

API Hub

AWS API Gateway를 활용한 오픈 API 플랫폼 서비스 개발

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Overview

- 프로젝트 명
 - API Hub
- 프로젝트 주제
 - AWS API Gateway를 활용한 오픈 API 플랫폼 서비스 개발
- 요구사항
 - AWS API Gateway REST API를 이용하여,
 - 오픈 API 서비스 제작 및 배포 플랫폼 개발

Goal/Problem & Requirement

Goal/Problem

- 오픈 API 서비스는 비즈니스 로직 구현 외에도 키 발급이나 사용량 제한, 모니터링 등의 기능이 필요
- 중소기업들은 오픈 API 서비스를 구축하기 어려움
- 개인 개발자 및 중소기업들을 위한 오픈 API 서비스 플랫폼 개발

Requirement

- 기존 오픈 API 서비스 이해를 바탕으로 오픈 API 서비스 플랫폼 설계
- AWS API Gateway 이해 및 활용
 - AWS API Gateway Python SDK 사용

Approach

- Amazon API Gateway + Open API Console Service = API Hub

자신의 서비스를 오픈 API로
제공하고자 하는 API 관리자



API 등록

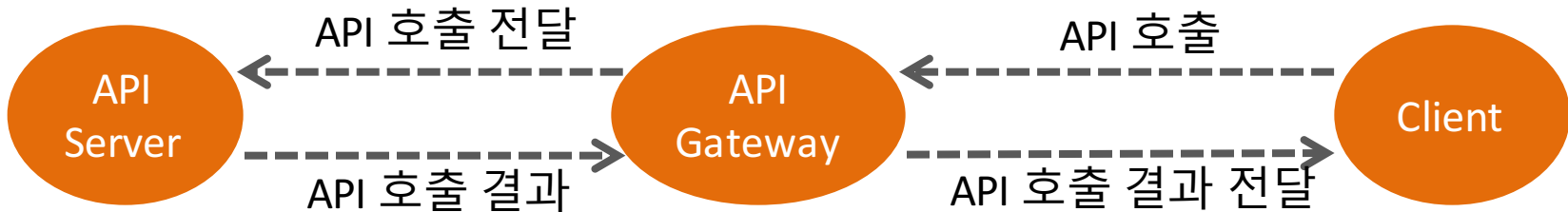
API Hub

Admin
Site

Developer
Console

API
Reference

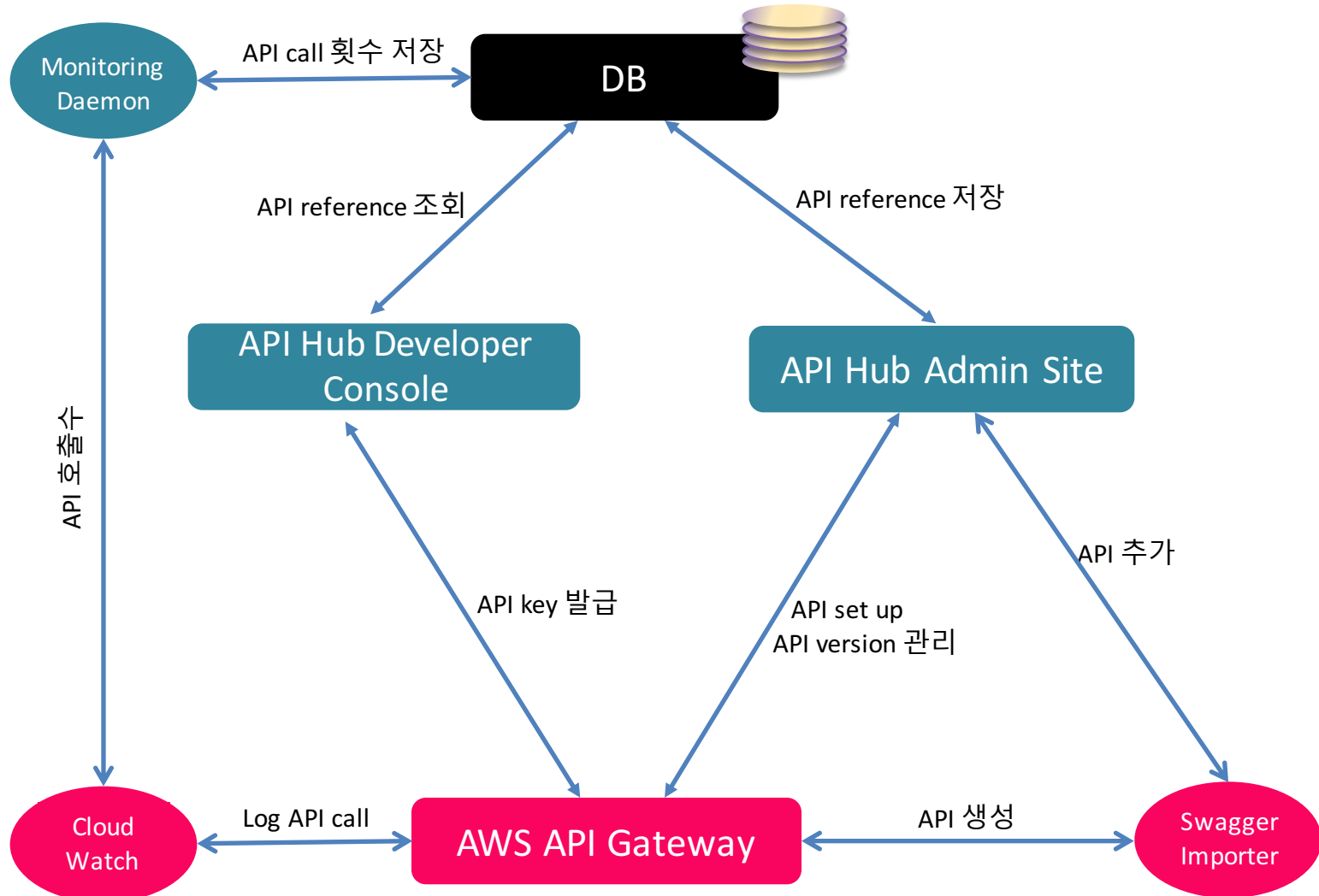
자신의 프로젝트에 오픈 API를
이용하고 싶은 API 사용자



Development Environment

- AWS EC2
 - Ubuntu 14.04.2 LTS (GNU/Linux 3.13.0-48-generic x86_64)
- Python 2.7.9
- Django 1.7.1
- Bootstrap 3.3.5
- JQuery
- IDE IntelliJ
- github
- IE10, Chrome

