

INDEPENDENT ASSURANCE REPORT

To the management of Entrust Corporation ("Entrust"):

Scope

We have been engaged, in a reasonable assurance engagement, to report on Entrust management's [statement](#) that for its Certification Authority ("CA") operations in Ontario - Canada, Texas - USA, Colorado - USA, Berkshire – UK, throughout the period 1 March 2024 to 28 February 2025 (the "Period") for its CAs as enumerated in [Attachment A](#), Entrust has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in its
 - Certificate Policy/ Certification Practice Statements ("CP/CPS") as enumerated in [Attachment B](#)
- maintained effective controls to provide reasonable assurance that:
 - Entrust provides its services in accordance with its CP/CPS
- maintained effective controls to provide reasonable assurance that:
 - the integrity of keys and certificates it manages is established and protected throughout their lifecycles;
 - the integrity of subscriber keys and certificates it manages is established and protected throughout their lifecycles;
 - subscriber information is properly authenticated (for the registration activities performed by Entrust); and
 - subordinate CA certificate requests are accurate, authenticated, and approved
- maintained effective controls to provide reasonable assurance that:
 - logical and physical access to CA systems and data is restricted to authorised individuals;
 - the continuity of key and certificate management operations is maintained; and
 - CA systems development, maintenance, and operations are properly authorised and performed to maintain CA systems integrity

in accordance with the [WebTrust Principles and Criteria for Certification Authorities v2.2.2](#).

Entrust does not escrow or archive its CA keys, does not provide integrated circuit card management services, and does not provide certificate suspension services. Accordingly, our procedures did not extend to controls that would address those criteria.

Entrust has issued cross-certificates to third-party certification authorities which were valid during the Period. The operations of these third-party certification authorities were not in scope for our engagement, and, accordingly, we express no opinion on these third-party certification authorities.

Certification authority's responsibilities

Entrust's management is responsible for its statement, including the fairness of its presentation, and the provision of its described services in accordance with the WebTrust Principles and Criteria for Certification Authorities v2.2.2.

Our independence and quality management

We have complied with the relevant rules of professional conduct / code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Canadian Standard on Quality Management 1, *Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements*, which requires the firm to design, implement and operate a system of quality management, including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.



Practitioner's responsibilities

Our responsibility is to express an opinion on management's statement based on our procedures. We conducted our procedures in accordance with Canadian Standard on Assurance Engagements 3000, *Attestation Engagements Other than Audits or Reviews of Historical Financial Information*, set out in the CPA Canada Handbook – Assurance. This standard requires that we plan and perform our procedures to obtain reasonable assurance about whether, in all material respects, management's statement is fairly stated, and, accordingly, included:

- (1) obtaining an understanding of Entrust's key and certificate lifecycle management business practices and its controls over key and certificate integrity, over the authenticity and confidentiality of subscriber and relying party information, over the continuity of key and certificate lifecycle management operations and over development, maintenance and operation of systems integrity;
- (2) selectively testing transactions executed in accordance with disclosed key and certificate lifecycle management business practices;
- (3) testing and evaluating the operating effectiveness of the controls; and
- (4) performing such other procedures as we considered necessary in the circumstances.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Relative effectiveness of controls

The relative effectiveness and significance of specific controls at Entrust and their effect on assessments of control risk for subscribers and relying parties are dependent on their interaction with the controls, and other factors present at individual subscriber and relying party locations. We have performed no procedures to evaluate the effectiveness of controls at individual subscriber and relying party locations.

Inherent limitations

There are inherent limitations in the effectiveness of any system of internal control, including the possibility of human error and the circumvention of controls. For example, because of their nature, controls may not prevent, or detect unauthorised access to systems and information, or failure to comply with internal and external policies or requirements. Also, the projection to the future of any conclusions based on our findings is subject to the risk that controls may become ineffective.

Other Matters

In course of our procedures, we have identified two records of the certificate related to CA#28 - L1K in ATTACHMENT A, with different SHA fingerprints. We have disclosed both of these records as Cert # 28.1 and Cert # 28.5 in ATTACHMENT A. We identified these records in crt.sh.

Opinion

In our opinion, throughout the period 1 March 2024 to 28 February 2025, Entrust management's statement, as referred to above, is fairly stated, in all material respects, in accordance with the WebTrust Principles and Criteria for Certification Authorities v2.2.2.

This report does not include any representation as to the quality of Entrust's services beyond those covered by the WebTrust Principles and Criteria for Certification Authorities v2.2.2, nor the suitability of any of Entrust's services for any customer's intended purpose.

Use of the WebTrust seal

Entrust's use of the WebTrust for Certification Authorities Seal constitutes a symbolic representation of the contents of this report and it is not intended, nor should it be construed, to update this report or provide any additional assurance.

