APPLICATION NOTE

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Product Family: Point of View

Number: AN-POV-018

Subject: Easy Database connection from POV

Date Issued: 5-11-2017

Revision: 1

Please note that this procedure is for quick start for historical data storage in POV. This example is shown with a Microsoft Access Database. We do not sell or support Access. Please contact Microsoft or your IT department for support of any software that we do not sell.

NOTE: This application assumes that you have the Microsoft Access Database OLE DB provider installed on your POV PC. Having this 3rd party software installed on the same machine as POV is a prerequisite for this procedure to work. If the version of Access you are using is version 2007 or newer, you will install the Microsoft Access Database OLE DB provider. If your version of Access is older than 2007, you will need the Microsoft Jet 4.0 OLE DB provider. These are free and found by doing a simple internet search (e.g. "Microsoft Access Database OLE DB provider"). Keep in mind this is software that we are unable to support the download or installation of and it is supported by Microsoft.

This quick start guide shows an easy way of connecting POV to a database using a Microsoft Access database file. For keeping historical data for trending, alarms and events, it is sometimes preferred use a database rather than the proprietary method in POV. Although the proprietary method of historical data storage is historical, the data is not useful outside of POV unless it is converted to a text file, which is possible but can be cumbersome. Access is not free but is readily available, affordable and easy to use. Another great thing about Access is you do not need to be an expert with databases and Access does not need to be installed on the machine running POV.

Step 1 Create the database file

On a computer that has Access installed open Access. Select Create Database and give it a name. Since this example will be done using the PCDemo project included with the installation of

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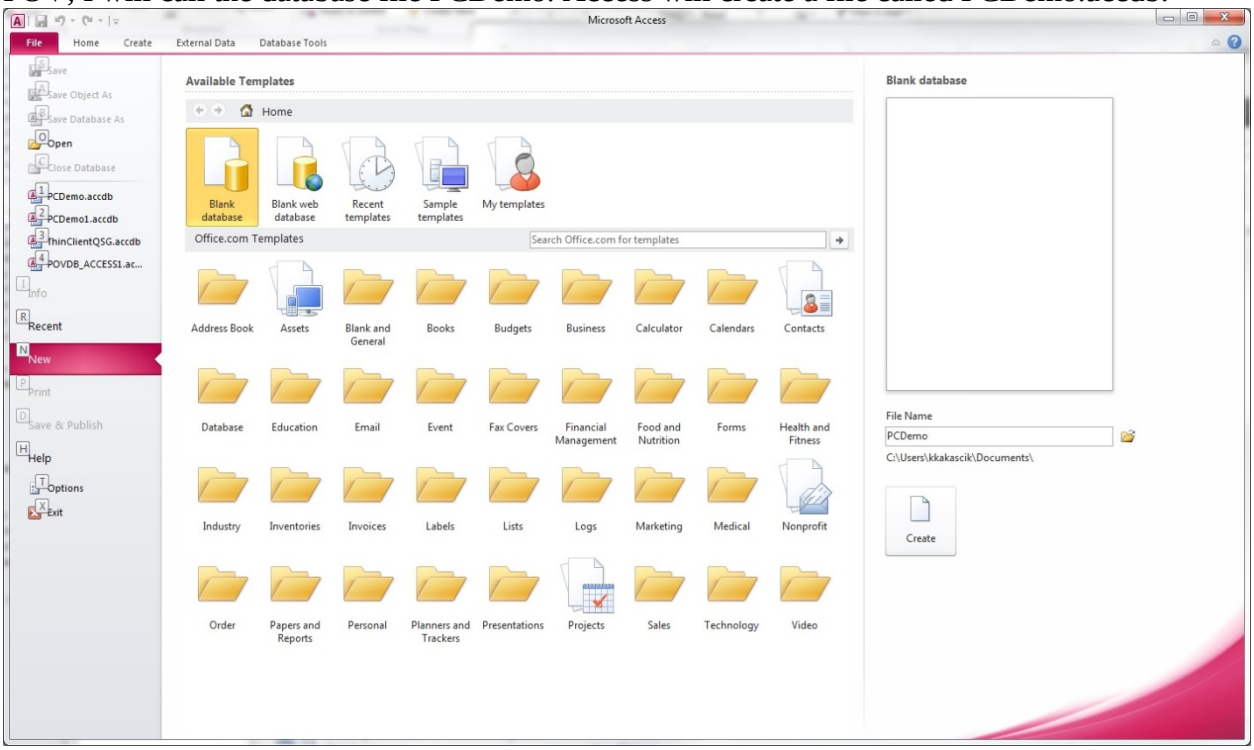
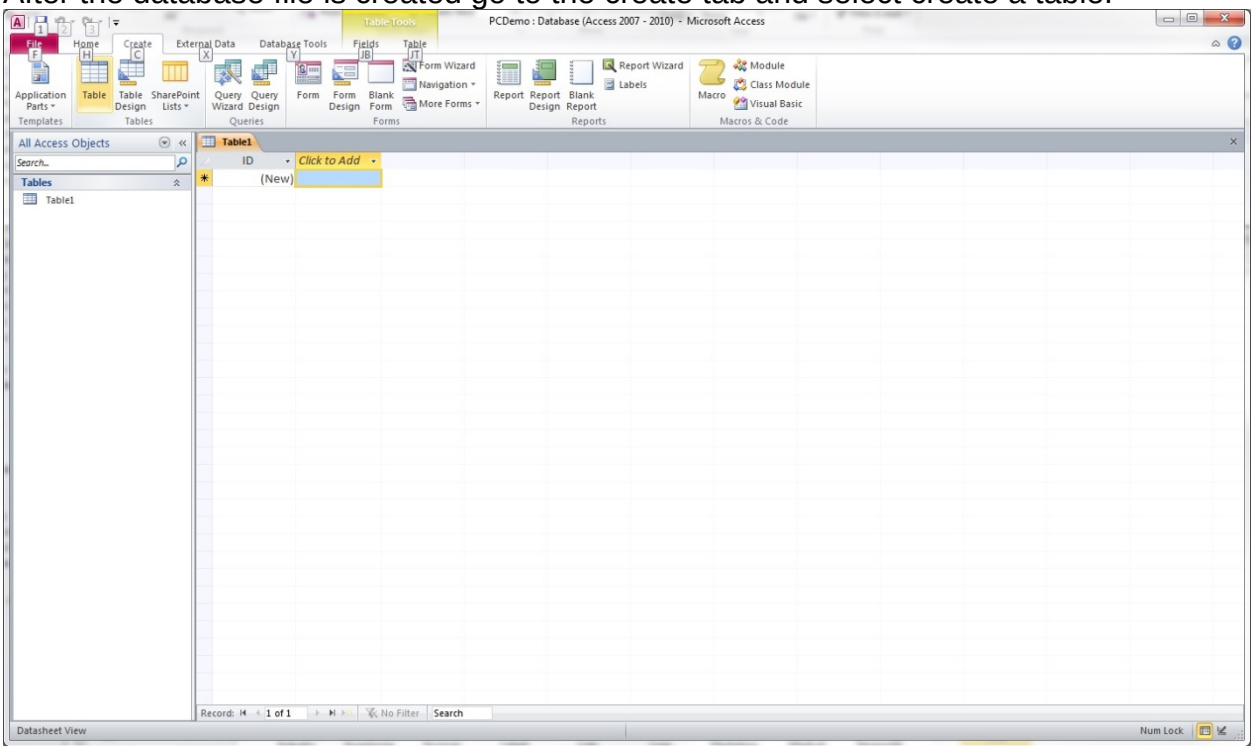
POV, I will call the database file PCDemo. Access will create a file called PCDemo.accdb.



