

How WRQ Reflection® Works with Microsoft® Technologies

With the predominance of Microsoft Windows® and Microsoft Office applications, Microsoft technology touches nearly every area of the enterprise computing environment. For companies that rely on other applications, such as WRQ Reflection®, for their back-end operations, compatibility with Microsoft technology is critical.

WRQ Reflection software connects Windows desktops with IBM, HP, UNIX, and OpenVMS systems. In addition to interoperating with Windows, Reflection has been engineered to work seamlessly with a range of other Microsoft technologies. These technologies can be organized into three groups:

- Installation and deployment
- Management
- Automation

This paper describes the Microsoft technologies that Reflection customers can leverage in each of these areas.

Installation and Deployment Technologies

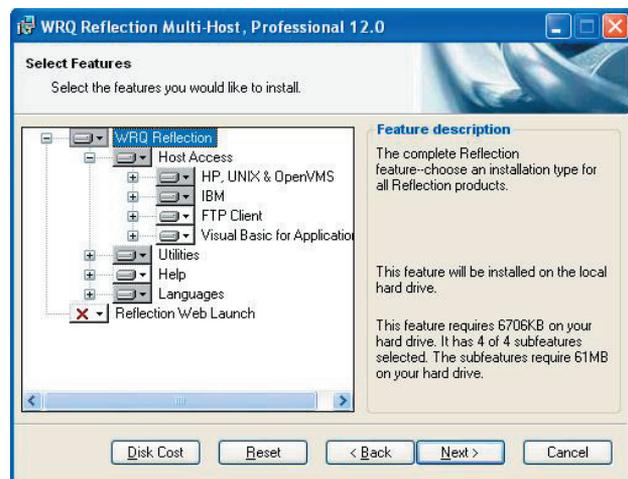
Reflection's ability to work seamlessly with the Microsoft technologies described in this section means that IT professionals do not need to acquire new skills for installing and deploying Reflection.

Windows Installer®

Windows Installer provides a standard method for installing and managing applications. For example, with this system service you can use a variety of tools to customize installations, upgrade software, repair applications, and advertise components. It's not surprising that today's IT departments have come to rely on Windows Installer to reduce their management burden.



Reflection products were the first terminal-emulation and PC X-server products to earn the "Certified for Windows 2000" and "Designed for Windows XP" logos. What's more, Reflection is the only emulator to earn the advanced "Designed for Windows XP-Optimized" logo.



Reflection's support for Windows Installer lets you control user access to features, settings, and commands

Reflection customers have been using Windows Installer package files to install Windows-based Reflection products since Installer was first introduced with Windows 2000. Reflection's support for Windows Installer helps IT in four key ways:

- **Control**
You can easily control user access to features, settings, and commands, without having to learn a whole new set of tools.
- **Resiliency**
If a major EXE or DLL is unintentionally damaged by a user, Reflection will automatically repair itself at startup. You can perform a more thorough level of repair using the Windows repair feature (Add/Remove Programs on the Control Panel). This feature makes it possible for Windows to examine damaged registry entries and file-level problems. Reflection also takes advantage of recent Installer 2.0 features by not requiring source media for patches.
- **Flexibility**
Reflection can quickly perform a workstation or network-based installation. You just choose the host product and features to install either locally or on the network. Then users can invoke the Install on Demand option to install a feature from the desktop. This option saves disk space on the user's computer until features are actually needed.

- **Reliability**

Reflection can recover from incomplete installations and automatically repair files and registry entries if they are accidentally corrupted or deleted. You can even deploy Reflection patches across the network via Windows Installer, speeding up desktop fixes.

Internet Information Services

IIS is the web-server component for Windows Server 2003. It is used for hosting multiple websites. It is also used for publishing web content, mail services, and news services. Many companies use it for both intranet and extranet web content.

Reflection is built to operate smoothly with IIS. For example, IIS can be used to deploy Reflection for the Web, WRQ's web-based emulator.

Management Technologies

Many of the Microsoft technologies highlighted below have become the de facto standard for IT departments today. Reflection supports these technologies to the highest degree possible.

Active Directory

With Active Directory, administrators can consolidate traditionally isolated domains on the corporate network at their own desktops for easier management. Active Directory can also serve as the central authority for network security.

