

Software Engineering

PA2
Presentation

180010013 - Rutik Dadhaniya
180010030 - Brinal Savsaviya
180010028 - Ritwik Singh
180020028 - Prerit Padya

Facebook API

Facebook APIs are the primary way to connect with the massive Facebook platform programmatically. Third-party developers create Facebook apps, games, stream live programmatically, run automated marketing campaigns, manage their business pages all with the help of the Facebook APIs.



A Brief History

The current Facebook Platform was launched in 2010.

The platform offers a set of [programming interfaces](#) and tools which enable developers to integrate with the open "[social graph](#)" of personal relations and other things like songs, places, and Facebook pages.

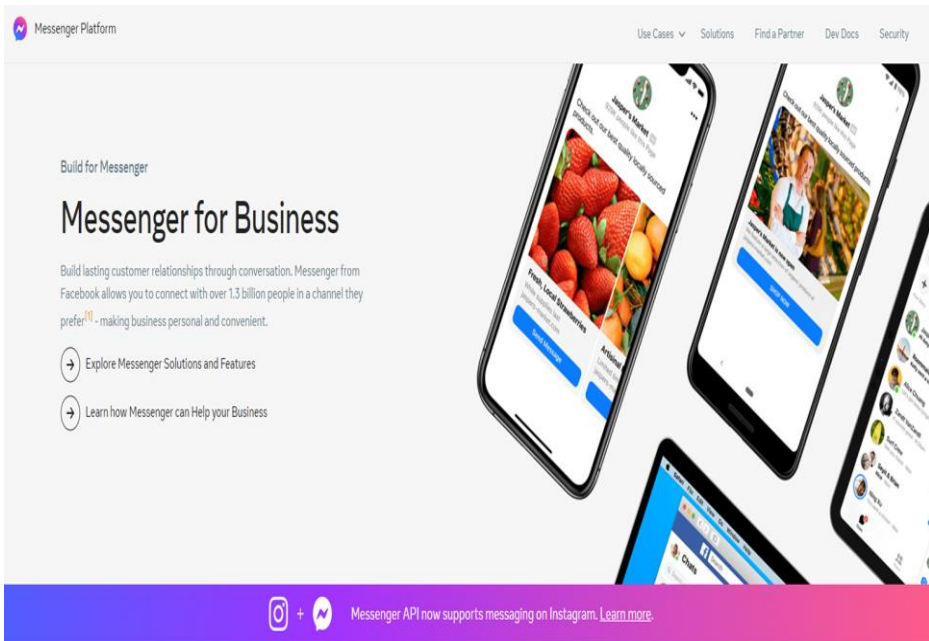
Applications on facebook.com, external websites, and devices are all allowed to access the graph.

Facebook api is divided among various modules, each serving a particular task.

Facebook Graph API is one of the most important and used api.



SOME API MODULES



Messenger Platform



Use Cases Solutions Find a Partner Dev Docs Security

Build for Messenger

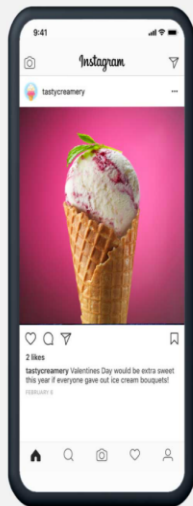
Messenger for Business

Build lasting customer relationships through conversation. Messenger from Facebook allows you to connect with over 1.3 billion people in a channel they preferTM - making business personal and convenient.

- Explore Messenger Solutions and Features
- Learn how Messenger can help your Business

 +  Messenger API now supports messaging on Instagram. [Learn more.](#)

Learn more about the Instagram Graph API



Mentions API

Facilitate interactions between businesses and people. Allow them to see media they have been photo tagged or @mentioned in and reply back.

[Docs](#)

Insights API

Help businesses access and analyze valuable metrics about their Instagram business profile. Enable them to understand and optimize the performance of their organic content on Instagram.

[Docs](#)

Business Discovery API

Discover other businesses. Learn how other businesses manage their Instagram presence by viewing their organic posts.

[Docs](#)

Comment Moderation API

Drive interactions at scale. Enable businesses to more efficiently interact with their audience through comments under their media on Instagram.

[Docs](#)

Business Tools

Tools to scale your business faster.



BUSINESS TOOLS

App Ads

Drive app installs and app engagement with ad campaigns on Facebook.

[OVERVIEW →](#)

BUSINESS TOOLS

App Events

Track app events to measure, optimize, and target your Facebook ads.

[DOCS →](#)

BUSINESS TOOLS

Facebook Login

A convenient and secure way for Facebook's billions of global users to log into your app or website.

[OVERVIEW →](#)

BUSINESS TOOLS

Facebook Pixel

Make conversion tracking, optimization and retargeting easier.

[DOCS →](#)

BUSINESS TOOLS

Insights for Pages

Easily understand how your audience is engaging with your Facebook Page.

[DOCS →](#)

BUSINESS TOOLS

App Links

An open, cross-platform standard for app-to-app linking.

[OVERVIEW →](#)

[DOCS →](#)

BUSINESS TOOLS

Commerce

Enable ecommerce solutions with tools to sell products across the Facebook family of apps.

[DOCS →](#)

BUSINESS TOOLS

Instagram

Tools to help businesses manage their presence on Instagram.

[OVERVIEW →](#)

[DOCS →](#)

BUSINESS TOOLS

Jobs on Facebook

Reach diverse and qualified candidates with jobs posts and applications from Facebook users.

