

Visual DataFlex Support for Windows x64

October 1, 2008

Background

Today, 64-bit processors have become the standard for systems ranging from the most scalable servers to desktop PCs and some laptops. Many of these systems are available configured with 64-bit editions of Microsoft Windows products. 64-bit hardware offers direct access to more virtual and physical memory than 32-bit systems and can process more data per clock cycle, enabling more scalable, higher performing computing solutions. The Microsoft Windows x64-based solutions are the direct descendants of x86 32-bit products, and are the natural choice for most deployments. For the purposes of this document, we will refer to Microsoft's 64-bit operating systems that run on 64-bit hardware as "x64". All usage of x64 below refers to Microsoft's software – not the underlying hardware.

Virtually all new x86 servers shipped today contain 64-bit processors capable of running 64-bit operating systems and applications. Even many desktop systems now contain 64-bit-capable processors. Windows Server 2008, and the Windows Vista operating systems, and many other Microsoft products are already available in x64 editions.

While the Microsoft Windows x64 platforms provide 32-bit compatibility, there can be specific incompatibilities with particular 32-bit devices and software. All current Data Access Worldwide products are 32-bit software and depend on the 32-bit compatibility mode of Windows x64 platforms to run.

Data Access Worldwide's Roadmap for Windows x64

Data Access Worldwide is currently determining what changes will be necessary or desirable to support our products on Windows x64. We will provide full support for Microsoft's Windows Server 2008 and Windows Vista x64 operating systems in the Visual DataFlex 2008 – 14.1 releases of Visual DataFlex Studio, Client Engines and Web Application Server.

Recent testing of Visual DataFlex 2008 confirms that its default configuration does not operate according to specification on the target x64 platforms (Windows Server 2008 and Vista). x64 issues impact Visual DataFlex itself (the functioning of the Studio, Web Application Server or Client Engine) and can also have specific impact on your applications. Our objective for Visual DataFlex 2008 – 14.1 is that all of the product's features and specifications will be available and supported on Windows x64 to the same extent that they are available and supported on the 32-bit Microsoft operating systems we currently support. If you use third party tools or technologies in your applications, you will need to contact those vendors to see what their intentions are in respect to Windows x64 support.

While the process of determining what is needed to fully support Windows x64 is ongoing, we want to provide you with the technical information that we have available now so you can understand the impact of attempting to use Visual DataFlex on x64

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operating systems. We will update this information as we move toward full support for Windows x64.

The main areas of incompatibility we have seen to-date are:

- Changes in the IIS Management API and Default Settings
- Debugging in the Visual DataFlex Studio

IIS Management API and Default Settings

Just like the 32-bit versions of Windows Server 200x and Vista, the default IIS settings on the x64 versions Windows Server 2008 and Vista do not include the various IIS settings necessary to develop and run Visual DataFlex Web Applications. In addition to the standard IIS adjustments made for 32-bit platforms, you must also turn on an additional 32-bit compatibility mode for IIS when using an x64 platform.

On Windows Server 2008 you must start by adding Application Server and Web Application Server as roles to the server machine configuration.

You must make changes to the default IIS configurations in order to successfully develop and run Visual DataFlex Web Applications. We recommend you make these operating system changes prior to installing Visual DataFlex in an x64 environment.

By default, Windows Server 2008 and Windows Vista x64 do not have ASP enabled, so you must turn on ASP to support the Visual DataFlex Web Application Server. This can be done under **Internet Information Services | World Wide Web Services | Application Development Features**. Turning on ASP will also automatically turn on ISAPI Extensions.

Windows Server 2008 and Windows Vista x64 include Internet Information Services version 7. While IIS 7 fully supports ASP, the management API has been changed dramatically from prior IIS revisions. Various Visual DataFlex components (from the installation to the Studio and Web Application Administrator) depend on the prior IIS management API to function correctly so you must enable backward compatibility for the prior IIS management API.

Enable the IIS v6 Management Console under **Web Management Tools | IIS 6 Management Compatibility**. If you do not enable this feature (in addition to enabling ASP), it will appear to the Visual DataFlex Studio or Web Application Server installation process that you do not have IIS installed and calls into IIS from any program (including the Studio and Web Application Administrator) will fail.

The final configuration change that needs to be made for both Windows Server 2008 and Windows Vista is the *Enable 32-bit Applications* setting in the Default Application pool. By

Visual DataFlex Support for Windows x64

October 1, 2008

default, that is set to False. In order to have your Visual Dataflex applications running in an x64 environment, you must change that setting to True by doing the following:

- On Windows Server 2008 x64:
 1. Open **Server Manager**
 2. Expand **Roles | Web Server | Internet Information Services (IIS) Manager**
 3. On the tree on the right, click on **Application Pools**
 4. On the panel to the right, select **DefaultAppPool**
 5. From the Action panel, select **Set Application Pool Defaults**
 6. In the General group, highlight **Enabled 32-bit Applications**
 7. From the combo, select **True**
 8. Click on **OK**

- On Windows Vista x64:
 1. Open **Control Panel**
 2. Click on **Additional Options**
 3. Click on **System and Maintenance** (on left hand side)
 4. Click on **Administrative Tools**
 5. Double-click on **Internet Information Services (IIS) Manager** (not the 6.0 version)
 6. Expand **ComputerName** on the left hand side (click on the little triangle in the tree view)
 7. Click on **Application Pools**
 8. Right-click on **DefaultAppPool** and select **Advanced Settings...** from the context menu
 9. In the **(General)** group, set **Enable 32-Bit Applications** to True
 10. Click on **Ok**

Special Note for Vista x64 - While the proper configuration of ASP and IIS is separate from the various Vista User Access Control (UAC) issues, some of the symptoms of an incorrect server configuration can be similar to symptoms of UAC issues. An application can not differentiate between the inability to access IIS or ASP because they are not properly enabled or due to UAC restrictions. Always check both areas if you are having problems with ASP or IIS.

Debugging in the Visual DataFlex Studio

The Studio must be able to terminate the processes it starts when running in debug mode. The current Studio implementation relies on the operating system to terminate the process when the debugger is terminated which does not work in x64 environments. When the process termination is not successful, various problems will occur.

The main symptom of a process that has not been properly terminated is that Visual DataFlex processes (desktop and/or Web applications) will appear disconnected from the Studio debugger, but are not fully terminated. These processes are not fully responsive

Visual DataFlex Support for Windows x64

October 1, 2008

and cannot be disposed of until you exit the Studio instance that started them. You can see the processes running in Windows Task Manager's process list. Closing the Studio will automatically terminate those processes.

The Visual DataFlex 2008 - 14.1 Studio will have the debugger explicitly terminate all processes instead of relying on the operating system to do so and the issue described above should not occur.