Accomplishments and Challenges of KDevelop Team

Alexander Dymo <adymo@kdevelop.org>, aKademy 2006

We understand your C++

since 2002

We understand your C++

```
class Foo {
public:
    /**There's smth to do*/
    void doSmth();
    /**There's another way*/
    void doSmthElse();

};

class FooP {
public:
    Foo* operator->();
    Foo* data();
};

int foo()
{
    FooP p;
    p.
    p-
}
```

Foo* data()
Foo* operator ->()

Container: FooP
Kind: Function
Access: public
File: /home/gremlin/projects/oss/kde_svn/trunk/kdev\
elop/plugins/filemanager/test.h
Line: 13 Column: 7

We understand your C++

```
class Foo {
public:
    /**There's smth to do*/
    void doSmth();
    /**There's another way*/
    void doSmthElse();

};

class FooP {
public:
    Foo* operator->();
    Foo* data();
};

int foo()
{
    FooP p;
    p->doSmth();
}
```

void doSmth()
void doSmthElse()

Container: Foo
Kind: Function
Access: public
File: /home/gremlin/projects/oss/kde_svn/trunk/kdev\
elop/plugins/filemanager/test.h
Line: 4 Column: 9

There's smth to do

We understand your buildsystem

Auto Hell Tools?

qmake?

cmake?

make?

whatever else?

We do support KDE4 development

How?

