애저 서버리스에서 파이썬/장고 웹서비스 쉽게 배포/운영하기

Azure SQL Database와 장고 연동

여러분의 파이썬/장고/리액트 페이스메이커가 되겠습니다.

세션 목차

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

Agenda

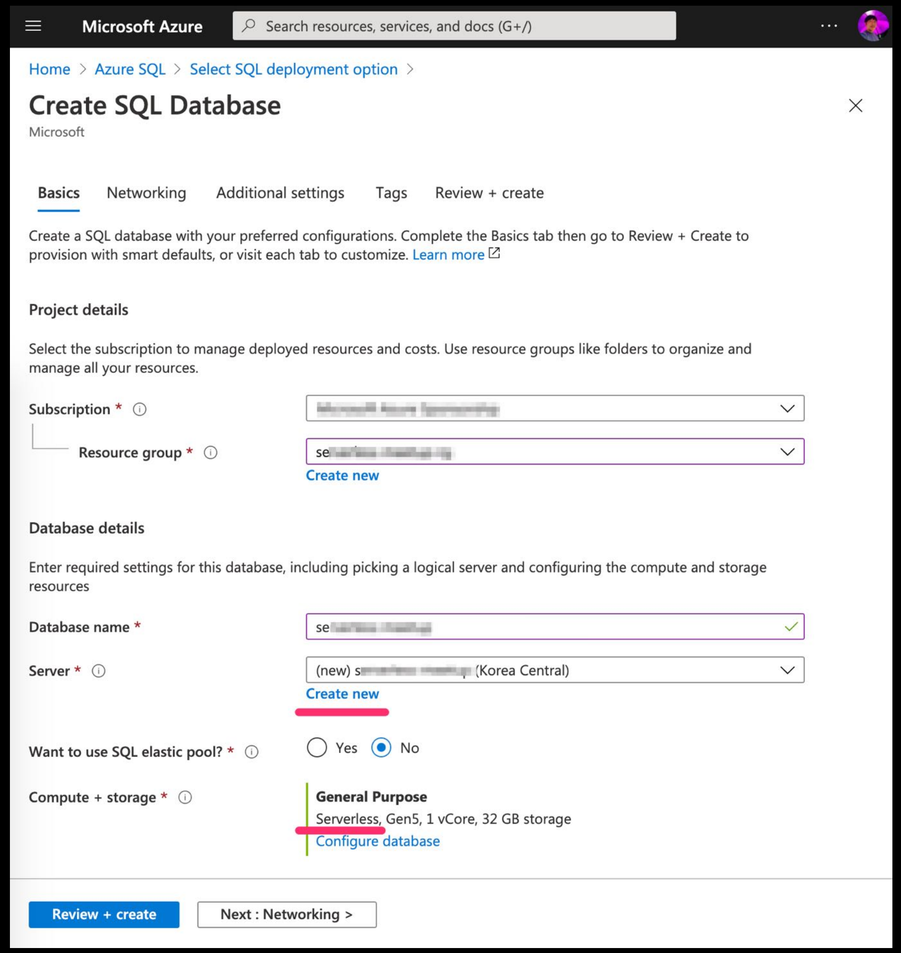
- Azure SQL 소개
- Azure SQL Database 생성 및 방화벽 설정
- ODBC 17 Driver
- Azure SQL Database 와 장고 프로젝트 연동

