



애저 서버리스에서 파이썬/장고 웹서비스 쉽게 배포/운영하기 애저펍션 인프라로 배포하기

여러분의 파이썬/장고/리액트 페이스메이커가 되겠습니다.

세션 목차

- EP01. 애저펄션과 파이썬 구동 환경 소개
- EP02. 애저펄션 개발환경 구축 및 기본 프로젝트 생성
- EP03. 장고 애플리케이션 생성 및 애저펄션 연동
- EP04. Azure SQL Database와 장고 연동
- EP05. Azure Blob Storages와 장고 연동
- EP06. 애저펄션 인프라로 배포하기
- EP07. 리액트 웹 애플리케이션 배포와 애저 장고 API 연동
- EP08. 마무리

Agenda

- Azure Functions에 빌트인 설치된 라이브러리들
- Azure Functions 생성 및 Remote build 배포
- Azure Portal에서 로그 확인
- Cold start

Azure Functions에 빌트인 설치된 라이브러리들

- Linux OS (Debian 10 기반)
 - python:3.8-slim-buster 도커 이미지 기반
- mysqlclient, SQL Server 드라이버, OpenCV, OpenMP 등이 기본 설치
- 공식 Dockerfile 에서 확인 가능
 - 다양한 버전의 Dockerfile : python38-appservice, buildenv, core-tools, slim

Azure Functions 생성 및 배포

Remote build 배포

Visual Studio Code의 Azure Functions 확장에서의 디폴트 동작

- 셸에서 직접 수행 `func azure functionapp publish <APP_NAME>`
- requirements.txt에 명시된 의존성은 원격에서 설치

Local build 배포

설치할 패키지 크기가 크다는 등의 이슈가 있을 경우, 로컬 빌드도 가능

- 서비스 OS가 Debian Linux이기에, 로컬 머신이 윈도우인 경우에는 OS 의존적인 라이브러리가 있을 경우, 비추천.

```
func azure functionapp publish <APP_NAME> --build local
```

no build 배포

로컬에서 수동으로 패키지 설치가 필요한 경우, 빌드 과정없이 publish 가능

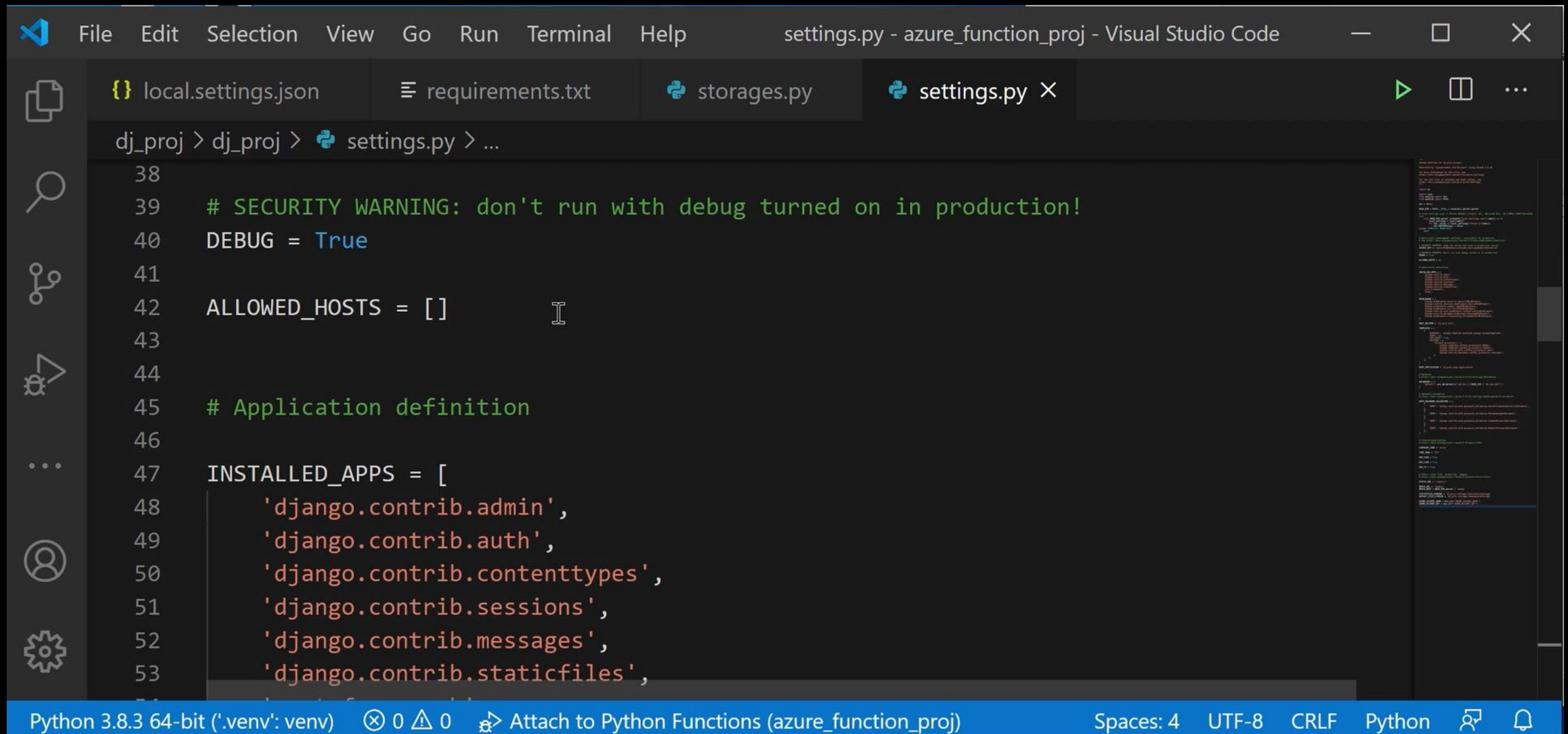
```
pip install --target="<PROJECT_DIR>/lib/site-packages" -r requirements.txt  
func azure functionapp publish <APP_NAME> --no-build
```


