

AI UGC Content Creation Workshop

A comprehensive hands-on guide for building AI-powered content creation workflows.

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 - Module 6: Testing & Deployment
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Introduction

Welcome to the **AI UGC Content Creation Workshop!** This guide will walk you through building a complete automated content creation pipeline using:

- [AI] **OpenAI** - For AI-powered text and image generation
- [CLOUD] **Google Cloud Platform** - For OAuth authentication and Google Drive API
- [BRAIN] **Google AI Studio** - For additional AI capabilities
- [SYNC] **n8n** - For workflow automation
- [FOLDER] **Google Drive** - For content storage and organization

Workshop Structure

This workshop is divided into clear modules:

Modules 1-4: Credential Setup (Complete these first)

- **Module 1:** Get your OpenAI API key
- **Module 2:** Get Google Cloud OAuth Client ID & Secret, enable Google Drive API
- **Module 3:** Get your Google AI Studio API key
- **Module 4:** Add all credentials to n8n

Module 5: Workflow Import (After credentials are ready)

- Import the pre-built workflow into n8n
- Update workflow nodes to use your credentials

Module 6: Testing & Deployment

- Test your workflow
- Deploy to production

By the end of this workshop, you'll have a fully functional system that can automatically generate, process, and organize AI-created content.

Prerequisites

Before starting this workshop, ensure you have:

Accounts Required

- [] Google Account (Gmail)
- [] OpenAI Account
- [] n8n Account (cloud or self-hosted instance)

Technical Requirements

- [] Modern web browser (Chrome, Firefox, Edge)
 - [] Stable internet connection
 - [] Basic understanding of APIs
-

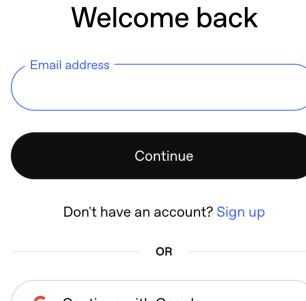
Module 1: OpenAI Setup

Goal: Obtain your OpenAI API key for AI content generation.

What you'll get: OpenAI API key (starts with `sk-proj-...`)

1.1 Creating Your OpenAI Account

1. Navigate to platform.openai.com



[Terms of Use](#) | [Privacy Policy](#)

OpenAI Login Page

2. Click **Sign Up** or **Log In** if you already have an account
3. Complete the registration process

1.2 Exploring the Platform

Once logged in, you'll see the OpenAI Platform dashboard.

OpenAI Platform Models Overview

Take a moment to explore:

- **Models** - Available AI models
- **Usage** - API usage statistics
- **Billing** - Payment and credits

1.3 Understanding Billing

The screenshot shows the OpenAI Platform interface with the 'Billing' section selected. The left sidebar has a 'Billing' item highlighted with a red box. The main content area displays a 'Free trial' section with a balance of '\$0.00'. It includes buttons for 'Add payment details' and 'View usage'. A note states: 'Note: This does not reflect the status of your ChatGPT account.' Below this are sections for 'Payment methods', 'Billing history', 'Preferences', and 'Usage limits'. A sidebar on the left also shows a 'Add credits' section with a note about API requests and a 'Go to Billing' button.

OpenAI Billing Overview

OpenAI provides:

- Free trial credits for new accounts
- Pay-as-you-go pricing
- Usage limits and caps

[COST] Important Cost Information:

- Each workflow run costs approximately **\$10** but produces **3 videos**
- You'll need **at least \$15** in your OpenAI account to run the workflow
- Make sure you have sufficient credits before testing the workflow

1.4 Creating Your API Key

This is a critical step - your API key is how your applications authenticate with OpenAI.

Access Your Profile:

1. From the OpenAI Platform home page, click your **profile icon** in the top right corner
2. Click on "**Your profile**" from the dropdown menu

The screenshot shows the OpenAI Platform homepage. On the left, there's a sidebar with navigation links for 'Get started', 'Core concepts', 'Agents', and 'API'. The main content area has a heading 'OpenAI Platform' and a 'Developer quickstart' section with a code snippet in JavaScript:

```
javascript ⓘ
1 import OpenAI from "openai";
2 const client = new OpenAI();
3
4 const response = await client.responses.create({
5   model: "gpt-5.1",
6   input: "Write a short bedtime story about a unicorn."
7 });
8
9 console.log(response.output_text);
```

Below this is a 'Models' section with three cards:

- gpt-5.1** (New): The best model for coding and agentic tasks with configurable reasoning effort.
- gpt-5-mini**: A faster, cost-efficient version of GPT-5 for well-defined tasks.
- GPT-5 nano**: Fastest, most cost-efficient version of GPT-5.

At the bottom, there are two buttons: 'Read and generate text' and 'Use a model's vision capabilities'.

OpenAI Platform Models Overview

3. Navigate to API Keys section

The screenshot shows the 'Profile' settings page. The sidebar on the left has a 'Settings' header and lists various sections: 'Your profile' (selected), 'Organization', 'General', 'API keys' (highlighted with a red box), 'Admin keys', 'People', 'Projects', 'Billing', 'Limits', 'Usage', 'Service health', 'Data controls', 'Security', 'Project', 'General', 'API keys', 'Webhooks', 'Evaluations', 'People', 'Limits', 'Cookbook', and 'Forum'.

The main content area is titled 'Profile' and shows the 'User' tab selected. It has a 'Name' field with a placeholder 'The name associated with this account' and a 'Save' button. There are also tabs for 'Security' and 'Edit'.

OpenAI API Keys via Profile

Creating the API Key:

3. Click Create new secret key

OpenAI Platform

Search % K

- [Get started](#)
- [Overview](#)
- [Quickstart](#)
- [Models](#)
- [Pricing](#)
- [Libraries](#)
- [Core concepts](#)
- [Text generation](#)
- [Images and vision](#)
- [Audio and speech](#)
- [Structured output](#)
- [Function calling](#)
- [Using GPT-3.5](#)
- [Migrate to Responses API](#)

[Add credits](#) X
Run your next API request by adding credits.

[Go to Billing](#)

[Cookbook](#)

[Forum](#)

Developer quickstart

Take your first steps with the OpenAI API.

The OpenAI API provides a simple interface to state-of-the-art AI [models](#) for text generation, natural language processing, computer vision, and more. Get started by creating an API Key and running your first API call. Discover how to generate text, analyze images, build agents, and more.

Create and export an API key

[Create an API Key](#)

Before you begin, create an API key in the dashboard, which you'll use to securely [access the API](#). Store the key in a safe location, like a `.zshrc` file or another text file on your computer. Once you've generated an API key, export it as an [environment variable](#) in your terminal.

[macOS / Linux](#) [Windows](#)

```
Export an environment variable on macOS or Linux systems
1 export OPENAI_API_KEY="your_api_key_here"
```

OpenAI SDKs are configured to automatically read your API key from the system environment.

Install the OpenAI SDK and Run an API Call

[JavaScript](#) [Python](#) [.NET](#) [Java](#) [Go](#)

To use the OpenAI API in server-side JavaScript environments like Node.js, Deno, or Bun, you can

OpenAI Create API Key

4. IMPORTANT: Save your API key immediately!

OpenAI Platform

Create

- [Chat](#)
- [Agent Builder](#)
- [Audio](#)
- [Images](#)
- [Videos](#)
- [Assistants](#)
- [Usage](#)
- [API keys](#)
- [Logs](#)
- [Storage](#)
- [Batches](#)
- [Optimize](#)
- [Evaluation](#)
- [Fine-tuning](#)

[Add credits](#) X
Run your next API request by adding credits.

[Go to Billing](#)

[API keys](#)

You have permission to view and manage all API keys in this project.

Do not share your API key with others or expose it in the browser or other client-side code. To protect your account's security, OpenAI may automatically disable any API key that has leaked publicly.

[View usage per API key on the Usage page.](#)

NAME	STATUS	LAST USED	CREATED BY	PERMISSIONS
myapikey	Active	Never	OpenAI Bee	All

[+ Create new secret key](#)

Save your key

Please save your secret key in a safe place since you won't be able to view it again. Keep it secure, as anyone with your API key can make requests on your behalf. If you do lose it, you'll need to generate a new one.

[Learn more about API key best practices](#)

`ds-gp9 YOUR_API_KEYHERE`

[Copy](#)

Permissions

Read and write API resources

[Done](#)

OpenAI Save API Key Modal

[WARNING] **Warning:** You will only see this key once. Copy it to a secure location.

5. Your key will appear in the API Keys list

Create

Chat

Agent Builder

Audio

Images

Videos

Assistants

Manage

Usage

API keys

Logs

Storage

Batches

Optimize

Evaluation

Fine-tuning

Add credits

Run your next API request by adding credits.

Go to Billing

API keys

You have permission to view and manage all API keys in this project.

Do not share your API key with others or expose it in the browser or other client-side code. To protect your account's security, OpenAI may automatically disable any API key that has leaked publicly.

View usage per API key on the [Usage page](#).

NAME	STATUS	SECRET KEY	CREATED	LAST USED	CREATED BY	PERMISSIONS
myapikey	Active	[REDACTED]	Dec 1, 2025	Never	Diego Bee	All

+ Create new secret key

OpenAI API Keys List

1.5 Setting Up Billing

To use the API beyond free credits, you need to add payment details:

- From the OpenAI Platform home page, click your **profile icon** in the top right corner
- Click on "**Your profile**" from the dropdown menu
- Navigate to **Billing** settings
- Add your payment method

Settings

Your profile

Organization

General

API keys

Admin keys

People

Projects

Billing

Limits

Usage

Service health

Data controls

Security

Project

Add credits

Run your next API request by adding credits.

Go to Billing

Cookbook

Forum

Billing

Overview Payment methods Billing history

Free trial

Credit remaining **\$0.00**

Add payment method

Note: This trial will end on December 1, 2025.

Add payment details

Add your credit card details below. This card will be saved to your account and can be removed at any time.