Deloitte LLP
Chartered Professional Accountants
Toronto, Ontario, Canada
June 27, 2025

ATTACHMENT A

LIST OF IN SCOPE Cas

Root Cas	
1.	Entrust.net Certification Authority (2048)
2.	Entrust Root Certification Authority- EV Root
3.	Entrust Root Certification Authority – G2
4.	Entrust Root Certification Authority – G4
5.	Entrust Root Certification Authority – EC1
6.	Entrust Root Certification Authority – CSBR1
7.	Entrust Root Certification Authority – DSR1
8.	Entrust Root Certification Authority – VMCR1
9.	Entrust Root Certification Authority – 4K EVTLSR 2022
10.	Entrust Root Certification Authority – P384 EVTLSR 2022
11.	Entrust Root Certification Authority – 4K TLSR 2022
12.	Entrust Root Certification Authority – P384 TLSR 2022
13.	Entrust Root Certification Authority - SMIMER 2022
14.	Entrust Root Certification Authority – 4K ClientR 2024
15.	Entrust Root Certification Authority – P384 ClientR 2024
16.	AffirmTrust Commercial
17.	AffirmTrust Networking
18.	AffirmTrust Premium
19.	AffirmTrust Premium ECC
20.	AffirmTrust 4K TLSR 2022
Client Authentication Cas	
21.	Entrust Root Certification Authority – Client1
22.	Entrust Root Certification Authority – Client2
Intermediate Cas	
23.	Entrust Certification Authority – AATL1
24.	Entrust Certification Authority – ICA1
DV SSL Issuing Cas	
25.	AffirmTrust Certificate Authority – DV1
26.	AffirmTrust Certificate Authority – DVTLS1
OV SSL Issuing Cas	
27.	Entrust Certification Authority – L1F
28.	Entrust Certification Authority – L1K
29.	Entrust Certification Authority – OVTLS1
30.	Entrust Certification Authority – OVTLS2
31.	Entrust Certification Authority – CrowdStrike TLS CA 2022
32.	Siemens 2020
33.	Entrust Certification Authority – Namirial OV SSL
34.	AffirmTrust Certificate Authority – OV1
EV SSL Issuing Cas	
35.	Entrust Certification Authority – L1E
36.	Entrust Certification Authority – L1J
37.	Entrust Certification Authority – L1M
38.	Entrust Certification Authority – L1N
39.	Entrust Certification Authority – QTSP1
40.	Entrust Certification Authority – ES QWAC2
41.	Entrust Certification Authority - EVTLS1
42.	Entrust Certification Authority - EVTLS2
43.	Entrust Certification Authority - Namirial EV SSL
44.	AffirmTrust Extended Validation CA – EV1
45.	AffirmTrust Extended Validation CA – EV2
46.	AffirmTrust Extended Validation CA – EV3
47.	AffirmTrust Extended Validation CA – EVEC1
Publicly Trusted Code Signing Issuing Cas	
48.	Entrust Code Signing CA – OVCS1
49.	Entrust Code Signing CA – OVCS2
EV Code Signing Issuing CA	
50.	Entrust Extended Validation Code Signing CA – EVCS1



51. Entrust Extended Validation Code Signing CA – EVCS2
Secure Email (S/MIME) CA
52. Class 1 Client CA – SHA256 53. Entrust Class 2 Client CA 54. Entrust Class 2 Client CA – C2CA2 55. Entrust SMIME1 Client CA 56. Entrust SMIME2 Client CA
Timestamp CA
57. Entrust Timestamping CA – ES QTS1 58. Entrust Timestamping CA – TS1 59. Entrust Timestamping CA – TS2 60. Entrust Time Stamping CA – TS3 61. Entrust Time Stamping CA - TS4
Verified Marks Certification CA
62. Entrust Certificate Authority – VMC2
Document Signing Cas
63. Entrust Class 3 Client CA - SHA256 64. Entrust Certification Authority - ES QSig1 65. Entrust Certification Authority - ES QSig2 66. Entrust Certification Authority - ES QSeal1 67. Entrust Certification Authority - ES QSeal2 68. Entrust Certification Authority – DS1 69. Entrust Certification Authority – RSS1 70. Entrust Certification Authority – SAS1



