

FactoryTalk View Site Edition



**Rockwell  
Automation**

# ThinManager and FactoryTalk View SE

**ESE**  
EMPLOYEE OWNED  
Engineering Solutions Experts

John Tertin; ESE, Inc.



ACP ThinManager presents

# thin industrial 13

The Industrial Visualization and Thin Client Management Conference

# Who Am I



John Tertin

Director of Manufacturing Information Systems



# Who We Are



- Founded in 1981
- Headquartered in Marshfield, Wisconsin
- 100% Employee-Owned
- Primary focus in Food and Beverage industries
  - Process Automation
  - Analytical Instrumentation
  - Manufacturing Business System (MES / ERP) Integration





# Who We Are



- Rockwell Automation Solution Partner
- CSIA Certified Member
- ACP ThinManager Platinum Integrator
- UL Listed Panel Shop
- GE Solution Provider
- WonderWare Solution Provider



# Architecture Progression

## Progression of FactoryTalk View SE Distributed System

Low number of thick clients initially

System continues to grow (more maintenance)

Introduce Microsoft Terminal Services (consolidates maintenance)

FTView SE becomes critical system

- Additional terminal servers with ThinManager redundancy
- Convert thick clients to thin clients using PXE booting
- Deploy thin clients going forward to realize cost savings



# Why ThinManager

## ECONOMIC FACTORS

- Lower Cost

- 20 Allen-Bradley 200R Industrial PCs \$48,000
- 20 Advantech thin clients *including* software \$32,175

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\$15,825 (32.9%)

- Decreased maintenance costs

- FTView Patch Rollups for 20 clients @ 15 minutes 5.0 hours
- FTView Patch Rollups for 2 servers @ 15 minutes 0.5 hours

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4.5 hours (90%)

# Why ThinManager

## OTHER FACTORS

- Decreased IT liability since clients no longer require virus protection
- Increased reliability using multiple terminal servers (SmartSession)
- Efficient use of software licensing using Shadow Display Clients
- Increased usability using SmartSession to switch between TS's
- Ability to directly support operators using terminal shadowing
- Ease of touch screen calibration – *not a trivial issue*
- Ability to swap a failed thin client in minutes
- Central management for restarting or repurposing clients

