Oxford Economics

Client SSO, Data Feed, API and Report Feed

Overview and Pricing Details

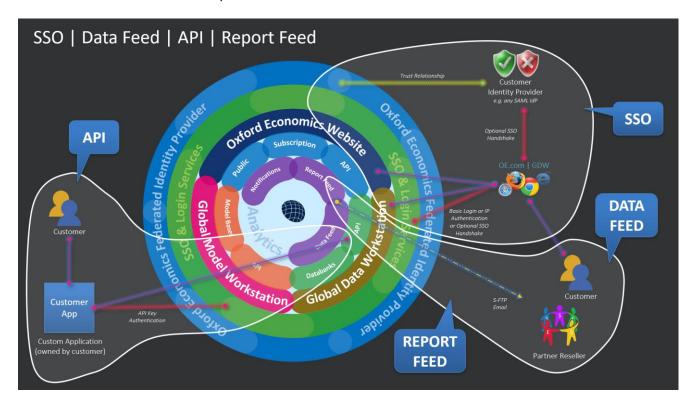
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Introduction

The figure below shows how the different elements Federated Single Sign-On (SSO), Data Feed, Application Programming Interface (API) and Report Feed sit in relation to the Oxford Economics services platform architecture.



Authentication Schemes

Federated SSO

- SSO takes very little time to set up if the firm uses a standards-based identity provider. E.g. Okta, PingFederate, ADFS, SharePoint, any SAML-compliant platform.
- All users get unique identities.
- This helps produce fine-grained usage reports.
- Users leaving their company will automatically stop having access to Oxford Economics services as soon as they are removed from their company's identity system.
- Password recovery can be used to get a real password which will work in addition to SSO authentication.
- A real password enables off-company network access to Oxford Economics services.
- A real password can be used with the mobile app and Excel Data Workstation.
- This service is a free add-on.

IP-Based authentication

- This type of authentication is the default only for public libraries where there are anonymous visitors.
- Universities have registered members, so we should always exhaust the possibility of adding SSO in preference to IP-based authentication.
- If IP-based authentication must be used, IP addresses supplied must NOT be of guest wireless APs at the University, but only those which can be resolved by public internet DNS servers.

IP Address authentication is problematic for both Oxford Economics and clients.

- We cannot identify users which leads to degraded user experience on a lot of our platforms. For example, saved selections are unusable, the upcoming profile service would be unusable too, any user on the network can apply personalisation on the main website which would affect every user.
- We cannot identify users, so we have no idea about usage and whether they are compliant to their contract and have no useful metrics, apart from total usage.
- Literally anyone plugged into their network can access the account's base subscription, leading to an access and revenue leaks.
- IP auth is deprecated by our third party Identity Provider (Auth0) and is likely to be stopped completely in the future https://auth0.com/docs/connections/enterprise/ip-address

There are no redeeming features for IP authentication, Universities especially, these days should be able to support SSO federated login like we would provide for any big enterprise.

Our Identity Provider supports a huge variety of SSO federation options https://auth0.com/docs/connections/identity-providers-enterprise

Data Feeds and API

Data Feeds (OE pushes data)

- These are simple to set up and rely on saved selections in the online databank.
- Oxford Economics supports email and secure FTP delivery of the data feed.
- Both SFTP and FTPS file transfer protocols are supported.
- Data feeds run unattended and are pushed out whenever the relevant databanks have been updated. E.g. for the Global Economics databank, this is monthly on or around the 12th of the month.
- Data is supplied in CSV & XLSX format.
- Data content is shaped exactly like the download format of the relevant databank, with a couple of additional columns identifying series categories (for backwards compatibility with legacy feeds).
- The customer is responsible for providing Oxford Economics IT details of their target FTP drop site and credentials and/or public keys to authenticate with it.

API Programmatic Access (Customer pulls data)

- Customers can use a web service interface to download data series and create CSV download files of economic forecast data from Oxford Economics' Global Data Workstation (Databank).
- Oxford Economics provides full documentation and examples of using the (REST)
 API. The documentation refers to our Global Economics databank, but the
 process is identical for all databanks.
 - See: https://www.oxfordeconomics.com/techlabs for further details (click on the 'API' tag to filter the posts).
- Comprehensive guidance on using the API includes examples and re-usable libraries written in .NET C#, Python and JavaScript, a Tableau Connector and Power BI Power Queries.
- Source code is available to download from our GitHub repository.
- The customer's IT development team must apply to Oxford Economics IT team for:
 - o An API developer key
 - The base URI for the Databank's HTTP/REST API
 - A full listing of the request and response message schemas (in JSON format)

Data Feeds and API Details

- The API Key is only available to subscribers of Global Data Workstation.
 - Provides access to all databanks included in your subscription
- The API subscription fee is in addition to the subscription fees paid for databank web access in Global Data Workstation.
 - The API subscription cannot be taken alone without a databank subscription.

- The API Key is authenticated by the user's subscription credentials and provides access only to databanks and variables authorised in the subscription.
 - Any attempt to circumvent this authorisation and/or use another organisation's API Key will be in breach of the terms and conditions of the subscription contract.
 - Note, the API does not return any data for unauthorised variable requests, and the API is governed to prevent abuse and protect the main service.

Data Feeds and API Service Fees

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Report Feeds

Report Feeds (OE pushes research content)

- A report feed is like a data feed, but delivers published research articles instead of data
- Oxford Economics supports email and secure FTP delivery of the report feed
- Report feeds run unattended and push content daily when new research reports have been published. E.g. newly published subscription reports in the Global Macro Service.
- Reports are packaged in a Zip file along with a <u>RIXML</u> format manifest (which describes the table of contents, report titles, authors, dates, topics, etc.)

Report Feeds Details

- The Report Feed is normally reserved for ENTERPRISE clients only, clients who
 use a CONTENT AGGREGATOR to deliver research, and RESELLERS. All other
 customer types are discouraged.
 - We prefer clients visit the website and My Oxford, subscribe to email notifications and newsletters, use our advanced search facilities, and/or use the mobile app to consume content
- The Report Feed subscription fee is in addition to the normal subscription fees paid for the products and services which carry the reports in the feed
 - The Report Feed subscription cannot be taken alone without a product or service subscription

Report Feeds Service Fees

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Frequently Asked Questions

What is the subscription fee used for?

- API application development (revisions, upgrades, improvements).
- API service management (cloud hosting, security, scalability, monitoring).
- Customer Innovation -Supports case to build and maintain APIs across OE services vs. many competing product development priorities (more of an internal argument).
- Customer Value Selling something for a price gives it value from the buyer's point of view, as well as ensuring the buyer uses it (more of an internal argument).

Resources

- Oxford Economics Website
- Global Data Workstation
- Global Economic Model
 - o Video (requires login)
- Global Model Workstation
 - o Blogs
- Excel Data Workstation
 - o Blogs | Videos
- Oxford Economics Mobile
 - o <u>Videos</u>
- Economic and Political Risk Evaluator
 - o Videos (note they are unlisted)
- Excel Data Workstation User Guide (incl. API)
- MDL User Guide
- Global Data Workstation User Guide
 - o Available in My Oxford requires login
- Global Model Workstation User Guide
 - o Available in My Oxford requires login
- Data Feeds User Guide
 - Contact OE support
- Global Data Workstation API User Guide
 - Contact OE support
- Technical Support
 - o support@oxfordeconomics.com