CA IDENTIFYING INFORMATION

CA #	Cert #	Subject	Issuer	Serial Number	Key Type	Hash Type	Not Before	Not After	Revoked Date	Extended Key Usage	Subject Key Identifier	SHA256 Fingerprint
1	1	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	3863def8	RSA 2048-bits	RSA SHA-1	12/24/1999 17:50	7/24/2029 14:15			55e481d11180bed889b908a331f9a1240916b970	6DC47172E01CBCB08F62580D895FE2B8AC9AD4F873801E0C10B9C837D21EB177
2	1	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	456b5054	RSA 2048-bits	RSA SHA-1	11/27/2006 20:23	11/27/2026 20:53			6890e467a4a65380c78666a4f1f74b43fb84bd6d	73C176434F1BC6D5ADF4580E76E727287C8DE57616C1E6E6141A2B2CBC7D8E4C
3	1	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	4a538c28	RSA 2048-bits	RSA SHA-256	7/7/2009 17:25	12/7/2030 17:55			6a72267ad01eef7de73b6951d46c8d9f901266ab	43DF5774B03E7FEF5FE40D931A7BEDF1BB2E6B42738C4E6D3841103D3AA7F339
3	2	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	51d33f09	RSA 2048-bits	RSA SHA-1	9/12/2014 17:28	9/13/2024 3:12			6a72267ad01eef7de73b6951d46c8d9f901266ab	CBCE622D06F9D2C093FAD75CEBB7852EF553FFFF146AD522AB321B3A4B2BD8F8
3	3	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	51d33f24	RSA 2048-bits	RSA SHA-1	9/12/2014 19:23	9/13/2024 3:12			6a72267ad01eef7de73b6951d46c8d9f901266ab	16296E3BEF9A64CFEDE3509F36D700A5CD61CF938EC3A9558F36D17D97E16E8D
3	4	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	51d34044	RSA 2048-bits	RSA SHA-256	9/22/2014 17:14	9/23/2024 1:31			6a72267ad01eef7de73b6951d46c8d9f901266ab	6B143C2005D5539CC22EAB5F772DB2A9FE87467FEFFA07FCFA9F7D28274CA7A
3	5	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	525c32e349f48525bc8d7810d7aabb67	RSA 2048-bits	RSA SHA-256	3/06/2024 16:00	11/26/2026 23:59			6a72267ad01eef7de73b6951d46c8d9f901266ab	65F0358FC93934CD5AAC43122F37948D7BD042D148E6FD88B2E65AA9AC399DDD
4	1	CN=Entrust Root Certification Authority - G4 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G4 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	00d9b5437fafa9390f000000005565ad58	RSA 4096-bits	RSA SHA-256	5/27/2015 11:11	12/27/2037 11:41			9f38c45623c339e8a0716ce8544ce4e83ab1bf67	DB3517D1F6732A2D5AB97C533EC70779EE3270A62FB4AC4238372460E6F01E88
5	1	CN=Entrust Root Certification Authority - EC1 OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - EC1 OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	00a68b79290000000050d091f9	EC 384-bits	ECDSA SHA-384	12/18/2012 15:25	12/18/2037 15:55			b763e71add8de908a65583a4e06a504165114249	02ED0EB28C14DA45165C566791700D6451D7F856F0B2AB1D3B8EB070E56EDFF5



