

#WWDC18

# MusicKit on the Web

Session 506

Betim Deva, Engineering Manager, Apple Music

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# MusicKit



MusicKit Updates

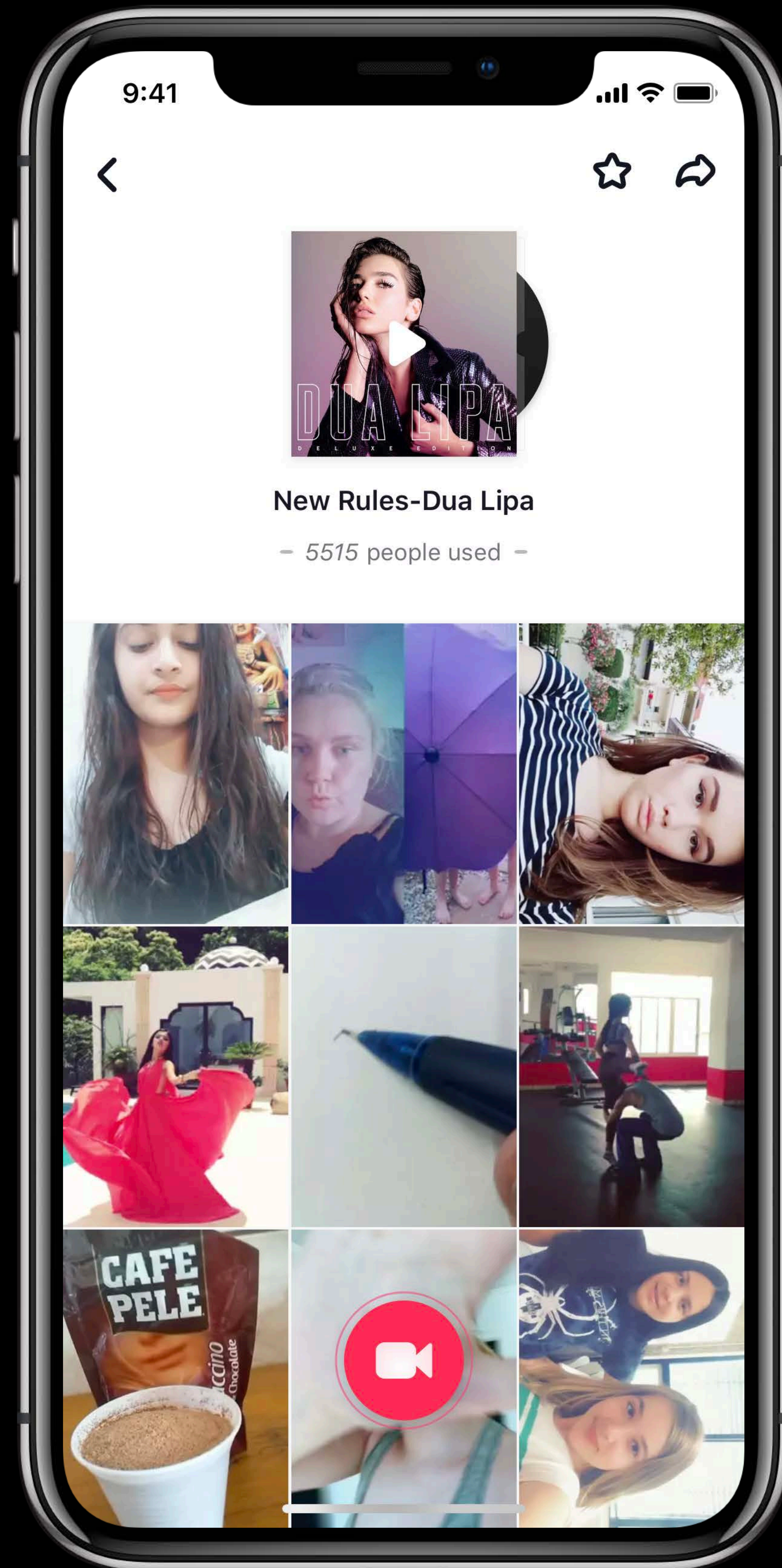
MusicKit on the Web

Apple Music Web Player

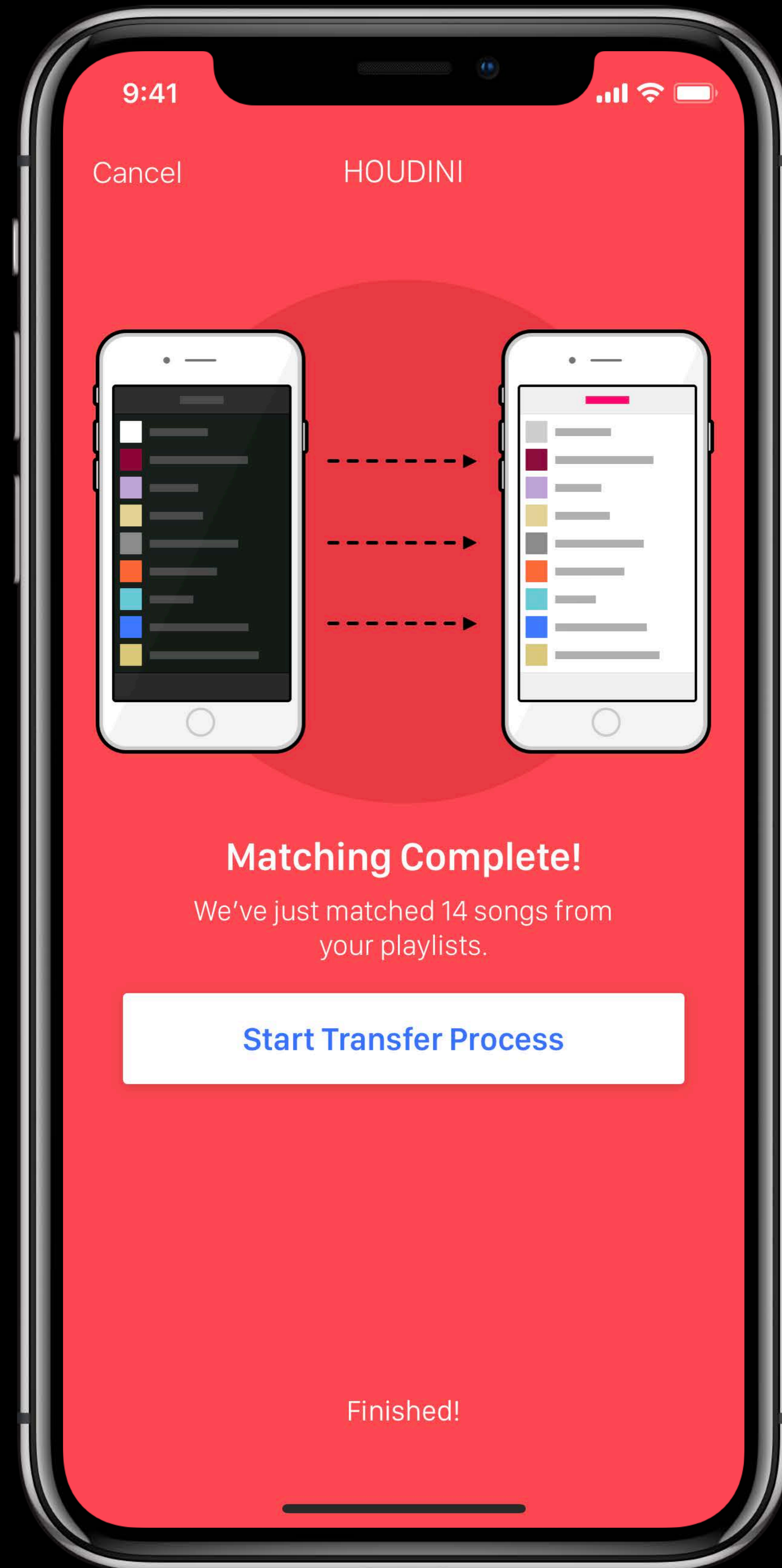
MusicKit JS

# MusicKit Updates

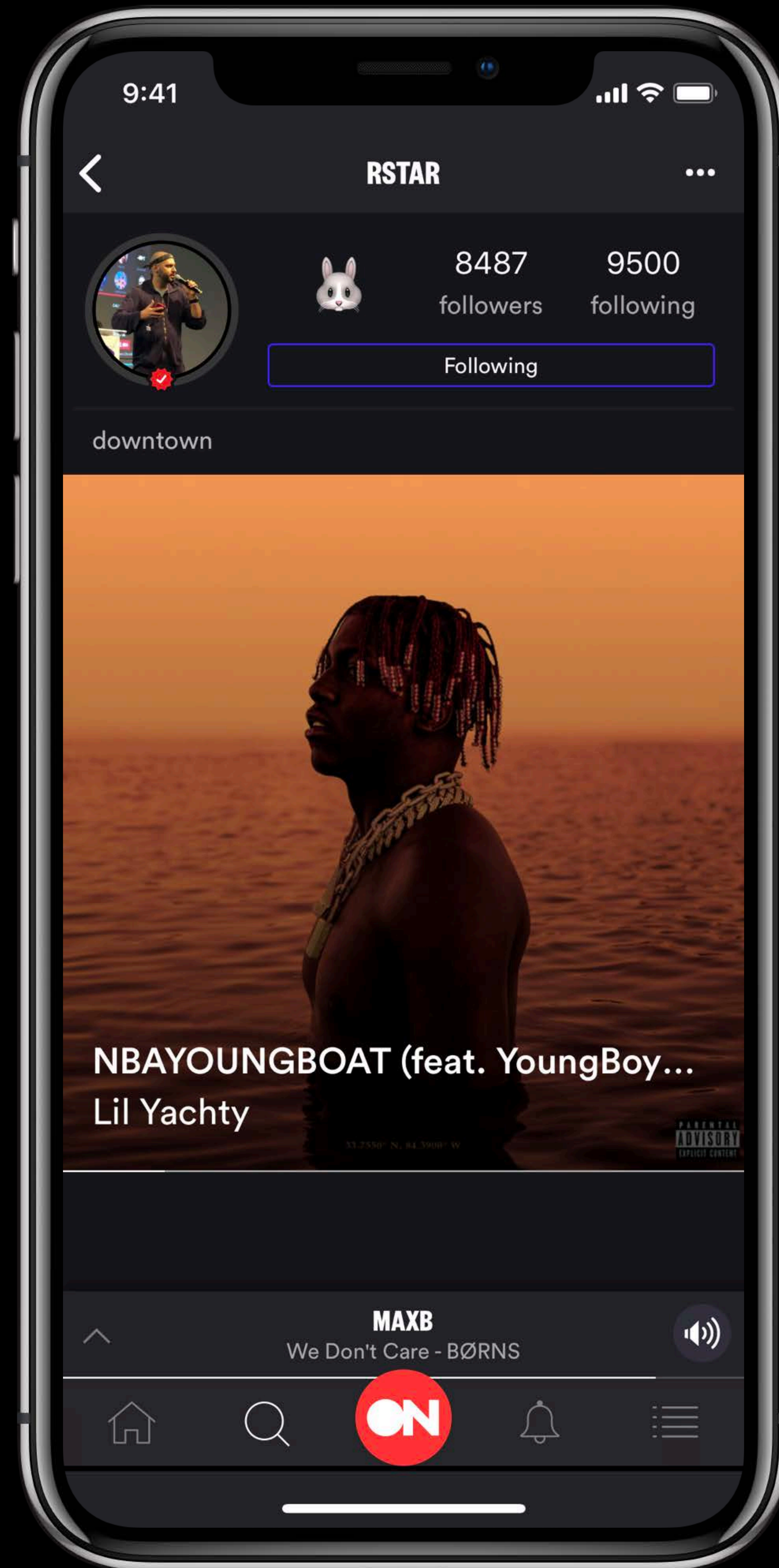
musical.ly



# Houdini



# Stationhead



# Ola





# ISRC Catalog Lookup

Added lookup by ISRC for songs and music videos

```
/v1/catalog/us/songs?filter[isrc]=USUM71703085
```

```
/v1/catalog/us/music-videos?filter[isrc]=USUV71300701
```

# iCloud Music Library APIs

Browse library content by type

Search for library content by type

Add to a user's music library

Create and add to playlists

MusicKit Updates

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# MusicKit on the Web

DJ Davis, Engineering Manager, Apple Music

# MusicKit on the Web

# MusicKit on the Web

Catalog REST API

# MusicKit on the Web

Catalog REST API

iCloud Music Library REST API

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MusicKit JS



# MusicKit on the Web

Catalog REST API

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MusicKit JS

Full song playback

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# Apple Music Web Player



"Angaleena, Miranda and I are the most real and honest versions of ourselves as human beings when we're around each other," says Monroe. "It's crazy how fast the walls fall. That's why I think that we can write from our true selves. We all have that input in every single song. I feel like this album will be definitely a more grown-up version, cause we've grown up a lot since our last one. That's [not] to say there's not still humor and all that stuff. There's heavy topics too, but these are hands-down the favorite songs we've ever written."

