

Ascential DataStage™

Oracle OCI Load Stage Guide

Version 1.0



Ascential[®]
Software

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How to Use This Guide

The Ascential DataStage Oracle OCI Load stage loads data into an Oracle database using Oracle direct path loading. Version 1.0 of Oracle OCI Load is compatible with Ascential DataStage Release 7.5.1.

Audience

This guide is intended for DataStage designers who create or modify jobs that use the Oracle OCI Load stage.

How This Book is Organized

The following table lists topics that may be of interest to you and it provides links to these topics.

To learn about	Read...
Functionality	"Functionality" on page 1
Configuration requirements	"Configuration Requirements" on page 2
Installation	"Installing the Oracle OCI Load Plug-In" on page 2
Load modes	"Load Modes" on page 4
Properties	"Properties" on page 5

Related Documentation

To learn more about documentation from other Ascential products and third-party documentation as they relate to Oracle OCI Load, refer to the following sections/tables.

Ascential Software Documentation

Guide	Description
<i>Ascential DataStage Server Job Developer's Guide</i>	Instructions for using a stage in a DataStage job
<i>Ascential DataStage Designer Guide</i>	General principles for designing jobs
<i>Ascential MetaStage User's Guide</i>	Information about Ascential MetaStage™
<i>Ascential DataStage NLS Guide</i>	Information about NLS and techniques for character-set mapping
<i>Ascential DataStage Plug-In Installation and Configuration Guide</i>	Information required to configure your system and install this stage

Teradata Documentation

Guide	Description
<i>Oracle Database Utilities</i>	Information about Oracle command syntax
<i>Oracle SQL Reference</i>	Information about Oracle command syntax
<i>Oracle Database Administrator's Guide</i>	Information about installing Oracle

Conventions

Convention	Used for...
bold	Field names, button names, menu items, and keystrokes. Also used to indicate filenames, and window and dialog box names.
<code>user input</code>	Information that you need to enter as is.
<code>code</code>	Code examples
<i>variable</i> or <variable>	Placeholders for information that you need to enter. Do not type the greater-/less-than brackets as part of the variable.

Convention	Used for...
>	Indicators used to separate menu options, such as: Start >Programs >Ascential DataStage
[A]	Options in command syntax. Do not type the brackets as part of the option.
B...	Elements that can repeat.
A B	Indicator used to separate mutually-exclusive elements.
{ }	Indicator used to identify sets of choices.

Contacting Support

To reach Customer Care, please refer to the information below:

Call toll-free: 1-866-INFONOW (1-866-463-6669)

Email: support@ascentialsoftware.com

Ascential Developer Net: <http://developernet.ascential.com>

Please consult your support agreement for the location and availability of customer support personnel.

To find the location and telephone number of the nearest Ascential Software office outside of North America, please visit the Ascential Software Corporation website at <http://www.ascentialsoftware.com>.

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Introduction

Oracle OCI Load is a passive stage that loads data from external files into an Oracle table. The Oracle database can reside locally or remotely. This stage has one stream input link and no output or output reference links. The input link provides a stream of data rows to load into the Oracle table using Oracle direct path loading. This input link corresponds to one bulk loading session in a DataStage job.

Oracle Call Interface (OCI) supports direct path loading calls that access the direct block formatter of the Oracle server. These calls perform the functions of the Oracle SQL*Loader utility. This lets you load data immediately from an external file into an Oracle database object, which is a table or a partition of a partitioned table, in automatic mode.

Ascential DataStage provides an Orabulk stage which generates control and data files for bulk loading into a single table in an Oracle target database. This stage then loads the files into the database by using the Oracle command *sqlldr*. However, the Orabulk stage cannot populate a table in different loading modes. Use Oracle OCI Load to do this.

Functionality

Oracle OCI Load has the following functionality:

- Bulk loading from a stream input link to provide rows of data into the target table residing locally or remotely.
- Immediate and delayed loading.
- Load actions to specify how data is loaded to the target table.
- Partition or table loading.
- NLS (National Language Support). For information, see *Ascential DataStage NLS Guide*.

The following functionality is not supported:

- Output or output reference links.
- Importing of table definitions.
- Use of the `TIMESTAMP` data type with fractions of seconds, for example, *hh:mm:ss:ff*. Use the `CHAR` data type instead.

Configuration Requirements

See the online readme.txt file for your platform for the latest information about the DataStage release. Oracle OCI Load requires the following configuration for Ascential DataStage and Oracle Enterprise Edition:

DataStage Version 7.0 or later on the DataStage client and server machines. For more information about Ascential DataStage configuration requirements, see *Ascential DataStage Install and Upgrade Guide*.