[OVERVIEW →](#)

BUSINESS TOOLS

Marketing API

Solutions designed to help you improve your reach across the Facebook family.

[OVERVIEW →](#)

[DOCS →](#)

BUSINESS TOOLS

Instant Experience API

Tell your brand story with fast, full screen experiences on mobile.

[OVERVIEW →](#)

[DOCS →](#)

BUSINESS TOOLS

Facebook Analytics

Measure behavior across your owned channels and discover valuable insights.

[OVERVIEW ↗](#)

BUSINESS TOOLS

Facebook Business SDK

Suite of SDK and APIs to help developers build business solutions on Facebook.

[OVERVIEW →](#)

[DOCS →](#)

BUSINESS TOOLS

Messenger

Build rich conversations and experiences with our messaging toolbox.

[OVERVIEW →](#)

[DOCS →](#)

BUSINESS TOOLS

Official Events API

Learn more about solutions designed to help you save time creating and managing Facebook events.

[OVERVIEW →](#)

BUSINESS TOOLS

Pages API

Learn how to publish content and easily manage your Facebook Pages.

[DOCS →](#)

GRAPH API

- Primary way for apps to get data in and out of facebook social graph.
- HTTP based REST API
- Features
 - Query data
 - Post status and stories
 - Uploading pictures and videos
 - Much more..



Graph API



Application

Response Data

Access Token



Graph API

Aggregate Information

Request Data



Facebook Database

- Facebook's core
- Social graph
- Connections

SOCIAL GRAPH

Representation of information on
facebook:

1. nodes
2. edges
3. fields



SOCIAL GRAPH - NODES

Basically individual objects:-

User, Photos, Album, Event, Comment,
Story, Video, Groups, etc..



SOCIAL GRAPH - EDGES

Connections between a collection of objects and a single object.

Feed, Tag, Post, Likes, Activities,
etc..

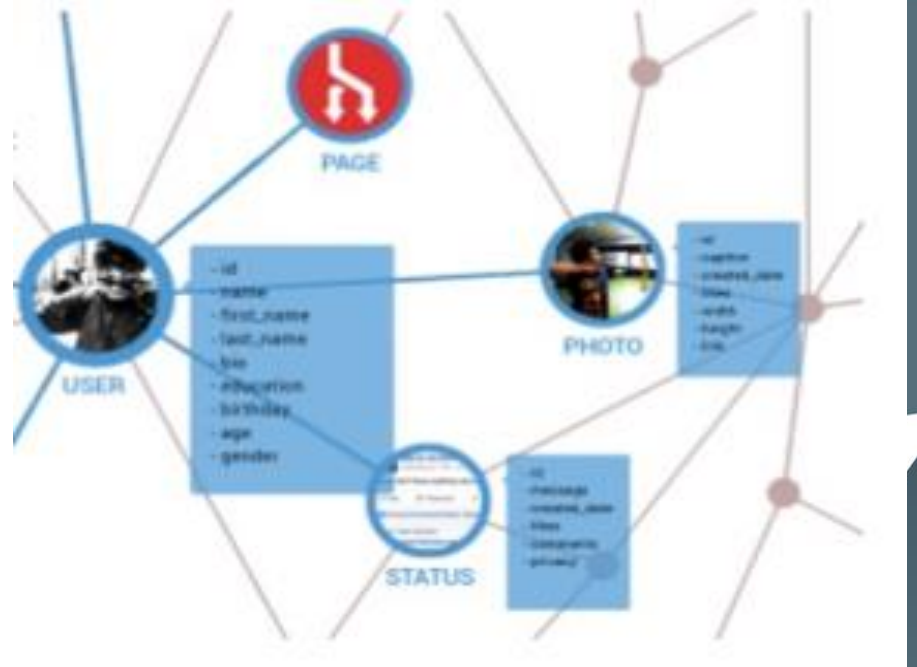


SOCIAL GRAPH - FIELDS

Data about an object.

User has: name, age, birthday, phone
number etc..

Page has: name, description, category etc..

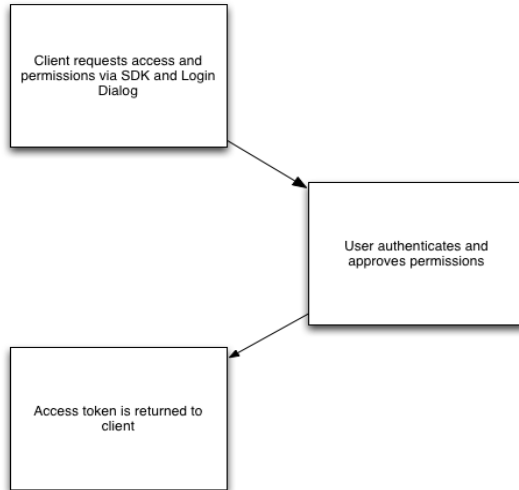


ACCESS TOKEN

An access token is an opaque string that identifies a user, app, or Page and can be used by the app to make graph API calls. When someone connects with an app using Facebook Login and approves the request for permissions, the app obtains an access token that provides temporary, secure access to

User Access Tokens

Although each platform generates access tokens through different APIs, all platforms follow the basic strategy to get a user token:



Short term and long term tokens

User access tokens come in two forms: short-lived tokens and long-lived tokens. Short-lived tokens usually have a lifetime of about an hour or two, while long-lived tokens usually have a lifetime of about 60 days.

