



# Users Guide



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## Welcome to dbDOS™ PRO 5+N

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The new dbDOS™ PRO 5+N is even faster than before and has been optimized to make it the easiest way for developers and end-users to continue to use MS-DOS / DOS based programs on the latest and greatest Windows Operating System hardware and software. dbDOS™ uses an advanced DOS Virtual Machine (VM) that enables DOS-based application to run on the latest and greatest hardware and software just as they did on older DOS machines.

This is an incredible way for individuals and companies to save time and money. Now users of dbDOS™ PRO 5+N can run stand-alone or with network based programs. They can deploy their existing DOS-based dBASE applications on almost any hardware and Microsoft® Windows® Operating System (2003, Vista, 2008, 7, 2012, 10, and 2016) 64 bit editions. This is done without changing any of the existing programs or applications.

dBase's dbDOS™ PRO 5+N makes it incredibly easy to create Windows shortcuts that allow running of almost any DOS-based programs, and this allows access to data in a few simple mouse-clicks.

dbDOS™ PRO 5+N is the best life extenders for dBASE for DOS products on the market today. Simply move your programs and data to the new hardware, install dbDOS, run the dbDOS™ Configuration Utility, and then double-click on the shortcut and the product(s) are up and running and ready to use.

The dbDOS™ PRO 5+N product supports both stand-alone and networking solutions for fast, easy to use approach that saves time and money.



## What's New in dbDOS™ PRO 5+N?

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- ❑ (NEW) Optimized Look & Feel
- ❑ (NEW) Streamlined configuration building
- ❑ (NEW) combined stand-alone and network engines
- ❑ (NEW) AutoExec customization wizard integration
- ❑ (Improved) Screen rendering for sizes larger than 600x800 resolutions
- ❑ (Improved) dbDOS™ PRO 5+N automatic configuration upgrades
- ❑ (Improved) 4DOS Integration
- ❑ dbDOS PRO 5+N general set of small issues resolved and most known bugs removed

More can be found on these exciting new features in the New Features in dbDOS™ 5+N section in this User's Guide.

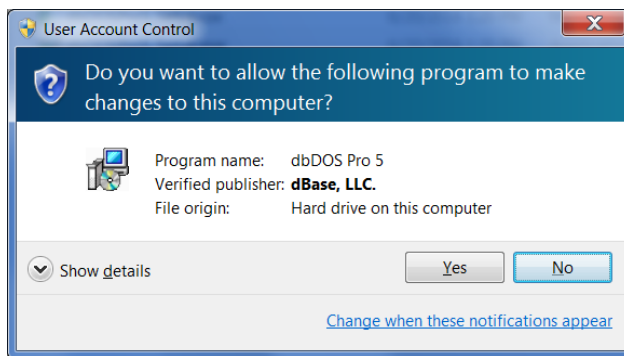


# Installing dbDOS™ PRO 5+N

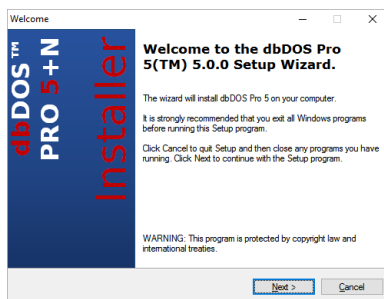
Installing dbDOS™ is the same as installing any other Microsoft Windows program and uses a standard installation program to do the job.

Simply click the downloaded setup program located in the download directory, to start the installer.

If you are installing in Windows Vista or newer, the first question will be whether to run the installer. This is a condition of the Windows UAC (User Access Control) and is part of the Windows security system.



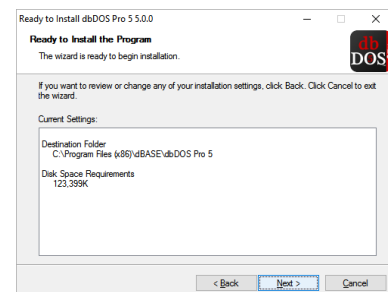
By clicking Yes to the UAC question, the installer will execute:



Press Next > button

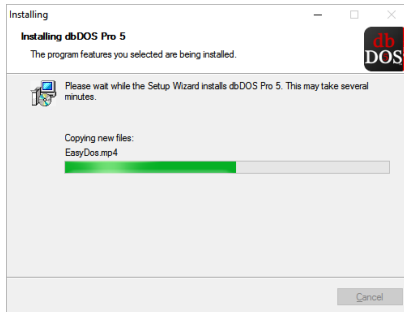


Accept the license and press Next > button

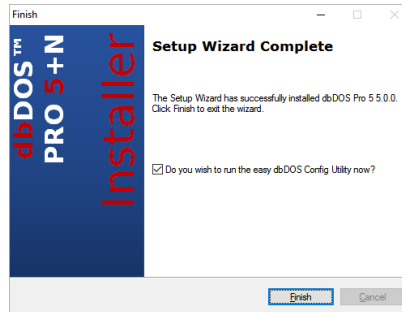


Review the install information and press Next > button to install.

# dbDOS PRO™



Installation process



Press the Finish button and it will start the dbDOS™ PRO 5+N Configuration Utility.



On the initial install, the Activation process will be displayed, put in your products credentials and dbDOS is ready to go!

That is the complete install process. As stated above, the install finishes when the Finish button is clicked and that will kick off the dbDOS Configuration Utility, which you can learn about in the next section.





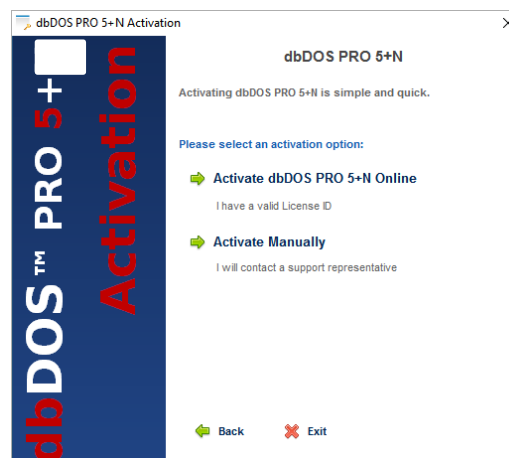
## Activating dbDOS™ PRO 5+N

Once installation is complete, the next step in running dbDOS™ PRO 5+N is Activating the software on each computer it is installed. The process is the same regardless if you are using the software as a single user version or the networking version, except that dbDOS™ PRO 5+N will need to be installed on **all network** nodes and activated on each node before it can be used.

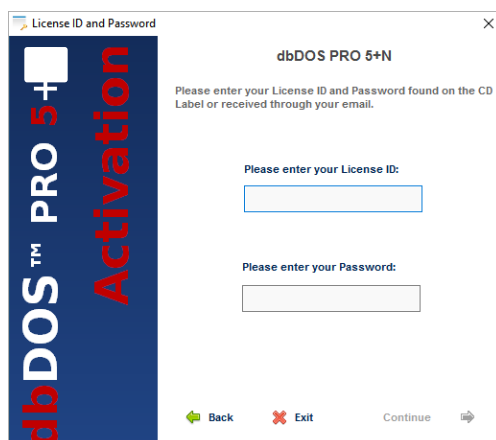
It is recommended that YOU REGISTER THE PRODUCT FROM THE INSTALLER! This will ensure that that Windows® Operating System has the proper elevations for UAC (User Access Control) on Vista and higher OSs.



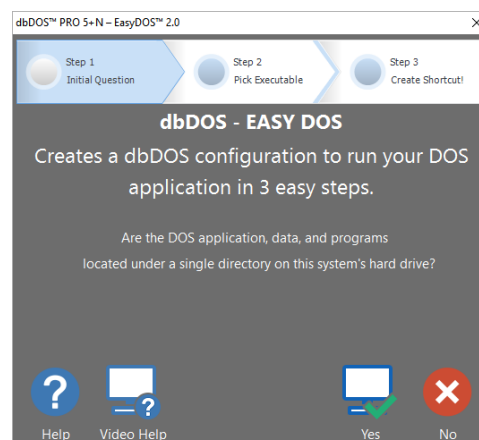
Click the Activate dbDOS™ PRO 5+N link



Select the option that best fits your situation. Normally this will be to Activate dbDOS™ PRO 5+N Online



Enter user License ID and your Password that was emailed to you.



The new dbDOS™ PRO 5+N EasyDOS is the quickest way to a configuration just three (3) steps.

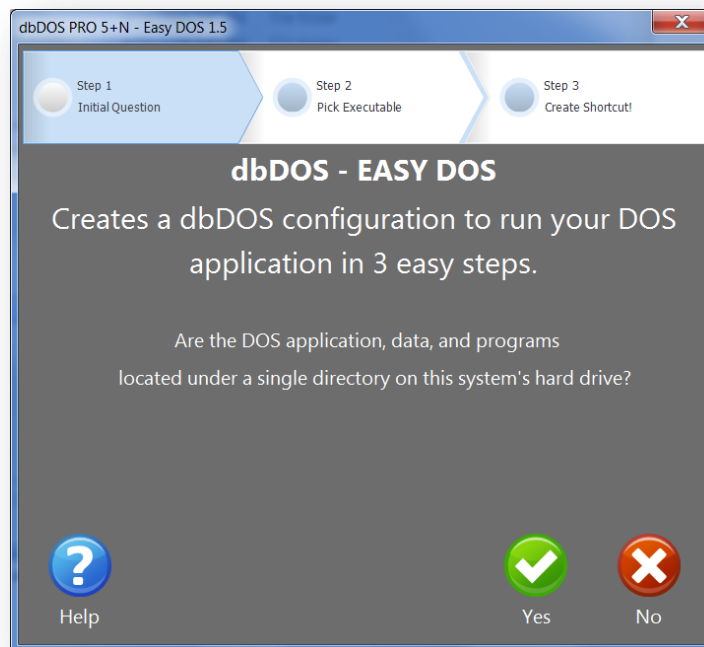


## Using the EASY DOS Feature

One of the exciting features of dbDOS PRO 5+N is the EASY DOS configuration utility. This utility is designed to make creating a dbDOS configuration that runs a DOS application very simple and straightforward. No need to understand mounted drives, display types, etc., it is a straightforward approach. Now, to get this ease of use, dbDOS Configuration utility must make some assumptions about what is being created. Therefore, before you start to use the new EASY DOS feature, make sure the following is correct:

- All DOS based programs, applications, and data are located under a single directory
- Have a Windows 7 or above machine with a good processor and memory
- Be able to use the standard location/CodePage (95% of the customers) use 437

If those three things are true, then making a new Configuration is just three simple steps, as defined below:



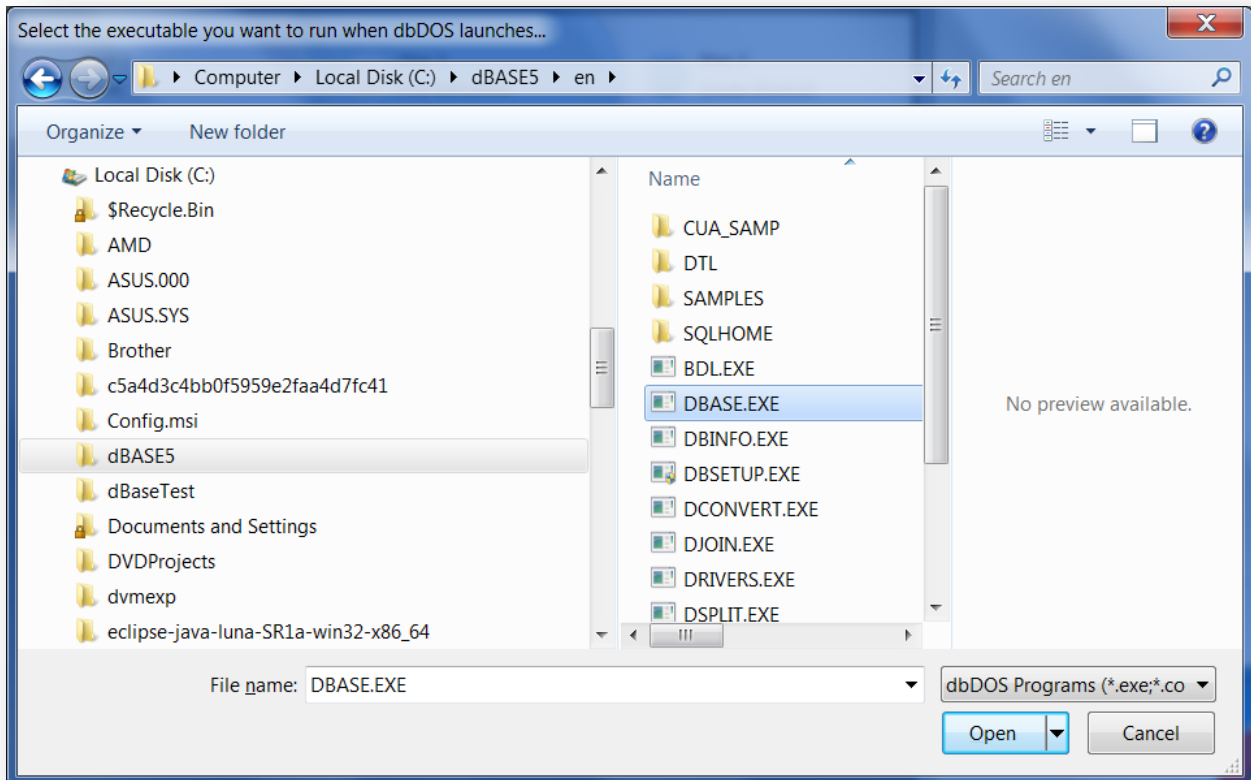
*Page one of the EASY DOS configuration creator*



If you can answer the above question with a Yes, then press the Yes button to continue. If you need more help, click the help button, and if the answer is No then press the No button to exit the utility.

**Note:** A word about answering No to the question in the wizard. Just because you answer No to the first question does not mean you cannot use dbDOS, it just means that you have a more complicated setup and must use the standard dbDOS Configuration Utility. This feature is covered in the next section of the Users Guide.

After answering Yes to the question, the utility will take you to the second page. However, before you get to the second page, the utility will show you a directory / file list dialog:



*Pick your Executable that will be run in the dbDOS environment*

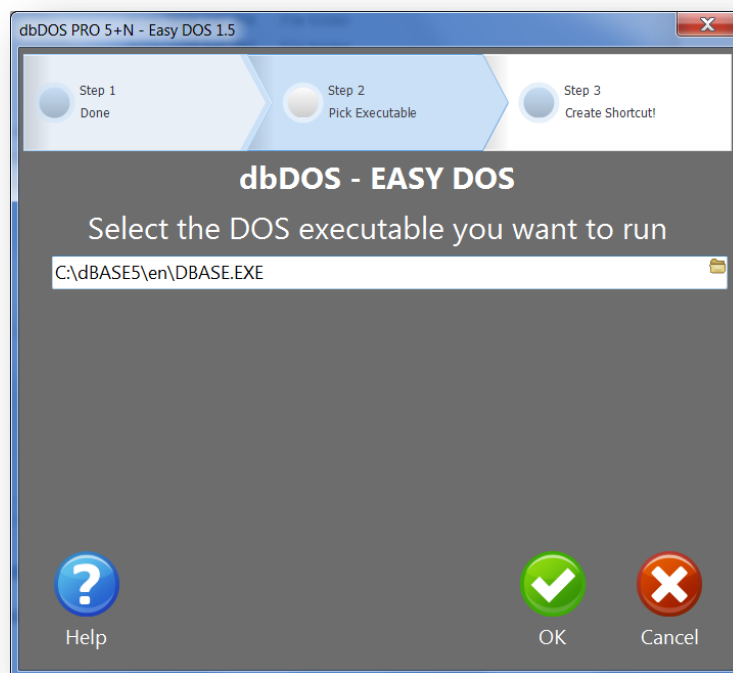
A few things to notice from the above dialog. Notice the dialog is pointing to the Computer > OS (C:) > dbase directory or in DOS terms: C:\dbase\>



Note: Keep in mind that your DOS applications do not need to be in C:\dbase\> directory. It can be located anywhere on the hard drive. So for instance if you had Word Perfect 5.1 for DOS loaded, it may be in c:\wp51\ so you would point to that directory... again, wherever the DOS applications, programs, and data are located on the hard drive.

Second, notice that only .exe(s) and .com(s) are being shown. The EASY DOS utility only recognizes those two DOS executable types. If you have a .bat file, you should use the full utility for creating a DOS configuration.

Once you select an executable (.exe or .com) and press the Open button, the following screen will appear:



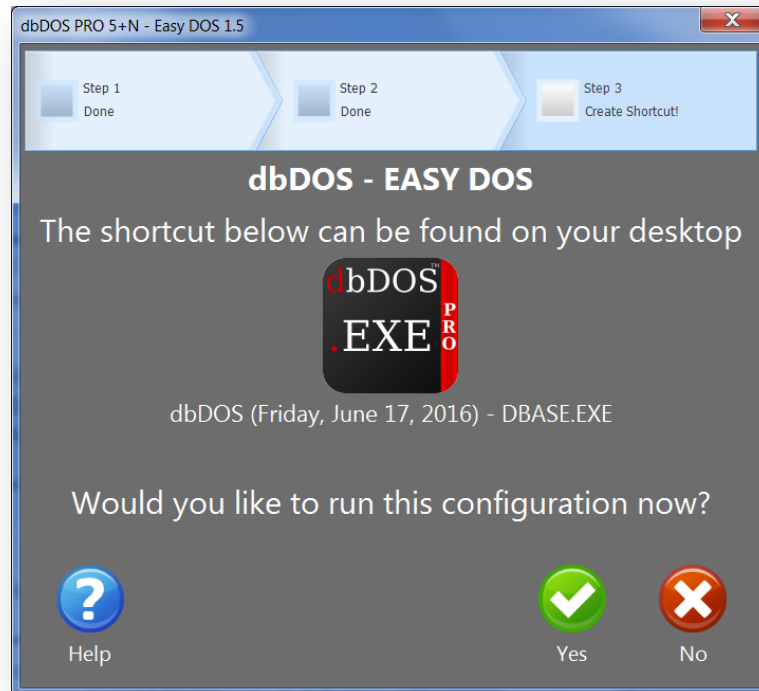
### *Showing the Selected file to create the configuration*

Therefore, the configuration being created in this example is pointing to an executable located in *c:\dbase\* directory. The DBASE.exe will be started when the dbDOS configuration is executed after the shortcut is created. Now, if everything looks good, press the OK button to continue. If you need more help, press the Help button or if you want to exit press the Cancel button.



**Note:** Notice the folder located in the right-hand side of the edit box. At any time, the user can click the folder image the Folder dialog will be shown again, where the user can reselect a new folder or executable.

The last page of the utility will appear:

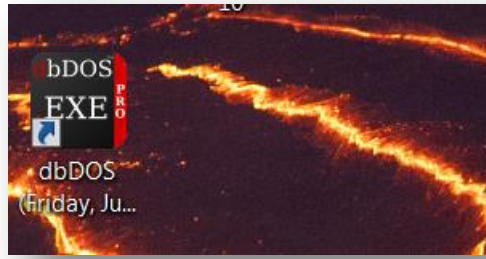


### *Final Page of the wizard*

The final page as shown above is straight forward, if you want to run the application in dbDOS click the Yes button. If not, hit the No button and it will exit the utility and of course, you can always get Help by pressing the help button.

This page is designed to review what will appear on the Windows Desktop. Take note of the graphic that should be on the desktop with the name under it, as shown below:

# dbDOS PRO™



*Configuration created on Desktop and ready to use*



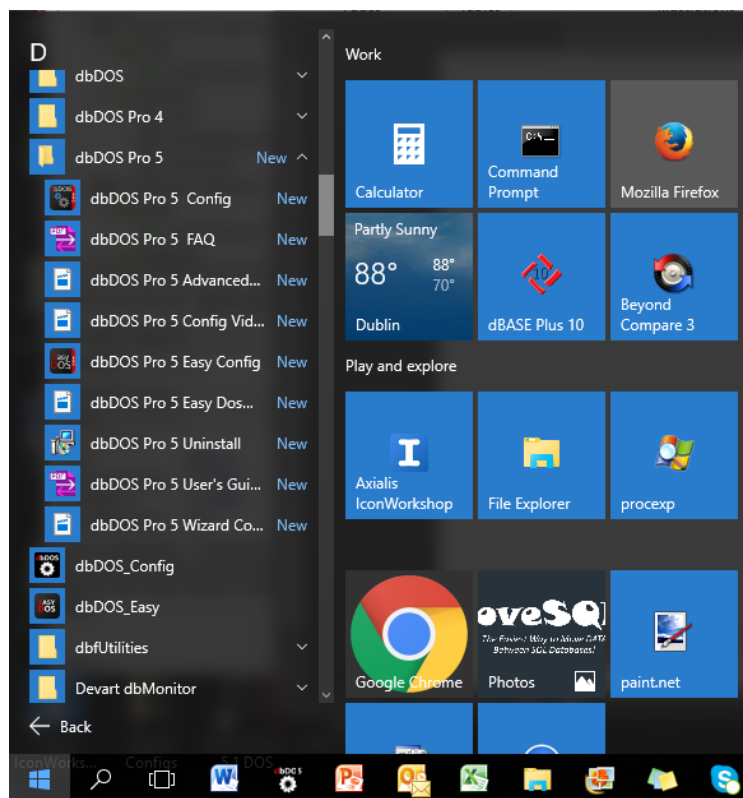
## Using dbDOS\_Config.exe

One of the main features of dbDOS™ PRO 5+N and dbDOS™ PRO 5+N Networking is the dbDOS\_Config.exe program. This program works the same on single user installs and networking installs. This program is responsible for configuring your dBASE programs to run in dbDOS and for creating the shortcuts that make using dbDOS so easy to use.

dbDOS™ PRO 5+N, we enhanced the ability to pick the way the developer wants to create configurations. The new wizard gives a much simpler approach to creating the dBASE for DOS shortcuts for the latest Windows® operating systems.

*Note: Shortcuts created with dbDOS™ 1.5.1 and above should automatically be updated to the latest standard, not action will be required from the end-user.*

Starting the dbDOS\_Config.exe interface has two main approaches, it will be started as the last step in the installing of dbDOS™, or it can be started at any time using the **Start|All Apps|dbDOS Pro 5|dbDOS Pro 5 Config**; as shown below:



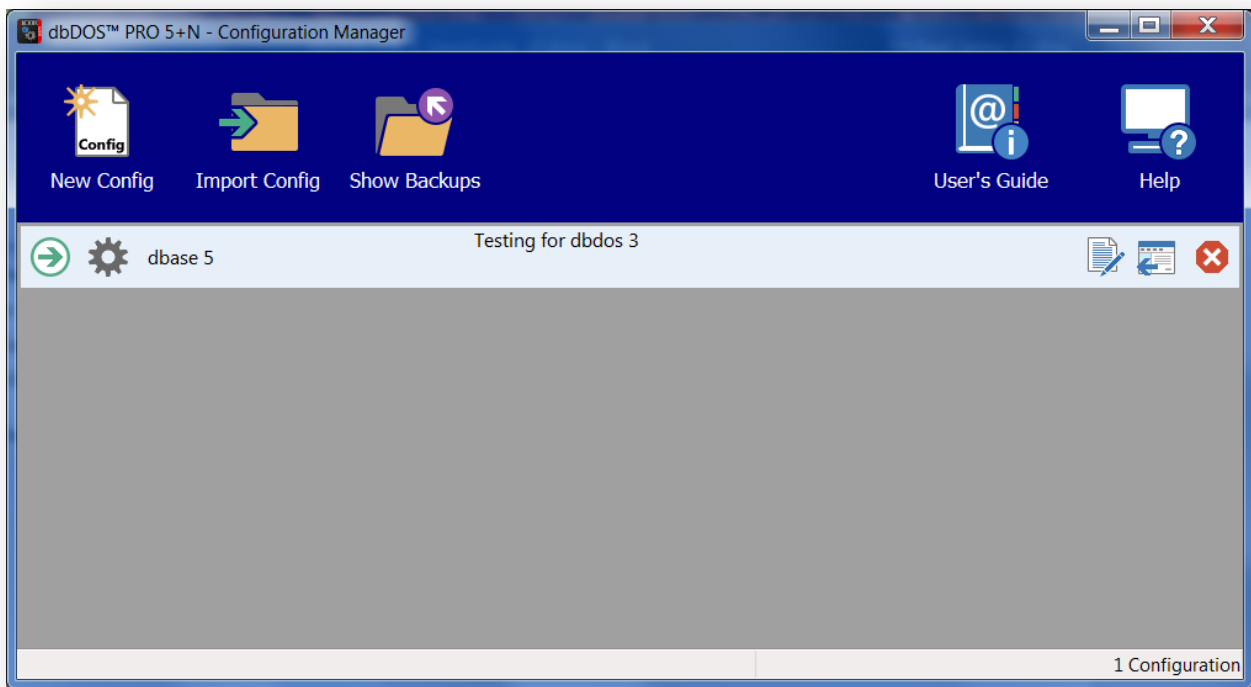
Using the Start|All Apps|dbDOS Pro 5|dbDOS Pro 5 Config



## Initial dbDOS™ PRO 5+N – Configuration Manager

The updated dbDOS Configuration adds significant features to manage Windows® shortcuts for running dBASE for DOS applications. The focus with the dbDOS™ PRO 5+N Configuration Manager was that end-users need to be able to manage the shortcuts, they wanted to be able to delete them, and they wanted a way to share them.

