UCOME
Your Content Management ...
in Tcl

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Content

- History
- Structure
- How a file is processed
- Debugging
- Conclusion

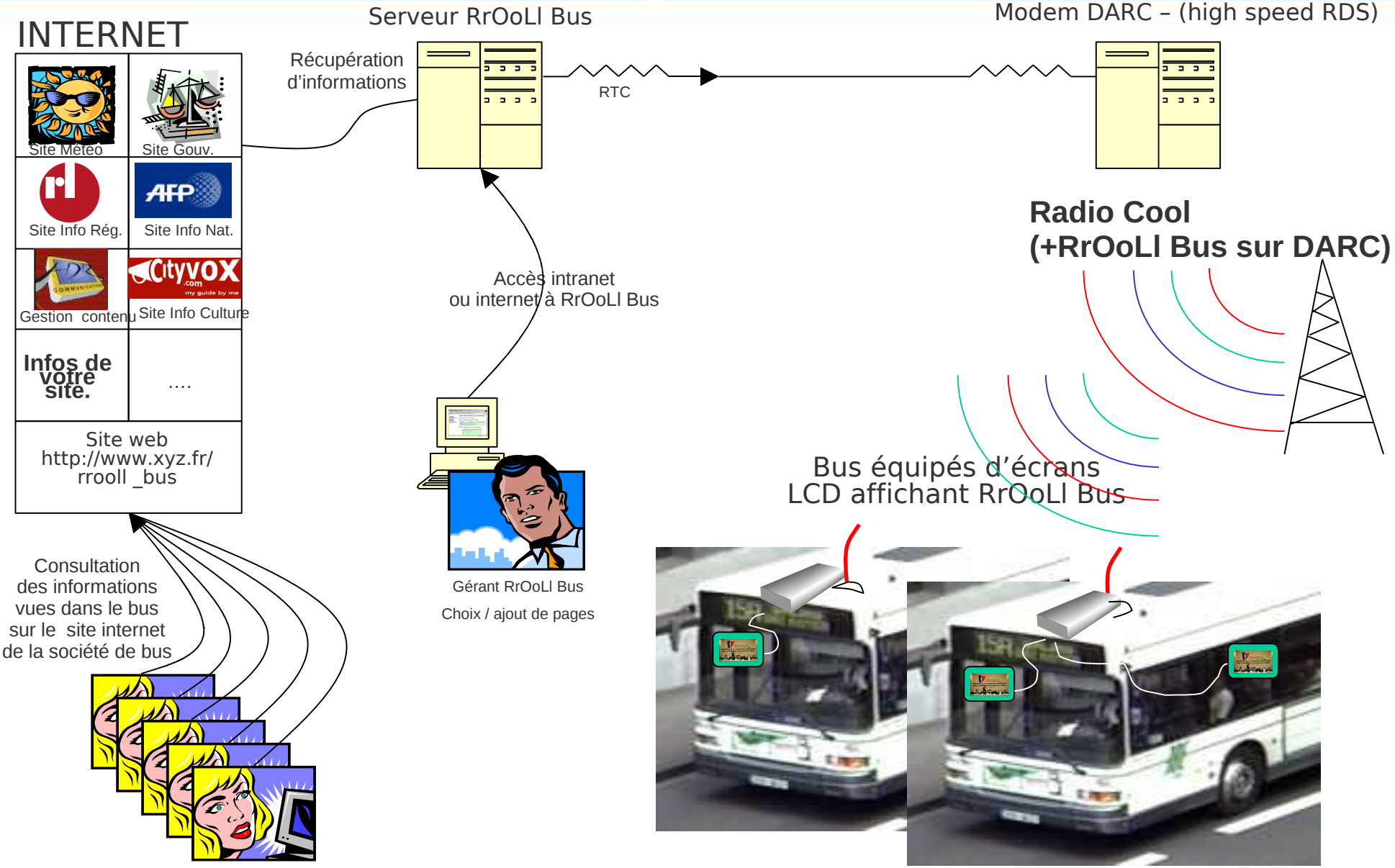
Story

- **Free&ALter Soft : services around free / open source software for industry 12/1996**
- **Bought Linbox in 2001**
  - **=> Linbox FAS**
  - **Switch from pure service to software edition / service**
  - **Linbox Rescue Server : a computer management solution : imaging, file backup, inventory, software deployment, keyboard/display control, integrated in a single web interface => used in Prime Ministry services, Ministère de l'Intérieur, Airbus for A380 flight test, préfecture, industry, ...**
  - **Linbox Directory Server : an open source AD killer.**
- **Linbox FAS bought by Mandriva in 2007**

