Attachmate®
Reflection®

VERSION COMPARISON CHART

Have you taken a good look at your Reflection lately?

Maybe it's time for a update. Our Reflection® product line provides enterprise customers with support for advanced security protocols and the latest Windows operating systems—plus features that make it easier to access legacy applications from mobile devices.

REFLECTION 2014 PRODUCTS	HOST/EMULATION TYPES
Reflection 2014	3270, 5250, VT/UNIX, HP
Reflection Pro 2014	3270, 5250, VT/UNIX, HP, X
Reflection X 2014	X

See what you might be missing

Find your Reflection product below and discover how it compares. Attachmate® Maintenance customers receive updates of each major release at no charge.

FEATURES FOR IBM® 3270/5250	2014 R1	2011 R3	2011 R2	2011 R1	2008	14.1	14.0
TouchUx for an optimized user experience with host applications on touch devices	✓						
SmartUx for adding modern UI elements to host screens	✓						
Version support for MSI packages, created via Attachmate Customization Tool	✓						
Support for Transport Layer Security (TLS) 1.2	✓						
Support for SHA-256/RSA-2048 digital signatures	✓						
Windows 8.1 Compatible logo	✓						
Support for Windows Server 2012 R2	✓						
Windows 8 Compatible logo	✓	✓					
VMware Ready logo	✓	✓					
Support for Windows Server 2012	✓	✓					
Masking of sensitive host data	✓	✓	✓				
Support for the SFTP 4.0 standard	✓	✓	✓				
PCI/DSS mode to prevent unsecured connections to host systems	✓	✓	✓				
Embeddable .NET control	✓	✓	✓				
Browser mode user experience	✓	✓	✓				
Integration with Reflection Security Gateway for centralized installation, deployment, and management*	✓	✓	✓	✓			
Support for Windows Server 2008 R2	✓	✓	✓	✓			
Integration with Microsoft Office 2010	✓	✓	✓	✓			
Granular feature installs for locking down desktops	✓	✓	✓	✓			
Compatible with Windows 7 logo	✓	✓	✓	✓	✓		
Citrix Ready logo	✓	✓	✓	✓	✓		
Web-based HTML Help system	✓	✓	✓	✓	✓		
Virtualization platform support: Microsoft App-V, Citrix XenApp, and VMware	✓	✓	✓	✓	✓		

✓ Feature available in this version.

‡ Maintained Reflection for Secure IT customers received this feature in a service pack.

* Optional component.

FEATURES FOR IBM® 3270/5250 CONTINUED	2014 R1	2011 R3	2011 R2	2011 R1	2008	14.1	14.0
Run RUMBA session files and macros	✓	✓	✓	✓	✓		
Tabbed Multiple Document Interface (MDI)	✓	✓	✓	✓	✓		
Built on the .NET Framework	✓	✓	✓	✓	✓		
Segoe for Attachmate font (for consistency with Windows 7)	✓	✓	✓	✓	✓		
Integration with Microsoft Office 2007	✓	✓	✓	✓	✓		
Implementation of the Microsoft Ribbon user interface	✓	✓	✓	✓	✓		
Application, desktop, and Internet search support	✓	✓	✓	✓	✓		
Built-in Screen History, Spell Check, Auto Expand, Auto Complete, Scratch Pad, and Recent Typing features	✓	✓	✓	✓			
Granular User Account Control (UAC) support	✓	✓	✓	✓	✓		
Privacy filters to protect sensitive host data	✓	✓	✓	✓	✓		
Native .NET API	✓	✓	✓	✓	✓		
Trusted Locations feature to secure desktop environment	✓	✓	✓	✓	✓		
Automate data exchange between host applications and web applications	✓	✓	✓	✓	✓		
U.S. DoD PKI certification	✓	✓	✓	✓	✓		
Federal Desktop Core Configuration (FDCC) and United States Government Configuration Baseline (USGCB) compliance	✓	✓	✓	✓	✓	✓	
IBM Express Logon Feature (ELF) support for single sign-on to mainframe applications	✓	✓	✓	✓	✓	✓	✓
Automatic Kerberos sign-on for access to IBM System i hosts using Windows credentials	✓	✓	✓	✓	✓	✓	✓
Reflection Certificate Manager	✓	✓	✓	✓	✓	✓	✓
Clickable URLs in host sessions	✓	✓	✓	✓	✓	✓	✓
Smart card support through PKCS #11 interface	✓	✓	✓	✓	✓	✓	✓
IPv6 support	✓	✓	✓	✓	✓	✓	✓
FTP client enhancements for configuring, deploying, and starting FTP sessions	✓	✓	✓	✓	✓	✓	✓
Session order feature (allows users to work in pre-selected sessions while other sessions are loading)	✓	✓	✓	✓	✓	✓	✓
SSL encryption for AS/400 LIPI file transfers	✓	✓	✓	✓	✓	✓	✓
Customizable screen sizes (to accommodate host apps with varying screen sizes; e.g., 60x132)	✓	✓	✓	✓	✓	✓	✓
Ability to browse TSO host file lists without sending Reflection script files to the host	✓	✓	✓	✓	✓	✓	✓
FIPS 140-2 validated cryptographic module	✓	✓	✓	✓	✓	✓	✓
One session file for settings and macros	✓	✓	✓	✓	✓	✓	✓
Font-sizing option, 3270 word wrap, and FTP toolbar button	✓	✓	✓	✓	✓	✓	✓
Metering capabilities for usage tracking	✓	✓	✓	✓	✓	✓	✓
Simplified management of VBA macros created with Reflection	✓	✓	✓	✓	✓	✓	✓
Management of web- and Windows-based sessions from a single console	✓	✓	✓	✓	✓	✓	✓
Variety of group policies that support Microsoft Active Directory	✓	✓	✓	✓	✓	✓	✓
One easy shortcut for opening groups of preconfigured sessions	✓	✓	✓	✓	✓	✓	✓
Simultaneous transfer of preconfigured file groups	✓	✓	✓	✓	✓	✓	✓
Microsoft *Designed for Windows XP–Optimized* logo	✓	✓	✓	✓	✓	✓	✓
Saving of settings in HTML or XML format	✓	✓	✓	✓	✓	✓	✓

