

## Release Notes

### About these Release Notes

This document contains important information about Pro\*C/C++ release 21c.

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### Compatibility and Migration Issues

This section describes compatibility issues when migrating from earlier releases of Pro\*C/C++.

## Compatibility Between 32 Bit and 64 Bit Implementations

On platforms which support both 32 bit and 64 bit implementations, you must re-compile your applications which include `sqlca` via an `EXEC SQL INCLUDE` statement before linking with the 64 bit binaries. For applications which include `sqlca.h` via the `#include` preprocessor statement, you must recompile to include the 64 bit `sqlca.h` before relinking with the 64 bit binaries.

In the future, to support generated code compatibility across implementations, only one version, the 64 bit version, of `sqlca.h` may be supplied on ports which support both 32 bit and 64 bit binaries.

## Pro\*C/C++ Configuration File

The Pro\*C/C++ configuration file `precomp/admin/pcscfg.cfg` needs to be updated with the appropriate path for `sys_include` option. Environment variables can be used to specify the path, e.g, `$ORACLE_HOME` for Unix systems and `%ORACLE_HOME%` for Windows. Your include option should also be updated appropriately.

```
sys_include=($ORACLE_HOME/precomp/public,/usr/include)  
<pre>sys_include=/usr/lib/gcc/i386-redhat-linux/4.1.1/include  
<pre>include=($ORACLE_HOME/precomp/public)  
<pre>include=$ORACLE_HOME/precomp/hdrs
```

## LTYPE=SHORT

Setting the `LTYPE=SHORT` option causes `.lis` files to be generated using the verbose form rather than the expository form in which the entire program is listed.

## New Features in Pro\*C/C++ Release 21c

The following feature is new in this release:

- Support for C99

The Pro\*C/C++ Precompiler now supports the C99 standard, the ISO/IEC 9899:1999 standards specification for C programming. C99 syntax and semantics enable application developers to use richer functionality.

## New Features in Previous Releases

This section lists new features introduced to Pro\*C/C++ in previous releases.

### New Features in Pro\*C/C++ Release 18c, Version 18.1

The following feature is new in this release:

- Support for Oracle Connection Manager in Traffic Director Mode

Oracle Connection Manager in Traffic Director Mode is a proxy that is placed between supported database clients and database instances for improved high availability, connection multiplexing, and load balancing.

## Features in Pro\*C/C++ 12.2 Production

- Support for long identifiers (object lengths of 128 bytes). In previous releases, the object length limit was 30 bytes.
- Support for Oracle Instant Client - Basic Light version.
- New command line option, `trim_password`, to prevent authentication issues caused by password strings that contain trailing blank space.
- Pro\*C/C++ Compatibility with vc12 (Visual Studio 2013 compiler).

## Features in Pro\*C/C++ 12.1 Production

- Support for Auto Increment Columns
- Support for 32k Columns
- Support for Prefetch By Memory
- Support for SQL Plan Management (SPM)

## Bugs Fixed

The following section lists bugs fixed in Pro\*C/C++. Numbers in parentheses following the description refer to bug numbers in the Oracle Bug Database.

### Bugs Fixed in Pro\*C/C++ Release 12.2 Production

- Pro\*C/C++ no longer throws CSF-S-00000 error when `common_parser=yes` in the `timezone.pc` file (9531787)
- Pro\*C/C++ no longer throws ORA-01008 error when binds are used in the Select list while `common_parser=yes` (14127422)
- Pro\*C/C++ no longer throws ORA-932 error when precompiling with option `USERID` and `common_parser=yes` for an INSERT statement which has CASE clause and `TIMESTAMP` function (14335958, 19473788)
- Pro\*C/C++ no longer fails to set `SQLSTATE` during rollback, with `MODE=ANSI` and without declaring `SQLCODE` (5891984)
- Pro\*C/C++ no longer throws ORA-538976288 error when using a "SELECT INTO" statement for PIC N variable (17189633)
- Pro\*C/C++ no longer throws PCB-S-00400 error while precompiling a program with a Level 88 initialised variable (20194289)
- Pro\*C/C++ no longer fails to parse Solaris platform-specific keyword `__thread` (20901503)

