



# OS Data Model

*for use with Invantive SQL*

24.0



# Copyright

(C) Copyright 2004-2025 Invantive Software B.V., the Netherlands. All rights reserved.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher.

Despite all the care taken in the compilation of this text, neither the author nor the publisher can accept liability for any damage, which might result from any error, which might appear in this publication.

This manual is a reference guide intended to clarify usage. If data in the sample images match data in your system, the similarity is coincidental.

## Important Safety and Usage Information

**Intended Use and Limitations:** This software, developed by Invantive, is designed to support a variety of business and information technology data processing functions, such as accounting, financial reporting and sales reporting. It is important to note that this software is not designed, tested, or approved for use in environments where malfunction or failure could lead to life-threatening situations or severe physical or environmental damage. This includes, but is not limited to:

- Nuclear facilities: The software should not be used for operations or functions related to the control, maintenance, or operation of nuclear facilities.
- Defense and Military Applications: This software is not suitable for use in defense-related applications, including but not limited to weapon control, military strategy planning, or any other aspects of national defense.
- Aviation: The software is not intended for use in the operation, navigation, or communication systems of any aircraft or air traffic control environments.
- Healthcare and Medicine Production: This software should not be utilized for medical device operation, patient data analysis for critical health decisions, pharmaceutical production, or medical research where its failure or malfunction could impact patient health.
- Chemical and Hazardous Material Handling: This software is not intended for the management, control, or operational aspects of chemical plants or hazardous material handling facilities. Any malfunction in software used in these settings could result in dangerous chemical spills, explosions, or environmental disasters.
- Transportation and Traffic Control Systems: The software should not be used for the control, operation, or management of transportation systems, including railway signal controls, subway systems, or traffic light management. Malfunctions in such critical systems could lead to severe accidents and endanger public safety.
- Energy Grid and Utility Control Systems: This software is not designed for the control or operation of energy grid systems, including electrical substations, renewable energy control systems, or water utility control systems. The failure of software in these areas could lead to significant power outages, water supply disruptions, or other public utility failures, potentially endangering communities and causing extensive damage.
- Other High-Risk Environments: Any other critical infrastructure and environments where a failure of the software could result in significant harm to individuals or the environment.

**User Responsibility:** Users must ensure that they understand the intended use of the software and refrain from deploying it in any setting that falls outside of its designed purpose. It is the responsibility of the user to assess the suitability of the software for their intended application, especially in any scenarios that might pose a risk to life, health, or the environment.

**Disclaimer of Liability:** Invantive disclaims any responsibility for damage, injury, or legal consequences resulting from the use or misuse of this software in prohibited or unintended applications.

# Contents

<b>1</b>	<b>SQL Driver for OS</b>	<b>1</b>
<b>2</b>	<b>SQL Driver Attributes</b>	<b>1</b>
<b>3</b>	<b>Catalog: FileSystem</b>	<b>4</b>
<b>3.1</b>	<b>Schemas</b> .....	<b>4</b>
3.1.1	csv_split_row: OS Split Row as CSV .....	4
3.1.2	directories: OS File System Directories .....	6
3.1.3	file_actions: OS File Actions .....	7
3.1.4	file_copy_actions: OS File Copy Actions .....	8
3.1.5	file_delete_actions: OS File Delete Actions .....	8
3.1.6	file_info: OS File Metadata Properties .....	9
3.1.7	file_move_actions: OS File Move Actions .....	10
3.1.8	file_rename_actions: OS File Rename Actions .....	10
3.1.9	files: OS File System Files .....	11
3.1.10	read_file: OS File Binary Contents .....	12
3.1.11	read_file_text: OS File Text Contents .....	13
3.1.12	regexp_split_row: OS Split Row on Regular Expression .....	14
3.1.13	write_file: OS Write File .....	16
<b>4</b>	<b>Package: dcr_metadata</b>	<b>16</b>
<b>4.1</b>	<b>Procedures</b> .....	<b>16</b>
4.1.1	dcr_metadata.get_partitions: OS Data container metadata package .....	16
	<b>Index</b>	<b>17</b>

## 1 SQL Driver for OS

Use the "Search" option in the left menu to search for a specific term such as the table or column description. When you already know the term, please use the "Index" option. When you can't find the information needed, please click on the Chat button at the bottom or place your question in the [user community](#). Invantive Support or other users will try to help you.

Access data through the operating system.

The OS driver covers 13 tables and 162 columns.

