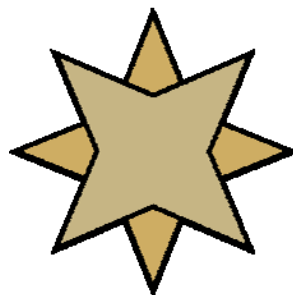


Fixing Status 161 Problems with Pervasive PSQL v10

A White Paper From

Goldstar Software Inc.



For more information, see our web site at
<http://www.goldstarsoftware.com>

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Pervasive PSQL v10 uses a different licensing scheme than previous versions of Pervasive PSQL used, which has led to a lot of confusion in the installation and implementation of the database engine for both Server engines and Workgroup engines alike.

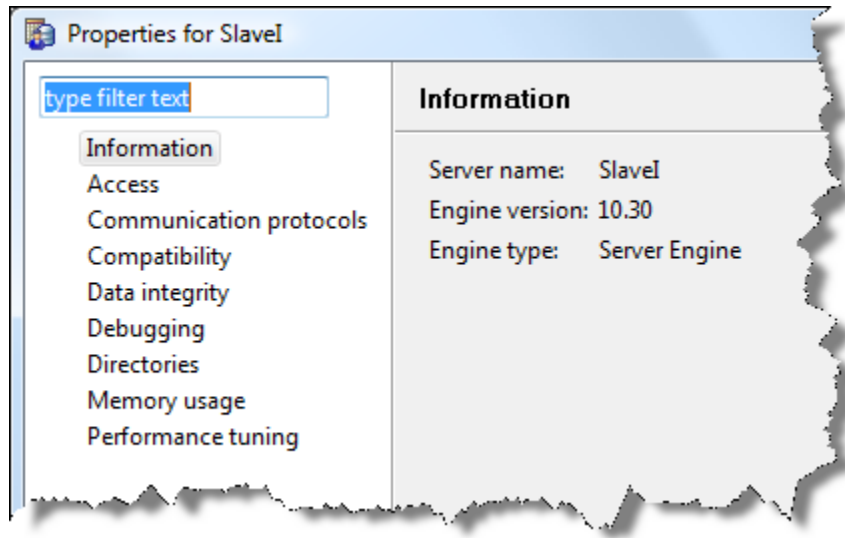
This paper explains how to check your licenses and determine why you may be seeing a Status 161 (Out of Pervasive Licenses) in your environment. It is broken down into 6 sections:

1. Determining Your Engine Version and Type
2. Determining Your Engine Platform and Bit Level
3. Determining Your License Information
4. Verifying that Licenses Are Installed Properly
5. Counting the Licenses Currently In Use
6. Troubleshooting Common License Problems

Determining Your Engine Version and Type

The first thing to verify is your exact engine version. This is critical because licenses for Pervasive PSQL vary between database engine versions, platforms, and bit levels. To verify the exact engine version, follow these simple steps:

1. Go to the server's console and start the **Pervasive Control Center (PCC)**.
2. On the right hand side of the PCC screen, inside the **Welcome** tab, click on **Configure Local Engine** and another dialog box will appear.
3. If it is not already selected, click on the **Information** tab on the left side, and you will see a screen similar to the following:



The **Engine Version** line will provide you the major and minor version of the engine that you are running, in this case v10.30, which indicates that we have Pervasive PSQL v10 Service Pack 3. This is important because some license keys, namely the newer 25-character "Activation" keys (e.g. 1111E-45GH6-87FD2-KX7F5-8763E) will only work on Pervasive engines with a version of v10.13 or higher. Also, you want to make sure that you are not trying to use a PSQlv9 license with a PSQlv10 engine.

The **Engine Type** line will provide you with the engine type, and will either be Server Engine or Workgroup Engine. You should compare this engine type with the information on your license document or invoice and verify that they are the same.

Determining Your Engine Platform and Bit Level

The **Platform** and **Bit Level** are only critical for Server Engines. If you are running a Workgroup Engine, then you can skip to the next section.

The **Platform** is defined as the operating system type on which you have installed your database engine, which for PSQlv10 can be either Windows or Linux. If you have to ask, you are most likely running Windows.

