

Reflection® for the Multi-Host Enterprise is terminal emulation software that connects Windows users to applications on multiple hosts—all in one package. It comes in two editions: the Professional Edition and the Standard Edition. Built to safeguard data, boost user productivity, and simplify desktop management, Reflection for the Multi-Host Enterprise easily meets all your host access needs.

The Professional Edition includes these products:

- Reflection® for IBM®
- Reflection for HP
- Reflection for UNIX and OpenVMS

The Standard Edition includes these products:

- Reflection for IBM
- Reflection for UNIX and OpenVMS

Each product is also sold separately.

TECHNICAL SPECIFICATIONS

REFLECTION FOR IBM

Host Types

- IBM mainframe (3270)
- IBM AS/400 (5250)

Emulation Types

- IBM mainframe (System z):
 - 3179, 3179-G, 3180, 3192-G, 3196, 3197, 3270, 3278, 3279, 3472-G, 3476, 3477, 3486, and 3487
- IBM AS/400 (System i):
 - 5250, 5251, 5291, and 5292

Network Protocols

- IPv6 support
- IBM mainframe:
 - 802.2 (DLC)
 - Coax DFT
 - IBM Communication Server
 - LUA
 - Microsoft SNA Server
 - NetWare for SAA via IPX/SPX
 - NetWare for SAA via TCP/IP
 - SDLC
 - LU 6.2 (APPC)
 - TN3270 and TN3270E
- IBM AS/400:
 - 802.2 (DLC)
 - IBM Communication Server
 - Microsoft SNA Server
 - MPTN (AnyNet)
 - NetWare for SAA
 - LU 6.2 (APPC)
 - TN5250 and TN5250E

File Transfer

- IND\$File, DISOSS, SQL data query, batch-file transfer, and APVUFILE
- SSL/TLS encryption for AS/400 LIPI file transfers
- 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

- 3287, 3812, 3912, and 5553 printer emulation
- Pre-printed form support
- Print screen with consolidated screen-printing utility

REFLECTION FOR IBM: VERSION 14.1 HIGHLIGHTS

- Microsoft Windows 7 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.
- Easy access to Internet addresses from within host sessions.
- 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.

- Host Print Transform
- Duplex printing

Programming and Automation

- One session file for settings and macros
- Microsoft Visual Basic for Applications
- VBA macro output available in VB.NET and C# (.NET)
- VBA macro sharing
- Macro recorder support for VBA and Reflection Basic
- Reflection Basic
- Programmatic access to over 400 properties and methods via Reflection API
- DOS HLLAPI, HLLAPI, eHLLAPI, WinHLLAPI, IMAPI, CPI-C, and WinAPPC
- Microsoft OLE Automation Controller and server capability
- Programmable events
- Run Reflection as an ActiveX control within a VB or VB.NET application
- Microsoft Dynamic Data Exchange (DDE)



TECHNICAL SPECIFICATIONS

User Interface

- Clickable Internet addresses (URLs) in host sessions
- Option to hide OIA
- Simplified batch-file transfers
- Customizable screen sizes (3270 only)
- Font sizing
- Removable title bar
- 3270 word wrap
- FTP toolbar button
- Connection wizard
- Customizable toolbars and menus
- Dynamic hot spots
- 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
- IBM Express Logon Feature (ELF) support
- Automatic Kerberos sign-on for IBM AS/400
- 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
- Integrated SSL/TLS Telnet encryption

Administrative Tools

- Auto-update of device names
- Centralized management of settings files using group policy
- Customization tools for:
 - Settings and installation files (including MSI)
 - Online Help
- Web-based deployment of settings files and updates
- Support for Windows administration features:
 - Windows Installer
 - Active Directory
 - Roaming user and multiple user profiles
 - Group Policy
- Microsoft Windows Terminal Server support
- Citrix XenApp support

REFLECTION FOR HP

Host Types

- HP e3000
- HP 9000 (HP-UX)

Emulation Types

- HP e3000:
 - HP 700/98, 700/96, 700/94, 700/92, and 2392A
- HP 9000:
 - VT220, VT102, and VT52
 - UTF-8 (Unicode) host character-set support

Network Protocols

- IPv6 (Telnet, Secure Shell, and SSL/TLS) support
- 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)
- NS/VT, 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
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 - Management of FTP settings via Reflection Administrator
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Printing

- Windows or host control
- Network, local, or print-to-disk
- Print logging

REFLECTION FOR HP: 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.

- 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
- 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

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Security

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- PKI support built to meet DoD standards:

TECHNICAL SPECIFICATIONS

- 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
 - 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
 - Secure NS/VT or Telnet sessions

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
 - Active Directory
 - Roaming user and multiple user profiles
 - Group Policy
- Microsoft Windows Terminal Server support
- Citrix XenApp support

REFLECTION FOR UNIX AND OPENVMS

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
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COMMON SPECIFICATIONS

International Support

- Support for the Chinese Simplified code page (Reflection for IBM only)
- 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
- 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



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