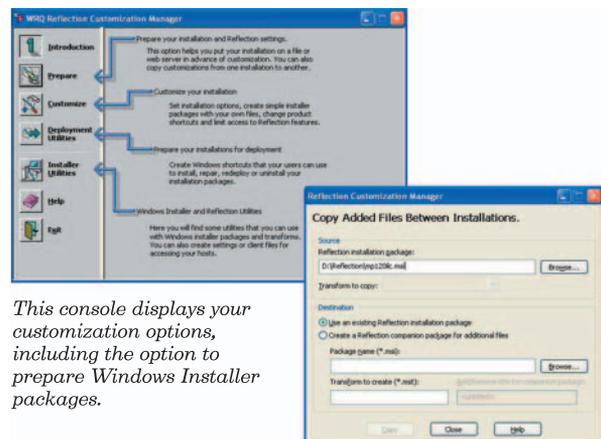
Since Reflection supports Active Directory, you can give authenticated users the ability to access authorized terminal sessions. Reflection allows just read-only access to the directory server, so you don't need to make any changes on your Active Directory server. You can even configure Reflection sessions for specific users or groups who are defined in Active Directory. By ensuring that the right people are using the correct configuration of Reflection, you can maximize productivity and minimize help-desk calls.

Reflection also uses Active Directory for access control. This allows you to comply with existing security policies and procedures while improving productivity for users.

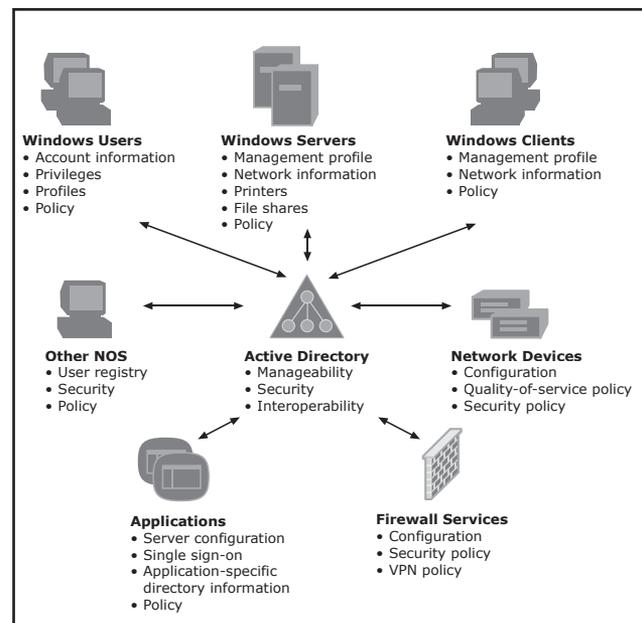
Reflection Customization Manager

Reflection Customization Manager is a software tool included with Reflection software. It allows administrators to quickly customize Reflection prior to deployment.

Reflection Customization Manager is designed to work with, or without, Windows Installer. You can make Reflection available to users through a Windows shortcut or via any Windows Installer-compatible deployment tool—such as SMS or Active Directory. Reflection is one of the few terminal emulators to support these tools without requiring an additional purchase.



This console displays your customization options, including the option to prepare Windows Installer packages.



Active Directory enables centralized management of users and computers.

Group Policy

Group Policy is the primary administrative tool in Windows. Microsoft recommends that Group Policy be used to define and control how programs, network resources, and the operating system work for groups of users and desktops.

While it can be used alone, Group Policy is most effective in conjunction with Active Directory. In an Active Directory environment, Group Policy is applied to users or computers based on their membership in sites, domains, or organizational units.

The Group Policy settings in Reflection provide administrators with powerful tools for customizing, managing, and securing Reflection applications. For example, you can customize Reflection to enable only secure, encrypted connections; you can disable macros; and you can remove a user's ability to transfer files to and from host computers.

Because Group Policy can define the Reflection settings and allowed actions for users and computers, you can tailor desktops to users' job responsibilities and experience levels. In this way, you can reduce lost productivity typically attributed to user errors (such as modifying system configuration files and rendering a computer unworkable) or to complexity (such as the availability of nonessential applications and features on the desktop).

