

Stay-Linked™

Application Mobility. Host Reliability.

White Paper

“Terminal Session Management”

Beyond emulation...the functionality required to effectively manage the use of Wireless Terminal Devices...



A quality wireless solution offered by...



Wireless Terminal Emulation - A different approach is needed:

By definition, a “terminal” device is meant to provide the ability for a user to enter data and view screen updates for an application that resides on the host system it is connected to. It is important to note that there is no data entry application running on the device itself. As such, our philosophy is that any hardware device being used as a “terminal” should have as little software on it as possible, and only for the purpose of enabling the functions of capturing/displaying user input/output. This belief has proven to be especially valid when connecting terminal devices to application hosts “wirelessly”.

With this thinking in mind, we created what we call our Client2Host™ architecture. It is the foundation for our popular Stay-Linked™ solution for wireless terminal emulation and session management. Virtually all other wireless terminal emulation products utilize an architecture that features emulation software running as an application on the device itself to create a remote Telnet client session. This has always been done on “wired” personal computers in the past. The feedback we received when doing our research prior to developing the Client2Host architecture, nearly three years ago, clearly indicated that a different type of software design was needed for terminal emulation applications making a “wireless” connection to an application host.

Our research included feedback from device manufacturers, device resellers/integrators and end-user organizations. While they all told us that terminal emulation running on a handheld wireless device worked, they all said that there were some major and very painful challenges they were all dealing with that did not surface in a “wired” world.

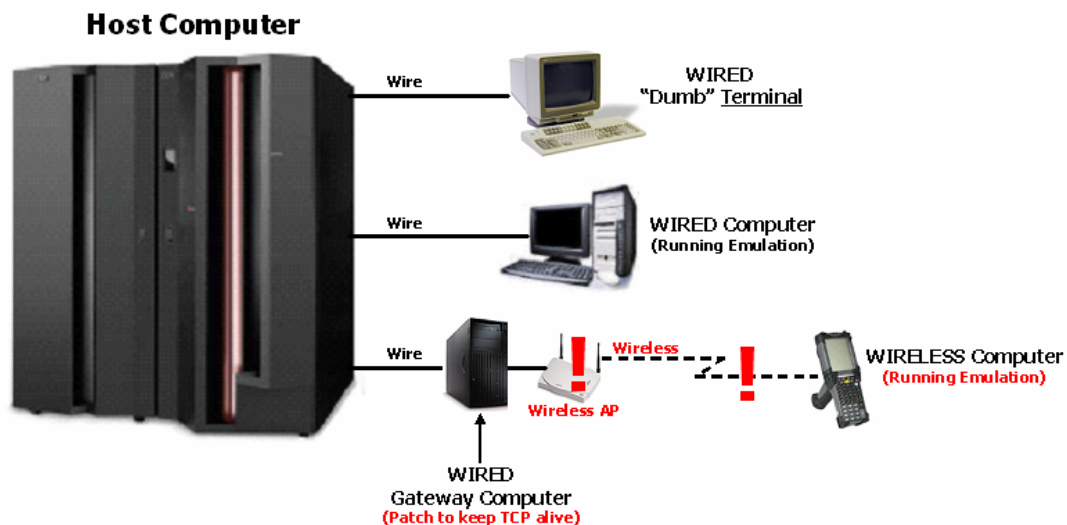


Figure 1 – Typical approach to terminal emulation is prone to challenges when connecting wirelessly

Of primary concern to our research base was that a loss of connection to the host, even for a short duration, would cause “dropped” or “abandoned” user sessions. This situation creates the need to reset and clean-up the host and device environment so the user can resume working (a major productivity killer for users and IT support staff).

They also conveyed to us that since the devices were mobile and remote from the support staff, there was really no way to effectively manage the terminal user sessions from the help desk (e.g. to see what the user is seeing on the device, to take control of the session if the device went bad, to share data entry interactively with the user for training purposes, etc.). In short, Telnet user sessions were a “black hole” for the help desk staff when problems occurred or if remote end-user training was needed.