After the database file is created go to the create tab and select create a table.



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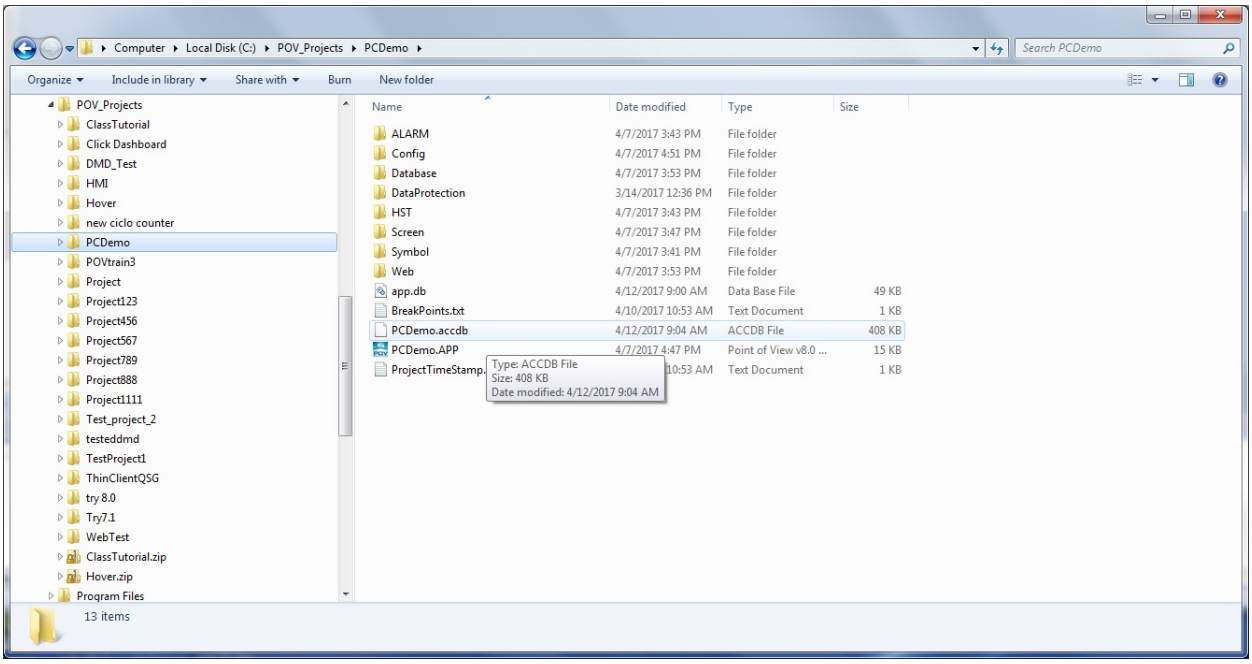
Now save the file and close Access.

Step 2 Move or copy that database file into the POV project folder

In my situation I do not have Access installed on the same computer that I have POV installed on. So I have to move the PCDemo.accdb file from one computer to another. Remember it is not necessary to have Access installed on the same machine as POV. It can be helpful for troubleshooting purposes to make sure the tables are created correctly and confirm data is being written to those tables, but not required.



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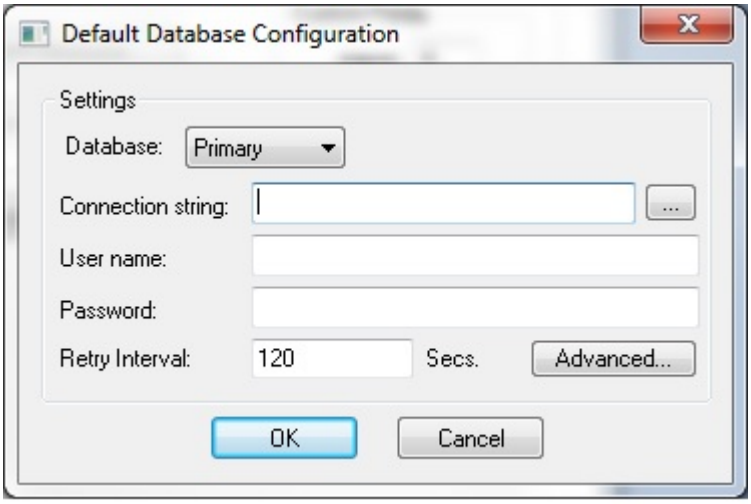
Step 3 make the connection to the Accesss Database file in POV

Open your POV project and click on the project tab of the ribbon bar and select Options. Then click on Default Database. You will see the following dialog.



