
Subject: CALL_EXTERNAL problems (re: DICOM)
Posted by [Richard Tyc](#) on Wed, 22 Dec 1999 08:00:00 GMT
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This may interest anyone who is using IDL with DICOM SCP servers.

I am trying to use CALL_EXTERNAL to initiate a DICOM query and retrieve a list of patients and/or studies from a PACS archive acting as a Query SCP.

I am using the CTN test code (Ansi C) from Mallinkrodt Institute of Radiology (MIR).

Essentially, I have modified the query_client application (which was a motif application) and turned it into a shared library. This involved removing all of the X windows stuff and turning the callbacks from widgets into C functions I can call from IDL. I was successfully querying a dicom server running on the same machine as IDL and getting patient lists, etc.

When I took the machine down to our MRI lab, I cannot get patient lists from IDL although the original query_client works. The main difference is now the CTN test code is querying across the net to the MRI system. The way a dicom query works is that first an association is made (which works!) and then for each response from the server a callback function is called which extracts the query data (all taking place over TCP/IP). Now all this takes place in the linked in librarie(s) which IDL calls. To make this work in IDL, I simply ensured all of the libraries linked in were shared libs. Note, the library created with the IDL function calls links with many other utilites providing the DICOM services.

Does anyone see any problem with this ? It seems to provide no query responses at all from the server. In order for this to happen, the C code must fundamentally be accepting sockets and waiting on socket reads to acquire data all during one IDL CALL_EXTERNAL. When the system was working on a standalone machine, it seems to indicate that success is dependent on no delays in the socket stuff. When I moved the app to network wide queries with inherent delays, I simply get no query data returned from the DICOM server. Do I have to do anything special in the other C libs not directly called by IDL but are linked in.

I am running IDL 5.2.1 on SGI 6.5 compiling with -n32 binaries.

Thanks
Rich

Subject: Re: CALL_EXTERNAL problems (re: DICOM)
Posted by [Karri Kaksonen](#) on Mon, 27 Dec 1999 08:00:00 GMT
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Richard,

I did almost the same thing but the other way around.
In my setup I used Callable IDL from my C-code and used
a commercial Dicom toolkit instead of Mallindkrodt.

I don't know if you find any help from this but the things
I have found to be necessary for my toolkit are:

```
set_port( pTran, "104" );  
set_protocol( pTran, "tcpip" );  
set_source( pTran, "NORDSTAR_MR_SCP" );  
status = listen( pTran, &listen_fd);
```

In addition to this the PACS is usually set up to accept
connections from certain physical wires only. Which means
that you cannot just move your machine to another place in
the house and plug it in the net. At least in one hospital
they tied the legal machines to an IP-address and a physical
twisted-pair port.

I could not find anything wrong in your description of how
to do this. If it had been a Windows-machine I could easily
have added all kind of silly "special" gimmicks like opening
the socket with the "rb" flags. Tricks with TCP/IP byteorder
being different, cache-bugs in the NT etc.

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Regards,

Karri Kaksonen
Picker Nordstar