The **Bit Level** is defined as the number of bits natively supported by the server operating system and database engine, and can be either 32-bit (x86) or 64-bit (x64). You must check the bit level of your server and database engine separately.

To check the bit level of your operating system, follow the steps provided by Microsoft in the following knowledgebase article:

<http://support.microsoft.com/kb/827218>

If you are running Windows Server 2008 R2 or newer, then please note that you have a 64-bit operating system, as Microsoft will not be releasing any more 32-bit Server operating systems from this point forward.

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If you have a 32-bit operating system, then you ***MUST*** have a 32-bit database engine -- there is no way to run a 64-bit engine on a 32-bit OS, so you can go to the next section now.

However, if you have a 64-bit OS, then you should verify the version of the PSQLv10 engine that is installed. The easiest way to do this is to navigate to the following directory:

C:\Program Files\Pervasive Software\PSQL\bin

Look for any files that start with "w64". If you see lots of them, then you have a 64-bit database engine installed. If not, then assume that you have a 32-bit engine running.

Determining Your License Information

The license information should be pretty easy to find, because it should be indicated directly on your license document and invoice. You are looking for five key pieces of information:

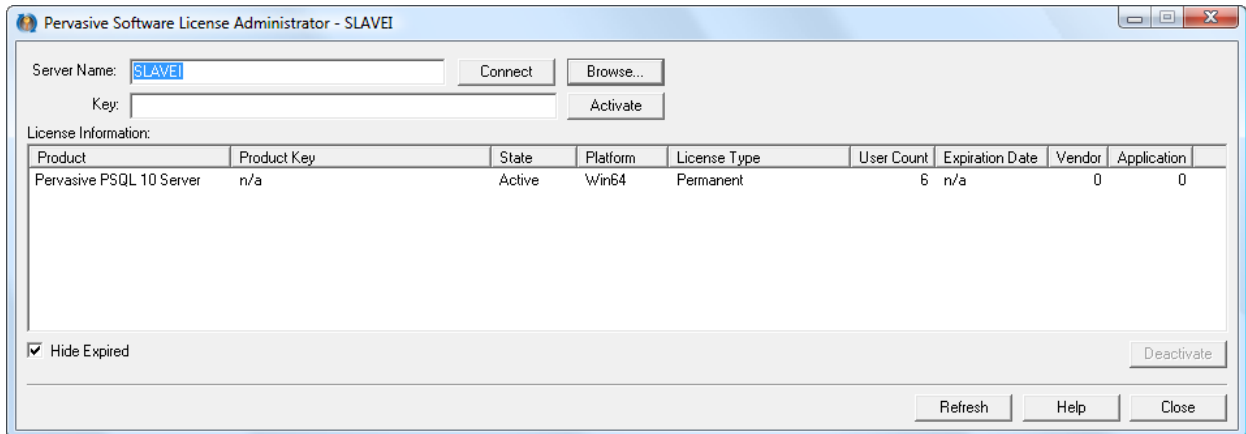
1. **License Version:** All licenses within a major version (v9, v10, etc.) should be cross-compatible with any engine version (but this is NOT always true for PSQLv10). We have seen users trying to use PSQLv9 licenses with PSQLv10, and vice versa, so this important check should not be overlooked.
2. **License Format:** There are two types of license formats. The *License Key* format is a string of 24 characters, and the *Activation Key* format is a string of 25 characters with dashes every 5 characters. If you have a License Key, then you can use this license on any version of PSQLv10. If you have an Activation Key, then you must be installing PSQLv10.13 or above.
3. **License Type:** There are four types of license types, which can be the Server Engine base license, the Server Engine User Count Increase, the Workgroup Engine base license, or the Workgroup Engine User Count Increase. Note that any PSQLv10.10 or newer engine can only have ONE base license installed, and you must add more licenses with User Count Increases.
4. **License Platform:** There are two different types of license platforms for the Server Engine, namely Windows and Linux. You must make sure that your purchased license matches the platform to which you are installing.
5. **License Bit Level:** There are two different bit levels for the Server Engine, namely 32-bit and 64-bit. You must make sure that your purchased bit level matches the bit level of the engine you are installing.

Note that if you have multiple licenses (including User Count Increases), then you will need to check every license that you have for the required information.

