

CAST Database Extractor

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Summary: this page describes how to use the standalone CAST Database Extractor to extract data from a supported RDBMS so that it can be delivered in AIP Console and subsequently analyzed.

What is the CAST Database Extractor?

Background information

In order to analyze SQL databases (Microsoft, Oracle and Sybase) that are part of an Application, AIP Console requires that the databases are delivered for analysis in "offline" file format. In other words, AIP Console does not connect to the database during the analysis and instead the "offline" files are analyzed. This delivery/analysis method provides a distinct performance boost and allows the delivery to be performed by a dedicated DBA.

The "offline" files are generated by the CAST Database Extractor tool - this tool will access the live RDBMS and extract and transform the required databases into file format - and it is these files that are fed into AIP Console.

How does the standalone database extractor work?

The standalone database extractor is a **Java based tool** which does not require installation. You can run it in **GUI mode** or via batch scripts in **CLI mode**. You can specify:

- the database(s) you want to extract
- the login you want to use to perform the extraction
- the location where you want to save the results

Once the database extractor has successfully completed, the results need to be fed into AIP Console for delivery. Subsequent analysis of the delivered databases in file format is then performed.

Where can I obtain the CAST Database Extractor?

You can download the extractor from [CAST Extend](#).

Versions provided / supported Java JRE

The following database extractors are available for use

Name	Description	Required Java JRE
------	-------------	-------------------

CASTDBGUI.jar	For use with Oracle 10 - 18c (and above) servers and all other supported RDBMS.	1.8.x (32bit or 64bit)
CASTDBGUI6.jar	For use with Oracle 10 - 18c (and above) servers and all other supported RDBMS.	1.6.x or 1.7.x (32bit or 64bit) only
CASTDBGUI9i.jar	For use with Oracle 9 -11 servers only.	1.6.x (32bit or 64bit)



Note that CAST recommends using the **CASTDBGUI.jar** unless you:

- specifically need to extract from an **Oracle 9** server (use **CASTDBGUI9i.jar**)
- specifically need to use a **JRE 1.6.x** or **JRE 1.7.x** (use **CASTDBGUI6.jar**).

Supported RDBMS for extraction

The CAST Database Extractor can extract databases from any of the following RDBMS:

RDBMS type	Supported	Notes
Oracle		<p>See list of supported RDBMS here.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> • The CAST Database Extractor (for the analyzer embedded in CAST AIP) supports (by reference) the extraction of schemas on Oracle 18c and above in line with Oracle's updated release cycle, however the extractor will handle the schemas as Oracle 12c schemas and no new syntax or features introduced in these newer releases is supported. • Support for extracting schemas on Oracle 18c is provided in the extractor delivered in CAST AIP 8.3.16. • Support for Case sensitive passwords (introduced in Oracle 12c R2) is provided in the extractor delivered in CAST AIP 8.3.16. • The extraction of schemas on Oracle 8i is not supported. </div>
Microsoft SQL Server		<p>See list of supported RDBMS here.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> • The CAST Database Extractor (for the analyzer embedded in CAST AIP) supports (by reference) the extraction of databases on Microsoft SQL Server 2016, 2017 and 2019, however the extractor will handle the databases as Microsoft SQL Server 2014 databases and no new syntax or features introduced in these newer releases is supported. • Support for extracting databases on Microsoft SQL Server 2016, 2017 and 2019 is provided in the extractor delivered in CAST AIP 8.3.25. </div>
Sybase ASE		<p>See list of supported RDBMS here.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> • The CAST Database Extractor (for the analyzer embedded in CAST AIP) supports (by reference) the extraction of databases on Sybase ASE 16, however the extractor will handle the databases as Sybase ASE 15.x databases and no new syntax or features introduced in this newer release is supported. • Support for extracting database on Sybase ASE 16 is provided in the extractor delivered in CAST AIP 8.3.25. </div>
Azure SQL		<p>See list of supported RDBMS here.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> Support for extracting Azure SQL is provided in the CAST Database Extractor 2.3.31-funcrel. </div>

