#### Introduction to PicoLibre

PicoLibre : A free software platform for collaborative software development Olivier Berger, GET/INT - Département INF

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This presentation is an introduction to the PicoLibre [http://www.picolibre.org] platform.

PicoLibre is an award wining free software system aimed at hosting collaborative software development, particularly adapted to the needs of students projects in a higher education school.

This presentation was given to a MSc class at GET/INT.

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# Introduction

#### Who is Olivier Berger?

Not a native english speaker!

Research Engineer at the Computer Science Department (Département INF) of GET1 / INT2

Free Software activist / evangelist : Vice-President of APRIL (http://www.april.org, french Free Software association since '96, associate member of FSF Europe)

Before INT: several years consulting to Public Sector (at Cap Gemini, then Idealx)

More details: http://www-inf.int-evry.fr/~olberger/

# **Quick poll**

SourceForge?

CVS?

#### **Goal of this presentation**

Describe the typical scenario of usage of a collaborative software development platform.

Describe the features and components of PicoLibre.

Give initial elements which will help preparing the usage of PicoLibre later this year (projects).

#### **Table of Contents**

**What is PicoLibre** 

**Typical uses** 

**Details of PicoLibre components** 

**Developper's tools** 

**Working with PicoLibre** 

# **What is PicoLibre**

#### **Quick intro**

Platform to support collaborative software development

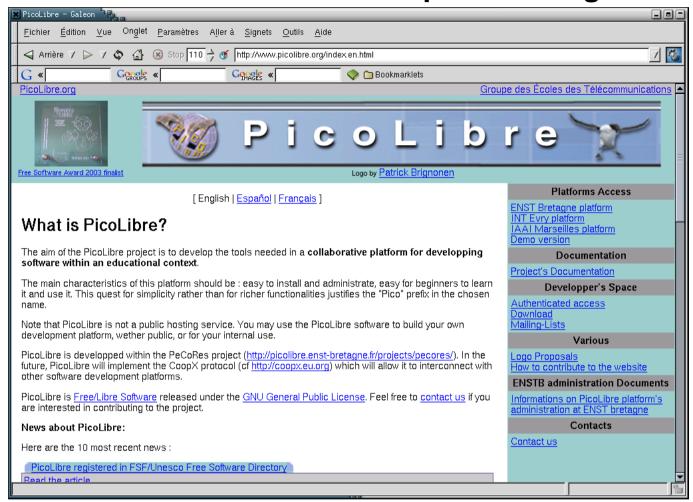
Platform to host projects (code, documentation, web site)

Easy administration of the projects (projects teams management, access control, ...)

Useable in a learning context too: as easy to use as possible

Inspired of similar platforms used to develop Free Software

#### www.picolibre.org



(full size image) [mediaobjects/picolibre\_org1.png]

http://www.picolibre.org

## PicoLibre goals

- Targeted users: undergraduate students and academic/industrial people not necessarily familiar with Software Engineering
- Targeted projects: small as well as big projects, involving software development or document production or a web site maintenance

Thus, the main qualities of the platform have to be *easy* and *safe* to use (preserve data integrity)

Integration of tools

- for facilitating remote work
- for facilitating interaction between remote developers/users
- for managing projects and user groups

#### **Features**

- Unified and coherent view of all components of the hosted projects (centralised repositories)
- Full access from all parts of the world via a customisable www interface (works with any browser)
- A secure concurrent versioning system (CVS)
- Archived and customizable mailing lists (Sympa)
- A bug reporting and tracking system and a task management system
- A set of system and user administration tools

#### **Architecture**

#### Integration/adaptation of existing free software components

- Heart: Based on PHPGroupware framework (over Apache and GNU/Linux)
- Glue: OpenLDAP + MySQL (for information, authentication)
- OpenSSH + CVS, for the CVS repository (+ CVSWeb for repository browsing)
- Sympa for mailing-lists

## History of the project

**Upcoming version: 0.9.10 in Release candidate** 

**Current version (installed at INT): 0.9.6** 

Developped mainly at ENST Bretagne between 2001 and 2003, furthering initial developments of *Serveur Libre* 

#### Awards:

- PicoLibre was selected as a finalist at the Free Software Trophies 2003.
- Awarded "Prix de l'innovation pédagogique" of Fondation Louis Leprince Ringuet in 2001.

