

*IBM Network Station Family of Thin Clients*  
*Access for today, flexibility for tomorrow*

## **IBM NetVista thin clients**

**Continued Leadership in Thin Client  
Computing**

**Windows-based Terminal (WBT)  
Standard 1.5**

Thin Client Marketing





# The Market Evolves from Personal Computing To End User Optimized Computing





# IBM NetVista thin clients

## *Proof Points for Edge of Network initiative*

### IBM NetVista thin clients as Edge of Network Devices

#### end user optimized

- ◆ **Universal access**
  - Windows servers
  - Browser
  - Emulators
  - Java
- ◆ **'Quick on' flash**
- ◆ **User and group preferences**
- ◆ **Small to zero footprint**

#### e-business ready

- ◆ **Rapid application deployment**
- ◆ **Lowest TCO**
- ◆ **Centralized management**
- ◆ **Universal access**
- ◆ **Designed for e-business**
- ◆ **Segment solutions**
- ◆ **ASP options**

#### e-lifestyle coordination

- ◆ **Small size**
- ◆ **Low power**
- ◆ **Universal access to new, existing applications**
- ◆ **Choose from a range of e-clients**
- ◆ **Ability to migrate across thin client environments**

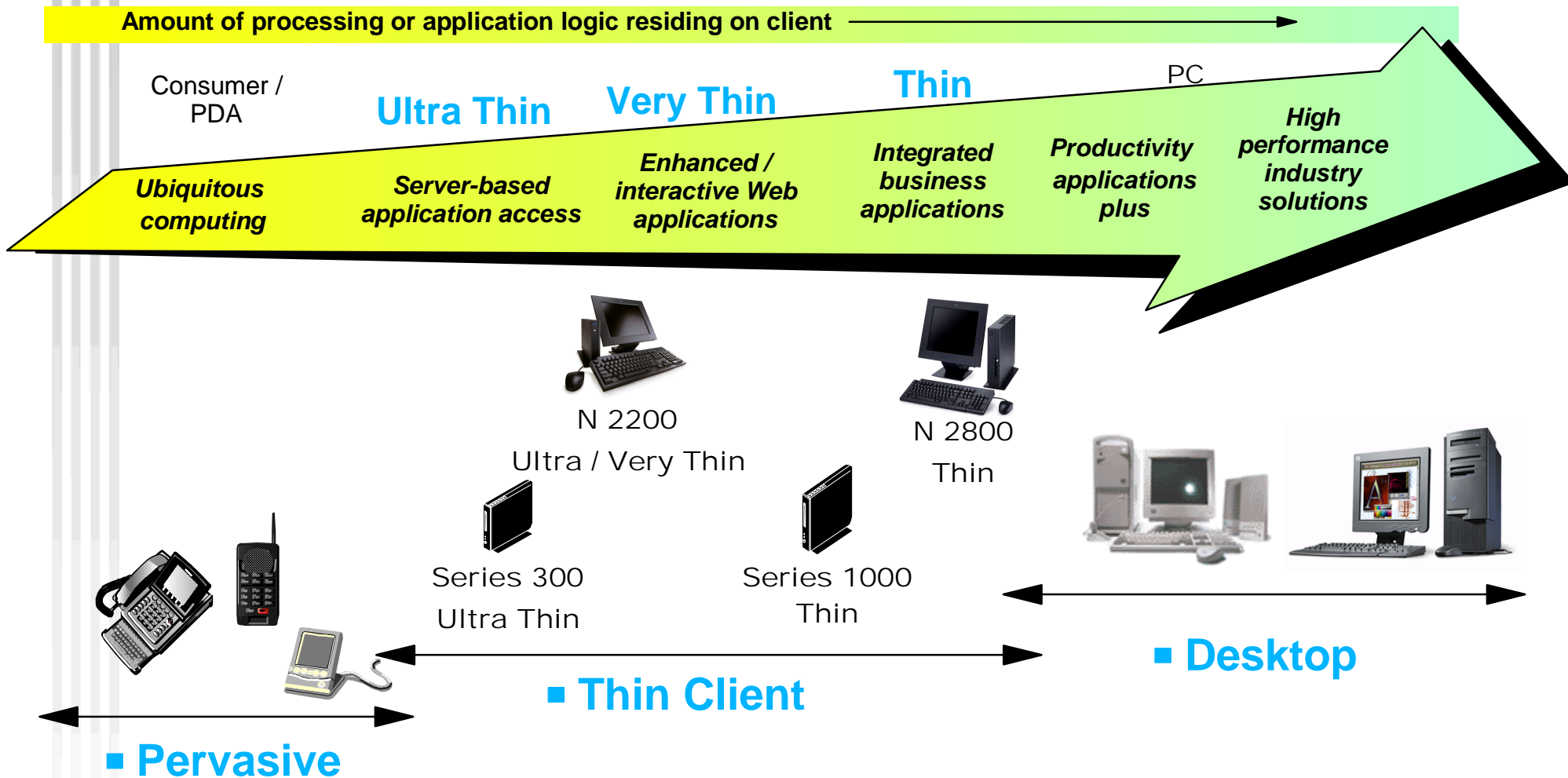
#### effortless use

- ◆ **Fast setup, quick access**
- ◆ **Windowed environment**
- ◆ **One time server setup**