**Sparrow**  
Ashley Monroe

▶ PLAY

- 1 Orphan
- 2 Hard On a Heart
- 3 Hands On You
- 4 Mother's Daughter
- 5 Rita
- 6 Wild Love
- 7 This Heaven
- 8 I'm Trying To

12 Songs

READ LIST

- 1 Ashley Monroe Talks 'Sparrow,' Eminem, Pistol Annies & More
- 2 Stereo Hideout's "Brahms V. Radiohead" Fuses "First Symphony" & 'OK Computer'
- 3 Ani DiFranco On 'Binary,' Folk Sing-Alongs, Activism & Gardening
- 4 Brandon Victor Dixon On "Jesus Christ Superstar," John Legend & "We Are" New Single
- 5 Inside Nick Cave's Candid Open Dialog At Conversations With... in NYC

Visibly excited about all the new music she's working on, Monroe also teases more solo material in the works. With essentially two main musical projects going at once, a long list of collaborations and live appearances, plus a busy family life with an infant (and don't forget Betty), she has come to cherish the few quiet moments her life has to offer.

"Yesterday, I flew here [to New York] from Nashville. It was very hectic at home, lots going on. Dalton's sick. This morning I woke up and I had coffee while reading the E.B. White '[\[Here Is\] New York](#)' book in complete silence," she says, smiling wide. "I had the most amazing morning

MacBook Pro

9:41 uproxx.com

**UPROXX**

**St. Vincent Mixtape Delivery Service (Eclectic, Curated By St. Vincent)**

Ep. 65 St. Vincent's Mixtape ...

▶ PLAY

- Roll (Burbank Funk) The Internet
- TOGETHER (feat. AlunaGeorge & GoldLin... KAYTRANADA
- All the Work Amber Mark
- Apache Incredible Bongo Band
- Wide Awake Parquet Courts
- Happy Man

Before there were playlists, there were mixtapes. And **St. Vincent** wants you to remember that. Her Beats 1 show makes custom playli... err ... mixtapes for fans the write her based on the information they provide. The result has been a few years of

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**MusicKit JS**

# Functionality

# Functionality

Full song playback



# Functionality

Full song playback

Authorize the user

# Functionality

Full song playback

Authorize the user

Queue of songs

# Functionality

Full song playback

Authorize the user

Queue of songs

Playback controls

# Functionality

Full song playback

Authorize the user

Queue of songs

Playback controls

Now playing metadata

# Building a Simple Player for the Web

# Building a Simple Player for the Web

Include JS Library

# Building a Simple Player for the Web

Include JS Library

Provide your developer token

# Building a Simple Player for the Web

Include JS Library

Provide your developer token

Declarative HTML markup



# Building a Simple Player for the Web

Include JS Library

Provide your developer token

Declarative HTML markup

Add content IDs or URLs



```
<script type="text/javascript" src="https://.../musickit.js"></script>
```

```
<button data-apple-music-authorize></button>
```

```
<button data-apple-music-unauthorize></button>
```

```
<script type="text/javascript" src="https://.../musickit.js"></script>
```

```
<button data-apple-music-authorize></button>  
<button data-apple-music-unauthorize></button>
```

```
<button data-apple-music-play></button>  
<button data-apple-music-pause></button>  
<button data-apple-music-skip-to-next-item></button>
```

```
<script type="text/javascript" src="https://.../musickit.js"></script>
```

```
<button data-apple-music-authorize></button>  
<button data-apple-music-unauthorize></button>
```

```
<button data-apple-music-play></button>  
<button data-apple-music-pause></button>  
<button data-apple-music-skip-to-next-item></button>
```

```
<span data-apple-music-now-playing="playlistName"></span>  
<span data-apple-music-now-playing="title"></span>  
<span data-apple-music-now-playing="artistName"></span>
```

```
<script type="text/javascript" src="https://.../musickit.js"></script>
```

```
<button data-apple-music-authorize></button>  
<button data-apple-music-unauthorize></button>
```

```
<button data-apple-music-play></button>  
<button data-apple-music-pause></button>  
<button data-apple-music-skip-to-next-item></button>
```

```
<span data-apple-music-now-playing="playlistName"></span>  
<span data-apple-music-now-playing="title"></span>  
<span data-apple-music-now-playing="artistName"></span>
```

```
<time data-apple-music-current-playback-duration></time>  
<time data-apple-music-current-playback-time></time>  
<span data-apple-music-current-playback-progress></span>
```

