**Pre-requisite**

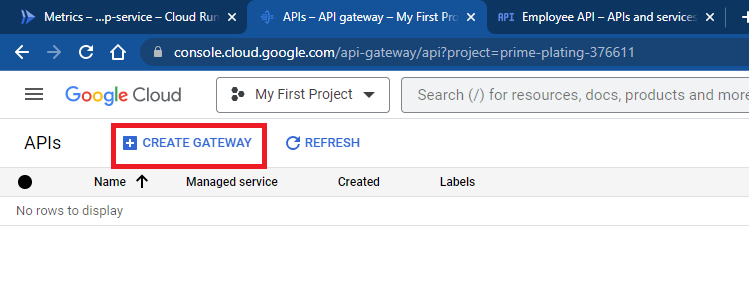
1. Deploy application into app engine(copy application url). Can find steps to deploy application into app engine in activity guide(2.app-engine)
2. Get API documentation using following URL

https://<application-url>/v3/api-docs

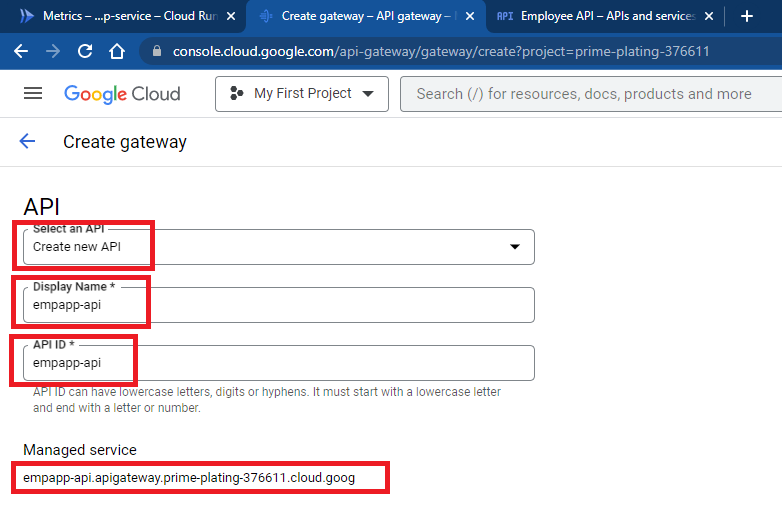
1. Copy json data in file empapi.json (json data will be in openapi3 format)
2. Convert json(openapi3) into yml(openapi2) format. Use this website for converting json into yml format https://www.apimatic.io/dashboard (**Disclaimer**: given url is just suggestion, it is not for promotion. You can use any tool/url for conversion)
3. Modify converted yml file. Modify host address

**Create API gateway**

1. Open google cloud console
2. Search for API gateway



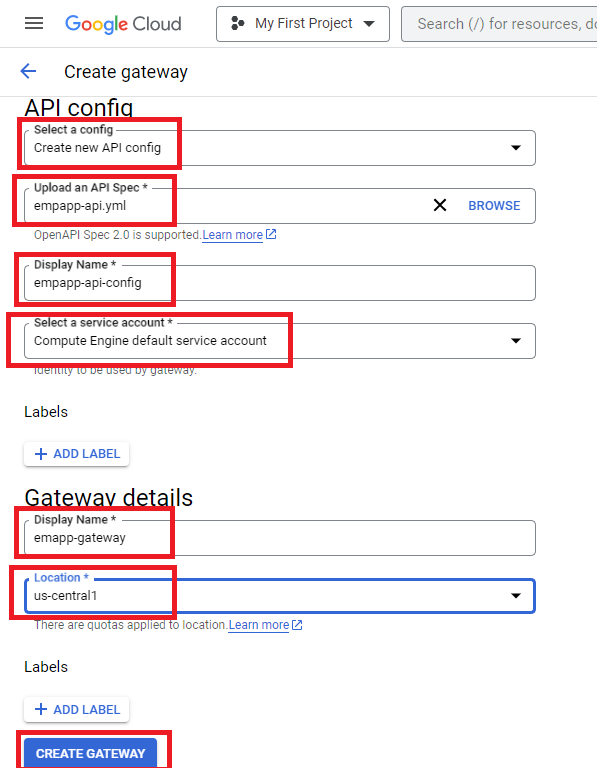
1. Configure API, create new API, mention display name, mention API ID, copy address of manage service