Architecture

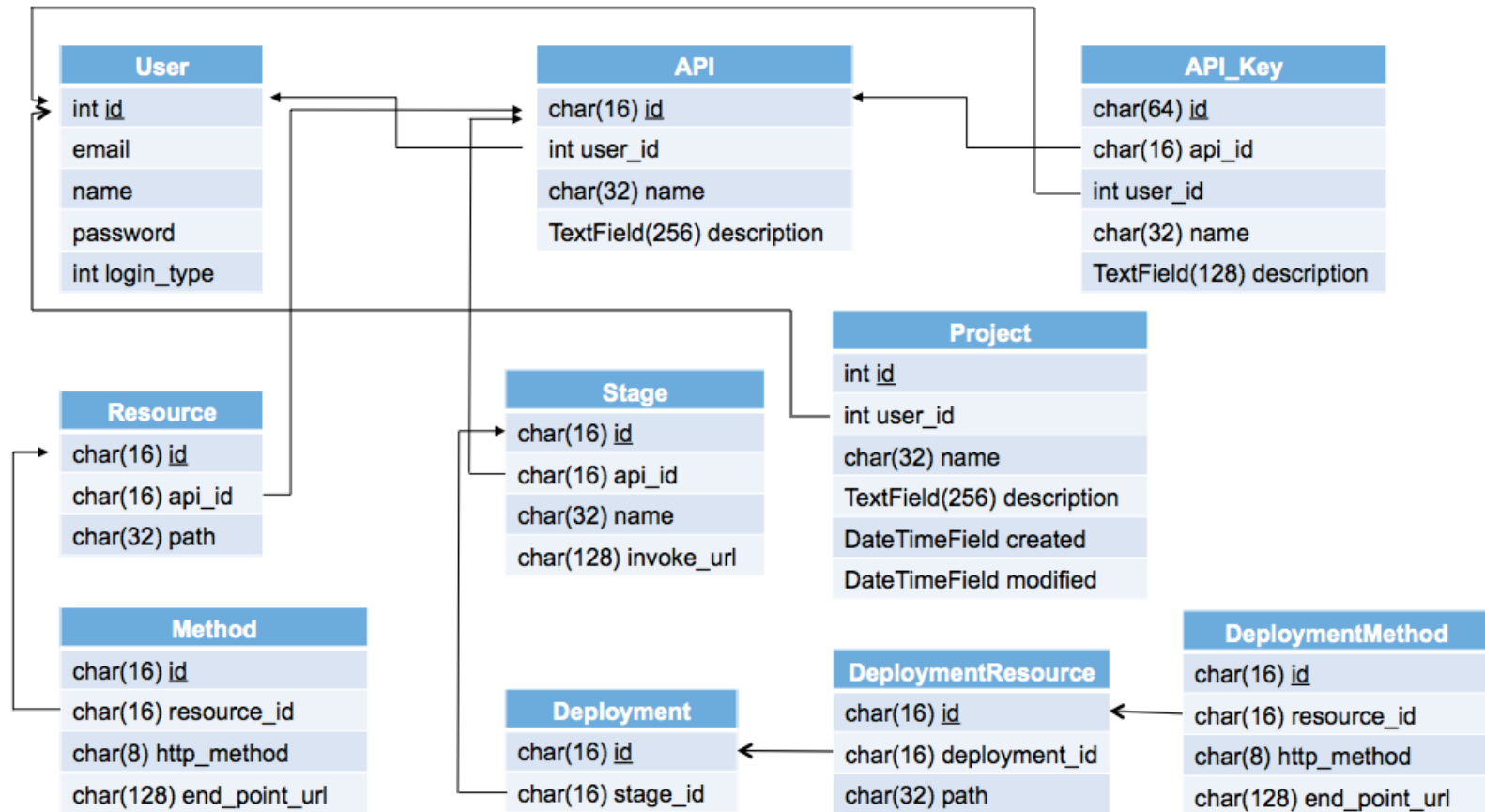


Implementation Spec

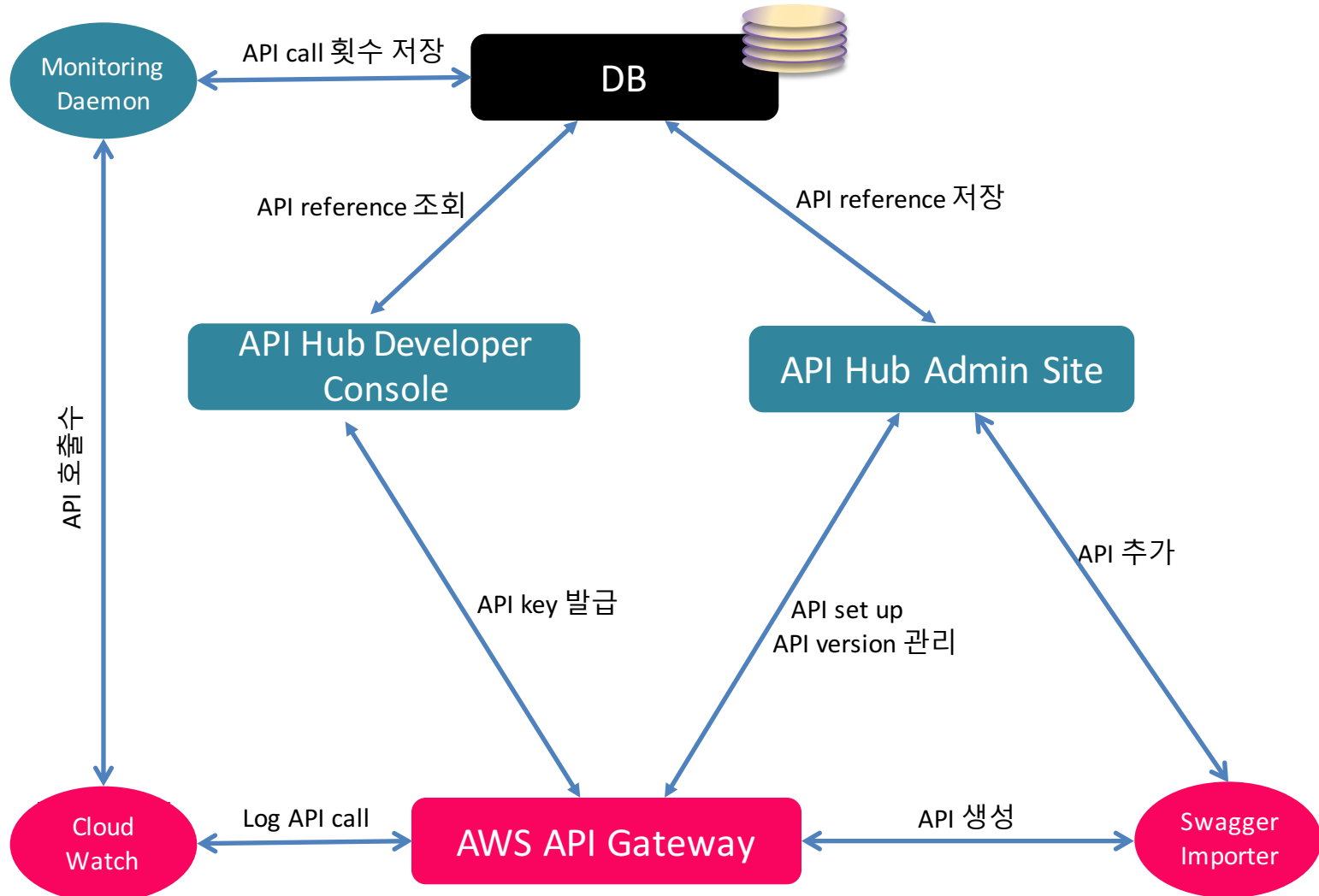
- log in / sign up
- API Hub Admin Site 핵심 기능
 - Create API - resource, method, endpoint URL
 - Manage API - deployment, version, caching, rule setting
- API Hub Developer Console 핵심 기능
 - Create Project
 - View API reference
 - Authentication - issue key
 - **Real time Monitoring** - daily and monthly usage
- Sample API - SNU Bob, Bugs Chart

Implementation Spec (cont)

