

Extending biblios

Implementing a new editor type
Adding a Couchdb-networked folder

Chris Catalfo

What is biblios?

- An open source web based metadata editor
<http://biblios.org>
- Developed at LibLime over last year
- Cataloging client used in <http://biblios.net>

Biblios architecture

- User Interface
 - <http://extjs.com> toolkit
 - <http://jquery.org>
- Backend uses Perl CGI scripts
 - Any server side language may be employed

Biblios Plugins

- At end of index.html loading, Biblios loads any plugins defined in biblios' configuration file
- Uses JQuery `$.getScript(filename, handler)`
- Plugins may do anything they like
 - Change UI
 - Add additional behaviours
 - Add editor types
 - Perform actions upon certain biblios actions

Part 1

Implementing an editor for Dublin Core

Example Plugin configuration

File: conf/biblios.xml

```
<plugin>  
  <name>DublinCoreEditor</name>  
  <type>editor</type>  
  <file>plugins/dcEditor/dcEditor.js</file>  
  <initcall>new dcEditor(editorid)</initcall>  
  <enabled>1</enabled>  
  <allowDelete>0</allowDelete>  
  <allowModify>0</allowModify>  
</plugin>
```

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```
<plugin>  
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Example Plugin configuration

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  <type>editor</type>  
  <file>plugins/dcEditor/dcEditor.js</file>  
  <initcall>new dcEditor(editorid)</initcall>  
  <enabled>1</enabled>  
  <allowDelete>0</allowDelete>  
  <allowModify>0</allowModify>  
</plugin>
```

Editor Plugins

- Provide means of previewing records
- Provide means of editing records
 - Generate html for record type
 - Server side code
 - Browser side javascript
- Provide means of saving records
 - Extract data from html editor and turn back into XML

Editor configuration

- Add <editor> stanza
- <syntax> associates this <editor> with given syntax
- <name> must match name of <plugin>

```
<editor>
  <name>MARC21Editor</name>
  <syntax>marcxml</syntax>
  <enabled>1</enabled>
</editor>
<editor>
  <name>DublinCoreEditor</name>
  <syntax>xml</syntax>
  <enabled>1</enabled>
</editor>
```

Editor Plugin API

Constructor

function(editorid)

Xml related methods

XMLString()

XML()

loadXml(xmlDoc, callback)

update()

Processing and editing methods

postProcess()

processForLocation()

getToolsMenu()

getToolbar(editorid)

Metadata retrieval methods

getFormat()

getTitle()

getAuthor()

getDate()

getPublisher()

getControlNumber()

Editor code overview

```
dcEditor = function(editorid) {
  this.editorid = editorid;
  this.editorelem = $('#'+editorid);
  this.xmldoc = '';

  this.XMLString = function() {...};
  this.update = function() {...};
  this.XML = function() {...};
  this.getFormat = function() {...};
  this.loadXml = function(xmlDoc,callback) {...};
  this.postProcess = function() {...};
  this.processForLocation = function() {...};
  this.getToolsMenu = function() {...};
  this.getToolbar = function(editorid) {...};
  this.getTitle = function() {...};
  this.getAuthor = function() {...};
  this.getDate = function() {...};
  this.getPublisher = function() {...};
  this.getControlNumber = function() {...};
};
```

loadXml()

```
this.loadXml = function(xmlDoc, callback) {  
  this.xmlDoc = xmlDoc;  
  var processor = new XSLTProcessor();  
  processor.importStylesheet( dcxsl );  
  var editorDoc = processor.transformToDocument( xmlDoc );  
  callback.call(this, xsltTransform.serialize(editorDoc), this.editorid);  
};
```

getTitle()

```
this.getTitle = function() {  
    return this.xmlDoc.getElementsByTagNameNS('http://purl.org/dc/elements/1.1/', 'title')[0].textContent;  
};
```

XSL Stylesheet to generate Editor

```
<xsl:template match="/rdf:RDF/*">
  <p class="title">Title:</p>
  <input type="text">
    <xsl:attribute name="class">dcEditor-title</xsl:attribute>
    <xsl:attribute name="value"><xsl:value-of select="dc:title"/></xsl:attribute>
  </input>

  <p class="creator">Creator:</p>
  <input type="text">
    <xsl:attribute name="class">dcEditor-creator</xsl:attribute>
    <xsl:attribute name="value"><xsl:value-of select="dc:creator"/></xsl:attribute>
  </input>