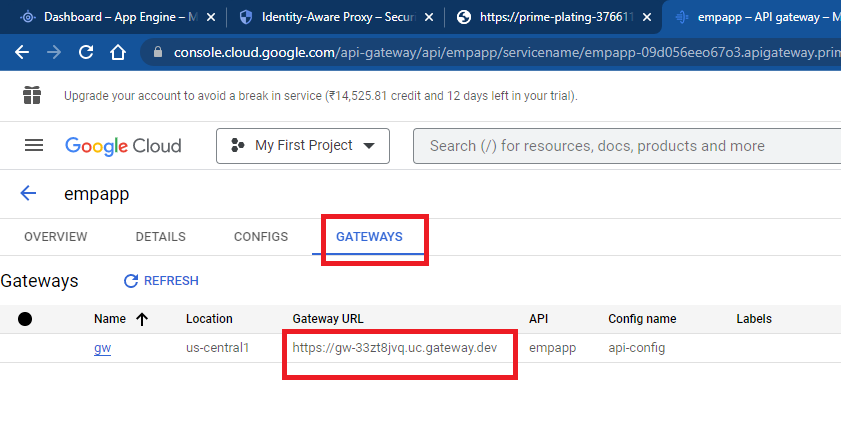
1. Update empapp-api.yml file with copied address in earlier step. Modify address under x-google-backend which is application url (application url can get from app engine). Modified emapp-api.yml would be as follows.



1. Go to API config, select empapp-api.yml file, mention display name, select service account (select default compute engine service account), mention name of API gateway, choose location