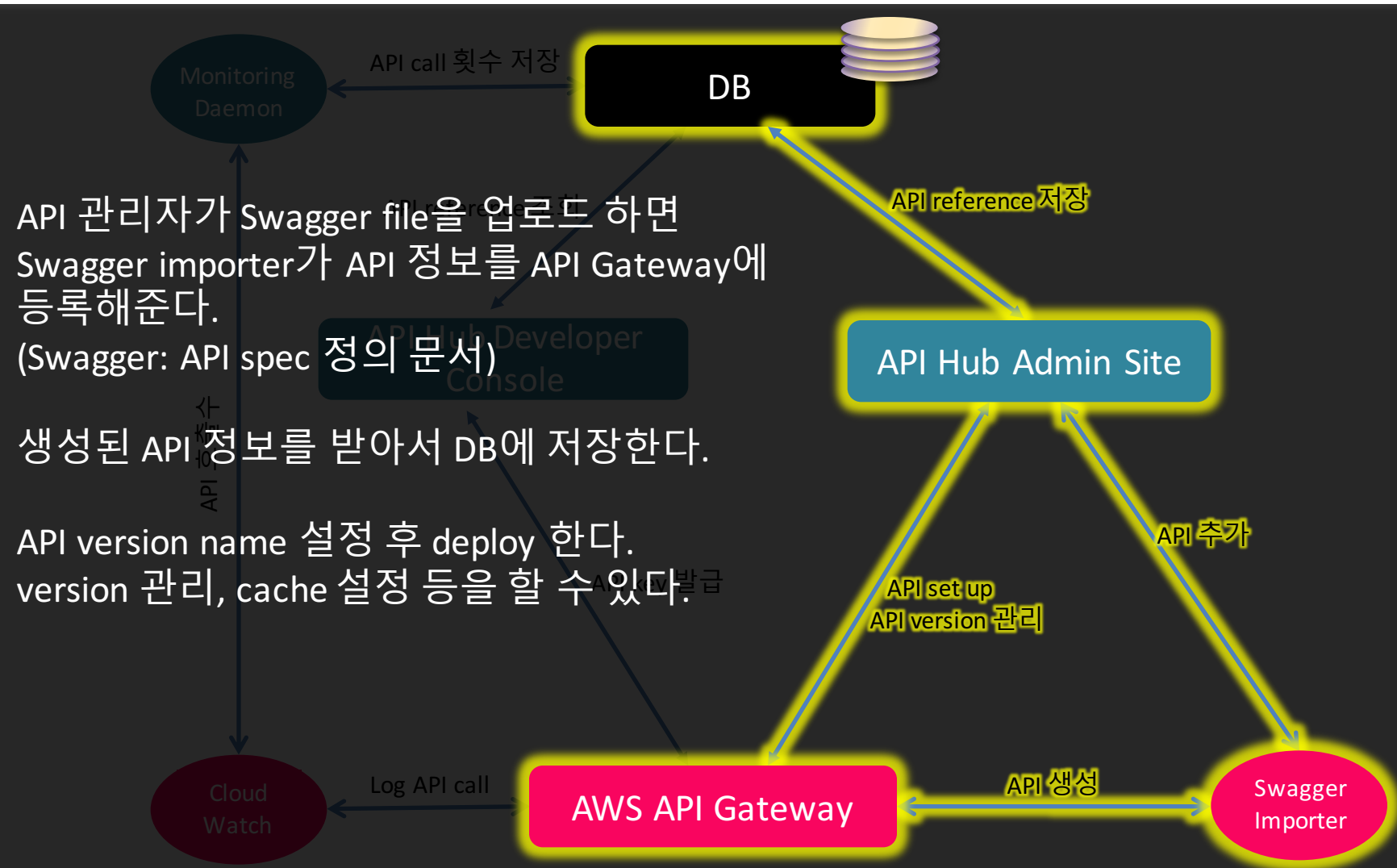
- DB schema



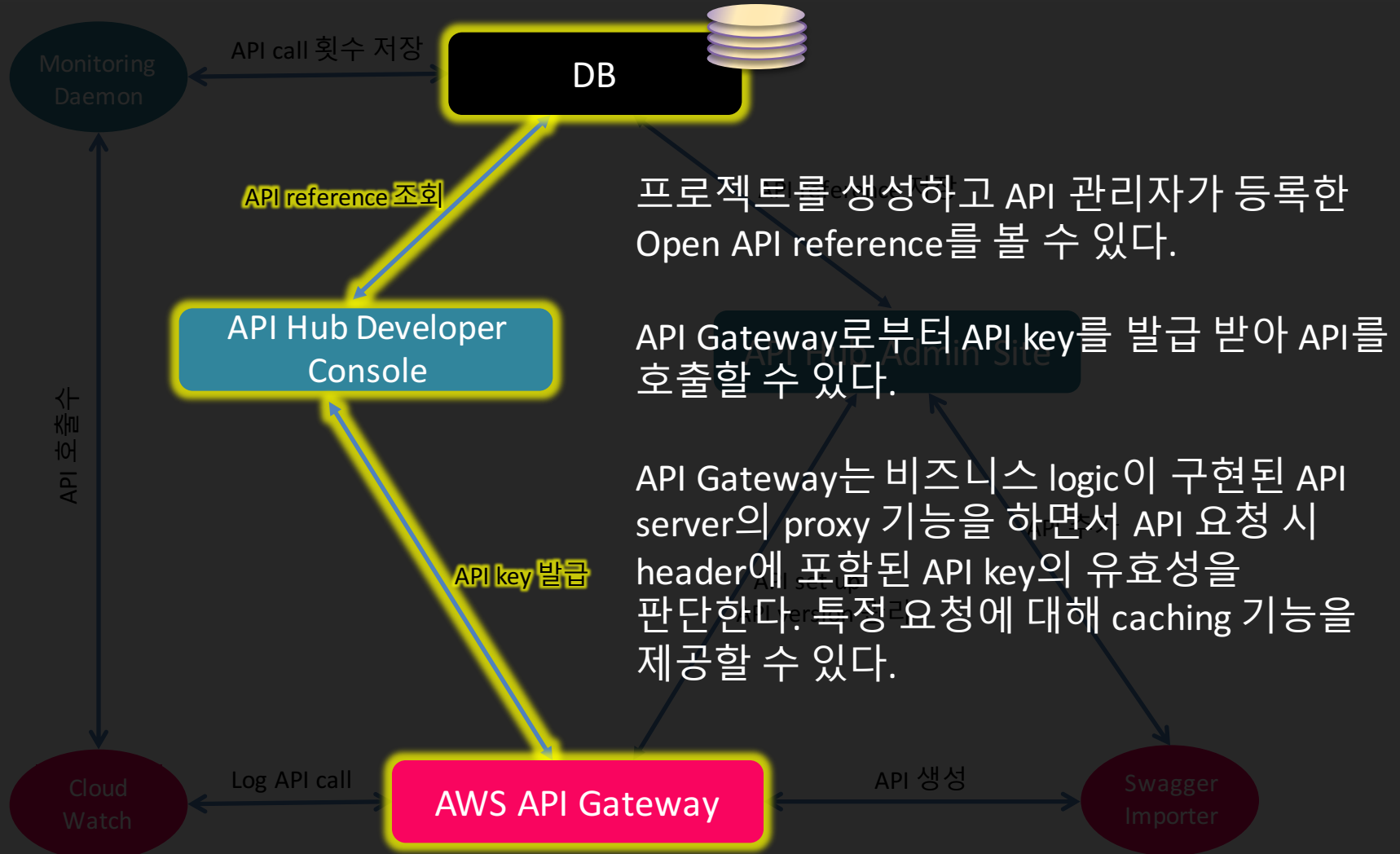
Implementation Spec (cont)



