

计算机实用技术系列丛书



实用手册

中文 Windows 3.1 SDK E DDKE

Microsoft Corporation

学苑出版社

计算机实用技术系列丛书

**中文 Microsoft Windows 3.1
设备开发工具包 SDKE DDKE**

实用手册

Microsoft Corporation

学苑出版社

Microsoft® Windows™ Chinese Edition
Software Development Kit Extension
development tools for building Chinese language Microsoft Windows applications

Installation Guide And Reference

VERSION 3.1

for the MS-DOS® Operating Systems

Microsoft Corporation

(京)新登字 151 号

内 容 提 要

为了国内广大计算机开发与应用人员使用的方便,我们特将 Microsoft Windows 3.1 的中文设备开发工具包 SDKE、DDKE 译成中文,并在本书后半部分附上相应英文,希望本书能为您的开发和应用助一臂之力。

欲购本书的用户可直接与北京 8721 信箱联系,邮政编码 100080,电话 2562329。

版 权 声 明

本书英文版由 Microsoft 公司出版,版权归 Microsoft 公司所有。本书中文版由 Microsoft 北京代表处授予北京希望电脑公司和学苑出版社独家出版、发行。未经出版者书面许可,本书的任何部分都不得以任何形式或任何手段复制或传播。

Microsoft, Microsoft Press, MS, MS-DOS 和 Windows 是微软公司的注册商标。

计算机实用技术系列丛书

中文 Microsoft Windows 3.1 设备开发工具包 SDKE DDKE 实用手册

原 著: Microsoft

责任编辑: 甄国宪

出版发行: 学苑出版社 邮政编码: 100032

社 址: 北京市西城区成方街 33 号

印 刷:

开 本: 787×1092 1/16

印 张: 46.25 字 数: 1052 千字

印 数: 1~5000 册

版 次: 1993 年 12 月北京第 1 版第 1 次

ISBN7-5077-0806-3/TP·17

本册定价: 99.00 元

学苑版图书印、装错误可随时退换

Information in this document is subject to change and does not represent a commitment on the part of Microsoft Corporation. The software described in this document is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of this agreement. It is against the law to copy the software on any medium except as specifically allowed in the license or nondisclosure agreement. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose without the express written permission of Microsoft.

©Copyright Microsoft Corporation, 1993. All rights reserved.

Microsoft, MS, MS-DOS, GW-BASIC, QuickC, CodeView, and XENIX are registered trademarks, and Windows, Windows/286, and Windows/386 are trademarks of Microsoft Corporation.

386 is a trademark of the Intel Corporation.

Epson is a registered trademark of Epson America, Inc.

Hercules is a registered trademark of Hercules Computer Technology.

HP, LaserJet, and PCL are registered trademarks of Hewlett-Packard Company.

IBM and PS/2 are registered trademarks of International Business Machines Corporation.

Intel is a registered trademark of Intel Corporation.

NEC is a registered trademark of NEC Corporation.

Paintbrush is a registered trademark of ZSoft Corporation.

PostScript is a registered trademark of Adobe Systems, Inc.

Introduction

This introduction provides background information you should review before you use this book.

This introduction covers the following topics:

- Things you should know before you start
- The purpose and contents of this guide
- Notational conventions used throughout this guide

What You Should Know Before You Start

To start using this guide, you will need the following:

- Experience using the Chinese Edition of Microsoft Windows, and a general understanding of the Chinese language extensions to the Windows user interface.
- Experience using the English language version of the Software Development Kit.
- Experience writing C language programs.

About this Guide

This reference will help experienced programmers understand and program for the Chinese Windows environment. Chinese Windows 3.1 extends the normal Windows graphics environment to support Double Byte Code System (DBCS) characters. The Far East versions of Windows use DBCS to encode the rich character sets that characterize languages such as Japanese and Chinese. Chinese Windows 3.1 also supports installable, selectable input method editors, to allow users to compose Chinese characters using ASCII keyboards.

Contents

This reference consists of the following chapters.

