

How to Implement an Email Subscription and Delivery System

Using COSCUP Newsletter Subscription as an Example

Toomore Chiang / COSCUP

2023/10/28 14:50 - 15:20 Web 应用开发 (Web Application Development)



2023 第八届中国开源年会

What's COSCUP



Conference for Open Source Coders, Users, Promoters

- COSCUP is a technology conference that focuses on open-source related topics.
- It is for developers, users, and promoters (Coders, Users, Promoters) to participate in.
- It is a free and registration-free conference.
- Usually held at the end of **July** or beginning of **August** at the <u>National Taiwan</u> University of Science and Technology (臺灣科技大學).
- Each track of the conference is self-reviewed and self-organized by open source community partners.
- The conference usually attracts 1500 to 2000 attendees.

Open - Open the door



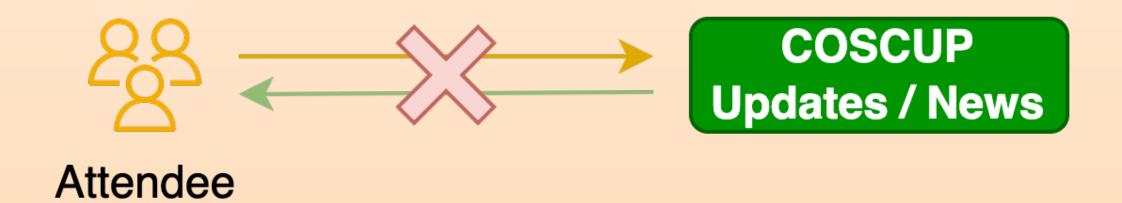
Why we turn to no longer require registration and open to anyone.

- 1. Since 2020, we have aimed to make **COSCUP** more physically open. The door is always open.
- 2. Additionally, we want to know how many people in Taiwan or from other countries who are interested in open source will come to join the annual conference.
- 3. The limit is ourselves. Let's not limit ourselves to 1200; instead, aim for 2000 or more.
- 4. But how do we confirm that "2000+" users have joined us? We encourage them to wear the badges we provide at COSCUP and calculate the number of badges issued.

Open is great, but ...



- 1. ... but it can also disconnect us from potential attendees.
- 2. ... but it may exclude those who still want to follow updates from COSCUP.
- 3. ... but it may not be suitable for announcing major news to everyone.



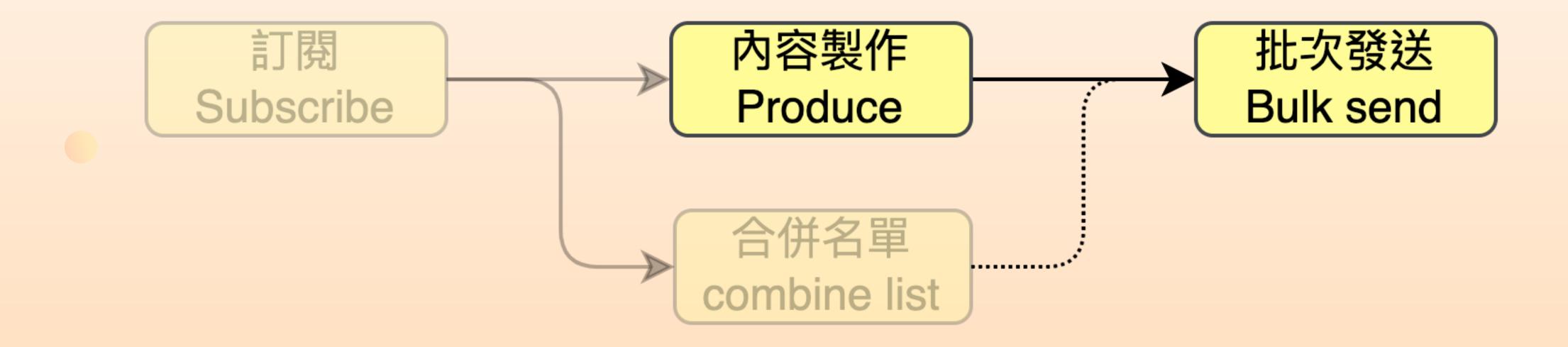


Build from scratch



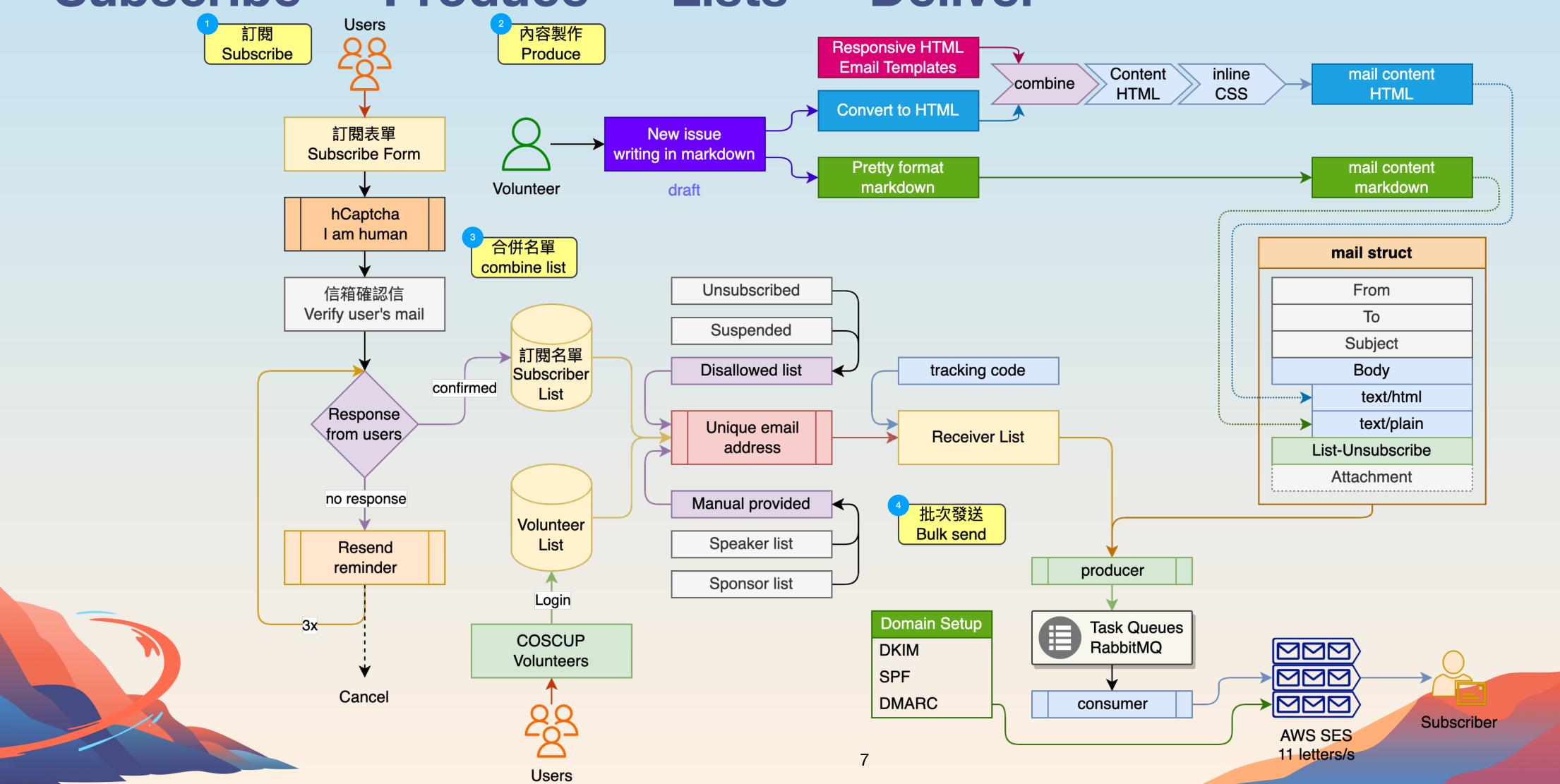
What we had established

Send bulk and user list in csv format file.



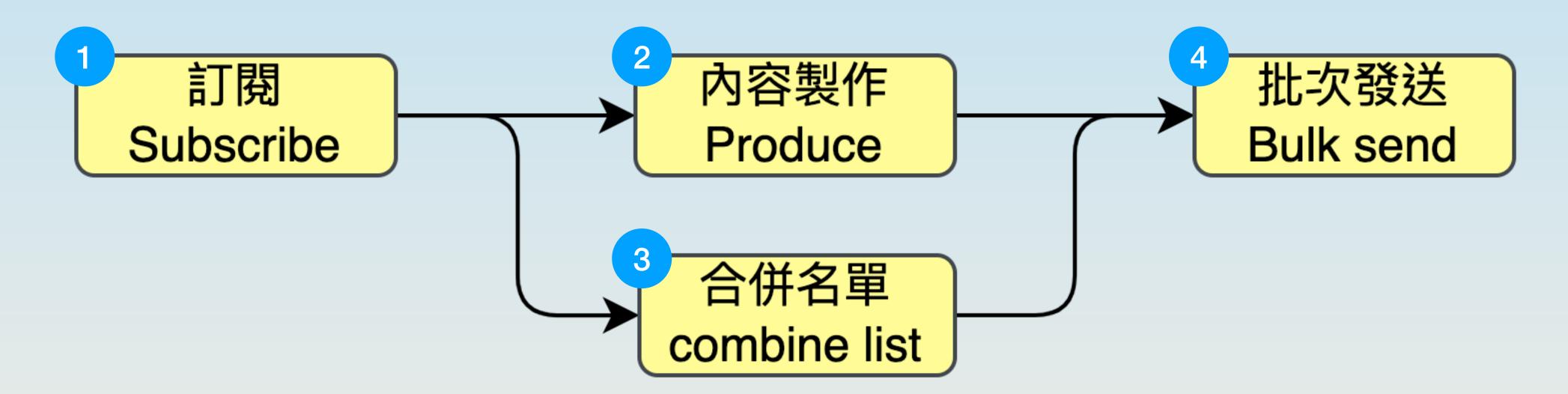
Workflow

Subscribe → Produce → Lists → Deliver



Subscribe to Deliver

There are four parts to the process.



