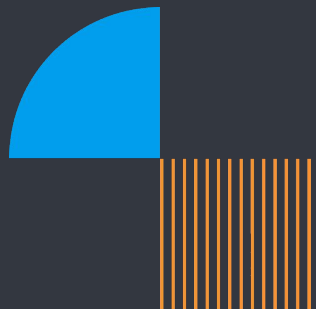# Why and How to Embed Yellowfin

Infodoc for Developers

Continue reading, or click here to watch on-demand

Embedding BI drives Revenue and Increases Customer Loyalty

Imagine providing your end users the experience of a full-time data analyst, working 24x7, always on demand inside your software? Someone to rapidly discover, monitor, and explain live data, enabling you to create real-time informed decisions! Everyone from the CEO, to a junior accountant can now be trusted with access to the right data to run the business! Not only do these features help ISV customers stay loyal, but you can deliver it with an amazingly low investment and near zero R&D spend!
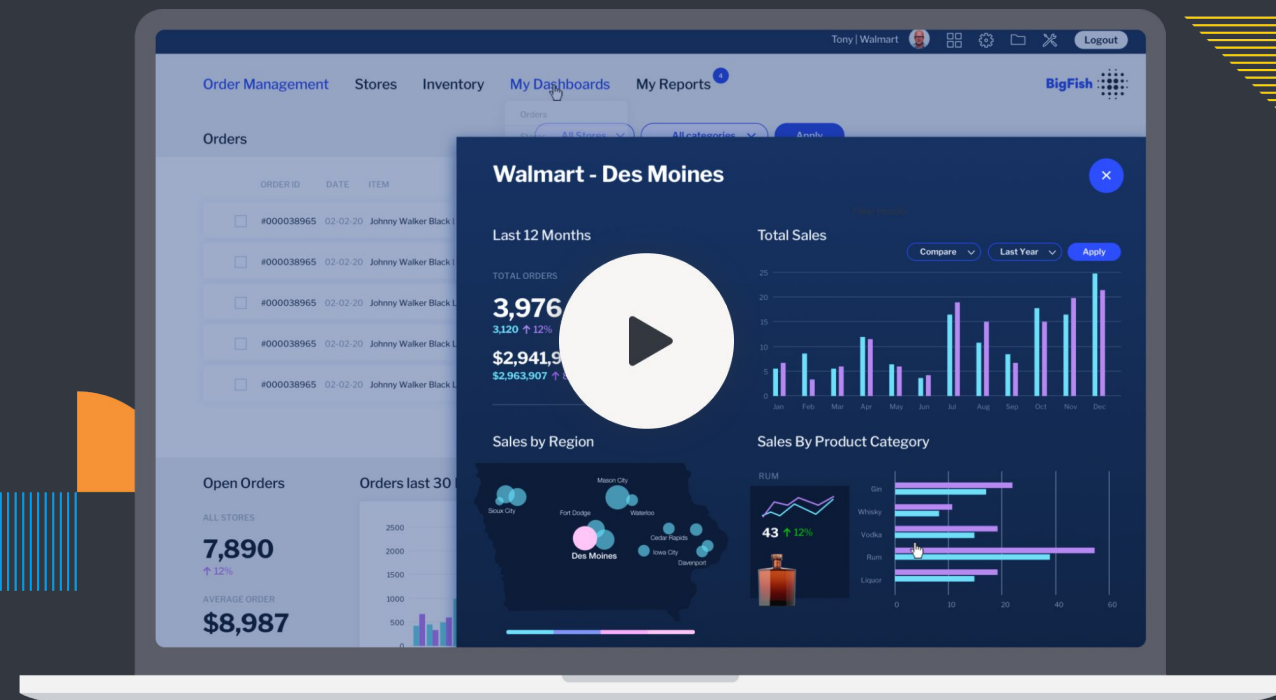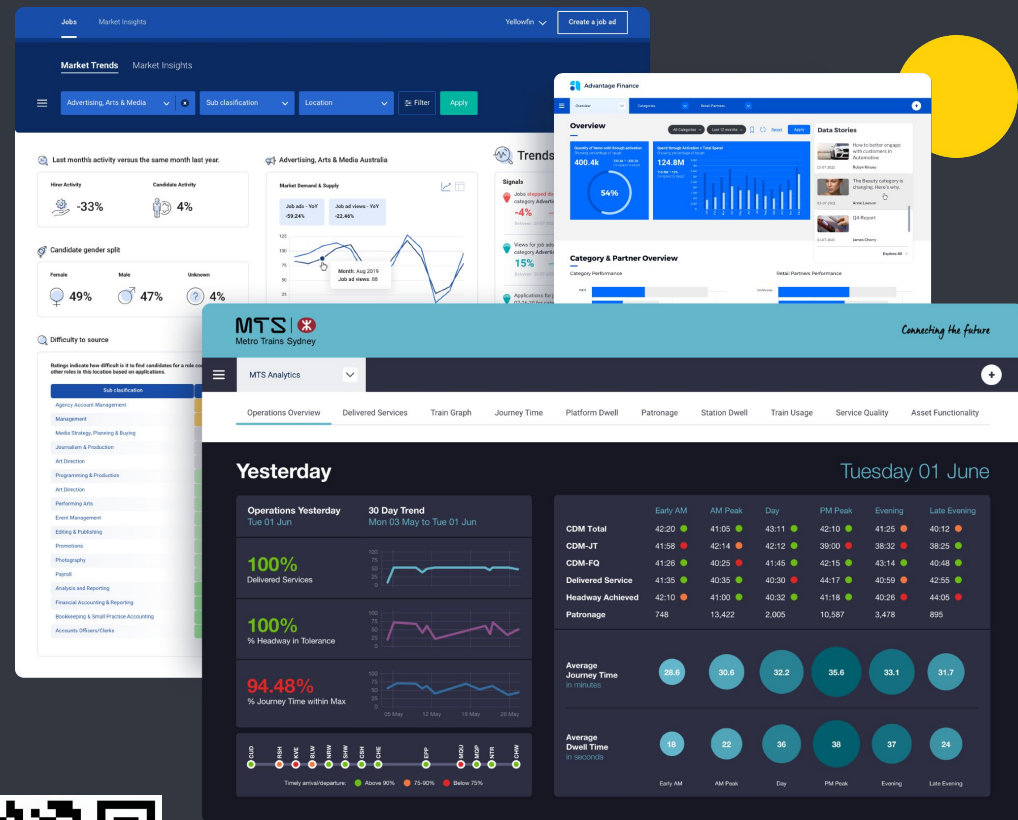
Self Service BI: How ISVs Can Boost ROI and Empower Customers

