为 Pentium4 的 PC 机移植 VxWorks 6.x (7/8/9) BSP

准备材料

- Pentium4 的主板, 1~2 个 RTL8139 网卡, 9 Pin 的串口线(2 -> 3、3 -> 2、5 -> 5), CF卡(包括 CF转 IDE 的适配器)
- 。 VxWorks 6.x (7/8/9) 安装软件, 主机 PC (Wind XP / Vista / Windows 7)

安装调试步骤

- 1. 在主机的 Windows XP 上安装 WorkBench 开发环境
- 2. 创建 Pentium4 目标机的 BSP
- 3. 基于 BSP 创建目标机引导 VxWorks 的 bootrom 文件
- 4. 将引导加载程序 bootrom 部署到 CF 卡上
- 5. 引导加载程序 boorom 的设置和启动
- 6. 创建 vxWorks 6.9 内核镜像
- 7. 设置网络下载 vxWorks 所需的 ftp 服务器
- 8. 通过以太网(RTL8139)加载 vxWorks 内核镜像来热
- 9. 连接 Target Server
- 10. 创建并下载"Hello World"应用程序镜像
- 11. 在 WorkBench 3.3 中进行"Hello World"应用程序的源代码级调试
- 12. 将 vxWorks 内核镜像部署到 CF 卡上并启动。

注意点

- 。 VxWorks 6.7, VxWorks 6.8 移植的是 Pentium PC
- 。 VxWorks 6.9 移植的是 Pentium4 PC
- 。 当 CF 卡是 ATA (IDE) Primary Master 引导时:
 - 对于 VxWorks 6.7、6.8, DEFAULT_BOOT_LINE 为:

"ata=0,0(0,0)host:/ata0a/vxWorks h=192.168.1.102 e=192.168.1.88

- g=192.168.1.1 u=vx pw=vx f=0x00 tn=x86v67 o=rtl"
- 对于 VxWorks 6.9, DEFAULT_BOOT_LINE 为:

"ata=0,0(0,0)host:/ata00:1/vxWorks h=192.168.1.102 e=192.168.1.88

g=192.168.1.1 u=vx pw=vx f=0x00 tn=x86v67 o=rtl"

1. 在主机的 Windows XP 上安装 WorkBench 开发环境







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Note: VxWorks 6.7、6.8、6.9 的安装方法相同

2. 创建目标机 Pentium4 的 BSP

2.1 创建 BSP 的目录

在 C:\WindRiver\vxworks-6.9\target\config 目录中创建 vt82c693 目录。 (由于没有主板的名称,因此用芯片组的名称来作为 BSP 的名字)

2.2 复制与准备好的主板最相似的 pcPentium4 BSP

复制 C:\WindRiver\vxworks-6.9\target\config\pcPentium4*.*(所有文件)到 C:\WindRiver\vxworks-6.9\target\config\vt82c693 目录下

2.3. 修改 Makefile 文件

2.3.1 修改 Makefile 中的目标机目录,供应商和主板的名称:

TARGET_DIR = vt82c693VENDOR = allVenderBOARD = VT82C693

2.3.2 更改 Makefile 文件中的 rom 大小值设定

ROM_SIZE = 00090000

将上面的设定更改为 8 MByte

ROM_SIZE = 00800000#ROM 空间的字节数

2.4 修改 config.h 文件

2.4.1 修改 config.h 文件的 **DEFAULT_BOOT_LINE**

对于网络启动:

"rtl (0,0) 主机: vxWorks h = 192.168.1.102 e = 192.168.1.88 g = 192.168.1.1 u = vx pw = vx f = 0x00 tn = x86v67"

当 CF 卡是 ATA (IDE) Primary Master 作为引导时 对于 vxWorks 6.7、6.8:

"ata=0,0(0,0)host:/ata0a/vxWorks h=192.168.1.102 e=192.168.1.88

g=192.168.1.1 u=vx pw=vx f=0x00 tn=x86v67 o=rtl"

对于 vxWorks 6.9:

"ata=0,0(0,0)host:/ata00:1/vxWorks h=192.168.1.102 e=192.168.1.88
g=192.168.1.1 u=vx pw=vx f=0x00 tn=x86v67 o=rtl"

#define DEFAULT_BOOT_LINE \
 "fd=0,0(0,0)host:/fd0/vxWorks.st h=90.0.0.3 e=90.0.0.50 u=target"
#elif (CPU == PENTIUM3)
#define DEFAULT_BOOT_LINE \
 "fd=0,0(0,0)host:/fd0/vxWorks.st h=90.0.0.3 e=90.0.0.50 u=target "
#elif (CPU == PENTIUM4)
#define DEFAULT_BOOT_LINE \
 "ata=0,0(0,0)host:/ata00:1/vxWorks h=192.168.1.102 e=192.168.1.88 g=192.168.1.1
u=vx pw=vx f=0x00 tn=x86v67 o=rtl"
#endif /* (CPU == I80386) */