- 1 How to build a subscribe system from scratch.
- 2 How to create email content.
- 3 How to combine user lists from multiple sources.
- 4 How to bulk send emails to users.

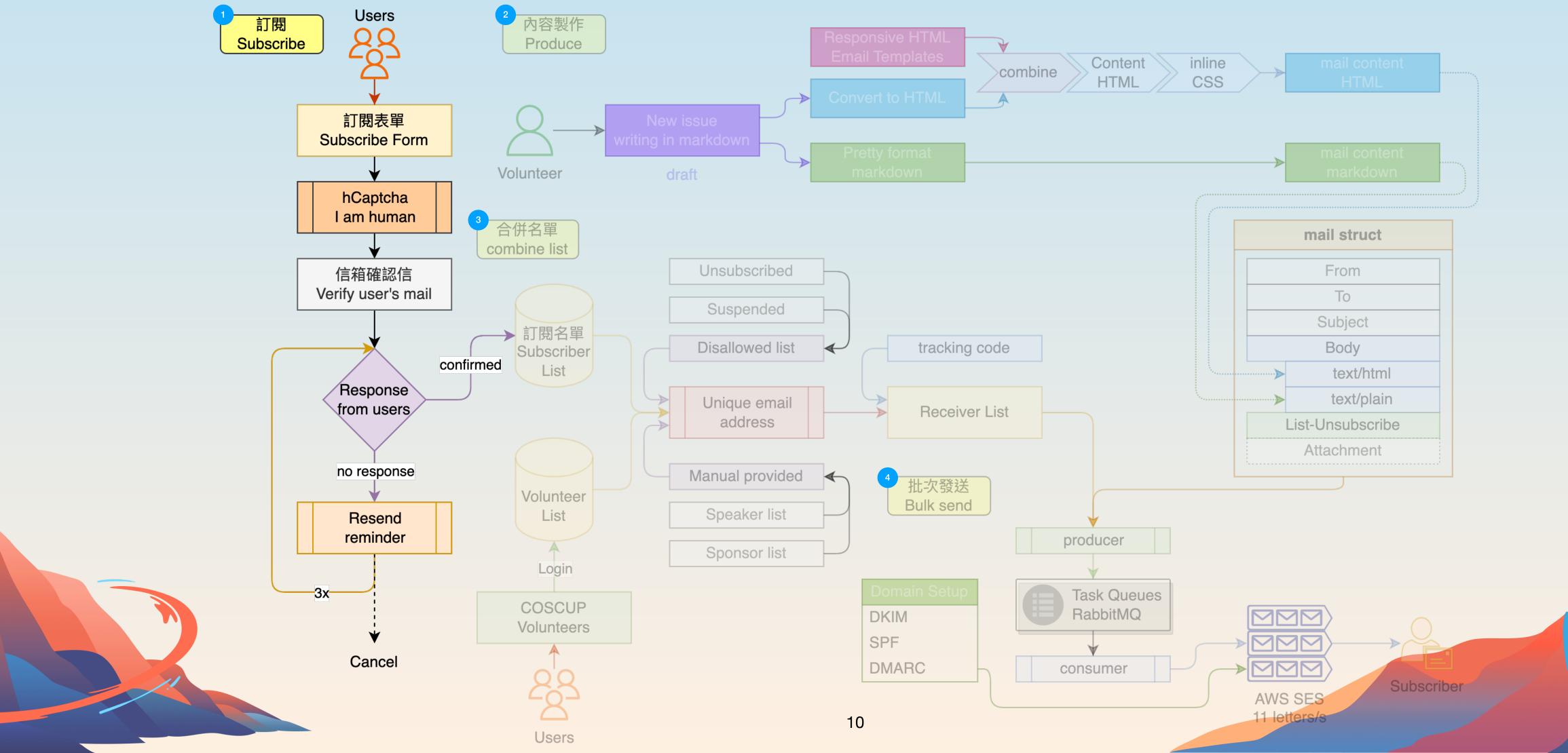


O Subscribe!



Workflow: @ Subscribe!

Subscribe* → Produce → Lists → Deliver



O Subscribe!Subscribe Form

- 1. Email
- 2. Name
- 3. I am human
 - hCaptcha

使用範圍 / Agreememt

訂閱只會收到 COSCUP 活動期間的訊息通知。在訂閱後會有確認信與取消訂閱的方式說明。如有其他問題詢問,可以寄信到 attentee@coscup.org.

We will only send information related to COSCUP activities. After submitting, you will receive a validation email, and the way to unsubscribe. If you have any questions, please email us at attentee@coscup.org.

□ 同意 COSCUP 的使	用規範 / accepted	
Mail		
Name		
我不是機器人 / I am hu	man	
I am human	hCaptcha Privacy - Terms	
	@ 2110 +1 subscribers	

O Subscribe!Verify / Confirm Email

 Send the verify / confirm mail to the subscriber.

● 信箱確認 / Email confirmed

已確認信箱,感謝訂閱。 Email confirmed, thanks.

[Verify] 驗證 COSCUP 電子報訂閱 / Your Subscribtion 母 区 (1592722812) >

COSCUP Secretary <secretary@coscup.org> Jun 21, 2020, 3:00 PM ☆ ← Reply to all : to Toomore ▼



Hi Toomore Chiang,

感謝訂閱 COSCUP 電子報,首先需要確認您的郵件信箱是否正確收到訊息,請透過以下的連結完成確認!

https://secretary.coscup.org/subscriber/verify_mail/ 11807cf4b652f7f3ae3367e18106f01690bf00de06e869d482731e91f9a63735

Please verify your mail address through click this link, thanks

如果您沒有訂閱,可以直接忽略確認信,或是直接回信這封信,將由行政組協助處理。

If you didn't subscribe, please ignore this or reply this mail to COSCUP Secretary Team for help.



1 Subscribe!

Reminder to Confirm

- Reminder the user to confirm.
- Don't bother users, set the limit times for auto-send reminder letters.