# Existing Architecture

Domain Controller



REDUNDANT SERVERS

Primary FTView SE



Secondary FTView SE



Terminal servers are not load balanced

Terminal Server



Terminal Server



OR

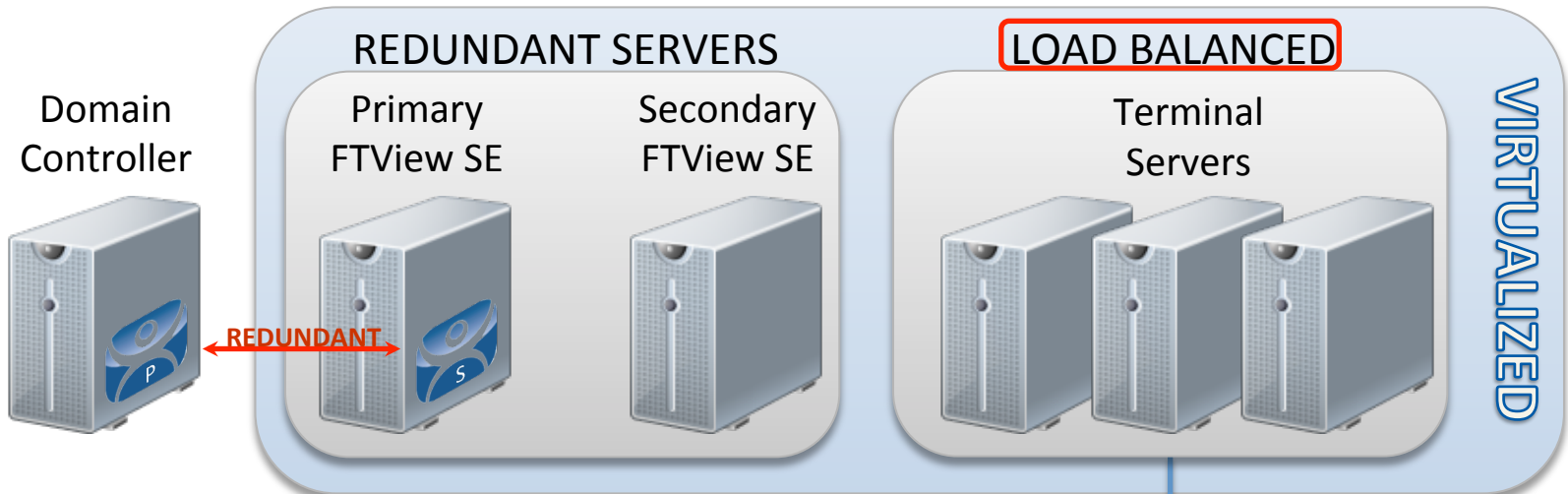
Windows OS = Vulnerabilities

FTView SE Thick Clients





# New Architecture

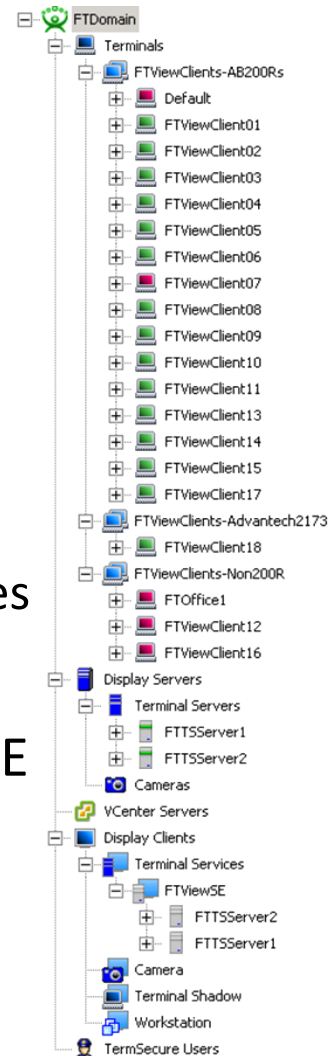


ThinManager (Stored in memory, downloaded to client at every restart = No viruses)



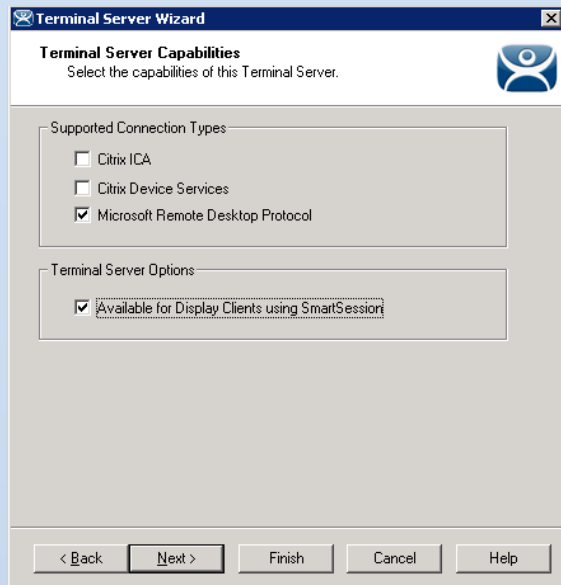
# Deployment Roadmap

- Installation took place over 3-day down period
- Installation and configuration of additional terminal servers
- Installation of fully redundant ThinManager
  - Create Display Servers
  - Configure Smart Session (for load balancing)
  - Create Display Clients with App Link (to run FView SE Client)
  - Create Terminal Groups and configure credentials and modules
- Configuration of controls network DHCP server
- Addition and configuration of TermMon ActiveX control in SE
- Conversion of 20 clients from thick clients to thin clients
- Calibrate terminal touch screens and test

