## 

**Mobilize.Net SnowConvert for SQL Server**

The purpose of this document is to summarize the technical considerations and code analysis in migrating SQL to Snowflake from SQL Server that either have an impact on the automated code conversion or cannot be handled by automated code conversion, as well as providing a high-level inventory and automation capability of the code that will need to be addressed.

|  |  |  |  |
| --- | --- | --- | --- |
| **OVERALL CONVERSION SUMMARY** | | **SQL CONVERSION SUMMARY** | |
| Total Files:  Total Files Not Generated  Conversion Speed  Conversion Time  Total Conversion Issues Total Parsing Errors  Total Warnings  Total Lines of Code (LOC) | 13  0  18 lines/sec 00:00:09  0  0  12  177 | Code Conversion Rate | 100% |
| **OBJECT CONVERSION SUMMARY** | |
| Identified Objects  Objects Conversion Rate  Fully converted Objects  Unrecognized Elements  Lines of Code in Unrecognized Elements | 12  100%  12  0  0 |
|  | |
|  |  |

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# **FILE** **AND OBJECT LEVEL BREAKDOWN**

***SQL – Files***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **Conversion Rate** | **Lines of Code** | **Total Object Quantity** | **Parsing**  **Errors** |
| SQL | **100 %** | 177 | 12 | 0 |

* *The SQL Conversion Rate and Lines of code are considering both identified objects and unrecognized elements to determine its value. As a result, the average for the conversion rates of Identified Objects given below may differ from the overall rate given above.*
* *Parsing errors are also considering the unrecognized objects, so this is not a sum of the parsing errors per object presented below.*

***SQL – Identified Objects***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Object** | **Conversion Rate** | | **Lines of Code** | **Total Object Quantity** | **Parsing errors** |
| **Objects** | **Code** |
| Tables | 100% | 100% | 33 | 3 | 0 |
| Views | 100% | 100% | 3 | 1 | 0 |
| Procedures | 100% | 100% | 140 | 8 | 0 |
| Functions | - | - | - | - | - |

***Notes****:*

* *The Object Conversion Rate is considering only identified objects to determine its value. Objects with errors are not considered fully converted objects.*
* *The data inside the “SQL – Identified Objects” table shows only information about identified objects. Parsing errors that could not be attributed to an object category are shown in the “SQL – Files” table.*
* *If a hyphen (‘-’) is listed in the table above, it means no objects of that kind were found in the input folder.*
* *If N/A is listed in the table above, SnowConvert is currently not converting that object type. It is likely listed for future conversion support.*

# **ISSUES BREAKDOWN**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Low** | **Medium** | **High** | **Critical** |
| # of issues | 12 | 0 | 0 | 0 |
| # of unique issues | 6 | 0 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Error Code** | **Description** | **Instances** | **Level** |
| [MSCEWI1020](https://docs.mobilize.net/snowconvert/general/issues/mscewi1020) | Custom UDF inserted | 7 | Low |
| [MSCEWI4025](https://docs.mobilize.net/snowconvert/for-transactsql/issues/mscewi4025) | Custom UDF inserted for ERROR\_SEVERITY | 1 | Low |
| [MSCEWI4009](https://docs.mobilize.net/snowconvert/for-transactsql/issues/mscewi4009) | Default value removed from parameter | 1 | Low |
| [MSCEWI1048](https://docs.mobilize.net/snowconvert/general/issues/mscewi1048) | Sequence warning | 1 | Low |
| [MSCEWI1046](https://docs.mobilize.net/snowconvert/general/issues/mscewi1046) | Verification of functional equivalence for function is pending. | 1 | Low |
| [MSCEWI4007](https://docs.mobilize.net/snowconvert/for-transactsql/issues/mscewi4007) | Recursion for CTE not checked. | 1 | Low |

*If you are using the full version of SnowConvert, you can find out the exact file and location of each error in the Issues Report in the output reports folder created by SnowConvert.*

**Issue Categorization**

|  |  |  |  |
| --- | --- | --- | --- |
| LOW | MEDIUM | HIGH | CRITICAL |
| Warnings for source code that there was no direct conversion to Snowflake. The code has been converted to a functionally equivalent output but should still be reviewed. | Errors that produce a functional or runtime difference. The user may have to invest a low amount of manual effort to complete the conversion. | Errors that produce a functional or runtime difference. The user may have to invest a high amount of manual effort to complete the conversion. | Parsing errors or errors that cause significant conversion exceptions in SnowConvert. If the source code is correct, a significant intervention will be required. |

*For more information on the error codes and their severity, please visit our documentation page on errors:* [*https://docs.mobilize.net/snowconvert/oracle-issues-and-troubleshooting*](https://docs.mobilize.net/snowconvert/oracle-issues-and-troubleshooting)

# **FUNCTIONS**

Snowflake does not support the same features in functions as SQL Server. Not all possible logic and database access can be consistently replicated with Snowflake JavaScript or SQL functions. Some of them are transformed to Snowflake procedures to keep the functional equivalence, but this kind of functions cannot be called from queries due to procedures behavior. These functions are currently transformed to dummy user defined functions.