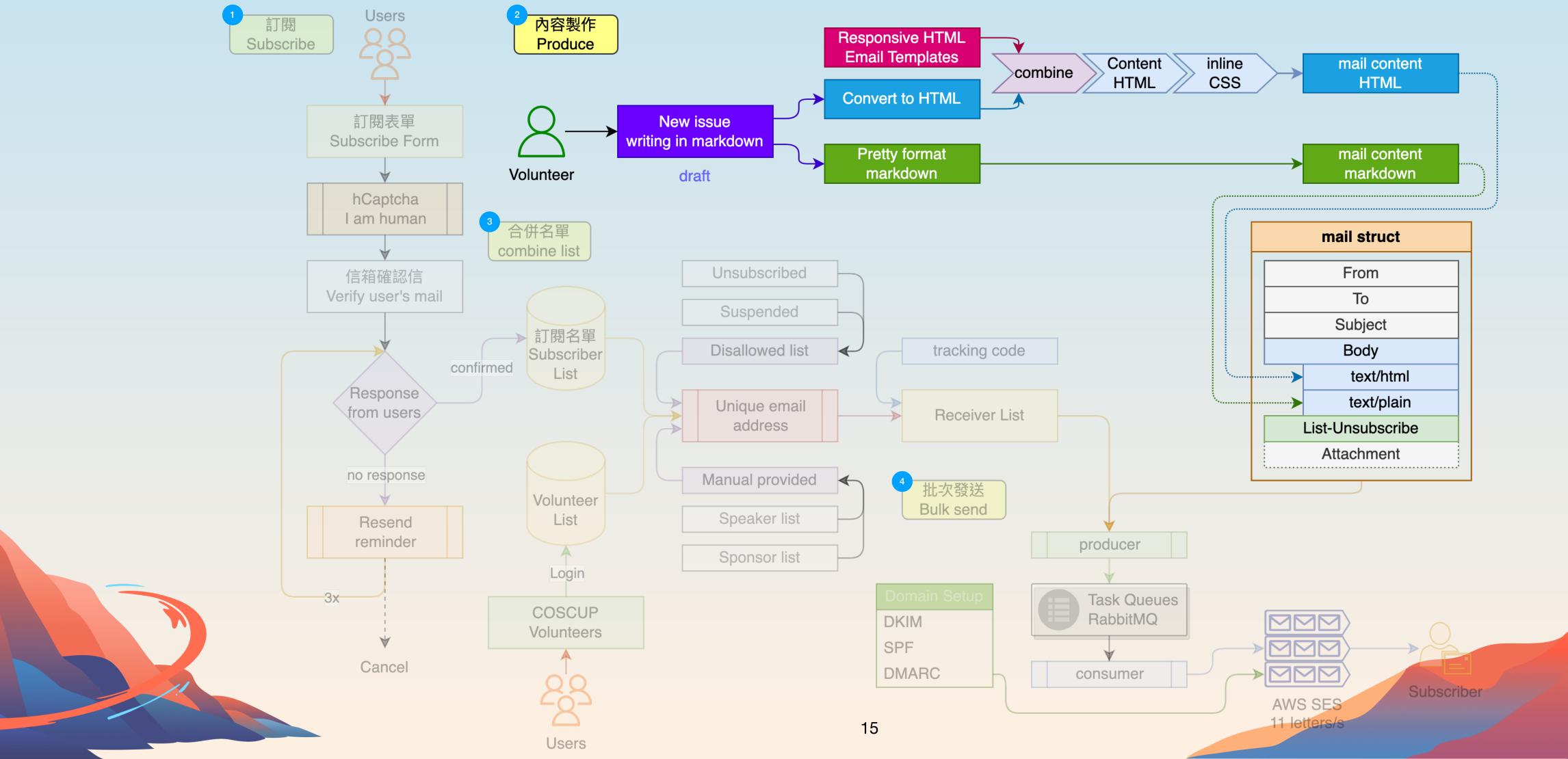


2) Produce



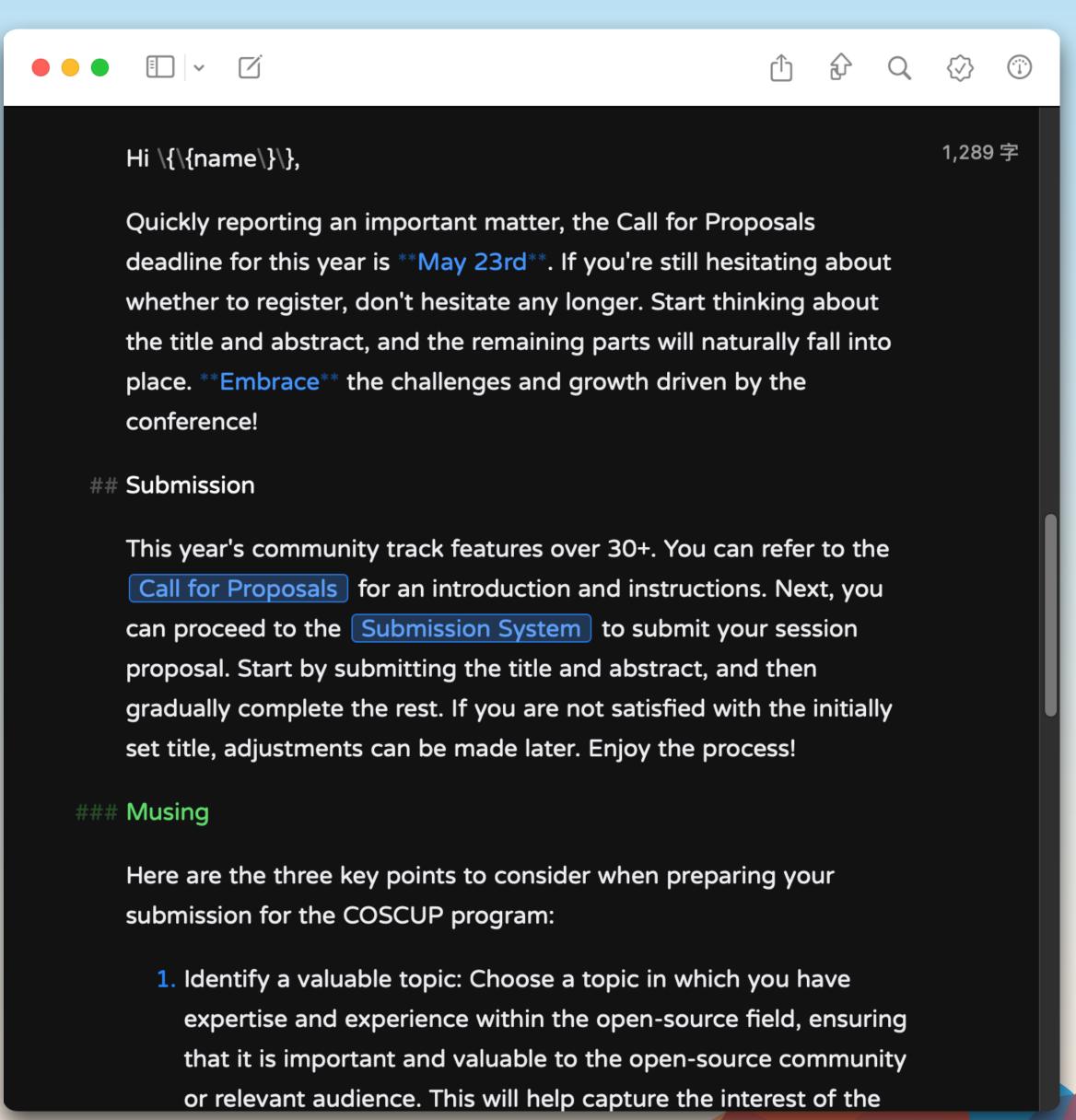
Workflow

Subscribe → Produce* → Lists → Deliver



Produce Markdown

- Write the content in Markdown format.
- At this step, we could force on the content what we want to communicate with subscriber.



Ulysses on macOS

2023 第八届中国开源年会

Produce Email Templates

- Using the responsive email templates to design.
- Don't write this templates from scratch, there are more open source templates can be used.
- Keys: responsive email.

COSCUP2013Secretary-Toolkit / scripts / 2023 / tpl / coscup_2023.html

```
466 lines (432 loc) · 16.8 KB
Code
         Blame
209
210
                   RESPONSIVE AND MOBILE FRIENDLY STYLES
211
              @media only screen and (max-width: 580px) {
212
                table[class=body] h1 {
213
                   font-size: 28px !important;
214
                   margin-bottom: 10px !important; }
215
                table[class=body] p,
216
                 table[class=body] ul,
217
                table[class=body] ol,
218
                table[class=body] td,
219
                 table[class=body] span,
220
                table[class=body] a {
221
                   font-size: 16px !important; }
222
                table[class=body] .wrapper,
223
                 table[class=body] .article {
224
                   padding: 10px !important; }
225
                 table[class=body] .content {
226
227
                   padding: 0 !important; }
                table[class=body] .container {
228
229
                  padding: 0 !important;
230
                  width: 100% !important; }
                 table[slace_bady] made [
224
17
```

2 Produce **Export to md / HTML**

- We need two types of raw text format for email content body.
- Markdown for text/plain.
- HTML for text/html.

	mail struct		
Г	From		
	То		
	Subject		
	Body		
	text/html		
	text/plain		
	List-Unsubscribe	Li	
	Attachment		

COSCUP第20週進度回報

Hi {{name}},

快速報告一件重要的事情,今年的徵稿截止到 5/23,如果還在猶豫要不要報名,不要再

猶豫了,先想題目與摘要

文字≎

ি Markdown

成長!

如何投稿呢

今年的社群議程軌約 30+ <u>系統來提交</u>一份議程投稿 目不滿意,之後也可以作

繆思

當準備投稿 COSCUP 開

- 1. 確定具有價值的主 題,並確保它對於 有助於吸引評審對
- 2. 提供簡明扼要的撬

COSCUP 第 20 週進度回報

Hi {{name}},

快速報告一件重要的事情,今年的徵稿截止到 5/23,如果還在猶豫要不要報名,不要再猶豫了,先想題 目與摘要,剩下的部分就會自然而然的產生出來了!研討會驅使的挑戰與成長! ## 如何投稿呢?

今年的社群議程軌約 30+,可以先參考[徵稿辦法](https://blog.coscup.org/2023/04/ coscup-2023-coscup-2023-call-for.html)中的介紹與說明,接下來可以進入到[徵稿系統] (https://pretalx.coscup.org/coscup-2023/locale/set?locale=zh-tw&next=/ coscup-2023/cfp%3F)來[提交](https://pretalx.coscup.org/coscup-2023/submit/)— 份議程投稿。可以先提交**題目**與**摘要**,接下來再慢慢完成它。如果設定的題目不滿意,之後也 可以作調整喔!

繆思

當準備投稿 COSCUP 開源人年會議程的主題與摘要時,以下是三個重要的要點

- 1. 確定具有價值的主題:選擇一個你在開源領域具有專業知識和經驗的主題,並確保它對於開源社群或
- 2. 提供簡明扼要的摘要:撰寫一個簡潔而有吸引力的摘要,清楚概括你的主題、內容和預期結果。確保
- 和可信度,讓評審相信你有能力交付一個有價值的演講。如果有相關的論文、演示文稿或博客文章,提供 相關連結或附件亦可增加你的可信度。

藉由這些重要要點,你可以準備一個有競爭力且引人注目的投稿,增加成功被選中的機會。祝你投稿順 利!如果還是想不太到接下來該怎樣設定主題或是分享的範圍,這裡有一個小工具可以協助你[參考] (https://volunteer.coscup.org/schedule/2023) •

擺攤組

擺攤組預計 5/28 在 [OSC2023 名古屋](https://event.ospn.jp/osc2023-nagoya/ exhibit) 擺攤推廣 COSCUP,之後會沿著東海道駕車前往東京(可能在 6/1 抵達)。我們也想與在日 本工作的夥伴們見個面、吃個飯聚聚,如果您或是您有認識的朋友在日本工作,非常歡迎傳達這個吃飯的

邀約,如有任何問題或是想要和擺攤組吃飯聊天的,可以回信到擺攤組的專用信箱: booth@coscup.org •

招募

目前場務組、製播組、紀錄組都還需要您的熱情投入,快點加入我們吧!

- 製播組:需要會操作 OBS 且活動二日能到場支援。或是於大會結束後協助影片轉檔、剪輯後製。
- 紀錄組:大會活動紀錄,需自備攝影設備與作品輸出能力。
- 場務組:與小組長合作完成大會場地庶務、餐飲等事項。

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ProduceInline the CSS into HTML

- Combine the CSS into HTML tags.
- To make sure most of the mail clients could recognize the css layout effects in HTML inline.
- ... and remove unused css definition.