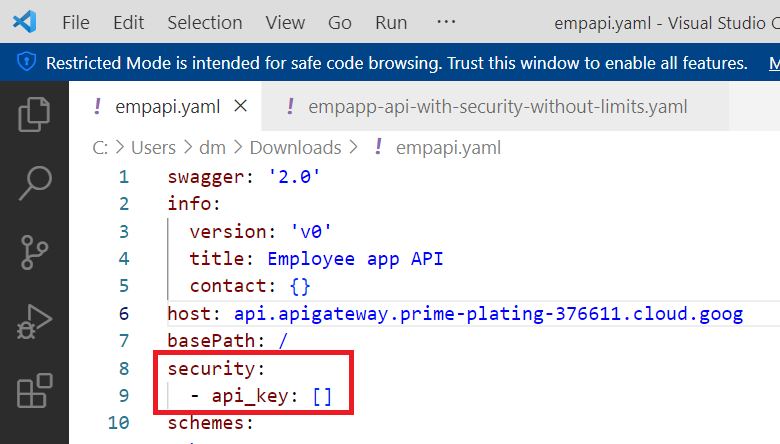


1. Wait for 5-7 minutes to create API gateway
2. Access application using gateway url

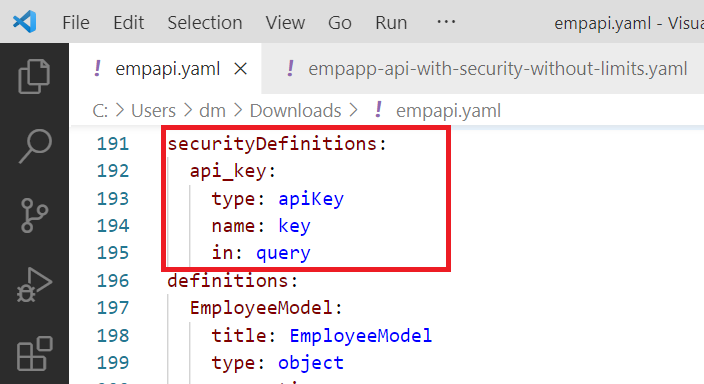


**Secure API with API key**

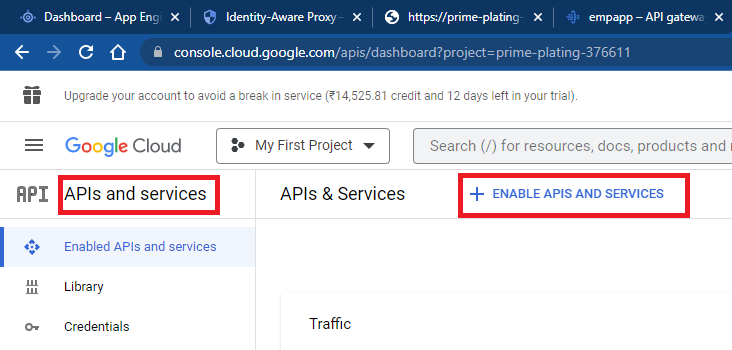
1. Create another api gatway
2. Make following changes in emapp-api.yml file. Use modified file to create API gateway



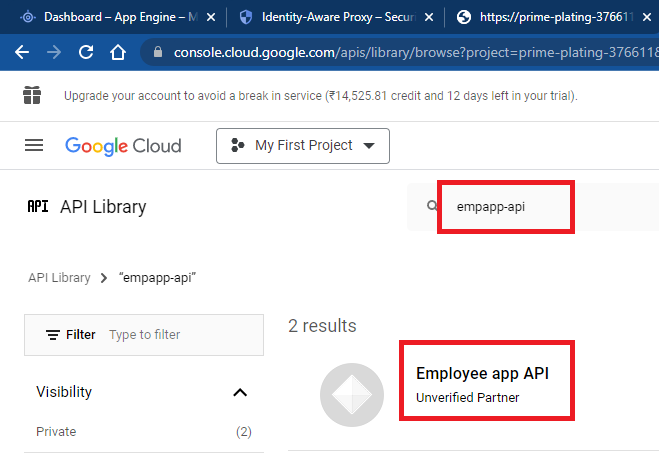
Add following entry in empapp-api.yml file as well



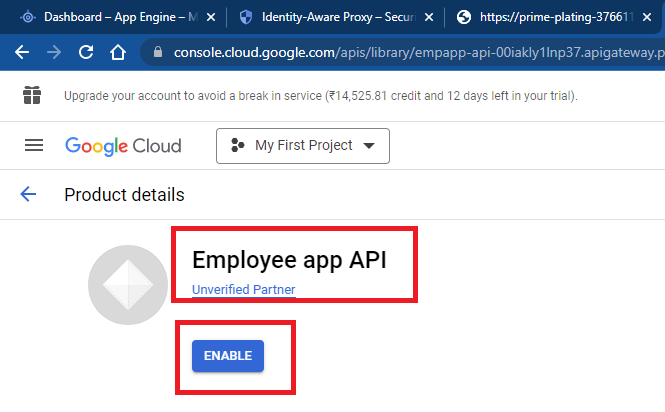
1. Open API and services and click on ENABLE APIS and SERVICES