2.4.2 SYS_WARM_TYPE 和 Boot 的相关修改

将热启动设备从软盘修改成 CF 卡

#define SYS_WARM_TYPE SYS_WARM_FD

将上面的语句改成:

#define SYS_WARM_TYPE SYS_WARM_ATA / * 热启动设备 * /

#define SYS WARM TYPE SYS WARM ATA /* warm start device */ #if TRUE #define BOOTROM_DIR "/vxboot #else #define BOOTROM_DIR Vfd0 #endif #if TRUE #define BOOTROM BIN "/vxboot/bootrom.sys" #else #define BOOTROM_BIN BOOTROM_DIR "/bootrom.sys" #endif #if TRUE #define BOOTROM_AOUT "/vxboot/bootrom.dat" #else #define BOOTROM_AOUT BOOTROM_DIR "/bootrom.dat" #endif /* driver and file system options */ #ifndef WRS CONFIG SMP #define INCLUDE FD /* include floppy disk driver */ #undef INCLUDE FD /* include floppy disk driver */ #endif

#define INCLUDE_ATA /* include IDE/EIDE(ATA) hard disk driver */

2.4.3 修改网络驱动组件,选择 INCLUDE_RTL8139_VXB_END

************** 例子 **************** /* Network driver options: VxBus drivers */ whorks. net #undef INCLUDE AM79C97X VXB END #undef INCLUDE_AN983_VXB_END #undef INCLUDE FEI8255X VXB END #undef INCLUDE_GEI825XX_VXB_END #undef INCLUDE MVYUKONII VXB END #undef INCLUDE_MVYUKON_VXB_END #undef INCLUDE NS8381X VXB END #define INCLUDE RTL8139 VXB END #undef INCLUDE RTL8169 VXB END #undef INCLUDE TC3C905 VXB END #undef INCLUDE NE2000 VXB END /* PHY and MII bus support */ #define INCLUDE MII BUS #define INCLUDE GENERICPHY #undef INCLUDE DM9191PHY #undef INCLUDE LXT972PHY #undef INCLUDE MV88E1X11PH #undef INCLUDE RTL8201PHY #undef INCLUDE RTL8169PHY #undef INCLUDE VSC82XXPHY #endif /* INCLUDE VXBUS */ #define INCLUDE END /* Enhanced Network Driver Support */ #undef INCLUDE DEC21X40_END /* (END) DEC 21x4x PCI interface */ #undef INCLUDE_EL_3C90X_END /* (END) 3Com Fast EtherLink XL PCI */ #undef INCLUDE ELT 3C509 END /* (END) 3Com EtherLink III interface */ #undef INCLUDE ENE END /* (END) Eagle/Novell NE2000 interface */ #undef INCLUDE_ULTRA_END /* (END) SMC Elite16 Ultra interface */ #undef INCLUDE GEI8254X END /* (END) Intel 82543/82544 PCI interface */ #undef INCLUDE_LN_97X_END /* (END) AMD 79C97x PCI interface */ #undef INCLUDE BSD /* BSD / Netif Driver Support (Deprecated) */ #undef INCLUDE_EEX /* (BSD) Intel EtherExpress interface */ #undef INCLUDE_EEX32 /* (BSD) Intel EtherExpress flash 32 */ #undef INCLUDE_ELC /* (BSD) SMC Elite16 interface */ #undef INCLUDE_ESMC /* (BSD) SMC 91c9x Ethernet interface */ #undef INCLUDE_AR521X_END /* Atheros AR521X WLAN Support */ #ifndef INCLUDE VXBUS #define INCLUDE_FEI_END /* (END) Intel 8255[7/8/9] PCI interface */ #endif /* !INCLUDE VXBUS */

*************示例结尾*************

2.4.4 修改 NV_RAM_SIZE

*************** 例子 ***************

/* memory addresses, offsets, and size constants */
#if (SYS_WARM_TYPE == SYS_WARM_BIOS) /* non-volatile RAM size */
define NV_RAM_SIZE (NONE)
#else
/* # define NV_RAM_SIZE (0x1000) */
define NV_RAM_SIZE (NONE) /* ysp non-volatile RAM size */
#endif