In this dialog click on the ellipsis button (the button with 3 dots). From here it brings up another dialog, where you select the appropriate OLE DB provider. We are going to select the Microsoft Office 12.0 Access Database Engine OLE DB provider, since our version of Access is newer than 2007. If your version is older than 2007, you will use the Microsoft Jet 4.0 OLE DB provider. If you do not see the correct OLE DB provider on your POV machine, you will need to download and install it.

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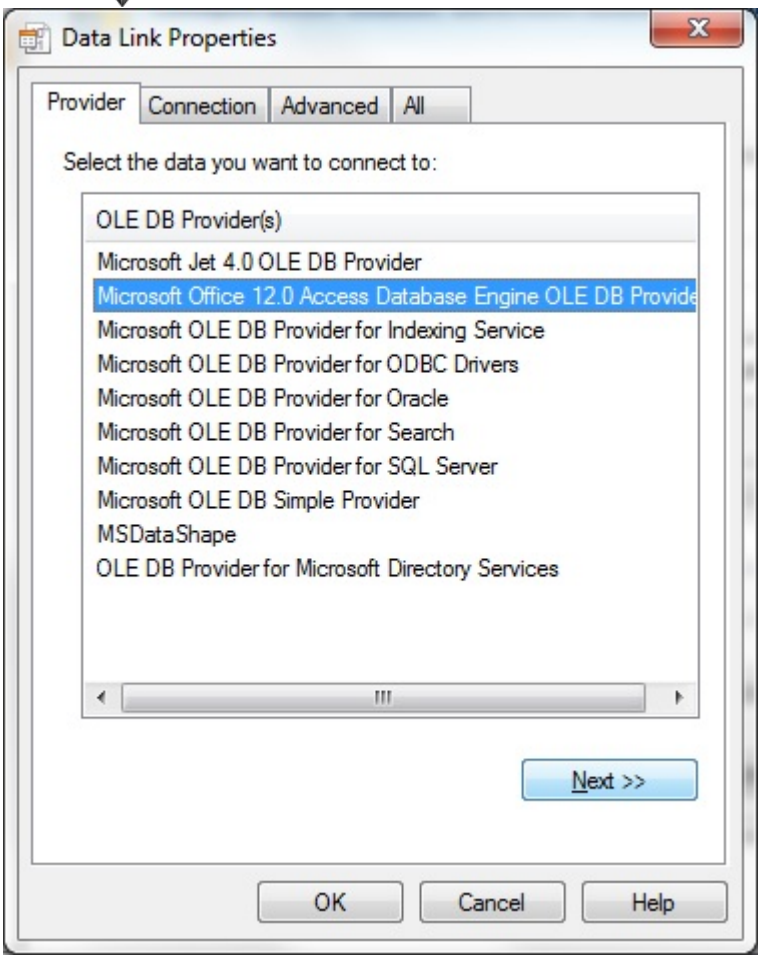

Click next and it takes you to the connection tab. In the Data Source field enter the complete path of the ACCDB file. We put it in our POV project folder in step 2. Our path is C:\POV_Projects\PCDemo\PCDemo.accdb, yours will be different. Also clear out the User name field. Our Access Database file does not require a user name and password, although Access does support it and most other databases require it. If required you will enter appropriate credentials here.

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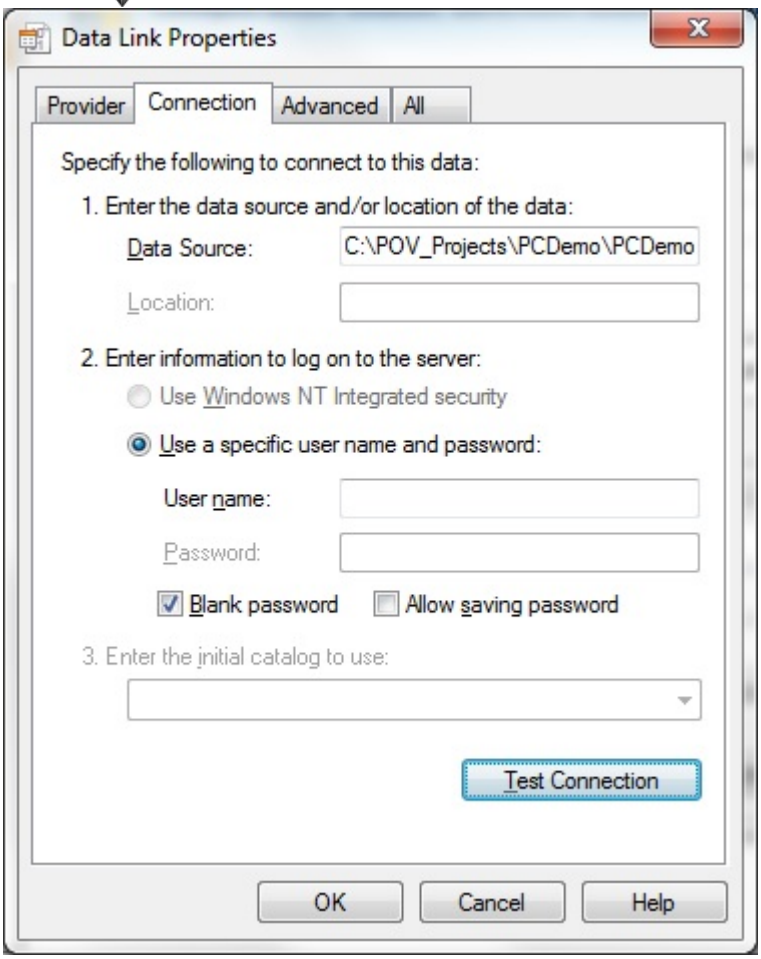