Yellowfin Embedded Analytics Walkthrough for Product Teams

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API's for all Embedding Scenarios

3 comprehensive API options enable developers to rapidly embed Yellowfin BI inside any modern application. - The API's enable you to work across multiple use cases. Website, WebApplication, Desktop applications. Anyone can now deliver context-aware data providing real insight rapidly. BUT which one should you use? Click the boxes to learn more.

JavaScript API

The API supports two broad methods for embedding content:

- **Embed links:**
  Obtained from within the Yellowfin application, and used to simply embed a report, chart or dashboard into your application. Various parameters can be appended to the link to provide some control over the look and behaviour of the embedded content.

- **Advanced API:** the advanced API allows more dynamic and flexible control over embedded content.

Rest API

Yellowfin exposes a public REST API that allows third party developers to create their own utilities, applications, and integrations with Yellowfin systems and content.

The API exposes most features of several main content types such as stories, signals, discussion streams, reports (coming soon), users, and user timelines. It also has some administration capabilities to supply features such as user management, category management, import/export, system configuration, and user session management so that developers can provide their own utilities to administer and control their Yellowfin system.

Soap API

The SOAP services allow access to certain administration functions and also allow report content to be obtained. Customers typically use the admin services to automate common administrative tasks such as deploying new client organizations and content. The Report Services can be used to build custom mobile apps or batch reporting processes.