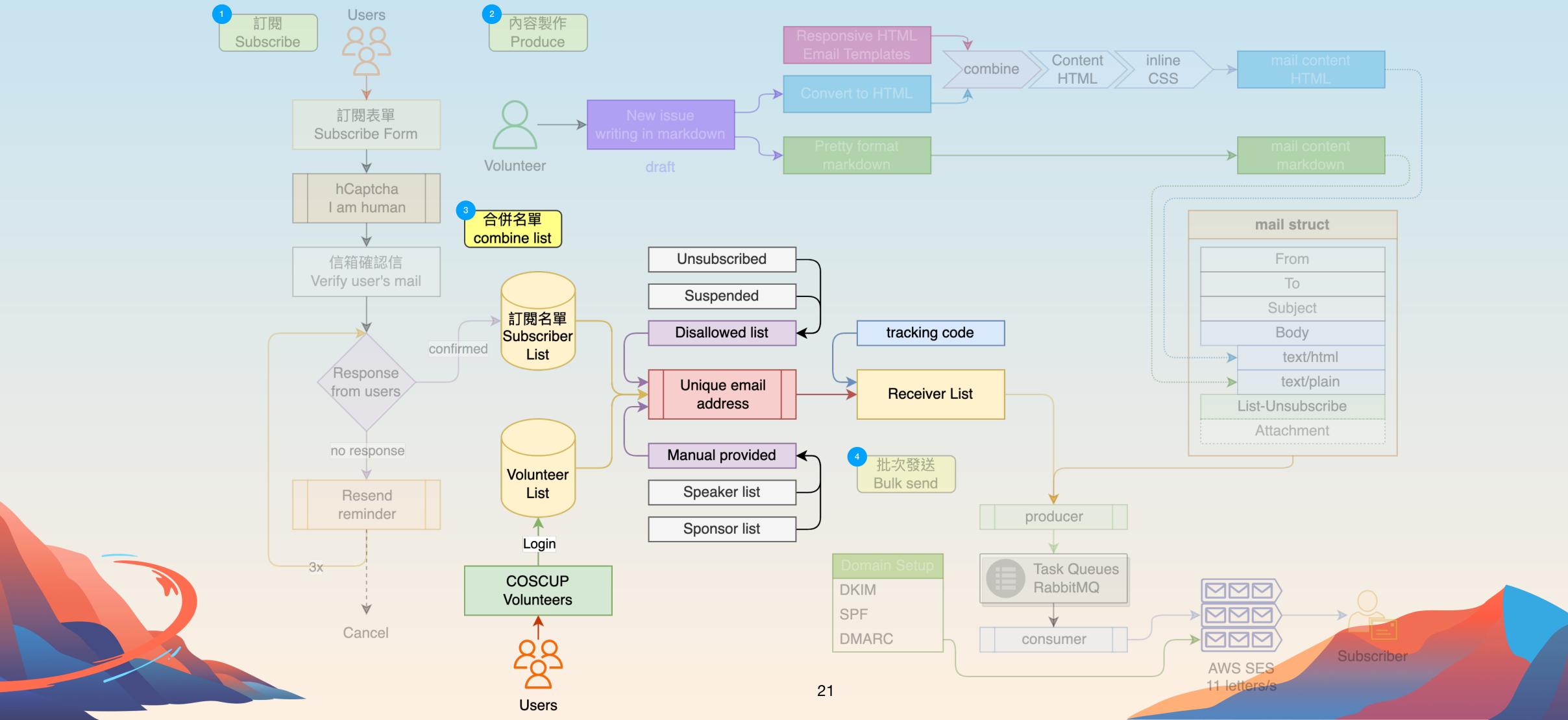
```
<body class="" style="background-color:#fffffff;font-family:sans-serif;-webkit-1</pre>
 <table border="0" cellpadding="0" cellspacing="0" class="body" style="border-
   </1</pre>
   <div class="content" style="box-sizing:border-box;display:block;margin:</pre>
     <!-- START CENTERED WHITE CONTAINER -->
     <span class="preheader" style="color:transparent;display:none;height:</pre>
     <table class="main" style="border-collapse:separate;mso-table-lspace:
      <!-- START MAIN CONTENT AREA -->
      <table border="0" cellpadding="0" cellspacing="0" style="border
          <td style="font-family:sans-serif;font-size:14px;vertical-a
            <table border="0" cellpadding="0" cellspacing="0" class="
             <td align="center" style="font-family:sans-serif;fc
                <table border="0" cellpadding="0" cellspacing="0"
```





Workflow

Subscribe → Produce → Lists* → Deliver



Case with "+"

- User's mail using '+' for splitting the purpose.
- The same email has variant foramt.

COSCUP Secretary <secretary@coscup.org>

Toomore Chiang <toomore0929+coscup@gmail.com>

Jun 21, 2020, 3:00 PM

[Verify] 驗證 COSCUP 電子報訂閱 / Your Subscribtion

COSCUP Secretary <secretary@coscup.org>

Toomore Chiang <toomore0929+coscup2@gmail.com>

Jun 22, 2020, 1:09 PM

[Verify] 驗證 COSCUP 電子報訂閱 / Your Subscription

(1592802570)

mailed-by: amazonses.com

signed-by: coscup.org

Standard encryption (TLS) <u>Learn more</u>

Important mainly because it was sent directly to you.



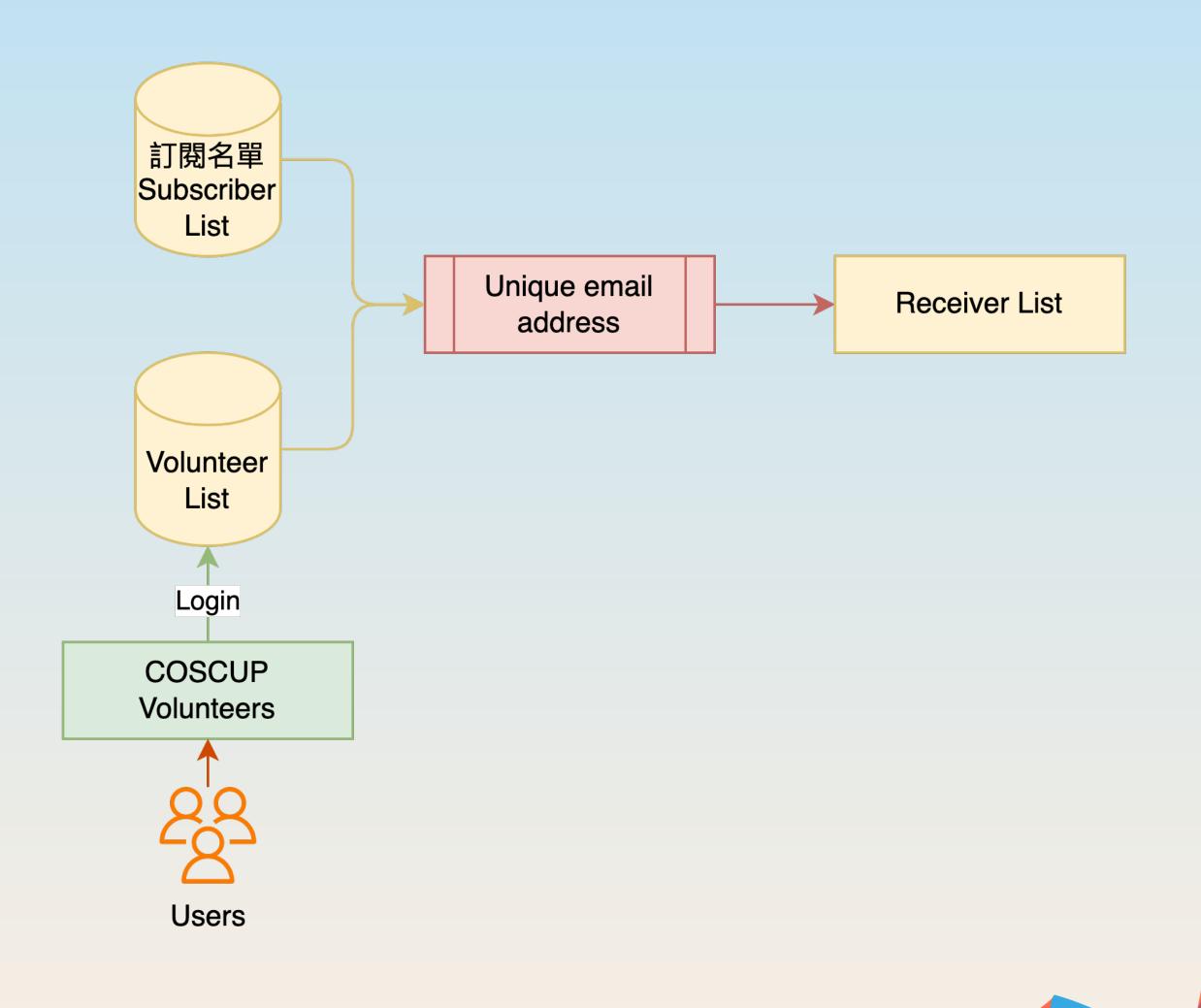
Unique the email format

- 1. "foo.bar+coscup@example.com"
 - Remove +tag.
- 2. "foo.bar@example.com"
 - Remove "."
- 3. "foobar@example.com"
 - Unique!

```
145
            @staticmethod
            def format_mail(mail):
146 🗸
                '''format mail
147
148
                   clean '.', '+', lower
149
150
                mail = mail.lower().strip()
151
                if '+' in mail:
152
                    mail = re.sub(r'(\+[a-z0-9]+)@', '@', mail)
153
154
                _mail = mail.split('@')
155
156
                if '.' in _mail[0]:
157
                    return '%s@%s' % (_mail[0].replace('.', ''), _mail[1])
158
159
                return mail
160
```

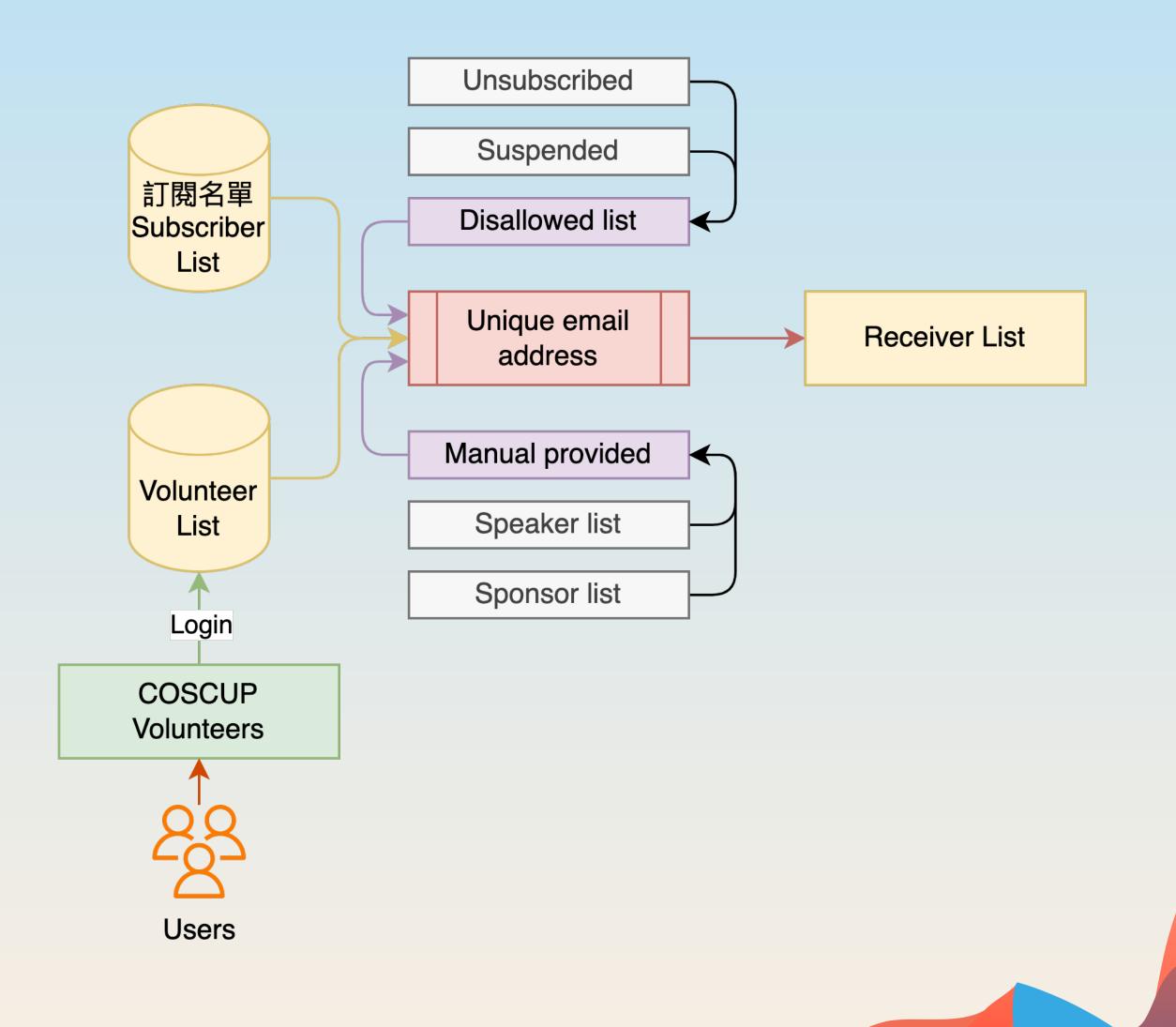
From two database

- Combine the users list from the subscriber and volunteers database.
- Unique the emails, filter out the same users.