# **Typical uses**

# Software development project

**Internal communication: mailing-lists** 

**Sharing source code: CVS repository** 

**External communication : mailing-lists + website** 

# **Collaborative documents authoring**

TXT based "source" for document (XML, LaTeX, etc.)

Ensure one can always retrieve reference version in repository or website

# Lonesome developer, etc.

**Necessary?** 

At least archival of elements

Sometimes only create a project initially for mailing-lists

### **Central concept: the project**

#### **Project:**

- 1 (or more) administrator(s)
- (0 or more) members
- Productions, works (managed via CVS)
- Meta-information
- Elements linked to life-cycle (bugs, tasks)
- Elements for communication (mailing-lists, website)

### **Principles of CVS**

Essential tool at heart of collaborative software development

Several people working in collaboration on same items

But also the same people working on different versions of the same items

**Tracking changes** 

**Semi-connected** 

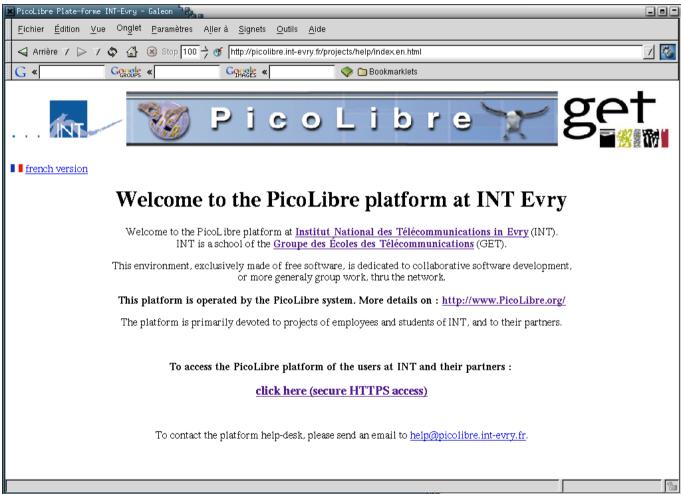
No development model imposed : necessity of communication in the team

Reference: http://www.cvshome.org

# **Details of PicoLibre components**

#### Welcome screen

http://picolibre.int-evry.fr/



#### (full size) [mediaobjects/picolibre\_int1.png]

See news in french version

Note contact address

### Login screen

https://picolibre.int-evry.fr/login.php



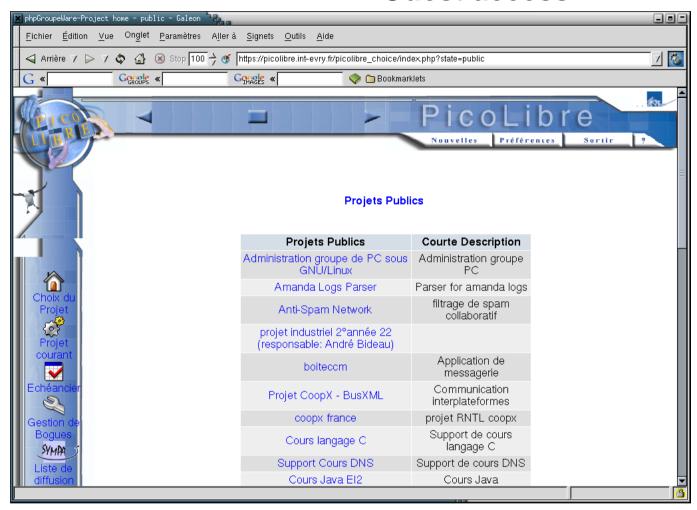
#### (full size) [mediaobjects/picolibre\_int2.png]

SSL secure session

This screen in french only, sorry

Specific PicoLibre login/password => need to register first guest/guest access possible (browsing public projects)

