OLAP Cube Connectivity Guide

Release 5.1

January 2011

Yellowfin ®
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Version: 2.0
Published: January 2011

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Yellowfin can connect and report from pre-built cubes exposed via a XML/A connection. Yellowfin views can be based on a cube, enabling reports to be written using a similar process to Yellowfin reports based on a standard RDBMS. Yellowfin does not have the capabilities to generate cubes.

XML for Analysis (XML/A) is a standard protocol for accessing data from OLAP data sources. XML/A is built on existing standards including XML, SOAP and HTTP.
This guide will briefly cover the connection process to XML/A data sources. The connection method is largely independent of the data source your are connecting to, but examples are provided for connecting to Microsoft Analysis Services, Mondrian and PALO sources.

Recommendations

OLAP connectivity is provided to give access to existing cube infrastructure that may exist at an organisation. If starting a new BI project with Yellowfin, it is recommended to use a RDBMS with a data warehouse, as this has several advantages over using a cube, with similar drill-down capabilities.

Restrictions

Using OLAP cubes has several restrictions, when compared to the functionality provided by Yellowfin for relational datasources

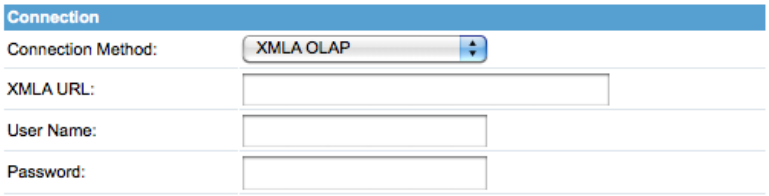
- Yellowfin inherits the hierarchies and data-types from the cube, and these cannot be changed in Yellowfin.
- Calculated fields cannot be added to a Yellowfin view or report that is based on a cube.
- Yellowfin has some restrictions with respect to row-level security when reporting from cubes.
- Grouped Columns will not work on Cubes, as this is not supported by MDX queries.
- Sub-Queries will not work with Cubes.
- Cubes will not support WKB geometry data types.

XML/A Data Source

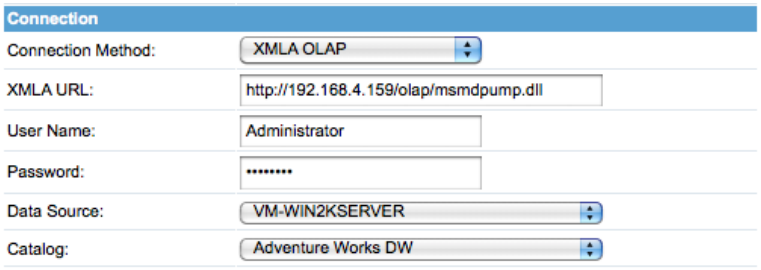
The interface to an XML/A data source is via a HTTP URL. All data access is performed via HTTP requests to the data source. As such, the only connection parameters required are the XML/A URL, and an optional username and password if the data source requires them.

The method for enabling the XML/A interface depends on the data source you are connecting to, and is not covered by this guide. Depending on the data source, the XML/A interface may be a built-in feature or require external software and configuration – for example, Microsoft Analysis Services requires IIS to be installed and a virtual directory configured to handle XML/A requests.

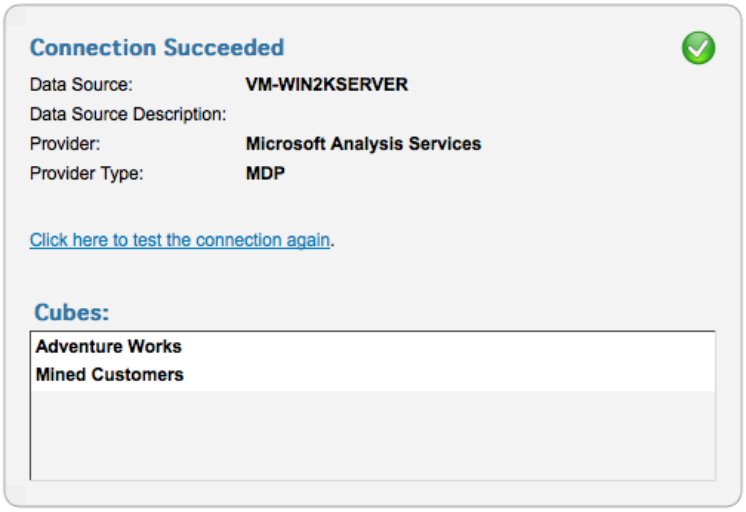
Create a new connection from the Source Systems and Views section of the Administration page. Set the Connection Method to XMLA OLAP. Then enter the connection URL, and a username and password if necessary:



Click on the Test Connection link to attempt to connect to the data source. Once a connection is made, Yellowfin retrieves the list of Data Sources and Catalogs. You can then select the default Data Source and Catalog for the connection:



The Test Connection link will also show some information about the data source, and lists available Cubes:



Microsoft Analysis Services

Microsoft Analysis Services 2000 is not currently supported. We recommend using Microsoft Analysis Services 2005 or later for a more robust OLAP and XML/A implementation.

Microsoft Analysis Services requires an initial step of mounting the cube as an XML/A service. This requires configuring a redirection filter on an IIS server. This process differs depending on the version of Microsoft Analysis Services and the version of IIS installed. This process is not covered in this guide. The following links may assist in this process:

Microsoft Analysis Services 2005 on Microsoft Windows Server 2003
http://technet.microsoft.com/en-us/library/cc917711.aspx

Microsoft Analysis Services 2005 on Microsoft Windows XP
http://technet.microsoft.com/en-au/library/cc917712.aspx

Microsoft Analysis Services 2005 on Microsoft Windows Vista
http://geekswithblogs.net/darrengosbell/archive/2007/11/04/SSAS-Connecting-via-HTTP-on-Windows-Vista.aspx

Microsoft Analysis Services 2008 on Microsoft Windows Server 2008
http://bloggingabout.net/blogs/mglaser/archive/2008/08/15/configuring-http-access-to-sql-server-2008-analysis-services-on-microsoft-windows-server-2008.aspx

The XMLA URL will depend on how IIS is configured. A common configuration is to have a virtual directory called “olap” which contains the connection pump dll file. In this case the URL would look like:

http://<server>:<port>/olap/msmdpump.dll

Mondrian

Mondrian is an open-source XML/A interface to an underlying RDBMS. We recommend the use of Mondrian only if existing Mondrian infrastructure is available, as Yellowfin can replicate the functionality of Mondrian directly from a relational database itself.

It is assumed that Mondrian has been configured to interface with the database where report data is to be sourced.

Mondrian runs as a web application on Tomcat (by default) and must be configured to enable XML/A. This process is outlined in the Mondrian documentation, but basically requires the addition of the MondrianXmlaServlet to the web.xml file for the Mondrian web application:

```
<servlet-mapping>
        <servlet-name>MondrianXmlaServlet</servlet-name>
        <url-pattern>/xmla</url-pattern>
</servlet-mapping>
```

The XMLA URL is the address to the MondrianXmlaServlet, for example:

http://<host>:<port>/mondrian/xmla

PALO

The Premium Edition of PALO OLAP server supports XML/A connections, by installing the optional XML/A provider.

The default connection URL for the PALO XML/A provider is:

XMLA URL: **http://localhost:4242/xmla**
Username: **admin**
Password: **admin**