

The Future Of Microsoft® Windows®

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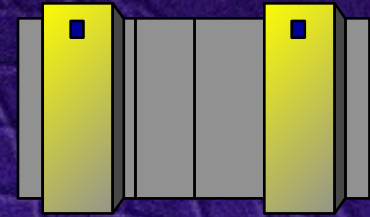


The State Of Windows

- ☐ **150+ million users of Windows**
- ☐ **10,000s of applications**
- ☐ **Broadest hardware support of any operating system**
- ☐ **Most leveraged platform for ISV investment**

Windows 95 And Windows NT™

Complementary implementations
of Windows



Win32 API

Windows NT

Windows 95

Windows Delivers

 The vehicle for the complete Win32[®] API standard

 Standards and interfaces for all technologies

 Fonts, printers, storage, video, modems, telephony, net

 Complete, integrated networking

 Drivers, protocols, APIs

 Exploits today's hot hardware!

 DirectX multimedia

 Advancing the state of the art -
Simply Interactive PC

Your
Application







Windows

APIs
ActiveX

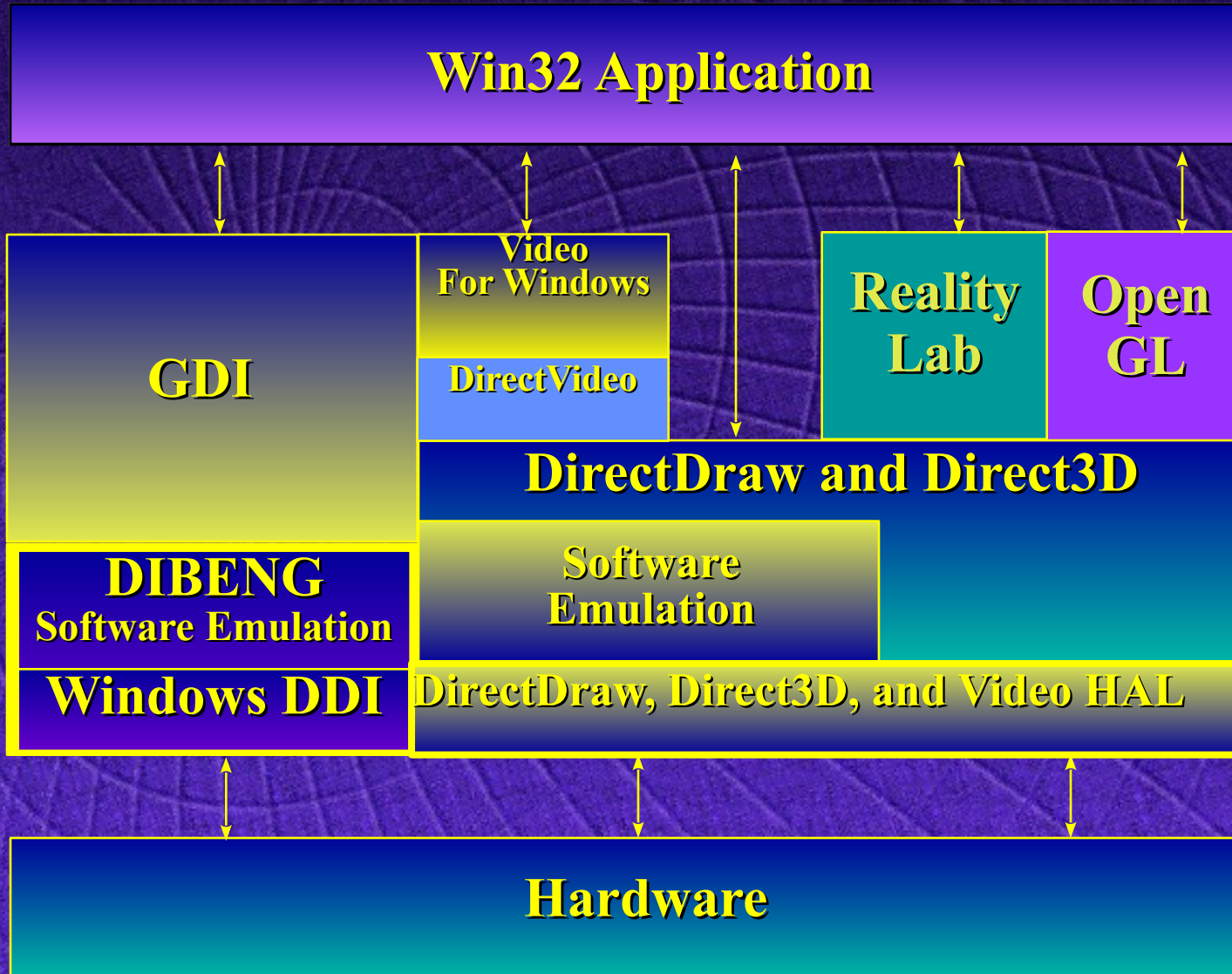
Drivers
Hardware

DirectX™ And Multimedia

Getting applications close to the hardware

-  **DirectDraw™** - 2D graphics, blitting, page flipping, surface management
-  **Direct3D™** - 3D acceleration, polygons
-  **DirectVideo** - accelerated Video for Windows over DirectDraw and DirectSound™
-  **DirectSound** - low-latency audio
-  **DirectInput™** - support force feedback devices
-  **DirectPlay™** - network connectivity for games

DirectX Architecture



The Network-Ready Desktop



Universal Client

TCP/IP is a standard component (with DHCP)

NIC attached and remote

PPP standard, ISDN, X.25

NDIS drivers for all net cards and topologies

Windows NT™ Workstation and Windows 95 are Internet-enabled out of the box

**NOS
Redirector**

**WinSock
Netbios**

**TCP/IP, IPX/SPX,
NetBEUI, DLC**

NDIS

**Ether, Token Ring,
Dialup, WAN**

Windows + Windows NT Server = Plug and Play Intranet!



Windows NT™ Server: The Internet Server

- The Universal Server**
- Internet-ready**
- The best solution for *Intranets***
- Security and directory service**
 - Single logon**
- Network services**
 - LAN, WAN, and RAS, DHCP/WINS**
- Scalability and portability**
- Reliability by design**