CA #	Cert #	Subject	Issuer	Serial Number	Key Type	Hash Type	Not Before	Not After	Revoked Date	Extended Key Usage	Subject Key Identifier	SHA256 Fingerprint
5	2	CN=Entrust Root Certification Authority - EC1 OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	008011196de613db160000000051d3575e	EC 384-bits	RSA SHA-256	6/10/2016 14:58	11/10/2026 15:28			b763e71add8de908a65583a4e06a504165114249	3FDE0D36E026B6E8EBE2C28883607C8651DE10BD6C1FCAD365E560F4EA2F3B03
6	1	CN=Entrust Code Signing Root Certification Authority - CSBR1 O=Entrust, Inc. C=US	CN=Entrust Code Signing Root Certification Authority - CSBR1 O=Entrust, Inc. C=US	7ff1a8f9f43ae8876e2dc6ff5e433db2ee30a643	RSA 4096-bits	RSA SHA-512	5/7/2021 13:26	12/30/2040 13:26			82bad63d97ce9cf71e89237affdb3b5693557cf	B80847FDA4538F6ED876CA7BC046A2481909E15B6ED376E665E7AD09F3864E71
6	2	CN=Entrust Code Signing Root Certification Authority - CSBR1 O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	4e40e43754ede68c0000000051d3947f	RSA 4096-bits	RSA SHA-256	5/7/2021 15:43	11/7/2030 16:13		Code Signing, Time Stamping	82bad63d97ce9cf71e89237affdb3b5693557cf	18DD9A467054C74A5AE46182843A6F4EC46D5E338D91ADF4E5980B50193FB94B
7	1	CN=Entrust Digital Signing Root Certification Authority - DSR1 O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G4 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	2d37bcd092d2cb88b67f5cc dab71b39b	RSA 4096-bits	RSA SHA-512	2021-11-12 00:00:00	2030-12-30 00:00:00	12/11/2024	1.3.6.1.4.1.311.10.3.12, Time Stamping	a6654181f25b87056addfd8a544e8f987bdc23b8	20FC75ACB2CAD7978C7B006A9B1523BFDAF5490AFCF49652C585E4A12F601C85
7	2	CN=Entrust Digital Signing Root Certification Authority - DSR1 O=Entrust, Inc. C=US	CN=Entrust Digital Signing Root Certification Authority - DSR1 O=Entrust, Inc. C=US	6c73c936b185e50b804d5bcec29f83d21a51c1a3	RSA 4096-bits	RSA SHA-512	2021-11-12 18:28:47	2040-12-30 18:28:47			a6654181f25b87056addfd8a544e8f987bdc23b8	E874FE2531EAE4A4B6B62F37496BBAE90EB1D8FC8CEDBEB800A182CFACDC7E61
7	3	CN=Entrust Digital Signing Root Certification Authority - DSR1 O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	3e52a4c23935756349c5a8820c03d47f	RSA 4096-bits	RSA SHA-256	2024-03-06 15:40	2029-07-23 23:59			a6654181f25b87056addfd8a544e8f987bdc23b8	37C4596A91541642B4DD07AE28A6E968999EA95A057A8182695A33DFEB308C4D
8	1	CN=Entrust Verified Mark Root Certification Authority - VMCR1 O=Entrust, Inc. C=US	CN=Entrust Verified Mark Root Certification Authority - VMCR1 O=Entrust, Inc. C=US	743900bd5b07fc63d7e9150452c89bb701680463	RSA 4096-bits	RSA SHA-512	5/7/2021 13:31	12/30/2040 13:31			7323567b2b7845809ab8c27ccca586398b2678c5	7831D95A47D42508CD5C9E6264F9096BAC19F04EB987C8BDD35FFFC71C189617
9	1	CN = Entrust 4K EV TLS Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust 4K EV TLS Root CA - 2022 O = Entrust, Inc. C = US	72429d8f40dfe46dafbe06ebb533194ce90d6c76	RSA 4096-bits	RSA SHA-384	2022-12-13 12:35:08	2047-12-07 12:35:08			0bdd90d58fbb3f5cbd60a0551a2482863c413041	647987D98D52645DA4D3DE3B80771A0CE02B9B9285E6E86999882170744EC9AA
9	2	CN = Entrust 4K EV TLS Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust Root Certification Authority - G2 O=Entrust, Inc. C = US	ac9a58d8637568d2cdfddc1c7955cc	RSA 4096-bits	RSA SHA-256	2024-03-06 15:31	2030-12-06 23:59			0bdd90d58fbb3f5cbd60a0551a2482863c413041	E821B11129110567F1607F0B0F368EC78D811418F0C48CC425450F63EB88095D
10	1	CN = Entrust P384 EV TLS Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust P384 EV TLS Root CA - 2022 O = Entrust, Inc. C = US	097558f5a16c16877bbd064ffd9ce483ba4b040b	EC 384-bits	ECDSA SHA-384	2022-12-13 12:46:44	2047-12-07 12:46:44			137210ae82580fc1389bbcb6a64c05ca8e8468bf	937EF8F12276B3C7A3F58E345D09A6EFF01F862F8D2794441CD84D511825FA0C
11	1	CN = Entrust 4K TLS Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust 4K TLS Root CA - 2022 O = Entrust, Inc. C = US	57262836aa751a000c16ba28cc86b590fdf225ba	RSA 4096-bits	RSA SHA-384	2022-12-13 12:26:47	2047-12-7 12:26:47			9440ea5affef4963019e09dfe03b803373122056	DD6C44B39401B053D8E61120748BBB0F6056007665C168E5C286750EDC8DF129
11	2	CN = Entrust 4K TLS Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust Root Certification Authority - G2 O = Entrust, Inc. C = US	2ef8e1b306cf96a867406dbedb4e688e	RSA 4096-bits	RSA SHA-256	2024-03-06 15:23:21	2030-12-06 23:59:59	2024-08-02		9440EA5AFFEF4963019E09DFE03B803373122056	E255DA2D54ECFD16FB6426A38A83399E7E39F6A01E96E649CD850F80FDDFF54EB
12	1	CN = Entrust P384 TLS Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust P384 TLS Root CA - 2022 O = Entrust, Inc. C = US	453eef32daed9068218d5bea0e83d165042e0f31	EC 384-bits	ECDSA SHA-384	2022-12-13 12:41:45	2047-12-7 12:41:45			c42e807c5f709204864c9e52cb2b67c5076a8293	420332EF876EBE78F2AF5D28AAACDE24AAD0C10F8FFAAC469EFD7BD941929568
13	1	CN = Entrust SMIME Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust SMIME Root CA - 2022 O = Entrust, Inc. C = US	7da23cfefbbe8849c350f2a511e9b96bb71f8d80	RSA 4096-bits	RSA SHA-384	2022-12-13 13:00:46	2047-12-7 13:00:46			94c8e8468d7f53170305441810ac65e06ea2950d	B7A41ED8096D627168ADC7F530942197A9E7E3175CE05D11D01E7AD6C12DCBA7
13	2	CN = Entrust SMIME Root CA - 2022 O = Entrust, Inc. C = US	CN = Entrust Root Certification Authority - G2 O = Entrust, Inc. CN = US	58cbd5fa3076485c180ac1e25747447d	RSA 4096-bits	RSA SHA-256	5/17/2023 19:22:00	12/7/2030 23:59:00			94c8e8468d7f53170305441810ac65e06ea2950d	E8A2B83BDE5365BE0BE83AAECC646A104B5C1A2CD03D4534F6CFCF4BDA1533E0