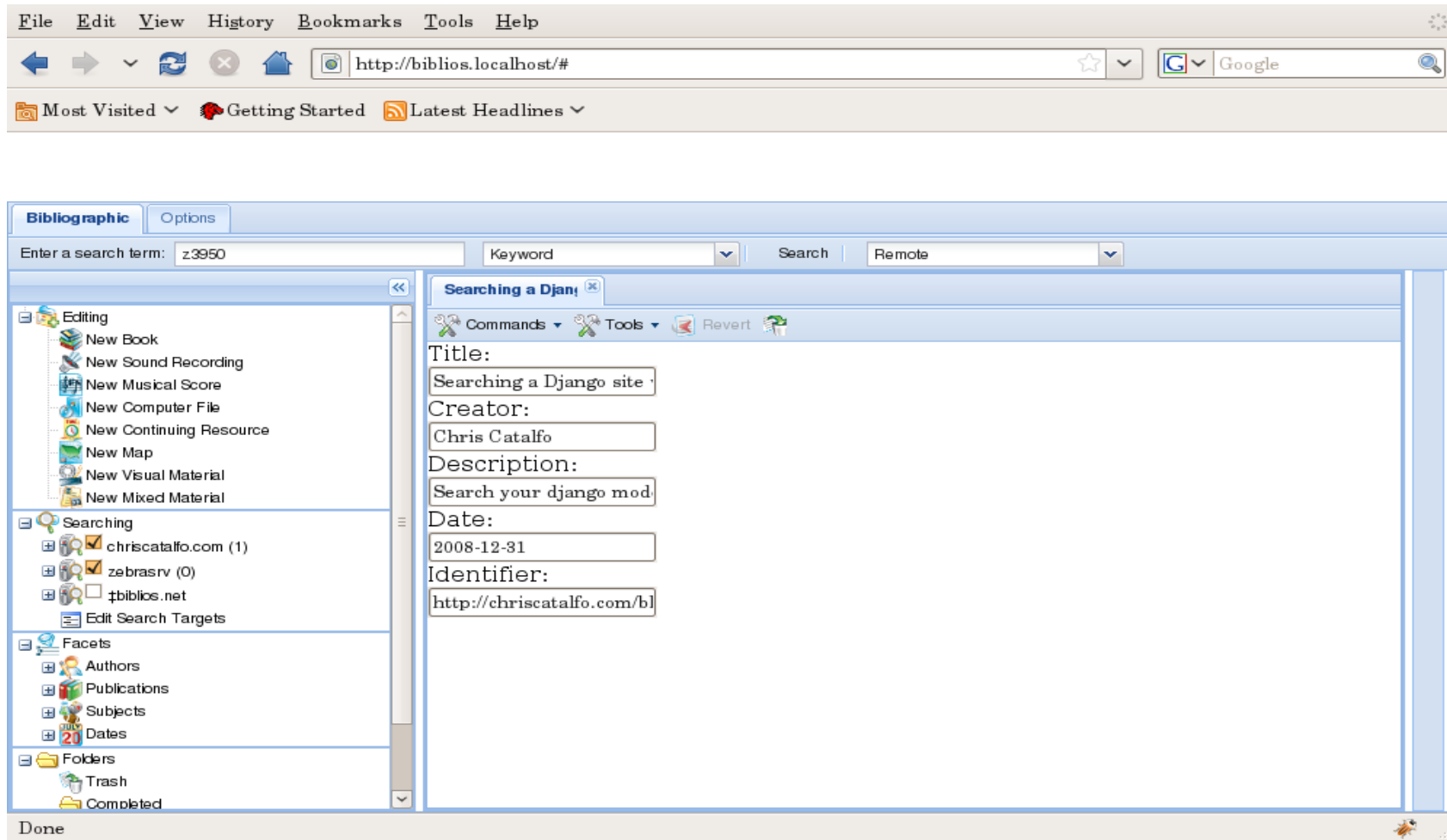
  <p class="description">Description:</p>
  <input type="text">
    <xsl:attribute name="class">dcEditor-description</xsl:attribute>
    <xsl:attribute name="value"><xsl:value-of select="dc:description"/></xsl:attribute>
  </input>

  <p class="date">Date:</p>
  <input type="text">
    <xsl:attribute name="class">dcEditor-date</xsl:attribute>
    <xsl:attribute name="value"><xsl:value-of select="dc:date"/></xsl:attribute>
  </input>

