

## 1. Project Overview

The **Discord Social Media Automation Bot** is a centralized management tool that allows teams and individuals to control multiple social media accounts (Facebook, Instagram) directly from a Discord server.

It transforms Discord into a **command center** for social media operations, enabling real-time posting, cross-posting, moderation, and account oversight — all without leaving the chat.

## 2. Core Capabilities

- **One-click posting** to any connected platform
- **Instant cross-posting** to all active accounts
- **Account visibility** and management
- **Post deletion** and **comment replies** via simple commands
- **Full audit trail** of every action

## 3. Command Interface

- **/post**: Publish to a specific platform
- **/accounts**: List all connected social accounts
- **/reply**: Respond to a comment on a post
- **/delete**: Remove a published post
- **/help**: Show all available commands

## 4. Data Management

- **MongoDB** (async via **Motor**) powers all persistent storage
- **Pydantic models** ensure strict data validation and type safety
- **Sensitive tokens** (access/refresh) are **encrypted at rest** using **Fernet (AES-128-CBC + HMAC-SHA256)** or **AES-256-GCM**
- Encryption key managed via `ENCRYPTION_KEY` environment variable
- All operations logged with full audit trail

### Core Collections & Models

- **users** Discord user profiles with role and activity tracking.
- **social\_accounts** Linked social media accounts with encrypted tokens.
- **scheduled\_posts** Future posts with status, retry logic, and scheduling.
- **published\_posts** Successfully posted content with metadata.
- **reply\_actions** Comment responses with success/failure status.
- **command\_logs** Every slash command execution (user, platform, result).
- **bot\_commands** Dynamic command registry for `/help`

## 5. Facebook Integration – Implemented Services

The **Facebook Graph API v18.0** integration is fully operational and supports advanced content and moderation workflows.

### Content Publishing

- **Text posts** – Simple messages with full formatting support
- **Link posts** – Share URLs with preview, optional scheduling
- **Image posts** – Upload via public URL
- **Video posts** – Full chunked upload for large files (up to 1GB+), with title and description
- **Scheduled publishing** – Post now or schedule between 10 minutes and 30 days in advance

### Post Management

- **Delete posts** – Permanently remove any published content
- **Retrieve posts** – View recent activity from personal profile or managed pages
- **Post analytics** – Get likes, comments, shares, and engagement summary

### Comment Moderation

- **View comments** – List recent comments with author and timestamp
- **Reply to comments** – Engage directly with audience
- **Hide comments** – Remove visibility without deleting
- **Delete comments** – Permanently remove spam or inappropriate content

### Page Insights

- **Page info** – Retrieve name, follower count, and fan metrics

All operations include **retry logic**, **error handling**, and **detailed logging**.

## 6. Instagram Integration – Aiograpi Service

### Content Publishing

- **Photos** – Upload with caption.
- **Videos** – Upload with thumbnail support.
- **Stories** – Photo stories (video support planned).

### Interactions & Moderation

- Like / Unlike posts
- Comment on posts

- Follow / Unfollow users
- Direct Messages (DMs) – Text and photo
- Search users and hashtags

### Data Retrieval

- User profile stats (followers, posts, bio, verified)
- Recent posts (with media URLs)
- Post details (likes, comments, timestamp)
- Followers / Following lists

### Anti-Ban Protections

- Random delays (2–12s) between actions
- Exception handling for rate limits
- Graceful recovery from login challenges

## 7. Scheduler & Automation Engine

- **APScheduler** (async mode) runs in the background to handle **scheduled and delayed posts**.
- Checks for **pending publications every 1 min** (configurable).
- Supports **retry logic** (up to 3 attempts) on failure.
- Fully integrated with **MongoDB** via `db_handler`.
- **Status tracking**: SCHEDULED → PUBLISHED / FAILED / CANCELLED.
- Logs every action in `activity_logs` and updates post metadata.

## 8. Getting Started

- Invite the bot to your server.
- Copy env example and edit.
- Run [bot.py](#) file
- Test the commands.

**Conclusion :** The Discord Social Media Automation Bot centralizes Facebook and Instagram management directly in Discord, with instant publishing, cross-posting, and secure scheduling. Fully modular and encrypted.