

RUNNING WINDOWS ON LANtastic[®]

Michael S. Montgomery

Running Windows on CANtastic®

Michael S. Montgomery

Windcrest® / McGraw-Hill

New York San Francisco Washington, D.C. Auckland Bogotá
Caracas Lisbon London Madrid Mexico City Milan
Montreal New Delhi San Juan Singapore
Sydney Tokyo Toronto

FIRST EDITION
FIRST PRINTING

© 1993 by **Windcrest**.

Published by Windcrest Books, an imprint of TAB Books.

TAB Books is a division of McGraw-Hill, Inc.

The name "Windcrest" is a registered trademark of TAB Books.

Printed in the United States of America. All rights reserved. The publisher takes no responsibility for the use of any materials or methods described in this book, nor for the products thereof.

Library of Congress Cataloging-in-Publication Data

Montgomery, Michael S., 1955-

Running Windows on LANtastic / by Michael S. Montgomery.

p. cm.

Includes index.

ISBN 0-8306-4446-6 ISBN 0-8306-4447-4 (pbk.)

1. LANtastic for Windows. 2. LANtastic. 3. Microsoft Windows
(Computer file) 4. Local area networks (Computer networks)

I. Title.

TA5105.9.M66 1993

005.7'1369—dc20

93-8049

CIP

Acquisitions editor: Brad Schepp

Editorial team: Sara Black, Book Editor

Joanne Slike, Executive Editor

Joann Woy, Indexer

Production team: Katherine G. Brown, Director

Ollie Harmon, Coding

Susan E. Hansford, Coding

Tina M. Sourbier, Coding

Sandy Hanson, Coding

Patsy D. Hame, Layout

Kelly S. Christman, Proofreading

Design team: Jaclyn J. Boone, Designer

Brian Allison, Associate Designer

Cover design and illustration: Sandra Blair, Harrisburg, Pa.

WU1

4423

Notices

286MAX	Qualitas
CarbonCopy	MicroCom
cc:Mail	Lotus Development Corp.
Central Station	Artisoft, Inc.
CheckIt	Touchstone Software Corp.
CompuServe Information Service	CompuServe & H. & R. Block
DDEX	Netlogic, Inc.
Ethernet	Digital Equipment Corp., Intel, & Xerox Corp.
Excel	Microsoft
IBM Personal Page Printer	International Business Machines Corp.
iniCommander	Netsupp.C++
LANtastic	Artisoft, Inc.
LANtastic for Windows	Artisoft, Inc.
Lotus 1-2-3	Microsoft
Lotus 1-2-3 for Windows	Microsoft
MS-DOS	Microsoft
Microsoft	Microsoft Corp.
NetMedia Starter Kit	Artisoft, Inc.
NetWare	Novell, Inc.
Netware Lite	Novell, Inc.
Norton Desktop for Windows	Symantec Corp.
Norton Utilities	Symantic Corp.
Novell	Novell, Inc.
pcANYWHERE for Windows	Symantec Corp.
PC Tools and PC Tools for Windows	Central Point Software
PostScript	Adobe Systems, Inc.
ReachOut	Ocean Isle Software
QEMM-386	Quarterdeck
Saber Menu System for Windows	Saber Software Corp.
Sounding Board	Artisoft, Inc.
Stacker	Stac Electronics
TM/1 Spreadsheet Connector	Sniper Corp.
Tiny Ram	Artisoft, Inc.
Windows	Microsoft
Windows for Workgroups	Microsoft
Windows Printing System	Microsoft
WinLogin	Microsoft
WinSleuth	Dariana, Inc.
Word for Windows	Microsoft
WordPerfect	WordPerfect Corp.
WordPerfect for Windows	WordPerfect Corp.
XTree for Windows	XTree Co.
XTree Gold	XTree Co.