# *Demo*

Jae Hess, Engineer, Apple Music

# Advanced Usage



# Advanced Usage

Fetch metadata from catalog by ID

# Advanced Usage

Fetch metadata from catalog by ID

Search for content in the catalog

# Advanced Usage

Fetch metadata from catalog by ID

Search for content in the catalog

iCloud Music Library browse and search

# Advanced Usage

Fetch metadata from catalog by ID

Search for content in the catalog

iCloud Music Library browse and search

Set and control a queue of songs

# Advanced Usage

Fetch metadata from catalog by ID

Search for content in the catalog

iCloud Music Library browse and search

Set and control a queue of songs

React to playback events

```
let music = MusicKit.getInstance();

music.api.song('1207120538').then(callback);

// Returns

{
  id: "1207120538",
  attributes: {
    albumName: "Memories...Do Not Open",
    artistName: "The Chainsmokers"
  },
  relationships: {
    // artist, album
  },
  ...
}
```

```
let music = MusicKit.getInstance();

music.api.song('1207120538').then(callback);

// Returns

{
  id: "1207120538",
  attributes: {
    albumName: "Memories...Do Not Open",
    artistName: "The Chainsmokers"
  },
  relationships: {
    // artist, album
  },
  ...
}
```

```
let music = MusicKit.getInstance();  
music.api.song('1207120538').then(callback);
```

```
// Returns
```

```
{  
  id: "1207120538",  
  attributes: {  
    albumName: "Memories...Do Not Open",  
    artistName: "The Chainsmokers"  
  },  
  relationships: {  
    // artist, album  
  },  
  ...  
}
```



```
let music = MusicKit.getInstance();  
  
music.api.song('1207120538').then(callback);
```

```
// Returns
```

```
{  
  id: "1207120538",  
  attributes: {  
    albumName: "Memories...Do Not Open",  
    artistName: "The Chainsmokers"  
  },  
  relationships: {  
    // artist, album  
  },  
  ...  
}
```

```
let music = MusicKit.getInstance();

music.api.songs({ filter: { isrc: 'USQX91603031' } }); // ISRC

// Returns

[ {
  id: "1207120538",
  attributes: {
    albumName: "Memories...Do Not Open",
    artistName: "The Chainsmokers"
  },
  relationships: {
    // artist, album
  },
  ...
} ]
```

```
let music = MusicKit.getInstance();
```

```
music.api.songs({ filter: { isrc: 'USQX91603031' } }); // ISRC
```

```
// Returns
```

```
[ {  
  id: "1207120538",  
  attributes: {  
    albumName: "Memories...Do Not Open",  
    artistName: "The Chainsmokers"  
  },  
  relationships: {  
    // artist, album  
  },  
  ...  
} ]
```

```
let music = MusicKit.getInstance();

music.api.songs({ filter: { isrc: 'USQX91603031' } }); // ISRC

// Returns
```

```
[ {
  id: "1207120538",
  attributes: {
    albumName: "Memories...Do Not Open",
    artistName: "The Chainsmokers"
  },
  relationships: {
    // artist, album
  },
  ...
} ]
```













```
// Catalog Search
```

```
music.api.search({ term: 'Westworld', types: 'songs' });
```

```
music.api.search({ term: 'Chainsmokers', types: ['songs', 'albums'] });
```



```
// Catalog Search
```

```
music.api.search({ term: 'Westworld', types: 'songs' });
```

```
music.api.search({ term: 'Chainsmokers', types: ['songs', 'albums'] });
```

```
// iCloud Music Library Search
```

```
music.api.library.search({ term: 'Westworld', types: 'songs' });
```

```
music.api.library.search({ term: 'Chainsmokers', types: ['songs', 'albums'] });
```

```
// Catalog Search
```

```
music.api.search({ term: 'Westworld', types: 'songs' });
```

```
music.api.search({ term: 'Chainsmokers', types: ['songs', 'albums'] });
```

```
// iCloud Music Library Search
```

```
music.api.library.search({ term: 'Westworld', types: 'songs' });
```

```