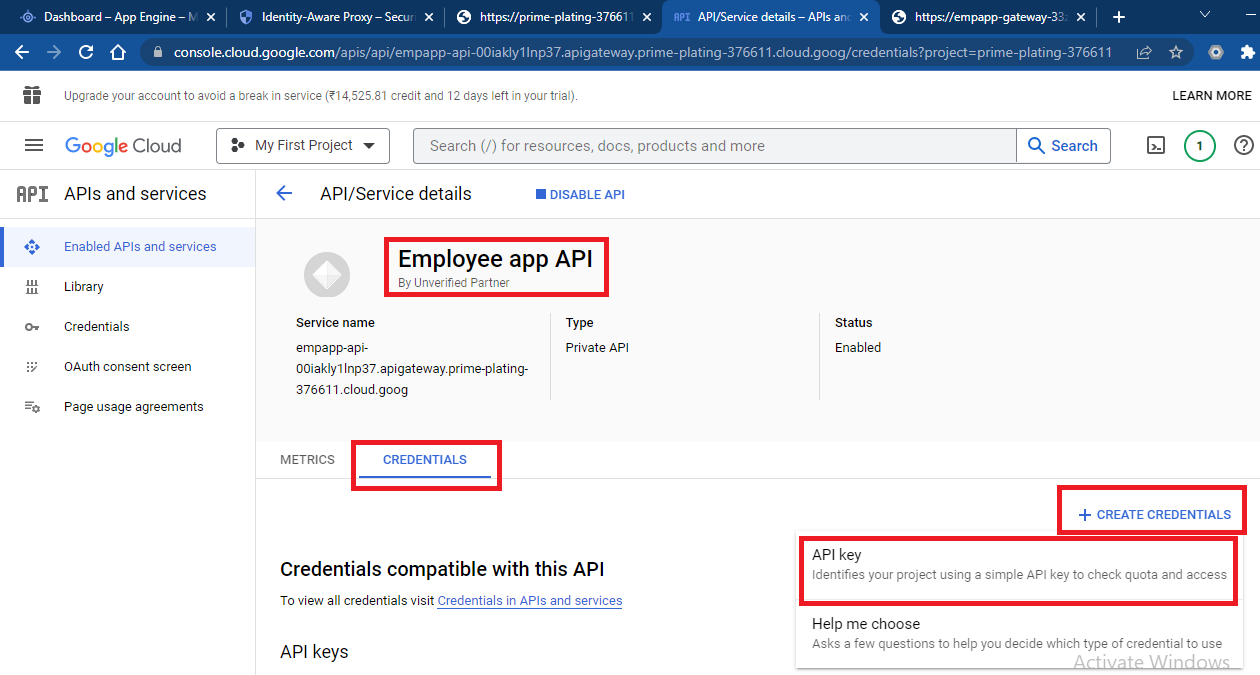
1. Search for empapp-api, click on Employee app API



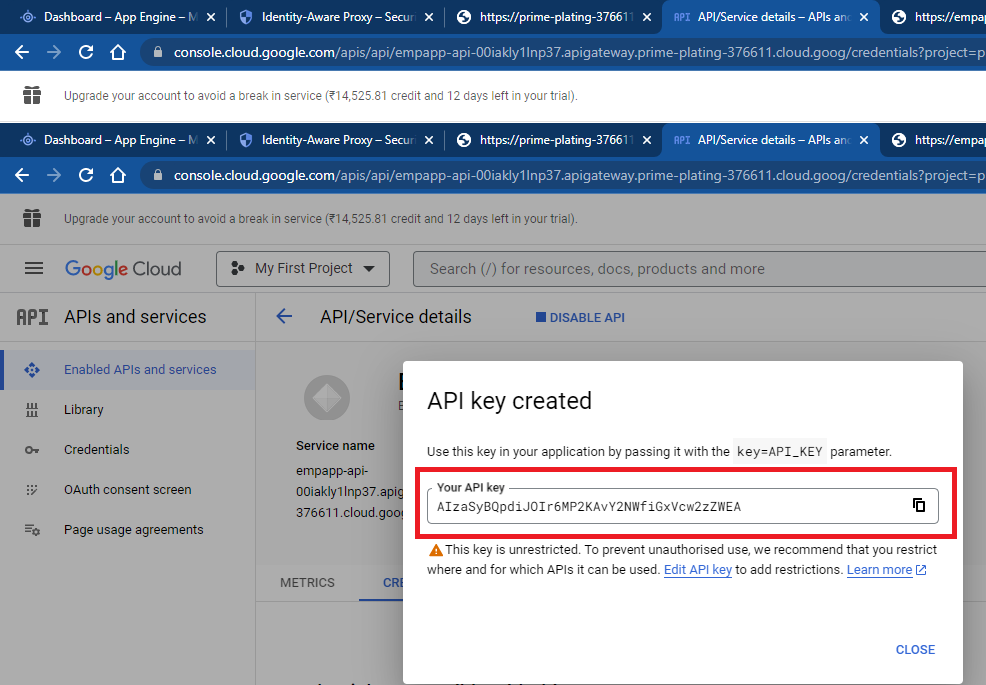
1. Click on enable (if prompted click ok)



