



Chinese Domain Name Universal Acceptance Test

Yaling Tan

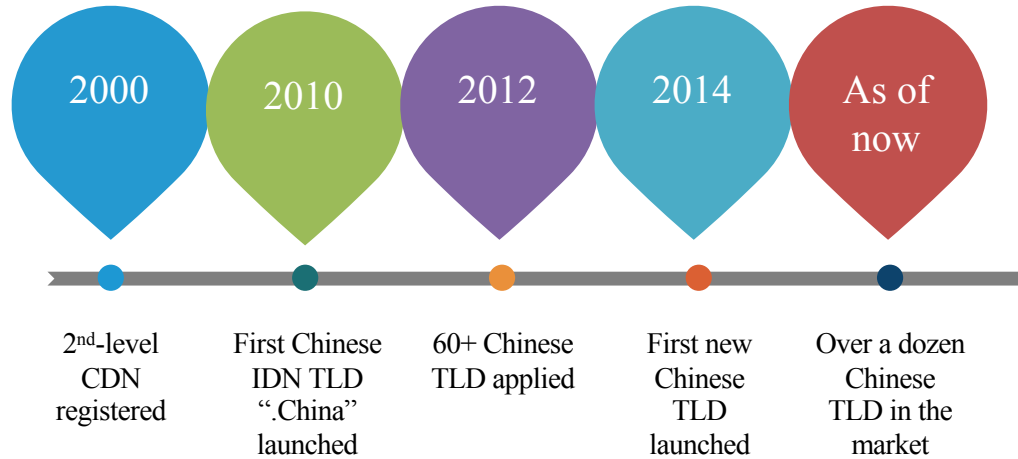
Beijing Teleinfo Network Technology Company, Ltd.

Teleinfo

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Background

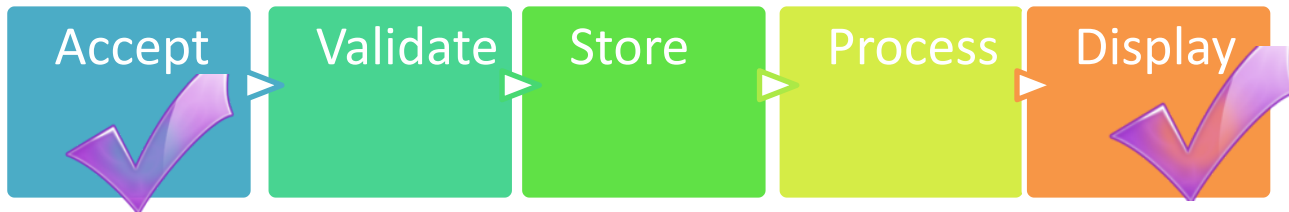


Chinese Domain names (CDN) has been in the market for over a decade. Yet its market share in China is still marginalized, compared with its ASCII peers.

What are the UA experiences for Internet users on a day to day basis? This question leads us to hatch this test.

Test Plan

- References
 - [UA-quick-guide](#)
 - UASG007-v8
- Test method
 - User perspective, Black-box test, meaning we just test the input and display of the services.
- Test period:
 - Planning in August
 - Testing started since September, ongoing



Preliminary Findings

- The tests finds out the UA in Chinese market are:

Domain name registration> Internet browser(Internet protection) > EAI mail> CDN/EAI recognition > Internet Search Engine> Other applications

- EAI support is the focal point, acceptance will take off with EAI
- UA requirement in your procurement may greatly improve the universal acceptance.

Test items

- The registration and Whois query of CDN
- The EAI user experience
- CDN acceptance in main Internet applications.

1. CDN registration

- Test domain
 - “测试.TLD”
 - “测试。TLD”（test the recognition and conversion of “。” and “.”）
 - “xn--0zwm56d. TLD”

1.1 Registration Test: for registrar

	HiChina	West.cn	Xin net	CNDNS	ZDNS	Godaddy
测试.com	pass	pass	pass	pass	pass	pass
xn--0zwm56d.com	unpass	pass	unpass	unpass	unpass	pass
测试。Com	N/A	unpass	N/A	N/A	N/A	unpass

Test findings:

1. Unpass: it means the registration is not accepted, which was caused by registrar's Punycode limitation policy
2. N/A: certain registrars use a drop down menu to select the TLD, so the test are not applicable for them.

