



# Nepomuk in KDE

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Nepomuk semantic desktop in KDE**

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## Outline

- **Why should I use Nepomuk**
- **What should I use Nepomuk for**
- **How do I use Nepomuk**





## Homework

- **Subscribe to the Nepomuk-KDE ML!**
  - <http://lists.semanticdesktop.org/mailman/listinfo/nepomuk-kde>
- **Check Techbase!**
  - <http://techbase.kde.org/Projects/Nepomuk>
- **Get used to SPARQL!**
- **Ask me!**
  - [trueg@kde.org](mailto:trueg@kde.org)





## Why should I use Nepomuk?

- **Better interoperability**
- **The better user experience**
- **We have the opportunity to be ahead of the competition**
- **You can tell people that you work on the semantic desktop**





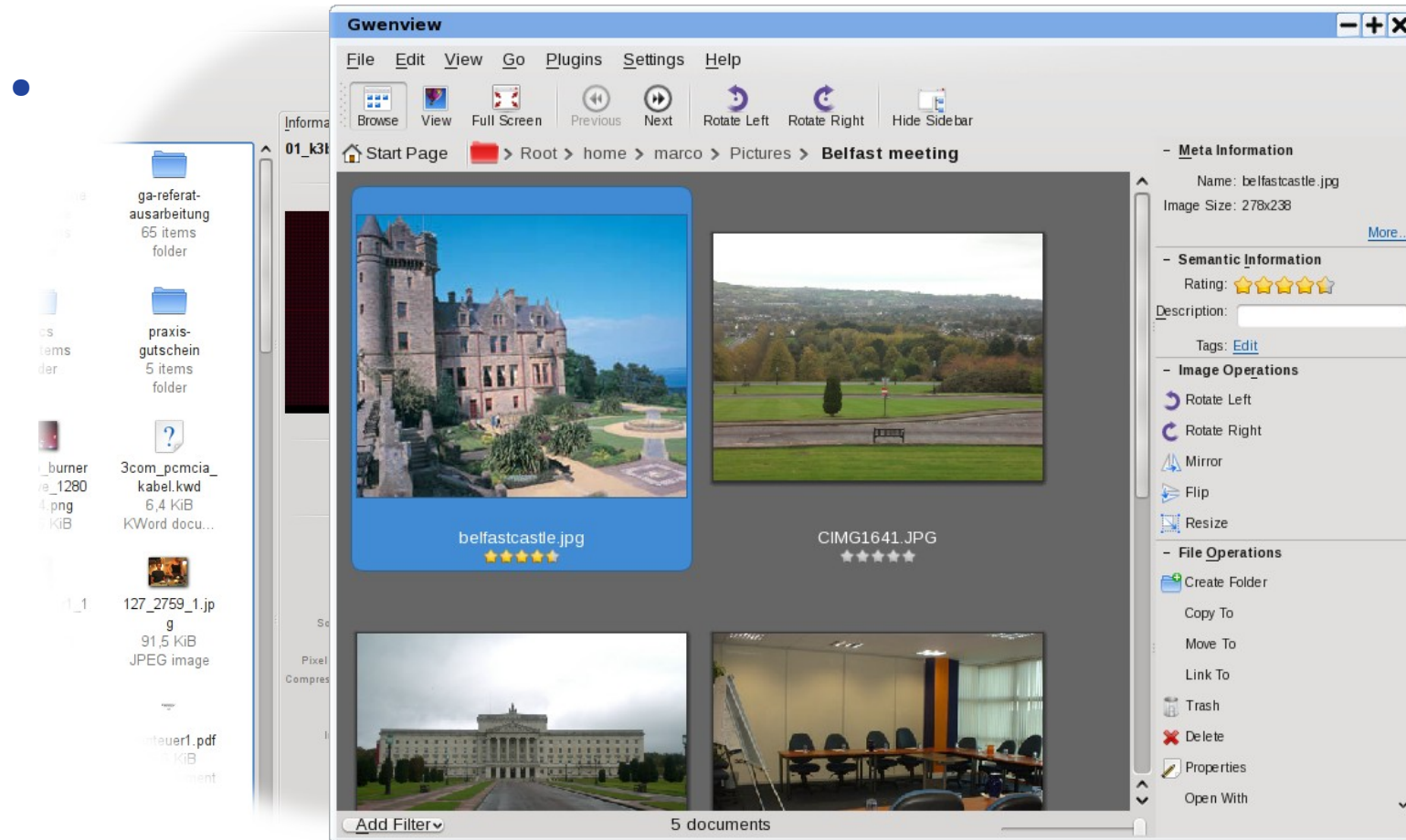
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# What should I use Nepomuk for?





