PowerNet Twin Client:

The universal terminal client software

This Connect, Inc., PowerNet Twin Client White Paper was updated June 9, 2004. Please visit http:/www.connectrf.com to get the latest release and review all of Connect's downloads.

Connect, Inc., 1701 Quincy Avenue, Suites 5 & 6, Naperville, IL 60540
Phone: (630) 717-7200 Fax: (630) 717-7243

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Connect, Inc., 1701 Quincy Avenue, Suites 5 & 6, Naperville, IL 60540
Phone: (630) 717-7200 Fax: (630) 717-7243

Executive Abstract

PowerNet Twin Client is based on Connect's standard server software (in fact, it can switch into server mode), making it the most sophisticated, mature software offering of its kind. Most all of the features and capabilities found in the standard product were preserved in PowerNet Twin Client which sets it apart from other telnet client packages when comparing features and functionality.

PowerNet Twin Client (Formerly called PowerNet TN Client) is a unique approach for an RF terminal based solution that provides VT100, VT220, HP700/92, TN3270, and TN5250 Telnet terminal emulations directly (from the terminal) to any TCP/IP telnet capable host application. This solution requires no network controller or server. However, if at any time a network controller or server is required, it may be placed on the network and the terminal client can be switched from "thick mode" (no server) to "thin mode" (a server) without requiring any new terminal client - hence the name "Twin Client". The PowerNet Twin Client package includes an easy-to-use Windows-based program to change the default configuration options that can be downloaded into the RF terminals.

This solution is ideal for sites using a small number of RF terminals that only require a straightforward set of features. Small warehouse distribution or manufacturing sites can benefit from this initial approach. Large or small retailers with a low RF terminal requirement at each store location can use PowerNet Twin Client for a specific store or as part of a rollout across the entire chain. Each PowerNet Twin Client system consists of the following: a Twin Client CD-ROM that includes Twin Client configuration software, 2.4GHz Wireless Network Software, Documentation, and a Terminal Application Program.

PowerNet Twin Client allows a VAR or Integrator to tailor systems with features that include Diagnostic Log Files, Scan Editing, Keyboard Mapping and Scan-Ahead to name just a few. PowerNet Twin Client has a full suite of capabilities when it comes to supporting the scanner, keyboard, and display. It is unique in its ability to support Screen Formatting.

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PowerNet Twin Client Architecture

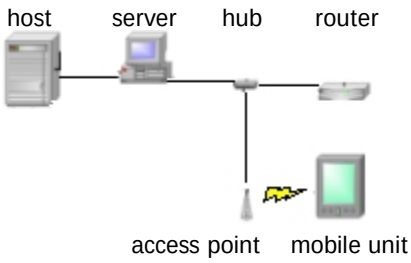
The PowerNet Twin Client architecture is, in many ways, radically different than other products on the market. Customization and implementation of its many features does not require a Software Development Kit (SDK), nor does it require operator navigation of a menu system on the terminal.

Instead, a user-friendly Windows-based menu program creates a setup file, which is included with the executable in the image downloaded to the terminal. By this same methodology, object files that control features such as keyboard remapping, scanner options, dialog scripting, scan editing, internationalization, and screen formatting are included in the image.

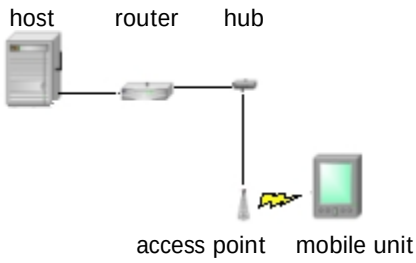
Due to the server-less nature of the Telnet client architecture, the many optimizations normally provided by the server are not present. However, PowerNet Twin Client incorporates both the "thick" and "thin" modes of operation, making the upgrade to an OpenAir server-based system transparent to the user.

PowerNet Twin Client operates in either of two modes: *thick* client or *thin* client.