Part 1, "Installation Guide"

- Chapter 1, “Overview of the Chinese Windows SDK,” outlines the components contained in the SDK 3.1
 - Chapter 2, “Installing the SDK,” gives the guidelines for installing the SDK 3.1 software.
- Part 2, “Reference,” provides all the information the user needs to know to develop applications under Chinese Windows 3.1.
- Chapter 3, “Architectural Changes for Chinese Windows,” outlines the changes that have been made to the pure Windows environment to create Chinese Windows 3.1.
 - Chapter 4, “Fonts ,” documents “Font Association”, “Code Range in Chinese Windows”, and “User Fonts”.
 - Chapter 5, “New and Modified Code Samples,” documents the changes that have been made to the code samples for Chinese Windows.
 - Chapter 6, “Creating Chinese Windows Help Files,” explains the changes made to the English language WinHelp system, and how to create help files for the Chinese Windows environment.
 - Chapter 7, “Programming for DBCS,” explains how to program in the Chinese Windows environment.
 - Chapter 8, “Code Page Conversion Utilities,” documents utility programs that make it possible to cut-and-paste between Chinese language MS-DOS-based programs and the Chinese Windows 3.1 clipboard.
 - Chapter 9, “Input Method Manager (IMM),” documents the architecture, functional interface, and data structures of the IMM.
 - Chapter 10, “Input Method Editor (IME),” documents the architecture, functional interface, and data structures of the IME.

Notational Conventions

The following document conventions are used throughout this manual:

<u>Convention</u>	<u>Description of Convention</u>
Bold text	Bold letters indicate a specific term or punctuation mark intended to be used literally: language key words or functions (such as EXETYPE or CreateWindow), MS-DOS commands, and command-line options (such as /Zi). You must type these terms and punctuation marks exactly as

shown. However, the use of uppercase or lowercase letters is not always significant. For instance, you can invoke the linker by typing either **LINK**, **link**, or **Link** at the MS-DOS prompt.

()

In syntax statements, parenthesis enclose one or more parameters that you pass to a function.

Italic text

Italic text indicates a placeholder; you are expected to provide the actual value. For example, the following syntax for the **SetCursorPos** function indicates that you must substitute values for the *X* and *Y* coordinates, separated by a comma:

SetCursorPos(*X*, *Y*)

Monospaced type

Code examples are displayed in a non-proportional typeface.

BEGIN

•
•
•

END

A vertical ellipsis in a program example indicates that a portion of the program has been omitted.

...

An ellipsis following an item indicates that more items having the same form may appear. In the following example, the horizontal ellipsis indicates that you can specify more than one *breakaddress* for the **g** command:

g [*=startaddress*] [*breakaddress*] . . .

[]

Double brackets enclose optional fields or parameters in command line and syntax statements. In the following example, *option* and *executable-file* are optional parameters of the **RC** command:

RC [*option*] *filename* [*executable-file*]

|

A vertical bar indicates that you may enter one of the entries shown on either side of the bar. The following command-line syntax illustrates the use of a vertical bar:

DB [*address* | *range*]

The bar indicates that following the **DB** (Dump Bytes) command, you can specify either an *address* or a *range*.

xii Installation Guide and Reference

“ ”

Quotation marks set off terms defined in the text.

{ }

Curly braces indicate that you must specify one of the enclosed terms.

SMALL CAPITAL LETTERS

Small capital letters indicate the names of keys and key sequences, such as:

ALT + SPACEBAR

目 录

第一篇 安装指南与参考手册

简介.....	1
使用须知.....	1
本手册有关事项.....	1
符号约定.....	2
第一部分 安装指南	5
第 1 章 中文 Windows SDKE 3.1 概述	7
1.1 概述	7
1.2 SDKE 的组成	7
1.3 硬件及软件需求	8
1.4 定义	8
第 2 章 SDKE 的安装	11
2.1 安装 SDKE 软件	11
2.2 中文 Windows 3.1 的运行库	12
2.3 中文 Windows 3.1 头文件	12
2.4 中文 Windows 3.1 的 CHELPEX 目录	12
2.5 更新用户的 CONFIG.SYS 和 AUTOEXEC.BAT 文件	12
第二部分 参考手册	13
第 3 章 中文 Windows 的结构修改	15
3.1 简介.....	15
3.2 功能说明.....	15
3.3 输入方法管理.....	18
3.4 可由最终用户定义字符的应用程序 UserFont	21
3.5 西文 Windows 应用程序支持	21
3.6 标记、拷贝及粘贴支持	21
3.7 建立中文帮助文件.....	22
第 4 章 字体	23
4.1 字体关联.....	23

