



Have your Cake and Eat it Too:

GPS: The GNAT Programming System IDE



When I Say Ada What Do You Think of ?



When I Say Ada Do You Think of ...



**Reliable, safe, secure
programming language**



Or Do You Think of ...



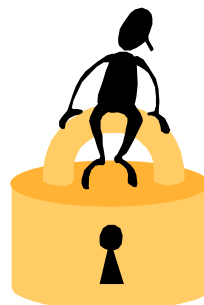
- **Cool, friendly, widely-available development environment**



Soon You Should be Thinking of Both



**Reliable, safe, secure
programming language**



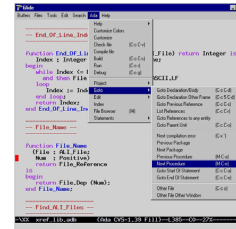
 **Cool, friendly, widely-available
development environment**



GNAT & Programming Environments

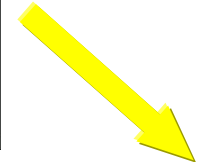
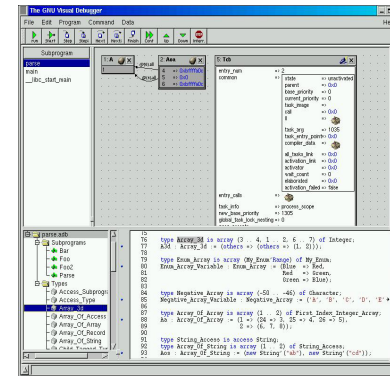
▶ GLIDE

- Emacs-based environment
- Powerful but Emacs-bound appeal



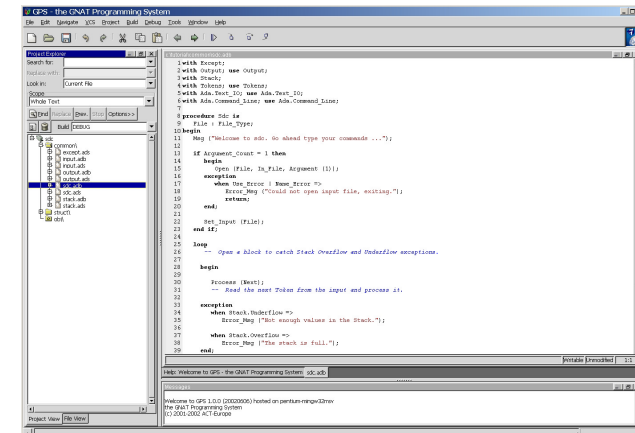
▶ GVD

- State-of-the-art GUI-based debugger



▶ GPS

- Widely available Ada 95 IDE
- Easy to use by professionals & students
- Allows to develop & maintain large systems
- Allows to develop simple student projects
- ... often a contradictory requirement in the Ada development arena