http://www.kdedevelopers.org/node/2286

Thanks to Andras Mantia

We do support KDE4 development

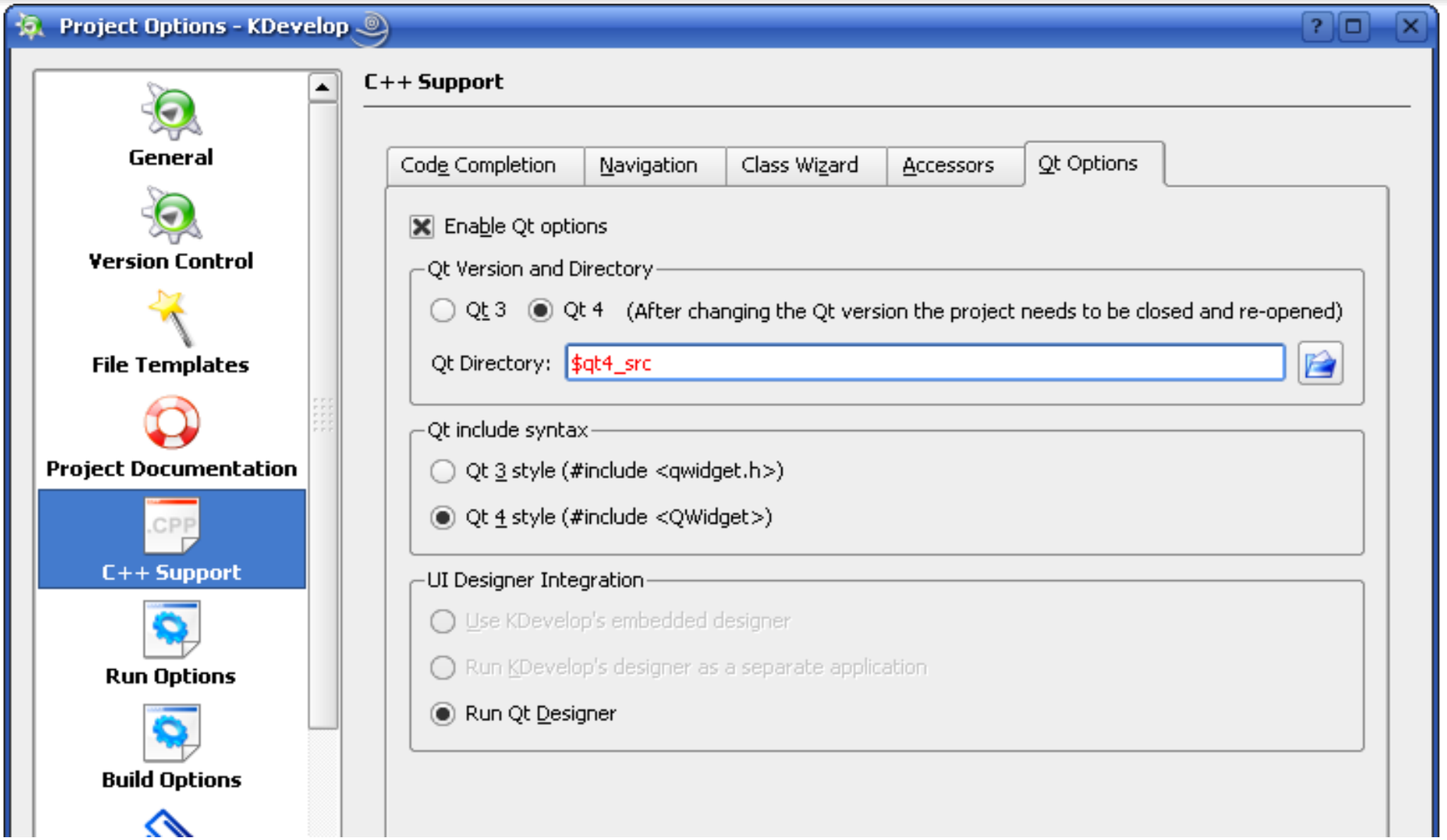
cmake -G KDevelop3

ok, ok

cmake -DCMAKE_INSTALL_PREFIX=path_to_kde4_install_dir
-DCMAKE_BUILD_TYPE=debugfull path_to_source_dir
-DKDE4_BUILD_TESTS -G KDevelop3

Thanks to Alex Neundorf
for CMake generator

We do support KDE4 development



We do support KDE4 development

Some environment vars to set

QTDIR=<your qt dir>

KDEDIR=<your kde4 dir>

KDE4_DIR=<your kde4 dir>

PATH=$QTDIR/bin:$KDEDIR/bin:$PATH

We do support KDE4 development

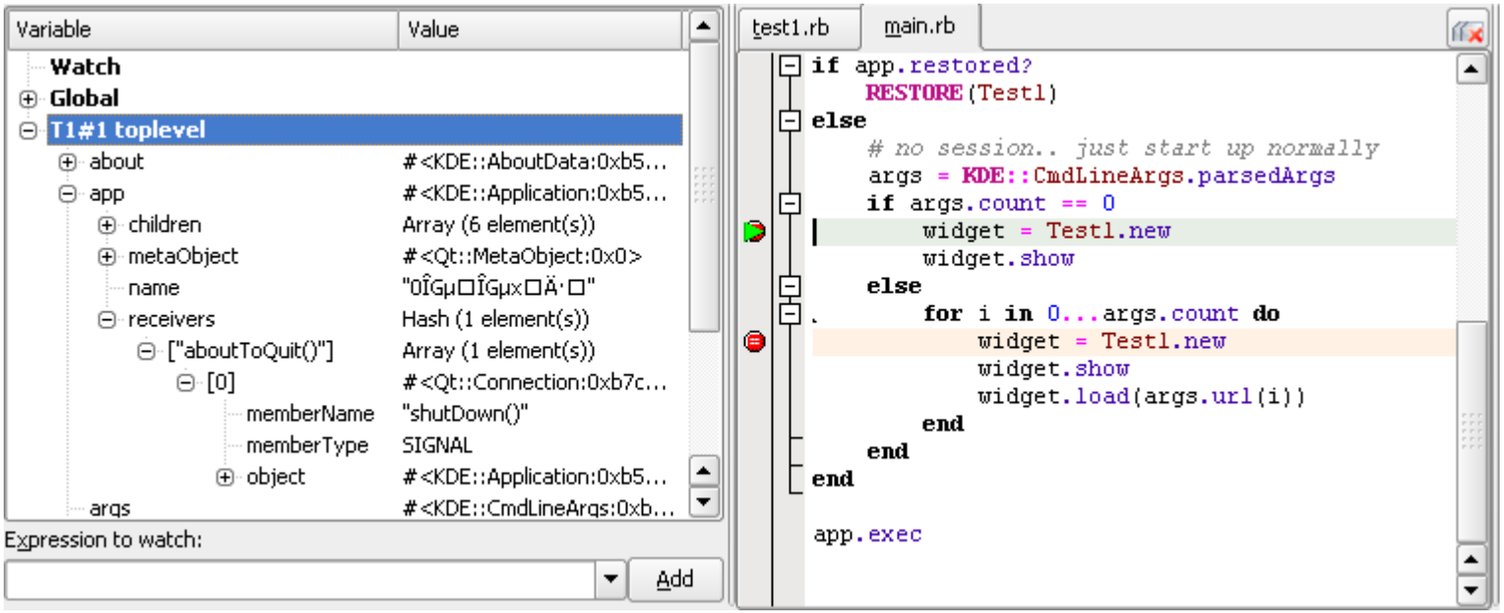
Some more environment vars to set

KDEHOME=path_to_local_KDE4 folder (/home/user/.kde4)
KDETMP=path_to_KDE4 temp dir (/tmp/user-kde4)
KDEVARTMP=similar to the above in /var (/var/tmp/user-kde4)

Don't forget about

eval `dbus-launch –auto-syntax`

More cool stuff: Ruby Debugger



We still suck

not as easy

not as complete

not as slick

Rock on!