**************示例结尾**************

2.4.5 修改 SYSTEM_RAM_SIZE 和 ROM_SIZE

#if (VM_PAGE_SIZE == PAGE_SIZE_4KB) /* 4KB page */ # define SYSTEM RAM SIZE (0x02000000) / 32MB minimum 8MB system RAM */ #else /* PAGE_SIZE_[2/4]MB */ /* [2/4]MB page */ # define SYSTEM RAM SIZE (0x02000000) /* minimum 32MB system RAM */ #endif /* (VM_PAGE_SIZE == PAGE_SIZE_4KB) */ #ifdef BOOTCODE_IN_RAM # undef ROMSTART BOOT CLEAR # define ROM_BASE_ADRS (0x00008000) /* base address of ROM */ # define ROM TEXT ADRS (ROM BASE ADRS) /* booting from A: or C: */ # define ROM_SIZE (0x00800000) /* 8MB size of ROM */ #else # define ROM BASE ADRS (0xfff20000) /* base address of ROM */ # define ROM_TEXT_ADRS (ROM_BASE_ADRS) /* booting from EPROM */ # define ROM_SIZE (0x0007fe00) /* size of ROM */ #endif 3. 基于 BSP 创建目标机引导 VxWorks 的 bootrom 文件

3.1 基于 BSP 创建项目(在 Workbench 开发环境中)

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- 🗀 mv6100	~	📾 OObsp.cdf	11KB	CDF 파일
mvl_pxa310hpdk	_	📾 00html, cdf	1KB	CDF 파일
😐 🛅 ocotea		🖬 20bsp.cdf	3KB	CDF 파일
🛅 pcPentium		📷 20comp_tipc_hend, cdf	2KB	CDF 파일
pcPentium2		📾 bootapp, sym	370KB	SYM 파일
🛅 pcPentium3		📾 bootapp, Z, o	375KB	0 파일
🛅 pcPentium4		🚈 bootapp, Z, s	2,762KB	Assemble 📄
i⊞- 🫅 rbtx4938_mipsi2sf		📷 bootinit, o	2KB	0 파일
i∋- 🫅 rbtx4938_mipsi2sfle		📷 bootrom	394KB	파일
⊕ 🛅 rbtx4938_mipsi3		📥 bootrom, bin	390KB	VLC med
i⊒- 🫅 rbtx4938_mipsi3le		h config.h	41KB	C/C++ He
🛅 rdb8323		🛅 configHtml, h	2KB	C/C++ He
		h configInum,h	9KB	C/C++ He
		h configNet, h	5KB	C/C++ He
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- 🛅 rh5500_mipsi3le	_	📷 ctdt, o	1KB	0 파일
		📾 dataSegPad.o	1KB	0 파일
		📷 depend, pcPentium3	118KB	PCPENTI
🛅 sb1250a_1_mipsi64		🖸 hwconf.c	16KB	C Source
		🖬 Makefile	5KB	파일
		🖸 mkboot, c	33KB	C Source
		h) pc,h	15KB	C/C++ He
		🔄 pciCfgIntStub,c	16KB	C Source
- 🫅 sb1480_mipsi64		o pciCfgStub.c	5KB	C Source
simpc		📥 pxeBoot,bin	1KB	VLC med
<u>Ca</u> sp7447		🖬 README	(* ≳. 4KB	
🛅 ti_dm6446evb		🐜 romcard, s	-C.2KB-	FASSEMILIE
- Co vt82c693	~	K		> .;;

4. 将引导加载程序 bootrom 部署到 CF 卡上

4.1 打开 Workbench Development shell 终端

🚳 Device Debug - W	ind River Workbench	
<u>F</u> ile <u>E</u> dit Refac <u>t</u> or <u>N</u> a	vigate Se <u>a</u> rch <u>P</u> roject Tar <u>g</u> et <u>R</u> u	n Ana <u>l</u> yze <u>W</u> indo
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	F 🔄 😫 🜌 •	
dellCpi		🔍 Err 🧔 T 💊
i — 🖆 dellCpi_elt 📼 🕬 bello, VyWorks (W	ind Biyer WyWorks 6.7 Downloadable Kr	
pcPentium3	9	Generation Platform:
	New	Command.
	Open in <u>N</u> ew Window	
	🗈 Сору	Ctrl+C
	💼 <u>P</u> aste	Ctrl+V
	🔀 <u>D</u> elete	Delete
	Rena <u>m</u> e	F2
	Move	
	Attributes	
	import	
	Export	
	Open Workbench Development Sh	ell
	Build Project	Ctrl+Shift+A
	Ruild Options	
	Balla Options S Befresh	F5
	Close Project	
	Close <u>U</u> nrelated Projects	
	Project References	· · · ·
📕 Remote Systems 🔀	Validate	
¥ №	O Run As	•
E E Local	🏇 Debug As	
🖶 🦥 Wind River Reg	, i <u>e</u> am Compare With	
🔤 🗔 Local Shells	Restore from Local History	
🖶 扰 vxsim0 (Wind Rive	<u>S</u> ource	•
🖶 📲 VxSim Lsmp (Win E 📲 VxWorks6x_192.16	P <u>r</u> operties	Alt+Enter
	Index	

