

► **Open solutions for a changing world™**

Visual DataFlex® Support for Windows Vista

January 15, 2007

During the development of Windows Vista, Microsoft made several key changes that are meant to improve overall quality, security, and reliability from previous versions of Windows. While Microsoft made investments in Windows Vista to provide backwards compatibility, some of the system changes, such as User Account Control and default configurations make Windows Vista behave quite differently from previous versions of Windows.

The changes in Vista will impact most existing software, including Visual DataFlex, and we are currently determining what changes will be necessary or desirable to support Data Access products on Windows Vista. Data Access Worldwide will provide full support for Microsoft's Vista operating system in future releases of Visual DataFlex Studio, Client Engines and Web Application Server.

Our testing of Visual DataFlex 12 confirms that the default Vista configuration precludes Visual DataFlex from operating according to specification. These incompatibilities 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 is to deliver a future version of Visual DataFlex where the product's features and specifications are available and supported on Vista to the same extent that they are available and supported on Microsoft Windows XP, Windows Server 2003 and Windows 2000 operating systems. If you use 3rd party tools or technologies in your applications, you will need contact those vendors to see what their intentions are in respect to Vista support.

While the process of determining what is needed to fully support Vista is ongoing, we want to provide the developer community with the technical information that we have available now. We will update this information as we move toward full support for Windows Vista.

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

- The impact of User Account Control
- Changes in the IIS Management API
- Inconsistencies in some user interface behaviors

► **Open solutions for a changing world™**

User Account Control

From a compatibility perspective, one of the most significant changes in Vista is User Account Control or "UAC". According to Microsoft...

"The main goal of User Account Control is to reduce the exposure and attack surface of the operating system by requiring that all users run in standard user mode. This limitation minimizes the ability for users to make changes that could destabilize their computers or inadvertently expose the network to viruses through undetected malware that has infected their computer.

With User Account Control, IT administrators can run most applications, components and processes with a limited privilege, but have "elevation potential" for specific administrative tasks and application functions.

Conversely, when users encounter a system task that requires administrator privileges, such as attempting to install an application, Windows Vista will notify the user and require administrator authorization. This type of prompting helps ensure that users do not accidentally make modifications to their desktops. It also helps eliminate the ability for malware to invoke administrator privileges without a user's knowledge."

While there are many aspects to UAC, the bottom line is that it removes local administrator type permissions from running programs. This can impact everything from installations (including the Visual DataFlex installations and your own application installation) to the functioning of deployed applications. The severity of impact depends on the specific operations being attempted by the program in question.

Certain registry and file manipulations can be restricted by UAC and this impacts some technologies that we employ, including the technology used for evaluation licenses and Visual DataFlex Personal and the creation or deleting of files in specific locations.

The types of registry and file manipulations that are restricted by UAC do not happen all the time, so it's possible that some developers may not seem to get the same results as others. This can result in some developers thinking "it works fine for me, so what's the problem?" Providing consistent and predicible support for all necessary Vista operations is a requirement to provide full support of our products.

While this document describes these issues from the perspective of the Visual DataFlex Studio, Web Application Server and Client functionality, it is important to understand that the specific behaviors of your applications can also be impacted by Vista depending on the technologies and techniques you use. Those technologies may be native to Visual DataFlex or introduced through 3rd party tools.

One of the backwards compatibility features Microsoft provides in Vista is the ability to "Run as Administrator" when executing programs that are known to require administrator

► **Open solutions for a changing world™**

level access. Based on our current testing, using the Run as Administrator option allows Visual DataFlex to run “normally”. While we are not prepared to adopt this as our official method for supporting Vista, it can be a valuable tool for developers who want or need to be more involved in the Vista environment now.

The elevated rights that happen when programs are “Run as Administrator” can be set so that they are automatically used for particular programs. This allows you to run in admin mode every time you run the program without having to access Run as Administrator from the context menu. You can access the Program Compatibility Wizard via Control Panel | Programs | Use an older program with this version of Windows. There are various options that you can set in the Program Compatibility Wizard, including the option to Run as Administrator. Our preliminary tests show that selecting that option for the Studio, Compiler and Web Application Administrator may be sufficient.

If you or your end users accidentally run a program that needs elevated rights but either do not have the compatibility mode set or do not select it from the context menu, the program will not run with elevated rights and there is no obvious indication that you have started an application in that mode. Typical issues that might occur when not running with elevated rights are:

- Attempting to run any Visual DataFlex program under an Evaluation or Personal license fails. These licenses may need access to the registry that is now restricted by UAC.
- Working with the examples in the Studio is problematic. In particular compiling any of the examples fails. Creation or deletion of any files under Vista’s Program Files folder is restricted by UAC.
- The Web Application Administrator indicates that the service is stopped and can not be started.

It can also be noted that UAC can be turned on and off at the system level. Turning off UAC is not recommended by Data Access because that essentially turns off much of the new security profile for Windows Vista. Turning off UAC can be a useful tool for temporary situations.

IIS Management API

The default Windows Vista configuration does not have ASP enabled (similar to Windows Server 2003) so developers must turn on ASP to support the Visual DataFlex Web Application Server. This can be found under Internet Information Services | World Wide Web Services | Application Development Features. Turning on ASP will also automatically turn on ISAPI Extensions.

Windows Vista includes 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

► **Open solutions for a changing world™**

Web Application Administrator) depend on the prior IIS management API to function correctly.

Microsoft provides backward compatibility for the prior IIS management API in Vista by allowing users to turn on the IIS 6 Management Console under Web Management Tools | IIS 6 Management Compatibility. If you do not turn on 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.

While the proper configuration of ASP and IIS is separate from the various UAC issues, some of the symptoms can be similar. Not being able to access IIS or ASP because those functions are not even on can appear the same to a program as not being able to access them due to UAC restrictions. Always check both areas if you are having problems.

User Interface Inconsistencies

Visual DataFlex uses a combination of the Windows APIs and 3rd party libraries and tools for its user interfaces. There are times where the Visual DataFlex user interface does not display as expected on Vista because not all of the interfaces use the Vista styles. So far, none of the inconsistencies we have found are critical. For example:

- The tooltips in the Studio's CodeMax editor do not pick up the Vista style. They will have a monochromatic background and squared corners. Vista tooltips in the default style have a gradient background and rounded corners.
- The Studio's menu system is not a standard Vista style menu – it uses CodeJock components.
- Depending on the Theme used, the fonts in the Studio menu may look bad.
- The tooltips in Debugging windows are offset slightly to the right of their correct position.
- Visual DataFlex applications that use the standard menu classes will pick up the Vista standard menu style.

There are no workarounds to these inconsistencies.

The impact of these Vista inconsistencies on Visual DataFlex applications will be based on the technologies used to develop them. Most of controls in the system library of Visual DataFlex use standard Windows components or APIs and they will appear as expected. If applications use controls from other vendors, developers should contact the provider to see what information they can provide about Vista support.