[MS-DPBCP]:
Bulk Copy Utility Data Portability Overview

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Revision Summary

Date	Revision History	Revision Class	Comments
06/04/2010	0.1	Major	First release.
09/03/2010	0.1.1	Editorial	Changed language and formatting in the technical content.
02/09/2011	0.1.1	No change	No changes to the meaning, language, or formatting of the technical content.
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10/23/2012	0.1.1	No change	No changes to the meaning, language, or formatting of the technical content.

Contents

1 Introduction

This document specifies the components and methodologies used for data portability within the Microsoft SQL Server Engine system. It provides examples of some of the common user scenarios for data import and export. It does not restate the details of formats used for data portability. These details are described in the specifications for each of the formats used by this system.

This document provides an overview of data portability scenarios between a SQL Server database and another vendor's database.

SQL Server hosts user databases that contain the data for the application. This document provides an overview of data portability scenarios for importing and exporting data between SQL Server and a vendor's database. In these scenarios, the vendor must use an API or tools that can consume the data within the vendor's database.
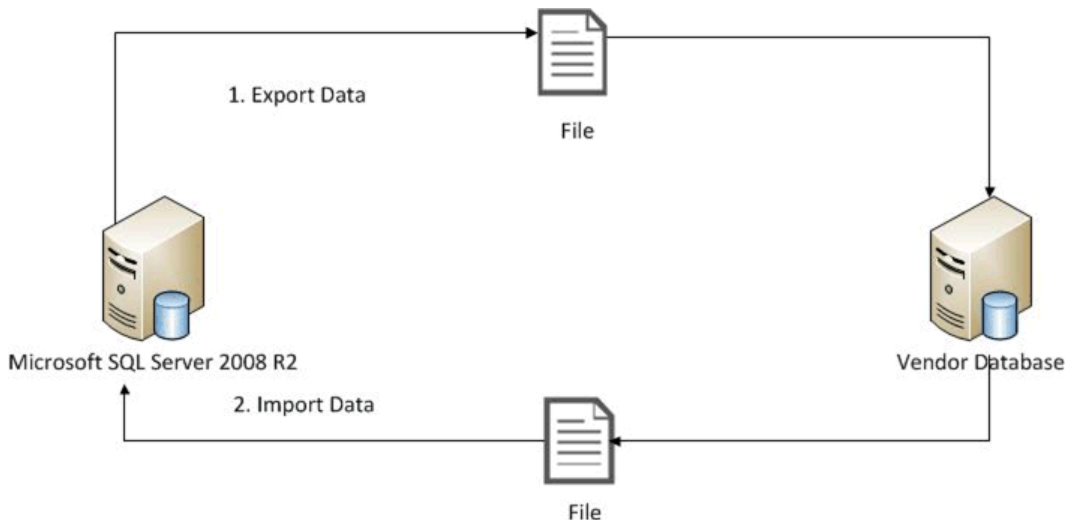

Figure 1: Conceptual overview of export and import data portability

In the export data scenario in the preceding figure, a vendor can use the bulk copy (**bcp**) utility as specified in [MSDN-IEBDUBU] to export data from a SQL Server database to files. This methodology is described in section 2.1. Data is exported in bulk copy (BCP) format [MS-BCP], a data structure format.

In the import data scenario in the preceding figure, a vendor can use the **bcp** utility as specified in [MSDN-IEBDUBU] to import data from files to a SQL Server database. This methodology is described in section 2.2.

1.1 Glossary

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

database object
schema

1.2 References

[MS-BCP] Microsoft Corporation, "Bulk Copy Format".

[MSDN-BCPU] Microsoft Corporation, "bcp Utility", http://msdn.microsoft.com/en-us/library/ms162802(SQL.105).aspx

[MSDN-DBSTATE] Microsoft Corporation, "Database States", http://msdn.microsoft.com/en-us/library/ms190442.aspx

[MSDN-IEBDUBU] Microsoft Corporation, "Importing and Exporting Bulk Data by Using the bcp Utility", http://msdn.microsoft.com/en-us/library/aa337544(SQL.105).aspx

[MSDN-SFRT] Microsoft Corporation, "Specifying Field and Row Terminators", http://msdn.microsoft.com/en-us/library/ms191485(SQL.105).aspx

[MSDN-UUCFIED] Microsoft Corporation, "Using Unicode Character Format to Import or Export Data", http://msdn.microsoft.com/en-us/library/ms188289.aspx

2 Data Portability Scenarios

The data portability scenarios described in the following sections describe exporting and importing data by using the **bcp** utility in Microsoft SQL Server. They describe only the export and import of data from a database in SQL Server. The portability of the database **schema** is outside the scope of this document.