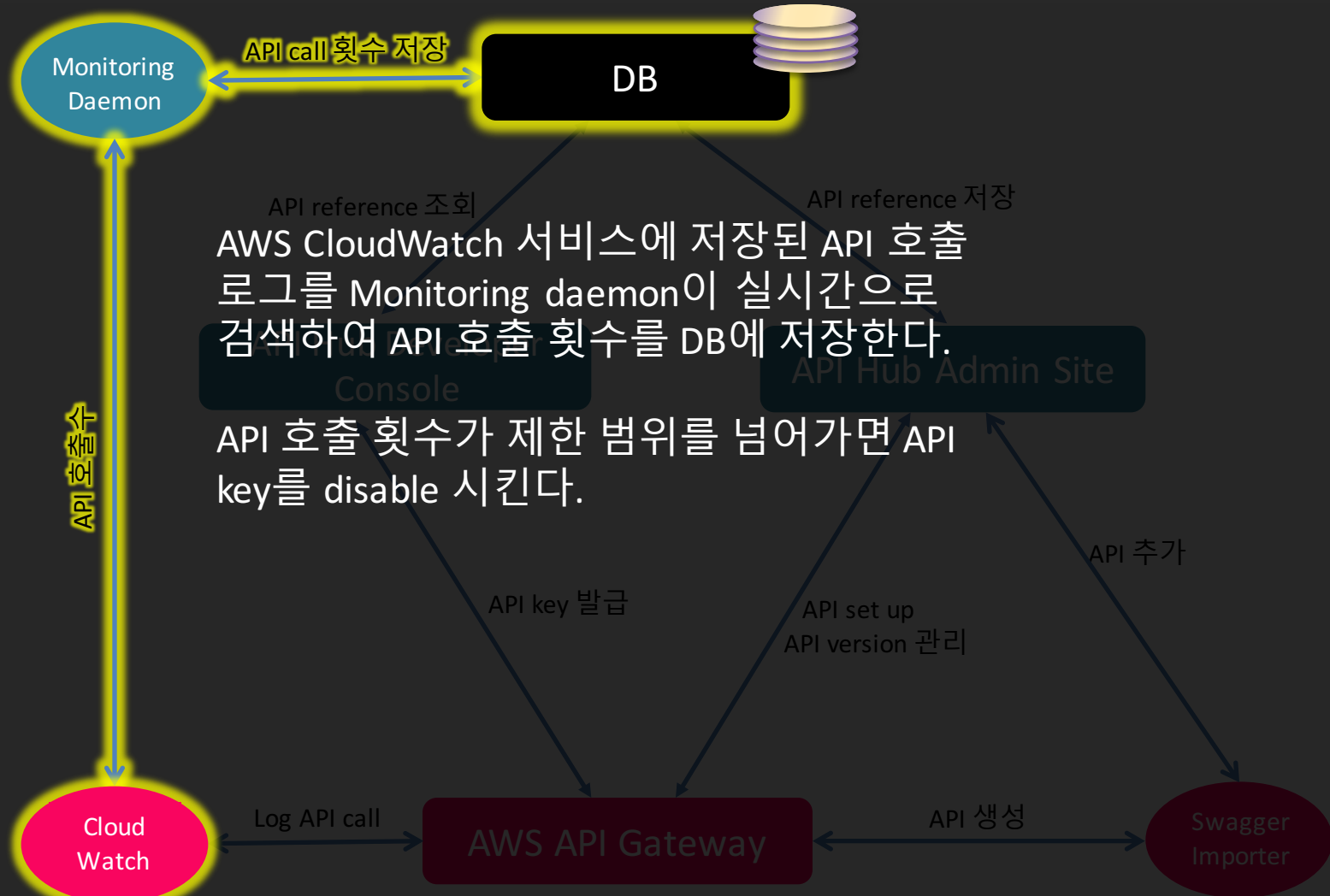
Implementation Spec (cont)



