

# Attachmate Corporation Reflection for IBM 2007



## Test Summary

### Competitive Feature Evaluation versus IBM Personal Communications 5.9.1 and NetManage RUMBA 7.5.0

**Premise:** IT infrastructures are evolving constantly. It is important that desktop applications evolve with, and take advantage of the infrastructure investment to help maximize end-user productivity, security, and interdependence among IT assets. Reflection 2007 represents Attachmate's significant investment in modernizing IBM mainframe terminal emulation. Reflection 2007 includes new features that increase user productivity, provide maximum security for valuable mainframe assets, and support existing and emerging IT technologies including Microsoft Windows Vista® and Office® 2007.

#### Test Highlights

- ▶ Increases user productivity up to 5X over IBM Personal Communications and NetManage RUMBA for the performance test scenarios conducted
- ▶ Delivers a broader user productivity feature set, with richer capabilities, than IBM Personal Communications and NetManage RUMBA
- ▶ Demonstrates superior support for Microsoft Windows Vista features such as User Account Control (UAC) to assist with desktop administration
- ▶ Increases user efficiency and security with a higher level of integration with Microsoft Windows Vista and Microsoft Office 2007

Attachmate Corporation commissioned The Tolly Group to evaluate the company's terminal emulation software, Reflection for IBM 2007, to verify its productivity features along with the Microsoft Windows Vista® and Office integration.

Attachmate's Reflection for IBM 2007 is the newest release of the company's fully featured terminal emulation software featuring a broad array of user productivity enhancements.

Tolly Group engineers evaluated Reflection for IBM 2007 features and Windows integration against IBM Personal Communications 5.9.1 (PCOM) and NetManage RUMBA 7.5.0 (RUMBA) terminal emulation packages.

Testing was conducted from June through August 2007.

Attachmate Reflection for IBM 2007 Feature Verification		
Category	Features	Verified
<b>User Productivity</b>	Auto Complete, Auto Expand, Spell Check, Screen History, Scratch Pad, Recent Typing	<input checked="" type="checkbox"/>
<b>Microsoft Windows Vista Integration</b>	User Account Control (UAC), Windows Desktop Search, Application's Help Integration	<input checked="" type="checkbox"/>
<b>Microsoft Office 2007 Integration</b>	Email Message, Word Processing Document, Appointment, Note, Task, Information Privacy Filters, Microsoft Office 2007 "Ribbon" Menu Toolbar	<input checked="" type="checkbox"/>

Source: The Tolly Group, August 2007

Figure 1

## Executive Summary

**Attachmate Reflection for IBM 2007 delivers superior security, user productivity and Microsoft Vista-readiness compared to IBM Personal Communications and Netmanage RUMBA.**

Tolly Group engineers verified that Reflection for IBM 2007 was able to provide richer productivity features and better integration with Microsoft Windows Vista and Office 2007 than

competitive products tested. Tolly Group engineers validated six productivity features, three Windows Vista integration features and seven Microsoft Office 2007 integration features. Each of the features tested are offered in the Reflection 2007 package and were evaluated against comparable features offered by the competitive products tested. During July/August 2007, NetManage RUMBA did not officially support Windows Vista when tests were conducted.