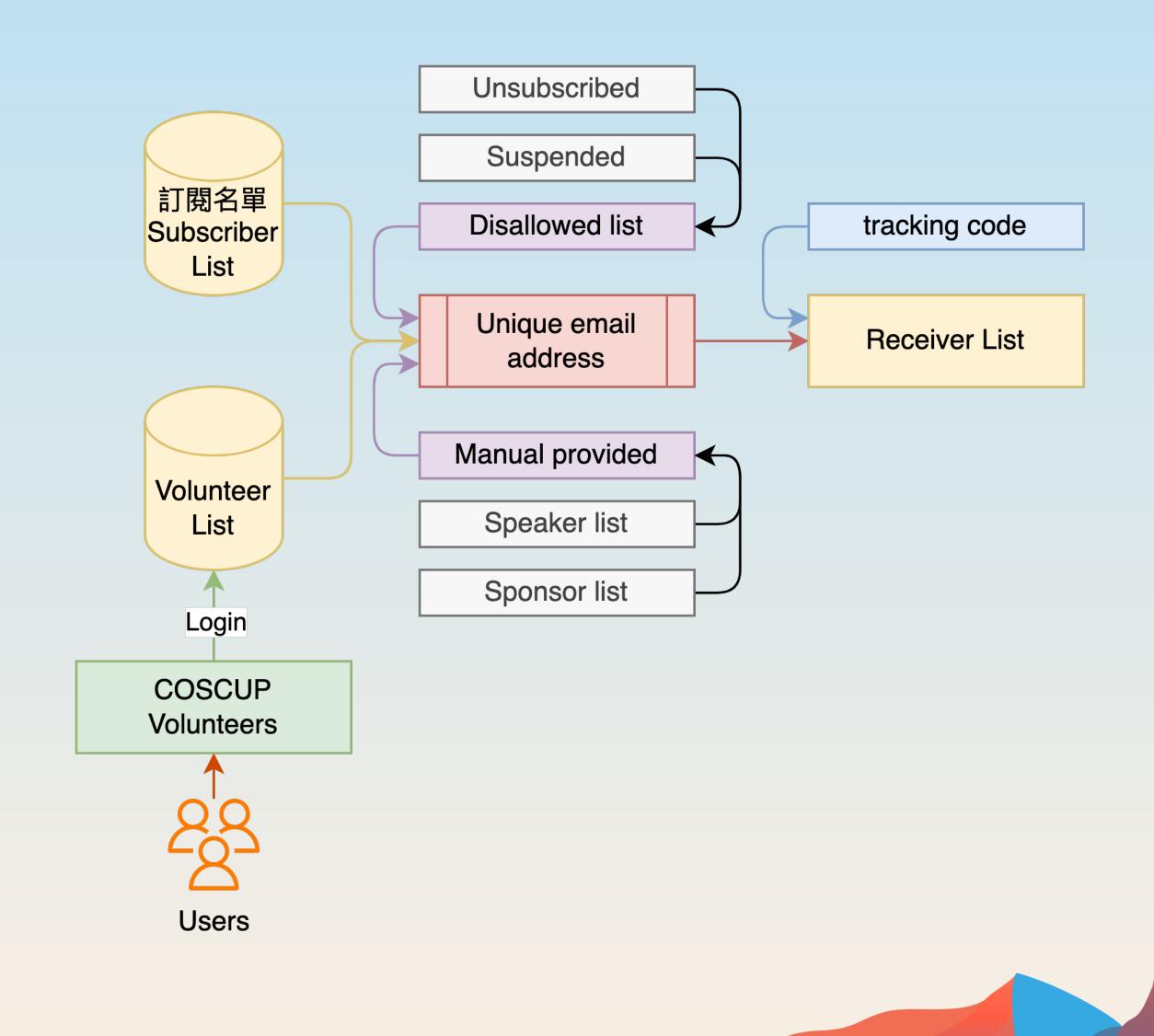
Filter and Append

- Filter out the unsubscribed and suspended user account.
- Append the sponsors and speakers list of this or last year.



Append the tracking code

- The code for mail-open tracking.
- hash = sha256({secret}, {args})
- url = {domain}/c/{hash}?{args}
-
 - Tips: The backend must return 404 http status code.
 - In this way, we could track the numbers of opened, not just opened or not.