4.2 用 mkboot 创建启动盘

cd C:\WindRiver\vxworks-6.9\target\config\vt82c693C:\WindRiver\vxworks-

6.9\target\config\vt82c693>mkboot f: bootrom.bin

注: f: 盘为 CF 卡在主机 PC 上的盘符



.x05.11



5. 引导加载程序 boorom 的设置和启动

5.1 串口端口 COM 的设置,波特率 9600,8 位数据为,1 位停止位

VxWorks 俱乐部

🕲 Device Debug - Wind Riv	er Workbench	
<u>File E</u> dit Refactor <u>N</u> avigate	Se <u>a</u> rch <u>P</u> roject Target <u>B</u> un Analyze <u>W</u> indow <u>H</u> elp	
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pcPentium3		ið 😿 🐵
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	View Settings:	
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<	Stop Bits:	
📕 Remote System 🕱 📃 🗆	Parity: None	· · · · · · · · · · · · · · · · · · ·
\bigtriangledown	Flow Control: None	
📽 M M 🕸 🗞	Timeout (sec): 5	2 3
E Eccal	OK Cancel	▼
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Local Shells		
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🗄 🕂 😹 VxWorks6x_192, 168, 1, 88 (\		
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No Connection Selec	ted 32M of 56M 👔	
5.2 甲口终端的题		
XV		
-		

VxWorks 俱乐部



5.3 [VxWorks Boot]: 用 p 命令查看引导参数

Kiles.

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👰 Error Log 🖉 Tasks 🖉 Terminal 1 🙁 🛛 🔝 Problems) 📰 Properties) 💷 Build Console) 💷 Console
                                                                                         Serial: (COM4, 9600, 8, 1, None, None - CONNECTED)
                                                                  88 💦 🛅 🏣 🖉 - 🔛 - 💥
Copyright 1984-2008 Wind River Systems, Inc.
                                                                                            ^
CPU: PC PENTIUM3
Version: VxWorks 6.7
BSP version: 2.0/10
Creation date: Aug 19 2010, 13:03:05
Press any key to stop auto-boot...
 7
[VxWorks Boot]: p
boot device : ata=0,0
unit number : 0
unit number . .

processor number : 0

host name : host

file name : /ata0a/vxWorks
inet on ethernet (e) : 192.168.1.88
host inet (h) : 192.168.1.102
gateway inet (g) : 192.168.1.1
user (u)
                      : VX
ftp password (pw) : vx
flags (f) : 0x0
target name (tn) : x86v67
other (o) : rtl
                                                                              Si 北南南北
[VxWorks Boot]:
对于 VxWorks 6.9, 修改成如下:
[VxWorks Boot]: p
boot device : ata=0,0
unit number : 0
processor number : 0
host name : host
file name : /ata00:1/vxWorks
inet on ethernet (e): 192.168.1.88
host inet (h): 192.168.1.102
gateway inet (g): 192.168.1.1
user (u) : vx
ftp password (pw) : vx
flags (f) : 0x0
target name (tn) : x86v69
other (o) : rtl
```

[VxWorks Boot]:

5.4 [VxWorks Boot]: 用 c 命令修改 Boot Parameter 将启动设备更改为 rtl0 -> (RTL8139) 以太网 将加载的文件名更改为 vxWorks