### PRODUCTIVITY FEATURES

#### AUTO COMPLETE

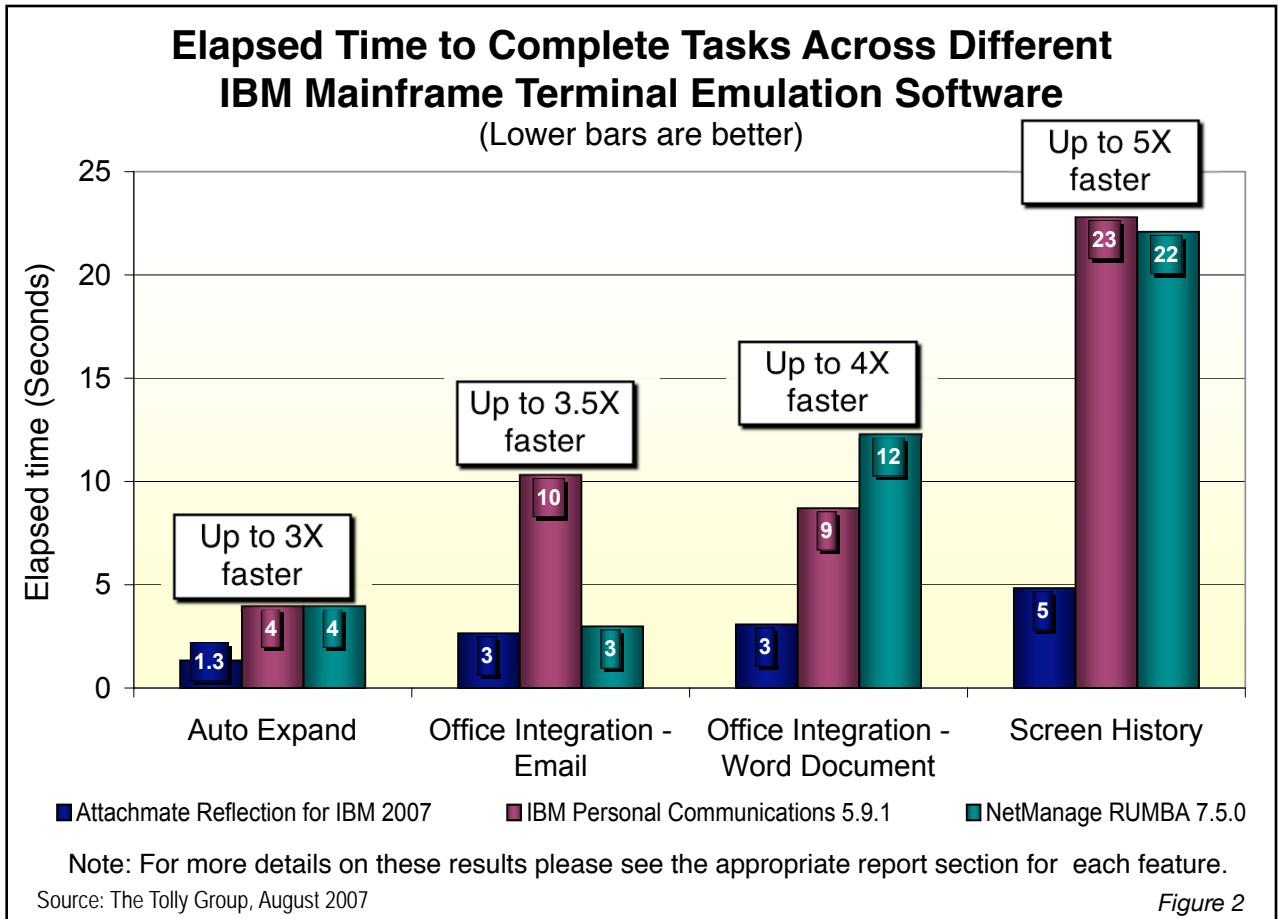
This is a keystroke saving feature allowing the program to

predict words or phrases based upon the first few letters of previously used words or phrases. In Reflection 2007 it was noted that by enabling the option to make suggestions from all screen data, testers were able to receive more suggestions that were helpful to the Auto Complete feature. This feature saved engineers time since only three letters from a previously recognized Auto Complete word had to be typed to complete a particular field.

RUMBA contained a similar feature under the QuickAssist feature, however PCOM did not offer such a capability.

#### AUTO EXPAND

This is a productivity enhancing feature that associates a few



keystrokes to predetermined definitions of words, phrases, or sentences (e.g. “eta” would automatically expand to Estimated Time of Arrival and “pse” would convert to Pseudoephedrine). In Reflection 2007 Tolly Group engineers discovered that after defining Auto Expand keywords, this feature saved the most time while typing because complete sentences could be replaced by a short predefined acronym. Neither PCOM nor RUMBA offered such a capability.

When it came to timing, given the average keystrokes per minute of 180, Reflection 2007 takes about 1.3 seconds on average to type using auto expand, while PCOM and RUMBA take about 4 seconds, on average. This results in a threefold time savings. See the Test Setup & Methodology section for details.

### SPELL CHECK

This feature improves host data integrity by checking the spelling of words entered into the host application against a dictionary database and adding a red line under words that have been misspelled. Engineers found this feature in Reflection 2007 to be intuitive, especially for people that have used word processing programs before. PCOM and RUMBA did not offer a spell checking feature.

