

MS Graph API workshop

系統整合中心-企業科技服務事業

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Outline

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- ▶ 09:30 ~ 10:30 Microsoft Graph API intro
- ▶ 10:45 ~ 12:00 使用API Explorer 測試 API
- ▶ 12:00 ~ 13:00 午餐
- ▶ 13:20 ~ 14:30 Hands-On Lab 1
- ▶ 14:30 ~ 15:30 Hands-On Lab 2
- ▶ 15:30 ~ 16:00 Break
- ▶ 16:00 ~ 17:30 Hands-On Lab 3
- ▶ 17:30 ~ 18:00 Q & A

Microsoft Graph API intro

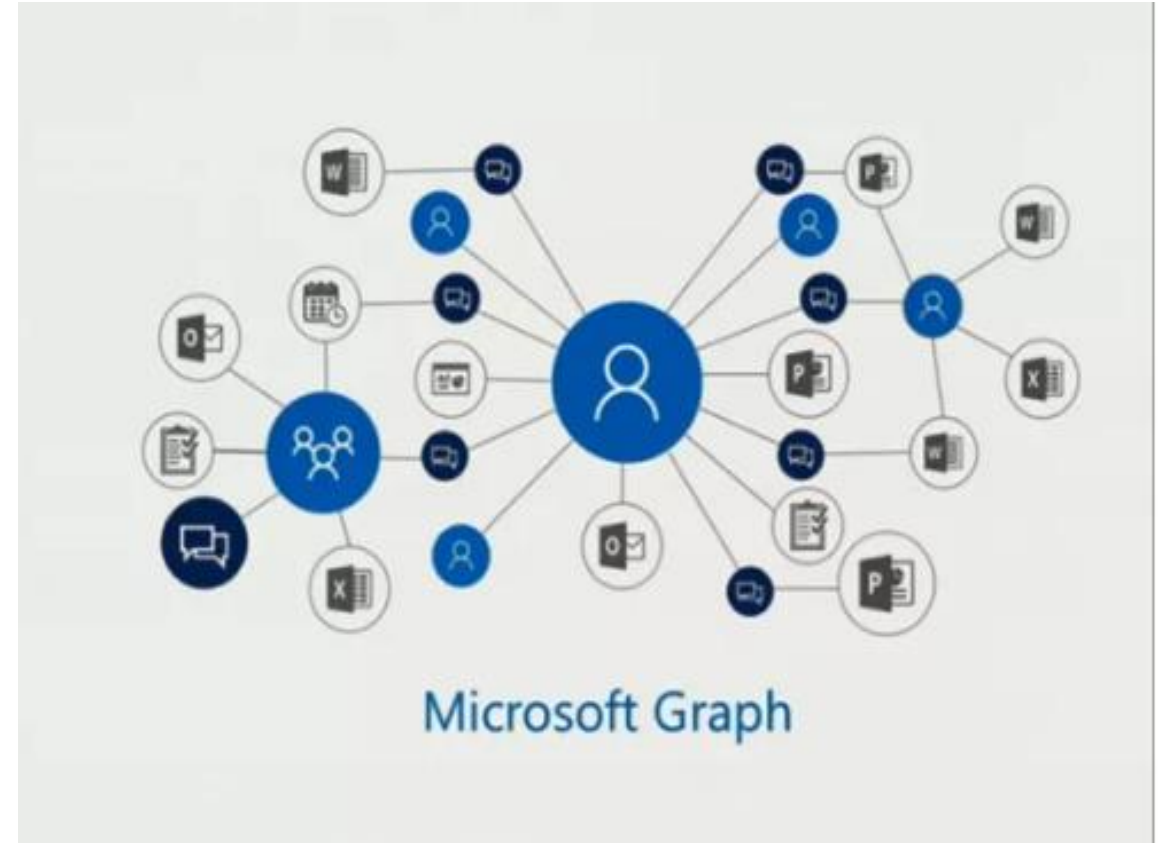
- ▶ Microsoft Graph (previously called Office 365 unified API) exposes multiple APIs from Microsoft cloud services through a single REST API endpoint (<https://graph.microsoft.com>). Using the Microsoft Graph, you can turn formerly difficult or complex queries into simple navigations.