Implementation Spec (cont)



Implementation Spec (cont)

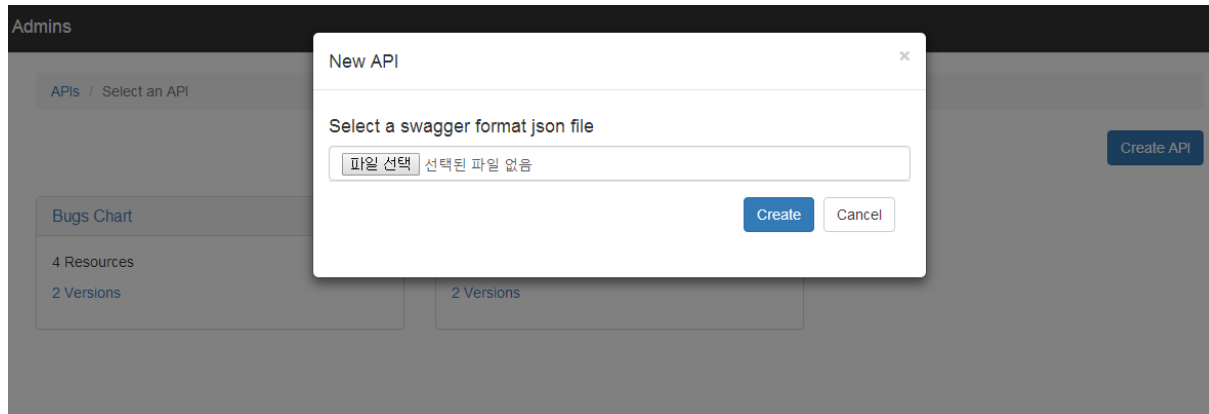


Issue

- 실시간 monitoring 성능 문제
 - 기존 방식:
CloudWatch 서비스에 log 검색을 할 때 특정 API key를 filter로 하여 해당 key의 API 호출 수를 계산
 - 문제점:
한 번 update 할 때마다 발급된 전체 api key 개수만큼 CloudWatch 검색
-> 유저가 많아지면 수행시간이 지나치게 오래 걸린다
 - 개선 방법:
각 API key마다 filter 검색을 하는 기존 방식 대신 최대한 많은 로그를 한번에 받아
검색 횟수를 최소화 & daemon에서 직접 로그 데이터를 검색

Results

- API 업로드



Admins

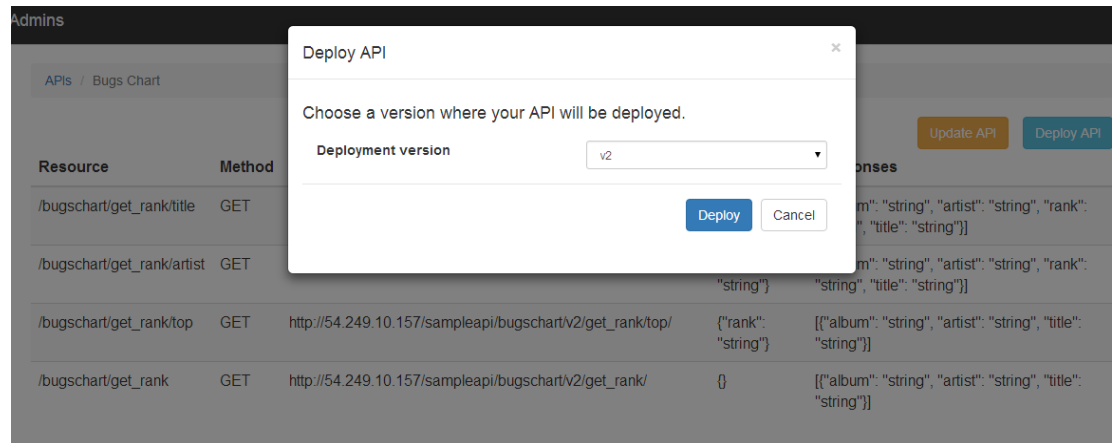
APIs / Bugs Chart

Update API Deploy API

Resource	Method	End Point Url	Parameters	Responses
/bugchart/get_rank/title	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/title/	{ "title": "string" }	{ { "album": "string", "artist": "string", "rank": "string", "title": "string" } }
/bugchart/get_rank/artist	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/myartist/	{ "artist": "string" }	{ { "album": "string", "artist": "string", "rank": "string", "title": "string" } }
/bugchart/get_rank/top	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/top/	{ "rank": "string" }	{ { "album": "string", "artist": "string", "title": "string" } }
/bugchart/get_rank	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/	{ }	{ { "album": "string", "artist": "string", "title": "string" } }

