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Non-XML Format Files (SQL Server)

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Applies to: SQL Server (all supported versions) Azure SQL Database Azure SQL Managed Instance Azure Synapse Analytics Parallel Data Warehouse

In SQL Server, two types of format files are supported for bulk exporting and importing: *non-XML format files* and *XML format files*.

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Benefits of Non-XML Format Files

- You can create a non-XML format file automatically by specifying the **format** option in a **bcp** command.
- When you specify an existing format file in a **bcp** command, the command uses the values that are recorded in the format file and does not prompt you for the file storage type, prefix length, field length, or field terminator.
- You can create a format file for a particular data type such as character data or native data.
- You can create a non-XML format file that contains interactively specified attributes for each data field. For more information, see [Specify Data Formats for Compatibility when Using bcp \(SQL Server\)](#).

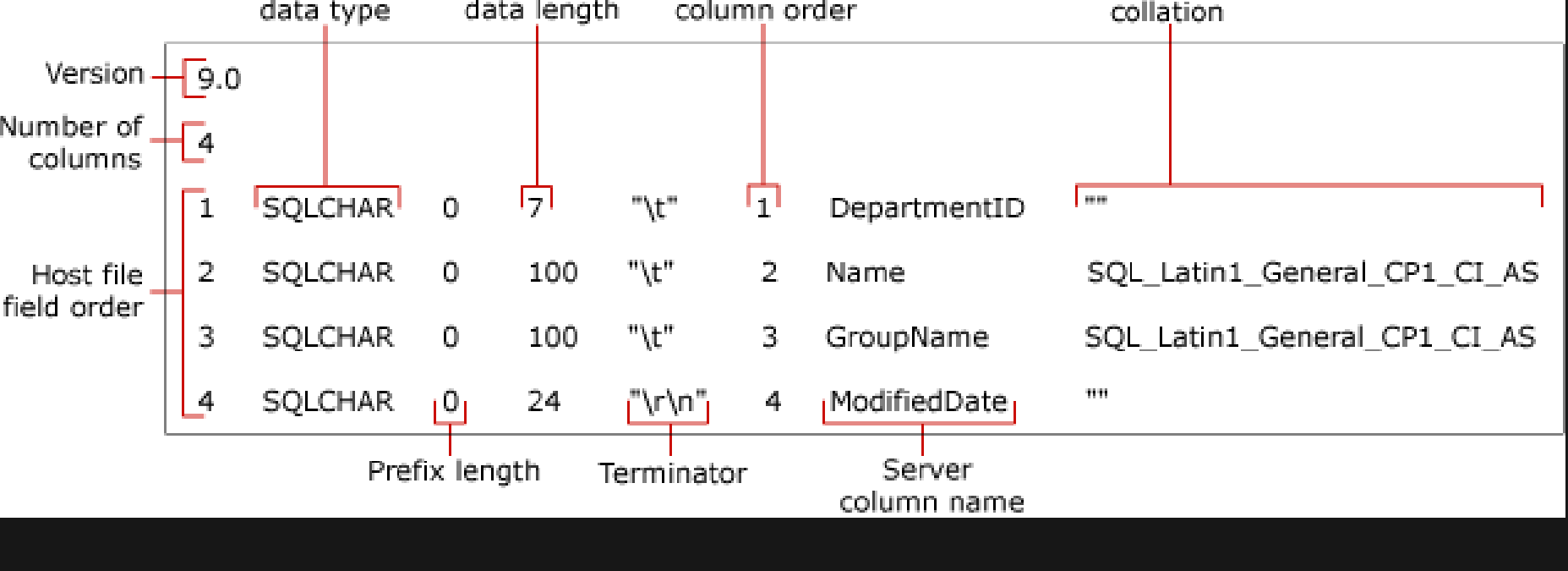
Note

XML format files offer several advantages over non-XML format files. For more information, see [XML Format Files \(SQL Server\)](#).

Structure of Non-XML Format Files

A non-XML format file is a text file that has a specific structure. The non-XML format file contains information about the file storage type, prefix length, field length, and field terminator of every table column.

The following illustration illustrates the format-file fields for a sample non-XML format file.