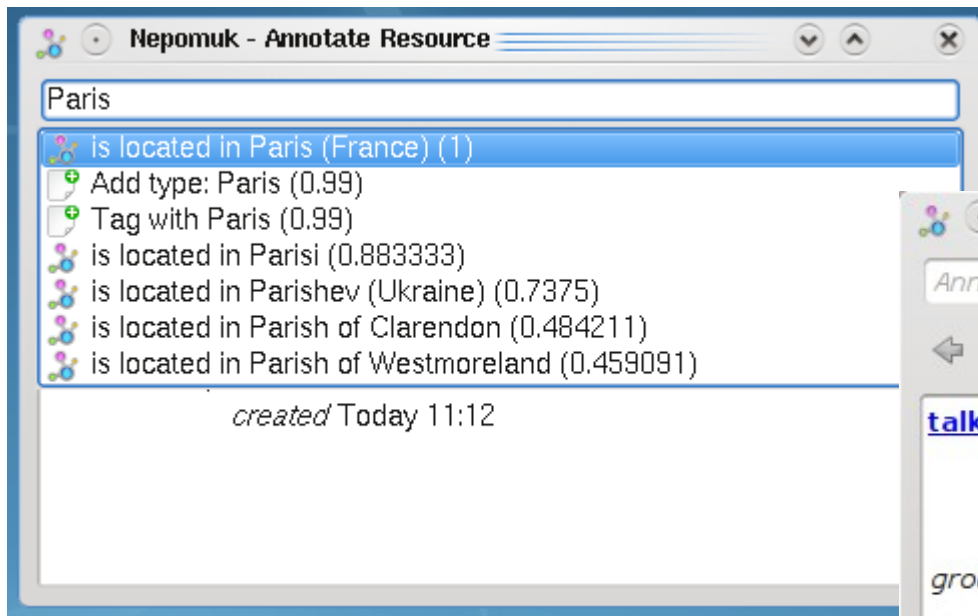
## What should I use Nepomuk for?

- **Store file annotations**
- **Store PIM annotations**
  - **Tag emails and persons**
  - **Relate persons to projects**
  - **Relate emails to projects**
  - **Relate tasks to emails and persons**
  - **Merge different contacts under one person**
  - **Show meta information for emails and persons**





# What should I use Nepomuk for?



**Create things from  
bookmarks!**







## What should I use Nepomuk for?

- **Store file annotations**
- **Store PIM annotations**
- **Create things**
- **Remember user events**
  - **Remember app usage**
  - **Remember file open with context**



# Nepomuk in KDE

Sebastian Trueg (Mandriva)



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- Que

Nepomuk - Annotate Resource

Annotate...

looks to me crucial is the easyness of integration between the applications. We don't know if basket or another task manager or a plugin for firefox will be the good tool. However, to have the possibility to create a button or a menu entry for sending a url, a mail to the inbox of a task management software, or to tag as "current project" object, seems to me of the highest importance.

isPartOf <file:///home/kde4dev> (Resource)

lineEndingFormat UNIX  
 characterCount 7570  
 fileName keyword-extraction-test-file.txt  
 maxLineLength 855  
 contentSize 7611  
 wordCount 1376  
 fileUrl <file:///home/kde4dev/keyword-extraction-test-file.txt> (FileDataObject)  
 sourceModified 2009-04-27 11:57  
 lineCount 42

A challenge and opportunity for KDE

1. Introduction  
 The appearance of a new comer on a mass market is a rare and difficult event. If Sony succeeded introducing the game market, it is due to the PS1 being the first mass market 3D games able console. Apple did the same on the phone market : providing a richer user experience through an innovative user interaction. In less than 2 years, they captured a third of the phone market in value in the US. They entered the market and took a fair part of it due to the perfect timing of their innovation. With about 1.2% of the desktop market, Linux is still very much in a catch up situation for the conquest of the desktop. And linux does not deserve that. Our **desktop software** are today nice, ergonomic, resource adapted, they should have a fair market share and they dont.

I think that we are today facing a technological and a market opportunity. The technological opportunity is the use of semantic technologies on the desktop, the market one is the netbook emergence. I am going to detail in the next paragraphs what I mean and what we could do to benefit of it.

2. Semantic technologies  
 I consider as being semantic technologies, everything allowing to attach a "meaning" to anything accessed with a computer. This meaning may be automatically or manually done, what is important is that the same "meaning" may be attached to all elements in a computer : a mail, a file, a web page, a sound, a video, a photography, ... you name it. The key is that the elements to which "meaning" are "attached" may be of very different nature. However, when doing a search on this "meaning" all elements of different nature will be provided by the computer. So it must be possible to store these "meanings", to attach these "meanings", to search for them and eventually to share them.