Access tokens generated via web login are short-lived tokens, but you can [convert them to long-lived tokens](#) by making a server-side API call along with your app secret.

Mobile apps that use Facebook's iOS and Android SDKs get long-lived tokens by default.

Apps with [Standard access](#) to Facebook's Marketing API when using long-lived tokens will receive long-lived tokens that don't have an expiry time. These tokens are still subject to invalidation for other reasons, but won't expire solely based on time.

Different platforms have different methods to kick off this process and include functionality to manage access tokens on behalf of the developer and the person granting permissions:

Android

The Facebook SDKs for Android automatically manages user access tokens through the class `com.facebook.AccessToken`. You can learn more about obtaining a user access token by implementing Facebook Login for Android. You can retrieve the user access token by inspecting `Session.getCurrentAccessToken`.

Sample Code

```
@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    accessToken = AccessToken.getCurrentAccessToken();
}
```

iOS

The Facebook SDKs for iOS automatically manages user access tokens through the class `FBSDKAccessToken`. You can learn more about obtaining a user access token by implementing Facebook Login for iOS. You can retrieve the access token by inspecting `FBSDKAccessToken.currentAccessToken`.

Sample Code

```
- (void) viewDidLoad
{
    [super viewDidLoad];
    NSString *accessToken = [FBSDKAccessToken currentAccessToken];
}
```

Javascript

The Facebook SDK for Javascript obtains and persists user access tokens automatically in browser cookies. You can retrieve the user access token by making a call to `FB.getAuthResponse` which will include an `accessToken` property within the response.

Sample Code

```
FB.getLoginStatus(function(response) {
  if (response.status === 'connected') {
    var accessToken = response.authResponse.accessToken;
  }
});
```

And much more..

App Access Tokens-

App access tokens are used to make requests to Facebook APIs on behalf of an app rather than a user. This can be used to modify the parameters of your app, create and manage test users, or read your app's insights.

Page Access Tokens-

Page access tokens are used in Graph API calls to manage Facebook Pages. To generate a page access token, an admin of the page must grant your app the Page permission or permissions needed. Once granted, you can retrieve the Page access token using a user access token with the required permissions.

Client Access Tokens-

A very small number of Graph API endpoints support Client access tokens. Like App tokens, Client tokens make Graph API requests on behalf of apps instead of users, but should only be used in cases where a token must be embedded in mobile or web client code instead of stored on a secure, backend server.

Facebook Graph Api Explorer

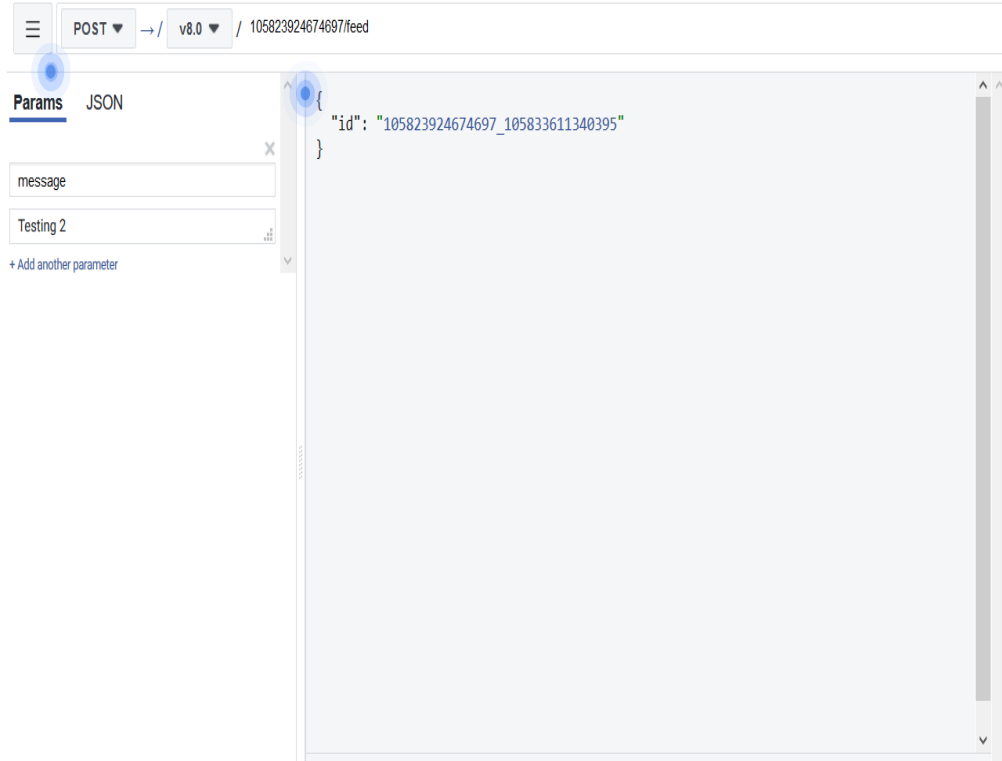
The screenshot shows the Facebook Graph API Explorer interface. The browser address bar displays the URL: `https://developers.facebook.com/tools/explorer/?access_token=CFT8q2H-600012`. The page title is "Graph API Explorer".

