

# MineQuest Business Analytics

*Where Business Intelligence Lives*



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## Technical Paper

### Configuring Your WPS Workstation after Installing WPS v3.3

Windows 7, Windows 8, Windows 8.1, Windows 10

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Now that you have installed WPS on your Windows workstation, you may want to configure your WPS installation for optimal performance. This guide suggest the most common tweaks and modifications that a user can do to enhance their installation to help get the best performance out of WPS with very little effort.

## Modify the WPS.CFG file

The WPS.CFG file can be found in the WPS installation directory. Typically, "C:\Program Files\World Programming WPS 3\wps.cfg" and you will likely have to have administrative privileges to modify the file using text editor or another editor of your choice.

### Add -bufno to the wps.cfg file

The bufno parameter tells WPS how many buffers to use when reading a WPS dataset. Adding too high of a value for the bufno parameter simply wastes memory and can actually slow down your processing time. We suggest starting out with a bufno of 16 and experiment with raising and lowering this value in increments of 8 to find the optimum setting.

Example:

```
-bufno 16
```

Note: you must restart WPS for this change to take effect.

### Add -bufsize to the wps.cfg file

-bufsize is a parameter that instructs WPS in the amount of RAM to use to read and write a WPS dataset in a single read or single write operation. In actuality, it is the page size that WPS will use to read or write to fixed storage. We have found it generally optimal to start with a value of 32K. You can experiment with this value increasing it or decreasing it 16K at a time to find what is the optimal setting for your workstation.

Example:

```
-bufsize 32k
```

Note: you must restart WPS for this change to take effect.

## Add -sortsize to the wps.cfg file

Adding a sortsize entry into the config file is virtually mandatory if you intend to sort data sets that are larger than the amount of RAM you have installed on your workstation. We suggest that you use a value that is just below the memsize setting (see below). For example, if you have 8GB of RAM installed in your workstation and have set memsize to be 7G, use 6GB for the sortsize value.

Example:

```
-sortsize 6G
```

Note: you must restart WPS for this change to take effect.

## Consider adding -memsize to the wps.cfg file

If you find that you are running multiple WPS jobs in the Workbench, we suggest that you add the -MEMSIZE option to the WPS config file. The -MEMSIZE option tells WPS the maximum amount of RAM that a WPS job/session can consume. If you will be running multiple jobs from the workbench, we suggest that you use a MEMSIZE option that is  $\frac{3}{4}$  the maximum amount of RAM that you have on your workstation. WPS may not use the allocated amount of RAM that you enter as the -MEMSIZE option if your program doesn't actually require that amount of RAM.

Example:

```
-memsize 7g
```

Note: you must restart WPS for this change to take effect.

## Consider putting your work/temp files on a second drive.

If you have a second hard drive inside your workstation (not one attached via USB), you should strongly consider putting your WPS work folder on that drive. By doing so, you can dramatically increase the execution speed of your WPS programs because your WPS programs will now be reading from one drive and writing to a second drive, thus reducing the read/write contention on a single hard drive.

To move your work folder to another drive, say drive E, bring up your WPS.cfg file in a text editor (you may need administrative permissions) and change the -WORK entry to

```
-WORK 'E:\wpswork'
```

You must also create the folder above. Make sure that you comment out the original -WORK entry or simply delete the line all together.

Note: you must restart WPS for this change to take effect.

## Install R

Since WPS includes support for R since version 3.1, we recommend that you install R on your workstation. PROC R is a PROC that is unique to WPS and we suspect that you will soon be seeing macros and even products based on the requirement that R be installed.

We suggest that you install 32-bit R on 32-bit workstations and 64-bit R on 64-bit workstations. With 64-bit R, you can theoretically access R data frames that are 4GB in size and larger.

You can download and install R from the CRAN repository from the R project for Statistical Computing by going to: <http://www.r-project.org/>. Simply download the program and follow the instructions on installing the program.

You can find information on the use of PROC R by going to the help system in the WPS Workbench and selecting:

Help | Help Contents | WPS Reference for Language Elements | WPS Core | Procedures | R

You can also find a document on the usage of PROC R in the WPS install folder, typically *C:\Program Files\World Programming WPS 3\doc/*. The document is entitled: *WPS-Proc-R-User-Guide* and is in PDF format.