### OS Clients

Invantive UniversalSQL is available on many user interfaces ("clients" in traditional server-client paradigm). All Invantive UniversalSQL statements can be exchanged with a close to 100% compatibility across all clients and operating systems (Windows, MacOS, Linux, iOS, Android).

The clients include Microsoft Excel, Microsoft Power BI, Microsoft Power Query, Microsoft Word and Microsoft Outlook. Web-based clients include Invantive Cloud, Invantive Bridge Online as OData proxy, Invantive App Online for interactive apps, Online SQL Editor for query execution and Invantive Data Access Point as extended proxy.

For technical users there are command-line editions of Invantive Data Hub running on iOS, Android, Windows, MacOS and Linux. Invantive Data Hub is also often used for enterprise server applications such as ETL.

### Specifications

The SQL driver for OS does not support partitioning.

An introduction into the concepts of Invantive UniversalSQL such as databases, data containers and partitioning can be found in the [Invantive UniversalSQL grammar](#).

The configuration can be changed using various attributes from the database definition, on log on and during use. A full list of configuration options is listed in the [driver attributes](#).

The catalog name is used to compose the full qualified name of an object like a table or view. The schema name is used to compose the full qualified name of an object like a table or view. On OS the comparison of two texts is case sensitive by default.

Changes and bug fixes on the OS SQL driver can be found in the [release notes](#). There is currently no specific section on the [Invantive forums](#) for OS. Please reach out to other users of OS by leaving a question or contact request.

Driver code for use in settings.xml: `os`

Alias: `os`

Recommended alias: `os`

Technical support (URL): <https://forums.invantive.com>

Function documentation (URL): <https://cloud.invantive.com/data-models>

Function support (URL): <https://forums.invantive.com>

## 2 SQL Driver Attributes

The SQL driver for OS has many attributes that can be finetuned to improve handling in scenarios with unreliable network connections to the OS server or high volumes of data.

Also, many drivers have driver-specific attributes to finetune actual behaviour or handle data not matching specifications.

The OS driver attributes are assigned a default value which seldom requires change. However, changes can be applied when needed on four levels, which are reflected in the table below by separate checkmarks:

- Connection string: the connection string from the settings\*.xml file and applied during log on.
- Set SQL statement: a set SQL-statement to be executed once connection has been established.
- Log on: value to be specified interactively by user during log on in a user interface.

The connection string for OS can be found in the settings\*.xml file used for the database. The reference manuals contain instructions how to relocate the settings\*.xml files. Settings\*.xml files are typically located in the %USERPROFILE%\invantive folder in most deployment scenarios. Each data container of a database in the connection string can have a `connectionString` element specifying the name and values of attributes. Both name and value must be properly escaped according to XML-semantics. Actual application of the value is solely done during log on. A new connection must be established to change the value of a driver attribute using a connection string.

The set SQL statement can be executed after log on. The syntax is: `set NAME VALUE`, or for a distributed database: `set NAME@ALIAS VALUE`. In some scenarios you may need to enclose the driver attribute name in square brackets to escape it from parsing, for instance when a reserved SQL keyword is part of the name. The new value takes effect straight after execution of the set-statement. The set-statement can be executed as often as needed during a session.

Driver attributes that can be interactively set to a value are typically presented in the log on window. Depending on the platform and design decisions of the user interface designer, some or all of the available driver attributes can have been made available.

The OS driver can be configured using the following attributes:

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
analysis-enforce-row-uniqueness	Enforce rows to be unique for software analysis. A fingerprint is calculated from the whole row of data when the primary key column is unknown.	Shared	False	✓	✓	✓	
bulk-delete-page-size-rows	Number of rows to delete per batch when bulk deleting.	Shared	10000	✓	✓	✓	
bulk-insert-page-size-bytes	Approximate maximum size in bytes of batch when bulk inserting.	Shared	10000000	✓	✓	✓	
bulk-insert-page-size-rows	Number of rows to insert per batch when bulk inserting.	Shared	10000	✓	✓	✓	
force-case-sensitive-identifiers	Consider identifiers as case-sensitive independent of the platform capabilities.	Shared	False	✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
forced-casing-identifiers	Forced casing of identifiers. Choose from: Unset, Lower, Upper and Mixed.	Shared		✓	✓	✓	
invantive-sql-compress-sparse-arrays	Whether to compress sparse arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-correct-invalid-date	Whether to correct dates considered invalid since they are before 01-01-1753. When nullable, they are removed. Otherwise they are replaced by 01-01-1753.	SQL Engine V1	False	✓	✓	✓	
invantive-sql-execution-profile-disk-path	{res:itgen_pae_invantive_sql_execution_profile_disk_path}	SQL Engine V1		✓	✓	✓	
invantive-sql-execution-profile-to-disk	{res:itgen_pae_invantive_sql_execution_profile_to_disk}	SQL Engine V1	False	✓	✓	✓	
invantive-sql-forward-filters-to-data-containers	Whether to forward filters to data containers.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-byte-arrays	Whether to share the memory used by identical byte arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-strings	Whether to share the memory used by identical strings in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-shuffle-fetch-results-data-containers	Whether to shuffle results fetched from data containers.	SQL Engine V1	False	✓	✓	✓	
invantive-use-cache	Whether to cache the results of a query.	SQL Engine V1	True	✓	✓	✓	
log-native-calls-to-disk-max-events	Maximum number of call events to register from last activation.	Shared		✓	✓	✓	
log-native-calls-to-disk-max-seconds	Maximum number of seconds to register calls from last activation.	Shared		✓	✓	✓	
log-native-calls-to-disk-on-error	Registers native calls to data container backend as disk files when the call raised an error.	Shared	False	✓	✓	✓	
log-native-calls-to-disk-on-success	Registers native calls to data container backend as disk files when the call raised no error.	Shared	False	✓	✓	✓	
log-native-calls-to-trace	Log native calls to data container backend on the trace.	Shared	False	✓	✓	✓	
maximum-length-identifiers	Non-default maximum length in characters of identifier names.	Shared		✓	✓	✓	
partition-slot-based-rate-limit-length-ms	Total length in milliseconds across all slots of a partition-based rate limit.	Shared	60000	✓		✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Driver's File	Set from Log On
partition-slot-based-rate-limit-slots	Number of slots per partition-based rate limit. Null means no slot-based rate limit.	Shared		✓		✓	
pre-request-delay-ms	Pre-request delay in milliseconds per request.	Shared	0	✓	✓	✓	
requested-maximum-usable-partitions	Requested Maximum Usable Partitions	Shared		✓	✓	✓	
requested-page-size	Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online.	Shared		✓	✓	✓	
requests-parallel-max	Maximum number of parallel data requests from individual partitions on the data container.	Shared	32	✓	✓	✓	
slot-based-rate-limit-length-ms	Total length in milliseconds across all slots of a slot-based rate limit.	Shared	60000	✓		✓	
slot-based-rate-limit-slots	Number of slots of a slot-based rate limit. Null means no slot-based rate limit.	Shared		✓		✓	
standardize-identifiers	Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.	Shared	True	✓	✓	✓	
standardize-identifiers-casing	Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.	Shared	True	✓	✓	✓	

## 3 Catalog: FileSystem

### 3.1 Schemas

#### 3.1.1 csv\_split\_row: OS Split Row as CSV

Catalog: FileSystem

Label: Split Row as CSV

Retrieve: true

### Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `csv_split_row`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be evaluated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example: a ``select * from table(value1, value2, value3)`` on a table with four

parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
csv	varchar2	<input checked="" type="checkbox"/>		Text in comma-separated format to split into individual columns.
max_entries_per_row	int32	<input type="checkbox"/>		Maximum number of individual columns to return from the text. Remaining content is included in the last columns. Defaults to null (no limit).

## Columns of Table Function

The columns of the table function `csv_split_row` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
text_content_1	varchar2	CSV Text Content #{0}		
text_content_10	varchar2	CSV Text Content #{0}		
text_content_11	varchar2	CSV Text Content #{0}		
text_content_12	varchar2	CSV Text Content #{0}		
text_content_13	varchar2	CSV Text Content #{0}		
text_content_14	varchar2	CSV Text Content #{0}		
text_content_15	varchar2	CSV Text Content #{0}		
text_content_16	varchar2	CSV Text Content #{0}		
text_content_17	varchar2	CSV Text Content #{0}		
text_content_18	varchar2	CSV Text Content #{0}		
text_content_19	varchar2	CSV Text Content #{0}		
text_content_2	varchar2	CSV Text Content #{0}		
text_content_20	varchar2	CSV Text Content #{0}		
text_content_21	varchar2	CSV Text Content #{0}		
text_content_22	varchar2	CSV Text Content #{0}		
text_content_23	varchar2	CSV Text Content #{0}		
text_content_24	varchar2	CSV Text Content #{0}		
text_content_25	varchar2	CSV Text Content #{0}		
text_content_26	varchar2	CSV Text Content #{0}		
text_content_27	varchar2	CSV Text Content #{0}		
text_content_28	varchar2	CSV Text Content #{0}		
text_content_29	varchar2	CSV Text Content #{0}		
text_content_3	varchar2	CSV Text Content #{0}		
text_content_30	varchar2	CSV Text Content #{0}		