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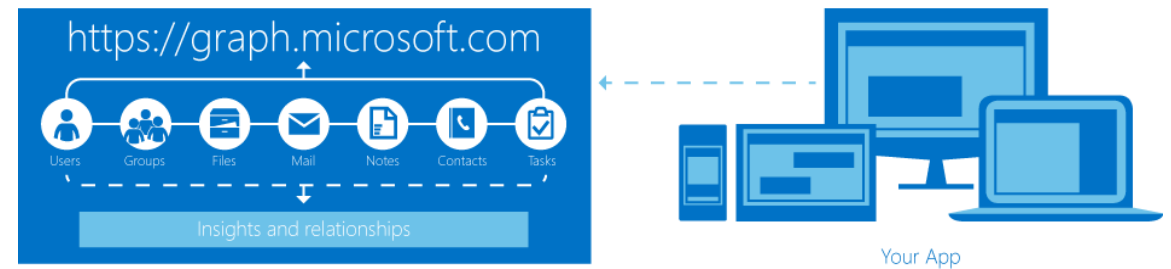
Microsoft Graph API feature

- ▶ Unified Microsoft API and SDKs
- ▶ Single sign-on with Azure
- ▶ Access to data in real-time



How many Graph APIs

- ▶ User
- ▶ OneDrive
- ▶ Outlook Mail
- ▶ Outlook Calendar
- ▶ Personal Contact
- ▶ Groups



Graph API - OneDrive

- ▶ The drive resource is the top level object within a user's OneDrive. A user will always have at least one Drive available--the default Drive.

Graph API – Outlook Mail

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- ▶ A message in a mail Folder.

Graph API – Outlook Calendar

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- ▶ A calendar which is a container for events.