## Install Python

In version 3.3 of WPS, the ability to execute Python programs from within WPS is not available. You can easily pass WPS datasets to Python so that Python can use that data for its own processing.

WPS will require a license key that allows for the execution of Python programs from within WPS. This license will allow for the Interop-for-Python module to be active. If you don't have a

license key that permits this, we suggest that you contact World Programming Support to get an updated key.

We strongly suggest that you install Python from the Anaconda depository. Using WPS v3.3 you cannot run Python 3.6 at this time. You can install Python version 3.4 or 3.5 according to the WPL Python documents.

What is Anaconda? Per the Anaconda website -

*Anaconda is the leading open data science platform powered by Python. The open source version of Anaconda is a high performance distribution of Python and R and includes over 100 of the most popular Python, R and Scala packages for data science.*

*By using the Anaconda depository, you will be getting the most popular python packages in a single, easy to install package.*

For 64-bit WPS users, the proper package to download is:

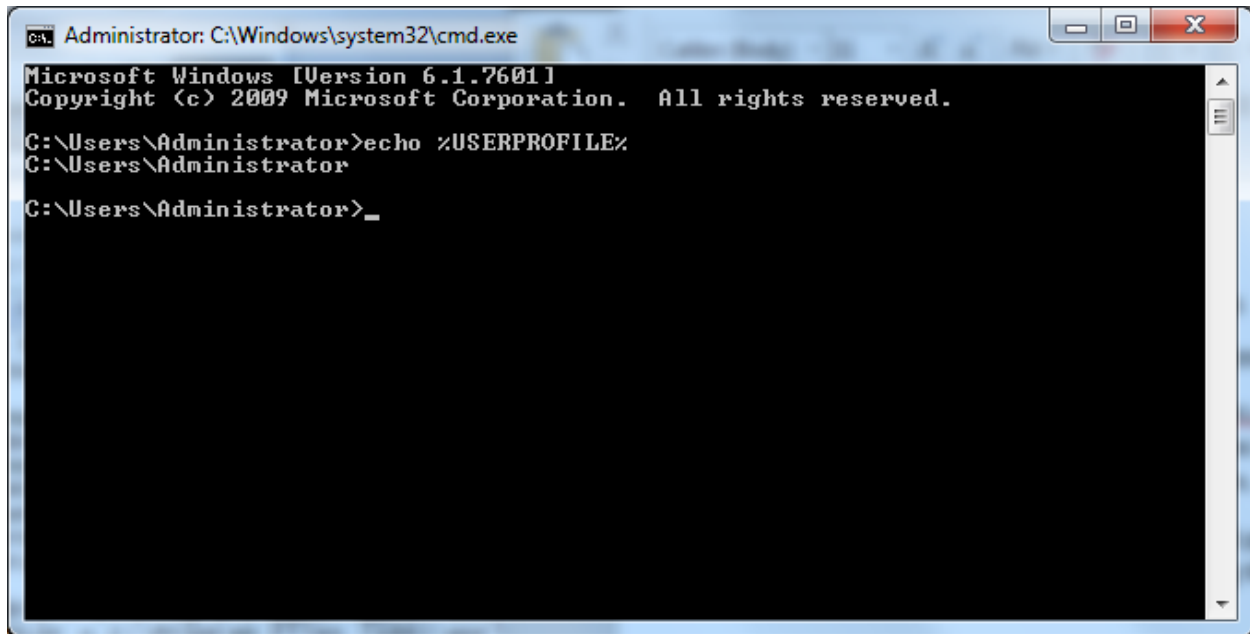
[https://repo.continuum.io/archive/Anaconda3-4.1.0-Windows-x86\\_64.exe](https://repo.continuum.io/archive/Anaconda3-4.1.0-Windows-x86_64.exe)

## Create an Autoexec.sas file

You should consider creating an autoexec.sas file for executing statements and setting options upon initiation of the WPS System. This ensures that site specific statements and commands are always executed when you start the WPS system.

Create a text file called autoexec.sas and place it in your home folder. Your home folder can be found by opening a command window and issuing the command:

```
echo %USERPROFILE%
```

A screenshot of a Windows command prompt window. The title bar reads "Administrator: C:\Windows\system32\cmd.exe". The window content shows the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>echo %USERPROFILE%
C:\Users\Administrator
C:\Users\Administrator>_
```

In our standard corporate autoexec.sas file, we always include options for printing our output in landscape mode with a linesize of 132 and a pagesize of 48. That works well with our Brother laser printers and those values work perfectly when printing duplex output.

We also see a lot of printouts/listings laying around so we put a footnote on all our output that helps identifies that a printout is from our organization by putting a FOOTNOTE statement in the autoexec.sas file.

Here's an example of the two lines of code that we put into the user folder and name the file autoexec.sas.

