

# Overcoming the Top 10 Oracle Errors



**Luke Smith**

Oracle/MySQL Lead DBA & Delivery Manager  
XTIVIA Inc.

A Publication of  
**XTIVIA**

# TABLE OF CONTENTS

<b>About the Author</b> .....	04
<b>Introduction</b> .....	05
<b>#1 ORA-12154</b> .....	06
TNS:could not resolve the connect identifier specified .....	07
<b>#2 ORA-00600</b> .....	08
Internal Error Code .....	09
<b>#3 ORA-01722</b> .....	10
Invalid Number.....	11
<b>#4 ORA-12560</b> .....	12
TNS:protocol adapter error.....	13
<b>#5 ORA-03113</b> .....	14
end-of-file on communication channel .....	15
<b>#6 ORA-00604</b> .....	16
Error occurred at recursive SQL level 1 .....	17
<b>#7 ORA-00936</b> .....	18
Missing expression .....	19

# TABLE OF CONTENTS

<b>#8 ORA-01017</b> .....	20
Invalid username/password; logon denied.....	21
<b>#9 ORA-01555</b> .....	22
Snapshot Too Old.....	23
<b>#10 ORA-04031</b> .....	24
Unable to Allocate nn Bytes of Shared Memory.....	25
<b>CLOSING</b> .....	26
<b>THANKS FOR READING</b> .....	27

# About the Author



Luke Smith's background in IT reaches back to the late '90s. Working with Oracle for nearly 20 years, Luke's climb up the tech ladder started at helpdesk. He went on to learn PL/SQL application development, and eventually, mastered database administration and management. He has been with XTIVIA for 5 years and currently leads both the Oracle and MySQL Database teams.

He is an Oracle Database 10-11g Administrator Certified Professional, an Oracle Application Server: 10g Certified Associate, and an Oracle PS/SQL Developer Certified Associate, to name just a few of his qualifications.

Luke moves his teams forward in his high sales record, always pushing for positive changes to improve best practices. He refines DBA processes to maximize efficiency. Acknowledging both sides of the fence, he makes XTIVIA better for both customers and employees.

In his spare time, Luke plays online PC gaming and DnD and is also an avid car enthusiast. When the weather is nice, he rebuilds racecars in his garage with his wife, Lisa.

# Introduction

With “just married” still painted on his car, Adam locks the doors and walks into a towering building. His company, Coachers, is a brand that focuses on formal fashion for the modern man. In just ten short years, Coachers went from a small startup in New York to absorption into a multinational corporation. With clients ranging from Hollywood producers to business executives and politicians, Coachers quickly outgrew their database management system, or DMNS, and needed a larger way to store their company data.

Now back from his honeymoon, Adam proudly enters his office. This will be the first time he logs in to his computer with a ring on his finger.

Not too long before, Coachers decided to beef up their team of Database Administrators, or DBAs. Dan, the team lead, just implemented a new Oracle database while Adam was on leave. The implementation was scheduled to take effect on the day of Adam’s return—*today*. With their fingers crossed, the DBA team patiently waits for Adam to try their new Oracle system. As he logs into his computer and accesses their new system, the DBA team thinks, *What could possibly go wrong?*

Well, Adam can’t get in. He encounters the error, “ORA-03113: end-of-file on communication channel.” Right away, Dan arrives at the scene. It appears they cannot connect to the Oracle servers and need help troubleshooting this error.

Oracle is one of the most common database management systems, but even Oracle isn’t without its occasional glitches. This eBook outlines ten of the common errors our team encounters in Oracle. We sincerely hope the experience outlined in this publication guides your team as they encounter—and overcome—these errors.



# ORA-12154

TNS:could not resolve the connect  
identifier specified



## ORA-12154: TNS:could not resolve the connect identifier specified

This is one of the most common Oracle errors and it is basically telling you that you are trying to connect to a database name that is unknown to the system.

The most common cause are typos in your connection string or network configuration files, so be sure to check your tnsnames.ora and listener.ora files. Also, make sure your ORACLE\_HOME and ORACLE\_SID are set to the proper environment. Sometimes, you also need to make sure your TNS\_ADMIN parameter is set if you're using an alternate location for those configuration files. Everyone makes mistakes and even someone that works in these environments every day can miss a small detail on occasion. Having a second set of eyes take a look usually can help you spot the error.



# ORA-00600

Internal Error Code





# ORA-00600: Data Corruption

The ORA-600 is an internal Oracle error that can be very serious. A lot of times this error can't be solved by an onsite DBA and needs direct help from Oracle to help troubleshoot the issue. If the trace files from the error don't prove to be useful in troubleshooting the error yourself, usually the next course of action is to log into metalink (Oracle Support) and use their ORA-600 lookup tool in hopes that this particular error is documented. This can be found via a quick search in metalink with a search string of Doc ID 153788.1.

The tool looks like the below and can be used for a few different internal error codes.

### Look-up By Error or Error Code's First Argument

Select the appropriate error code and enter its First argument. Alternatively, enter the entire error message in the First Argument field. Then select 'Look-up Error'.