CA #	Cert #	Subject	Issuer	Serial Number	Key Type	Hash Type	Not Before	Not After	Revoked Date	Extended Key Usage	Subject Key Identifier	SHA256 Fingerprint
14	1	CN = Entrust 4K Client Root CA – 2024 O = Entrust, Inc. C = US	CN = Entrust 4K Client Root CA - 2024 O = Entrust, Inc. C = US	2FB1D7468F0B138D4D6FDDA5D0F815395F48543D	RSA 4096- bits	RSA SHA- 384	2024-07-24 14:00	2049-07-23 14:00			143879FB85583B6138F45DE28B32A7A507E27507	621A840CDEECFDD820B2528E5E8AE5CBA6D2FDC23020BC7BA04FA90F54833D74
15	1	CN=Entrust P384 Client Root CA - 2024 O=Entrust, Inc. C=US	CN=Entrust P384 Client Root CA - 2024 O=Entrust, Inc. C=US	1e3bdb63c66d0904c2c68263cee6845535199faa	384 bits	ECDSA SHA-384	2024-07-24 14:00	2049-07-23 14:00			6C79BDFE09E30965CD682D370EB693E60CFFC314	481F0E1B0874D84B189FF83A694D27B30ECD2A477AB3289E976C7FA1A6BD255B
16	1	CN = AffirmTrust Commercial O = AffirmTrust C = US	CN = AffirmTrust Commercial O = AffirmTrust C = US	7777062726a9b17c	RSA 2048- bits	RSA SHA- 256	01/29/2010 09:06	12/31/2030 09:06			9d93c6538b5ecaaf3f9f1e0fe59995bc24f6948f	0376AB1D54C5F9803CE482E201A0EE7EEF7B57B636E8A93C9B8D4860C96F5FA7
17	1	CN = AffirmTrust Networking O = AffirmTrust C = US	CN = AffirmTrust Networking O = AffirmTrust C = US	7c4f04391cd4992d	RSA 2048- bits	RSA SHA- 256	01/29/2010 9:08	12/31/2030 09:08			071fd2e79cdac26ea240b4b07a50105074c4c8bd	0A81EC5A929777F145904AF38D5D509F6685E2C58FCD853105880E17F3F0B41B
18	1	CN = AffirmTrust Premium O = AffirmTrust C = US	CN = AffirmTrust Networking O = AffirmTrust C = US	6d8c1446b1a60aee	RSA 2048- bits	RSA SHA- 256	01/29/2010 9:10	12/31/2030 09:10			9dc067a60c22d926f54Saba665521127d845ac63	70A73F7F376B60074248904534B11482D5BF0E698ECC498DF52577EBF2E93B9A
19	1	CN = AffirmTrust Premium ECC O = AffirmTrust C = US	CN = AffirmTrust Premium ECC O = AffirmTrust C = US	7497258ac73f7a54	RSA 2048- bits	RSA SHA- 256	01/29/2010 9:20	12/31/2040 09:20			9aaf297ac011353526513000c36afe40d5aed63c	BD71FDF6DA97E4CF62D1647ADD2581B07D79ADF8397EB4ECBA9C5E8488821423
20	1	CN = AffirmTrust 4K TLS Root CA - 2022 O = AffirmTrust C = CA	CN = AffirmTrust 4K TLS Root CA - 2022 O = AffirmTrust C = CA	4261723e9b00a227d3bd5871e2d5b404687473a5	RSA 2096- bits	RSA SHA- 256	12/13/2022	12/07/2047			07875af4076871d9661be264788037805cdef727	A7DEDf5A842167DD12FDAa0F2080E732958888BEA71B2094EA0950945A482FC1
20	2	CN = AffirmTrust 4K TLS Root CA - 2022 O = AffirmTrust C = CA	CN = AffirmTrust Premium O = AffirmTrust C = CA	050f8ba96a256314f2893d9ba3315b1a	RSA 4096- bits	RSA SHA- 256	3/6/2024	12/30/2040	08/02/2024		07875AF4076871D9661BE264788037805CDEF727	B0A178E06B7A7274F0B2A640F6A03BF003AB1EDE8693770D5D2741B2D2F01980
21	1	CN = Entrust 4K Client CA - Client1 O = Entrust C = US	CN = Entrust 4K Client Root CA – 2024 O = Entrust, Inc. C = US	24de798d488441a7d026db305996043a	RSA 4096- bits	RSA SHA- 384	2024-07-24 17:45	2040-12-29 23:59			4775F09CF5BD101D755B9EF38C855733A535330D	58C8CEAC8C50BA2ADFF1AF675AFAD118A0125B4B0070834B070C16F646D85D17