- ◆ **Automated updates**
- ◆ **Easy to reconfigure**
- ◆ **End user optimized**
- ◆ **Server managed**





# IBM's Exclusive Client Solution Spectrum

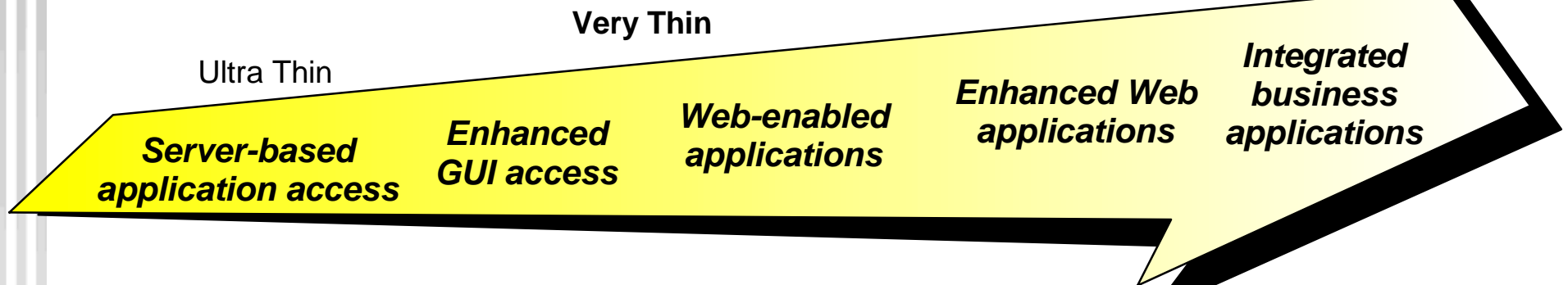




# Thin Client Spectrum

## IBM NetVista thin clients

Amount of processing or application logic residing on client → Thin



- Emulator / ICA on client
- 5250, 3270, ASCII, X
- Access to Windows (tm) applications
- Simple GUI on client
- Additional function
- Browser on client
- Web-server enabled
- HTML
- Browser with Java on client
- Java applets / components
- Full Line of Business application execution on client
  - ▶ LOB Java / non Java applications



**Series 300**



**N 2200**



**Series 1000**



**N 2800**

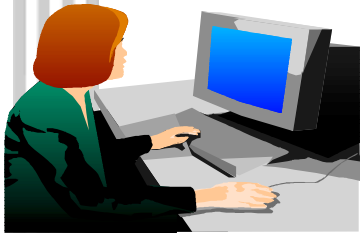
**IBM NetVista thin clients . . . Only 'full spectrum' Family to meet customer needs**

# IBM Thin Client Manager

IBM is paving the way for 'Large Scale' adoption of Thin Clients

## Browser Based Central Administration

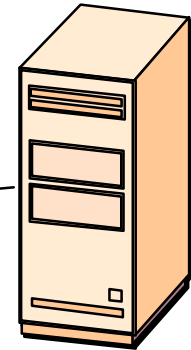
- Runs from NetVista thin client Browser or PC Browser
- Runs anywhere in an Enterprise  
Available on all IBM servers, and NT servers(Intel-based)
- Change Individual users configurations
- Make Global configuration changes
- SNMP Support



