



Attachmate® Reflection®

Suite for X

Reflection® Suite for X offers a PC X server, terminal emulation software, and file transfer clients—all in one deployment package. With this multipurpose solution, you can connect Windows® users to graphical and character-based applications on UNIX, Linux, OpenVMS, and IBM systems. You can also provide drag-and-drop file transfer, secure file transfer, and easy access to NFS resources.

With Reflection Suite for X you can:

- Deploy a single product that meets the full spectrum of host access needs.
- Connect Windows users to graphical and character-based applications on UNIX, Linux, OpenVMS, and IBM systems.
- Display highly graphical and 3D X applications via OpenGL 1.4 and GLX 1.4.
- Ensure secure communications with a Secure Shell (SSH) client that offers X11 forwarding, interactive and batch session capabilities (ssh), and secure file transfer (sftp and scp).
- Enable user-driven and automated file transfers with drag-and-drop, command line, and API file transfer interfaces that support a broad range of protocols, including FTP, FTP/S, and SFTP.
- Provide access to X applications over the most popular desktop virtualization environments, including Windows Terminal Server and Citrix XenApp/Presentation Server.
- Access NFS shares from Windows 2000 and Windows XP with the same user interface used to access Windows-based shared directories.

What's New in Reflection Suite for X version 14?

- Microsoft® *Works with Windows Vista* logo.
- Tested on new platforms, including Windows Vista SP1, Windows XP SP3, Windows Server 2008, and Citrix XenApp.
- FIPS 140-2 validated cryptographic module.
- Reflection Certificate Manager for easier use of certificates.
- Reflection Key Agent, which accepts certificates for single sign-on authentication.
- Strong authentication via enhanced support for certificates (PKCS #11, Certificate Revocation Lists, and intermediate certificate storage through LDAP).



Product Highlights

UNIX apps and Windows desktops—a seamless relationship.

Reflection Suite for X seamlessly integrates UNIX applications and Windows desktops. For example, you can easily launch a graphical UNIX application using a desktop shortcut; the UNIX application appears to be running in Windows. You can minimize, maximize, restore, and close your UNIX application just like you can with a Windows application. You can also copy and paste text and images from Windows to UNIX, and vice versa.

Time-saving configuration wizards and templates.

You can easily set up your PC server environment with Reflection Suite for X's built-in configuration wizards and templates. The Reflection X Client Wizard steps you through the configuration process—gathering information on the target host system, security settings, and client command line. It even generates a startup shortcut for future use. Reflection Suite for X also offers quick-start templates for configuring your X server.

Multiple solutions rolled into one.

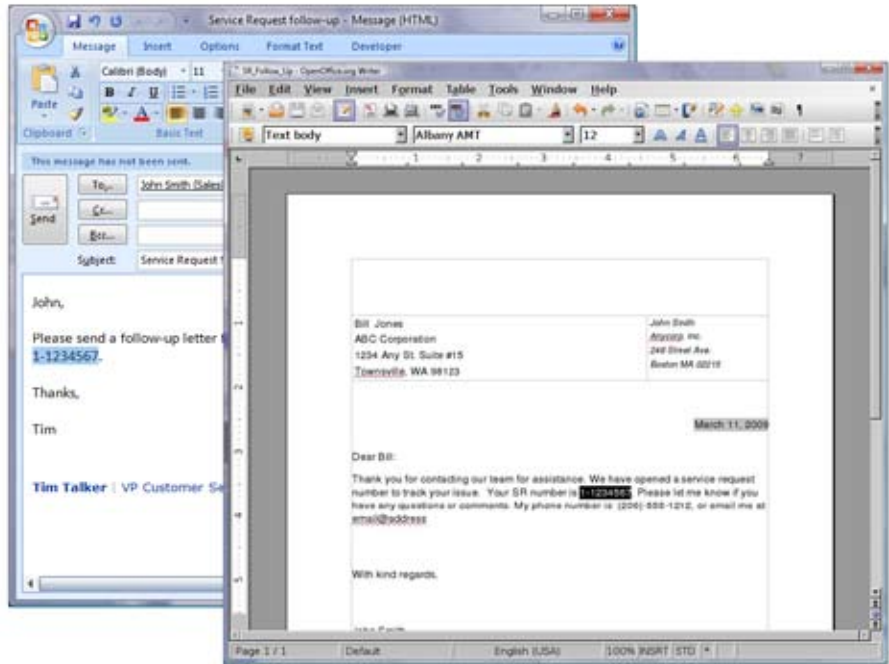
Reflection Suite for X covers the full spectrum of UNIX-based host access needs with a powerful PC X server; VT, 3270, and 5250 terminal emulators; and a secure FTP client. This multipurpose solution provides connections to both graphical and character-based applications. It also safely transfers the files that keep your business running.