Name	Data Type	Label	Required	Documentation
text_content_31	varchar2	CSV Text Content #{0}		
text_content_32	varchar2	CSV Text Content #{0}		
text_content_33	varchar2	CSV Text Content #{0}		
text_content_34	varchar2	CSV Text Content #{0}		
text_content_35	varchar2	CSV Text Content #{0}		
text_content_36	varchar2	CSV Text Content #{0}		
text_content_37	varchar2	CSV Text Content #{0}		
text_content_38	varchar2	CSV Text Content #{0}		
text_content_39	varchar2	CSV Text Content #{0}		
text_content_4	varchar2	CSV Text Content #{0}		
text_content_40	varchar2	CSV Text Content #{0}		
text_content_41	varchar2	CSV Text Content #{0}		
text_content_42	varchar2	CSV Text Content #{0}		
text_content_43	varchar2	CSV Text Content #{0}		
text_content_44	varchar2	CSV Text Content #{0}		
text_content_45	varchar2	CSV Text Content #{0}		
text_content_46	varchar2	CSV Text Content #{0}		
text_content_47	varchar2	CSV Text Content #{0}		
text_content_48	varchar2	CSV Text Content #{0}		
text_content_49	varchar2	CSV Text Content #{0}		
text_content_5	varchar2	CSV Text Content #{0}		
text_content_50	varchar2	CSV Text Content #{0}		
text_content_6	varchar2	CSV Text Content #{0}		
text_content_7	varchar2	CSV Text Content #{0}		
text_content_8	varchar2	CSV Text Content #{0}		
text_content_9	varchar2	CSV Text Content #{0}		

### 3.1.2 directories: OS File System Directories

Catalog: FileSystem

Label: File System Directories

Retrieve: true

## Parameters of Table Function

The following parameters can be used to control the behaviour of the table function directories. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be evaluated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example: a ``select * from table(value1, value2, value3)`` on a table with four

parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
all_directories	char	<input checked="" type="checkbox"/>		Whether to recurse into folders. Defaults to false.
path	varchar2	<input checked="" type="checkbox"/>		Root of folder structure to search.
search_pattern	varchar2	<input checked="" type="checkbox"/>		Directory name match pattern. Use <code>**</code> to signal text of arbitrary length and <code>?</code> as any single character.

## Columns of Table Function

The columns of the table function directories are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
directory_path	varchar2	Directory Path	<input checked="" type="checkbox"/>	

### 3.1.3 file\_actions: OS File Actions

Catalog: FileSystem

Label: File Actions

Documentation:

File actions executed.

Retrieve: true

## Table Columns

The columns of the table file\_actions are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
action	varchar2	Action	<input checked="" type="checkbox"/>	Type of action.
duration_ms	int32	Duration (ms)	<input type="checkbox"/>	Duration of action in milliseconds.
exception_code	varchar2	Exception Code	<input type="checkbox"/>	The message code of the error.
exception_message	varchar2	Exception Message	<input type="checkbox"/>	The text of the error.
file_path_source	varchar2	File Name and Path for Source	<input type="checkbox"/>	File path of source for action.
file_path_target	varchar2	File Name and Path for Target	<input type="checkbox"/>	File path of target for action.
has_exception	varchar2	Has Exception	<input type="checkbox"/>	Whether an exception occurred during execution.

Name	Data Type	Label	Required	Documentation
start_time	datetime	Start Time	<input type="checkbox"/>	Start time of action.

### 3.1.4 file\_copy\_actions: OS File Copy Actions

Catalog: FileSystem

Label: File Copy Actions

Documentation:

Copies a file on file system.

Retrieve: false

## Table Columns

The columns of the table file\_copy\_actions are shown below. Each column has an SQL data type. A new non-null value must be provided for every required column at all times during insert.

Name	Data Type	Label	Required	Documentation
create_directory	varchar2	Create directory	<input type="checkbox"/>	Whether to create the directory when non-existing.
file_path_source	varchar2	File Name and Path for Source	<input checked="" type="checkbox"/>	Path of file to copy.
file_path_target	varchar2	File Name and Path for Target	<input checked="" type="checkbox"/>	Path of new file.
ignore_error	varchar2	Ignore Error	<input type="checkbox"/>	Whether to ignore an error.
overwrite_existing	varchar2	Overwrite Existing	<input type="checkbox"/>	Whether to overwrite an existing file.

