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1. About DUO 2FA

The traditional authentication method by just verifying the username and password is no more secure enough nowadays. In order to strengthen the access security, two-factor authentication (2FA) is introduced. 2FA is an enhance authentication mechanism which requires user to provide any 2 of below factors for identity verification:

- Something you know: e.g. password
- Something you have: e.g. token, one-time passcode
- Something you are: e.g. fingerprint, voice

DUO 2FA is a two-factor authentication solution which requires users to provide the 2\textsuperscript{nd} factor, i.e. one-time passcode, from a designated device (e.g. your mobile device) when they are logging in to those 2FA integrated applications for identity verification before granting the access.

1.1. Applications Integrated with DUO 2FA

The following applications are integrated with DUO 2FA:

- Domain-joint Windows Desktop login
- CUHK VPN application
- O365 services
- Some AD Federation Service applications

1.2. How It Works

Steps:

You need to:

i. **Enroll your O365 account and designated mobile device** (e.g. your mobile, tablet) via the Self-Service Portal.

ii. **Install the DUO Mobile App** on above enrolled mobile device for linking to your account and for receiving DUO notification (i.e. DUO Push) or generate the one-time passcode for your login request.

Afterwards, when you are logging in to the above 2FA integrated applications, you will need to:

i. login the application with your username and password;

ii. then provide the 2\textsuperscript{nd} factor to the application by either one of below:

   a. **DUO Push response**, which is the authorization response to the DUO Push notification for the login request from the application, via your DUO Mobile App; or

   b. **One-Time Passcode**, which is generated from your DUO Mobile App for inputting to the application.

Once the above verification is passed, your access to the application is granted.
2. Enrollment, Installation and Configuration

2.1. Enrollment and Installation

Before you can use the 2FA for application authentication, you need to enroll your account & designated mobile device in DUO Self-Service Portal, and install the DUO Mobile App on your designated mobile device for one-time passcode generation or Duo Push authorization.

Steps:

i. Open a web browser, visit the Two-Factor Authentication (2FA) Self-Service User Portal at https://duo.itsc.cuhk.edu.hk.

ii. Login with your O365 account.

iii. Once login the Self-Service User Portal, the enrolment process start. Click Start setup.
iv. Select the type of your mobile device that you will use to install the DUO 2FA Mobile App. DUO recommends users to select Mobile phone, but this require users to provide their phone number as well later. Due to privacy concern, CUHK highly recommends you to select Tablet, then click Continue.

**Note:** Due to privacy issue, CUHK highly recommends you to select Tablet' instead during device enrollment.

v. Select the **type of your mobile device**, then click **Continue**, and follow Step vii.
vi. If you selected **Mobile phone** in Step iv and click **Continue**:  

*Note: Due to privacy issue, CUHK highly recommends you to select 'Tablet' instead during device enrollment.*

You need to provide your phone number in this step. Select the **location** and input the **phone number** of your mobile phone. **Tick the checkbox**, then click **Continue**.

Select the **type of your phone**, then click **Continue**, and **follow Step vii**.
vii. Follow the on-screen instructions to install DUO Mobile App on your mobile device.

If you are using iOS device:

- Open the App Store on your mobile, tap search and search ‘Duo Mobile’.
- Tap ‘Get’ and then ‘install’ to download and install the app.
If you are using Android device:

- Open the **Google Play Store** on your mobile, and search ‘**Duo Mobile**’.
- Then tap ‘**install**’ to download and install the app.

If you are using Android device bought in China, where the **Google Play Store** is not available:

- Open the browser on your mobile, and **download** the Duo Mobile APK directly from official Duo website ([https://dl.duosecurity.com/DuoMobile-latest.apk](https://dl.duosecurity.com/DuoMobile-latest.apk)). *Please do not download and install any untrusted APK files into your mobile since they may be altered by hackers for malicious purposes.*
- After the file is downloaded, open Downloads, tap on the APK file, and tap ‘**Yes**’ when prompted or follow the onscreen instruction for installation, the app will begin installing on your device.

After the mobile app is installed, back to your computer, click **I have Duo Mobile installed**.

