Install and run different VFP 9 versions on one computer, plus where to get the latest and greatest components

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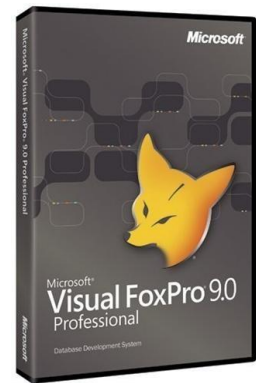***Southwest Fox Conference:*** *http://SWFox.net*

This white paper outlines the steps needed to install VFP 9 original (Released to Manufacturing – RTM), Service Pack 1 (SP1), Service Pack 2 (SP2), and Service Pack 2 (SP2) with all the hotfixes all on the same computer so you as a developer can test for different behavior and make choices with respect to the version of VFP you want to develop and deploy solutions.

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Introduction

Installing a new version of Visual FoxPro can be a daunting task when you consider the overhead of completely system testing all the applications you have released, or are planning on releasing in the near future. What fixes in the product can you take advantage of, and what new regression bugs did the FoxPro Team include in the new release that breaks your code? What are the risks of implementing a new service pack? Can you afford to give up the current stable release and the known set of issues without breaking stride? These are good business questions developers should be asking when updating or upgrading their favorite developer language.

Wouldn't it be great if you could have the old version of Visual FoxPro as well as the new service pack on the same machine so you can test the new version before you adopt it as the current and only version? You can use a virtual machine with the free version of Microsoft's VirtualPC, or one of the many competitors like VMWare or VirtualBox. The overhead of installing the operating system in the virtual machine, all the configuration you need to do to match your current development environment and then installing all your source code and developer tools is certainly a lot of work. You might not even be able to do this depending on the licensing restrictions of the framework and developer tools you use.

You certainly could put it on a separate machine, but not everyone has a secondary development machine. Besides, the secondary machine is usually a generation below your current development machine and could be underpowered for your testing.

I have VFP 9 RTM (Release to Manufacturing – unpatched), Service Pack 1 (SP1) and Service Pack 2 (SP2) and Service Pack 2 with the latest hotfixes loaded on my primary development machine in separate development folders. The four versions share some resources and they have separate settings for other resources and configuration. The rest of this white paper outlines how I got all four on the same machine and some things you need to consider when doing this.

The techniques discussed in this white paper were first posted in a blog entry I made during the VFP9 SP1 beta. I improved on this technique during the SP2/Sedna Community Technology Preview (CTP) release. Developers need to develop in a release they have tested and consider stable, but also want to investigate the stability of the latest release. This white paper will help establish the environment to all the production development continue, and test out the latest release to ensure it is stable enough for production development.

Feedback

Please send any feedback about this process to **raschummer@whitelightcomputing.com**. I have used this sort of process over the years and was tweaked based on the feedback of others, but might not be perfect for you. If you find something that does not work or is confusing, please let me know so I can make this process better for others who read it after you do.

Disclaimer

We are all adults here, but this document comes "as is", with no warranties. None whatsoever. This means no expressed, implied or statutory warranty, including without limitation, warranties of merchantability or fitness for a particular purpose or any warranty of title or non-infringement. Some settling can happen during shipment, your mileage may vary, etc.

Visual FoxPro Folders

The key to success with respect to installing multiple copies of Visual FoxPro 9 on the same machine is understanding where the Visual FoxPro files are stored.

> NOTE: All references to the "Program Files" folder is generic. This is the name of the folder on 32-bit Windows. On 64-bit Windows this folder might be "Program Files (x86)". Developers know this, but it was included here for the sake of completeness and because someone asked the question.

Files	VFP Command	Typical/Common/Default Folder Locations
VFP Home folder	`HOME(1)`	C:\Program Files (x86)\Microsoft Visual FoxPro 9
Common Files		C:\Program Files (x86)\Common Files\Microsoft Shared\VFP
Merge Modules		C:\Program Files (x86)\Common Files\Merge Modules
Tool Metadata	`HOME(7)`	C:\Documents and Settings\<user>\Application Data\Microsoft\Visual FoxPro 9

Where do I get updates?

Visual FoxPro 9 is installed from a CD purchased individually, or from an MSDN Subscriptions (CD/DVD or download). The Visual FoxPro updates used to be available from the Microsoft MSDN site (see **Figure 1**):
http://msdn.microsoft.com/vfoxpro

Figure 1. The Visual FoxPro Developer Center – Download page from 2016, which no longer exists.

Updated December 2019: The Visual FoxPro page on Microsoft.com has been pushed to the Microsoft Previous Versions Documentation page (see **Figure 2**):

https://docs.microsoft.com/en-us/previous-versions/visualstudio/foxpro/mt490117(v=msdn.10)?redirectedfrom=MSDN
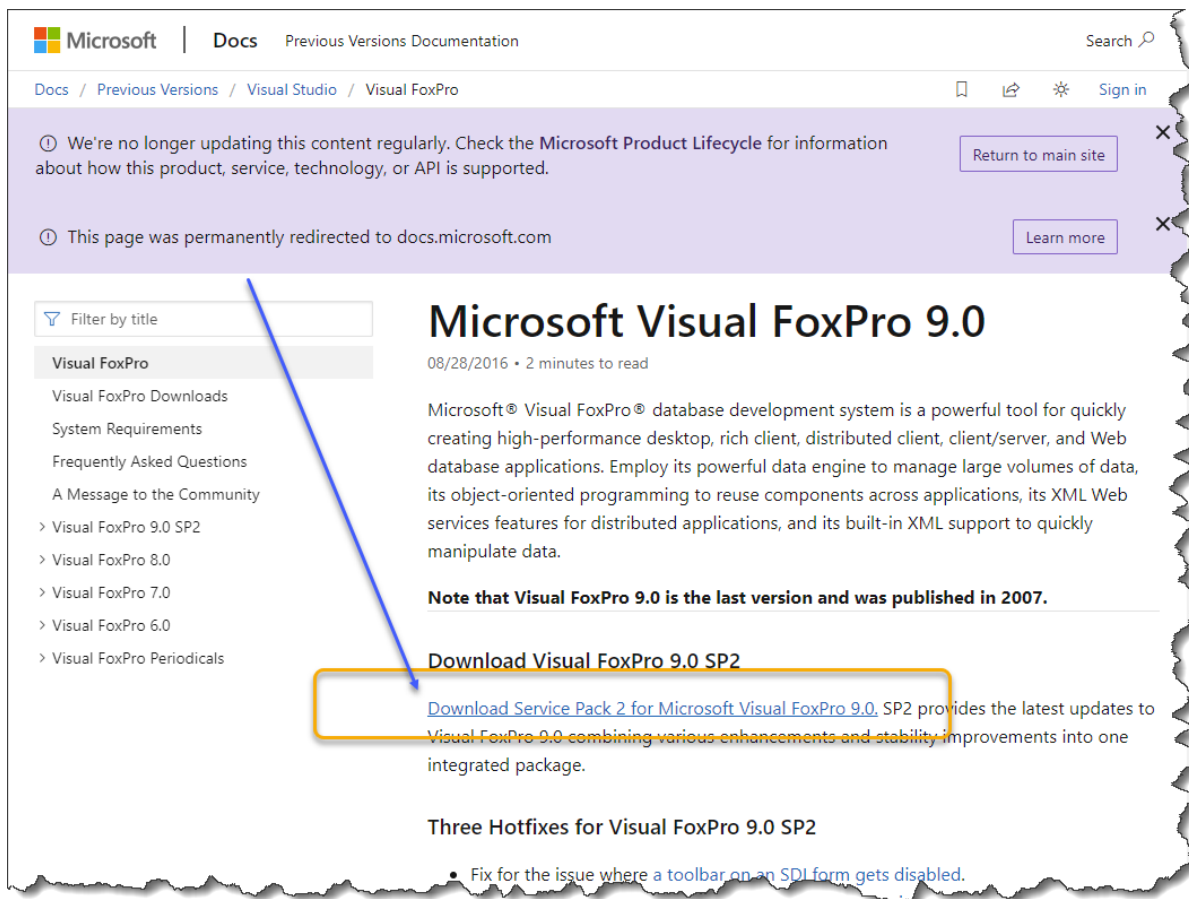
Figure 2. The Microsoft Visual FoxPro 9 page once Microsoft support ended.