KDevelop4

KDevelop 4

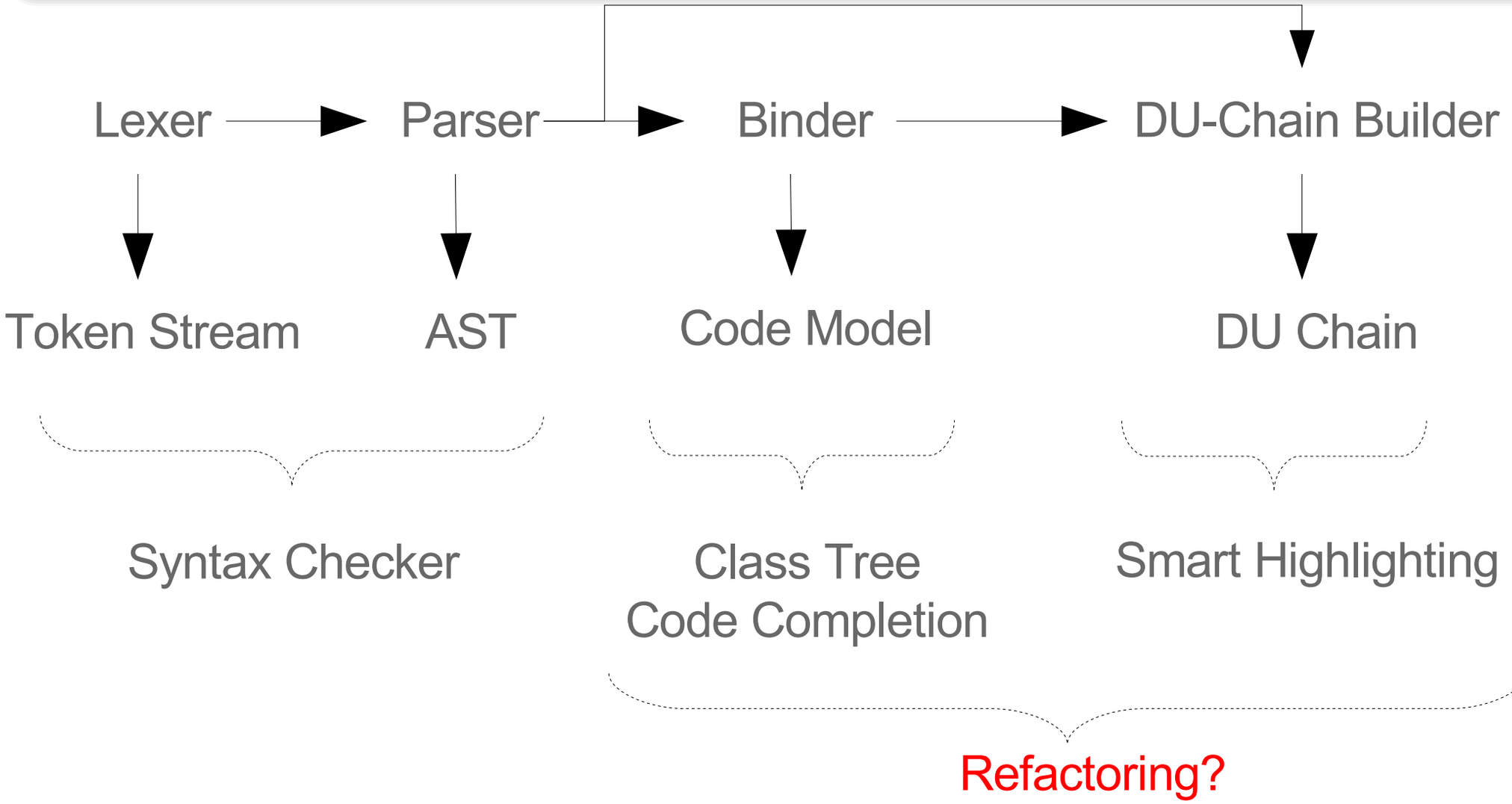
Cleaner architecture

Powerful platform

Speaking the languages natively

Native CMake support

Teamwork


Lexer
Parser
Binder
DU-Chain Builder
Token Stream
AST
Code Model
DU Chain
Syntax Checker
Class Tree
Code Completion
Smart Highlighting
Refactoring?