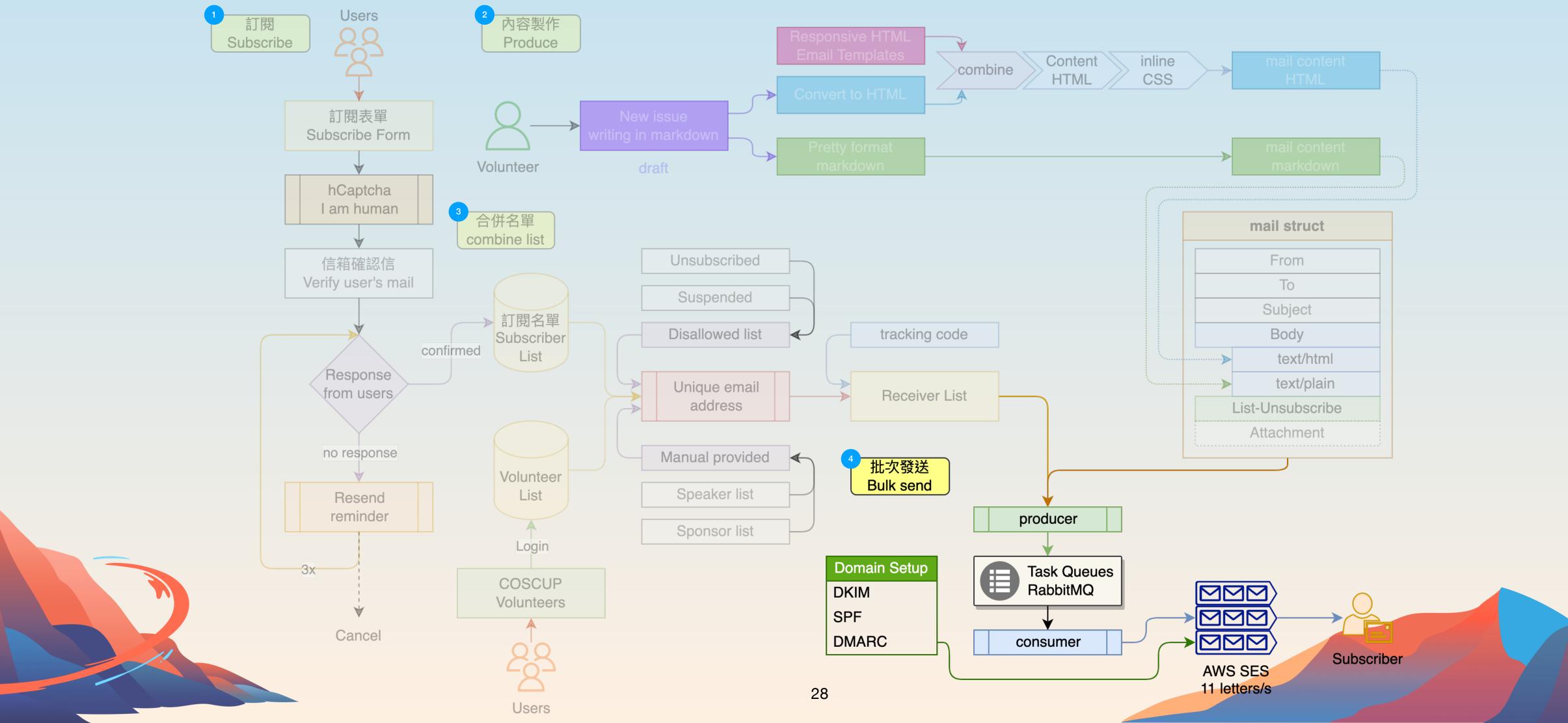


4 Deliver / Bulk Send

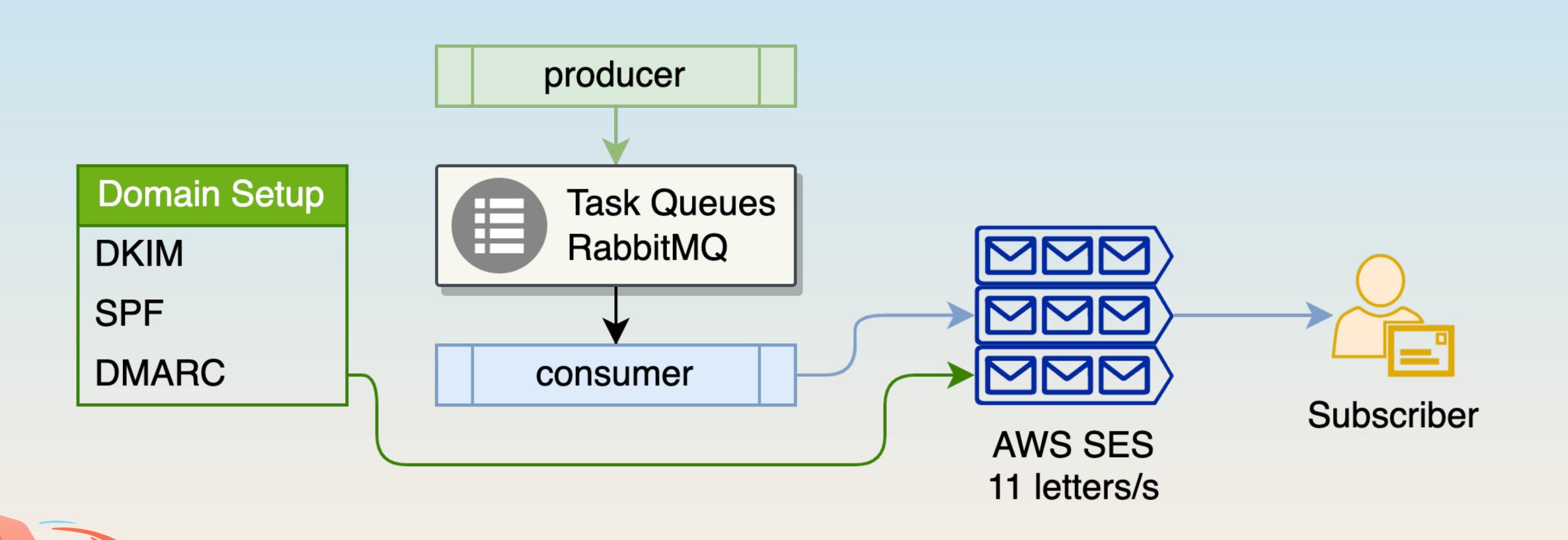
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Workflow

Subscribe → Produce → Lists → Deliver*



Deliver / Bulk SendWhat's SPF, DKIM, DMARC





What's SPF



- The Sender Policy Framework (SPF) record basically tells the world which **hosts** or **IPs** are allowed to send email for your domain.
- If not in the allowed list, the mail will to be as spam.
- "v=spf1 include:amazonses.com include:_spf.google.com ?all" (more details.)
 - all: Fails authentication. The server with matching IP address is not authorized to send for the domain. The SPF record doesn't include the sending server IP address or domain so messages won't pass authentication.
 - ~all: Softfails authentication. It's unlikely that the server with matching IP address is authorized to send
 for the domain. The receiving server will typically accept the message but mark it as suspicious.
 - ?all: Neutral. Neither passes nor fails authentication. The SPF record doesn't explicitly state that the IP address is authorized to send for the domain. SPF records with neutral results often use ?all.

4 Deliver / Bulk Send

What's DKIM



- Domain Keys Identified Mail (DKIM) is a method of email authentication that cryptographically verifies if an email was sent by trusted servers and has not been tampered with.
- Basically, when a server sends an email using your domain, it will calculate an encrypted hash of the email contents using a private key (that only trusted servers know) and add it to the email headers as a DKIM signature.
- The receiving server will verify the email contents by looking up the corresponding public key in your domain's DNS records, decrypting the encrypted hash, and calculating a new hash based on the email contents it received. It then compares the decrypted hash to the new hash. If there is a match, then the email has not been tampered with, and so DKIM passes. Otherwise, DKIM fails, and the email is treated with suspicion.

4 Deliver / Bulk Send What's DKIM

 The <u>receiving server</u> will verify the email contents by looking up the corresponding public key in your domain's DNS records, decrypting the encrypted hash, and calculating a new hash based on the email contents it received. It then compares the decrypted hash to the new hash. If there is a match, then the email has not been tampered with, and so DKIM passes. Otherwise, DKIM fails, and the email is treated with suspicion.

DKTM—Signature: v=1; a=rsa—sha256; q=dns/txt; c=relaxed/simple; s=o6odsjgst6o5osct=1684458597; h=Content—Type:MIME—Version:From:To:Subject:List—Unsubscribe:Messacbh=N6EoZv+4CVQ3uG6XHT0egzd7nJlk4ykvbuFCzsr70dU=; b=RpsWYu6s9LpaMXAomY5c39ES1+d1xqdn7QoZLvgXB+OVyhCca9YRSpL6+DlfQ/nYn37Hk6CNcH6ko3F3PCMpJWqI2K1vVkeeGyNPoPY+vqvmLKU00rjX0TL0PyLhiE/lEFE vjMs1ya/3L5qrDKIM—Signature: v=1; a=rsa—sha256; q=dns/txt; c=relaxed/simple; s=224i4yxa5dv7c2; d=amazonses.com; t=1684458597; h=Content—Type:MIME—Version:From:To:Subject:List—ID:Date:Feedback—ID; bh=N6EoZv+4CVQ3uG6XHT0egzd7nJlk4ykvbuFCzsr70dU=; b=HVzMUJ5LJLpffEDFPw4EnW3PoIcxAZkpxwepTxcRjx5hsIdRy6zs8HzRTPaPTW0t ISHkO7YcEkzbeQDkzn2u5VQcQilxcK0goUVduQ3s8tj6A4QCqvWbsJj/HU3+Kkpj9LQ 6tt0ijW0X0+ZFContent—Type: multipart/mixed; boundary="==========0628428324548072302=="MIME—Version: 1.0 From: "COSCUP Volunteer 志工服務" <volunteer@coscup.org>

4 Deliver / Bulk Send What's DMARC

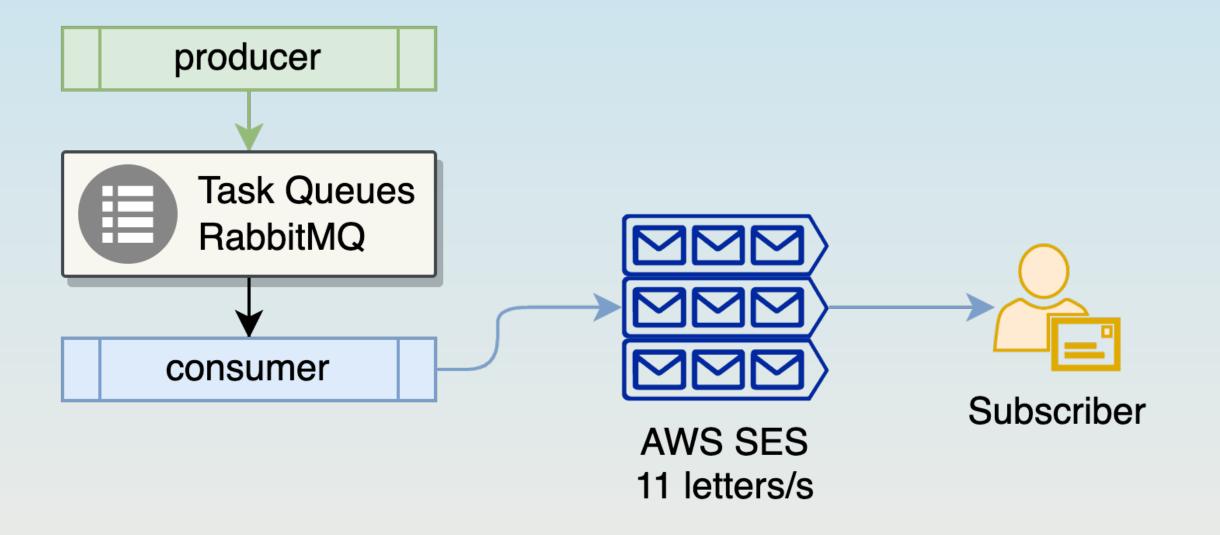


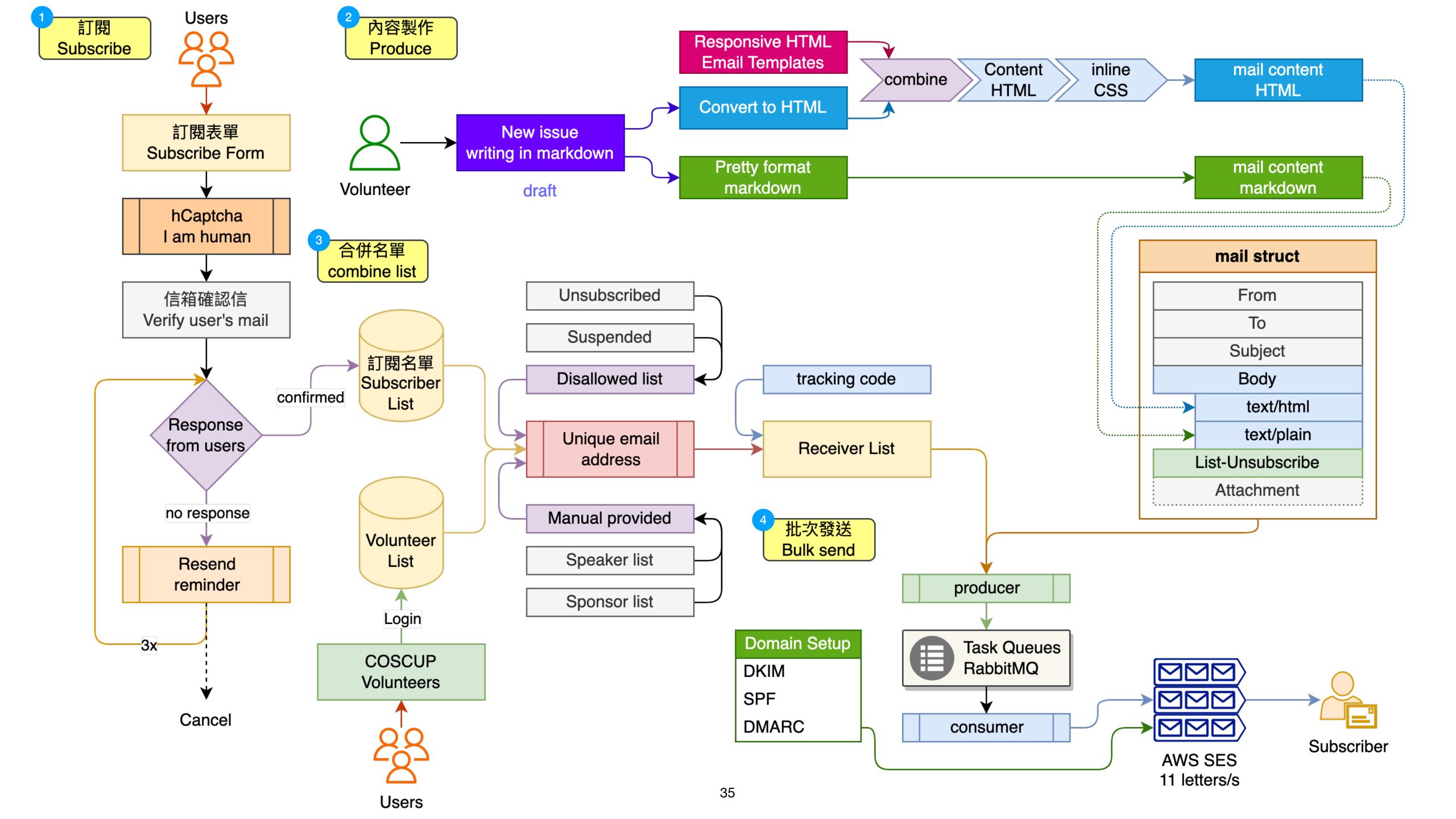
- How the receiving server deals with an email that fails the checks?
 - Domain-based Message Authentication, Reporting, and Conformance (DMARC) allows the <u>domain owner</u> to specify what happens with <u>failed</u> <u>emails</u> and get feedback when they arrive. Basically, there are three actions receiving servers can take if BOTH SPF and DKIM checks fail: **none**, quarantine, and reject.
 - This setting are more complicated, the more details could refer to: https://support.google.com/a/answer/10032169