Key features and callouts include:

- Method Selection:** A dropdown menu is open, showing options for GET, POST, and DELETE. A callout states: "Easily switch between HTTP GET, POST and DELETE".
- URL Input:** The URL input field contains `https://www.facebook.com/596824621`. A callout says: "Change the URL to run the Graph API you wish to try".
- Access Token:** The "Get Access Token" button is highlighted. A callout reads: "Get an access token with necessary permissions to try your API".
- Method Execution:** The "GET" method is selected, and the response is displayed as JSON. A callout points to the response: "Explains the connections per object by clicking them".
- Response Content:** The JSON response includes an object for "Modern School" with an ID of "116962635018500" and a year of "1996". A callout points to this object: "Click on object id to see the API result for the object associated with the id.".
- Connections Panel:** A panel on the right lists various connection types such as "accounts", "activities", "books", "checking", "events", "friendlists", "friends", "inbox", "interests", "likes", "music", "notes", "photos", "payments", and "posts".

At the bottom of the page, there is a footer with the text: "Facebook © 2011" and navigation links for "Home", "About", "Privacy Policy", and "Terms of Service".

Graph API Explorer Demo



The screenshot displays the Graph API Explorer interface. At the top, the request method is set to POST, the version is v8.0, and the endpoint is /105823924674697/feed. The response is shown in JSON format, containing a single object with an 'id' field.

POST → / v8.0 / 105823924674697/feed

Params JSON

message

Testing 2

+ Add another parameter

```
{
  "id": "105823924674697_105833611340395"
}
```

Sample Inserted Post - using POST method

This screenshot shows a Facebook post by John Wire. The post title is "Testing 2". It has 0 people reached and 0 engagements. A "Boost Unavailable" button is present. Below the post, there is a comment by John Wire with the text "Care". The interaction bar includes "Comment", "Share", and a profile icon. At the bottom, there is a text input field for commenting, with the text "Comment as John Wire" and "Press Enter to post." and icons for emojis, photos, GIFs, and stickers.

John Wire
Published by Testing Alpha · 1 m · 🌐

Testing 2

0 People reached 0 Engagements **Boost Unavailable**

👤 John Wire

👉 Care 💬 Comment ➦ Share J ▾

J Comment as John Wire 😊 📷 GIF 🗨️
Press Enter to post.

This screenshot shows a Facebook post by John Wire. The post title is "Testing Using Graph API Explorer (Post Method)". It has 0 people reached and 0 engagements. A "Boost Unavailable" button is present. Below the post, there are no comments. The interaction bar includes "Like", "Comment", "Share", and a profile icon. At the bottom, there is a text input field for commenting, with the text "Comment as John Wire" and "Press Enter to post." and icons for emojis, photos, GIFs, and stickers.

John Wire
Published by Testing Alpha · 1 m · 🌐

Testing Using Graph API Explorer (Post Method)

0 People reached 0 Engagements **Boost Unavailable**

👍 Like 💬 Comment ➦ Share J ▾

J Comment as John Wire 😊 📷 GIF 🗨️
Press Enter to post.

Command Prompt (cURL)

```
C:\Users\rutik>curl -i -X POST \ "https://graph.facebook.com/v8.0/105823924674697/feed?message=SecondTestingUsingCmdPmt(cURL)&access_token=EAAK6oDdmuucBAPMgazZCoAAAsdP05D2uskB7oyNK1VcMobyrrJutZBv9p1cIR4Bpz6PAtv4oDpMVHVKNrxZBLwZBwxcfrI46fjZBZBGfqqMAMwn5F2QAfPZBuZAgwNPGkc5jemHgc151Ss1C6N856xTBzhKCKVZCrAFIGhm7kQ1873vMJ8052CBtVaVKHvWoXoDqs2gZD"
curl: (6) Could not resolve host: \
HTTP/1.1 200 OK
Expires: Sat, 01 Jan 2000 00:00:00 GMT
Content-Type: application/json; charset=UTF-8
facebook-api-version: v8.0
x-fb-request-id: AWFNCcyu3Go0wfU2zoSvbqW
Strict-Transport-Security: max-age=15552000; preload
x-fb-trace-id: GpqChcUNlbH
x-fb-rev: 1002940157
Cache-Control: private, no-cache, no-store, must-revalidate
Pragma: no-cache
x-business-use-case-usage: {"105823924674697":[{"type":"pages","call_count":1,"total_cputime":1,"total_time":1,"estimated_time_to_regain_access":0}]}
Access-Control-Allow-Origin: *
X-FB-Debug: yiTB8cTPYjUwJhmw4vMjEqwudXxZqaTnYrS6Wa/Iaq9oayZIHs/15wXSC7gxR4/OCWfiEsxBv5o/++kCyKfdzA==
Date: Mon, 09 Nov 2020 17:28:55 GMT
Alt-Svc: h3-29=":443"; ma=3600,h3-27=":443"; ma=3600
Connection: keep-alive
Content-Length: 40

{"id":"105823924674697_105839914673098"}
```

OUTPUT USING cURL



A screenshot of a social media post interface. At the top left is a blue circular profile picture with the letter 'J'. To its right, the name 'John Wire' is displayed in bold, followed by 'Published by Testing Alpha' and '1 m' with a globe icon. A three-dot menu icon is on the far right. The main text of the post is 'SecondTestingUsingCmdPmt(cURL)'. Below this, there are two statistics: '0 People reached' and '0 Engagements'. To the right of these is a grey button that says 'Boost Unavailable'. Underneath the statistics are three interaction options: 'Like' with a thumbs-up icon, 'Comment' with a speech bubble icon, and 'Share' with a share icon. To the right of 'Share' is a blue circle with 'J' and a dropdown arrow. Below these options is a comment input area with a blue circle containing 'J' on the left, the text 'Comment as John Wire' in the center, and icons for emojis, photos, GIFs, and stickers on the right. At the bottom of the input area, it says 'Press Enter to post.'

