

Getting Started

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Basic Facts

- Free & Open Source Software Library
- Library: routines you can use
- GNU software framework & tools
 - gcc : GNU compiler collection
 - Make & related tools
- Compile a program: use “make” command to trigger process that
 - translates *.h and *.m into *.o,
 - executable program

Where do you stand?

- Novice Programmer? Swarm's a good way to learn
 - Get a good book on C:
 - Kochan, *Programming in ANSI C*
 - Kernighan & Richie: *The C Programming Language*
 - Work hard on 1st part of Swarm Tutorial
- Intermediate: learn ideas of Object-Oriented Programming
- Java users: still need to master Obj-C Swarm

Motivate Yourself by Example Programs

- Find working / published examples
- Dedicate yourself to understanding (& fixing !) them
- Read every line of code
- Explore variations

First, you must install Swarm libraries

- Building requires installation of many programs you might not have
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- Easier to install a “pre-built” binary package for your operating system

Linux

With the RPM package manager, install

- hdf5
- blt
- swarm
- jdk-1.4.2 (from Sun javasoft)
- swarm-jdk (optional)
- swarm-debuginfo (optional)
- swarm-static (optional)

Windows

- Download setup.exe
- Run setup.exe, choose “download packages”
 - browse through selected packages
 - do not de-select any!
 - add some, such as “wget” or “vim”
- Run setup.exe again, choose “install from local directory”
- Choose target directory WITH NO SPACES, such as [c:\cygwin](#)
- OK to update Cygwin against other repositories

Gathering Tools

- Make sure you have a good editor:
 - Emacs
- gdb : The GNU debugger

Web sites to remember

Swarm Development Group:

<http://www.swarm.org> (old)

<http://wiki.swarm.org> (new)

My Swarm HQ:

<http://lark.cc.ku.edu/~pauljohn/Swarm>

Swarm packages for Linux users

Links to many resources (discussed next)

Wiki has potential as “clearinghouse” for
Swarm info (but requires user effort)

Gather Manuals

Put copies in ~/swarm/docs

- The “Objective-C” book in pdf form
- The reference guide for Swarm
 - Don't take the source code for the guide
 - Look for a bland name like “set-html-2.2.tar.gz”
- Swarm User Guide
 - A [immodesty alert] pretty good discussion of Swarm in Objective-C
 - Look for it in html or postscript or pdf format
- SwarmOnlineFaq
- Keep a copy of the Swarm Source code, even if you don't compile Swarm

Join Email Lists

- swarm-support and swarm-modelling (via www.swarm.org)

Swarmapps

- Swarmapps-objc is a tar.gz file containing the Swarm Tutorial as well as other demonstration programs.
- Most recent official release:
 - `swarmapps-objc.2.2-2.tar.gz`

Read through the Swarm Tutorial

- Steps from elementary C to the design of Swarm models.
- Recently added elements
 - “batch” processing of simulations
 - parameter classes & command line arguments
 - data collection

Shop for working programs

- Swarm changes, programs change, not all work all of the time
- Get programs from authors or on the web
- Swarm ftp site has
 - apps/objc/sdg apps/objc/contrib
 - apps/java/sdg apps/java/contrib
- Make sure a program compiles & runs before you exert any effort on it.
- If you find a program is out of date, contact the author directly. Don't be bashful.

Small Working Examples

- Marcus Daniels (SDG) wrote many small programs that illustrate usage of specific Swarm elements.
- Best way to learn “how to” use a particular thing.
- Best way to get help and report bugs
- These and others are collected in the WorkingExampleCode directory referred to in SwarmFAQ