### SCREEN HISTORY

The Screen History function automatically saves screenshots of a legacy host application session. Reflection 2007 included the most complete version of this

feature. The feature could be docked on the side of an application session for quick access to previous screens. Also, the screenshots could be searched, previewed in the form of thumbnails, or dropped into a PowerPoint or Word document for presentation purposes. Engineers noted that screenshots could be dropped in the form of text or as images. The screens were also listed in chronological order, which could also be reversed. RUMBA offered a slightly related feature which was only able to save text manually from a screen to a text file, thus we judged this to represent partial support for the feature. PCOM did not offer such feature.

In the screen history performance test scenario, Tolly Group engineers performed a common business task five times faster using the screen history feature in contrast with its competitors. For details on the test scenario, see the Test Setup & Methodology section.

### SCRATCH PAD

This feature provides a space for taking notes within the terminal emulation session. Information can then be saved for reuse or later entry if necessary. Reflection 2007 included this feature and text files could also be opened for viewing inside the Scratch Pad. PCOM and RUMBA did not have a similar feature.

### RECENT TYPING

This feature maintains a list of typed items in chronological order, and enables a user to click open the list and choose from a particular word or phrase. Reflection 2007 kept track of all items that were

Attachmate  
Corporation



Reflection for  
IBM 2007

Productivity, Windows Vista,  
and Office 2007 Features

### Product Specifications

*\* Vendor-supplied information not necessarily verified by The Tolly Group*

Attachmate Corporation  
Reflection for IBM 2007  
Product Specifications\*

#### Security:

- Support for SSL/TLS, SSH, Kerberos, and SOCKS
- Cryptomodules built to meet FIPS 140-2
- Advanced support for digital certificates, meets DoD PKI standards such as PKCS #11 and Certificate Revocation Lists (CRL), Reflection Certificate Manager
- Information privacy filters
- Trusted locations
- API security
- Automatic Kerberos sign-on

#### Productivity:

- Integration with Microsoft Office 2007
- Integrated Desktop Search
- Screen History
- Spell Check
- Scratch Pad
- Auto Expand & Auto Complete
- VBA 6.4

#### User Interface:

- Customizable Office 2007 Ribbon user interface
- Tabbed multisession interface
- HTML Help

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recently typed in a chronological list on which the user could pick the saved item to be reused. RUMBA included a comparable feature inside the QuickAssist Viewer. It also kept track of recently typed items on a “per-field” basis. However, the QuickAssist Viewer inconveniently layered windows over the emulation session which blocked about one-fourth of the terminal screen. PCOM did not offer a similar feature at test time.




## MICROSOFT WINDOWS VISTA INTEGRATION

### USER ACCOUNT CONTROL (UAC)

UAC is a new administrative security feature in Windows Vista which allows administrators to better manage, control, and secure desktop applications running on Windows Vista. Reflection 2007 offered support for UAC after predefining which sections of the program were going to have UAC enabled.

UAC increases user productivity, since in the past, users would need to log off the workstation in order to have an administrator log in, make the necessary changes, log back off, and log the user back in. Reflection 2007 embeds the UAC security shield, which can be clicked to elevate administrator privileges after providing the appropriate credentials, without the need to log off. During testing, PCOM and RUMBA did not offer support for Windows Vista User Account Control.

Productivity Features Tested Among Attachmate Reflection for IBM 2007, IBM Personal Communications 5.9.1, and NetManage RUMBA 7.5.0			
Feature	Attachmate Reflection for IBM 2007	IBM Personal Comm. 5.9.1	NetManage RUMBA 7.5.0
Auto Complete			
Auto Expand			
Spell Check			
Screen History			
Scratch Pad			
Recent Typing			

 = Fully Supported   
  = Not Supported   
  = Partially Supported

Source: The Tolly Group, August 2007 Figure 3

### WINDOWS DESKTOP SEARCH

This is a productivity feature which integrates Vista’s Windows Desktop Search feature into the application. This can then be used to search documents, screen history, desktop, or the Internet.