Visual FoxPro 9 Service Packs

The only update you can get for Visual FoxPro 9 on the MSDN Web site is SP2. Microsoft removed SP1 from the MSDN Web site. As of the writing of this white paper you can still find it on the Microsoft Downloads pages. Here are the links:

VFP 9 SP1	https://www.microsoft.com/en-us/download/details.aspx?id=7374 Found via Google/Bing: "VFP9 SP1 download"
VFP 9 SP2	https://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=13959 (One special note about SP2. Microsoft released the SP2 twice. The first time was missing some key files in the build. The second version of SP2 was released October 15th and is affectionately referred to as SP2a. When you install this version make sure the VERSION() function returns October 15, 2007 as the build date.)

If you have an MSDN subscription you will find the VFP 9 SP1 files on the CD/DVD.

MSXML 4.0 Service Pack 3 (Microsoft XML Core Services)

Windows 10 users may find that the Task Pane Manager errors out because it cannot find the XML Core Services. This used to be part of the prerequisites for Visual FoxPro 9 installation, but for some reason it is not getting installed. You can find these files here:
https://www.microsoft.com/en-us/download/details.aspx?id=15697

Or you might have to Google/Bing search for it because Microsoft seems to enjoy moving files around and breaking the Internet links, we all save.

Backups

If you already have VFP 9 installed on your machine, you should make a backup of the four folders mentioned in the section titled "Visual FoxPro Folders." This provides you with the ultimate safety net in case something goes wrong. You can always start over by uninstalling Visual FoxPro 9.0 and reinstalling, but using a backup is faster.

> NOTE: I know some developers install developer tools and other things in the main VFP folder and in subfolders. You need to protect these files anytime you are installing or uninstalling Visual FoxPro. If you have changed any of the samples, registered any custom builder or wizards, or changed any of the Fox Foundation Classes (FFC) you may need to take some extra care as well.

You also might consider backing up the registry entries too if you want to restore the most recent configuration. Run RegEdit from the Windows Run command line. The registry entry is found here:

HKEY_CURRENT_USER\Software\Microsoft\VisualFoxPro\9.0

Right-click on the VFP 9 node and select the Export option (see **Figure 3**). This will prompt you to save the file with a REG extension. To restore the registry settings, double-click on the REG file in Windows Explorer or File Explorer.
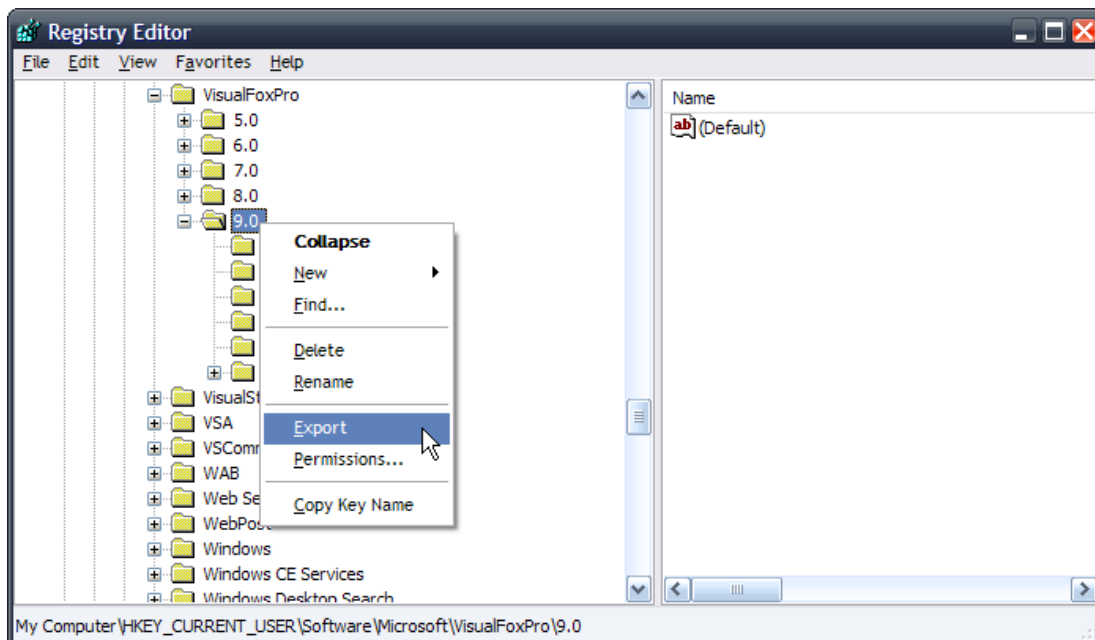

Figure 3. Exporting the registry is done by locating the node and using the shortcut menu to save to a file.

Virtual Store issues on Windows Vista, Windows 7/8/10, Windows Server 2008+

For Windows Vista, Windows 7, Windows 8, Windows 10, Server 2008, 2012 and 2016 users, another problematic issue can occur during the installation of Visual FoxPro 9 due to the Virtual Store. Files sitting in the "Program Files" directory are not read-write, except during installation. After that point, any attempt to write to a file in "Program Files" is virtualized by the operating system. Virtualization means the operating system makes a copy of the file in another folder called "\Users\[UserName]\AppData\Local\VirtualStore". Your changes are saved in this directory, not the original "Program Files" directory. Any future access to this file routes to the copy sitting in the Virtual Store, not the original file in the "Program Files" directory.

So why is virtualization a problem for the SP2 installation? Well, it has to do with the fact that FoxPro actually writes to a VCX the moment you open it and view it. It doesn't matter if you changed anything or not. Just the mere task of viewing the VCX causes a write to the file which means the operating system makes a copy of that VCX in the Virtual

Store. During the SP2 installation, several VCX files in the FFC directory ("\Program Files (x86)\Microsoft Visual FoxPro 9\FFC") are overwritten with new versions. However, if you have previously opened any VCXs that reside in the FFC directory, they have been virtualized. Now the new SP2 version is in "Program Files", but the older version is sitting in the Virtual Store. Unfortunately, it's the older version in the Virtual Store that gets accessed from this point forward, not the new version sitting in Program Files.

> *NOTE: The solution to the virtualization problem is to delete any VFP files from the Virtual Store before you install SP2. However, if you have purposefully made changes to any of those files, you will need to rename them, install SP2, and then redo your changes in the updated files. Also, remember there is a different Virtual Store for each Windows user so be sure to delete the Virtual Store for all users.*

> *NOTE: Special thanks to Cathy Pountney as I borrowed the text for this section from her "Making the Most of VFP 9 SP2 Reports" conference session!*

VFP 9 RTM Installed

Naturally you have to start with a copy of VFP 9 RTM so install this first if you have not. If you already have SP1 installed and don't care about RTM, skip ahead to the section VFP 9 SP1 to SP2. Having a copy of VFP 9 RTM is not as important since SP1 and SP2 are considered extremely stable. The only reason I have a copy of it is to test behavior before the service packs were released.

1) Install VFP 9 RTM.
2) Go to the VFP Common folder: C:\Program Files (x86)\Common Files\Microsoft Shared\VFP
3) Create a subfolder called VFP9RTM
4) Copy all the VFP9 Runtime files including VFP9r.dll, VFP9t.dll, VFP9rXXX.dll (resource files, especially the ones you deploy), the three Report*.app files, the FoxHHelp9.exe, and the FoxHHelpPs9.dll to this new subfolder.
5) Go to the Merge Module folder: C:\Program Files (x86)\Common Files\Merge Modules
6) Create a subfolder called VFP9RTM
7) Copy all the VFP 9 merge modules to the new subfolder. The list is: vfp9rchs.msm, vfp9rcht.msm, vfp9rcsy.msm, vfp9rdeu.msm, vfp9resn.msm, vfp9rfra.msm, vfp9rkor.msm, VFP9RptApps.msm, vfp9rrus.msm, Vfp9Runtime.msm, vfpodbc.msm, vfpoledb.msm, VFP9HTMLHelp.msm, VFP_GDIPlus.msm

At this stage you have a backup of all the important files in case you need to re-establish a VFP 9 RTM environment. If you run the VFP9.EXE file in the main VFP 9 folder and issue a **?VERSION(1)** in the Command Window you will see **"Visual FoxPro 09.00.0000.2412 for Windows [Dec 13 2004 11:21:37] Product ID xxxxx-xxx-xxxxxxx-xxxxx"**

VFP 9 RTM to SP1

I start with current VFP 9 RTM folders in the main VFP 9 folder.