#### **Guest access**



#### (full size) [mediaobjects/picolibre\_int4.png]

Sorry, in french

Only public projects available / browsable

#### **Public or Private projects**

Each project may be:

public most of the information is available to the public (internet-wide)

read-only for non-members

project is listed in the platform's projects list (ht-

tp://picolibre.int-evry.fr/projects/)

private most of the information is not available

web site browsable at ht-

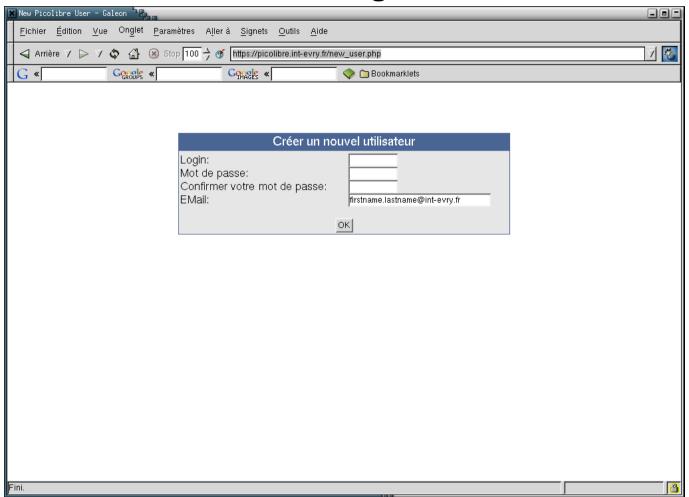
tp://picolibre.int-evry.fr/projects/PROJECT\_NAME

We advise to do public projects unless specifically required : open review, inspired from free software practice

Note

cannot change project status at present time

# **Registration screen**



#### (full size) [mediaobjects/picolibre\_int3.png]

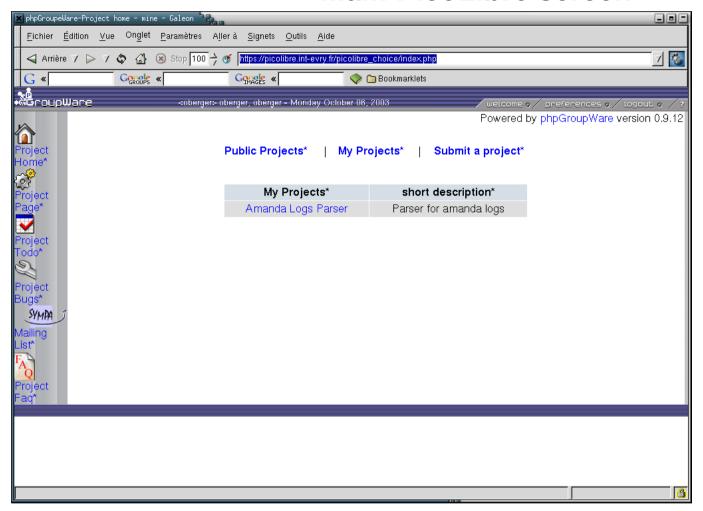
PicoLibre specific login/password, no link with MCI identification

 $Use \ the \ "canonical" first name. last name \ email$ 

Better use a "standard" login like "flastname" or "lastname\_f"

PicoLibre available for almost anybody

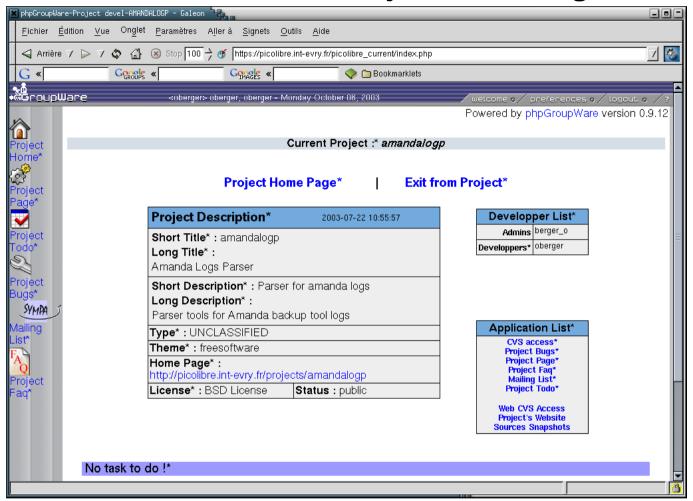
#### Main PicoLibre screen



#### (full size) [mediaobjects/picolibre\_int5.png]

will display only projects of which the user is a member access to list of public projects