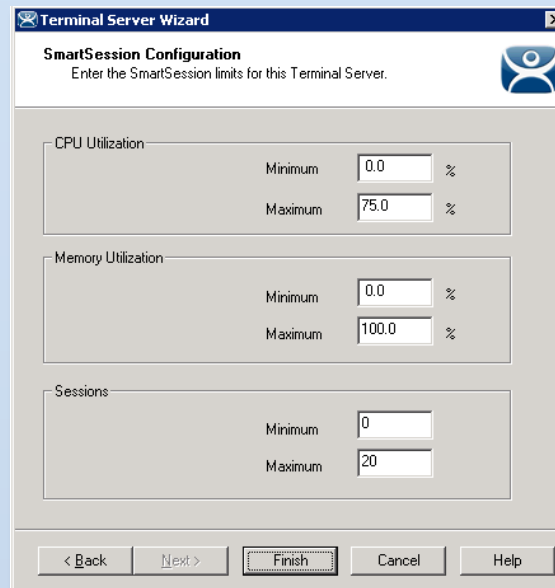


# Create Display Servers

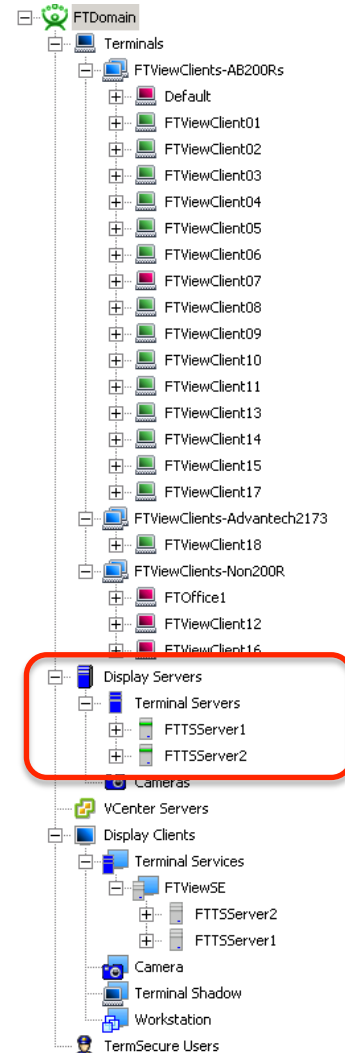
- Create Display Servers and enable SmartSession



Enable SmartSession for all Display Servers to enable load balancing



Configure each server's CPU, Memory, and Session load balancing parameters



# Create Display Clients

- Display Servers determine how the clients will act after they connect
- AppLink bypasses the desktop and starts the FTView Client

**SmartSession Settings**  
Enter the SmartSession weights for this Display Client

Smart Session Weights

CPU Utilization Weight: 1.0

Memory Utilization Weight: 2.5

Sessions Weight: 3.0

Queueing

Queue Time: Min 10 Sec, Max 30 Sec

Infinite

< Back Next > Finish Cancel Help

Set weights for created Display Servers and Min/Max connection frequency

**AppLink**  
Enter the linked application path.

AppLink Path

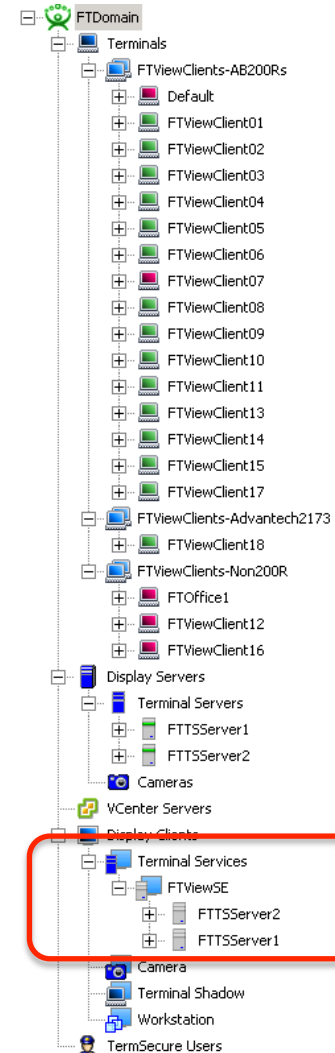
Program Path and Filename  
Files (x86)\Rockwell Software\RSView Enterprise\DisplayClient.exe

Command Line Options  
Users\Documents\RSView Enterprise\SE\Client\ProductionClient.cli