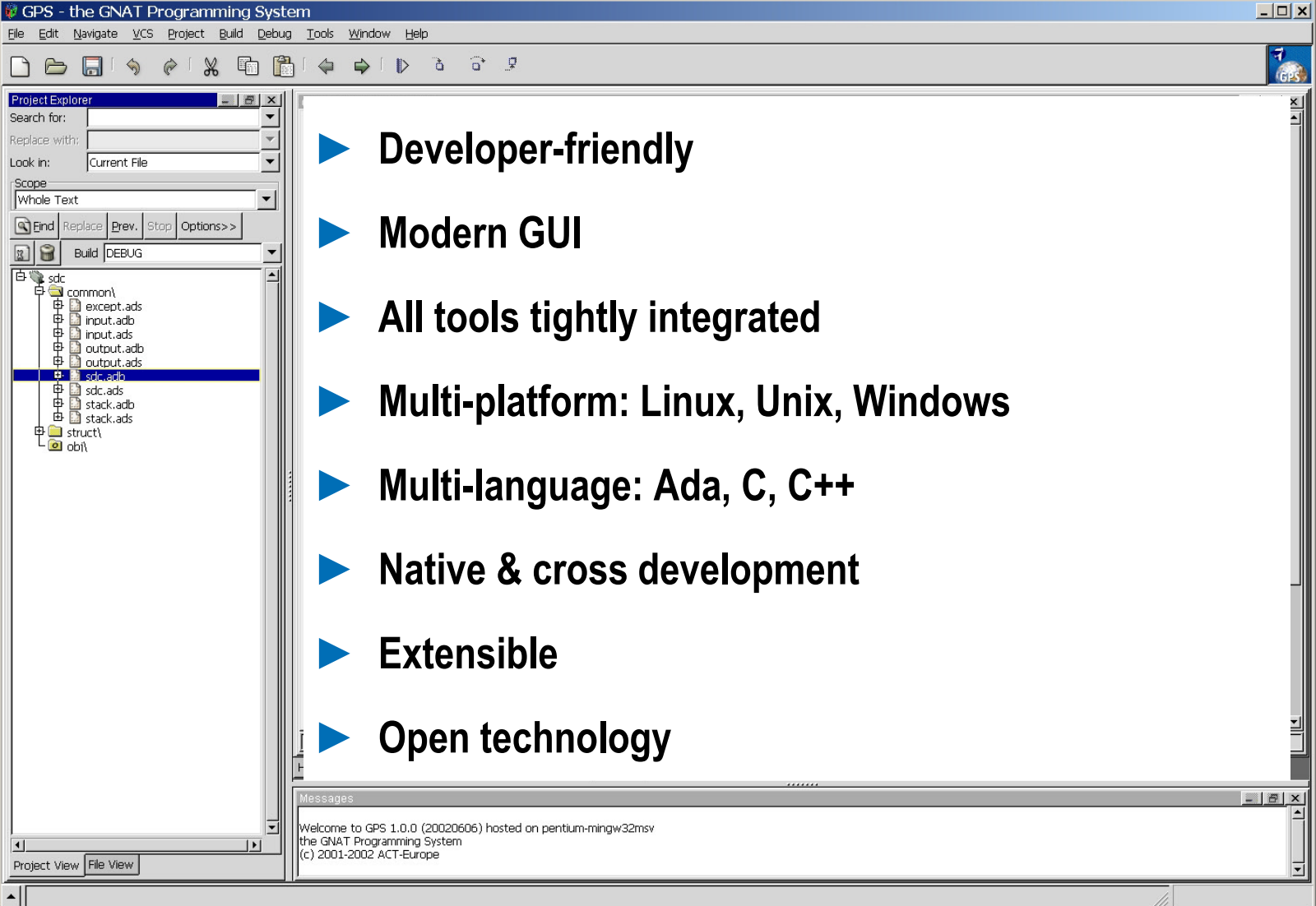
The GNAT Programming System

Develop Applications

Maintain Sources

Navigate through Code

GPS: The GNAT Programming System



- ▶ **Developer-friendly**
- ▶ **Modern GUI**
- ▶ **All tools tightly integrated**
- ▶ **Multi-platform: Linux, Unix, Windows**
- ▶ **Multi-language: Ada, C, C++**
- ▶ **Native & cross development**
- ▶ **Extensible**
- ▶ **Open technology**

GPS: The Programmers' Companion

▶ **Developer-friendly**

- Intuitive interface
- Easy to learn and use
- Allows to develop, build, maintain large complex systems

▶ **Modern GUI**

- Same look'n'feel for all tools and on all platforms
- Can plug your favorite look'n'feel (e.g. Windows)

▶ **All software-engineering tools are tightly integrated**

- Tools interact in a coordinated fashion
- Launch all tools from the same interface
- User's extensions tightly integrated

GPS Tools

- ▶ **Language sensitive editor**
- ▶ **Source code navigation**
- ▶ **Source-level debugger**
- ▶ **Project, dependency & call graphs**
- ▶ **Version control** (RCS, CVS, ClearCase, ...)
- ▶ **Project & configuration manager**

- ▶ **Class, type & instantiation graphs**
- ▶ **Unit testing**
- ▶ **Reformatting tool**
- ▶ **Documentation generator**
- ▶ **Metrics**
- ▶ **Refactoring tool**