The new dbDOS\_Config.exe interface will always show the initial start screen.



*dbDOS Config main screen*

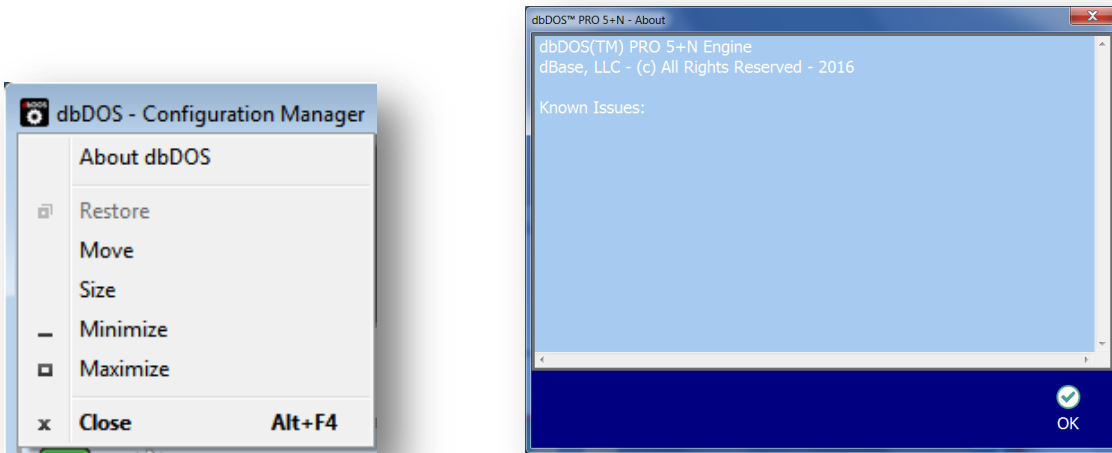




### Screen Break down



Clicking the dbDOS icon gives the ability to get the About... window. The red 'x' is the standard way to close the dbDOS Config.

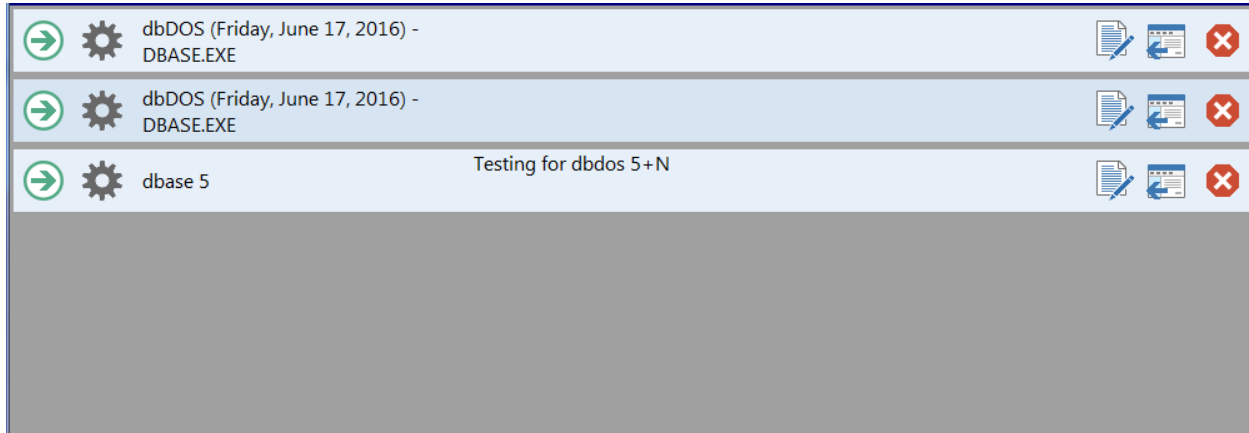


The Execution Bar – allows you to pick the operation you want to perform inside the dbDOS Config.





The Shortcut browser – allows you to see all of the created shortcuts for your DOS programs.  
This is the area where you can manage those configurations.

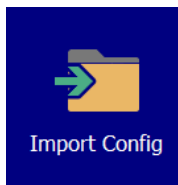


*This is the list of configurations created to be used by dbDOS™*

The execution bar has a number of buttons that can be activated to do certain operations as defined below:



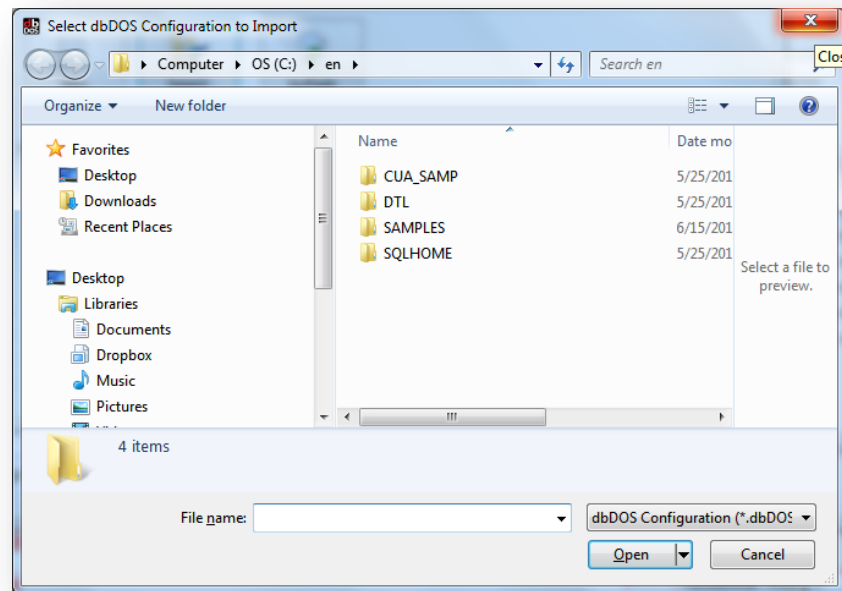
The **New Configuration** button will create a new shortcut that will be placed on the Windows® desktop and can be placed inside the dbDOS folder off the Start menu.



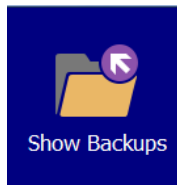
The **Import Configuration** button allows the end-user to modify an existing configuration. This means that once a Windows® shortcut is created, it can now be updated, and can be deleted if needed.

When the Import Configuration button is pressed, the end-user can import a saved configuration. This will also allow you to then modify or customize that configuration to meet their needs on the system.

# dbDOS PRO™



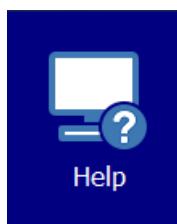
*Import a configuration: it asks the location of the configuration to be imported*



Press the **Show Backups** button to show all the backup configurations. This is **NEW** in dbDOS™ PRO 5+N and helps keep the configuration listing much more organized and easier to read.

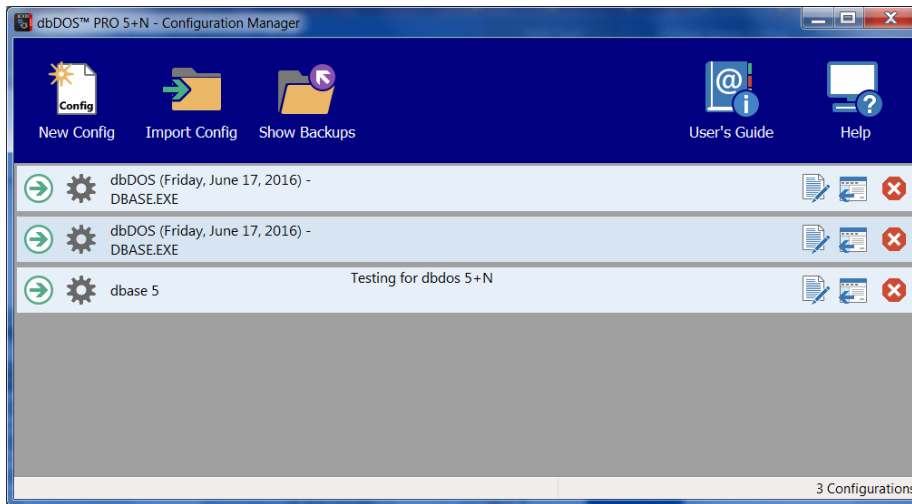


Press the **User's Guide** button to show the PDF version of this write-up from within the dbDOS™ Configuration manager.



Press the **Help icon** to watch the help video – Clicking this link will start the video that includes an overview of the dbDOS Config and how to use the dbDOS™ PRO 5+N interface.

# dbDOS PRO™



*The shortcut created on the Windows® desktop*

*After a Windows® shortcut is created*

The above shows the outcome of running the dbDOS PRO 5+N – Configuration Manager, it shows that a new Windows® shortcut was created and it now lists that short cut in the Configuration Manager for better on-going support.

There are some additional Icons on the page that need to be defined.



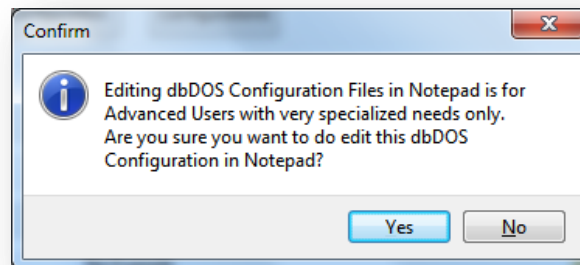
Pressing this icon will execute the shortcut



Pressing this icon will allow you to Edit the selected configuration.



**[ADVANCED END-USERS]** Pressing this icon will allow the end-user to edit the dbDOS™ configuration file, this is for advanced end-users only. The program will display a warning making sure you do want to edit the configuration as below:





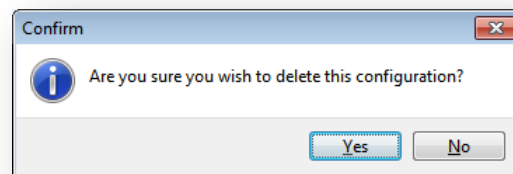
Pressing the Yes button will take you into the configuration file.



This icon represents the Export function, this will now allow you to export out a configuration and share it with other end-users



This icon represents the Delete function and anytime it is pressed a confirmation dialog will be displayed asking the end-user if they are sure they do want to delete the configuration:

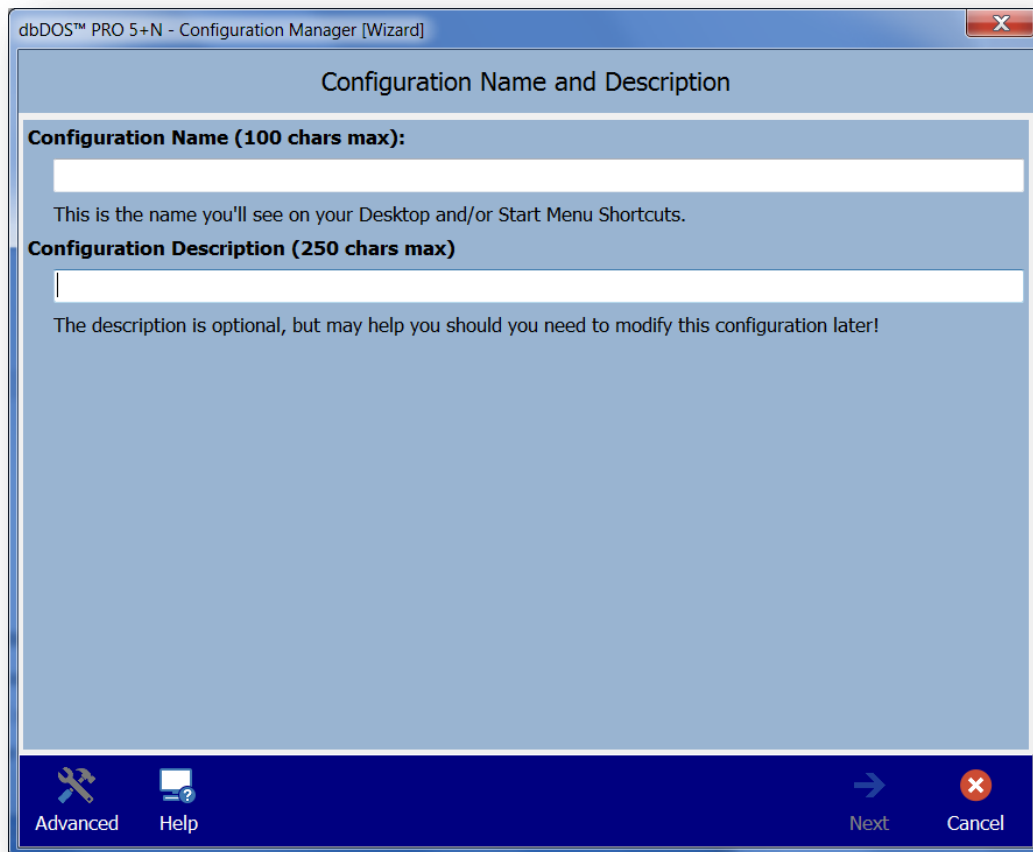


Pressing the Yes button will Delete and pressing the No button will return the end-user back to main screen.



## New Configuration

When you start a new configuration, the first step will always be the Configuration Name and the Configuration Description, as shown below. The name and the Description are used so that the end-user can easily see which configuration they are working with.

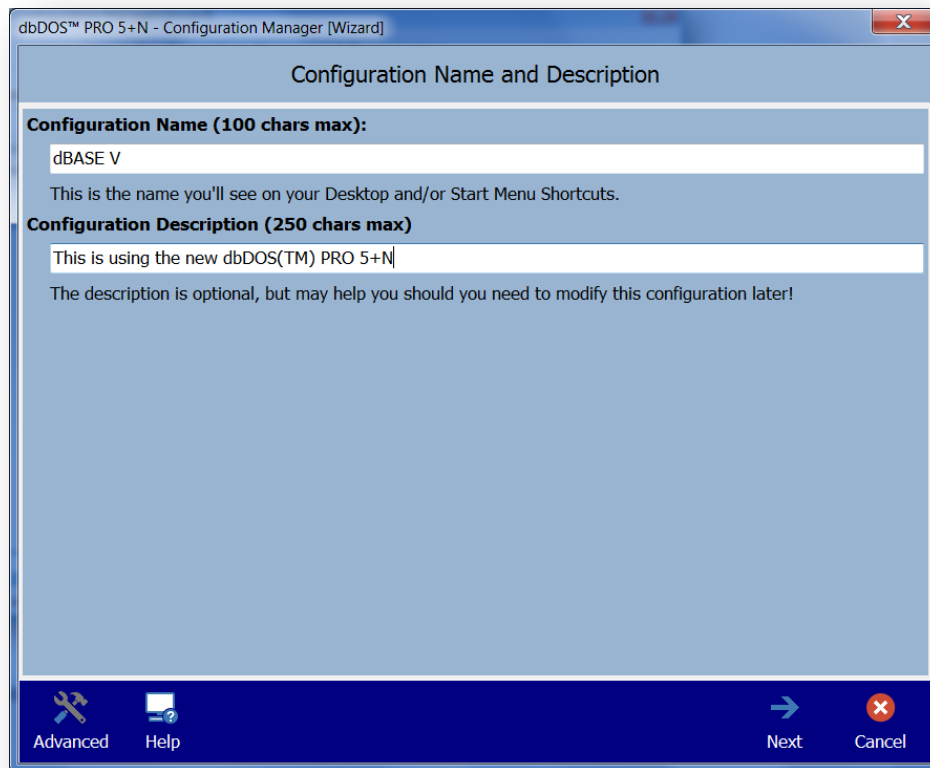


*First Operation: Always have to define the name and description of the Configuration*



### Wizard Approach to building a dbDOS™ Windows® shortcut:

Once the Name and Description of the dbDOS™ configuration has been defined, pressing the Next button will start the dbDOS Configuration Wizard. Keep in mind that the Configuration Name will be the name of the shortcut created.




#### *Name and Describe the new configuration*

Notice above, that the naming and description fields are available for text, also notice that at the bottom of the dialog there are three (3) buttons. The first button to the left is called Advanced



this button will take you to the single-page configuration screen found in the original dbDOS™ 1.0 product. If you want to learn more about the Advanced approach please go to the Advanced Approach to building a dbDOS™ Windows® shortcut section in this

document. After the Advanced button, you will see a Next button , which will take



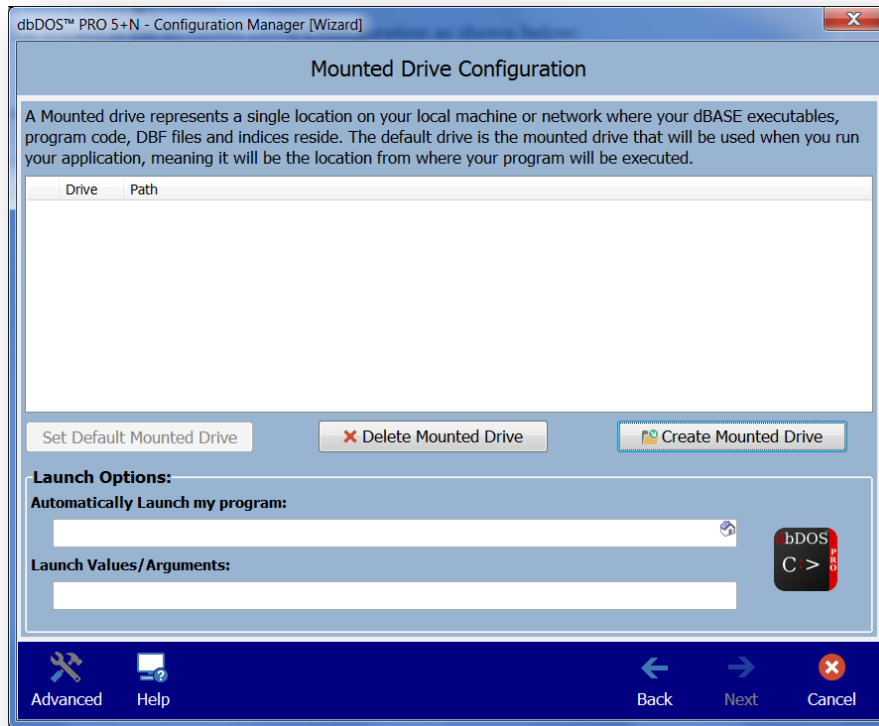
you to the first step in the Configuration Wizard and the Cancel button, which will take you back to the New Configuration screen.





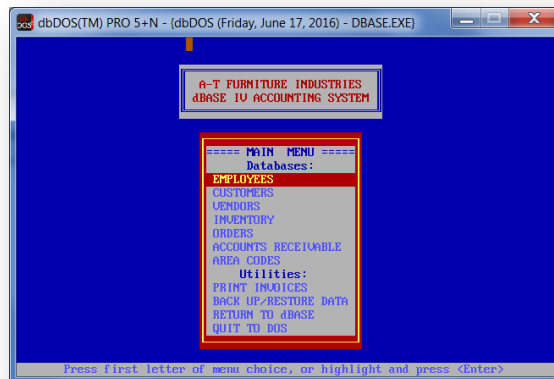
### Step 1: Mounted Drive Configuration:

The next step in the wizard is the Mounted Drive Configuration as shown below:



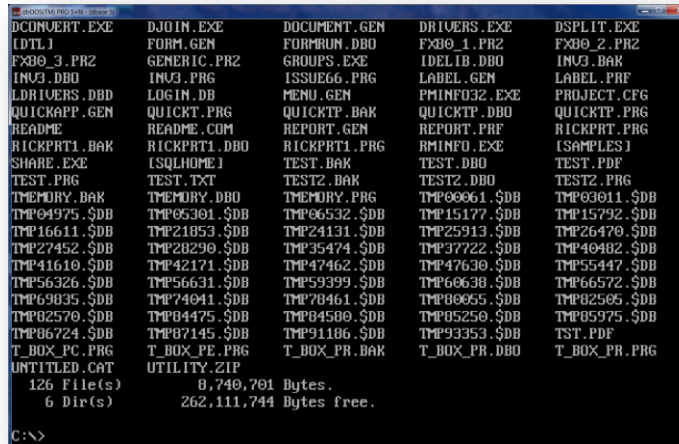
*Configuration Type: This is where you choose an Executable or a Command-line Prompt*

The above wizard page does many things. The main goal from this page is to define a configuration that calls a .BAT, .COM, or a .EXE file to be executed inside the dbDOS VM.





Or, the other option is to have a shortcut that takes the end-user to a command prompt:



## Step 2: Create a mounted drive

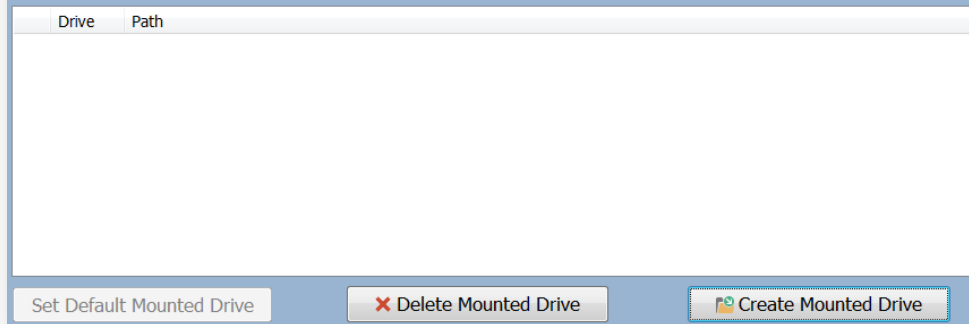
Depending on the information you put into the wizard page, it will determine if the configuration will be pointing to a DOS program or creating a configuration that takes you to a command prompt.

Mounted drives within dbDOS™ represent a location on either your local hard drive or a network mapped drive. Creating a Mounted Drive in dbDOS is the process of making a storage device on the host system, such as a hard drive, CD-ROM, or even a network drive, usable on the dbDOS VM system. You do not need to make every drive on your host system available to dbDOS. As an example, Microsoft Windows 7 would be the host system, the C: drive on Windows 7 would be the storage device you want to mount in dbDOS in order to make it available to the Virtual DOS machine.