잠깐) 배포 전에 보강해야할 장고 settings

```
DEBUG = env.bool('DEBUG', True)
```

```
ALLOWED_HOSTS = env.list('ALLOWED_HOSTS', default=[])
```

잠깐) 배포 전에 보강해야할 장고 settings (Demo)



```
File Edit Selection View Go Run Terminal Help settings.py - azure_function_proj - Visual Studio Code
local.settings.json requirements.txt storages.py settings.py X
dj_proj > dj_proj > settings.py > ...
38
39 # SECURITY WARNING: don't run with debug turned on in production!
40 DEBUG = True
41
42 ALLOWED_HOSTS = []
43
44
45 # Application definition
46
47 INSTALLED_APPS = [
48     'django.contrib.admin',
49     'django.contrib.auth',
50     'django.contrib.contenttypes',
51     'django.contrib.sessions',
52     'django.contrib.messages',
53     'django.contrib.staticfiles',
```

Python 3.8.3 64-bit ('.venv': venv) 0 0 Attach to Python Functions (azure_function_proj) Spaces: 4 UTF-8 CRLF Python

함수앱 생성

Microsoft Azure

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...

[Home](#) > [Function App](#) >

Create Function App

Basics

Hosting

Monitoring

Tags

Review + create

Create a function app, which lets you group functions as a logical unit for easier management, deployment and sharing of resources. Functions lets you execute your code in a serverless environment without having to first create a VM or publish a web application.

Project Details

Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource Group *

se...

Create new

Instance Details

Function App name *

.azurewebsites.net

Publish *

☒ Code

☐ Docker Container

Runtime stack *

Python

Version *

3.8

Region *

Korea Central

Review + create

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환경변수 지정

Microsoft Azure

Search resources, services, and docs (G+ /)

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Function App

Configuration

Search (Cmd+ /)

Refresh Save Discard

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Security

Events (preview)

Functions

Functions

App keys

App files

Proxies

Deployment

Deployment slots

Deployment Center

Settings

Configuration

Authentication / Authorization

Application Insights

Identity

Backups

Application settings

Function runtime settings

Application settings

Application settings are encrypted at rest and transmitted over an encrypted channel. You can choose to display them exposed as environment variables for access by your application at runtime. [Learn more](#)