```
👰 Error Log 🕢 Tasks 🔎 Terminal 🛛 🙁 💽 Problems) 🔲 Propertie 🗎 🕎 Build Con) 📮 Console
                                                                          Serial: (COM4, 9600, 8, 1, None, None - CONNECTED)
                                                      N N 📑 🛅 🖓 -
                                                                           30
[VxWorks Boot]: c
                                                                            ^
'.' = clear field; '-' = go to previous field; ^D = quit
processor number : 0
host name : host
inet on ethernet (e) : 192.168.1.88
inet on backplane (b):
host inet (h) : 192.168.1.102
gateway inet (g) : 192.168.1.1
user (u) : vx
ftp password (pw) (blank = use rsh): vx
flags (f)
             : 0x0
target name (tn)
                    : x86v67
startup script (s) :
other (o)
                     .
NOTE: Bootline not saved to NVRAM
Error reading target netmask information.
Defaulting netmask to 0xFFFFFF00.
Using default network mask = 0xFFFFFF00
                                                                 3合 北南南北
[VxWorks Boot]:
[VxWorks Boot]:
                    对于 VxWorks 6.9, 修改成如下:
[VxWorks Boot]: p
boot device : rtl0
unit number : 0
processor number : 0
host name : host
file name : vxWorks
inet on ethernet (e) : 192.168.1.88
host inet (h): 192.168.1.102
gateway inet (g) : 192.168.1.1
user (u) : vx
ftp password (pw) : vx
flags (f) : 0x0
```

target name (tn) : x86v69 other (o) : rtl [VxWorks Boot]:

6. 创建 vxWorks 6.9 内核镜像

Device Debug – Wind River Workbench			×	Coursests WMy Pictures Www.Works6.7 Porting Pe.	- CX
Elle Edit Refactor Navigate Search Project Target Br	in Analyze Window Help		U	589(d)	At .
1日日 - 11日 日 - 11日 - 11	· · · · · · · · · · · · · · · · · · ·	Terformanc *	 * * icuments and Settings ************************************	D -	
🔁 Proje 🙁 🥶 Debu 🧮 🗆		Debug 12 - D	0.00	acumentsWMy PicturesWvxWorks6,7 Porting Pentium	OIE
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Open in <u>N</u> ew Window	🛫 Build Target		18H	FTP Server ##.bmp FTP Server Enable Logging.bmp	376K8 370K8
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1/시작 한 2 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	UtraEdt-32 - LW S Device Debug - W D CrWOod	uments a 🔛 veWorks 6.7 Po	antin 📴 No log file open	A 須 日 🔇	🖉 24 244

6.1 创建 vxWorks 6.9 项目

6.2 vxWorks项目组件的配置

Description	Name	Туре	Value	
Multi-OS	FOLDER_MULTIOS			
This BSP does not have MIPC Multi-OS support	INCLUDE_MOB_BUS_U,,,			
🙀 Network Components (default)	FOLDER_NETWORK			
🖃 🗃 Common Network Stack Infrastructure	FOLDER_COMMON			
Common network infrastructure (default)	INCLUDE_COMMO			
💕 IPNet Stack	INCLUDE_IPNET_S			
🗉 🗃 Distributed Systems Infrastructure	FOLDER_DSI			
🖃 🗭 Network Applications (default)	FOLDER_NET_APP			
🗉 翸 DHCP Components	FOLDER_DHCP			
🗉 🗭 FTP Components	FOLDER_FTP			
🗉 🗭 IPv4 AutolP Components	FOLDER_AUTOIP			
🗉 🗐 IPv6 RADVD Components	FOLDER_RADVD			
🗉 🞒 Network Host Utilities	FOLDER_NET_HOS			
🗉 🗭 PING Components	FOLDER_PING			
🗉 翸 RIP Components	FOLDER_RIP			
🗉 🎒 RPC Components	FOLDER_RPC			
🗉 🗭 Remote Access Components (default)	FOLDER_REMOTE			
🗉 🗭 SNTP Components	FOLDER_SNTP			
🗉 🞒 TELNET Components (default)	FOLDER_TELNET			
🗉 🎒 TFTP Components	FOLDER_TFTP			
🗉 🟉 DNS Client	INCLUDE_IPDNSC			
🗉 🍜 ProxyARP	INCLUDE_IPPROXY			
🖃 🗭 Network Authentication Components	FOLDER_NET_AUTH			
🗉 🖶 IPCOM authentication configurations	SELECT_IPCOM_AUT,			
💕 Use Authentication	INCLUDE_IPCOM_U			
🗉 🗭 Network Core Components (default)	FOLDER_NET_CORE			
🗉 🗭 Network Device Components (default)	FOLDER_NET_DEV			
🗉 🗭 Network Private Components (default)	FOLDER_NET_PRIV			
🗉 🎒 Network Protocol Components (default)	FOLDER_NET_PRO			
🗉 🗭 Network Socket Components (default)	FOLDER_NET_SOC			
🗉 🗭 Network Utility Components (default)	FOLDER_NET_UTILS			
🗉 🗃 PPP Components	FOLDER_NET_PPP			
🗉 🚝 QoS Framework	FOLDER_NET_QOS			
) 🗃 Startup Sequence and Initialization Components	FOLDER_SSI			
🗃 application components	FOLDER_APPLICAT			
🗃 development tool components (default)	FOLDER_TOOLS			
🗃 🗃 hardware (default)	FOLDER_HARDWARE			
a 🗃 obsolete components	FOLDER_OBSOLETE			
🗃 🥵 operating system components (default)	FOLDER_OS			
ynopsis Log				
Log			120	हा हहा

7. 设置网络下载 vxWorks 所需的 ftp 服务器 7.1 启动并运行 FTP 服务器



7.2 FTP 服务器的配置

Eile <u>E</u> dit <u>V</u> iev	Logging Options		
	✓ Enable Logging Log: ✓ Gets ✓ Puts ✓ Logins Anon. Logins Commands ✓ Warnings	OK Cancel Help	· 论 北南南北
For Help, press 7.3 FTP 服务器	用户名,密码,主目录的设定	N.	1 socket

User Name: vx Password: vx