Verifying that Licenses Are Installed Properly

Once you have verified that the various details of your engine and licenses match, the next step is to check to see that they are properly installed. To check your installed

license information, go to the server's console and start the **Pervasive License Administrator** to bring up the following dialog box:



If you have PSQLv10.10 or earlier, your box may look slightly different, but it will still convey most of the same information.

You should see one entry in this screen for each installed license. As you can probably imagine, you are checking for several traits of the installed licenses:

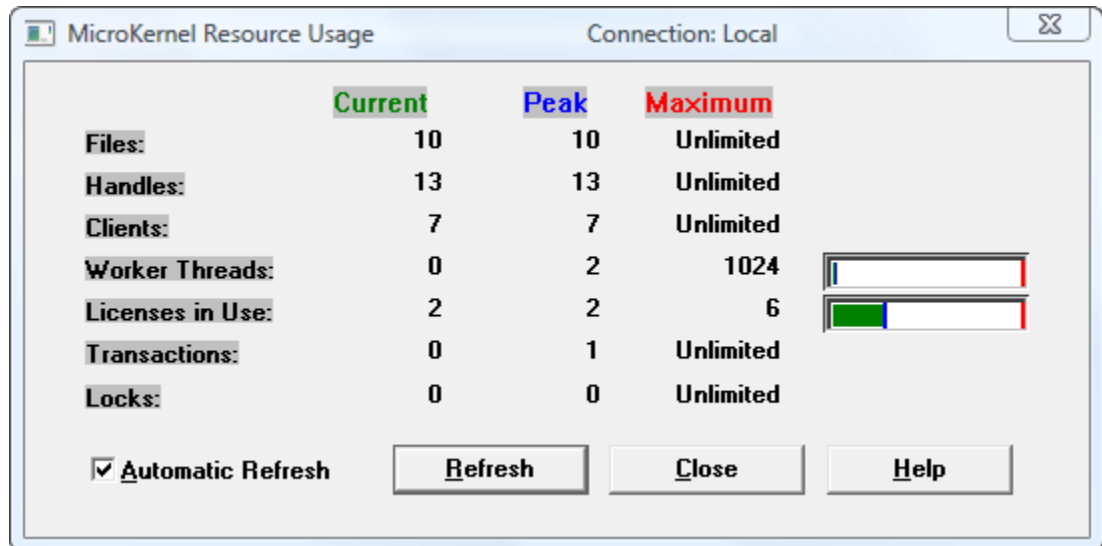
1. **Version and License Type:** Verify that the information under "Product" matches your installed engine information, both in terms of the Version (PSQLv9 versus PSQLv10) and the License Type (Server versus Workgroup).
2. **License Type:** This is a slightly different use of the term than what we used above, which in this case can either be *Permanent* or *Temporary*. If you are running a trial license, then you may still see a *Temporary* license in this screen. but it should disappear after it the *Expiration Date* has past. All purchased licenses should show up as *Permanent*.
3. **Platform and Bit Level:** In the Platform column, you will see one of several different values, such as *Win32*, *Win64*, *Linux32*, *Linux64*. Pervasive also has some special-use platform values, like *Any*. Verify that the platform and bit level match what you have installed.
4. **User Count:** Verify that the purchased User Count on your license matches the displayed number here. If you have multiple licenses installed, and if they are all the same platform, bit level, version, and engine type, then you should add up the licenses shown here to get your total user count.
5. **State:** New to PSQLv10 is the "state" of a license, which may be *Active* or *Deactivated*. Pervasive uses an electronic license process to prevent software piracy that can deactivate your license if it determines that the underlying machine has substantially changed. You should verify that the license state is showing as *Active* in this column.

Counting the Licenses Currently In Use

The database engine keeps track of the number of computers establishing database engine connections at all times, and compares this number with the installed license count. It then reports a Status 161 whenever the number of connected computers would exceed the installed license count.