+ New application setting

Hide values

Advanced edit

Filter application settings

Name	Value	Source
ALLOWED_HOSTS	se .azurewebsites.net	App Config
APPINSIGHTS_INSTRUMENTATIONKEY	d1a	App Config
APPLICATIONINSIGHTS_CONNECTION_STRING	InstrumentationKey=d1af	App Config
AZURE_ACCOUNT_KEY	iff	App Config
AZURE_ACCOUNT_NAME	se	App Config
AzureWebJobsStorage	DefaultEndpointsProtocol=https;AccountName=st	App Config
DATABASE_URL	mssql://myadmin:1@s .c	App Config
DEBUG	false	App Config
FUNCTIONS_EXTENSION_VERSION	~3	App Config
FUNCTIONS_WORKER_RUNTIME	python	App Config

Connection strings

Connection strings are encrypted at rest and transmitted over an encrypted channel. Connection strings should only be used in App Settings. [Learn more](#)

함수앱 생성 및 환경변수 지정 (Demo)

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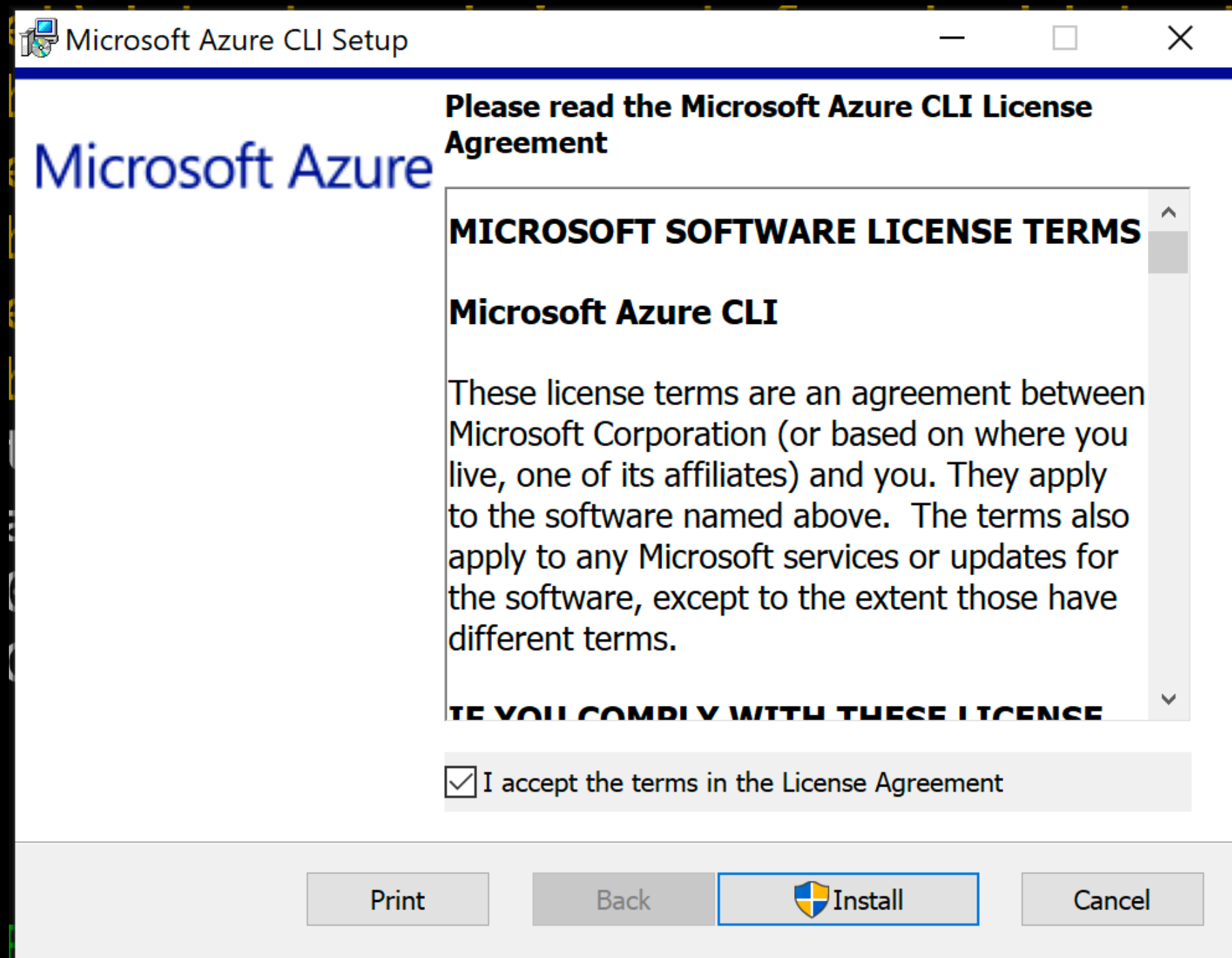
Function App
[Quickstarts + tutorials](#)



