

## Extending Application Access with a Unified Terminal Emulation Solution: A Customer Case-in-Point

Solutions that provide *terminal emulation* and *host access* to an enterprise's deeply entrenched, mission-critical business systems are as essential as ever — and must continue to evolve to support an increasingly diverse mix of enterprise endpoints. The example of a large global financial institution illustrates how drivers to re-evaluate an organization's existing portfolio of terminal emulation solutions can trigger immediate opportunities for reducing both technical complexity and total annual cost.

### Business Context: Because He's Not Yet Dead!

A cousin of Mark Twain was lying seriously ill in London, and rumors were swirling that it was the American humorist himself on his deathbed. In response, he is alleged to have directed a reporter who stopped by to check on his health to "say that the report of my death was greatly exaggerated."

For many aspects of information technology, much the same can be said. About a decade ago, for example, Microsoft chairman Bill Gates was talking about the end of *passwords*. And how many "waves of computing" presentations do we continue to see from solution providers and analysts, which always seem to reference the *IBM mainframe* as a relic of the enterprise glass houses of 40 to 50 years ago?

The truth, however, is that like passwords, mainframes are both widely used and not likely to go away any time soon. One of the oldest associations of computing professionals, SHARE, [reported](#) in May 2013 that:

- 96 of the world's top 100 banks, 23 of the 25 top US retailers, and 9 out of 10 of the world's largest insurance companies currently run System z [i.e., IBM mainframes]
- Seventy-one percent of global Fortune 500 companies use System z
- Nine of the top 10 global life and health insurance providers process their high-volume transactions on a System z mainframe
- Mainframes process roughly 30 billion business transactions per day, including most major credit card transactions, stock trades, and money transfers, along with manufacturing processes and ERP systems

Providing flexible, secure access to the information and applications hosted by mainframes continues to be a mission-critical business requirement — and this is true even more so today than ever before, given the disruptive

### Analyst Insight

Aberdeen's Analyst Insights provide the analyst perspective of the research as drawn from an aggregated view of surveys, interviews, analysis, and industry experience.

### Fast Facts

Aberdeen's 2H 2012 study of nearly 140 organizations showed that critical enterprise workloads (e.g., databases, ERP systems) are still most likely to be running on-premise, and primarily on physical servers.

For example, ERP systems:

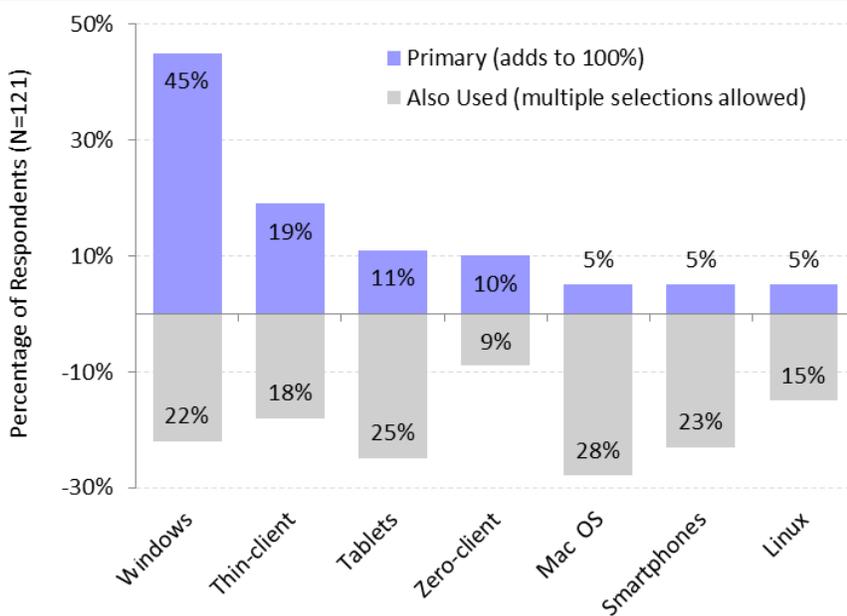
- ✓ Physical servers – 70%
- ✓ Virtualized servers (private cloud) – 30%
- ✓ Virtualized servers (public cloud) – 0%

mega-trends of *collaboration, mobility, big data, and cloud computing*. Which means that solutions that provide *terminal emulation and host access* to these deeply entrenched, mission-critical business systems are as essential as ever to the modern enterprise — and perhaps more so.

### Extending Access to a Range of Existing Enterprise Systems, from a Diverse Mix of Enterprise Endpoints

Expanding application access to a given organization’s installed base of back-end systems is only half of the technical challenge — typically, the challenge also includes supporting an increasingly diverse mix of enterprise endpoints. The results from Aberdeen’s 2H 2012 study of enterprise endpoint deployments (summarized in Figure 1) drive home the reality that even when an enterprise adopts a “primary” endpoint solution, it is just the tip of the proverbial iceberg — they end up supporting a diverse mix of others as well. In other words, very few organizations are uniform and homogeneous these days when it comes to the endpoint platforms they need to support.