Around 2000, everybody thought that these technologies would be used first on the web. In 2009 there are uses of semantic technologies on the web (in wikipedia, in the search engine Quaero, ...) but it can not be seen as a huge success, it is still a residual use.

Annotating the full text

Sony  
 Tag with Sony - +

search engine  
 Tag with search engine - +

informations between different applications  
 Tag with informations between different applications - +

Mandriva  
 Tag with Mandriva - +

Linux  
 Tag with Linux - +

semantic technologies  
 Tag with semantic technologies - +

project/taesk management software  
 Tag with project/taesk management software - +

desktop software  
 Tag with desktop software - +

semantic technologies  
 Tag with semantic technologies - +

United States  
 Tag with United States - +

r?

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## How do I use Nepomuk?

- **Simple resource access:** `Nepomuk::Resource`

```
Nepomuk::Resource file( myFilePath );
```

```
file.addTag( Nepomuk::Tag( "Fancy stuff" ) );  
QString desc = file.description();
```

```
QList<Nepomuk::Tag> allTags  
    = Nepomuk::Tag::allTags();
```





## How do I use Nepomuk?

- **Fancy Nepomuk : : Resource usage: CMake**

```
set(foo_SRC main.cpp)

find_file(FOO_SOURCE
  foo.trig
  PATHS "${KDE4_DATA_INSTALL_DIR}" ENV XDG_DATA_DIRS
  PATH_SUFFIXES "apps/nepomuk/ontologies"
)

nepomuk_add_ontology_classes(
  foo_SRC
  ONTOLOGIES
  ${FOO_SOURCE}
)
```





## How do I use Nepomuk?

- **Fancy Nepomuk::Resource usage: Cpp**

```
#include "bar.h"
```

```
Nepomuk::Bar myBar( "hello" );  
Nepomuk::Bar anotherBar( uri );
```

```
myBar.addTag( Nepomuk::Tag( "foobar" ) );  
myBar.setFoobar( 42 );
```

```
Nepomuk::Foo myFoo;  
myFoo.setLabel( "My Foo" );  
myBar.addFoo( myFoo );
```





# How do I use Nepomuk?

- **Performing queries**

```
using namespace Soprano;
```

```
Model* model = Nepomuk::ResourceManager::instance()->mainModel();
```

```
QString query = QString( "prefix nao:%1 "  
                        "select ?x where { "  
                        "%2 nao:hasTag ?t . "  
                        "?r nao:hasTag ?t . }" )  
    .arg(Node::resourceToN3(Vocabulary::NAO::naoNamespace()))  
    .arg(Node::resourceToN3(file.resourceUri()));
```

```
QueryResultIterator it  
    = model->executeQuery( query, Query::QueryLanguageSparql );
```





## How do I use Nepomuk?

- **Iterating query results**

```
while(it.next()) {  
    Nepomuk::Resource file( it["r"] );  
    ShowFile( file );  
}
```







## How do I use Nepomuk?

- **Ontologies**
  - **NIE: NFO, NMO, NCO, NCAL, NEXIF, NID3**
  - **NAO**
  - **and others...**
- **CMake magic**

```
soprano_add_ontology(foo_SOURCES  
    ${CMAKE_CURRENT_BINARY_DIR}/foo.rdfs  
    "FOO"  
    "Nepomuk:Vocabulary"  
    "rdfxml")
```





## How do I use Nepomuk?

- **Ontology usage**

```
#include "foo.h"
```

```
QUrl uri = Nepomuk::Vocabulary::Foo::Bar();
```

```
QString query = QString( "select ?r where { "  
                          "? a %1 . }" )  
    .arg( Node::resourceToN3(uri) );
```





## How do I use Nepomuk?

- **Annotations**

- **playground/base/nepomuk-kde/annotationplugins**

```
Resource res = getResource();  
AnnotationPluginFactory::instance()  
    ->getPluginsSupportingAnnotationForResource( res.resourceUri() );
```

```
AnnotationPluginWrapper* wrapper = new AnnotationPluginWrapper();  
connect( wrapper, SIGNAL(newAnnotation(Nepomuk::Annotation*)),  
         this, SLOT(addNewAnnotation(Nepomuk::Annotation*)) );  
connect( wrapper, SIGNAL(finished()),  
         this, SLOT(slotFinished()) );
```

```
AnnotationRequest req;  
req.setResource( res );  
req.setFilter( filter );  
wrapper->getPossibleAnnotations( req );
```





## How do I use Nepomuk?

```
void slotNewAnnotation( Nepomuk::Annotation* anno )
{
    showAnnotation( anno->comment() );
    m_annotations.append( anno );
}
```

```
void slotCreateAnnotation( Nepomuk::Annotation* anno )
{
    anno->create( m_resource );
}
```





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**Questions?**