1.2 Whois query Test: for registry

	.com			.org			.top		
	测试.com	测试。Com	xn--0zwm56d.com	中文.org	中文。Org	XN--FIQ228C.ORG	测试.top	测试。Top	xn--0zwm56d.top
WHOIS CLI	unpass	unpass	pass	unpass	unpass	pass	pass	pass	pass
WHOIS WEB	pass	N/A	pass	N/A	N/A	N/A	pass	pass	pass
	.wang			.cn			.中国 (China)		
	测试.wang	测试。Wang	xn--0zwm56d.wang	测试.cn	测试。Cn	xn--0zwm56d.cn	测试.中国	测试。中国	xn--0zwm56d.xn--fiqs8s
WHOIS CLI	pass	pass	pass	pass	unpass	pass	pass	unpass	pass
WHOIS WEB	pass	pass	pass	pass	pass	pass	pass	pass	pass
	.网址(web address)			.网络 (network)			.信息 (information)		
	测试.网址	测试。网址	xn--0zwm56d.xn--ses554g	测试.网络	测试。网络	xn--0zwm56d.xn--io0a7i	测试.信息	测试。信息	xn--0zwm56d.xn--vuq861b
WHOIS CLI	pass	pass	pass	pass	unpass	pass	pass	pass	pass
WHOIS WEB	pass	pass	pass	pass	pass	pass	pass	N/A	pass

Whois Query

- Test findings
 - The Whois input/output is standardized for new gTLDs, the results are OK;
 - Some registry does not compare the Unicode query with its punycode form
 - Some registry does not convert “。 ”

```
[qichao@TF-Audit-01 ~]$ telnet whois.verisign-grs.com 43
Trying 199.7.49.74...
Connected to whois.verisign-grs.com.
Escape character is '^]'.
测试.com

Whois Server Version 2.0

Domain names in the .com and .net domains can now be registered
with many different competing registrars. Go to http://www.internic.net
for detailed information.

No match for "测试.COM".
>>> Last update of whois database: Tue, 18 Oct 2016 08:39:40 GMT <<<
```

```
[qichao@TF-Audit-01 ~]$ telnet whois.verisign-grs.com 43
Trying 199.7.49.74...
Connected to whois.verisign-grs.com.
Escape character is '^]'.
测试.com

Whois Server Version 2.0

Domain names in the .com and .net domains can now be registered
with many different competing registrars. Go to http://www.internic.net
for detailed information.

No match for "测试.COM".
>>> Last update of whois database: Wed, 19 Oct 2016 03:00:11 GMT <<<
```

2. EAI acceptance test

- Popular email service providers
 - Netease (163.com, 126.com, yeah.net)
 - 263 mail
 - QQ mail
 - outlook.com
 - Gmail
- Test items:
 - New EAI Account set up
 - Send mails to EAI account
 - receive emails from an EAI account and display it correctly

2.1 Mail servers Test

	测试@QQ.com	测试@126.com	测试@163.com	测试@sina.com	测试@263.net	测试@yeah.net	测试@tencent.com	测试@outlook.com	测试@gmail.com
EAI account set up	unpass	unpass	unpass	unpass	unpass	unpass	unpass	unpass	unpass
Receiving mail from “测试@互联网.中国”	Display Punycode	Display punycode	Display punycode	Display punycode	Display punycode	Display punycode	Display punycode	Display punycode	pass
Send mail to “测试@互联网.中国”	unpass	unpass	unpass	unpass	unpass	unpass	unpass	unpass	pass

2.2 Mail clients Test

	Desktop				Android			iOS		
	Foxmail	Outlook	Netease mail clients	Thunderbird	Android built-in	MailBox	Netease Mail app	iOS built-in	MailBox	QQ mail app
Set up EAI mail server	pass	pass	unpass	unpass	unpass	pass	unpass	pass	pass	unpass
Receive mail from EAI account	pass (depending on mail server)	pass (depending on mailserver)	unpass (punycode)	unpass (punycode)	pass (depending on mail server)	pass (depending on mail server)	unpass (punycode)	pass (depending on mail server)	pass (depending on mail server)	unpass
Send mail to EAI account	pass	pass	unpass	unpass	unpass (punycode)	pass	unpass	pass	pass	unpass