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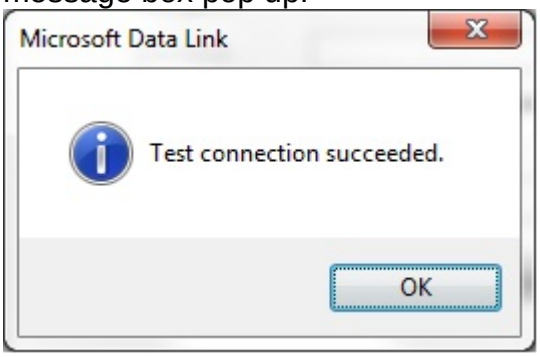
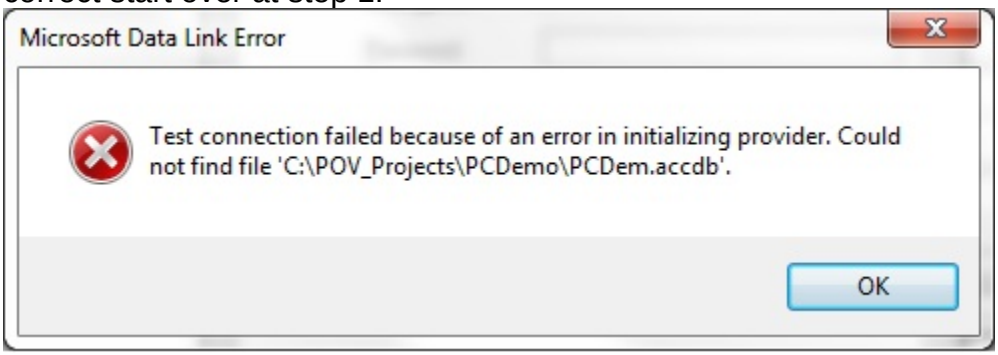
From here click on test connection. If everything works you will get the following message box pop up.



If instead you get a message similar to what is shown below, there was an error. Most likely the path is incorrect in the Data Source field of your connection. Check and if it is correct start over at step 1.



Other possibilities are that the file is not located where you thought it was or you used the wrong OLE DB provider.

Step 4 setting alarms and events to use the default database

Click OK to get back to the project settings options window. Here you can change the History format from proprietary to Database. If desired you can even select individual alarm and event databases by clicking on those buttons. It brings up a dialog shown below.

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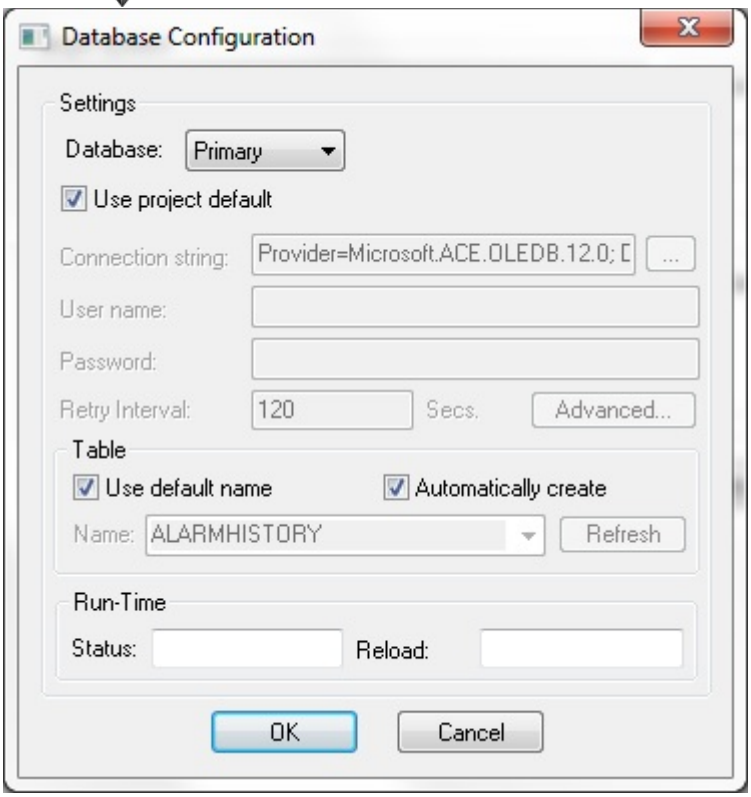

It is important to note that in almost all cases to let POV create this table automatically. This ensures that the table has the correct number of columns, names and are in the correct order. Using a pre-existing table is the usual cause of a POV feature not working with a database. If you are fine with the default name assigned, you need to do nothing here. It is not recommended to change the default name, but if you want to uncheck “use default name”, then enter the desired table name. If something doesn’t work later this would be the first thing you should check.