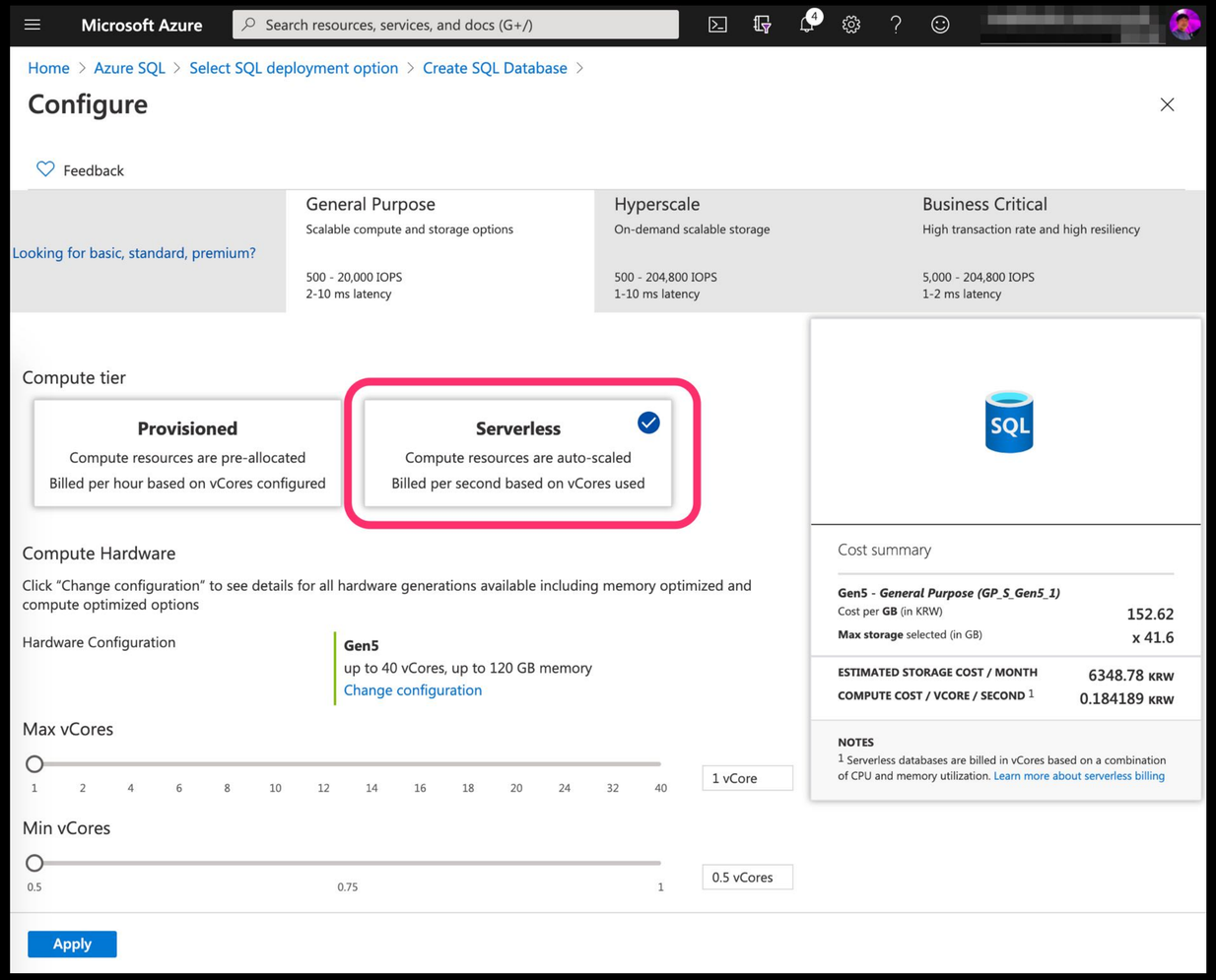
Azure SQL

Azure 클라우드에서 지원하는 SQL Server 서비스

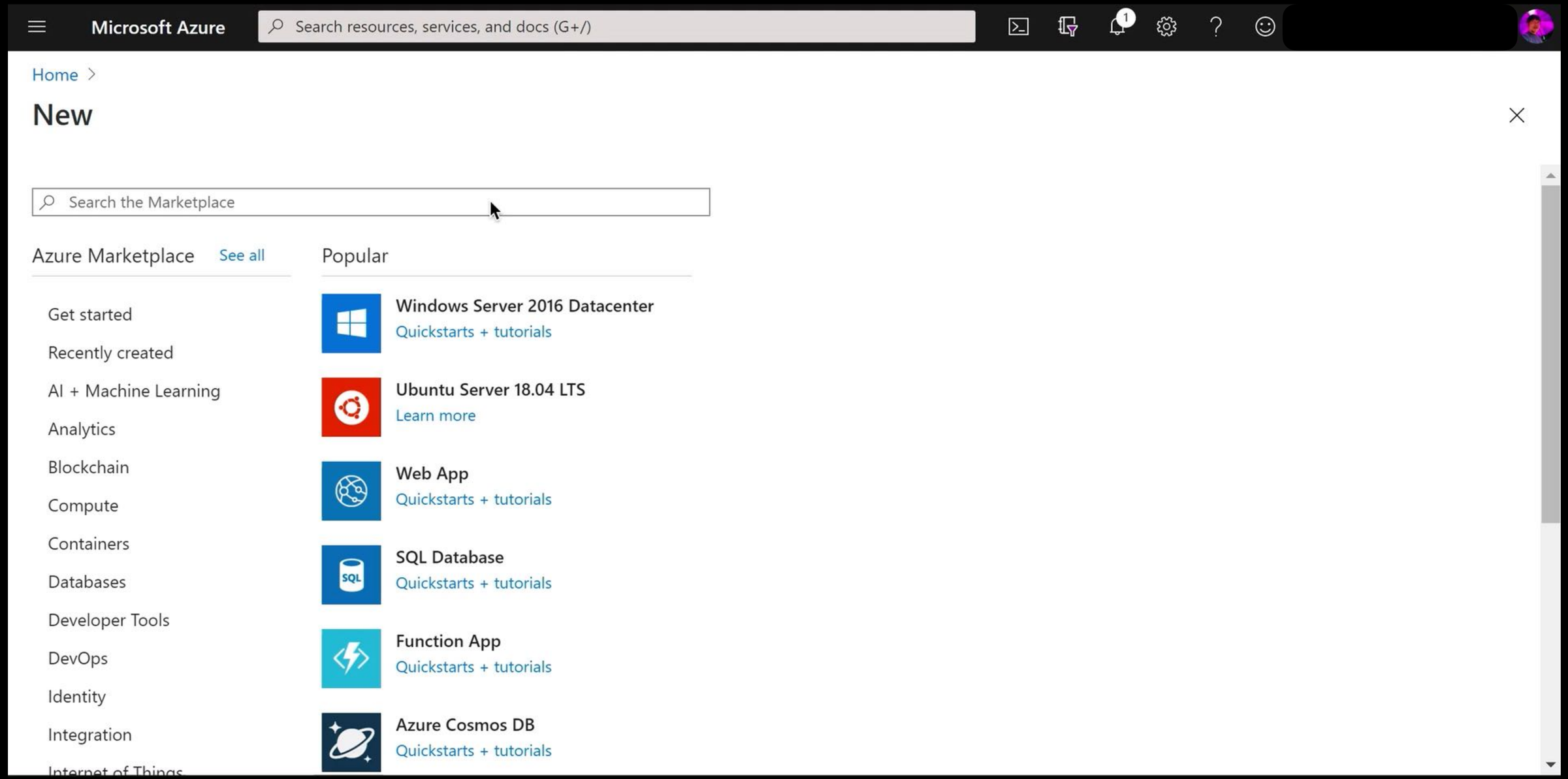
- Azure SQL Database
  - 옵션1) 예측 불가능한 워크로드를 위한 오토 스케일링 (서버리스)
  - 옵션2) 무제한 데이터베이스 (100TB 이상) 스토리지 (하이퍼스케일)
- Azure SQL Managed Instance : VM을 Microsoft에서 관리하는 PaaS
- Azure VM에서 직접 SQL Server 운영