22	1	CN = Entrust P384 Client CA – Client2 ON = Entrust C = US	CN=Entrust P384 Client Root CA - 2024 O=Entrust, Inc. C=US	5c305c4ffc05841af97cb8a2aecf8879	384 bits	ECDSA SHA-384	2024-07-24 17:49	2040-12-29 23:59			1B21F09CADC08D0C57561B429C4DF2A77815CAC2	307F34CDBAFABFDBC8952ED153DEC54E0D0B5F60784159580D409D26A7C7C91A
23	1	CN=Entrust Certification Authority - AATL1 O=Entrust, Inc. C=US	OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	00c727f51f8f922b02000000005565d8ad	RSA 4096- bits	RSA SHA- 512	7/20/2020 15:46	12/20/2037 16:16		1.3.6.1.4.1.311.10.3.12, 1.2.840.113583.1.1.5, E- mail Protection	63f184dd03bea39f64fa767a47c4567ec06da020	839F9B91C2E49218A66416DF181B984E9BE634D12A95483D98A6199FC0788D74
24	1	CN=Entrust Enterprise Intermediate CA - ICA1 O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	3eeb174d9b443ba90000000051ce1981	RSA 2048- bits	RSA SHA- 256	5/7/2021 15:32	7/7/2029 16:02		TLS Web Client Authentication, E-mail Protection, Microsoft Smart card login, Microsoft Encrypted File System, 1.3.6.1.4.1.311.10.3.4.1, 1.3.6.1.4.1.311.67.1.1	c838d40a70dda357a8e596592d1313c920d5dcb3	C54D8B12C438725C2755B4AD81825F6975CBDA6C258A2BFB88247A14F03BD22A
25	1	CN = AffirmTrust Certificate Authority - DV1 O = See www.affirmtrust.com/repository ON = AffirmTrust CN = CA	CN = AffirmTrust Commercial ON = AffirmTrust CN = US	6345009686538276405	RSA 2048- bits	RSA SHA- 256	2017-04-07 15:10	2030-12-02 04:00		TLS Web Server Authentication, TLS Web Client Authentication	33DF7A3E027996EBB60CC063FA75BF9222CD91FA	CA4389C89DDFC31BEC26C74B44A8498C58B2D838516FA01B14F1393629E58A40
25	2	CN = AffirmTrust Certificate Authority - DV1 O = See www.affirmtrust.com/repository ON = AffirmTrust CN = CA	CN = AffirmTrust Commercial ON = AffirmTrust CN = US	62b4c3eba53918177f127a837b574f96	RSA 2048- bits	RSA SHA- 256	2019-03-21 20:21	2030-12-02 04:00		TLS Web Server Authentication, TLS Web Client Authentication	33DF7A3E027996EBB60CC063FA75BF9222CD91FA	4563B936E35A897576F5AEF1935D9BC7E9977841F0573BD2E16BCAC9534A6AF9
26	1	CN = AffirmTrust 4K TLS Certification Authority - DVTL51 O = AffirmTrust C = CAS	CN = AffirmTrust 4K TLS Root CA - 2022 O = AffirmTrust C = CA	04e911e082864b911d97267aa3388c5a	RSA 4096- bits	SHA384	2022-12-14 14:09:01	2040-12-29 19:59:59		TLS Web Server Authentication, TLS Web Client Authentication	45c174f7f45d033320f133efb8da6179886f5c96	FB327FE14AB3FEC5C96D9169A8B536382B97B1B325543C3DCD8A10F8C431E103
27	1	CN=Entrust Certification Authority - L1F OU=(c) 2016 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - EC1 OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	b601913d8553bafa0000000051d4c1f6	EC 384- bits	ECDSA SHA-384	4/5/2016 20:17	10/5/2037 20:47		TLS Web Server Authentication, TLS Web Client Authentication	2e62f014ee87cdb335033defe4b999efd3bb8a3c9	1835B0E482EA65536FC010E4BC13C060F65668165FBA97E2F542CE96CA6DFFFC



