

# Microsoft® Windows NT™

## Advanced Server Version 3.1

*Operating System*

**Microsoft Windows NT Advanced Server is the most powerful, reliable, and open platform to build, deploy and manage client-server applications for your networks.**

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### Overview

Microsoft® Windows NT™ Advanced Server is the premier platform for client-server computing. The server version of the Microsoft Windows NT operating system, it is designed to offer a powerful, reliable platform for organizations implementing mission-critical business applications. As an open system, it protects your long term investment.

Windows NT Advanced Server enables organizations to take advantage of powerful capabilities to implement client-server applications such as data-base servers that require access to advanced hardware platforms including multiprocessor machines and new high performance processors.

Windows NT Advanced Server 3.1 is a key part of Microsoft's total systems platform with advanced networking services and new multi-server management capabilities. MIS managers can ensure availability of important business information and protect it from unauthorized access with Windows NT Advanced Server. It supplements the high

reliability of Windows NT with advanced fault tolerance and is designed to meet C2 security requirements for high availability and controlled access of data.

Today's business solutions require open systems to provide choices of hardware, applications, networks, and service providers. Windows NT Advanced Server provides a consistent, safe choice since it works well with your existing systems and networks while offering access to powerful hardware. It is easily extendible in the future, protecting long term investments.

Windows NT Advanced Server provides a complete server solution for file and print service. Additionally, it can run inventory management, accounting systems, and other client-server applications in existing environments with LAN Manager, DEC® Pathworks®, Novell® NetWare®, Banyan® Vines®, UNIX®, and SNA networks.

Windows NT Advanced Server

makes it easy for end users and administrators to browse and manage network information. Single network logon allows users access throughout the network with only one user account and password.

Client connectivity includes workstations running Microsoft Windows™, Windows for Workgroups, Windows NT, MS-DOS®, and OS/2® operating systems. The integrated Services for Macintosh® enables Macintosh connectivity. Remote users can access the network with the Remote Access Service included.

The Microsoft Windows Family Windows NT Advanced Server is a key part of the Microsoft Windows family. It is easily combined with Windows NT, Windows for Workgroups, and Windows 3.1 to provide solutions to organizations ranging from small workgroups to international corporations with multiple sites.

## Technical Highlights

### Powerful Platform for Client-Server

Microsoft Windows NT Advanced Server lets organizations implement business solutions with new, high capacity hardware. It makes system management easier. Centralized administration of user accounts across multiple servers saves both time and expense. Graphical tools simplify administration. Integration with standard network management systems allows coexistence with installed base. Users benefit with a simplified, one-time logon to the network.

- **Multiple platforms:** 32-bit Windows NT based applications run on Intel 386/486 and Pentium®, MIPS® R4000™ and the DEC® Alpha processors.
- **Symmetric multiprocessing (SMP):** Windows NT Advanced Server is scalable with support for high-performance servers with multiple processors.
- **High capacity:** Support for 4 gigabytes of RAM and no practical limit to disk storage. Logical drives can span multiple physical disks for very large storage capabilities.
- **Domains ease administration:** Group servers into a logical unit called a *domain*. For example, the sales department may have 25 servers which can be grouped into a domain called "Sales." A user account or password change needs to be made only one time for access to the servers within this

domain. The change is automatically distributed to other servers.

- **Single network logon:** Extend domain relationships throughout the organization to provide centralized management of all user accounts in the enterprise. Users benefit by having only one password to enter for secure access to enterprise network resources.

In this example, with Windows NT Advanced Server, a user in the Finance Domain accesses resources throughout the enterprise wide network with just a single user

- account and password.
- **Make server management easier:** Integrated graphical tools provide control of servers in ways such as closing a file, disconnecting users, or viewing who is connected to the server through the Server Manager. Configure disk options to enable fault tolerance features with Disk Manager. Back up files to tape with Backup Manager.
- **Easy user and group administration:** Control network security policy and manage user and group accounts with graphical tools. Manage multiple servers from a single computer. User Profile Manager enables a user to get their personal environment profile on any Windows NT-based computer.
- **Distribute management functions:** Designate privileges such as *backup operator* and *account operator* to delegate management functions to different individuals.
- **Easy configuration:** Network

interface card is automatically detected during setup. Server is automatically tuned.