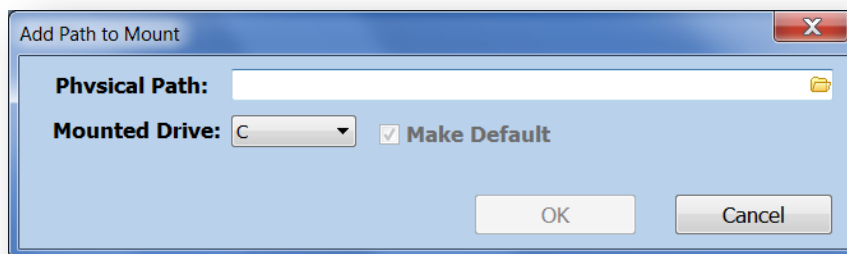
1. A Mounted drive represents a single location on your local machine or network where your dBASE executables, program code, DBF files, or indices reside.



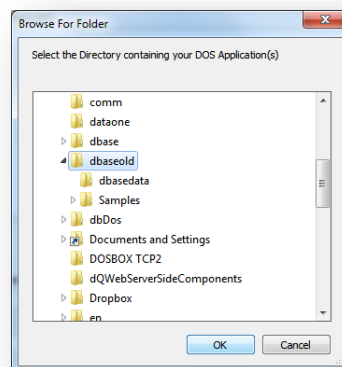
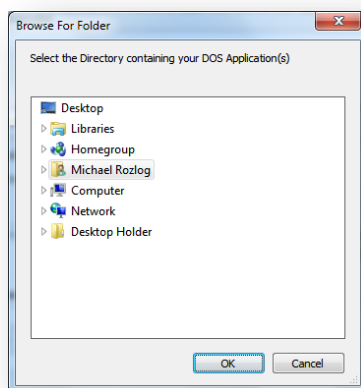
A Mounted drive represents a single location on your local machine or network where your dBASE executables, program code, DBF files and indices reside. The default drive is the mounted drive that will be used when you run your application, meaning it will be the location from where your program will be executed.



Clicking the Create Mounted Drive button will open the Path to Mount dialog:

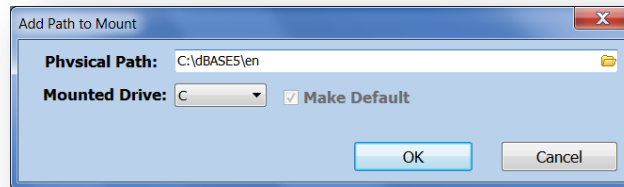


Clicking the Folder icon  will open the Browser for Folder dialog as shown below:

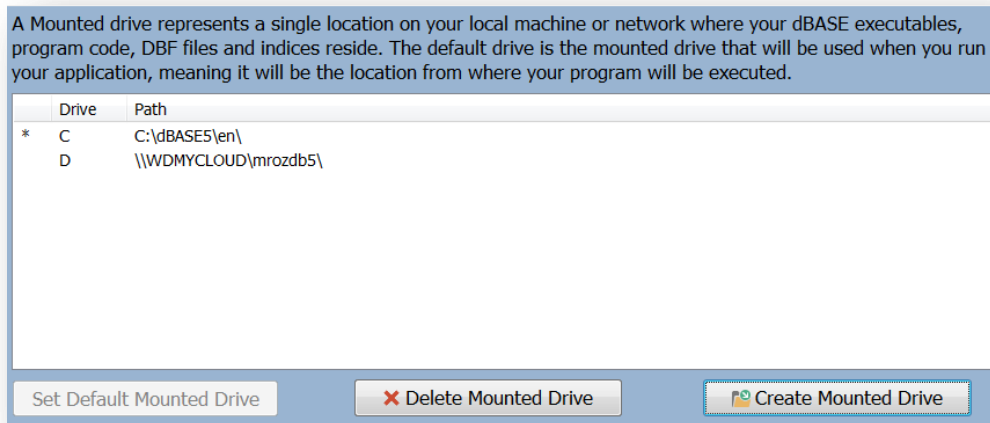




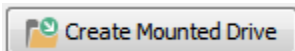
The above dialog shows that the C:\dbaseold path has been chosen and when you click the OK button is clicked, the following will be displayed:



The next option the end-user is to choose the Drive letter to represent the Physical Path from within dbDOS, for the above example a Mounted Drive: of C has been set as the default drive within dbDOS . Then press the OK when complete.



The dbDOS™ configuration now has defined a “C” drive in your dbDOS configuration and it points to the directory of C:\dbaseold\. From this point, you can choose to have the configuration run an Executable, COM, Bat or other file or start at the Mounted C:\ drive Command Prompt.

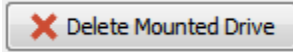


Press this button to create a new Mounted Drive. You can have multiple Mounted drives in dbDOS, just as you can have multiple drives on your local hard drive.

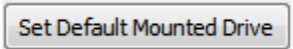
You can have up to 26 mounted drives and you can select exactly which drive letter (A-Z) that you want to use for each



location.



Pressing this button will delete a Mounted Drive.



Press this button to set a Mounted Drive as default. The default Mounted drive will be the location that dbDOS is set to as soon as you run your configured dbDOS shortcut (similar to the way that C:\ is the default drive in Windows).

The default drive is the mounted drive that will be used when you run your application, meaning it will be the location from where your program will be executed and by default, the directory structure in which the application code, databases and indices must reside in.


Any additional Mounted drives can be accessed within your dBASE DOS application (running in dbDOS) by using SET DIRECTORY TO "<mounted drive>" or by referencing the new Mounted drive when accessing files or folders under that directory in your code.

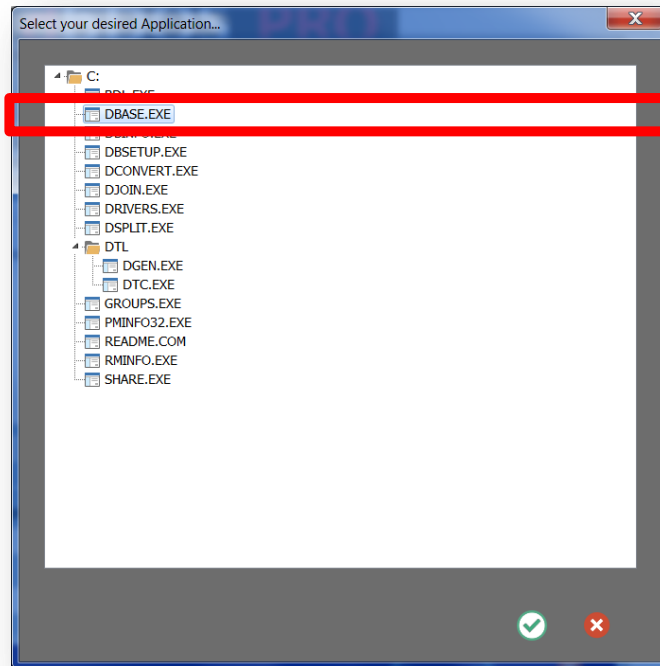
*Note:* (e.x. do D:\filename.prg-- where D is the newly mounted drive and filename.prg is a program in that directory).

### *Creating an Executable configuration:*

Once you have created a mounted drive, you can now set up the configuration to either run an Executable at startup or just go into a Command Line where you can then execute any exe or other runnable file by typing it in and hitting enter. In the following, the focus will be on generating a shortcut that runs an Executable at startup.



If you know the name of the program, you can type it into the Automatically Launch my program edit box. Alternatively, you can click the House  icon and it will display the valid executables available in the Default Mounted Drive as shown below.



*Select Application: this allows you to pick .bat, .com, or .exe*

Now the only programs that will be displayed are the valid ones of .bat, .com, or .exe. Again, if you want to override this setting you can type anything into the edit box. Once you select the program, for this example *do.exe* (in older versions of dBASE the end-users used to rename dbase.exe to do.exe to make working with the dot-prompt easier), you can then press the **OK** button to continue. If you decide not to select an executable, they can click the **Cancel** button and it will return you to the prior dialog.

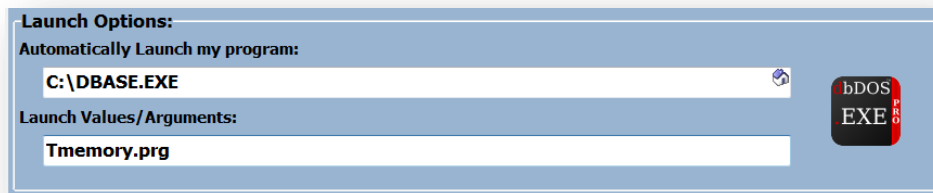


Notice a couple of things about the above portion of the dialog. The Automatically Launch my program edit box now has c:\do.exe and that the Icon to the right has changed to represent an



executable configuration. In addition, the Launch Values/Arguments: edit box is now editable.

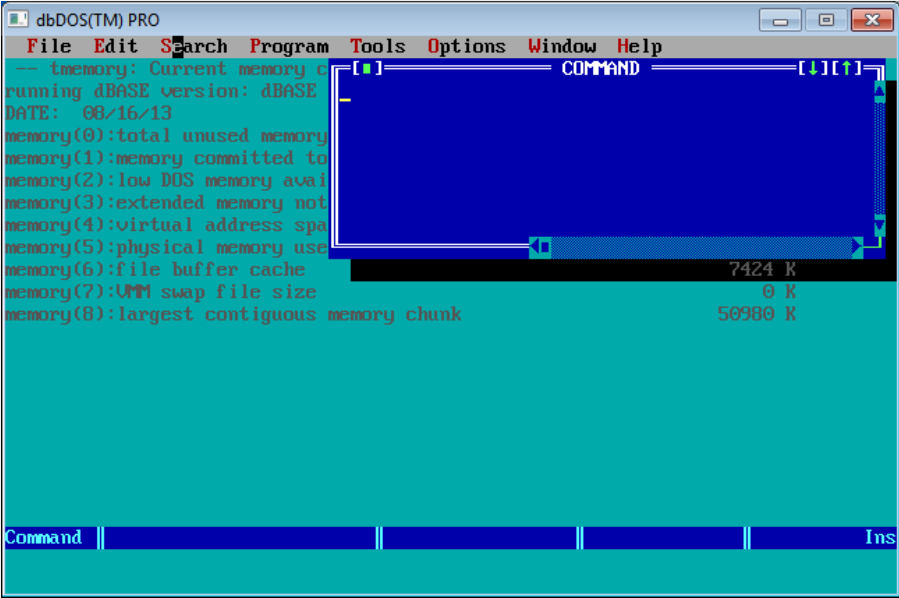
This is where you can add any additional launch options that may be needed. For example, many people want the Windows® shortcut to load up an initial program on launch. Therefore, adding *TMemory.prg* to the Launch Values/Arguments will start dBASE for DOS and also load the TMemory.prg when the shortcut is executed:



*Selected Application: Showing using the Launch Parameters*



Here is the example of how this would execute using dBASE V for DOS calling the TMemory.prg as a Launch Parameter:



*Example: Running dBASE V for DOS using a Launch Parameter*

When you are done setting both of the options, you can click the Next button to continue to the



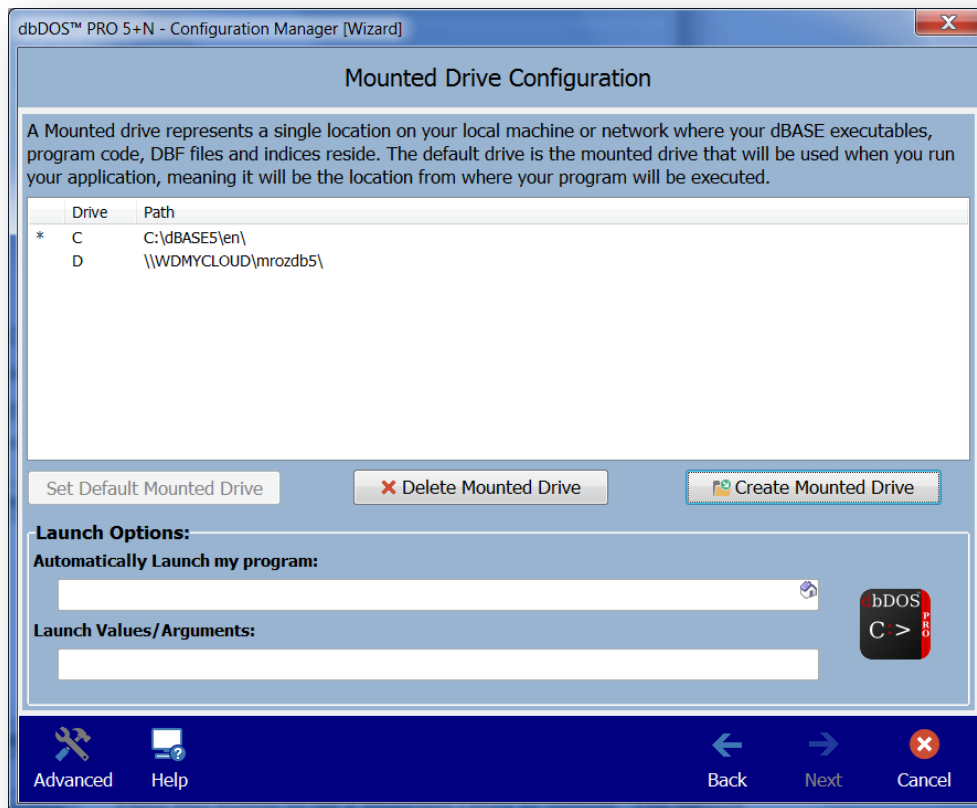
next wizard page.





### *Creating a Command Prompt:*

If you chose to create a configuration that simply starts a Command-prompt, it is very simple. Leave the 'Automatically Launch My Program' field blank then this dbDOS configuration will start in Command Window mode (with your default Mounted drive as the current directory).



### *Creating a Command-Line configuration*

Notice in the above dialog, the icon to the right of the Launch Options, it represents the



Command-Line configuration.

When you are done setting the directory, you

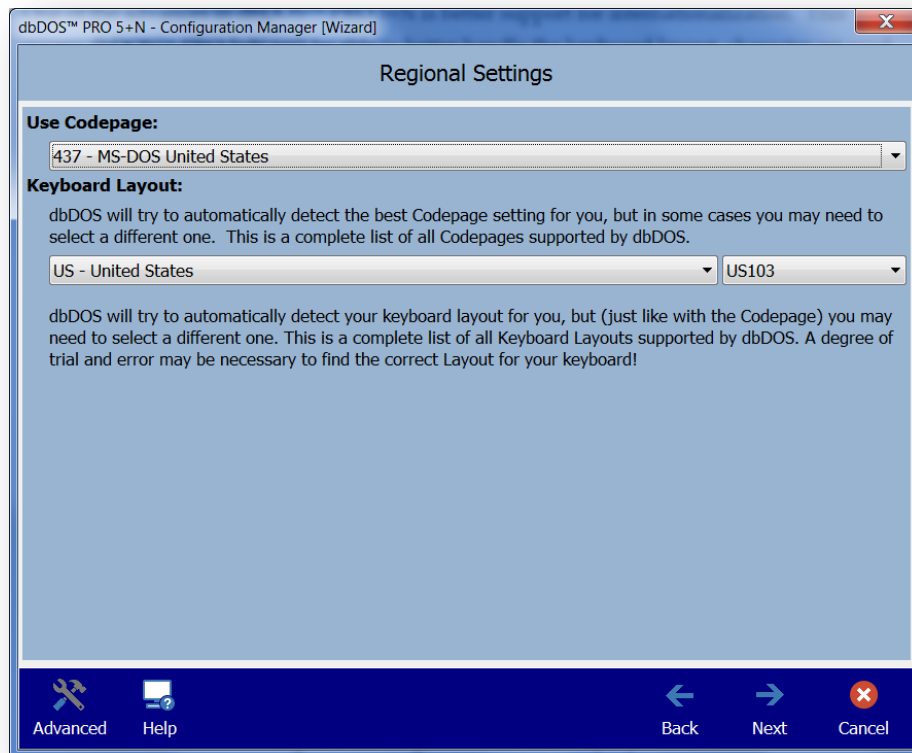


can click the Next button to continue to the next wizard page.



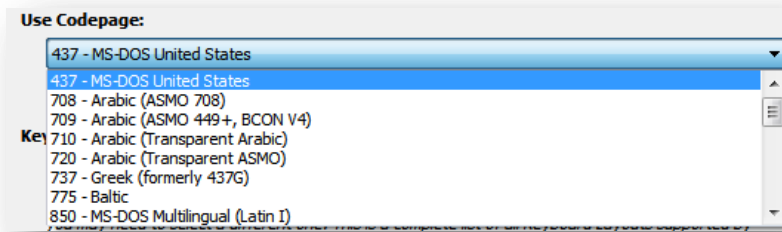
### Step 3: Regional Settings:

One of the advances in dbDOS™ PRO 5+N is better support for internationalization. This means dbDOS™ PRO 5+N will be able to better handle the keyboard layout, character set used, and the printer characters used. The following is the dialog that will be displayed:



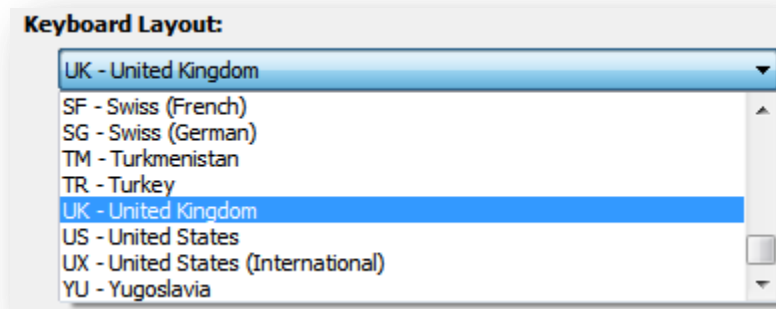
*Regional Settings: Base wizard displayed*

In the above wizard page, the Use Codepages will only show the valid Codepages on the machine.



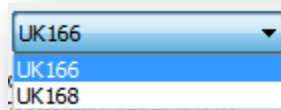
### Available Codepages on the current machine

Select the proper Codepage for your location. In this example 437 – MS-DOS United States is being used as the standard CodePage. Once that option has been selected, the Keyboard layout will be dictated from that selection. Only the valid Keyboard layouts will be displayed in the dropdown list box:



### Possible Keyboard layout countries under the Codepage

Normally you would pick US – United States, but let’s say, for example, the only option picked was the UK – United Kingdom. This will then cause only the proper keyboards supported by that Codepage as shown below:

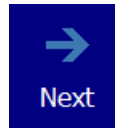


### Pick the proper Keyboard support



*NOTE: if you don't know which Codepage or Keyboard you are using, it is recommended that you use Codepage – 437, pick the US – United States, and US103 for the keyboard.*

When you are done selecting the Regional Settings, you can click the Next button to continue to

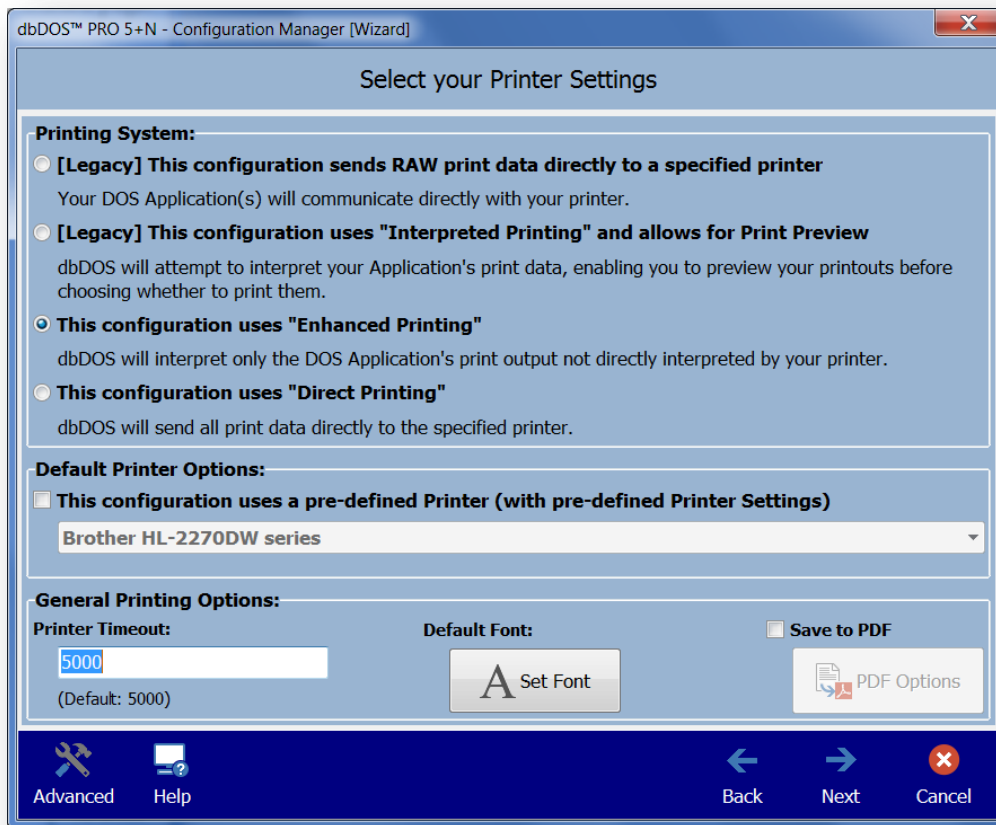


the next wizard page.



#### Step 4: Printer Settings:

Many advances have been made in the dbDOS™ PRO 5+N product around printing. The new printing interface allows you to change many more options than before. The following is the wizard page:



#### *Printer Settings: Standard wizard page*

Printing DOS based outputs has always been a challenge for dbDOS. Keep in mind that in many cases dbDOS is trying to print reports or output from 20 – 30 years ago on modern or new equipment (printers).

We now have five ways to print:

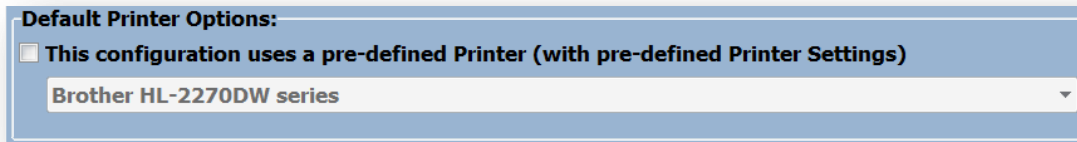
- **RAW (legacy)** – output stream from the DOS program goes directly to the printer. This is a legacy feature, and it is recommended that if you are having issues with printing that you go to the new enhanced printing.



- **NOTE:** RAW does not support the picking of a default printer.
- **Interpreted (legacy)** – Output stream from DOS program is generated and sent to a text preview window. This output type is for legacy reasons; if you are having print issues, it is recommended that you move towards the Enhanced print option. There are many limitations with Interpreted printing.
  - **NOTE:** While Interpreted can be helpful with the print preview functionality, additional features to strip leading pages, convert lf (linefeed) to cr (carriage return) and picking the font are extra capabilities to help generate better output. The only 2 print drivers recommended for Interpreted include ASCII.pr2 and GENERIC.pr2 which are included in the dbDOS install process.
- **Enhanced** – The best way to get printouts the way they used to print. This new feature uses a stripping process for the ASCII characters going into print channel. The new functionality strips any text decorations related to DOS and applies the Windows text decorations, thus giving a more respectable output format.
  - **NOTE:** Enhanced print is recommended to use any of the FX80\_1, 2, or 3.pr2 print drivers for the best results across multiple printer types, including HP.
- **Direct** – The new RAW approach. This is a hybrid approach that takes the best features of the RAW approach and applies the Enhanced as well. This should be the first choice if the Enhanced print setting does not work.
  - **NOTE:** The **Direct** option needs to have a printer selected at the time of selection. This means the configuration will be limited to that default printer. When selecting the **Direct** option please select a printer in the default printer section or it will default to the first item in the list.
- **PDF** – The new output to PDF. This option allows for both printing only to PDF or optionally printing to PDF and the selected Printer.
  - **NOTE:** PDF printing is only available in Enhanced and Interpreted print modes.