### 3.1.5 file\_delete\_actions: OS File Delete Actions

Catalog: FileSystem

Label: File Delete Actions

Documentation:

Deletes specific files on file system.

Retrieve: false

## Table Columns

The columns of the table file\_delete\_actions are shown below. Each column has an SQL data type. A new non-null value must be provided for every required column at all times during insert.

Name	Data Type	Label	Required	Documentation
file_path	varchar2	Filename and Path	<input checked="" type="checkbox"/>	Path of file to delete.

### 3.1.6 file\_info: OS File Metadata Properties

Catalog: FileSystem

Label: File Metadata Properties

Retrieve: true

## Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `file_info`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be evaluated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example: a ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
ignore_errors	varchar2	<input type="checkbox"/>		Whether to ignore errors when accessing the file. Defaults to false.
path	varchar2	<input checked="" type="checkbox"/>		Relative or absolute path to the file.

## Columns of Table Function

The columns of the table function `file_info` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
created_utc	datetime	Created (UTC)	<input type="checkbox"/>	
created	datetime	Created	<input type="checkbox"/>	
directory_name	varchar2	Directory Name	<input type="checkbox"/>	
exception_code	varchar2	Exception Code	<input type="checkbox"/>	The message code of the error.
exception_message	varchar2	Exception Message	<input type="checkbox"/>	The text of the error.
extension	varchar2	Extension	<input type="checkbox"/>	
is_archive	varchar2	Is Archive File	<input type="checkbox"/>	
is_compressed	varchar2	Is Compressed File	<input type="checkbox"/>	
is_content_indexed	varchar2	Is Content Indexed File	<input type="checkbox"/>	
is_device	varchar2	Is Device File	<input type="checkbox"/>	
is_directory	varchar2	Is Directory	<input type="checkbox"/>	
is_encrypted	varchar2	Is Encrypted File	<input type="checkbox"/>	
is_existing	varchar2	Is Existing	<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
is_hidden	varchar2	Is Hidden File	<input type="checkbox"/>	
is_integrity_stream	varchar2	Is Integrity Stream File	<input type="checkbox"/>	
is_normal	varchar2	Is Normal File	<input type="checkbox"/>	
is_offline	varchar2	Is Offline File	<input type="checkbox"/>	
is_reparse_point	varchar2	Is Reparse Point File	<input type="checkbox"/>	
is_scrub_data	varchar2	Is Scrub Data File	<input type="checkbox"/>	
is_sparse	varchar2	Is Sparse File	<input type="checkbox"/>	
is_system	varchar2	Is System File	<input type="checkbox"/>	
is_temporary	varchar2	Is Temporary File	<input type="checkbox"/>	
is_writable	varchar2	Is Writable File	<input type="checkbox"/>	
last_access_utc	datetime	Last Access (UTC)	<input type="checkbox"/>	
last_access	datetime	Last Access	<input type="checkbox"/>	
last_write_utc	datetime	Last Write (UTC)	<input type="checkbox"/>	
last_write	datetime		<input type="checkbox"/>	
length	number	File Size (bytes)	<input type="checkbox"/>	
name	varchar2	Name	<input type="checkbox"/>	

### 3.1.7 file\_move\_actions: OS File Move Actions

Catalog: FileSystem

Label: File Move Actions

Documentation:

Moves specific files on file system.

Retrieve: false

## Table Columns

The columns of the table file\_move\_actions are shown below. Each column has an SQL data type. A new non-null value must be provided for every required column at all times during insert.

Name	Data Type	Label	Required	Documentation
file_path_source	varchar2	File Name and Path for Source	<input checked="" type="checkbox"/>	Path of source file to move.
file_path_target	varchar2	File Name and Path for Target	<input checked="" type="checkbox"/>	Path of target file.

### 3.1.8 file\_rename\_actions: OS File Rename Actions

Catalog: FileSystem

Label: File Rename Actions

Documentation:

Renames specific files on file system.

Retrieve: false

## Table Columns

The columns of the table `file_rename_actions` are shown below. Each column has an SQL data type. A new non-null value must be provided for every required column at all times during insert.

Name	Data Type	Label	Required	Documentation
<code>file_path_source</code>	<code>varchar2</code>	File Name and Path for Source	<input checked="" type="checkbox"/>	Path of file to rename.
<code>file_path_target</code>	<code>varchar2</code>	File Name and Path for Target	<input checked="" type="checkbox"/>	Path of file after rename.

### 3.1.9 files: OS File System Files

Catalog: FileSystem

Label: File System Files

Documentation:

Scan file system for files matching the specifications.

