

CodeRage® XI

Productivity, Platforms, Performance

15-17 November 2016

DX CX



GETTING STARTED WITH DATABASE APPLICATIONS FOR MOBILE

Fernando Rizzato
Lead Software Consultant, LatAm

embarcadero®

AGENDA

- IBLite, IBToGo, Interbase Server
- Embedded Mobile Database Options
 - SQLite
 - IBLite/IBToGo
- Configurations and Common Problems
- Interbase vs SQLite
- Demos
- Additional Resources

IBLITE, IBToGo, INTERBASE SERVER

<https://goo.gl/tqo7Lp>

Attribute Description	IBLite Edition	InterBase ToGo Edition	InterBase Server Edition
Licensing of CPU Cores	1	4	8
Licensed simultaneous users	1	2	Unlimited
Number of connections per user	1	4	4
Access local database from clients on remote systems	No	No	Yes
Connect to server hosting database on remote systems	Yes	Yes	Yes
TCP Listening Server	No	No	Yes
Strong (AES) Database and Column Encryption	No encryption of any kind (weak or strong) allowed	Yes	Yes
Strong Network (SSL) Encryption	No encryption of any kind (weak or strong) allowed	Yes	Yes
Able to Import Add-on Licenses	No	No	Yes
Database File Size Limitation	100MB	No limit	No limit
Simultaneous Transaction per Connection	1*	No limits	No limits
Change Views	No	Yes	Yes
Services API Enabled	No	Yes	Yes
OTW/SSL Support	No	Yes	Yes
Metadata Updates (ddl operations)	Yes	Yes	Yes
External Table Access	Yes	Yes	Yes
Performance Monitoring	No	No	Yes

MOBILE DATABASE OPTIONS: SQLITE

- Embedded
- No external dependencies
- Serverless - and has no server edition available
- Zero-Configuration - no installation required
- Transactional and follows the ACID standards
 - Atomic, Consistent, Isolated, and Durable
- Developed by the SQLite Consortium
 - <http://sqlite.org>
- SQLite Tutorial: <https://www.tutorialspoint.com/sqlite/index.htm>

MOBILE DATABASE OPTIONS: IBLITE/IBToGo

- Embedded
- No external dependencies
- Serverless - and has an high performance server edition
- Zero-Configuration - no installation required
- Transactional and follows the ACID standards
 - Atomic, Consistent, Isolated, and Durable
- A full RDBMS system, even on mobile
- Windows, Android, iOS and OS X (also Linux and Solaris – Server Edition)
- Developed by Embarcadero: <https://www.embarcadero.com/products/interbase>
- IB Tutorial: http://docwiki.embarcadero.com/InterBase/XE7/en/InterBase_Quick_Start

MOBILE DATABASE OPTIONS: IBLITE/IBToGo

Attribute Description	IBLite Edition	InterBase ToGo Edition
Licensing of CPU Cores	1	4
Licensed simultaneous users	1	2
Number of connections per user	1	4
Access local database from clients on remote systems	No	No
Connect to server hosting database on remote systems	Yes	Yes
TCP Listening Server	No	No
Strong (AES) Database and Column Encryption	No encryption of any kind (weak or strong) allowed	Yes
Strong Network (SSL) Encryption	No encryption of any kind (weak or strong) allowed	Yes
Able to Import Add-on Licenses	No	No
Database File Size Limitation	100MB	No limit
Simultaneous Transaction per Connection	1*	No limits
Change Views	No	Yes