Stay-Linked’s success since its introduction nearly two years ago validates the importance of the two major goals we kept in mind when we created the Client2Host architecture:

1. Implement “host-based” session persistence, using the reliability of the host computer to keep sessions alive by running the sessions there, not on the device or on a gateway PC server (only a thin client resides on the device to provide remote control of the Telnet client and server session running on the host).
2. Take advantage of the session running on the host at all times as a central point of contact that both the device user and support staff can access simultaneously to provide centralized session management functions.

Using wireless terminal devices for the purpose of gathering real-time data is not new. However, until recently the main focus has been on emulating the proper terminal interface (IBM 5250/3270, VT100/220, etc.) based on the host application platform and creating a solution to maintain a reliable, persistent host connection. Stay-Linked’s Client2Host architecture meets the challenge of providing reliable, persistent wireless connectivity by keeping the Telnet Client and Server session on the host.

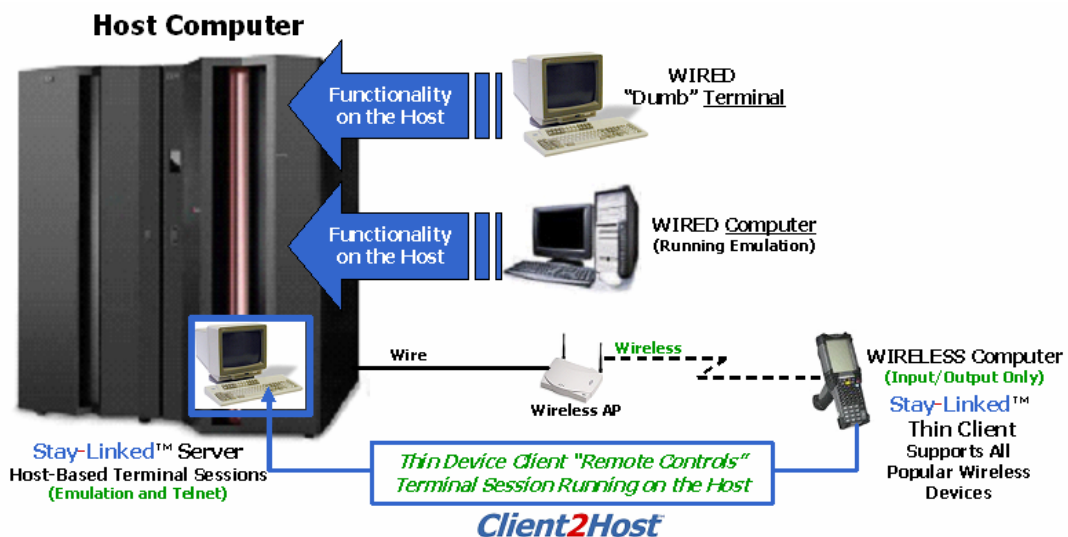


Figure 2 – Stay-Linked’s Client2Host architecture, developed specifically for wireless terminal emulation

Very valuable on its own, reliable wireless session persistence with the Client2Host architecture is just the beginning of the Stay-Linked story. It is also the foundation for an additional set of much-needed help desk/centralized management functionality that is simply not possible with other terminal emulation architectures.

Beyond Emulation...Terminal Session Management:

Stay-Linked's Client2Host architecture enables the most reliable method for wireless terminal connectivity. It also brings with it the ability to provide centralized help desk staff with a means of effectively managing Telnet user sessions. This is especially valuable when supporting remote users who are connecting to host systems with a wireless terminal device to gather data in real time (e.g. scanning barcode labels in a warehouse, distribution center or retail location). Disruptions in connectivity, abnormal device functionality, or unexpected application behavior could result in a loss of productivity for the user and frequent calls to the help desk.

The help desk staff being asked to provide wireless terminal users with support is typically not geographically local to them. They are usually deployed centrally at corporate headquarters locations, along with the other IT support resources for critical host-based applications and systems. Typically, once a remote wireless terminal user loses their host connection, they also lose all information related to where they were in their transaction sequence and data entry process. This leaves the user and the support staff with very little data to go on. Not so with Stay-Linked. Its Client2Host architecture allows both the end user and the support staff to have the ability to view and control the user's Telnet session running on the host. This is still true if the user is disconnected.