Oracle Client A version of the Oracle Client on the DataStage server machine. See *Ascential DataStage Plug-In Installation and Configuration Guide*.

Note Version 8.1.7 requires Installation Type: Programmer

Platforms Your Oracle client and server machines must have the same operating system type, such as UNIX to UNIX or Windows 2000 to Windows 2000, in order to run successfully. If you mix UNIX and Windows platforms for your Oracle client and Oracle server machines, the DataStage job will fail, for example, if the Oracle client is on a UNIX machine and the Oracle server is on a Windows 2000 machine.

Oracle Enterprise Manager If you install Oracle Enterprise Manager on the same machine as Oracle Client, the Oracle server home directory must precede the Oracle Enterprise Manager home directory. You must ensure that the PATH system environment variable has the correct setting, for example:

```
d:\oraclehome\bin;d:\oraclemanager\bin
```

oraclehome is the location where your Oracle software is installed.

oraclemanager is the name of the Oracle Enterprise Manager home directory.

Any changes to system environment variables may require a system reboot before the values of the variables take effect.

The configuration of SQL*Net using a configuration program, for example, SQL*Net Easy Configuration, to set up and add database aliases is also required.

Installing the Oracle OCI Load Plug-In

For instructions and information supporting the installation, see *Ascential DataStage Plug-In Installation and Configuration Guide*.

Building the Oracle Client Shared Library

The Oracle OCI Load stage requires the *libclntsh.so* shared library (for the Solaris and Tru64 platforms) and *libclntsh.sl* (for the HP-UX 11 platform), which is normally built during the installation of Oracle client software. The Oracle installation accomplishes this by running the script *genclntsh* located in the *ORACLE_HOME/bin* directory, where *ORACLE_HOME* is the environment variable set to the location in which your Oracle software is installed.

The *genclntsh* script provided by Oracle creates a shared library that causes errors resulting from undefined symbols. Users running Oracle8i on specific platforms with certain versions of Oracle client software (as documented in "UNIX Platforms" in the next section) must therefore use the *genclntsh8* script provided with Ascential DataStage to build a replacement *libclntsh.so* or *libclntsh.sl*.

These scripts are placed in a tar archive at the root level of the installation media, and replaces the new *libclntsh.so* or *libclntsh.sl* in the *lib* directory underneath the DataStage server installation directory. This is the same directory where your Oracle OCI Load stage shared library is installed. It does not overwrite the original *libclntsh.so* or *libclntsh.sl* in the *\$ORACLE_HOME/lib* directory.

Note Users running Oracle9i or above are not required to build the Oracle client shared library.

UNIX Platforms

The following sections specify information about library requirements and running the bulk loader, depending on your platform.

Solaris

Before you build the Oracle client shared library, install Oracle, and set the environment variable *ORACLE_HOME* to the directory where you installed Oracle.

To run the Oracle OCI Load stage with Ascential DataStage 7.0 or later, a one-time site linking is required to build a shared library. This is required to expose the necessary direct path loading API symbols. The library works with Oracle Call Interface and the Oracle OCI Load plug-in, but it is unnecessary for the Oracle Call Interface plug-in.

To build the library for Version 8.1.7, use the following commands:

```
# cp /cdrom/genclnt.tar
# tar -xvf genclnt.tar
# cd solaris
# ./genclntsh817
```

Tru64

A one-time site linking to build a replacement Oracle client shared library is required for Oracle 8.1.7 on Tru64. This is required to expose the necessary direct path loading API symbols. Before you build the Oracle shared library, install Oracle and set the environment variable *ORACLE_HOME* to the directory where you installed Oracle.

In order to build the library, you must copy the *GENCLNT.TAR;1* file, which is located at the root level of the installation media, into a directory on the local hard disk and extract it before running the script.

Use the following commands to build the shared library for version 8.1.7:

```
# cp /cdrom/GENCLNT.TAR;1 ./genc1nt.tar
# tar -xvf genc1nt.tar
# cd tru64
# ./genc1ntsh817
```

HP-UX 11

A one-time site linking to build a replacement Oracle client shared library is required for Oracle Client 8.1.7 on HP-UX 11. This site linking binds your unique Oracle client configuration into the file that is used by the Oracle BL stage to access local and remote Oracle databases.

Before you build the Oracle client shared library, install Oracle, and set the environment variable *ORACLE_HOME* to the directory where you installed Oracle.

