



# NetVista N2200w Training

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Introducing the IBM NetVista N2200w,  
Thin Client for Windows-based Terminal  
Standard 1.5

BSQUARE Corporation

March, 2000

# Preliminaries

- Who is here?
- What are your learning objectives?
- Any special questions or problems at hand?

# Course Preview

- Under the Hood: Features and Components
- Owner's Manual: How To Operate
- Test Drive: Live Demonstrations

# Course Objectives

- On completion of the course trainees should:
  - Know the key technical features of Microsoft Windows CE and the Windows-based Terminal (WBT) platform
  - Understand customer needs best met by the NetVista N2200w
  - Understand the function of included internal software components
  - Know how to install and administer the terminal, including emulation, printing, and updating.

# What is the NetVista N2200w? Two things.

- An IBM NetVista thin client, Type 8363
- A Microsoft Windows-based Terminal running Windows CE

# IBM NetVista thin client

- Replacement/Alternative for dumb terminals
- Emulates various terminal protocols
- Works with IBM Thin Client Manager
- Connects to non-Windows servers

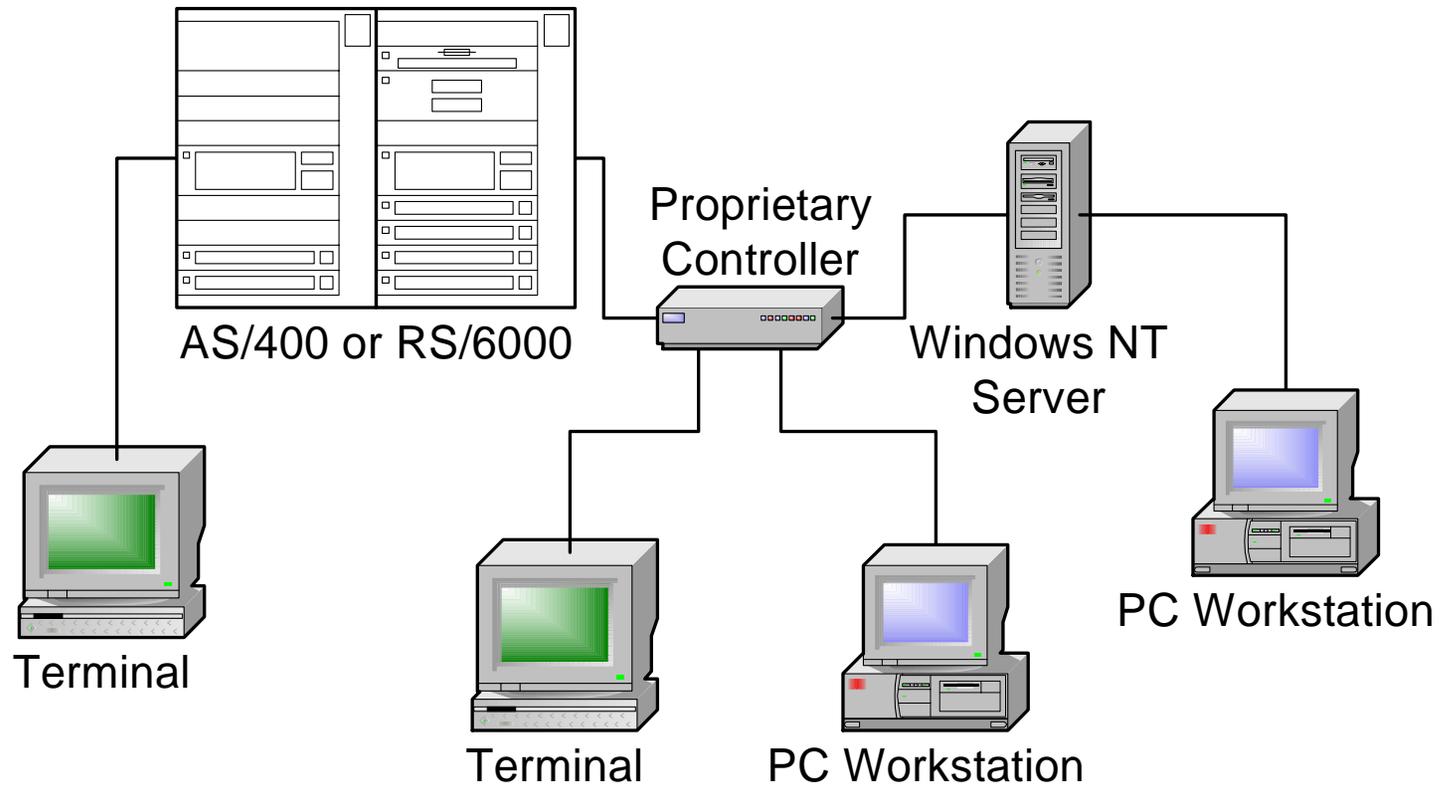
**NOTE:** Thin Client Manager is the new name for IBM Network Station Manager Version 2. However, for some period of time, you will see references to both names.