John Wire
Published by Testing Alpha · 1 m · 🌐

SecondTestingUsingCmdPmt(cURL)

0 People reached 0 Engagements Boost Unavailable

👍 Like 💬 Comment ➦ Share J ▾

J Comment as John Wire 😊 📷 GIF 🗨️

Press Enter to post.

Marketing API

Facebook Marketing API



Custom Audiences



Business Manager



Ads



Insights

Facebook Marketing API is a way to automatically create, read, modify and delete campaigns, ad sets, ads, creatives & more on Facebook's advertising platform, which covers Facebook "feed", Facebook Messenger, Instagram (stories & feed) etc... using your favourite programming language.

The Marketing Operations API provides a more consistent approach to working with marketing definition data. It is easy to use, and simplifies the deployment of marketing definitions and marketing taxonomies.



Benefits

The benefits of using the Marketing Operations API include:

- Create, update, delete, deploy, and activate marketing definitions and taxonomies more easily across the platform.
- Search access across campaign, goal, outcome, asset, and funnel definitions.
- Retrieve marketing taxonomy, campaign, goal, outcome, and funnel data.
- Retrieve marketing taxonomy data for use in aggregation processing.
- High level of confidence in your data for reporting.



Using Marketing API

- Generating an Access Token
- Selecting a scenario
- API request according to the required SDK and usage

The screenshot shows the 'facebook for developers' dashboard for an app named 'getting-started-tutorial'. The left sidebar contains navigation options: Dashboard, Settings (Basic, Advanced), Roles, Alerts, App Review, PRODUCTS (Facebook Login, Marketing API), and Activity Log. The main content area is the 'Basic' settings section, which includes fields for App ID, App Secret, Display Name, Namespace, App Domains, Contact Email, Privacy Policy URL, Terms of Service URL, App Icon (1024 x 1024), and Business Use options (Support my own business, Provide services to other businesses).

Select a Scenario

Select one of the following scenarios to get product-specific help content as you build your app. If you already have your project mapped out and are ready to build, feel free to skip this step.

Examples

- Integrate Facebook Login**
A secure, fast and convenient way for people to create accounts and log into your app across multiple platforms.
 - Create accounts without having to set a password
 - Personalize peoples' in-app experiences
- Get Started with the Pages API**
With the Pages API people can update and manage Facebook Pages from your page-related app. People can publish content to Facebook or Messenger with a Page's identity.
 - Make a Pages management tool for customers or for your company
 - Build apps so content creators and editors can easily publish as a Page
- Implement Marketing API**
Get programmatic access to the Facebooks ads platform to automate ads management, create data-based audiences and more.
 - Target audiences strategically by automatically creating different ads permutations
 - Manage and optimize ads in real time with rules-based ads management
- Get Started with the Ads Insights API**
Get programmatic access to Facebooks Ads Insights.
 - Provides a single, consistent interface to retrieve ad statistics