Graph API – Group

- ▶ Represents an Azure Active Directory group, which can be an unified group

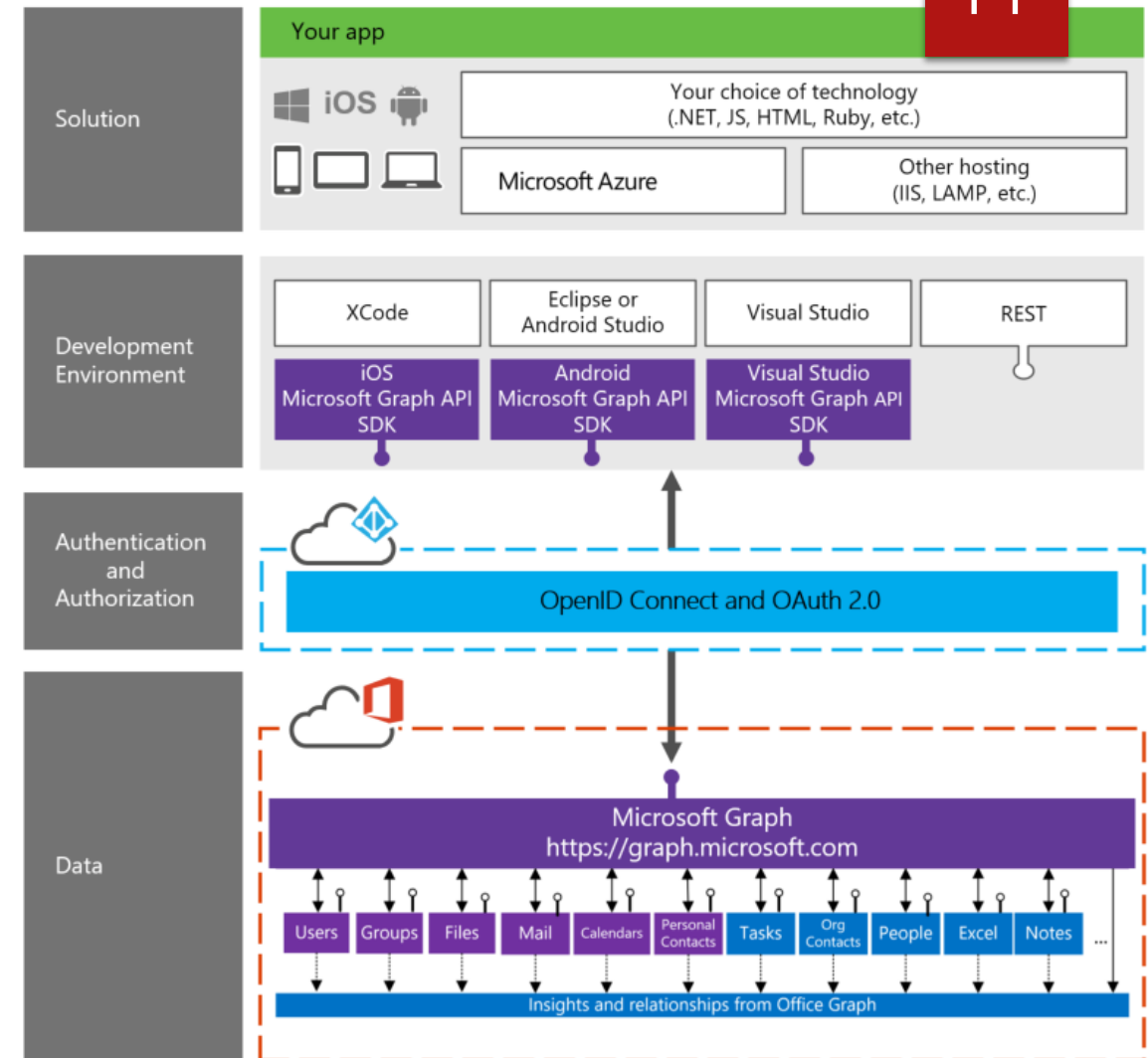
Graph API - User

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- ▶ Represents an Azure AD user account. Inherits from [directoryObject](#).

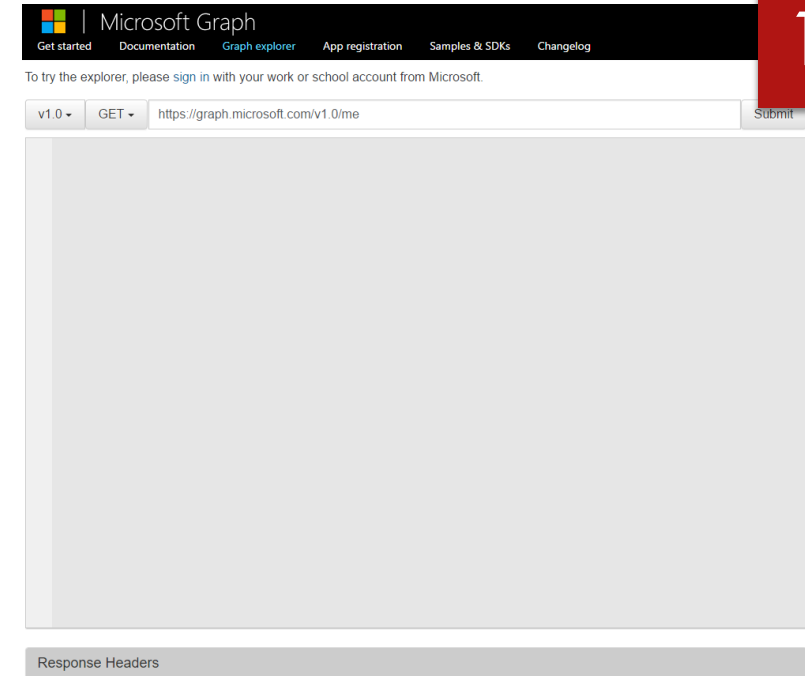
How to use it

- ▶ By Graph RESTful API
- ▶ By Microsoft Graph API SDKs



Some Common Queries

- ▶ Get my profile
- ▶ Get my files
- ▶ ...



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Common Queries

The following are some examples of common queries using Microsoft Graph API:

Operation	Service endpoint
GET my profile	https://graph.microsoft.com/v1.0/me
GET my files	https://graph.microsoft.com/v1.0/me/drive/root/children
GET my photo	https://graph.microsoft.com/v1.0/me/photo/\$value
GET my mail	https://graph.microsoft.com/v1.0/me/messages
GET my high importance email	https://graph.microsoft.com/v1.0/me/messages?\$filter=importance%20eq%20'high'
GET my calendar	https://graph.microsoft.com/v1.0/me/calendar
GET my manager	https://graph.microsoft.com/v1.0/me/manager

What is REST, RESTful API ?