Supported releases of CAST AIP for analysis of output data

The output of the CAST Database Extractor can be analyzed with any of the following releases of CAST AIP:

CAST AIP	Supported
8.3.x	

Preloaded configuration file version numbers

The CAST Database Extractor contains multiple configuration files (one for each supported RDBMS) that contain the queries used to perform the data extraction. Below is a list the version numbers of each configuration file delivered in the current release of the CAST Database Extractor:

Vendor	Name	Version
Oracle	OracleCASTDatabase.config	2.7.6
Microsoft SQL Server	MSSQLCASTDatabase.config	2.2.2
Sybase ASE	ASESybaseCASTDatabase.config	2.2
Azure SQL	AzureSQLCASTDatabase.config	2.2.2 (identical to MSSQLCASTDatabase.config)

Prerequisites

To use the CAST Database Extractor, the following is required:

Java JRE

A Java JRE must be installed on the machine on which you want to run the CAST Database Extractor:

JRE version	Supported	Notes
1.6.x (32bit or 64bit)		Note that this is a minimum requirement - the CAST Database Extractor will work with more recent versions of the Java JRE. See also Versions provided / supported Java JRE above.

Supported Operating Systems

The CAST Database Extractor can be run form on the following Operating Systems:

Operating System	Supported	Supported by reference
Microsoft Windows 7 SP1 64-bit		
Microsoft Windows 8 64-bit		
Microsoft Windows 8.1 64-bit		
Microsoft Windows 10 64-bit		
Microsoft Windows Server 2008 R2 SP1 64-bit (Standard edition)		
Microsoft Windows Server 2012 64-bit (Standard edition)		
Microsoft Windows Server 2012 R2 64-bit (Standard edition)		
Unix based (Linux/MacOS X)		



Note that the CAST Database Extractor will also run on the equivalent 32bit versions of the Operating Systems listed above.

Known issues

<CAST_AST_WithResolutionSymbolReference resolutionSymbol="DT.-1"/> analysis warnings for Oracle Server

When attempting to run an analysis of Oracle Server source code that has been extracted with the standalone CAST Database Extractor, the analysis log may contain multiple warnings as follows:

```
Line XX: <CAST_AST_WithResolutionSymbolReference resolutionSymbol="DT.-1"/>
```

This issue exists due to the fact that some new built-in datatypes are not extracted with the standalone extractor to avoid breaking backward compatibility with CAST AIP versions older than 8.x. If this occurs then there are two workarounds available to you:

- Either use the CAST Delivery Manager Tool to complete the extraction of the required schemas
- Or, if you must use the standalone CAST Database Extractor, you can explicitly specify the configuration file to be used by the standalone CAST Database Extractor: OracleCASTDatabase.config, instead of the default CASTDatabase.config. This can be done in the **GUI** ([Expert panel](#), **Configuration File Path Override** option) or in the **CLI** (**-config** option). This second workaround will only function when the output of the CAST Database Extractor is used with CAST AIP 8.x.

Launching the CAST Database Extractor

The CAST Database Extractor is provided as an executable JAR file, which can be launched by double-clicking it. However when doing so you will likely encounter Java "out of memory" exceptions especially when extracting large or multiple databases/schemas. CAST therefore highly recommends that the executable JAR file is launched via a batch file containing the following commands:

```
java -Xmx1024M -jar D:\DBExtractor\CASTDBGUI.jar
```

The **java -XMX1024M** command allows you to configure the Maximum Java Heap Size of your JVM. Change the figure to match the number of MB you want to allocate to the process – i.e. increase the memory allocation until you no longer receive errors (CAST recommends starting at a minimum of 1024MB).