Card information

Card number MM / YY CVC

Name on card

Billing address

Country

Address line 1

Address line 2

City Postal code

State, county, province, or region

Purchasing as a business

Cancel Continue

5. Set up usage limits (recommended)

[WARNING] **Important:** Make sure you have at least **\$15** in your account balance before running the workflow. Each workflow run costs approximately **\$10** and generates **3 videos**.

Module 2: Google Cloud Platform Setup

Goal: Create a GCP project, configure OAuth credentials, set up billing, and enable Google Drive API.

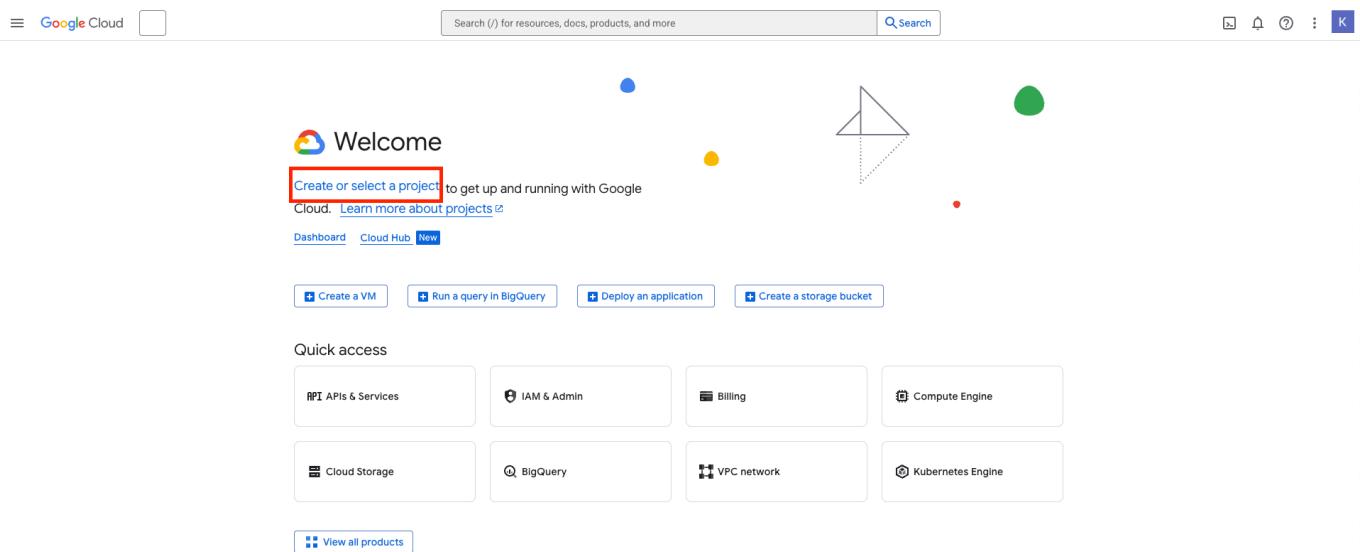
What you'll get:

- GCP Project
- OAuth Client ID
- OAuth Client Secret
- Billing account configured
- Google Drive API enabled

2.1 Creating a GCP Project

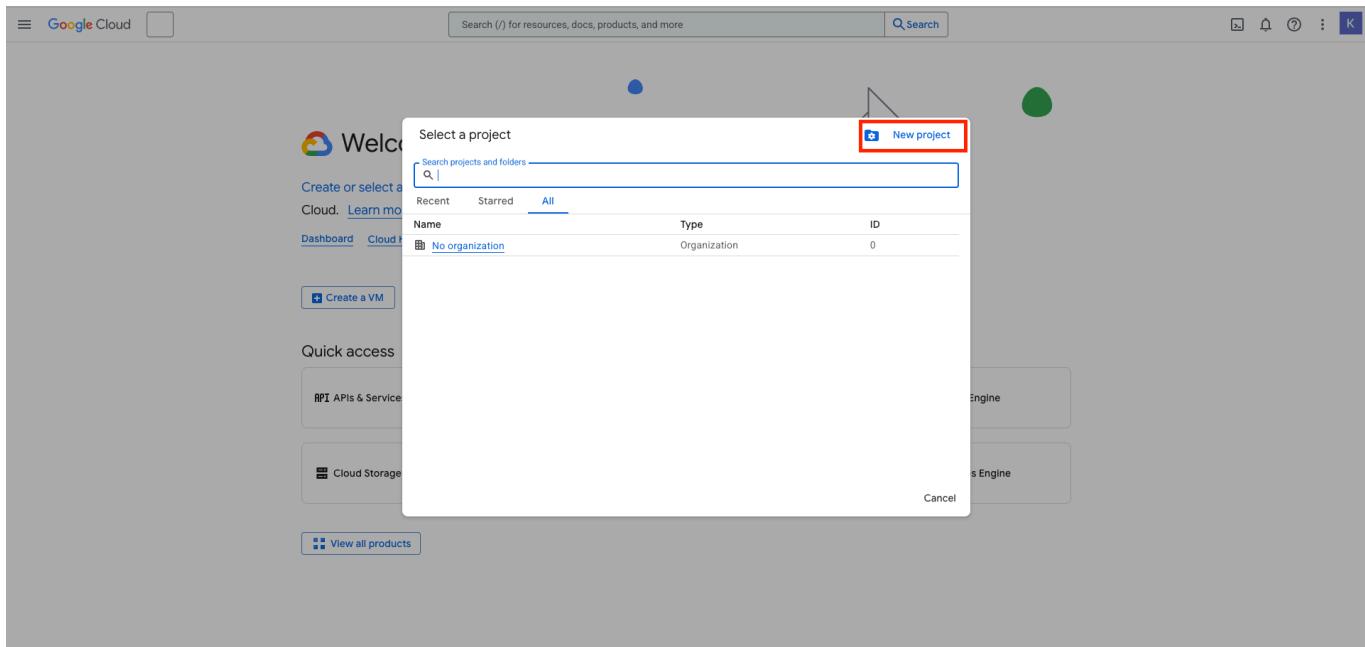
Before you can configure OAuth and APIs, you need a Google Cloud Platform project.

1. Go to [Google Cloud Console](#)
2. Click on the project selector at the top of the page (or click **Create Project** if you don't have any projects)



GCP Create Project Step 1

3. Click **New Project** button



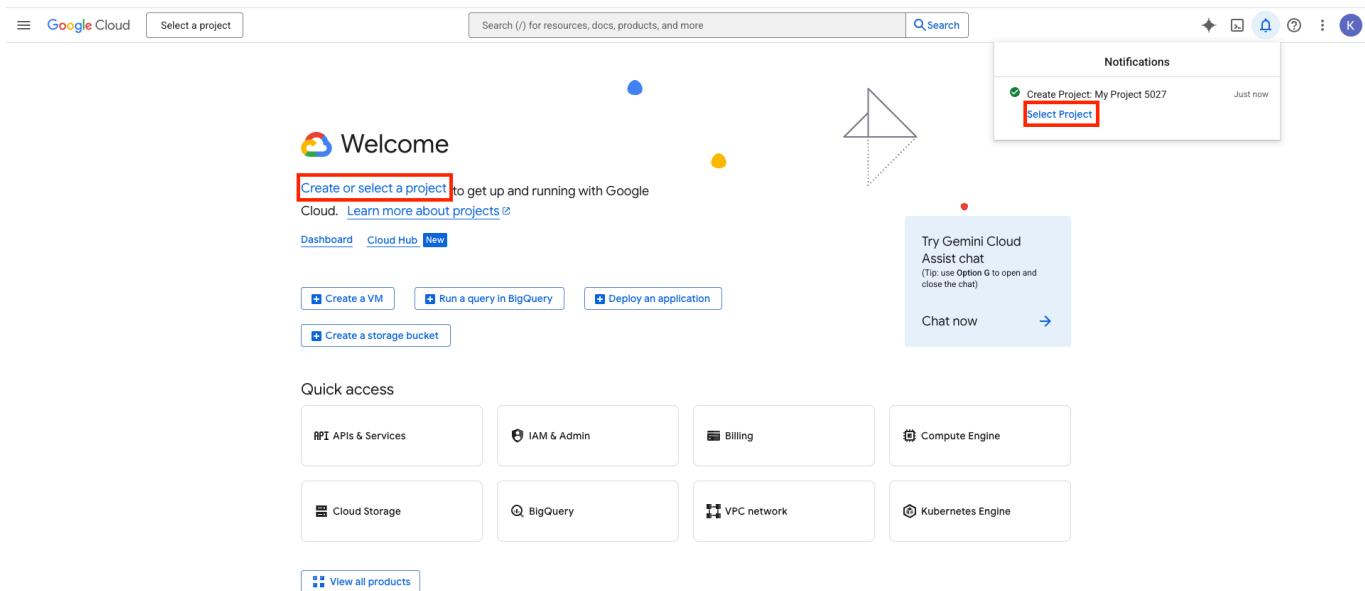
GCP Create Project Step 2

4. Fill in the project details:

- **Project name** - Choose a descriptive name (e.g., "UGC Content Creation")
- **Project ID** - Will be auto-generated (you can customize it)
- **Location** - Select an organization or leave as "No organization"

5. Click **Create**

6. Wait for the project to be created. You'll see a confirmation when it's ready:



GCP Project Created Confirmation

7. Click on your project name to access the project

2.2 Creating OAuth Credentials

Now you'll create OAuth client credentials for Google Drive integration:

1. On the project page, use the search bar at the top of the page to search for "google oauth"

The screenshot shows the Google Cloud Project Page for 'My Project 5027'. The search bar at the top is highlighted with a red box. The dashboard displays various project metrics and links to different Google Cloud services like API APIs, Resources, and Monitoring.

GCP Project Page

2. Click on Google Auth Platform from the search results

The screenshot shows the Google Cloud Project Page with the search bar containing 'google auth platform'. The search results list 'Google Auth Platform' as the top result, which is highlighted with a red box. Other results include Java, Overview, and Marketplace items.