Home Directory: C:\WindRiver\WB31_VxWorks\vt82c693_rtl8139\default(将路径设置为创建 vxWorks ELF 镜像文件的文件夹)

7.4 FTP 服务器主机地址的设置

主机地址: 192.168.1.102 点击 Add/Update 进行更新

💁 No log file ope	Host Security Settings		
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>L</u>	● Allow ● Deny	Close Add/Update Delete Help	
For Help, press F1	Specific action Host address (numeric only)	C Deny	した した した に 前 北 う に し 、 、 、 し 、 、 、 、 し し 、 し し 、 し し し し

8. 通过以太网(RTL8139)加载 vxWorks 内核镜像并执行 8.1 输入 @进行下载并引导 [VxWorks Boot]: @

🗕 Device Debug - Wind Riv	er Workbench	
File Edit Refactor Navigate	Search Project Target Run Ana <u>l</u> yze Window Help	
i mi ti • 🔚 📄 🐘 i 🔉 V i 🖻 🎕 투 🗠 🅸 i →i i Vi	ヽ ! थ ! 歩 • O • Q • ♥ • ◀ • ! D • 5 • 5 • 5 •	🖹 📂 Performanc » 🛸 Memory A
🍋 Proje 🙁 🥭 Debu 🗖 🗖		🕸 Debug 🛛 🔍 🗖 🗖
E 🔄 🖆 🐼 - ▽ - 🗳 dellCpi - 🚰 dellCpi_elt	🍳 Error Log 🕢 Tasks 🔎 Terminal 🙁 💽 Problems 🔲 Propertie) 📟 Build Con 🖶 Console 🖓 🖬 Serial: (COM4, 9600, 8, 1, None, None - CONNECTED) 🛛 🖓 💦 🖬 🚛 🦉 - 📽 - 💥	▽
🗄 🖽 hello_VxWorks (Wind Rive	[VxWorks Boot]: c	3. O. K = 5
	'.' = clear field; '-' = go to previous field; ^D = quit	i> <u>F</u> 🗇
⊞ 🛃 प82c693_nt8139 (Wind Rive	boot device : rtl0 processor number : 0 host name : host file name : vxWorks inet on ethernet (e) : 192.168.1.88 inet on backplane (b): host inet (h) : 192.168.1.102 gateway inet (g) : 192.168.1.1	● Breakpoi 🛛 🗖 🗸
	user (u) : vx ftp password (pw) (blank = use rsh): vx flags (f) : 0x0 target name (tn) : x86v67 startup script (s) : other (o) :	
Wind River Registric Cocal Files Local Shells Wind River Vy	NOTE: Bootline not saved to NVRAM Error reading target netmask information. Defaulting netmask to 0xFFFFFF00. Using default network mask = 0xFFFFFF00 [VxWorks Boot]: [] [VxWorks Boot]: []	★ ■ & • □ @ # ¥ & ○ 北南南北=
I ● Serial: (COM4, 9600, 1)	3, 1, None, None - CONNECTED) 32M of 56M 🔟	

🔞 D	Device Debug - Wind River Workbench	
File	Edit Refactor Navigate Search Project Target Run Ana <u>l</u> yze Window Help	
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2	Loading 2125232	
\square	Starting at 0x308000	
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J.	Adding 6492 symbols for standalone.	ľ
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]]]]]]]]]]]]]]]]]]]]]]] Development System	
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]]]]]]]]]]]]]]]]]]]]]]]]] KERNEL: WIND version 2.12	
	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	
	CPU: PC PENTIUM3. Processor #0. Memory Size: 0x76fa000. BSP version 2.0/10.	
	Created: Aug 18 2010, 10:02:47	
	ED&R Policy Mode: Deployed WDB Comm Tvpe: WDB COMM END	
	WDB: Ready.	

http://

- -💇 Error Log 🖉 Tasks 💭 Terminal 1 🙁 🔪 Problems) 🔲 Properties) 📟 Build Console) 📮 Console Serial: (COM4, 9600, 8, 1, None, None - CONNECTED) N N 🗖 🖬 🖓 -📑 = 💥 ^

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Memory Size: 0x3fefa000 (~1022Mb). BSP version 6.9/0. Created: Jul 29 2012, 16:16:44 ED&R Policy Mode: Deployed WDB Comm Type: WDB_COMM_END \rightarrow devs drv name 0/null 1 /tyCo/0 1/tyCo/12 /aioPipe/0x45d6d60 3 /ata00:1 8 host: 9/vio value = 25 = 0x19

, while here -> ataShow device type : ATA/ATAPI-1 ATA device XBD device t: 0x1drive type : Direct-access device removable media: NO intCount =254 intStatus =0x58 ataTypes cylinders =1966 heads =16 sectorsTrack =63 bytesSector =512 precomp =0xff ataParams cylinders =1966 heads ≤ 16 config = 0x44a specConfig = 0x0sectorsTrack =63 serial number =TSS25015070703205651 rev =20070312 model =CF 1GB capacity =0x000001e3d20 sectors multiSecs =0x8001 capability =0x300 valid =0x3 curr-cyl =1966curr-head =16 curr-sector =63 capacity0 = 0x3d20 capacity1 = 0x30multiSet =0x100 sectors0 =0x3d20 sectors1 =0x1e singleDma =0x0 multiDma =0x407 advancedPio =0x3 cycleDma =120 cycleMulti =120 cyclePio-wo =120 cyclePio-w =120 Capability MULTI: TRUE, IORDY: FALSE, DMA: TRUE, LBA: TRUE multiSectors =0x1 pioMode =0x2

KS.net

singleDma =0x0 multiDma =0x2 ultraDma =0xff Configuration rwMode =PIO_W_2 rwBits =16BITS value = 0 = 0x0 -> ls "/ata00:1" /ata00:1/vxWorks /ata00:1/BOOTROM.SYS value = 0 = 0x0

->ioHelp

cd "path" Set current working path pwd Print working path ls ["wpat"[,long]] List contents of directory ll ["wpat"] List contents of directory - long format lsr ["wpat"[,long]] Recursive list of directory contents llr ["wpat"] Recursive detailed list of directory rename "old", "new" Change name of file copy ["in"][,"out"] Copy in file to out file (0 = std in/out) cp "wpat", "dst" Copy many files to another dir xcopy "wpat", "dst" Recursively copy files mv "wpat","dst" Move files into another director xdelete "wpat" Delete a file, wildcard list or tree attrib "path", "attr" Modify file attributes xattrib "wpat", "attr" Recursively modify file attributes chkdsk "device", L, V Consistency check DOS file system dosfsDiskFormat "device" DOSFS file system format. hrfsDiskFormat "device", N HRFS file system format. commit "device" Commit current transaction