1) Copy the main VFP 9 folder to another folder. I call mine: C:\Program Files\Microsoft Visual FoxPro 9 NoSP. You now have two identical VFP folders.
2) Install VFP 9 SP1, which installs the service pack over the main VFP 9 folder.
3) Go to the following folder: C:\Program Files (x86)\Common Files\Microsoft Shared\VFP
4) Create a subfolder called VFP9SP1
5) Copy all the VFP9 Runtime files including VFP9r.dll, VFP9t.dll, VFP9rXXX.dll (resource files, especially the ones you deploy), the three Report*.app files, the FoxHHelp9.exe, and the FoxHHelpPs9.dll to this new subfolder.
6) Go to the following folder: C:\Program Files (x86)\Common Files\Merge Modules
7) Create a subfolder called VFP9SP1
8) Copy all the VFP 9 merge modules to the new subfolder. The list is: vfp9rchs.msm, vfp9rcht.msm, vfp9rcsy.msm, vfp9rdeu.msm, vfp9resn.msm, vfp9rfra.msm, vfp9rkor.msm, VFP9RptApps.msm, vfp9rrus.msm, Vfp9Runtime.msm, vfpodbc.msm, VFP9HTMLHelp.msm, VFP_GDIPlus.msm, vfpoledb.msm (which may be in this folder or found in C:\Program Files\Common Files\Microsoft Shared\Merge Modules – and is not changed by installing VFP 9)

At this stage you have a backup of all the important files in case you need to re-establish either a VFP 9 RTM, or an SP1 environment. If you run the VFP9.EXE file in the main VFP 9 folder and issue a **?VERSION(1)** in the Command Window you will see

"Visual FoxPro 09.00.0000.3504 for Windows [Nov 4 2005 17:39:44] Product ID xxxxx-xxx-xxxxxxx-xxxxx"

VFP 9 SP1 to SP2

There is a general recommendation to install Service Pack 2 over the RTM version of Visual FoxPro 9, not over the SP1 version. It gives you the cleanest results. If you install over SP1 and you have changed any file in the VFP 9 folder, the Service Pack 2 install will not overwrite the newer file. Considering how easy it is to unknowingly change files; Merely opening an FFC VCX-based class to look at it changes the file because VFP changes the file date; Any recompile changes the contents of forms and classes; Tweaking a record in the sample data or adding to the meta data for builders or wizards can also change the file. Any of these can inadvertently lead to an incomplete installation of SP2.

1) Rename your main VFP 9 folder to another folder. I call mine: C:\Program Files (x86)\Microsoft Visual FoxPro 9 SP1.
2) Copy your VFP 9 RTM folder or uninstall/reinstall VFP 9 RTM (or copy the SP1 folder if you are comfortable with this) to the main folder location. My main folder is called C:\Program Files (x86)\Microsoft Visual FoxPro 9.
3) Install VFP 9 SP2, which installs the service pack over the main VFP 9 folder.
4) Go to the following folder: C:\Program Files (x86)\Common Files\Microsoft Shared\VFP
5) Create a subfolder called VFP9SP2
6) Copy all the VFP9 Runtime files including VFP9r.dll, VFP9t.dll, VFP9rXXX.dll (resource files, especially the ones you deploy), the three Report*.app files, the FoxHHelp9.exe, and the FoxHHelpPs9.dll to this new subfolder.
7) Go to the following folder: C:\Program Files (x86)\Common Files\Merge Modules
8) Create a subfolder called VFP9SP2
9) Copy all the VFP 9 merge modules to the new subfolder. The list is: vfp9rchs.msm, vfp9rcht.msm, vfp9rcsy.msm, vfp9rdeu.msm, vfp9resn.msm, vfp9rfra.msm, vfp9rkor.msm, VFP9RptApps.msm, vfp9rrus.msm, Vfp9Runtime.msm, vfpodbc.msm, VFP9HTMLHelp.msm, VFP_GDIPlus.msm, and vfpoledb.msm (which may be in this folder or found in C:\Program Files (x86)\Common Files\Microsoft Shared\Merge Modules – and is not changed by installing VFP 9)

At this stage you have a backup of all the important files in case you need to re-establish any of the VFP 9 RTM, SP1 or SP2 environments. If you run the VFP9.EXE file in the main VFP 9 folder and issue a **?VERSION(1)** in the Command Window you will see

"Visual FoxPro 09.00.0000.5815 for Windows [Oct 15 2007 09:11:06] Product ID xxxxx-xxx-xxxxxxx-xxxxx"

VFP 9 SP2 to VFP 9 SP2 with hotfixes

There are a lot of Visual FoxPro developers who refused to upgrade to Visual FoxPro 9 SP2 because it was determined by someone else to be buggy. Microsoft released a hotfix to the most serious Report Designer bug in VFP 9 SP2. This is the Data Group bug Cathy Pountney first blogged about here: *Gotcha: Serious report bug with Data Groups introduced in VFP 9 SP2*. (http://cathypountney.blogspot.com/2007/11/gotcha-serious-report-bug-with-data.html)

You can read about the fix in the Microsoft KnowledgeBase article #968409, titled "FIX: The group header of a data grouping is not printed at the top of each page as expected after you install Microsoft Visual FoxPro 9.0 Service Pack 2" (https://support.microsoft.com/en-us/help/968409/fix-the-group-header-of-a-data-grouping-is-not-printed-at-the-top-of-a)

This fix is considered by many to be the most serious bug introduced in VFP 9 SP2, and has often been referred to as the main stumbling block to the adoption of VFP 9 SP2. I am hopeful with this news that you will consider downloading the new hotfix and giving it a try to see if it works well for your apps. Only you can make the determination on what is best for your customers. Yes, there are more bugs to squash, but a high percentage of them have decent workarounds where this particular bug did not.

Additionally, there is some terrific news on how you can get the hotfix. Previous to this release Microsoft only made Visual FoxPro hotfixes available by calling Microsoft Product Support Services (PSS), report the bug in the hotfix, and

then Microsoft would make it available to you. Hotfixes are easier for the team to release because there is less overhead, but getting it to the Fox Community is a pain in the neck because of the PSS bottleneck. So the "Fox Team" came up with releasing this important hotfix through MSDN Code Gallery so any Visual FoxPro developer can download and apply the patch without calling PSS. I think this is a real positive move for the Fox Community.

The hotfix can be downloaded on the download page of Code Gallery for the KB article.

http://code.msdn.microsoft.com/KB968409/Release/ProjectReleases.aspx?ReleaseId=2445

> *NOTE: As you might have seen, the file can no longer be downloaded from Microsoft's Code Gallery because Microsoft (as it does too often) killed the Web site and removed all the files upload by developers. The FoxPro Community responded by creating a VFPX project. The files can now be downloaded from here: http://vfpx.codeplex.com/releases/view/573949*

> *NOTE: As you might have seen, Codeplex was closed down by Microsoft and the files can not longer be downloaded from CodePlex. The VFPX Administrators responded by moving VFPX to Github. The files can be downloaded from here: https://github.com/VFPX/VFP9SP2Hotfix3*

All three hotfixes released for VFP 9 SP2 are rolled up into this release so if you patch VFP 9 SP2, you also get the following fixes included in the new build:

- FIX: The toolbar on an SDI form is disabled in Visual FoxPro 9.0 Service Pack 2 (build 6303, 12-Apr-2008, KB 948528) http://code.msdn.microsoft.com/kb948528 (broken link, no replacement found)

- FIX: Records from another user session that violate the criteria for a parent table are displayed in the browse window for a child table in a Visual FoxPro 9.0 Service Pack 2 multiuser environment (build 6602, 03-Jun-2008, KB 952548) http://code.msdn.microsoft.com/KB952548 (broken link, no replacement found)

I want to thank the "Fox Team" for their hard work and personal efforts to make the hotfix happen. I also want to thank those in the Fox Community who have reported VFP 9 SP2 bugs, those who have documented the workarounds, those who researched when some of the alleged SP2 bugs really surfaced, and those who tested out the hotfix to ensure it is the best possible fix for the reports at this time.

The steps to install the hotfix are simply:

1) Run the hotfix EXE. This is a self-extracting ZIP file. The EXE extracts the new VFP 9 executable and the runtime files to a folder you specify. This might not be clear, but a message (**Figure 4**) displayed at the end of the extraction process sort of hints to this.
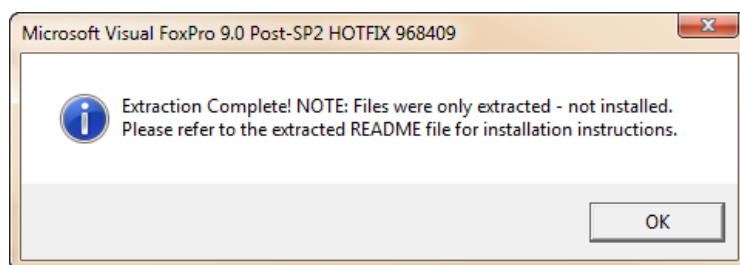

Figure 4. The final message displayed at the end of the VFP 9 SP2 Hotfix 3 extraction process.