FEATURES FOR IBM® 3270/5250 CONTINUED	2014 R1	2011 R3	2011 R2	2011 R1	2008	14.1	14.0
Automatic updating and deployment of settings using Reflection Web Launch	✓	✓	✓	✓	✓	✓	✓
Automatic display of the Euro character in IBM applications that support it	✓	✓	✓	✓	✓	✓	✓
Migration of settings to and from Reflection for the Web	✓	✓	✓	✓	✓	✓	✓
Compatibility with any combination of TCP/IP, SNA, and LAN	✓	✓	✓	✓	✓	✓	✓
Windows Terminal Server and Citrix support	✓	✓	✓	✓	✓	✓	✓
Deployment of Reflection using the Microsoft Installer	✓	✓	✓	✓	✓	✓	✓
SSL/TLS Telnet encryption	✓	✓	✓	✓	✓	✓	✓
Ability to update deployed settings files	✓	✓	✓	✓	✓	✓	✓

FEATURES FOR UNIX AND OPENVMS	2014 R1	2011 R3	2011 R2	2011 R1	2008	14.1	14.0
TouchUx for an optimized user experience with host applications on touch devices	✓						
Version support for MSI packages, created via Attachmate Customization Tool	✓						
Support for Transport Layer Security (TLS) 1.2	✓						
Support for SHA-256/RSA-2048 digital signatures	✓						
Windows 8.1 Compatible logo	✓						
Support for Windows Server 2012 R2	✓						
Windows 8 Compatible logo	✓	✓					
VMware Ready logo	✓	✓					
Support for Windows Server 2012	✓	✓					
Support for opening new sessions in an existing workspace	✓	✓					
Ability to run RUMBA VT/UNIX sessions within Reflection	✓	✓					
Browser mode user experience	✓	✓	✓				
Embeddable .NET control	✓	✓	✓				
Support for the SFTP 4.0 standard	✓	✓	✓				
Integration with Reflection Security Gateway for centralized installation, deployment, and management	✓	✓	✓	✓			
Support for Windows Server 2008 R2	✓	✓	✓	✓			
Integration with Microsoft Office 2010	✓	✓	✓	✓			
Granular feature installs for locking down desktops	✓	✓	✓	✓			
Compatible with Windows 7 logo	✓	✓	✓	✓	✓		
Citrix Ready logo	✓	✓	✓	✓	✓		
Application, desktop, and Internet search support	✓	✓	✓	✓	✓		
Tabbed Multiple Document Interface (MDI)	✓	✓	✓	✓	✓		
Web-based HTML Help system	✓	✓	✓	✓	✓		
Virtualization platform support: Microsoft App-V, Citrix XenApp, and VMware	✓	✓	✓	✓	✓		
Segoe for Attachmate font (for consistency with Windows 7)	✓	✓	✓	✓	✓		
Built-in Screen History, Scratch Pad, and Recent Typing features	✓	✓	✓	✓	✓		
Integration with Microsoft Office 2007	✓	✓	✓	✓	✓		
Attachmate implementation of the Microsoft Ribbon user interface	✓	✓	✓	✓	✓		
Privacy filters to protect sensitive host data	✓	✓	✓	✓	✓		