#### **Project Home Page**

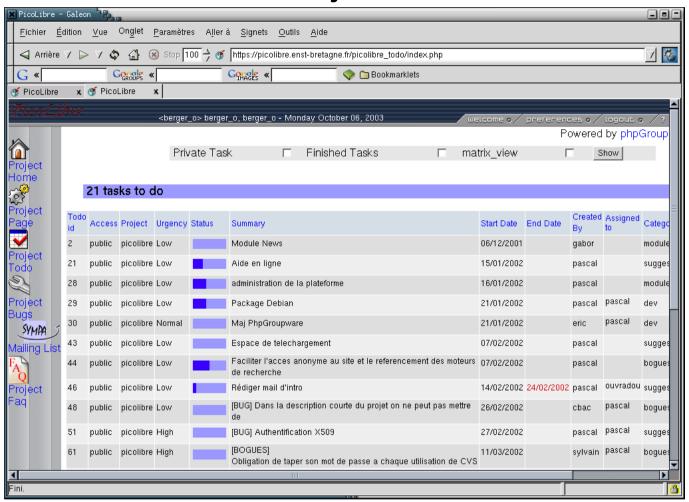


#### (full size) [mediaobjects/picolibre\_int6.png]

scroll to the todo-list

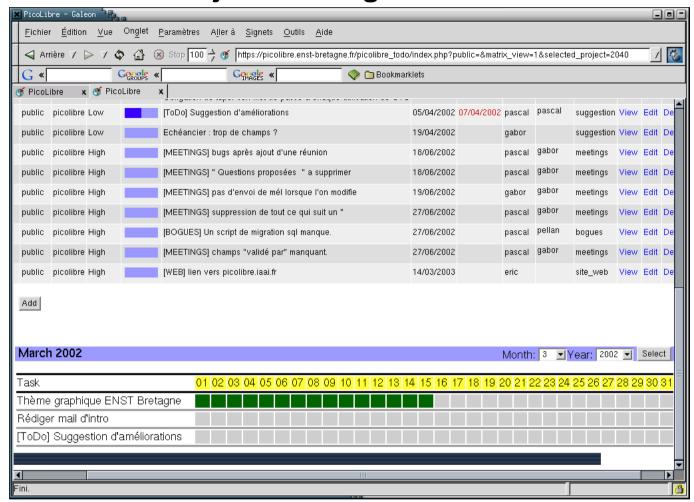
two series of links to the project's views

# **Project's Tasks: To-Do list**



(full size) [mediaobjects/picolibre\_int7.png]