CAST Database Extractor GUI

Below are links to explanation of each section in the GUI:

- [CAST Database Extractor - Source panel](#)
- [CAST Database Extractor - Options panel](#)
- [CAST Database Extractor - Target panel](#)
- [CAST Database Extractor - Advanced panel](#)
- [CAST Database Extractor - Expert panel](#)
- [CAST Database Extractor - Log panel](#)
- [CAST Database Extractor - Script panel](#)

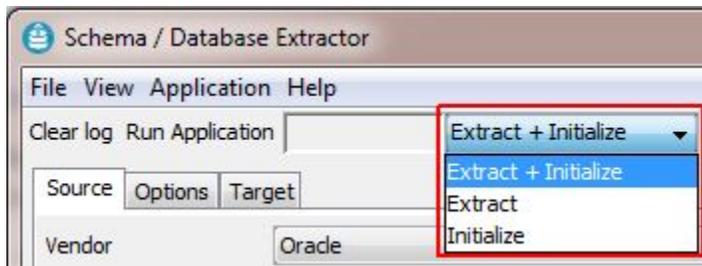
How to extract SQL source code from a live RDBMS

Extract/Initialize actions

The database extraction process is a two-step action:

- **Extract** > data is extracted from the required RDBMS and saved in an archive file with the extension **.castextraction**
- **Initialize**> the **.castextraction** archive file is transformed into **UAXDIRECTORY**, **UAX** and **SRC** files

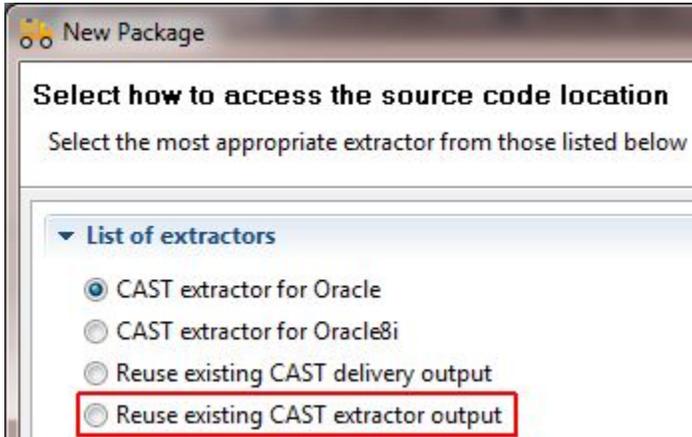
These two steps can be run **together**, or **separately** in the CAST Database Extractor and shown by the menu option below (for the GUI):



Use the following information to help you decide how to proceed:

- In most circumstances, CAST recommends that you run the two steps together using the **Extract + Initialize** option