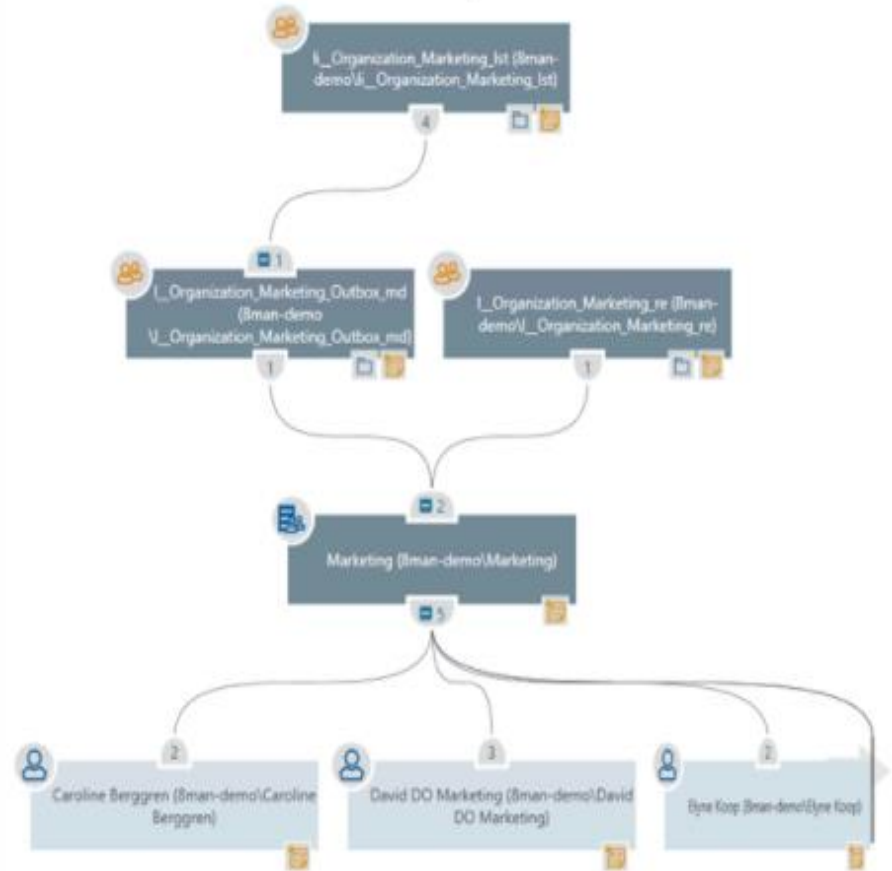
Skip

Confirm

The screenshot shows the 'facebook for developers' dashboard for the same app. The left sidebar is identical to the previous screenshot. The main content area is the 'Get Access Token' page, which includes a 'Select Token Permissions' section with checkboxes for 'ads_management', 'ads_read', and 'manage_pages'. Below this is a 'Get Token' button. The page also features a 'Sandbox Ad Account Management' section with a 'New Sandbox Ad Account' button and a note about the 'development_access' tier.

Uses of Marketing API

1. Automate Ad Management: Seamlessly create multiple ad templates at once to test different creative, bidding, or tagging strategies.
2. Leverage Dynamic Creative: Find the most effective creative for your target audience by automatically creating different permutations.



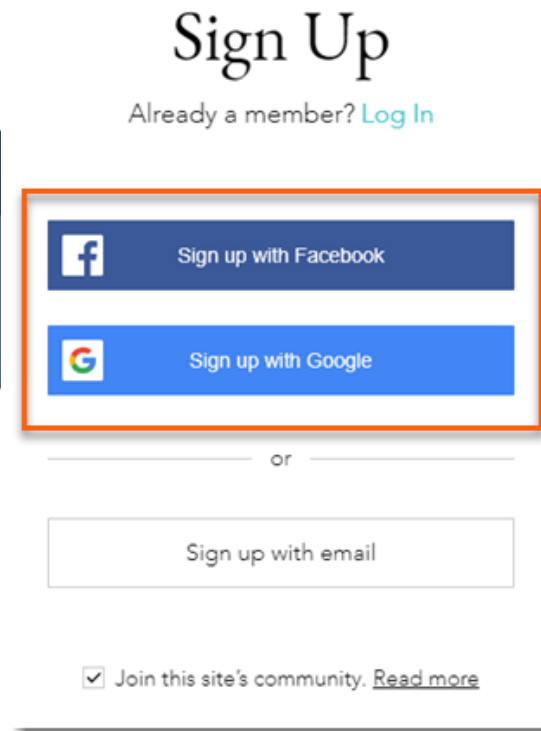
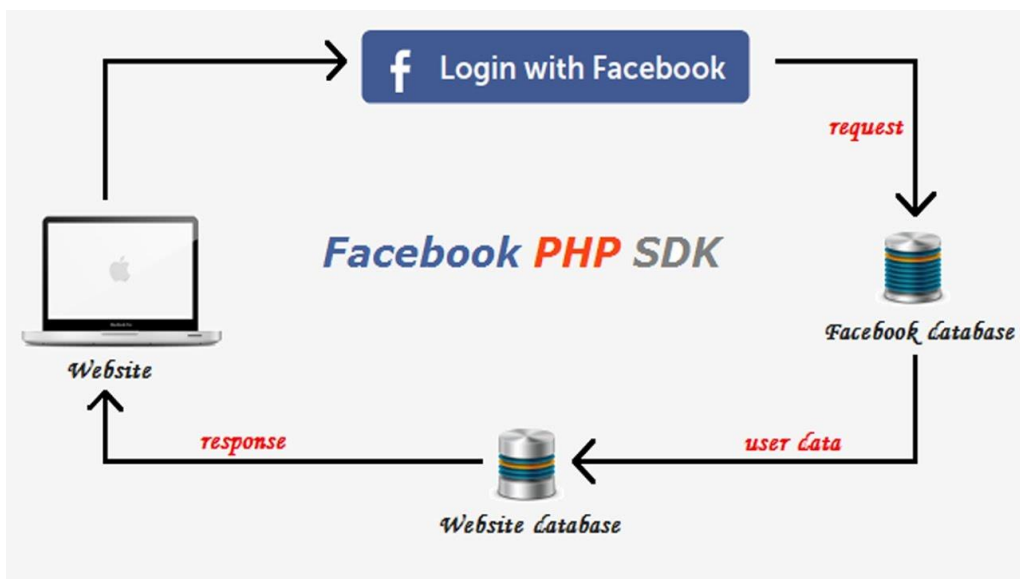
3. *Create Data-based Audiences:* Easily create audience segments by integrating your CRM system with our API.
4. *Optimize in Real Time:* Manage and optimize ads in real time using rules-based ads management.
5. *Build Custom Dashboards:* Build dashboards to compare the performance of Facebook ads with ads on other advertising channels.