GCP Search Google OAuth

3. You'll be taken to the Google Auth Platform overview page. Navigate to Clients from the sidebar

The screenshot shows the 'Create branding' wizard in the Google Cloud Platform. The left sidebar has 'Overview' selected. The main area is titled 'Project configuration' and shows step 1: 'App Information' (selected) and step 2: 'Audience'. Under 'Audience', there are two options: 'Internal' (selected) and 'External'. The 'Internal' option is described as being available to users within the organization. The 'External' option is described as being available to any test user with a Google Account. A 'Next' button is visible at the bottom.

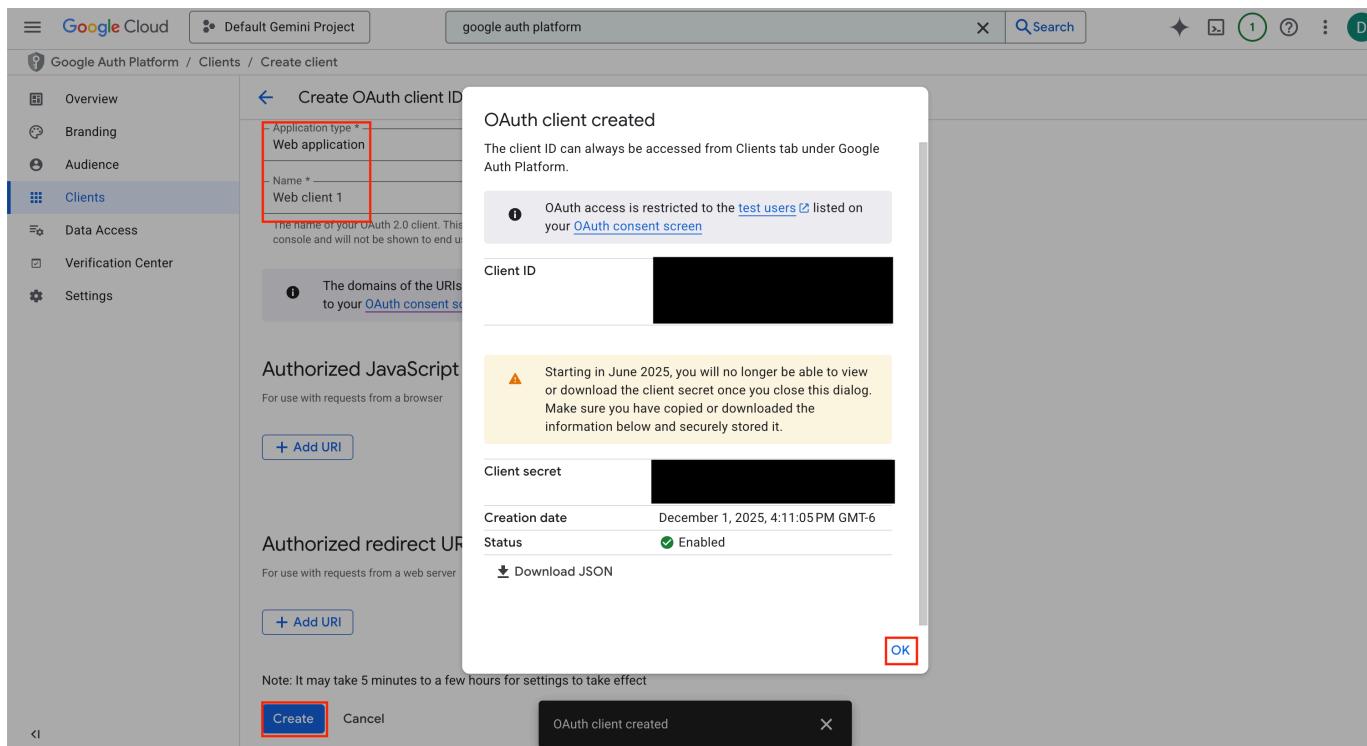
GCP Auth Platform Overview

4. Click **Create Credentials > OAuth client ID**

The screenshot shows the 'Create OAuth client ID' form in the 'Clients' section of the Google Cloud Platform. The left sidebar has 'Clients' selected. The main form has 'Application type' set to 'Web application' and 'Name' set to 'Web client 1'. It includes sections for 'Authorized JavaScript origins' and 'Authorized redirect URIs'. A note states that it may take 5 minutes to a few hours for settings to take effect. At the bottom are 'Create' and 'Cancel' buttons.

GCP Create OAuth Client Step 1

5. Select **Web application** as the application type



GCP Create OAuth Client Step 2

6. Fill in the required fields:

- **Name** - Choose a name for your OAuth client (e.g., "Web client 1")
- **Authorized redirect URIs** - Add the callback URL:
- **For n8n Cloud:** <https://oauth.n8n.cloud/oauth2/callback>
- **For self-hosted n8n:** Your n8n instance URL followed by /rest/oauth2-credential/callback

7. Click Create

Name	Creation date	Type	Client ID	Actions
Web client 1	Dec 1, 2025	Web application	685701800314-fjbi...	

GCP Create OAuth Client Step 3

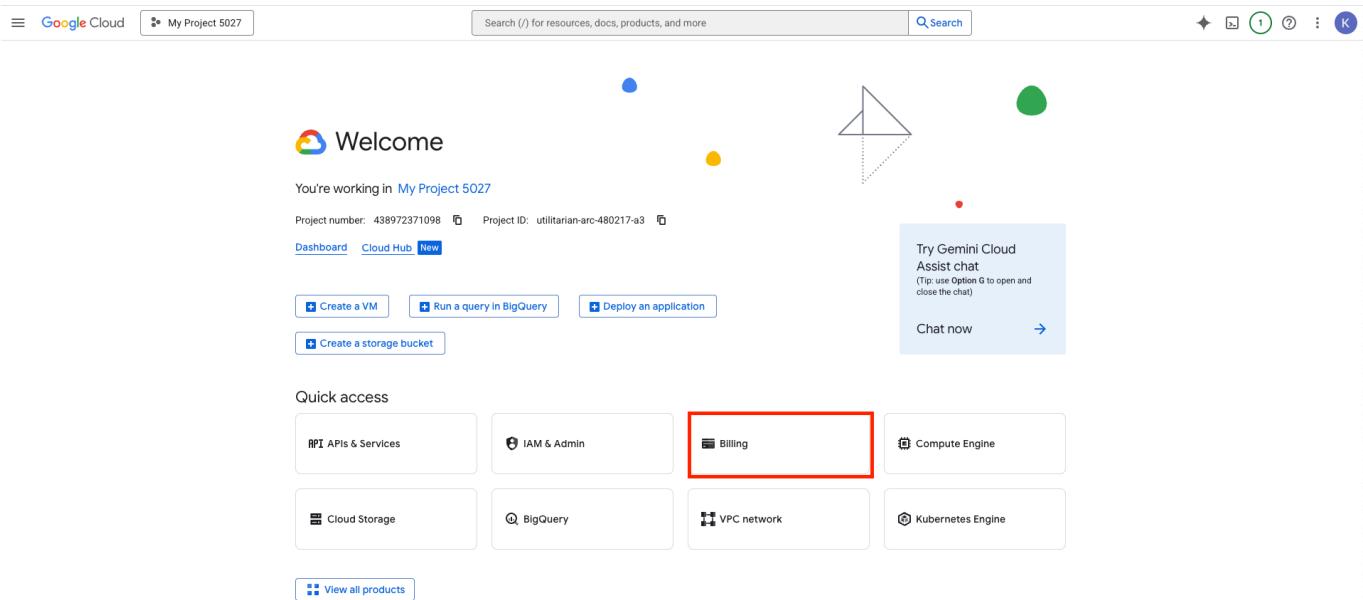
After creating your OAuth client, you'll see a confirmation modal with your Client ID and Client Secret. **Important:** Save your Client ID and Client Secret immediately! You'll need these in Module 4.

[WARNING] Note: It may take 5 minutes to a few hours for settings to take effect.

2.3 Setting Up Billing

Before you can use Google AI Studio (Gemini API) and other paid services, you need to set up billing for your GCP project.

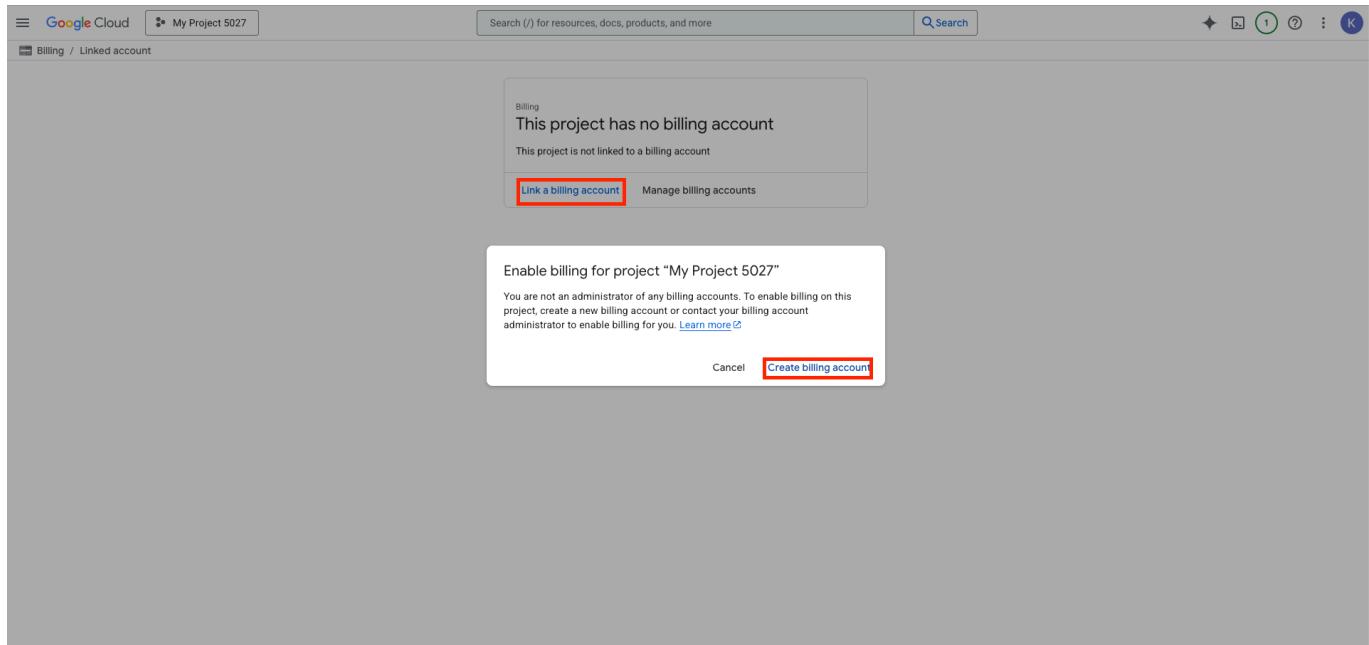
1. Go back to the Google Cloud Console homepage



