" type="PackagesType"
          minOccurs="1" maxOccurs="1"/>
        <xsd:element name="DeploymentInfo" type="DeploymentInfoType"
          minOccurs="1" maxOccurs="1"/>
      </xsd:sequence>
      <xsd:attribute name="ProtectionLevel" type="xsd:string"/>
      <xsd:anyAttribute namespace="##other" processContents="skip" />
    </xsd:complexType>
  </xsd:element>

  <xsd:complexType name="PropertyType">
    <xsd:simpleContent>
      <xsd:extension base="xsd:string">
        <xsd:attribute name="Name" type="xsd:string" />
      </xsd:extension>
    </xsd:simpleContent>
  </xsd:complexType>

  <xsd:complexType name="PropertiesType">
    <xsd:choice minOccurs="1" maxOccurs="unbounded">
      <xsd:element name="Property" type="PropertyType"/>
    </xsd:choice>
    <xsd:anyAttribute namespace="##other" processContents="skip" />
  </xsd:complexType>

  <xsd:complexType name="PackageType">
    <xsd:attribute name="EntryPoint" type="xsd:boolean" />
    <xsd:attribute name="Name" type="xsd:string" />
  </xsd:complexType>

  <xsd:complexType name="PackagesType">
    <xsd:choice minOccurs="0" maxOccurs="unbounded">
      <xsd:element name="Package" type="PackageType" />
    </xsd:choice>
    <xsd:anyAttribute namespace="##other" processContents="skip" />
  </xsd:complexType>

  <xsd:complexType name="ParameterType">
    <xsd:choice minOccurs="0" maxOccurs="unbounded">
      <xsd:element name="Properties" type="PropertiesType"/>
    </xsd:choice>
    <xsd:anyAttribute namespace="##other" processContents="skip" />
  </xsd:complexType>

  <xsd:complexType name="ParametersType">
    <xsd:choice minOccurs="0" maxOccurs="unbounded">
      <xsd:element name="Parameter" type="ParameterType"/>
    </xsd:choice>
    <xsd:anyAttribute namespace="##other" processContents="skip" />
  </xsd:complexType>
```

```
<xsd:complexType name="PackageMetadataType">
  <xsd:sequence>
    <xsd:element name="Properties" type="PropertiesType"
      minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Parameters" type="ParametersType"
      minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

<xsd:complexType name="PackageInfoType">
  <xsd:sequence>
    <xsd:element name="PackageMetadata" type="PackageMetadataType"
      minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

<xsd:complexType name="DeploymentInfoType">
  <xsd:choice minOccurs="0" maxOccurs="unbounded" >
    <xsd:element name="PackageInfo" type="PackageInfoType"/>
  </xsd:choice>
  <xsd:anyAttribute namespace="##other" processContents="skip" />
</xsd:complexType>

</xsd:schema>
```

## 6 (Updated Section) Appendix B: Product Behavior

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

- Microsoft SQL Server 2012
- Microsoft SQL Server 2014
- Microsoft SQL Server 2016
- Microsoft SQL Server 2017

### ▪ Microsoft SQL Server 2019

Exceptions, if any, are noted ~~below in this section.~~ If ~~a an update version,~~ service pack or ~~Quick-Fix Engineering (QFE)~~ Knowledge Base (KB) number appears with ~~the~~ product ~~version,~~ name, the behavior changed in that ~~service pack or QFE.~~ update. The new behavior also applies to subsequent ~~service packs of the product~~ 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](mailto:dochelp@microsoft.com).

Section	Description	Revision class
6 Appendix B: Product Behavior	Added SQL Server 2019 to the product applicability list.	Major

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