CA #	Cert #	Subject	Issuer	Serial Number	Key Type	Hash Type	Not Before	Not After	Revoked Date	Extended Key Usage	Subject Key Identifier	SHA256 Fingerprint
27	2	CN=Entrust Certification Authority - L1F OU=(c) 2016 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - EC1 OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	a25b1769bad80ad70000000051ce1941	EC 384-bits	RSA SHA-256	2/5/2021 16:34	7/5/2029 17:04		TLS Web Server Authentication, TLS Web Client Authentication	2e62f014ee87cdb335033defe4b99efd3bb8a3c9	0C5A09DB8AEDF7D2D1DDE14DCCC2DB6EA959BCF6F010360D836C342C624D7E0E
28	1	CN=Entrust Certification Authority - L1K OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	79851D5CBC895C56D97FEF2D5CF3D6	RSA 2048-bits	RSA SHA-256	10/05/2015 19:13	12/05/2030 19:43			82a27074ddbc533cf7bd4f7cd7fa760c60a4cbf	052C0174E806F9474AEC865129A04867F385087B631393B4D8A7F26B43733348
28	2	CN=Entrust Certification Authority - L1K OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	51d360cf	RSA 2048-bits	RSA SHA-256	8/26/2014 17:14	8/27/2024 8:34			82a27074ddbc533cf7bd4f7cd7fa760c60a4cbf	380CC20384AD7F24EB438F2B80C63EBE003F7F215B8877E418EBB0484028DB57
28	3	CN=Entrust Certification Authority - L1K OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU= www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	51ce00fe	RSA 2048-bits	RSA SHA-256	10/10/2014 15:23	10/11/2024 6:22			82a27074ddbc533cf7bd4f7cd7fa760c60a4cbf	D6C3FC493BACD1DF8A1BA30F4AE26254B2A4528E4876081EACC6A16A090AA36A
28	4	CN=Entrust Certification Authority - L1K OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	51d360ee	RSA 2048-bits	RSA SHA-256	10/22/2014 17:05	10/23/2024 7:33			82a27074ddbc533cf7bd4f7cd7fa760c60a4cbf	F5C2F23C6518F9D19B6F39BEAEA4FBAE10031BA9DC985CE1563A520DA0AD4116
28	5	CN=Entrust Certification Authority - L1K OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	0ee94cc30000000051d37785	RSA 2048-bits	RSA SHA-256	10/5/2015 19:13	12/5/2030 19:43			82a27074ddbc533cf7bd4f7cd7fa760c60a4cbf	13EFB39A2F6654E8C67BD04F4C6D4C90CD6CAB5091BCEDC73787F6B77D3D3FE7
28	6	CN = Entrust Certification Authority - L1K OU = (c) 2012 Entrust, Inc. - for authorized use only OU = See www.entrust.net/legal-terms O = Entrust, Inc. C = US	CN = Entrust.net Certification Authority (2048) OU = (c) 1999 Entrust.net Limited OU = www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O = Entrust.net	2e0451ce5d2424c72b5d6576716506d8	RSA 2048-bits	RSA SHA-256	2022-11-25 17:19:43	2029-7-22 20:00:00		Server Authentication (1.3.6.1.5.5.7.3.1) Client Authentication (1.3.6.1.5.5.7.3.2)	82a27074ddbc533cf7bd4f7cd7fa760c60a4cbf	7F4325CC24107A39441552F27FDC34185802482E164D1794AA415EF1E4206BA7
28	7	CN=Entrust Certification Authority - L1K OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	51d360ce	RSA 2048-bits	RSA SHA-256	8/26/2014 17:07	8/27/2024 5:48			82a27074ddbc533cf7bd4f7cd7fa760c60a4cbf	386DD5581C9853092007D81BB0106FC61205E88E360543D7CAE02D68E7A25AC3
29	1	CN = Entrust 4K TLS Certification Authority - OVTLS1 O = Entrust, Inc. C = US	CN = Entrust 4K TLS Root CA - 2022 O = Entrust, Inc. C = US	68ca04736adcebbd10432a6bd6ef8a34	EC 384-bits	RSA SHA-256	2022-12-14 14:23:34	2040-12-29 19:59:59		Server Authentication (1.3.6.1.5.5.7.3.1) Client Authentication (1.3.6.1.5.5.7.3.2)	a80003c10185b8c0272aa9bc08acfad44abe51a5	9EC6CA44D6ADB5DAEFEC9D773787E3BB8E1243F5455341B8438A67768699333B