GCP Billing Homepage

2. Navigate to **Billing** (you can use the search bar or navigation menu)

3. You may see a message indicating your project has no billing account:



GCP Project No Billing Account

4. Click **Create Billing Account** or **Link a billing account** if you already have one

5. If creating a new billing account, follow these steps:

Step 1: Fill in your account details

Try Google Cloud for free

Step 1 of 2 Account Information



Country
United States

By using this application, you agree to the [Google Cloud Platform Terms of Service](#), [Supplemental Free Trial Terms](#), and [any applicable services and APIs Terms of Service](#).

Agree & continue

Access to Google Cloud products

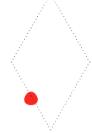
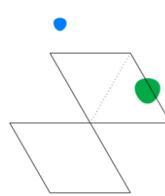
Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API.

\$300 in free credit

Try Google Cloud with \$300 in credit to spend over the next 90 days.

No automatic charges

You only start paying if you decide to activate a full, pay-as-you-go account or choose to prepay. Any remaining free credit is yours to keep.



GCP Billing Create Step 1

Step 2: Add your payment information (credit card required)

Try Google Cloud for free

Step 2 of 2 Payment Information Verification

Don't worry, this trial is still free. Collecting your payment information helps us verify your identity to reduce fraud. You won't be charged unless you manually activate a full pay-as-you-go account or choose to prepay.

Contact information
 +

Payment method
 +

Add contact information before continuing
Your info is saved in a [payments profile](#) and shared across Google services

Start free

Access to Google Cloud products

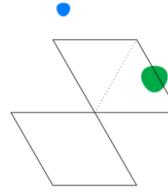
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GCP Billing Create Step 2

Step 3: Review and confirm your billing account setup

 Try Google Cloud for free

Step 2 of 2 Payment Information Verification

Don't worry, this trial is still free. Collecting your payment information helps us verify your identity to reduce fraud. You won't be charged unless you manually activate a full pay-as-you-go account or choose to prepay.

Contact information

Payment method

Your info is saved in a [payments profile](#) and shared across Google services

[Start free!](#)

Access to Google Cloud products

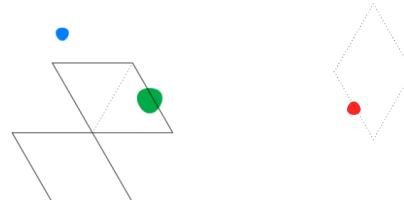
Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API.

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No automatic charges

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[Privacy policy](#) | [FAQs](#)



GCP Billing Create Step 3

Step 4: Complete the final setup steps

The screenshot shows the Google Cloud Billing interface. At the top, there's a navigation bar with the Google Cloud logo, a project selector ('My Project 5027'), and a search bar ('Search (/) for resources, docs, products, and more'). Below the search bar is a breadcrumb trail ('Billing / Linked account'). The main content area has a heading 'Billing' and a message 'You have multiple billing accounts'. It states 'Billing account "My Billing Account" is linked to this project'. There are two buttons at the bottom of this section: 'Go to linked billing account' (which is highlighted with a red box) and 'Manage billing accounts'.

GCP Billing Create Step 4

6. After creating your billing account, you'll be taken to the billing overview page

Your total cost (December 1 – 4, 2025) Last 7 days Current month

Cost	Savings	Total cost
\$0.00	– \$0.00	= \$0.00

[View details](#)

Forecasted total cost
Available once there is enough usage

Create a budget alert ?

Set a monthly budget for your billing account. You'll get email notifications as your costs approach and exceed the budget amount.

\$100 \$

[Create](#)

→ View budgets and alerts

Free trial credit

	\$300
Free trial credit	
Out of \$300	

	91
Days remaining	
Ends March 5, 2026	

GCP Billing Overview

7. Link your billing account to your project if it's not already linked

[WARNING] Important: Billing is required for Google AI Studio (Gemini API) access. You'll need a credit card and must move to Tier 1 billing to use the Gemini API. See Module 3.4 for more details.

2.4 Enabling Google Drive API

Before you can use Google Drive with n8n, you must enable the Google Drive API in your GCP project:

1. In the Google Cloud Console, use the search bar at the top to search for "Google Drive API"

Free trial status: \$300.00 credit and 43 days remaining. Activate your full account to get unlimited access to all of Google Cloud—use any remaining credits, then pay only for what you use.

Dismiss [Activate](#)

Google Cloud Default Gemini Project

Search: google drive api

Top results

- Google Drive API Marketplace · Create and manage resources in Google Drive.
- Elastic AI Agent Marketplace · Search AI, open source observability and AI-driven security investigations with th...
- VISION Analytics Marketplace · Real-time insights. Real-world impact.

Enabling an API in your Google Cloud project Documentation · In the Google Cloud console, go to APIs & services for your project. Go to API...

Google Cloud APIs Documentation · Google Cloud APIs allow you to automate your workflows by using your...

Sync Google Drive files to apps using the Drive REST API ... Documentation · We're simplifying options for developers by retiring the Drive Android API. We...

Marketplace

- Google Drive API Marketplace · Create and manage resources in Google Drive.
- Google Drive Activity API Marketplace · Get info about activity on files and folders in Google Drive.
- Drive Labels API Marketplace · Define label taxonomies for your organization.

Show more →

Showing resource results for Default Gemini Project only ?

Dashboard Cloud Hub New

+ Create a VM + Run a query

+ Create a storage bucket

Project number: 378670202782

Quick access

- API APIs & Services
- Cloud Storage
- BigQuery
- VPC network
- Kubernetes Engine

2. Click on **Google Drive API** from the search results (it will appear in the "Top results" or "Marketplace" section)
3. You'll be taken to the Google Drive API product details page. Click the blue **Enable** button to activate the API for your project

The screenshot shows the Google Drive API product details page. At the top, there's a banner with a trial status message: "Free trial status: \$300.00 credit and 43 days remaining. Activate your full account to get unlimited access to all of Google Cloud—use any remaining credits, then pay only for what you use." Below the banner, the title "Google Drive API" is displayed with its logo and a link to "Google Enterprise API". A sub-header says "Create and manage resources in Google Drive." Two buttons are present: "Enable" (which is highlighted with a red box) and "Try this API". Below the main title, there are tabs for "Overview", "Documentation", "Support", and "Related Products". The "Overview" tab is selected. On the left, under "Overview", there's a section titled "Additional details" with information like Type: SaaS & APIs, Last product update: 2/6/23, Category: Google Enterprise APIs, Storage, Google Workspace, and Service name: drive.googleapis.com. On the right, there's a "Tutorials and documentation" section with links to "Overview", "Quickstarts", and "API reference".

GCP Google Drive API Product Details

4. After enabling, you'll be redirected to the API/Service Details page where you can verify the API is enabled

The screenshot shows the API/Service Details page for the Google Drive API. At the top, there's a banner with a trial status message: "Free trial status: \$300.00 credit and 43 days remaining. Activate your full account to get unlimited access to all of Google Cloud—use any remaining credits, then pay only for what you use." Below the banner, the title "Google Drive API" is displayed with its logo and a link to "API/Service Details". A "Disable API" button is shown. To the left, there's a sidebar titled "Enabled APIs & services" with options: Library, Credentials, OAuth consent screen, and Page usage agreements. The "Library" option is selected. The main content area shows the "Google Drive API" card with the following details: Service name: drive.googleapis.com, Type: Public API, Status: Enabled. There are links for Documentation (Overview, Quickstarts, API reference) and Explore (Try in API Explorer). Below the card, there are sections for Metrics, Quotas & System Limits, Credentials, and Drive UI Integration. The Metrics section includes a dropdown for "Select Graphs" set to "4 Graphs", and filters for Versions (v1, v2, v2beta, v2internal...), Credentials (Default Gemini API Key...), and Methods (432 options selected). A "Traffic by response code" chart is also visible.

[OK] **Verification:** You should see **Status: Enabled** on this page, confirming the API is active for your project.

[WARNING] **Note:** If you don't see the Enable button on the product details page, the API may already be enabled. You can verify this in the **APIs & Services > Enabled APIs** section.

[WARNING] **Note:** It may take 5 minutes to a few hours for settings to take effect.