Administrator

## Customization:

- Individual and Global changes
- Application Configuration
- Application Launching
- Desktop Preferences  
(e.g. Colors, Backgrounds...)
- System/Server Access
- Hardware Configuration
- Flash image



## Client Function:

- Emulators
- ICA Client
- Browser
- JVM
- Linux emulation

User	Joe
ICA client	<input checked="" type="checkbox"/>
5250	<input checked="" type="checkbox"/>
3270	<input checked="" type="checkbox"/>
Browser	<input checked="" type="checkbox"/>
Java	<input checked="" type="checkbox"/>

User	Bob
ICA client	<input checked="" type="checkbox"/>
5250	<input checked="" type="checkbox"/>
3270	<input checked="" type="checkbox"/>
Browser	<input checked="" type="checkbox"/>
Java	<input checked="" type="checkbox"/>

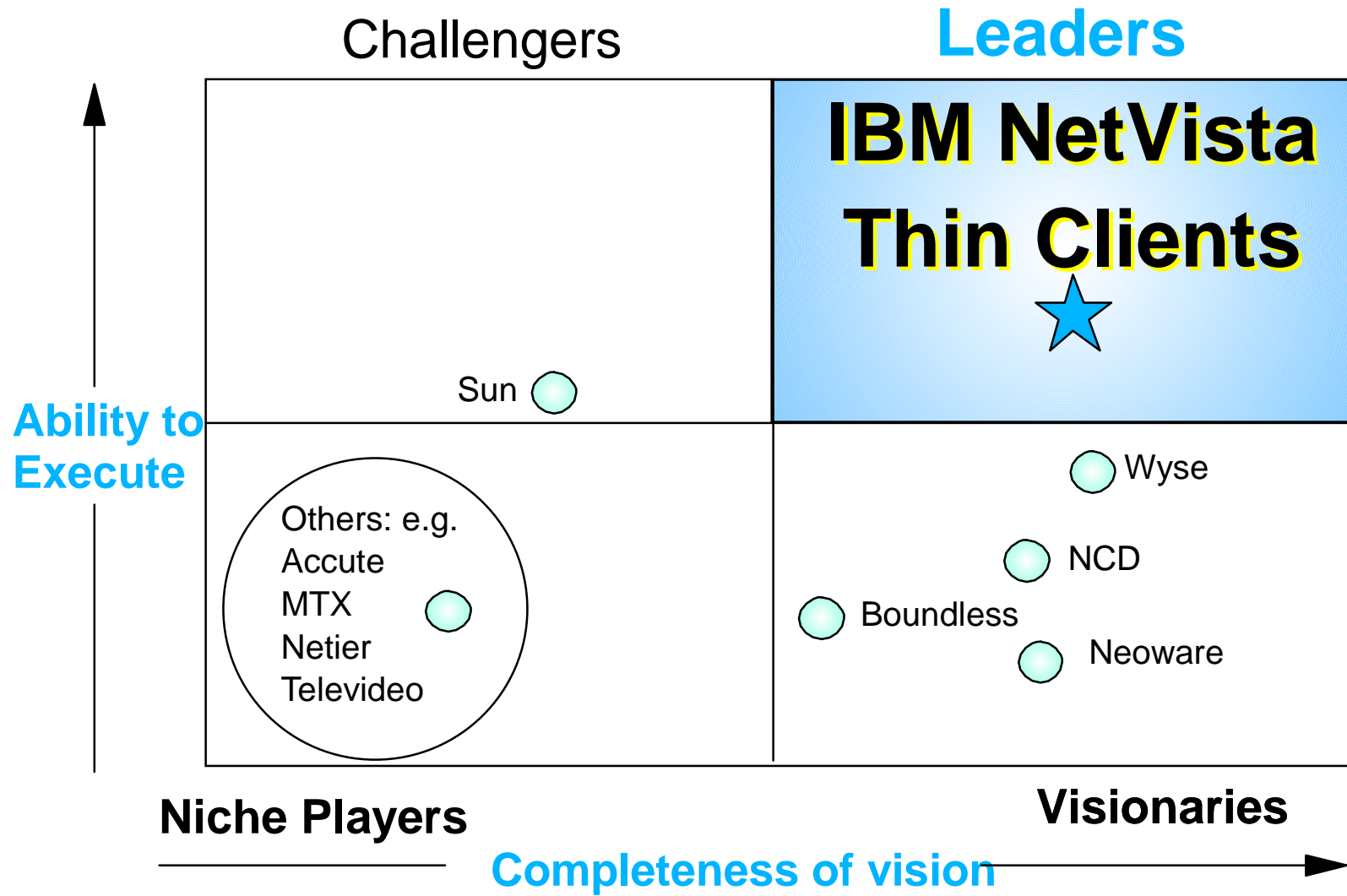
User	John
ICA Client	<input checked="" type="checkbox"/>
5250	<input checked="" type="checkbox"/>
3270	<input checked="" type="checkbox"/>
Browser	<input checked="" type="checkbox"/>
Java	<input checked="" type="checkbox"/>