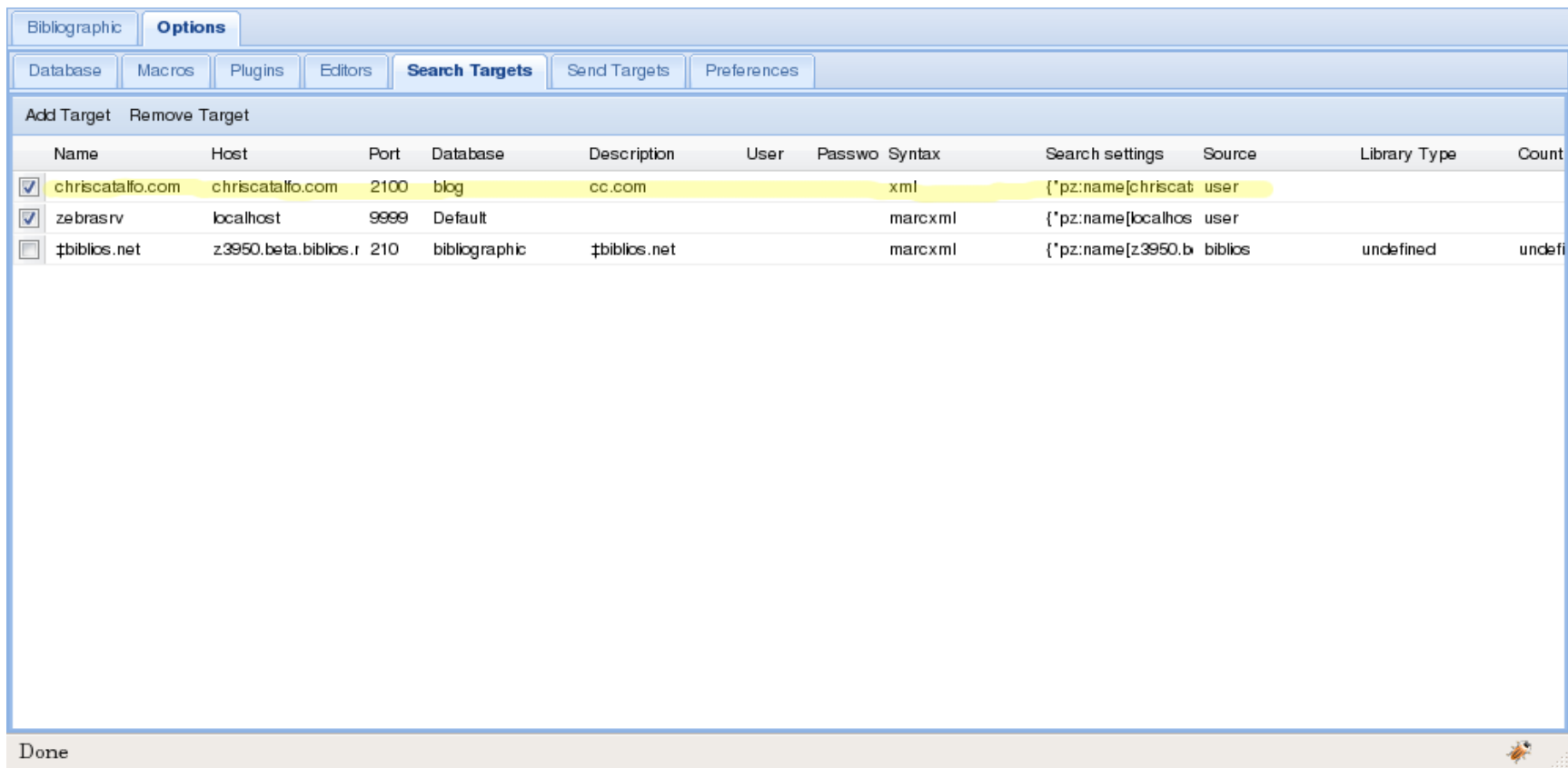
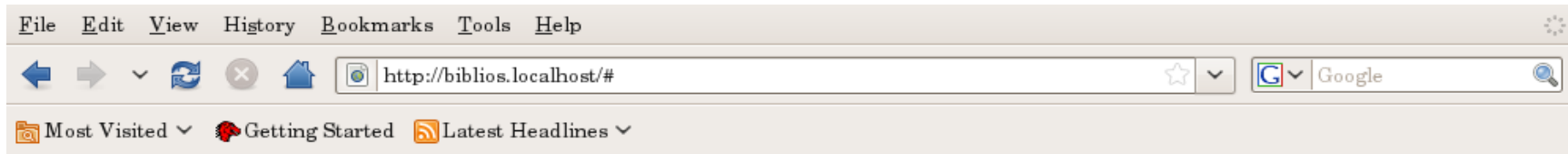
  <p class="identifier">Identifier:</p>
  <input type="text">
    <xsl:attribute name="class">dcEditor-identifier</xsl:attribute>
    <xsl:attribute name="value"><xsl:value-of select="dc:identifier"/></xsl:attribute>
  </input>

```


Editor Generated in biblios



Getting Dublin Core Records to Edit

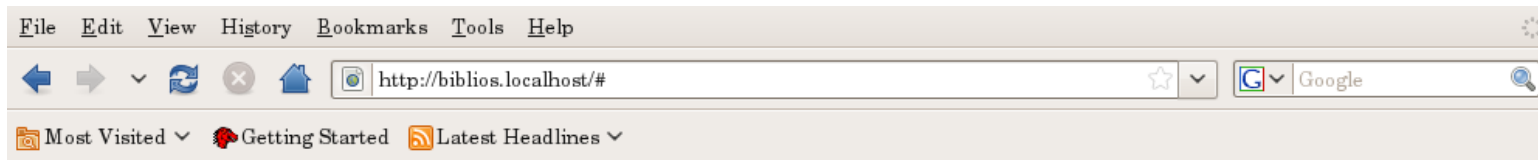


Setting up record previews