4.2	GB2312 内部代码页	28
4.3	UserFont	30
第 5 章	新的和修改过的代码实例	47
5.1	简介	47
5.2	修改过的程序	47
5.3	新推出的程序	48
第 6 章	创建中文 Windows 帮助文件	49
6.1	使用中文 Word 1.2 for Windows 编辑 RTF 主题	49
6.2	创建中文帮助文件	51
6.3	文件实例	51
第 7 章	DBCS 编程	53
7.1	常规 DBCS Windows 编程	53
7.2	Windows 中的 DBCS 字符	53
第 8 章	输入方法管理员 (IMM)	57
8.1	输入方法系统	57
8.2	输入方法系统的结构	57
8.3	汉字字符流	59
8.4	WINNLS.DLL: 输入方法系统的核心模块	60
8.5	IMEINFO.INI 的内容	61
8.6	应用程序接口	63
8.7	IMP API	63
8.8	IMM API	70
第 9 章	输入方法编辑器 (IME)	79
9.1	简介	79
9.2	数据结构	79
9.3	IME 应用程序接口	80
9.4	IME 的安装	90
9.5	激活及卸载 IME	91
9.6	IME 窗口	91
9.7	IME 热键	91
9.8	IME 状态	91
9.9	窗口及命令消息	92

附录	95
A. IMEPROC_SK0 软键盘的布局	95
B. IMEPROC_SK1 软键盘的布局	96
C. IMEPROC_SK2 软键盘的回调函数	97

第二篇 安装与设备驱动程序改编指南

第一部分 安装指南	99
第 1 章 中文 Windows DDKE 概述	101
1.1 概述	101
1.2 中文 Windows 3.1 的特点	101
1.3 DDKE 的内容	102
1.4 定义	102
第 2 章 开发环境	105
2.1 中文 Windows 3.1 开发环境	105
2.2 中文 Windows 库	105
2.3 中文 Windows 的头文件	105
第 3 章 安装和启动	107
3.1 安装程序:setup.exe	107
3.2 检查 Tools Setup	108
第二部分 设备驱动程序改编指南	109
简介	111
在开始之前应知道些什么	111
关于本指南	111
符号约定	112
第 4 章 中文 Windows 设备驱动程序的结构	115
4.1 概述	115
4.2 Windows 智能字型环境	115
4.3 Windows TrueType 字体	121
第 5 章 中文 Windows 改编概述	123
5.1 概述	123

5.2 字体关联	125
5.3 WIFE 下的驱动程序	136
5.4 有关 DBCS 生效的信息	149
第 6 章 字体驱动程序	153
6.1 WIFE 字体驱动程序	153
6.2 位图字体支持	170
第 7 章 Minidriver	173
7.1 概述	173
7.2 要求	173
7.3 建立 Minidriver	175

第三篇 Windows 智能字型环境

简介	179
使用须知	179
本手册有关事项	179
符号约定	181
第一部分 WIFE 简介	183
第 1 章 概述	185
1.1 WIFE 的设计目标	185
1.2 兼容性	186
1.3 术语定义	187
第 2 章 新的 WIFE 用户界面	191
2.1 WIFE 中的 Control Panel	191
第 3 章 WIFE 体系结构	195
3.1 WIFE 和西文 Windows 的比较	195
3.2 WIFE 模块	197
3.3 字体数据与字体驱动程序之间的关系	203
第 4 章 兼容设备驱动程序	205
4.1 随机存取驱动程序和兼容驱动程序的比较	205
4.2 模块之间的控制流	206