User	Jane
ICA Client	<input checked="" type="checkbox"/>
5250	<input checked="" type="checkbox"/>
3270	<input checked="" type="checkbox"/>
Browser	<input checked="" type="checkbox"/>
Java	<input checked="" type="checkbox"/>



# IBM Sole Leadership Vendor for 3+ Years

## Gartner Group Thin Client 'Magic Quadrant' 2000



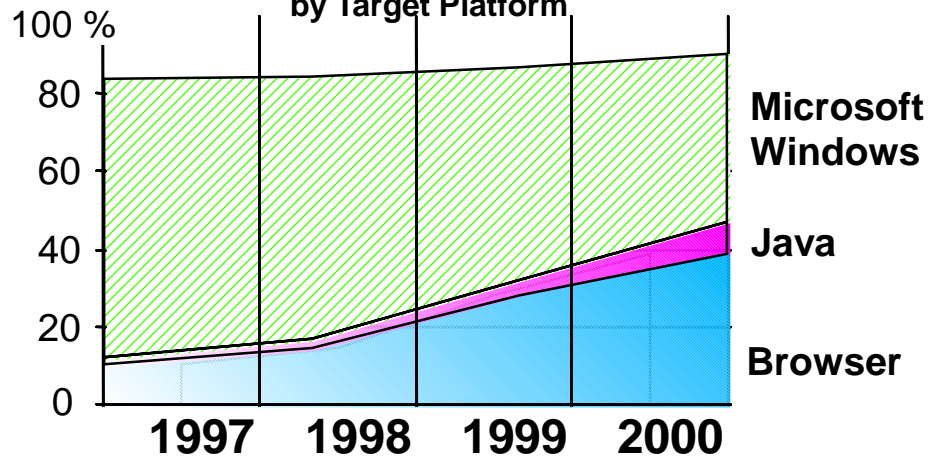
Source: Gartner Group's Datapro--Gartner Group Symposium, October, 1999



# Thin Client Market Trends

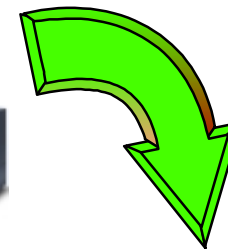
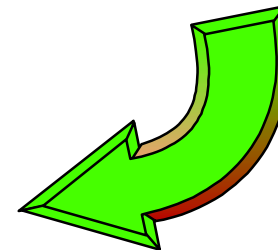
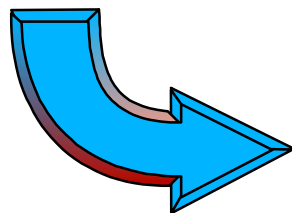
## e-business solutions

New Network Computing Applications Developed by Target Platform



Source: Gartner. 1997 and 1998 data are reported actuals, while 1999 and 2000 data are estimates.

- *Browser, Java, Linux*



- *Multi-user Windows – Windows 2000*
- *ICA and RDP*

**IBM NetVista thin clients . . .**

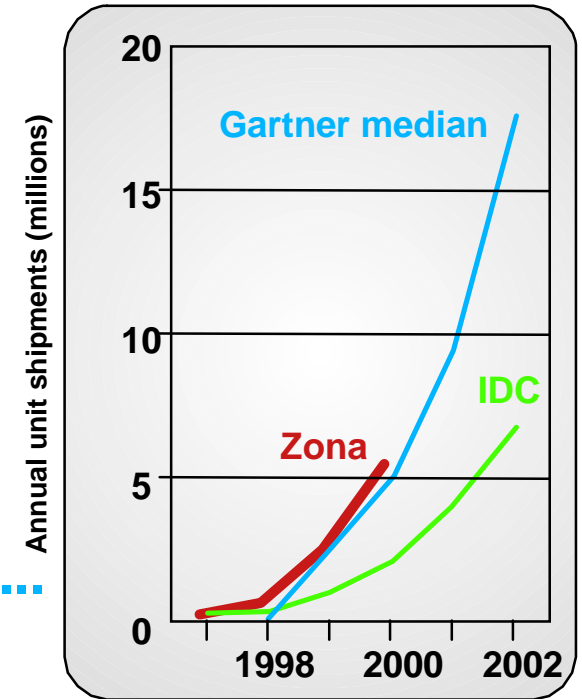
**Access for Today... Flexibility for Tomorrow...**