Contents at a Glance

Section 1 Getting ready to network Windows

Chapter 1 The basics of sharing Windows

Chapter 2 Windows installation

Section 2 Mastering Windows

Chapter 3 Mastering the Setup program

Chapter 4 Mastering Program Manager

Chapter 5 Mastering the INI files

Section 3 Getting the most from your installation

Chapter 6 LANtastic for Windows

Chapter 7 Managing a networked Windows

Chapter 8 Sharing Windows applications

Chapter 9 Windows performance factors

Chapter 10 Windows printing on a network

Introduction

Running Windows on LANtastic is a guide and reference for anyone who uses or manages Windows on a LANtastic network. It will be helpful to any user, but it is aimed primarily at network managers who must install, configure, and maintain the program. Much of the information is technical and goes well beyond the information needs of the average LANtastic or Windows user.

This book assumes that you have a basic knowledge of your computers, Windows, and LANtastic. The information presented here is not necessarily intended for Windows experts or programmers, but the basics of computer use, DOS, Windows, and LANtastic are not covered.

Assumptions

This book focuses on those aspects of Windows that relate to installing and using the program on a LANtastic network. It is not a reference or tutorial on the basis of using Windows. Countless other books serve that need. Many concepts and commands are reviewed, some in considerable detail, but this book will not teach you to use Windows.

Scope

This book focuses on running Windows 3.1 on LANtastic 4.x and 5.x. Each of these program versions has important management and performance improvements over their respective previous versions. If you are still using an earlier version of Windows or LANtastic or both, one of the best things you can do to increase the performance of your system is to upgrade to these current versions. This advice is not a sales pitch, it is a simple fact. However, thousands of offices have not yet upgraded for one reason or another. Significant differences between the current and previous software versions are noted.

Running Windows on LANtastic has three main objectives. First, it will help you understand and control the aspects of Windows that relate to network use. By examining the networking features of Windows, this book will help you to create the type of installation that meets your needs for performance, management, and security.

Objectives

Second, this book will help you understand those aspects of LANtastic that either affect, or are affected by, sharing Windows on the network. You need to know how your Windows configuration affects the performance of LANtastic and how your LANtastic configuration affects the performance of Windows.

And third, this book will help you simplify your work as a network manager. If installed and configured properly, your Windows installation will be easy to

manage. By creating a system appropriate for your office and your users, you can avoid some of the problems that Windows users often encounter.

Organization The information is divided into three sections:

Section 1 explains the files and functions that make up the Windows program as well as the ways that Windows operates differently when shared on a network. The advantages and disadvantages of using a multiuser copy of Windows are then presented. The multiuser installation process itself is then detailed, followed by the steps needed to set up LANtastic servers and workstations for sharing Windows.

Section 2 provides detailed information on three subjects. This section begins with an explanation of the Windows Setup program. Windows setup is usually an automated process. However, when installing Windows for network use, you might want to control and modify various aspects of the installation. Several aspects of how the Setup program can be customized to meet the needs of the office are identified.

You can customize several aspects of Program Manager to change or restrict how Windows can be used—preventing Windows games from being played, for example. The relationship between the initialization file that controls Program Manager and the Windows menus are illustrated.

Almost every aspect of Windows is controlled by a setting in one of the initialization (INI) files. These files are complex and cryptic, and Windows users often misunderstand them. These files are demystified by describing them in a simple, systematic way. The structure and syntax of these files is first explained. Each of the four main INI files is then examined individually, with those settings that are important to network described in detail.

Section 3 covers several topics that will help you simplify your work and get the most performance from your system. First, the LANtastic for Windows menu interface is covered in detail. Windows-related management and security issues are then addressed. Several business applications such as Word for Windows and Excel are discussed, focusing on those aspects that relate to multiuser installations.

Several other programs are also discussed, as a means of introducing the topics of file management, menu systems, and remote access and control. The use of Dynamic Data Exchange (DDE) and Object Linking and Embedding (OLE) on a network are also covered.