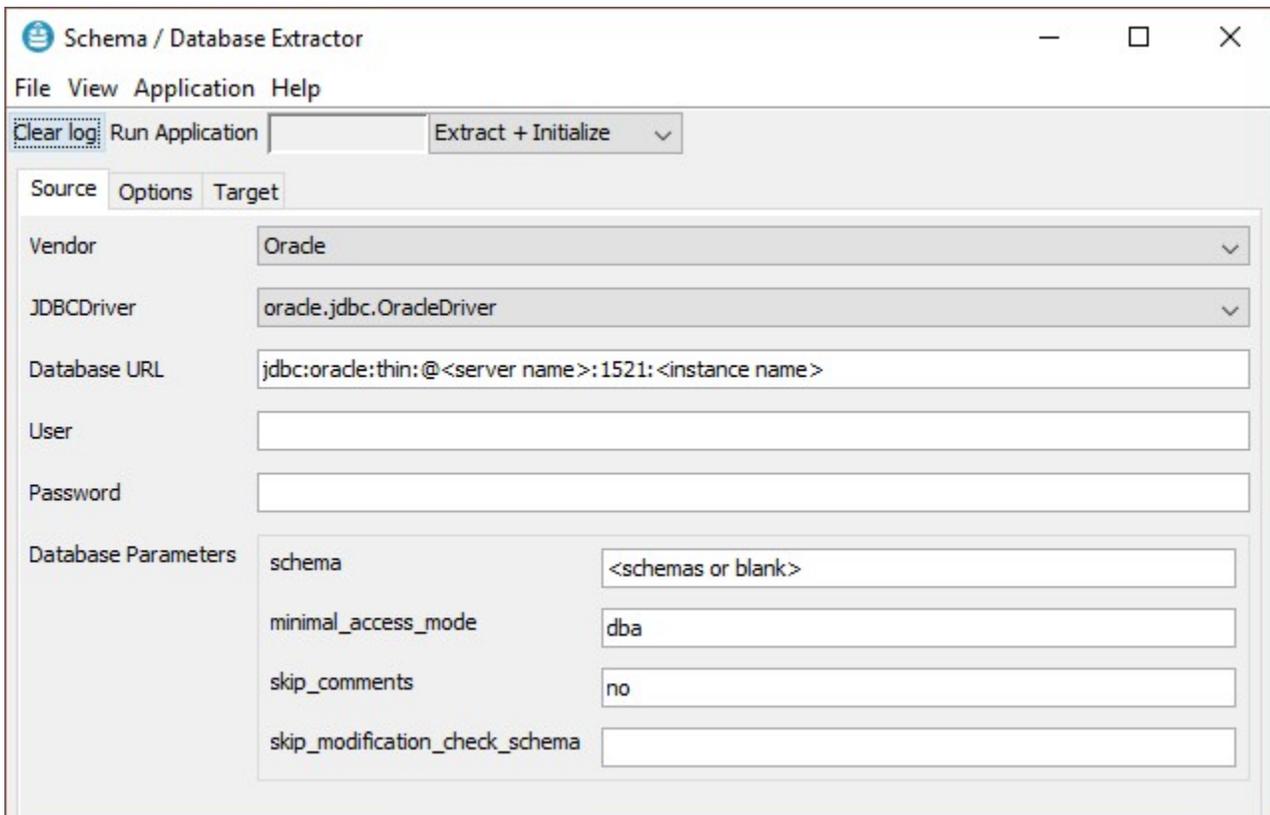
- If your source databases are large, you may want to run the **Extract** action first and then run the **Initialize** action later. The advantage of this is that you can view the log of the Extract action before you start the Initialize action.
- If you are extracting **Microsoft SQL Server** or **Sybase databases**
 - and you are using AIP Console to delivery and analyze your source code, you can deliver files that have been processed by the **Extract step alone**, or files that have been processed by the **Extract + Initialize** option. Both are accepted.
 - and you are using the **legacy CAST Delivery Manager tool**, you must run both the **Extract** and **Initialize** steps (whether together using the **Extract + Initialize** option or one after the other with the **Extract** and then the **Initialize** options) before you package the output with the CAST Delivery Manager Tool.
- If you are extracting **Oracle schemas**, then it is possible to run **only** the **Extract** action using the CAST Database Extractor and then complete the **Initialize** action using via AIP Console (this is automatically actioned) or via the legacy CAST Delivery Manager Tool (when configuring the package in the CAST Delivery Manager Tool, you should select the **Reuse existing CAST extractor output**):



How to run an extract/initialize with the GUI

i Note that this guide describes the **Extract + Initialize** option only.

Launch the CASTDBGUI.jar file using your batch file. The following will be displayed:



When launched, you need to:

- Configure the necessary fields in the [Source panel](#) to connect to your chosen RDBMS - make sure that you pay attention to the **Database Parameters** field which defines the schemas (Oracle) or databases (Microsoft SQL Server / Sybase ASE) you want to extract.
- Define the required location of the extract action output in the [Options panel](#)
- Define the required location of the initialize action output in the [Target panel](#)
- Click **Run Application** on the toolbar to commence the process.

Output

If the process is successful, you should see the following output:

- **Extract action** - output stored in a file called **exportResults.castextraction** as specified in the **Extraction File Path** field located in the [Options panel](#).
- **Initialize action** - a set of files in the folder specified in the **Target Folder Path** in the [Target panel](#). You should expect the following if you have extracted one schema/database:
 - one **DatabaseExtraction.uaxdirectory** file
 - various **.uax** files
 - various **.src** files

How to run an extract/initialize with the CLI

The CAST Database Extractor can be run in CLI mode should you wish to automate the extract/initialize process.