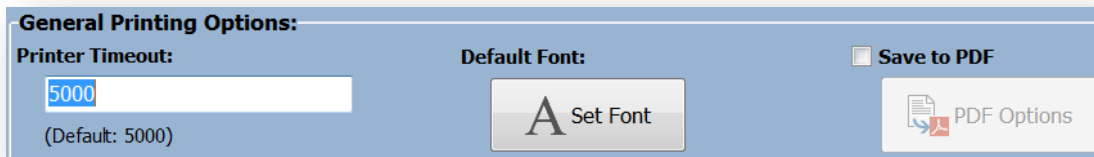


The long-term plan is that everybody will move towards the Enhanced approach. Both RAW and Interpreted will be supported for the foreseeable future, but in time we hope that they can be removed from the option set, thus making the printing options much easier to use and work with.



### *Pre-defined Printer settings*

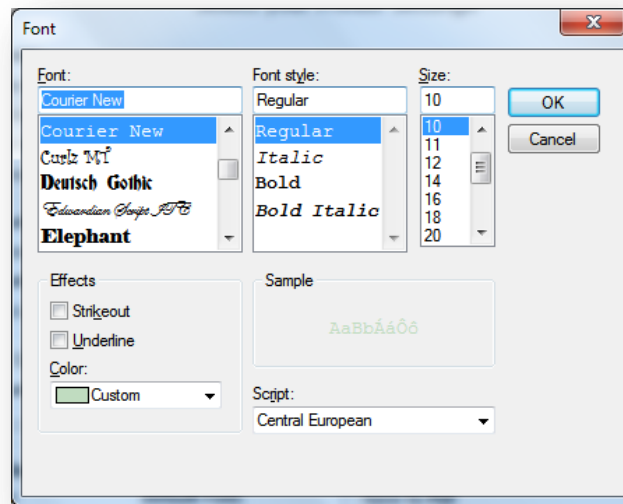
A few items to know about concerning setting a Default Printer. First, you cannot set a default printer for the RAW options. Interpreted and Enhanced can have a default printer set for each, and as noted above, the Direct print option REQUIRES you to pick a default printer when selecting that option.



### *General Printing Options: set the timeout, Font, and PDF settings*

The above is used to set the printer timeout. dbDOS is set to 5 seconds by default, but this setting can be tweaked by you as needed. Every 1000 represents 1 second of actual time.

The new Default Font allows the users to set the font for both the Enhanced and Interpreted print modes. The user is allowed to choose any font available to them; however, it is recommended that the user stick with the following fonts:



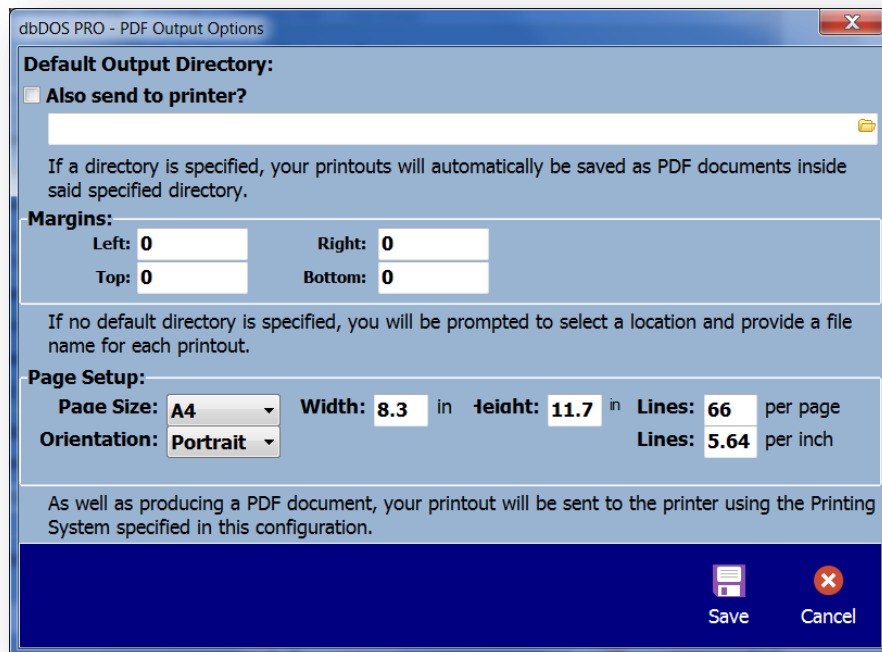
- Courier (default) Regular (font style) and 10 (font size)
- Times Roman – Regular, (font style) and 10 (font size)
- Helvetia – Regular, (font style) and 10 (font size)

**NOTE:** The size of the font can drastically change the appearance of the printout. If you want to have ELITE (12 characters per inch) or CONDENSED (16.66 characters per inch) you may set the size here if these items are not set in the dBASE program. Again, these features give the end-user ultimate control of the output.





The last option is the Save to PDF; this is only available in either Enhanced or the legacy Interpreted print modes. The options for PDF are shown below:



### *PDF Output Options*

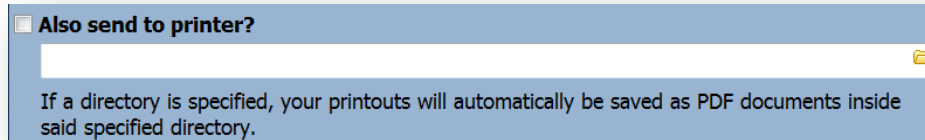
The new PDF print system has many new features that many people will be very excited about and want to know the details. The first is the Default Output Directory. If an output directory is inserted, the PDF will automatically be printed to that directory **WITHOUT** any user interaction. If there is **NO** default output directory, the user will be asked each time to pick the location and name the PDF file. Keep in mind that the default name when a directory is used is the name of the configuration and a time and date stamp with the .pdf extension.

Remember that for PDF there is no printer. It is recommended that you select the proper size for your printing. dbDOS Config tries to help by giving option for setting the page size (A4, Letter, Legal), Orientation (Portrait or Landscape), and setting the number of lines per page or lines per inch. A custom size can be selected and the user can define the page size and structure.

**NOTE:** For U.S. Letter there are 60, 66, or 78 lines in PICA, ELITE, and CONDENSED respectively. There are 45 lines with printing Landscape with U.S. Letter paper for Pica.



The user can also set the margins for the paper, currently the margins are set to 0.0.



### *Physical Print with PDF generation*

In the above image, notice that you can select the “Also send to printer” option; this will send the output to the PDF generator and also to the physical printer!

**NOTE:** Please keep in mind that if this option is not set and output to PDF is selected that NO physical print will occur. You must select the “Also send to printer” option if you want a physical print, regardless if you have selected a default printer for the configuration.

After selecting your options, you can either Save or Cancel from the operation. If you press the Cancel button all changes will be lost!

When you are done selecting the Printer Settings, you can click the Next button to continue to

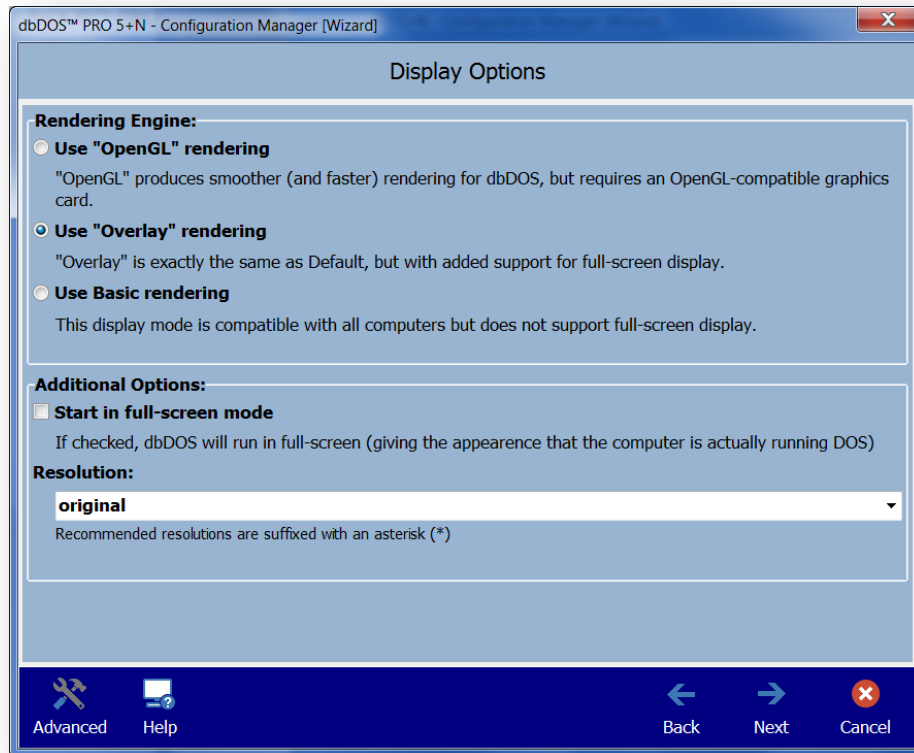
the next wizard page.





### Step 5: Display options:

dbDOS™ PRO 5+N offers many new optimizations in the Display Options dialog. This dialog will help you with various hardware settings to determine the best, most useful settings for the hardware when it comes to drawing the screen.

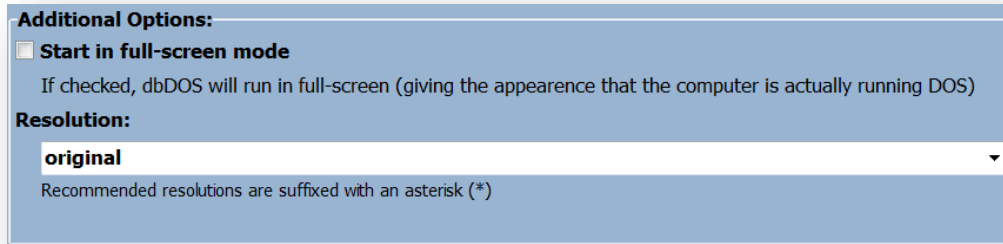


*Display Options – this will help draw the screen in Windows and full-screen mode*

- |                                |   |
|--------------------------------|---|
| <b>Use “OpenGL” rendering</b>  | The last option is OpenGL and ironically, it is the fastest and most supported, but it does require newer hardware because the processing is delegated to the Graphics Processor Unit (GPU) and it does support full-screen mode. |
| <b>Use “Overlay” rendering</b> | Overlay is slightly more optimized but still has good backward hardware compatibility. This is a little faster than the Basic drawing and this setting does support full-screen mode.   |
| <b>Use Basic rendering</b>     | Basic rendering is usually the most compatible with most hardware, however, Basic does not support full-screen mode on most hardware. This setting should be used when the other two  |



(2) options do not work. (*Basic*) is the default



In the Additional Options section, it gives you two options if and only if the “Overlay” or the “OpenGL” options are picked. Only “Overlay” and “OpenGL” can set the configuration to start in full-screen mode. Select the Start in full-screen mode option and when the configuration is executed, the windows will be full-screen and the underlying Windows® desktop will not be seen.

**Alt-Enter** – will take the dbDOS window from Full-Screen to Windows screen. If it is in a windowed setting pressing the Alt-Enter will take it back to full screen. Hitting the Alt-Enter again will put it back in to a windowed setting.

**NOTE:** *Moving from full-screen mode to window, and window to full screen mode may not always work with different graphics cards. This mode is supported but due to the differences in the way graphics cards work, the presentation may become unstable.*



The second option besides full-screen is to pick the size of the screen you may want to use. dbDOS™ PRO 5+N reads your hardware and shows only the valid options that you may pick. The default size is 640x480; however, you can pick the size you would like to start in:



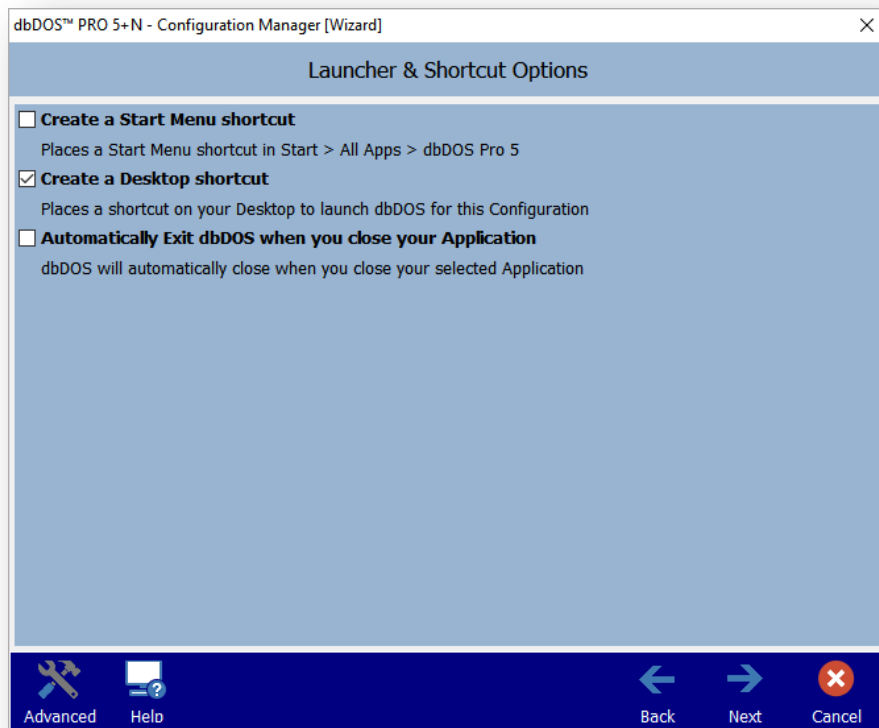
*Note: Picking a size from the Resolution dropdown does not mean the screen will look good. This option scales the size of the screen to the sized picked. Some sizes may look as good as the default and some may look much worse. This is a trial and error setting, and it depends on your hardware, screen size, and application being displayed.*

Now it is also possible to manually enter a custom resolution for the best display. Keep in mind that the best resolutions are based on the 4:3 aspect ratio in a 25x80 screen. That means that a multiple of 320x200 will offer a better picture. Therefore setting a 960x600 would maintain that 4:3 ratio and give a fairly clean representation of the DOS screen. Also, keep in mind that if you use the advance display options for 43 or 50 lines, then the aspect ratio does change so the resolution picked may have to be based on that as well. Using at 43/50 lines, give an 800x600, or a multiple of that which would be 1600x1200 for a multiple in-between.



### Step 6: Launcher & Shortcut Options:

These are additional options that can be set with the configuration to make the product run as desired. None of the following options are mandatory, but they can make your experience better.



*Launcher & Shortcut Options: Pick the ones you think will give the best experience*

#### **Create a Start Menu shortcut**

This option will add a shortcut to the Windows shortcut menu.

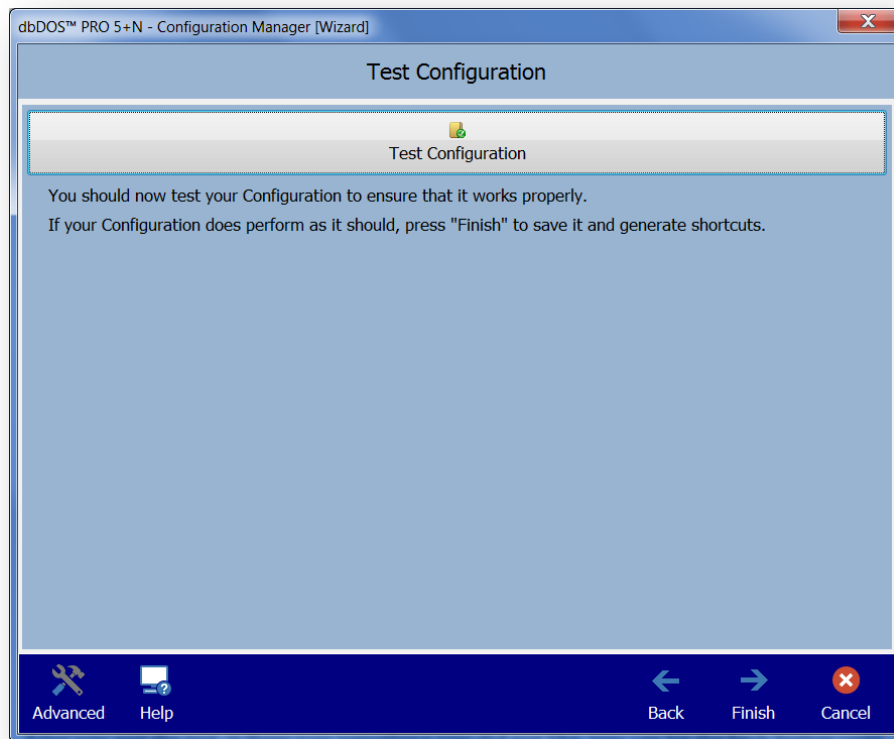
#### **Create a Desktop shortcut**

This option will add a shortcut to the Windows Desktop and is selected by default. You must de-select to remove this option.



### Step 7: Test Configuration:

The Test Configuration option is just that, after you have set all the options for the configuration, the program now gives you an opportunity to test to see if you like it. Press the Test Configuration button and the configuration will execute.



*Test Configuration: Press the button to test*

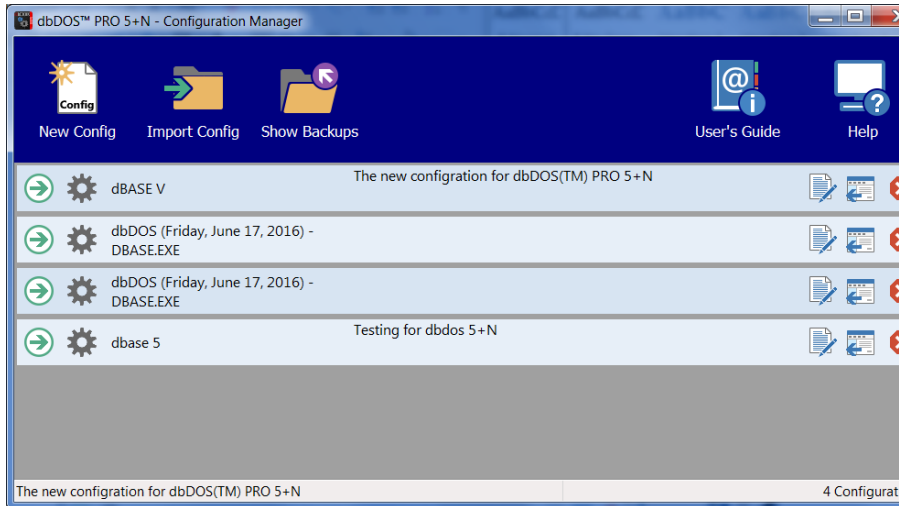
After you exit the test, if there was something you did not like, you can hit the back button until you reach the page containing the setting you wish to change. You can then make a change and retest as needed. You can then make a change and retest as needed. If everything works as

defined, click the Finish button  to complete the wizard.



**Returns to Main page:**

After the wizard is complete, you will be taken back to the main page. On the main screen, you should see the new configuration you created in the prior wizard steps as shown below:



*Configuration Manager: Showing the new configuration added*

The shortcut created on the Windows® desktop



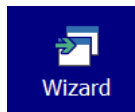


### Configuration Wizard Footer-bar explained:

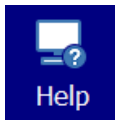
The bottom button bar, called the Footer-bar is where you control the process of the Configuration wizard.



This takes you to the single-page Advanced configuration manager. This button will be replaced with the Wizard button below when in the Advanced configuration manager.



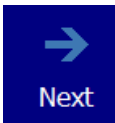
This takes you to the Wizard configuration. This button will be replaced with the Advanced button above when in the Advanced configuration manager.



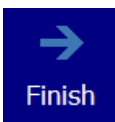
Clicking Help button will start the embedded how-to video on the wizard. This will open in the machines pre-defined media viewer, most likely a browser.



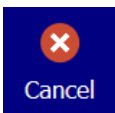
This button, if it is enabled, will take you back one step in the wizard.



This button, if it is enabled, will take you one step forward in the wizard



The Finish button will appear instead of the Next button on the final stage of the wizard. Pressing the Finished button will complete the wizard interface.



This button will return you back to the main screen, where you can create a new configuration, import a configuration, refresh a configuration, or exit the dbDOS Config program.

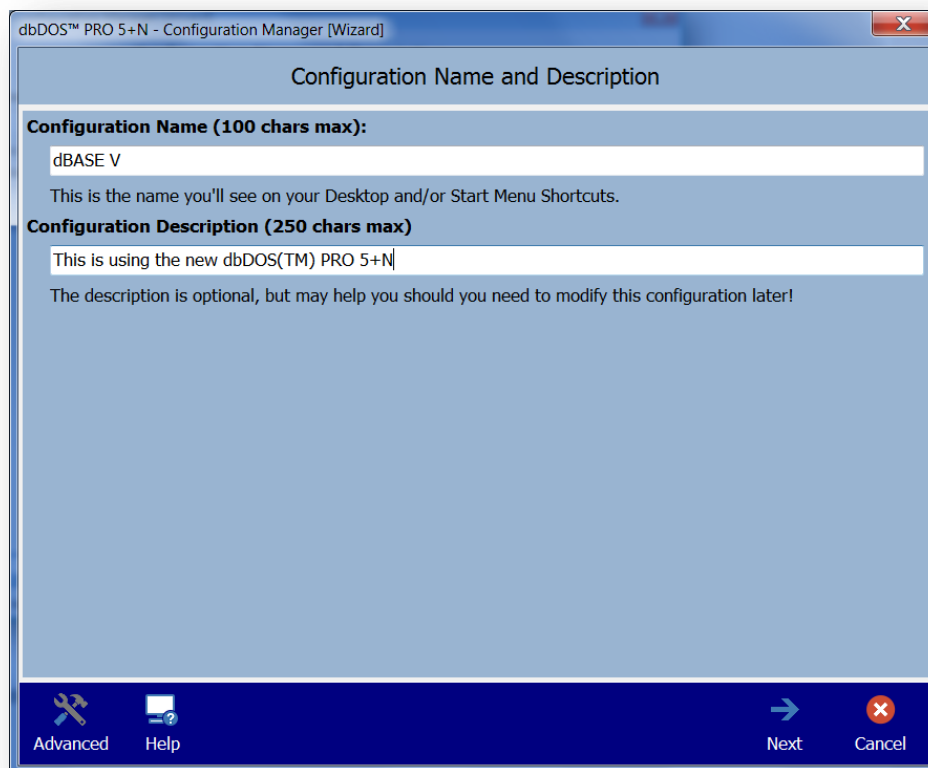


### **Advanced Approach to building a dbDOS™ Windows® shortcut:**

The dbDOS\_Config.exe Advanced interface is a very straightforward and easy to use single-page interface.

We added the wizard to help more novice end-users in a systematic fashion to create configurations.

However, if you understand the options and settings for a configuration, the advanced single-page interface is very fast and as easy to use as the wizard. It also includes various additional items that can be set for greater flexibility and support. However, just like in the Wizard approach, the first page you will be shown is the Main configuration Manager page.