4 Deliver / Bulk Send

Queue / RabbitMQ

- The bulk send still has limited, AWS SES 11 letters per second.
- Our codebase is Python:
 Celery → RabbitMQ → AWS SES
- Launch more multi-workers to force the queue limit up to 11 letters/s.
 - Fail of limit, retry and back to queue.
 - 5000 mails => 7.57 mins







6 Tips and more







开源II kaiyuanshe

Why we still build the system or services?

- For the privacy, keep and maintain the users' list in safety.
- Compared or combined the data in consistent.
- And found the best or better way to do open-source things.

6 Tips and more

How to explain the numbers of opened?

- The large numbers of opened mail may open by many readers.
 - The mail has been forwarded.
 - The original user help us to share the mail to more users.
 - Friend → Friends
 - Community / Groups
 - Teacher → Students

1	151.	87562887	7	4	映			
	152.	4ae56f46		1				
	153.	76f08aaa		2				
	154.	5d57e284	1	.3				
	155.	4157a5af		3				
	156.	af5b8f41		4				
L	157.	ad8110ae 1204.		-	19/2023, 06:55 PM	5d57e284	220.130.197.246	Mozilla/5.0 (Ma AppleWebKit/6
			1205.		19/2023, 06:53 PM	5d57e284	220.130.197.246	Mozilla/5.0 (Ma AppleWebKit/6
	5/10	2/2023 54	57028/	17	2 226 160 2	Mozilla/5 0		

1457.	5/19/2023, 10:48:15 AM	5d57e284	172.226.160.2	Mozilla/5.0
1458.	5/19/2023, 10:48:09 AM	c32ed2f1	74.125.209.68	Mozilla/5.0 (Windows NT 5.1; rv:11.0) Gecko Firefox/11.0 (via ggpht.com GooglelmageProxy)
1459.	5/19/2023, 10:47:23 AM	5d57e284	220.130.197.246	Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) SparkDesktop/3.4.3 Chrome/110.0.5481.104 Electron/23.1.1 Safari/537.36
1460.	5/19/2023, 10:47:22 AM	5d57e284	220.130.197.246	Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) SparkDesktop/3.4.3 Chrome/110.0.5481.104 Electron/23.1.1 Safari/537.36

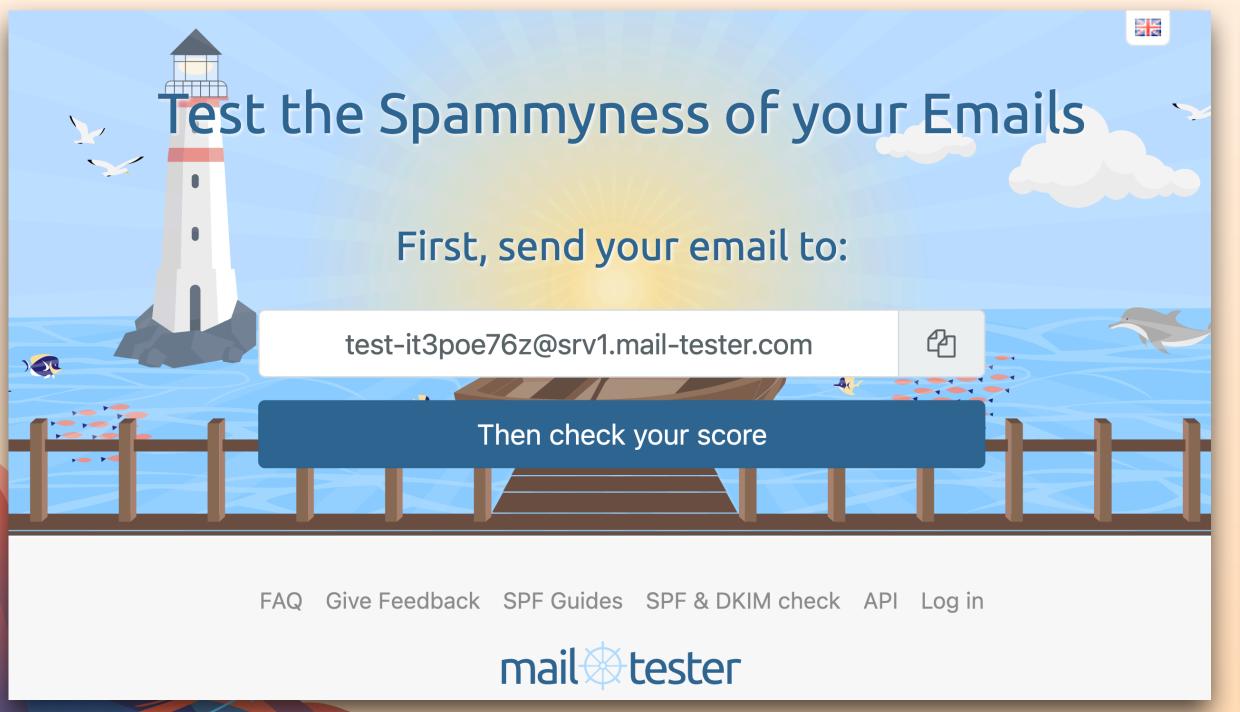


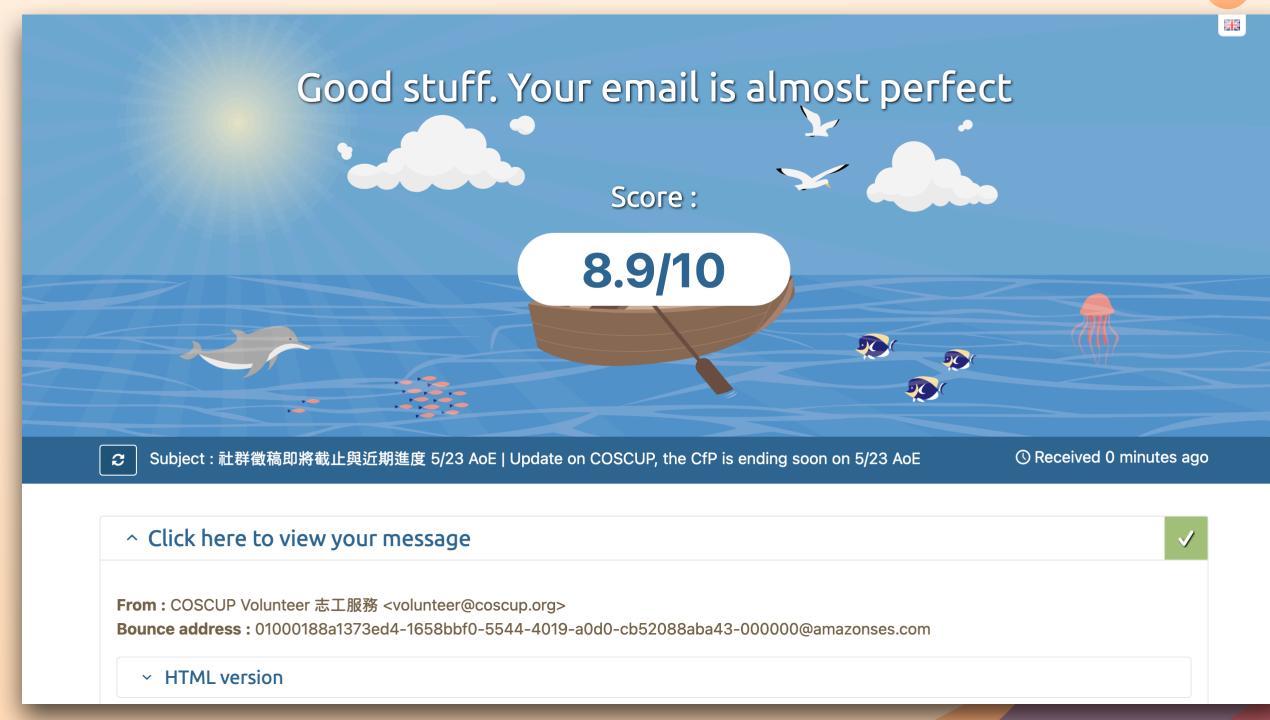
6 Tips and more



How to test the mail to prevent being spams? (1/2)

 Check your sender setting or the mail content is more quality. Send the mail to the unique email provided by <u>Mail-Tester</u>.