2) Follow the instructions included in a file called: 968409_ReadMe.txt (see **Figure 5**). This file is found in the folder you specified the hotfixes be extracted. You need to manually copy the files to various folders documented in the text.

> *NOTE: Depending on your operating system and settings, copying the files from the extracted folder to a folder that is in a "Program Files" subfolder requires administrator access. This means that you need to run Windows Explorer or File Explorer (or your favorite replacement) as an administrator or provide the*
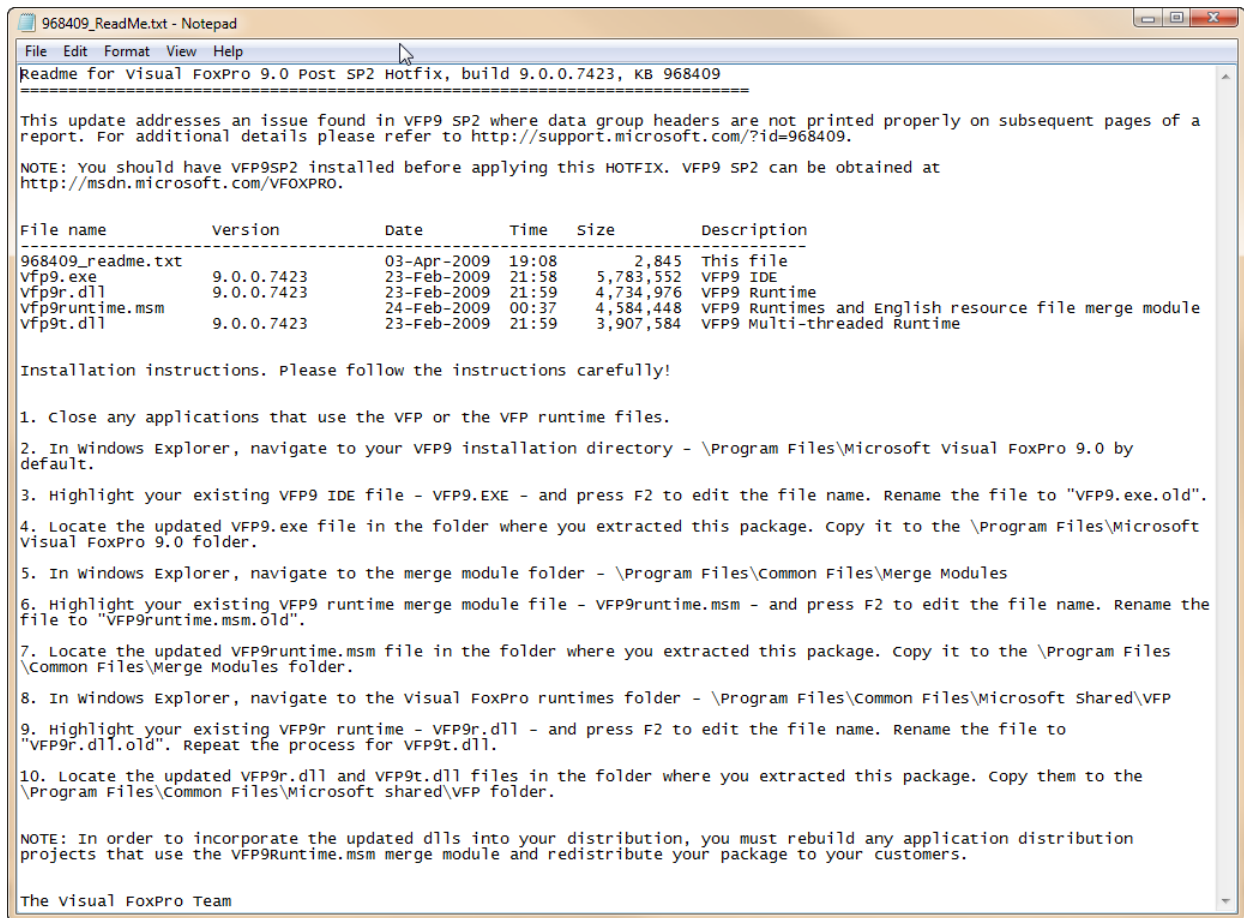
administrator credentials if the UAC is raised.

Figure 5. The read me instructions to install the hotfix files are included in 968409_ReadMe.txt.

> *NOTE: If you want a separate copy of SP2 without the hotfixes for testing, or you have a released product that cannot take new runtimes at this time, you can follow the same process I outline for creating a folder for VFP 9 SP2. Just create separate folders and copy the files as needed.*

If you run the VFP9.EXE file in the main VFP 9 folder and issue a **?VERSION(1)** in the Command Window you will see **"Visual FoxPro 09.00.0000.7423 for Windows [Feb 23 2009 13:20:28] Product ID xxxxx-xxx-xxxxxxx-xxxxx"**

Visual FoxPro 9 SP2 Help File fixed

As you may know, the April 2008 version of the VFP 9 SP2 Help file is badly broken. Actually, it a serious mess. There are lots of cosmetic things broken, and hyperlinks broken on important things like properties, events, and methods. I blogged about many of the problems I found back in April 2008 (http://rickschummer.com/blog2/2008/04/vfp-9-sp2-help-fix-glitches.html). A real mess, literally unusable, and not much hope from Microsoft to get it fixed by the Help team because of limited resources.

Several people (who will remain nameless at this time) started working behind the scenes to fix the Help file by decompiling it, repairing the problems, and rebuilding it. Some of us allegedly got closer than others and there allegedly was lots of collaboration, but one person allegedly made a serious breakthrough with lots of time put into getting it corrected.

I contacted Alan Griver and asked if a Help file allegedly was fixed, would Microsoft post it for the Fox Community to use it. You see, there are lots of legal entanglements with copyrights and third-parties and no one wanted anyone to be thrown in jail. It took a while and I was starting to lose hope.

Alan later emailed me with the news that we could post the changes on VFPX under the Creative Commons license. This means the Fox Community has the rights to improve the VFP 9 SP2 Help file! Some final tweaks were made to the new file, and one additional fix has to be made, but soon a usable VFP 9 SP2 Help file was posted. This file now resides on VFPX!

All the history of the fixes and the updated Help file can be found here:
https://github.com/VFPX/HelpFile

Thanks to Alan Griver for spending the time battling Microsoft Legal and going to bat again for the Fox Community! Proof again that even though there might not be an official Fox Team at Microsoft, we still have friends who are helping us out. Thanks to all allegedly involved in the battle to assemble the Help file without some key source files. You know who you allegedly are and you folks rock!

Reporting Apps

The default implementation of Visual FoxPro 9's Report Applications. Including the report output engine, the preview container, and the default Report Builder application, complete with a framework of Report Designer event handlers now reside on VFPX. There have been several updates to these files. The latest and greatest files can be downloaded here:

https://github.com/VFPX/ReportingApps

Thanks to Joel Leach for finding and fixing the Reporting Apps bug in ReportOutput.APP and ReportBuilder.APP that didn't handle higher DPI displays properly. This is a recommended download for those developers using the VFP 9 SP2 report designer and preview window in your applications, especially if your customers are using higher DPI monitors.

You need to make sure you copy the two APP files to the appropriate folders

- {Program Files}\Common Files\Microsoft Shared\VFP

- VFP 9 folder

- Deployment folders you have set up

Something I have caught people doing is accidentally leveraging a stale Windows Installer Merge Modules. If you are using InstallShield Express or one of the other remaining Windows Installer tools, you need to include the individual reporting APP files instead of using the Merge Module (VFP9RptApps.MSM) for the reporting apps. Fortunately, if you are using a tool like Inno Setup, you are most likely incorporating the individual files.

XSource

Many of the tools included with Visual FoxPro are written in Visual FoxPro. These tools are commonly referred to as the Xbase tools. The source code for the Xbase tools (Class Browser, Task Pane Manager, Object Browser, and so on), all the builders, the wizards, the three reporting apps, and a few lesser known tools are found in the XSource.ZIP file in the Tools\XSource folder under the Visual FoxPro root folder. Microsoft included the XSource.ZIP file with Visual FoxPro 6 and all later versions, so developers have the source to make improvements they need.

Prior to their release on VFPX, the license for the XSource code was controlled by the Visual FoxPro End User License Agreement (EULA, available at http://is.gd/IHvJeo), the Redist.TXT file found in the Visual FoxPro root folder, and the Distributable and Restricted Visual FoxPro Features and Files topic in the Help file (not the non-existent Help file topic noted in the Redist.TXT file).

These three legal sources dictated which files could be distributed, which files could not, which files could be distributed but not changed, and which had to be compiled into the application (rather than released alongside an executable). I justifiably felt like consulting an attorney to fully understand what we could and could not do.