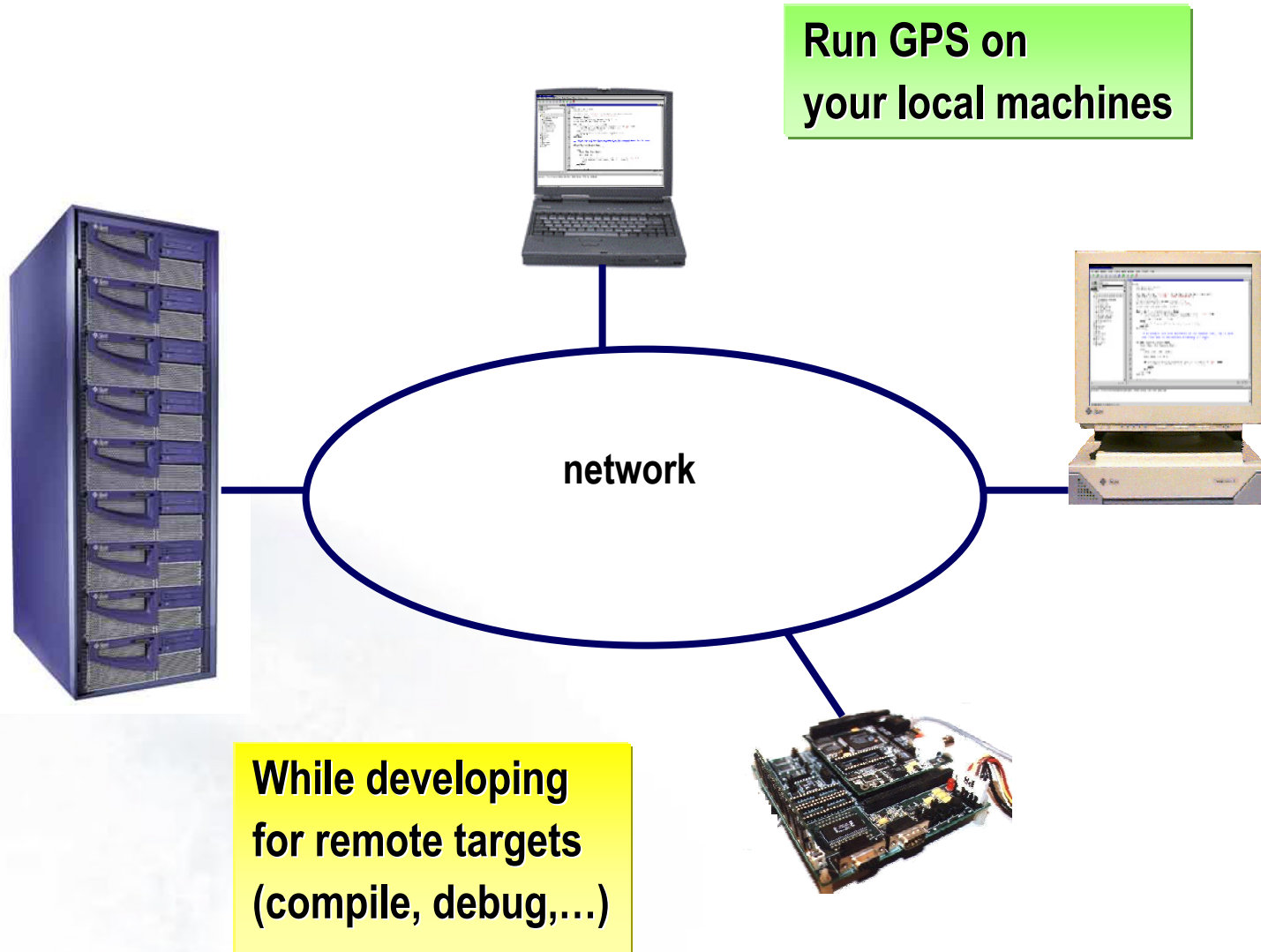
- ▶ **GUI builder**
- ▶ **Real-time event monitoring**



The GNAT Programming System

A Flexible, Extensible, and Open Technology

GPS & Heterogeneous Environments



GPS is an Open Environment

- ▶ **All tools also available from the command line**
 - You can use them in text-only mode (e.g. for use in scripts)
 - Call them from your own tools

- ▶ **All formats use plain text**
 - E.g. the project file

- ▶ **Ability to plug in your own tools**

GPS is Customizable & Extensible

- ▶ You can change key bindings, shortcuts, font colors, etc
- ▶ You can add a menu or a button to invoke a new tool
- ▶ You can extend the editor to understand a new language
- ▶ Easy to plug-in 3rd party tools
- ▶ The ultimate extensibility: You can plug your modules in GPS

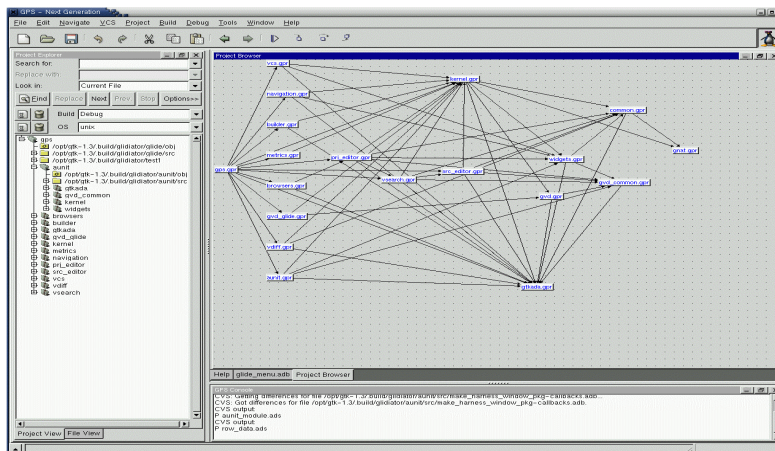
GPS Architecture

LOC

- 200,000 Ada**
 - 90,000 GNSA
 - 50,000 GVD
 - 60,000 GPS

100,000 Ada

400,000 C



GtkAda

Thick Ada binding

Gtk

toolkit for creating graphical user interfaces

X11 or Win32
graphic libraries

Linux, Unix, Windows



Summary

The GNAT Programming System

- ▶ **Helps you manage software complexity**
- ▶ **Increases software development productivity**
- ▶ **With a comfortable, easy to use interface**