Code Conversion Rate: -

Object Conversion Rate: -

Number of Scalar Functions: 0

Number of Inline Table-Valued Functions: 0

Number of Multi-Statement Table-Valued Functions: 0

Lines of Code: -

Total Parsing Errors: -

Total Functions: -

*Note*: Only functions written by SQL are evaluated by SnowConvert and appear in the code conversion rate, number of functions, lines of code, and total parsing errors listed above.

SQL Function Conversion Breakdown:

Function calls inside DML: 0

Function calls inside DDL: 0

If you want to know more about this transformation you can follow this link: <https://docs.mobilize.net/snowconvert/for-transactsql/translation-reference>

# **GLOSSARY**

In this section, we try to explain concepts used in multiple report documents generated by SnowConvert. You can also read more about the terminology used in SnowConvert on our [documentation page](https://docs.mobilize.net/snowconvert/general/reports#glossary).

* **Total Conversion Issues,** the total count of conversion issues that happened during the conversion process. A conversion issue is an error that happened during the conversion process related to file I/O, memory management, or any abnormal situation that could not be handled. These are unhandled code exceptions and are considered critical issues
* **Total Parsing Errors,** the total count of parsing errors that occurred during the code analysis process. A parsing error occurs when the parser (the component that reads the source code files) encounters something unexpected. This usually means a syntax error, which refers to a code element in the file that did not match the SQL grammar specification that the parser was expecting. In other cases, these errors can also occur because the parser is not yet ready to support a specific grammar. Parsing errors are also considered critical issues. If this number is high in relation with the migration workload size, input code revision is advised.
* **Total Warnings,** the total count of warnings that SnowConvert generated for the given input. A warning is inserted when the translation of a specific element is mostly functionally equivalent but there are some corner cases in which some user intervention might be required. They have low severity because their intention is to provide information that can be reviewed if the code shows any kind of functional difference when executed on the target platform.
* **Total Lines of Code (LOC),** the total number of lines in the text of the source code files, that are not comments or blank lines, that were processed by the conversion tool.
* **Identified Objects**, in general, this refers to TABLES, VIEWS and PROCEDURES. These objects are classified as top-level because they are usually the “root” elements for a database dialect DDL, and they can contain other “smaller” definitions. The top-level objects vary from one SQL dialect to another (Oracle, Teradata, SqlServer, etc). For more information about top-level objects in each SQL dialect SnowConvert supports, you can check [this link](https://docs.mobilize.net/snowconvert/general/reports/top-level-objects-report) in our documentation. Parsing errors might cause SnowConvert to **not** be able to properly count all top-level objects.
* **Unrecognized Elements,** any code element (or parts of them) such as DML, DDL, control statements, with parsing errors that SnowConvert was unable to process.
* **Lines of Code in Unrecognized Elements,** the total lines of code in all the unrecognized elements. This is a good indicator of how much code SnowConvert was **not** able to process.
* **Fully Converted Objects,** the count of top-level objects that were fully converted without any error in any of their sub-parts. They are considered ready for deployment.
* **Code Conversion Rate (SQL), t**his metric is calculated using as reference the source code of both recognized and unrecognized elements in the given workload. The conversion rate is the percentage of source code that was successfully converted by SnowConvert into functionally equivalent Snowflake code. Take into consideration that unrecognized elements (because of parsing issues) will affect this metric, as their source code will be counted as not converted. Furthermore, elements that do not have equivalence in Snowflake will also punish the conversion rate, because even though SnowConvert is able to process them (frequently by removing them or commenting them) the translation does not represent a functionally equivalent code. For example, if there is a lot of code of indexes (which do not have an equivalent in Snowflake) the conversion rate can be highly punished because the source code of those unsupported elements might represent a significant part of the overall workload.
* **Object Conversion Rate,** the percentage between **fully** converted objects and identified objects.