Start in the following folder

< Back Next > Finish Cancel Help

Configure AppLink with the application parameters to run upon client connection



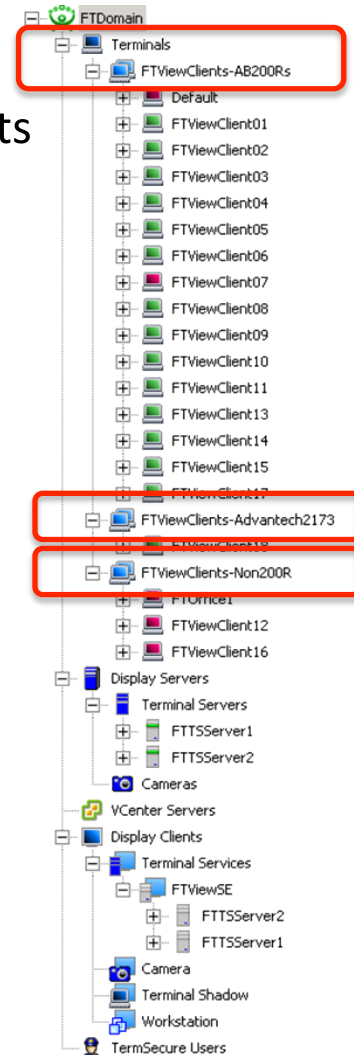
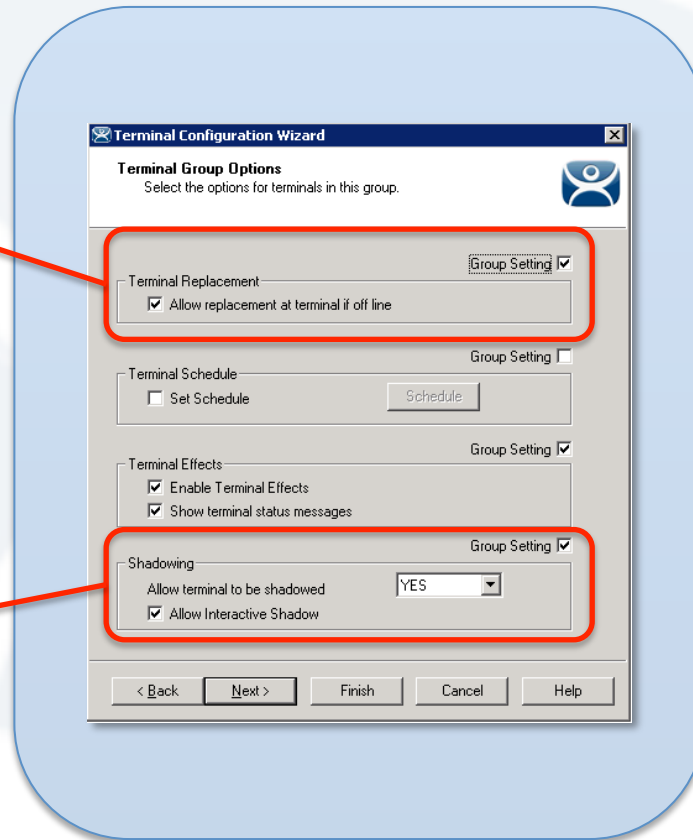


# Create Terminal Groups (1)

- Terminal groups apply “group settings” to the clients they contain
- Use to set the Display Server and Hardware Modules specific to clients

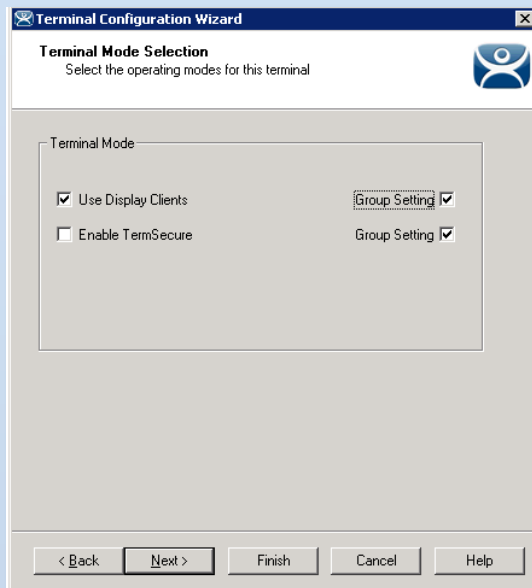
Allow offline replacement in case of thin client failure

