

# What is Wakanda?

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Wakanda is a fully integrated application development platform that allows you to design, build and publish business-oriented Web applications. These web applications are hosted by Wakanda Server and can be accessed through a Web browser, tablet, or smartphone.

Wakanda provides you with an end-to-end JavaScript platform, where you get:

- A zero-configuration server with built-in HTTP services,
- A client proxy that automatically replicates the logic and services from the server,
- Client-side access to all the data objects,
- Multi-layered architecture,
- Datastore classes in the domain layer,
- Robust infrastructure with integrated database,
- Server-side JavaScript,
- REST data services with automatic JSON transport using JSON-RPC,
- Fully evolutionary by inheritance to add behaviors and events, and
- Dynamic behaviors: no static code generation.

## Wakanda Platform

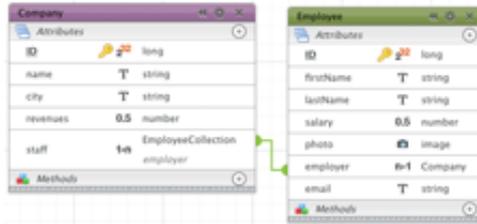
The Wakanda platform consists of two main components:

- **Wakanda Studio:** an application that allows you to create your application's data model and Pages.
- **Wakanda Server:** publishes your application and stores the data in its datastore as well as uses its WAF (JavaScript framework) to interact with the datastore and the Pages.
- **WAF:** This JavaScript framework provides you with server-side and client-side APIs to interact with the datastore.



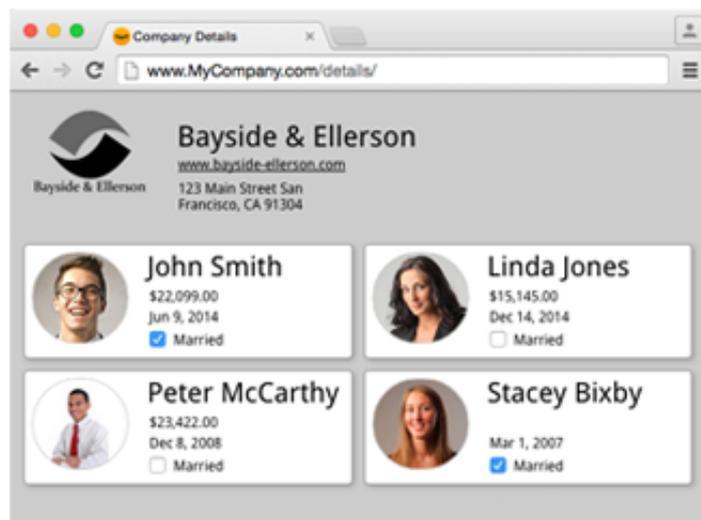
## Wakanda Studio

Build the data model, create Pages, and code your application's business logic.



## Wakanda Server

Access and process data on the server and publish it to the Web (desktop, tablet, or smartphone)



The fully integrated Wakanda platform provides the necessary tools to create and run your Web applications. While other development environments require various technologies and tools (application server, HTTP server, database server, a framework, etc.) that must work together through multiple layers of code, Wakanda provides an **all-in-one environment**, thus eliminating the intermediary code and hazards of inter-application interfacing. Both Wakanda Server and the Web applications use the same language: JavaScript.

The application's logical structures (entities) are available as directly editable objects through JavaScript code, making the access to data immediate and natural. Building Wakanda applications is done using business logic, found at all stages of the creation process, making the application easy to design as well as easy to maintain.

The Wakanda application's data structure is inspired from the entity-relationship model. The data model as well as its attributes and relations are defined using datastore classes. Datastore classes make it possible to define the database structure in a natural way, befitting the user's needs and letting go of the conceptual constraints of the relational model.

### Wakanda Server

Wakanda Server is a faceless application intended to run on Windows, Mac and Linux, comprised of the two principal components:

- **Data server:** Wakanda Server benefits from a complete, robust, and powerful Object

Data Storage engine, on top of which is built the concept of entity-relationship model, thus allowing you to formalize the hierarchical data structures in a simple and efficient manner using datastore classes, staying as close as possible to the requirements of your application logic.