Azure SQL 데이터베이스 생성

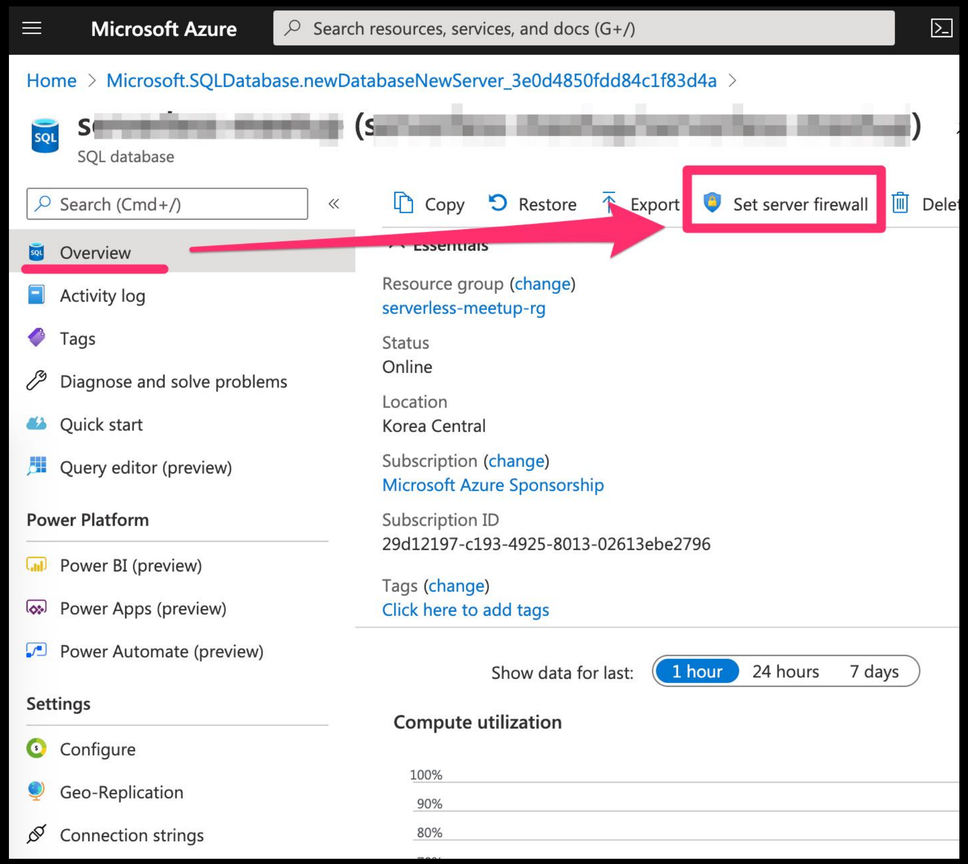