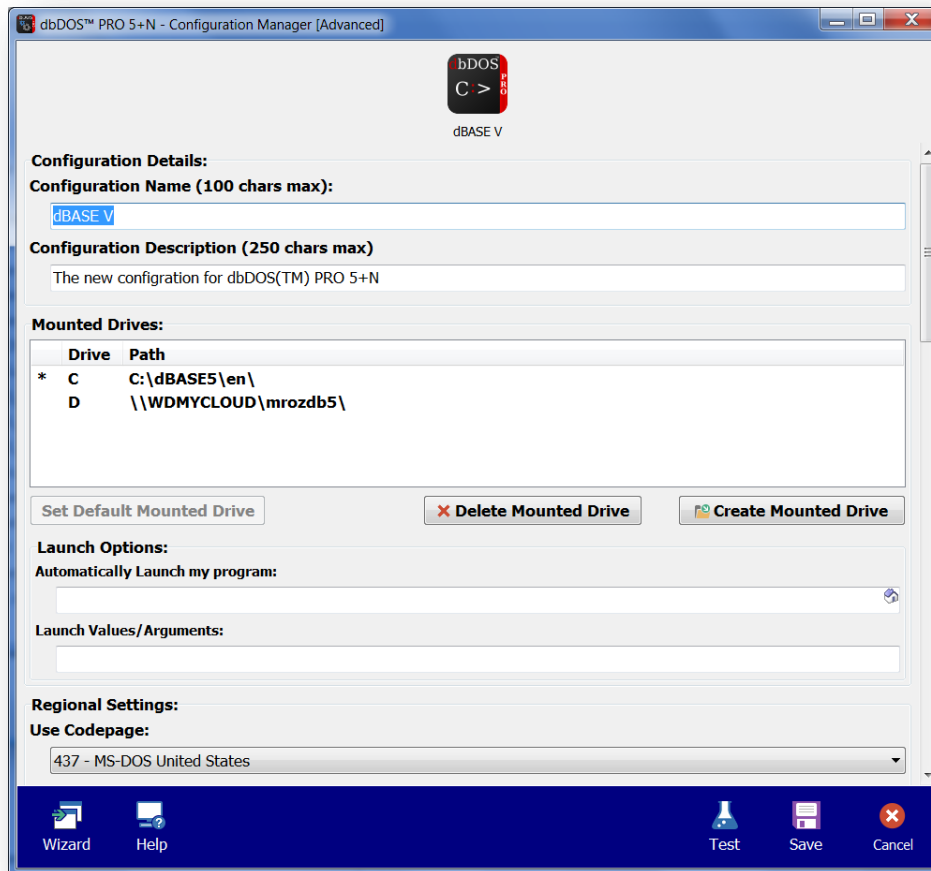


*First Operation: Always have to define the name and description of the Configuration*



## Configuration Manager Advanced

As stated above, all of the options are available on this single page. The following section of this guide reviews the available options, and how to configure them. The advanced manager is built of speed, not for esthetics as the wizard is created and used. The advanced manager is base gray color and very little “eye-candy.”



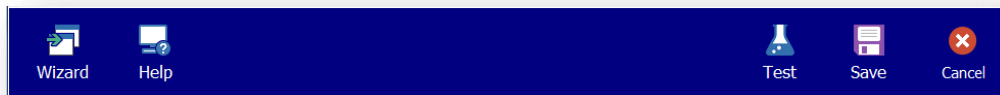
### *Configuration Manager [Advanced] – Single page interface*

There are four (4) sections to this interface and they include:

1. **Top panel** – it is responsible for picking the product you want to configure. It also is used to represent the shortcut icon on the desktop and an example of what the screen may look like. These things will change with the options selected.



2. **Configuration options and settings** – These options are on a scroll pane so you can set all the needed options and settings on one single page. For a review of those options and settings go to the Configuration Settings and Options section below.
3. **Footer-bar** – This is where the four (4) basic options come into play. You can go to the wizard, Test Configuration, Save Configuration, or Cancel out of the configuration wizard.



*Footer-bar – this is the button bar of options.*

### Configuration Settings and Options:

This is really the heart of the single-page interface. This allows you to set any of the options that are required to create a configuration for dbDOS™ 1.5.

**NOTE:** *If you used dbDOS™ 1.0 and created configuration using that version, those configurations will not work in version 1.5 of dbDOS, dbDOS PRO 2 and dbDOS PRO 5+N. Please delete and recreate your configurations, as that will ensure proper execution of the dBASE for DOS products.*

The following will break down each section of the Settings and Options:



## Change Area 1: Configuration Details:

Configuration Details:  
Configuration Name (100 chars max):  
New config  
Configuration Description (250 chars max):  
This is a new configuration

*Configuration Details – put in the name of the configuration and a description*

The above section will be filled in by you in the first page of the Configuration Manager, where you are asked to input the Name of the configuration and the Description. However, it should be pointed out that you can change these values at any time on this screen.

## Change Area 2: Mounted Drives

Drive	Path
* C	C:\dbase\
D	C:\dbase4\

Set Default Mounted Drive    X Delete Mounted Drive    Create Mounted Drive

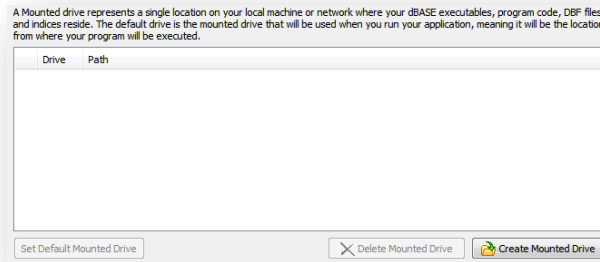
*Mount Drives – Pick a Mounted Drive*

Depending on the type of configuration you are creating, you will have one of two possible Wizards screens displayed.

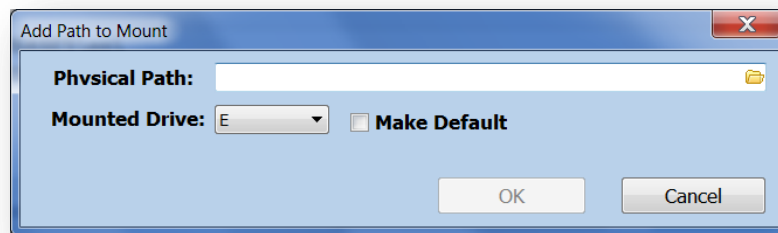
Mounted drives represent a location on either your local hard drive or a network mapped drive. Creating a Mounted Drive in dbDOS is the process of making a storage device on the host system, such as a hard drive, CD-ROM, or even a network drive, usable on the dbDOS VM. You do not need to make every drive on your host system available to dbDOS. As an example, Microsoft Windows 7 would be the host system, the C: drive on Windows 7 would be the storage device you want to mount in dbDOS in order to make it available to the dbDOS VM for DOS.



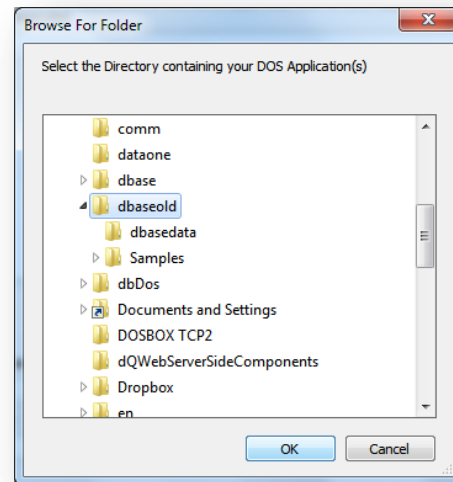
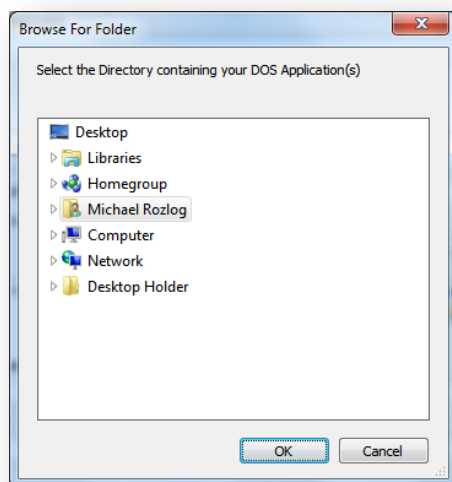
1. A Mounted drive represents a single location on your local machine or network where your dBASE executables, program code, DBF files, or indices reside.



Clicking the Create Mounted Drive button will open up the Add Path to Mount dialog:

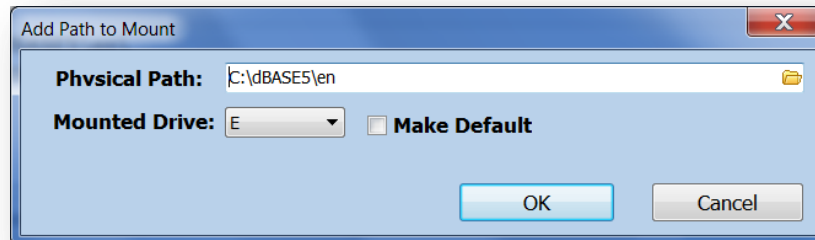


Clicking the Folder icon  will open the Browser for Folder dialog as shown below:

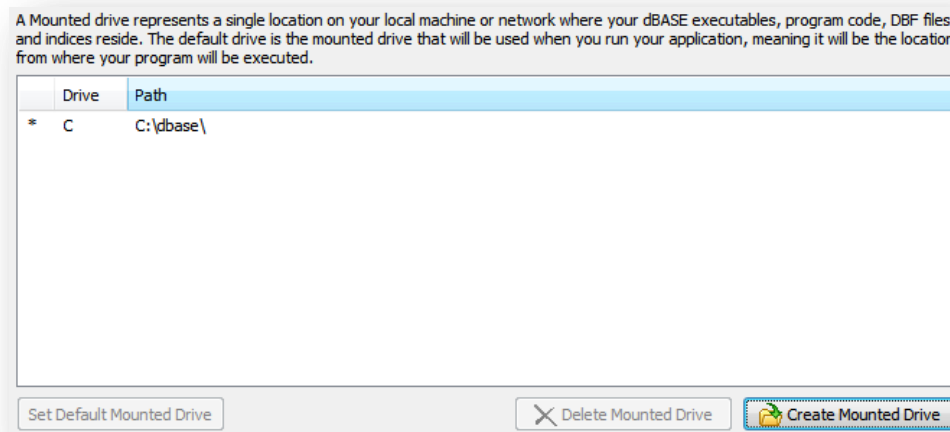




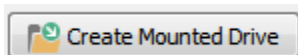
The above dialog shows that the C:\dbasegold path has been chosen and when you click OK, the following will be displayed:



The next option allows you to choose the Drive letter to represent the Physical Path within dbDOS, for the above example a Mounted Drive: of C is used to represent “c:\dbasegold”. Click OK when complete.



The dbDOS™ configuration now has defined a Mounted “C” drive which points to the directory of C:\dbaseold\. From this point, you can define if the configuration start an Executable or start a Command Prompt.



Press this button to create a new Mounted Drive. You can have multiple Mounted drives in dbDOS, just as you can have multiple drives on your local hard drive.

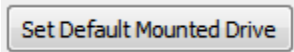
You can have up to 26 mounted drives and you can select exactly which drive letter (A-Z) that you want to use for each



location.



Pressing this button will delete a Mounted Drive.



Press this button to set a Mounted Drive as default. The default Mounted drive will be the location that dbDOS is set to as soon as you run your configured dbDOS shortcut (similar to the way that C:\ is the default drive in Windows).

The default drive is the mounted drive that will be used when you run your application, meaning it will be the location from where your program will be executed and by default, the directory structure in which the application code, databases and indices must reside in.

Any additional Mounted drives can be accessed within your dBASE DOS application (running in dbDOS) by using SET DIRECTORY TO "<mounted drive>" or by referencing the new Mounted drive when accessing files or folders under that directory in your code.

*Note:* (e.x. do D:\filename.prg-- where D is the newly mounted drive and filename.prg is a program in that directory).

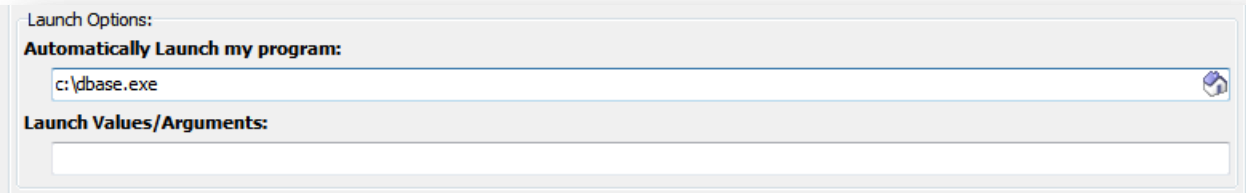
Now proceed to the next section of the Create Mounted Drive dialog where you can define the type of configuration you want, either starting dbDOS with an Executable or just with a Command-Line type.




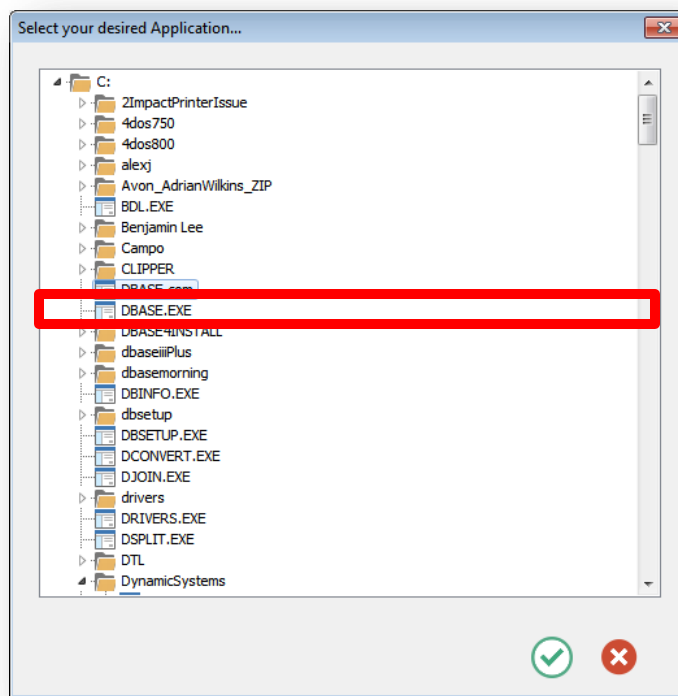


**Creating an Executable configuration:**

In the following, the focus will be on generating an Executable type.



If you know the name of the program, you can type it into the Automatically Launch my program edit box. Alternatively, you can click the House  icon and it will display the valid executables available in the Default Mounted Drive as shown below.

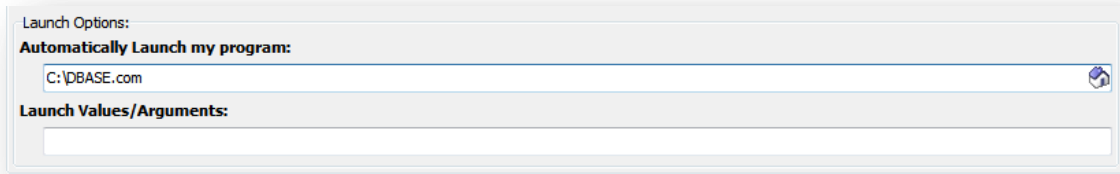


**Select Application:** this allows you to pick .bat, .com, or .exe

Now the only programs that will be displayed are the valid ones of .bat, .com, or .exe. Again, if you want to override this setting you can type anything into the edit box. Once you select the program, for this example do.exe (in older versions of dBASE the end-users used to rename



dbase.exe to do.exe to make working with the dot-prompt easier), you can then press the OK button to continue. If you decide not to select an executable, they can click the Cancel button and it will return you to the prior dialog.

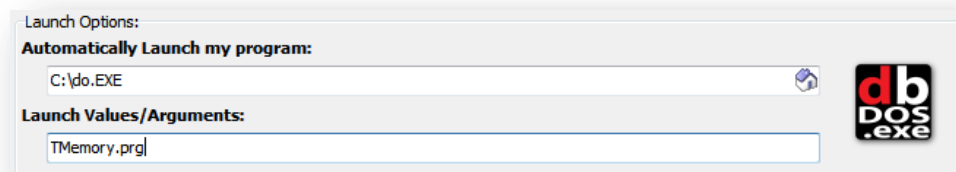


Notice a couple of things about the above changed portion of the dialog. The Automatically Launch my program edit box now has c:\do.exe and that the Icon to the right has changed to



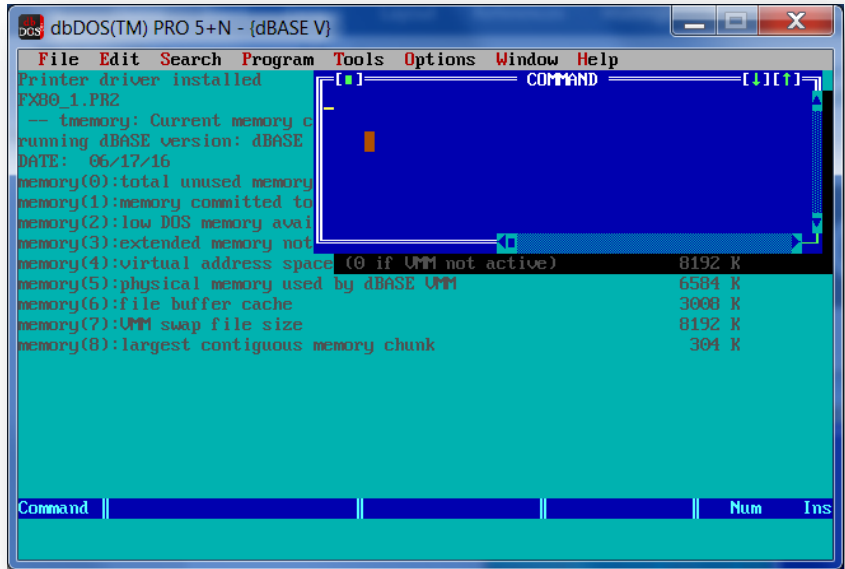
represent an executable configuration. In addition, the Launch Values/Arguments: edit box is now editable.

This is where you can add any additional launch options that may be needed. For example, many people want the Windows® shortcut to load up an initial program on launch. Therefore, Adding **TMemory.prg** to the “Launch Values/Arguments” edit box will start dBASE for DOS (the do.exe program) and also load the TMemory.prg when the shortcut is executed:



### Selected Application: Showing using the Launch Parameters

Here is the example of how this would execute using dBASE V for DOS calling the TMemory.prg as a Launch Parameter:

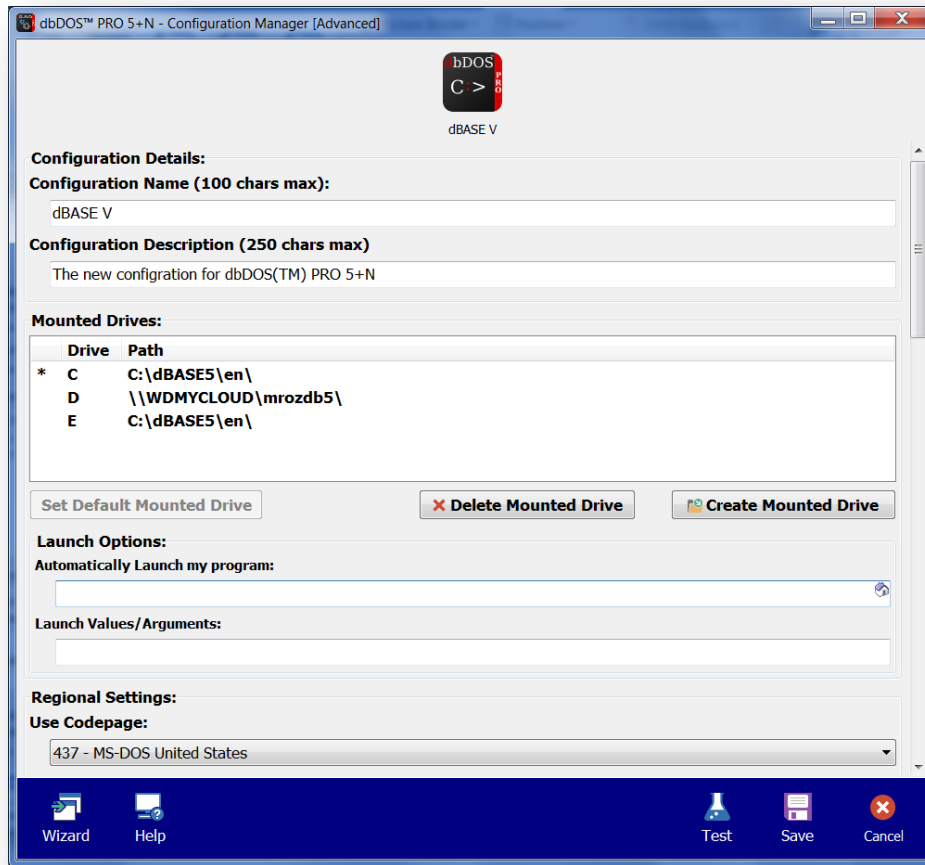


*Example: Running dBASE V for DOS using a Launch Parameter*

**Creating a Command Prompt:**

If you chose to create a Command-prompt configuration, it is very simple. If you leave, the 'Automatically Launch My Program' field blank then this dbDOS configuration will start in Command Window mode (with your default Mounted drive as the current directory).

# dbDOS PRO™



## *Creating a Command-Line configuration*

Notice in the above dialog, the icon to the right of the Launch Options, it represents the

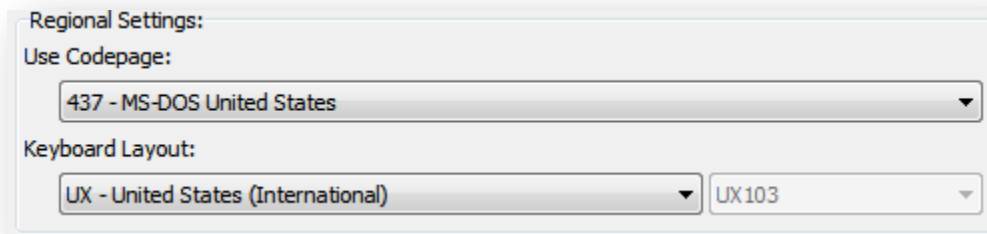


Command-Line configuration.



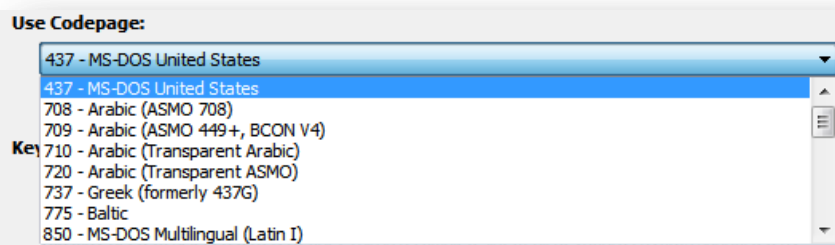
### Change Area 3: Regional Settings:

One of the advances in dbDOS™ PRO 5+N is better support for internationalization. This means dbDOS™ PRO 5+N will be able to better handle the keyboard layout, character set used, and the printer characters used. The following is the dialog that will be displayed:



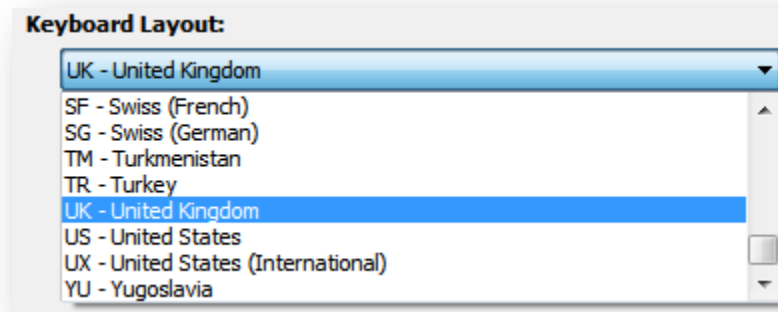
*Regional Settings: Base wizard displayed*

In the above area, the “Use Codepages” option will only show the valid Codepages on the machine.