**Note:** Please make sure to allow the Duo Mobile app to access the camera, otherwise, it would not be able to scan the activation code in next step.
viii. Follow the on-screen instructions to **activate the Duo Mobile App on your mobile device.**

![Activate Duo Mobile for iOS](image)

ix. **Open the DUO Mobile App** on your mobile device, then **tap the ‘+’ button**, then scan the above code image. You should find your DUO Mobile App is activating and adding your account into the app.

![Scan an activation barcode to link Duo Mobile to your account.](image)

x. Back to the web browser, once the activation is done, you should find a tick picture. Click **Continue** then.
xi. The enrollment process finish. Click **Dismiss** to view the settings of your enrolled device.

The 1st enrolled device would become the default device for you to use the Duo Mobile App.

### 2.2. Configuration

You can view or change the 2FA settings in the 2FA Self-Service User Portal ([https://duo.itsc.cuhk.edu.hk](https://duo.itsc.cuhk.edu.hk)). In ‘**My Settings & Devices**’ page, you can:

a. Configure the Device Options;

b. Add another device under your account;

c. Configure the default device and 2FA authentication method.
2.2.1. Device Options

Steps:

i. Click **Device Options** of a device, 3 options are shown:

   - **Reactivate Duo Mobile**: you can reactivate your Duo Mobile App on your mobile device in case your mobile device is changed.
   - **Change Device Name**: you can change the name of your enrolled mobile device displaying on this page.
   - **Delete Device**: this option would only be shown if you had enrolled for more than 1 mobile devices, it allows you to delete the selected device if it is no more needed.

2.2.2. Add another device

Steps:

i. Click **Add another device**, it would restart the enrollment process. Repeat the steps from Section 2.1, Step iv to enroll another device.
2.2.3. Default mobile device & Authentication method

Steps:

i. **After Default Device**, a drop down list would be shown if you had enrolled for more than 1 mobile devices, you can select one of them as the default device that you want to receive the Duo Push notification.

![Default Device Selection](image1)

- **Ask me to choose an authentication method**: you will be asked to choose either one of the authentication methods, i.e. **Duo Push** or **Passcode**, every time when you login any DUO 2FA integrated application.
  - **Duo Push**: it is an automatically notification which would be pushed to your default device selected above.
  - **Passcode**: it is the one-time passcode that is generated by your Duo Mobile App and valid for a short period, e.g. 1 min.
    
    *(Note: The use of Passcode and Duo Push can be found in next section.)*

ii. **After When I log in**, you can select the default authentication method:

![Login Select Authentication Method](image2)

- **Automatically send this device a Duo Push**: an automatic notification would be pushed to your default device selected above.
3. Use of Duo Push and Passcode

Below demonstrates the use of the 2 authentication methods, i.e. **Passcode** and **Duo Push**, for logging in the DUO integrated applications.

Take an example of logging in to the 2FA Self-Service Portal (Note: different application may have different layout). When you logging in to the portal, you will be asked to choose either one of the authentication method, **Enter a Passcode** or **Send Me a Push**.

![Image of Duo Push and Passcode interface]

3.1. Passcode

**Steps for using Passcode:**

(Note: Network connection on your mobile device is not a must)

i. Click **Enter a Passcode**, you will be asked to enter a passcode which is generated from your Duo Mobile App.

   | ex. 867539 |
   | Log In |

ii. **Open the DUO Mobile App** on your mobile device, then **tap on the key icon** next to your account, a one-time passcode is generated.

![Image of Duo Mobile App with Passcode]

Please note that there is a time limit, e.g. 30 seconds, for using each one-time passcode. Once the passcode is expired, you need to tap the key again to generate a new one.

iii. Back to the application, **enter the passcode** above and then **Log In** the application.
3.2. Duo Push

Steps for using Duo Push:

(Note: Network connection on your mobile device is required)

i. Click Send Me a Push, a notification would be pushed to your device.

![Duo Push](image)

ii. **Open the DUO Mobile App** on your mobile device, then **tap on the notification message**, a Login Request with the information of requesting source is displayed. If the request is initiated by you, **tap Approve**. If it is unexpected, tap Deny.

![Login Request](image)

iii. Once the Approve is tapped, Login Request is **Approved**, and the application should be login automatically.

![Approved](image)

- END -