The **Version** and **Number of columns** fields occur one time only. Their meanings are describes in the following table.

Format-file field	Description
Version	Version number of the bcp utility: 9.0 = SQL Server 2005 (9.x) 10.0 = SQL Server 2008 11.0 = SQL Server 2012 (11.x) 12.0 = SQL Server 2014 (12.x) The version number is recognized only by bcp , not by Transact-SQL.
Number of columns	Number of fields in the data file. This number must be the same in all rows.

Note: The version of the **bcp** utility (Bcp.exe) used to read a format file must be the same as, or a later version than was used to create the format file. For example, SQL Server 2012 (11.x)**bcp** can read a version 10.0 format file, which is generated by SQL Server 2008**bcp**, but SQL Server 2008**bcp** cannot read a version 12.0 format file, which is generated by SQL Server 2014 (12.x)**bcp**.

The other format-file fields describe the data fields that are to be bulk imported or exported. Each data field requires a separate row in the format file. Every format-file row contains values for the format-file fields that are described in the following table.

Format-file field	Description
Host file field order	A number that indicates the position of each field in the data file. The first field in the row is 1, and so on.
Host file data type	Indicates the data type that is stored in a given field of the data file. With ASCII data files, use SQLCHAR; for native format data files, use default data types. For more information, see Specify File Storage Type by Using bcp (SQL Server) .
Prefix length	Number of length prefix characters for the field. Valid prefix lengths are 0, 1, 2, 4, and 8. To avoid specifying the length prefix, set this to 0. A length prefix must be specified if the field contains NULL data values. For more information, see Specify Prefix Length in Data Files by Using bcp (SQL Server) .
Host file data length	Maximum length, in bytes, of the data type stored in the particular field of the data file. If you are creating a non-XML format file for a delimited text file, you can specify 0 for the host file data length of every data field. When a delimited text file having a prefix length of 0 and a terminator is imported, the field-length value is ignored, because the storage space used by the field equals the length of the data plus the terminator. For more information, see Specify Field Length by Using bcp (SQL Server) .
Terminator	Delimiter to separate the fields in a data file. Common terminators are comma (,), tab (\\t), and end of line (\\r\\n). For more information, see Specify Field and Row Terminators (SQL Server) .
Server column order	Order in which columns appear in the SQL Server table. For example, if the fourth field in the data file maps to the sixth column in a SQL Server table, the server column order for the fourth field is 6. To prevent a column in the table from receiving any data from the data file, set the server column order value to 0.
Server column name	Name of the column copied from the SQL Server table. The actual name of the field is not required, but the field in the format file must not be blank.
Column collation	The collation used to store character and Unicode data in the data file.

Note

You can modify a format file to let you bulk import from a data file in which the number or order of the fields are different from the number or order of table columns. For more information, see the [Related Tasks](#) list, later in this topic.

Example of a Non-XML Format File

The following example shows a previously created non-XML format file (`myDepartmentIdentical-f-c.fmt`). This file describes a character-data field for every column in the `HumanResources.Department` table in the `AdventureWorks2012` sample database.

The generated format file, `myDepartmentIdentical-f-c.fmt`, contains the following information:

12.0							
4							
1	SQLCHAR	0	7	"\\t"	1	DepartmentID	""
2	SQLCHAR	0	100	"\\t"	2	Name	SQL_Latin1
3	SQLCHAR	0	100	"\\t"	3	GroupName	SQL_Latin1
4	SQLCHAR	0	24	"\\r\\n"	4	ModifiedDate	""

Note

For an illustration that shows the format-file fields in relation to this sample non-XML format file, see [Structure of Non-XML Format Files](#), earlier in this topic.

Related Tasks

- Create a Format File (SQL Server)
- Use a Format File to Bulk Import Data (SQL Server)
- Use a Format File to Skip a Table Column (SQL Server)
- Use a Format File to Skip a Data Field (SQL Server)
- Use a Format File to Map Table Columns to Data-File Fields (SQL Server)

See Also

- [bcp Utility](#)
- [Create a Format File \(SQL Server\)](#)
- [XML Format Files \(SQL Server\)](#)
- [Format Files for Importing or Exporting Data \(SQL Server\)](#)

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