3. Browsers

- Desktop :
 - IE 11.633.10586.0
 - Chrome 49.0.2623.110
 - Firefox 47.0.1
 - QQ Browser 9.5.9430.400
 - 360 Browser 8.1.1.230
 - 2345 Browser 8.1
 - CheetahMobile Browser 5.3.108.13212
 - Sogou Browser 6.3.8.22277
 - UC Browser 5.7.16173.12
 - Mobile:
 - Safari iOS10.0.2
 - Android Chrome 50.0.2661.89
 - Android : Android4.4.2_HW-PE-CL00
 - UC Browser: V11.1.0.870_android
- Test items:
- Unicode format domain name recognition
 - Punycode format domain name recognition
 - Recognition and processing of “。” and “.”

3.1 Browsers Test

	http://www.泰尔英福.com http://www.泰尔英福.Com	http://www.泰尔英福.信息	http://www.人民网.中国	http://www.baidu.信息 http://www.baidu.xn--vuq861b	http://www.xn--i9qx3e6wi067c.com/ http://www.xn--i9qx3e6wi067c.com/	http://xn--diq91tg4awy4n.xn--vuq861b/ http://xn--diq91tg4awy4n.xn--vuq861b/	http://www.互联网.中国	http://www.中国移动.中国
google/Chrome	pass	pass	pass	pass	pass	pass	pass	pass
IE	pass	pass	pass	pass	pass	pass	pass	pass
360 Browser	pass	pass	pass	pass	pass	pass	pass	pass
Sogou Browser	pass	pass	pass	pass	pass	pass	pass	pass
2345 Browser	pass	pass	pass	pass	pass	pass	pass	pass
Cheetahmobile Browser	pass	pass	pass	pass	pass	pass	pass	pass
firefox	pass	pass	pass	pass	pass	pass	pass	pass
QQ Browser	pass	pass	pass	pass	pass	pass	pass	pass
safari	pass	pass	pass	pass	pass	pass	pass	pass
Andriod built-in	pass	pass	pass	pass	pass	pass	pass	pass
Chrome of Andriod	pass	pass	pass	pass	pass	pass	pass	pass
UC Android	pass	pass	pass	pass	pass	pass	unpass	unpass

- Note
 - the latest browsers have much better support for IDN;
 - Desktop Browsers works better than mobile Browsers;
 - Mobile Browsers tend to treat IDN as keyword if not using <http://> suffix;

4. Search Engines test

- Popular Search Engines in China
 - Baidu
 - Bing
 - Sogou
 - Google
 - 360 Search
 - Youdao Search
 - Easou
- Test items:
 - Unicode format CDN: “测试.com”
 - Punycode format CDN: “xn--0zwm56d.com”
 - The recognition of “。” and “.” : “测试。com”

4. Test results

- Most search engines return search results with the target website, but it is suspected that the search results were attributed to the search of keyword, instead of search of the domain name itself;
- Google can return search results with matching CDN;
- Youdao search and 360 search can return punycode search results with matching domain name;

The image shows a composite of three search engine results pages. The top section is a Baidu search for 'Y 警圣境.信息', showing a result for 'Y 警圣境.信息' website officially online. The middle section is a Google search for '互联网.中国', showing results for '中文邮箱' and '中国互联网- 维基百科'. The bottom section is a 360 Search result for the punycode domain 'xn--i9qx3e6wi067c.com', showing a 'Whois' information page for '站长工具'.

Baidu Search Results:

- Search: Y 警圣境.信息
- Result: "Y 警圣境.信息" 网站正式上线了!——中文域名创新应用全新诠释...
- 2016年5月26日 - 2016年5月26日, 骄阳璀璨, 风轻云淡, "Y 警圣境.信息" 网站在这样的一个好日子正式开通了! 在网络地址栏输入 "Y 警圣境.信息", 即可访问网站。 "Y..."