The Telnet client runs on the host and is controlled "remotely" by either the Stay-Linked thin client running on the user's device or from the Stay-Linked Administrator GUI console's "Manage Connections" function running on a help desk staff member's PC. In short, both the end user and the help desk staff member are accessing and viewing the same Telnet session running on the host in real time, but from two different sources.

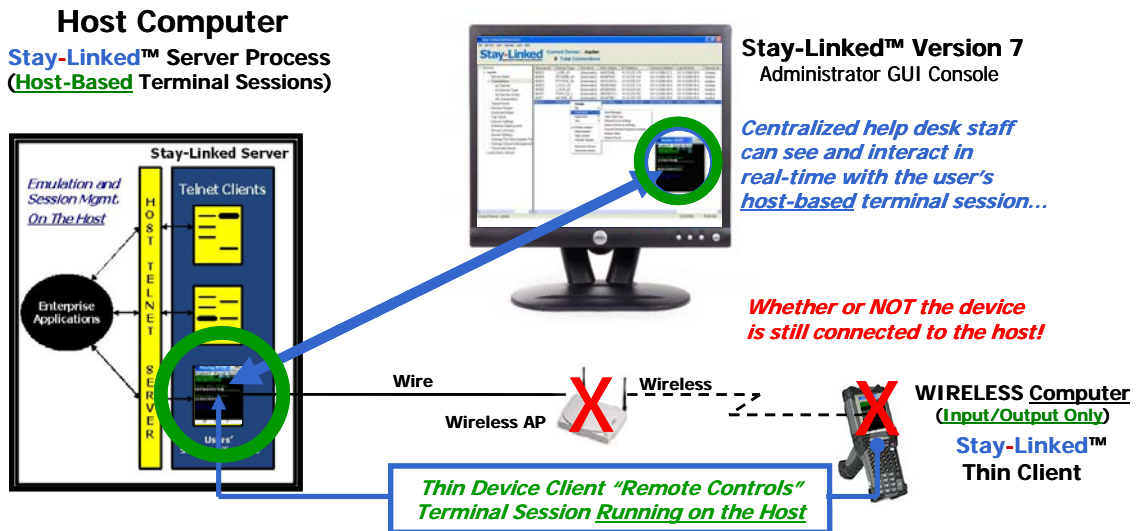


Figure 3 – End user and help desk can both view and control the same host-based session with Stay-Linked

Even if the end user's device goes bad (dead battery, etc.), or if they are out of wireless access range, the help desk staff member can see and manage the user's session (current screen with cursor blinking waiting for next transaction/key stroke/scan) running on the host system. It is unaffected by device or coverage issues.

This is a very valuable piece of functionality for the help desk staff to have when a user may be thousands of miles away from them in a remote warehouse, distribution center or retail location. It confirms for both parties the last transaction to be successfully completed on the host. It also displays precisely where processing will resume (screen and exact field/cursor location) when Stay-Linked automatically reconnects the user to their session after the disruption in access or device issue is resolved. This type of information and functionality is not possible if the Telnet client is running on the device.

Centrally managing the Wireless “Network” and the “Device” is not enough:

When being asked to support users in a wireless terminal environment, the help desk needs “management” solutions that give them “centralized” definition/configuration of the software technologies involved. They need real-time console applications that give them centralized visibility and control of the entire network of users they support, no matter how distant those users may be physically. Many quality solutions exist that provide wireless network support staff with this type of capability in the areas of Wireless “Network” Management and Wireless “Device” Management. These solutions offer complete functionality provided the wireless devices are running client/server “fat applications” that feature databases and application programs that reside on the device.

However, if the wireless devices are being used as wireless “terminals” accessing a host-based application through a Telnet Client and Server session, then there is additional information and functionality required. None of the existing Wireless “Network” Management and Wireless “Device” Management solutions available today provides the help desk with the specific “centralized” visibility and control needed to effectively manage a wireless terminal user’s session.

Stay-Linked™ fills the Wireless Terminal Session MANAGEMENT void... and seamlessly integrates with all other critical components.