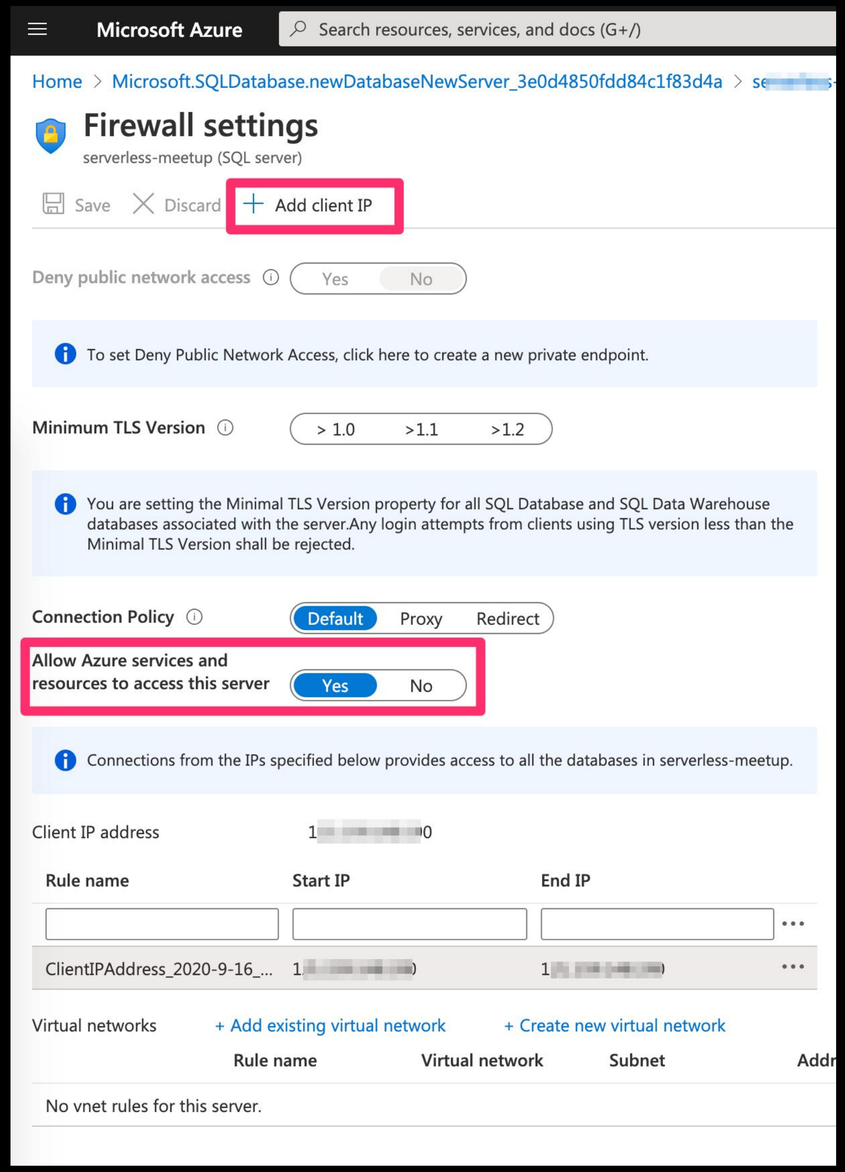


Azure SQL 데이터베이스 생성 (Demo)