When using the command line, the process consists of a set of instructions and commands contained in a batch file (.bat) file. When the batch file is executed, the Java tool (CASTDBGUI.jar) is launched and the process begins. If you are extracting a large amount of data (i.e. multiple schemas /databases or one very large schema/database), you must use a batch file that contains **specific Java Heap Space configuration commands (the -Xmx command)**, otherwise you will likely receive **out of memory exceptions**. Below is an example batch file for launching the .JAR tool.

Example batch files for Extract + Initialize option

Please modify this to suit your needs and environment.

Please note that:

- the commands **MUST be placed on one line** rather than as shown above (for display reasons).
- any messages of the following type seen in the output are for information only:
 - Adding platform
 - Adding type
 - Adding vendor's type
 - Incompatibility between
 - Additional vendor's type

```

REM =====
REM EXTRACT ACTION
REM =====
java
-Xmx1024M
-cp CASTDBGUI.jar com.castsoftware.extractor.cli.DatabaseExtractor
-vendor <vendor name>
-driver <driver name>
-url <JDBC URL>
-user <extraction user>
-password <extraction user password>
-parameters <database|schema>=<database/schemas for extraction>;minimal_access_mode=<dba|all>;
skip_comments=<no|yes>;skip_modification_check_schema=<schemas not to test for modification>
-target <path to output location - no trailing backslash>
-l <path to extract log file>

REM =====
REM EXAMPLE
REM java -Xmx1024M -cp CASTDBGUI.jar com.castsoftware.extractor.cli.DatabaseExtractor -vendor SQLServer -
driver net.sourceforge.jtds.jdbc.Driver -url jdbc:jtds:sqlserver://dbserver:1433 -user sa -password
mypassword -parameters database=MYDATABASE -target D:\DBExtractor\results -l D:\DBExtractor\output_extractor.
txt
REM =====

REM =====
REM INITIALIZE ACTION
REM =====
java
-Xmx1024M
-cp CASTDBGUI.jar com.castsoftware.extractor.cli.Importer
-source <path to source location - no trailing backslash>

```

```

-target <path to output location - no trailing backslash>
-relativepaths
-l <path to initialize log file>

REM =====
REM EXAMPLE
REM java -Xmx1024M -cp CASTDBGUI.jar com.castsoftware.extractor.cli.Importer -source D:\DBExtractor\results -
target D:\DBExtractor\initialize -relativepaths -l D:\DBExtractor\output_initialize.txt
REM =====

```

Alternative example batch script using environment variables to simplify the configuration. Please modify this to suit your needs and environment.

```

@echo off
REM SQLExtractor folder path
set EXTRACTOR_PATH=C:\Program Files\CAST\<version>\Extractors\SQLExtractor

REM Extract Parameters
REM =====
REM -parameters parameter value. Note that the example below is set for Oracle Server only.
REM To extract MS SQL Server/Sybase ASE, use set "EXTRACT_PARAMETERS=database=<databases for extraction>"
set EXTRACT_PARAMETERS=schema=<schemas for extraction>;minimal_access_mode=dba|all;;skip_comments=no|yes;;
skip_modification_check_schema=<schemas not to test for modification>
REM -l parameter value
set EXTRACT_LOGFILEPATH=<path to extract log file>
REM -target parameter value, and Initialize -source parameter value
set EXTRACT_TARGET=<path to output location - no trailing backslash>
REM -driver parameter value
set EXTRACT_DRIVER=<driver name>
REM -url parameter value
set EXTRACT_URL=<JDBC URL>
REM -user parameter value
set EXTRACT_USER=<extraction user>
REM -password parameter value
set EXTRACT_PASSWORD=<extraction user password>

REM Initialize Parameters
REM =====
REM -l parameter value
set INITIALIZE_LOGFILEPATH=<path to initialize log file>
REM -target parameter value
set INITIALIZE_TARGET=<path to output location - no trailing backslash>

java -cp "%EXTRACTOR_PATH%\CASTDBGUI.jar" com.castsoftware.extractor.cli.DatabaseExtractor -driver "%
EXTRACT_DRIVER%" -url "%EXTRACT_URL%" -user "%EXTRACT_USER%" -password %EXTRACT_PASSWORD% -parameters "%
EXTRACT_PARAMETERS%" -target "%EXTRACT_TARGET%" -l "%EXTRACT_LOGFILEPATH%"
SET RETURN_CODE=%ERRORLEVEL%

IF '%RETURN_CODE%' == '0' ( ECHO Extract Succeeded. Details in '%EXTRACT_LOGFILEPATH%'
) ELSE ( ECHO Extract Failed with %RETURN_CODE%. Details in '%EXTRACT_LOGFILEPATH%'
    exit /B 1 ' Extract ERROR
)

java -cp "%EXTRACTOR_PATH%\CASTDBGUI.jar" com.castsoftware.extractor.cli.Importer -target "%
INITIALIZE_TARGET%" -source "%EXTRACT_TARGET%" -l "%INITIALIZE_LOGFILEPATH%"
SET RETURN_CODE=%ERRORLEVEL%
IF '%RETURN_CODE%' == '0' ( ECHO Initialize Succeeded. Details in '%INITIALIZE_LOGFILEPATH%'
) ELSE ( ECHO Initialize Failed with %RETURN_CODE%. Details in '%INITIALIZE_LOGFILEPATH%'
    exit /B 2 ' Initialize ERROR
)

exit /B 0