- Thick client mode (also referred to as *telnet client* mode) provides a telnet connection directly to host computers and their applications.
- Thin client mode communicates directly with a PowerNet OpenAir or PowerNet AirLinc server, which in turn provides the connection to host computers and their applications.



Thin Mode Topology



Thick Mode Topology

The primary difference between the two modes is in processing load distribution: In thick mode, all application protocol processing is performed on the terminal, while in thin mode all of the processing takes place on an intermediate OpenAir or AirLinc server. Another important difference is optimization: In thin mode, the OpenAir or AirLinc server introduces display optimization, data compression, and several other techniques that can dramatically reduce wireless network traffic. These optimizations are not possible in thick mode.

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All of the user interface features, functions, and capabilities remain the same, regardless of the mode of operation.

Features and Benefits of PowerNet Twin Client

PowerNet Twin Client is unique in its ability to support screen formatting without a server. It is also unique in having the ability to create diagnostic trace files for network and application troubleshooting. The following table summarizes the PowerNet Twin Client feature set. Each of these capabilities is included in the standard program.

Feature	PowerNet/TN
Addressing	
Client IP Addressing Option	Yes
Host IP Addressing Option	Yes
Address Range Option	IP range
Scanner	
Scan Termination Key Option	Yes
Scan Ahead Option	Yes
Scanner Type Options	Yes, 5 options
Field Length Check Option	Yes
Field Wrap/Truncation Option	Yes
Trailing Data Stripping Option	Yes
Scanner Data Mapping Option	Yes
Barcode ID Character Option	Yes
Realtime Decoder Control Option	Yes
Application Decoder Control	Yes
Scan Editing Option	Yes
Binary Scan Data Option	Yes
Modulus-10 Check Option	Yes
Concatenation Option	Yes
Redundancy	Yes
RF File Transfer (AirLoader)	Yes
Keyboard	
Keyboard Mapping Option	Yes
Keyboard Macros Option	Yes
Session End Key Option	Yes
Autosend Key on Field Fill Option	Yes
Key Click Option	Yes
Case Conversion Option	Yes
Display	
Character Set Mapping Option	Yes
Quadrant Mode Selection Option	Yes
Backlight Option	Yes
Cursor Format Option	Yes

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Row Relocation	Yes
Native Scripting Language	Yes
Audible Alarm	
Volume Option	Yes
Frequency Option	Yes
Duration Option	Yes
Count Control Option	Yes
Printer	
Type Selection	Yes
Initialization	Yes
Three Print Methods	Yes
Screen Formatting	Yes
Configurable Diagnostic Log File	Yes
Miscellaneous	
AirLoader	Yes
Font Size Control	Yes
Language Selection	Yes
Scripting	Yes
Screen Formatting	Yes

PowerNet Twin Client terminals offer the following benefits:

- **Simplicity:** Twin Client is preset to match the default keyboard overlays and functionality of the Telnet client. No special configuration procedures are required.

- **Compatibility:** Existing installations that have been customized can be easily converted to Twin Client by importing the existing configuration file, and/or by using the alternate terminal configuration menu system.

- **Management:** Administrators and integrators can monitor and modify the software revision and configuration of each portable terminal from any Windows PC attached to the TCP/IP network. Changes are downloaded to the terminals over the wireless LAN automatically.

- **Formatting:** The Twin Client Terminal Screen Formatter feature is built-in, allowing integrators to tailor host application displays to suit the needs of the terminal operators without modifying the applications.

- **Internationalization:** Error message language translations and character sets are menu selections. No additional integration is necessary.

- **Migration:** Conversion to a PowerNet OpenAir or PowerNet AirLinc client-server environment is automatic because the "thin" client is included in the Twin Client software already downloaded to the terminal.

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System Requirements

PowerNet Twin Client minimum system requirements:

- A Pentium-class processor
- 32 MB of RAM
- 10 MB of free hard disk space available
- Microsoft Windows 95, 98, XP, ME, 2000 or NT operating system

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