```
var dcxsl = xslTransform.loadFile('plugins/dcEditor/dcxsl.xsl');  
biblios.app.registerPreviewXsl('xml', dcxsl);
```

- `biblios.app.registerPreview('syntax', xml doc)`

Setting stylesheet to extract data

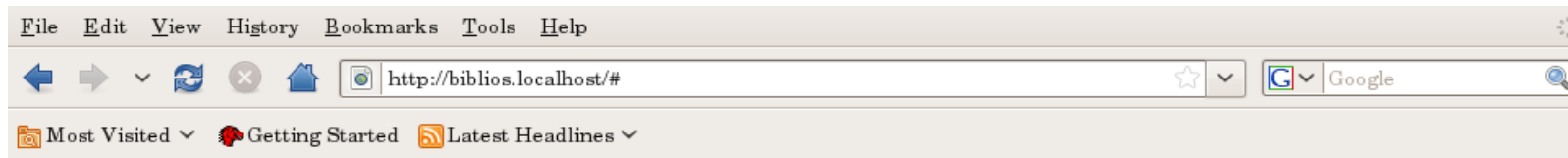


The 'Search Targets' dialog box is open, displaying a list of search targets. The dialog has tabs for 'Database', 'Macros', 'Plugins', 'Editors', 'Search Targets', 'Send Targets', and 'Preferences'. The 'Search Targets' tab is active, showing a table with 'Name' and 'Value' columns. The table lists various search targets for the domain 'chriscatalfo.com:2100/blog'. The 'pz:requestsyntax' and 'pz:xslt' entries are highlighted in yellow.

Name	Value
pz:allow[chriscatalfo.com:2100/blog]	1
pz:cclmap:au[chriscatalfo.com:2100/blog]	u=1003 s=al
pz:cclmap:date[chriscatalfo.com:2100/blog]	u=30 r=r
pz:cclmap:isbn[chriscatalfo.com:2100/blog]	u=7
pz:cclmap:issn[chriscatalfo.com:2100/blog]	u=8
pz:cclmap:kw[chriscatalfo.com:2100/blog]	u=1016
pz:cclmap:pub[chriscatalfo.com:2100/blog]	u=1018 s=al
pz:cclmap:su[chriscatalfo.com:2100/blog]	u=21 s=al
pz:cclmap:ti[chriscatalfo.com:2100/blog]	u=4 s=al
pz:elements[chriscatalfo.com:2100/blog]	F
pz:name[chriscatalfo.com:2100/blog]	chriscatalfo.com
pz:nativesyntax[chriscatalfo.com:2100/blog]	xml
pz:requestsyntax[chriscatalfo.com:2100/blog]	xml
pz:xslt[chriscatalfo.com:2100/blog]	dc.xsl

Buttons at the bottom of the dialog: 'New Search Type', 'Save', and 'Cancel'.

Searching and previewing DC



The screenshot shows the Bibliographic software interface. The search term is `z3950`. The results table shows one record:

Medium	Title	Author	Publisher	Date	Location
<input type="checkbox"/>	Searching a Django site via Z39.50	Chris Catalfo		2008	chriscatalfo.coi

Below the table is a preview section with the following fields:

- Title: Searching a Django site
- Creator: Chris Catalfo
- Description: Search your django mod
- Date: 2008-12-31
- Identifier:

The interface also includes a left sidebar with navigation options like Editing, Searching, Facets, and Folders. The browser's address bar at the bottom shows `http://biblios.localhost/`.

Saving a DC record