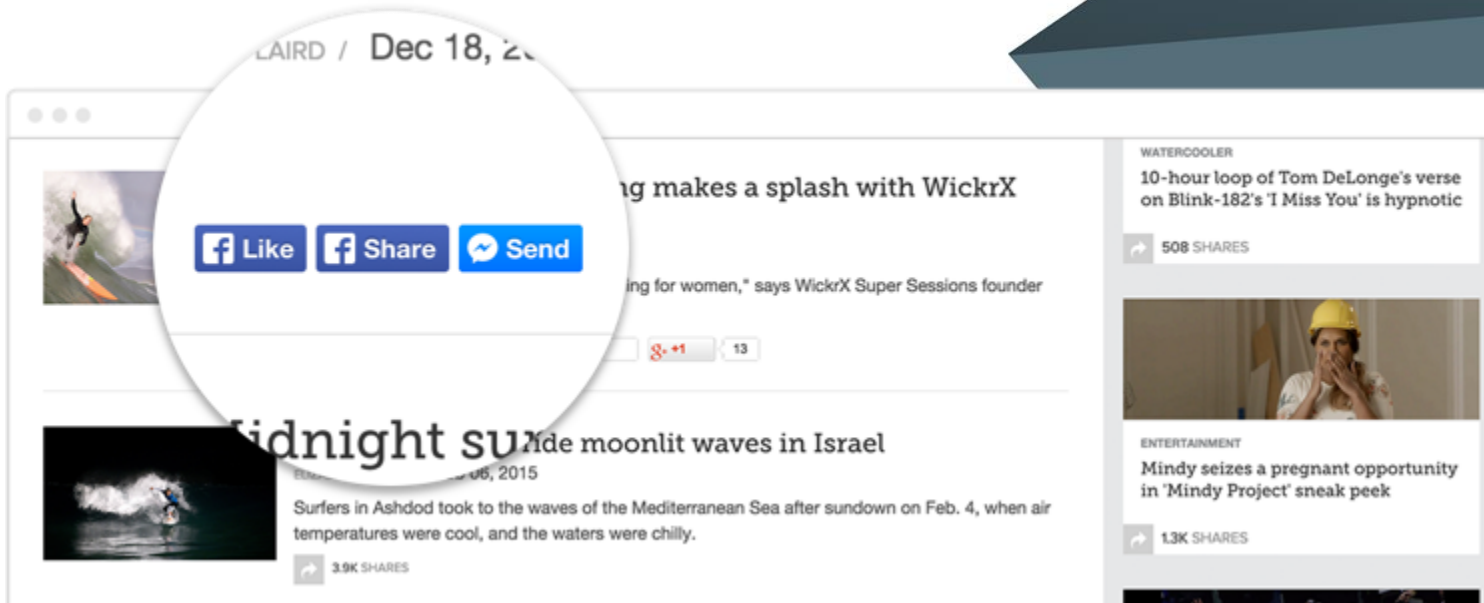
SOME USES OF FACEBOOK API



Facebook Login API



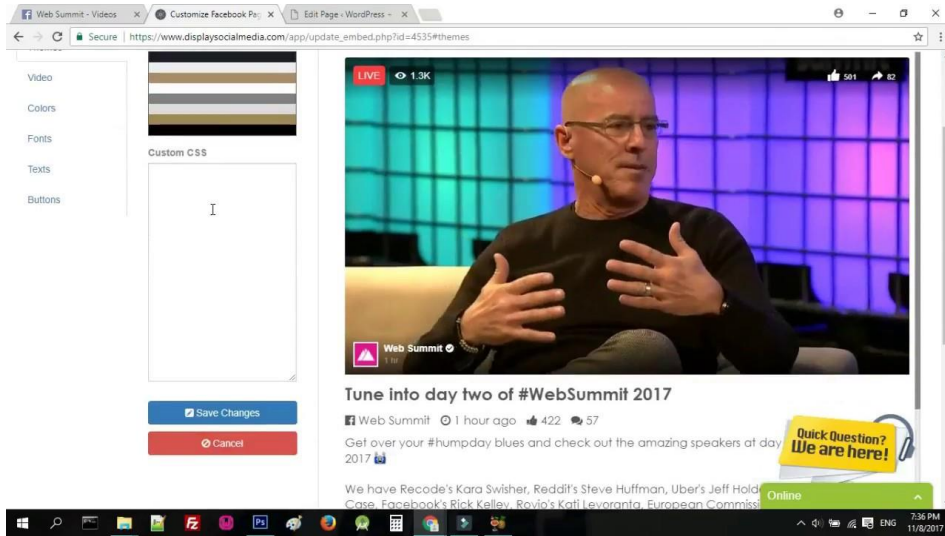
Embedding facebook functionalities in website using graph and business model api



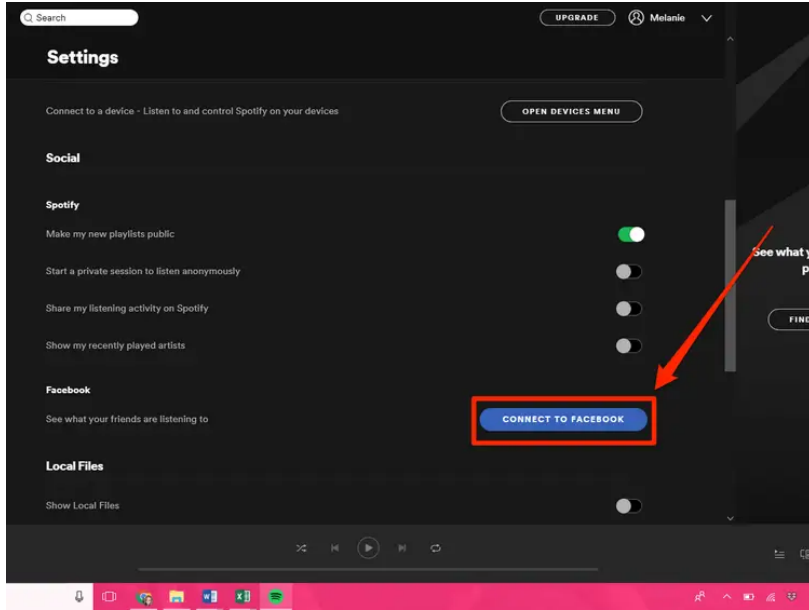
Live Video API

The Live Video API enables video encoders, cameras, web, and desktop applications to stream live video directly to Facebook user profiles, pages, and groups. As long as your app can produce a live RTMPS stream, you can stream to Facebook using the Live Video API.