SOAP is a legacy protocol that, whilst robust, has recently been dropping in popularity. Yellowfin continues to maintain and support the existing SOAP services, however the RESTful web services provide a more modern approach.
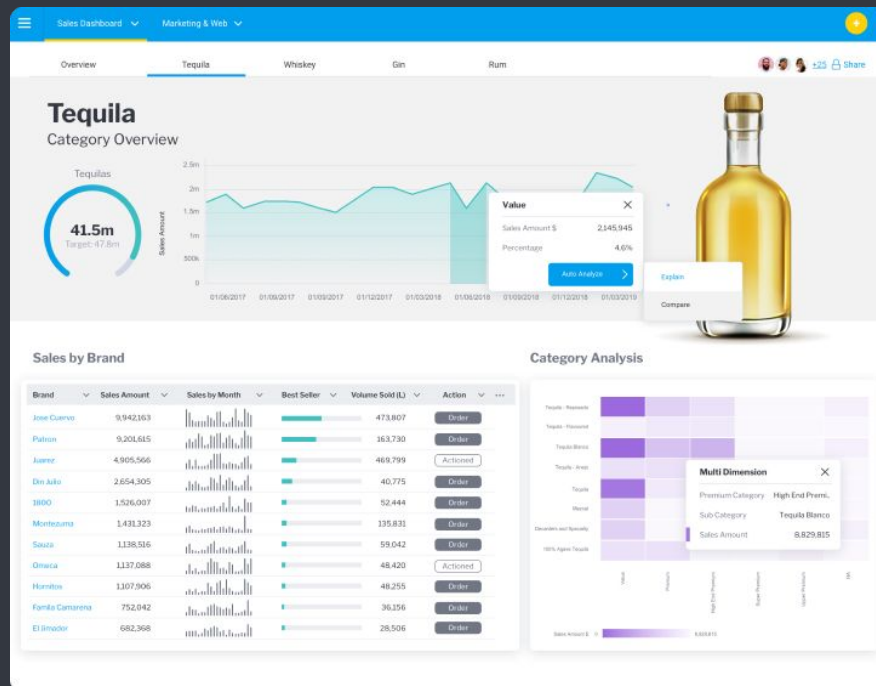
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Get Prototyping... Fast!

Yellowfin makes prototyping simple! Rather than spending time setting up sample data, reports and dashboards. Yellowfin has an "All in one" Docker image that contains our sample Ski Team dataset. This helps developers start playing with the API without having to become product experts!
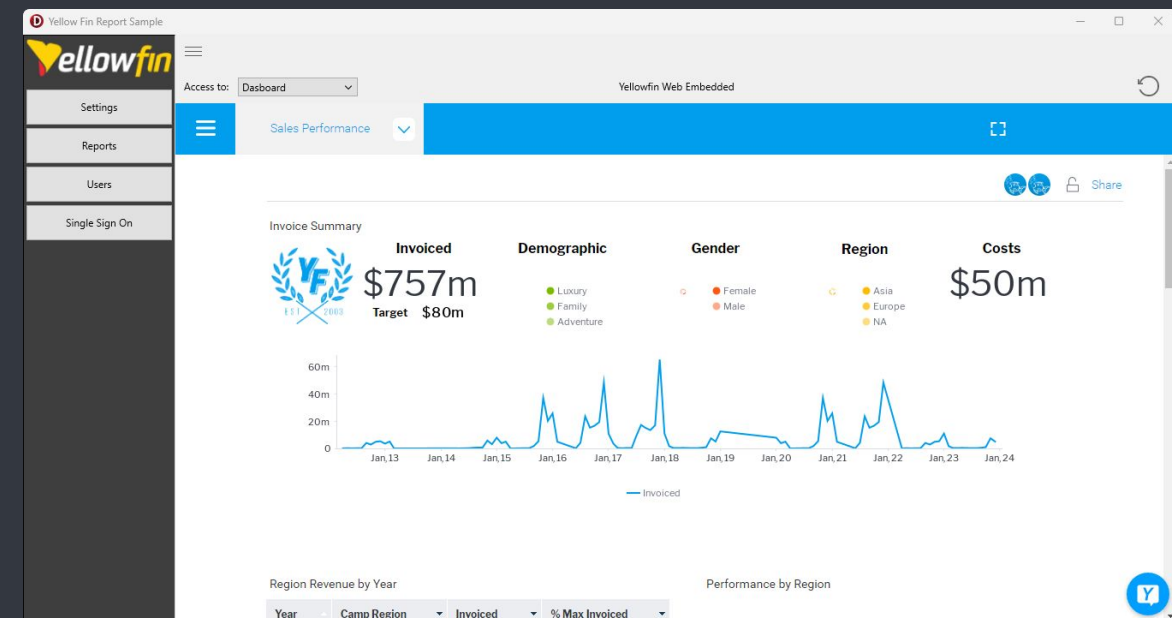
Get started in 3 easy steps! 1) Pull and run the docker image 2) Add your developer license 3) Call the APIs and get live data!