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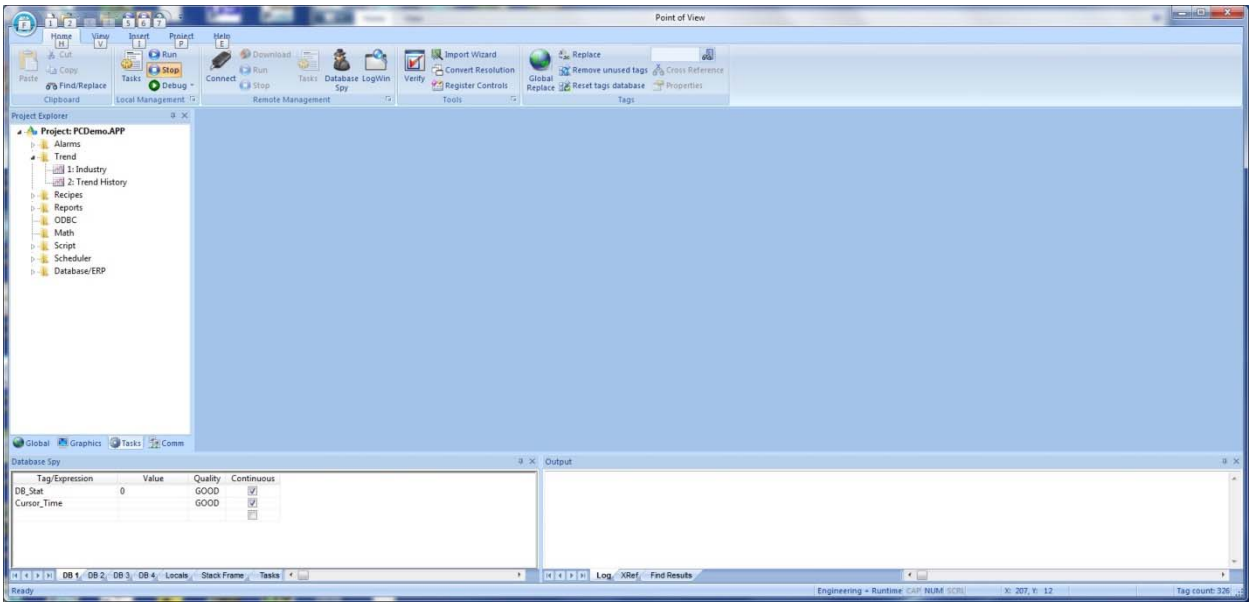
Step 5 Setup a Trend worksheet to log historical data and the Trend Object to display historical data

For this example we are using the PCDemo sample project. This project already includes 2 trend worksheets and 1 Trend Control object. For our example we are going to use the Trend History worksheet that is already created in the PCDemo project. To get to this worksheet, click on the Tasks tab on the project explorer, then expand the Trend folder, and then double-click on the Trend History worksheet (worksheet #2). If you want to create your own Trend worksheet, right-click on the trend folder and select insert.



The default state logs data to proprietary history format and the trend control object displays data from the tags. If the project is shut down, all of this data is lost. If we change the trend worksheet's history format from proprietary to database and setup the trend control object to display data from the database table, it will keep this data, even in the event POV is shut down, the PC is rebooted, etc. (keep in mind this is within reason, if you run out of hard drive space or the drive crashes, etc. nothing can be guaranteed).

The first thing we need to do is change the Trend worksheet's history format from Proprietary to Database.

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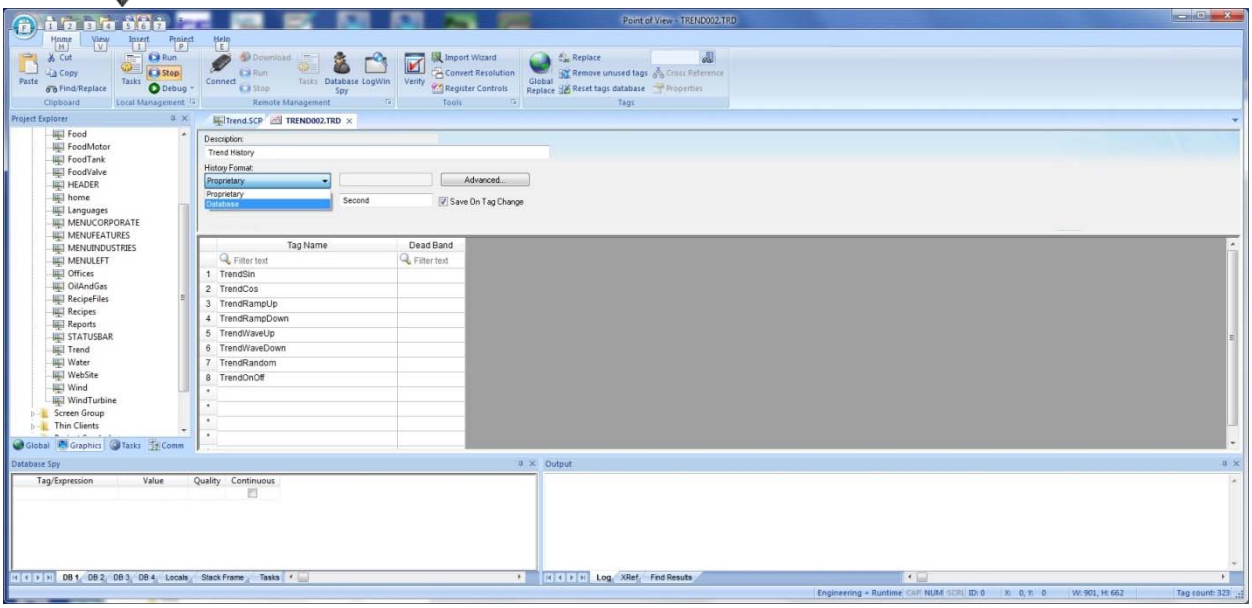
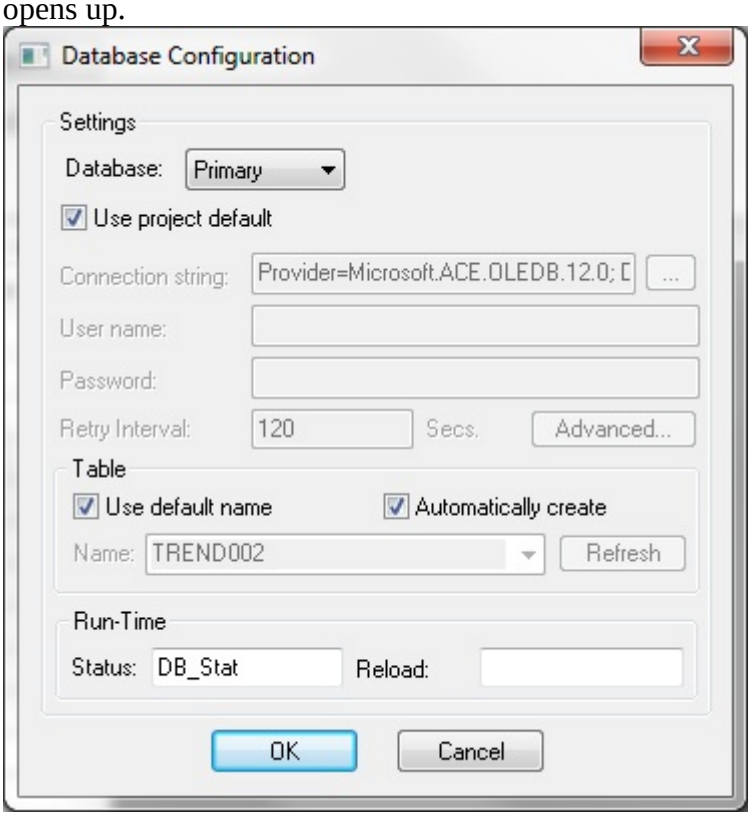