**Figure 1: Enterprise Endpoints Current Deployed**



Source: Aberdeen Group, October 2013

What does this mean, in the context of terminal emulation? On the one hand, drivers to re-evaluate an organization’s existing portfolio of terminal emulation solutions include:

- **Platform migration**, e.g., Windows 7, Windows 8
- **Application and desktop virtualization initiatives**, e.g., VMware Horizon, Microsoft App-V, Citrix XenApp, IBM SmartCloud Desktop Infrastructure

#### Fast Facts

Aberdeen’s 2H 2012 study of more than 120 organizations highlighted the following as the leading drivers for new investments in providing flexible, secure access to centralized enterprise resources (*note that more than one response was accepted; does not add to 100%*):

- ✓ Increasingly mobile / remote workforce – 37%
- ✓ Support for traditional desktop solutions becoming too expensive – 34%
- ✓ Traditional desktop installations and upgrades take too long – 27%
- ✓ Enterprise-wide operating system upgrade creates an opportunity to consolidate solutions and reduce cost – 23%

#### Definitions

- ✓ A **thin-client** is a stateless endpoint device that consists of a keyboard, monitor, and network connection to access the computing resources of back-end systems. Thin-clients also incorporate firmware that can be updated to provide new capabilities.
- ✓ A **zero-client** is a thin-client without the ability to update firmware; it is essentially a desktop appliance.

- **Evolving regulatory compliance requirements**, e.g., encrypted communications, government certifications

These and other events can trigger immediate opportunities for annual cost savings, by reducing the number of supported terminal emulation solutions that may have accumulated as a result of mergers, acquisitions, and independent technology purchases over time.

On the other hand, any re-evaluation of terminal emulation solutions must also address several critical aspects of *integration* and *compatibility*, including:

- Support for the organization's existing range of back-end hosts, communication modes, and terminal types
- Support for the organization's existing and future range of endpoint devices, which may range from traditional clients, to thin clients, to web browsers, to tablets and smartphones
- Compatibility with incumbent terminal emulation solutions, e.g., existing session files, macros, keyboard maps, and other custom settings

#### Definitions

√ In the context of terminal emulation, a **session file** includes all the required settings for the connection to the host, along with any other parameters required for deployment to enterprise end-users

### Case-in-Point: Leading Global Financial Institution

With a corporate history dating back more than 100 years, a leading global financial institution (LGFI) provides an example of how terminal emulation services have evolved to keep pace with the change of information technology, while continuing to leverage existing investments. Today's LGFI, built on the foundation of dozens of predecessor institutions, is a leading global financial services firm with assets of more than \$2 trillion, more than 200,000 employees, and operations in more than 50 countries. LGFI's Client Technology Services (CTS) group provides the core desktop technology solutions to address the needs of the firm's Line of Business functions, currently supporting more than 200,000 workstations and more than 40,000 remote access users.

The trigger to re-evaluate their terminal emulation strategy was the firm's decision to migrate to Windows 7, starting in 2011. After identifying that they were managing a half-dozen terminal emulation solutions from four different vendors — IBM (*Personal Communications*), Micro Focus (*Rumba*), Open Text / Hummingbird (*Host Explorer, Exceed*), and Attachmate (*EXTRA!, Reflection*) — CTS saw an opportunity to reduce the complexity of their application portfolio, and to significantly reduce the cost of procurement, deployment, testing, training, maintenance contracts, and ongoing technical support.

Merger and acquisition activity over the years has resulted in a heterogeneous host environment that includes a wide range of systems, including IBM mainframes, AS/400s, Unix, Linux, OpenVMS, HP e3000, Unisys, and others. Management and Line of Business users were initially skeptical that a single-vendor solution for terminal emulation could be found

to connect to this broad range of systems, for the needs of some 150,000 users.

High-level requirements included in-country support in all of LGFI's worldwide locations, Line of Business acceptance of the conversion process — including the inherent inertia of “it's working, why fix it?” — and how to deal with technical issues of compatibility. But the firm's Head of Core Desktop Product Engineering and Architecture was up for the challenge — and ultimately made it work.

After evaluating the options offered by the incumbent solution providers, LGFI moved forward with a single-vendor strategy based on *Reflection 2011* from Attachmate, which was particularly strong in its ability to provide backward compatibility with previous solutions — e.g., finding and inventorying existing terminal emulation products, and running session files, custom keyboards, and macros from other vendors — with no conversion required. Attachmate also provided the global support required by LGFI, as well as critical knowledge and local support from an Attachmate elite support technician and dedicated system engineers.

Over a total migration period of about 18 months, the results from the transition to Reflection have exceeded LGFI's initial expectations. For example:

- More than 10,000 terminal emulator session files have been streamlined and reduced to less than 700 — a big reduction in complexity, as well as a significant savings in terms of internal accounting and chargebacks
- Six terminal emulation products from four vendors have been reduced to one — with a significant savings in license renewals and maintenance agreements
- The internal (soft) costs for procurement, deployment, testing, training, and support have been reduced by a factor of 5-times

The ability to mimic certain components of existing IBM terminal emulation solutions presented the biggest technical challenge, but LGFI gives strong kudos to Attachmate for their responsiveness and support over their extended migration period. Several new capabilities were added in a service pack midway through the rollout, and additional advances in packaging and automation have since evolved into a new Attachmate product. For similar size deployments, Attachmate estimates that these new capabilities might cut future deployment times in half.