# IDC Enterprise Thin Client Market Report--1999 Highlights...

- **WW Enterprise Thin Client market increased 90% to 700K units**
- **Estimated future growth:**
  - ▶ 2000-- 79.6% (1.3M)
  - ▶ 2001-- 90% (2.4M)
  - ▶ 2000 to 2004 CAGR--65.9%
- **In the Thin Client Market IBM participated in...**
  - ▶ IBM lead with 38.6%
- **WBT's represented over 70% of WW volumes**
  - ▶ IBM's WBT offering schedule to ship early 2Q00
- **WBT's and Linux-based thin clients will be evaluated to address new opportunities in specific application segments**
  - ▶ Linux-based thin clients estimated to represent 10-15% of total in 2000 growing to 20-25% in 2001
  - ▶ IBM announced support of Linux-based thin client in February 2000
- **IBM's strategy is to participate and address the Total thin client marketplace**
  - ▶ WBT's, Linux, NSM, NSM Express





## Continuing IBM's Thin Client Leadership

- **Thin Client for Windows-based Terminal Standard 1.5 client**
  - ▶ Can upgrade to NSM, Linux
- **Thin Client Manager V2R1**
  - ▶ Updated functions
  - ▶ New capabilities
- **Thin Client Express**
  - ▶ Fast to configure
  - ▶ Quick to boot
- **NetVista Thin Client for Linux**
  - ▶ Open source computing
- **Zero footprint option**
  - ▶ Attach N 2200 to IBM T55 TFT





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

- **Based on the versatile Series 2200**
  - ▶ Superior graphics performance
  - ▶ Legacy-free system
  - ▶ Highly configurable
  - ▶ Very small footprint
  - ▶ Very low power
  - ▶ Very high reliability
- **First WBT 1.5 implementation in the marketplace**
  - ▶ Fully compliant with WBT Standard 1.5 specification
  - ▶ Superior performance/ function to WBT 1.2
- **Full complement of client side function**
  - ▶ RDP 5.0, ICA 3.0+, Emulators, IE4.0 browser with Media Player(future)
- **Maintain up-to-date client flash images from central server**
- **Offer customers with unique flexibility and investment protection**
  - ▶ Transition to NSM or Linux



# Address Growing Interest in Thin Clients

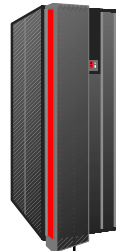
## WBT, TCM V2R1, Thin Client Express, Linux



Netfinity



SP2, S390



AS/400



RS/6000



■ **'Drop ship'**  
client-based  
install model



■ **TC Express**

- ▶ Fast to configure
- ▶ Quick to boot
- ▶ ICA, emulators

■ **WBT 1.5**

- ▶ Microsoft client
- ▶ RDP 5.0
- ▶ ICA, emulators

■ **TCM V2R1**

- ▶ Netscape 4.5
- ▶ Server managed
- ▶ Flash 'quick on'

■ **Linux client**

- ▶ Open source
- ▶ Download SW
- ▶ ICA







# Windows-based Terminal Standard Thin Client

## *Windows-based Terminal Standard 1.5 compliant*

### ■ Benefits:

- ▶ Fast, easy access to Windows applications plus thin client benefits
- ▶ Flexibility to transition from WBT-Standard to TCM or Linux
- ▶ Leverages existing Windows infrastructure, tools and knowledge
- ▶ Ready for Windows 2000