 - Proven through testing and deployment**

Microsoft Internet Servers

Extending Windows for the Internet

 **Windows Personal Web Publishing ~ coming soon!**

 **Every Windows-based desktop can publish on the Intranet**

 **Windows NT Server and Internet Information Server**

 **The most powerful Web server for businesses of all sizes**

 **Designed as part of Windows NT Server**

 **The easiest way to create Intranets**

 **Enables a new generation of Internet applications**



Creating A Platform For The Internet

ISVs must be able to target a *platform*

A broadly deployed API definition

Complete - must include clients, browser, servers, infrastructure, and tools

The platform must be very high-volume

The client, browser, server must be everywhere

Must capture new users, grow the market

Must be sufficiently cross-platform

Preserves your investment!

Leverage knowledge, codebase assets, skills

Making Windows *The* Platform For The Internet

- Windows, Internet Explorer, and Internet Information Server will be everywhere**
- Windows-based applications are carried forward**
- Windows has broad support from ISVs**
- Microsoft is committed to platform innovation**
 - Continue to insure driver availability and support for the latest hardware**
- Microsoft and other tools vendors deliver the development environment**

Upcoming Windows Releases

1995

Windows NT

Windows 95

1996

Mid '96
Windows NT 4.0
Windows 95
GUI

Mid '96
OEM
refresh
inc. IE 3.0

1997+

H2 '96
"Internet
Add-on"
(aka
"Nashville")
Internet
Explorer 3.0
Integrated
Shell/Browser

'97
Cairo

'97
Memphis

Internet Explorer 3.0
will be downloadable, free,
from the net

Windows OEM Service Pack #2

 PCMCIA Enhancements

 IRQ Sharing

 Power Management

 PCI Bridging and Docking

 FAT32 Filesystem

 Storage Improvements

 Online and WDL Driver Updates

 Crypto API, Signed Code Download/Run

 DirectX 2.0

Windows NT 4.0 “SUR”

Windows NT Workstation

- Windows 95 Shell , Internet Explorer, DirectX
- Kernel-Mode User and GDI
- OEM Setup improvements
- Hardware profiles
- RAS Autodial