FEATURES FOR UNIX AND OPENVMS CONTINUED	2014 R1	2011 R3	2011 R2	2011 R1	2008	14.1	14.0
Trusted locations feature to secure desktop environment	✓	✓	✓	✓	✓		
Automate data exchange between host applications and web applications	✓	✓	✓	✓	✓		
U.S. DoD PKI certification	✓	✓	✓	✓	✓		
Built on the .NET Framework	✓	✓	✓	✓	✓		
Native .NET API	✓	✓	✓	✓	✓		
Federal Desktop Core Configuration (FDCC) and United States Government Configuration Baseline (USGCB) compliance	✓	✓	✓	✓	✓	✓	
Reflection Certificate Manager	✓	✓	✓	✓	✓	✓	✓
Reflection Key Agent for single sign-on authentication	✓	✓	✓	✓	✓	✓	✓
SSH connection reuse	✓	✓	✓	✓	✓	✓	✓
Integrated multihop SSH configuration support	✓	✓	✓	✓	✓	✓	✓
Smart card support through PKCS #11 interface	✓	✓	✓	✓	✓	✓	✓
IPv6 support	✓	✓	✓	✓	✓	✓	✓
PKI support in the Reflection SSH and SSL/TLS clients	✓	✓	✓	✓	✓	✓	✓
SSH command line utility for SSH tasks	✓	✓	✓	✓	✓	✓	✓
SSH configuration scheme support for configuring clients and servers	✓	✓	✓	✓	✓	✓	✓
Easy uploading of users' public keys to an SSH server	✓	✓	✓	✓	✓	✓	✓
Support for IPv6 networks and SOCKSv5	✓	✓	✓	✓	✓	✓	✓
Migration from F-Secure SSH Windows Client to Reflection products without losing configuration settings	✓	✓	✓	✓	✓	✓	✓
FTP client enhancements for configuring, deploying, and starting FTP sessions	✓	✓	✓	✓	✓	✓	✓
Session order feature (allows users to work in pre-selected sessions while other sessions are loading)	✓	✓	✓	✓	✓	✓	✓
New emulation options, including QNX4 and xterm	✓	✓	✓	✓	✓	✓	✓
X11 mouse style support	✓	✓	✓	✓	✓	✓	✓
Enhanced support for Windows Terminal Server APIs	✓	✓	✓	✓	✓	✓	✓
SFTP downloads resume if interrupted	✓	✓	✓	✓	✓	✓	✓
FIPS 140-2 validated cryptographic module	✓	✓	✓	✓	✓	✓	✓
Enhanced support for Unicode-enabled hosts	✓	✓	✓	✓	✓	✓	✓
Drag-and-drop file transfers to the desktop	✓	✓	✓	✓	✓	✓	✓
Metering capabilities for usage tracking	✓	✓	✓	✓	✓	✓	✓
Enhanced macro-recording options for .NET environments	✓	✓	✓	✓	✓	✓	✓
Simplified management of VBA macros created with Reflection	✓	✓	✓	✓	✓	✓	✓
Management of web- and Windows-based sessions from a single console	✓	✓	✓	✓	✓	✓	✓
Variety of group policies that support Microsoft Active Directory	✓	✓	✓	✓	✓	✓	✓
Updated Reflection Profiler for improved administrative control	✓	✓	✓	✓	✓	✓	✓
Ability to copy and paste Unicode to the Windows clipboard	✓	✓	✓	✓	✓	✓	✓
Emulation of IBM 3151, 3153, 3101, and 3161 terminals	✓	✓	✓	✓	✓	✓	✓
Microsoft *Designed for Windows XP–Optimized* logo	✓	✓	✓	✓	✓	✓	✓
Migration of settings to and from Reflection for the Web	✓	✓	✓	✓	✓	✓	✓
Automatic updating and deployment of settings using Reflection Web Launch	✓	✓	✓	✓	✓	✓	✓
One easy-to-access location for all management tools	✓	✓	✓	✓	✓	✓	✓

FEATURES FOR UNIX AND OPENVMS CONTINUED	2014 R1	2011 R3	2011 R2	2011 R1	2008	14.1	14.0
Deployment of Reflection using the Microsoft Installer	✓	✓	✓	✓	✓	✓	✓
Saving of settings in HTML or VB Script format to speed distribution to end users	✓	✓	✓	✓	✓	✓	✓
Protection of data with:							
- Integrated SSH client (works with Reflection FTP Client)	✓	✓	✓	✓	✓	✓	✓
- Integrated Kerberos client	✓	✓	✓	✓	✓	✓	✓
- SSL/TLS Telnet encryption	✓	✓	✓	✓	✓	✓	✓
Ability to update deployed settings files	✓	✓	✓	✓	✓	✓	✓

FEATURES IN REFLECTION FOR HP	14.1	14.0	13.X	12.X	11.X
Support for TLS 1.2 (SP3) when used with Reflection Security Gateway*	✓				
Support for SHA-256/RSA-2048 digital signatures (SP3)	✓				
Support for current operating environments, including Windows 7 and Citrix XenApp	✓				
Federal Desktop Core Configuration (FDCC) and United States Government Configuration Baseline (USGCB) compliance	✓				
Reflection Certificate Manager	✓	✓			
Reflection Key Agent accepts certificates for single sign-on authentication	✓	✓			
SSH connection reuse	✓	✓			
Integrated multihop SSH configuration support	✓	✓			
Smart card support through PKCS #11 interface	✓	✓			
FTP client enhancements for configuring, deploying, and starting FTP sessions	✓	✓	✓		
Session order feature (allows users to work in pre-selected sessions while other sessions are loading)	✓	✓	✓		
SSH key agent	✓	✓	✓		
PKI support in the Reflection SSH and SSL/TLS clients	✓	✓	✓		
SSH command line utility for SSH tasks	✓	✓	✓		
Enhanced support for Windows Terminal Server APIs	✓	✓	✓		
Support for IPv6 networks and SOCKSv5	✓	✓	✓		
FIPS 140-2 validated cryptographic modules	✓	✓	✓	✓	
Enhanced support for Unicode-enabled hosts	✓	✓	✓	✓	
Expanded connection options via TAPI 3.0	✓	✓	✓	✓	
Metering capabilities for usage tracking	✓	✓	✓	✓	
Enhanced macro recording options for .NET environments	✓	✓	✓	✓	
Simplified management of VBA macros created with Reflection	✓	✓	✓	✓	
Management of web- and Windows-based sessions from a single console	✓	✓	✓	✓	✓
Variety of group policies that support Microsoft Active Directory	✓	✓	✓	✓	✓
Secure access to HP e3000 applications using NS/VT and SSL/TLS	✓	✓	✓	✓	✓
Microsoft *Designed for Windows XP–Optimized* logo	✓	✓	✓	✓	✓
Automatic updating and deployment of settings using Reflection Web Launch	✓	✓	✓	✓	✓
Migration of settings to and from Reflection for the Web	✓	✓	✓	✓	✓
One easy-to-access location for all management tools	✓	✓	✓	✓	✓
Industry-standard scripting via Microsoft Visual Basic for Applications	✓	✓	✓	✓	✓
Ability to save settings and record macros in XML	✓	✓	✓	✓	✓

*   Optional component.