Performance is examined from two perspectives. First, the effect Windows has on LANtastic's performance is discussed. The demands of sharing Windows can easily reduce the performance of the entire network—even those users who are not running Windows. Then, the performance of

Windows running on LANtastic is discussed. Windows is a very demanding application, and several variables affect its performance on a network.

Printing from Windows to a shared network printer is frequently a source of problems. The process does work well, as long as some very important configuration items are properly set. Printer configuration in Windows is examined in detail, and printing performance factors are covered.

Finally, a glossary of Windows and networking terms and acronyms is provided for easy reference to definitions.

Although this book covers the important factors involved in running Windows on LANtastic, it cannot include all the Windows information that a LANtastic manager needs. Many times you will need to refer to other sources for important information that does not relate directly to networking.

Additional Information

There are many additional sources of information about Windows, including books, magazines, and technical support departments. Before turning to these sources, however, to be sure to read the technical information that is supplied as part of the Windows program.

Some sources of additional information are listed in TABLE I-1. You should obtain and read each of them; they contain valuable information about many aspects of installing, configuring, and using Microsoft Windows 3.0 and 3.1.

Table I-1
Sources of information available for Windows.

Document Name	Source	For Windows Version
networks.txt	Windows Program	3.0
printers.txt	Windows Program	3.0
readme.txt	Windows Program	3.0
sysini1.txt	Windows Program	3.0
sysini2.txt	Windows Program	3.0
sysini3.txt	Windows Program	3.0
winini1.txt	Windows Program	3.0
setup.txt	Windows Program	3.1
networks.wri	Windows Program	3.1
printers.wri	Windows Program	3.1
readme.wri	Windows Program	3.1
sysini.wri	Windows Program	3.1
winini.wri	Windows Program	3.1
readme.doc	LANtastic	3.0 and 3.1
win300.txt	Artisoft BBS or FAX	3.0
win31.txt	Artisoft BBS or FAX	3.1
Windows Resource Kit	Microsoft (800) 642-7676	3.0 or 3.1

Windows Help Documents

If you are currently using Windows, then you already have some of these documents—the help files that come with the Windows program. To read the help files, open them with Write or double click on them in File Manager.

Artisoft Technical Bulletins

You can obtain the documents supplied by Artisoft in two ways. If you have a modem, you can access the Artisoft Technical Support Bulletin Board Service at (602) 884-8648. You can use either the communications software that comes with your modem or the Windows Terminal program.

In addition to the files listed, you can download many other informative documents. These documents might help you solve (or avoid) problems with the hardware and software you are using with your LANtastic network.

If you do not have a modem, you can obtain copies of these documents by using the Artisoft Fast FAX service. With your FAX machine phone, call (602) 293-1397. You can select up to three documents per call by responding to the recorded message.

Microsoft Windows Resource Kit

The Windows Resource Kit is a comprehensive technical reference for the Windows program. The information in the Kit is more extensive than that found in the manual supplied with Windows. Much of this information cannot be found in any other resource. This 500-page book costs \$19.95 plus shipping, but it is one of the best values you are likely to find anywhere. Anyone responsible for managing a Windows installation should consider this book a necessity. To order the Windows Resource Kit, call Microsoft at (800) 426-9400. You can also download the Kit from the Windows BBS at (206) 637-9009.

Much of the information in Section two is adapted from the Windows Resource Kit. If you want additional or more detailed information on installation, INI files, and other subjects, the Windows Resource Kit is the best source. Additional topics such as fonts, PIF files, hardware compatibility, memory management, and troubleshooting are also covered. A disk containing several very good Windows utilities is included with the Kit. Chapter 7 discusses and illustrates some of these utilities.

An electronic version of the Windows Resource Kit, called WRK Help, is produced by the Windows User Group Network (WUGNET). Since much of your work in the Windows Resource Kit is likely to be index and text searching anyway, the online version makes sense. Contact WUGNET at (215) 565-1861 or through CompuServe (GO WUGNET).

