

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.

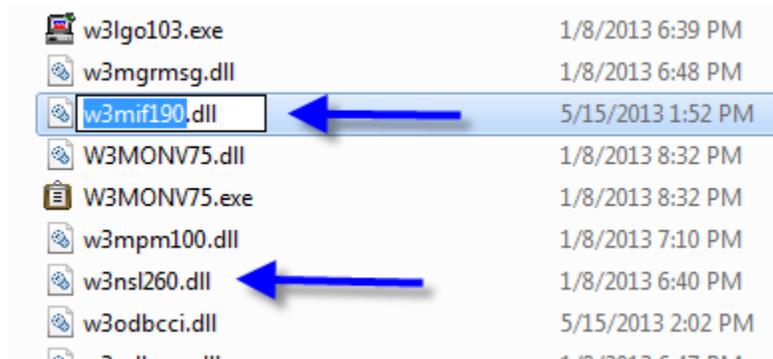
Installing the Debug Requesters

Before you can use the debug requesters, they need to be properly installed. If you are running Actian Zen v15.10 or later, then the correct DLL's are already installed for you, so skip to the next section. If you are running v15.01 or older, then follow 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.



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



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 through Zen v15.01, you will ALSO need to copy over the *w32psxdebug.dll* file, 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 on PSQL v13 and older here:

HKEY_LOCAL_MACHINE\SOFTWARE\Pervasive Software\Communications Requester\Diagnostics

On Zen v14 and newer, 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, but sometimes you need to go to 128 or even 256, depending on what issue you are trying to research.
- **Trace File:** This is path and file to where the trace data should be written. Make sure the path exists. A new trace file will be created if it does not exist. (With v15.10 and above, this item is no longer needed, and the logs are written to the C:\ProgramData\Actian\Zen\Logs folder automatically, using a filename based off of the current datetime, process ID and the process name, as in this example: 20230131_161222.375_WBEXEC32.exe_43600_COMM.TRC. In a custom installation, this Client will actually read the first of the 3 registry locations HKLM\SOFTWARE\Actian\Zen\InstallInfo\[Client | Workgroup | Server]\InstallData, then append the "\Logs" folder to the path provided therein, and use that. At this time, there is no (easy) way to modify this, but this may change in the future.)
- **Trace Level:** Leave this set to **None** to disable tracing, or 99 to start 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

With Actian Zen v15.01 or older, you may notice that your system runs VERY SLOWLY with the debug requesters enabled, even if you are not logging anything. This is because of the way that the DLL's constantly check the registry values. When you are done tracing, 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.

If you are on Actian Zen v15.10 or newer, of course, then this issue is less pronounced and you do not have to do anything special – the tracing components are built into the normal DLL's.

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:

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