# Windows-based Terminal

- Replacement/Alternative for PCs (Thin Client)
- Thin Client runs on Windows CE 2.12
- Uses RDP/ICA to connect to Windows NT
- Uses Windows application server to deliver apps

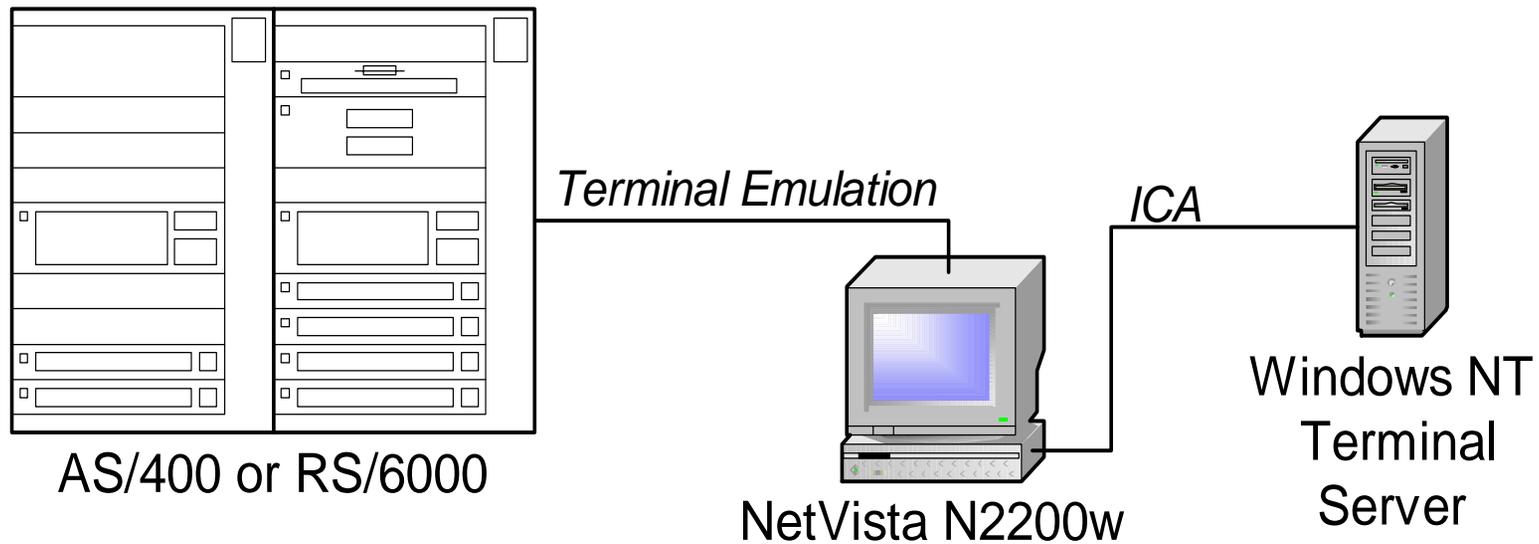
# Without NetVista N2200w

- Not easy to integrate dual enterprise systems



# With NetVista N2200w

- Single client connects directly to Windows and non-Windows servers simultaneously



# Some Acronyms

ATL	Active Template Library
CIFS	Common Internet File System
COM	Component Object Model
DLL	Dynamic Link Library
DOM	Document Object Model
DTD	Document Type Definition
FTP	File Transfer Protocol
HTTP	Hyper Text Transfer Protocol
ICA	Independent Computing Architecture (Citrix)
OS	Operating System
RDP	Remote Display Protocol
UI	User Interface
URL	Universal Resource Locator
WBT	Windows Based Terminal
XML	Extensible Markup Language