After this is done the Database Configuration button appears. Click on it and a familiar window opens up.



First thing that needs to be done is, check the “Use project default” box. Also, it is very important to NOT uncheck the Automatically create box. Allowing POV to create this table, makes sure that the table is created correctly. While in this window note the name of the table and write it down. Click OK to go back to the Trend worksheet. And

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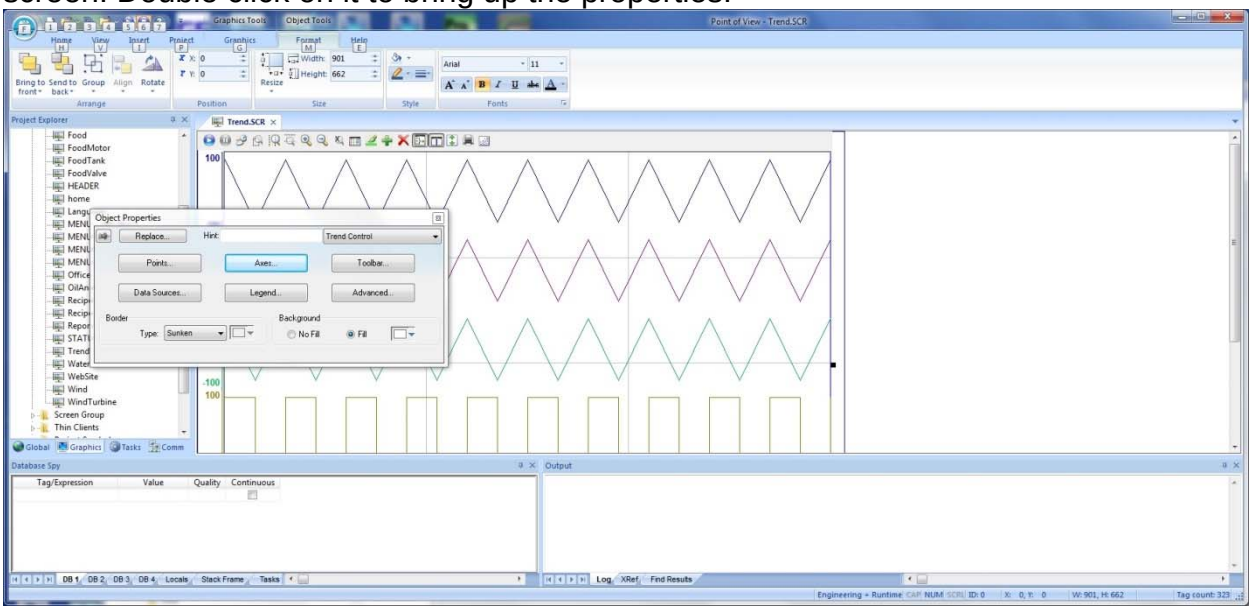
note what your trigger is.

Close the Trend worksheet and save it when prompted.

At this point it is highly recommended to run your project just long enough to allow the trigger for this trend worksheet to execute at least one time. This allows POV to create the table and will make the next step easier.

Our worksheet trigger is Second so we only need to run the project for 1 second then stop it.

Now go your Trend control object. The PCDemo project already has one on the Trend screen. Double click on it to bring up the properties.



The first thing we need to do is create a data source from the table that the Trend worksheet created so click on Data Sources. Click on New, give it a name and click on create.

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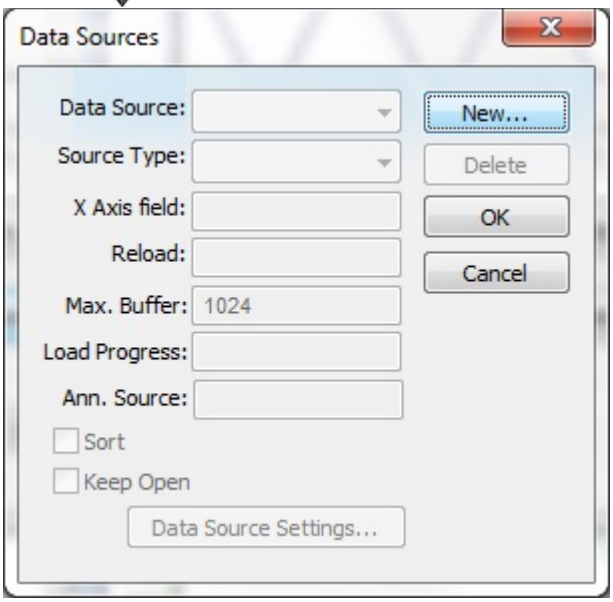
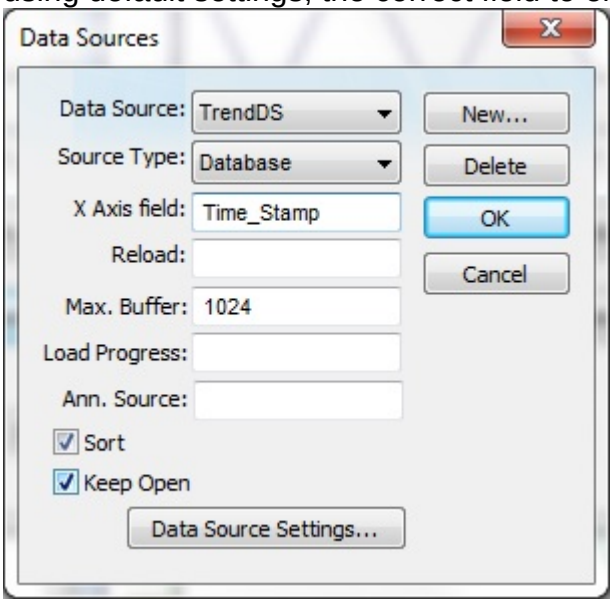