- **Web server:** Facilitating and optimizing the interactions between the user interface and data by way of the technologies implemented by the development environment (datastore classes, Server-Side JavaScript, RESTful Data Services, etc.), Wakanda's Web server offers a platform dedicated to deploying powerful and evolutionary Business Internet Applications, using the latest industry standards.

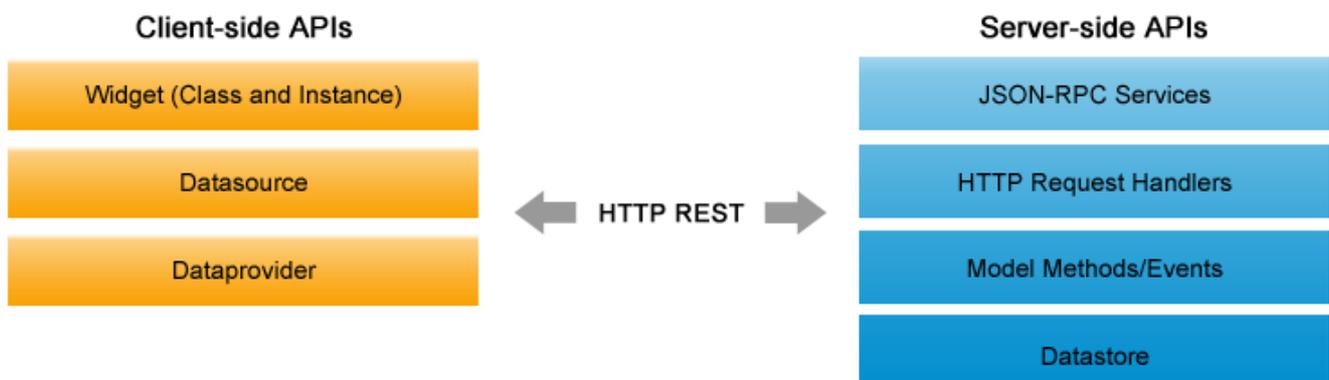
## Wakanda Studio

Wakanda Studio is where you design and develop your Web applications. Wakanda Studio is made up of the following editors:

- **Solution Explorer:** This area allows you to manage your solutions, projects, and various files (Pages, HTML, JS, CSS, JSON, XML, Text, images, etc.) in the solution and each project.
- **Datastore Model Designer:** In this editor, you create the data model for your Wakanda project. Each data model contains the datastore classes, attributes, methods, and events.
- **GUI Designer:** The GUI Designer allows you to design your Pages with powerful widgets to view and edit the data in your Web application. To create the interface, you add one or more built-in or custom widgets to your Page.
- **Code Editor:** You code in this editor all the JavaScript for methods and events for datastore classes, attributes, Pages, and widgets. In this editor, you can also edit XML, JSON, and CSS files.
- **Debugger:** A full-featured JavaScript Debugger that will help you to debug your code both client-side and server-side.
- **Studio Tools:** A few additional tools, like the **Wakanda Server Administration** and **Data Browser**, allow you to administer your web application on the server and to manage the data in your projects. Both are accessible through your default Web browser. The **Add-ons** extension allows you to install themes, widgets, and modules into your project as well as extensions into Wakanda Studio.

## Wakanda APIs

A Wakanda solution relies on several JavaScript APIs available in WAF (Wakanda Application Framework) on both the server-side and client-side that allow built-in editors or interfaces from any other application to connect and use the business model. The current architecture of Wakanda data access APIs is shown here:



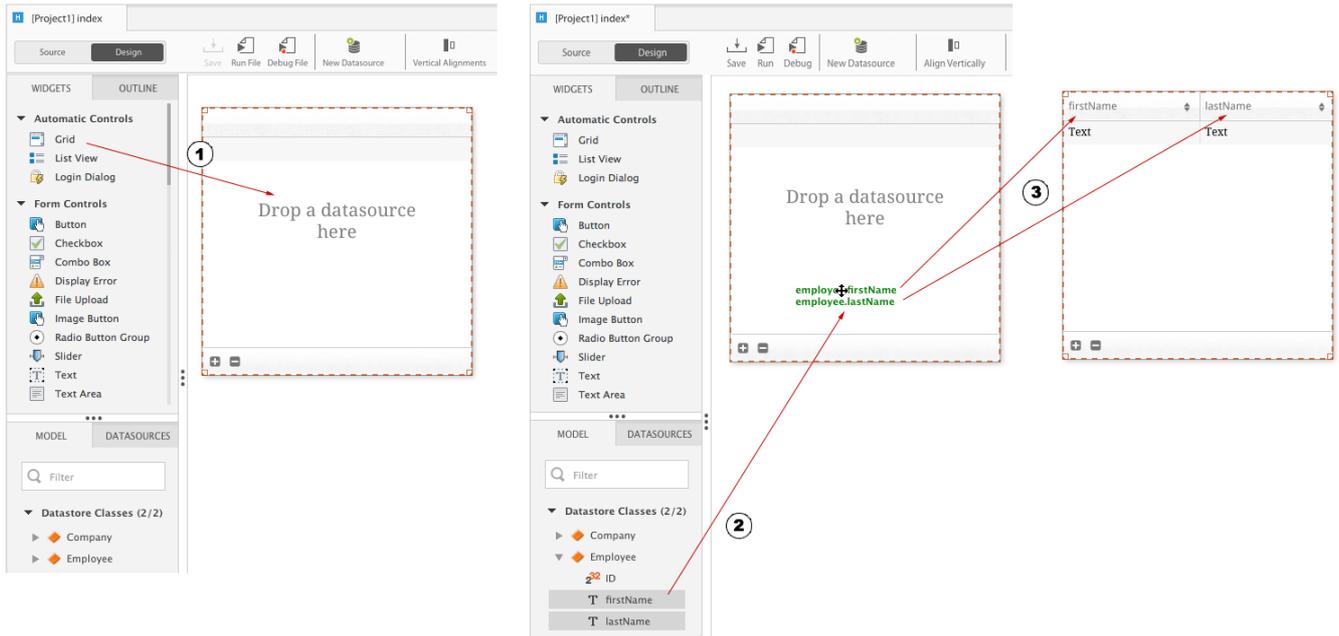
Server-side JavaScript APIs provide you with all the necessary tools to manage files, folders, services, and so on.

## Save Time

Connecting the interface and the data has two advantages:

- You can bind a widget (an interface element) to data on your server (and its attached functionality) with a single click and define its properties in a palette.
- Whenever there is a change to the data or its corresponding function, the widget and its properties will automatically change with it.

This connection will save you much development (and re-development) time.



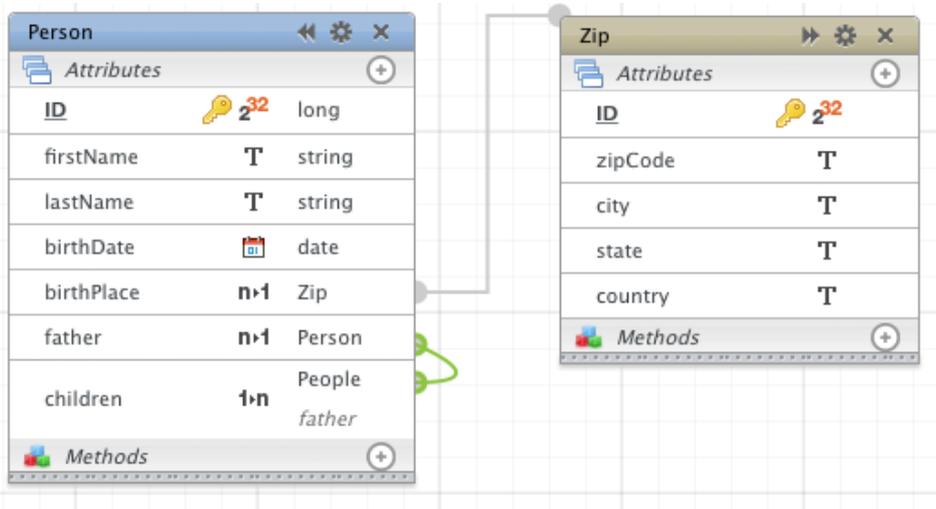
1. In the GUI Designer, dragging and dropping a Grid from the Widget panel, creates it on the Page.
2. From the Datasources panel, the Grid can be connected to several attributes in a data source (e.g., a datastore class).
3. The data is then automatically bound to the Grid as displayed in the user interface.

