



Telegram Feed

CS 1660 - Cloud Computing

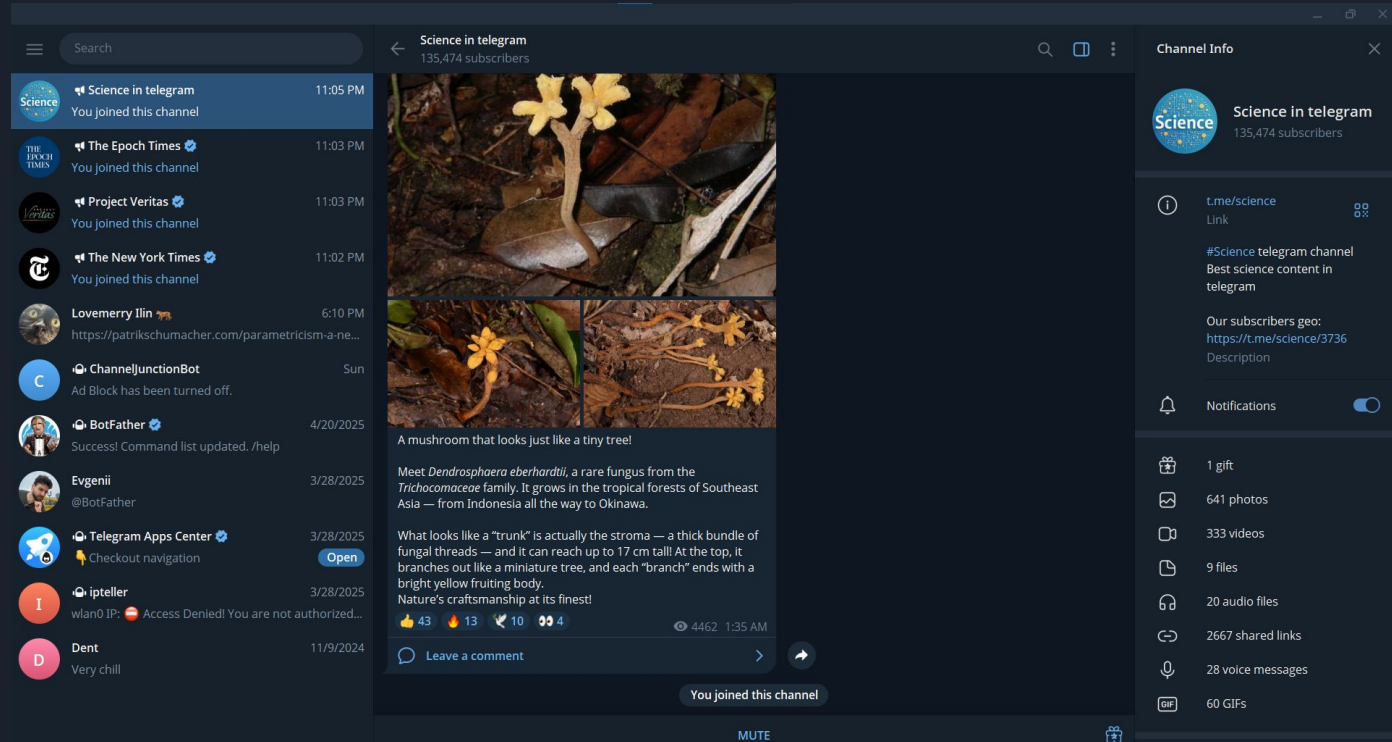
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What is Telegram?

- Over 1 billion active users, ranked among the top 5 most downloaded apps globally
- Send messages, files, photos, videos, and host groups up to 200,000 members.
- Bots available for automation, newsfeeds, and custom integrations

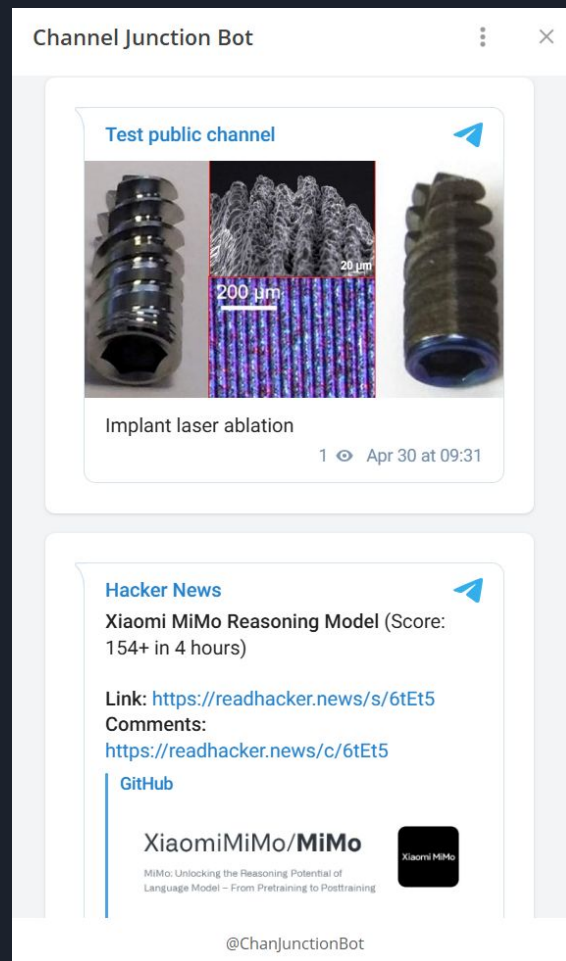
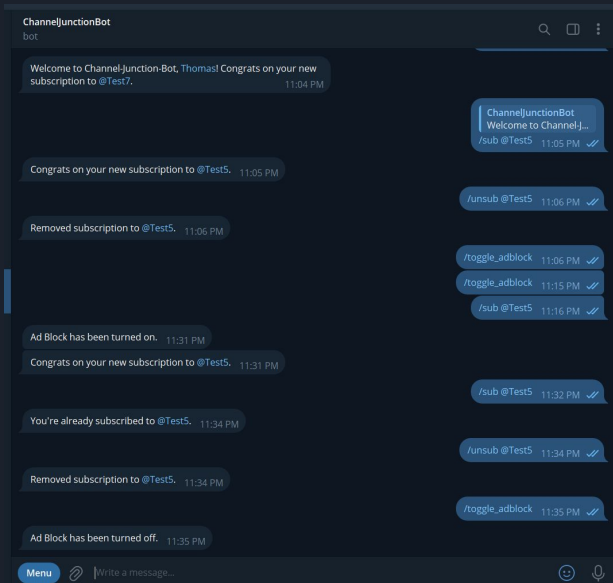