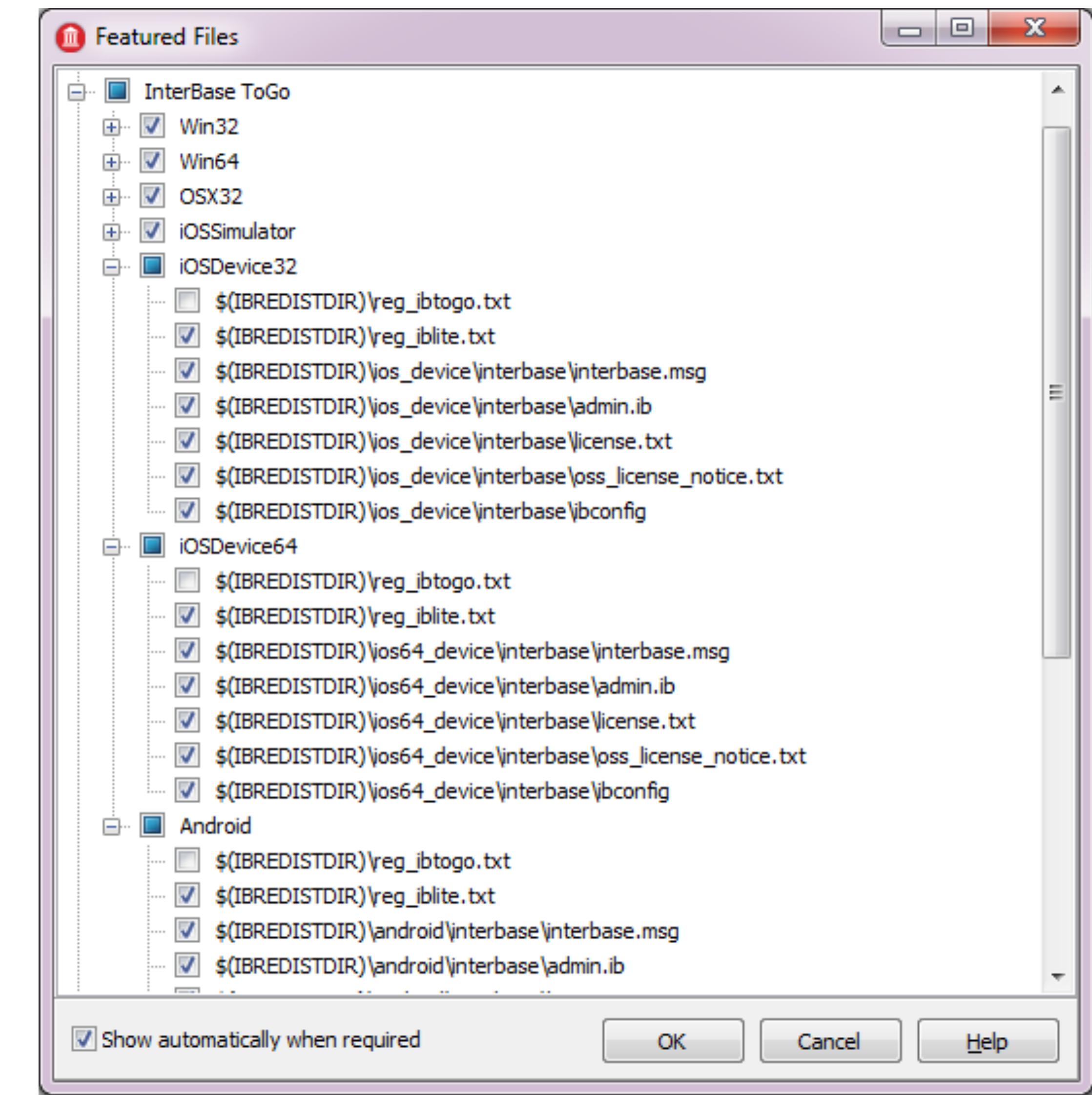
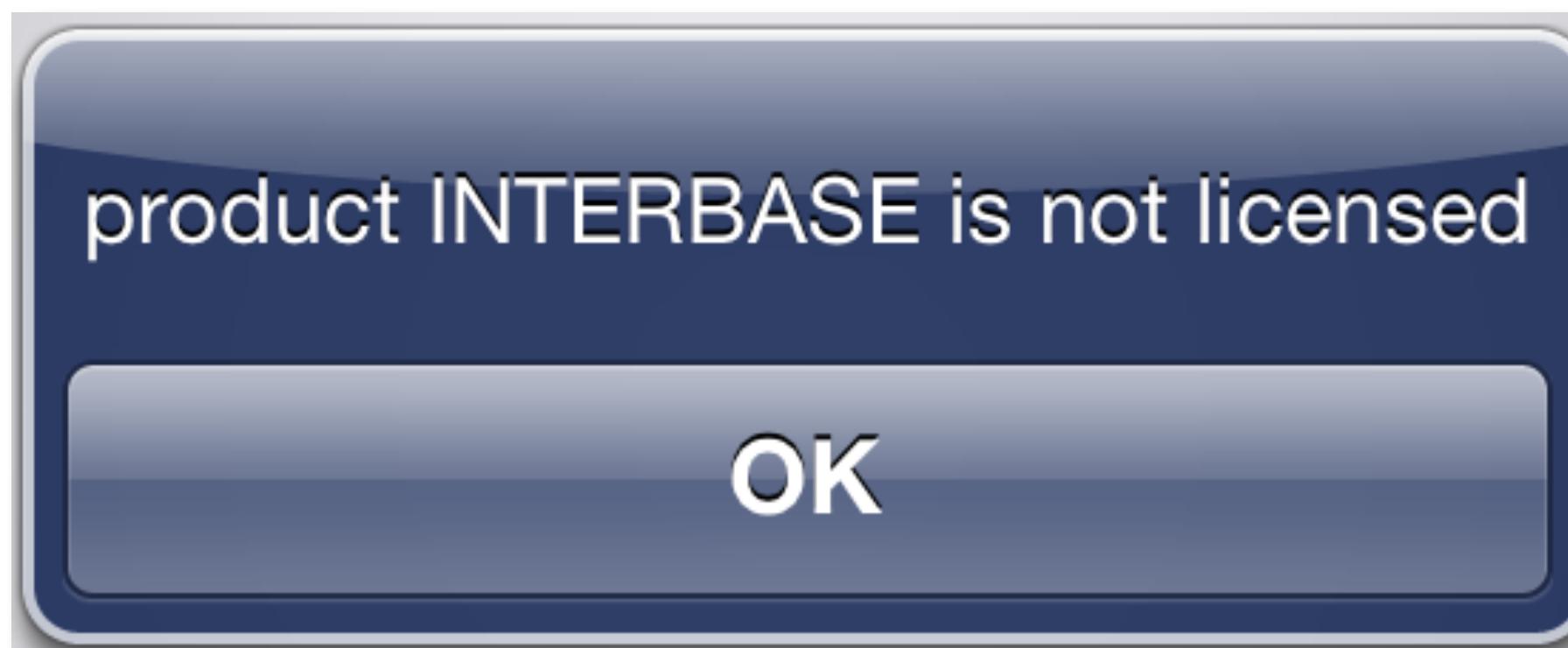