To check the number of licenses currently being tracked by the database engine, follow these steps:

1. Go to the server's console and start the **Pervasive Monitor** utility.
2. In the menu, select **Microkernel**, and then **Resource Usage...** You will see a dialog box similar to the following:



	Current	Peak	Maximum	
Files:	10	10	Unlimited	
Handles:	13	13	Unlimited	
Clients:	7	7	Unlimited	
Worker Threads:	0	2	1024	<input type="text"/>
Licenses in Use:	2	2	6	<input type="text"/>
Transactions:	0	1	Unlimited	
Locks:	0	0	Unlimited	

Automatic Refresh

3. In the **Maximum** column for the **Licenses In Use** row, verify that the number of licenses being reported matches the number of licenses installed. If these do not match, then please go back to the previous section and review your installed license information.
4. Finally, look at the **Current** column to see how many licenses are currently in use, as seen by the database engine. In this case, we see that TWO licenses are currently in use, which leaves us with 4 more concurrent users available on this server.

When you look at the Current Licenses In Use value, it should match the number of computers that are currently accessing the database engine. If this number does not match what you THINK is currently running, then you may have to verify what is running on each computer. Note that when an application is not "properly" terminated, it may leave a connection to the database open. Further, if a workstation crashes, the database connection can survive for up to two hours before it is terminated automatically by the engine, which can also impact your license count.

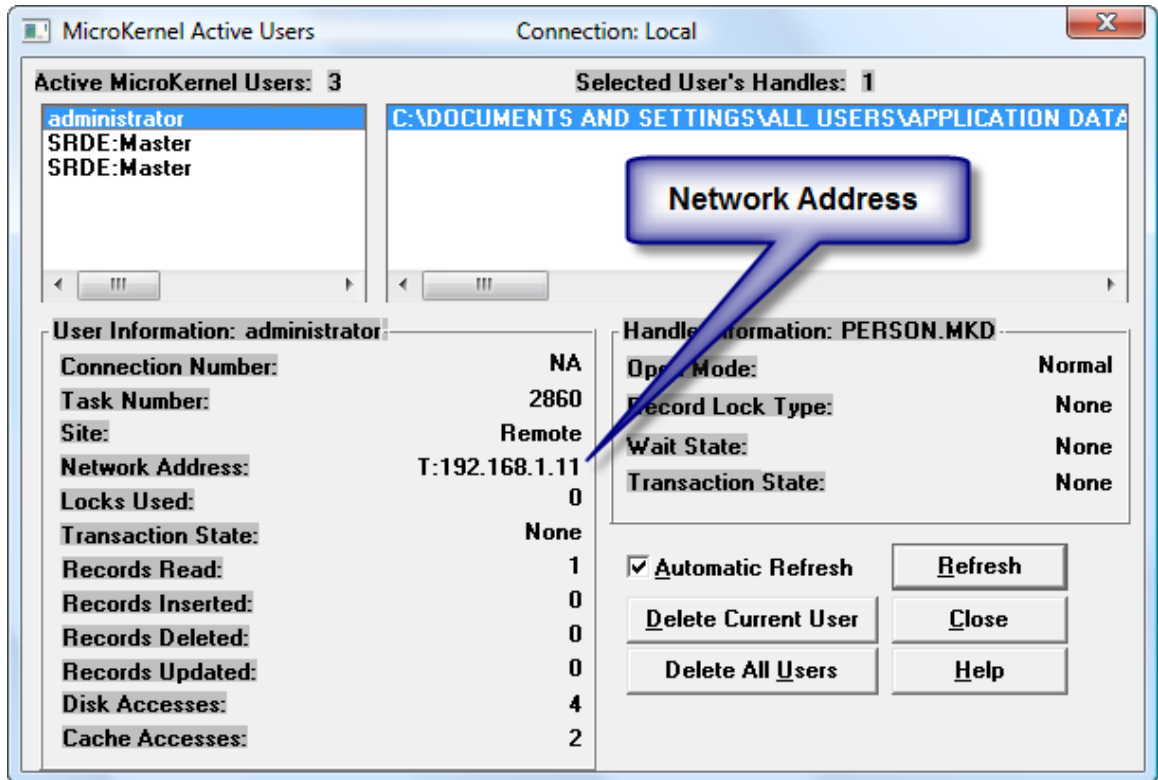
To check which machines are currently accessing the engine, follow these steps:

1. Go to the server's console and start the **Pervasive Monitor** utility.

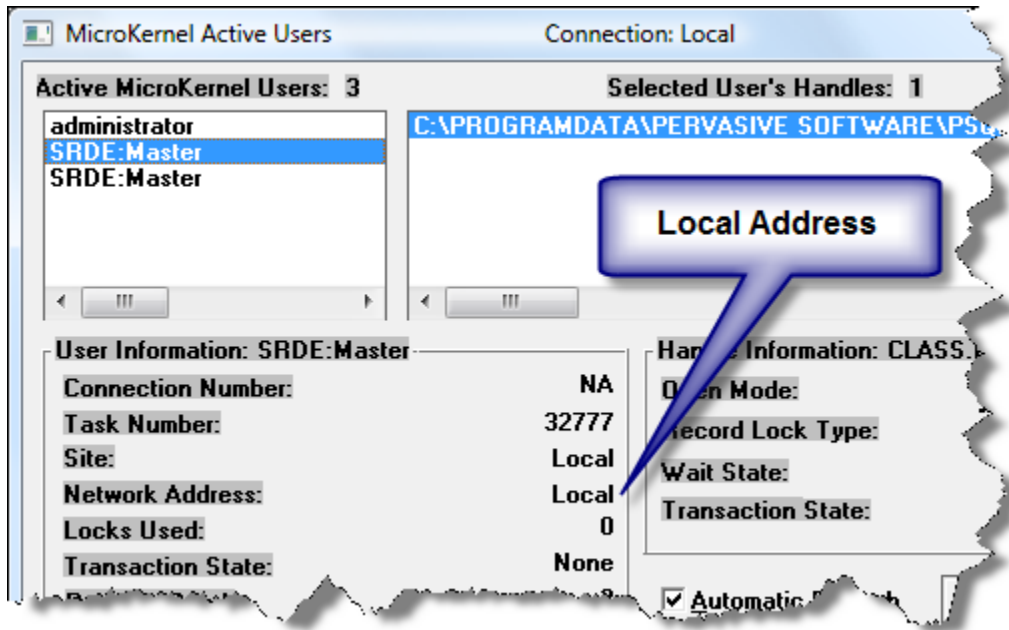
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2. In the menu, select **Microkernel**, and then **Active Users....** You will see a dialog box similar to the following:

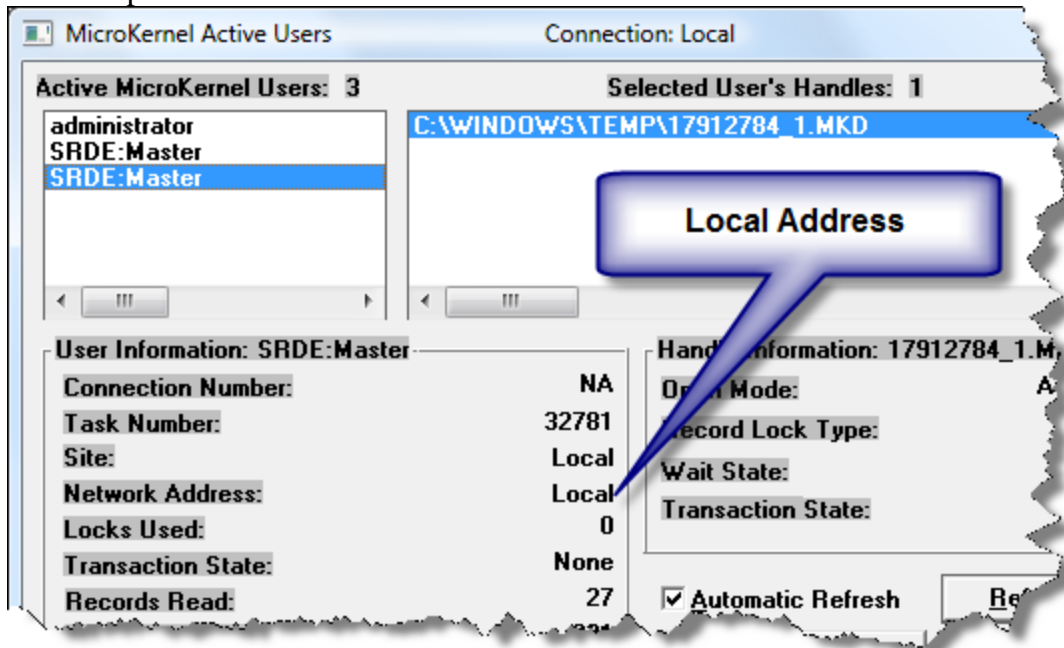


3. Write down the **Network Address** information onto a piece of paper. In this case, the connection is coming from a computer at TCP/IP address 192.168.1.11. This represents one license. Some network addresses will show up with a suffix, like \$1, \$2, etc. These suffixes indicate that a remote desktop connection is running from the stated machine. Each remote desktop connection is tracked as a separate license and must be counted separately. You can also note the user name shown (reported only for server engines) and contact that user to verify that they are still using the system. Workgroup Engines report connection names of "Client #...", but with the smaller environment, it shouldn't be too hard to figure out who it is.
4. Next, click on the other connects shown in the upper left corner and continue writing down each address that shows up there. When we click on the second connection, we get this screen:



In this case, the connection is coming in locally from the server console itself. This ALSO counts as a license to the Pervasive engine.

5. The last thing that we do is eliminate duplicates. Here's the third connection from our example server:



Note that this is ALSO a local connection. The database engine sees multiple connections coming from the same computer as a single license, so we do NOT count this separately.

As you can see in this example, the database engine is reporting two licenses in use, and when we scan the connection list, we see that there are currently two network addresses using the database resources.

Troubleshooting Common License Problems

Goldstar Software has been working with the Pervasive database in its various incarnations since 1991, so we've seen a large number of license issues over the years. Here's the most common issues that we help our clients troubleshoot.

Licenses Do Not Appear in the License Administrator

It is possible that the original license was never installed, and that a trial license was previously running on the engine which has now expired. Fixing this is easy -- simply enter your license key information right into the box provided and click *Activate*.

Licenses Show as Deactivated in the License Administrator

The engine can deactivate licenses when it detects that the underlying machine configuration has substantially changed. You may need to deactivate the license to remove it, and then activate the license again. If you have continual problems with license deactivation, then you should contact Pervasive directly at 800-BTRIEVE.

License Count in Monitor Doesn't Match License Administrator

This is one of the most common problems, and is usually caused by simple mistakes in the installation process. Check the following items:

- Verify that the engine type matches. **THE** most common issue that we see is caused by a user purchasing a Workgroup Engine license, and then erroneously downloading and installing the Server Engine software. If you find that the wrong engine type is installed, then you must uninstall the wrong engine and install the correct one. You can get the new download from www.pervasive.com.
- Verify that the engine version matches. Many people overlook the fact that the installed license says "Pervasive PSQL v9" when they are troubleshooting a problem with PSQLv10. If you have a license for PSQLv9 and have installed PSQLv10, then you may wish to remove PSQLv10 and install PSQLv9 from your original media instead, or you may wish to simply purchase a license for PSQLv10. Refer to <http://www.goldstarsoftware.com/prices10.asp> for pricing information. Remove or deactivate any older version licenses to avoid confusion in the future.
- Verify that the engine platform and bit level matches. If you have a 32-bit license on a 64-bit engine, then things simply won't work right. If you find that the wrong engine platform or bit level is installed, then you must uninstall the wrong engine and install the correct one. You can get the new download from www.pervasive.com. You can also purchase a cross-platform upgrade by contacting Pervasive directly at 800-BTRIEVE. There is a cost for this upgrade.

Network Addresses Are Reported by Monitor Even Though Computer Is Off

It is up to each database application to terminate the database connection properly, and most applications do that when the application is ended normally. However, if an application crashes, if the operating system crashes, or if a power failure occurs, the database connections can remain for up to 2 hours. To clear these "stale" connections, go back to the **Active Users...** screen in the **Pervasive Monitor**, select the connection that you want to clear, and click on the **Delete Current User** button. This will cleanly abort all transactions, release all locks, close all open files, and terminate the database connection from that address. If this is the last connection from that given address, it will also free up the license, making it available for another user.

Note that if you terminate a connection on an active user, the user at that workstation will lose data. It is also possible that the application running behind that session may crash, or otherwise return abnormal results or error messages. In short, you should not do this if you think the user may be active.