## Project "management" : Tasks "matrix view"

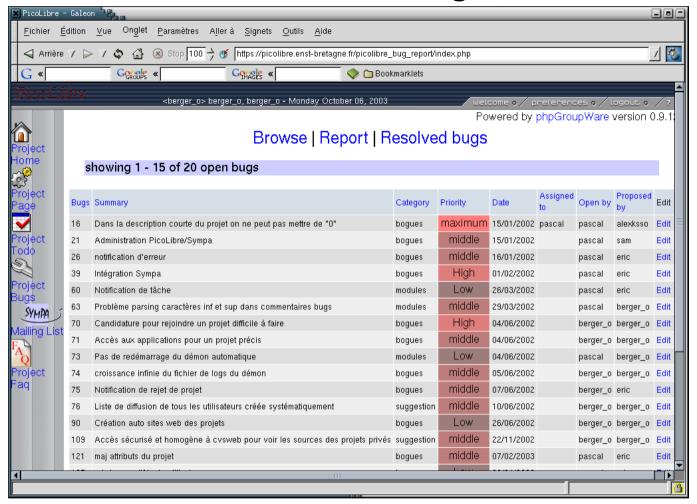


#### (full size) [mediaobjects/picolibre\_int8.png]

Not really comparable to real project management tool

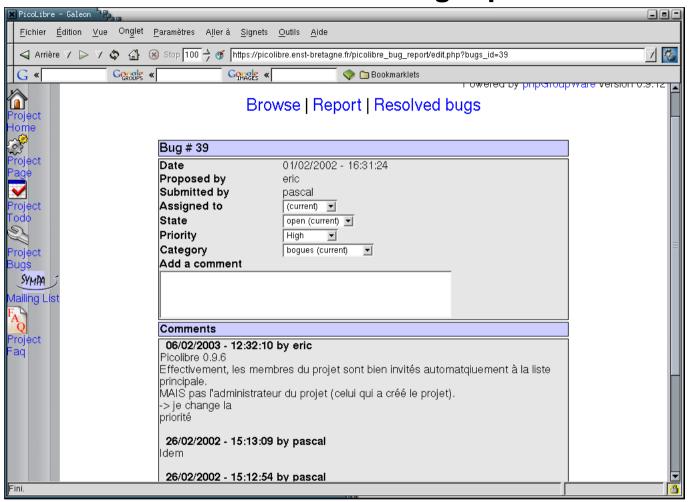
Improved version to be integrated

# **Bugs list**



(full size) [mediaobjects/picolibre\_int9.png]

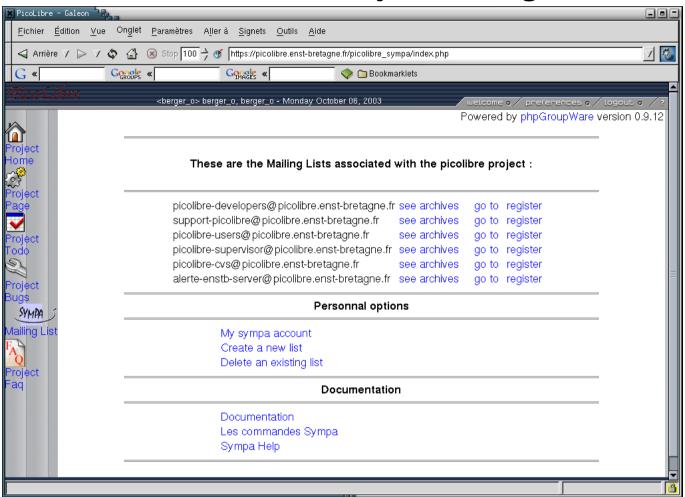
### **Bug report**



#### (full size) [mediaobjects/picolibre\_int10.png]

Each bug has a simple "lifecycle"

### **Project mailing-lists**



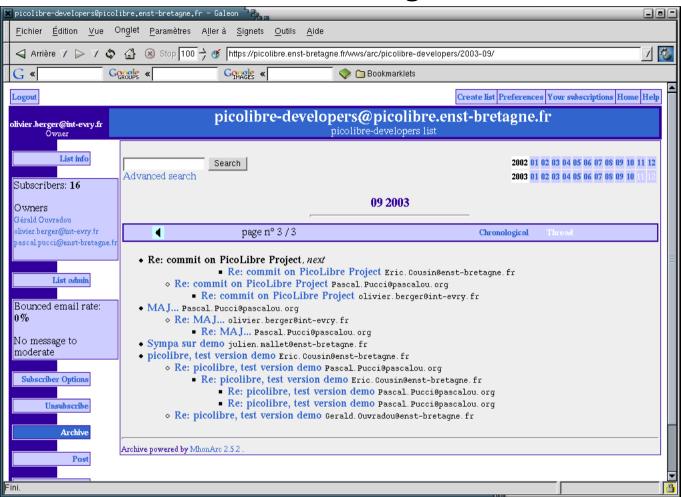
#### (full size) [mediaobjects/picolibre\_enstb1.png]

two lists created by default

the lists profiles depend on the project type: public / private

not necessary to have a picolibre login to be registered on a list: quasi-autonomous sympa lists