Precise 2D and 3D graphics with OpenGL support.

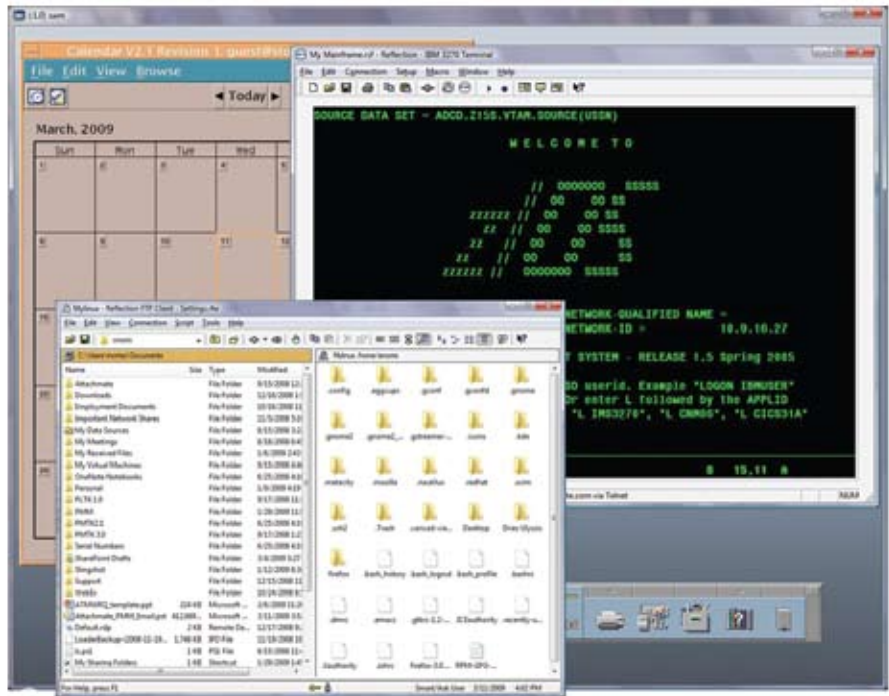
Reflection Suite for X supports CAD/CAM, modeling, animation, and simulation applications that leverage the OpenGL API. That means Windows users can access powerful graphical applications that deliver high-quality 2D/3D color images and use functions such as modeling, transformations, color, lighting, smooth shading, and texture mapping.

High-level security. High-level compliance.

Reflection Suite for X is designed to help you meet both internal and external security requirements. In addition to providing all the latest SSH, SSL/TLS, and Kerberos encryption and authentication technologies, Reflection Suite for X is validated for FIPS 140-2 and certified for DoD PKI—the U.S. government's top security standards. This high level of security helps you comply with mandates driven by PCI audits, Sarbanes-Oxley, HIPAA, and Basel II.



You can seamlessly copy and paste text and graphics between Windows and UNIX-based applications.



You can access graphical X Window environments, run terminal-based applications from UNIX and IBM hosts, and transfer files—all with a single product installation.