“Initially there was quite a lot of resistance to the project; the biggest hurdle we faced was not necessarily technical, but rather people saying it couldn't be done,” said the Head of Core Desktop Product Engineering and Architecture. “But we visited every line of business and responded to every requirement that was raised, which won them over pretty quickly.” Beyond the immediate benefits of reduced cost and complexity, migration to a consistent terminal emulation platform also helped CTS to achieve an important strategic benefit: “From the beginning, part of the plan was also

to make it even easier for LGFI to make the next platform migration in the future — and for that, we have put ourselves in an even better position.”

## Solutions Landscape (illustrative)

Solution providers for terminal emulation range from smaller specialists to multi-billion dollar firms; Table I provides an illustrative list.

Solution selection criteria for terminal emulation solutions should incorporate current and future requirements to support host access from a range of enterprise endpoints — including *traditional clients* (e.g., Windows, Mac OS, Unix, Linux), *thin clients*, *browsers*, and *mobile devices* (e.g., iPad, iPhone, Android).

**Table I: Solutions Landscape for Terminal Emulation (illustrative)**

Vendor	Solution(s)
<a href="#">Attachmate</a>	Reflection, EXTRA!, INFOConnect
<a href="#">Century Software</a>	TinyTERM, TinyTERM Plus
<a href="#">Ericom</a>	PowerTerm InterConnect
<a href="#">IBM</a>	Personal Communications
<a href="#">Micro Focus</a>	Rumba
<a href="#">OpenText (Hummingbird)</a>	HostExplorer, Exceed
<a href="#">Rocket Software</a>	BlueZone

Source: Aberdeen Group, September 2013

## Summary and Key Takeaways

Providing flexible, secure access to the information and applications hosted by mainframes continues to be a mission-critical business requirement — which means that solutions that provide *terminal emulation* and *host access* to these deeply entrenched, mission-critical business systems are as essential as ever to the modern enterprise. In addition, such solutions must also evolve to support an increasingly diverse mix of enterprise endpoints, including *traditional clients* (e.g., Windows, Mac OS, Unix, Linux), *thin clients*, *browsers*, and *mobile devices* (e.g., smartphones and tablets).

*Platform migration, application and desktop virtualization initiatives, and evolving regulatory compliance requirements* are among the many drivers to re-evaluate an organization’s existing portfolio of terminal emulation solutions — which can trigger immediate opportunities for reducing both technical complexity and total annual cost, as illustrated in the example of a large global financial institution.

For more information on this or other research topics, please visit [www.aberdeen.com](http://www.aberdeen.com).

Related Research	
<a href="#"><i>Enterprise-Grade Mobile Apps: Powering Organizational Transformation</i></a> ; April 2013	<a href="#"><i>Best-in-Class Companies Choose Thin-Client Desktops</i></a> ; December 2012
<a href="#"><i>Evolving Your Datacenter? Evolve Your Datacenter Security</i></a> ; January 2013	<a href="#"><i>New Breed of Servers: Platforms for Server Virtualization</i></a> ; August 2012
<a href="#"><i>The Move to Virtual Desktops and Applications and the Strain it Adds to Corporate Networks</i></a> ; January 2013	<a href="#"><i>Measuring the Returns from a Desktop Virtualization Program</i></a> ; September 2011
	<a href="#"><i>Secure Remote Access: From the Outside In, to the Inside Out</i></a> ; January 2011
Author: Derek E. Brink, Vice President and Research Fellow, IT Security and IT GRC ( <a href="mailto:Derek.Brink@aberdeen.com">Derek.Brink@aberdeen.com</a> )	

For more than two decades, Aberdeen's research has been helping corporations worldwide become Best-in-Class. Having benchmarked the performance of more than 644,000 companies, Aberdeen is uniquely positioned to provide organizations with the facts that matter — the facts that enable companies to get ahead and drive results. That's why our research is relied on by more than 2.5 million readers in over 40 countries, 90% of the Fortune 1,000, and 93% of the Technology 500.

As a Harte-Hanks Company, Aberdeen's research provides insight and analysis to the Harte-Hanks community of local, regional, national and international marketing executives. Combined, we help our customers leverage the power of insight to deliver innovative multichannel marketing programs that drive business-changing results. For additional information, visit Aberdeen <http://www.aberdeen.com> or call (617) 854-5200, or to learn more about Harte-Hanks, call (800) 456-9748 or go to <http://www.harte-hanks.com>.

This document is the result of primary research performed by Aberdeen Group. Aberdeen Group's methodologies provide for objective fact-based research and represent the best analysis available at the time of publication. Unless otherwise noted, the entire contents of this publication are copyrighted by Aberdeen Group, Inc. and may not be reproduced, distributed, archived, or transmitted in any form or by any means without prior written consent by Aberdeen Group, Inc. (2013a)