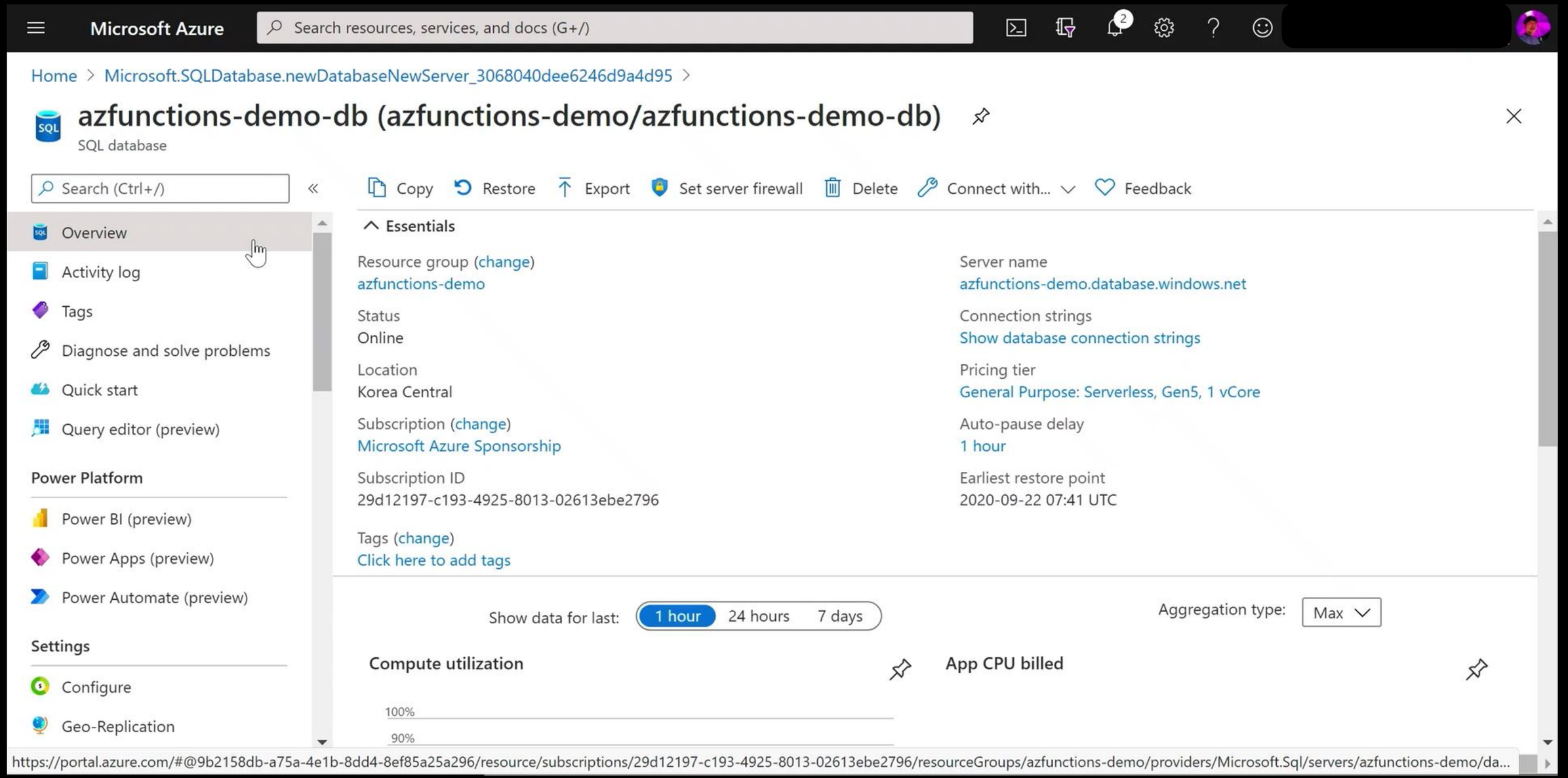


방화벽 설정


Microsoft Azure
Search resources, services, and docs (G+/)
Home > Microsoft.SQLDatabase.newDatabaseNewServer_3e0d4850fdd84c1f83d4a >
SQL database
Search (Cmd+/)
Copy
Restore
Export
Set server firewall
Overview
Activity log
Tags
Diagnose and solve problems
Quick start
Query editor (preview)
Power Platform
Power BI (preview)
Power Apps (preview)
Power Automate (preview)
Settings
Configure
Geo-Replication
Connection strings
Resource group (change)
serverless-meetup-rg
Status
Online
Location
Korea Central
Subscription (change)
Microsoft Azure Sponsorship
Subscription ID
29d12197-c193-4925-8013-02613ebe2796
Tags (change)
Click here to add tags
Show data for last:
1 hour
24 hours
7 days
Compute utilization
100%
90%
80%


Microsoft Azure
Search resources, services, and docs (G+/)
Home > Microsoft.SQLDatabase.newDatabaseNewServer_3e0d4850fdd84c1f83d4a >
Firewall settings
serverless-meetup (SQL server)
Save
Discard
Add client IP
Deny public network access
Yes
No
To set Deny Public Network Access, click here to create a new private endpoint.
Minimum TLS Version
> 1.0
>1.1
>1.2
You are setting the Minimal TLS Version property for all SQL Database and SQL Data Warehouse databases associated with the server.Any login attempts from clients using TLS version less than the Minimal TLS Version shall be rejected.
Connection Policy
Default
Proxy
Redirect
Allow Azure services and resources to access this server
Yes
No
Connections from the IPs specified below provides access to all the databases in serverless-meetup.
Client IP address
Rule name
Start IP
End IP
ClientIPAddress_2020-9-16_...
Virtual networks
+ Add existing virtual network
+ Create new virtual network
Rule name
Virtual network
Subnet
No vnet rules for this server.