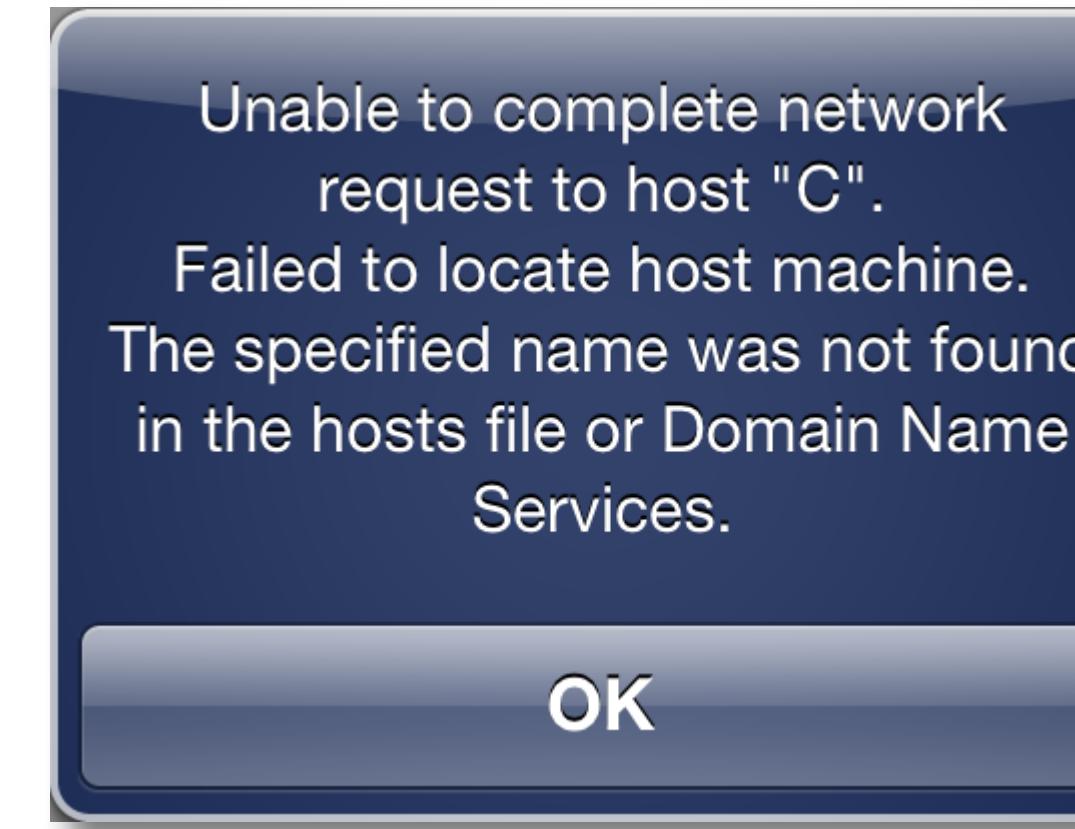
