



December 18, 2006

## Contents

Terminal Services .....	2
Terminal Server Relationship .....	2
Centralized Computing Benefit .....	2
Managing All The Pieces .....	2
Centralized Client Configuration .....	3
Centralized Management .....	3
Failover .....	3
Security .....	3
Load Balancing .....	4
Multiple Session Support .....	4
AppLink (App Publishing) .....	4
Shadowing and Microsoft Config .....	4
E-mail Event Notification .....	5
Quick Replacement .....	5
Share Keyboard and Mouse .....	5
Options for TM Ready Clients .....	6
TM Ready Dedicated Hardware .....	6
WinTMC – TM Windows Client .....	6
Licensing Modes .....	6

## Why Use ACP's Thin Client Software ThinManager?



Any explanation of ACP's ThinManager software requires an understanding of the underlying technology - Microsoft Terminal Services and the Thin Client model. The following brief overview should be helpful for the ThinManager discussion that follows.

## Microsoft Terminal Services

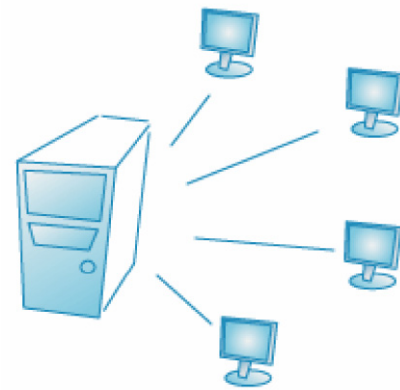
Terminal Services is a Microsoft® Windows® service that brings centralized computing (the mainframe architecture) to Windows servers. A properly configured terminal server allows many users to login and run independent sessions simultaneously on the server, each with its share of the server resources. Terminal Services can be activated on any Windows 2000 or Windows 2003 Server.

### Thin Client - Terminal Server Relationship

Each session running on the terminal server is displayed on a client connected to the server via a standard Ethernet network. Keyboard and mouse activity is sent back to the corresponding session on the terminal server. The terminal server then processes the commands and generates the graphic screen update, which is passed back to the client. This makes the terminal server session virtually indistinguishable from a PC session.

If the client is a full-blown PC it is called a “fat client”. Fat clients require a standard operating system, maintenance, security patches and updates.

But because the application processing has been split from the user interface, the client could also be a machine with very limited resources. These special display machines, called Thin Clients, are "reduced" computer devices that lack a hard drive and don't need the maintenance, patching, and updating that fat clients require.



### Centralized Computing Benefits

Terminal Services makes maintenance easier. Because the applications are running on the terminal server and not on the clients it is the terminal server that is maintained, not the clients. Applications are installed once on the server and are available to all the clients. Patches and upgrades are done on the terminal servers and not the clients.

While terminal services simulates a mainframe architecture, it is based on Microsoft's standard operating systems so it is a true Windows environment - users can call up all their familiar applications and have them run as expected.

## Managing all the Pieces

A small Thin Client network is fairly easy to keep up with using the basic tools provided by Microsoft. However once the number of clients and Terminal Servers begins to expand the system can quickly grow out of hand. And for larger systems users typically want much more power, flexibility, security and reliability than can be squeezed from the Windows operating system.

ACP developed our ThinManager® Thin Client management software as an enhancement to Microsoft Terminal Services. It was designed specifically to meet the demanding needs of industrial users who insist on 24-hour uptime, simple and reliable operation, and software and hardware that does not become obsolete just a few years after the purchase.

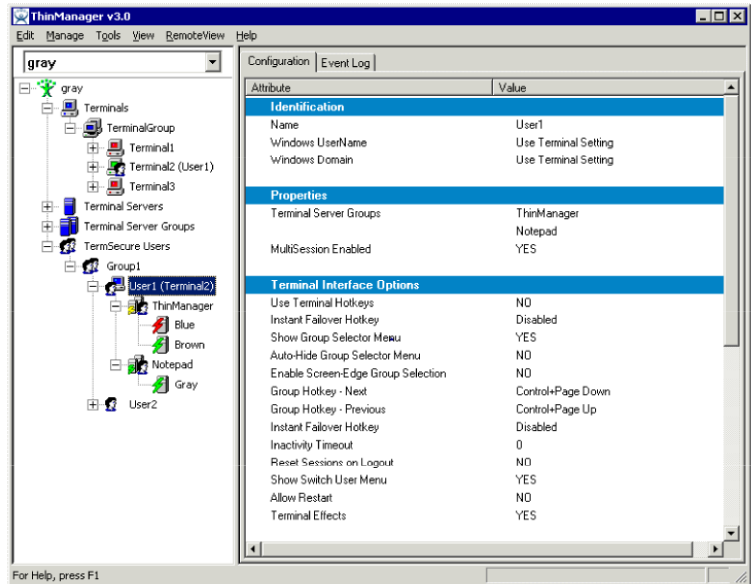
Some of the benefits of running ThinManager alongside Windows Terminal Services are listed below.

## **Centralized Client Configuration**

ThinManager allows compatible clients (ThinManager Ready Thin Clients) to be configured in a central location instead of individually at each client. ThinManager Ready Thin Clients do not have an embedded operating system so they do not grow obsolete or require firmware updates.

## **Centralized Management**

ThinManager allows the monitoring of the Thin Client from a central (local or remote) location. ThinManager shows what Thin Clients are active, what terminal servers they are assigned to, whether they are logged in, and even what applications they are running.