### **Mailing-List archives**

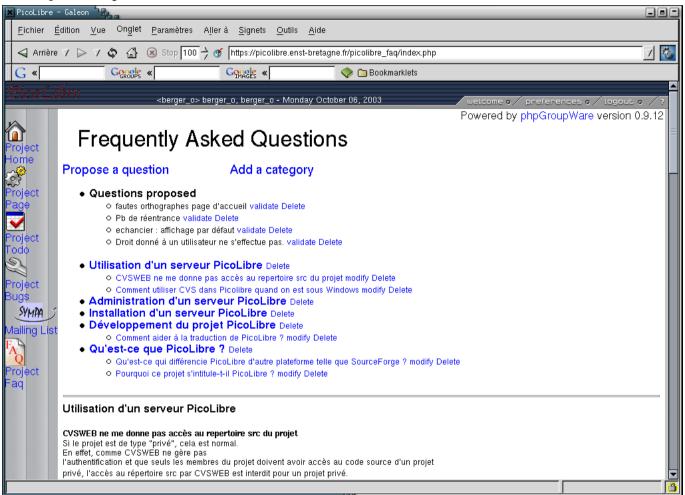


### (full size) [mediaobjects/picolibre\_enstb2.png]

Sympa's interface is not fully integrated into PicoLibre at the present time.

### **Project's FAQ**

#### **Frequently Asked Questions**



(full size) [mediaobjects/picolibre\_enstb3.png]

### **CVS** browsing



#### (full size) [mediaobjects/picolibre\_enstb4.png]

Allows browsing the contents of the CVS Repository

Uses a dedicated tool (CVSWeb) not fully integrated into PicoLibre

# **CVS** Repository

CVS: Concurrent Versions System

Standard configuration management tool in the free software world for program development

Manages source files

**Each project contains:** 

src/ directory/module contains sources for programs and documents

:

not browsable by non-members of the project for

private projects

web/ directory/module contains the website static HTML pages and documents

its content constructs automatically the website

(crontab)

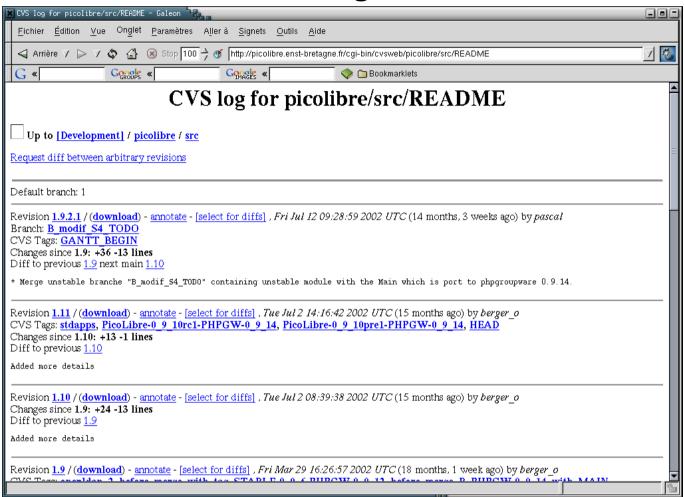
always browsable for private projects

Secure access via SSH (plus chroot-ed environment)

Not very well adapted to managing non source oriented documents

does not impose a specific development process (quality review, synchronisation, testing, release process, etc.)

## **Browsing CVS revisions for a file**



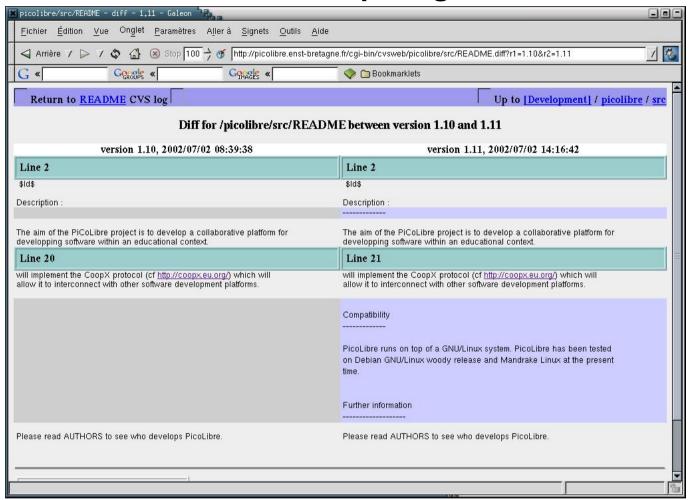
#### (full size) [mediaobjects/]