Enable interactive shadowing for troubleshooting and demonstration for operators

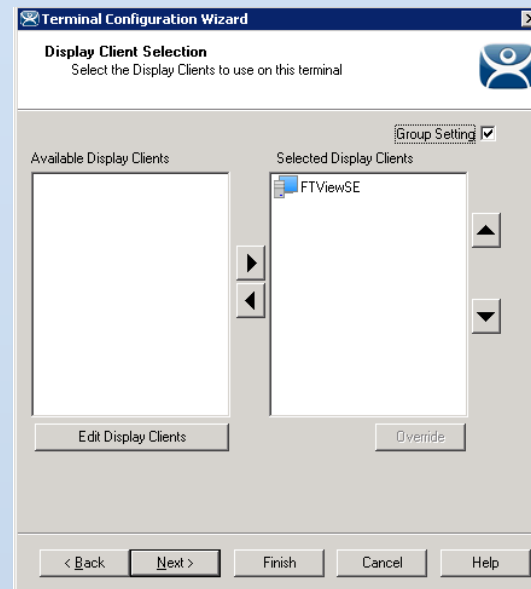


# Create Terminal Groups (2)

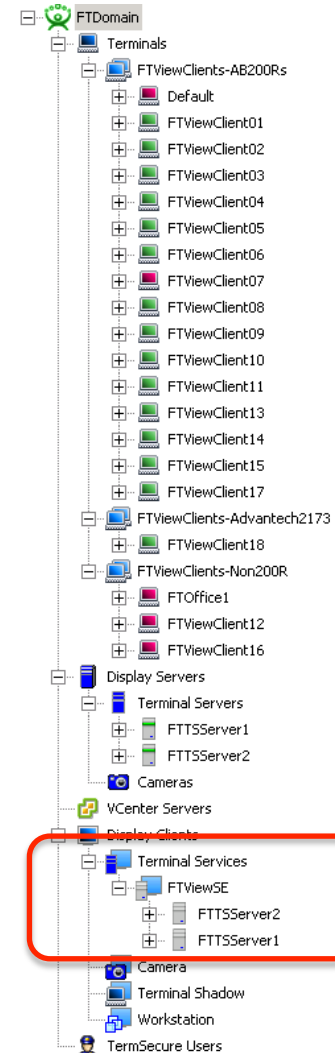
- Set group to use Display Clients to cascade AppLink settings



Set the group to "Use Display Clients"

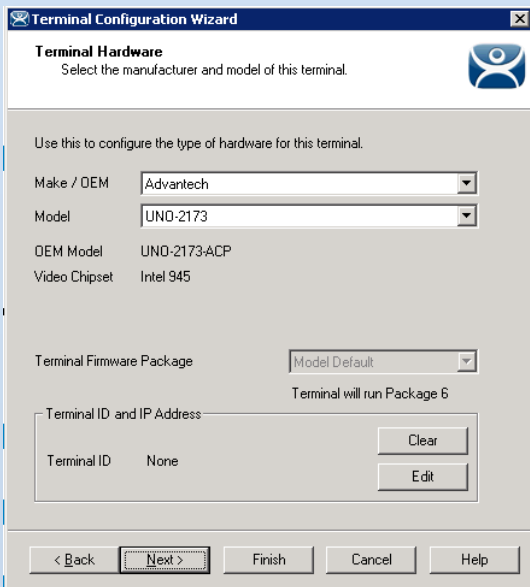


Select the configured FTView SE Display Client



# Create Terminals

- Create terminals specifying hardware and credentials



**Terminal Configuration Wizard**

**Terminal Hardware**  
Select the manufacturer and model of this terminal.

Use this to configure the type of hardware for this terminal.

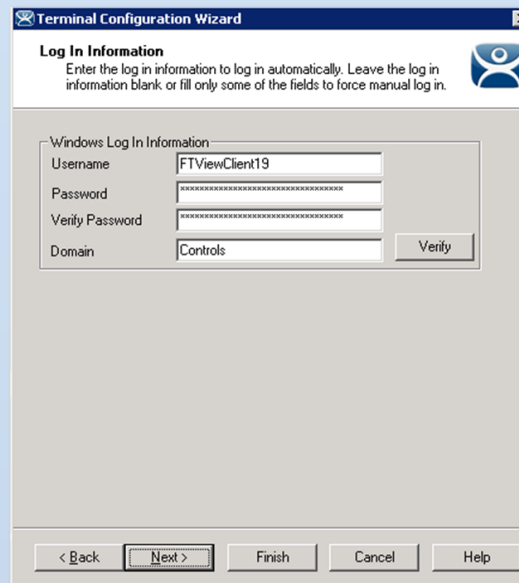
Make / OEM: Advantech  
Model: UNO-2173  
OEM Model: UNO-2173-ACP  
Video Chipset: Intel 945