```
Options Linesize=132 Pagesize=48;
Footnote "MineQuest Business Analytics, LLC.";
```

Of course, many installations have elaborate autoexec.sas files that do such things as reference libnames for WPS data sets as well as databases using the libname statement.

Note: you must restart WPS for any changes to the autoexec to take effect.

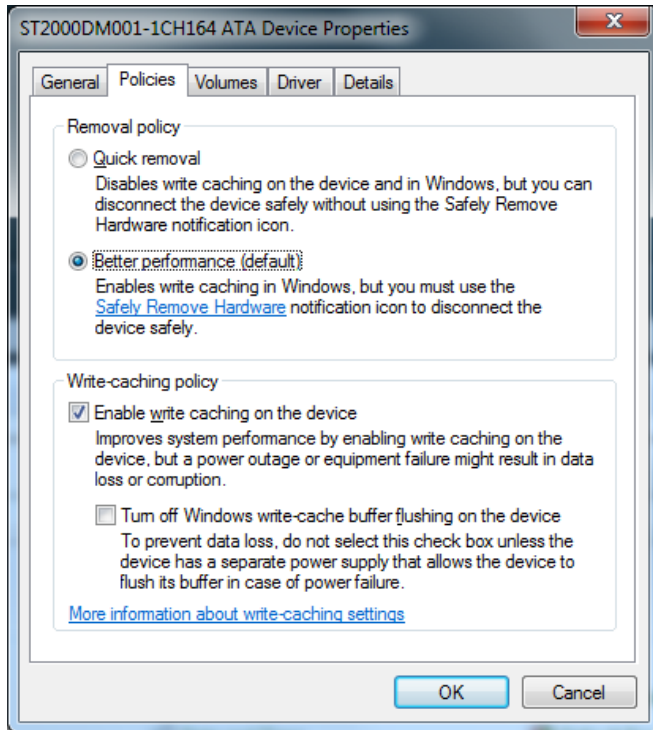
## Enable Disk Write Caching

Enabling write caching in Windows can speed up your WPS processing by temporarily saving the data to memory before writing it to disk. You will probably want to enable disk write caching on your drive(s) such as the drive that contains your work folders and permanent data sets. You can enable disk write caching on multiple drives.

1. Right-click **My Computer**, and then click **Properties**.
2. Click the **Hardware** tab.
3. Click **Device Manager**.
4. Click the **plus sign (+)** next to the **Disk Drives** branch to expand it.
5. Right-click the drive on which you want to enable or disable disk write caching, and then click **Properties**.
6. Click the **Disk Properties** tab.
7. Click the **Policies** Tab.
8. Click to select or clear the **Enable write caching on the device** check box as appropriate.
9. Click **OK**.

**NOTE:** Enabling write caching may generate the following warning. This is normal:

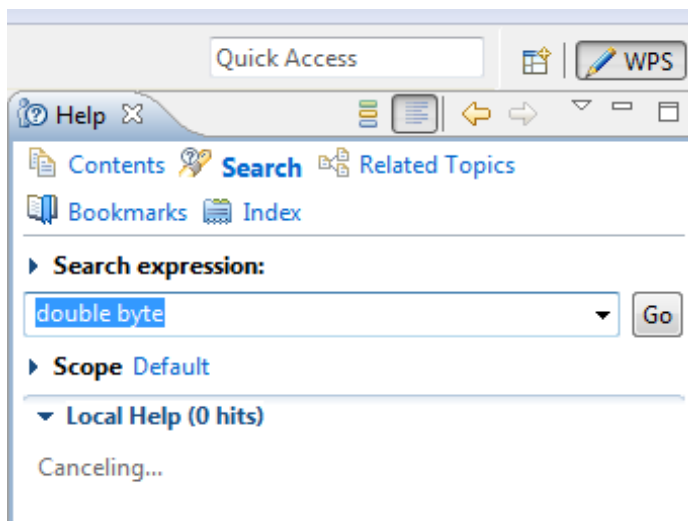
**By enabling write caching, file system corruption and/or data loss could occur if the machine experiences a power, device or system failure and cannot be shutdown properly.**



## Run the Help System to Index the Help Files

Go to the Workbench Menu and select **Help**

