

APPENDIX

Table 6: **TLS Certificate Authority Market.** Unless the CAs claim their maximum revocation delay, the revocation delay specified in the CA/B Baseline Requirements are listed in this table.

CA	Reseller	Price (DV)	Validity Period	Revocation	
				Delay	Method
Let's Encrypt	-	\$0.00	90d	1d [16]	E
cPanel	-	\$0.00	90d	1-5d [9]	E
CloudFlare	-	\$0.00	6m	1-5d [10]	W,E
COMODO	-	\$99.00	1-2y	1-5d [21]	E
	comodossllstore	\$8.95	1-2y	1-5d [21]	E
DigiCert	-	\$218.00	1-2y	1-5d [10]	E
RapidSSL	-	\$59.00	1-2y	1-5d [10]	W,E
	thesslstore	\$17.95	1-2y	1-5d [10]	W,E
GeoTrust	-	\$149.00	1-2y	1-5d [10]	W,E
	cheapsslsecurity	\$44.95	1-2y	1-5d [10]	W,E
GlobalSign	-	\$249.00	1-2y	1-5d [12]	W,E
Go Daddy	-	\$79.99	1-2y	1-5d [13]	W,E

* W: web form, E: email

Table 7: **CT Logs of the issued high-risk domain certificates.** They are issued with the suspicious domain name (*pyp-al.com*) that had been already used for a real phishing attack.

crt.sh ID	Logged At	Issuer
1950796162	2019-10-02	cPanel
1950666605	2019-10-02	Let's Encrypt
1950582955	2019-10-02	GlobalSign
1949985542	2019-10-02	GeoTrust (<i>re-seller: cheapsslsecurity</i>)
1949774788	2019-10-02	GeoTrust
1949917389	2019-10-02	RapidSSL (<i>re-seller: thesslstore</i>)
1947266413	2019-10-02	RapidSSL
1949842149	2019-10-02	Comodo (<i>re-seller: comodossllstore</i>)
1947421234	2019-10-02	Comodo
1947184524	2019-10-02	Go Daddy

Table 8: **Top-10 Issuers (CAs) including CloudFlare.** Revocation status is checked on Sep. 22, 2020. We are unable to check the revocation status of 23 certificates due to OCSP errors.

Cat.	Issuer (CA)	Total	Status		
			Good	Expired	Revoked
A/C	COMODO	2,259,250	10,044	2,249,161	45
A	Let's Encrypt	1,951,721	130,708	1,820,996	17
A	cPanel	1,197,283	57,710	1,139,566	7
C	GlobalSign	120,855	17,453	103,252	150
A	CloudFlare	58,136	36,563	21,573	0
C	Go Daddy	34,175	7,458	24,937	1,780
C	Sectigo	30,233	11,355	18,617	261
C	DigiCert	19,802	8715	11,003	84
C	RapidSSL	9,772	1,300	8,465	7
C	GeoTrust	5,857	855	4,995	7
	Etc.	52,254	11,477	44,528	537
Total		5,739,338	293,638	5,442,805	2,895

A: free, automated CA, C: commercial CA.

Table 9: **CPS/CP revocation statements by CAs.**

CA	CPS/CP Revocation Statement
Comodo	"The Subscriber has used the Certificate contrary to law, rule or regulation, or Sectigo reasonably believes that the Subscriber is using the Certificate, directly or indirectly, to engage in illegal or fraudulent activity."
Let's Encrypt	"Each Subscriber acknowledges and accepts that ISRG is entitled to revoke Subscriber's ISRG certificates immediately if the Subscriber violates the terms of the Subscriber Agreement or if ISRG discovers that any of Subscriber's ISRG certificates are being used to enable criminal activities such as phishing attacks, fraud, or the distribution of malware."
Go Daddy	"Within 24 hours after receiving a Certificate Problem Report, ... provide a preliminary report on its findings to both the Subscriber and the entity who filed the Certificate Problem Report."