Linbox FAS & TCL

- 1997 : free software distribution for Solaris (then IRIX and HPUX)
  - Main customers : Renault & MBDA (1998-2007)
  - Installation GUI + generator of environment variables in tcl/tk
- 1998 : tcl cgi program for ticket management in Thomcast
- 1998-99 : tcl cgi program (fastcgi) to manage the time spent on projects for SNCF
  - tcl is the main company programming language
  - but it is not an obligation : we are heavy users of scripting language (perl, php, python)
- 1999 : EQUAL project – infomobility

EQUAL



Architecture RrOoLl Bus

EQUAL

- Presentation of informations in buses
- Pb : content creation cost
  - take the content where it is : on internet !
  - reshape the content to adapt it to a “television” display
- System :
  - content creation
  - static content management (non internet)
  - transmission to display system(s)
  - display

Bravo !!!!

- But what a mess !!!!!
  - content aspiration and transformation with NewsClipper in perl
  - static content management with a perl cgi (webfm) + cgis in tcl (choice of pages and sources, set up, ...)
  - control of transmission via a tcl script
  - reception on the terminal and display with ad-hoc scripts : content is totally static
- A lot of heterogeneous elements => difficult to maintain

Linbox web site

- **At the same time, I begin to work on Linbox FAS web site content management system :**
  - **I start from txt2ml : a script that transform text (à la wiki) in html**
  - **then I add what is required to manage menus and also have an on-line edition possibility**

Enthrone – Ecim

- Follow up of Equal project is the European Enthrone project
- I am said : “just keep the previous code, and do small adaptations”
- Obviously, I take the occasion to create a full content management system in tcl

Constraints & properties

- Fully file based
- Possibility to easily change and adapt the look
- Management of rights and “properties”
- Possibility to create an automatic rolling display
- Multi-language

- Integrated debugging and logging solution
- independent of server and technology (cgi, tclhttpd, apache rivet, websh, ...)
- Management of menu by using directory structure and properties
- Wiki like but with structured presentation of informations (except no history management)
- Experimental tcl only connected ftpd server for direct file management (taking into account the rights)

File organisation of a site

- /any : directory of web site files
- /any/.mana/.val : properties of /any
- /any/toto.txt : a file that will be displayed
- /any/.mana/toto.txt : properties of /any/toto.txt
- /cache : cache of all files created
- /cache/comp/any/toto.txt&&& : html file obtained from /any/toto.txt. The &&& means here that no values where exported with the file, and no cooky are set or used.
- /session : session files
- /template : directory in which all templates are stored.
- /comp : directory in which file storing the action for each parts of a file are stored

How it works

- Ucome is a transformation engine
- You have :
  - an original file (in its original format)
  - an action
  - a target format (displayable, pdf, original, ...)
- Transformations are done till getting something
- Every operation is cached

Example – viewing directory /any/programmer

- directory “${ROOT}/any/Programmer”
  - determination that it is a dir
  - calling dir::new_type
    - answer is txt (it looks if there is an index.xxx in the directory, here it finds index.txt,
  - calling dir::2txt
    - the file index.txt is loaded and cached
- text file
  - calling txt::new_type
    - answer is comp (composite file)
  - txt::2comp
    - the text file is transformed in html (à la wiki)
- comp
  - calling comp::2newtype
    - answer is fashtml

Example – viewing directory /any/programmer (2)

- calling comp::2fashtml
  - I will come back on this function after
- fashtml
  - calling fashtml::new_type
    - answer is htmf
  - calling fashtml::2htmf
    - all url are transformed depending if they are relative, absolute, some keywords (such as fas: are changed into what it should be depending on the url)
- htmf
  - calling htmf::new_type
    - answer is “” : it is a “final” filetype
  - calling htmf::display
    - using the function to send back the content depending on the “engine” used (cgi, tclhttpd, rivet, websh)

What about actions ?