The XSource project is a direct contribution from Microsoft giving developers the opportunity to improve what Microsoft shipped.

Updates can be found here:
https://github.com/VFPX/XSource

Additionally, you can find individual XSource projects on VFPX (http://vfpx.org). See the entire project list here: https://vfpx.github.io/projects/

Final Folder Structure

Now I have this for the Visual FoxPro EXE root folders under the Program Files folder (see **Figure 6**).
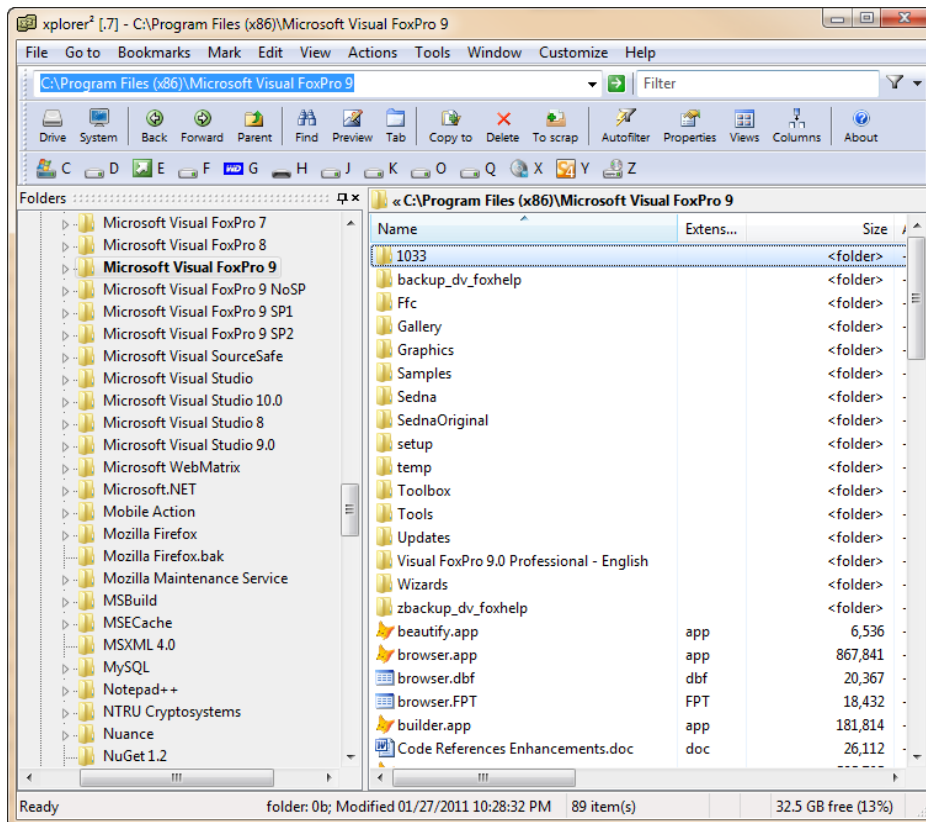

Figure 6. The four Visual FoxPro 9 folders on my development machine are found under "Program Files (x86)".

The main VFP9 folder on my machine now contains SP2 with the latest hotfixes. I have SP2, SP1 and RTM in separate folders. I then create shortcuts (see **Figure 7**) to each separate VFP9.EXE.
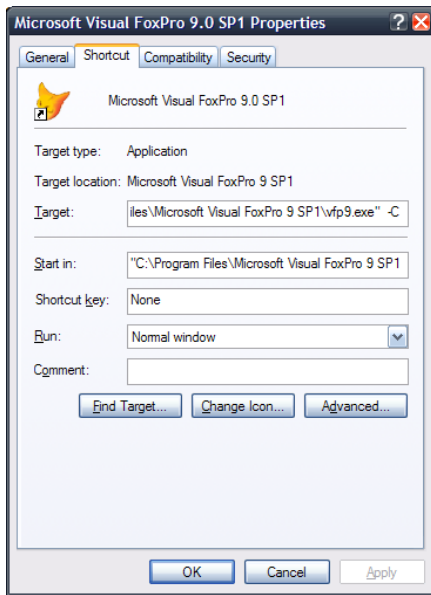
Figure 7. This is the Properties dialog for my VFP 9 SP1 shortcut.

The most important folders you need to watch are the VFP 9 Common Files folder (see **Figure 8**) and the Merge Module folder because these files are the ones you will ship to your customers via your favorite installer. Here is the C:\Program Files (x86)\Common Files\Microsoft Shared\VFP folder.
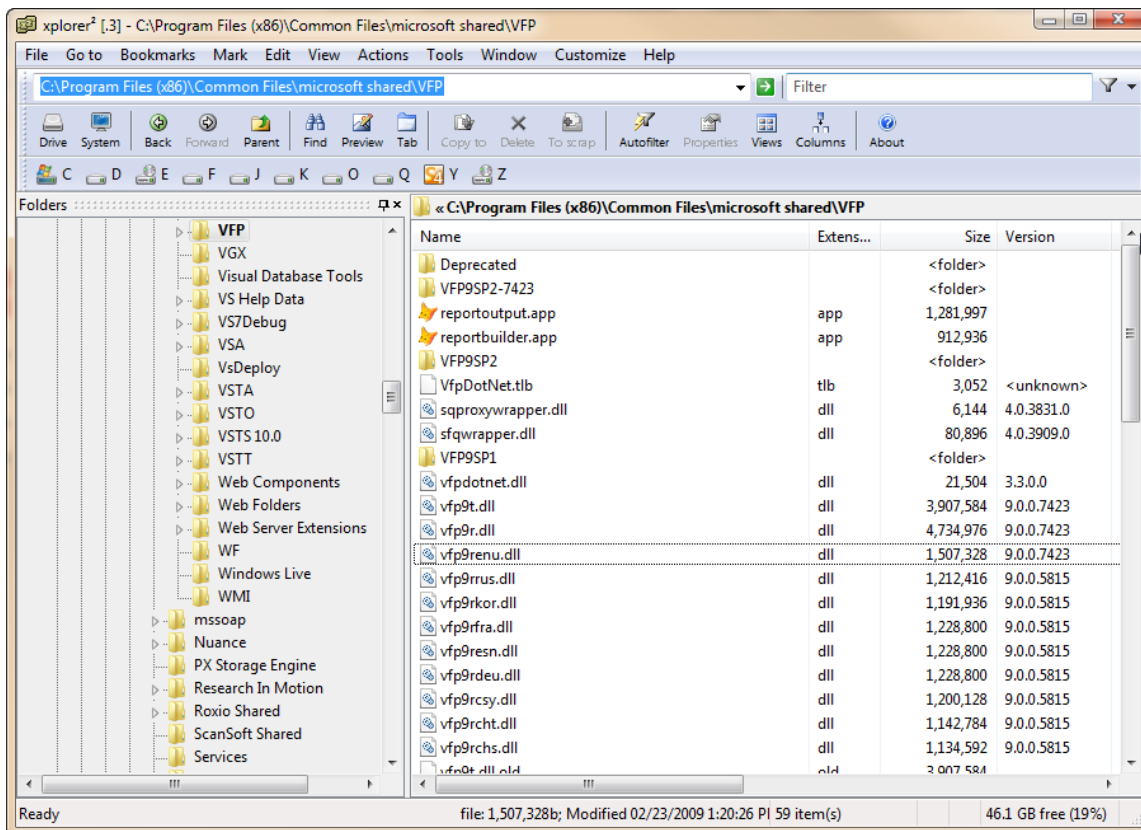

Figure 8. The Common Files folder is critical because you ship these files to your customers via installers like Inno Setup.

Real world file swapping

I swap in the runtimes as needed, but 99% of the time they are the SP2 with the appropriate hotfixes applied because this is what I am shipping these days. If I need any of the other runtimes all I have to do is copy the files from the appropriate subfolder to the root folder.

Sharing development files and folders

There are certain files I share between the different versions of Visual FoxPro 9, including the same FoxUser resource file, Config.FPW, and the tool metadata files found in the **HOME(7)** folder (depending on your operating system): C:\Documents and Settings\<user>\Application Data\Microsoft\Visual FoxPro 9 OR C:\Users\<user>\AppData\Roaming\Microsoft\Visual FoxPro 9\

This gives me the things I like to be common such as IDE windows showing up in the same place no matter what version I am using. It means the DataExplorer has all the same configuration settings and connections. If you set this up properly you can do the same thing for the Code References tool, the Environment Manager (run separately or as part of the Task Pane Manager), a common IntelliSense table, ToolBox configuration, and Task List.

The registry is shared and I accept that. You can manipulate the registry programmatically if you like. I have not had any problems with a shared registry between the versions.