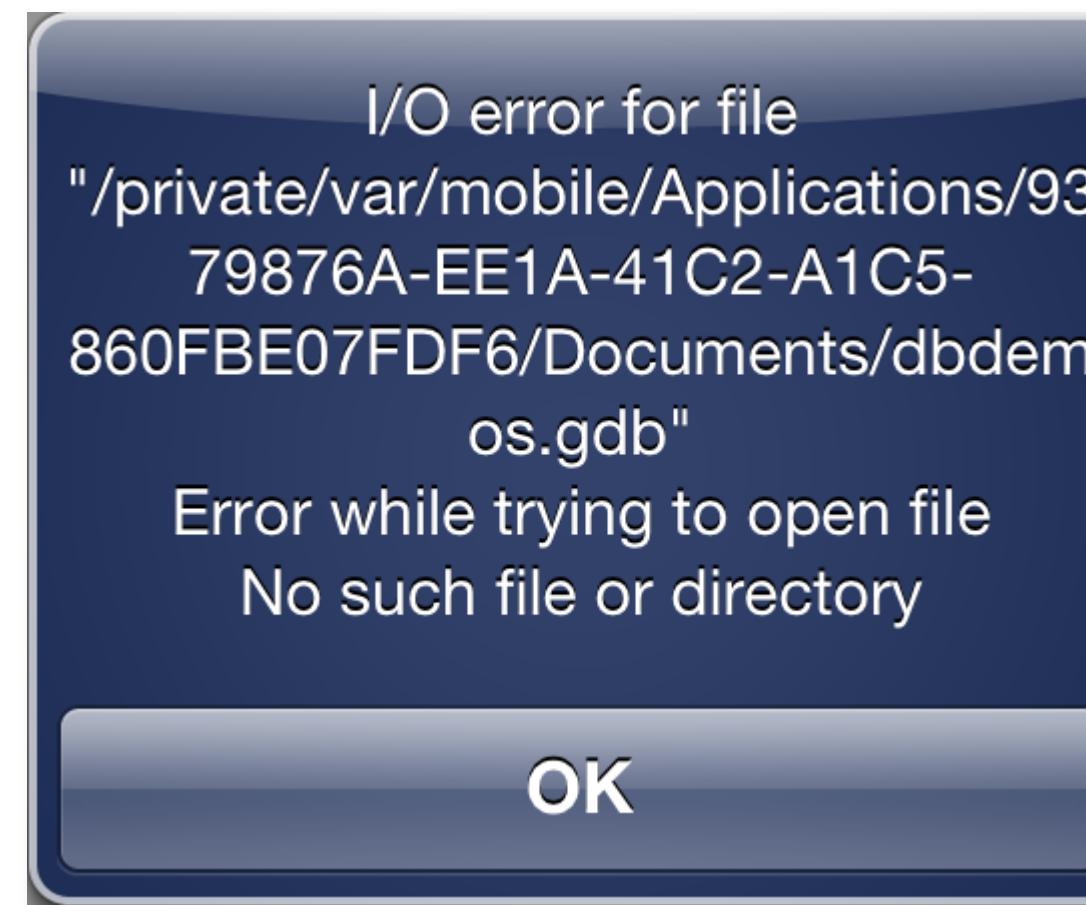
CONFIGURATIONS AND COMMON PROBLEMS