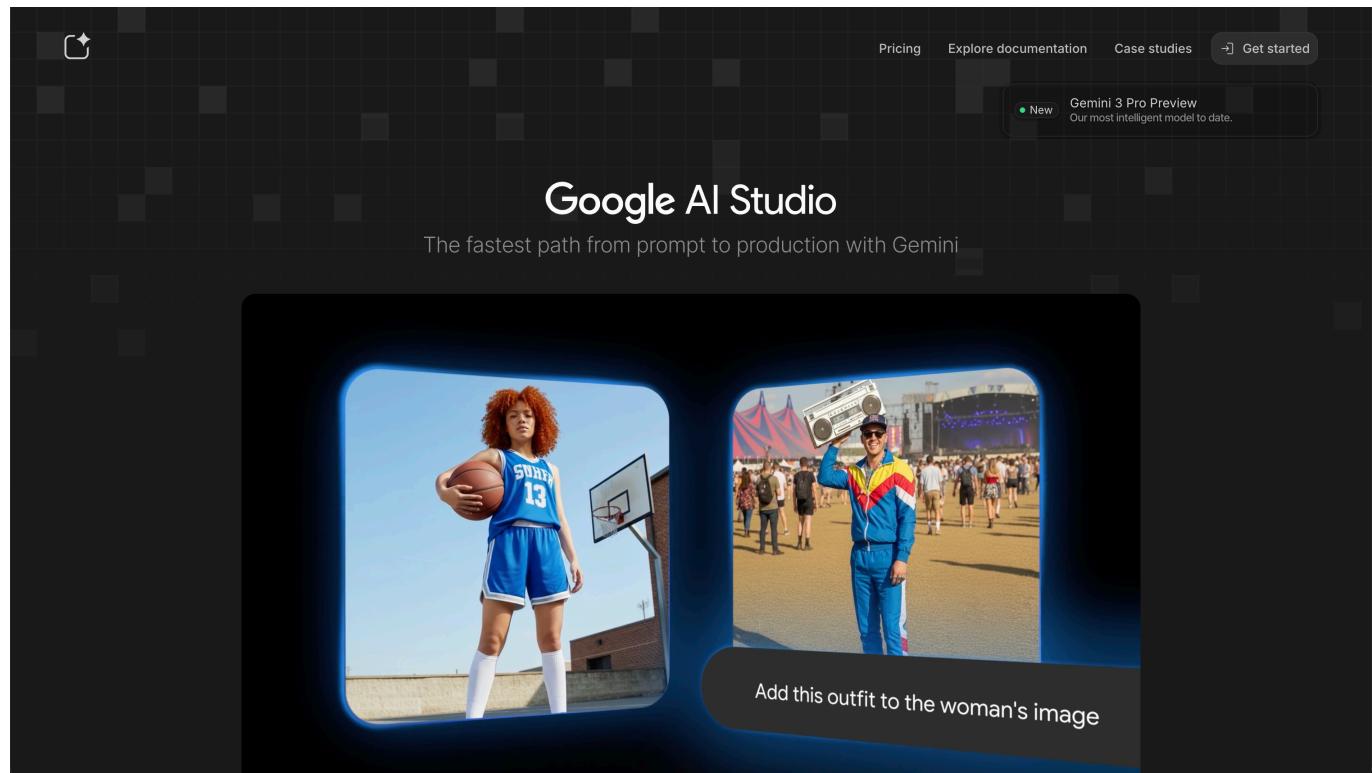
Module 3: Google AI Studio Setup

Goal: Obtain your Google AI Studio API key for Gemini API access.

What you'll get: Google AI Studio API key

3.1 Accessing Google AI Studio

1. Navigate to [Google AI Studio](#)



Google AI Studio Landing Page

2. Sign in with your Google account
3. Accept the welcome modal

Welcome to AI Studio

Google AI Studio empowers developers to build with Gemini, our next generation family of generative AI models.

The [Gemini API Additional Terms of Service](#) and the [Google Privacy Policy](#) apply. Prompts and responses may be reviewed and used to train Google AI, so don't submit sensitive or personal information. Learn more about [data use](#). Gemini can make mistakes, so double-check it.

Agreements

* As a developer building with Google AI Studio and Gemini API for professional or business purposes, I consent to the terms and acknowledge the privacy policy linked above.

I'd like to receive emails for model updates, offers, useful tips, invitations to participate in research studies, and news about Google AI.

[Continue](#)

Google AI Studio Welcome Modal

3.2 Dashboard Overview

Google AI Studio

New Gemini 3: Our most intelligent model to date. Try it + New app

Google AI Studio

The fastest way from prompt to production with Gemini

What's new

- Try Gemini 3: Our most intelligent model to date.
- Veo 3.1: Our best video generation model, now with sound effects.
- Try Nano Banana Pro: State-of-the-art image generation and editing.
- Text to speech with Gemini: Generate high quality text to speech with Gemini.

Get started with Gemini

Python

```
from google import genai
client = genai.Client()
```

View API keys Explore docs

Google AI Studio Home Dashboard

The dashboard provides access to:

- Model playground
- API key management
- Project settings

3.3 Creating an API Key

1. Navigate to API Keys

The screenshot shows the Google AI Studio interface. On the left, a sidebar menu includes 'Dashboard', 'API keys' (which is selected and highlighted with a red box), 'Projects', 'Usage and Billing', 'Logs and Datasets', and 'Changelog'. The main content area is titled 'API Keys' and displays a table with one row. The table columns are 'Key', 'Project', 'Created on', and 'Quota tier'. The single entry is 'Default Gemini API Key' under 'Default Gemini Project', created on 'Dec 1, 2025', in 'Free tier'. To the right of the table is a large, light-gray decorative star shape. Below it, a message says 'Can't find your API keys here?' followed by a note: 'This list only shows API keys for projects imported into Google AI Studio. Import other projects to manage their associated API Keys. You can also create a new API Key above. [Learn more](#)'. At the bottom right of the table area is a button labeled 'Import projects'. At the very bottom of the page are two buttons: 'Get API key' and 'Settings'.

Google AI Studio API Keys List

2. Click Create API Key

The screenshot shows the same Google AI Studio interface as the previous one, but with a modal window open over the 'API Keys' table. The modal is titled 'Create a new key' and contains two input fields: 'Name your key' with the value 'myapikey' and 'Choose an imported project' with the value 'Default Gemini Project'. At the bottom of the modal are two buttons: 'Cancel' and 'Create key' (which is highlighted with a red box). The background table and sidebar remain visible.

Google AI Studio Create New API Key

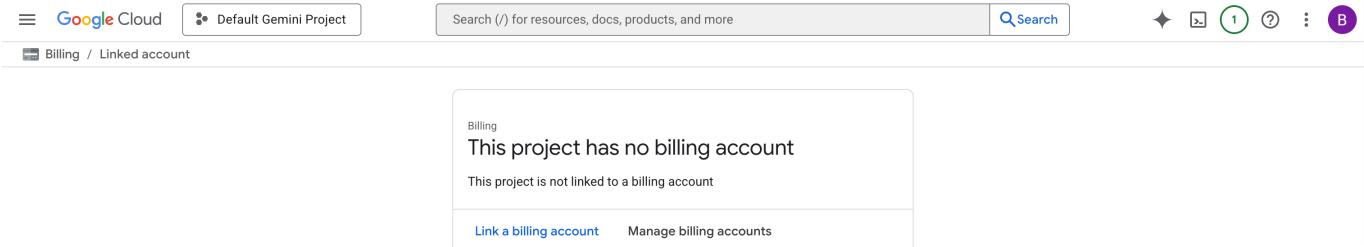
3. Select or create a project

3.4 GCP Billing Setup (Required for Gemini API)

[WARNING] **Important:** To use the Gemini API (required for this workflow), you **must** have a billing account with a credit card attached. The Gemini API requires Tier 1 billing access.

If your project requires billing:

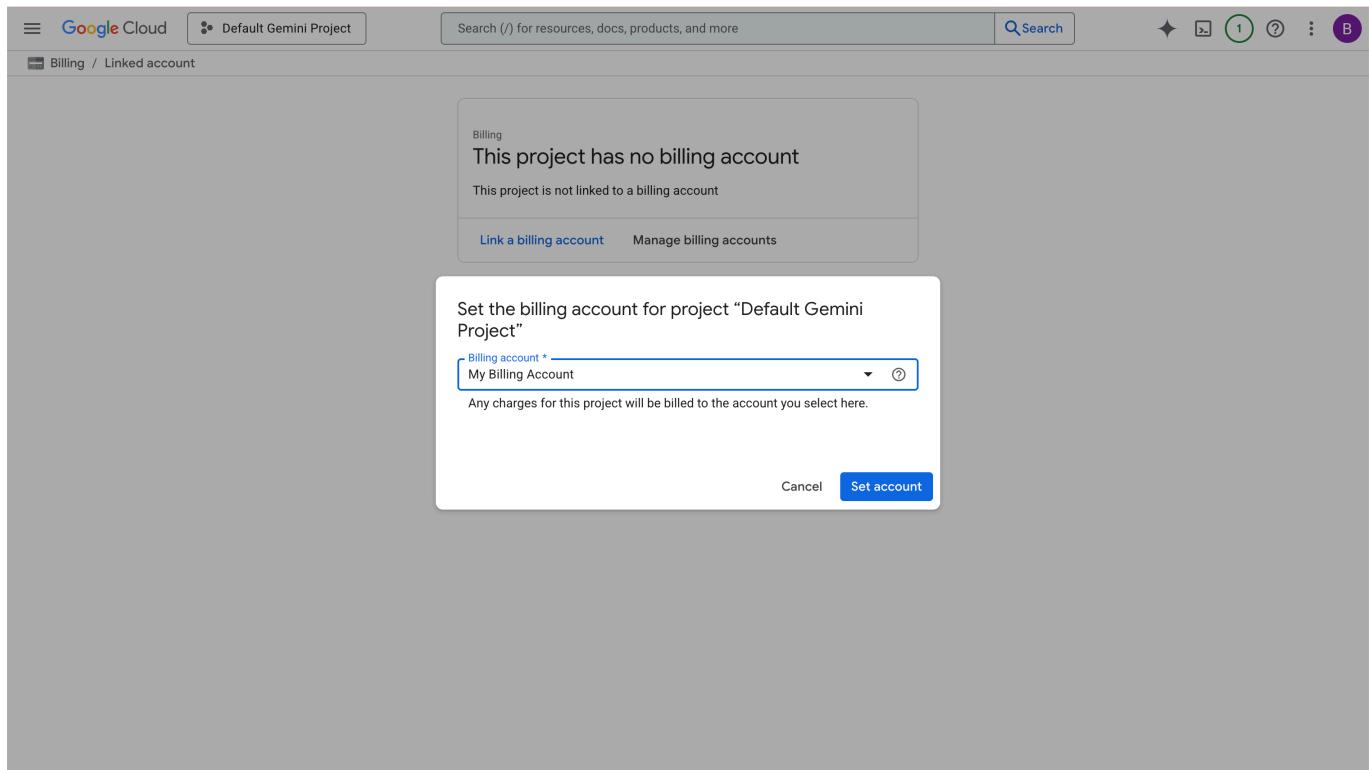
1. You may see a billing requirement message



The screenshot shows the Google Cloud interface with the navigation bar at the top. Below it, a main content area displays a "Billing" section. The section title is "Billing". Inside, there is a message: "This project has no billing account" and "This project is not linked to a billing account". At the bottom of this section are two buttons: "Link a billing account" and "Manage billing accounts".