FEATURES IN REFLECTION FOR HP CONTINUED	14.1	14.0	13.X	12.X	11.X
Protection of data with:					
- Integrated Kerberos client	✓	✓	✓	✓	✓
- SSL/TLS Telnet encryption	✓	✓	✓	✓	✓
- Integrated SSH Client (works with Reflection FTP Client)	✓	✓	✓	✓	✓
Added security for authentication and encryption	✓	✓	✓	✓	✓
Integrated Reflection Security Components	✓	✓	✓	✓	✓
Ability to update deployed settings files	✓	✓	✓	✓	✓

FEATURES IN REFLECTION FOR THE WEB	2014 R1	2011	2008	9.6	9.5	9.0X	8.X
Support for Java 7 and compatibility with the latest Java 7 security features	✓						
Integrated Windows Authentication using NTLM version 2	✓						
Central management of certificate stores across multiple servers with PKI Services Manager	✓						
Logs that support event sequencing and integrate smoothly with management frameworks	✓						
Customizable tooltips on the Button Palette	✓						
Native 64-bit installer support for Windows and Linux servers	✓	✓					
JavaScript macro recorder/editor for automating business processes	✓	✓					
LDAP access mapping report for managing user access rights	✓	✓					
Customizable toolbar with drag-and-drop buttons	✓	✓					
Ability to map commands, macros, and other actions to toolbar buttons	✓	✓					
Ability to save frequently used file and data transfers	✓	✓					
Unified file transfer interface for IND$FILE, FTP, and System i data transfers	✓	✓					
Secure token authorization support for VHI Design Tool	✓	✓					
Support for HTTP-only cookies for improved security	✓	✓					
Dynamic LDAP group support	✓	✓	✓				
Support for the Google Chrome browser	✓	✓	✓				
Optimized VT scrolling for faster display performance	✓	✓	✓				
Automatic generation of unique 5250 device names	✓	✓	✓				
Configurable headers and footers on screen prints	✓	✓	✓				
Ability to change Active Directory user passwords in non-domain use cases	✓	✓	✓				
Stronger SSH encryption algorithms with AES CTR mode ciphers	✓	✓	✓				
Secure token authorization support for Reflection 2011 and Reflection X 2011	✓	✓	✓				
Simplified management of Public Key Infrastructure (PKI) certificates	✓	✓	✓				
Troubleshooting enhancements for PKI/smart card authentication and Online Certificate Status Protocol (OCSP)	✓	✓	✓				
Improved screen reader support for greater accessibility	✓	✓	✓				
Advanced copy/paste options	✓	✓	✓				
Macro sharing between sessions of the same type	✓	✓	✓				
Ability to save frequently used IND$FILE transfers	✓	✓	✓				
Custom color support for the cursor, ruler, and terminal-screen elements	✓	✓	✓				
Enhanced text rendering and scaling	✓	✓	✓				
URL recognition and opening from emulation client	✓	✓	✓				

FEATURES IN REFLECTION FOR THE WEB CONTINUED	2014 R1	2011	2008	9.6	9.5	9.0X	8.X
Cursor ruler support for VT emulation	✓	✓	✓				
Ability for end-users to customize and group local copies of terminal sessions	✓	✓	✓				
Unisys UTS and T27 emulation (Unisys Edition, English Only)	✓	✓	✓				
Automated management server data replication for load-balanced environments	✓	✓	✓	✓	✓		
Online Certificate Status Protocol (OCSP) for Public Key Infrastructure (PKI) environments	✓	✓	✓	✓	✓		
Ability to restrict user access to menus and controls	✓	✓	✓	✓	✓		
Support for CA SiteMinder	✓	✓	✓	✓	✓		
Support for Lightweight Directory Access Protocol (LDAP) interface to Resource Access Control Facility (RACF)	✓	✓	✓	✓	✓		
Support for Eastern European and Cyrillic code pages and character sets	✓	✓	✓	✓	✓		
Certificate revocation list (CRL) support	✓	✓	✓	✓	✓	✓	
Certificate policy support	✓	✓	✓	✓	✓	✓	
Automatic Kerberos sign-on for access to IBM iSeries hosts using Windows credentials	✓	✓	✓	✓	✓	✓	
SSH SFTP (secure file transfer) support	✓	✓	✓	✓	✓	✓	
Ability to browse host files for IND$FILE	✓	✓	✓	✓	✓	✓	
Cursor ruler support	✓	✓	✓	✓	✓	✓	
Mouse mapping	✓	✓	✓	✓	✓	✓	
Dockable keyboard, button, and toolbar palettes	✓	✓	✓	✓	✓	✓	
Option to view/hide OIA	✓	✓	✓	✓	✓	✓	
End-to-end SSL/TLS encryption from the client, through the security proxy server, to the host	✓	✓	✓	✓	✓	✓	✓
Smart card support	✓	✓	✓	✓	✓	✓	✓
Single sign-on to IBM mainframes via Express Logon Feature	✓	✓	✓	✓	✓	✓	✓
Integration with IBM WebSphere Portal	✓	✓	✓	✓	✓	✓	✓
IBM WebSphere browse-away support	✓	✓	✓	✓	✓	✓	✓
Centrally managed FTP client for standalone use	✓	✓	✓	✓	✓	✓	✓
FTP command line interface for file transfers	✓	✓	✓	✓	✓	✓	✓
Macro enhancements for users and administrators	✓	✓	✓	✓	✓	✓	✓
FIPS 140-2 validated cryptographic modules	✓	✓	✓	✓	✓	✓	✓
More secure FTP file transfers to and from any host or FTP server	✓	✓	✓	✓	✓	✓	✓
Faster authentication for Microsoft Active Directory users starting web or Windows sessions	✓	✓	✓	✓	✓	✓	✓
Improved metering for tracking usage levels	✓	✓	✓	✓	✓	✓	✓
Enhanced printing capabilities, based on Java 2 support	✓	✓	✓	✓	✓	✓	✓
Management of web- and Windows-based sessions from the same console	✓	✓	✓	✓	✓	✓	✓
Integration with BEA portals	✓	✓	✓	✓	✓	✓	✓
Web single sign-on using CA SiteMinder	✓	✓	✓	✓	✓	✓	✓
Secure token authorization	✓	✓	✓	✓	✓	✓	✓
SSH2 support	✓	✓	✓	✓	✓	✓	✓