# What is Windows CE?

- Not a stripped down version of something else
- 32-bit modular operating system
- Runs on many CPU architectures
- Multiple processes and multiple threads
- Designed to be adapted to many platforms

# What is WBT?

- Thin Client platform from Microsoft
- “Standard” edition is based on Windows CE 2.12
- “Pro” edition is based on NT Embedded 4.0

# Why Choose Windows CE WBT?

- Let's take a look at some Microsoft marketing materials for the answer.
- What Microsoft Says
  - About Windows CE
  - About thin clients
  - About WBT

# Windows CE OS

## Powering the Next Generation of Intelligent Appliances

- Encourages a huge variety of devices from many different manufacturers
  - Based upon: MIPS, SH3/4, X86, PPC, or Arm/StrongArm core
  - Choose only the modules you need to keep memory footprint small
  - Extensive networking and power management capabilities
- Tap the huge base of Windows programmers to write the applications for these Intelligent Appliances
  - Visual Studio development tools for: ASM, C/C++, VB, Java
- Part of a complete end-to-end Windows solution including:
  - NT, IIS/ASP web server, MTS, SQL Server, Exchange, Site Server, SNA, existing NT-based LOB applications, etc.

# Windows CE in Consumer

## Examples of announced Products



AT&T / TCI Set-top Box



Clarion AutoPC



Numerous Palm-sized PCs

eZEX Internet Access Device



Sega Dreamcast



Numerous Hand-held PCs

Anigma WebMan Internet Access Device

# Windows CE in Retail

## Examples of announced Products



Itronix Rugged Terminal



Radiant POS Terminals



Radiant KIOSKS



Radiant Gas Pump



Unisys Check Scanner



Intermec Barcode Scanners and Terminals



Telxon Barcode Scanner



Husky Rugged Terminal



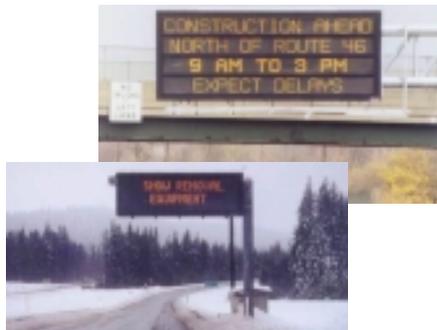
Symbol Barcode Scanners and Terminals



NTT Data Magstripe Reader

# Windows CE in Transportation

## Examples of announced Products



Daktronics Intelligent Street Signs



DriverTech TruckPC



Kinetic PC Pirana Vehicle Computer



Datus: GPS

# Windows CE in Test & Measurement

## Examples of announced Products



Idexx: Milk Analyzer



Harris Telecom Line Tester

Data General WiinPad Patient Monitor



HP Telecom Line Tester

Foerster-Technik Cow Feeder



TimbaTec Forestry Ruggedized Terminal

# Windows CE in Manufacturing

## Examples of announced Products



Dynapro Process Control PC

Host Engineering WinPLC

Total Control Products HMI Panel

Siemens HMI Panel

AquaNode Touchscreen

Embedded Automation PLC

Phoenix Contact PLC

Iconics Pocket HMI

Exor CE Engine controller

Rockwell Software PLC Maintenance Software

Honeywell Goldeneye

Husky Ruggedized Terminals

# Windows CE in Office Automation

- Examples of announced WBT Products follow
  - Boundless
  - Neoware
  - NCD
  - Wyse

# Boundless Technologies

## *Viewpoint and Capio* Windows-based Terminals

These inexpensive thin-client workstations provide data security, low administrative costs, full connectivity, and an easy-to-use graphical user interface.



- Native connectivity to Windows NT server reduces cost of ownership.
- Familiar, easy-to-use GUI.
- OS permits emulation for legacy systems.

# Neoware Systems

## *Neostation with Windows CE* Windows-based Terminal

This powerful Windows-based terminal provides full network connectivity to access Windows applications hosted on a Windows NT Server. Centralized administration reduces total cost of ownership.



- Extensive networking and power management capabilities.
- Best choice for low-cost, low-power, easy-to-administer terminals with full connectivity to powerful Windows-based servers.
- Easy-to-use GUI, allowing users with minimal training to get up to speed quickly.