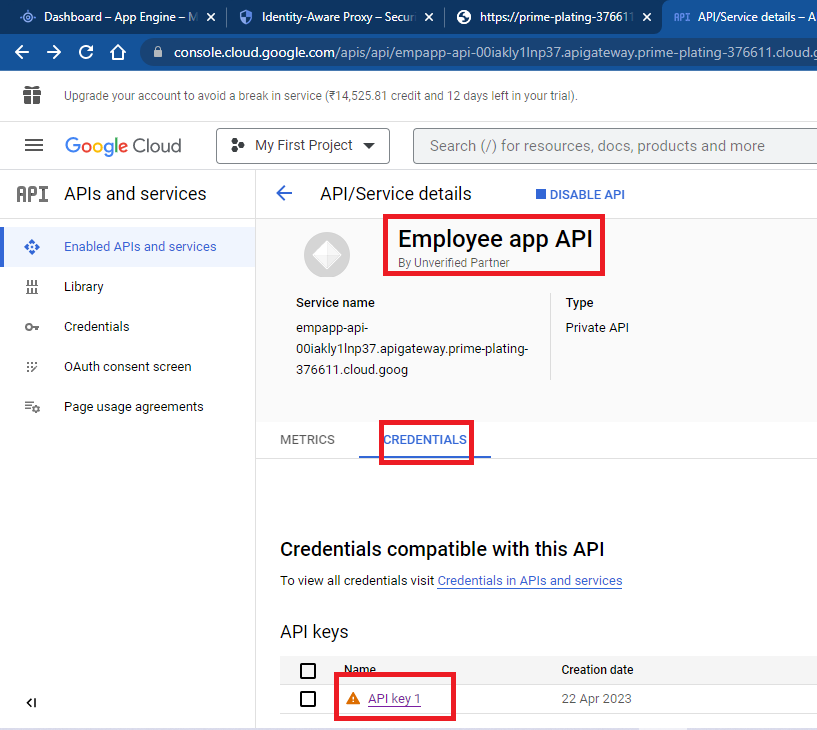
1. Select credentials and click on create credentials, choose API key



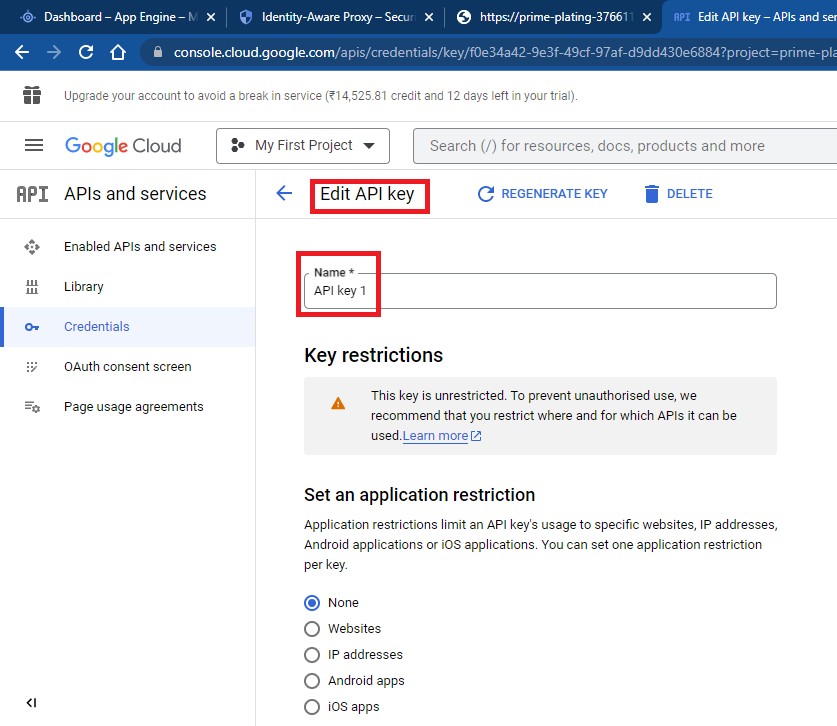
1. Copy API key which is used to access API further