FEATURES IN REFLECTION FOR THE WEB CONTINUED	2014 R1	2011	2008	9.6	9.5	9.0X	8.X
AES encryption	✓	✓	✓	✓	✓	✓	✓
Triple DES encryption	✓	✓	✓	✓	✓	✓	✓
SSL/TLS encryption for Telnet	✓	✓	✓	✓	✓	✓	✓
Centralized deployment, configuration, troubleshooting, and security	✓	✓	✓	✓	✓	✓	✓
Ability to print to HPT (Host Print Transform) or non-HPT printing devices using 3812 printer emulation	✓	✓	✓	✓	✓	✓	✓
Transfer of data to and from AS/400 hosts using SQL, a SQL Wizard, or ASCII files	✓	✓	✓	✓	✓	✓	✓
Quick automation of tasks with our macro recorder—no programming required	✓	✓	✓	✓	✓	✓	✓
Use of FTP to transfer files between FTP servers and Reflection for the Web terminal sessions	✓	✓	✓	✓	✓	✓	✓
Printing from HP systems using local or host control; network, local, or print to disk; top, bottom, and record mode logging support; and line-drawing characters	✓	✓	✓	✓	✓	✓	✓
Ability to print using TN3287 transport for 3270 printer sessions	✓	✓	✓	✓	✓	✓	✓
Ability to link a terminal session to a printer session using TN association; the host automatically assigns a printing device LU	✓	✓	✓	✓	✓	✓	✓
Additional IBM 3270 features, such as cut to clipboard, word wrap, smart insert, and error reset	✓	✓	✓	✓	✓	✓	✓

FEATURES IN REFLECTION X	2014 R1	2011 R3	2011 R2	2011 R1	14.1	14.0	13.X	12.X
Support for SHA-256/RSA-2048 digital signatures	✓							
Support for Transport Layer Security (TLS) 1.2	✓							
Windows 8.1 Compatible logo	✓							
Suspend/resume (leave/join) support for 3-D (GLX) X-client applications	✓							
Windows 8 Compatible logo	✓	✓						
VMware Ready logo	✓	✓						
Support for Windows Server 2012	✓	✓						
Built-in keyboard templates for common keyboard layouts	✓	✓			✓			
Keyboard remapping for X client applications	✓	✓			✓			
Firewall-friendly remote domain connections	✓	✓	✓					
Integration with Reflection Security Gateway for centralized installation, deployment, and management*	✓	✓	✓		✓			
Negative coordinates support	✓	✓	✓		✓			
Support for suspending and resuming a persistent X session	✓	✓	✓	✓				
Ability to transfer an X session to a different user or device	✓	✓	✓	✓				
Support for sharing X sessions with remote users	✓	✓	✓	✓				
Patentable compression technology for better performance on slow networks	✓	✓	✓	✓				
Administrative Console for central management and monitoring of domain components	✓	✓	✓	✓				
Support for multiple user directory types, including LDAP, Windows, and internal	✓	✓	✓	✓				
Fault tolerance feature for resuming lost X sessions	✓	✓	✓	✓				
Ability to load-balance X sessions across multiple servers in a domain	✓	✓	✓	✓				
Reflection PKI Services Manager utility for easier management of SSH keys	✓	✓	✓	✓				

*   Optional component.