Separating development

The last thing I need to discuss is the things I do separate between the versions. My start-up program sets the various things I don't want shared. I believe I got many of the ideas from Trevor Hancock or Jim Saunders years ago. Both of these gentlemen are superior tech support individuals who worked for Microsoft Product Support Services at the time:

```
_wizard       = HOME()+'wizard.app'
_builder      = HOME()+'builder.app'
_browser      = HOME()+'browser.app'
_converter    = HOME()+'convert.app'
_genxtab      = HOME()+'vfpxtab.prg'
_genmenu      = HOME()+'genmenu.prg'
_runactivedoc = HOME()+JUSTFNAME(_runactivedoc)
_beautify     = HOME()+JUSTFNAME(_beautify)
_coverage     = HOME()+JUSTFNAME(_coverage)
_gallery      = HOME()+JUSTFNAME(_gallery)
_genhtml      = HOME()+JUSTFNAME(_genhtml)

IF TYPE('_codesense') # 'U'
   _codesense = HOME()+JUSTFNAME(_codesense)
ENDIF

IF TYPE('_objectbrowser') # 'U'
   _objectbrowser = HOME()+JUSTFNAME(_objectbrowser)
ENDIF

IF TYPE('_tasklist') # 'U'
   _tasklist = HOME()+JUSTFNAME(_tasklist)
ENDIF

IF TYPE('_taskpane') # 'U'
   _taskpane = HOME()+JUSTFNAME(_taskpane)
ENDIF

IF TYPE('_toolbox') # 'U'
   _toolbox = HOME()+JUSTFNAME(_toolbox)
ENDIF

IF TYPE('_foxcode') # 'U'
```

```
   _foxcode = HOME(7) + JUSTFNAME(_foxcode)
ENDIF

IF TYPE('_foxtask') # 'U'
   _foxtask = HOME(7) + JUSTFNAME(_foxtask)
ENDIF

IF TYPE('_foxref') # 'U'
   _foxref = HOME() + JUSTFNAME(_foxref)
ENDIF

IF TYPE('_reportbuilder') # 'U'
   _reportbuilder = HOME()+'reportbuilder.app'
ENDIF

IF TYPE('_reportoutput') # 'U'
   _reportoutput = HOME()+'reportoutput.app'
ENDIF

IF TYPE('_reportpreview') # 'U'
   _reportpreview = HOME()+'reportpreview.app'
ENDIF

lcHelp = SET('Help',1)

IF FILE(HOME() + JUSTFNAME(m.lcHelp))
   SET HELP TO HOME() + JUSTFNAME(m.lcHelp)
ENDIF
```

A couple of months ago I refactored this code to deal with a couple of things I missed (reporting APPs were all shared to the SP1 set by accident), so it is a little less tested than the previous version. This configuration works under Windows 7/8/10. I recognized how this code could be a problem with some of the DBF files for things like the IntelliSense table (_FoxCode), the Task List table (_FoxTask), etc. It might be better to use the **HOME(7)** folder for some of the other files, but you would also be committing to share these files if you do so. The **HOME()** folder is unique to the different releases.

You can inspect the Options dialogs (**Figure 9, 10, and 11**) to see the impact of this code in your start up program.
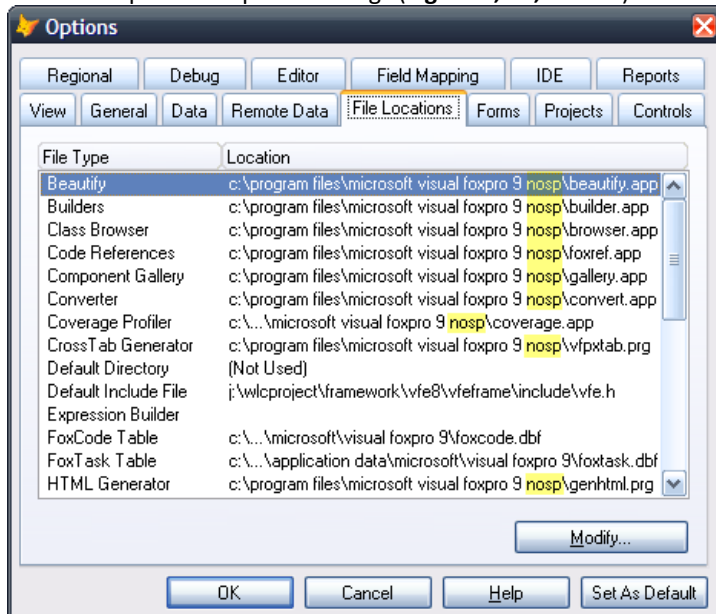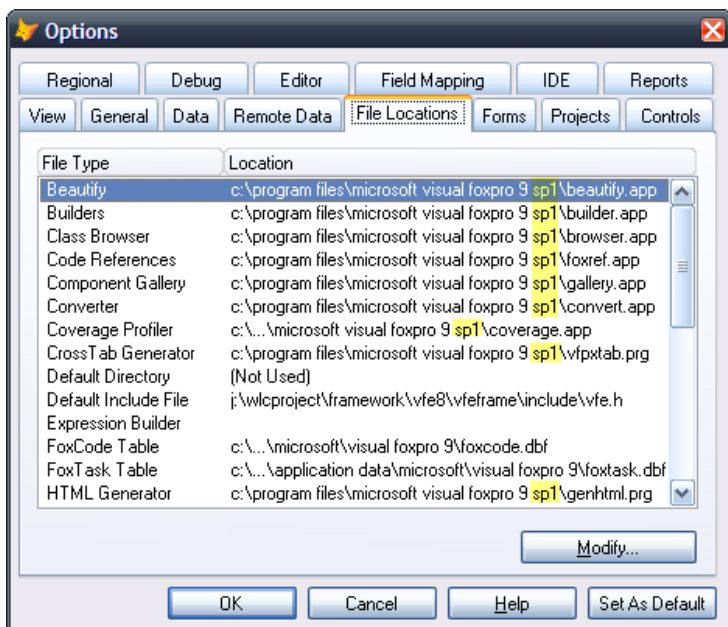

Figure 9. The VFP 9 RTM Options dialog.

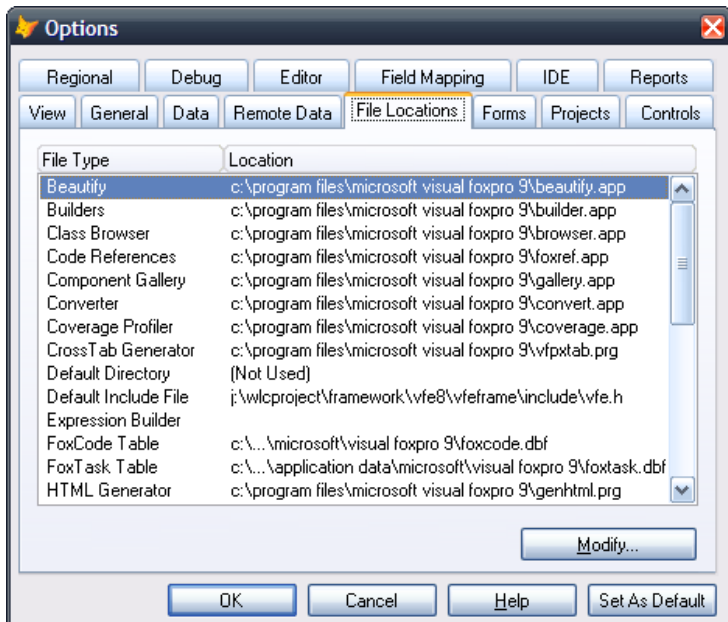**Figure 10.** The VFP 9 SP1 Options dialog.

Figure 11. The VFP 9 SP2 Options dialog.

Sedna Installation

Sedna is a collection of tools, libraries, samples and add-ons to Visual FoxPro 9.0. The Sedna components install separately, are not related to SP2, and do not directly impact the implementation of the various versions of VFP 9. I still think it is important to discuss in this white paper.

The Sedna install will create a Sedna folder under the main VFP 9 folder. This install does not require VFP 9 SP2, and the components will work with VFP 9 SP1. The only requirements for using the Sedna components I know are:

Sedna Component	Requirements
DDEX Provider	Requires Visual Studio .NET 2005 because it was designed to help .NET developers access Visual FoxPro data inside of .NET.
Net4COM	Requires Visual Basic.NET if you want to review the source code for the component. The .NET 3.5 runtimes are required if you are developing with or distributing this functionality.
Upsizing Wizard	Requires SQL Server 2000 or 2005/2008/2012/2014 installed and access granted to upsize VFP databases to SQL Server
Vista Dialogs for COM	Requires Windows Vista or higher as the dialogs are designed to work on Windows Vista.