GCP Project Has No Billing Account

2. Set up a billing account with a credit card



The screenshot shows the same Google Cloud interface as the previous one, but with a modal dialog box overlaid. The modal has a title "Set the billing account for project ‘Default Gemini Project’". It contains a dropdown menu labeled "Billing account * My Billing Account" with a help icon. Below the dropdown is a note: "Any charges for this project will be billed to the account you select here." At the bottom of the modal are two buttons: "Cancel" and "Set account".

GCP Set Billing Account

3. View existing billing accounts

The screenshot shows the Google Cloud Billing account management page. At the top, there's a navigation bar with 'Google Cloud' and a search bar. Below it, a header says 'Billing account management'. A sub-header 'Your billing accounts' is underlined, and 'Your projects' is also listed. A 'Create account' button is visible. A 'Filter' section shows 'Status : Active' and a search input field. The main table lists one account:

Account name	Account type	Last 30 days' spend	Account ID	Status	Organization	Health checks
My Billing Account	Direct	\$0	011A94-3CBB62-12AFD3	Active	-	1

GCP Billing Account Management

4. Create a new billing account if needed (requires credit card)

The screenshot shows the 'Create a new billing account' form. At the top, there's a navigation bar with 'Google Cloud' and a search bar. Below it, a header says 'Billing / Create billing account'. The form has fields for 'Name *' (containing 'My Billing Account 1'), 'Country *' (containing 'United States'), and 'Currency' (containing 'USD'). At the bottom, there are 'Continue' and 'Cancel' buttons.

GCP Create New Billing Account

[TIP] Note: You may need to add a credit card to move into Tier 1 billing, which is required for Gemini API access.

5. Confirm your billing setup with free trial credit

The screenshot shows the Google Cloud Billing Overview page. At the top, there is a banner stating "Free trial status: \$300.00 credit and 43 days remaining. Activate your full account to get unlimited access to all of Google Cloud—use any remaining credits, then pay only for what you use." Below the banner, the main interface has a sidebar on the left with sections like "Cost management", "Cost optimization", and "Payments". The main content area displays "Your total cost December 1, 2025" as \$0.00. It also shows a "Create a budget alert" section where users can set a monthly budget and receive notifications. A prominent "Free trial credit" section indicates a balance of \$300, with a note that it is "Out of \$300". On the right side, there is a "Recommended for you" sidebar with links to "Cloud Billing overview", "Google Cloud Billing Tour", "Billing Reports Tutorial", "Analyze Cloud Billing data with BigQuery", "View your billing reports and cost trends", and "Overview of Cloud Billing access control".

GCP Billing Overview with Free Trial

[WARNING] Important Note: To move into Tier 1 (beyond free tier limits), you may need to add a credit card to your Google Cloud billing account. The free trial provides \$300 in credits, but some services require a payment method on file to access Tier 1 quotas.

Module 4: n8n Workflow Platform

Goal: Add all your credentials to n8n so the workflow can authenticate with external services.

What you'll create:

- Google Drive OAuth2 credential in n8n
- OpenAI API credential in n8n
- Header Auth credential for Google AI Studio in n8n

4.1 Accessing n8n

1. Log into your n8n instance
2. View your workflows

Overview

All the workflows, credentials and data tables you have access to

Create Workflow

Create Credential

Create Data table

Prod. executions Last 7 days	Failed prod. executions Last 7 days	Failure rate Last 7 days	Time saved Last 7 days	Run time Last 7 days
0 -100%	0 +100%	0% +100pp	--	0s -0s

Workflows Credentials Executions Data tables Beta

Search Sort by last updated

Automate UGC Content Creation with N8N and Sora 2
Last updated 1 hour ago | Created 1 December | tutorials

BizeeBee - Audio Stream to Supabase (Minimal)
Last updated 1 week ago | Created 14 October | Self-Sustaining | Debug | Clean Workflow | +6 more

RunwayML Video Polling + YouTube Upload
Last updated 1 week ago | Created 14 October

Total 3 < 1 > 50/page

Admin Panel Templates Variables Insights Help What's New Deion Locklear ...

n8n Overview Workflows List

4.2 Setting Up Google Drive Credentials

1. Go to **Credentials** in n8n
2. Click **Add Credential**
3. Search for **Google Drive**

Personal

Workflows, credentials and data tables owned by you

Create Workflow

Search credentials... Sort by last updated

Some credentials may be hidden since filters are applied. [Remove filters](#)

Google Drive account	A. Personal
Header Auth account	A. Personal
OpenAI account	A. Personal
OpenAI account 2	A. Personal
YouTube account	A. Personal
YouTube account 2	A. Personal
Header Auth account	A. Personal
OpenAI account	A. Personal
Supabase account	A. Personal

Add new credential

Select an app or service to connect to

google drive

Google Drive OAuth2 API

Admin Panel Templates Variables Insights Help What's New Deion Locklear ...

n8n Add Credential Google Drive Search

4. Configure OAuth2 connection

The screenshot shows the n8n interface with the 'Personal' workspace selected. A modal window is open for creating a new credential named 'Google Drive account 2' using the 'Google Drive OAuth2 API'. The modal contains fields for 'Connection', 'Sharing', and 'Details'. The 'Connection' tab is active, showing the 'OAuth Redirect URL' as 'https://oauth.n8n.cloud/oauth2/callback', which is intended for use in Google Drive. Other fields include 'Client ID' and 'Client Secret', both of which are redacted. The 'Allowed HTTP Request Domains' dropdown is set to 'All'. A note at the bottom of the modal says 'Make sure that you have enabled the Google Drive API in the Google Cloud Console.' and 'Enterprise plan users can pull in credentials from external vaults.'

n8n Google Drive OAuth2 Connection Form

5. Enter your credentials:

- Client ID: YOUR_CLIENT_ID_HERE
- Client Secret: YOUR_CLIENT_SECRET_HERE

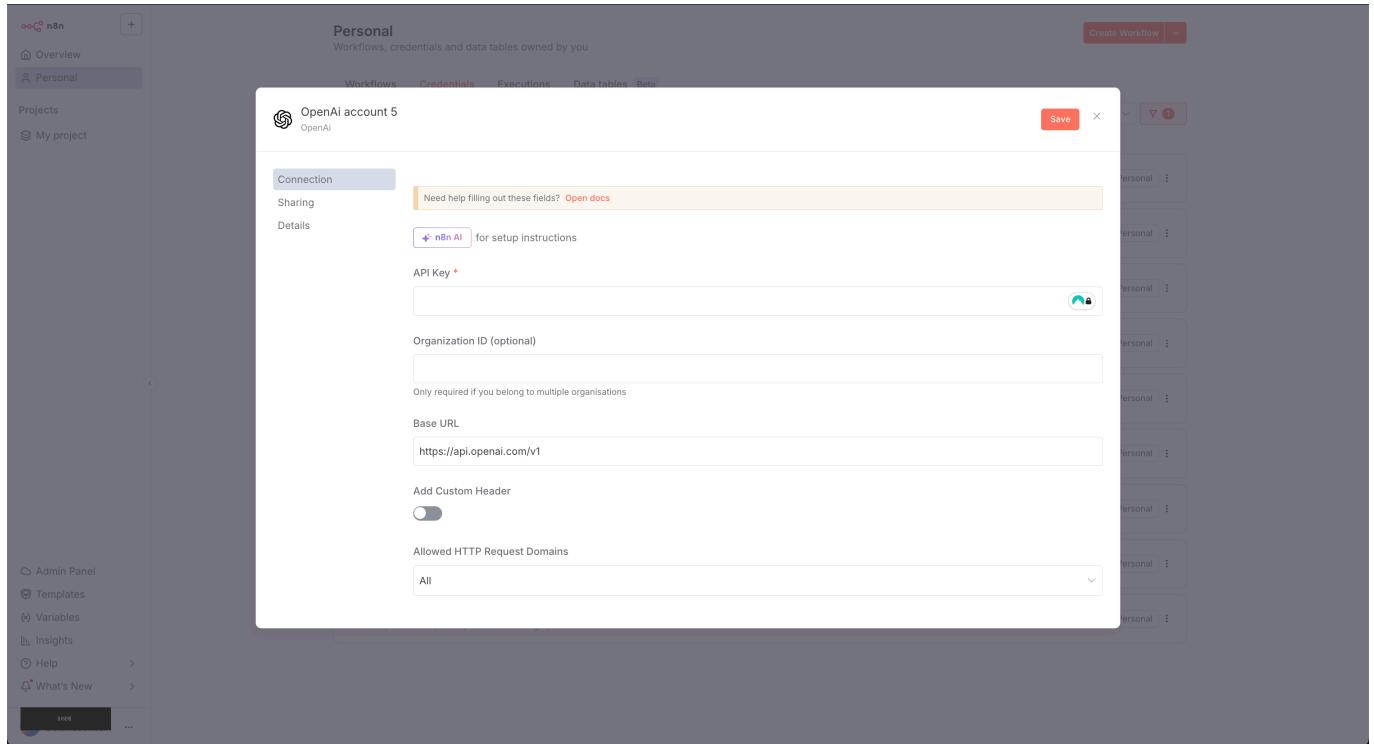
4.3 Setting Up OpenAI Credentials

1. Add a new credential
2. Search for **OpenAI**

The screenshot shows the n8n interface with the 'Personal' workspace selected. A modal window titled 'Add new credential' is open, prompting the user to 'Select an app or service to connect to'. A search bar contains the text 'openai'. Below the search bar, a list of results includes 'openai' and 'OpenAI'. In the background, a list of existing credentials is visible, including 'Google Drive account', 'Header Auth account', 'OpenAI account 4', 'OpenAI account 2', 'YouTube account', 'YouTube account 2', 'Header Auth account', 'OpenAI account', and 'Supabase account'.