FEATURES IN REFLECTION X CONTINUED	2014 R1	2011 R3	2011 R2	2011 R1	14.1	14.0	13.X	12.X
Support for current operating environments, including Windows 7, Microsoft App-V, Citrix XenApp, and VMware	✓	✓	✓	✓	✓			
X11 RENDER, XFree86 BigFont, and Sync extension support	✓	✓	✓	✓	✓			
Federal Desktop Core Configuration (FDCC) and United States Government Configuration Baseline (USGCB) compliance	✓	✓	✓	✓	✓			
X11R6.9 compliance	✓	✓	✓	✓	✓	✓		
Reflection Certificate Manager	✓	✓	✓	✓	✓	✓		
Reflection Key Agent for single sign-on authentication	✓	✓	✓	✓	✓	✓		
SSH connection reuse	✓	✓	✓	✓	✓	✓		
Integrated multi-hop SSH configuration support	✓	✓	✓	✓	✓	✓		
Smart card support through PKCS #11 interface	✓	✓	✓	✓	✓	✓		
Support for DOUBLE-BUFFER and XF86_Bigfont extensions	✓	✓	✓	✓	✓	✓	✓	
Support for 3Dconnexion SpaceBall 5000 and SpaceMouse Plus	✓	✓	✓	✓	✓	✓	✓	
Support for multiple X screens	✓	✓	✓	✓	✓	✓	✓	
Downloadable server and connection templates	✓	✓	✓	✓	✓	✓	✓	
Application-specific icons	✓	✓	✓	✓	✓	✓	✓	
XKB extension support	✓	✓	✓	✓	✓	✓	✓	
Support for any local window manager	✓	✓	✓	✓	✓	✓	✓	
Secure remote troubleshooting capability	✓	✓	✓	✓	✓	✓	✓	
SSH enhancements, including a new SSH key agent	✓	✓	✓	✓	✓	✓	✓	
Automatic image pasting to graphics editor	✓	✓	✓	✓	✓	✓	✓	
Support for multiple XDMCP sessions	✓	✓	✓	✓	✓	✓	✓	
Secure font retrieval function	✓	✓	✓	✓	✓	✓	✓	
X Client Wizard enhancements	✓	✓	✓	✓	✓	✓	✓	
FIPS 140-2 validated cryptographic modules	✓	✓	✓	✓	✓	✓	✓	✓
Support for all types of Windows fonts, including TrueType	✓	✓	✓	✓	✓	✓	✓	✓
Support for Multicast (IPv6)	✓	✓	✓	✓	✓	✓	✓	✓
Consolidated view of all configuration settings	✓	✓	✓	✓	✓	✓	✓	✓
Metering capabilities for usage tracking	✓	✓	✓	✓	✓	✓	✓	✓
Management of multiple X clients and servers in the same window	✓	✓	✓	✓	✓	✓	✓	✓
Customization of X client launching methods using the RunRX utility	✓	✓	✓	✓	✓	✓	✓	✓
Integrated secure FTP with site-to-site file transfer support	✓	✓	✓	✓	✓	✓	✓	✓
Scroll and mapping support for mouse-wheel users	✓	✓	✓	✓	✓	✓	✓	✓
OpenGL 1.4 and GLX 1.3 support	✓	✓	✓	✓	✓	✓	✓	✓
Certification for Windows 2000	✓	✓	✓	✓	✓	✓	✓	✓
Installation of Reflection X using Microsoft Installer	✓	✓	✓	✓	✓	✓	✓	✓
Deployment of Reflection X via Microsoft Active Directory	✓	✓	✓	✓	✓	✓	✓	✓
Integrated VPN functions that enable remote PC users to connect to X Window applications through NAT	✓	✓	✓	✓	✓	✓	✓	✓
Integrated security, including SSH and Kerberos clients	✓	✓	✓	✓	✓	✓	✓	✓
Rendering of graphics with improved performance over previous versions	✓	✓	✓	✓	✓	✓	✓	✓
Running of X clients on 64-bit Intel platforms	✓	✓	✓	✓	✓	✓	✓	✓

FEATURES IN REFLECTION X CONTINUED	2014 R1	2011 R3	2011 R2	2011 R1	14.1	14.0	13.X	12.X
Connection to X clients over IPv6 networks	✓	✓		✓	✓	✓	✓	✓
Running of multiple X desktops simultaneously (e.g., CDE, GNOME, and KDE simultaneously)with correct settings and without resetting X server	✓	✓	✓	✓	✓	✓	✓	✓
Adheres to the *Designed for Windows XP* logo specifications	✓	✓	✓	✓	✓	✓	✓	✓
Microsoft Terminal Server and Citrix support	✓	✓	✓	✓	✓	✓	✓	✓

FEATURES IN REFLECTION FOR SECURE IT CLIENT FOR WINDOWS	7.2	7.1	7.0	6.1	6.0	5.4
Microsoft Windows 7 support	✓					
Convenient setup for multihop connections	✓					
Preserved timestamps and file attributes during SFTP transfers	✓					
Smart card support for agent forwarding	✓					
Shared trusted certificate store location	✓					
Microsoft Windows Server 2008 support	✓	✓				
IPv6 support in command line utilities (ssh, scp, sftp)	✓	✓				
Configurable default permissions for uploaded files	✓	✓				
HTTP proxy server support	✓	✓				
Support for environment variables in configuration file settings	✓	✓				
Attachmate Cryptographic Module version 2.0.40 (FIPS 140-2 Level 1 validated—Certificate #1027)	✓	✓				
Reflection FTP client utility	✓	✓	✓			
The SFTP protocol, standard FTP (unencrypted), FTP over SSL/TLS, and Kerberized FTP (TLS)	✓	✓	✓			
Public Key Infrastructure (PKI) support	✓	✓	✓	✓		
File transfer automation via OLE interface	✓	✓	✓			
Easier configuration of SSH tunneling for FTP sessions	✓	✓	✓			
Reflection Certificate Manager	✓	✓	✓	✓		
Reflection Key Agent accepts certificates for single sign-on authentication	✓	✓	✓	✓		
Enhanced command line switches and scp options	✓	✓	✓	✓		
Consolidated user key dialog for certificates and keys	✓	✓	✓	✓	✓	
Automatic conversion of keys to correct format upon upload	✓	✓	✓	✓	✓	
Deployment of SSH client using the Microsoft Installer	✓	✓	✓	✓	✓	
Support for Windows Terminal Server and Citrix Presentation Server	✓	✓	✓	✓	✓	
Migration wizard for converting F-Secure profiles to Reflection settings	✓	✓	✓	✓	✓	
Key codes removed	✓	✓	✓	✓	✓	
FIPS 140-2 Level 1 validated cryptographic modules	✓	✓	✓	✓	✓	✓
Authentication agent (key agent) for safely storing private and public keys	✓	✓	✓	✓	✓	✓
Ability to connect to several SSH servers without entering a passphrase	✓	✓	✓	✓	✓	✓
SFTP downloads resume if interrupted	✓	✓	✓	✓	✓	✓
Unattended scheduled file transfers	✓	✓	✓	✓	✓	✓