TECHNICAL SPECIFICATIONS

Product Components

- PC X server
- UNIX and OpenVMS terminal emulation
- IBM terminal emulation
- Secure file transfer application
- NFS client

PC X Server

- X11R6.9 compliance
- Support for multiple X displays and X screens
- Multiple monitor support
- Color depths:
 - 1, 8, 24, and 32
- Broad server visual support, including TrueColor, PseudoColor, GrayScale, StaticColor, and StaticGray
- Support for local and remote window managers, including GNOME, KDE, and CDE
- Sun X server compatibility settings
- Backing store and save under support
- Native 64-bit support for Microsoft Windows XP x64 Edition and Microsoft Windows Vista
- IPv4 and IPv6 support
- XDMCP (direct, indirect, and broadcast)
- Extensive client connection options, including SSH, Telnet, Kerberized Telnet, rexec, rsh, rlogin, and PCX\$SERVER
- Copy and paste both text and graphics between X clients and Microsoft Windows applications
- Copy and paste text between X clients
- X11R5/X11R6 font server with local font caching
- Support for TrueType, Unicode, and International fonts
- 3-button mouse emulation
- OpenGL 1.4 and GLX 1.4 support

Host and Emulation Types

- UNIX and OpenVMS:
 - VT terminals including Japanese
 - Support for numerous host character sets, including UTF-8 (Unicode)
 - TVI 950/955, Wyse 50+, Wyse60, ADDS VP2, SCO-ANSI, and BBS-ANSI
 - Linux console, AT386, IBM 3151, xterm, and VT-UTF8
 - ReGIS, sixel, and Tektronix graphics terminal emulation (VT340)
- IBM System z (Mainframe):
 - 3270 text and graphics terminals and printers
- IBM System i (AS/400):
 - 5250 terminal and printers
- Unisys A Series:
 - T27
- Data General:
 - Dasher 215
- All host types:
 - IPv4 and IPv6 support

Security

- Support for SSL 3.0/TLS 1.0, SSH, Kerberos, and SOCKS
- FIPS 140-2 validated cryptographic module (Certificate #766)
- Adheres to FDCC security policy requirements

- PKI support built to meet DoD standards:
 - PKCS #11 support
 - Online Certificate Status Protocol (OCSP) support
 - Certificate Revocation Lists (CRL)
 - Intermediate certificate storage through LDAP
 - Reflection Certificate Manager
- SSH encryption:
 - SSH X client launching
 - X11 forwarding
 - Command line SSH utilities (ssh, scp, and sftp)
 - Port forwarding (tunneling) for TCP/IP ports through secure channel
 - Integrated multihop SSH configuration support
 - Password, keyboard interactive, public key (user key and X.509 certificates), and Kerberos authentication
 - Smart card support through PKCS #11 interface
 - SSH key agent
 - Key generation and conversion (RSA-1, RSA, and DSA) utility
 - Easy uploading of users' public keys to SSH servers
 - SSH connection reuse
- Reflection Kerberos Client:
 - Secure authentication
 - Datastream encryption (DES and 3DES) for Telnet and FTP
 - Support for ticket forwarding and renewal
 - Compatible with Microsoft and Leash32 credentials caches
 - Standard Kerberos configurations
 - Support for Kerberos KDCs using TCP or UDP
- Host-based security to determine which clients can connect to the X server
- User-based security with MIT-MAGIC-COOKIE or XDM-AUTHORIZATION-1

X Extensions Support

- BIG-REQUESTS, GLX, MIT_SUNDRY_NONSTANDARD, SHAPE, XTEST, MIT-SHM, SYNC, DEC-XTRAP, DOUBLE-BUFFER, EVI, GP-MIT-SHM, LBX, MBX, SECURITY, TOG-CUP, WRQ_XPRINT, WRQ-ADMIN, XC-APPGROUP, XC-MISC, XDIRECTACCESS, XF86_BIGFONT, XINPUT, and XKB

File Transfer

- UNIX and OpenVMS hosts:
 - WRQ Reflection proprietary protocol, FTP, Kermit, Xmodem, and Zmodem
 - VAXLINK2 support for IA-64
- IBM System z (Mainframe) and IBM System I (AS/400):
 - IND\$FILE, APVUFILE, DISOSS, SQL data query, LIPI, and batch file transfer
- Reflection Secure FTP Client:
 - SSH, SSL/TLS, SOCKS, and Kerberos security protocols
 - Extensive firewall support
 - File browsing on z/OS hosts with TSO data sets
 - Save FTP client sessions in Layouts
 - Management of FTP settings via Reflection Administrator
 - IPv4 and IPv6 support
 - Change UNIX file permissions with FTP client
 - SFTP downloads resume after interruption