Azure Cosmos DB
[Quickstarts + tutorials](#)

Azure CLI 설치

- <https://aka.ms/installazurecliwindows> 에서 다운로드/설치



```
C:\Demo\azure_function_proj> az login
You have logged in. Now let us find all the subscriptions to which you have access...
The following tenants don't contain accessible subscriptions. Use 'az login --allow-no-su
bscriptions' to have tenant level access.
7f98
ba1f6
[
{
  "cloudName": "AzureCloud",
  "homeTenantId": "7f98ba1f6",
  "id": "7f98ba1f6",
  "isDefault": true,
  "managedByTenants": [],
  "name": "Microsoft Azure CLI",
  "state": "Enabled",
  "tenantId": "7f98ba1f6",
  "user": {
    "name": "user@domain.com",
    "type": "user"
  }
},
]
```

<https://docs.microsoft.com/cli/azure/install-azure-cli>

로컬에서 Remote build 수행

```
> func azure functionapp publish serverless-hello
Getting site publishing info...
Creating archive for current directory...
Performing remote build for functions project.
Uploading 13.11 KB [#####]
Remote build in progress, please wait...
Updating submodules.
Preparing deployment for commit id '6bd59f0e35'.
Repository path is /tmp/zipdeploy/extracted
Running oryx build...
Command: oryx build /tmp/zipdeploy/extracted -o /home/site/wwwroot --platform
sion 3.8 -p packagedir=.python_packages/lib/site-packages
Build orchestrated by Microsoft Oryx, https://github.com/Microsoft/Oryx
You can report issues at https://github.com/Microsoft/Oryx/issues

Oryx Version      : 0.2.20200310.1, Commit: f4b40f6ea0763678611b86b0ff9a48c92
e: 20200310.1
Build Operation ID: |/7iLMb1Lqwg=.95a74b11_
Repository Commit : 6bd59f0e35ce40c4a5b48e4b95ccff9b

Source directory   : /tmp/zipdeploy/extracted
Destination directory: /home/site/wwwroot

Python Version: /opt/python/3.8.2/bin/python3

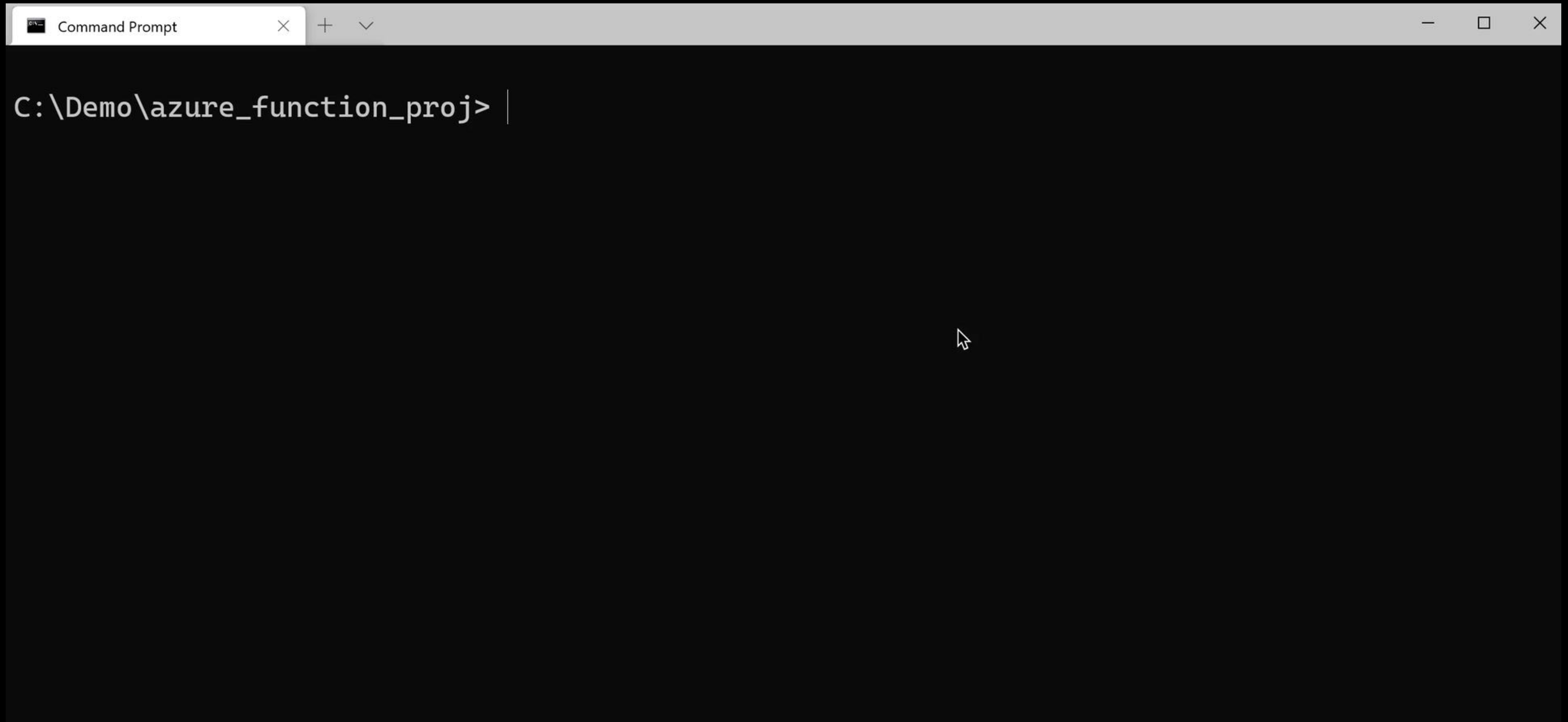
Running pip install...
[17:06:23+0000] Collecting azure-functions
[17:06:24+0000]   Downloading azure_functions-1.3.1-py3-none-any.whl (120 kB)
[17:06:24+0000] Collecting django~=3.1.0
[17:06:24+0000]   Downloading Django-3.1.1-py3-none-any.whl (7.8 MB)
[17:06:28+0000] Collecting django-environ
```