- file=/any/index.txt action=copy
- directory “${ROOT}/any/index.txt”
  - determination that it is a txt
- text file
  - calling txt::new_type
    - answer is ... copy
  - txt::2copy
    - function defined for everybody in tcl/fas_basic_proc.tcl
    - in variable ::STANDARD_PROCEDURES
    - return “”
- copy
  - copy::2new_type
    - return “final” + variable done=1 (action done)
  - copy::2final : the copy is done and a message is created (copy done or not)

Action (take 2)

- once the copy done ... restart a full display with file=/any message=”xxxx” action=view (call display_file)

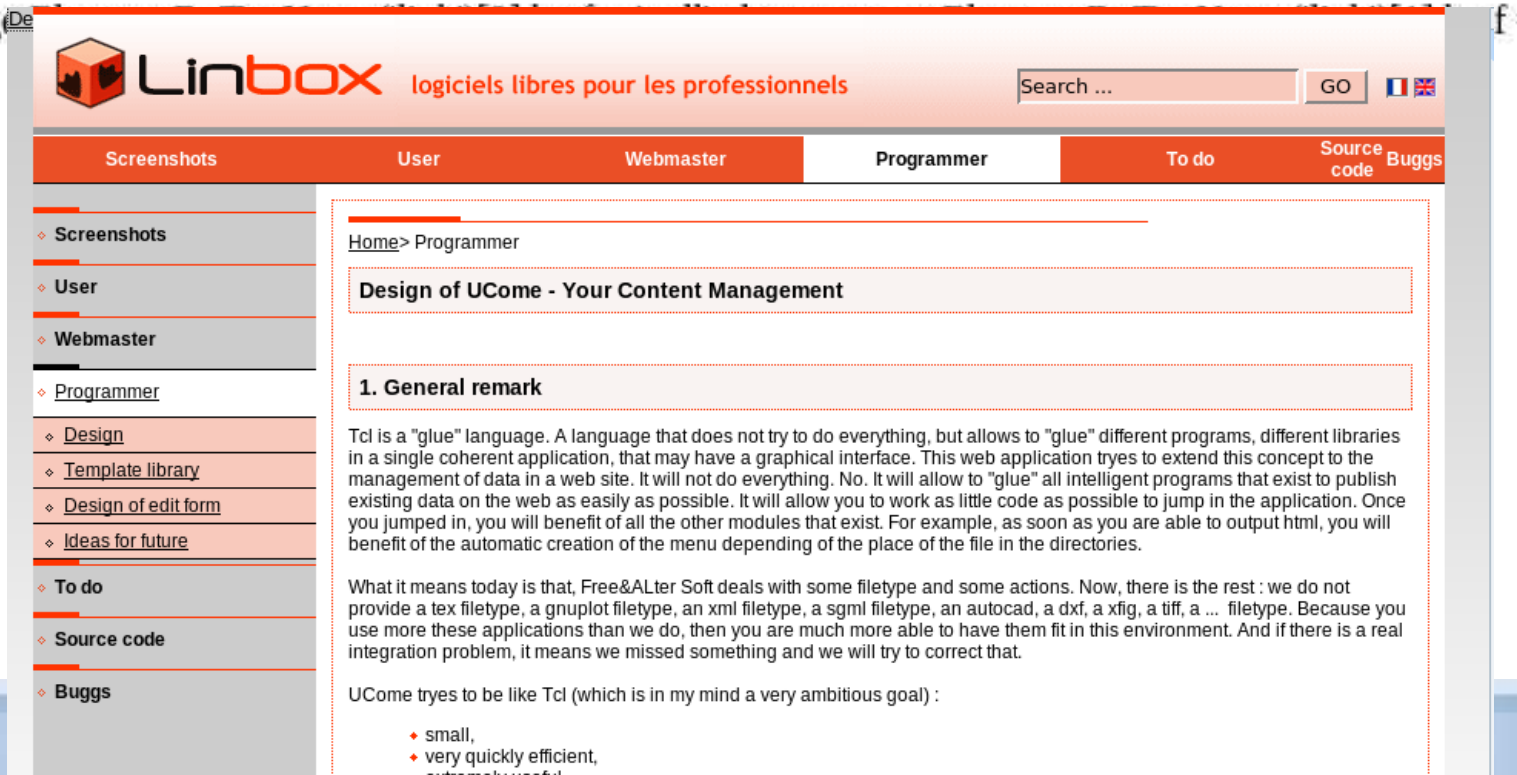
comp

- Just using a pipe is not flexible enough
- Each element of a page may be considered as an element coming from a transformation
- For example the menu :
  - file : /any/programmer
  - action: menu
  - target: nocomp

if (document.layers) { document.g

Screenshots
User
Webmaster
Programmer
Design
Template library
Design of edit form
Ideas for future
To do
Source code
Buggs

