**Building an InterBase UDF DLL/Dylib**

1. Create a new Dll Project. File|New|Dynamic Link Library  
2. Add a target for Win 64  
3. Add a target for Mac OSX. To build for Mac you will need a remote Mac profile setup.  
4. Add these 3 files for using ib\_util\_malloc, as InterBase UDFs using Delphi and C++Builder need to allocate and free memory using the same memory allocation convention.

* ib\_util.lib for Win32
* ib\_util64.a for Win64
* ib\_util.dylib for Mac OSX

5. Add these 2 paths for the compiler include path

* C:\ProgramData\Embarcadero\InterBase\rad\_xe3\examples is the path for example.h
* C:\Program Files (x86)\Embarcadero\RAD Studio\10.0\InterBaseXE3\SDK\include is the path for ib\_util.h

6. Because the dll is C++ but the example code is C the code for the .cpp file and the included ib\_util.h need to be defined as extern C

File2.cpp and ib\_util.h in the attached zip already have this in the code.

7. If the Compiler can't find some header files these are the default locations

* C:\ProgramData\Embarcadero\InterBase\rad\_xe3\examples is the path for example.h
* C:\Program Files (x86)\Embarcadero\RAD Studio\10.0\InterBaseXE3\SDK\include for ib\_util.h

**Deploying the dll**

To Deploy on win32 and Win64 copy IBUDF.dll to the InterBase\UDF directory.

To Deploy on Mac OSX, the file libcgunwind.1.0.dylib must be copied to /usr/lib along with IBUDF.dylib being copied to the InterBase/UDF Directory

**Adding the UDF in InterBase**

In either isql or with IBConsole execute the following SQL

DECLARE EXTERNAL FUNCTION LOWER  
VARCHAR(256) CHARACTER SET NONE  
RETURNS CSTRING(80) CHARACTER SET NONE FREE\_IT  
ENTRY\_POINT 'fn\_lower\_c' MODULE\_NAME 'IBUDF';

**Using the UDF**

select lower(FIRST\_NAME) from employee