API 응답 확인

```
> http -f POST https://s[REDACTED].azurewebsites.net/posts/ message="hello world" photo@profile.jpg
HTTP/1.1 201 Created
Allow: GET, POST, HEAD, OPTIONS
Content-Length: 201
Content-Type: application/json
Date: Tue, 15 Sep 2020 18:15:54 GMT
Request-Context: appId=cid-v1:883b5701-5788-4558-a09c-ad87cef19f42
Server: Kestrel
Vary: Accept, Cookie
x-content-type-options: nosniff
x-frame-options: DENY

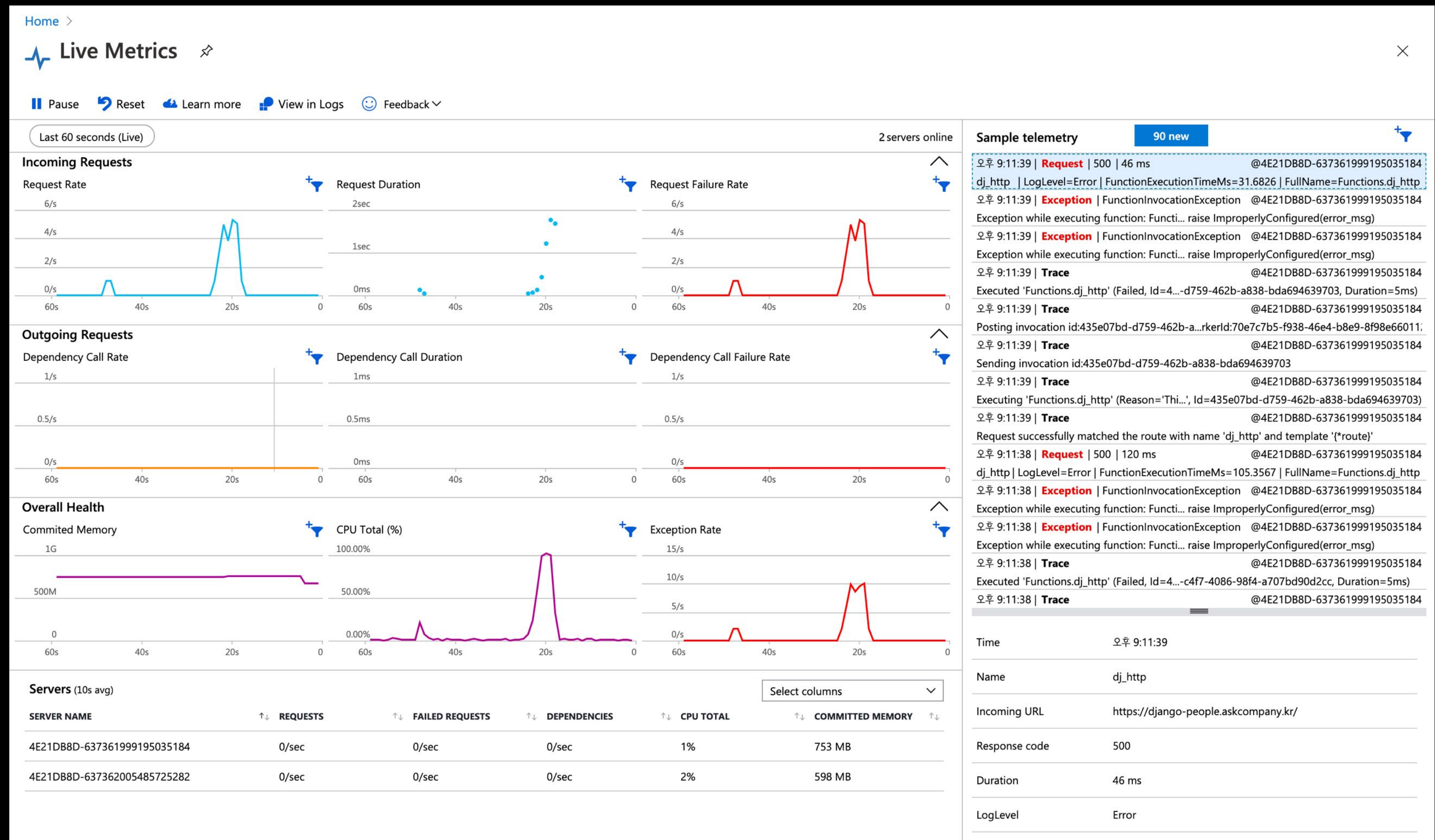
{
  "created_at": "2020-09-15T18:15:54.067375Z",
  "id": 5,
  "message": "hello world",
  "photo": "https://serverlessmeetup.blob.core.windows.net/media/profile_VbvdMn4.jpg",
  "updated_at": "2020-09-15T18:15:54.067406Z"
}
```


로컬에서 Remote build 수행 및 API 응답 확인 (Demo)