The Help dialog box will appear and simply select **Search** to start indexing the help system.





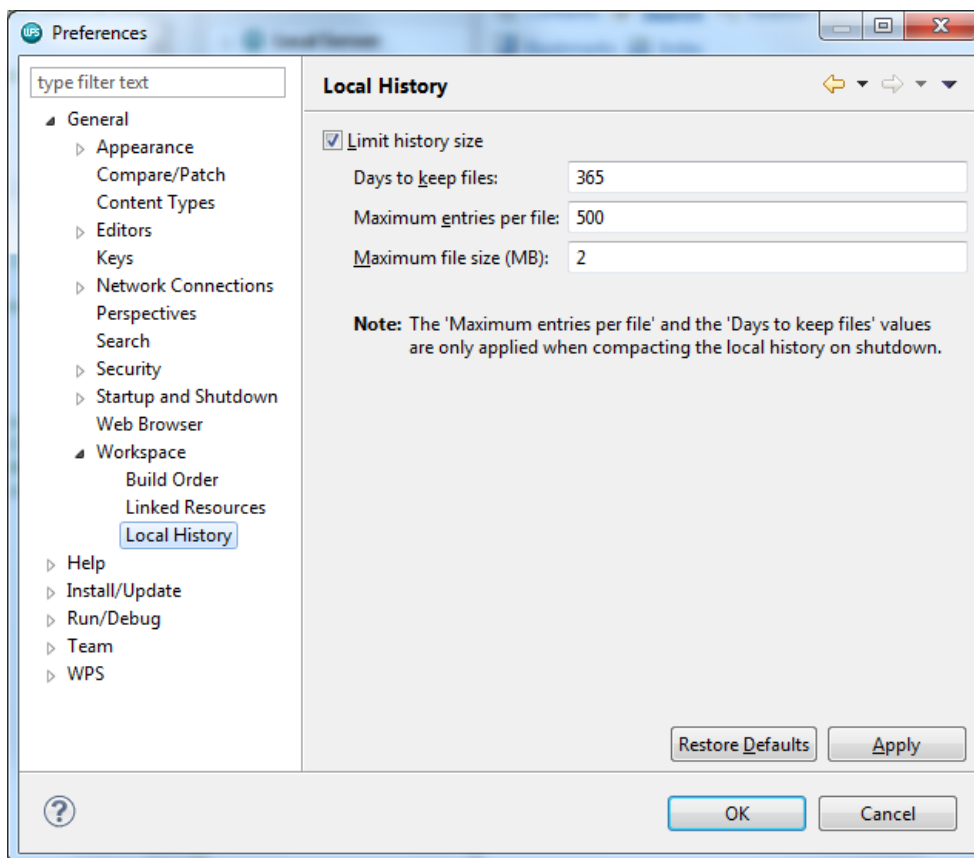
## Increase the Local History Stored

If you have ever found yourself working long hours on a project, you make a change with a series of edits, and somehow the application is no longer working the way it should? What did you change that broke your code? With the Local History and Quick Diff operations you can revert back to a working example.

The parameters for the duration and size of the files that are saved are (in our opinion) a bit small. We suggest that you increase those numbers.

From the Main Menu, go to: Window | Preferences | General | Work Space | Local History. We suggest you set the following minimum parameters.

**Days to keep files:** 365  
**Maximum entries per file:** 500  
**Maximum file size (MB):** 2

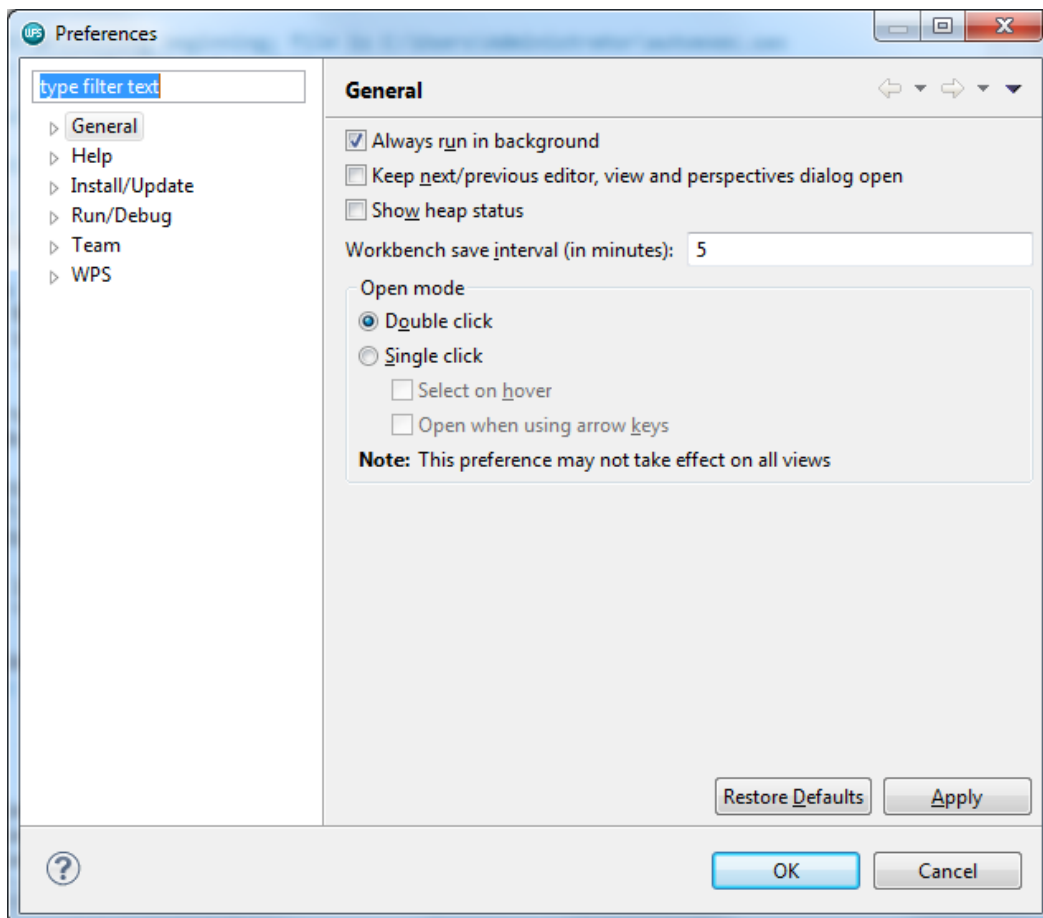


## Run your code in the background

You can have WPS run your program in the background so that longer running programs don't block you from doing other work. This is a nice feature and we suggest that you turn on this option.

One very enjoyable element of using the Workbench is that you can actually run multiple WPS jobs on your workstation. As a matter of fact, you can have a few local jobs running and simultaneously have a remote job running on a server.