Retrieve: true

## Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `files`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be evaluated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example: a ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
<code>all_directories</code>	<code>char</code>	<input checked="" type="checkbox"/>		Whether to recurse into folders. Defaults to false.
<code>ignore_case</code>	<code>char</code>	<input checked="" type="checkbox"/>		Ignore case.
<code>ignore_unauthorized_exception</code>	<code>char</code>	<input checked="" type="checkbox"/>		Whether to ignore unauthorized exceptions.
<code>path</code>	<code>varchar2</code>	<input checked="" type="checkbox"/>		Root of folder structure to search.
<code>search_pattern</code>	<code>varchar2</code>	<input checked="" type="checkbox"/>		File name match pattern. Use <code>***</code> to signal text of arbitrary length

Name	Data Type	Required	Default Value	Documentation
				and '?' as any single character.

## Columns of Table Function

The columns of the table function files are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
file_path	varchar2	Filename and Path	<input checked="" type="checkbox"/>	

### 3.1.10 read\_file: OS File Binary Contents

Catalog: FileSystem

Label: File Binary Contents

Retrieve: true

## Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `read_file`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be evaluated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example: a ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
ignore_errors	varchar2	<input type="checkbox"/>		Whether to ignore errors when accessing the file. Defaults to false.
path	varchar2	<input checked="" type="checkbox"/>		Relative or absolute path to the file.

## Columns of Table Function

The columns of the table function `read_file` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
file_contents	blob	File Contents	<input type="checkbox"/>	

Name	Data Type	Label	Required	Documentation
file_path	varchar2	Filename and Path	<input checked="" type="checkbox"/>	
is_existing	varchar2	Is Existing	<input checked="" type="checkbox"/>	

### 3.1.11 read\_file\_text: OS File Text Contents

Catalog: FileSystem

Label: File Text Contents

Retrieve: true

## Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `read_file_text`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be evaluated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example: a ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
encoding	varchar2	<input type="checkbox"/>		Character encoding, defaults to UTF8, alternative names listed in code page table on <a href="https://docs.microsoft.com/en-us/dotnet/api/system.text.encoding?view=netframework-4.8">https://docs.microsoft.com/en-us/dotnet/api/system.text.encoding?view=netframework-4.8</a> .
ignore_errors	varchar2	<input type="checkbox"/>		Whether to ignore errors when accessing the file. Defaults to false.
path	varchar2	<input checked="" type="checkbox"/>		Relative or absolute path to the file.
record_separator	varchar2	<input type="checkbox"/>		Record separator is a text signaling the start of a new record. Defaults to platform-specific new line.
separate_on_record	varchar2	<input type="checkbox"/>		Separates file contents into records based upon the record separator when true. Returns full file contents as one large string when false. Defaults to false.

## Columns of Table Function

The columns of the table function `read_file_text` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
<code>file_contents</code>	clob	File Contents	<input type="checkbox"/>	
<code>file_path</code>	varchar2	Filename and Path	<input checked="" type="checkbox"/>	
<code>is_existing</code>	varchar2	Is Existing	<input checked="" type="checkbox"/>	

### 3.1.12 `regexp_split_row`: OS Split Row on Regular Expression

Catalog: FileSystem

Label: Split Row on Regular Expression

Retrieve: true

## Parameters of Table Function

The following parameters can be used to control the behaviour of the table function `regexp_split_row`. A value must be provided at all times for required parameters, but optional parameters in general do not need to have a value and the execution will default to a pre-defined behaviour. Values can be specified by position and by name. In both cases, all parameters not specified will be evaluated using their default values.

Value specification by position is done by listing all values from the first to the last needed value. For example: a ``select * from table(value1, value2, value3)`` on a table with four parameters will use the default value for the fourth parameter and the specified values for the first three.

Value specification by name is done by listing all values that require a value. For example with ``select * from table(name1 => value1, name3 => value3)`` on the same table will use the default values for the second and fourth parameters and the specified values for the first and third.

Name	Data Type	Required	Default Value	Documentation
<code>regex</code>	varchar	<input checked="" type="checkbox"/>		Regular expression to use.
<code>row</code>	varchar	<input checked="" type="checkbox"/>		Text to split into individual columns using a regular expression.

## Columns of Table Function

The columns of the table function `regexp_split_row` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
<code>input_text</code>	varchar2	Original Input		Original input.
<code>regular_expression</code>	varchar2	Regular Expression		Regular expression used to split.
<code>success</code>	boolean	Success		Could content be split.
<code>text_content_1</code>	varchar2	RE Text Content #{0}		Split content of the text file.
<code>text_content_10</code>	varchar2	RE Text Content #{0}		Split content of the text file.