- Support for a wide variety of FTP servers, including IBM System z, IBM System i, UNIX, NetWare, Unisys, HP 3000, and OpenVMS
- FTP site wizard
- Site-to-site transfer between FTP servers
- Export/import settings in XML format
- Wildcard filters
- Automation tools (script recorder and Microsoft OLE Automation)
- Reflection NFS Client:
 - Multiuser password caching
 - Monitored locks
 - NFS 3.0 support
 - NIS (including Automount) support
 - Dynamic or manual sizing of read/write buffer
 - NFS file and directory caching
 - Cse-based file name support
 - Search for server file systems over TCP/IP
 - OLE file locking support
 - Support for the Windows net use command
 - Symbolic links
 - NFS printing
 - Access from My Computer and My Network Places
 - LDAP support with search capabilities

Printing

- UNIX and OpenVMS:
 - Windows or host control
 - Network, local, or print to disk
 - Print logging
 - Fixed pitch TrueType and printer font
 - Line-drawing characters
- IBM System z (Mainframe):
 - 3287 (LU1 and LU3)
- IBM System i (AS/400):
 - 3812, 3912, and 5553 printer emulation
 - Host Print Transform

Programming and Automation

- VBA support
- Macro recorder for VBA
- Programmatic access to over 400 properties and methods via Reflection API
- Microsoft OLE Automation
- HLLAPI, eHLLAPI, and WinHLLAPI (for 3270 and 5250)
- Reflection Command Language (VT sessions only)

User Interface

- X11 mouse style support
- Customizable toolbars and menus
- Dynamic hotspots
- Keyboard mapping editor
- International keyboard support
- Mouse mapping (2- and 3-button)
- Full-color editing
- 3270 and 5250 word wrap

TECHNICAL SPECIFICATIONS

Administrative Tools

- X Manager:
 - Multiple X client and server management from single tool
 - Consolidated view of all configuration settings
- X Profiler:
 - Default value configuration for each Reflection X setting
 - End-user configuration lockdown
- Quick-start tools:
 - X Client Wizard
 - Client-connection and server configuration templates
- X protocol trace and replay utility with custom filters for troubleshooting, user training, or presentation
- Application customization tool (settings and installation files, including MSI)
- Support for Windows administration features:
 - Windows Installer
 - Active Directory

- Roaming user and multiple user profiles
- Group Policy

International Support

- English, French, German, and Japanese languages
- XIM (I18N and XIMP), Microsoft-IME, and LocalFEP
- Localized keyboards, displays, and printers
- Japanese inline input
- Japanese PC-9800 series
- Support for double-byte fonts, including Chinese
- Support for the Chinese Simplified code page

System Requirements

- Any system that meets the recommended requirements for the Microsoft Windows operating system (an additional 64 MB of memory is recommended for better performance)
- 17 MB minimum of disk space
- 256-color video card (24-bit color recommended; accelerated OpenGL video card recommended for 3D CAD/CAM applications)

- 100 Mbps network speed for 2D and 3D CAD/CAM applications
- 2-button mouse, 3-button mouse, wheel mouse, 3Dconnexion SpaceBall 5000, or SpaceMouse Plus

Operating Systems

- Microsoft Windows Vista*
- Microsoft Windows XP x64 Edition (native)*
- Microsoft Windows XP
- Microsoft Windows 2000
- Microsoft Windows Server 2003
- Microsoft Windows Server 2008*
- Microsoft Windows 2000 Server
- Microsoft Windows Terminal Server*
- Citrix XenApp/Presentation Server/ MetaFrame*

* Reflection NFS Client is not supported on these platforms.

About Attachmate

Attachmate delivers advanced software for terminal emulation, application integration, and secure communications. Our NetIQ business provides solutions for automating IT processes and managing performance, security, and compliance of distributed IT. With our technologies, more than 65,000 businesses worldwide are putting their IT assets to work in new and meaningful ways. www.attachmate.com.



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