music.api.library.search({ term: 'Chainsmokers', types: ['songs', 'albums'] });
```





```
// Playback
```

```
music.setQueue({ album: '1207120422' }).then(function() {  
  music.play();  
});
```



```
// Playback
```

```
music.setQueue({ album: '1207120422' }).then(function() {  
  music.play();  
});
```

```
// Playback
```

```
music.setQueue({ album: '1207120422' }).then(function() {  
  music.play();  
});
```

```
// Playback
```

```
music.setQueue({ album: '1207120422' }).then(function() {  
  music.play();  
});
```

```
// Control
```

```
music.skipToNextItem();
```

```
music.skipToPreviousItem();
```

```
music.pause();
```

```
// Playback
```

```
music.setQueue({ album: '1207120422' }).then(function() {  
  music.play();  
});
```

```
// Control
```

```
music.skipToNextItem();
```

```
music.skipToPreviousItem();
```

```
music.pause();
```





```
// Add to Library
```

```
music.api.addToLibrary({ songs: ['1207120538', '1336756656'] });
```

```
music.api.addToLibrary({ playlists: ['pl.6ce2df480c9d4eed81115f9c003ac55c'] });
```

```
music.api.addToLibrary({ albums: ['1207120422'] });
```

```
// Batch Add to Library
```

```
music.api.addToLibrary({  
  songs: ['1207120538', '1336756656'],  
  playlists: ['pl.6ce2df480c9d4eed81115f9c003ac55c'],  
  albums: ['1207120422']  
});
```

```
// Add to Library
```

```
music.api.addToLibrary({ songs: ['1207120538', '1336756656'] });
```

```
music.api.addToLibrary({ playlists: ['pl.6ce2df480c9d4eed81115f9c003ac55c'] });
```

```
music.api.addToLibrary({ albums: ['1207120422'] });
```

```
// Batch Add to Library
```

```
music.api.addToLibrary({  
  songs: ['1207120538', '1336756656'],  
  playlists: ['pl.6ce2df480c9d4eed81115f9c003ac55c'],  
  albums: ['1207120422']  
});
```



```
music.addListener(..., function(event) {  
  // Handle Event  
});
```



```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.mediaItemWillChange
```

```
MusicKit.Events.mediaItemDidChange
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.mediaItemWillChange  
MusicKit.Events.mediaItemDidChange
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.playbackStateWillChange  
MusicKit.Events.playbackStateDidChange
```

```
MusicKit.PlaybackStates.loading  
MusicKit.PlaybackStates.playing  
MusicKit.PlaybackStates.paused
```

```
...
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.playbackStateWillChange  
MusicKit.Events.playbackStateDidChange
```

```
MusicKit.PlaybackStates.loading  
MusicKit.PlaybackStates.playing  
MusicKit.PlaybackStates.paused
```

```
...
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.playbackStateWillChange  
MusicKit.Events.playbackStateDidChange
```

```
MusicKit.PlaybackStates.loading  
MusicKit.PlaybackStates.playing  
MusicKit.PlaybackStates.paused
```

```
...
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});  
  
// Events  
  
MusicKit.Events.playbackProgressWillChange  
MusicKit.Events.playbackProgressDidChange  
  
event.progress
```



```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.playbackProgressWillChange  
MusicKit.Events.playbackProgressDidChange
```

```
event.progress
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.playbackProgressWillChange  
MusicKit.Events.playbackProgressDidChange
```

```
event.progress
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.mediaPlaybackError
```

```
music.addListener(..., function(event) {  
  // Handle Event  
});
```

```
// Events
```

```
MusicKit.Events.mediaPlaybackError
```

***Demo***

MusicKit Updates

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# More Information

<https://developer.apple.com/wwdc18/506>

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