9. 连接 Target Server

Application Development - hello_Vx	Wo	rks/hel	lo.c -	Wind R	iver Wo	rkbench
<u>F</u> ile <u>E</u> dit Refac <u>t</u> or <u>N</u> avigate Se <u>a</u> rch <u>P</u> roj	ect	Target	<u>R</u> un	Ana <u>l</u> yze	<u>W</u> indow	<u>H</u> elp
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陷 Project Expl 🛛 📄 File Navigat 🖵 🗖	c	💊 Laur	nch De	fault Regis	try	
E 🔄 🔛 🖉 - 🏹		Nº C <u>o</u> ni	nect			example '
dellCpi		🞝 D <u>i</u> sc	onnect	t		
dellCpi_elt		Boci	at conr	norted Tar	not	ver Syste
😑 😅 hello_VxWorks (Wind River VxWorks 6,		Kill -	Fordot	Coruor	ger	
😨 🏭 Build Targets (SIMNTdiab - debug)		Chai	rarget Tora	oerver of Convord		
🛛 🍲 Wind River Launches		500	w Tary	et Server t	_09	
🗈 📸 Includes		⇒i Host	Shell		16-3.	
l lello,c		ai Attar	h Hoe	t Shell	YO :	化前角化
📔 🔄 📄 sample.txt		海~ Allal		Conell		

🛿 New Connection	
Select Remote System Type	
System type:	
type filter text	
General VxWorks 6,x Wind River VxWorks 6,x Core Dump Connection Wind River VxWorks 6,x Simulator Connection Wind River VxWorks 6,x Target Server Connection	
Ktles./	

https://www.vxworks.net

VxWorks 俱乐部

New Connection		
Target Server Options Review and customize the target server op	otions.	
Backend settings		
Backend: wdbrpc	Processor: (default from target)	Select,
Target name / IP address: 192,168,1,88	Checl	k Port:
Kernel image		
 File path from target (if available) 		
O File:		Browse
Bypass checksum comparison		
Advanced target server options		
Verbose target server output		
Options: -R C:/WindRiver/WB31_VxWork	s -RW -Bt J -A	Edit
tgtsvr -V -R C:/WindRiver/WB31_VxWorks	-RW -Bt 3 -A 192,168,1,88	 ▲
0	< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	
http://w		

Starget Connection
Target Server Options Review and customize the target server options,
Name VxWorks6x_192,168,1,88 Shared:
Associated target platform: Wind River VxWorks 6,7
Target Server Options Object Path Mappings Target State Refresh Debug Options Backend settings Backend: wdbrpc Processor: (default from targ Select, Target name / IP address: 192,168,1,88 Check, Port:
Kernel image ○ File path from target (if available) ● File: ndRiver₩WB31_VxWorks₩vt82c693_rt18139₩default₩vxWorks ▼ Bypass checksum comparison Advanced target server options ✓ Verbose target server output Ontions: -B C:/WindBiver/WB31_VxWorks -BW -Bt 3 -A
Command Line:
tgtsvr -V -R C:/WindRiver/WB31_VxWorks -RW -Bt 3 -c C:\WindRiver\WB31_VxWorks\Vt82c693_rtl8139\U22694default\VxWorks -A 192,168,1,88
の OK SCOMBRIN
KCK

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Here vozcoss_niorss (white niver vxworks 6,7 image Pr	<u>R</u> eset connected Target Kill Target Server Show Target Server Log T <u>a</u> rget Tools	•
	№ Connect 'VxWorks6x_192, 168, 1, 88'	
	😽 Disconnect "VxWorks6x_192,168,1,88"	
📕 Remote Systems 🕱 🛛 🙀 Kernel Objects	R System Viewer Configuration	
	M Triggering	
	Attach Code Coverage Analyzer	
🖉 🚡 🚳 Wind River Registries	Attach Memory Analyzer	
🗉 🐔 Local Files	Attach Performance Profiler	
	Bafrash Properties	
Wind River VXWorks 5, ()		化南南北一
Average Ave	<u>P</u> roperties	Alt+Enter

10. 创建并下载"Hello World"应用程序镜像

<u>N</u> ew	۱.	Project	
Open in <u>N</u> ew Window	Ctrl+C Ctrl+V Delete	 Image: Build Target Image: File Image: File from Template Image: Folder 	
Rena <u>m</u> e Mo <u>v</u> e Attributes	F2	Wind River Workbench Project	
Import Export Open Workbench Development Shell		Image Project Image Project <td< td=""><td></td></td<>	
 Build Project Rebuild Project Build Options 	Ctrl+Shift+A	S VxWorks Shared Library Project VxWorks Source Build (Kernel Library) Project	
Retresh Close Project Close <u>Unrelated</u> Projects Project References	F5	Native Application Project Example	
Debug VxWorks Kernel Task ☆ Debug VxWorks Kernel Task ぜ Download VxWorks Kernel Task		<u> ⊡° O</u> ther	Ctrl+N
Validate ▶ Bun As ▶ Debug As ♥ Download Tgam Comp <u>a</u> re With Restore from Local Histor <u>y</u> <u>S</u> ource			✓ ● ✓
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Index	•		20 Vi -

🔇 New Example		
Select a wizard Creates a new VxWorks downloadable kernel mod	ule sample project	
Wizards: type filter text Image: Status of the state of the s	ample Project nple Project ct	
Show All Wizards,		
0	< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	