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- ▶ 具象狀態傳輸（英文：Representational State Transfer，簡稱REST）是 Roy Thomas Fielding 博士於2000年在他的博士論文 "Architectural Styles and the Design of Network-based Software Architectures" 中提出來的一種全球資訊網軟體架構風格。

REST是設計風格而不是標準

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- ▶ 資源是由URI來指定。
- ▶ 對資源的操作包括獲取、創建、修改和刪除資源，這些操作正好對應HTTP協議提供的GET、POST、PUT和DELETE方法。
- ▶ 通過操作資源的表現形式來操作資源。
- ▶ 資源的表現形式則是XML或者HTML，取決於讀者是機器還是人，是消費web服務的客戶軟體還是web瀏覽器。當然也可以的任何其他的格式。

符合REST設計風格的Web API稱為 RESTful API

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它從以下三個方面資源進行定義：

- ▶ 直觀簡短的資源地址：URI，比如：`http://example.com/resources/`。
- ▶ 傳輸的資源：Web服務接受與返回的網際網路媒體類型，比如：JSON，XML，YAML等。
- ▶ 對資源的操作：Web服務在該資源上所支持的一系列請求方法（比如：POST，GET，PUT或DELETE）。

REST的優點

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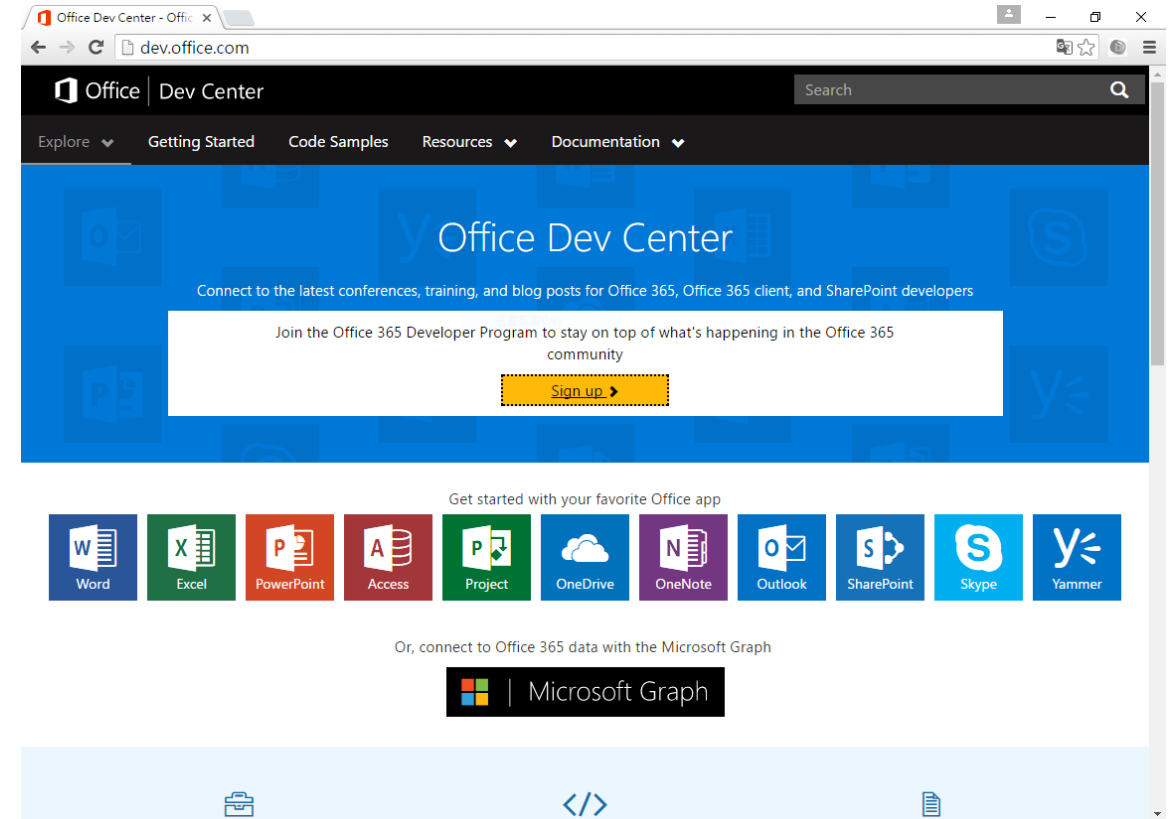
- ▶ 可更高效利用快取來提高響應速度
- ▶ 通訊本身的無狀態性可以讓不同的伺服器的處理一系列請求中的不同請求，提高伺服器的擴展性
- ▶ 瀏覽器即可作為客戶端，簡化軟體需求
- ▶ 相對於其他疊加在HTTP協議之上的機制，REST的軟體相依性更小
- ▶ 不需要額外的資源發現機制
- ▶ 在軟體技術演進中的長期的相容性更好