# Network Computing Devices

## *ThinSTAR* Windows-based Terminals

This easy-to-administer Windows-based terminal is a reliable, low-cost access device that connects to a variety of server environments.



- Low total cost of desktop ownership.
- Flexibility to support many user requirements
- Native connectivity to Windows NT servers.

# Wyse Technology

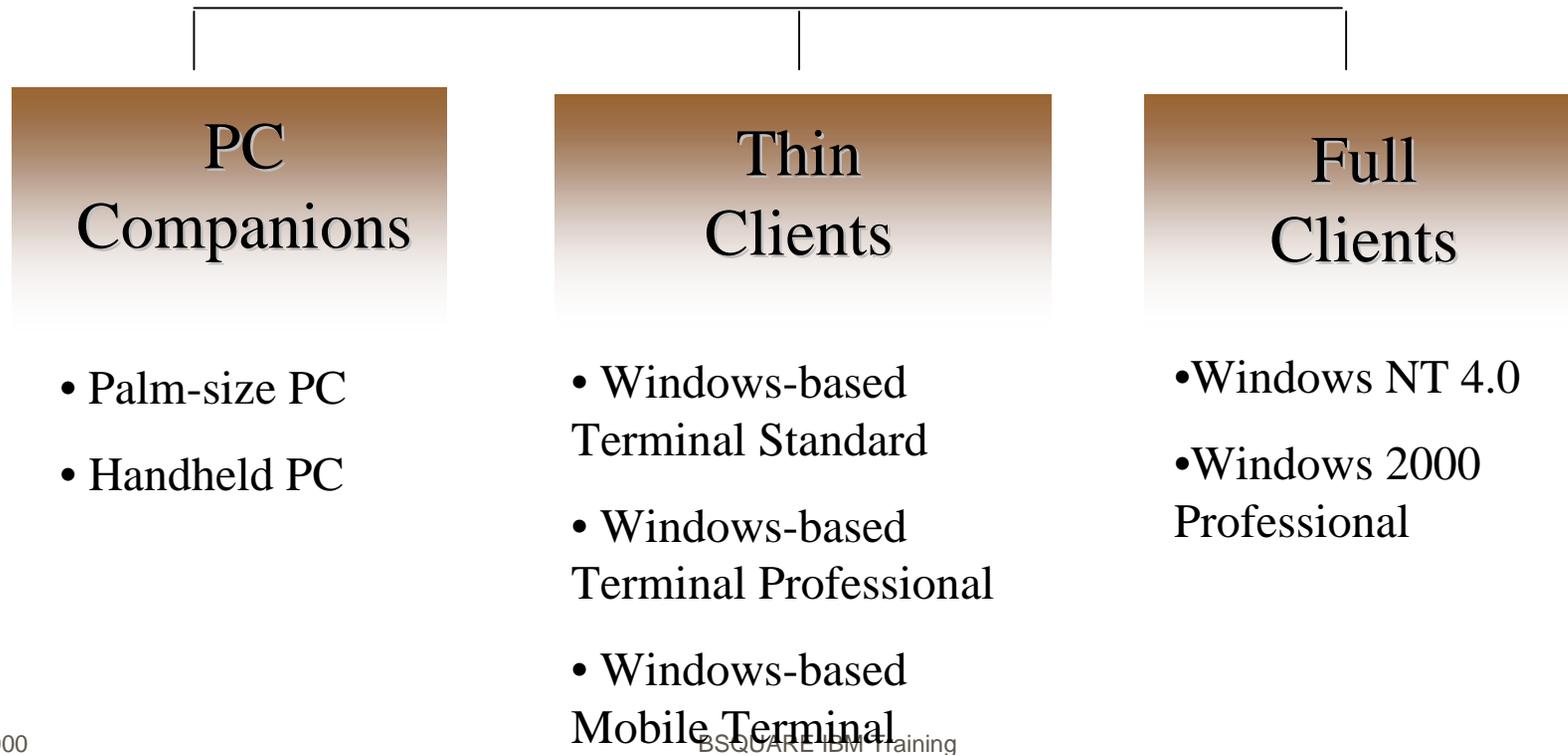
## *Winterm* Windows-based terminal

This family of Windows-based terminals reduces the cost of managing users, software, and hardware, while at the same time providing ease of management and full internal security.