Multiple branches

Tags

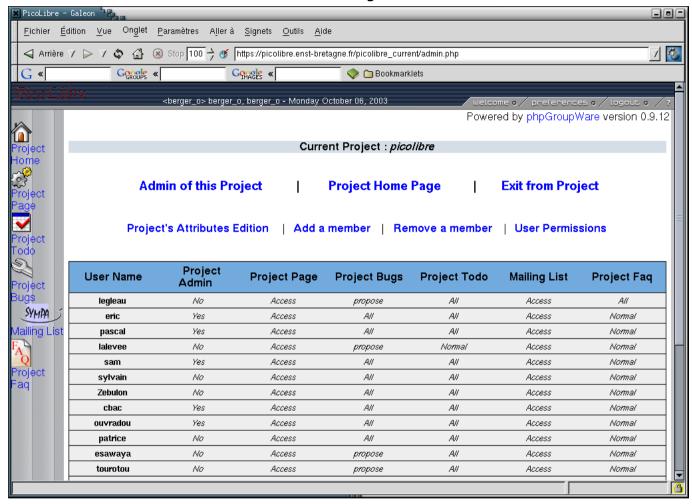
Best viewed in graphical CVS client

# **Comparing two revisions**



(full size) [mediaobjects/picolibre\_enstb6.jpg]

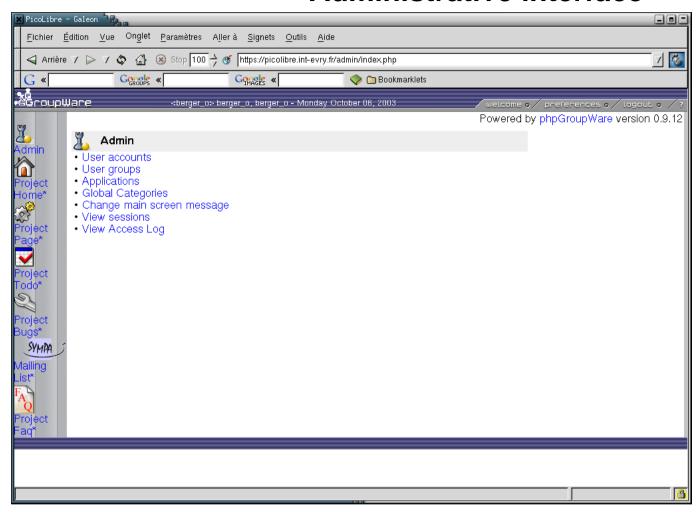
# **Project administration**



#### (full size) [mediaobjects/picolibre\_enstb7.png]

add or remove members to the project

### **Administrative interface**



### (full size) [mediaobjects/picolibre\_int11.png]

for PicoLibre adminstrator's eyes only

# **Developper's tools**

# **Operating System**

PicoLibre is compatible with any "client" O.S.

Better integration on Un\*x-like (GNU/Linux), though.

### **CVS** clients

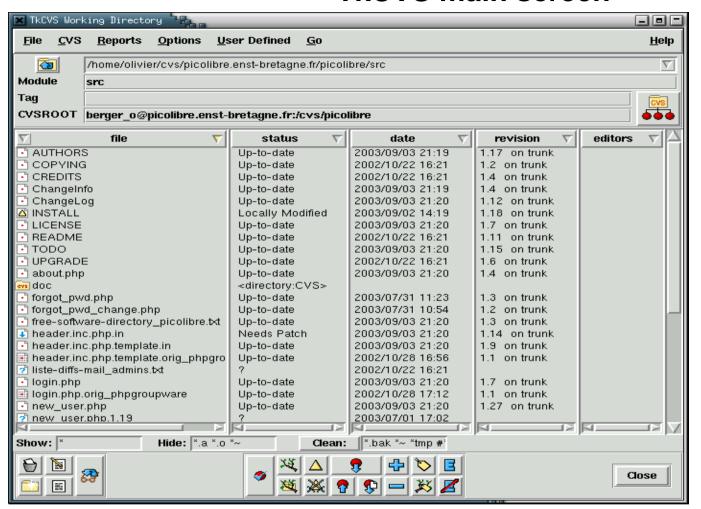
### Using a good graphical client helps a lot to understand what's happening

