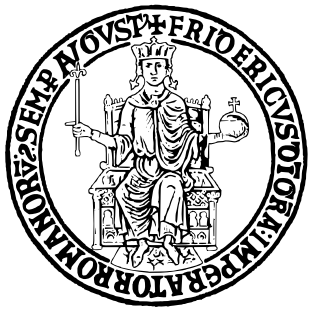
Università degli Studi di Napoli Federico II

Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione



Parallel and Distributed Computing submissions

Giuliano Aiello

2024

Contents

Part I

First part

Chapter 1

Prolusion

1.1 TBD

`main.c` Supercomputing is a way to solve a problem by using a supercomputer. The term "supercomputer" refers to a system that provides the most high performances, in that exact moment ("that moment" is specified because, as history has taught, today's enhanced technology is tomorrow's ordinary/outdated tool[1]). Performance is measured by the needed time to solve a particular application.

This is a citation in a footnote: [2].

Here is a glossary word: bug

1.2 Goal

This document provides a comprehensive overview of a project developed in `C`, consisting of multiple modules delivered in incremental phases. The purpose of the project is to experiment parallel computing techniques and occasionally exploiting High Performance Computing.

1.3 Environment

The project was entirely developed on a macOS system, with the help of Xcode IDE.

1.4 TBD

Most parts of the `main.c` files are provided by the project supervisor.

[1] In 80s, Cray 1 (100 Mflops) performed a calculation in one year. Nowadays (2023), the same calculation is performed in less than 2 µs by Frontier (1.6 Eflops)

[2] [Mar09], pp 123

1.5 Build

1.5.1 Xcode

1.6 Figures

1.6.1 Option inkscapelatex

This is an imported SVG with LaTeXembedded text.

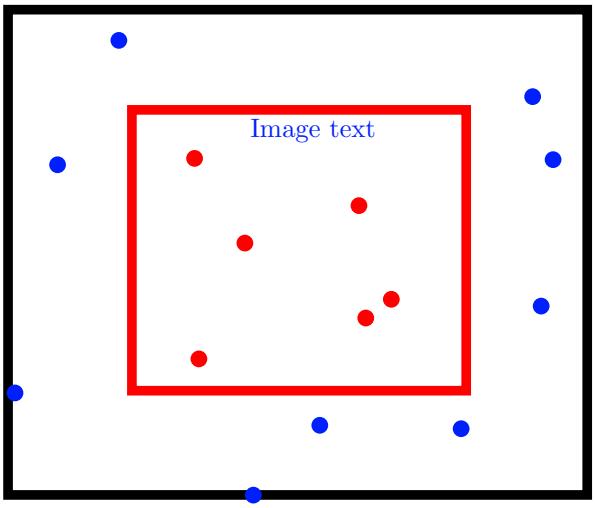


Figure 1.1: *True inkscapelatex option*

This is an imported SVG without LaTeXembedded text.

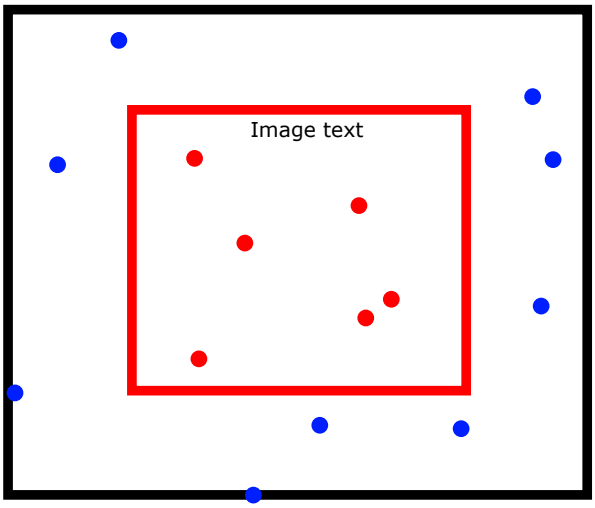


Figure 1.2: *False inkscapelatex option*

Bibliography

[Mar09] Robert C. Martin. *Clean code: A handbook of Agile Software Craftmanship*. Prentice Hall, 2009.

Glossary

bug Possibile causa di una failure di un software. 3

Acronyms

HPC High Performance Computing 3

IDE Integrated Development Environment 3