```

Output

If the extraction is successful, you should see the following output:

- **Extract action** - output stored in a file called **exportResults.castextraction** as specified in the **-target** parameter

- **Initialize action** - a set of files in the folder as specified in the **-target** parameter. You should expect the following if you have extracted one schema/database:
 - one **DatabaseExtraction.uaxdirectory** file
 - various **.uax** files
 - various **.src** files

Command line parameters

The following table lists all available commands for the CAST Database Extractor when run direct from the command line:

Extraction action

Parameter	Mandatory	Description
java or C: \\path\to\java. exe	✔	This command specifies the location of your JRE. You should not need to specify the path, however, if you do, replace the C:\path\to with the location of the Java exe file. Note that if it is installed in a path containing spaces, you must surround the path with quotation marks.
-Xmx1024M	✘	This is an optional but recommended parameter for the extract action that allows you to configure the Maximum Java Heap Size of your JVM. Change the figure to the number of MB you want to allocate. This parameter is necessary if you are getting Out of memory exceptions for the Java Heap Space when you execute the batch file. Please increase the memory allocation until you no longer receive errors. Please see the JRE documentation for more information about this.
-cp D: \\path\to\CASTD BGUI.jar com. castssoftware. extractor.cli. DatabaseExtrac tor	✔	This parameter specifies the location of the CASTDBGUI.jar. Replace the D:\path\to with the location of the jar file.
-vendor <vendor name>	✔	This parameter specifies the target RDBMS vendor for the extract action. See Source panel for more information.
-driver <driver name>	✔	This parameter specifies the JDBC Driver that is appropriate for the vendor chosen with the -vendor command. See Source panel for more information.
-url <JDBC URL>	✔	This parameter is used to specify the source server for connection purposes. Enter the JDBC Connection parameters for the vendor/driver chosen above. See Source panel for more information.
-user <extraction user>	✔	This parameter tells the tool what login to use to access the source server. Enter a login with sufficient rights as explained in Required RDBMS rights for packaging a database .
-password <extraction user password>	✔	This parameter tells the tool what password to use to access the source server (corresponds to the login specified above). Enter the correct password for the login specified above.
-parameters	✔	<p><database schema>=<database/schemas for extraction></p> <p>This parameter specifies the schema/database you would like to extract:</p> <ul style="list-style-type: none"> • If you are extracting from an Oracle server, use the -parameters schema=<database/schemas for extraction> syntax • If you are extracting from a Microsoft SQL Server or Sybase ASE server, use the -parameters database=<database/schemas for extraction> syntax <p>See Source panel for more information.</p>
	✔	<p>minimal_access_mode=<dba all></p> <p>Only available when running an extraction on an Oracle server. This option determines the access mode used for the extraction (DBA_* views or ALL_* views) and accepts either of the following values:</p> <ul style="list-style-type: none"> • dba (default) - this can improve performance. • all <p>See Source panel for more information about the option.</p>
	✔	<p>skip_comments=<no yes></p> <p>Only available when running an extraction on an Oracle server. This option determines whether comments on tables, columns, views and materialized views will be extracted or not. Extracting comments (or not) has no impact on analysis results or Automatic Function Point values - they will either be visible or not in CAST Enlighten. Accepts either of the following values:</p> <ul style="list-style-type: none"> • No (default)

