

Spotify for Developers

Transcript

Start

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Welcome to this Talk about Spotify for Developers from tutorialr.com/talks.

developer.spotify.com

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developer.spotify.com is where you can discover how to build experiences with Spotify for Developers using Spotify, the music streaming and podcast service.

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Discover how to develop unique experiences for over 180 million global music fans with Spotify features such as Audio Features & Analysis, Playback, Recommendations, Search, Playlists, Metadata, Curated Content and User Taste.

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Docs contain a complete reference for the Spotify Web API and Web Console allows you to try them using Sample Data and even obtain an example CURL request to use.

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Use Cases for common scenarios where Spotify can be integrated include Home Audio using Spotify Connect, Voice Integrations offering immersive voice-controlled experiences, Wearable devices such as smartwatches, health and fitness bands plus headphones or Innovate in new and emerging areas.

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Dashboard is where you create and manage Spotify Integrations, you just need to Log In with a Spotify account and agree to the Terms & Conditions.

Then choose Create a Client Id, then Create an App or Hardware Integration and state the purpose of the non-commercial integration although Spotify can approve commercial integrations.

Once done you get a Client ID and Client Secret to use with the Spotify API. You can also Edit Settings to set the Redirect URI for Authentication.

Authorisation

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Authorisation will show how to authorise your application to get data or to allow an end user to approve your application to access their Spotify data or features.

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Authorised requests to Spotify require permission to be granted to access data. In accordance with OAuth 2.0 the parties involved in the authorisation process are the End User, Application Client and the Spotify Server.

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Scopes allow your application to access specific API endpoints on behalf of a user such as Images, Spotify Connect, Playback, Users, Playlists, Library, Listening History and Follow.

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Obtain authorisation from the user by redirecting to a page where they may log in to Spotify or sign up if not already, then the requested information is presented including what account data and activity can be viewed and what actions can be performed.

Flows

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Flows for obtaining app authorisation include refreshable user authorisation, temporary user authorisation and refreshable app authorisation.

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Authorisation Code Flow is suitable for long-running applications where the user grants permission only once, and provides an Access Token that can be Refreshed and is performed on a backend service, rather than a client such as a browser or mobile app.

First, the application requests authorisation where the user logs in and authorises access.

Next, the application requests Refresh and Access Tokens with the Code returned in the Redirect URI.

Then, use the Access Token to access the Spotify Web API which are set to expire after a short time.

Finally, when needed request a refreshed Access Token.

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Authorization Code Flow with Proof Key for Code Exchange is the best option for mobile and desktop applications and provides an Access Token that can be Refreshed.

First, create the Code Verifier, a cryptographically random string and then hash with SHA256 and base64url encode this to create the Code Challenge and construct

and redirect to the Authorisation URI where the user logs in and authorises access.

Next, use the Code returned in the Redirect URI to exchange for an Access Token and Refresh Token.

Then, use the Access Token to access the Spotify Web API which are set to expire after a short time.

Finally, when needed request a Refreshed Access Token.

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Implicit Grant Flow is the best option for clients that are implemented entirely on the client such as a browser however there are no Refresh Tokens provided.

First, have your application request authorisation where the user logs in and authorises access, then the Access Token will be returned as a Hash Fragment in the Redirect URI and use the Access Token to access the Spotify API.

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Client Credentials flow is designed for server-to-server communication, only endpoints that do not access user information may be accessed.

Have your application request authorisation and then an Access Token will be returned in the response and use the Access Token to access the Spotify Web API.

Spotify Web API

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Spotify Web API allows applications to retrieve Spotify content such as album data, playlists and more

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Spotify Web API endpoints are based on simple REST principles and return JSON metadata about artists, albums, tracks and more. It also provides access to user related data, like playlists and music the user saves in their library.

Requests

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Spotify Web API Requests are performed using standard HTTPS requests in UTF-8 format to an API endpoint and where possible use the appropriate HTTP verbs for each action.

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Spotify Web API Requests include Albums API such as Get an Album, Artists API such as Get an Artist's Top Tracks, Browse API such as Get All Categories and Episode API such as Get Multiple Episodes.

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Also, Requests include Follow API such as Get User's Followed Artists and Library API such as Get User's Saved Shows.

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Next, Requests include Personalisation API to Get a User's Top Artists or Tracks and Player API to control user playback plus more such as Get Current User's Recently Played Tracks .

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Then, Requests include Playlist API such as Get a Playlist's Items, Search API to Search for an Item and Shows API such as Get a Show's Episodes.

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Finally, Requests include Tracks API such as Get Audio Features for a Track and User Profile API to Get Current User's Profile.

Responses

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Spotify Web API Responses are returned in JSON format and with HTTP Status Codes for Success or any Error.

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Objects Index features the Responses which include AlbumObject, ArtistObject, PlaylistObject, TrackObject and more or an Error Object

Spotify SDKs

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Spotify SDKs are available to help developers take advantage of the Spotify Web API

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Web Playback SDK is a client-side JavaScript Library which allows you to create a new player in Spotify Connect and play any audio track from Spotify in a Web Browser.

Spotify iOS SDK allows access to the Spotify API and supports features such as playing a track using the Spotify App in the background or responding to changes in playback state.

Spotify Android SDK allows access to the Spotify API and supports features such as playing a track using the Spotify App in the background or subscribing to Player State. Third-party SDKs are available for other platforms such as .NET and the Universal Windows Platform are available on NuGet.

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Spotify.NetStandard covers the Spotify Web API and is available on NuGet and can be installed into any .NET Standard 2.0 compatible runtime including .NET Framework, .NET Core and .NET 5. Source Code is available on GitHub including unit tests and documentation.

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Spotify.NetStandard.Sdk wraps Spotify.NetStandard by adding support for Commanding, Rich Data Binding enhancements and more making it even easier to build Spotify applications supporting .NET Standard 2.0 using Xamarin, WinUI and WPF and is available on NuGet with documentation, unit tests and source code on GitHub.

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Spotify.Uwp extends Spotify.NetStandard.Sdk by adding dedicated support for Universal Windows Platform applications including lists as Observable Collections to support incremental loading allowing for infinite scroll and is available on NuGet and supports Windows 10 Fall Creators Update from 2017 or later with full source code, unit tests and documentation available on GitHub.

Summary

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Spotify for Developers allows developers to create their own Spotify powered experiences.

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developer.spotify.com is where you can get started with Spotify for Developers, read documentation, try out API calls with the Console and create your Client Id and Client Secret to use the Spotify API in your applications from the Dashboard and more.

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Authorisation for the Spotify platform has four flows to obtain application authorisation. Refreshable user authorisation with Authorization Code Flow and Authorization Code Flow With Proof Key for Code Exchange, Refreshable app authorisation with Client Credentials Flow and Temporary user authorisation with Implicit Grant Flow.

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Spotify Web API endpoints are based on simple REST principles and return JSON metadata about artists, albums, tracks and more directly from the Spotify Catalogue.

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Spotify SDKs from Spotify include Web Playback, iOS and Android SDKs plus there are third-party SDKs available including .NET Standard and Universal Windows Platform SDKs.

Finish

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Thanks for watching this Talk about Spotify for Developers, you can find out more at tutorialr.com/talks/seriesone.