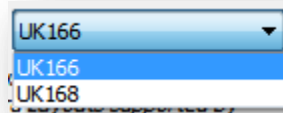
*Available Codepages on the current machine*

Select the proper Codepage for the end-users location. In this example 437 – MS-DOS United States is being used as the standard CodePage. Once that option has been selected, the Keyboard layout will be dictated from that selection. Only the valid Keyboard layouts will be displayed in the dropdown list box:



### *Possible Keyboard layout countries under the Codepage*

As for this example, normally the end-user would pick US – United States, but in this example, the only option picked was the UK – United Kingdom. This will then cause only the proper keyboards supported by that Codepage to be available, as shown below:



### *Pick the proper Keyboard support*

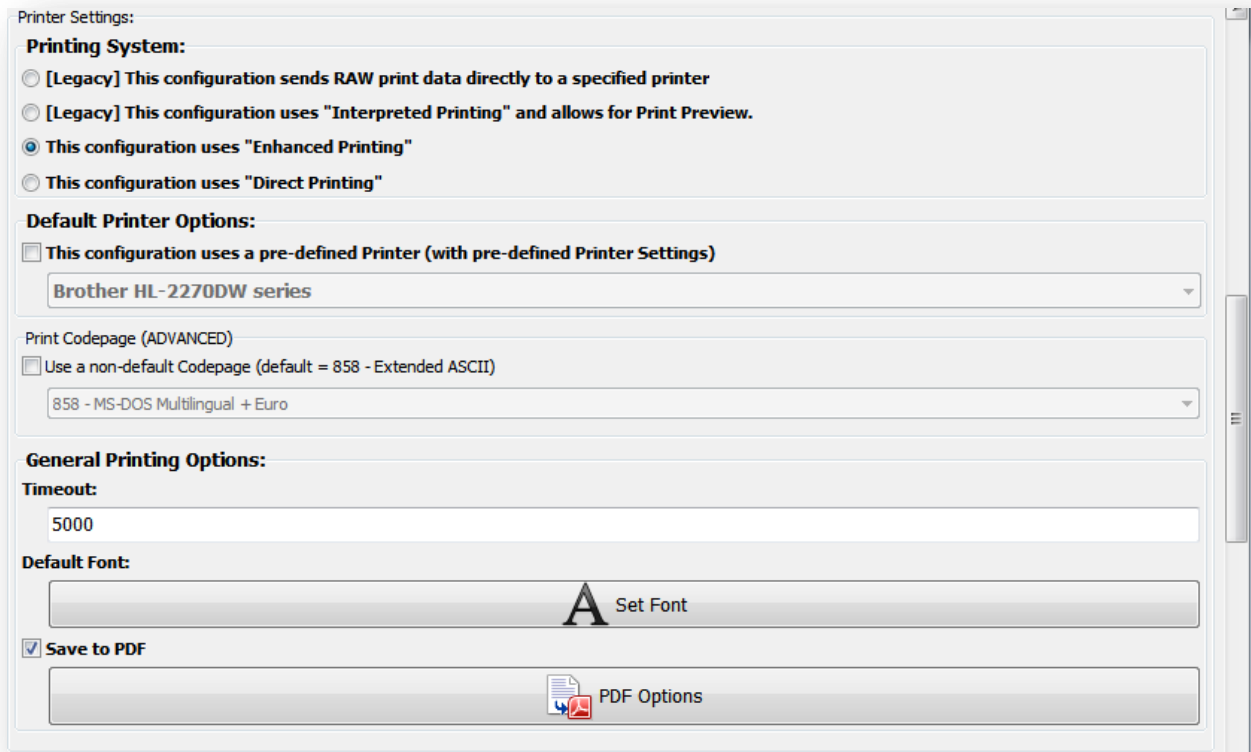
**NOTE:** *if you don't know which Codepage or Keyboard you are using, it is recommended that you use Codepage – 437, pick the US – United States, and US103 for the keyboard.*

When you are done selecting the Regional Settings, you can move down to the next areas of the single page interface.



#### Change Area 4: Printer Settings:

Many advances have been made in the dbDOS™ PRO 5+N product around printing. The new printing interface allows you to decide many more options than before.



#### *Printer Settings: Standard wizard page*

**NOTE:** *In the single page interface, you may have to scroll down to see all of the options on the scroll pane. Click the scroll bar and pull down with the mouse.*

Printing DOS based outputs has always been a challenge for dbDOS. Keep in mind that in many cases dbDOS is trying to print reports or output from 20 – 30 years ago on modern or new equipment (printers).

We now have five ways to print:

- **RAW (legacy)** – output stream from the DOS program goes directly to the printer. This is a legacy feature, and it is recommended that if you are having issues with printing



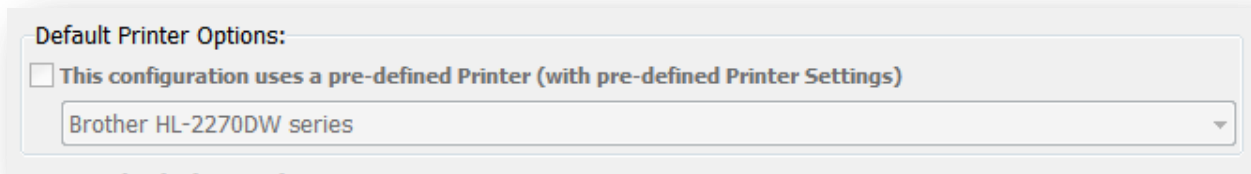
that you go to the new enhanced printing.

- **NOTE:** RAW does not support the picking of a default printer.
- **Interpreted (legacy)** – Output stream from DOS program is generated and sent to a text preview window. This output type is for legacy reasons; if you are having print issues, it is recommended that you move towards the Enhanced print option. There are many limitations with Interpreted printing.
  - **NOTE:** While Interpreted can be helpful with the print preview functionality, additional features to strip leading pages, convert lf (linefeed) to cr (carriage return) and picking the font are extra capabilities to help generate better output. The only 2 print drivers recommended for Interpreted include ASCII.pr2 and GENERIC.pr2 which are included in the dbDOS install process.
- **Enhanced** – The best way to get printouts the way they used to print. This new feature uses a stripping process for the ASCII characters going into print channel. The new functionality strips any text decorations related to DOS and applies the Windows text decorations, thus give a more respectable output format.
  - **NOTE:** Enhanced print is recommended to use any of the FX80\_1, 2, or 3.pr2 print drivers for the best results across multiple printer types, including HP.
- **Direct** – The new RAW approach. This is a hybrid approach that takes the best features of the RAW approach and applies the Enhanced as well. This should be the first choice if the Enhanced print setting does not work.
  - **NOTE:** The **Direct** option needs to have a printer selected at the time of selection. This means the configuration will be limited to that default printer. When selecting the **Direct** option please select a printer in the default printer section or it will default to the first item in the list.
- **PDF** – The new output to PDF. This option allows for both printing only to PDF or optionally printing to PDF and the selected Printer.
  - **NOTE:** PDF printing is only available in Enhanced and Interpreted print modes.



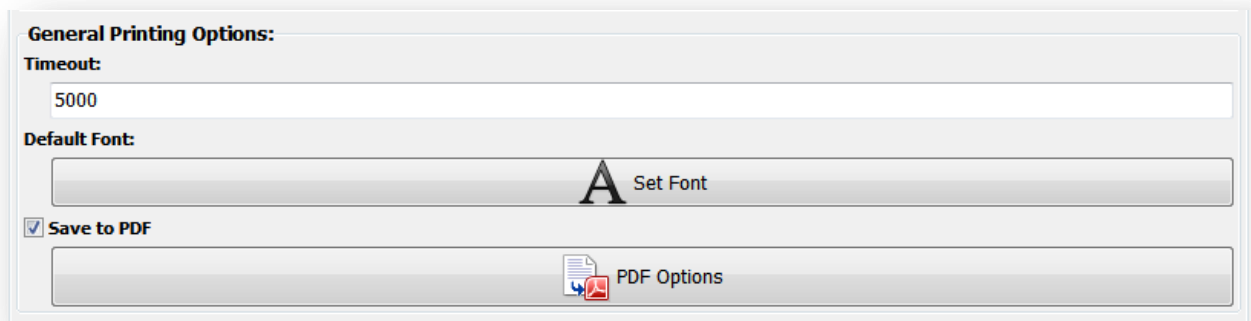


The long-term plan is that everybody will move towards the Enhanced approach. Both RAW and Interpreted will be supported for the foreseeable future, but in time we hope that they can be removed from the option set, thus making the printing options much easier to use and work with.



### *Pre-defined Printer settings*

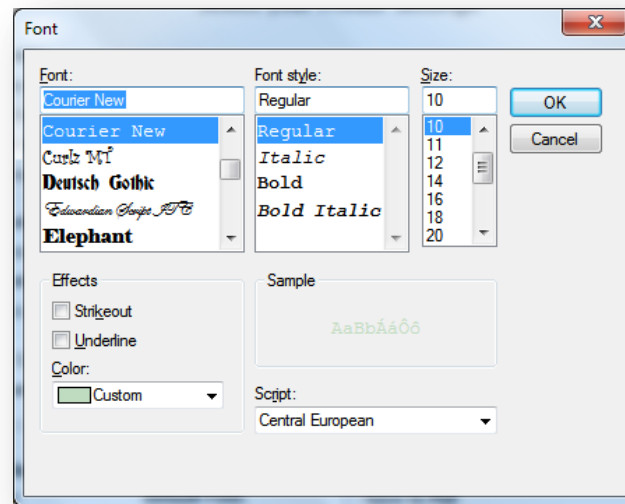
A few items to know about concerning setting a Default Printer. First, you cannot set a default printer for the RAW options. Interpreted and Enhanced can have a default printer set for each, and as noted above, the Direct print option REQUIRES you to pick a default printer when selecting that option.



### *General Printing Options: set the timeout, Font, and PDF settings*

The above is used to set the printer timeout. dbDOS is set to 5 seconds by default, but this setting can be tweaked by you as needed. Every 1000 represents 1 second of actual time.

The new Default Font allows the users to set the font for both the Enhanced and Interpreted print modes. The user is allowed to choose any font available to them; however, it is recommended that the user stick with the following fonts:

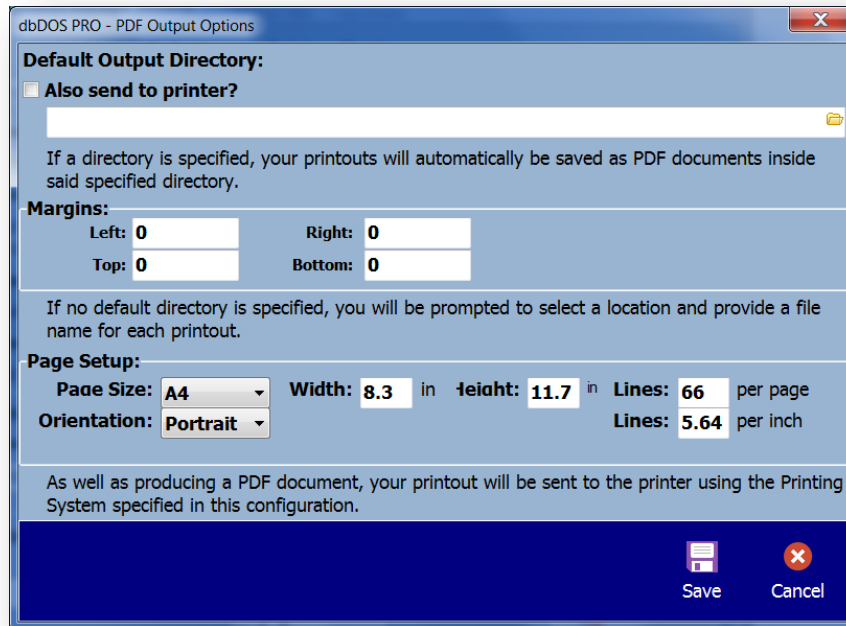


- Courier (default) Regular (font style) and 10 (font size)
- Times Roman – Regular, (font style) and 10 (font size)
- Helvetica – Regular, (font style) and 10 (font size)

**NOTE:** The size of the font can drastically change the appearance of the printout. If you want to have ELITE (12 characters per inch) or CONDENSED (16.66 characters per inch) you may set the size here if these items are not set in the dBASE program. Again, these features give the end-user ultimate control of the output.



The last option is the Save to PDF; this is only available in either Enhanced or the legacy Interpreted print modes. The options for PDF are shown below:



### *PDF Output Options*

The new PDF print system has many new features that many people will be very excited about and want to know the details. The first is the Default Output Directory. If an output directory is inserted, the PDF will automatically be printed to that directory **WITHOUT** any user interaction. If there is **NO** default output directory, the user will be asked each time to pick the location and name the PDF file. Keep in mind that the default name when a directory is used is the name of the configuration and a time and date stamp with the .pdf extension.

Remember that for PDF there is no printer. It is recommended that you select the proper size for your printing. dbDOS Config tries to help by giving option for setting the page size (A4, Letter, Legal), Orientation (Portrait or Landscape), and setting the number of lines per page or lines per inch. A custom size can be selected and the user can define the page size and structure.

**NOTE:** For U.S. Letter there are 60, 66, or 78 lines in PICA, ELITE, and CONDENSED respectively. There are 45 lines with printing Landscape with U.S. Letter paper for Pica.

The user can also set the margins for the paper, currently the margins are set to 0.0.



**Also send to printer?**

As well as producing a PDF document, your printout will be sent to the printer using the Printing System specified in this configuration.

*Physical Print with PDF generation*

In the above image, notice that you can select the “Also send to printer” option; this will send the output to the PDF generator and also to the physical printer!

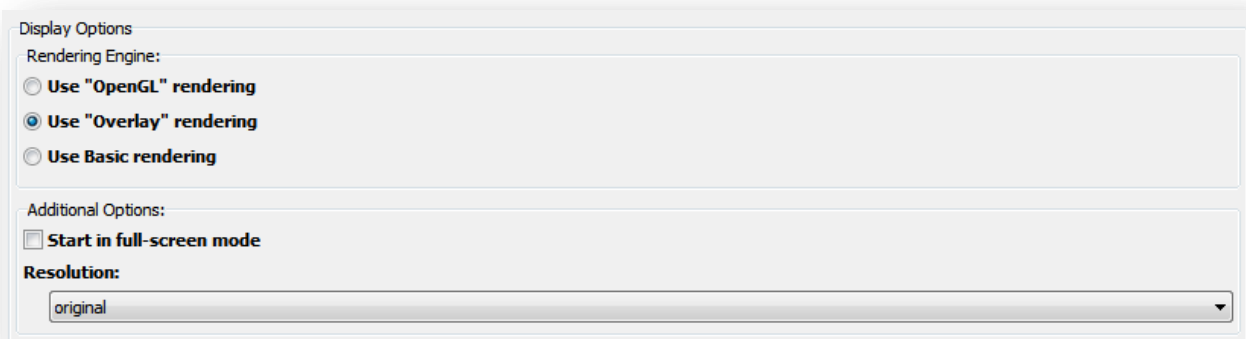
**NOTE:** Please keep in mind that if this option is not set and output to PDF is selected that NO physical print will occur. You must select the “Also send to printer” option if you want a physical print, regardless if you have selected a default printer for the configuration.

After selecting your options, you can either Save or Cancel from the operation. If you press the Cancel button all changes will be lost!



### Change Area 5: Display Options:

The dbDOS™ PRO 5+N offers a new optimization called display options. This optimization will help you on various hardware settings to figure out the best, most useful settings for that hardware when it comes to drawing the screen.



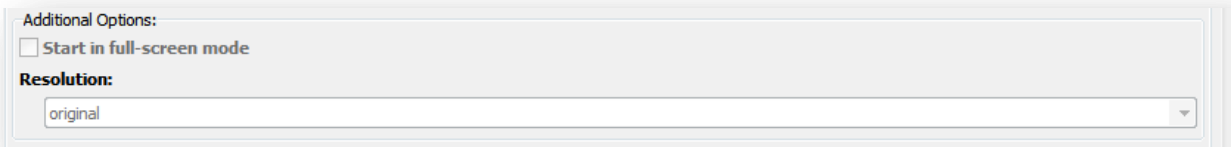
*Display Options – this will help draw the screen in Windows and also full-screen mode*

**Use "OpenGL" rendering** The last option is OpenGL and ironically, it is the fastest and most supported, but it does require newer hardware, because the processing is delegated to the Graphics Processor Unit (GPU) and it does support full-screen mode.

This is also, where you can set if the configuration should start in full-screen mode. Click the Start in full-screen mode and when the configuration is executed the windows will be full-screen and the underlying Windows® desktop will not be seen.

**Use "Overlay" rendering** Overlay is slightly more optimized but still has good backward hardware compatibility. This is a little faster than the Surface drawing and this setting does support full-screen mode.

**Use "Basic" rendering** Basic is usually the most compatible with most hardware, however, Basic does not support full-screen mode on most hardware. This setting should be used when the other two (2) options do not work.

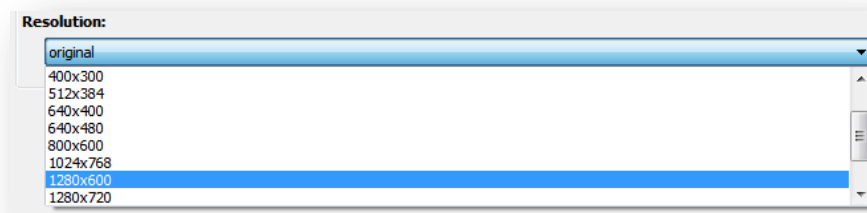


In the Additional Options section, it gives you two options if and only if the “Overlay” or the “OpenGL” options are picked. If and only if “Overlay” and “OpenGL” can set the configuration to start in full-screen mode. Select the Start in full-screen mode option and when the configuration is executed the windows will be full-screen and the underlying Windows® desktop will not be seen.

**Alt-Enter** – will take the dbDOS window from Full-Screen to Windows screen. If it is in a windowed setting pressing the Alt-Enter will take it back to full screen. Hitting the Alt-Enter again will put it back in to a windowed setting.

**NOTE:** *Moving from full-screen mode to window and window to full screen mode may not always work with different graphics cards. This mode is supported but due to the differences in the way graphics cards work, the presentation may become unstable.*

The second option besides full-screen is the resolution of the screen you may want to use. dbDOS™ PRO 5+N reads your hardware and shows only the valid options that you may pick. The default size is 640x480; however, you can pick the size you would like to start in:



**Note:** Picking a size from the Resolution dropdown does not mean the screen will look good. This option scales the size of the screen to the sized picked. Some sizes may look as good as the default and some may look much worse. This is a trial and error setting, and it depends on your hardware, screen size, and application being displayed.



Now it is also possible to manually enter a custom resolution for the best display. Keep in mind that the best resolutions are based on the 4:3 aspect ratio in a 25x80 screen. That means that a multiple of 320x200 will offer a better picture. Therefore setting a 960x600 would maintain that 4:3 ratio and give a fairly clean representation of the DOS screen. Also, keep in mind that if you use the advance display options for 43 or 50 lines then the aspect ratio does change so the resolution picked may have to be based on that as well. Using 43/50 lines gives an 800x600, or a multiple of that which would be 1600x1200 for a multiple in-between.

### Change Area 6: CPU Options:

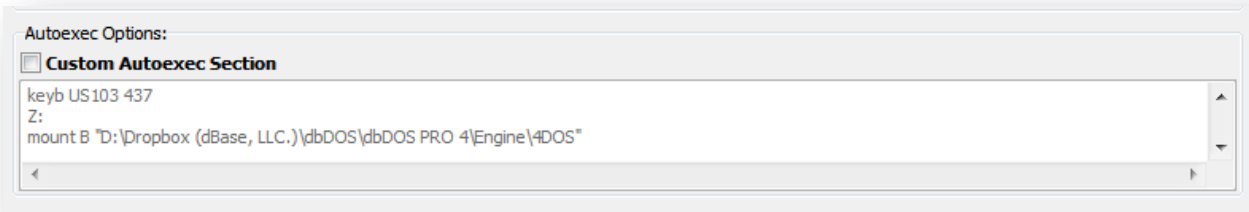
In dbDOS™ PRO 5+N we have added settings for CPU Options, to allow users to customize the instruction set used by the CPU to maximize performance. This new exposure reduces the need for a 3<sup>rd</sup> Party Memory Management product to be included, which drastically reduces hardware conflicts and better memory management.



### Change Area 7: Autoexec (Customization)

In dbDOS™ PRO 5+N there is a new option on the Advanced Wizard (ONLY) that allows for customization of the Autoexec section of the configuration. The Autoexec section is what controls the DOS programs being called and allows for additional batch processing. This along with 4DOS integration gives a strong and powerful combination that allows for easier customization, and adds more power to the support for DOS products.

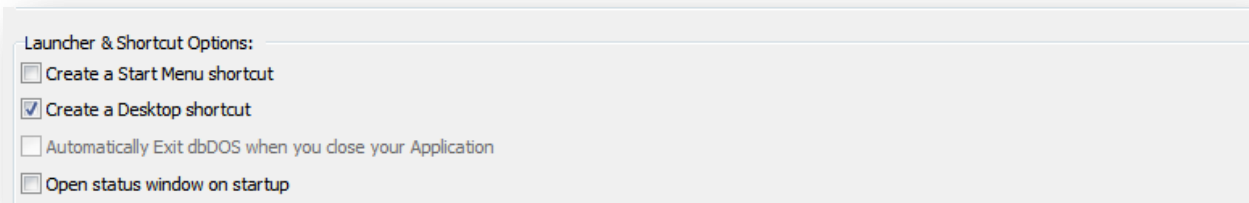
To overwrite or customize the Autoexec section, the user must be in the Advanced Wizard and click the **Custom Autoexec Section option**. Once selected it will unlock the editor and customization can begin. All updates will be saved to the Configuration when the wizard is completed.



*This gives you the ability to change the Autoexec area of a configuration*

### Change Area 8: Launcher & Shortcut Options:

These are additional options that can be set with the configuration to make the product run as desired. None of the following options are mandatory, but they can make the experience better for you.



*Launcher & Shortcut Options: Pick the ones you think will give the best experience*

Create a Start Menu shortcut    This option will add a shortcut to the Windows shortcut menu.

Create a Desktop shortcut    This option will add a shortcut to the Windows Desktop and is selected by default. You must de-select to remove this option.

Automatically Exit dbDOS when you close your Application    When an application is executed and then closed if this option is not selected it will return to a command-prompt. If you want to close the command prompt, clicking the red 'x' or type in exit at the prompt and hitting return will close the session.

Open status window on startup    When this option is selected, an additional status window will be opened. This window displays additional information from the dbDOS™ VM. This is primarily used for advanced





debugging purposes.

### Change Area 7: Footer-bar

The bottom toolbar is the location where you can complete the single interface configuration manager.

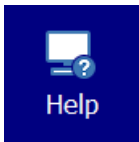


#### *Footer-bar: All the options for completing a configuration*

Now to explain what each button on the footer-bar does:



This takes you to the Wizard configuration. This button will be replaced with the Advanced button above when in the Advanced configuration manager.

