Fatal NI Connect Error 12170, 'TNS-12535: TNS:operation timed out' Reported in 11g Alert Log (Doc ID 1286376.1)

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Applies to:

Oracle Net Services - Version 11.1.0.6 to 12.1.0.2 [Release 11.1 to 12.1]

Information in this document applies to any platform.

TNS-12170, ORA-12170, TNS-12535, TNS-00505 alert.log

Symptoms

nt secondary err code: 110   Monitoring of the 11g database Alert log(s) may show frequent timeout related messages such as:

- On Oracle Solaris:

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Fatal NI connect error 12170.

VERSION INFORMATION:

TNS for Solaris: Version 11.2.0.1.0 - Production

Oracle Bequeath NT Protocol Adapter for Solaris: Version 11.2.0.1.0 - Production

TCP/IP NT Protocol Adapter for Solaris: Version 11.2.0.1.0 - Production

Time: 22-JAN-2011 21:48:23

Tracing not turned on.

Tns error struct:

ns main err code: 12535

TNS-12535: TNS:operation timed out

ns secondary err code: 12560

nt main err code: 505

TNS-00505: Operation timed out

nt secondary err code: 145

nt OS err code: 0

Client address: (ADDRESS=(PROTOCOL=tcp)(HOST=10.xxx.yy.117)(PORT=1092))

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The "nt secondary err code" will be different based on the operating system.

Linux x86 or Linux x86-64: "nt secondary err code: 110"

HP-UX Server: "nt secondary err code: 238"

AIX: "nt secondary err code: 78"

Changes

No changes are necessary, but may have recently upgraded the database to 11g release 1 or higher, or installed a new Oracle11g database.

Note: Prior to 11gR1 these same 'Fatal NI connect error 12170' are written to the sqlnet.log

Cause

These time out related messages are mostly informational in nature.  The messages indicate the specified client connection (identified by the 'Client address:' details) has experienced a time out.  The 'nt secondary err code' identifies the underlying network transport, such as (TCP/IP) timeout limits after a client has abnormally terminated the database connection.

The 'nt secondary err code' translates to underlying network transport timeouts for the following Operating Systems:

For the Solaris system: nt secondary err code: 145:

ETIMEDOUT 145 /\* Connection timed out \*/

For the Linux operating system: nt secondary err code: 110

ETIMEDOUT 110 Connection timed out

For the HP-UX system: nt secondary err code: 238:

ETIMEDOUT 238 /\* Connection timed out \*/

For AIX: nt secondary err code: 78:

ETIMEDOUT 78 /\* Connection timed out \*/

For Windows based platforms: nt secondary err code: 60 (which translates to Winsock Error: 10060)

Description:  A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.

The reason the messages are written to the alert log is related to the use of the new 11g Automatic Diagnostic Repository (ADR) feature being enabled by default.  See (Doc ID 454927.1).

Solution

Suggested Actions:

- Search the corresponding text version of the listener log located on the database server for the corresponding client connection referenced by the Client address details referenced in the alert log message.

For the message incident below you would search the listener log for the 'Client address' string:

(ADDRESS=(PROTOCOL=tcp)(HOST=10.xxx.yy.117)(PORT=1092))

The search of the listener log should find the most recent connection before the time reference displayed in the alert log message, e.g. '22-JAN-2011 21:48:23'.

-Corresponding listener log entry:

22-JAN-2011 21:20:12 \* (CONNECT\_DATA=(SERVER=DEDICATED)(SERVICE\_NAME=AMN11264.us.oracle.com)(CID=(PROGRAM=D:\app\mcassady\product\11.2.0\dbhome\_1\bin\sqlplus.exe)(HOST=mcassady-lap)(USER=mca

ssady))) \* (ADDRESS=(PROTOCOL=tcp)(HOST=10.xxx.yy.117)(PORT=1092)) \* establish \* AMN11264.us.oracle.com \* 0

- Alert log entry:

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Tns error struct:

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Note the time of the client corresponding client connection(s) in the listener log.  Here you may find a particular client, set of clients or particular applications that are improperly disconnecting causing the timeout errors to be raised and recorder in the database alert log.

See the following for more information and a potential solution where a firewall may be causing this issue:   Note:1628949.1   Alert Log Errors: 12170 TNS-12535/TNS-00505: Operation Timed Out

You may choose to revert from the new Automatic Diagnostic Repository (ADR) method to prevent the Oracle Net diagnostic details from being written to the alert log(s) by setting the following Oracle Net configuration parameters:

To revert to Oracle Net Server tracing/logging, set following parameter in the server's sqlnet.ora :

DIAG\_ADR\_ENABLED = OFF

Also, to back out the ADR diag for the Listener component, set following parameter in the server's listener.ora:

DIAG\_ADR\_ENABLED\_<listenername> = OFF

   - Where the <listenername> would be replaced with the actual name of the configured listener(s) in the listener.ora configuration file.  For example, if the listener name is 'LISTENER', the parameter would read:

DIAG\_ADR\_ENABLED\_LISTENER = OFF

-Reload or restart the TNS Listener for the parameter change to take effect.

References

NOTE:151972.1 - Dead Connection Detection (DCD) Explained

NOTE:454927.1 - Using and Disabling the Automatic Diagnostic Repository (ADR) with Oracle Net for 11g

NOTE:1628949.1 - Alert Log Errors: 12170 TNS-12535/TNS-00505: Operation Timed Out