

[App Clips](#) / Encoding a URL in an App Clip Code

## Article

# Encoding a URL in an App Clip Code

Choose an invocation URL for your App Clip Code that you can encode efficiently.

## Overview

Creating an App Clip Code involves the following key tasks:

- Choosing invocations to support
- Choosing invocation URLs to use in your App Clip Code
- Setting up advanced App Clip experiences

Although App Clip Codes are a great way to launch your App Clip, an App Clip Code can only contain a limited amount of information in its visual code or NFC tag. At the same time, it's important you choose invocation URLs with additional parameters or attributes that lead to the best possible launch experience for users. This additional information could make your invocation URL too long to encode.

When you create an App Clip Code, you need to find the best tradeoff between the limited capacity to store information in the App Clip Code and the need to encode more information. Therefore, choosing the right URLs to launch your App Clip from an App Clip Code is important.

## Review App Clip experiences and invocation URLs

Users launch your App Clip with an invocation; for example, by tapping a link in the Messages app, by scanning a QR code, or by scanning an App Clip Code. To support invocations from App Clip Codes:

### App Clip demo URL

You don't have to associate your App Clip with your website or create an advanced App Clip experience to use the App Clip demo URL in an App Clip Code. However, you can't use launch parameters with the demo URL.

## default App Clip URL

You can't use the default App Clip URL in your App Clip Code.

## advanced App Clip experiences

Create at least one advanced App Clip experience and associate your App Clip with your website to enable the system to verify your App Clip upon launch. For more information, see [Associating your App Clip with your website](#).

When you create an advanced App Clip experience, use a custom URL for your default App Clip experience and your advanced App Clip experiences. For example, create a default App Clip experience that uses `https://example.com` as its invocation URL, and one advanced App Clip experience. The advanced experience's registered invocation URL might be `https://appclip.example.com`, and takes advantage of prefix matching.

When you use the advanced App Clip experience, you support invocations from QR codes, NFC tags, and App Clip Codes. These invocations use `https://appclip.example.com` as their URL prefix and encode additional information with URL path components or queries. For example, you can encode `https://appclip.example.com/shop?p=123&p1=ab` in an App Clip Code.

For more information, refer to [Configuring App Clip experiences](#).

## Choose a valid invocation URL

In general, the invocation URL encoded in an App Clip Code follows the same pattern as other URLs: `https://[host][/<path>][?<query>][#<fragment>]`. However, the URL encoded in an App Clip Code must meet additional requirements:

- The invocation URL must use the `https` scheme in lowercase.
- The host segment is the invocation URL's *authority component* and can only contain the lowercase ASCII characters `a` to `z`, `.`, and `-`.
- The invocation URL may have zero or more path and query components, followed by an optional fragment. They can use the following ASCII characters: `a` to `z`, `A` to `Z`, `0` to `9`, and `/` `#` `?` `=` `%` `-` `.` `_` `,` `+` `;` `:` `&`.

## Follow practices that allow for efficient encoding

An App Clip Code can only contain a limited amount of information, and as a result, the tools you use to create the code compress the encoded invocation URL. The underlying encoding algorithm can encode some words efficiently, while some characters may reduce the algorithm's efficiency. As a result, the exact length of an invocation URL you can encode in an App Clip Code varies based on the ASCII characters and words you use.

When you create an App Clip Code, both [App Store Connect](#) and the [App Clip Code Generator](#) command-line tool inform you if your invocation URL is too long.

To ensure you can encode your invocation URL in an App Clip Code:

- Use the minimum number of characters you need to uniquely identify a resource. Long unique identifiers (UUIDs) lower the effectiveness of the encoding.
- Use a short host name with as few subdomains as possible.
- If possible, remove the www subdomain from your host name.
- Use decimal numbers as values for query components.
- Replace long query string argument names and values with short strings. For example, use `https://example.com/?p=0` instead of `https://example.com/?status=view`.
- Omit a trailing slash (/) character at the end of the URL. For example, use `https://example.com` instead of `https://example.com/`.