Name	Data Type	Label	Required	Documentation
text_content_11	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_12	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_13	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_14	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_15	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_16	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_17	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_18	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_19	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_2	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_20	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_21	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_22	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_23	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_24	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_25	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_26	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_27	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_28	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_29	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_3	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_30	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_31	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_32	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_33	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_34	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_35	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_36	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_37	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_38	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_39	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_4	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_40	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_41	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_42	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_43	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_44	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_45	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_46	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_47	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_48	varchar2	RE Text Content #{0}		Split content of the text file.

Name	Data Type	Label	Required	Documentation
text_content_49	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_5	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_50	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_6	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_7	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_8	varchar2	RE Text Content #{0}		Split content of the text file.
text_content_9	varchar2	RE Text Content #{0}		Split content of the text file.

### 3.1.13 write\_file: OS Write File

Catalog: FileSystem

Label: Write File

Retrieve: false

## Table Columns

The columns of the table write\_file are shown below. Each column has an SQL data type. A new non-null value must be provided for every required column at all times during insert.

Name	Data Type	Label	Required	Documentation
creation_date_time_utc	datetime	Requested Creation Date/Time (UTC)	<input type="checkbox"/>	
file_contents	blob		<input type="checkbox"/>	
file_path	varchar2	Filename and Path	<input checked="" type="checkbox"/>	
modified_date_time_utc	datetime	Requested Modified Date/Time (UTC)	<input type="checkbox"/>	

## 4 Package: dcr\_metadata

### 4.1 Procedures

#### 4.1.1 dcr\_metadata.get\_partitions: OS Data container metadata package

Get all partitions.

Documentation:

List all partitions.

# Index

## - A -

Action 7  
 all\_directories 6, 11  
 analysis-enforce-row-uniqueness 1

## - B -

bulk-delete-page-size-rows 1  
 bulk-insert-page-size-bytes 1  
 bulk-insert-page-size-rows 1

## - C -

Create directory 8  
 create\_directory 8  
 created 9  
 Created (UTC) 9  
 created\_utc 9  
 creation\_date\_time\_utc 16  
 csv 4  
 CSV Text Content #{0} 4  
 csv\_split\_row 4

## - D -

Database Driver 1  
 directories 6  
 Directory Name 9  
 Directory Path 6  
 directory\_name 9  
 directory\_path 6  
 Duration (ms) 7  
 duration\_ms 7

## - E -

encoding 13  
 Exception Code 7, 9  
 Exception Message 7, 9  
 exception\_code 7, 9  
 exception\_message 7, 9  
 Extension 9

## - F -

File Actions 7  
 File Binary Contents 12  
 File Contents 12, 13  
 File Copy Actions 8  
 File Delete Actions 8  
 File Metadata Properties 9  
 File Move Actions 10  
 File Name and Path for Source 7, 8, 10  
 File Name and Path for Target 7, 8, 10  
 File Rename Actions 10  
 File Size (bytes) 9  
 File System Directories 6  
 File System Files 11  
 File Text Contents 13  
 file\_actions 7  
 file\_contents 12, 13, 16  
 file\_copy\_actions 8  
 file\_delete\_actions 8  
 file\_info 9  
 file\_move\_actions 10  
 file\_path 8, 11, 12, 13, 16  
 file\_path\_source 7, 8, 10  
 file\_path\_target 7, 8, 10  
 file\_rename\_actions 10  
 Filename and Path 8, 11, 12, 13, 16  
 files 11  
 force-case-sensitive-identifiers 1  
 forced-casing-identifiers 1

## - H -

Has Exception 7  
 has\_exception 7

## - I -

Ignore Error 8  
 ignore\_case 11  
 ignore\_error 8  
 ignore\_errors 9, 12, 13  
 ignore\_unauthorized\_exception 11  
 input\_text 14  
 invantive-sql-compress-sparse-arrays 1  
 invantive-sql-correct-invalid-date 1  
 invantive-sql-execution-profile-disk-path 1  
 invantive-sql-execution-profile-to-disk 1  
 invantive-sql-forward-filters-to-data-containers 1