### ■ Key features:

- ▶ A packaged solution providing a WBT-Standard 1.5-compliant Windows-based terminal with a low total cost of ownership
- ▶ RDP 5.0 or ICA 3.0++ Client
- ▶ Includes 3270, 5250, ASCII and VTxxx terminal emulators
- ▶ **Version of IE 4.0 Browser (within 90 days of availability-3Q???)**
- ▶ Ready to run with the Terminal Services provided in Windows 2000 or Windows NT 4.0, Terminal Server Edition
- ▶ Includes WBT-Standard 1.5 on Flash card installed in Series 2200
- ▶ Based on the proven NetVista thin client N2200 hardware





# Windows-based Terminal Standard Client

## *Continued*

### ■ System Management

- ▶ **WBT utilities for base set-up / configuration**
- ▶ **Set-up Wizard for IP address, display, input specifics**
- ▶ **Session manager administers type of session**
  - RDP, ICA, Emulators
- ▶ **Update flash image from the server**
  - Only those files that changed
  - Can be configured to auto-update
  - Initiated manually on the client

### ■ Transition capability

- ▶ **From WBT-Standard 1.5 to TCM V2R1**
- ▶ **From WBT-Standard 1.5 to Linux client**





# New NetVista thin client N2200 Offerings

*Extend investment, choices for software migration*

## ■ N 2200

- ▶ **X86 legacy-free system**
  - USB connections only
  - Serial / parallel via converter cables
- ▶ **Highly configurable**
- ▶ **Very small footprint**
- ▶ **Very low power**
- ▶ **Very high reliability**



## ■ TCM V2R1

- ▶ **Netscape 4.5**
- ▶ **Server managed**
- ▶ **Flash management**



## ■ Linux Client

- ▶ **N2200I**
- ▶ **Open-source Linux**
- ▶ **Download latest**
  - Navigator browser
  - Java client
  - Real Audio
  - Shockwave
  - Acrobat
  - Applix
  - etc.

## ■ Zero Footprint

- ▶ **Brackets to attach N2200 to IBM T55 flat panel screen**
- ▶ **Prolongs client life**
- ▶ **Maximum flexibility**

## ■ WBT 1.5

- ▶ **N2200w**
- ▶ **Packaged solution**
  - WBT Standard 1.5
  - RDP 5.0 or ICA
  - Emulators
- ▶ **Flash card**
- ▶ **Migrate to TCM, Linux**

## ■ TCM Express

- ▶ **N2200e**
- ▶ **Flash boot**
- ▶ **No boot server required**
- ▶ **TCM, ICA, emulators**
- ▶ **Browser option 3Q 2000**
- ▶ **Migrate to TCM, Linux**