n8n Add Credential OpenAI Search

3. Configure the connection



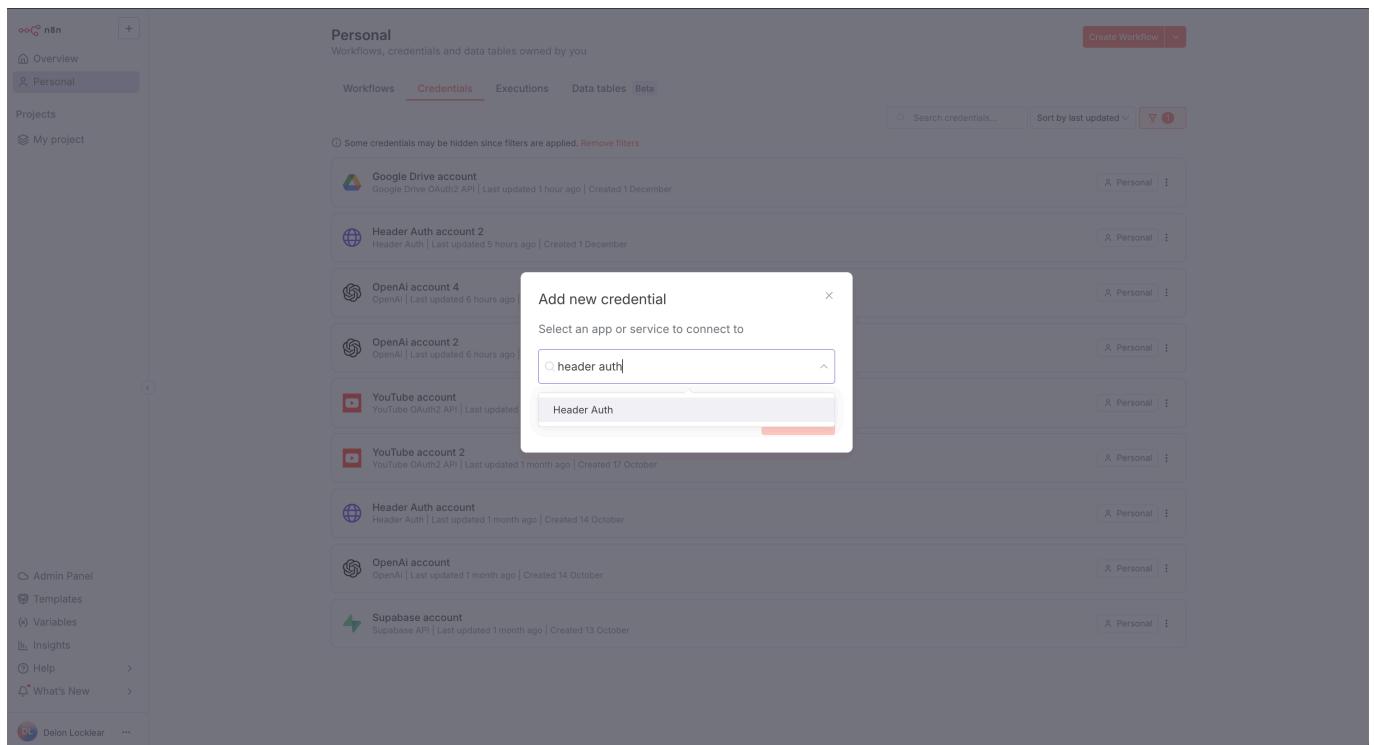
n8n OpenAI Credential Connection Form

4. Enter your API key: YOUR_API_KEY_HERE

4.4 Setting Up Header Auth Credentials (For Google AI Studio)

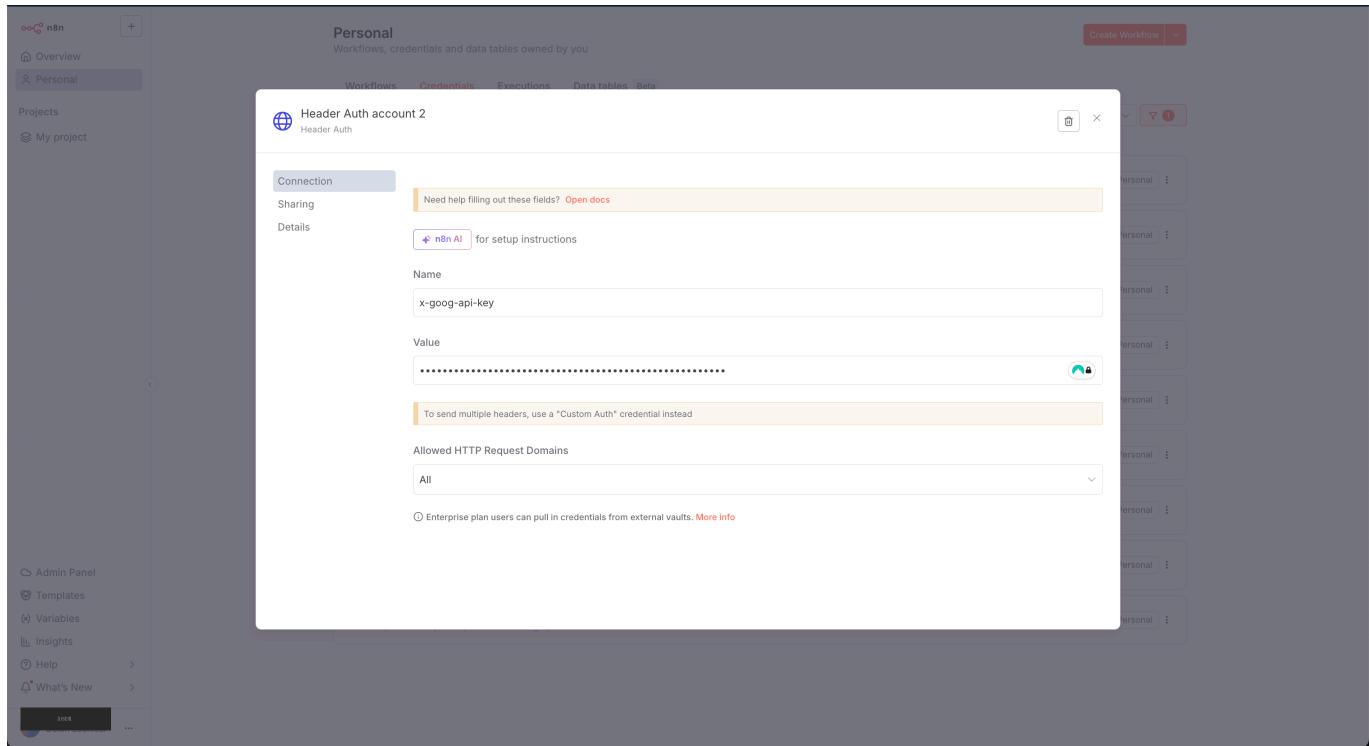
For Google AI Studio API integration, you'll need to set up Header Auth credentials:

1. In n8n, go to **Credentials** and click **Add Credential**
2. Search for **Header Auth**



3. Configure the header authentication:

- **Name:** x-goog-api-key
- **Value:** Your Google AI Studio API key (from Module 3.3)



n8n Header Auth Credential Connection Form

4. Click **Save** to store the credential

4.5 Credential Summary

By the end of Module 4, you should have created the following credentials in n8n:

- [OK] **Google Drive OAuth2** - Using Client ID and Client Secret from Module 2
- [OK] **OpenAI API** - Using API key from Module 1.4
- [OK] **Header Auth (x-goog-api-key)** - Using Google AI Studio API key from Module 3.3

Make sure all credentials are saved and test each one to ensure they're working correctly before proceeding to Module 5.

Module 5: Importing and Configuring the UGC Workflow

Now that you have all your credentials set up in n8n, it's time to import the pre-built workflow and connect it to your credentials.

5.1 Understanding the Workflow

The "Automate UGC Content Creation with N8N and Sora 2" workflow automates the creation of

User-Generated Content (UGC) videos. Here's what it does:

Workflow Overview:

1. **Form Trigger** - Collects a product image and product name from users
2. **Persona Generation** - Uses OpenAI to analyze the product and generate an ideal customer persona
3. **Script Generation** - Uses Google AI Studio (Gemini) to create 3 authentic UGC video scripts based on the persona
4. **Video Creation** - Generates 3 videos using OpenAI's Sora 2 model:
 - Creates a first frame image using Gemini
 - Generates 12-second videos with Sora 2
 - Polls for video completion
 - Downloads completed videos
5. **Storage** - Uploads all generated videos to Google Drive

Key Components:

- **Input:** Product image (file) + Product name (text)
- **AI Services Used:** OpenAI (GPT-4o, Sora 2), Google AI Studio (Gemini 2.5)
- **Output:** 3 UGC videos uploaded to Google Drive

5.2 Obtaining the Workflow

The UGC Content Creation workflow is available as a premium digital asset.

To obtain the workflow:

1. Purchase access to the workflow through the designated platform
2. Download the workflow package (ZIP file)
3. Extract the contents, which include:
 - `ugc_workflow.json` - The complete n8n workflow file
 - `README.md` - Setup and usage instructions
 - Link to this workshop guide
4. Locate the `ugc_workflow.json` file in the extracted package

> **Note:** The workflow file contains all nodes, connections, and configurations. You'll need to update the credentials after importing.