Figure 4 – Wireless Terminal Session Management is specialized for wireless terminal environments

Therefore, Terminal Session Management is defined by the set of information and functionality required specifically for effectively managing wireless “terminal” user environments, which is not addressed by any other centralized management scheme. It is important to note that Terminal Session Management supplements network and device management information and functionality, and is not a replacement for either.

The information and functionality provided by Terminal Session Management:

Centrally-deployed help desk staff members need an intuitive GUI console application that gives them the ability to not only monitor the status of a remote wireless terminal user's session, but also to interact with it in real time based on what the user is seeing and what they are experiencing on their end. Ideally, they should also be able to take immediate remedial action through the same centralized interface to assist the user with resolving any productivity-hindering application behavior or end-user training issues.

Stay-Linked's centralized Administrator GUI console application provides this powerful set of capabilities to the support desk. Wireless terminal Telnet sessions running on the application host are completely visible and controllable with the Stay-Linked Administrator GUI console at all times. This eliminates the previously described "black hole" scenario for all wireless terminal devices where the Stay-Linked thin client software is installed to remotely "drive" host Telnet sessions, as opposed to running the sessions locally on the device.

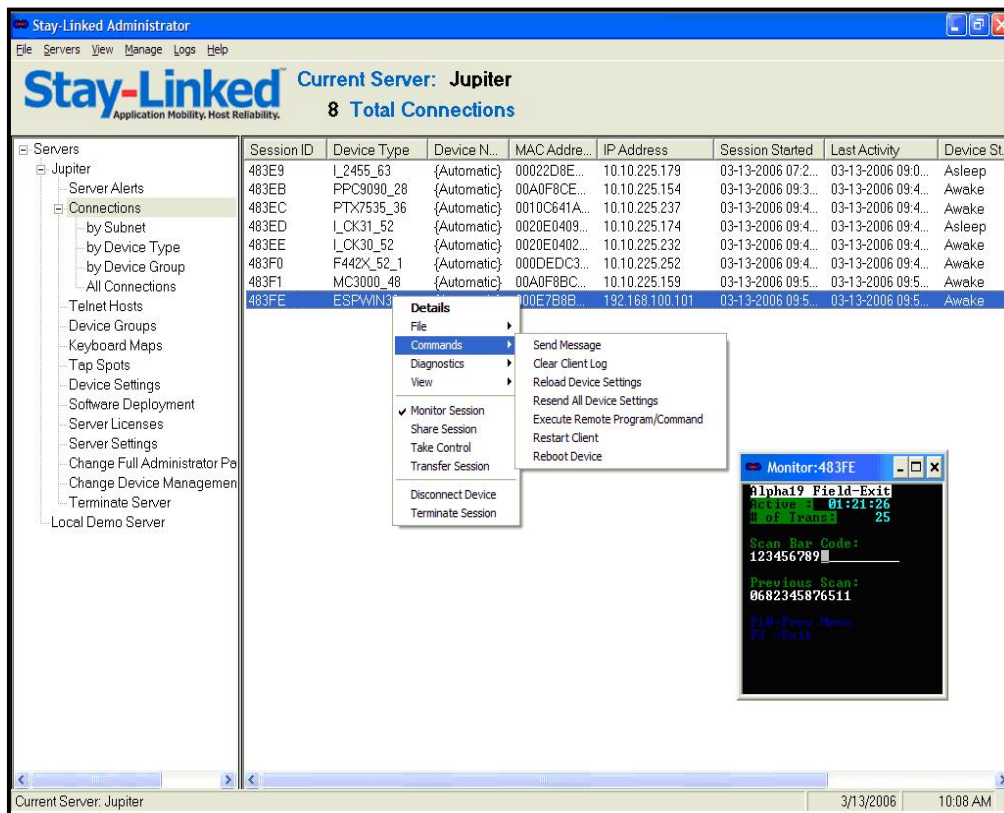


Figure 5 – Centralized "Terminal Session Management" with the Stay-Linked Administrator GUI console

The Stay-Linked Administrator GUI console application can be installed on any non-dedicated Windows PC that has network access to the host system where the Stay-Linked Server software is running. It is through this single, intuitive interface that the support staff can configure, view, and manage all aspects of the Stay-Linked environment.