```
this.XMLString = function() {
  var xmlstring = "";
  xmlstring += '<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/elements/1.1/"><rdf:Description rdf:about="http://media.example.com/audio/guide.ra">';
  var title = $(' .dcEditor-title',this.editorelem).val();
  xmlstring += '<dc:title>'+title+'</dc:title>';
  var creator = $(' .dcEditor-creator',this.editorelem).val();
  xmlstring += '<dc:creator>'+creator+'</dc:creator>';
  var description = $(' .dcEditor-description',this.editorelem).val();
  xmlstring += '<dc:description>'+description+'</dc:description>';
  var date = $(' .dcEditor-date',this.editorelem).val();
  xmlstring += '<dc:date>'+date+'</dc:date>';
  var publisher = $(' .dcEditor-publisher',this.editorelem).val();
  xmlstring += '<dc:publisher>'+publisher+'</dc:publisher>';
  var identifier = $(' .dcEditor-identifier',this.editorelem).val();
  xmlstring += '<dc:identifier>'+identifier+'</dc:identifier>';
  xmlstring += '</rdf:Description>';
  xmlstring += '</rdf:RDF>';
  return xmlstring;
};
```

Part 2

Adding a network folder using CouchDB

CouchDB Plugin Overview

- CouchDB
 - <http://couchdb.apache.org/>
 - Non relational, document oriented database
 - Interaction done using REST API over HTTP
- Biblios <-> couchDB interaction
 - Through proxy script
 - Through web server proxy directly to couchDB

ExtJS <-> CouchDB

- ExtJS Grid
- ExtJS Data Store
 - http://wiki.apache.org/couchdb/Getting_started_with_
 - Encapsulates interaction with CouchDB
 - Uses proxy to allow requests to be sent from biblios to couchDB

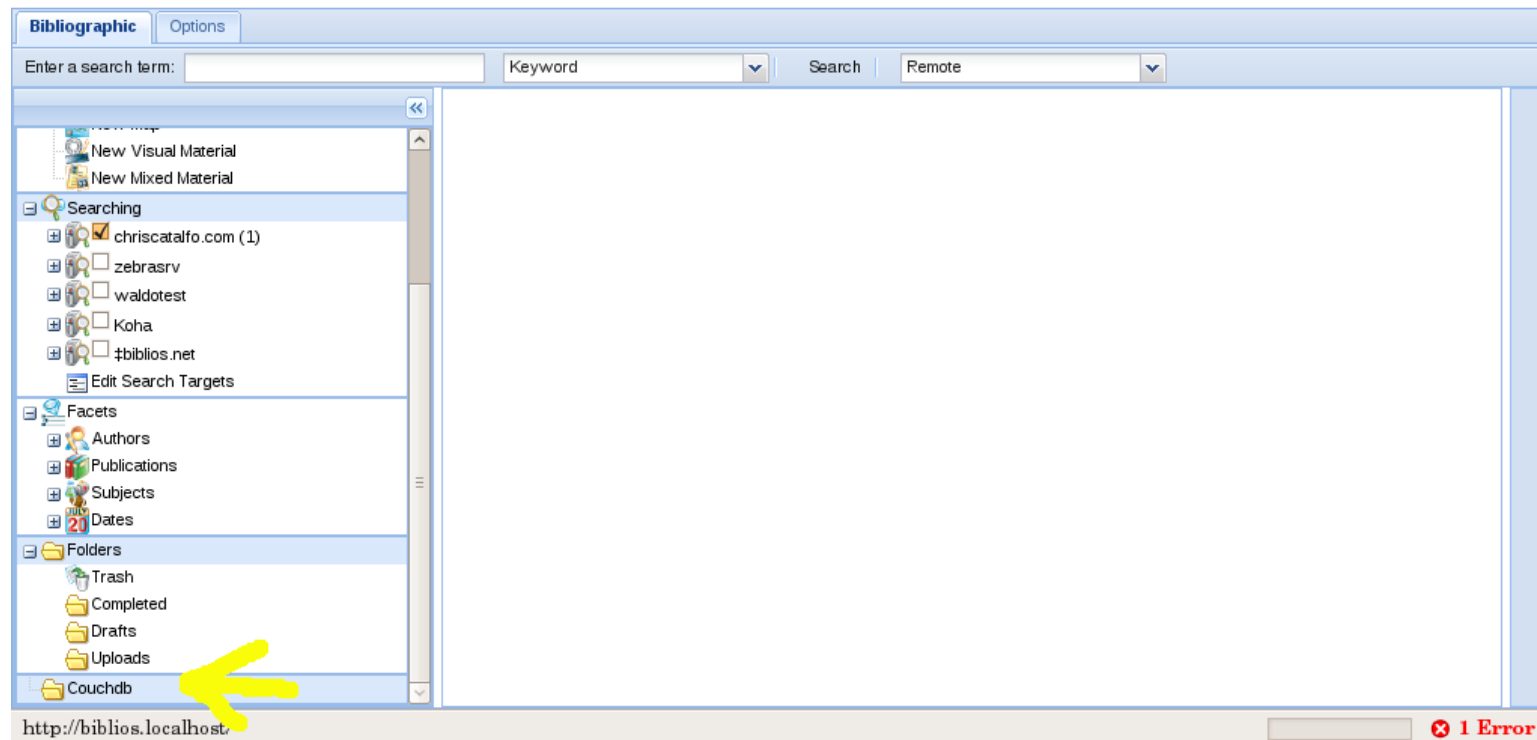
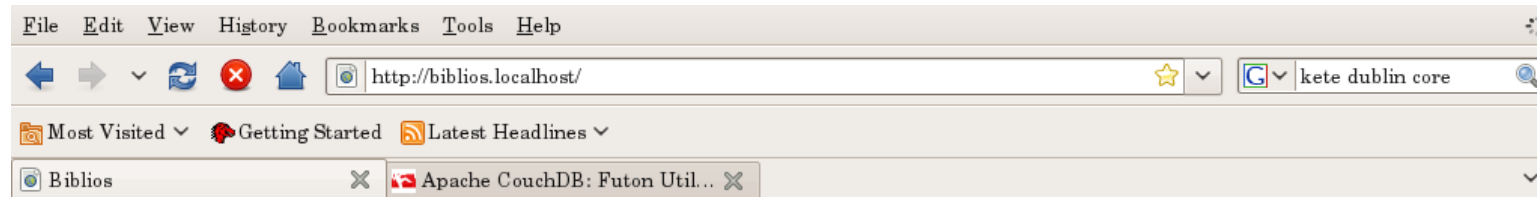
Adding Extjs Components

- `Ext.getCmp('...').add(<your object>)`
- `Ext.getCmp('resourcesPanel').items.get(0).items.add(new Ext.tree.TreePanel({....}))`

Add Couch folder to biblios sidebar

```
Ext.getCmp('resourcesPanel').items.get(0).items.add(  
  new Ext.tree.TreePanel({  
    id: 'couchFolder'  
    ,autoScroll:true  
    ,leaf:false  
    ,root: new Ext.tree.AsyncTreeNode({  
      text: 'Couchdb'  
      ,leaf:true  
      ,icon: libPath + 'lib/extjs2/resources/images/default/tree/folder-open.gif'  
      ,listeners: {  
        click: function(n,e) {...}  
      }  
      ,loader: new Ext.tree.TreeLoader({  
        }) //couchdb loader  
      }) // couchdb root  
    })  
  });
```

Couch folder in biblios



Biblios <--- Couch

- REST request to CouchDB to retrieve records
- ExtJS Store retrieves data from external source
- Create CouchDB View document and use as url for ExtJS store

CouchDb ExtJS Store