FEATURES IN REFLECTION FOR SECURE IT SERVER FOR WINDOWS	8.1	8.0	7.2	7.1	7.0	6.1
Microsoft Windows Server 2012 (x86-64) support	✓					
VMWare ESXi support	✓					
Microsoft Windows 7 (x86 and x86-64) support	✓	✓				
Dedicated audit logs for all SFTP and SCP2 file transfers	✓	✓				
Meets DoD requirements for use of SHA-2 algorithms	✓	✓				
SFTP version 4 and UTF-8 character support	✓	✓				
Microsoft Windows Server 2008 R2 (x86-64) support	✓	✓	✓			
Use of mapped drives to access network directories during terminal sessions	✓	✓	✓			
Control over the number of connections allowed per user	✓	✓	✓			
Use of alternative credentials for accessing SFTP directories and mapped drives	✓	✓	✓			
Customizable locations for server configuration files	✓	✓	✓			
Microsoft Cluster Service support	✓	✓	✓	‡		
HSPD-12 support	✓	✓	✓	‡		
PKI client command line utility	✓	✓	✓	‡		
Centralized PKI support via the Reflection PKI Services Manager	✓	✓	✓	✓		
Granular permissions for file transfer functions (upload/download/browse/delete) configurable at Global, Group, and User levels and by Client address	✓	✓	✓	✓		
SFTP and SCP2 Smart Copy	✓	✓	✓	✓		
Support for the Microsoft Certificate Store	✓	✓	✓	✓		
Support for file transfer checkpoint resume	✓	✓	✓	✓		
FTP over SSH for both active and passive mode connections	✓	✓	✓	✓		
Windows Server 2008 support	✓	✓	✓	✓	‡	
Granular access control configurations for local and domain users and groups	✓	✓	✓	✓	‡	
Section 508 support in configuration console	✓	✓	✓	✓	‡	
Support for user keys generated using the OpenSSH keygen utilities	✓	✓	✓	✓	‡	
GSSAPI/Kerberos-based user and host authentication	✓	✓	✓	✓	✓	
Full range of documentation formats (context-sensitive help, PDF, and HTML)	✓	✓	✓	✓	✓	
Enhanced logging capabilities, including more customization options for diagnostic and event data collection	✓	✓	✓	✓	✓	
IP blocking feature	✓	✓	✓	✓	✓	
Native 64-bit Windows support for x64 hardware	✓	✓	✓	✓	✓	
Enhanced domain name authentication	✓	✓	✓	✓	✓	✓
Windows Domain authentication	✓	✓	✓	✓	✓	✓
Maximum password feature	✓	✓	✓	✓	✓	✓
Windows Server 2003 support	✓	✓	✓	✓	✓	✓
FIPS 140-2 validated cryptographic modules	✓	✓	✓	✓	✓	✓

FEATURES IN REFLECTION FOR SECURE IT CLIENT FOR UNIX	8.0	7.2	7.1	7.0	6.1
Dedicated audit logs for all SFTP and SCP2 file transfers	✓				
Meets DoD requirements for use of SHA-2 algorithms	✓				
SFTP version 4 and UTF-8 character support	✓				
High Performance Enabled (HPN) file transfer	✓	✓			
Granular control of data compression levels	✓	✓			
Inclusion of OpenSSH packages in Linux-based rpm package capability lists	✓	✓			
HSPD-12 support	✓	✓	‡		
PKI client command line utility	✓	✓	‡		
Centralized PKI support via the Reflection PKI Services Manager	✓	✓	✓		
Customizable installation locations in Solaris and Linux	✓	✓	✓		
Enhanced X.509 certificate utility (ssh-certview)	✓	✓	✓		
Support for PKCS#11 smart cards in Solaris 10 SPARC	✓	✓	✓		
Attachmate Cryptographic Module version 2.0.40 (FIPS 140-2 validated—Certificate #1027)	✓	✓	✓	‡	
Host name aliasing for host key storage	✓	✓	✓	‡	
Oracle Solaris Projects support	✓	✓	✓	‡	
Enhanced support for Kerberos through gssapi-keyex	✓	✓	✓	✓	
SSH connection reuse feature	✓	✓	✓	✓	
Full range of documentation formats (PDF and HTML)	✓	✓	✓	✓	
Strict Mode support	✓	✓	✓	✓	
FIPS 140-2 validated cryptographic modules	✓	✓	✓	‡	✓
Additional platform support:					
- HP-UX 11i v3 (Itanium)	✓	✓	✓	‡	
- HP-UX 11i v2 (PA-RISC)	✓	✓	✓	‡	✓
- HP-US 11i v2 (Itanium)	✓	✓	✓	‡	
- IBM AIX 6.1 (POWER)	✓	✓	✓		
- IBM AIX 7.1 (POWER)	✓				
- Red Hat Enterprise Linux 5 (x86)	✓	✓	✓	✓	✓
- Red Hat Enterprise Linux 5 (x86-64)	✓	✓	✓	✓	✓
- Red Hat Enterprise Linux 6 (x86)	✓				
- Red Hat Enterprise Linux 6 (x86-64)	✓				
- Oracle Solaris 11 (SPARC)	✓				
- Oracle Solaris 10 (SPARC)	✓	✓	✓	✓	✓
- Oracle Solaris 10 (x86)	✓	✓	✓	✓	‡
- Oracle Solaris 10 (x86-64)	✓	✓	✓	✓	✓
- SUSE Linux Enterprise Server 10 (x86)	✓	✓	✓	✓	✓
- SUSE Linux Enterprise Server 10 (x86-64)	✓	✓	✓	✓	✓
- SUSE Linux Enterprise Server 11 (x86)	✓	✓	✓	✓	
- SUSE Linux Enterprise Server 11 (x86-64)	✓	✓	✓	✓	
- SUSE Linux Enterprise Server 11 (zLinux 64-bit)	✓				