Terminal Firmware Package: Model Default  
Terminal will run Package 6

Terminal ID and IP Address  
Terminal ID: None

< Back Next > Finish Cancel Help

Select appropriate hardware for each new client



**Terminal Configuration Wizard**

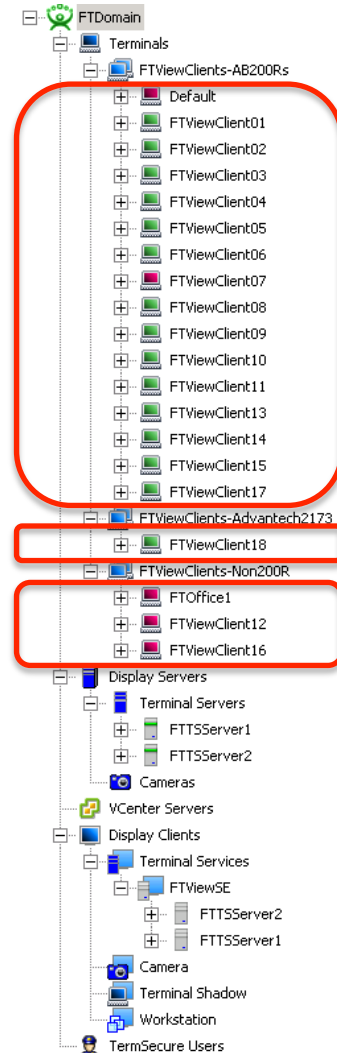
**Log In Information**  
Enter the log in information to log in automatically. Leave the log in information blank or fill only some of the fields to force manual log in.

Windows Log In Information

Username: FTViewClient19  
Password: [masked]  
Verify Password: [masked]  
Domain: Controls

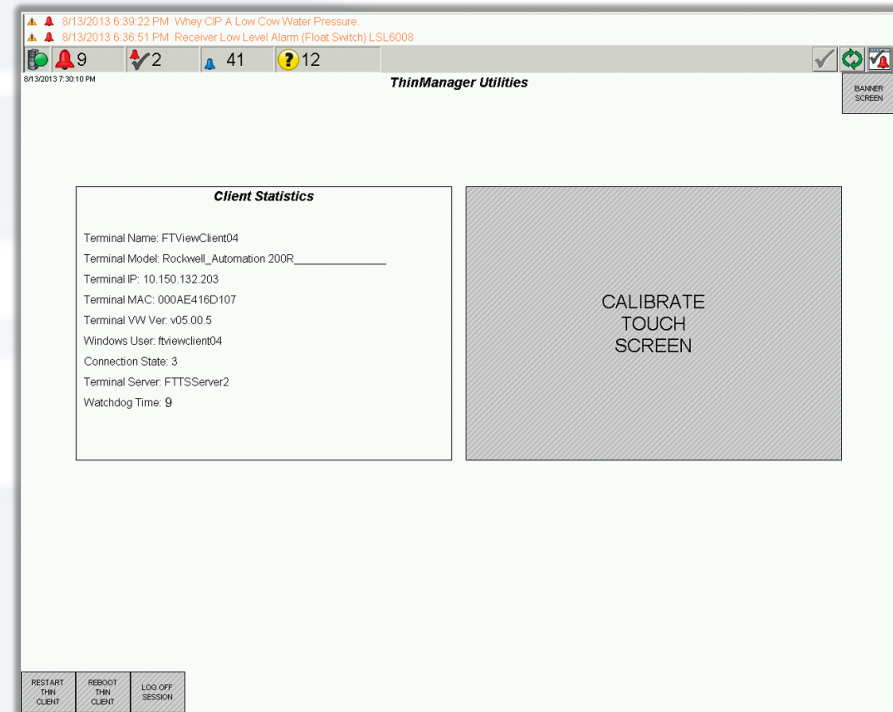
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Configure credentials for the client to use when connecting to the terminal server