With Stay-Linked, licensing, active user sessions, and all device terminal emulation configuration and desired behavior is managed centrally. Changes can be made centrally and applied to specific devices or groups of devices, as opposed to the need to “touch” every device for desired changes to take effect. Additionally, there is no need to modify any device-resident software for changes in desired behavior to take effect, eliminating the need to re-transmit new/updated copies of device-resident software over the network.

The Stay-Linked Administrator uniquely provides a wide-range of information and functionality that takes advantage of the Client2Host architecture:

Category 1 – Centralized Definition/Configuration of Session Behavior

***Important note:** Centralized Definition/Configuration of Session Behavior is applied to the user's session when a connection is made between the Stay-Linked thin client software and the Stay-Linked server software (does not require any configuration on the device).*

- Which types of barcodes to support/allow as valid input
- Keyboard map definitions (and alternate keyboard map definitions)
- Handling of messages and alerts (where to display, sounds, etc.)
- Tap spot data entry mnemonics for “touch” enabled devices (PocketPC, etc.)
- Color, backlight settings and other terminal display characteristics

Category 2 – Centralized Visibility and Control of Terminal User Sessions

- Monitor application screens and user input in real time
- Take over user sessions when devices fail (complete unfinished transactions)
- Collaboratively “share” sessions between the user and the help desk
- Terminate sessions
- Transfer a session associated with a dead device to a healthy spare
- Reboot devices
- Execute a remote program on the user's device
- Send text messages to devices

In addition to the capabilities listed above, Stay-Linked also features a comprehensive set of server and device log files that can be used for diagnostic and troubleshooting purposes. Having a background facility that captures critical event data with time stamp information is extremely valuable for determining exactly when and why unexpected issues occur.

Summary:

The purpose of this white paper is to raise awareness of the fact that a different approach to terminal emulation is needed when implementing wireless terminal devices. It is needed to maximize host connection reliability, as well as to provide an architecture that facilitates much-needed centralized management capabilities for help desk staff.

Wireless terminal users and IT support staff no longer have to defer to the time consuming and disruptive process of “re-booting” devices as the only solution when a user experiences issues with accessing host-based applications.

Stay-Linked’s Client2Host architecture combined with the Stay-Linked Administrator GUI console application enables the help desk to take immediate, informed action to assist a remote user when issues occur.

It also provides a platform that can proactively be used for providing training to remote end-users to familiarize them with new or modified application screens. The ability to have a support staff member act as an interactive co-pilot in real time with host application users, without having to physically be there, maximizes the effectiveness of centrally deployed IT and support resources.

If your organization has deployed wireless terminal devices and you are experiencing the issues raised in this white paper, or if you are planning on using wireless terminal devices, we strongly encourage you to consider the functionality offered by Stay-Linked. Stay-Linked is licensed according to the number of simultaneous connections required as opposed to licensing each device. Therefore, there is no charge for the Stay-linked thin client software that resides on each. This allows customers to migrate from older terminal devices to newer devices without the need to re-purchase terminal emulation software for the new devices.

Stay-Linked server software installs and runs natively on a wide range of highly-reliable host computing platforms, including the IBM AS/400-iSeries (OS/400) and RS/6000-pSeries (AIX), HP9000 (HP-UX), Sun Solaris, as well as various Linux and Windows-based server offerings. Stay-Linked thin client software is available for most popular wireless terminal devices from manufacturers such as AML, HHP, Symbol, Intermec, PSC, LXE, Citadel, Psion-Teklogix and others, as well as any Windows, Windows CE/CE.net/PocketPC based PDAs, Tablet PCs, laptops and desktop computers.

Stay-Linked...Beyond Emulation™.

For more information on Stay-Linked™, or to request a FREE 30-day evaluation copy, please contact:



System ID Warehouse (a Stay-Linked Certified Partner solution reseller)

1400 10th Street

Plano, TX 75074

1-800-397-9783

Web: <http://www.systemid.com> **e-Mail:** sales@systemid.com