The Future of IDN ccTLDs

TWNIC

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TWNIC’s IDN ccTLD

- TWNIC is the registry of TW, 台湾 and 台湾
  - 台灣 (xn--kpry57d) is the Traditional Chinese of Taiwan, and 台灣 (xn--kprw13d) is the Simplified Chinese

- 台灣 and 台灣 were delegated to TWNIC at IDN ccTLD fast track, the two IDN ccTLDs are variant TLDs, the resolution of the two TLDs must be the same destination
TWNIC’s IDN ccTLD

- IDN.tw, IDN.台灣 and IDN.台灣 are bundle before Jan 7th this year
- After Jan 7th, then only IDN.台灣 and IDN.台灣 are bundle
How to implement same destination

- RFC 6672: DNAME Redirection in the DNS
- Registrant only setup Traditional Chinese DNS
- All Simplified Chinese resolution will DNAME or CNAME to Traditional Chinese
Architecture

Cache server

Users

.(root)

xn—kprw13d. (台灣.)

xn—kpyr57d. (台灣.)

IDN.xn—kpyr57d. (IDN.台灣.)

DNAME
Traditional Chinese DNS resolution

```
snw@ip-172-31-21-137 ~]$ dig www.買網址.台灣
; <<>> DiG 9.9.4-RedHat-9.9.4-74.amzn2.1.2 <<>> www.買網址.台灣
;; global options: +cmd
;; Got answer:
;; ->>>HEADER<<< opcode: QUERY, status: NOERROR, id: 1336
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
www.買網址.台灣. IN A

;; ANSWER SECTION:
www.買網址.台灣. 14 IN A 113.196.231.224

;; Query time: 0 msec
;; SERVER: 172.31.0.2#53(172.31.0.2)
;; WHEN: Sun Feb 09 21:44:52 CST 2020
;; MSG SIZE  rcvd: 75

[snw@ip-172-31-21-137 ~]$ 
```
Simplified Chinese DNS resolution

```bash
[snw@ip-172-31-21-137 ~]$ dig www.买网址.台湾.

; <<>> DiG 9.9.4-RedHat-9.9.4-74.amzn2.1.2 <<>> www.买网址.台湾.
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 57759
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;www.买网址.台湾.

;; ANSWER SECTION:
台湾. 2422 IN DNAME 台湾.
www.买网址.台湾. 0 IN CNAME www.买网址.台湾.
www.买网址.台湾. 3600 IN A 113.196.231.224

;; Query time: 121 msec
;; SERVER: 172.31.0.2#53(172.31.0.2)
;; WHEN: Sun Feb 09 21:46:12 CST 2020
;; MSG SIZE  rcvd: 166
```

Variant IDN TLD

- ICANN Board resolved on 25 September 2010 that "no variants of gTLDs will be delegated ... until appropriate variant management solutions are developed."
- Root Zone Label Generation Rules is almost finished, the second round new gTLD and following IDN ccTLD will support variant TLD
- The next question is how to keep same destination in those variant TLDs, by policy or technical solution?