Change the source type to Database and enter the correct X-Axis field. This is one case where having Access installed on your POV will help. I will tell you now though that if using default settings, the correct field to enter is Time_Stamp.



Now another thing we need to do is click on Data source settings. In this particular case you need to make sure that Automatically create is NOT checked and Use Default name is also NOT checked. This is because we are reading and not writing to this table and we want to read from the table that the trend worksheet has created and is logging to. Open the drop down box next to the name field, you should see the name of the table created by the trend worksheet. If you do not, it is most likely because the project was not run after saving the worksheet, or was not run long enough to allow the trigger for the worksheet to execute. Here is what is seen if the project was not run after saving the trend worksheet (incorrect).

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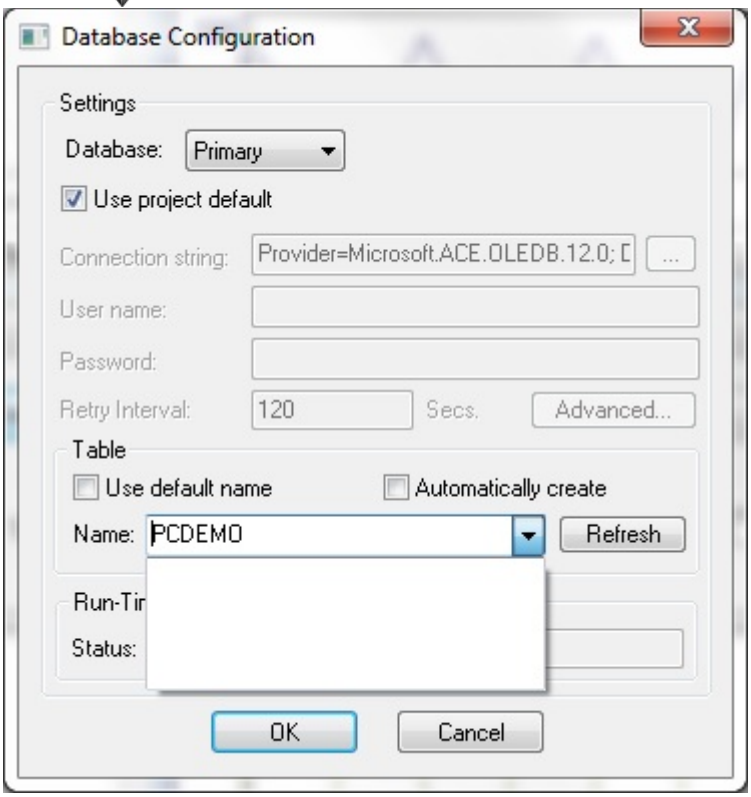

Now I did this to show how to resolve this. Simply select ok, close your documents and run the project. Here is what is seen after I allowed the project to run for 1 second.

