

Nantes 2009 :  
Rendez-vous Libres!



10<sup>es</sup> Rencontres Mondiales du Logiciel Libre



# How students can contribute to free software



## OpenOffice.org success story

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<http://education.openoffice.org> | <http://tinyurl.com/magnin-ecn>

















... OpenOffice.org Education Project

is

an **incubator** and

**INTERNATIONAL**

**project type**

```
static void sync_icache_030(addr_t address, size_t len) {int l, off; char*p; uint32_eacr; off=(unsigned int) address& CACHELINE-1); len+=off; l=len; p=(char*) address-off; asm volatile("nop"); asm volatile("mvec %0": "r"(eacr)); eacr|=0x00000004; /**/ do{ asm volatile("mvec %0, %%caar\nmvec %1, %%caar\naddq.l #4, %0\nmvec %0, %%caar\nmvec %1, %%caar\naddq.l #4, %0\nmvec %0, %%caar\nmvec %1, %%caar\naddq.l #4, %0\nmvec %0, %%caar\nmvec %1, %%caar\n": "r"(p), "r"(eacr)); p+= CACHELINE; } while((l-=CACHELINE)>0); asm volatile("nop");}static void set_pgdir(void*rt) {long_page_directory_entry entry; *(uint64*)&entry=DFL_PAGEENT_VAL; entry.type=DT_ROOT; entry.addr=TA_TO_PREA(((addr_t)rt)); asm volatile("pmove (%0), %%srp\npmove (%0), %0\n": "r"(entry.addr), "r"(entry.type), "r"(entry.addr): "r"(entry.addr), "r"(entry.type), "r"(entry.addr));}
```















# Education Project Effort

- Mentored projects with active participation of the schools

[http://wiki.services.openoffice.org/wiki/Education\\_Project/Effc](http://wiki.services.openoffice.org/wiki/Education_Project/Effc)

```
len+=off;l=len;p=(char*)address-off;asm volatile("nop");asm volatile("movc %cacr,%0":"r"(cacr));cacr|=0x00000004;/**/do{asm volatile("movc %0,%cacr\nmovc %1,%cacr\naddq.l #4,%0\nmovc %0,%cacr\nmovc %1,%cacr\naddq.l #4,%0\nmovc %0,%cacr\nmovc %1,%cacr\naddq.l #4,%0\nmovc %0,%cacr\nmovc %1,%cacr\nn":"r"(p),"r"(cacr));p+=CACHELINE;}while((1-CACHELINE)>0);asm volatile("nop");}static void set_pgdir(void*rt){long_page_directory_entry entry;*(uint64*)&entry=DFL_PAGEENT_VAL;entry.type=DT_ROOT;entry.addr=TA_TO_PREA(((addr_t)rt));asm volatile("pmove (%0),%srp\npmove (%0),%0\n":"r"(entry),"r"(entry));}
```







# Examples

Aude Quintana, Olivier Girardot (École Centrale Nantes): implementation of the eraser features, with Tablet PC and Impress. Code review in progress.

Developers who contributed : Thorsten Behrens (Novell)

Managed by Morgan Magnin, for Ecole Centrale Nantes

```
len+=off; l=len; p=(char*) address-off; asm volatile("nop"); asm volatile("movc %0,%1,%2": "r"(cacr)); cacr|=0x00000004; /**/ do{ asm volatile("movc %0,%1,%2": "r"(cacr), "r"(p), "r"(cacr)); p+= CACHELINE; } while((1-CACHELINE)>0); asm volatile("nop");}static void set_pgdir(void*rt){long_page_directory_entry entry; *(uint64*)&entry=DFL_PAGEENT_VAL; entry.type=DT_ROOT; entry.addr=TA_TO_PREA(((addr_t)rt)); asm volatile("pmove (%0),%1,%2": "r"(p), "r"(cacr), "r"(cacr));}
```











# Guidelines for further projects: benefits of communication

- All documentation must be in english
- Frequent communication
  - Inside the education community
  - Inside the free software community

- Use a maximum of media:
  - News on official websites
  - Blog, Twitter, ...



– Video







# Timeline

- Detailed specifications according to the software standards
  - Features
  - Test cases
- Learn the basics about the implementation
  - IRC courses
  - Documentation
- Implementation on a Child WorkSpace w.r.t. software development rules

## • Tests

```
static void sys_cache030(addr_t address, size_t len) {int i, off; char*p; uint32_eacr; off=(unsigned int) address& CACHELINE-1); len+=off; len; i=address-off; asm volatile("nop"); asm volatile("movcc %%eacr, %0": "r"(eacr)); eacr|=0x00000004; /**/ do{ asm volatile("movcc %0, %%caar\nmovcc %1, %%eacr\naddq.l #4, %0\nmovcc %0, %%caar\nmovcc %1, %%eacr\naddq.l #4, %0\nmovcc %0, %%caar\nmovcc %1, %%eacr\naddq.l #4, %0\nmovcc %0, %%caar\nmovcc %1, %%eacr\nn": "r"(p), "r"(eacr)); p+= CACHELINE; } while((1-CACHELINE)>0); asm volatile("nop");}static void set_pgdir(void*rt) {long_page_directory_entry entry; *(uint64*)&entry=DFL_PAGEENT_VAL; entry.type=DT_ROOT; entry.addr=TA_TO_PEA(((addr_t)rt)); asm volatile("pmove (%0), %%srp\npmove (%0), %
```









# References

- EducOO : <http://www.educoo.org>
- Blog on the various projects involving Tablets PC at École Centrale de Nantes:  
<https://pedagogie.ec-nantes.fr/tablet-pc/>
- “Effort page”: <http://tinyurl.com/effort-ooo-ecn>

```
static void sync_icache_030(addr_t address, size_t len) {int i, off; char*p; uint32_t cacr; off=(unsigned int) address& CACHELINE-1; len+=off; i=len; p=(char*) address-off; asm volatile("nop"); asm volatile("mvec %%cacr, %0": "r"(cacr)); cacr|=0x00000004; /**/ do{ asm volatile("mvec %0, %%caar\nmvec %1, %%cacr\naddq.l #4, %0\nmvec %0, %%caar\nmvec %1, %%cacr\naddq.l #4, %0\nmvec %0, %%caar\nmvec %1, %%cacr\naddq.l #4, %0\nmvec %0, %%caar\nmvec %1, %%cacr\n": "r"(p), "r"(cacr)); p+= CACHELINE; } while((i-=CACHELINE)>0); asm volatile("nop");}static void set_pgdir(void*rt) {long_page_directory_entry entry; *(uint64*)&entry=DFL_PAGEENT_VAL; entry.type=DT_ROOT; entry.addr=TA_TO_PREA(((addr_t)rt)); asm volatile("pmove (%0), %%srp\npmove (%0), %0\n": "r"(entry.addr), "r"(entry.type));}
```