# TermMon ActiveX Control

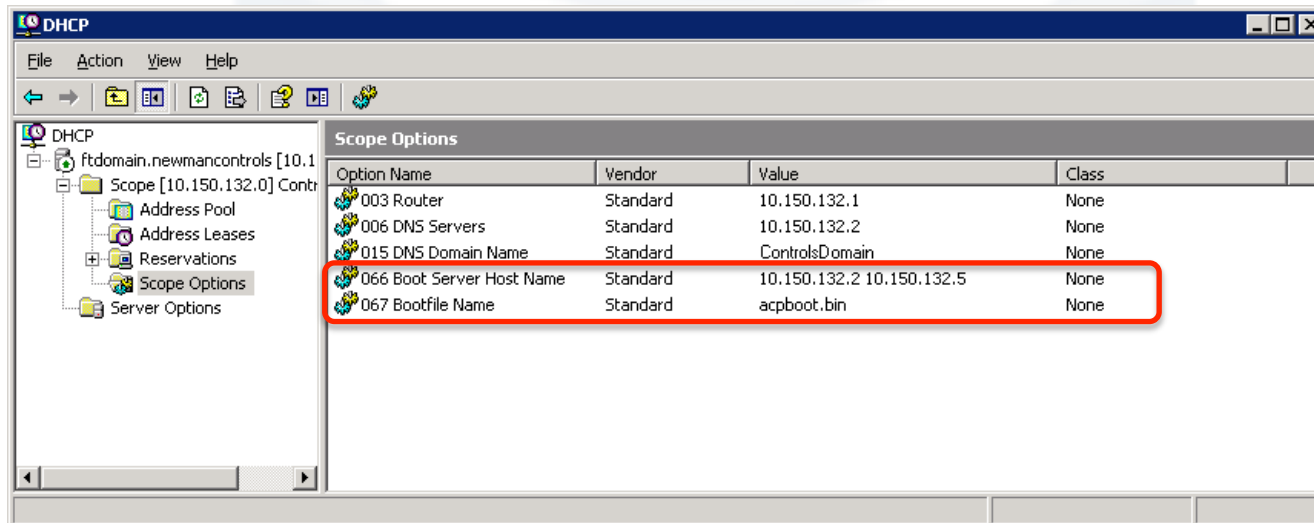
- Control located in persistent location on HMI (Alarm Banner in this case)
- Provides detailed terminal information
- Watchdog function for automatically restarting an unresponsive client
- Use ActiveX control to perform reboot, touch screen calibration, and failover terminal servers without ever leaving the HMI software





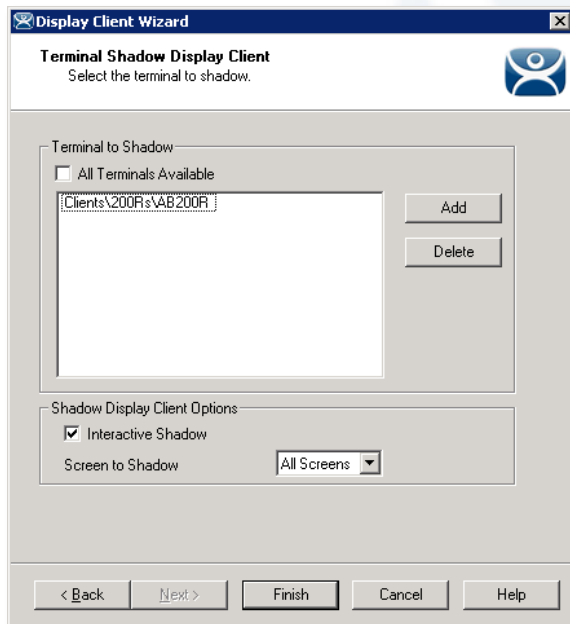
# DHCP Configuration

- We are using an existing DHCP server to distribute IP addresses
- DHCP Option 66 tells PXE clients where to get configuration (primary and secondary ThinManager server IP addresses)
- DHCP Option 67 tells PXE clients what “image” (the ThinManager bootloader) to request from the PXE server



# Terminal Shadow Display Clients

- Efficiently use SCADA licenses by using Terminal Shadow Display Clients
- Commonly used for Utility / Maintenance SCADA terminals



Questions?



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Thank You!



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