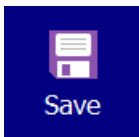


Clicking Help button will start the embedded how-to video on the wizard. This will open in the machines pre-defined media viewer, most likely a browser.



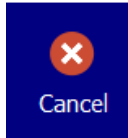
The Test Configuration option is just that, after you have set all the options for the configuration, the program now gives you an opportunity to test to see if you like it. Press the Test Configuration button and the configuration will execute.

After you exit the test, if there was something you did not like, you can change the settings, then retest if needed. If everything works as defined, click the Save Configuration to complete the task.

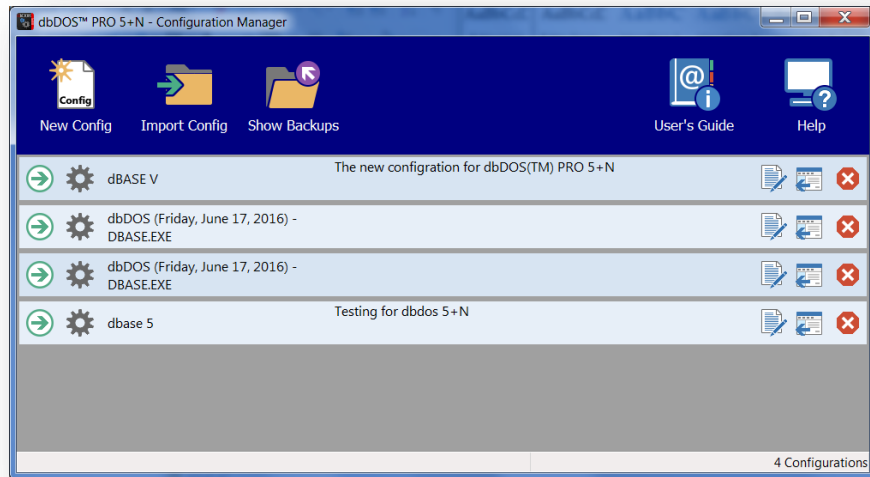


The Save Configuration button allows you to Save the configuration settings at any point. Pressing the Save Configuration button will complete the interface.

# dbDOS PRO™

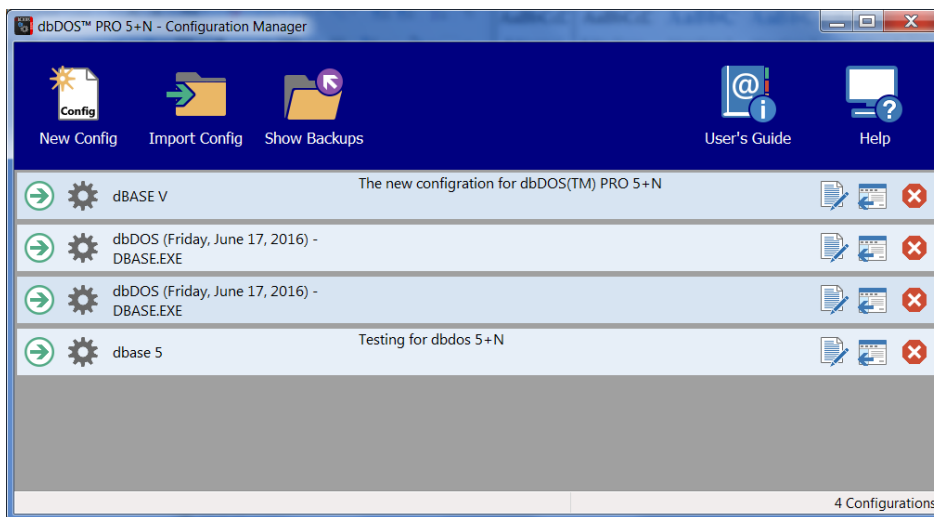


This button will return you back to the main screen, where you can create a new configuration, import a configuration, refresh a configuration, or exit the dbDOS Config program.



## Returns to Main page:

After the wizard is complete, the wizard will take you back to the main page. On the main screen, you should see the new configuration you created in the prior wizard steps as shown below:



*Updated after creating a configuration using the Single Page approach*



The shortcut created on the Windows® desktop





## Running dBASE DOS after the dbDOS Configuration Utility (dbDOS\_Config.exe)

Once the dbDOS™ Configuration Utility has been completed, you should now see icons on your Windows desktop. There can be four different icons for dbDOS:



This icon represents the dbDOS™ product (without any configuration settings). Used internally in the dbDOS™ VM.



This icon represents the specific configured programs' command-prompt. It is found on the Windows® desktop and menu shortcuts and will be used to start a dbDOS™ session. Double-clicking on the icon from the Windows® desktop will start the program's command prompt. From there you can execute various DOS commands.



**Example:** You have configured dbDOS™ to work with dBASE V DOS. Double-clicking this will take you to {drive}:\> (which is actually pointing to the root folder of the dBASE V DOS program) if you execute a DIR command the directory contents are shown; if you type in dbase.exe the dBASE program will execute.

```
dbDOS(TM) PRO 5+N - [dbDOS (Friday, June 17, 2016) - DBASE.EXE]
DCONVERT.EXE  DJOIN.EXE  DOCUMENT_GEN  DRIVERS.EXE  DSPLIT.EXE
[DTL]         FORM_GEN     FORMBUN.DBO   FX80_1.PRZ   FX80_2.PRZ
FX80_3.PRZ   GENERIC.PRZ  GROUPS.EXE   IDELIB.DBO  INUG.BAK
INUG.DBO     INUG.PRG     ISSUE65.PRG  LABEL_GEN   LABEL.PRF
DRIVERS.DDB  LOGIN.DB     MENU_GEN     PRINT02.EXE PROJECT.GFG
QUICKAPP_GEN  QUICKTP.PRG  QUICKTP.BAK  QUICKTP.DDB  QUICKTP.PRG
README       README.COM   REPORT_GEN   REPORT.PRF  RICKPRT.PRG
RICKPRT1.BAK RICKPRT1.DBO RICKPRT1.PRG RMINFO.EXE  [SAMPLES]
SHARE.EXE    [SQLHOME]   TEST_BAK     TEST.DBO    TEST.PDF
TEST.PRG     TEST.TXT    TEST2.BAK    TEST2.DBO   TEST2.PRG
MEMORY.BAK   MEMORY.DBO  MEMORY.PRG   TMP06061.$DB TMP03011.$DB
TMP04975.$DB TMP05304.$DB TMP06532.$DB TMP15177.$DB TMP15792.$DB
TMP16611.$DB TMP21853.$DB TMP24121.$DB TMP25913.$DB TMP26470.$DB
TMP27452.$DB TMP28290.$DB TMP35474.$DB TMP37722.$DB TMP40482.$DB
TMP41610.$DB TMP42171.$DB TMP47462.$DB TMP47630.$DB TMP52015.$DB
TMP55447.$DB TMP56326.$DB TMP56631.$DB TMP59399.$DB TMP60630.$DB
TMP62215.$DB TMP66572.$DB TMP69835.$DB TMP74041.$DB TMP78461.$DB
TMP80665.$DB TMP82506.$DB TMP82570.$DB TMP84475.$DB TMP84500.$DB
TMP85250.$DB TMP85975.$DB TMP86724.$DB TMP87145.$DB TMP91106.$DB
TMP93353.$DB TEST.PDF     T_BOX.PR.PRG T_BOX.PR.PRG T_BOX.PR.PRG
T_BOX.PR.DBO T_BOX.PR.PRG UNTITLED.GAT UTILITY.ZIP  T_BOX_PR.BAK
128 File(s)      8,740,701 Bytes.
6 Dir(s)         262,111,744 Bytes free.
C:\>
```

# dbDOS PRO™

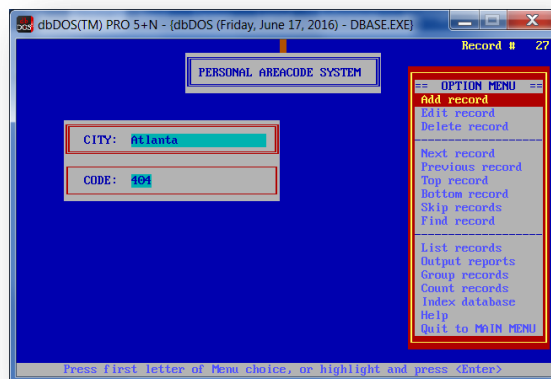


This icon is used to represent a specific executable program configured to run inside the dbDOS™ VM. This will usually have a name under the icon on the desktop or on the start menu, which describes what program will be executed when selected.

For Example:



double-click – executes:



This icon represents the dbDOS™ Configuration Utility, by double-clicking on this icon, the dbDOS™ Configuration Utility will be executed and run. Once in the configuration utility, you can make additional shortcuts to other programs, those programs will be assigned one of the above icons depending on if you are starting from a DOS prompt or executing a program.



This program allows to build a configuration in 3 steps.

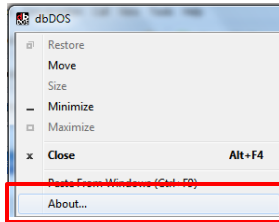
# dbDOS PRO™



This is the image that is displayed when starting a dbDOS™ PRO 5+N configuration on a machine. It is only on the screen for less than a second. The program cannot be run alone it must be executed from the shortcut that is created.



This is the icon in the top left corner of the dbDOS™ engine when it is executing a DOS program.



**The About... menu item** is available on the system menu of the dbDOS window. Clicking the menu item will show you the about box, with information of the release.

Note: Please watch the video on configuring dbDOS, this will answer many of the questions and show you exactly how the program works and can be configured.



## New Features in dbDOS™ 5+N

These are exciting new features found in dbDOS™ PRO 5+N, plus you can find other unique features of dbDOS in the [Additional Features for dbDOS™](#) section.

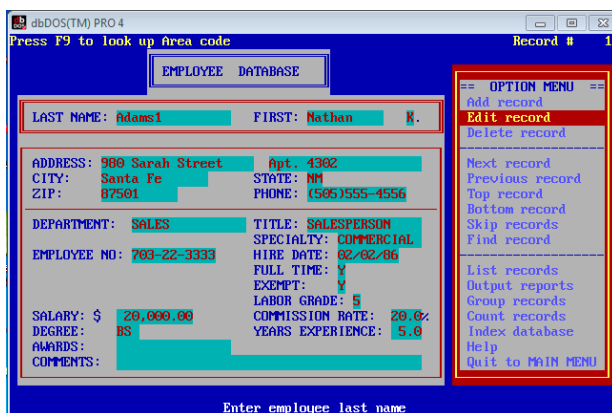
### New Native file system and network support combined for the dbDOS™ Engine

In dbDOS™ PRO 5+N the underlying file system used by the dbDOS™ VM is brand new and adds significant functionality. In addition, the new engine adds the Networking Capability to dbDOS™ PRO 5+N! This now allows for multi-user network dBASE applications to work as they did back in the MS-DOS days.

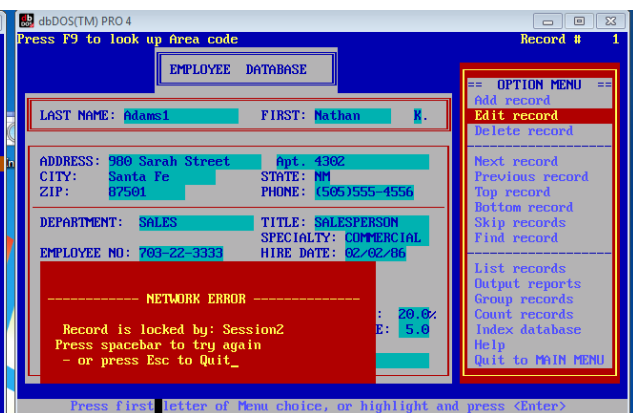
While combining these features we did not lose any speed and maintain the speed dbDOS™ PRO 4 had. The new dbDOS VM engine increases the speed of the system by as much as 38% over the prior engine. It also adds what is called a live file system; which means files are automatically updated in the VM even when a file is modified outside the VM's protected area. What does that mean? It means you can use outside editors. For example, if you want to upgrade a program (.prg) you could open Notepad++ and make changes to the file outside the VM and when you save the file outside the VM those changes will be automatically reflected in the VM's space. This feature does not require a "rescan" to see the changes.

The last improvement in the engine is that because it is a live file system, it makes doing network communications and multiuser programs easier and safer in most cases. This feature alone is why dbDOS™ now supports multi-user programs in a Network environment.

The below is an example of an application in Network mode; one instance is in edit mode on a record and the other is trying to edit at the same time. The program reports an error to the second user because the first user has the records locked.



*Application in Edit record mode*



*Application getting error on locked record*



Please review the dbDOS™ PRO 5+N Networking Quick Start Guide for more information on multi-user use with dbDOS™ PRO 5+N.

### New – 4DOS Integration

One of the other great features we have added to dbDOS™ PRO 5+N is full feature DOS Command processor replacement. Many people over the years have brought to our attention that the dbDOS™ VM does not support all the commands found in MS-DOS and this is certainly true. However, with the addition of 4DOS to the product, this limitation has been removed and now dbDOS™ VM has one of the most powerful Command-Processor for DOS commands on the planet. Some of the features include over 120 commands that can be used for batch processing or .bat files.

Here is how you start 4DOS in a configuration. Simply type 4DOS at a configurations C:\> as shown below:

A screenshot of a DOS command prompt window titled 'dbDOS(TM) PRO 5+N - {db5}'. The window has a black background and white text. The text shows the command 'C:\>4dos' being entered, followed by the output '4DOS EMS swapping initialized (272K)'. Below that, it shows '4DOS 8.00 MS-DOS 5.00' and 'Copyright 1988-2003 Rex Conn & JP Software Inc. Updates 2006-2009 L.I.Georgiev'. The prompt 'c:\>' is visible at the bottom of the window.

```
dbDOS(TM) PRO 5+N - {db5}
C:\>4dos
4DOS EMS swapping initialized (272K)

4DOS 8.00  MS-DOS 5.00
Copyright 1988-2003 Rex Conn & JP Software Inc. Updates 2006-2009 L.I.Georgiev
c:\>
```

Once the new command processor is loaded you can start to work with it, a quick example is the type **Memory** at the C:\> prompt and hit return:





```
dbDOS(TM) PRO 5+N - (dbDOS (Friday, June 17, 2016) - DBASE.EXE)
c:\>memory

655,360 bytes total DOS RAM
644,816 bytes free

7,340,032 bytes total EXTENDED memory
6,995,968 bytes free XMS memory

512 bytes total environment
446 bytes free

1,024 characters total alias
1,023 bytes free

1,024 characters total function
1,023 bytes free

1,024 characters total history

c:\>This configuration is running 4DOS
```

*This is a simple configuration that goes to a command prompt*

dbDOS™ PRO 5+N configuration manager adds the 4DOS command-processor directory to each configuration. This can be turned off if needed in the Advanced Wizard settings under the Autoexec Options functionality. Once at a C:> type help and hit return – the following is what you will see.

```
dbDOS(TM) PRO 5+N - (dbDOS (Friday, June 17, 2016) - DBASE.EXE)
Table of Contents
Welcome to the free 4DOS 8.00 help system. Please select a topic area:

Using 4DOS          Using the Command Line
                   File Selection
                   Directory Navigation
                   Other Features

Commands           Commands by Category
                   Commands by Name

Aliases and Batch Files  Aliases
                       Batch Files

The Environment     Using the Environment
                   Internal Variables
                   Variable Functions

Configuring 4DOS    4DOS.INI

Setup and Troubleshooting  Starting 4DOS
                       Error Messages

F1·Index  F2·TOC  F3·Keys  F4·Ext Help  F9·Print  F10·Search Keys
```

*4DOS integrated help system*



When in the 4DOS help system, use the {ESC} button to go back one step or to the prior help page.

As an example, at the C:> one of the new commands is the PROMPT command, and by typing in the following:

**Prompt \$D \$t \$g**

The following changes will happen to your command-prompt as shown below:

A screenshot of a DOS command prompt window titled "dbDOS(TM) PRO 5+N - (dbDOS (Friday, June 17, 2016) - DBASE.EXE)". The window has a black background with white text. The text displayed is as follows:

```
644,816 bytes free
7,340,032 bytes total EXTENDED memory
6,995,968 bytes free XMS memory

512 bytes total environment
446 bytes free

1,024 characters total alias
1,023 bytes free

1,024 characters total function
1,023 bytes free

1,024 characters total history

c:\>help
c:\>Prompt $D $t $g
Fri Jun 17, 2016 18:06:48 >
Fri Jun 17, 2016 18:06:50 >
Fri Jun 17, 2016 18:06:50 >
Fri Jun 17, 2016 18:06:50 >
```

*Notice the command prompt now states: Fri May 1, 2015 11:06:47>*

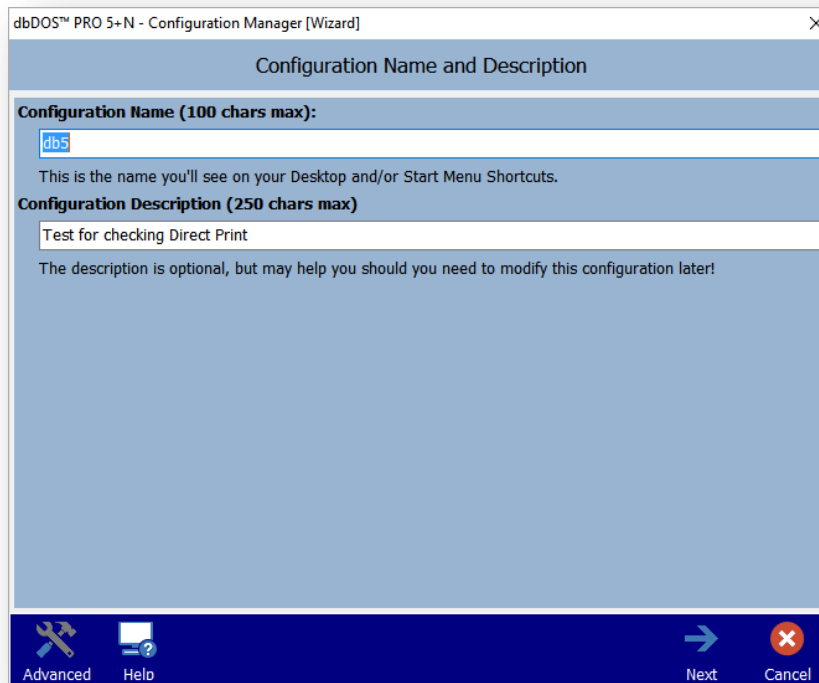
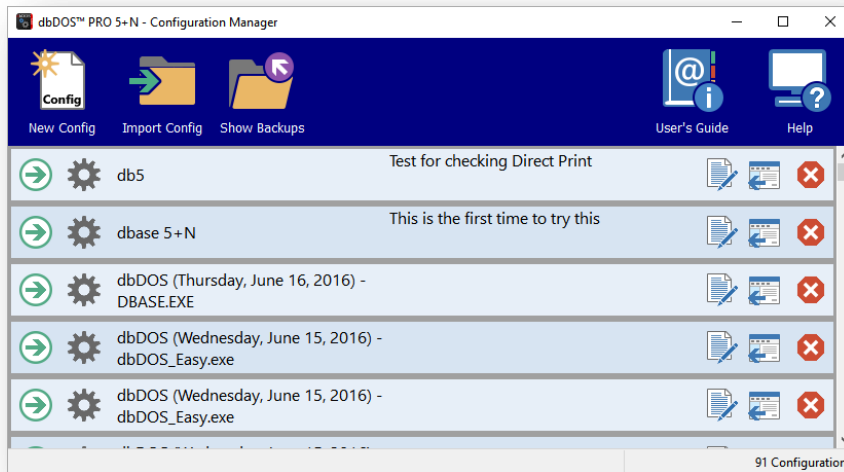
Therefore, as you can see the addition of 4DOS will help casual and advanced users alike take advantage of the dbDOS™ VM product in ways they could not even do back in the MS-DOS days.

There is a full reference guide included with 4DOS and it is located in the 4DOS directory. That guide can be found here: *C:\Program Files (x86)\dBASE\dbDOS Pro 5\4DOS* and is called *4DOS\_ref50.pdf*.



### Updated – Look & Feel

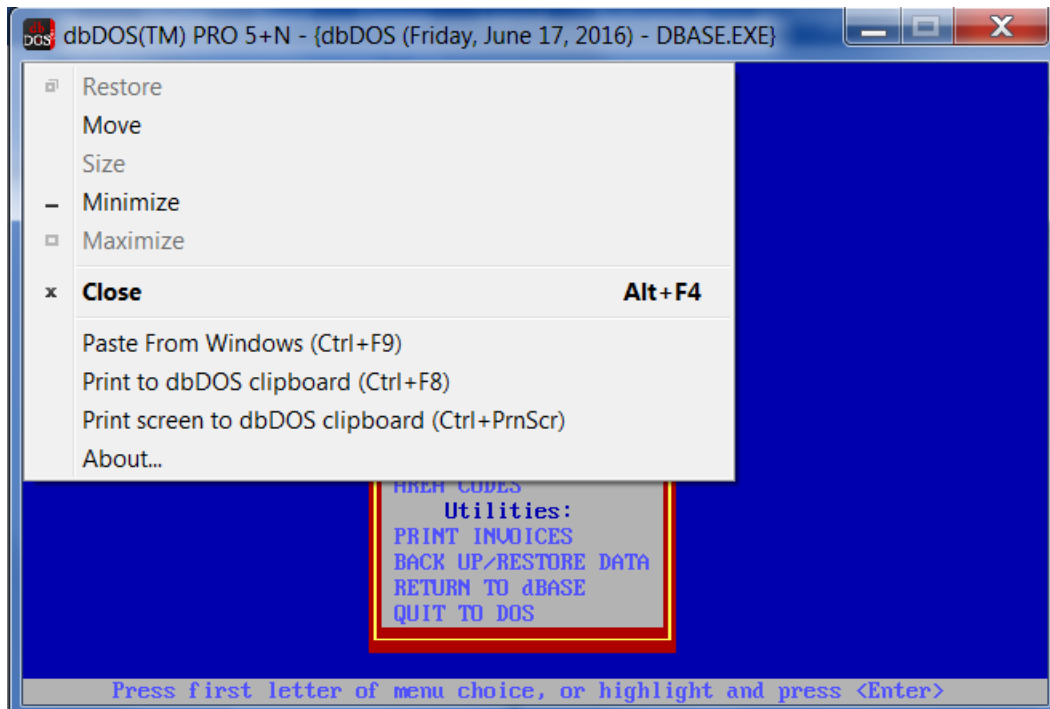
dbDOS™ PRO 5+N also introduces a new look & feel to the product. It has a more modern feel and a cleaner and more easily understood graphics for increasing the ease of use. Testing has confirmed that users believe it is easier to understand, view and use. We agree.





## Additional Features for dbDOS™

By clicking the system menu button in the dbDOS PRO 5+N VM you get the following menu:



*System Menu: Mouse click the top icon for advanced features*

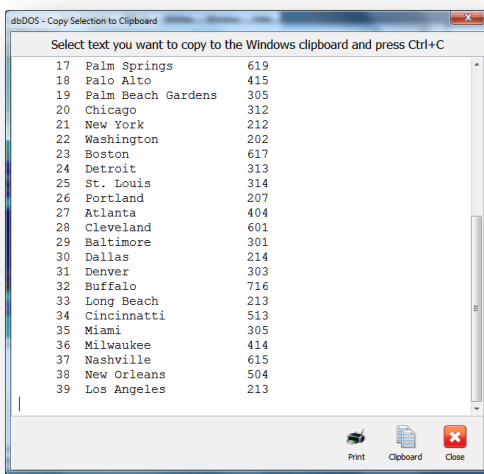
### Paste From Windows (CTRL | F9)

From Windows if you copy text, usually Ctrl-c in a windows application you can paste that text into the dbDOS™ system by pressing Ctrl-F9 or clicking the dbDOS™ PRO 5+N VM System menu as shown above and select the option from the menu.