Reflection 2007 incorporates a Windows Desktop Search field directly on the menu bar. PCOM and RUMBA did not offer support for Windows Desktop Search.

### HELP INTEGRATION

Windows Help is a program (WinHlp32.exe) that was

included with earlier versions of Windows. Windows Vista does not ship with this program, therefore if a user needs to view a .hlp help file, they would need to install the program which Microsoft considers obsolete and does not meet the vendor’s current standards. Both Reflection 2007 and RUMBA include an updated version of the help topics which is compatible with Vista, while PCOM requires users to install this legacy program manually to consult help.

## MICROSOFT OFFICE 2007 INTEGRATION

### E-MAIL MESSAGE

This feature creates a new Outlook E-mail with the on-screen host application data inserted in the message body. Reflection 2007 and RUMBA included support for this feature, however PCOM did not.

Reflection 2007 and RUMBA demonstrated up to 3.5 times faster creation of an E-mail than PCOM for the specific test scenario. For details, see the Test Setup & Methodology section for details.

### WORD PROCESSING DOCUMENT

Although, similar to the E-mail Message feature, this particular features creates a new Word document with the on-screen host application data inserted in the document. Reflection 2007 was the only one out of all three products under test that supported this feature.

Reflection 2007 demonstrated up to 4 times the speed in creating a Word document compared to its competitors tested for this test scenario. See the Test Setup & Methodology section for details.

### APPOINTMENT

This creates a new Outlook appointment with the on-screen host application data inserted in the message section. Again, Reflection 2007 was the only software tested to support this feature.

## NOTES AND TASKS

Note creates a new Outlook note with the on-screen host application data inserted in the note, while Task creates a new Outlook task with the on-screen host application data inserted in the message section.

## INFORMATION PRIVACY FILTERS

This feature supports identification of patterns of sensitive data (e.g. Social Security numbers, phone numbers, driver's license numbers, etc.) in host applications and prevents this data from being printed, saved, and copied to the clipboard or into Office documents. Reflections 2007 included this feature and it also blocked the patterns inside screenshots from the screen

history feature. PCOM and RUMBA did not support this or a similar feature.

## “RIBBON” MENU TOOLBAR

This new toolbar is featured in Microsoft Office 2007 and is designed to enhance usability by consolidating the program's functions, features and tools in an easily recognizable place. Reflection 2007 was again the only software to feature this toolbar. This toolbar contains all of the program's functions grouped by type. This enhances user productivity by not only streamlining the design of the toolbar with Office 2007, but also by making it easier for the user to find the features. PCOM and RUMBA did not include this toolbar.

Microsoft Windows Vista Integration Features Tested Among Attachmate Reflection for IBM 2007, IBM Personal Communications 5.9.1, and NetManage RUMBA 7.5.0			
Feature	Attachmate Reflection for IBM 2007	IBM Personal Comm. 5.9.1	NetManage RUMBA 7.5.0
User Account Control (UAC)			
Windows Desktop Search			
Application's Help Integration			

= Fully Supported    
 = Not Supported    
 = Partially Supported

Note: This testing was performed using the latest commercially available version of RUMBA, however RUMBA displayed a message when installing that read: "The operating system on this workstation is not supported by the version of RUMBA that you are installing. If you elect to continue this installation, some functions or features of this product may fail to work correctly or dependably."

Source: The Tolly Group, August 2007 Figure 4






















## TEST SETUP & METHODOLOGY




Tolly Group engineers tested Reflection for IBM 2007 Version R1 (15.0.475.0), IBM Personal Communications Version 5.9.1 (20070515 S), and NetManage RUMBA Version 7.5.0 SP0 Patch0.

All three software packages were tested with TracePlayer Version 2005.08.02. This emulator used trace data from a newspaper company, which was captured from an actual customer host application. The data was from an IBM 3270 terminal controller environment. The flow of the application, as well as some of the actual screen data, was slightly modified for simplicity sake.

Each solution under test was installed on identical workstations. These workstations were Intel Pentium D computers running Microsoft Windows Vista Ultimate and Office Ultimate 2007.

Feature verification was conducted using a mock-up script for a call-center scenario where a customer called in to make changes to their account. These were common customer account changes encountered by call centers daily, such as logging into the host application, credit card changes, vacation stops, etc. Engineering then followed identical steps in all three software to compare the features and functionality available in each software, respectively.