**Error Code**  ORA-600  ORA-7445  ORA-700

**Error Code First Argument**  ⓘ

**Oracle RDBMS Version**

or

You simply click on the rdbms version that you're currently using and then enter the first argument in the first set of brackets after the error number. Then click the lookup button. If the tool found a match it will pop up a box like below.

ORA-00600: internal error code,arguments: [ktfbtgex-7], [1015817],[1024],[1015816],[ ], [ ], [ ], [ ]

For ORA-600 errors, if you have the related trace file, consider trying the [MOS ORA-600-Troubleshooting Tool](#) [CLICK HERE](#)

### ORA-600/ORA-7445/ORA-700 Error Lookup

This tool provides a look-up capability for generic

#### Look-up By Error or Error Code's First Argument

Select the appropriate error code and enter its First Argument field. Then select 'Look-up Error'.

**Error Code**  ORA-600  ORA-7445  ORA-700

**Error Code First Argument**  ⓘ

**Oracle RDBMS Version**

or

[Document 178643.1](#) matches this error.

Click on the link to view the article. (or right-click to open the document in a new Window/Tab)

If the document does not help, you can use 'Do a general Search for Knowledge' to begin a search for any published documents and bugs that mention the error.

[Close](#)



# ORA-01722

Invalid Number



## ORA-01722: Invalid Number

This error occurs when you try to convert a character string into a number, and the string can't be converted into a valid number. So what is a valid number, you ask? A valid number to Oracle would be a digit between 0-9, a negative or positive sign at the beginning or end, a decimal point, or an upper case or lower case e. All other characters are not allowed.

One reason you might be getting this error is due to an implicit conversion happening in the where clause. Such as comparing a character column to a number column.

Another reason may be that you are simply trying to insert or update with an invalid number that doesn't fall within the criteria stated above. So check your insert or update statement and make sure that the values you are using fall within those boundaries.

The bottom line is to check that your number is a valid number when doing comparisons, inserts, and updates. If you don't see it, have a second set of eyes look at it for you just to make sure you're not glancing over the obvious to someone else.



# ORA-12560

TNS:protocol adapter error



# ORA-12560: TNS:protocol adapter error

When you see this error on windows you need to check these two things before anything else.

1) Make sure the windows service is up and running.

Service Name	Status	Start Mode	Log On As
OracleServiceORACONTAIN	Started	Automatic	.\oracle
OracleWebWriterORACONTAIN	Started	Automatic	\oracle

2) Ensure your ORACLE\_SID is set to the instance name you're trying to connect to.

If either one or two are not correct, you will get the error as seen below.

```
E:\app\oracle\product\12.1.0\dbhome_1\BIN>sqlplus / as sysdba
SQL*Plus: Release 12.1.0.2.0 Production on Fri Feb 17 15:44:27 2017
Copyright (c) 1982, 2014, oracle. All rights reserved.

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
with the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

SQL> exit
Disconnected from Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
with the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

E:\app\oracle\product\12.1.0\dbhome_1\BIN>set ORACLE_SID=nottherightone
E:\app\oracle\product\12.1.0\dbhome_1\BIN>sqlplus / as sysdba
SQL*Plus: Release 12.1.0.2.0 Production on Fri Feb 17 15:44:42 2017
Copyright (c) 1982, 2014, oracle. All rights reserved.

ERROR:
ORA-12560: TNS:protocol adapter error

Enter user-name: AC
E:\app\oracle\product\12.1.0\dbhome_1\BIN>set ORACLE_SID=oracontain
E:\app\oracle\product\12.1.0\dbhome_1\BIN>sqlplus / as sysdba
SQL*Plus: Release 12.1.0.2.0 Production on Fri Feb 17 15:44:57 2017
Copyright (c) 1982, 2014, oracle. All rights reserved.

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
with the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

SQL>
```



# ORA-03113

end-of-file on communication channel



## ORA-03113: end-of-file on communication channel

This error occurs due to the fact your connection to the Oracle server is either no longer available, or the server couldn't respond to the client's requests. This is usually called an Oracle server issue or a networking issue.

You can start troubleshooting by making sure your Oracle server, Oracle Database, and Listener are each up and running. If everything is up and without errors, then try another client box, or at least make sure the error is happening for everyone.

If you're still at a loss, you can check the logs in the `user_dump_dest` that should help you find the root cause of the problem, or at least assist your DBA in helping you troubleshoot the issue. It will also help your DBA to narrow down if this error occurs when trying to make a connection or with an established connection.



# ORA-00604

Error occurred at recursive SQL level 1





## ORA-00604: error occurred at recursive SQL level string

This error is rather common; however, the following error is what needs to be resolved. Below, you can see several of these errors (and their associated errors) that needs to be resolved. Each of the following errors have their own resolution.