- TkCVS
- WinCVS
- Eclipse
- good old CVS command-line tools

not a course on CVS... planned in the curriculum I think

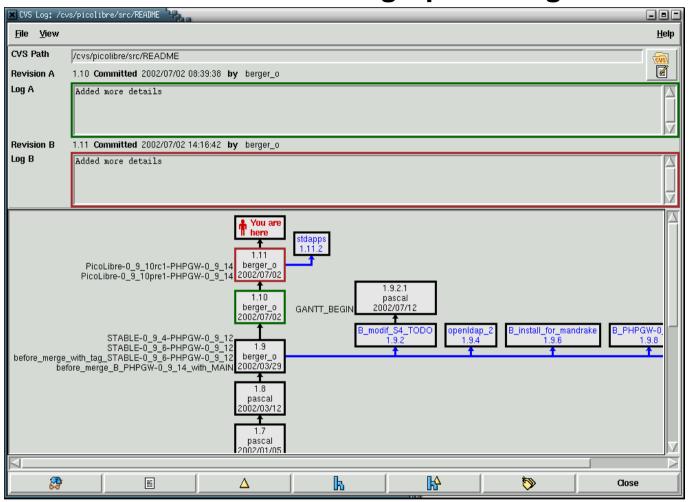
not sure these tools are all available on the platforms you'll work on

#### **TkCVS** main screen



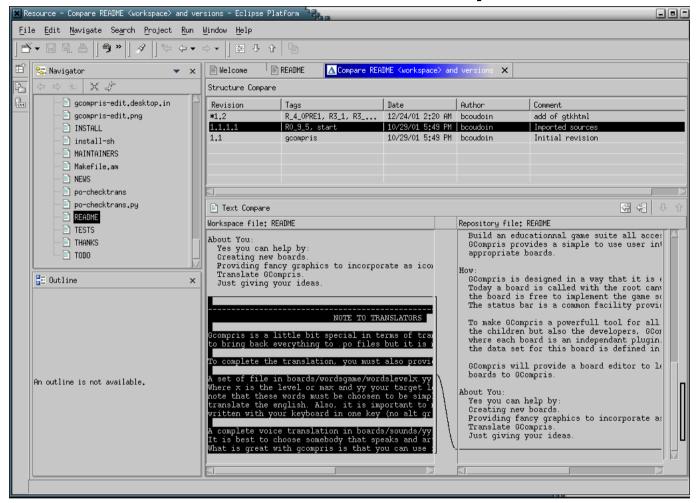
(full size) [mediaobjects/tkcvs1.png]

# **TkCVS** graphical log viewer



(full size) [mediaobjects/tkcvs2.png]

## **Eclipse**



#### (full size) [mediaobjects/eclipse1.png]

CVS support

I'm not sure it's fully compliant with PicoLibre CVS setup

### A browser!

Of course you'll need a browser

"Best viewed with Any Browser!"

# **Working with PicoLibre**

# **Initial steps**

- 1. register yourself
- 2. submit a project ? (moderation)
- 3. join an existing project (ask its project manager)

Then, you're free to do almost whatever you want

# **Project registration**

Not yet a real policy on which projects may be submitted

At the present time, we ask for a link to INT

Other hosting solutions exist

## **Areas for improvement**

Typing CVS access password

Various other areas

Still a young project

**Extensions:** 

- "codename PicoGET"
- Going CoopX http://www.coopx.eu.org/ (Cf. the project presentation next week)

You're welcome to help ;-)

# **Help-Desk**

You may contact the PicoLibre Help-Desk

<help@picolibre.int-evry.fr>

Documentation and other useful documents at : http://www.picolibre.org/doc/

# **Conclusion**

**Most learning effort needed: CVS** 

Importance of COMMUNICATION

Hope you will use PicoLibre during your projects

# Legalese

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# **Appendices**

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