5.3 Importing the Workflow into n8n

1. Log into your n8n instance
2. Click **Workflows** in the left sidebar (or use the **Overview** page)

n8n Overview Workflows List

3. Click the **three dots menu (...)** in the top right corner of the workflows page
4. Select **Import from File** from the dropdown menu
5. Choose the `ugc_workflow.json` file from your downloaded package
6. Click **Import** to add the workflow to n8n
7. The workflow will appear in your workflows list

> **Alternative:** You can also use **Paste JSON** option if you prefer to copy and paste the workflow JSON directly.

5.4 Updating Workflow Nodes with Your Credentials

After importing, you need to update each node to use the credentials you created in Modules 1-4. The workflow contains several node types that require credential configuration:

5.4.1 Update OpenAI Nodes

The workflow uses OpenAI for persona generation, script extraction, and Sora 2 video generation. Update these nodes:

OpenAI LangChain Nodes:

- "**Generate Ideal Persona**" - Analyzes product image and creates customer persona
- "**Extract Prompts**" - Extracts and formats video script prompts

HTTP Request Nodes (OpenAI API):

- "**generate_ad_prompts**" - This is an HTTP Request node that may show a red error indicator until configured
- "**Generate Video With SORA**" - Creates videos using Sora 2
- "**Get Video Creation Status**" - Checks video generation status
- "**Download Video**" - Downloads completed videos

Steps to Update:

1. Click on each OpenAI node in the workflow
2. In the node configuration panel, find the **Credential** dropdown
3. Select your **OpenAI credential** (created in Module 4.3)
4. For HTTP Request nodes using OpenAI API, look for **Authentication** -> **Predefined Credential Type** ->

OpenAI API

5. Repeat for all OpenAI-related nodes in the workflow

[WARNING] **Sora Verification Note:** If you've never used Sora before, you may need to verify your OpenAI organization. If the "Generate Video With SORA" step fails, n8n will display an error message indicating what the issue may be. Common issues include:

- Organization verification required
- API access not enabled for your account
- Billing setup incomplete

5.4.2 Update Google Drive Nodes

The workflow uses Google Drive to store generated videos:

Google Drive Node:

- "**upload_video**" - Uploads completed videos to Google Drive

Steps to Update:

1. Click on the "**upload_video**" node in the workflow
2. In the node configuration panel, find the **Credential** dropdown
3. Select your **Google Drive OAuth2 credential** (created in Module 4.2)
4. Complete the OAuth flow if prompted (this authorizes n8n to access your Google Drive)
 - You may be redirected to Google to authorize access
 - Click **Allow** to grant permissions
5. **Optional:** Update the folder path in the node configuration if you want videos saved to a specific Google Drive folder

[WARNING] **Important:** If you're using n8n Cloud and having trouble connecting Google Drive, make sure you've:

- Added Google Drive scopes in the OAuth consent screen (Module 2.1)
- Added n8n.cloud to the **Authorized domains** in your OAuth consent screen configuration
- Used the **Google Drive OAuth2** credential type (not the generic Google OAuth)

5.4.3 Update Google AI Studio (Gemini) Nodes

The workflow uses Google AI Studio (Gemini) for script generation and first frame image creation:

HTTP Request Nodes (Gemini API):

- "**generate_ad_prompts**" - Generates 3 UGC video scripts using Gemini 2.5 Pro
- "**Generate First Frame Image**" - Creates first frame image using Gemini 2.5 Flash Image Preview

Steps to Update:

1. Click on each HTTP Request node that calls Gemini API (look for URLs containing generativelanguage.googleapis.com)
2. In the node configuration, find the **Authentication** section
3. Select **Generic Credential Type -> Header Auth**
4. Choose your **Header Auth credential** with x-goog-api-key (created in Module 4.4)
5. Verify the header name is set to x-goog-api-key in the node configuration
6. Repeat for both Gemini API nodes:
 - generate_ad_prompts (Gemini 2.5 Pro)
 - Generate First Frame Image (Gemini 2.5 Flash Image Preview)

5.5 Verifying Node Connections

After updating all credentials, verify the workflow is properly configured:

1. Check Credentials:

- [OK] All OpenAI nodes have your OpenAI credential selected
- [OK] Google Drive node has your Google Drive OAuth2 credential selected
- [OK] Both Gemini HTTP Request nodes have your Header Auth credential selected

2. Verify Node Connections:

- [OK] Node connections (the lines between nodes) are intact
- [OK] No red error indicators are present on any nodes

- [OK] All required parameters are filled in

3. Key Nodes to Verify:

- **Form Trigger** - Should be active and ready to receive submissions
- **OpenAI Nodes** - Verify model selection (GPT-4o, GPT-5-mini, Sora 2)
- **Gemini HTTP Request Nodes** - Check URLs point to correct Gemini endpoints
- **Google Drive Node** - Confirm folder path is set (or will use default)
- **Video Generation Nodes** - Ensure Sora 2 API endpoints are correct

4. Optional Configuration:

- Update the Google Drive folder path in the `upload_video` node if you want videos saved to a specific location
- Review the form trigger settings if you want to customize the input fields
- Check video generation parameters (duration, size) if you want to modify defaults

5.6 Workflow Execution Flow

Understanding the workflow execution will help you troubleshoot if needed:

Execution Flow:

1. **Form Submission** -> User submits product image + name via form trigger
2. **Image Processing** -> Product image converted to base64 format
3. **Persona Generation** -> OpenAI analyzes product and generates ideal customer persona
4. **Script Generation** -> Gemini creates 3 authentic UGC video scripts
5. **Script Extraction** -> OpenAI formats scripts into structured prompts
6. **Video Loop** (runs 3 times, once per script):
 - **First Frame** -> Gemini generates first frame image
 - **Resize** -> Image resized to video format (720x1280)
 - **Video Generation** -> Sora 2 creates 12-second video
 - **Status Check** -> Polls for video completion (with 15-second delays)
 - **Download** -> Downloads completed video
 - **Upload** -> Saves video to Google Drive

Expected Output:

- 3 UGC videos (12 seconds each, 720x1280 resolution)
- Videos saved to Google Drive with names like "UGC Video #1", "UGC Video #2", "UGC Video #3"

[TIP] Tip: The workflow includes retry logic and error handling. If a video generation fails, the workflow will retry automatically. Check the execution logs in n8n if you encounter issues.

Module 6: Testing & Deployment

6.1 Testing Your Workflow

1. Click **Execute Workflow** in n8n
2. Monitor the execution
3. Check for errors in each node
4. Verify content in Google Drive

6.2 Deployment Checklist

- [] All credentials are valid and connected
- [] API keys are not expired
- [] Billing is set up for all services
- [] Error handling is configured

- [] Notifications are working

6.3 Production Considerations

- Set up monitoring and alerts
 - Configure retry logic for failed API calls
 - Implement rate limiting
 - Back up your workflow regularly
-

Troubleshooting Appendix

Common Issues and Solutions

Issue 1: OpenAI API Key Not Working

Symptoms:

- 401 Unauthorized error
- "Invalid API key" message

Solutions:

1. Verify the API key is copied correctly (no extra spaces)
2. Check if the key has been revoked
3. Ensure billing is set up on your OpenAI account
4. Create a new API key if necessary

Issue 2: Google OAuth Connection Failed

Symptoms:

- "Access denied" error
- Redirect loop

Solutions:

1. Verify OAuth consent screen is configured
2. Check redirect URIs match exactly
3. Ensure required scopes are added
4. Try re-authenticating

Issue 3: n8n Credential Connection Failed

Symptoms:

- "Could not connect" error
- Timeout errors

Solutions:

1. Verify credentials are entered correctly
2. Check for typos in Client ID/Secret
3. Ensure the API is enabled in GCP
4. Check n8n instance can reach external APIs

Issue 4: Google Drive Upload Failed

Symptoms:

- "Insufficient permissions" error
- "File not found" error

Solutions:

1. Re-authenticate Google Drive credentials
2. Check folder permissions
3. Verify the target folder exists
4. Ensure Drive API is enabled

Issue 5: Rate Limiting Errors

Symptoms:

- 429 Too Many Requests
- "Rate limit exceeded" message

Solutions:

1. Add delays between API calls
2. Implement exponential backoff
3. Upgrade to higher API tier
4. Distribute requests over time

Issue 6: GCP Billing Not Set Up

Symptoms:

- "Billing account required" message
- API calls blocked

Solutions:

1. Go to GCP Console > Billing
2. Create or link a billing account
3. Enable billing for your project
4. Wait a few minutes for propagation

Issue 7: Workflow Not Triggering

Symptoms:

- Workflow doesn't start
- No execution history

Solutions:

1. Check trigger configuration
2. Verify workflow is active
3. Test with manual trigger first
4. Check for disabled nodes

Issue 8: Image Generation Failed

Symptoms:

- Empty image response
- "Content policy violation" error

Solutions:

1. Review prompt for policy violations
2. Try a different prompt
3. Check image generation credits
4. Verify API endpoint is correct

Error Code Reference

Code	Meaning	Action
401	Unauthorized	Check API key
403	Forbidden	Check permissions
404	Not Found	Verify endpoint URL
429	Rate Limited	Add delays
500	Server Error	Retry later
503	Service Unavailable	Check service status

Getting Additional Help

If you're still experiencing issues:

1. Check theFAQs
 2. Review theInstallation Guide
 3. Open an issue in the repository
 4. Consult the official documentation:
- [OpenAI Docs](#)
- [n8n Docs](#)
- [Google Cloud Docs](#)
-

Conclusion

Congratulations! You've completed the AI UGC Content Creation LiveLab.

You now have:

- [OK] OpenAI API integration
- [OK] Google Cloud OAuth configuration
- [OK] Google AI Studio access
- [OK] A working n8n workflow
- [OK] Automated content creation pipeline

Next Steps

1. Customize the workflow for your use case
 2. Add more AI models and capabilities
 3. Set up scheduled triggers
 4. Build a content library in Google Drive
 5. Share your creations!
-

Happy Creating!