The My for VFP IntelliSense extension library and the DataExplorer both work fine under SP1 and SP2, and have no additional requirements. One note about the DataExplorer: if you want the new version to show up in the Task Pane Manager you need to copy the Sedna version from the Sedna\DataExplorer folder to the main VFP 9 folder and overwrite the original version (was not updated in SP1).

You can install the Sedna files once, and copy the folder over to the other VFP 9 folders, but the COM registration will still point to the original installed files where you installed them. I personally only have Sedna files stored in the main VFP 9 folder and have copied the DataExplorer to the other folders as needed.

Also note that the Sedna source code is completely hosted on VFPX and some projects like the Data Explorer are separate projects on VFPX.

Making Sense of Sedna and SP2

SET SELF-PROMOTION ON

If you want in depth help with the different components of Sedna, my recommendation is to purchase the book published by dFPUG (German speaking FoxPro User Group, headed by Rainer Becker) called *Making Sense of Sedna and SP2*. This work is a compilation of a lot of knowledge and insight from Visual FoxPro gurus Cathy Pountney, Doug Hennig, Rick Schummer, Tamar Granor, Toni Feltman, and Bo Durban. The four retired Visual FoxPro MVPs and two should have been Visual FoxPro MVPs have written some great material that will save you time. The information inside of this book is tremendous and is not going to be found together any place else.
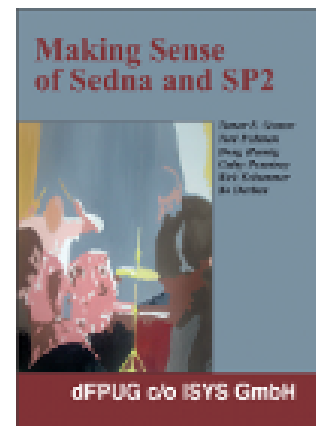

If you are using the Report Designer, this book is a must have. If you are using any of the Sedna components, this book is a must have. If you are using SP2, you owe it to yourself to read this book and get the low down on the new features in Visual FoxPro that will make your development life better and your customer application more stable and reliable. It is 242 pages of goodness no Visual FoxPro 9 developer should be without.

North American developers can purchase this book through Forward Thinking Software (http://vfpshop.com), otherwise the book can be ordered through German FoxPro User Group Publishing. (http://dfpug.de/)

SET SELF-PROMOTION OFF

Conclusion/Summary

I hope you found the information presented in this white paper a useful guide in getting the different versions of Visual FoxPro 9 installed and working on your development machine. If you read it to get the locations of the various downloads for all the VFP 9 components, great. The main reason I wrote this up was to encourage developers who were hesitant to install Visual FoxPro 9 Service Pack 2 to get it installed and begin the testing process. The more people who test the service pack the more issues will be surfaced and workarounds designed. If there are no workarounds found for the bugs we can better present the issues to Microsoft in hope they will put in the effort to fix them based on the FoxPro Community's need for a stable service pack.

Special thanks

These materials in this white paper were reviewed by several of my friends in the FoxPro Community. Special thanks to Pamela Thalacker, Mary Pilon, Tamar Granor, and Cathy Pountney for reviewing this process before publication.

Resources

"Unofficial" Bug List: http://fox.wikis.com/wc.dll?Wiki~VFP9SP2BugList~Wiki

Official Bug List:
https://connect.microsoft.com/VisualStudio/feedback/SearchResults.aspx?Advanced=true&KeywordSearchIn=2&SearchQuery=vfp+OR+foxpro&FeedbackType=0

Post issues for Microsoft to investigate here:
https://connect.microsoft.com/VisualStudio/feedback/CreateFeedback.aspx

> NOTE: Microsoft Connect has been "retired". Since Visual FoxPro is no longer supported by Microsoft, reporting issues is kind of pointless.

Change Log

Date	Version	Updater	Description
March 1, 2008	1.0	Rick. Schummer	Initial release
July 24, 2010	1.1	Rick Schummer	Updated to include VFP 9 SP2 hotfixes, details on where to go get VFP 9 SP2 Help file fixed and maintained by the Fox Community, fixed date problem on version of VFP 9 RTM, and information on the *Making Sense of Sedna and SP2* book.
November 12, 2010	1.2	Rick Schummer	Included information from Cathy Pountney about the Virtual Store issues with VFP 9 core files. Thanks Cathy!
July 21, 2011	1.3	Rick Schummer	Updated blog links.
March 25, 2013	1.4	Rick Schummer	Fixed bad links.
April 19, 2015	1.5	Rick Schummer	Change of location for VFP 9 SP2 Hotfix downloads. Added download location of updated VFP 9 Reporting Apps from VFPX. Fixed bad links. Updated some figures and folder names to bring more current. Added books written by Rick Schummer.
January 6, 2016	1.6	Rick Schummer	Updated the notes about applying VFP 9 SP2 Hotfix 3. Updated some figures and folder names to bring more current. Cleaned up some typos and updated to include Windows 10. Incorporated **CleverFox** marketing. Added dFPUG book distribution to marketing.
December 12, 2019	1.7	Rick Schummer	Cleaned up dead links to many Microsoft pages because they moved stuff around. Added download link to MSXML 4.0 Service Pack 3 (Microsoft XML Core Services) as it is often needed for Windows 10 installs. Cleaned up links previously pointing to the VFPX CodePlex site and corrected to the VFPX GitHub pages.

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Author Profile

Rick Schummer is the president and lead geek at White Light Computing, Inc. located in southeast Michigan, USA. He prides himself in guiding his customer's Information Technology investment toward success. After hours you might find him creating developer tools that improve developer productivity, or writing articles for his favorite Fox periodical.

Rick co-authored *VFPX: Open Source Treasure for the VFP Developer*, *Making Sense of Sedna and Visual FoxPro 9 SP2*, *Visual FoxPro Best Practices for the Next Ten Years*, *What's New In Nine: Visual FoxPro's Latest Hits*, *Deploying Visual FoxPro Solutions*, *MegaFox: 1002 Things You Wanted To Know About Extending Visual FoxPro*, and *1001 Things You Always Wanted to Know About Visual FoxPro*.

He has presented at user groups across North America and has enjoyed presenting at Southwest Fox, GLGDW, Essential Fox, VFE DevCon, German DevCon, Advisor DevCon, OzFox, and DevLink conferences. Rick is also an organizer for Southwest Fox and an administrator of VFPX. In 2010 Rick was awarded the FoxPro Lifetime Achievement Award. You can contact him via email at raschummer@whitelightcomputing.com , Twitter: **rschummer**, or his company Web site: http://www.whitelightcomputing.com, and read more of his thoughts on VFP in his blog Shedding Some Light (http://rickschummer.com/blog2).

Marketing

Optional reading for those who are interested in services offered by the various ventures the author is involved in.

Southwest Fox

Rick is the lead organizer (along with friends Doug Hennig and Tamar Granor) of Southwest Fox and ~~Southwest Xbase++~~ held in the Phoenix Arizona suburbs each year. The best Visual FoxPro conference in North America! Phoenix, Arizona is the place to be each October as the top VFP gurus on the planet show you how to make the most of VFP.

- Web site: http://swfox.net/
- Email: info@geekgatherings.com
- Southwest Fox Blog: http://swfox.net/blog/index.php
- Twitter: http://twitter.com/swfox

Southwest Fox is organized by Geek Gatherings LLC, which is a company Rick Schummer owns.

CleverFox

CleverFox Backup is a service for backing up Visual FoxPro data to the cloud. It protects against common PC disasters such as disk failure, power surges, fire, and theft. It also safeguards against viruses and rootkits like CryptoLocker that target DBF files.

CleverFox Backup is installed as a background service, no-user action required. Configuration (what to backup, how often and when) is done using a web-based management system. Backups are compressed and transmitted over a SSL connection to a secure data center where they are stored using AES-256 encryption.

CleverFox Backup is designed for Visual FoxPro systems. It has a feature set not found in competing services.

- Multiple backup sets (daily, weekly, monthly)
- Backup in-use DBF files
- Email notifications
- Web-based management
- API interface

CleverFox Backup has multiple plans to fit almost any budget and need. Get started for as little as $9.95 per month.

- Simple monthly billing
- No long-term contract
- Cancel anytime
- FREE 30-day trial, no credit card

Partnership opportunities are available for Vertical Market Application and Custom Application developers. CleverFox Backup handles all of the renewal, billing, and credit card processing. Partners get the benefits of:

- ·Reducing support costs related to corrupt DBF files or no recent backups
- ·Bundle with your application
- ·Revenue sharing

Partners have the ability to offer an Emergency Backup Plan to their customers (possibly for FREE) to perform weekly backups for a very low monthly cost. Contact us for more details.