1
```
docker run -p 9999:8080 yellowfinbi/yellowfin-all-in-one
```

2 Initialize the Yellowfin Server with a developer license

3 Call the API from your code!

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White Labeling Yellowfin

Yellowfin can be restyled to align with an organization's brand identity by incorporating corporate colors, fonts, logos, and links. This integration ensures that Yellowfin seamlessly becomes an extension of your organization within your OEM application, enhancing the user experience. Branding can also be managed by client orgs, enabling each tenant to have their own look and feel.
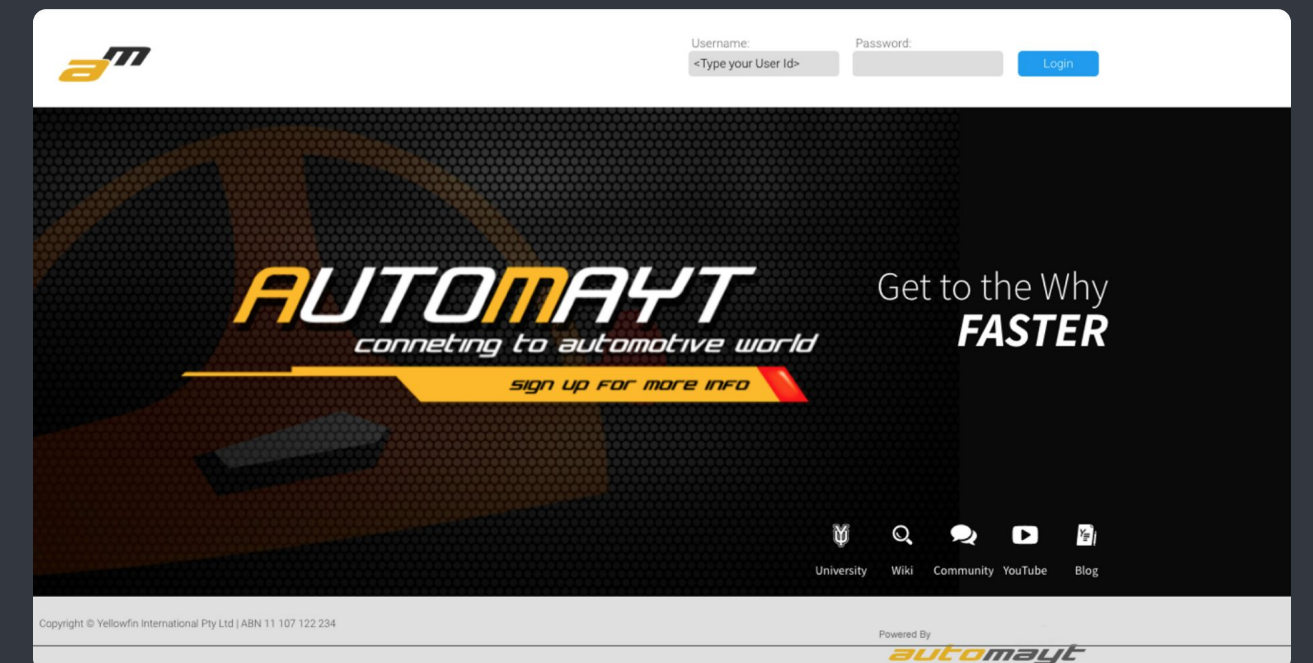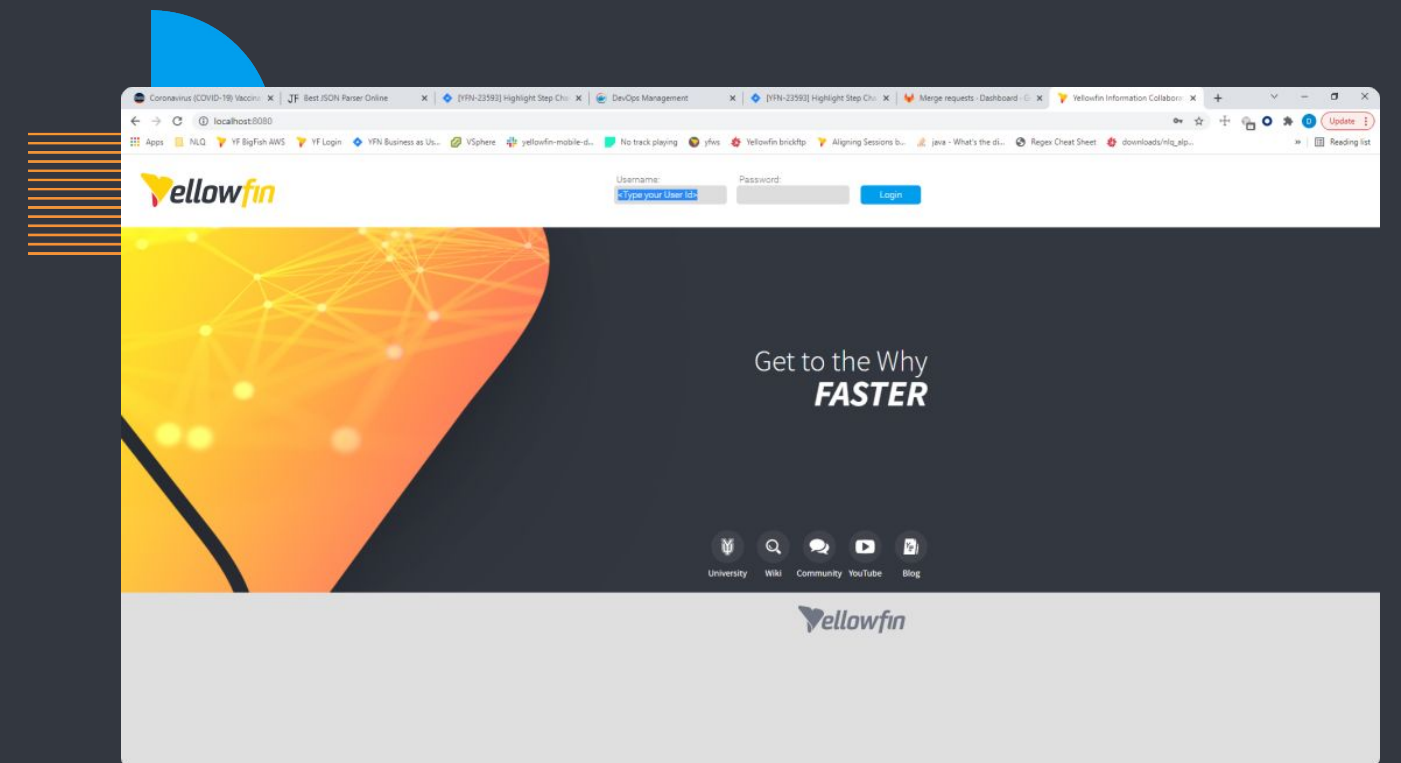
Styling Components

<u>Documentation and examples</u>

The components in Yellowfin that can be styled and customized are linked to here.