invantive-sql-share-byte-arrays 1  
 invantive-sql-share-strings 1  
 invantive-sql-shuffle-fetch-results-data-containers  
 invantive-use-cache 1  
 Is Archive File 9  
 Is Compressed File 9  
 Is Content Indexed File 9  
 Is Device File 9  
 Is Directory 9  
 Is Encrypted File 9  
 Is Existing 9, 12, 13  
 Is Hidden File 9  
 Is Integrity Stream File 9  
 Is Normal File 9  
 Is Offline File 9  
 Is Reparse Point File 9  
 Is Scrub Data File 9  
 Is Sparse File 9  
 Is System File 9  
 Is Temporary File 9  
 Is Writable File 9  
 is\_archive 9  
 is\_compressed 9  
 is\_content\_indexed 9  
 is\_device 9  
 is\_directory 9  
 is\_encrypted 9  
 is\_existing 9, 12, 13  
 is\_hidden 9  
 is\_integrity\_stream 9  
 is\_normal 9  
 is\_offline 9  
 is\_reparse\_point 9  
 is\_scrub\_data 9  
 is\_sparse 9  
 is\_system 9  
 is\_temporary 9  
 is\_writable 9

## - L -

Last Access 9  
 Last Access (UTC) 9  
 Last Write (UTC) 9  
 last\_access 9  
 last\_access\_utc 9  
 last\_write 9  
 last\_write\_utc 9  
 length 9  
 log-native-calls-to-disk-max-events 1  
 log-native-calls-to-disk-max-seconds 1

log-native-calls-to-disk-on-error 1  
 log-native-calls-to-disk-on-success 1  
 log-native-calls-to-trace 1

## - M -

max\_entries\_per\_row 4  
 maximum-length-identifiers 1  
 modified\_date\_time\_utc 16

## - N -

Name 9

## - O -

Original Input 14  
 OS 1, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16  
 Overwrite Existing 8  
 overwrite\_existing 8

## - P -

partition-slot-based-rate-limit-length-ms 1  
 partition-slot-based-rate-limit-slots 1  
 path 6, 9, 11, 12, 13  
 pre-request-delay-ms 1

## - R -

RE Text Content #{0} 14  
 read\_file 12  
 read\_file\_text 13  
 record\_separator 13  
 regex 14  
 regexp\_split\_row 14  
 Regular Expression 14  
 regular\_expression 14  
 Requested Creation Date/Time (UTC) 16  
 Requested Modified Date/Time (UTC) 16  
 requested-maximum-usable-partitions 1  
 requested-page-size 1  
 requests-parallel-max 1  
 row 14

## - S -

search\_pattern 6, 11  
 separate\_on\_record 13

slot-based-rate-limit-length-ms	1	text_content_45	4, 14
slot-based-rate-limit-slots	1	text_content_46	4, 14
Split Row as CSV	4	text_content_47	4, 14
Split Row on Regular Expression	14	text_content_48	4, 14
standardize-identifiers	1	text_content_49	4, 14
standardize-identifiers-casing	1	text_content_5	4, 14
Start Time	7	text_content_50	4, 14
start_time	7	text_content_6	4, 14
Success	14	text_content_7	4, 14
		text_content_8	4, 14
		text_content_9	4, 14

## - T -

text_content_1	4, 14
text_content_10	4, 14
text_content_11	4, 14
text_content_12	4, 14
text_content_13	4, 14
text_content_14	4, 14
text_content_15	4, 14
text_content_16	4, 14
text_content_17	4, 14
text_content_18	4, 14
text_content_19	4, 14
text_content_2	4, 14
text_content_20	4, 14
text_content_21	4, 14
text_content_22	4, 14
text_content_23	4, 14
text_content_24	4, 14
text_content_25	4, 14
text_content_26	4, 14
text_content_27	4, 14
text_content_28	4, 14
text_content_29	4, 14
text_content_3	4, 14
text_content_30	4, 14
text_content_31	4, 14
text_content_32	4, 14
text_content_33	4, 14
text_content_34	4, 14
text_content_35	4, 14
text_content_36	4, 14
text_content_37	4, 14
text_content_38	4, 14
text_content_39	4, 14
text_content_4	4, 14
text_content_40	4, 14
text_content_41	4, 14
text_content_42	4, 14
text_content_43	4, 14
text_content_44	4, 14

## - W -

Write File	16
write_file	16



# *invantive* the **SQL** company

Invantive B.V.  
Biesteweg 11  
3849 RD Hierden  
the Netherlands

Tel: +31 88 00 26 500  
Fax: +31 84 22 58 178  
info@invantive.com  
invantive.com

IBAN NL25 BUNQ 2098 2586 07  
Chamber of Industry and Commerce  
13031406  
VAT NL812602377B01  
RSIN 8122602377  
Managing Director: Guido Leenders  
Registered office: Roermond