Google Search Results:

- Search: 互联网.中国
- Result: 中文邮箱
- Result: 中国互联网- 维基百科, 自由的百科全书

360 Search Results:

- Search: xn--i9qx3e6wi067c.com
- Result: 找不到该URL, 可以直接访问 <http://xn--i9qx3e6wi067c.com>, 还可[提交网址](#)给我们。
- Result: 以下是网页中包含"xn--i9qx3e6wi067c.com"的结果
- Result: xn--i9qx3e6wi067c.com的Whois信息- 站长工具
- Result: 请输入要查询的域名: xn--i9qx3e6wi067c.com 相关查询: 域名 xn--i9qx3e6wi067c.com 访问此网站 该数据缓存于 2014-08-16 16:15, 点击 强制更新 注册商: HICHINA ZHICHENG...
- Result: 凡客VANCL-互联网快时尚品牌.服装.鞋.配饰.网上购物货到付款网站...

5. Anti-virus applications

- To test if anti-virus application recognize CDN or its hyperlink correctly
- Tested anti-virus applications
 - 360 Security;
 - Tencent Security ;
 - Microsoft MSE;
 - Norton Internet security
 - Baidu Anti-virus;
- Test item:
 - Unicode domain name: “测试.com”
 - Punycode domain name: “xn--0zwm56d.com”
 - The recognition and conversion of “。”to“.”: “测试。com”

Test results

	http://www.泰尔英福.com http://www.泰尔英福。Com	http://www.泰尔英福.信息	http://www.人民网.中国	http://www.baidu.信息 http://www.baidu.xn--vuq861b	http://www.xn--i9qx3e6wi067c.com/ http://www.xn--i9qx3e6wi067c。com/	http://xn--diq91tg4awy4n.xn--vuq861b/ http://xn--diq91tg4awy4n。xn--vuq861b/	http://www.互联网.中国	http://www.中国移动.中国
360 Internet Security	pass	pass	pass	pass	pass	pass	pass	pass
Baidu Anitvirus	pass	pass	pass	pass	pass	pass	pass	pass
Tencent Security	pass	pass	pass	pass	pass	pass	pass	pass
Norton Internet Security	pass	pass	pass	pass	pass	pass	pass	pass

6. Text editing

– Tested applications

- Office(word/excel/power point);
- WPS;
- iWork(page/number/Keynote);

– Test item:

- Input “www.测试.com”，“www。测试。com” or www.xn--0zwm56d.com to test if the application can recognize and hyperlink the Chinese domain name;
- Input EAI email address “邮件@测试.com”，“mail@测试.com” or “mail@xn--0zwm56d.com”，to test if the application can recognize and hyperlink the EAI address.

Test results

	中文邮测试@互联网中国; www.互联网.中国	teleinfo@泰尔英福.com; www.泰尔英福.com	teleinfo@泰尔英福.信息; www.泰尔英福.信息	teleinfo@baidu.信息; www.baidu.信息	teleinfo@xn--gmq282eogn.信息; www.xn--gmq282eogn.信息	teleinfo@teleinfo.xn--fiqs8s; www.teleinfo.xn--fiqs8s	teleinfo@xn--3et350b8pjrj.xn--vuq861b; www.xn--3et350b8pjrj.xn--vuq861b	teleinfo@xn--3et350b8pjrj.com; www.xn--3et350b8pjrj.com
Word	pass	pass	pass	pass	pass	pass	pass	pass
Excel	pass	pass	pass	pass	pass	pass	pass	pass
PowerPoint	pass	pass	pass	x	x	pass	pass	pass
wps	pass	pass	pass	pass	pass	pass	pass	pass
pages	x	www.泰尔英福.com---pass	x	x	x	x	x	x
Numbers	x	www.泰尔英福.com---pass	x	x	x	x	x	x
Keynote	x	www.泰尔英福.com---pass	x	x	x	x	x	x

- Office and WPS have good support of CDN and EAI
- However, Powerpoint has difficulty recognizing and hyperlinking “www.domain.IDNTLD” / “mail@domain.IDNTLD”

7. Other applications

- Tested applications:
 - Wechat (900 million users)
 - Taobao (800 million users)
 - Amazon China
 - Sina Weibo (212 million active users)
 - Jd.com (90 million active users)
 - 58 Tongcheng
- Test items:
 1. Try to register an account using an EAI address;
 2. If step 1 is successful, try to log in and make use of the service;
 3. For messaging services, try to input CDN or EAI to test if it could recognize and hyperlink it correctly;