Section 1: Getting ready to network Windows

- 1 *The basics of sharing Windows* 3
 - How Windows works 4
 - How a multiuser installation is different 8
 - Sharing Windows 9
 - Installation choices 12
 - Hard disk requirements 13
 - Network traffic 14
 - Network independence 16
 - Sharing program licenses 16
- 2 *Windows installation* 17
 - Single-user installations 18
 - Multiuser installations 19
 - Configuring the server 23
 - Configuring workstations 25
 - Installing Windows 3.0 30

Section 2: Mastering Windows

- 3 *Mastering the Setup program* 35
 - The Setup process 36
 - Options for running Setup 40
- 4 *Mastering Program Manager* 51
 - Understanding Program Manager 52
 - Restricting Program Manager use 55
 - Sharing Group Files 57
 - Restoring default groups 58
- 5 *Mastering the INI files* 59
 - The INI file format 60
 - Editing an INI file 61
 - The WIN.INI file 65
 - The SYSTEM.INI file 71
 - Other INI files 75
 - SYSTEM.INI settings for LANtastic 75

Section 3: Getting the most from your installation

6	<i>LANtastic for Windows</i>	81
	LANtastic for Windows features	82
	Program installation	83
	NET for Windows	85
	The main NET functions	88
	NET_MGR for Windows	103
	The main NET_MGR functions	104
	Saving configurations	123
	The Network Scrapbook	126
	Voice error messages	130
	The LAN Radio	131
	LANtastic for Windows DDE macros	132
7	<i>Managing a networked Windows</i>	135
	Managing your users	136
	Managing your computers	139
	Managing your programs	143
	Network security issues	149
	Microsoft's WinLogin	152
8	<i>Sharing Windows applications</i>	159
	Multuser applications	160
	Word for Windows	161
	Microsoft Excel	165
	WordPerfect for Windows	167
	Windows for Workgroups	171
	Object linking & embedding	173
9	<i>Windows performance factors</i>	183
	Server configuration	184
	Configuring a dedicated server	189
	Running Windows on the server	190
	Disk caching	191
	Workstation performance	195
	Swap files	202

10 Windows printing on a network 207

Shared printer resources 208

Printer setup in Windows 211

Print Manager 218

Printing from Windows programs 219

Printing performance 220

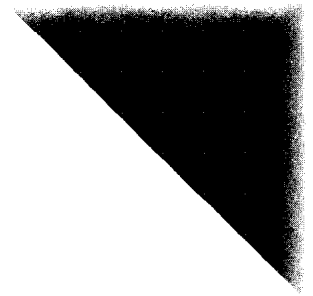
Glossary 227

Acronym list 239

Index 241

Section one

Getting ready to network Windows



1. The Basics of Sharing Windows

2. Windows Installation

Chapter Topics

This section explains the basics of installing and sharing Windows on your network.

Chapter 1 covers the elements that make up the Windows program, with emphasis on those aspects that relate to network use and network performance. The differences between a single-user and a multiuser installation are described, and the advantages and disadvantages of each are detailed.

Chapter 2 covers the installation process itself. Each step in the process is explained, including installing the program, creating shared resources, and configuring servers and workstations. Tips and precautions that provide a thorough understanding of Windows installations are included.

1 *The basics of sharing windows*

Windows is a very powerful program. Literally hundreds of variables allow users to customize different options. While this is what makes Windows such a flexible and useful application, it also makes it very complex. Many users fail to get the most from Windows because they do not understand all the features and options available. They might be quite satisfied with the features and performance that they do have, but they could be doing much more. Most use only a fraction of the power and flexibility of Windows.

This chapter serves two important purposes. First, it introduces how Windows works and the factors involved in sharing the program on a network. A multiuser installation is different in several ways from the single-user installations to which most of us are accustomed. These differences are clearly defined, so that managers can make better decisions about installation and configuration.

