Badam Halwa

of

Embedded Systems

Version 1.1

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February 2009

System Architecture

Applications
Middleware
Operating System
Hardware

Compilation

Cross-Compilation

Build

... machine you are building on

Host

... machine you are building for

Target

... machine that GCC will produce code for

Building Toolchain

Build	**x86**	**x86**	**sparc**
Host	**x86**	**x86**	**x86**
Target	**x86**	**arm**	**arm**
	Native	**Cross**	**Canadian**

Interpretation

Where is the

Badam Halwa?

Static Library

libopcodes.a

S-h-a-r-e-d Library

libopcodes-2.17.so

von Neumann architecture

Harvard architecture

Micro**controller**

8051

Micro**processor**

ARM

Intel

SoC

Atmel AT91RM9200 ARM920T
Cirrus Maverick EP9307
STMicroelectronics
“Nomadik”
TI OMAP2410

CISC

Intel Pentium
Motorola 68000
VAX
PDP-11

RISC

ARM
Xscale
PowerPC
SPARC
MIPS
AVR

Booting

Hard disk

Flash

Network

USB

RAM

BIOS

Bootloader

u-boot

RedBoot

Bootloader
Kernel
Ramdisk
Storage

Monolithic Kernels

Linux

BSD

Microkernels

GNU Mach

L4

Memory-mapped I/O

Port-mapped I/O

Are you going to give the

Badam Halwa

or not?


0x0000 000c
0x0000 0000
Little Endian
MSB
LSB
0x0000 0009
0x0000 0000
naidnE giB
MSB
LSB

Process

T h r e a d s

System calls

open()
close()
read()
write()
exec()
fork()
kill()

Block-ing

Non-blocking

Synchronous

Asy nchron ous

IPC

Pipes
FIFO
Mutex
Semaphores
Message Queues
Shared Memory

Polling

POP fetch e-mail

Interrupts

Ethernet

Keyboard

74 68 61 6E 6B

79 6F 75