7.1 Test results-Registration & Logon

Registration and Log on	中文@中文.中文 格式 中文邮箱测试@互联网.中国	英文@中文.英文 格式 teleinfo@泰尔英福.com	英文@中文.中文 格式 teleinfo@泰尔英福.信息	英文@英文.中文 格式 teleinfo@baidu.信息	英文@punycode.中文 格式 teleinfo@xn--gmq282eogn.信息	英文@英文.英文.punycode 格式 teleinfo@teleinfo.xn--fiqs8s	英文@punycode.punycode 格式 teleinfo@xn--3et350b8pjrj.vuq861b	中文@英文.英文 格式 泰尔英福@teleinfo.com	Punycode@英文.英文 格式 xn--3et350b8pjrj@aliyun.cn	英文@punycode.英文 格式 teleinfo@xn--3et350b8pjrj.com
Wechat registration	x	pass	pass	pass	pass	pass	pass	pass	x	pass
Wechat logon	x	x	x	x	x	x	x	x	x	x
Taobao Registration	x	x	x	x	x	x	x	x	pass	pass
Sina Webo	x	x	x	x	x	x	x	x	pass	x
Jd.com	x	x	x	x	x	x	x	x	pass	pass
Amazon China	x	x	x	x	x	x	x	x	pass	pass
58 Tongcheng	x	x	x	x	x	x	x	x	pass	pass

- All applications don't support EAI
- Wechat does not deny the input of EAI at the registration, but account set up was not successful.

7.2 test results- texting recognition

	中文邮测试@互联网.中国; www.互联网.中国	teleinfo@泰尔英福.com; www.泰尔英福.com	teleinf@泰尔英福.信息; www.泰尔英福.信息	teleinfo@baidu.信息; www.baidu.信息	teleinfo@xn--gmq282eogn. 信息; www.xn--gmq282eogn.信息	teleinfo@teleinfo.xn--fiqs8s; www.teleinfo.xn--fiqs8s	teleinfo@xn--3et350b8pjrj.xn--vuq861b; www.xn--3et350b8pjrj.xn--vuq861b	teleinfo@xn--3et350b8pjrj.com; www.xn--3et350b8pjrj.com
QQ	x	x	x	x	x	EAI--x CDN---pass	EAI--x CDN---pass	EAI--x CDN---pass
Wechat	x	x	x	x	x	x	x	EAI--x CDN---pass
Sina Weibo	x	x	x	x	x	x	x	x

8. Corporation applications

	Test item	Expectation	Results
Company Mail service	测试@泰尔英福.cn	Account registration successful	unpass
	测试@泰尔英福.cn	EAI display correctly	unpass
	测试@泰尔英福.cn	send mail to EAI address successfully	unpass
Internal searching	泰尔英福.cn	Searching returns the matching result	pass
	xn--3et350b8pirnj.xn--vuq861b		unpass
	泰尔英福。信息		pass
Internal accounts	mail@测试.中国	EAI account set up successfully; and then log on with EAI account successfully;	pass
	mail@测试.citic		unpass
	mail@测试.信息		pass
Company internal texting	www.测试.中国	CDN correctly hyperlinked	pass
	www.测试.信息		unpass
	www.xn--3et350b8pirnj.xn--vuq861b		pass
	mail@xn--3et350b8pirnj.xn--vuq861b	EAI correctly hyperlinked	pass
	mail@测试.citic		unpass
	mail@测试.信息		pass

- Use Teleinfo internal applications as a test case;
- Some applications were purchased from third-party

Final words

- The scope and depth of this test is limited, and the test results may not properly reflect the reality.
- The test is conducted by us only, only the input and output are tested, more tests on store and process will requires support from vendors.
- Test report may be available in the following months. planning to revisit the test next year.
- The test is still going on, any comments and suggestions is welcome!

Special thanks to:

CAICT, ICANN AP Hub/China Engagement Center, UASG

Special thanks to:

- ✓ CAICT
- ✓ ICANN AP Hub/China Engagement Center
- ✓ UASG

Thank you!