```
var couchDbStore = new Ext.ux.data.CouchStore({
  db:      'couchdb/biblios',
  view:    'records/all',
  fields: [
    {name: '_id'           }, // I'd love to get rid of this as well
    {name: '_rev'         }, // ditto
    {name: 'title'        },
    {name: 'author'       },
    {name: 'publisher'    },
    {name: 'xml'          },
    {
      name: 'dateofpub'
    },
    {
      name: 'xmlformat'
    },
    {
      name: 'location'
    },
    {
      name: 'medium'
    }
  ]
}); // CouchStore def
```

Couchdb View

The screenshot shows the Apache CouchDB Futon interface. The browser address bar is at `http://localhost:5984/_utils/`. The breadcrumb navigation shows `Overview > biblios > _design/records`. The document is a design document with the following fields:

Field	Value
<code>_id</code>	<code>"_design/records"</code>
<code>_rev</code>	<code>"586456827"</code>
<code>language</code>	<code>"javascript"</code>
<code>views</code>	<code>all</code> <code>map "function(doc){emit(null,doc);}"</code>

Below the table, it says "Showing revision 3 of 3" and provides links for "Previous Version" and "Next Version".

On the right sidebar, there is a CouchDB logo with the text "CouchDB relax". Below the logo, there are sections for "Tools" (Overview, Replicator, Test Suite) and "Databases" (biblios). At the bottom right, it says "Futon on Apache CouchDB 0.8.0-incubating".

The bottom status bar of the browser shows "Done" and a small bug icon.

Add Couch Grid