- Pro\*C/C++ demo makefiles from Oracle Instant Client now allows the user to specify the GCC path (14591784)
- Pro\*C/C++ no longer truncates strings while fetching data from a long column into a long variable (13589112)
- Pro\*C/C++ Nvarchar2 object is now correctly mapped to nvarchar2 data type (11653552)
- Pro\*C/C++ now supports OCIRaw processing in the EXEC SQL OBJECT GET construct (11653512)
- Pro\*C/C++ is now shipped with generic demo files instead of OSD files, and old unused files are no longer shipped (9909411)
- Pro\*C/C++ now handles parsing of lengthy numeric values (9814506)
- Pro\*C/C++ now accepts the TYPE token in the IS OF clause (9535800)
- Pro\*C/C++ now correctly interprets a newline character between single quotes in SQL statements (9531904)
- Pro\*C/C++ no longer has memory corruption issues when processing SQL statements containing N'string' (9531638)
- Pro\*C/C++ now recognizes the CURSOR WITH HOLD option when parser unification is enabled (8436316)
- Pro\*C/C++ now passes the correct "mode" parameter value to OCIStmtFetch2() (18509872)
- Pro\*C/C++ now frees up the memory allocated to column properties (20051833)
- Pro\*C/C++ no longer fails with ORA-1008 error after encountering ORA-942 error when a table is dropped (20029428)
- Pro\*C/C++ no longer throws PCC-S-2201 error while parsing cursor with hold syntax in unified parser mode (20534275)
- Pro\*C/C++ no longer throws PLS-S-201 error when compiling with common\_parser=No (20808657)
- Len attribute of Varchar structure no longer gets corrupted during batch fetching of rows (14013076)
- Pro\*C/C++ no longer throws a segmentation fault when precompiling a long filename (12565588)

## Bugs Fixed in Pro\*C/C++ Release 12.1

- Pro\*C/C++ parser no longer fails when both outline and common\_parser are set to 'yes' (12819524)
- Pro\*C/C++ no longer generates the ANSI prototypes for public APIs when the Precompiler option 'code' is set to 'kr\_c' (10250555)
- XA application no longer crashes after upgrade to 11.2 (10086495)
- Obsolete Sun SPARC compiler option 'dalign' removed from Pro\*C/C++ demo make file (9590964)

- EXEC SQL COLLECTION GET from VARRAY(5) of CHAR(5) now behaves correctly (9531014)
- On 64-bit platform SQLSQLDAAlloc() no longer returns an invalid descriptor handle (9491931)
- Pro\*C/C++ no longer crashes on HP-UX after upgrading to 11g (7365514)

## Known Bugs

The following section lists known bugs in Pro\*C/C++. Numbers in parentheses following the description refer to bug numbers in the Oracle Bug Database.

### Known Bugs in Pro\*C/C++ Release 12.2

- ORA-00942 error is thrown while running a query that selects values from an XML table in online mode (9535704)
- PCC-S-2322 error is thrown while executing an embedded SQL statement that contains a macro (9970779)
- PCC-S-02201 error is thrown due to a c99 compliance issue with the stdbool.h file (12866048)
- Implementation of GCC extension #include\_next needs to be modified in order to correctly include a file in multiple paths (21414819)
- Certain DDL statements are incorrectly parsed (20857434)
- PCC-S-02201 error is thrown while parsing the DDL statement "CREATE GLOBAL TEMPORARY TABLE" (20857400)
- PCC-S-02201 error is thrown while parsing the DDL statement "CREATE ROLE" (20857370)
- Oracle Social Network does not support special character "@" in passwords (20809065)

## Support

For Pro\*C/C++ support, please contact your local Oracle Support Services Center.

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