Debug file Main log file



comp

- You define what to display in a special file :
  - ${ROOT}/comp/${action}.form or ${type}.${action}.form or ${target}.${type}.${action}.form
  - ie ${ROOT}/comp/view.form

global.template *standard.template*
global.title "*Block definitions for the template for looking at a text file*"
global.title.fr "*Définition des blocs pour le canevas permettant de visualiser un fichier texte*"
title.type *file*
title.cgi_uservar.action *title*
menu.type *file*
menu.cgi_uservar.action *menu*
content.type *html*
allow.type *file*
allow.cgi_uservar.action *show_action_list*
allow.cgi_uservar.from *view*

comp

- When doing comp::2fashtml :
  - template file is downloaded (property templatedir and file given in previous view.form) => standard.template
  - for each section defined in view.form which is a file, the action is done with the file name
  - at the end, all html is integrated in the single template file to obtain the final file

Debugging

- **fas_debug.tcl**

```
# Enable (0) or Disable debug (0)
set DEBUG 1
# Useful on a big crash to determine where fas_view crashes
set DEBUG_FILE 1
# Show debug on html pages
set DEBUG_SHOW 1
# Mandatory - global variables in which all messages are accumulated
set DEBUG_STRING ""
# At 0 every possible message are enabled for all namespace
set DEBUG_ALL 0
# At 0 debug messages of function in no namespace are displayed
set DEBUG_MAIN 1
# Enable debug message for a given namespace
# If a LOCAL_DEBUG_COLOR is defined then messages are in this color
# for this namespace
catch {set atemt::LOCAL_DEBUG 0 }
catch {set fas_depend::LOCAL_DEBUG 0 }
catch {set fas_depend::LOCAL_DEBUG_COLOR "#00FFFF" }
catch {set fas_session::LOCAL_DEBUG 1}
catch {set fas_name_and_dir::LOCAL_DEBUG 0}

catch {set binary::LOCAL_DEBUG 1}
```

Debugging 2

- /tmp/ucome/ucome_1557-4171715781.dbg

```
fas_basic_proc::fas_get_value name => file args => -noe -nos -default
/icons/ok.gif
fas_view.tcl - file -> /any/bug.txt
  fas_basic_proc::fas_get_value name => action args => -noe -nos -default
view
fas_view.tcl - action -> edit
---------------- displaying _cgi_uservar -------------------
ok.x -> 9
file -> /any/bug.txt
ok.y -> 19
ok -> 1
action -> edit
content -> All bugs (there are too many)
```

Logging

- /tmp/ucome/ucome_1557-4171715781.dbg.log

```
 fas_session::open_session - fas_session::open_session -1-0 -
reading existing session file : /var/lib/ucome/session/1212224229_15502_368481
   cache_and_display - Calling txt::2edit on /any/bug.txt
       cache_and_display - Calling dir::2edit_form on /any
           atemt::read_file_template_or_cache - Using template
/template/linbox5/dir.template
         cache - Caching
/cache/edit_form/any&user=&&{action+edit_form}+{message+{Succe
ssful+writing+of+++any+bug.txt}}
           cache_and_display - Calling edit_form::2comp on /any
            cache - Caching /cache/comp/any&user=&&{action+edit_form}+{message-
{Successful+writing+of+++any+bug.txt}}
             cache_and_display - Calling comp::2fashtml on /any
              comp::2fashtml - Using form /comp/edit_form.form
              comp::2fashtml - Processing section path of type file
               comp::file::get_html - Processing file /any
               comp::file::get_html -              - action <= admin_path
               comp::file::get_html -              - new_type_option
```

Conclusion

- Opening
- Community ?
- To many bugs (to many actions, filetypes, cases, backends => websh sessions do not work ...)
- Changing the caching solution !!! everything is written in files, each step => to slow (but very practical for debugging !)
- Creating a good automatic testing solutions (for all actions, filetypes, ...)
- So many other things to do ...

Mandriva Linux

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