Second, this chapter summarizes the variables that affect the performance of Windows on your network. You have several options from which to choose as you install and configure Windows for your network. Each option has implications for performance, and sometimes management or security. Making the right choices allows you to provide optimum performance for all your Windows users.

There are two main ways to share Windows on your network. Many offices simply install the program on each workstation and use the network only for storing shared data files and printing. This approach works well in small offices, but maintaining multiple copies of Windows often becomes a source of problems in larger offices.

You can also install Windows as a multiuser program. You install a single copy of Windows at the server, and all workstations share that directory to run the program. Larger offices will see several important benefits from installing Windows in this way. These benefits are summarized later in this chapter, and many aspects of multiuser installations are covered in detail in the following chapters.

NOTE: You must have a license for each workstation running Windows concurrently.

How Windows Works

What we see on the screen and call *Windows* is actually a shell (Program Manager), a group of small programs and utilities, and a handful of smaller support files such as drivers and fonts. These programs and utilities function together as an integrated system because they all use the same graphical interface and internal communication system.

You should understand a few things about the files and processes that make up the Windows program and how Windows controls your computer to perform its tasks. Once you understand the basics of the program, you'll more readily understand how it functions differently on a network and how you can customize and control various aspects of its operation.

This section summarizes the basic components of the Windows program. The next section highlights the areas where a multiuser installation is different. Finally, a summary of the advantages and disadvantages of a multiuser installation is presented to help you determine the best way to install Windows in your office.

The Setup program

The Windows Setup program is a sophisticated utility that greatly simplifies the installation and configuration of Windows. It automates the process of analyzing installed hardware and software, copying program files, and configuring the program for personal preferences.

You can configure Windows to run on a wide variety of computers. The program comes with drivers for virtually every type of computer, monitor, printer, and mouse that may be used on your system. When you run the Setup program for a stand-alone installation, it examines your computer and configures the Windows program according to the types of hardware that it detects. The Setup program installs to your hard disk only the drivers and other files required for your hardware.

A stand-alone installation is, therefore, relatively efficient and economical as far as your hard disk is concerned—only necessary files are installed. It is also a very simple and straightforward process as far as you are concerned. You need very little interaction or knowledge of the process. The Setup program is usually very good at determining the optimum configuration for your computer.

When running Setup for a network installation, you must consider several additional variables, making it even more important for you to understand the process. Understanding all aspects of the Setup program gives you control over the installation, configuration, and maintenance of the Windows workstations on your network. To help you accomplish this, chapter 3 is devoted to using the Windows Setup program.

As already mentioned, the Windows program is actually made up of several groups of files that work together to configure your system, control the programs running on it, and provide useful utilities to simplify your work. The main groups of files are summarized in this section.

Windows program files

When a single-user installation of Windows is performed, the Setup program copies all the program files to the Windows program directory on the hard disk. It copies the drivers and fonts that it matched with your hardware to the System subdirectory, beneath the program directory.

WIN.COM The WIN.COM file actually starts the Windows program. When you type WIN at the DOS prompt, WIN.COM checks the type of computer, amount and type of memory, and installed drivers to determine the correct operating mode. It then executes one of two files to start in either Standard mode or Enhanced mode, based on the configuration of the computer. Finally, it assembles the necessary components for the program from a variety of files, including the core files, device drivers, fonts, and support files.

Core files Three files are known collectively as the *core files*: KERNEL, USER and GDI. The kernel file, KRNL.286 or KRNL.386, depending on your computer), is responsible for controlling the computer's resources. It loads applications and manages the computer's memory and running programs.

The USER.EXE file is responsible for managing the visual aspects of the program. It creates the windows, icons, and other elements of the screen display. It is also responsible for directing input from the mouse or keyboard to the appropriate program.

The graphics device interface, or GDI.EXE, controls graphics functions. It is responsible for drawing graphics and fonts on the screen and for printing.

Device drivers Device drivers are very small files that contain instructions for Windows to work with a specific piece of hardware. Every graphics board, input device, printer, and network adapter must have a driver