A Regular Telegram Interface



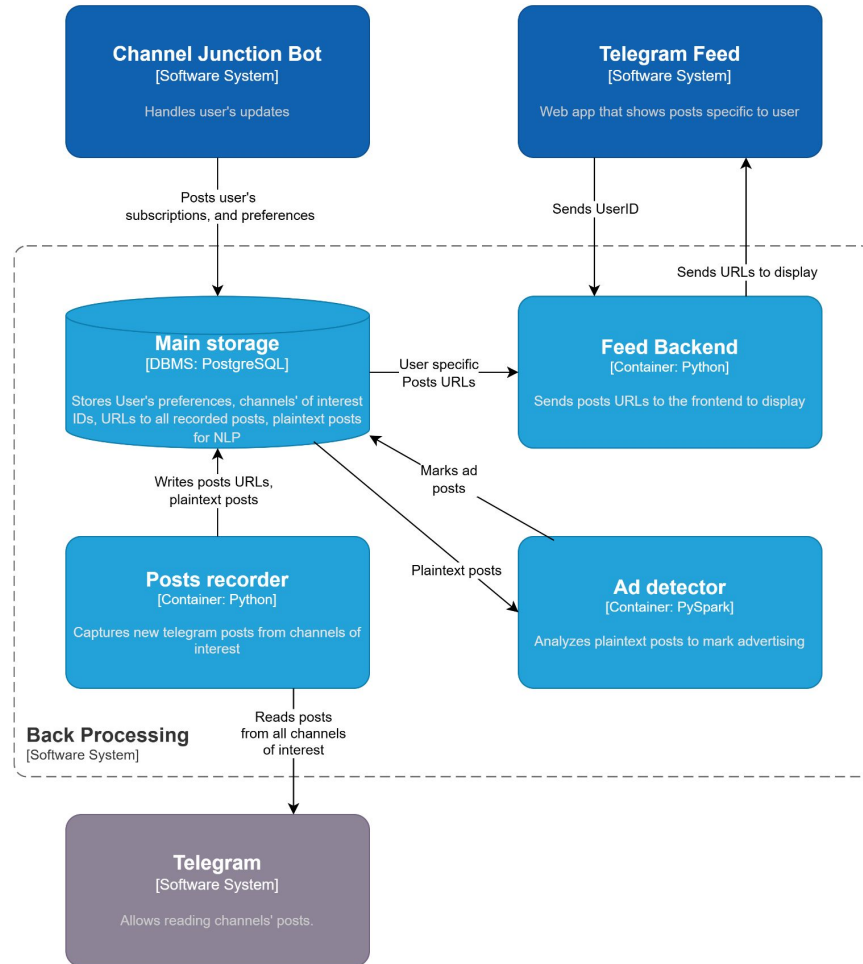
- Disjointed newsfeed channels with individual chats mixed in with personal chats

Our Interface



- Subscribe channels via the Channel Junction Bot
- Subscription feed consolidated into single view on the frontend

System Diagram



Legend

Person

Software System

Container

Component

External Person

External Software System



GCP Services

1. Artifact Registry
 - a. Repository of the docker images
 - b. Have images for Feed-backend, Channel junction bot, and posts Recorder
2. Cloud SQL
 - a. Acts as main storage database for the posts
 - b. Stores posts from posts recorder
3. Cloud SQL Proxy
 - a. Acts as a service to start a local connection to the Cloud SQL
 - b. Deployed as a side car pattern
4. Secrets Manager
 - a. Store and Retrieve all the secrets to securely access across all the services.
5. Cloud Run
 - a. Runs and deploys all the services of the app.
 - b. Feed-Backend, Channel Junction Bot, and Posts Recorder
6. IAM Roles
 - a. Specific roles to be able to push and deploy using Github Actions Workflow



Few Roles Provided for the services

1. `projects/telegram-feed101/roles/githubCloudRunDeployer`
2. `roles/artifactregistry.createOnPushWriter`
3. `roles/artifactregistry.writer`
4. `roles/secretmanager.secretAccessor`

Few Secrets Stored in the Secrets Manager

1. `BOT-TOKEN`
2. `DATABASE_DSN`
3. `Service-account-key`

Database Schema — Posts



Column	Type	Nullable	Default Value
id (primary key)	Integer	No	Incremented Sequentially
message_text	Text	No	
channel_name	String	No	
channel_title	String	No	
timestamp	Timestamp with Timezone	No	Now
is_ad	Boolean	No	False
message_id	Big Integer	No	

Database Schema — Subscriptions



Column	Type	Nullable	Default
user_name	String	No	
channels	Array of Strings	No	
block_ads	Boolean	No	False
user_id (primary key)	Big Integer	No	

How Services Connect to Database