- <http://docwiki.embarcadero.com/Libraries/en/System.IOUtils.TPath.GetDocumentsPath>

Platform	Sample path	Path ID
Windows XP	C:\Documents and Settings\<username>\My Documents	CSIDL_MYDOCUMENTS 🔗 CSIDL_PERSONAL 🔗
Windows Vista or later	C:\Users\<username>\Documents	FOLDERID_Documents 🔗
Mac OS X	/Users/<username>/Documents	
iOS Device	/var/mobile/Containers/Data/Application/<application ID>/Documents	NSDocumentDirectory 🔗
iOS Simulator	/Users/<username>/Library/Developer/CoreSimulator/Devices/<Device ID>/data/Containers/Data/Application/<application ID>/Documents	
Android	/data/data/<application ID>/files	Context.getFilesDir 🔗

- http://docwiki.embarcadero.com/RADStudio/Berlin/en/Deployment_Manager
- <http://docwiki.embarcadero.com/RADStudio/en/Standard RTL Path Functions across the Supported Target Platforms>

CONFIGURATIONS AND COMMON PROBLEMS



INTERBASE VS SQLITE

Features	InterBase	SQLite
Stored Procedures	Fully supported including DDL.	Not supported
User and table permissions	Fully supported, allows database, table and user level permissions	Not supported
No simultaneous remote access	Allowed without any limitations	Restricted, as simultaneous database access is not recommended.
True online backups	Supported	Not truly on-line
Encryption	Database level, table level and column level, with permissions control.	Not supported. Extension with only full database encryption available for additional cost.
Numeric Data types	Multiple choices supported, including exact numeric.	Single integer type supported.
Parallelism.	Allow simultaneous query execution. Allow parallel index creation.	Not Supported.
Domains	Allows full support for SQL Domains	No user or domain support.
SQL Cursors	Supported, allows breaking up of operations to one row at a time.	Not supported. Must deal with the complete result set and application must provide and accommodate for the result set.

A wide-angle, nighttime photograph of the Macau skyline. The Macau Tower stands prominently in the center, its illuminated spire reaching towards the top of the frame. A massive, colorful fireworks display erupts from behind the tower, filling the sky with streaks of red, blue, and white light. In the foreground, the brightly lit building of the Venetian Macao is visible on the left, and the Cotai Strip area with its many skyscrapers and bridges stretches across the middle ground. The water of the South China Sea reflects the city lights.

DEMOS

ADDITIONAL RESOURCES

- **Download**
 - Interbase **Server** Trial (90 days):
<https://www.embarcadero.com/products/interbase/start-for-free>
 - Interbase **Developer** (20 users/ 80 connections):
<https://downloads.embarcadero.com/free/ibdev>
 - **IBLite** (Free) / **IBToGo** (test license)
Part of your Delphi / C++ Builder installation
 - http://docwiki.embarcadero.com/RADStudio/en/IBLite_and_IBToGo_Test_Deployment_Licensing

ADDITIONAL RESOURCES

- **Documentation**
 - [http://docwiki.embarcadero.com/RADStudio/en/Mobile Tutorial: Using FireDAC in Mobile Applications \(iOS and Android\)](http://docwiki.embarcadero.com/RADStudio/en/Mobile_Tutorial:_Using_FireDAC_in_Mobile_Applications_(iOS_and_Android))
 - [http://docwiki.embarcadero.com/RADStudio/en/Mobile Tutorial: Using InterBase ToGo with FireDAC \(iOS and Android\)](http://docwiki.embarcadero.com/RADStudio/en/Mobile_Tutorial:_Using_InterBase_ToGo_with_FireDAC_(iOS_and_Android))
 - [http://docwiki.embarcadero.com/RADStudio/en/Mobile Tutorial: Using FireDAC and SQLite \(iOS and Android\)](http://docwiki.embarcadero.com/RADStudio/en/Mobile_Tutorial:_Using_FireDAC_and_SQLite_(iOS_and_Android))
 - [http://docwiki.embarcadero.com/RADStudio/en/Using SQLite with FireDAC](http://docwiki.embarcadero.com/RADStudio/en/Using_SQLite_with_FireDAC)
- **Interesting blogs**
 - <http://www.fmxexpress.com/read-and-write-a-blob-field-using-firedac-with-firemonkey-on-android-and-ios/>
 - <https://delphiaball.co.uk/2016/02/01/interbase-user-security-interbase-labs/>
 - <https://delphiaball.co.uk/2016/02/08/interbase-journaling-interbase-labs/>

CodeRage® XI

Productivity, Platforms, Performance

15-17 November 2016



THANK YOU!

<https://fernandorizzato.com>

@FernandoRizzato

fernando.rizzato@embarcadero.com