```
🖻 hello,c 🙁
                                                             /* hello.c - hello world example */
  /* Copyright 2004 Wind River Systems, Inc. */
  /*
  modification history
  01a,07oct04,f_b added
  */
  #include <stdio.h>
  int main(void)
  Ł
     printf("Hello World!\n");
     return 0;
  }
                                                     いた 北南南北
  <
```

11. 在 WorkBench 3.3 中进行"Hello World"应用程序的源代码级 调试





12. 将 vxWorks 内核镜像部署到 CF 卡上并启动

将生成的 vxWorks 文件复制到 CF 卡中,并修改启动参数

3

```
👰 Error Log 🖉 Tasks 🔎 Terminal 1 🕱 🛛 🔝 Problems) 🔲 Properties) 💷 Build Console) 📮 Console)
                                                                               Serial: (COM4, 9600, 8, 1, None, None - CONNECTED)
                                                           88 💦 🧰 🏣 🖉 - 🖬 - 💥
Copyright 1984-2008 Wind River Systems, Inc.
                                                                                  ^
CPU: PC PENTIUM3
Version: VxWorks 6.7
BSP version: 2.0/10
Creation date: Aug 19 2010, 13:03:05
Press any key to stop auto-boot...
 7
[VxWorks Boot]: p
boot device : ata=0,0
unit number : 0
processor number : 0
host name : host
file name : /atag
                    : /ata0a/vxWorks
inet on ethernet (e) : 192.168.1.88
                 : 192.168.1.102
host inet (h)
gateway inet (g)
                    : 192.168.1.1
user (u)
                    : VX
ftp password (pw) : vx
target name (tn) : x86v67
                                                                     😳 北南南北
[VxWorks Boot]:
输入@从 CF 卡引导并启动 vxWorks
[VxWorks Boot]: @
```