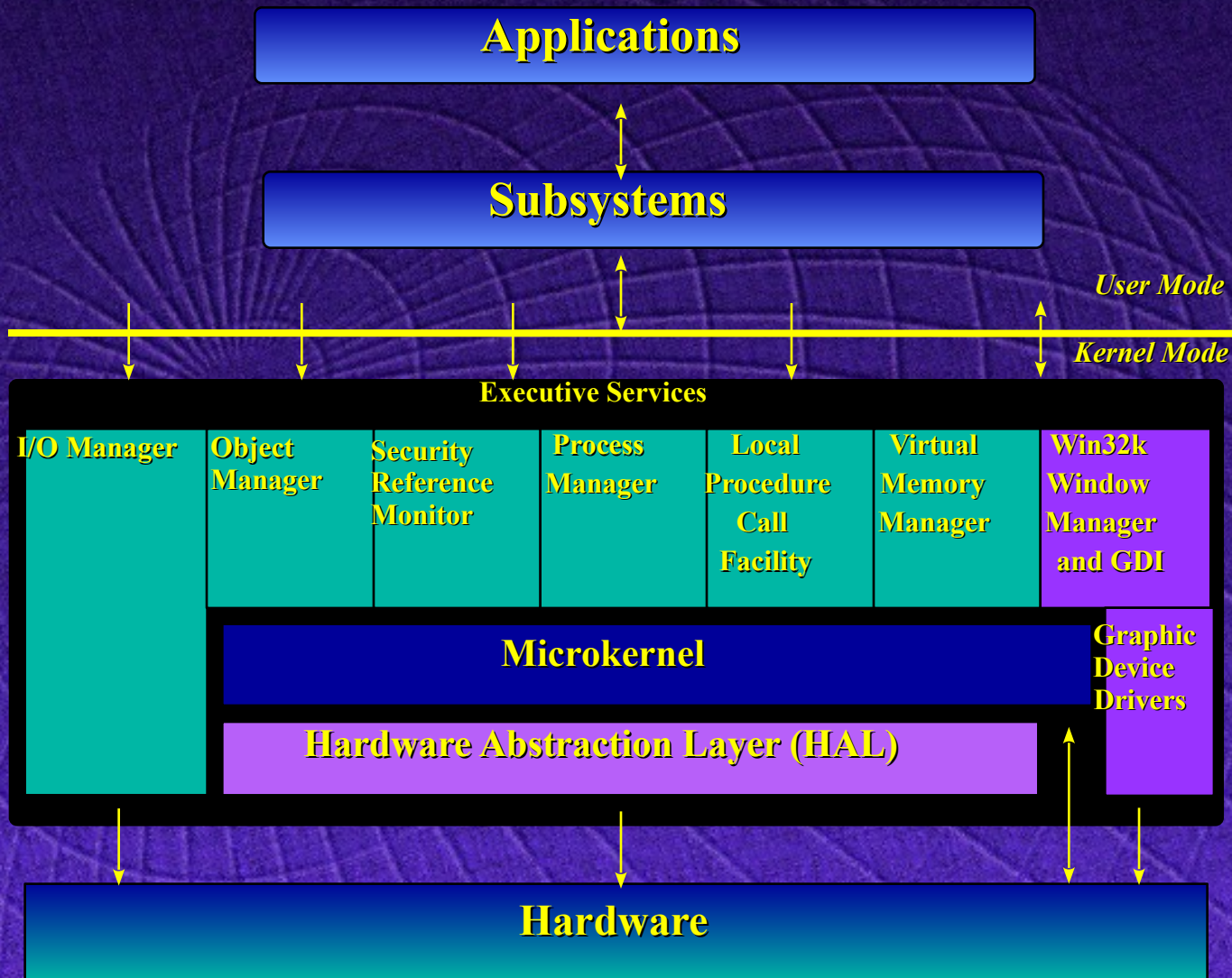
Windows NT Server

- Internet Information Server
- MPR Routing
- Policies for Windows 95 and Windows NT Workstation
- Windows 95 RPL
- DNS Server

Networking

- PPTP
- RAS Multilink
- Distributed COM v1
- TAPI/Unimodem
- Crypto API

Windows NT 4.0 Architecture





Windows NT Workstation 4.0 Demonstration

“Nashville” Internet Add-On Pack

- Integrated Internet Explorer 3.0, Shell view for HTML Docs**
- Data and audio conferencing**
- Improved Internet Wizard**
- ISDN Wizard and Multilink**
- Direct MPEG drivers**
- HTTP Peer Server**
- User profiles/ratings**



Demo

Future Of Windows: Focus Areas

☐ **Dramatic ease of use refinements**

☐ **Simply Interactive PC (SIPC)**

☐ **Distributed Systems/Directory Services**

☐ **Scaling and fault tolerance**

☐ **Hardware support - multimedia
and networking**

Simply Interactive PC

Making all PCs easier to use

- **Broad series of initiatives**
- **Technologies targeted at usage scenarios**
 - **Entertainment PC in a living room**
 - **Business PC/Server at SOHO**
 - **Business PC/Server at the office**
- **Appliance like hardware/software setup**
- **Consumption optimized user interface**
- **Integrate consumer devices in one box**
 - **TV, phone, stereo, VCR, CD, DVD, LaserDisc, DSS, game console**

