Oracle Banking Trade Finance
OBTF Length Semantics

Release 14.7.6.0.0

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Preface

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Purpose

This manual explains the steps to setup session-level character length semantics during Oracle Banking Trade Finance installation.

Audience

This guide is intended for anyone responsible for installing Oracle Banking Application.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customer access to and use of Oracle support services will be pursuant to the terms and conditions specified in their Oracle order for the applicable services.

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Oracle advises customers to get all their security vulnerability information from the Oracle Critical Patch Update Advisory, which is available at Critical Patches, Security Alerts and Bulletins. All critical patches should be applied in a timely manner to ensure effective security, as strongly recommended by Oracle Software Security Assurance.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners,

we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Related Resources

For more information, see these Oracle Banking Trade Finance resources:

- Oracle Banking Trade Finance Release Notes
- Oracle Banking Trade Finance Install & Upgrade

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Introduction

Oracle Banking Trade Finance Solution supports multi-byte characters by means of setting session-level character length semantics during OBTF installation using the NLS_LENGTH_SEMANTICS parameter of Oracle Database. Most of the application code is written without explicit length semantics (BYTE or CHAR) and, hence, adapts to the session-level semantics during compilation at the time of OBTF installation.

- Background
- Approach

1.1 Background

NLS_LENGTH_SEMANTICS parameter allows you to specify the length of a column datatype/ PLSQL variable in terms of characters (CHAR) instead of the default BYTE. Typically, you would need this if you were to deal with (in PL/SQL code) and store data that contains multi-byte characters such as Japanese or Mandarin characters.

Oracle strongly recommends that you do not set NLS_LENGTH_SEMANTICS parameter on instance level (i.e. in the server parameter file) but only use it to alter session-level semantics as necessary. From MOS note 144808.1:

"Oracle advices to use explicit CHAR semantics in the SQL or PL/SQL syntax

OR

To make sure your application does an "ALTER SESSION SET

NLS_LENGTH_SEMANTICS=CHAR;" when connecting if CHAR semantics is required but the semantic is not defined explicit in SQL."

Based on this note and other available documentation for the parameter, we recommend an approach in the next section, which should be followed in sites where multi-byte character support is required.

> **✎ Note:**
>
> SR with oracle mentioned below is feasible. (SR 3-16364463401)

1.2 Approach

In situations where PL/SQL code would interact with multi-byte character data and the same kind of data would be stored in Oracle Banking Trade Finance tables, follow below approach:

Please note the approach is suggested for 12c and above Database version only.

1. Complete the database installation and set up as per the Oracle Banking Trade Finance Database Best Practices for your Oracle Banking Trade Finance release.

2. Immediately after creating the Oracle Banking Trade Finance application user (schema), create a logon trigger as the SYS user to alter each new session so that the session-level length semantics are maintained as CHAR for the user at all times. For example, if the schema name were OBTF and the trigger was named "FCUSER_LOGON", the trigger would look like:

CREATE OR REPLACE TRIGGER SYS.FCUSER_LOGON

AFTER LOGON ON OBTF.SCHEMA

BEGIN

EXECUTE IMMEDIATE 'alter session set nls_length_semantics=CHAR';

END;

/

3. Proceed with the rest of the Oracle Banking Trade Finance installation as per the installation documents.
In situations where an operation results in Oracle Banking Trade Finance objects being invalidated, make sure the objects are re-compiled either:

   a. By the Oracle Banking Trade Finance schema user using one of the following options:

      i. Manually using ALTER… COMPILE statements

      ii. SYS.UTL_RECOMP.RECOMP_PARALLEL procedure

      iii. SYS.UTL_RECOMP.RECOMP_SERIAL procedure
         Or,

   b. By a user with appropriate privileges on SYS.UTL_RECOMP package (such as the SYS user) *using one of the following options only:*

      i. SYS.UTL_RECOMP.RECOMP_PARALLEL procedure

      ii. SYS.UTL_RECOMP.RECOMP_SERIAL procedure

Oracle Banking Trade Finance strongly advises against manually compiling Oracle Banking Trade Finance schema objects (using ALTER…COMPILE) as a non- Oracle Banking Trade Finance application user when length semantics of CHAR are being enforced. Such an attempt may change the NLS_LENGTH_SEMANTICS parameter setting of the PL/SQL objects to BYTE and this may result in runtime exceptions within the application, such as:

"ORA-06502- PL/SQL: numeric or value error: character string buffer too small".

> **Note:**
>
> If the Oracle Banking Trade Finance schema is ever re-compiled using SYS.DBMS_UTILITY.COMPILE_SCHEMA in an environment that is using CHAR semantics, then it must be ensured that for the user executing the procedure, the session-level NLS_LENGTH_SEMANTICS parameter is set to CHAR. This is because while SYS.UTL_RECOMP.x procedures re-use existing PL/SQL object settings, SYS.DBMS_UTILITY.COMPILE_SCHEMA compiles the objects with the NLS settings of the invoking user's session and may alter the PL/SQL object settings of the objects (including length semantics).