To turn on this option, from the main menu go to **Window | Preferences** and make sure that the box **Always run in the background** is checked.

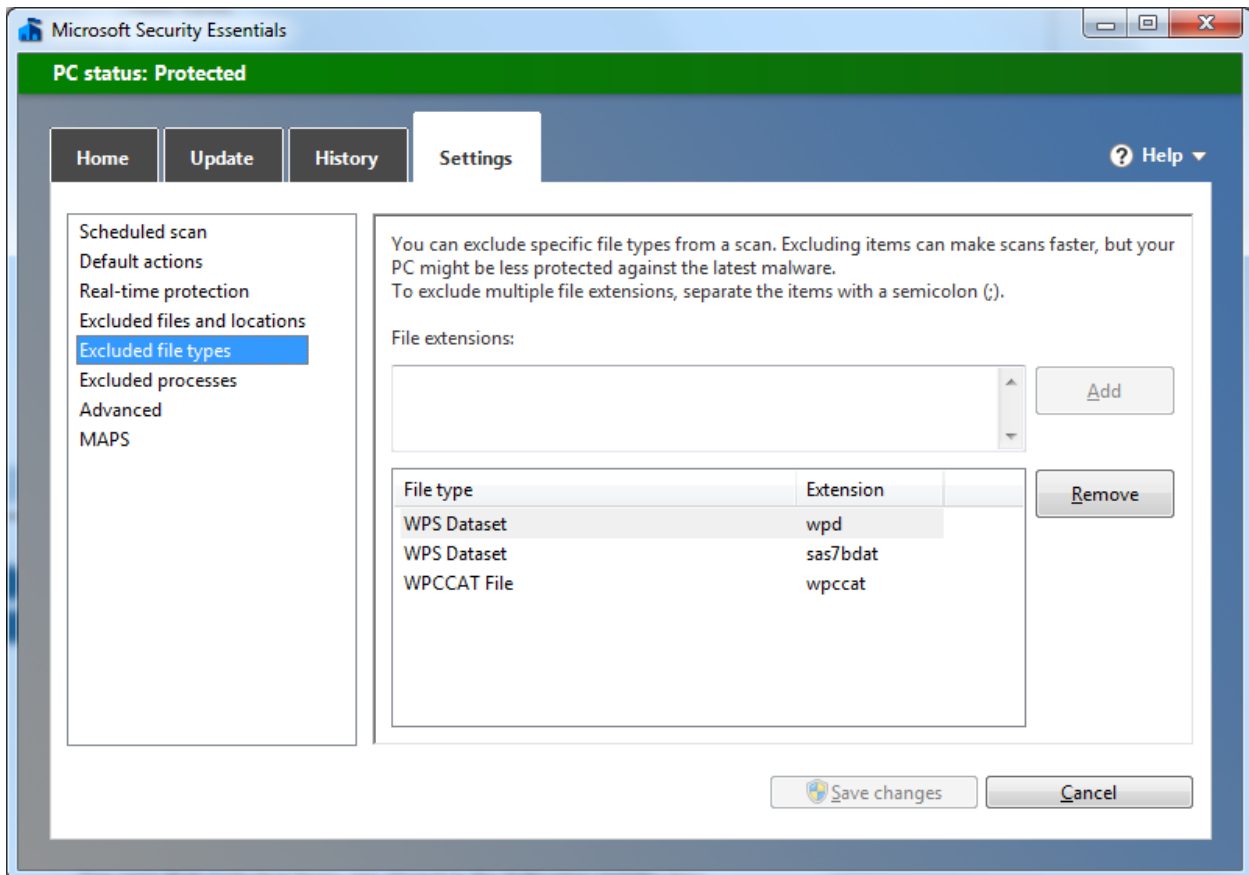


### Antivirus Software

If you are running antivirus software, you should exclude WPS filetypes from being scanned during the creation of data sets and catalogs. Most antivirus software allows you to exclude file types as well as folders. We suggest that you exclude files with the extensions of WPD, SAS7Bdat, and WPCCAT.

Using Microsoft Security Essentials as an example, go to the **START** menu and select **Microsoft Security Essentials**. Go to **Settings** and click on **Excluded file types** on the left hand side. You can now enter the aforementioned file extensions in the file extensions box and when done, click **add**.

When done, simply click on **Save changes** and exit the program.







## WPS Consulting

A variety of expert software services and professional assistance can be tailored to meet your organization's immediate or long-term computing needs. You can take advantage of short-term, on-site or off-site assistance as well as small-to-large-scale-application development services.

For organizations looking for expertise in migrating from a SAS to a WPS solution, MineQuest Business Analytics has a vast repertoire of experience. We offer both on and off site migration assistance to ensure that your organization is up and running as quickly as possible. Our migration services include installation and tuning, as well as training users on getting the most out of WPS.

For a short-term period, a consultant can provide technical assistance with specific business tasks. Whether you need to access data on different systems or platforms, produce graphs, create reports, modify or implement your business intelligence systems, skilled consultants in the use of WPS can deliver knowledgeable assistance and development.

With MineQuest consulting, you and your staff receive informal instruction and training on the use of WPS software efficiently and effectively. You maximize your staff resources and minimize your turnaround time for information delivery when you obtain short-term consulting services.

If you need leading-edge applications, you can have our experienced consultants develop, implement, and test a WPS application that meets your business requirements. You save time and money when our consultants use preprogrammed and pretested WPS software tools. No other consulting firm has more experience in using and implementing WPS technology. You know you are getting the best WPS application.

Consulting Services options available to meet your business information needs include:

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- Language Support
- Performance Tuning
- Reporting Systems
- Conversion and Project Management
- Production Support
- Web Enablement
- BI Architectural Design
- Client Server Technology
- Applied Analysis
- Software Migration from SAS to WPS
- Application Development
- Custom Applications



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