Configuration changes can be easily made using the Network Control Panel for network items such as hardware adapter cards, protocols, or other network software.

- **Troubleshooting:** Performance Monitor provides the ability to view system performance statistics and set thresholds for alerts on local or remote computers. Event Viewer provides auditing and diagnosis allowing administrators to quickly troubleshoot as well as filter events.
- **Easy printer setup and sharing:** With the enhanced Print Manager it is easy to set up and share printers on the network.
- **Standards-based systems management:** Application Programming Interfaces for Simple Network Management Protocol (SNMP) provide an extendible management framework in the operating system. Supports Standard MIBs: SNMP Service hosts MIB 2, Host MIB, LAN Manager MIB, and DSIS MIB. NetView Alert and NetView Run services integrate Windows NT into the SNA enterprise.

## Reliable System

Organizations must be able to depend on the operating system when deploying mission critical applications. Windows NT Advanced Server provides protection and high availability for business data. MIS managers can implement a high level of security, protecting against unauthorized data access. Advanced fault tolerance ensures data integrity and enhances system availability.

- **Password encryption:** Logon passwords are encrypted using the U.S. Government Data Encryption Standard (DES) to protect password security.
- **Application protection:** Memory protection and virtual memory manager protect applications providing robust foundation for client-server applications.
- **Secure access to all resources:** Designed to meet C2-level security rating specified by the U.S. Department of Defense, security permissions are discretionary and can be attributed to individual files and other system objects such as printers and peripherals.
- **High performance disk access with fault tolerance:** Disk striping provides very high disk access performance by reading data on up to 32 disks simultaneously. Striping with parity (RAID 5) provides non-stop access to disk arrays even if a disk fails.
- **Data is always available:** Disk mirroring provides backup to maintain data on two disk drives. Disk duplexing provides backup drive

controllers for additional protection.

- **File replication:** Replicates specified files to other servers on the network whenever files are changed.
- **Uninterruptible Power Supply:** Protects server from power failures by sending out power failure warnings to administrators and users, then safely and automatically shutting down the server before battery power runs out.

## Open System

Today's systems require access to information anytime, anywhere, usually from different sources. Windows NT Advanced Server has an open networking architecture and advanced connectivity which allows integration of information from multiple platforms and sites.

Windows NT Advanced Server offers rich, robust interfaces for cross-platform client-server applications, enabling organizations to access information from existing systems.

Windows NT Advanced Server is fully interoperable with Microsoft Windows™ for Workgroups, as well as LAN Manager on multiple platforms (OS/2®, UNIX, and VMS®). Its open network design enables it to interoperate in heterogeneous environments including Novell Netware, Banyan Vines, UNIX, and SNA networks.

In addition, it connects workstations running Microsoft Windows, Windows NT, Windows for

Workgroups, MS-DOS, OS/2, and Macintosh operating systems.

Windows NT is based on an open protocol architecture and includes the NetBEUI and TCP/IP transports, OSF DCE compatible RPC, the Windows Sockets API, as well as named pipes and DLC.

- **TCP/IP:** Microsoft's strategic, industry standard protocol provides integrated wide area networking and a foundation for open, cross-platform connectivity.
- **RPC facilities:** Windows NT includes a complete Remote Procedure Call (RPC) facility that enables development of distributed network applications. It is compatible with the OSF DCE standards.
- **Windows Sockets:** Industry standard application programming interface which makes it easy to develop cross platform client-server applications.
- **Named Pipes:** Interprocess communication to facilitate client-server applications on PC LANs.
- **DLC:** Data Link Control interface for connectivity to environments including IBM® mainframes and AS/400®.

## Windows NT Remote Access Service

With Windows NT Remote Access Service, off-site PC users—remote administrators, business travelers, and home workers—have transparent access to resources as if they were working on-site.