		<ul style="list-style-type: none"> • Yes - this can improve performance. <p>See Source panel for more information about the option.</p>	
	✓	<p>skip_modification_check_schema=<schemas not to test for modification></p> <p>Only available when running an extraction on an Oracle server. If an object is compiled or modified when the extraction is run, the database extractor will detect this by default and messages to that effect will be displayed in the log file (see What happens if an object is compiled or modified when the extraction is run on an Oracle Server?). If you would prefer that this check is not performed during an extraction, then you can list the schemas (separated by commas) which should be excluded from the check.</p>	
	✗	<p>connection:oracle.net.encrypted_client=, connection:oracle.net.encrypted_types_client=, connection:oracle.net.crypto_checksum_client=, connection:oracle.net.crypto_checksum_types_client=</p> <p>These options are aimed at extraction of schemas hosted on Oracle Server 11 / 12 that require encrypted connections. These four options allow you to configure the database extractor to connect to an Oracle Server which accepts only encrypted connections. The default values provided in the CAST Database Extractor are the default settings used on the Oracle Server side, therefore if your target Oracle Server uses a custom/specific encryption policy, you should change the options in the CAST Database Extractor to match those defined in the SQL NET.ORA file.</p> <p>If your target Oracle Server is configured to accept unencrypted connections, do not add these options</p> <p>Permitted values:</p> <ul style="list-style-type: none"> • connection:oracle.net.encrypted_client= REJECTED, ACCEPTED, REQUESTED, REQUIRED • connection:oracle.net.encrypted_types_client= AES256, AES192, AES128 • connection:oracle.net.crypto_checksum_client= REJECTED, ACCEPTED, REQUESTED, REQUIRED • connection:oracle.net.crypto_checksum_types_client= SHA512, SHA384, SHA256, SHA1, MD5 <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p> Note that while the possibility to accept encrypted was introduced in Oracle Server 10g, the default settings available in the CAST Database Extractor may not be fully compatible and CAST does not recommend using them unless you are forced to.</p> </div>	
-target <path to output location - no trailing backslash>	✓	This parameter specifies the location you would like the extract action to output the results to (the resulting file will be a ZIP format file with the .castextraction extension). See Options panel for more information.	
-l log_file.txt	✗	This parameter specifies an output file for logging purposes. Specify a .TXT file to contain the log of the entire extract action. You can name the file anything you like. If omitted, the output will be displayed in the command line window.	
-platform <platform>	✗	See Advanced panel for more information.	
-logtime <log time>	✗		
-retry <connection retry>	✗		
-timeout (time out ms)	✗		
-secure	✗		
-zip <zip packaging>	✗		See Expert panel for more information.
-format <export format>	✗		
-idcachefolder <internal id cache folder>	✗		
-multithreaded <multithreaded export>	✗		
-checktype <type to check>	✗		
-checkconfig <verbose>	✗		

configuration>		
-abortonfatal <abort on fatal error>	✗	
-h	✗	Use this command to display a list of available command line options - you may need to output the list to a text file.