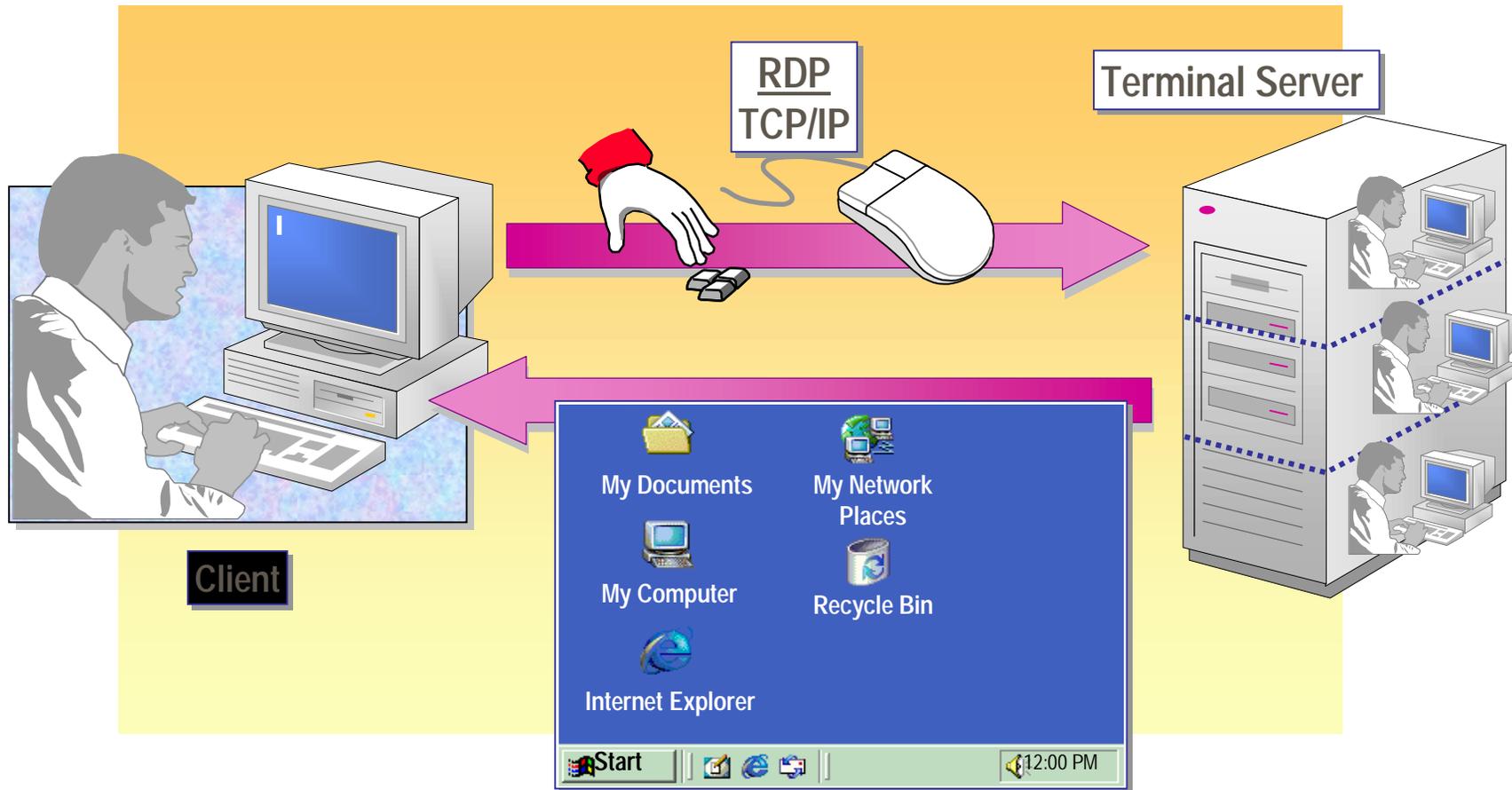


- Reduced time to market.
- Ability to locate drivers that adhere to Microsoft standards and function with little to no modification.
- Reduced cost of managing users, software, and hardware.