Simply Interactive PC Initiative

1997 desktops



Take Plug and Play to the next level:

- No on/off switch
- Sealed case PCs
- Simpler, more integrated UI

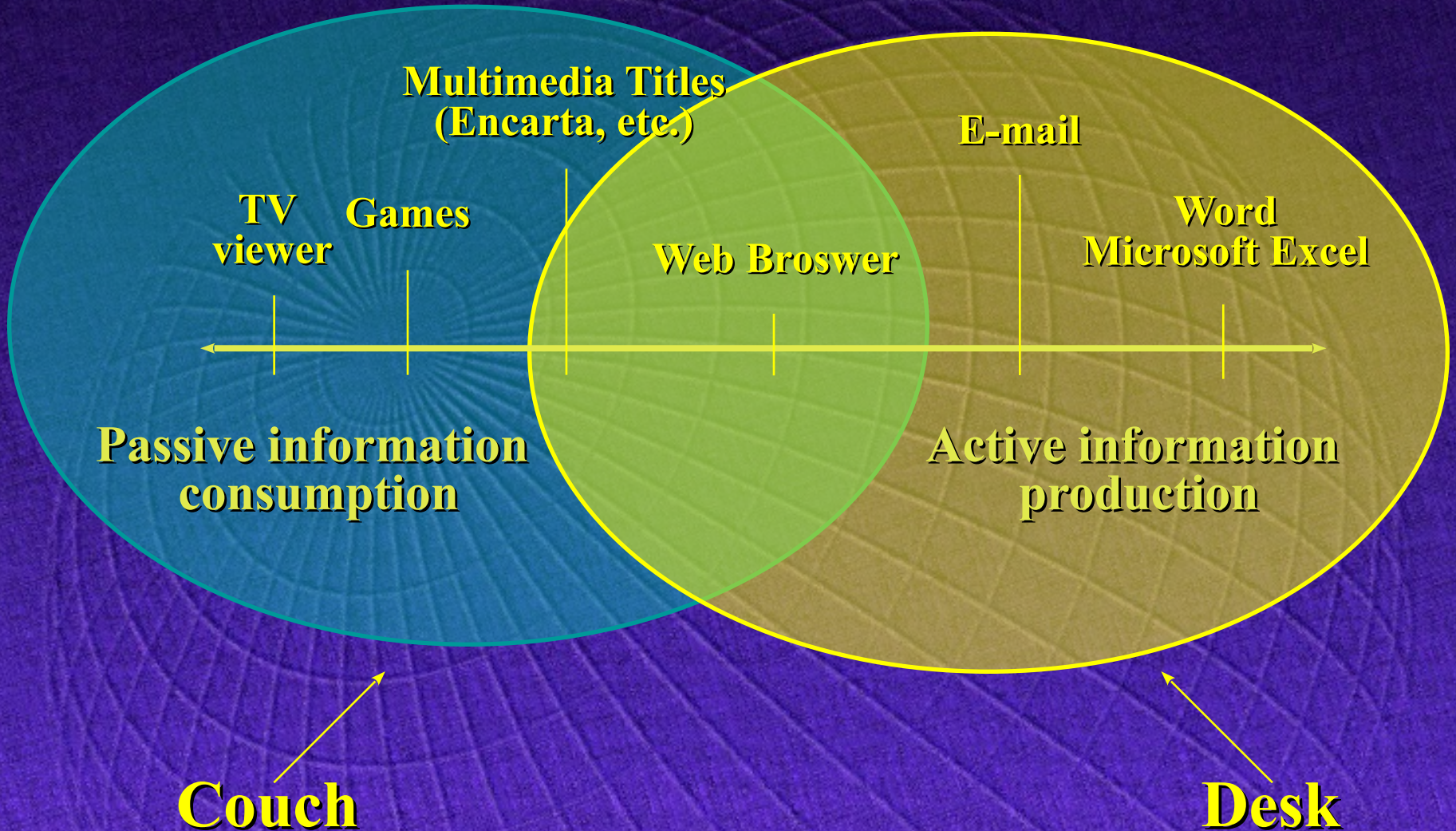


Win32 API, Active X



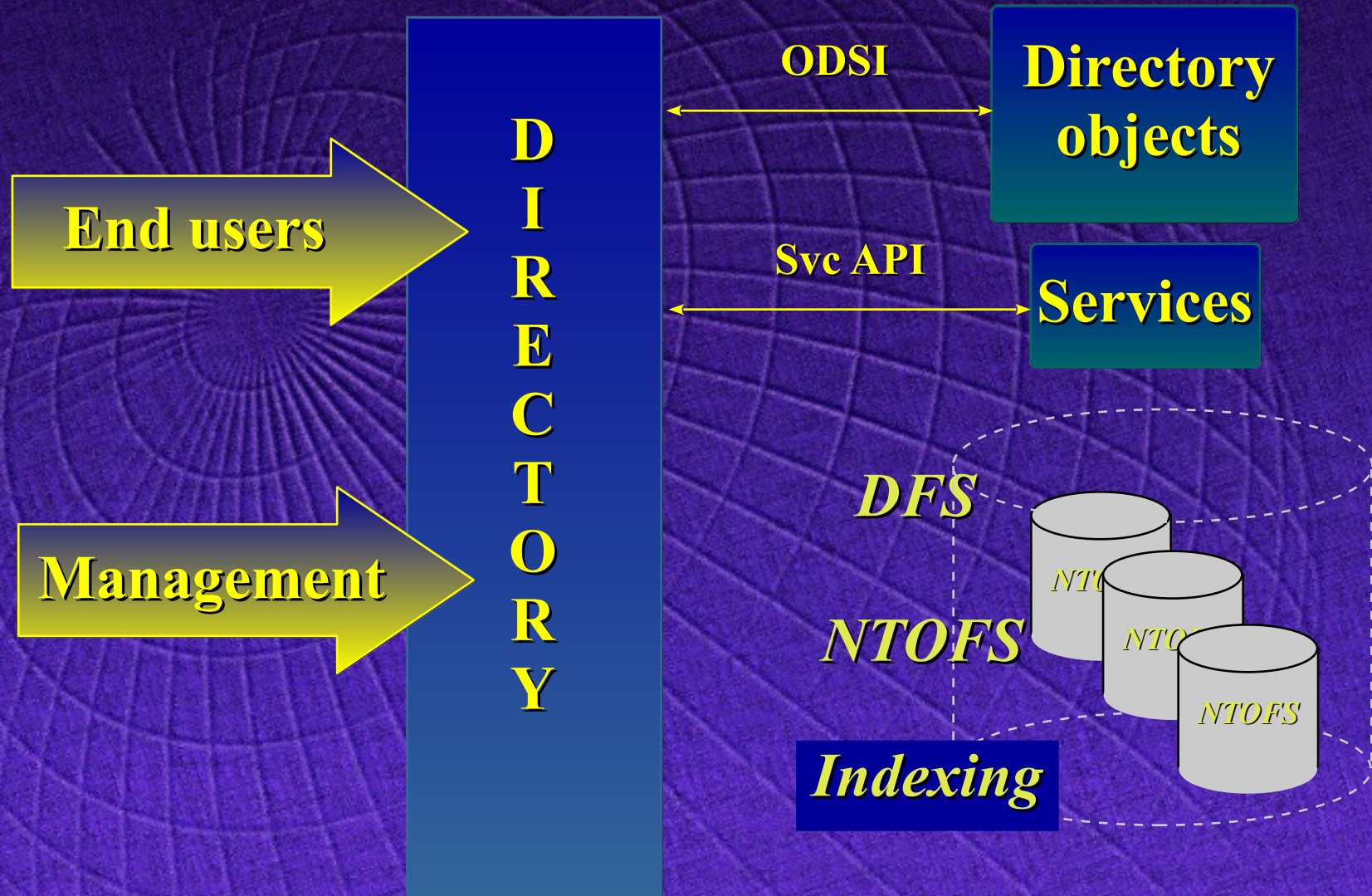
Win32 Driver Model

User Interface Directions



Windows NT “Cairo”