How to test the mail to prevent being spams? (2/2)

^ SpamAssassin thinks you can improve				
	us spam filter SpamAssassin. Score: -0.1. elow -5 is considered spam.			
-0.1	DKIM_SIGNED	Message has a DKIM or DK signature, not necessarily valid This rule is automatically applied if your email contains a DKIM signature but other positive rules will also be added if your DKIM signature is valid. See immediately below.		
0.1	DKIM_VALID	Message has at least one valid DKIM or DK signature Great! Your signature is valid		
0.1	DKIM_VALID_AU	Message has a valid DKIM or DK signature from author's domain Great! Your signature is valid and it's coming from your domain name		
0.1	DKIM_VALID_EF	Message has a valid DKIM or DK signature from envelope-from domain		
-0.249	HEADER_FROM_DIFFERENT_DOMAINS	From and EnvelopeFrom 2nd level mail domains are different		
-0.001	HTML_MESSAGE	HTML included in message No worry, that's expected if you send HTML emails		

6 Tips and more

How to setup the unsubscribe link or by Listunsubscribe headers?

- Let's the subscriber has OPT-OUT to unsubscribe.
- Add the `List-unsubscribe` into the mail headers in `<mailto:volunteer+unsubscribem e@coscup.org>`, the mail client has supported the processing for users.

from: COSCUP Volunteer 志工服務

<volunteer@coscup.org>

to: "toomore0929@gmail.com"

<toomore0929@gmail.com>

date: Jun 10, 2023, 1:32 AM

subject: 2023.05.19 社群徵稿即將截止與近期進度 | Update

on COSCUP, the CfP is ending soon on 5/23 AoE

mailed-by: amazonses.com

signed-by: coscup.org

unsubscribe: Unsubscribe from this sender

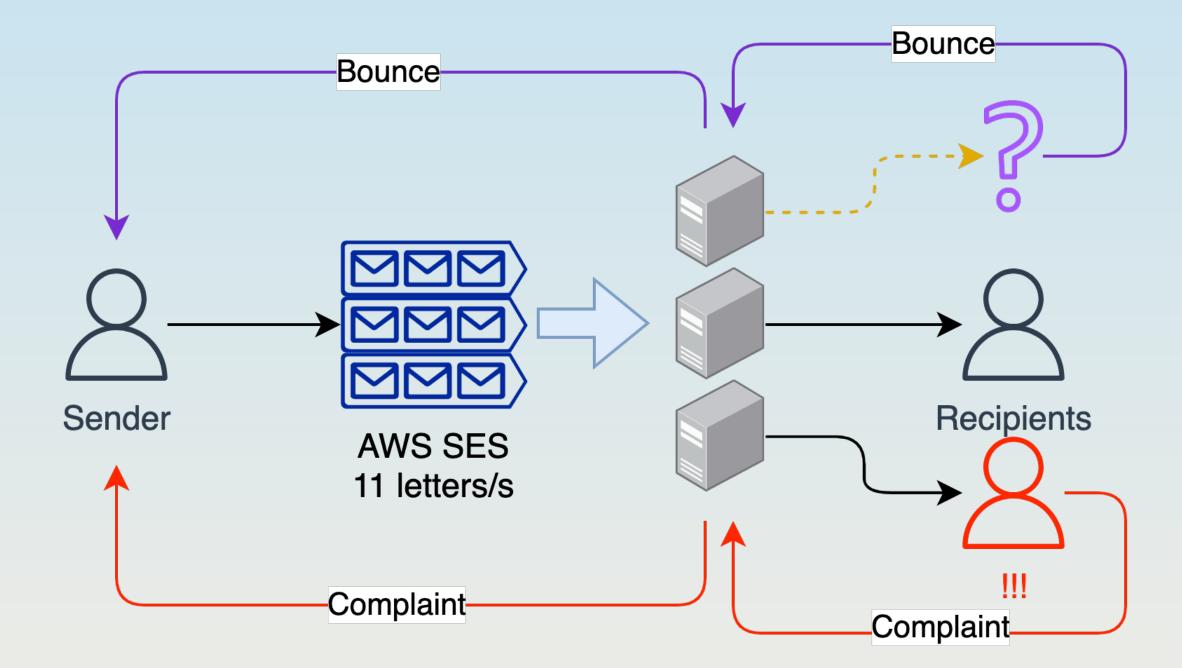
security: 🖻 Standard encryption (TLS) Learn more

Important mainly because it was sent directly to you.

6 Tips and more

What is sending reputations?

- bounce rate / complaint rate
 - bounce: like account not existed or recipient's mail server permanently rejects the message.
 - complaint: recipient reports to their email provider that the message they received was unsolicited or unwanted.



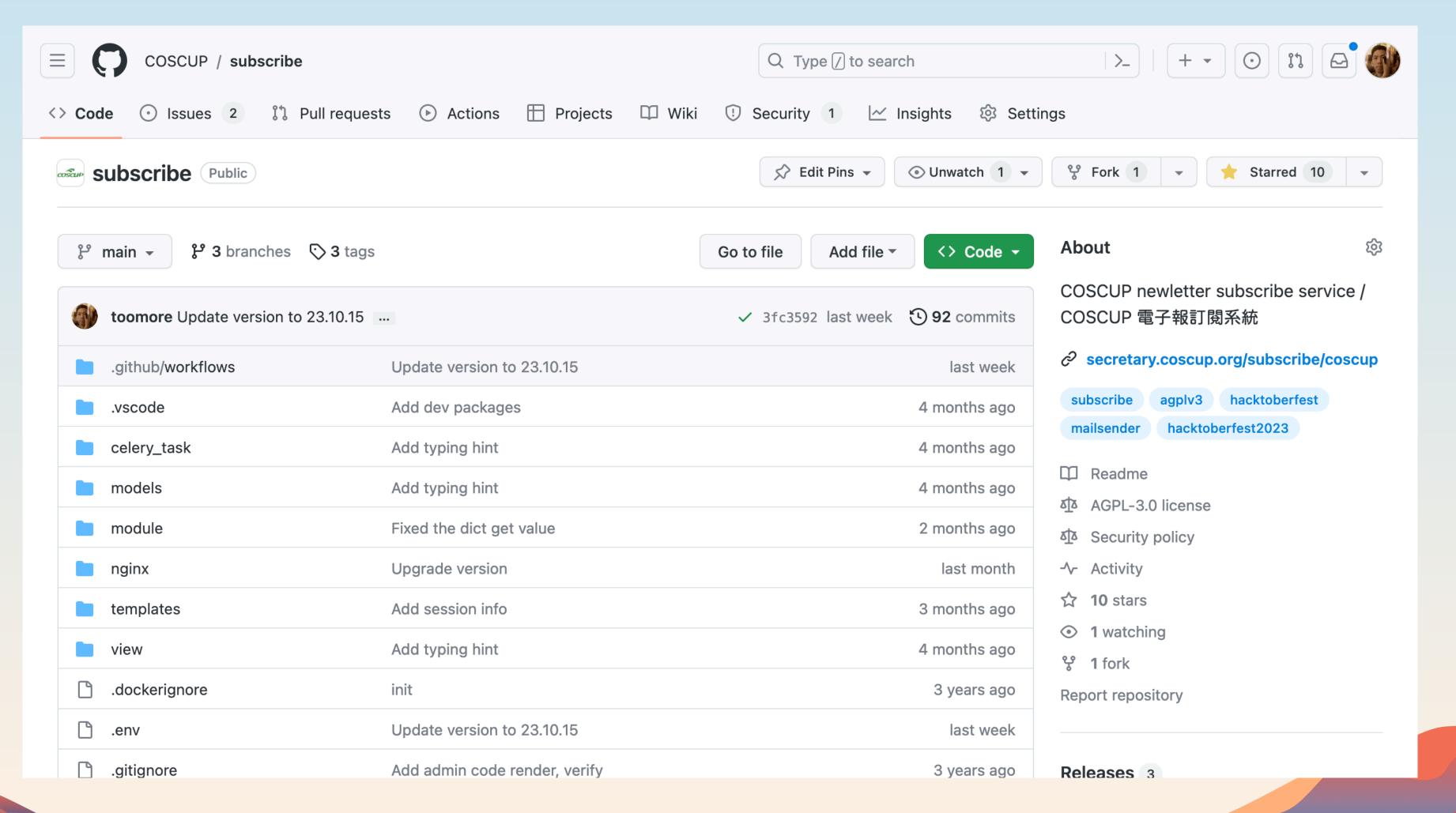


Open Source



Source code has been published

https://github.com/COSCUP/subscribe



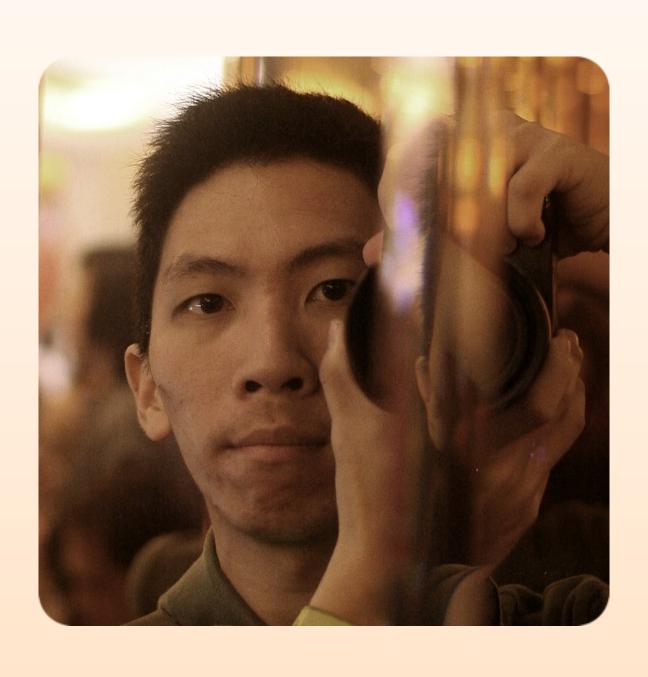


www.www.aml?





- Toomore Chiang
- From Kaohsiung, Taiwan.
- First time participated COSCUP at 2008.
 - Leader of the secretary team (行政組)
- COSCUP 2023 → 07/29 07/30 Taipei.
- Open Culture Foundation 開放文化基金會 OCF.TW
 Technical Support Lead.







QUESTIONS?

WeChat Official Account: 开源社KAIYUANSHE

WeChat Channels: 开源社KAIYUANSHE

Weibo: 开源社

Bilibili: 开源社KAIYUANSHE

Jianshu: 开源社

TouTiao: 开源社

Facebook: KaiyuansheChina

Twitter: 开源社KAIYUANSHE

欢迎扫码打卡 积分可兑换对应礼品哟!