## JavaScript Everywhere

Wakanda uses JavaScript to not only business logic on the server, but also the actual interface.

Wakanda's implementation of JavaScript eliminates overcomplicated ORMs and the tedious generation of SQL code that sometime needs to be manually optimized (which complicates maintenance). Thanks to JavaScript, you can develop web and mobile applications that act as native ones. Instead of requiring a patchwork of languages, such as PHP, SQL, Ruby, PERL, Java, Objective C, or C++, Wakanda development requires only JavaScript.

By using JavaScript, HTML5 and CSS3, you can easily deploy your application on any mobile device.



```
// Find all people born in New York and return an array of cities in which
// all their grandchildren were born

ds.Person.query('birthPlace.city = "New York"').children.children.birthPlace.distinctValues('city');
```

*The JavaScript code above would be much longer if it were written for a SQL database with the same tables.*

### For Any Developer

While Wakanda is managing the bulk of the work, with very little code, you can then focus on your application's business logic and its interface.

You don't need to be a JavaScript expert to build powerful apps with the Wakanda platform. Because JavaScript is currently one of the easiest and most ubiquitous programming languages, you can easily learn and apply it in very little time regardless of your development background.

By using standards-based files, you can also ensure access by just about any developer on any platform using a variety of third-party tools.

### For Any Application

Wakanda can be tailored to the most exacting needs and a wide range of scales. From start-ups with a new breed of application to established enterprises with specialized needs, businesses of all kinds can benefit from Wakanda's rapid model for development, testing, and deployment of your application.

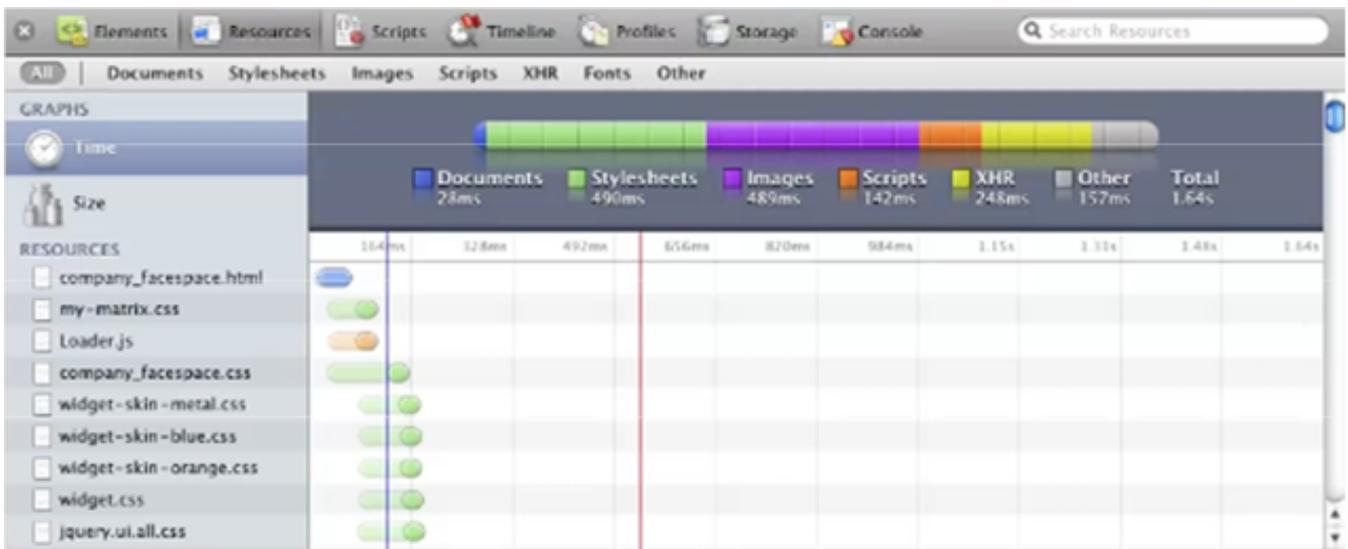
Wakanda is especially well suited for all kinds of business applications, like a department-specific application with a tightly secured access or a public site with thousands of users accessing large amounts of shared data.