Break time

Setting

- ▶ Sign up a developer account ([gotoLink](#))
- ▶ Login Office365:prepare email , Calendar and onedrive ([gotoLink](#))

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Graph API Explorer

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- ▶ Login with dev account & get start(<https://graph.microsoft.io/>)

Example

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- ▶ Get my contacts data
 - ▶ <https://graph.microsoft.com/v1.0/me/contacts>
- ▶ Get calendar events list
 - ▶ <https://graph.microsoft.com/v1.0/me/events>

Get my contacts result

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```
{
  "@odata.context": "https://graph.microsoft.com/v1.0/$metadata#users('480a75db-270a-4399-8515-56624b4f5ff8')/contacts",
  "@odata.nextLink": "https://graph.microsoft.com/v1.0/me/contacts?$skip=10",
  "value": [
    {
      "@odata.etag": "W/\"EQAAABYAAADR0P1ZU08aR6P/VM1P2IhmAADDCCIso\"",
      "id": "AAMkAGYyZTA5YWQ0LTU2MjMtNGYxMi1hNzJjLWZkODc4NmExN2VhNgBGAAAAAAXhP8RDXtB_hL6hsgPxwDR0P1ZU08aR6P-VM1P2IhmAAAAAAE0AADR0P1",
      "createdDateTime": "2016-08-08T08:27:33Z",
      "lastModifiedDateTime": "2016-08-08T08:27:41Z",
      "changeKey": "EQAAABYAAADR0P1ZU08aR6P/VM1P2IhmAADDCCIso",
      "categories": [],
      "parentFolderId": "AQMkAGYyZTA5YWQ0LTU2ADIZLTRmMTItYTcyYy1mZDg3ODZhMTd1YTALgAAAwprGE-xENdNv6EvqGyA-F8BANHQ_V1TTxpHo-9UzU-YiGYAAA1",
      "birthday": null,
      "fileAs": "",
      "displayName": "禁景應",
      "givenName": "禁景應",
      "initials": null,
      "middleName": null,
      "nickName": null,
      "surname": null,
      "title": null,
      "yomiGivenName": null,
      "yomiSurname": null,
      "yomiCompanyName": null,
      "generation": null,
      "emailAddresses": [
        {
          "name": "禁景應",
          "address": "chinyint@microsoft.com"
        }
      ],
      "imAddresses": [],
      "jobTitle": "資深合作夥伴技術顧問",
      "companyName": "合作夥伴支援部",
      "department": null,
      "officeLocation": null,
      "profession": null,
      "businessHomePage": "www.microsoft.com/taiwan",
      "assistantName": null,
      "manager": null,
      "homePhones": [],
      "mobilePhone": "0237253888",
    }
  ]
}
```

Get my events result

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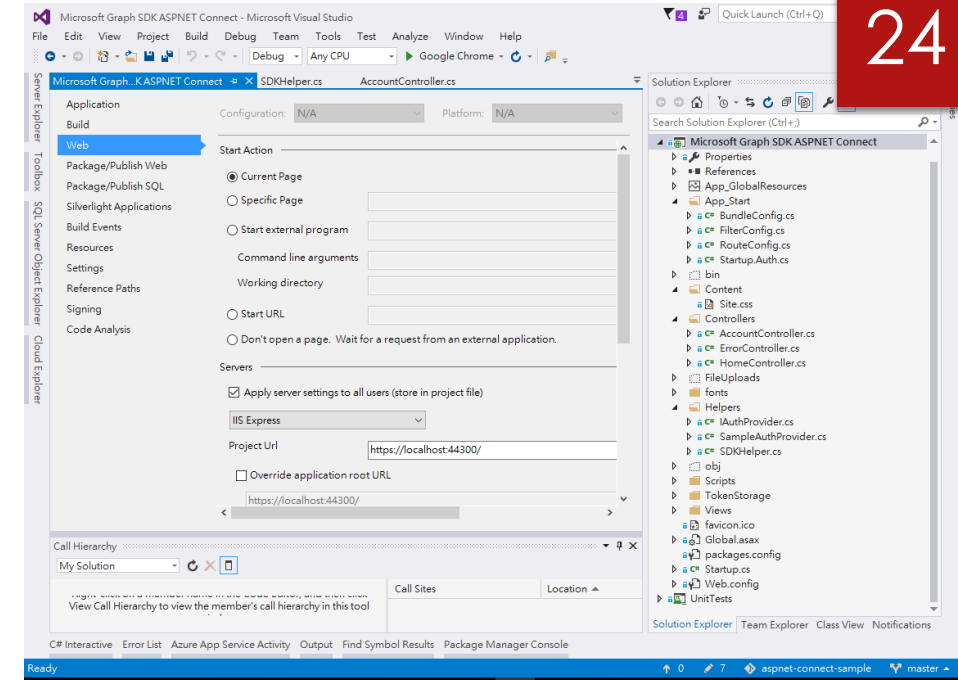