Saving your customer's data to the cloud in case of a rainy day!
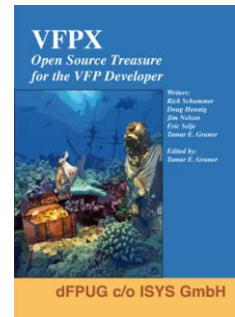
Books Distributor

White Light Computing is the new North American distributor for the dFPUG books (*VFPX Open Source Treasure for the VFP Developer*, *Making Sense of Sedna and SP2*, *Effective Application Development with Visual FoxPro*, *Flying Fox Applying Visual FoxPro Reporting to Any Data, in Any Enviroment*). If you are interested in ordering an electronic or paper copy (see availability) of the books please download our order form and send us an email (books@whitelightcomputing.com) OR give us a call (586.254.2530): http://whitelightcomputing.com/Books/WLCdFPUGOrderForm.pdf

Books

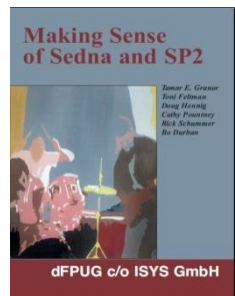Rick has co-authored 7 books over the years.

VFPX: Open Source Treasure for the VFP Developer

Lead author with Doug Hennig, Jim Nelson, Eric Selje, and Tamar Granor, wrote twenty chapters (1-3, 5-9, 11, 16, 22-26, 28-29, 35, 37, and Appendix A), and tech edited several more, published in 2012 by German FoxPro User Group (http://www.foxrockx.com/GetVFPX.htm)
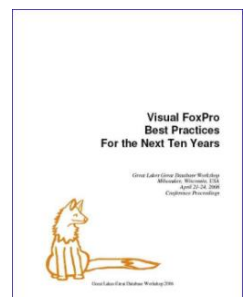
Making Sense of Sedna and Visual FoxPro 9 SP2

Along with Tamar Granor, Cathy Pountney, Doug Hennig, Toni Feltman, and Bo Durban, wrote two chapters (6 and 8), assisted on two others (1 and Appendix A), and author reviewed a handful more, published in 2010 by German FoxPro User Group.
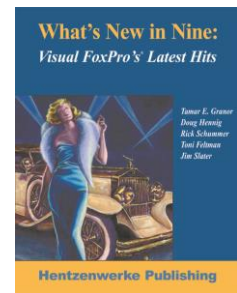
Visual FoxPro Best Practices for the Next Ten Years

Along with several contributors, wrote two chapters (1a and 2) in the GLGDW 2006 proceedings, published in 2006 by Hentzenwerke Publishing. (http://www.hentzenwerke.com/catalog/vfpbp10.htm)
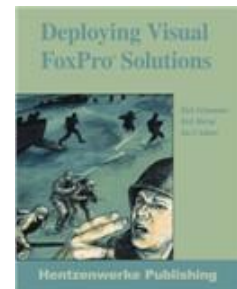
What's New In Nine: Visual FoxPro's Latest Hits

Along with Tamar Granor, Doug Hennig, Toni Feltman, and Jim Slater, wrote three chapters (1, 4, and 15) in What's New In Nine: Visual FoxPro's Latest Hits, published in 2005 by Hentzenwerke Publishing.
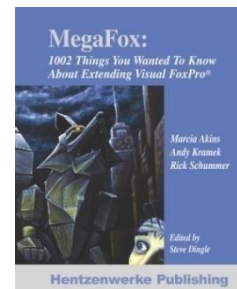
Deploying Visual FoxPro Solutions (DeployFox)

Lead author along with Rick Borup and Jacci Adams, wrote twelve chapters (1-4, 6-10, Appendix B, E, and F), and tech edited several chapters, published in 2004 by Hentzenwerke Publishing.

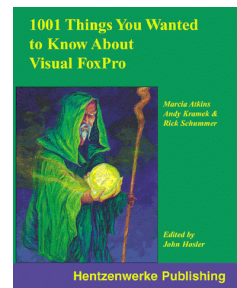### MegaFox: 1002 Things You Wanted To Know About Extending Visual FoxPro (MegaFox)

Along with Andy Kramek and Marcia Akins, Rick wrote six chapters (7, 8, 11, 12, 18), published in 2002 by Hentzenwerke Publishing.

1001 Things You Always Wanted to Know About Visual FoxPro (KiloFox)

Along with Andy Kramek and Marcia Akins, Rick wrote four chapters (14-18), published in 2000 by Hentzenwerke Publishing. (http://www.hentzenwerke.com/catalog/kilofox.htm)

Commercial Developer Tools

White Light Computing sells professional developer tools to help Visual FoxPro developers be more productive.

HackCX Professional: Having fun hacking a class or form via the ever trusty BROWSE window? Enjoy rearranging memo windows each time, manually finding the correct record in the table, making the change, only to discover that the class or form won't open in the designer? HackCX Pro is a better editor than the BROWSE window and provides a safer hacking experience for your forms and visual class libraries. More details here: http://www.whitelightcomputing.com/prodhackcxpro.htm

ViewEditor Professional: A vastly enhanced version of the award-winning ViewEditor, ViewEditor Professional is a replacement for the native Visual FoxPro View Designer. ViewEditor Professional provides support for local and

remote views, views that access free tables, views that access other views, parameterized views, multiple table updates and Visual FoxPro databases with multiple remote data connections.

View Editor Professional provides a much more efficient interface that makes writing and maintaining views a breeze, and leverages your skill as a database developer by getting out of your way while you write SQL code, but is there to help you with the process of setting the numerous properties associated with views. More details here: http://www.whitelightcomputing.com/prodvieweditorpro.htm

White Light Computing Services for Developers

White Light Computing specializes in extending development capabilities, expanding resources on projects, and helping you to come up to speed on technology you need to implement today. We offer tools, one-on-one mentoring, solid and successful project management, strong testing skills, quick debugging, and guide application deployment to production environments. White Light Computing brings professional experience and expertise to your team.

Developer Tools and Resources

We have two successful commercial products called HackCX Professional and ViewEditor Professional. HackCX Professional is a safer and better editor than the BROWSE window when hacking your forms and visual class libraries. ViewEditor Professional is a replacement for the VFP View Designer providing support for local views, remote views, remote data stored procedures, and provides the ability to script complex views to a program. Our VFP Programming Standards and Guidelines document, a set of free developer tools, and our commercial line are in use by companies around the world.

Mentoring and Training

We can provide classroom style training for several of your employees, or perform one-on-one problem solving. Our geeks can help you and your team learn about the various aspects of computing and software development, and different aspects of Visual FoxPro. Our lead geek, Rick Schummer has trained and mentored developers for more than 15 years in programming FoxPro and Visual FoxPro. He has trained end-users for more than 25 years in everything from working with the operating system, backups, using Microsoft Office and other productivity programs. Some of the training is formal, and some is very informal. We can do customizing training for your needs.

Data Conversions

Our team of developers converts data to and from different data sources for custom and vertical market applications. Data conversion is often tedious work with a host of challenges that bog down your development staff when they need to be focusing on delivering the core application. Our data scrubbing techniques, attention to detail, and ability to move large volumes of data between systems have a proven track record of success with end-users who rely on this information to run their business.

Software Testing

The key to successful acceptance of your application by your customers is making sure it meets the documented requirements. A well-known problem in the computing industry: developers are not the best people to test the code they create. Small development shops often do not have the resources to test code with a second developer and IT department resources are often stretched doing the development. Our software testing techniques give proven results and lead to less defects reported after deployment.

Software Deployment

Today's Information Technology (IT) professionals are responsible for managing a multitude of different platforms, operating systems, hardware configurations, networks, application development tools, and third-party components. Implementing and maintaining custom software and vertical market products you develop in this environment is more complex than ever, despite running in the most advanced environment since the dawn of the personal computing era. A strong understanding of deployment fundamentals can reduce the problems introduced into the process and increase the ability to react to unexpected situations and resolve inevitable problems.

Stonefield Query Implementations

Have you recently purchased the powerful Stonefield Query ad-hoc query and reporting tool? Need assistance in configuring it to work with your database so you can get this important tool into the hands of your customers? Leverage the years of experience our team has implementing this for other vertical market and custom software applications.

Migrations

We specialize in FoxPro for DOS and FoxPro for Windows conversions to Visual FoxPro too!

Need some help with something not on our list? We still may be able to help, please give us a call!

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info@WhiteLightComputing.com
586.254.2530
Ask for Rick Schummer!