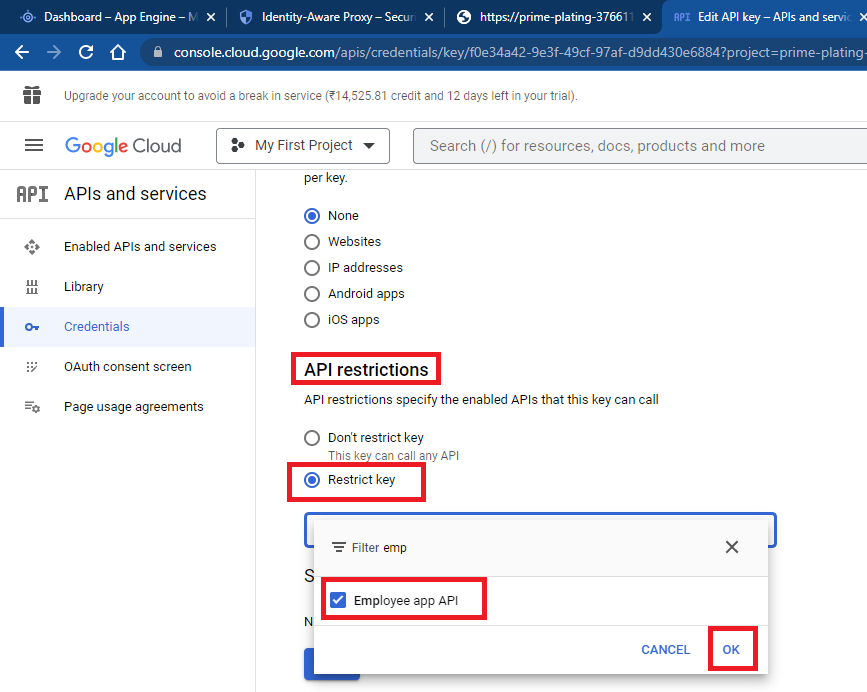
1. Click on API key 1



1. Screen will be as follows



1. Go to API restrictions, select restrict key radio button, search for your app, select app, click on ok. Finally click on save.



1. Wait for 5-7 minutes reflect changes
2. Try accessing application(it will be UNAUTHENTICATED access to application)
3. Now access application using API key

https://<getway-url>/employee?key=<API-key>

replace gateway-url and API-key with your value.

e.g. <https://gw-33zt8jvq.uc.gateway.dev/employee?key=AIzaSyDC-jWCMCKKV8U3dCL60spfoc5njQ2_Ezs>

**Limit API usage**

1. Create API gateway
2. Usage following API configuration file. (you will find it in activity section under 7.api-gateway)

empapp-api-without-security-with-limits.yml

limit configurations are as follows

|  |
| --- |
| x-google-management:    metrics:      - name: "get-requests"        displayName: "get requests"        valueType: INT64        metricKind: DELTA      - name: "post-requests"        displayName: "post requests"        valueType: INT64        metricKind: DELTA      - name: "put-requests"        displayName: "put requests"        valueType: INT64        metricKind: DELTA      - name: "delete-requests"        displayName: "delete requests"        valueType: INT64        metricKind: DELTA    quota:      limits:        - name: "get-limit"          metric: "get-requests"          unit: "1/min/{project}"          values:            STANDARD: 10        - name: "post-limit"          metric: "post-requests"          unit: "1/min/{project}"          values:            STANDARD: 5        - name: "put-limit"          metric: "put-requests"          unit: "1/min/{project}"          values:            STANDARD: 3        - name: "delete-limit"          metric: "delete-requests"          unit: "1/min/{project}"          values:            STANDARD: 1 |

1. As per configuration file only 10 get request, 5 post request, 3 put request and only 1 delete request per minute.