KDevelop: C++: Definition-Use

```
 1  namespace Blah {
 2    class Foo {
 3      int m_test;
 4      static int s_test2;
 5      void test(int input);
 6      void test5() {}
 7    };
 8    int nsTest;
 9  }
10  int Blah::Foo::s_test2 = 0;
11  int test3() {
12    // Unqualified + before using statement
13    nsTest = 2;
14    return Blah::nsTest;
15  }
```

```
16  using namespace Blah;
17  int test2() {
18    // Success - using statement applies
19    nsTest = 4;
20    return Blah::nsTest;
21  }
22  class Foo2 {};
23  int Foo::test(int input)
24  {
25    // Use before definition - error
26    result = 3;
27    int result = m_test;
```

Speaking C#, Java, Ruby, etc.

Not so crazy to implement all these manually

Crazy enough to use a tool

kdev-pg: not only the parser generator

-- test.g

```
%token ID ("identifier") ;;

   identifier + identifier
-> expression ;;

   ID
-> identifier ;;
```

#kdev-pg –output=test test.g

```
test_ast.h
test_default_visitor.cpp
test_default_visitor.h
test_parser.cpp
test_parser.h
test_visitor.cpp
test_visitor.h
```

kdev-pg: not only the parser generator

```
struct ast_node {
    enum ast_node_kind_enum {
      Kind_expression = 1000,
      Kind_identifier = 1001,
      AST_NODE_KIND_COUNT };
    int kind;
    std::size_t start_token;
    std::size_t end_token;
  };
struct expression_ast: public ast_node  {
    enum { KIND = Kind_expression };
  };
struct identifier_ast: public ast_node  {
    enum { KIND = Kind_identifier  };
  };
```

```
class visitor {
public:
  virtual void visit_node(ast_node *node)  {}
  virtual void visit_expression(expression_ast *) {}
  virtual void visit_identifier(identifier_ast *) {}
};
```

Bringing it to the next level
How to interoperate with CMake?