- <u>System Login Page</u>
- <u>System Header</u>
- <u>System Footer</u>
- <u>Images</u>
- <u>CSS</u>
- <u>Styling Reports, Charts, and Dashboards</u>


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Flexible Architecture

There are multiple choices when it comes to deployment. You can either run Yellowfin as a standalone solution or embedded into your applications. Yellowfin can even bring in data from other data-sources outside of your application to help enrich your experience. You can even embed it into multiple applications!

Choice of User Interface
Local, Remote, Dashboards etc
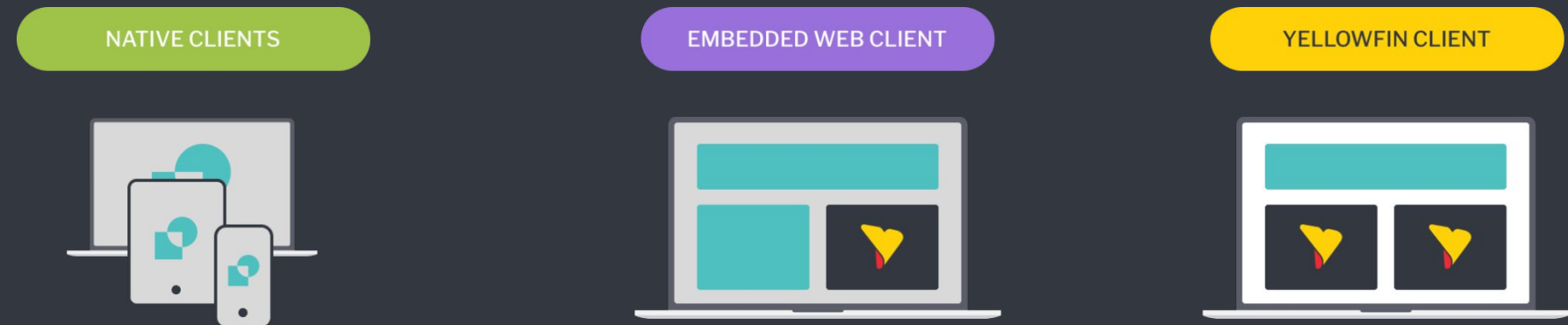
Business Logic & Data Access Layer
Rapidly expand your system with fully featured BI intelligence
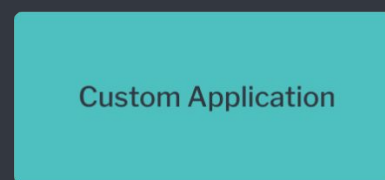
Data Layer
Use existing data layers, and also draw in non-structured data with data automation that you can report on inside you existing applications

NATIVE CLIENTS

EMBEDDED WEB CLIENT

YELLOWFIN CLIENT

Custom Application

Yellowfin BI App

Data Warehouse

Other Data Sources

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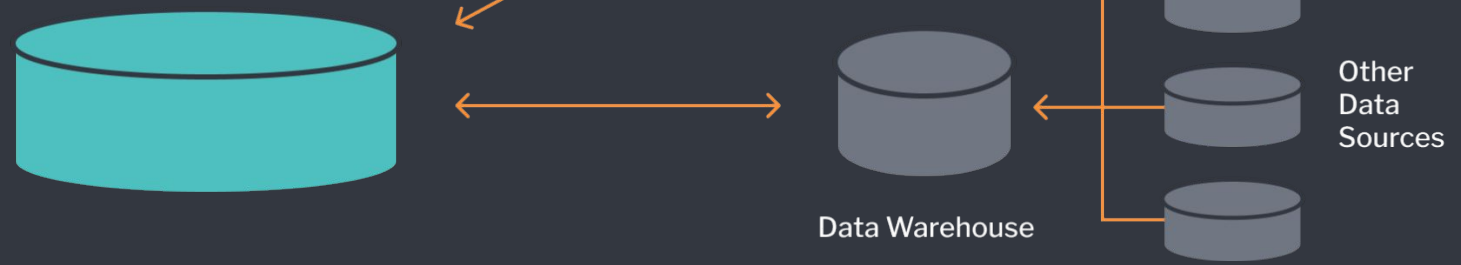
Try the API

Script logic to get you started!