Completing the infrastructure services

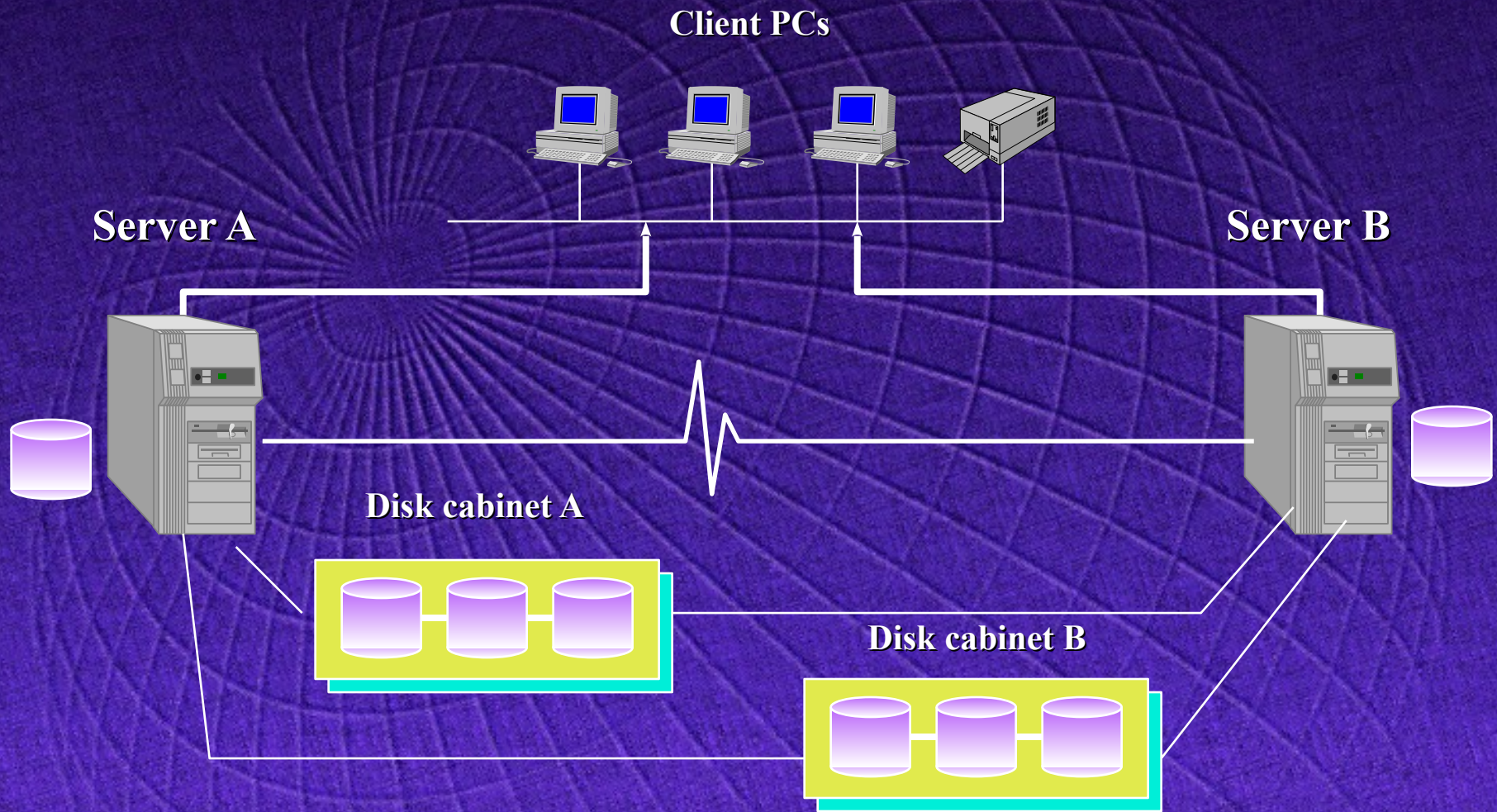


Windows NT Clusters

Scaling and fault tolerance

- ❑ Windows NT-focused (client/server, shared-nothing, PC-standard parts)
- ❑ Improved availability (Phase 1)
 - ❑ Recover software/hardware failure
 - ❑ Utilize paired servers that both do work
- ❑ Enhanced scalability (Phase 2)
 - ❑ Working around SMP bottlenecks without exotic hardware
- ❑ Delivery
 - ❑ Phase 1: 1996 - Paired Servers
 - ❑ Phase 2: 1997 - 16 node, enhanced scaling

Clusters Phase I Diagram



Summary

- ☐ Windows 95 and Windows NT cover the spectrum of clients and servers
- ☐ “SIPC” initiative to make PCs true “appliances” in terms of ease of use
- ☐ “Cairo” will complete distributed computing infrastructure in 1997
- ☐ “Memphis” and “Cairo” key steps on move to a unified kernel in future

Summary

- Windows is a complete, broadly supported network computing platform
- Windows is the natural platform for the Intranet
- We are committed to making Windows **THE** *platform* for “Active Wave” of the Internet



Questions?

Microsoft[®]