## Use a separate subdomain

Optionally, you can use the special subdomain `appclip` to define URLs specific to App Clip Codes; for example, `https://appclip.example.com`. The algorithm that generates App Clip Codes encodes this subdomain more efficiently than others. Choosing `appclip` as a subdomain also allows URLs to have short path and query components by eliminating the possibility of conflicts with an unrelated functionality of your website. If you use this subdomain, it must appear as the first subdomain of the URL's host.

## Choose a single-word path component

If possible, don't use any path components at all. However, if you must use them, choose from the list below so the algorithm that creates the App Clip Code can encode the path components more efficiently. For example, you might use `https://example.com/brand`.

Always use the fewest possible path components.

- about, access, account, add, app, archives, article, attraction, author
- bag, biz, book, brand, brands, browse, buy
- cancel, cart, cat, catalog, category, categories, channel, charts, checkin, checkout, collection, collections, company, compare, connect, contact, content, contents, cost, coupons, create
- data, demo, destinations, detail, discover, download
- entry, event, events, explore

- `faq`, `fetch`, `finance`, `find`, `food`, `fund`
- `game`, `gift`, `goods`, `guide`
- `health`, `help`, `home`, `hotel`, `hotels`
- `id`, `index`, `info`, `item`, `item_id`
- `join`
- `lifestyle`, `list`, `listen`, `live`, `local`, `location`, `locations`, `locator`, `login`
- `manage`, `menu`, `more`, `music`
- `name`, `news`, `note`, `open`
- `order`, `overview`
- `park`, `part`, `pay`, `payment`, `payments`, `play`, `post`, `posts`, `preview`, `product`, `product_id`, `products`, `profile`, `promotion`, `purchase`
- `rate`, `recipe`, `recipes`, `reservation`, `reservations`, `reserve`, `retail`, `review`, `rewards`
- `sale`, `scan`, `schedule`, `search`, `sell`, `send`, `service`, `share`, `shop`, `show`, `showtime`, `site`, `song`, `special`, `stations`, `status`, `store`, `store-locator`, `stores`, `stories`, `story`
- `tag`, `tags`, `terms`, `tickets`, `tips`, `title`, `today`, `top`, `topic`, `tours`, `track`, `transaction`, `travel`, `try`
- `update`, `upload`, `use`, `user`
- `vehicles`, `video`, `view`, `visit`
- `watch`, `wiki`

Note that the words in the list above don't lead to more efficient encoding if you use them as a subdomain or query parameter.

## Use ordered argument names for query components

If you use no path component, or a single-word path component from the above list of special words and query components, use the special ordered argument names `p`, `p1`, `p2`, `p3`, and so on. Doing so increases the likelihood of the URL fitting in an App Clip Code. For example, instead of `https://appclip.example.com/shop?a=123&b=456&c=789`, use `https://appclip.example.com/shop?p=123&p1=456&p2=789`.

## Hash long URLs

In some cases, you may need to pass long query strings to the App Clip upon launch that result in a URL that's too long to encode in an App Clip Code. In this case, you can use a hashing algorithm

to shorten the long query string. Upon launch, your app and App Clip can then expand the hash back to the long query string and use it to update their UI.

## Reuse existing URLs

You may want to reuse URLs you previously created for other purposes in your App Clip Codes; for example, if you created your own tool to create short URLs for use in QR codes. If you do so, you also need to:

- Register each domain that can launch your App Clip in the list of associated domains.
- Set up the AASA file for each domain you use.
- Configure advanced App Clip experiences for both the short and long URLs.

For more information, refer to [Configuring App Clip experiences](#).

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## See Also

### App Clip Codes



#### Creating App Clip Codes

Help users discover your App Clip by using an NFC-integrated or scan-only App Clip Code.



#### Preparing multiple App Clip Codes for production

Prepare your App Clip Codes to send to a professional printing service.



#### Interacting with App Clip Codes in AR

Display content and provide services in an AR experience with App Clip Codes.