```
var bibliosCouchGrid =
  new Ext.grid.GridPanel({
    id: 'couchgrid'
    ,height:300
    ,region:'center'
    ,store: couchDbStore
    ,columns:
      [
        {
          header: 'Title'
          ,dataIndex: 'title'
        }
        ,{
          header: 'Author'
          ,dataIndex: 'author'
        }
        ,{
          header: 'Publisher'
          ,dataIndex: 'publisher'
        }
        ,{
          header: 'Date'
          ,dataIndex: 'date'
        }
        ,{
          header: 'Medium'
          ,dataIndex: 'medium'
        }
        ,{
          header: 'Format'
          ,dataIndex: 'xmlformat'
        }
        ,{
          header: 'Location'
          ,dataIndex: 'location'
        }
      ]
  })
```



Documents in CouchDB

Overview **biblios**

+ Create Document ... ⓘ Compact Database ✕ Delete Database Select view: All documents ▼

Key ▲	Value
"9c2b5f7defbdb5cc22fae1282b2c3bd2" ID: 9c2b5f7defbdb5cc22fae1282b2c3bd2	{"rev": "3807362825"}
"_design/records" ID: _design/records	{"rev": "586456827"}
"b0e73d87dab3832524085a039f69a80c" ID: b0e73d87dab3832524085a039f69a80c	{"rev": "2989028981"}
"b67820734a07fc04dceeb74f0d29247f" ID: b67820734a07fc04dceeb74f0d29247f	{"rev": "3549026065"}
"fd287fcddeb0e500780ad010ee44233f" ID: fd287fcddeb0e500780ad010ee44233f	{"rev": "3798715044"}

Showing 1-5 of 5 rows ← Previous Page | Rows per page: 10 ▼ | Next Page →



CouchDB
relax

Tools

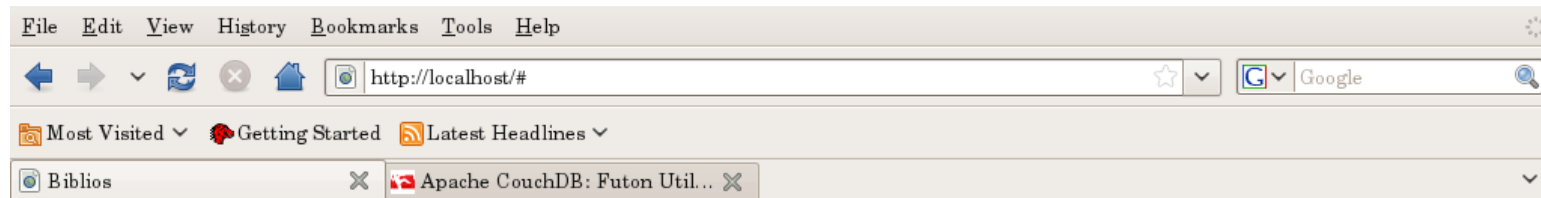
- Overview
- Replicator
- Test Suite

Databases

- biblios

Futon on Apache CouchDB 0.8.0-incubating

Couchdb Grid = Store + Display



The screenshot shows the Apache CouchDB Futon interface. The main area displays a search results table with the following data:

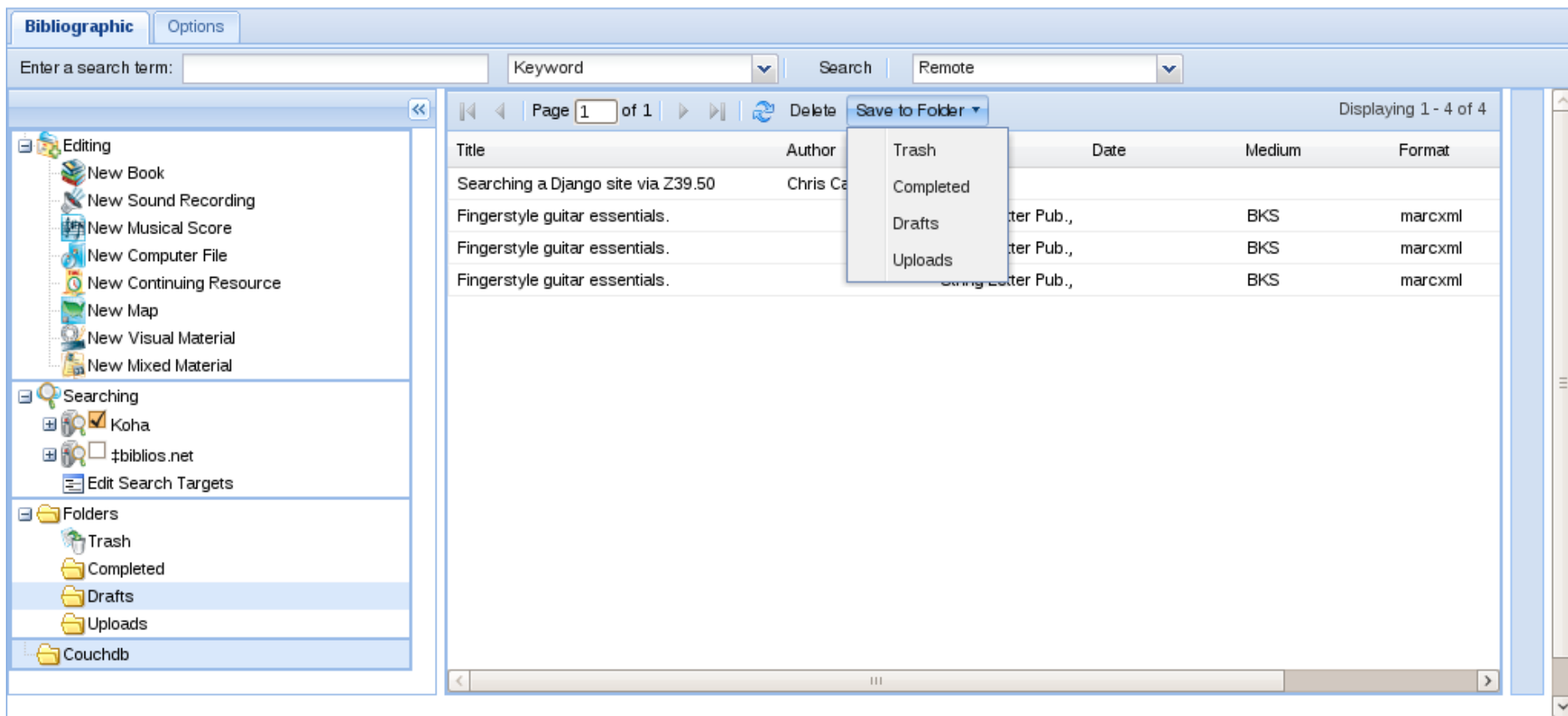
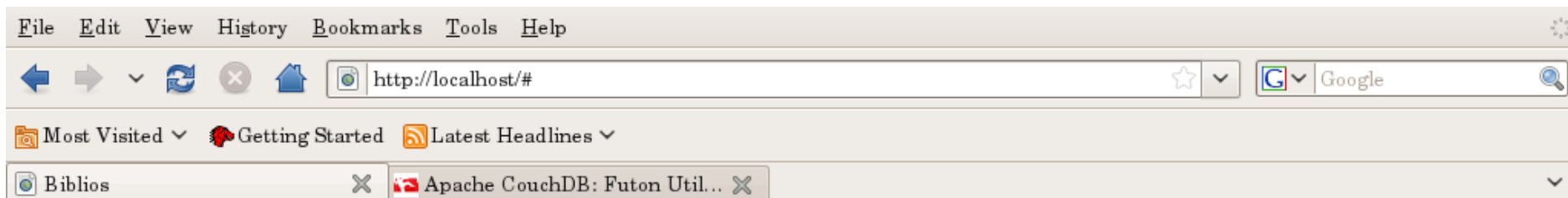
Title	Author	Publisher	Date	Medium	Format
Searching a Django site via Z39.50	Chris Catalfo				
Fingerstyle guitar essentials.		String Letter Pub.,		BKS	marcxml
Fingerstyle guitar essentials.		String Letter Pub.,		BKS	marcxml
Fingerstyle guitar essentials.		String Letter Pub.,		BKS	marcxml

A yellow arrow points to the empty space below the table. The interface also includes a search bar, a sidebar with navigation options, and a status bar at the bottom showing 'http://localhost/' and a red error icon.

Implementing Saving to biblios