Results

- API Deploy



APIs / Bugs Chart / Versions / v2

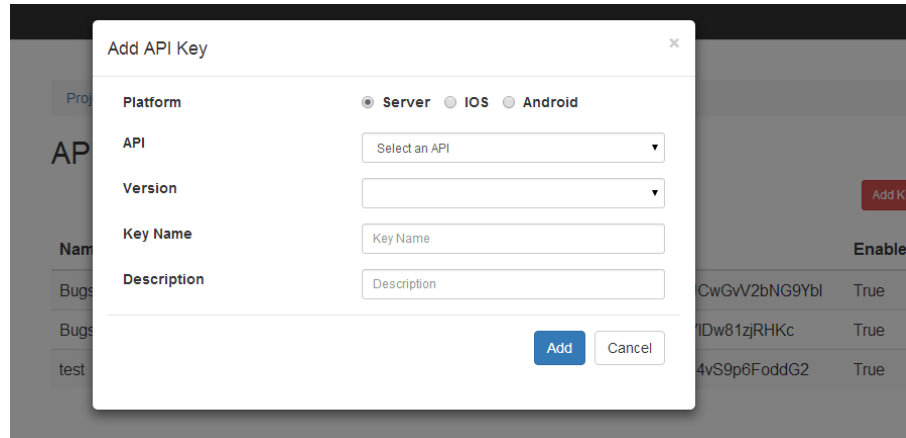
v2 Bugs Chart

invoke URL: <https://a011vc6c61.execute-api.ap-northeast-1.amazonaws.com/v2>

Resource	Method	End Point Uri	Parameters	Responses
/bugchart/get_rank/title	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/title/	{ "title": "string" }	{ ["album": "string", "artist": "string", "rank": "string", "title": "string"] }
/bugchart/get_rank/artist	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/myartist/	{ "artist": "string" }	{ ["album": "string", "artist": "string", "rank": "string", "title": "string"] }
/bugchart/get_rank/top	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/top/	{ "rank": "string" }	{ ["album": "string", "artist": "string", "title": "string"] }
/bugchart/get_rank	GET	http://54.249.10.157/sampleapi/bugchart/v2/get_rank/	{ }	{ ["album": "string", "artist": "string", "title": "string"] }

Results

- API Key 발급



Add API Key

Platform ☒ Server ☐ iOS ☐ Android

API

Version

Key Name

Description

[Projects](#) / [SNU Project](#) / [API Key](#)

API Key

Name	Platform	API	Version	Key	Enabled
Bugs Chart v1	Server	Bugs Chart	v1	W5jSLQCM4V2myuGaihrNu3RnGSUCwGvV2bNG9Ybl	True
Bugs Chart v2	Server	Bugs Chart	v2	OV4KrH19dh7aITP4J9bx78JqT9NRYIDw81zRHKc	True
test	Server	SNU Bob	v1	ulspJZTPYD78doMwalUXdhJmFYUB4vS9p6FoddG2	True

Results

- API Call

Request Maker

GET

Request URL:

Example: mysite.com

https://a011vcbc61.execute-api.ap-northeast-1.amazonaws.com/v1/bugschart/get_rank

Request Headers:

Add

Header: Content-Type

Value: application/json

×

Header: x-api-key

Value: W5jSLQCM4V2myuGaihrNu3RnGS

×

HTTP/1.1 200 OK

Content-Type: application/json

Content-Length: 13617

Connection: keep-alive

Date: Thu, 17 Dec 2015 13:03:48 GMT

x-amzn-RequestId: 9a637928-a4be-11e5-bf62-bff5002356d7

X-Cache: Miss from cloudfront

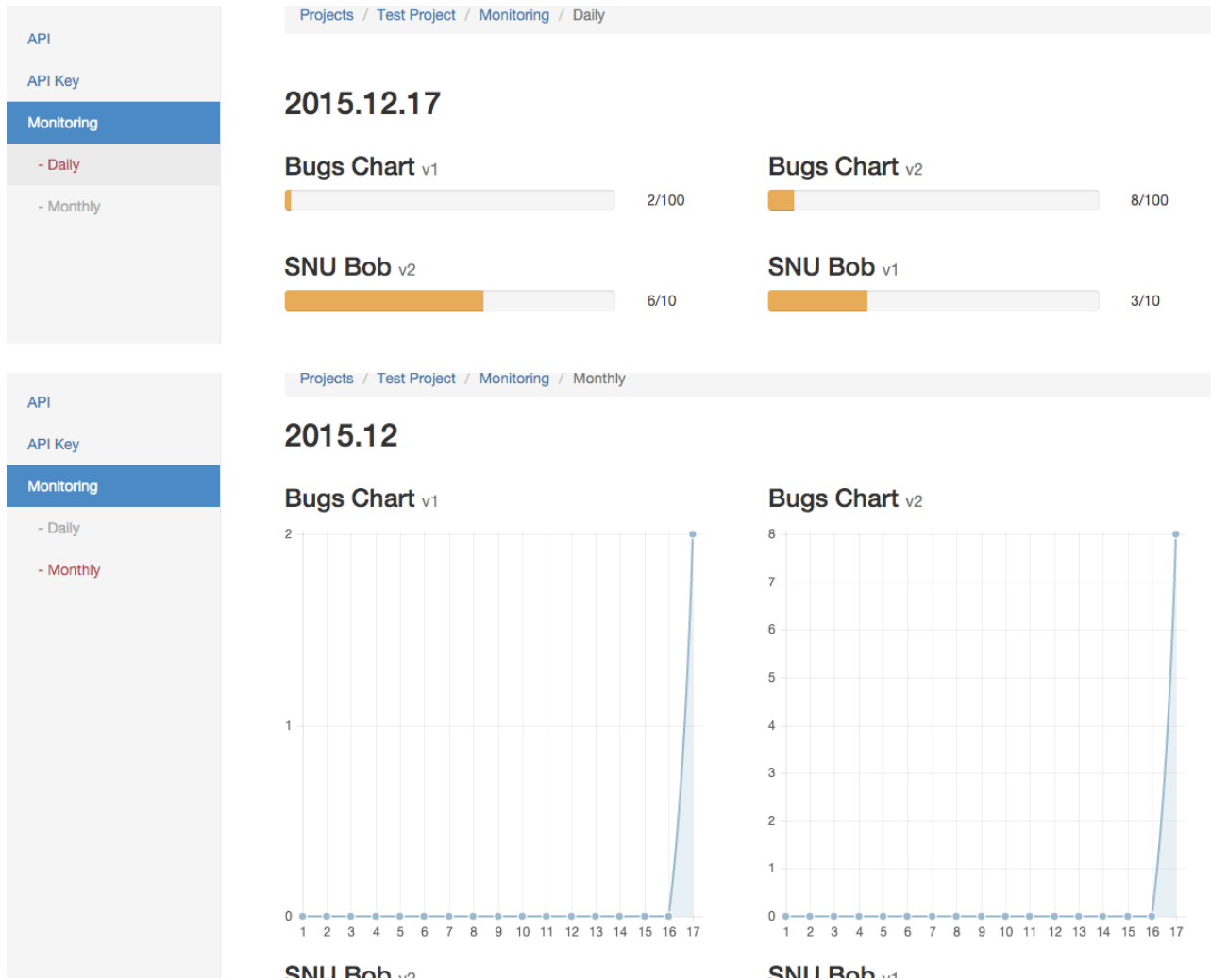
Via: 1.1 8f1f698096cedfe283c4f61448f5153a.cloudfront.net (CloudFront)

Response Body:

[{"album": "D-MAKE", "artist": "\ub2e4\ube44\uce58", "title": "\ud654\uc774\ud2b8 (WHITE) (Feat. \ubc15\uc7ac\ubc94)", "album": "\uc0ac\ub791\uc774 \ub9de\uc744\uac70\uc57c", "artist": "\uc724\ubb8\ub798", "title": "\uc0ac\ub791\uc774 \ub9de\uc744\uac70\uc57c", "album": "\uc751\ub2f5\ud558\ub77c 1988 (tvN \ub4dc\ub77c\ub9c8) OST - Part.3", "artist": "\uc624\ud601(Hyuk Oh)", "title": "\uc18c\ub140", "album": "\uc751\ub2f5\ud558\ub77c 1988 (tvN \ub4dc\ub77c\ub9c8) OST - Part.2", "artist": "\uc774\uc801", "title": "\ucac71\uc815\ub9d0\uc544\uc694 \uad8\ub300", "album": "\uc751\ub2f5\ud558\ub77c 1988 (tvN \ub4dc\ub77c\ub9c8) OST - Part.5", "artist": "\ub514\uc148\ubc84(December)", "title": "\ub124\uac8c \uc904 \uc218 \uc788\ub294\uc74 \uc624\uc9c1 \uc0ac\ub791\ubfd0", "album": "\uce60\uc9d1\uc2f8\uc774\ub2e4", "artist": "\uc2f8\uc774(Psy)", "title": "DADDY (feat. CL of 2NE1)", "album": "SING FOR YOU - \uacac8\ub6b8 \uc2a4\ud398\uc15c \uc568\ubc94, 2015", "artist": "EXO", "title": "Sing For You", "album": "\uc751\ub2f5\ud558\ub77c 1988 (tvN \ub4dc\ub77c\ub9c8) OST - Part.4", "artist": "\ubc15\ubcf4\ub78c", "title": "\ud61c\ud654\ub3d9 (\ud639\uc740 \uc30d\ubb38\ub3d9)", "album": "Jelliv Christmas 2015 - 4\ub791", "artist": ""}]

Results

- API 사용량 Monitoring



Demo

- API 업로드(Admin)
- API Deploy(Admin)
- API Key 발급(Developer)
- API Call(Developer)
- API 사용량 Monitoring(Developer)

Division and Assignment of Work

항목	담당자
개발 환경 구축	박지영
데이터베이스 설계	박지영, 임애란, 주신영
Admin site backend 개발	박지영
Admin site UI 설계 및 frontend 개발	주신영
Developer console backend 개발	박지영
Developer console UI 설계 및 frontend 개발	임애란
샘플 API 제작	임애란, 주신영

감사합니다

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