Microsoft Office 2007 Integration Features Tested Among Attachmate Reflection for IBM 2007, IBM Personal Communications 5.9.1, and NetManage RUMBA 7.5.0			
Feature	Attachmate Reflection for IBM 2007	IBM Personal Comm. 5.9.1	NetManage RUMBA 7.5.0
Email Message			
Word Processing Document			
Appointment			
Note			
Task			
Information Privacy Filters			
Office 2007 Ribbon menu toolbar			

 = Fully Supported   
  = Not Supported   
  = Partially Supported

Source: The Tolly Group, August 2007 Figure 5

## AUTO EXPAND PERFORMANCE TEST SCENARIO

More often than not, companies working with pharmaceuticals are obliged to type out long names of particular drugs. These names can easily vary from about 9 to 15 characters in length. Engineers formulated an average amount of keystrokes per minute from two separate sources. The first source was a study on typing speed titled, "Typing Speed: How Fast is Average" by Teresia R. Ostrach (<http://www.readi.info/TypingSpeed.pdf>).

This study shows that the average (mean) typing speed is about 40 words per minute. The second source was from the Computer Science Department at Trinity College titled, "Percentages of Letter Frequencies per 1000 Words" (<http://starbase.trincoll.edu/~crypto/resources/LetFreq.html>). This resource shows that the average length of English words is 4.5 letters. Engineers used these two numbers to obtain an average keystrokes per minute of 180.

Using this number, a sample list of eight different drug names

was created, along with three letter abbreviations for each name. This list, with words as short as nine characters and as long as 15 characters, averaged a drug name length of about 12 characters. For Reflection 2007, only 4 characters needed to be typed every time a drug name had to be spelled out using the Auto Expand feature (3 characters for the abbreviations and 1 for a space to complete the expand). For PCOM and RUMBA this number varied but averaged to about 12 characters, due to the average drug name length of our sample list.

### E-MAIL TEST SCENARIO

E-mail creation is a common task in a help desk scenario. Help desks representatives often find themselves having to copy a screen of their terminal emulation software and E-mail it to a different department or client. With

Reflection 2007 and RUMBA, this is done with just clicking two menu items. However, in PCOM this is a more involved process as it requires copying the screen, then opening a blank message, and finally pasting the items from the Windows clipboard.

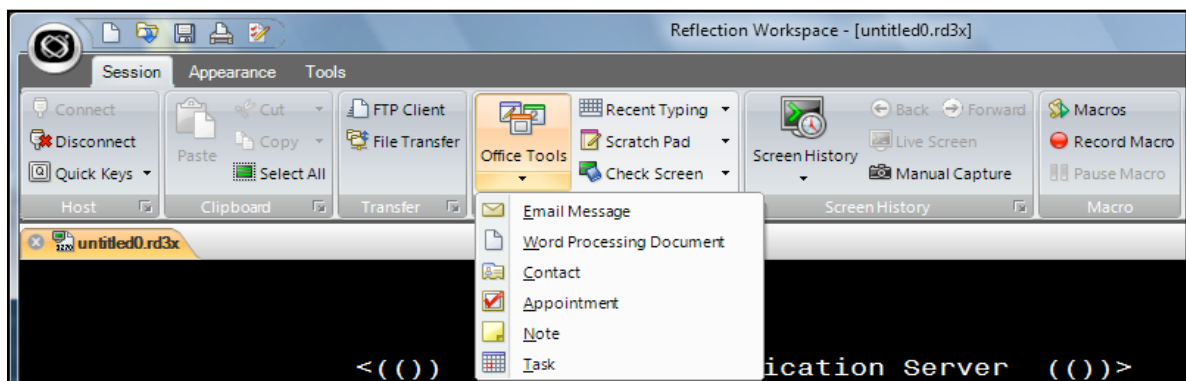
### WORD DOCUMENT PERFORMANCE TEST SCENARIO

Similarly, the goal of this scenario was to create a word document that contained a copy of the terminal screen. In Reflection 2007 it was just a matter of clicking two menu items to achieve such task. In PCOM, the same task required copying the screen to the clipboard, opening a new word document, and pasting the Windows clipboard. However, in RUMBA this task involved an extra initial step of selecting the whole terminal screen before copying it to the clipboard, thus increasing the time to complete such task.