4.3 直接安装兼容设备驱动程序	206
第二部分 字体驱动程序管理员(FDM)接口	207
第5章 概述	209
5.1 术语定义	209
5.2 输入库	210
5.3 初始化时模块的装载次序	210
第6章 模块安装管理员(MIM)	211
6.1 概述	211
6.2 MIM 函数	211
第7章 字体驱动程序接口(FDI)	219
7.1 概述	219
7.2 FDI 函数	219
第8章 字体高速缓存管理员(FCM)	239
8.1 概述	239
8.2 函数	241
第9章 字体驱动程序支持库(MISC)	253
9.1 概述	253
9.2 函数	253
第三部分 字体驱动程序接口	263
第10章 概述	265
10.1 术语定义	265
第11章 字体驱动程序函数	267
11.1 概述	267
11.2 函数	267
第四部分 数据结构和文件格式	287
第12章 背景信息	289
12.1 UBCS——等字节编码系统	289
12.2 字体包句柄	290
12.3 字体环境句柄	290
12.4 枚举类型 FDMEDIA	291
12.5 辅助字符集	291
12.6 类 OS/2 数据类型	292

12.7	特殊换码函数号	292
12.8	字符集	293
12.9	错误代码	294
第 13 章	结构定义	295
13.1	IFIMETRICS 结构	295
13.2	FCM_CHARACTERISTIC 结构	301
13.3	FCM_EXTCHARACTERISTIC 结构	302
第 14 章	文件格式	303
14.1	由概要文件指定 DBCS 代码范围	303
14.2	WIFE 的概要文件	303
第 15 章	其它定义	307
15.1	规范化的包名格式	307
15.2	通用的实用宏	307
附录		311
附录 A	局限性	313
A.1	多语言版本	313
附录 B	WIFE 中系统字体的处理	315
B.1	概述	315
附录 C	符旋转和垂直字体	317
C.1	WIFE 字体模式	317
C.2	字体类型和字体旋转	319
C.3	枚举字体和字体模式 <small>益空印刷厂</small>	322
附录 D	字符属性	325
附录 E	中文 UserFont 支持	327
E.1	概述	327
E.2	函数	327
E.3	UserFont 文件格式	329
E.4	装载 UserFont 文件	332

Table of Contents

Introduction	ix
What You Should Know Before You Start.....	ix
About this Guide.....	ix
Contents.....	ix
Notational Conventions	x

PART 1 Installation Guide

Chapter 1 Overview of the Chinese Windows SDKE	1-1
1.1 Overview	1-1
1.2 Contents of the SDKE.....	1-1
1.3 Hardware and Software Requirements	1-2
1.4 Definitions.....	1-2
Chapter 2 Installing the SDKE	2-1
2.1 Installing the SDKE Software	2-1
2.2 CWin3 Run-Time Libraries	2-2
2.3 CWin3 Header Files.....	2-2
2.4 CWin3 CHELPEX Directory	2-2
2.5 Updating Your CONFIG.SYS and AUTOEXEC.BAT Files.....	2-2

PART 2 Reference

Chapter 3 Architectural Changes for Chinese Windows.....	3-1
3.1 Introduction	3-1
3.2 Functional Summary.....	3-1
3.2.1 Kernel Support.....	3-2
3.2.2 System Utilities and Accessories.....	3-2

3.2.3	Open Architecture for Multiple Fonts	3-2
3.2.4	Open Architecture for Chinese Input Methods	3-3
3.2.5	UserFont Utility Program	3-3
3.2.6	Direct Access Device Drivers	3-3
3.2.7	Accelerator Key Compatibility	3-4
3.3	Input Method Management	3-4
3.3.1	Input Method Editor Management	3-5
3.3.2	Input Method Editors	3-5
	Soft-Keyboard and Mouse Support	3-5
	Chang-Jei Input Method	3-6
	Phonetic Input Method	3-6
	Internal Code Input Method	3-7
	Quick Input Method	3-7
	DA-I Input Method	3-7
	Array Input Method	3-7
	Full Shape Roman Character Input Method Subsystem	3-7
3.4	End User Definable Characters Utility (UserFont)	3-8
3.5	English Windows Application Support	3-8
3.6	Mark, Copy, and Paste Support	3-9
3.7	Creating Chinese Help Files	3-10
Chapter 4	Fonts	4-1
4.1	Font Association	4-1
4.1.1	Introduction	4-1
4.1.2	New Sections in WIN.INI for Font Association	4-1
	[Associated CharSet]	4-1
	[Associated DefaultFonts]	4-2
	[Associated Fonts]	4-2
4.1.3	New Flag in Logfont Structure for Font Association	4-3
4.1.4	New CheckBox in Font Common Dialog for Font Association	4-3