Series 2800  
3Q 2000

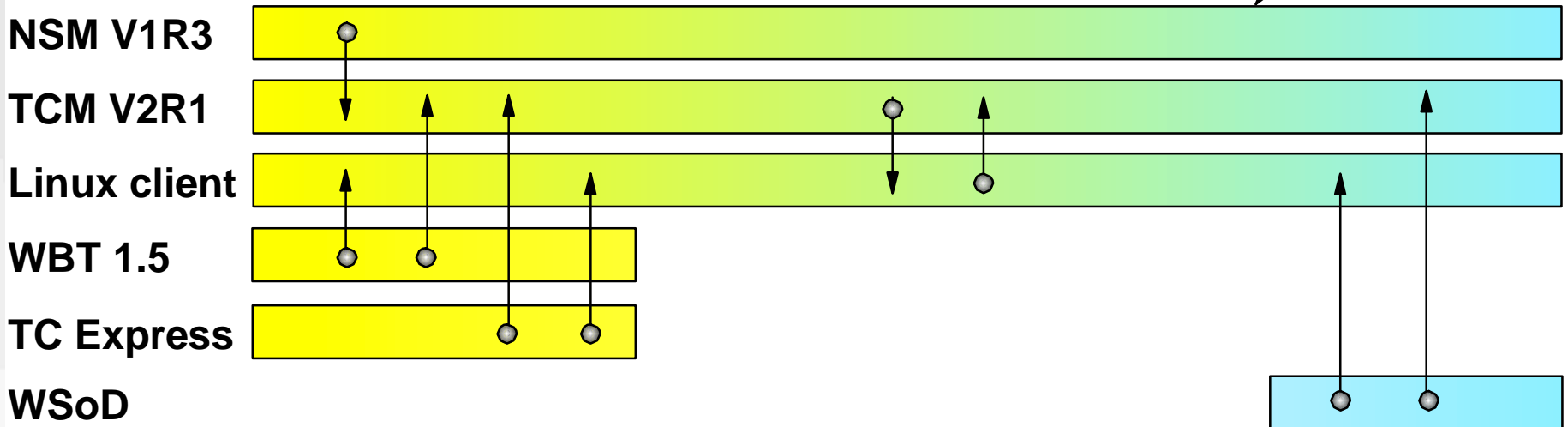
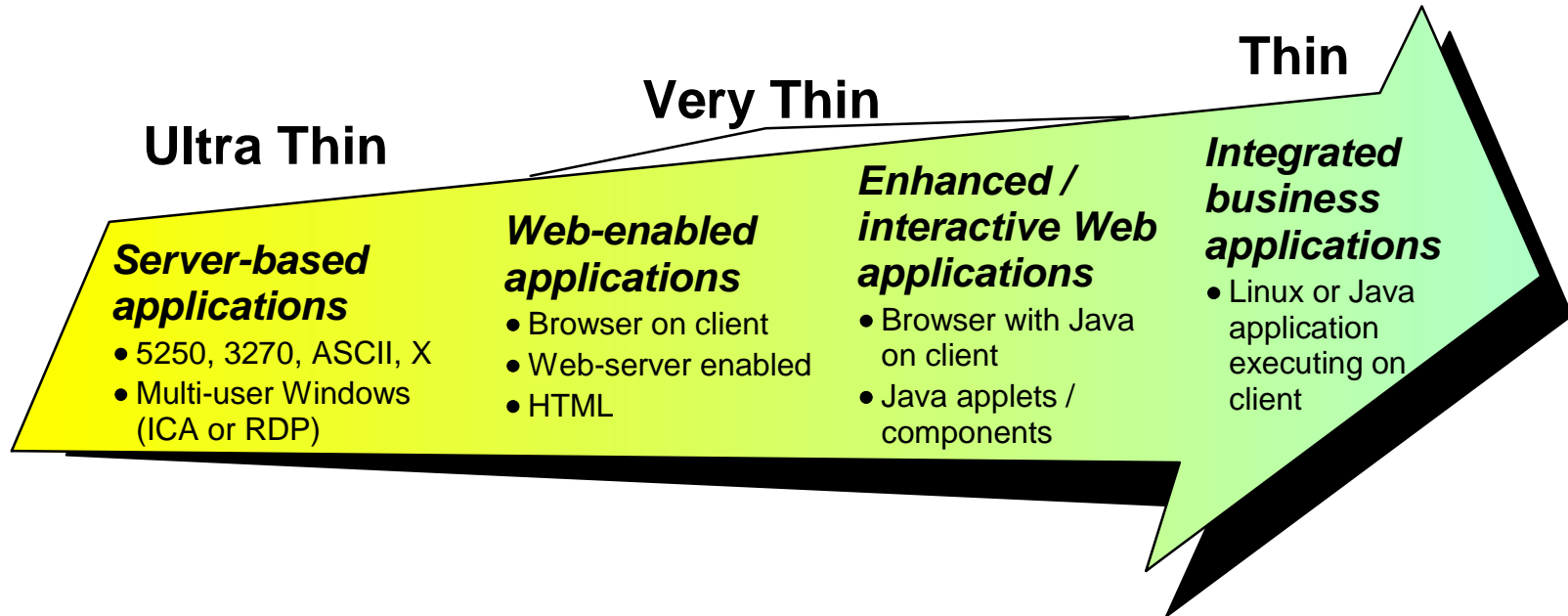
Also on  
Series 2800



# Enhanced Thin Client Solution Spectrum

*Additional Customer choices, flexibility, function...*

Amount of processing or application logic residing on client



Migration options and direction





# IBM NetVista Thin Client Leadership

- **Shipping since 1996**
  - ▶ Vision - full Thin Client capabilities
  - ▶ Competitors are now imitating
- **Worldwide customer base**
- **Broad solution spectrum**
- **Industry leader**
  - ▶ Mind share
  - ▶ Market share
- **Delivering benefits of Thin Client computing**
- **Taking Thin Clients to a higher level**
  - ▶ Fast install, start-up options
  - ▶ Windows-based Terminal Standard 1.5 client
  - ▶ Linux open source client
  - ▶ Migrate across environments
  - ▶ Edge of Network devices





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