User Synchronization and Single Sign on using the REST API

Accessing the REST / RPC API

The REST API is available under the /api namespace. For example, https://yellowfin.myapp.com/api/stories

Additionally, the suite includes RPC (Remote Procedure Call) endpoints which support workflows that are difficult to fit into the REST paradigm. These are located in the /api/rpc namespace.

Every API request requires an Authorization header. Its format is

The time in milliseconds from the Unix epoch 00:00:00 UTC on 1 January 1970

YELLOWFIN ts=1600224140615 nonce=3370ddc4-37d9-41b9-9f24-ada181fdc4bf token=securityToken

Yellowfin allows you to name your application as part of the white labeling. This needs to match your application name (Default Yellowfin)

A random UUID generated by the client

Security Token for accessing the API.

As a basic rule, enter a Refresh Token to get an Access token, and use the Access Token to call most API's. The required tokens are specified in the API docs.

https://wiki.yellowfinbi.com/display/yfcurrent/REST+API#RESTAPI-Authentication

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Yellowfin API - Security Tokens

Refresh Token

This is used to verify you are allowed to start making API calls. Think of it as an application secret token that allows first level access to the API, but is separate from user security.

You now have a key to the door, but you are still not allowed in! You need to get an Access Token for that!

Access Token

Using the Refresh Token, you can then attempt to sign in as a specific user and get an Access Token.

The Access token allows you to call the platform API's to (e.g.) fetch a list of the users favourite reports.

Login Token

The access token can be used to request a direct login token.

This can be used as part of a request to log directly into Yellowfin as part of a URL. They are single use, so need to be requested for each session that logs in.

I want to call the Yellowfin API, here are my credentials...

OK... Here is a secret key to allow your application access to call the API, use this each time you want to work with the Yellowfin API.

Here is my Refresh Token. I've got user "Steve" here. Please, can you give me a token that identifies them ready to call the Yellowfin API.

Here you go, this token lasts 20 minutes. You can use this token to call any API that user "Steve" has access rights for.

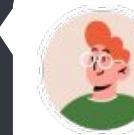Here is my Access Token. Can I have a list of Dashboards?

This Access Token is for "Steve". Here is the list of report for them, including their favorite ones.

Here is my Access Token, please, can I have a token to enable single sign on. I see it goes into the URL

Your Access Token is for "Steve", here you go, use this one-time-use code to log them into the system. Just put it in the URL and they can get into any allowed entry point.

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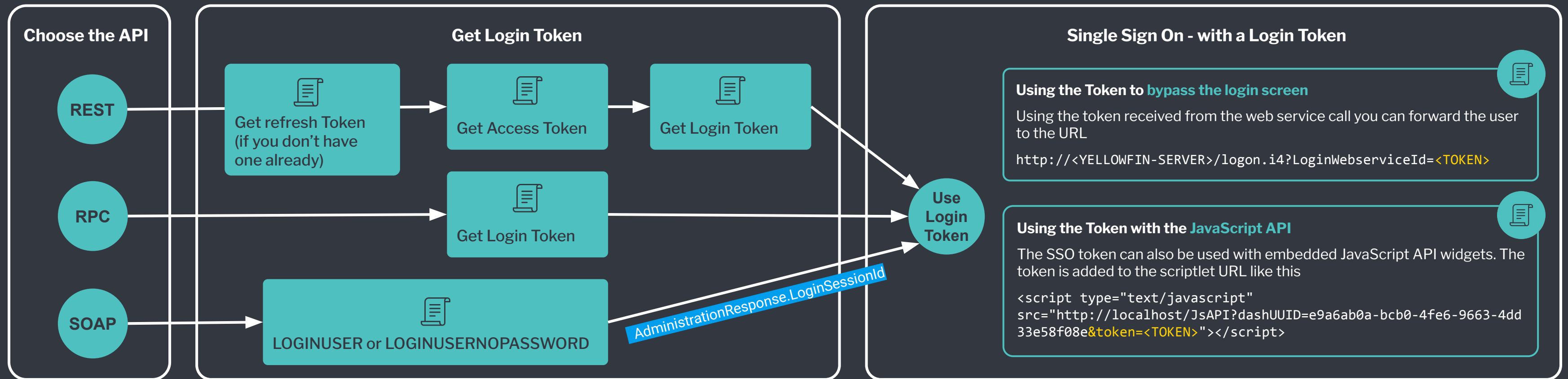
Single Sign On APIs