Video conferencing and live streaming on messenger (NEWER DEVELOPMENT)

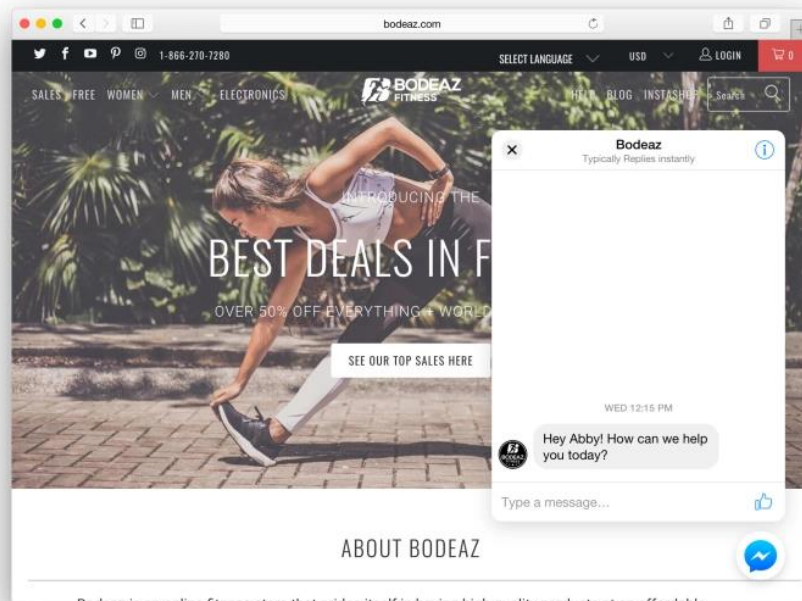
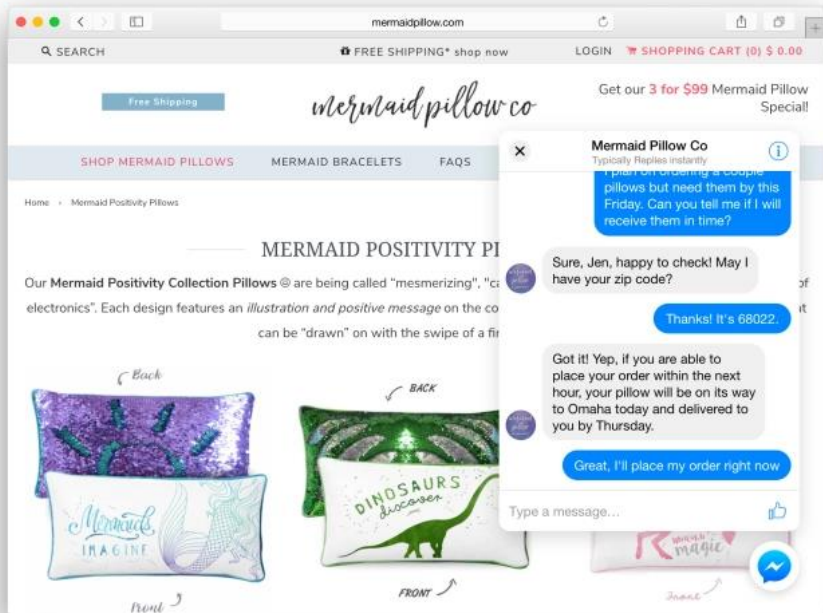


Connecting applications, services,IOT... using facebook



This helps with data integration across services and platforms. Also it is really advantageous for facebook ad Sense

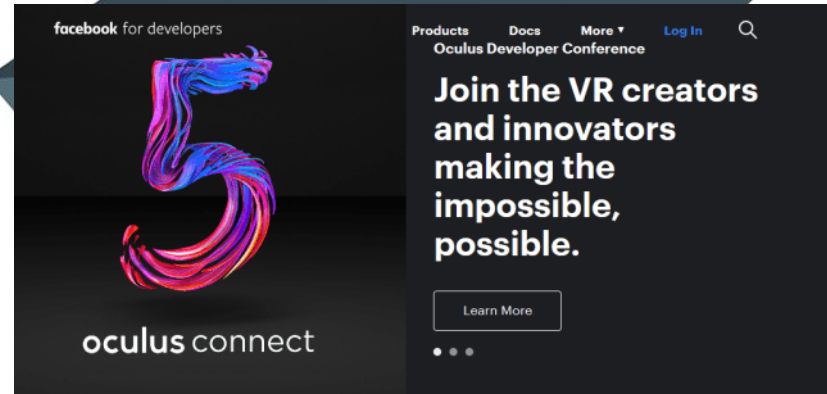
Facebook messenger plugin on business websites



Facebook API of Virtual Reality



VR based game for oculus, using facebook's api



Regional winners for the Developer Circles Community challenge announced

[Learn More](#)

An Update on Facebook App Review

[Learn More](#)

Platform Update on Publish Permission

[Learn More](#)

THANK YOU

