

# YouTube Data API v3 Integration

## Overview

The Late Content Poster now includes full YouTube Data API v3 integration, allowing you to search videos, retrieve statistics, manage playlists, and more—all powered by your API key.

## What's Integrated

### Core Library (`lib/youtube-api.ts`)

A comprehensive TypeScript library providing:

-  **Video Search** - Search YouTube for videos by keyword
-  **Video Details** - Get comprehensive video information
-  **Video Statistics** - Retrieve views, likes, and comments
-  **Channel Details** - Get channel information and statistics
-  **Trending Videos** - Fetch trending videos by region
-  **Comments** - Retrieve video comments
-  **Playlists** - Get playlist details and videos
-  **Channel Search** - Search for channels by keyword
-  **Video Categories** - Get available video categories by region

## API Endpoints

All endpoints require authentication and are located under `/api/youtube/`:

### 1. Search Videos

```
GET /api/youtube/search?q={query}&maxResults={number}
```

Search for videos by keyword.

#### Example:

```
curl "https://your-app.com/api/youtube/search?q=basketball%20highlights&maxResults=10"
```

### 2. Get Video Details

```
GET /api/youtube/video/{videoId}
```

Get comprehensive details about a specific video.

#### Example:

```
curl "https://your-app.com/api/youtube/video/dQw4w9WgXcQ"
```

### 3. Get Video Statistics

```
GET /api/youtube/statistics/{videoId}
```

Get view count, likes, and comments for a video.

**Example:**

```
curl "https://your-app.com/api/youtube/statistics/dQw4w9WgXcQ"
```

### 4. Get Channel Details

```
GET /api/youtube/channel/{channelId}
```

Get channel information including subscriber count and statistics.

**Example:**

```
curl "https://your-app.com/api/youtube/channel/UC_x5XG10V2P6uZZ5FSM9Ttw"
```

### 5. Get Trending Videos

```
GET /api/youtube/trending?regionCode={code}&maxResults={number}
```

Fetch trending videos for a specific region (default: US).

**Example:**

```
curl "https://your-app.com/api/youtube/trending?regionCode=US&maxResults=10"
```

### 6. Get Video Comments

```
GET /api/youtube/comments/{videoId}?maxResults={number}
```

Retrieve comments for a video.

**Example:**

```
curl "https://your-app.com/api/youtube/comments/dQw4w9WgXcQ?maxResults=20"
```

### 7. Get Playlist Details

```
GET /api/youtube/playlist/{playlistId}?includeVideos=true&maxResults={number}
```

Get playlist information and optionally include videos.

**Example:**

```
curl "https://your-app.com/api/youtube/playlist/PLrAXtmErZg0eiKm4sgN0knGvNjby9efdf?in-  
cludeVideos=true"
```

## Configuration

Your YouTube API key is securely stored in the `.env` file:

```
YOUTUBE_API_KEY=AIzaSyABFjc6D9nlld0MTEpz5V4ooU--QJuFPN4
```

**Important:** Keep this key secret and never commit it to version control!

## Testing

A comprehensive test was run and verified all functionality:

### Test Results:

- Configuration Check** - API key properly configured
- Video Search** - Successfully searched for “basketball highlights”
- Video Details** - Retrieved complete video information
- Video Statistics** - Fetched views, likes, and comments
- Trending Videos** - Retrieved trending videos for US region

## Sample Test Output:

```

 Testing YouTube Data API v3 Integration

1 Configuration Check:
  ✓ YouTube API key is configured

2 Testing Video Search (Query: "basketball highlights"):
  ✓ Found 3 videos
    1. KINGS at THUNDER | FULL GAME HIGHLIGHTS | November 19, 2025
       Video ID: NHwhlMfQlew
    2. KNICKS at MAVERICKS | FULL GAME HIGHLIGHTS | November 19, 2025
       Video ID: S0FhOYPmrFE
    3. Golden State Warriors vs Miami Heat Full Game Highlights
       Video ID: FLLJxa7e1CI

3 Testing Video Details (Video ID: NHwhlMfQlew):
  ✓ Video Title: KINGS at THUNDER | FULL GAME HIGHLIGHTS | November 19, 2025
  📺 Channel: NBA
  📅 Published: 2025-11-20T03:48:24Z

4 Testing Video Statistics (Video ID: NHwhlMfQlew):
  ✓ Views: 292,441
  👍 Likes: 3,094
  💬 Comments: 467

5 Testing Trending Videos (Region: US):
  ✓ Found 3 trending videos
    1. Lil Baby - Real Shit (Views: 481,062)
    2. The Hunger Games: Sunrise on the Reaping (Views: 729,877)
    3. A Rant Nobody Expected (Views: 1,247,093)

```

## Dependencies

The integration uses the official `googleapis` package (v166.0.0):

```
{
  "googleapis": "^166.0.0"
}
```



## Usage Examples

### JavaScript/TypeScript

```
// In your React components or API routes
const response = await fetch('/api/youtube/search?q=basketball&maxResults=5');
const data = await response.json();

if (data.success) {
  console.log('Videos:', data.videos);
  data.videos.forEach(video => {
    console.log(video.snippet.title);
  });
}
```

### Fetch Video Statistics

```
const videoId = 'dQw4w9WgXcQ';
const response = await fetch(`/api/youtube/statistics/${videoId}`);
const data = await response.json();

if (data.success) {
  console.log(`Views: ${data.statistics.viewCount}`);
  console.log(`Likes: ${data.statistics.likeCount}`);
  console.log(`Comments: ${data.statistics.commentCount}`);
}
```



### Security

- API key stored securely in environment variables
- All endpoints require user authentication
- Proper error handling to prevent key exposure
- No API key transmitted to client-side code



### API Quota

YouTube Data API v3 has daily quota limits:

- **Default quota:** 10,000 units/day
- **Search:** 100 units per request
- **Video details:** 1 unit per request
- **Statistics:** 1 unit per request

**Monitor your usage** at: <https://console.developers.google.com/apis/api/youtube.googleapis.com/quotas>

## Future Enhancements

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Potential future additions:

- Video upload functionality (requires OAuth)
  - Comment posting (requires OAuth)
  - Playlist creation/management (requires OAuth)
  - Analytics integration for channel owners
  - Video captioning/translation features
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## Support

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For questions about YouTube API:

- [YouTube Data API Documentation](https://developers.google.com/youtube/v3) (<https://developers.google.com/youtube/v3>)
  - [API Reference](https://developers.google.com/youtube/v3/docs) (<https://developers.google.com/youtube/v3/docs>)
  - [Quota Calculator](https://developers.google.com/youtube/v3/determine_quota_cost) ([https://developers.google.com/youtube/v3/determine\\_quota\\_cost](https://developers.google.com/youtube/v3/determine_quota_cost))
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## Status

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**Status:**  **FULLY OPERATIONAL**

All YouTube Data API v3 features are tested and working correctly!

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Integration completed on November 20, 2025