```
{
  "@odata.context": "https://graph.microsoft.com/v1.0/$metadata#users('480a75db-270a-4399-8515-56624b4f5ff8')/events",
  "@odata.nextLink": "https://graph.microsoft.com/v1.0/me/events?$skip=10",
  "value": [
    {
      "@odata.etag": "W/\"0dD5WVNPgkej/1TNT9iIZgAA2cwQoA==\"",
      "id": "AAMkAGYyZTA5WQ0LTy2MjMtNGYxM1hNzJjLWZkODc4NmExN2VhNgBGAAAAAAKaxhP8RDXtB_hL6hsgPxwDR0P1ZU08aR6P-VM1P2IhmAAAAAENAADR0P1",
      "createdDateTime": "2016-09-11T04:34:40.5273202Z",
      "lastModifiedDateTime": "2016-09-11T04:34:40.5433329Z",
      "changeKey": "0dD5WVNPgkej/1TNT9iIZgAA2cwQoA==",
      "categories": [],
      "originalStartTimeZone": "UTC",
      "originalEndTimeZone": "UTC",
      "responseStatus": {
        "response": "notResponded",
        "time": "0001-01-01T00:00:00Z"
      },
      "iCalUID": "040000008200E00074C5B7101A82E0080000000E11E3FCDE50BD201000000000000001000000063BEAA6F28BD384482FE892F6F9C260D",
      "reminderMinutesBeforeStart": 1024,
      "isReminderOn": true,
      "hasAttachments": false,
      "subject": "invite you to join a meeting",
      "body": {
        "contentType": "text",
        "content": "Hi , please join the meeting."
      },
      "bodyPreview": "Hi , please join the meeting.",
      "importance": "normal",
      "sensitivity": "normal",
      "start": {
        "dateTime": "2016-09-12T01:00:00.0000000",
        "timeZone": "UTC"
      },
      "end": {
        "dateTime": "2016-09-12T02:00:00.0000000",
        "timeZone": "UTC"
      },
      "location": {
        "displayName": "",
        "address": {}
      },
      "isAllDay": false,
    }
  ]
}
```

Lunch time

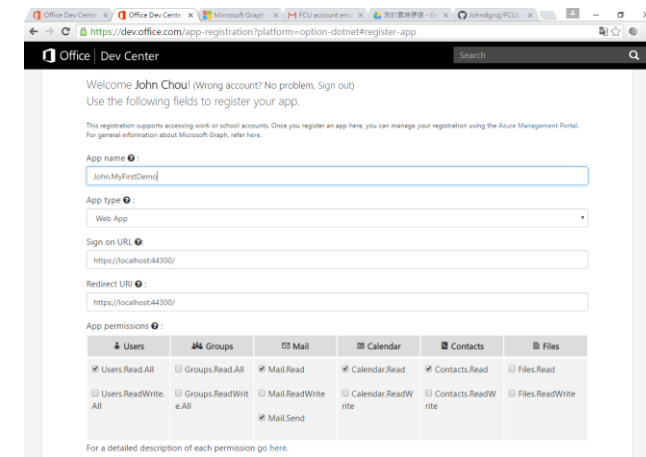
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Hands-On Lab 1

- ▶ Download sample code from github([UnifiedApiConnect](#))
- ▶ Registry a new application([gotoLink](#)).



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- ▶ Copy Client ID and Client Secret to your app
- ▶ Run the APP!

- ▶ Copy Client ID and Client Secret to your app
- ▶ Run the APP!



Hands-On Lab2

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- ▶ 查詢Calendar內的Events
- ▶ 動手作：為自己在Office365 Calendar上建立一個Event。

Hands-On Lab3

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- ▶ 讀取 OneDrive 列表
- ▶ 動手做：上傳檔案、下載清單中的附件。

Q&A

See you next time!