To use Single Sign On, you you need a User and a Login Token. Login Tokens last for 5 minutes, and can only be used once to launch a session (to ensure tight security controls). You can get a Login Token using either the REST, RPC or the SOAP API. The Login Token can then be used as part of the URL for either a redirect, or to access an embedded JavaScript API widget.

What about the user, and do I need their password? You can add/update/delete a user directly via Yellowfin, or via the API's. Once you have a Refresh Token, the API has a configuration that allows for password-less Access Token creation, simplifying integration. Also, if you only want users to access Yellowfin via your application, you can create the user via the API without a password. Users without a password are unable to reset their password, ensuring integrators maintain full control over access.

Yellowfin also offers Single Sign On via its SAML Bridge, including support for Active Directory.

Choose the API

- REST
- RPC
- SOAP

Get Login Token

Get refresh Token (if you don't have one already) → Get Access Token → Get Login Token

Get Login Token

LOGINUSER or LOGINUSERNOPASSWORD

AdministrationResponse.LoginSessionId

Use Login Token

Single Sign On - with a Login Token

Using the Token to bypass the login screen

Using the token received from the web service call you can forward the user to the URL

```
http://<YELLOWFIN-SERVER>/logon.i4?LoginWebserviceId=<TOKEN>
```

Using the Token with the JavaScript API

The SSO token can also be used with embedded JavaScript API widgets. The token is added to the scriptlet URL like this

```
<script type="text/javascript"
src="http://localhost/JsAPI?dashUUID=e9a6ab0a-bcb0-4fe6-9663-4dd
33e58f08e&token=<TOKEN>"></script>
```

Developer Resources to Watch and Read!
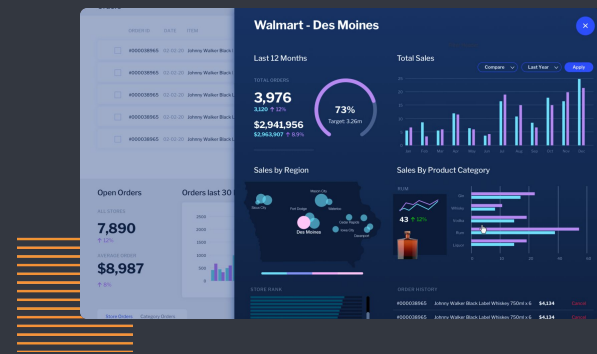
 Yellowfin Community

 Yellowfin Wiki

 Yellowfin YouTube

 Yellowfin University

Embedded Analytics Overview

Great overview of the features and capabilities of Yellowfin that you can embed inside your applications.
https://www.youtube.com/watch?v=_VRLdnfjZwk

Sample code for Integrating Business Analytics, powered by Yellowfin, inside Delphi Applications.

https://blogs.embarcadero.com/sample-code-for-integrating-business-analytics-powered-by-yellowfin-inside-delphi-applications/
https://github.com/DelphiABall/Yellowfin

Deploy Yellowfin using Docker and connect it to Delphi apps

https://blogs.embarcadero.com/deploy-yellowfin-using-docker-and-connect-it-to-delphi-apps/

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Yellowfin is a global Business Intelligence and analytics software vendor with a suite of world-class products powered by automation. Yellowfin is recognized as an innovator by the world's leading analyst firms. More than 27,000 organizations and more than three million end-users across 75 countries use Yellowfin every day. For more information, visit yellowfinbi.com

Please contact the Yellowfin sales team to request a developer license or to connect with our Embedded ISV team.