

Tech Tip: Using the PSQL/Zen Debug Requesters

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Sometimes, it is difficult to tell where a problem in an environment resides. Is it a problem on the Server? The Client? The Application? Often, we point to the network analyzer as a great way to detect where the problem lies, but sometimes we know the problem is on the workstation – but we still don't know if the problem is with the application or with the PSQL/Zen Client.

This tech tip provides you with the missing link – the debug requesters – which will allow you to ascertain once and for all which side is really at fault, and end any finger-pointing.

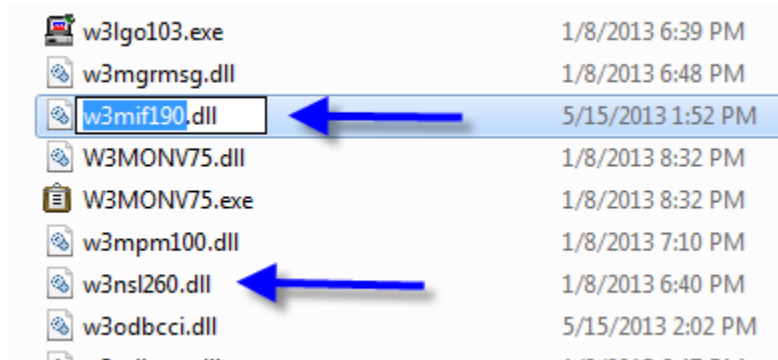
Installing the Debug Requesters

Before you can use the debug requesters, they need to be properly installed with these steps:

1. Make sure that all database applications on the workstation are shut down. If necessary, reboot the machine to make sure.
2. Locate your 32-bit BIN folder. For a 32-bit computer, this should be located in one of these locations:
 - *C:\Program Files\Pervasive Software\PSQL\bin*
 - *C:\Program Files\Actian\PSQL\bin*
 - *C:\Program Files\Actian\Zen\bin*

For a 64-bit operating system, it will be located in one of these locations:

- *C:\Program Files (x86)\Pervasive Software\PSQL\bin*
 - *C:\Program Files (x86)\Actian\PSQL\bin*
 - *C:\Program Files (x86)\Actian\Zen\bin*
3. In this folder, rename the files W3MIF*.DLL and W3NSL*.DLL to have an extension of ORG.



- Copy the files from the *Trace* subfolder up into the *BIN* folder.

Name	Date modified
w3mf190.dll	5/15/2013 1:52 PM
w3nsl260.dll	1/8/2013 6:41 PM
w3upi310.dll	5/15/2013 2:10 PM

In most cases, you will not have to trace the Utilities Programming Interface DLL (UPI), so you should not need to work about this file. If you are attempting to trace DTI/DTO requests, then you may want to backup and activate this file, too. **Note: With PSQL v13 and above, you will ALSO need to copy over the file *w3psxdebug.dll*, but there will not be an original file to rename.**

Activating the Debug Requesters

When the debug requesters are loaded, they will create the registry entries they need automatically. You can load these requesters by simply launching your application. When done, the registry entries (see next section) will be created. If running the application doesn't load the DLLs and create the entries, launch the Function Executor and attempt to open a file. If this still doesn't work, reboot the computer and try again.

Configuring the Debug Requesters

After the debug requesters are loaded, you will see a new registry key here:

HKEY_LOCAL_MACHINE\SOFTWARE\Pervasive Software\Communications Requester\Diagnostics

On Zen v14, this location has been moved to:

HKEY_LOCAL_MACHINE\SOFTWARE\Actian\Zen\Communications Requester\Diagnostics

Inside this registry key, you will find 5 or more settings:

Name	Type	Data
(Default)	REG_SZ	(value not set)
Trace Append	REG_SZ	yes
Trace Buffer Length	REG_SZ	64
Trace File	REG_SZ	C:\data\COMM.TRC
Trace Level	REG_SZ	None
Trace Modules	REG_SZ	all

Your default values may be different. Set up the configuration values as described here:

- Trace Append:** Leave this set to **yes**.
- Trace Buffer Length:** Set this to the minimum value you need for tracing. Usually, 32 or 64 bytes is sufficient.
- Trace File:** This is where the trace data will be written. Make sure the path exists. A new trace file will be created if it does not exist.
- Trace Level:** Leave this set to **None** to disable tracing.
- Trace Modules:** Leave this set to **all**.

- **Trace with OutputDebugString:** This setting is available starting with PSQL v13. If set to “no” (the default), then tracing will work exactly as listed in this document. If set to “yes”, then the debug lines will instead be sent to the Windows OS call OutputDebugString(). These messages can then be viewed in a Debugger or with the DebugView tool from SysInternals.

After you configure these registry settings, the system should be ready to start logging. Leave RegEdit open, as you will need it again.

Using the Debug Requesters

Now that everything is installed, you can trace your application:

1. Start your application and run it to the point where you want to begin tracing. (If you want to begin tracing at the beginning, then you don't need to do anything.)
2. Go back to RegEdit and change **Trace Level** from **None** to **99**.
3. Run the program to duplicate the error you are trying to trace.
4. Change **Trace Level** back to **None** to stop tracing.

Analyzing the Debug Requester Data

If you have captured data correctly, you should have a very large text file to start digging through. Depending on what you are working on, you may have to wade through various pieces of the trace data. You'll quickly find that the data capture was the easy part, of course.

Removing the Debug Requesters

If you were paying attention, you should have noticed that your system ran VERY SLOWLY with the debug requesters enabled. This is because of the constant logging and registry lookups. When you are done, you must remember to remove the requesters. Go back to your BIN folder, delete the trace requesters you copied over, and then rename the ORG files back to DLL. If you fail to do this last step and later complain about performance, I can only say that you were warned.

Summary

You can use this process to capture tons of good diagnostic data from inside the PSQL/Zen components, but analyzing the data is far outside the scope of this document. Best of luck!

Author Information:

Bill Bach is the Founder and President of Goldstar Software Inc., an Actian reseller in the Chicago area that specializes in providing PSQL/Zen products, services, and training to its customers in North America and abroad. Bill has written numerous tools and utilities to help system administrators and database developers work with their PSQL database environments, and his training classes for Actian PSQL and DataExchange are the most comprehensive classes available. Get more information from <http://www.goldstarsoftware.com>.