2.1 Export Data

The data export scenario describes exporting customer data from a Microsoft SQL Server 2008 R2 database to files that a vendor can consume within its database. As shown in the following figure, a file containing the data can be created by using the **bcp** utility that ships with Microsoft SQL Server. Data is exported in BCP format [MS-BCP], or the vendor can export the data in Unicode text file format.
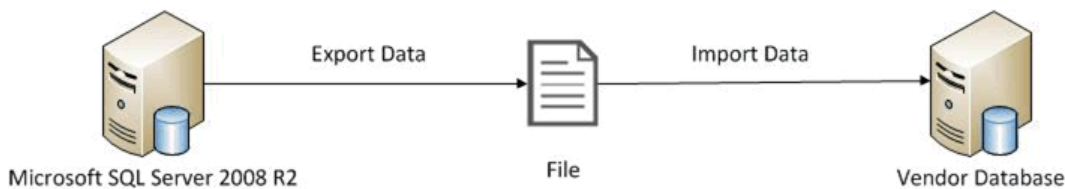

Figure 2: Export data

2.1.1 Data Description

Customer Data

The customer data is a text file representation of a **database object** in a Microsoft SQL Server database.

Intended User

The intended user is a vendor who can export SQL Server database objects from a SQL Server instance to consume it within another vendor's database.

2.1.2 Format and Protocol Summary

The following table provides a comprehensive list of the formats and protocols used in this data portability scenario.

Protocol or format name	Description	Reference
Bulk Copy File Format	The bulk copy file format that is output by the **bcp** utility.	[MS-BCP]

2.1.3 Data Portability Methodology

The data portability methodology describes the steps to export the data by using the **bcp** utility. The vendor database's consumption of the file is outside the scope of this document.

Export data from a database object

To export data from a database object, follow these steps:

1. Invoke the **bcp** utility [MSDN-BCPU] to export data from a database object in the customer database.

2. Specify the database object to export.

3. Use the **-out** option to export the data from the specified database object.

4. Use the **-w** option to perform the bulk copy operation using Unicode characters [MS-UUCFIED].

If the data in the database object contains special characters such as tabs or newline characters, a different field or row terminator can be used to handle the export [MSDN-SFRT].

2.1.3.1 Preconditions

The SQL Server database must be ONLINE as specified in [MSDN-DBSTATE].

2.1.3.2 Versioning

This version of the data export scenario is applicable to the Microsoft SQL Server 2008 R2 release.

2.1.3.3 Error Handling

None.

2.1.3.4 Coherency Requirements

There are no special coherency requirements.

2.1.3.5 Additional Considerations

There are no additional considerations.

2.2 Import Data

The data import scenario describes importing customer data from a vendor database that can produce files that contain data into Microsoft SQL Server 2008 R2 database. As shown in the following figure, a file containing the data can be created by using the vendor's utility and imported into Microsoft SQL Server. The vendor can export the data in Unicode text file format.

Figure 3: Import data

2.2.1 Data Description

Customer Data

The customer data is a text file representation of a database object in a vendor's database.

Intended User

The intended user is a vendor who can import data from files produced from a vendor database into a Microsoft SQL Server database.

2.2.2 Format and Protocol Summary

The following table provides a comprehensive list of the formats and protocols used in this data portability scenario.

Protocol or format name	Description	Reference
Bulk Copy File Format	The bulk copy file format that is the output of **bcp** utility.	[MS-BCP]

2.2.3 Data Portability Methodology

The data portability methodology describes the steps to import the data by using the **bcp** utility. The vendor database's production of the file is outside the scope of this document.

Import data from a file

To import data from a file into a database object, follow these steps:

1. Invoke the **bcp** utility [MSDN-BCPU] to import data from a file produced from a vendor's database.

2. Specify the database object into which the file is to be imported.

3. Use the **-in** option to import the data from the specified file.

4. Use the **-w** option to perform the bulk copy operation using Unicode characters [MS-UUCFIED].

If the data in the file does not conform to the specifications of the **-w** option, a different field or row terminator can be used to handle the import accordingly [MSDN-SFRT].

2.2.3.1 Preconditions

The SQL Server database must be ONLINE as specified in [MSDN-DBSTATE].

2.2.3.2 Versioning

This version of the data import scenario is applicable to the Microsoft SQL Server 2008 R2 release.

2.2.3.3 Error Handling

The **-e** option enables the user to specify the full path of an error file used to store any rows that the **bcp** utility cannot transfer from the file to the database. Error messages from the **bcp** command go to the workstation of the user. If this option is not used, an error file is not created.

The **-m** option specifies the maximum number of syntax errors that can occur before the **bcp** operation is canceled. A syntax error implies a data conversion error to the target data type. The *max_errors* total excludes any errors that can be detected only at the server, such as constraint violations.

2.2.3.4 Coherency Requirements

There are no special coherency requirements.

2.2.3.5 Additional Considerations

There are no additional considerations.

3 Change Tracking

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

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