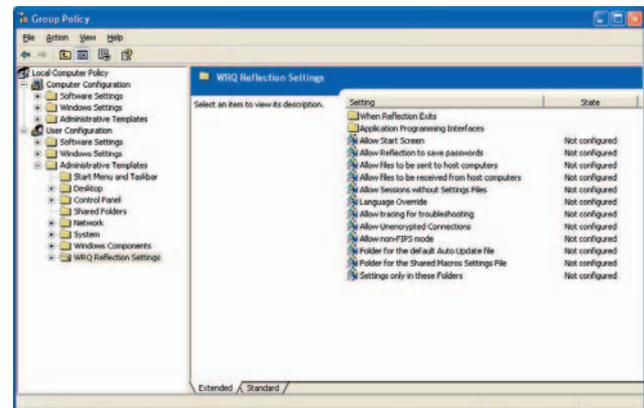
Windows Terminal Server

Windows Terminal Server can enhance your software-deployment capabilities in ways that are not possible with traditional application-distribution technologies.

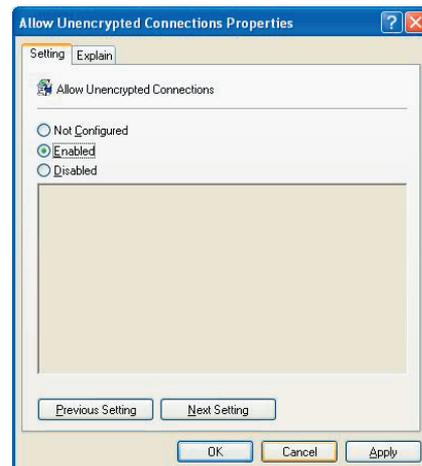
When users run an application on Terminal Server, the application execution takes place on the server; only keyboard, mouse, and display information is transmitted over the network. All users see are their own sessions, which are managed transparently by the server operating system and remain independent of any other client session.

Reflection customers have found that Terminal Server is an effective way to provide host connections to users without previous access. Here's why:

- You can quickly deploy Windows-based applications to host applications—especially those that are frequently updated, infrequently used, or hard to manage.



Reflection provides predefined Group Policies that make it easy to define settings for specific user groups or computers.



"Allow Unencrypted Connections" is a useful Group Policy.

- When an application is managed on Terminal Server, rather than on each device, it's easy for IT administrators to determine whether or not users are running the latest version of Reflection.
- A minimum amount of interaction is necessary to communicate to the host via the terminal. This increases the efficiency of Reflection and reduces the amount of processing time required to run multiple sessions.
- Remote or temporary users can access Reflection quickly and easily from a variety of desktop configurations.

WRQ has optimized Reflection's support for Windows Terminal Server over many years of customer use and testing. We can provide [detailed information](#) on using Reflection in Terminal Server environments.

Roaming User Profiles

With Roaming User Profiles, employees can “carry” their PC user settings and preferences from location to location, just as they would carry a laptop.

Roaming User Profiles improve the computing experience for users and make life easier for network administrators. Because Roaming User Profiles store user settings and preferences on the server, they are not necessarily affected when a personal computer is replaced or upgraded. This means you need only deploy the standardized applications to each Windows 2000 Professional-based desktop. Settings and preferences will automatically follow each roaming user.

With Reflection, users can sit down at any networked PC and expect to view their own desktop, complete with newly assigned software automatically installed on login or refresh. Administrative, Power User, and other privilege-level support options assure IT administrators that network resources are selectively and safely exposed.

Automation Technologies

The ability to automate common routines is critical for reducing costs and increasing user productivity. Reflection supports several key automation methods made available by Microsoft.



Visual Basic® for Applications

VBA offers programmers a complete development environment, including a dialog box editor, debugger, and extensive online help. Over the years, VBA has become the tool of choice for automating Microsoft Word, Excel, Access, and Visio.

Reflection lets you use VBA to customize your host sessions, so there's no need to learn a completely new scripting tool. For example, you can replace host application screens with graphical dialog boxes, automatically transfer data from a host application to an Excel spreadsheet, automate time-consuming tasks, and run tasks during off-peak hours.

.NET scripting

.NET has become an increasingly important architecture for the future of computing. Being able to support the familiar VB.NET file structure and C# is critical to moving forward with .NET initiatives.