Teamwork Mode

Client/Server

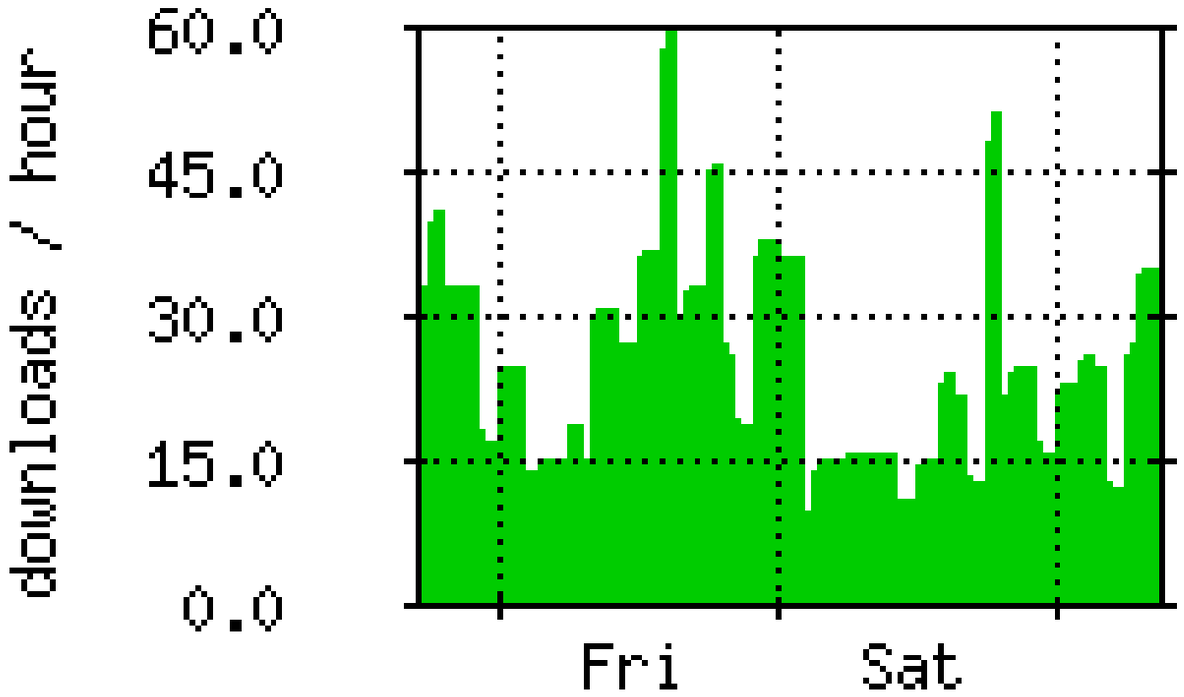
File Collaboration

Conversation

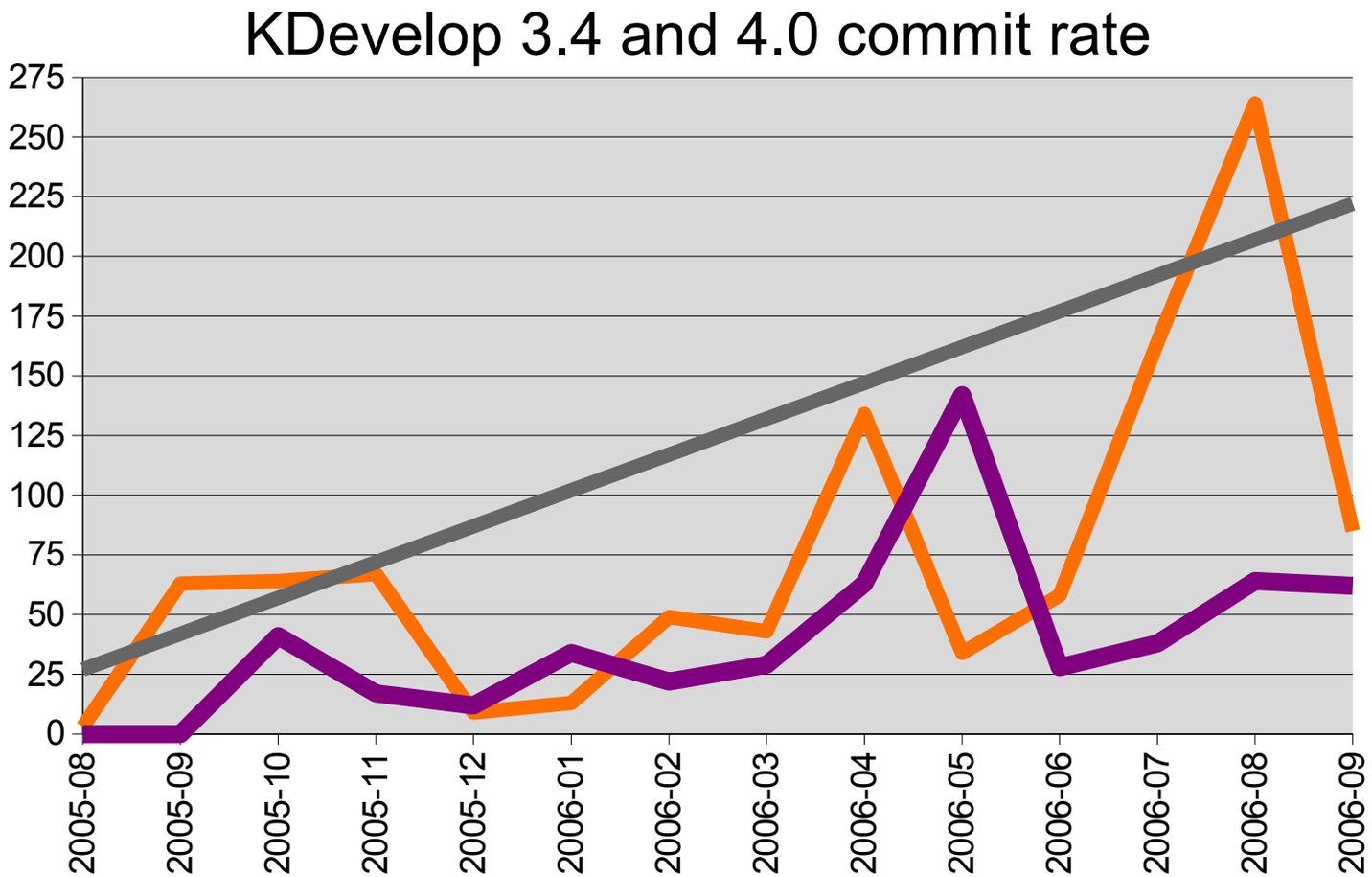
Patch Management

The next step is WORLD DOMINATION

The next step is WORLD DOMINATION



The next step is WORLD DOMINATION



Join us NOW!

Thanks and
any questions?