Windows NT Remote Access Service supports dial-in over asynchronous telephone lines, ISDN, and X.25 networks from workstations running MS-DOS, Windows, Windows for Workgroups, and Windows NT operating systems.

- **Full network access for remote PC:** Remote users can access resources on all Windows NT-based, LAN Manager (OS/2, UNIX, VMS), and Windows for Workgroups computers on the network, including file and print resources and client-server applications.
- **Access client-server applications:** Remote Access Service is optimized for client-server applications providing an excellent foundation for solutions that span several sites.
- **Remote administration:** You can perform all administrative tasks, such as monitoring server performance, managing user accounts, and starting and stopping services, from a remote workstation.
- **Advanced security:** Remote Access Service implements full security *before* allowing remote users access to the network.

Network administrators can select level of call-back on an account-by-account basis. The dial-in server can be instructed to:

- Hang-up and call back to a phone number designated by the administrator for tighter security
- Call a number supplied by the user after validation to more efficiently manage

telephone costs

- **Integrated administration:** There is no administrative difference between remote users and on-site users—remote access is a permission in the user account database.

Windows NT Services for Macintosh  
Windows NT Services for Macintosh allows Macintosh and PC workstations to transparently share files, printers, and client-server applications on your Windows NT servers.

Macintosh users can connect without additional software, and access file and printer resources through the Chooser—the same way they would access any AppleShare® server. Windows NT Services for Macintosh includes integrated administration tools and advanced networking, and takes advantage of advanced security.

- **Seamless file sharing:** Windows NT Services for Macintosh makes it easy for PC and Macintosh users to share files by automatically translating file names into the appropriate formats.

- Long filenames: Macintosh users can create files with long filenames.
- File Systems: Filenames are converted between Mac®, FAT, and Windows NT file system (NTFS) formats as required.
- File Associations: PC-created files can be automatically associated with a Macintosh file type. For example, Mac users can launch Microsoft Excel and open a Microsoft Excel PC file simply by double clicking on the file icon.

- **Cross platform printer sharing:** PC and Macintosh users can share PostScript® compatible printers on the network—those attached to Windows NT-based servers and Apple® LaserWriter® compatible printers directly attached to the AppleTalk® network.
- **Non-PostScript print capabilities:** Macintosh users can leverage investment in non-PostScript printers. Services for Macintosh automatically converts PostScript to any printer setup for Windows NT.

- **Integrated Administration:** Services for Macintosh is fully integrated into the Windows NT Advanced Server. Managing Macintosh user accounts is easy—they are no different than other user accounts.
  - Server Manager: Services for Macintosh monitors Macintosh session information.
  - File Manager: create

Macintosh volumes the same way you create PC shares.

- **Advanced networking:** Services for Macintosh supports AppleTalk Phase 2 routing between AppleTalk net-works. Macintosh users can access client-server applications such as SQL Server.
- **High capacity:** Windows NT

Services for Macintosh can support the AppleTalk limit of 255 simultaneous connections on each server.

- **Security:** Windows NT Services for Macintosh takes advantage of the NTFS file system providing high levels of security. It provides optional client software to encrypt passwords over the network.

## Specifications

### System Requirements

- Personal computer using 386DX/25 or higher microprocessor or RISC-based system such as the MIPS R4000 or R4400.
- 12 MB or more recommended for Intel-based systems. For RISC-based machines, 16 MB is recommended.
- One 3.5" or 5.25" high-density disk drive and a hard disk with 70 MB free disk space for the operating system. 20MB will be used for the virtual-memory

paging file.

CD-ROM drive is optional.

### Availability

The Microsoft Windows NT Advanced Server is scheduled to be available in the second quarter 1993.

For more information, call Microsoft Inside Sales at (800) 227-4679. In Canada, call the Microsoft Canada Customer Support Centre at (800) 563-9048. Outside the United States and Canada, please contact your local Microsoft subsidiary or representative.

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