Reflection lets you record macros using VB.NET and C# syntax. Then you can plug directly into a Visual Studio project without having to substantially reformat the output.

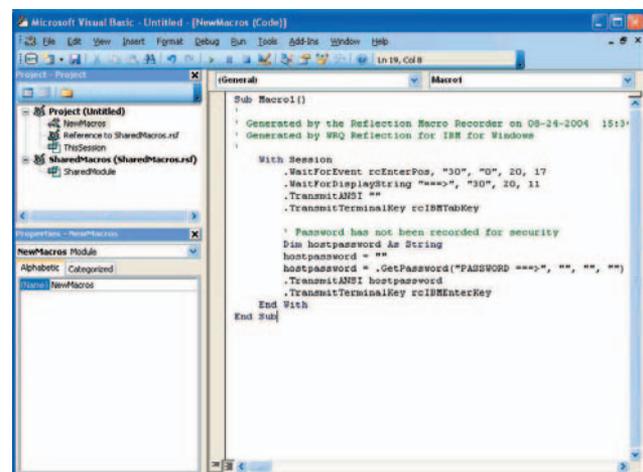
ActiveX® Controls

ActiveX Controls have become the primary architecture for developing programmable software components for use in a variety of containers. These containers range from software development tools to end-user productivity tools.

Reflection can be used as an ActiveX Control in a web page or within an application that supports ActiveX Controls, such as a Visual Basic application. The application can then launch Reflection, send commands to Reflection, and respond to events that occur in the Reflection session.

Office XP Web Services Toolkit

Reflection can be used as a consumer of web services via a simple download of the Office XP Web Services Toolkit. Administrators with some level of familiarity with VBA can quickly generate a request from within Reflection to consume a web service. In this way, they can enhance user productivity by adding new functionality to existing host applications.



Reflection's built-in VBA lets you automate tasks, customize terminal sessions, and integrate host systems with Windows desktop applications.

In Step with Microsoft

As long as Microsoft continues to develop new technologies, WRQ will continue to look for new ways to help companies leverage them. The broad support for Microsoft technologies in the Reflection product line gives IT managers and users the tools they need to be productive at a minimal cost. Because these technologies are already required to manage a variety of applications, little additional expertise is needed to implement Reflection solutions.

Why Does it Matter that Reflection is Microsoft Certified?

Reflection products were the first terminal-emulation and PC X-server products to earn the “Certified for Windows 2000” and “Designed for Windows XP” logos. What’s more, Reflection is the only emulator to earn the advanced “Designed for Windows XP–Optimized” logo.

Why are these logos important? Because each one is associated with a stringent set of requirements, defined by Microsoft, that determine application integrity on Microsoft OS platforms. Without these requirements, any vendor could claim interoperability. That’s why Microsoft used Veritest, a neutral third-party vendor, to decide who should receive “Certified for Windows 2000” logos. Similarly, vendors must meet detailed compatibility requirements in order to earn the Windows XP logo.

Microsoft certifications assure customers that Reflection interoperates with Active Directory, roaming and multi-user Windows, and Microsoft Windows Installer, among other technologies. Reflection has also been one of the few products to provide group policies and to [integrate VBA](#) for advanced customization with Office products.

Now that Reflection has earned the “Designed for Windows XP–Optimized” logo, customers can also count on Reflection to offer complete interoperability with XP. For example:

- Reflection is compatible with the new visual styles and theme manager in Windows XP.
- The Reflection user interface is more consistent with the Windows interface—simplifying configuration.
- Reflection can accommodate fast user switching, so you can switch multiple users on a single workstation.

Beyond testing Reflection for Windows logo certification, both WRQ and Microsoft routinely test Reflection’s ability to interoperate with Windows server products and service packs. For example, current versions of Reflection have been tested for [interoperability with Windows XP Service Pack 2](#).

About WRQ

WRQ builds host-integration, terminal-emulation, and PC X-server software. We've been connecting legacy applications to emerging technologies since 1981. Our expertise helps companies get the most value from their hosts today as they advance their long-term IT strategy. Learn more about our Reflection[®] and Verastream[®] products at www.wrq.com.



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