Here, the variable string value is too small:

ORA-00604: error occurred at recursive SQL level 1

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

The shared pool size needs to be increased:

ORA-00604: error occurred at recursive SQL level 3

ORA-04031: unable to allocate 4096 bytes of shared memory ("shared pool","select /\*+ rule \*/ bucket\_cn...","Typecheck heap","kgghtelnit")

This is related to a user that needs a password change for an active dataguard environment:

ORA-00604: error occurred at recursive SQL level 1

ORA-16000: database open for read-only access

Either: need to reduce the number of cursors used, or increase the `open_cursors` value:

ORA-00604: error occurred at recursive SQL level 1

ORA-01000: maximum open cursors exceeded

If this is related to a materialized view, it needs to be truncated and the log purged:

ORA-00604: error occurred at recursive SQL level 1

ORA-00904: "CURRENT\_SCN": invalid identifier

Something created an empty cursor here and would need to be researched further on a case-by-case basis:

ORA-00604: error occurred at recursive SQL level 1

ORA-01003: no statement parsed

I hope this helps someone troubleshoot their issue more quickly by knowing that the ORA-00604 error is not the error that should be researched.



# ORA-00936

missing expression



## ORA-00936: Missing Expression

This error comes up pretty often and can be caused by a lot of different things. Usually, this is a pretty easy one to solve. It's mostly just a syntax error and you forgot part of your SQL statement. You need a select, a column, from clause, and optionally a where clause to limit your select statement. Make sure you have those parts and you should be able to fix this issue.

Oracle lists the below cause in their Oracle error utility notes:

“A required part of a clause or expression has been omitted. For example, a SELECT statement may have been entered without a list of columns or expressions or with an incomplete expression. This message is also issued in cases where a reserved word is misused, as in SELECT TABLE.”

For example:

```
select column1 from table1;
```



# ORA-01017

Invalid username/password; logon denied



## ORA-01017: Invalid username/password; logon denied

This error seems pretty straight forward; however, it can have us banging our heads against our desks for awhile trying to figure out why we can't seem to type our password in correctly.

Here are a few reasons I have personally ran into this issue. I was attempting to connect to the wrong database due to multiple databases on one server. After checking my ORACLE\_SID variable, I was able to connect to the correct database.

- I made a typo and put a '0' where an 'o' should have went in a tnsnames.ora file from a client box and had to have a second set of eyes check it and find the error.
- I was using an 11g database and the SEC\_CASE\_SENSITIVE\_LOGON parameter was set to true and I was using the wrong case for the username.
- And, of course, I have definitely typed in my password wrong several times.

I hope this helps someone resolve their ORA-01017 error more quickly. I know we all need a reminder from time to time—even for the small things.



# ORA-01555

Snapshot Too Old



## ORA-01555: Snapshot Too Old

The “snapshot too old” error is a very common error we get asked about on a regular basis. It’s also pretty simple to avoid if you know what to look for and how to configure your queries and the Oracle database.

The error is basically stating that the database couldn’t keep enough undo data for your query while other sessions were writing/changing the data you were querying.

To avoid this error, you can do the following:

- Optimize the query to take less time
- Try to reschedule the long running queries to a time when the system is issuing less DML statements.
- Increase the size of your UNDO tablespace
- Increase the size of your UNDO\_RETENTION parameter
- Set the UNDO tablespace in GUARANTEE mode
- Do not commit inside a cursor loop

10

# ORA-04031

Unable to Allocate nn Bytes of Shared Memory





## ORA-04031: Unable to Allocate nn Bytes of Shared Memory

As the error states, the system tried to allocate so much shared memory, but there was no memory to allocate. This usually happens when you're running a rather large package and your shared pool isn't sized to handle it.

I would do one of two things to fix this ORA-04031 issue: I would either simply add more RAM to the shared pool, or pin the large package.

However, I feel as though pinning isn't as needed as it was once upon a time and, therefore, rarely use it. I would instead ask myself if the package really needs all those features or can it be trimmed down or broken up.

If you would like some help from one of our Oracle DBA experts fixing your ORA-04031: Unable to Allocate nn Bytes of Shared Memory [get in touch](#) with us today!

# Closing

Adam, still sitting at his desk, tries to decipher a strange error: “ORA-03113: end-of-file on communication channel.” Although Dan is an experienced DBA, he’s stumped. He’s never seen this before.

*This is not how I imagined my first day back at work to go,* Adam thinks to himself. With his frustration rising, he turns to the internet to troubleshoot the error.

Dan mentions a friend who works at XTIVIA—and just so happens to be an Oracle expert—so Adam checks out [xtivia.com](http://xtivia.com). Lo and behold, he finds this eBook, which addresses Coachers’ particular database predicament. Thanks to the information herein, Adam and Dan know the next steps to address the error plaguing their Oracle database.

Best of all, Adam gets going on his workday with the confidence that Coachers is good to go... and no technical glitch or error is too large to overcome. Their Oracle system now works as well as they hoped, and their productivity skyrockets. Adam’s week is back to awesome.

Thanks for reading

## Overcoming the Top 10 Oracle Errors

Need more guidance with the Oracle  
errors you're experiencing?  
Call 1-888-685-3101 ext. 2  
Or visit [virtual-dba.com](http://virtual-dba.com) for more info