### SCREEN HISTORY PERFORMANCE TEST SCENARIO

In this scenario, Tolly Group engineers followed a simulated call center script to make use of the screen history feature. In this script, a customer calls to request a vacation stop on their newspaper delivery. After the dates are set, the host application produces a confirmation and clears the dates from the screen. In Reflection 2007, the customer service representative can simply use the screen history feature to go back through screens and copy the dates. However in PCOM and RUMBA, the customer service representative must go back to the main screen and follow the steps once again. Timing was taken from the initial vacation stop confirmation screen (where the dates are cleared) until the dates were retrieved and displayed once again on the terminal screen.

## Attachmate Reflection for IBM 2007 “Ribbon” Menu Toolbar

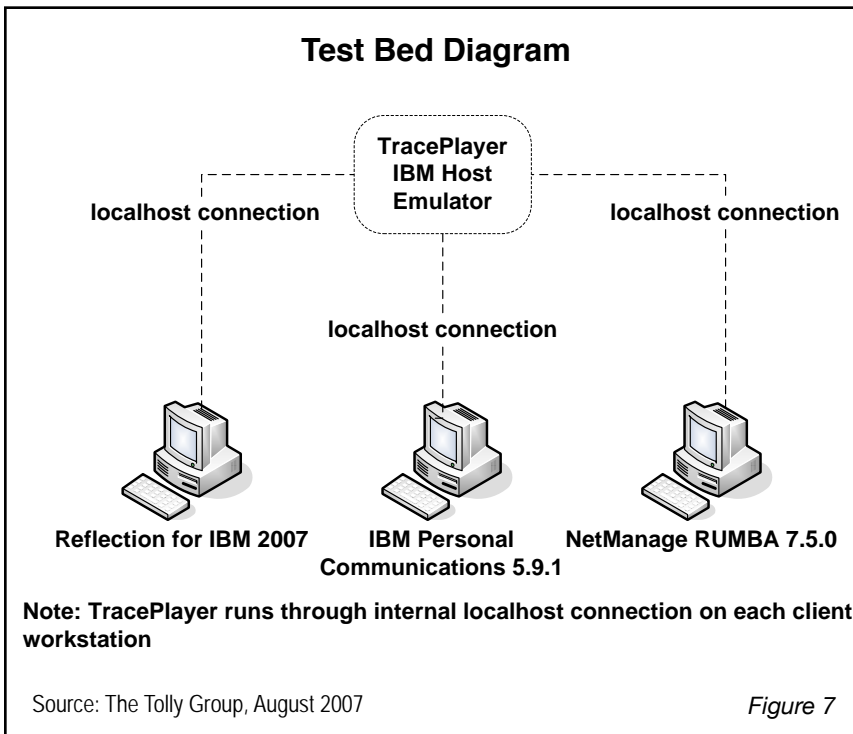


The “Ribbon” menu toolbar found in Reflection for IBM 2007 is designed to streamline with Microsoft Office 2007’s menu toolbar. This toolbar groups the program’s functions by type. This feature became very useful, as observed in Figure 2, with the Office Tools toolbar section. This toolbar reduced the amount of clicks and time required to create a new Email message and word processing document.

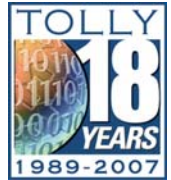
Source: The Tolly Group, August 2007

Figure 6

### Test Bed Diagram



The Tolly Group is a leading global provider of third-party validation services for vendors of IT products, components and services.



The company is based in Boca Raton, FL and can be reached by phone at (561) 391-5610, or via the Internet at <http://www.tolly.com>, [sales@tolly.com](mailto:sales@tolly.com)

### Fair Testing Charter™ and Interaction with Competitors

The Tolly Group invited IBM and NetManage to participate in the testing as per The Tolly Group's Fair Testing Charter.

Representatives from IBM and NetManage did respond to the invitation and decided not to participate.

The IBM Personal Communications and NetManage RUMBA software packages were acquired by The Tolly

Group through normal distribution channels.

When contacted, a NetManage official said the company's product did not support Windows Vista at test time.



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