```
, {
  text: 'Save to Folder'
  , menu: {
    id: 'couchSaveMenu'
    , items: []
    , listeners: {
      beforeshow: function(menu, menuItem, e) {
        menu.removeAll();
        var savefiles = getSaveFileNames();
        for(var i = 0; i < savefiles.length; i++) {
          menu.add({
            text: savefiles[i].name
            , savefileid: savefiles[i].id
            , handler: function(btn) {
              var records = bibliosCouchGrid.getSelections();
              for(var i = 0; i < records.length; i++) {
                if(bibliosdebug) {
                  console.info('saving ' + records[i].data.title);
                }
                showStatusMsg('Saving ' + records[i].data.title);
                var record = new DB.Records({
                  title : records[i].data.title
                  , author: records[i].data.author
                  , publisher: records[i].data.publisher
                  , date: records[i].data.date
                  , xml: records[i].data.xml
                  , medium: records[i].data.medium
                  , location: 'couchdb'
                  , Savefiles_id: btn.savefileid
                }).save();
                clearStatusMsg();
              }
            }
          });
        }
      }
    }
  }
};
```

Save from Couchdb



Listening to biblios.app events

- `biblios.app.on('beforesearch',
function(searchWhere, searchQuery) { ...})`

Add Couch to Send Menu

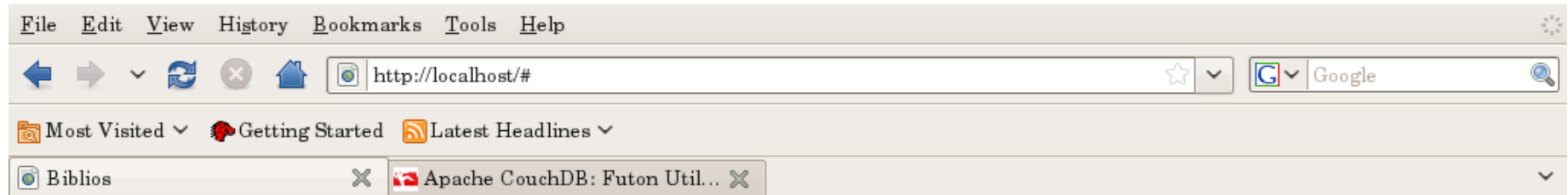
```
File Edit Options Buffers YASnippet Tools IM-JavaScript-IDE JavaScript Help
[Icons]
id: 'couchTbar'
,store: couchDbStore
,displayInfo: true
,items: [
  {
    text: 'Delete'
    ,handler: function(btn) {...}
  }
  ,{
    text: 'Save to Folder'
    ,menu: {
      id: 'couchSaveMenu'
      ,items: []
      ,listeners: {
        beforeshow: function(menu, menuItem, e) {...}
      } // couchSaveMenu listeners
    } // couchSaveMenu
  } // saveToFolder
] // couchTbar items
});
Ext.getCmp('bibliocenter').items.add(bibliosCouchGrid);
biblios.app.on('updatesendmenu', addCouchToSendMenu);
couchDbStore.load({});

function sendToCouch(records) {...}

function addCouchToSendMenu(menu) {...}

Ext.getCmp('resourcesPanel').items.get(0).items.add(
  new Ext.tree.TreePanel({
    id: 'couchFolder'
    ,autoScroll:true
    ,leaf:false
    ,root: new Ext.tree.AsyncTreeNode({
      text: 'Couchdb'
      ,leaf:true
      ,icon: libPath + 'lib/extjs2/resources/images/default/tree/folder-open.gif'
    })
  })
);
--:-- bibliosCouch.js 59% L300 Git:master (JavaScript-IDE)----Fri Feb 13 9:57AM 0.71-----
```

Send to Couchdb



The screenshot shows the 'Bibliographic' interface. On the left is a navigation pane with sections for 'Editing', 'Searching', and 'Folders'. The 'Editing' section includes options like 'New Book', 'New Sound Recording', etc. The 'Searching' section includes 'Koha' and '#biblios.net'. The 'Folders' section includes 'Trash', 'Completed', 'Drafts', 'Uploads', and 'Couchdb'. The main area displays a table of records with columns: Medium, Title, Publisher, DateOfPub, and Status. A 'Tools' menu is open over the table, with 'Send' selected, and a sub-menu showing 'Couchdb' as an option. Below the table is a 'Preview' section showing a list of identifiers and titles.

Medium	Title	Publisher	DateOfPub	Status
<input checked="" type="checkbox"/>	BKS Hitching Post Hill--Ash Hill :General Bea		1927-1996	new
<input type="checkbox"/>	BKS Hitching Post Hill--Ash Hill :General Bea	Truce,; McNee	1927-1996	new
<input type="checkbox"/>	BKS Hitching Post Hill--Ash Hill :General Bea	Truce,; McNee	1927-1996	new
<input type="checkbox"/>	BKS Hitching Post Hill--Ash Hill :General Bea	Creighton, Eugene Bruce,; McNee	1927-1996	new
<input type="checkbox"/>	BKS The old stone ditching post,	Davis, Eugene N. s.n.]	1927.	new

Preview

000 00912cam a22002651 4500
001 426990
003 BIBLIOS
005 20050817181833.0
008 791114s1927 nhuacf 000 0 eng
010 # # 1s 27008750

Extending biblios: Summary

- Extend editors by creating new editor type
- Add Extjs components with handlers that do something useful
- Listen for biblios.app events and do something when they get fired

More Information

- Chris Catalfo
 - ccatalfo@gmail.com
- <http://biblios.org/docs>
- Post to biblios-dev Google Group
(<http://groups.google.com/group/biblios-dev>)
- <git://git.biblios.org>
- <git://github.com/ccatalfo/biblios-dceditor.git>
- <git://github.com/ccatalfo/biblios-couchdb.git>
- Demo of these plugins:
<http://chriscatalfo.com/biblios>