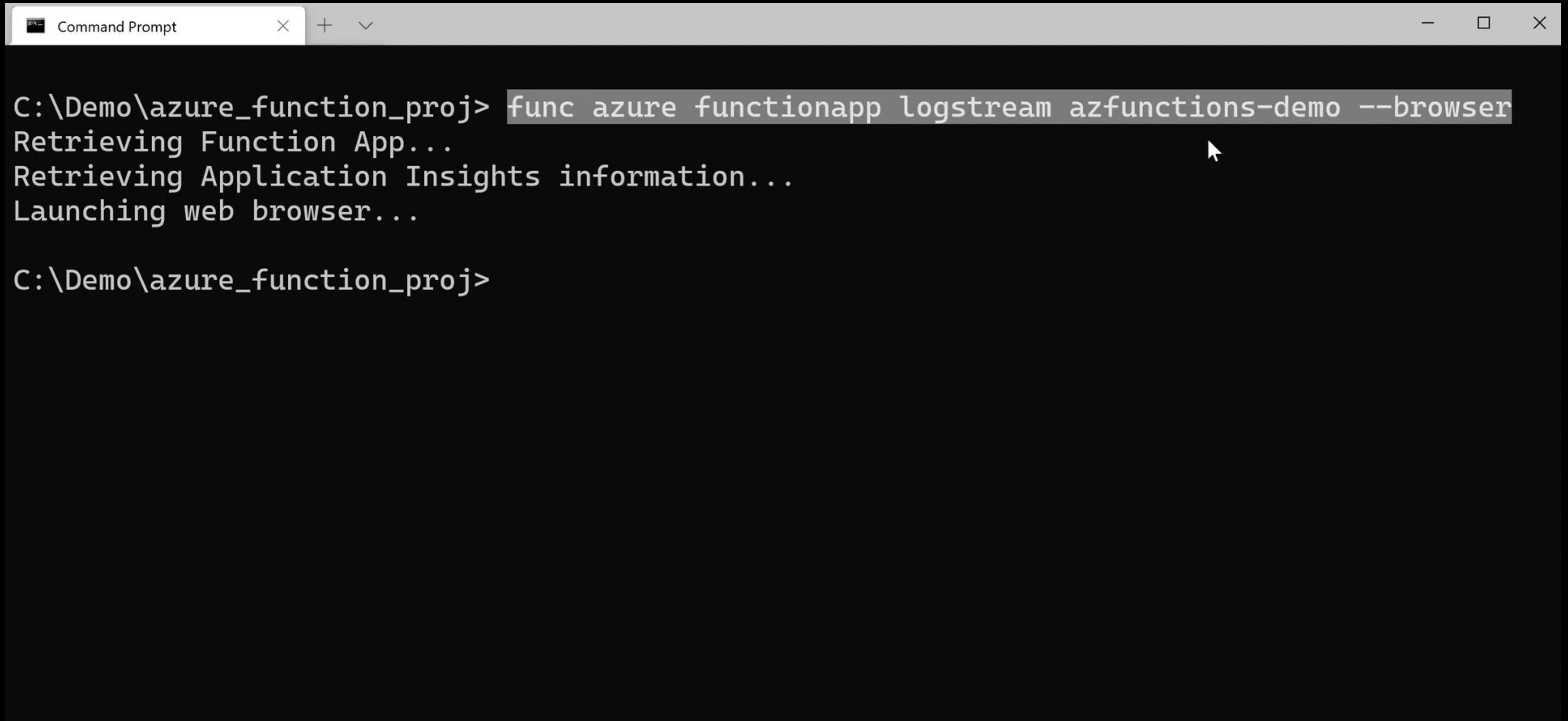


로그 확인

func azure functionapp logstream <APP_NAME> --browser



로그 확인 (Demo)



```
Command Prompt
C:\Demo\azure_function_proj> func azure functionapp logstream azfunctions-demo --browser
Retrieving Function App...
Retrieving Application Insights information...
Launching web browser...

C:\Demo\azure_function_proj>
```

Cold start

- 약 20분 동안 접속이 없으면, 유휴 상태로 진입 ➡ 무과금
- 소비계획에서만 있습니다.
 - 프리미엄계획 및 앱서비스계획은 VM을 할당하니까 없습니다.
- 최소 15분 간격의 요청이 있다면, Cold start는 없습니다. ➡ Azure Logic Apps 활용 가능
 - 시간당 4회 * 24시간 * 30일 = 2,880회/월 요청이 필요.

다음 에피소드에서는 ...

EP07. 리액트 웹 애플리케이션 배포와 애저 장고 API 연동

- 리액트 웹 애플리케이션 생성 및 화면 만들기
- API 연동 및 CORS 설정
- Azure Blob Storages로의 정적 웹 사이트 호스팅 배포

Life is short.
You need Python and Django.

I will be your pacemaker.