방화벽 설정 (Demo)


Microsoft Azure
Search resources, services, and docs (G+/)
Home > Microsoft.SQLDatabase.newDatabaseNewServer_3068040dee6246d9a4d95 >
azfunctions-demo-db (azfunctions-demo/azfunctions-demo-db)
SQL database
Search (Ctrl+/)
Copy
Restore
Export
Set server firewall
Delete
Connect with...
Feedback
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Diagnose and solve problems
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Power Apps (preview)
Power Automate (preview)
Settings
Configure
Geo-Replication
Essentials
Resource group (change)
azfunctions-demo
Status
Online
Location
Korea Central
Subscription (change)
Microsoft Azure Sponsorship
Subscription ID
29d12197-c193-4925-8013-02613ebe2796
Tags (change)
Click here to add tags
Server name
azfunctions-demo.database.windows.net
Connection strings
Show database connection strings
Pricing tier
General Purpose: Serverless, Gen5, 1 vCore
Auto-pause delay
1 hour
Earliest restore point
2020-09-22 07:41 UTC
Show data for last:
1 hour
24 hours
7 days
Aggregation type:
Max
Compute utilization
App CPU billed
100%
90%
https://portal.azure.com/#@9b2158db-a75a-4e1b-8dd4-8ef85a25a296/resource/subscriptions/29d12197-c193-4925-8013-02613ebe2796/resourceGroups/azfunctions-demo/providers/Microsoft.Sql/servers/azfunctions-demo/da...

ODBC 17 Driver

- Azure Functions 기본 이미지 (Debian Linux 10 기반)에 이미 설치
  - Ubuntu 등에서도 손쉽게 드라이버를 설치하실 수 있습니다.
- 개발머신에 드라이버 설치 : 윈도우, 맥, 리눅스
- 장고에서는 다음 2개 라이브러리만 설치하면 OK
  - pyodbc, django-mssql-backend
- 장고에서 DATABASES, ENGINE 지정 : 'sql_server.pyodbc'

팁) pyodbc 버전을 꼭 확인해주세요.

- pyodbc==4.0.0-unsupported 에서는 django-mssql-backend 설치 불가

```
(py38) C:₩Users₩allieus> pip freeze | find "pyodbc"
pyodbc===4.0.0-unsupported

(py38) C:₩Users₩allieus> pip install --upgrade pyodbc
Collecting pyodbc
  Using cached pyodbc-4.0.30-cp38-cp38-win_amd64.whl (68 kB)
Installing collected packages: pyodbc
  Attempting uninstall: pyodbc
    Found existing installation: pyodbc 4.0.0-unsupported
    Uninstalling pyodbc-4.0.0-unsupported:
      Successfully uninstalled pyodbc-4.0.0-unsupported
Successfully installed pyodbc-4.0.30

(py38) C:₩Users₩allieus>
```

장고 프로젝트 설정

- 필요한 라이브러리 : pyodbc, django-mssql-backend
- DB ENGINE 명 : "sql_server.pyodbc"
- django-environ을 활용한 database uri 지정 (환경변수 키 : DATABASE_URL)

```
mssql://유저명:암호@DB서버주소:포트/DB명?driver=ODBC Driver 17 for SQL Server&timeout=5&conn_max_age=30
```