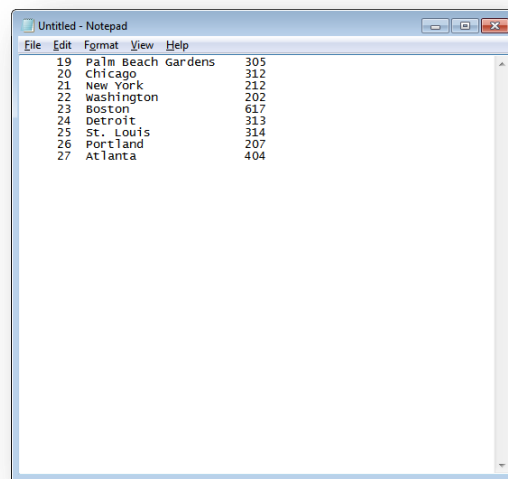


### Print to dbDOS clipboard (Ctrl-F8).

dbDOS™ PRO 5+N adds a new capability to copy from the dbDOS™ PRO 5+N environment to the Windows environment. This is not as easy as one would think, as DOS did not have a clipboard support. The way that dbDOS™ accomplishes this is from a suggestion from on our dbDOS™ users. The system accomplishes this task by capturing any output to the printer in a windows buffer and allowing users to copy from the popup window into the Windows OS. This option can be turned on, and left on, as long as you can print Interpreted using the Print option. ALL output when this option is on is put into the popup window, as shown below:

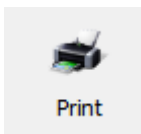


*Copy contents from dbDOS -*

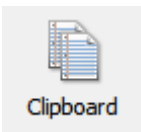


*Paste into a Windows Program*

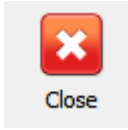
There are some limitations to this approach, one you must be able to use the Print features that will be captured out in the new buffer. We have implemented multiple windows for multiple outputs, so you need to keep track of all the output windows.



This will allow for the Print of the buffer using the Interpreted Print functionality.



Pressing this button will put the contents of the display into the standard Windows® clipboard feature. This can then be copied like any other clipboard item.



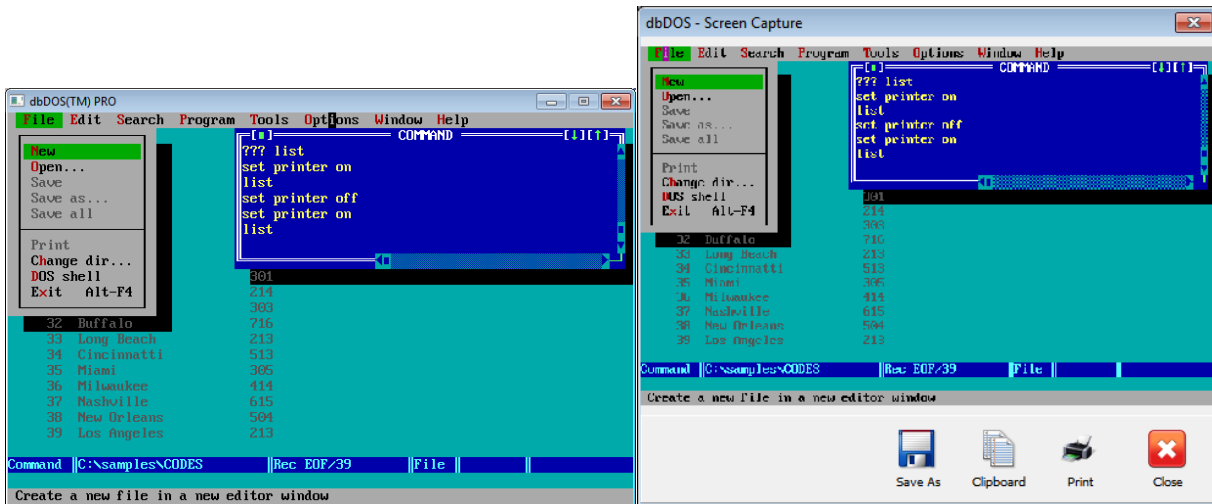
This will close the window and clear the clipboard buffer.



### Print screen to dbDOS Clipboard (Ctrl-PrnScr)

The next feature has been requested since the introduction of dbDOS™. In the old DOS based programs, there was the ability to print the screen contents to a printer. We have now implemented that functionality in dbDOS™ PRO 5+N.

Pressing the Ctrl-PrnScr button or clicking the dbDOS™ PRO 5+N's System menu and selecting the menu item will take a screen shot of the current screen.



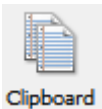
*Actual Screen*

*Screen Print Interface*

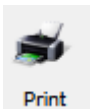
Notice that the Screen Capture interface has four options:



dbDOS™ PRO 5+N gives the ability for the user to save the picture for future review or printout.



dbDOS™ PRO 5+N gives the ability to copy the contents of the screen capture into the Windows clipboard feature and can be used as any other item in the Windows clipboard.



dbDOS™ PRO 5+N gives the ability to Print the Screen Capture to a printer



dbDOS™ PRO 5+N gives the ability to close the picture and it will be discarded from memory.



## Better Printing with dbDOS PRO 5+N

dbDOS PRO 5+N comes with multiple ways of printing. As stated above this is one of the hardest parts of dbDOS to get working consistently. In dbDOS PRO 5+N, we introduce three (3) major features around printing, one being the new Enhanced Printing and also the ability to output the reports into PDF format.

In addition to those improvements we have also included a set of new printer drivers (old printer drivers actually) and found that a few offer better support than the generic that has been included in the products before. These new drivers use more cross-printer escape codes to give a more standard print or output. The most consistent driver we have found for going across a number of printers is the Epson FX80 print driver.

The easiest way to support the driver is to add the driver line to your code. Make sure the driver is located in the dbase directory and also the directory if you have a compiled application. Adding the line is simple:

```
_pdriver = " fx80_1.pr2"
```

When using the new Enhanced Print settings this will produce fairly consistent reports. Again, remember that the printer drivers from back in the 80's and 90's were responsible for doing the advanced features like: Bold, Underline, Italics, Superscript, Subscript, and character graphics output. For example if you use the ASCII.pr2 driver that is included with both dBASE IV and V for DOS it does not support any of those advanced features and will not recognize the commands if found in the code. While another driver, HPLASER.pr2 may support those commands and many others. *The output power is in the printer driver.*

This does mean that you need to have access to your code so that it can be switched. If access to the code is not possible, then it may be possible to set the default FONT in the dbsetup.exe. This option would only be available to dBASE IV and V users and dbBASE III+ did not offer the print driver options.

If those options are exhausted then it is recommended that you try the Direct print option. Remember that you will have to pick a default printer with that option and the configuration can have only one printer. This means if you need different printouts that you may need multiple configurations.

If all else fails, you must use one of the legacy printer approaches of RAW or Interpreted. In addition, if you are not having print issues, it is recommended that you do not change what is





working. If you want to play or test another driver, make a copy of the configuration by exporting it and then reimporting it and then change the copy as a best practice.

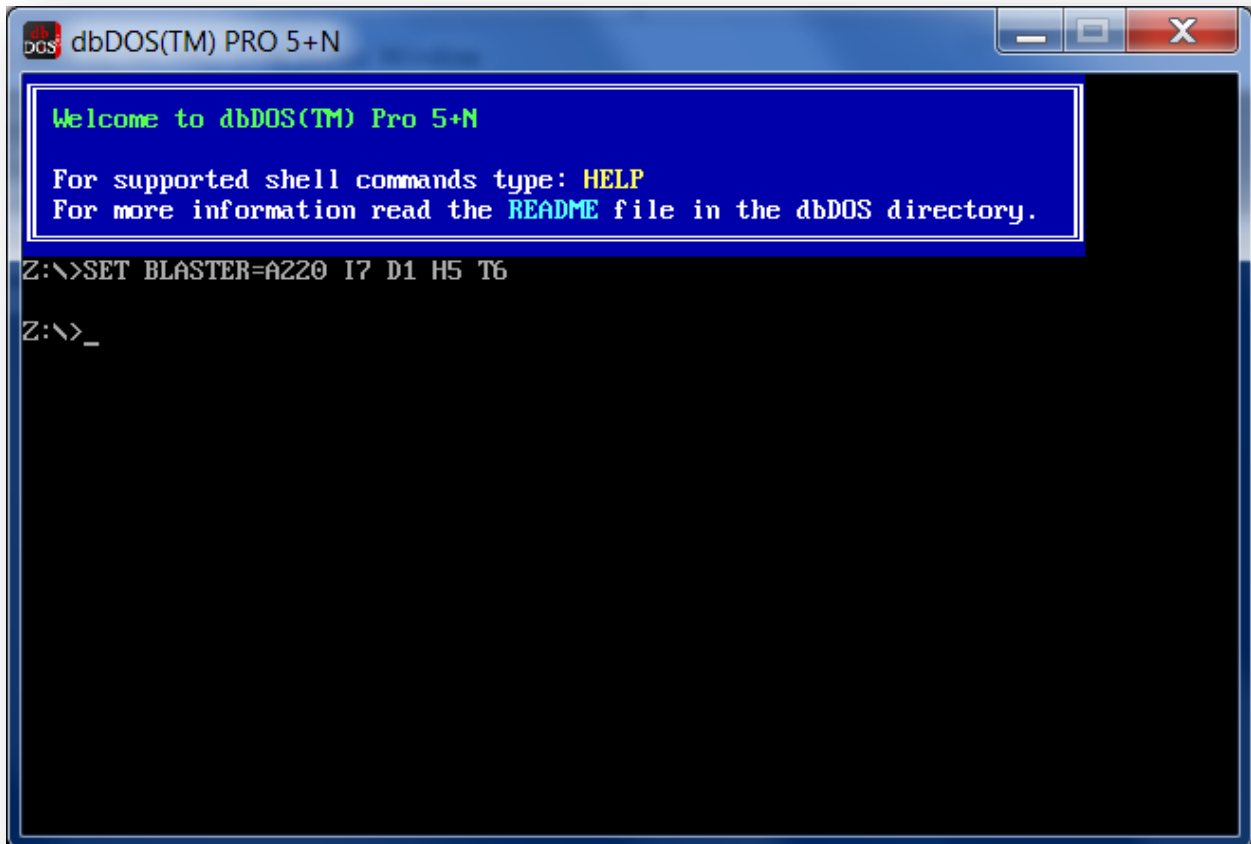
**DOES THIS ELIMINATE ALL PRINT ISSUES?** Unfortunately, no! There are still instances where the printer hardware and dbDOS will just not communicate. In that instance, either the code has to be changed to work with the existing hardware or new known hardware needs to be purchased by the users.



Here is an example of how to use dbDOS Command prompt (configured to use dBASE V DOS)



Double-clicking on the  will take you to the {drive}:> as shown below:

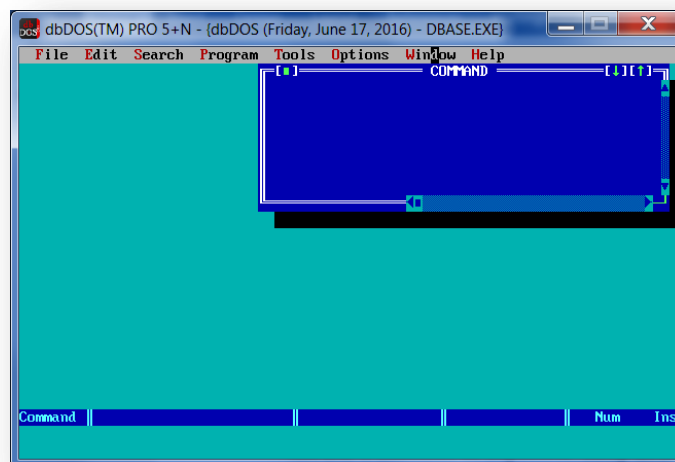




Execute a DIR command and the following displays:

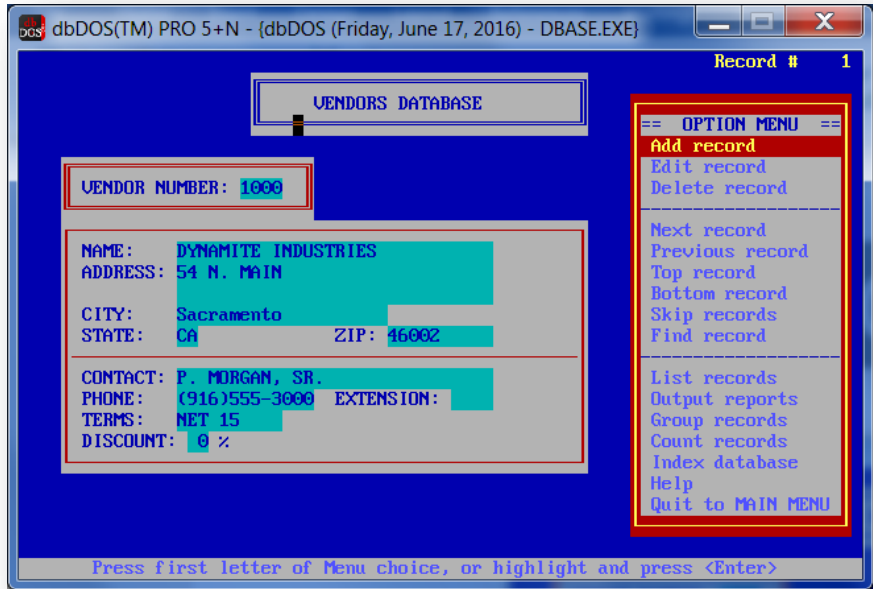
```
dbDOS(TM) PRO 5+N - (dbDOS (Friday, June 17, 2016) - DBASE.EXE)
dbsetup.pif  dbsetup.prd  dbsetup.res  dconvert.exe  djoin.exe
document.gen  drivers.exe  dsplit.exe  form.gen      formrun.dbo
fx80_1.pr2   fx80_2.pr2  fx80_3.pr2  generic.pr2   groups.exe
idelib.dbo   inv3.bak    inv3.dbo    login.db      issue66.prg
label.gen    label.prf   ldrivers.dbd  login.db      menu.gen
pminfo32.exe  project.cfg  quickapp.gen  quickt.prg   quicktp.bak
quicktp.dbo  rickprt.prg  readme.com   rickprt1.dbo  report.gen
report.prf   rickprt1.bak  rickprt1.dbo  rickprt1.prg  rickprt1.prg
rminfo.exe  share.exe   test.dbo     test.pdf     test2.prg
test.prg     test.txt    test2.bak    test2.dbo    test2.prg
tmemory.bak  tmemory.dbo  tmemory.prg  tmp00061.$db tmp03011.$db
tmp04975.$db tmp05301.$db tmp06532.$db tmp15177.$db tmp15792.$db
tmp16611.$db tmp21853.$db tmp24131.$db tmp25913.$db tmp26470.$db
tmp27452.$db tmp28290.$db tmp35474.$db tmp37722.$db tmp40482.$db
tmp41610.$db tmp42171.$db tmp47462.$db tmp47630.$db tmp52015.$db
tmp55447.$db tmp56326.$db tmp56631.$db tmp59399.$db tmp60638.$db
tmp62215.$db tmp66572.$db tmp69835.$db tmp74041.$db tmp78461.$db
tmp80655.$db tmp82505.$db tmp82570.$db tmp84475.$db tmp84580.$db
tmp85250.$db tmp85975.$db tmp86724.$db tmp87145.$db tmp91186.$db
tmp93353.$db tst.pdf     t_box_pc.prg  t_box_pe.prg  t_box_pr.bak
t_box_pr.dbo  t_box_pr.prg  untitled.cat  utility.zip
              8,740,701 bytes in 128 files and 6 dirs  13,199,872 bytes allocated
              262,111,744 bytes free
Fri Jun 17, 2016 18:10:58 >_
```

As you can see this is the main directory from dBASE V DOS and if the dbase.exe command is executed the following will appear:

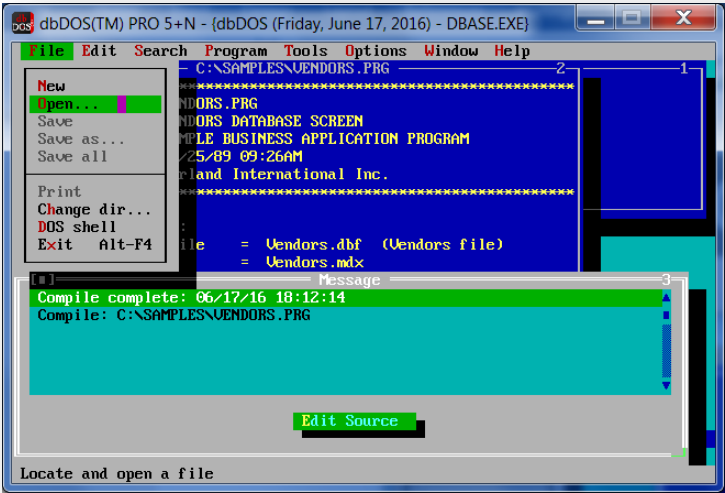


dBASE V executes as expected. Keep in mind that **NO** changes have been made to dBASE DOS and all functions that you normally have in a dBASE V DOS running on a Microsoft DOS machine will work in dbDOS's VM. As you can see below the AREACODE.PRG is ready for modification:

# dbDOS PRO™

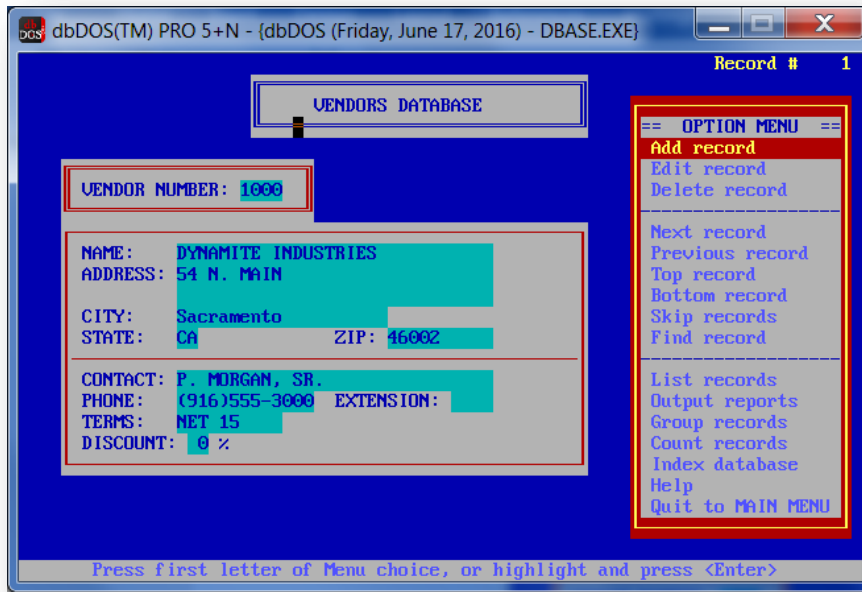


Using the mouse with dbDOS™ PRO 5+N is automatic, If you click with the mouse inside the window; dbDOS™ will properly show the mouse cursor inside the window. If you want to exit the mouse in the window, press the CTRL-F10 and the mouse will be returned to the Windows® operating system. An example is shown below:





Also be aware that all dBASE "." commands work as expected. This is essentially running the dBASE program in a DOS window. You can also run Compile, Debug, Run, and Link dBASE programs as you normally would. Example of the Areacode.exe sample shown:





## Quick Keyboard shortcuts

---

dbDOS™ supports a number of different keyboard shortcuts that end-users can use to make the experience with dbDOS™ even better. All the standard keyboard commands of MS-DOS are supported, and some additional ones listed below:

- **Alt-Enter** – This will take the end-user from Full-Screen to Windows screen. If end-user is in a windowed setting pressing the **Alt-Enter** will take the product full screen. Hitting the **Alt-Enter** again will put the end-user back in to a windowed setting.

*Note: Moving from full-screen mode to window and window to full screen mode may not always work with different graphics cards. This mode is supported but due to the differences in the way graphics card work, the presentation may become unstable.*

**Activate:** Hold the **Alt** key down and press the **Enter** key

- **CTRL-F9** – This will KILL the dbDOS™ windows or session. If for some reason the end-user needs to exit or kill the running program pressing the CTRL-F9 key combination, will close the dbDOS™ window and thus will kill the dbDOS™ session as well.

*\*\*Please be aware the closing a window with CTRL-F9 could cause corruption as the window/session is automatically killed with no regard to open files or mid-process, use with caution.*

**Activate:** Hold the **CTRL** key down and press the **F9** key

- **CTRL-F10** – This will enable or release the mouse. If you have mouse control for the DOS application and the end-user would want to escape back to the Windows OS, press the **CTRL-F10** and the mouse control will be released from the dbDOS™ window. While on a dbDOS™ window, if **CTRL-F10** is pressed the mouse will be activated inside that window.

**Activate:** Hold the **CTRL** key down and press the **F10** key



## Glossary of Terms:

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- **Microsoft DOS® or MS-DOS®**  
This is reference to Microsoft Disk Operating System or DOS environment. Microsoft DOS and MS-DOS can be used interchangeably and is sometimes shorted to just DOS. dbDOS™ PRO 5+N is designed to run MS-DOS application from version 3.0 – 6.0.
- **dbDOS™ PRO 5+N**  
dbDOS™ PRO 5+N is a complete approach to running MS-DOS based application and specifically dBASE version of the DOS programs. dbDOS™ PRO 5+N comes with the DOS emulation virtual machine, a configuration program, and the ability to print either local or networked based printers. **\*\*\*Each network node must be licensed separately\*\*\***
- **dbDOS™ PRO 5+N VM or VM**  
The dbDOS™ VM or VM stands for Virtual Machine and with dbDOS™ it is a MS-DOS emulation that allows products developed for DOS based application to run inside the virtual machine. The VM supports the Windows® Operating Systems (XP, 2003, Vista, 2008, 7) in either 32 or 64-bit editions.
- **DOS Compatible software**  
Software that was compiled to run specifically on the DOS system.
- **Program Executable**  
On a DOS based system this could be either a file name with the extension of .com or .exe
- **Program Command-Prompt**  
The base directory where the Program Executable would be located. Using dBASE V for DOS as an example it was usually installed on the main drive under the en directory. Therefore, the Program Command-Prompt for dBASE.exe would be {drive}:\en\>
- **Windows Shortcut to Program Command-Prompt**  
This is an Icon or menu item that points to a program's default or executable directory. Double-clicking on the shortcut will take the end-user to the Command-Prompt for that



directory. dbDOS\_Config.exe can be used to create this shortcut.

- **Windows Shortcut to Program Executable**

This is an Icon or Menu item that points to the Program itself and when double-clicked to execute that program. dbDOS\_Config.exe can be used to create this shortcut.

- **Local Print**

dbDOS™ PRO 5+N will allow you to print to a local printer. In the DOS days this printer would be referred to as LPT1. dbDOS™ allows you to print to any connected Printer.

- **Network Print**

dbDOS™ PRO 5+N will allow for network printing as well. When you create a shortcut for a program you can assign the networked printer's IP address. (advanced end-users only)

- **dbDOS\_Config.exe**

The main program for building shortcuts in dbDOS™ 1.5. This program will allow you to configure each shortcut with specific options to optimize the end-users experience.

- **Program Directory**

The directory on the Windows based machine that has the needed executable (.com or .exe).

- **Data Directory**

The directory on the Windows based machine that has the program or application data.

- **Program & Data Directory**

The directory on the Windows based machine that has the needed programs and data located.