Alma and Primo Analytics
Perl REST API

IGeLU Developers Day. 8 Sep 2016.
David Lewis, Curtin University Library.
What you need to know

- You understand general programming concepts (eg parse trees)
- You are familiar with debugging
- You program in Perl
- You are familiar with Perl paradigms (eg regex) and modules (eg DBI)
- You know how to find and install Perl modules
- You already know how to create a BI Analysis and what are filters
- You are familiar with the Analysis editor
SQL select and Analytics

- BI Analysis = select statement
- Queries and result sets
  - Rows and named columns
    - Select mms_id, title, . . . . . .

<table>
<thead>
<tr>
<th>MMS ID</th>
<th>Title</th>
<th>Created</th>
<th>Modified</th>
<th>Creator</th>
<th>Modifier</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>9921232400 01951</td>
<td>Introduction</td>
<td>2015-01-01</td>
<td>2015-12-31</td>
<td>Me</td>
<td>Me</td>
<td><a href="http://abc.org/video?v=xZ1i_Lktv">http://abc.org/video?v=xZ1i_Lktv</a></td>
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Perl DBI

my $dbh = DBI->connect("DBI:oracle:...", $uid, $pwd);

my $qs = "select mms_id,title from bibrec where title like ?";
my $sth = $dbh->prepare($qs);

$sth->bind_param(1, "Introduction%");

$sth->execute;
while (my $row = $sth->fetchrow_hashref) {
    print $row->{MMS_ID}.",".$row->{TITLE}."\n";
}

$sth->finish;
$dbh->disconnect;
Raw Analytics REST API Programming

• Create REST client connection
• Prepare XML filter
• Create REST API GET URL
  • /almaws/v1/analytics?...
• Add API key to HTTP request header (or URL)
• Execute analysis via HTTP GET
• Retrieve XML response
• Parse response
• Check for errors
• Cycle through rows and process
• Work with continuation token (if any)
<sawx:expr xsi:type="sawx:logical"
  op="and"
 xmlns:saw="com.siebel.analytics.web/report/v1.1"
 xmlns:sawx="com.siebel.analytics.web/expression/v1.1"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <sawx:expr xsi:type="sawx:expression">
    <sawx:expr xsi:type="sawx:comparison" op="notNull">
      "Physical Items"."Bibliographic Details"."ISBN"
    </sawx:expr>
  </sawx:expr>
  <sawx:expr xsi:type="sawx:comparison" op="equal">
    "Bibliographic Details"."Suppressed From Discovery"="No"
  </sawx:expr>
  <sawx:expr xsi:type="sawx:comparison" op="between">
    "Bibliographic Details"."Modification Date"="2015-01-01" to "2015-12-31"
  </sawx:expr>
  <sawx:expr xsi:type="sawx:comparison" op="null">
    "Portfolio"."Pps link id"
  </sawx:expr>
  <sawx:expr xsi:type="sawx:list" op="in">
    "Bibliographic Details"."MMS ID"="1711" or "9511"
  </sawx:expr>
</sawx:expr>
and (
    !null ( "Physical Items"."Bibliographic Details"."ISBN" ),
    eq ( "Bibliographic Details"."Suppressed From Discovery" , "No" ),
    between ( "Bibliographic Details"."Modification Date" , "2015-01-01Z" , "2015-12-31Z" ),
    null ( "Portfolio"."Pps link ID" ),
    in ( "Bibliographic Details"."MMS ID" , [ "1711" , "9511" ] )
)
Perl REST API (Alma and Primo)

my $conf = Alma2::Config::YAML->new(Alma2::Config::YML_FILE);
my $dbh = Alma2::Analytics::Client->connect($conf->get('production.analytics'));

my $types = [ 'string' ];
my $sfilter = 'eq ( "E-Inventory"."Bibliographic Details"."Title" , ? )';
my $filter = Alma2::Analytics::Filter->new();
$filter->initialize($sfilter, $types);

my $title = "Introduction";
my $xml = $filter->compile([ $title ]);  

my $columns = [ 'MMS_ID', 'TITLE' ];
my $qs = '/shared/My University/Reports/EUS/MMSID_TITLE';
my $sth = $dbh->prepare($qs, $columns);
$sth->bind_param($xml);

$sth->execute();
while ( my $row = $sth->fetchrow_hashref() ) {
    print $row->{MMS_ID}.'','$row->{TITLE}'."\n";
}

$sth->finish();
$dbh->disconnect();
my $conf = Alma2::Config::YAML->new(Alma2::Config::YML_FILE);
my $dbh = Alma2::Analytics::Client->connect($conf->get('production.analytics'));

my $sth = $dbh->prepare(
    query => '/shared/My University/Reports/EUS/MMSID_TITLE',
    columns => [ 'MMS_ID', 'TITLE' ],
    filter => 'eq ( "E-Inventory"."Bibliographic Details"."Title", ? )',
    type => [ 'string' ]
);

$sth->bind_param(1, "Introduction");

$sth->execute();

while (my $row = $sth->fetchrow_hashref()) {
    print $row->{MMS_ID} ",".$row->{TITLE}.
};

$sth->finish();
$dbh->disconnect();
The Modules

• Supporting utilities and classes
  • Struct/Skywalker, XPC, Error, Logger
  • Util: Core, DB, DateTime
  • Mail: Unix mailer
  • Config: Configuration file .yml

• REST client
  • Transport layer
  • Connection, Timeout, Retries
  • URI Escaping
  • Error Handling

• Analytics Client
  • High level DBI-style interface
  • Client, Statement, RowStruct, Filter, Parser, DataWriter
runrep.pl

• Analytics Export Limitations
  • 64,000+ rows

• Batch execution script
  • Unlimited results (in theory)
  • Execute any analysis you create
  • Job
    • Batch up inputs (options: query, filters+types+data, columns)
    • runrep.pl run job
    • Output target file (.csv .xls .xlsx SQLite)
    • runrep.pl save job

• Automation
  • Merge Alma data with other Library and University data sources
  • Copyright compliance reporting (Electronic Usage Survey)
Download. Use.

• Bit Bucket
  • Git repository
  • Tar file
  • GPL
  • Repository: https://bitbucket.org/curtin-library/almaanalytics

• Read the instructions

• Email
  • d.lewis@curtin.edu.au
  • Bugs, comments, suggestions, help
    • Subject: Perl Analytics API : Bug | Comment | Suggestion | Help
  • Include as much detail as possible
    • Explain what you are trying to do. Code snippets if possible.
    • Error messages, log files
    • Operating system and version
    • Perl version and environment (Perlbrew?)
    • Any other details
  • Fixes are welcome if you have any and would like to contribute
Thank you!