Initialize action

Parameter	Mandatory	Description
java or C: \path\to\java.exe	✓	This command specifies the location of your JRE. Note that if it is installed in a path containing spaces, you must surround the path with quotation marks.
-Xmx1024M	✗	This is an optional but recommended parameter for the extract action that allows you to configure the Maximum Java Heap Size of your JVM. Change the figure to the number of MB you want to allocate. This parameter is necessary if you are getting Out of memory exceptions for the Java Heap Space when you execute the batch file. Please increase the memory allocation until you no longer receive errors. Please see the JRE documentation for more information about this.
-cp D: \path\to\CASTD BGUI.jar com. castsoftware. extractor.cli. Importer	✓	This parameter specifies the location of the CASTDBGUI.jar. Replace the D:\path\to with the location of the jar file.
-source <path to source location - no trailing backslash>	✓	This parameter specifies the file created by the extract action (named with a .castextraction extension). Do not include the extension.
-target <path to output location - no trailing backslash>	✓	This parameter specifies the folder you would like the files to output to. Note that this action will create a large number of files.
-relativepaths	✓	This parameter will force the creation of relative paths (instead of absolute paths) in the resulting .UAX files that point to the location of the source code (this is used in the CAST dashboards and in CAST Enlighten). This allows you to move the results of the Initialize action and not lose the accompanying source code.
-dispatch	✗	This option will force the results of the Initialize action to be placed in multiple folders within the location defined with the -target option. The uaxdirectory file will be placed at the root of the location defined with the -target option. CAST highly recommends using this option if you are planning to deliver a very large single schema or a high number of multiple schemas: <ul style="list-style-type: none"> the files generated by the deliver action will be spread over multiple folders, thus avoiding a situation where the host file system becomes overloaded the time taken to deliver the results of the extract action can be greatly reduced (anything up to ten times quicker) See Advanced panel for more information.
-l log_file.txt	✗	This command specifies an output file for logging purposes. Specify a .TXT file to contain the log of the entire Initialize action. You can name the file anything you like. If omitted, the output will be displayed in the command line window.
-logtime <log time>	✗	See Advanced panel for more information.
-platform <platform>	✗	
-zip <source zip packaging>	✗	See Expert panel for more information.
-ziptarget <target zip packaging>	✗	
-unicode <unicode encoding>	✗	
-uaxcode <UAX code information generation>	✗	

-shortids <IDs compression in UAX file>	✘	
-checkconfig <verbose configuration>	✘	
-config <configuration file path override>	✘	
-h	✘	Use this command to display a list of available command line options - you may need to output the list to a text file.

What happens if an object is compiled or modified when the extraction is run on an Oracle Server?

If an **object is compiled** during the Package action, then a **warning** is raised in the log and the extraction will successfully complete with the message **Execution succeeded** (this means that the .castextraction file will be generated and can be used without any further issue: compilation does not modify the object scripts). Example from the log:

```
2018-01-08 13:37:33.467 - Some objects from 'Schema A' have been compiled during the extraction: initial 'Last
Compilation Date' is '2018-01-08 13:36:57.0', new 'Last Compilation Date' is '2018-01-08 13:37:13.0'
2018-01-08 13:37:33.470 - Disconnected!
Execution succeeded!
```

If an **object is modified** during the Package action, then an **error** is raised in the log and the extraction will fail with the message **Execution failed** (this means that the .castextraction file will be generated but **must not be used**: a modification will change the object scripts and the schema will therefore be inconsistent and the Package action must be re-run). Example from the log:

```
2018-01-08 13:39:27.742 - Invariance error #-10: 'Schema A' has been modified during the extraction: initial
'Last Modification Date' is '2017-07-17:11:22:08', new 'Last Modification Date' is '2018-01-08:13:39:09'
2018-01-08 13:39:27.743 - Some objects from 'Schema A' have been compiled during the extraction: initial 'Last
Compilation Date' is '2018-01-08 13:37:13.0', new 'Last Compilation Date' is '2018-01-08 13:39:09.0'
2018-01-08 13:39:27.760 - Disconnected!
Error executing: Extraction -driver oracle.jdbc.OracleDriver -url jdbc:oracle:thin:@server:1521:TEST -user A -
password **** -parameters schema=A;minimal_access_mode=all -target C:\TEST\exportResults => -1
Execution failed!
```



Note that if you do not want to see messages in the log about invariance, then you can use the **skip_modification_check_schema** option (see above) to prevent the check from occurring on specific schemas.

What to do with the output from the CAST Database Extractor

Once you have successfully run the CAST Database Extractor to extract the required schemas/databases, the next step is to deliver this output. See [SQL - Prepare and deliver the source code](#) for more information.