In order to build the library, you must copy the *GENCLNT.TAR;1* file, which is located at the root level of the installation media, into a directory on the local hard disk and extract it before running the script.

Oracle 8.1.7 requires a different script to link an adequate shared library on HP-UX 11. Use the following sequence of commands to build the shared library for version 8.1.7:

```
# cp /cdrom/GENCLNT.TAR;1 ./genc1nt.tar
# tar -xvf genc1nt.tar
# cd hpux
# ./genc1ntsh817
```

Load Modes

Load mode specifies whether to load the data into the target file in automatic or manual mode. The Load Mode property specifies whether to populate the Oracle database immediately or generate a control file and a data file to populate the database later.

Automatic

Automatic loading, which is the default, loads the data during the DataStage job. The stage populates the Oracle database immediately after loading the source data. Automatic data loading occurs when the DataStage server resides on the same system as the Oracle server or when the Oracle server is remote and has the same operating system as the DataStage server. Be sure the Oracle client shared library is built (see "[Building the Oracle Client Shared Library](#)" on page 1-3).

Manual

Use manual loading to modify and move the data file, the control file, or both, to a different system before the actual loading process. Use manual mode to delay loading the data, which causes the data and control files required to load the data to be written to an ASCII file. The data and control files are used to load the data later.

Properties

The following table includes these column heads:

- **Prompt** is the text that you see in the stage editor user interface.
- **Type** is the set of values that are valid for the property.
- **Default** is the text used if you do not supply any value.
- **Description** describes the properties.

Each stage property is described in the order in which it appears. You can also access this information from the stage **Properties** page in the DataStage Designer.

Prompt	Type	Default	Description
Service Name	String		The name of the Oracle service. It is the logical representation of the database, which is the way the database is presented to clients. The service name is a string that is the global database name, a name comprised of the database name and domain name, which is entered during installation or database creation.
User Name	String		The user name for connecting to the service.

Prompt	Type	Default	Description
Password	String		The password for "User Name."
Table Name	String		The name of the target Oracle table to load the files into.
Schema Name	String		The name of the schema where the table being loaded resides. If unspecified, the schema name is "User Name."
Partition Name	String		The name of the partition or subpartition that belongs to the table to be loaded. If not specified, the entire table is loaded. The name must be a valid partition or subpartition name.
Date Format	String List	DD-MON-YYYY	The date format to be used. Use one of the following values: DD.MM.YYYY YYYY-MM-DD DD-MON-YYYY MM/DD/YYYY
Time Format	String List	hh24:mi:ss	The time format to be used. Use one of the following values: hh24:mi:ss hh:mi:ss am
Max Record Number	Long	100	Specifies the maximum number of input records in a batch. This property is used only if "Load Mode" is set to Automatic.

Prompt	Type	Default	Description
Load Mode	String List	Automatic	<p>The method used to load the data into the target file. This property specifies whether to populate the Oracle database or generate a control file and a data file to populate the database. Use one of the following values:</p> <p>Automatic (immediate mode). The stage populates an Oracle database immediately after loading the source data. Automatic data loading can occur only when the DataStage server resides on the same system as an Oracle server.</p> <p>Manual (delayed mode). The stage generates a control file and a data file that you can edit and execute on any Oracle host system. The stage does not establish a connection with the Oracle server.</p>
Directory Path	String		The pathname of the directory where the Oracle SQL*Loader files are generated. This property is used only when "Load Mode" is set to Manual.
Control File Name	String	<i>servicename_ tablename.ctl</i>	The name of the Oracle SQL*Loader control file generated when "Load Mode" is set to Manual. This text file contains the sequence of commands telling where to find the data, how to parse and interpret the data, and where to insert the data. You can modify and execute this file on any Oracle host system. This file has a <i>.ctl</i> extension.
Data File Name	String	<i>servicename_ tablename.dat</i>	The name of the Oracle SQL*Loader sequential data file created when "Load Mode" is set to Manual. This file has a <i>.dat</i> extension.
Delimiter	String	, (comma)	The character used to delimit fields in the loader input data.
Preserve Blanks	String List	No	The indicator specifying whether SQL*Loader should preserve blanks in the data file. If No , SQL*Loader treats blanks as nulls.

Prompt	Type	Default	Description
Column Name Case-sensitivity	String List	No	The indicator specifying whether both uppercase and lowercase characters can be used in column names. If No , all column names are handled as uppercase. If Yes , a combination of uppercase and lowercase characters is acceptable.