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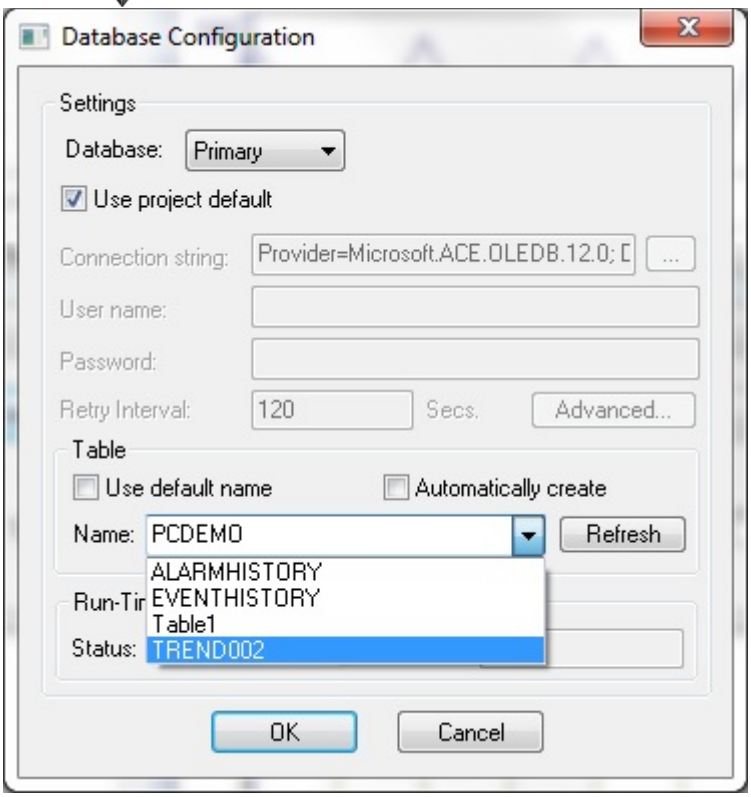
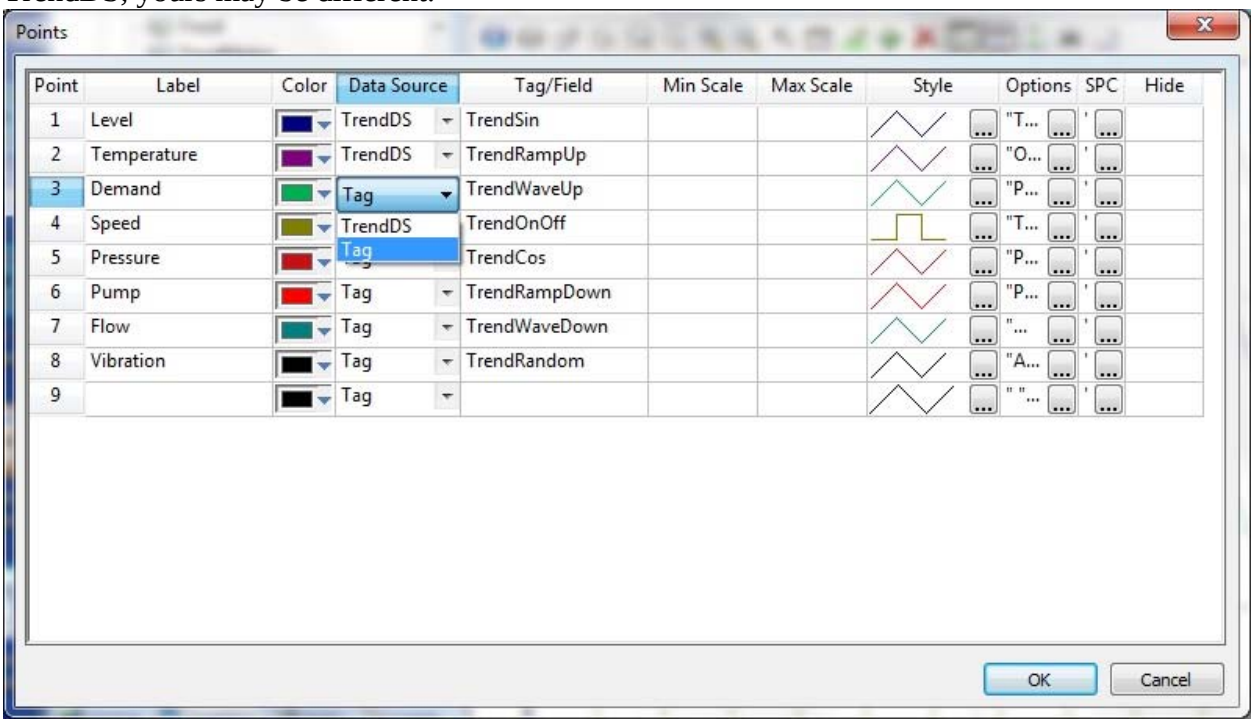


Click on OK, then OK again in the Data Sources window. Back at the Trend Control Object properties, click on Points. From here the Data Source is currently set to tag (real time only). Change this to the Data source that you just created on pages 11 through 12, I named mine TrendDS, yours may be different.



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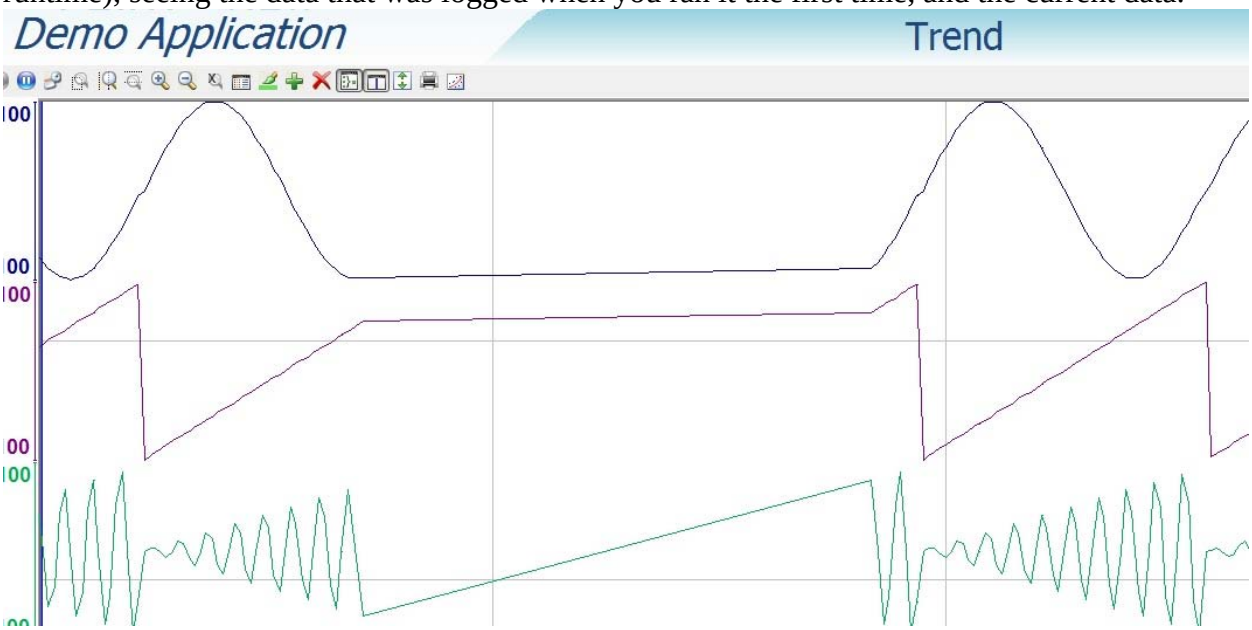
Now click on OK in the points window, close the Trend control object properties and close/save the screen. You can test by running your project for a few minutes. If it is displaying data, let it run for a few minutes, shut it down for a few minutes, and then restart. You should be able to navigate the object historically now (moving back in time to before you stopped the project runtime), seeing the data that was logged when you ran it the first time, and the current data.