[MS-ISPAC]:
Integration Services Project Deployment File Format Structure Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
09/03/2010	0.1	New	Released new document.
02/09/2011	0.1	No change	No changes to the meaning, language, or formatting of the technical content.
07/07/2011	1.0	Major	Significantly changed the technical content.
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Contents

1 Introduction

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

1.1 Glossary

The following terms are defined in [MS-GLOS]:

globally unique identifier (GUID)
XML namespace

The following terms are specific to this document:

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/IEC 29500-2:2008].

part: A stream of bytes with a MIME content type and associated common properties, as specified in [ISO/IEC 29500-2:2008].

project: A collection of **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 described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

References to Microsoft Open Specification documents do not include a publishing year because links are to the latest version of the documents, which are updated frequently. References to other documents include a publishing year when one is available.

1.2.1 Normative References

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

[FIPS46-2] National Institute of Standards and Technology, "Federal Information Processing Standards Publication 46-2: Data Encryption Standard (DES)", December 1993, http://www.itl.nist.gov/fipspubs/fip46-2.htm

[ISO/IEC 29500-2:2008] Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 2: Open Packaging Conventions, http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=51459

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

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

1.2.2 Informative References

[MS-GLOS] Microsoft Corporation, "Windows Protocols Master Glossary".

1.3 Overview

This document specifies the file format for the Microsoft® 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 must 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 **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.

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
ProtectionLevel	String	Specifies the protection level of the project. The protection level MUST be one of the following values: EncryptAllWithUserKey EncryptAllWithPassword EncryptSensitiveWithUserKey EncryptSensitiveWithPassword DontSaveSensitive ServerStorage 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

Child elements
Parameters
Packages
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
ID	Guid	Specifies the GUID that is assigned to the project.
Name	String	Specifies the name of the project.
Description	String	Specifies the description of the project.
VersionMajor	Positive integer	Specifies the major version of the project.
VersionMinor	Positive integer	Specifies the minor version of the project.
VersionBuild	Positive integer	Specifies the build version of the project.
VersionComments	String	Specifies comments for the version of the project.
VersionGUID	Guid	Specifies the GUID of the version of the project.
CreationDate	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
EntryPoint	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.
Name	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 (.conmgr) 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: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
Name	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
Name	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
ID	Guid	Specifies the GUID that is assigned to the IS package.
Name	String	Specifies the name of the IS package.
Description	String	Specifies the description of the IS package.
ProtectionLevel	Integer	Specifies an integer value. The value MUST be one of the following: 0 – DontSaveSensitive 1 – EncryptAllWithPassword 2 – EncryptAllWithUserKey 3 – EncryptSensitiveWithPassword 4 – EncryptSensitiveWithUserKey 5 – ServerStorage
VersionMajor	Positive integer	Specifies the major version of the IS package.
VersionMinor	Positive integer	Specifies the minor version of the IS package.
VersionBuild	Positive integer	Specifies the build version of the IS package.
VersionComments	String	Specifies comments of the version of the IS package.
VersionGUID	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
Name	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
ID	Guid	Specifies the GUID that is assigned to the parameter.
Description	String	Specifies the description of the parameter.
Required	Boolean	Specifies whether the value is required. ▪ True specifies that the parameter is required. ▪ False specifies that the parameter is not required.
Sensitive	Boolean	Specifies whether the value is sensitive. ▪ True specifies that the parameter is sensitive. ▪ False specifies that the parameter is not sensitive.

Property	Value	Description
DefaultValue	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.
DataType	Integer	Specifies that the value MUST be one of the following: 3 – Boolean 5 – SByte 6 - Byte 9 – Int32 10 – Uint32 11 – Int64 12 – Uint64 13 – Single 14 – Double 16 – DateTime 18 – String

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+sBAAAAT1admM5G+EmCVt6OOLna+QAAAAACAAAAAAADZgAAwAAAABA
AAACyXjYXsjUrMnUPBsjleDKAAAAAAASAAACgAAAAEAAAADZUUCbG8oqLjVx1OamH8CJAAAAAmDJujhbCxEtBq6FiRAvz
q3BGVACvLGW3OPkgIDkSv5woRpotOhXZyCkMZsP6kJvt/FKVdIXwF/qDfY//ijG/ahQAAAAimi6gMlFu1RSRzUFMK2WSo
dk75w==</Property>
              <Property Name="DataType">18</Property>
            </Properties>
          </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>
      </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 should 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 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:

- Microsoft® SQL Server® 2012

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product 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

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

8 Index