

Reflection® for UNIX and OpenVMS is terminal emulation software that connects Windows users to applications on UNIX, Linux, and OpenVMS hosts. Built to safeguard data, boost user productivity, and simplify desktop management, Reflection easily meets all your host access needs.

### Version 14.1 Highlights

- Microsoft Windows 7 support.
- Microsoft Windows 64-bit platform support.
- FIPS 140-2-validated cryptographic module (Certificate #1027).
- Reflection Certificate Manager for easier use of certificates.
- Tested against Federal Desktop Core Configuration (FDCC) security standard.
- Reflection Key Agent, which accepts SSH keys and certificates for single sign-on authentication.
- Enhanced support for certificates—PKCS #11, U.S. DoD Common Access Card (CAC), Online Certificate Status Protocol (OCSP), Certificate Revocation Lists (CRL), and intermediate certificate storage through LDAP—for strong authentication.

## TECHNICAL SPECIFICATIONS

### Host Types

- UNIX (including Linux)
- OpenVMS (including Itanium)
- Data General

### Emulation Types

- UNIX and OpenVMS:
  - VT terminals, including Japanese
  - Support for numerous host character sets, including UTF-8 (Unicode)
  - TVI 950/955, Wyse 50+, Wyse 60, ADDS VP2, SCO-ANSI, and BBS-ANSI
  - Linux console, AT386, IBM 3151, xterm, and VT-UTF8
- Data General:
  - Dasher 215
- All host types:
  - IPv4 and IPv6 support (Telnet, SSL/TLS, and SSH)

### Network Protocols

- SOCKS client support
- Extensive Telnet options with support for threaded I/O; Line mode; NAWs (option 31); Local Echo, including Telnet option 45 (Suppress Local Echo)
- Rlogin, TCP/IP, and network-based modems
- Full support for serial connections, including automatic serial-port detection and USB

### 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)
- Drag-and-drop file transfers directly to the desktop
- WRQ Reflection proprietary protocol, FTP, Kermit, Xmodem, and Zmodem
  - ASCII, binary, and labels/image support

### Printing

- Windows or host control
- Network, local, or print to disk
- Print logging
- Fixed pitch TrueType and printer font
- Line-drawing characters

### Programming and Automation

- Microsoft Visual Basic for Applications
- Reflection Basic and Reflection Command Language
- VBA macro output available in VB.NET and C# (.NET)
- VBA macro sharing
- Macro recorder for VBA and Reflection Basic
- Programmatic access to over 400 properties and methods via Reflection API
- Microsoft OLE Automation Controller and server capability
- Run Reflection as an ActiveX control within a VB or VB.NET application
- Programmable events

### User Interface

- X11 mouse-style support
- Connection wizard
- Customizable toolbars and menus
- Dynamic hotspots
- Full-screen terminal mode
- Graphical keyboard mapping
- Mouse mapping (2- and 3-button)
- Resizable terminal keyboard
- Full color editing
- HTML Help in the customization tools

### Browser Support

- Run Reflection as an ActiveX control in supported browsers

### Security

- FIPS 140-2-validated cryptographic module (Certificate #1027)
- NEW • Adheres to FDCC security policy requirements
- PKI support built to meet DoD standards:
  - PKCS #11 support
  - U.S. DoD Common Access Card (CAC) support
  - Online Certificate Status Protocol (OCSP) support
  - Certificate Revocation Lists (CRL)
  - Intermediate certificate storage through LDAP
  - Reflection Certificate Manager
- Reflection Key Agent accepts SSH keys and certificates for single sign-on authentication
- 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

## TECHNICAL SPECIFICATIONS

- Easy uploading of users' public keys to SSH servers
- SSH connection reuse
- Standard SSH configurations
- 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
- SSL/TLS Telnet encryption:
  - Integrated SSL/TLS Telnet encryption

### Administrative Tools

- Centralized management of settings files using group policy
- Customization tools for:
  - Settings and installation files (including MSI)

- Online Help
- Web console for centralized administration of settings files
- Web-based deployment of settings files and updates
- Support for Windows administration features:
  - Windows Installer (MSI)
  - Active Directory
  - Roaming user and multiple user profiles
  - Group Policy
- Microsoft Windows Terminal Server support
- Citrix XenApp support

### International Support

- English, French, German, and Japanese languages
- Localized keyboards, displays, and printers
- Japanese PC-9800 series
- Support for Asian input-method editors

### System Requirements

- Any system that meets the minimum requirements for the Microsoft Windows operating system
- Disk space requirement varies depending on the features installed (typically 45–120 MB)
- Network interface card (not required for serial connections)
- 256-color or higher video-card resolution
- 2- or 3-button mouse

### Operating Systems

- NEW • Microsoft Windows 7
- Microsoft Windows Vista
- Microsoft Windows XP
- Microsoft Windows Server 2008
- Microsoft Windows Server 2003
- Microsoft Windows Terminal Server
- NEW • Citrix XenApp



## About Attachmate

Attachmate delivers advanced software for terminal emulation, legacy modernization, and managed file transfer. 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](http://www.attachmate.com)



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