환경변수 지정/참조 예

local.settings.json

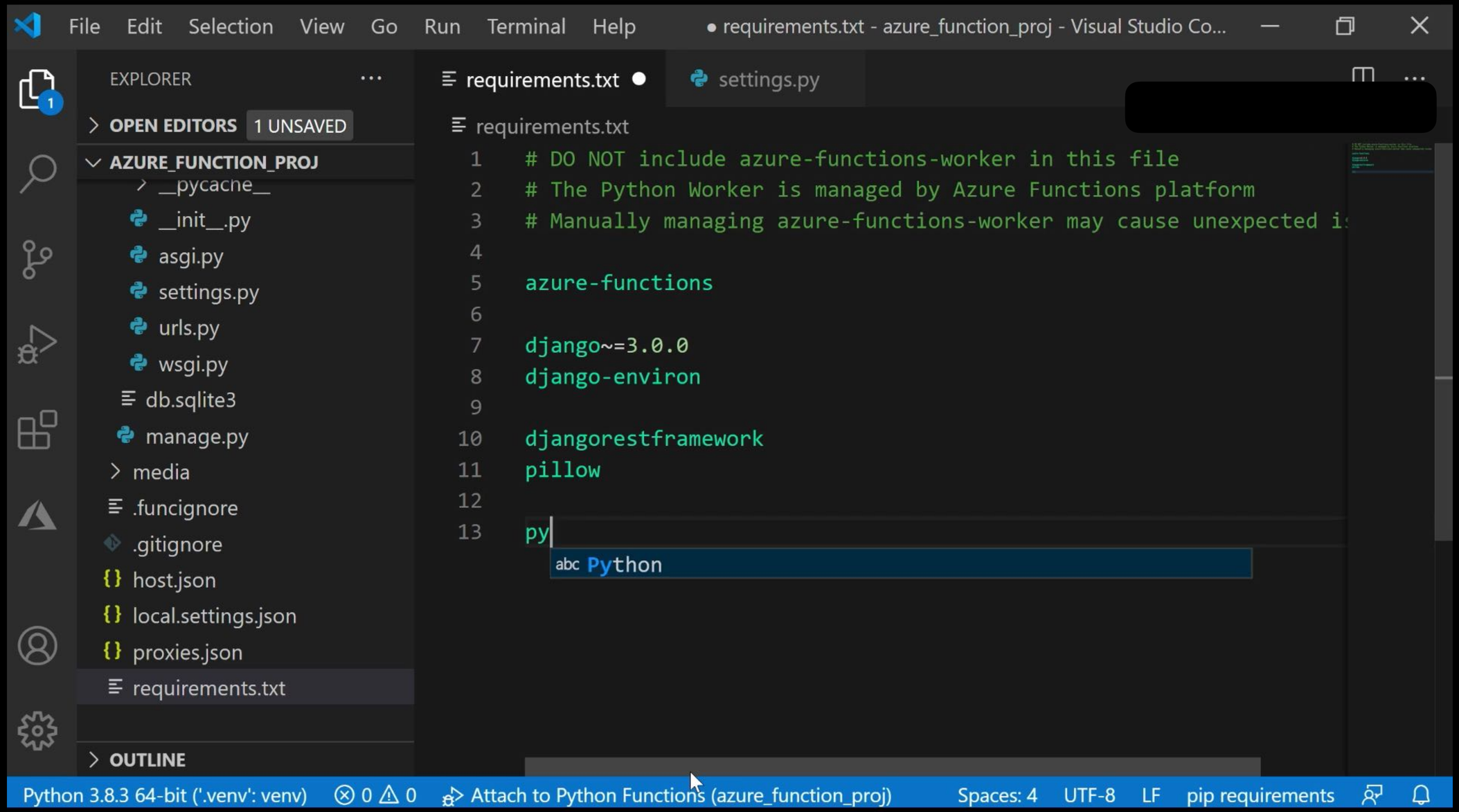
```
{} local.settings.json > {} Values
{
  "IsEncrypted": false,
  "Values": {
    "AzureWebJobsStorage": "",
    "FUNCTIONS_WORKER_RUNTIME": "python",
    "DATABASE_URL": "mssql://myadmin:!1234azfunctions-demo@azfunctions-demo.database.windows.net:1433/azfunctions-demo-db?driver=ODBC Driver 17 for SQL Server&timeout=5&conn_max_age=30"
  }
}
```

```python
from environ import Env

env = Env()

DATABASES = {
    'default': env.db(default=f'sqlite:///{BASE_DIR / "db.sqlite3"}'),
}
```

Azure SQL Database와 장고 연동 (Demo)



다음 에피소드에서는 ...

EP05. Azure Blob Storage와 장고 연동

- 장고의 Static/Media와 File storage API
- Azure Blob Storage 생성 및 Container 생성
- Azure blob Storage 와 장고 연동

Life is short.
You need Python and Django.

I will be your pacemaker.