## **Failover**

ThinManager allows the Thin Client to be assigned to multiple terminal servers at once. If the terminal server fails, the Thin Client will detect it and switch to a backup terminal server, preventing downtime. ThinManager also allows the Thin Client to logon to two terminal servers at once. The primary session will be displayed while the session from the backup terminal server is hidden. If the primary terminal server fails, the Thin Client will simply switch to the backup session, providing immediate failover.

## **Security**

Customers such as nuclear weapons labs, nuclear power plants and chemical weapons disposal facilities require the highest security possible, and only ThinManager Ready Thin Clients fit their needs. Thin Clients using ThinManager with another ACP product, TermSecure™, have Thin Clients that cannot even see the network without authorization. Once on the network, TermSecure users do not have access to any Windows usernames or passwords, and a lost or stolen ThinManager Ready Thin Client contains no user data of any kind.

## **Load Balancing (SmartSession)**

ThinManager allows Thin Clients to connect to groups of terminal servers. ThinManager will poll the servers and determine their load based on CPU usage, memory usage and number of sessions. The Thin Client will then connect to the terminal server with the lightest load.

Thin Clients can also be queued up during a system restart. This allows a server to start the sessions one at a time to keep the server from being overwhelmed.

## **Multiple Session Support**

ThinManager allows ThinManager Ready Thin Clients to connect to multiple terminal servers and run multiple sessions - called MultiSession. These sessions are cascaded on the Thin Client and can be accessed with a hot key or a selector bar.

## **AppLink (Application Publishing)**

ThinManager allows terminal servers to be configured so that only one application runs in the session. This can be used as a security tool to limit access to unwanted programs. AppLink, in combination with the MultiSession functionality, allows a ThinManager Ready Thin Client to connect to sessions, each of which is a specific application. This simplifies the terminal server configuration. Instead of installing every application on every terminal server, terminal servers can be configured to concentrate on running fewer applications, reducing complexity and limiting conflicts between programs.

## **Shadowing and Microsoft Configuration**

ThinManager allows ThinManager Ready Thin Clients to be “shadowed” from within ThinManager. This allows the administrator to see exactly what is being run on the Thin Clients. ThinManager also allows the administrator to see what user is logged into a session and what applications and processes they are running. ThinManager also allows configuration of most of the Microsoft Server parameters directly from within the ThinManager interface.

## **E-mail Event Notification**

ThinManager can be configured to send e-mails or a local message to a designated operator's console when any of a number of specified events occur.

## **Quick Replacement**

ThinManager Ready Thin Clients can be replaced with a single click of the mouse, with the new unit assuming the old unit's identity and displaying the old unit's session. Configuration of the new unit (configuring IP addresses, adjusting serial drivers, etc.) is automatic.

## Share Keyboard and Mouse

ThinManager allows a single keyboard and mouse to be shared among as many as 5 Thin Clients. The user is then able to slide the mouse off the screen of one client and have it move onto the screen of another, saving desk space.

**Legend** ○ Feature not supported    ◌ Support depends on Thin Client hardware    ● Feature fully supported

Feature	Windows 2003 Server alone	Windows Server with <i>ThinManager</i>
Local printer connected to each Thin Client	●	●
Thin Client shadowing—allows administrator to watch session	●	●
Automatic reconnects if client disconnected	◌	●
Automatic login on Thin Client power up	◌	●
Logical application based server grouping (“Smart Session”)	○	●
Conversion of obsolete PCs to true Thin Clients	○	●
Intelligent load balancing among Terminal Servers	○	●
Real-time graphs of Terminal Server loading	○	●
Configuration Wizards with import and export capability	○	●
Automatic Thin Client configuration w/out user intervention	○	●
Automatic “single keystroke” replacement of failed clients	○	●
No software or configuration resident on the Thin Clients	○	●
Instant failover to backup server, controlled by the clients	○	●
Hotkey switching between servers at the Thin Client	○	●
Identical support for over 30 models of true industrial clients	○	●

# Options for ThinManager Ready Thin Clients

## ThinManager Ready Dedicated Hardware

ThinManager Ready Thin Clients are available from a number of manufacturers and every unit is able to connect to ThinManager right out of the box. All ThinManager Thin Clients are interchangeable so the customer is not limited to a single hardware provider.

ThinManager Ready Thin Clients do not have an embedded operating system so they do not grow obsolete and require firmware updates. Literally as long as the hardware continues to run it will remain a viable client.

ThinManager Ready Thin Clients are also more reliable due to the lack of a hard drive or other moving parts.

## WinTMC - ThinManager Windows Client

ACP's Windows client for installation on PCs allows the PC to become a fat client. This Windows client can be configured to make the PC look just like dedicated ThinManager Ready hardware, and supports ThinManager features such as failover, SmartSession, and AppLink.

## Licensing Modes

ThinManager has two licensing models. The Standard model is a per connection license and is available in 5, 10, and 25-packs.

The Enterprise model is an unlimited connection license and is available in Server, Site, and Global licenses. The cost per connection using Enterprise licenses becomes lower and lower as more units are installed.

The Enterprise Server License allows unlimited connections to two ThinManager Servers, a primary and a backup.

The Enterprise Site License allows any number of ThinManager Servers to be installed on one customer site. This is useful where different departments each want control over their own ThinManager servers. The Enterprise Global License allows a company to install ThinManager multiple times on multiple sites.