### It's Fast

Fast turnaround is matched by fast performance. Wakanda Server runs perfectly on Linux, Windows, and Mac, doing all the heavy lifting of the data and business logic as well as acting as a web server.

Data and procedures can eventually be stored in the cloud for distributed solutions.

On the user end, by employing standards like HTML5, CSS3 and transferring data via JSON/REST, client applications run rapidly without plug-ins.

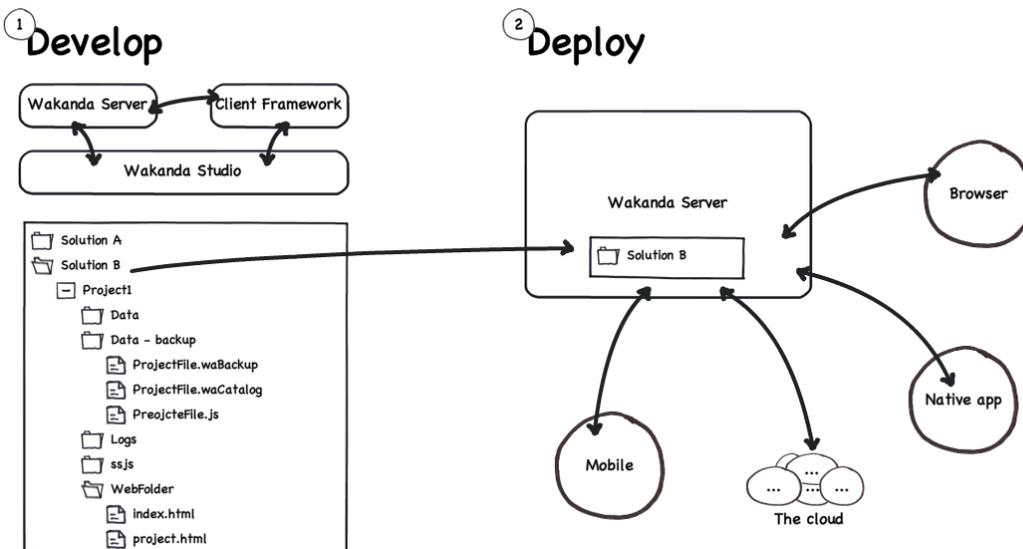


## Easy to Start

Wakanda was designed to be easy to begin using to deploy an application:

- On Windows or Mac, install Wakanda Server and Wakanda Studio simply by dragging and dropping them onto your computer.
- Create your datastore class model.
- Build your web pages.
- Test and execute your application from a single click in Wakanda Studio.
- Access the application from a Web browser.
- Administer the server from a Web browser.

Once you're satisfied with your application, copy your files onto any machine - Windows, Mac, or Linux - running Wakanda Server to access it via a browser.



1. Build your solution using the entire platform for development and testing.
2. Copy the solution onto a production machine running Wakanda Server and your application will be available on desktop browsers, smartphones, and tablets.

## Easy to Run

The user experience will be similar no matter how the user accesses your application either on a desktop browser, like Chrome or Firefox, a smartphone, or a tablet. Wakanda allows for this cross-platform compatibility without the hassle of re-developing for each platform thanks to the power and flexibility of WAF.

[Download Wakanda](#) to see for yourself just how easy it is. Once you go through the **Quick Start** manual to better understand how to develop an application with Wakanda, you can discover many of the more advanced concepts in the **How Do I** guide, and you'll be well on your way to developing like a pro.

You can also interact with other developers and the Wakanda team on the [forum](#).