# Microsoft® Windows Family



# Terminal Services Architecture



# Windows-based Thin Clients

## *Extending the Platform*

- Windows-based Terminal Standard
  - The lowest-cost Windows-based thin client, with a focus on simplicity
- Windows-based Terminal Professional
  - The highest performance thin client with full Microsoft Internet Explorer 5.0 local browser software and multimedia support
- Windows-based Mobile Terminal
  - Vertically-oriented device that supports local limited applications and data when disconnected from the network

# WBT Standard

*Based on Windows CE*

- Shipping today from a variety of OEMs, including Acer, Boundless, Compaq, Neoware, Network Computing Devices, Televideo and Wyse Technology
- Functionality targeted at task-based workers and 'green screen' replacement
- Base Functionality:
  - No CD-ROM, hard drive or floppy drive
  - Terminal emulation suites provided by OEM
  - Terminal Services connectivity via RDP or ICA
  - Simple session-oriented user interface
- Planned Enhancements in 1Q CY00:
  - SNMP manageability, RDP 5.0 for Windows 2000 Terminal Services
  - Local Internet Explorer 4 HTML browser control

# WBT Professional

*Based on Windows NT Embedded 4.0*

- Availability expected in 1H CY00
- Planned functionality:
  - Consistent UI experience with WBT Standard
  - Local Internet Explorer 5 browser software and Windows Media™ Player
  - Full Win32® development platform
  - Tight integration with Windows NT® security
  - Highest level of thin client performance and robustness
  - SNMP/WMI manageability built-in
  - Best support for local peripherals

# What Is A Windows-based Mobile Terminal?

- Access full Windows applications when connected
  - Wired and wireless Ethernet
  - Dial-up
- Still useful when offline
  - Instant on/off and up to 12 hours battery life
  - Send email, take notes, update your calendar, browse the Web
  - Sync with Windows desktops and servers

# WBT Design Considerations



X86, MIPS, PPC, ARM, SH  
256 KB to 2.5 MB ROM, XIP  
System-on-a-Chip support  
Advanced Power Mgmt  
Instant-on, real-time, USB  
Port Win32 applications

Powerful  
Modular Features  
Tools

Connected  
LAN, WAN, Dialup  
Wired, Wireless

Open Platform  
Applications  
Hardware  
Device Drivers



X86 PC Architecture, SMP

8 MB Storage, boot to RAM

Run BackOffice &  
Win32 Applications

Base OS Security

Advanced Networking

Remote Management



8051  
32KB  
On-Card RTE

Authentication  
Standards-Based  
FAT File System

# Windows Client Options



# When Do I Use What?

## Windows-based Terminal



## Windows-based Mobile Terminal



## Notebooks



## Desktops



Users	<ul style="list-style-type: none"> <li>■ Retail</li> <li>■ Manufacturing</li> <li>■ Financial, acc'ting</li> <li>■ Healthcare</li> </ul>	<ul style="list-style-type: none"> <li>■ Mobile sales reps</li> <li>■ Mobile health care givers</li> <li>■ Students</li> </ul>	<ul style="list-style-type: none"> <li>■ Mobile knowledge worker</li> </ul>	<ul style="list-style-type: none"> <li>■ Mainstream business desktop user</li> </ul>
Applications	<ul style="list-style-type: none"> <li>■ Remote access to Windows applications</li> <li>■ Point of sale</li> <li>■ Manufacturing</li> <li>■ Terminal replacement</li> </ul>	<ul style="list-style-type: none"> <li>■ Remote access to Windows applications</li> <li>■ Local Pocket applications</li> </ul>	<ul style="list-style-type: none"> <li>■ All Windows applications anywhere</li> </ul>	<ul style="list-style-type: none"> <li>■ All Windows applications at a desk</li> </ul>
Replace and extend	<ul style="list-style-type: none"> <li>■ Extend older desktops (386, 486; Win 3.11)</li> </ul>	<ul style="list-style-type: none"> <li>■ Paper-based process replacement</li> <li>■ Augment desktops</li> </ul>	<ul style="list-style-type: none"> <li>■ Older laptops and desktops</li> <li>■ Augment desktops</li> </ul>	<ul style="list-style-type: none"> <li>■ Older desktops</li> </ul>

# Summary

- NetVista N2200w meets a dual need: terminal emulation and WBT
- Windows CE is a 32-bit OS deployed for many purposes, including WBT
- WBT comes in a CE version and an NT embedded version

# Discussion Question

- What advantages might NetVista N2200w offer against competing Windows CE WBT solutions?

Questions?

*Questions?*