FEATURES IN REFLECTION FOR SECURE IT SERVER FOR UNIX	8.0	7.2	7.1	7.0	6.1
Dedicated audit logs for all SFTP and SCP2 file transfers	✓				
Meets DoD requirements for use of SHA-2 algorithms	✓				
SFTP version 4 and UTF-8 character support	✓				
High Performance Enabled (HPN) file transfer	✓	✓			
AIX System Resource Controller support	✓	✓			
Granular control of data compression levels	✓	✓			
Inclusion of OpenSSH packages in Linux-based rpm package capability lists	✓	✓			
HSPD-12 support	✓	✓	‡		
PKI client command line utility	✓	✓	‡		
Oracle Solaris Basic Security Module auditing support	✓	✓	‡		
Centralized PKI support via the Reflection PKI Services Manager	✓	✓	✓		
Customizable installation locations in Solaris and Linux	✓	✓	✓		
Granular permissions for file transfer functions (upload/download/browse/delete) configurable at Global, Group, and User levels and by Client address	✓	✓	✓		
Additional file transfer logging options (login/logout, directory listings, uploads, downloads, file modifications)	✓	✓	✓		
Configurable pre-authenticated session limits	✓	✓	✓		
User shell configuration inheritance from LDAP directories	✓	✓	✓		
Oracle Solaris Least Privilege Model support	✓	✓	✓		
Enhanced X.509 certificate utility (ssh-certview)	✓	✓	✓		
Attachmate Cryptographic Module version 2.0.40 (FIPS 140-2 validated—Certificate #1027)	✓	✓	✓	‡	
Dynamic support for UNIX TCP Wrappers	✓	✓	✓	‡	
HP-UX System Administration Manager (SAM) Auditing and Security tool support	✓	✓	✓	‡	
Enhanced support for Kerberos through gssapi-keyex	✓	✓	✓	✓	
Dead and idle client detection	✓	✓	✓	✓	
Full range of documentation formats (PDF and HTML)	✓	✓	✓	✓	
Strict Mode support	✓	✓	✓	✓	
FIPS 140-2 validated cryptographic modules	✓	✓	✓	‡	✓

FEATURES IN REFLECTION FOR SECURE IT SERVER FOR UNIX CONTINUED	8.0	7.2	7.1	7.0	6.1
Additional platform support:					
- HP-UX 11i v3 (Itanium)	✓	✓	✓	‡	
- HP-UX 11i v2 (PA-RISC)	✓	✓	✓	‡	✓
- IBM AIX 6.1 (POWER)	✓	✓	✓		
- IBM AIX 7.1 (POWER)	✓				
- Red Hat Enterprise Linux 5 (x86)	✓	✓	✓	✓	✓
- Red Hat Enterprise Linux 5 (x86-64)	✓	✓	✓	✓	✓
- Red Hat Enterprise Linux 6 (x86)	✓				
- Red Hat Enterprise Linux 6 (x86-64)	✓				
- Oracle Solaris 10 (SPARC)	✓	✓	✓	✓	✓
- Oracle Solaris 10 (x86)	✓	✓	✓	✓	‡
- Oracle Solaris 10 (x86-64)	✓	✓	✓	✓	✓
- SUSE Linux Enterprise Server 10 (x86)	✓	✓	✓	✓	✓
- SUSE Linux Enterprise Server 10 (x86-64)	✓	✓	✓	✓	✓
- SUSE Linux Enterprise Server 11 (x86)	✓	✓	✓	✓	
- SUSE Linux Enterprise Server 11 (x86-64)	✓	✓	✓	✓	
- SUSE Linux Enterprise Server 11 (zLinux 64-bit)	✓				

FEATURES IN REFLECTION FOR SECURE IT WEB EDITION	8.1	8.0
Microsoft Windows Server 2012 (x86-64) support	✓	
LDAP integration	✓	
X.509 authentication with web transfer client	✓	
Flexible deployment of components	✓	
Optional enforcement of browser plug-in version	✓	
VMWare ESXi support	✓	
Dedicated audit logs for all SFTP and SCP2 file transfers	✓	✓
Meets DoD requirements for use of SHA-2 algorithms	✓	✓
SFTP version 4 and UTF-8 character support	✓	✓
Microsoft Windows Server 2008 R2 (x86-64) support	✓	✓
Use of mapped drives to access network directories during terminal sessions	✓	✓
Control over the number of connections allowed per user	✓	✓
Use of alternative credentials for accessing SFTP directories and mapped drives	✓	✓
Customizable locations for server configuration files	✓	✓
HSPD-12 support	✓	✓

FEATURES IN REFLECTION FOR SECURE IT WEB EDITION CONTINUED	8.1	8.0
PKI client command line utility	✓	✓
Centralized PKI support via the Reflection PKI Services Manager	✓	✓
Granular permissions for file transfer functions (upload/download/browse/delete) configurable at Global, Group, and User levels and by Client address	✓	✓
SFTP and SCP2 Smart Copy	✓	✓
Support for the Microsoft Certificate Store	✓	✓
Support for file transfer checkpoint resume	✓	✓
FTP over SSH for both active and passive mode connections	✓	✓
Windows Server 2008 support	✓	✓
Granular access control configurations for local and domain users and groups	✓	✓
Section 508 support in configuration console	✓	✓
Support for user keys generated using the OpenSSH keygen utilities	✓	✓
GSSAPI/Kerberos-based user and host authentication	✓	✓
Full range of documentation formats (context-sensitive help, PDF, and HTML)	✓	✓
Enhanced logging capabilities, including more customization options for diagnostic and event data collection	✓	✓
IP blocking feature	✓	✓
Native 64-bit Windows support for x64 hardware	✓	✓
Enhanced domain name authentication	✓	✓
Windows Domain authentication	✓	✓
Maximum password feature	✓	✓
FIPS 140-2 validated cryptographic modules	✓	✓

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