CA #	Cert #	Subject	Issuer	Serial Number	Key Type	Hash Type	Not Before	Not After	Revoked Date	Extended Key Usage	Subject Key Identifier	SHA256 Fingerprint
30	1	CN = Entrust P384 TLS Certification Authority - OV TLS2 O = Entrust, Inc. C = US	CN = Entrust P384 TLS Root CA - 2022 O = Entrust, Inc. C = US	68772973693c55320a742ff1433ca0a2	EC 384-bits	RSA SHA-256	2022-12-14 14:25:44	2040-12-29 19:59:59		Server Authentication (1.3.6.1.5.5.7.3.1) Client Authentication (1.3.6.1.5.5.7.3.2)	c25b7126ed58efa51419aa2ef60456546f9a39c9	2DB842F824321277291266B230ABC31DE13C1D4B852D6C21C9B1007D5AC20681
31	1	CN = CrowdStrike TLS CA 2022 O = CrowdStrike, Inc. C = US	CN = Entrust Root Certification Authority - G2 OU = (c) 2009 Entrust, Inc. - for authorized use only OU = See www.entrust.net/legal-terms O = Entrust, Inc. C = US	309dc7b318912d0ecb7d1df27ab75cdf	RSA 2048-bits	RSA SHA-256	2022-11-15 12:50:48	2030-12-5 20:00:00			55eaa745b99af7b671311a31dfa176fe7692997a	2C4AD64B4E862D7D46424D9FA13EA9A974A62F7C4B608AE1A871424CC9A6873D
32	1	CN=Siemens Issuing CA Internet Server 2020 O=Siemens C=DE	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	00fabb27dfff80d09a0000000051d39440	RSA 2048-bits	RSA SHA-256	2020-08-10 14:11:48	2030-11-10 14:41:48		TLS Web Server Authentication, TLS Web Client Authentication	c9a757cb86c96107c6c2b48665a91ec1cae1029b	A665007A05EFE1889D66A40DEECBC6C1A271E919006811FD88DBD7E0675212D1
33	1	CN = Namirial OV SSL CA 2023 O = Namirial S.p.A C = IT	CN = Entrust Root Certification Authority - G2 OU = (c) 2009 Entrust, Inc. - for authorized use only OU = See www.entrust.net/legal-terms O = Entrust, Inc. C = US	17c236215a437f11aae022348b6b7f2d	RSA 2048-bits	RSA SHA-256	2023--2-9 16:09:10	2030-12-7 8:59:59		Server Authentication (1.3.6.1.5.5.7.3.1) Client Authentication (1.3.6.1.5.5.7.3.2)	9a9f6fa5f8fe34fc102deb2f89c6b9d7c692d31e	F4E268EB0279228D96D47B05DF744AE6CE6AAD888A3B757D249EB3D22D27F4C6
34	1	CN AffirmTrust Certificate Authority – OV1 OU= See www.affirmtrust.com/repository ON= AffirmTrust C=CA	CN= AffirmTrust Commercial ON= AffirmTrust C=US	1764987999490089933	RSA 2048-bits	RSA SHA-256	11/11/2016	2030-12-02			FE60C30DA4A29D214F7A784C62C5DB14FC3978C4	EA4EE2FAA57AE4B539B63977FE5BB205B6AFB32F7A73B2B363E4BE02CD8A91E9
34	2	CN= AffirmTrust Certificate Authority – OV1 OU= See www.affirmtrust.com/repository ON= AffirmTrust C=CA	CN= AffirmTrust Commercial ON= AffirmTrust C=US	53f6a611092e528ed963f19149532204	RSA 2048-bits	RSA SHA-256	2019-03-21 20:25	2030-12-02 04:00		TLS Web Server Authentication, TLS Web Client Authentication	FE60C30DA4A29D214F7A784C62C5DB14FC3978C4	B5FD6F800334F565036B0999F8310B580BD7268395D8B267005697AF7301C5E8
35	1	CN=Entrust Certification Authority - L1E OU=(c) 2009 Entrust, Inc. OU=www.entrust.net/rpa is incorporated by reference O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	008666b02ac1cb54400000000051d3589c	RSA 2048-bits	RSA SHA-256	2019-06-19 16:52:08	2026-11-19 17:22:08		TLS Web Server Authentication, TLS Web Client Authentication	5b418ab2c443c1bdbfc85441559de096adffb9a1	232F6367CF561E00C83E180A9FCA8546B3771FB450EBCB4A0526F8349C8CA139
36	1	CN=Entrust Certification Authority - L1J OU=(c) 2016 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - EC1 OU=(c) 2012 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	0a83d4803e7e9f510000000051d4c1f7	EC 384-bits	ECDSA SHA-384	2016-04-05 20:19:54	2037-10-05 20:49:54		TLS Web Server Authentication, TLS Web Client Authentication	c3f94503bec8f90b3c4535f3eb72ece7e8eb949b	3447B74B5E500A549983FA2CED73A5642E6AAEC78829546158437DF66D7435B8
37	1	CN=Entrust Certification Authority - L1M OU=(c) 2014 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority OU=(c) 2006 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	51d346e1	RSA 2048-bits	RSA SHA-256	2014-11-18 20:59:32	2024-11-19 06:33:02		TLS Web Client Authentication, TLS Web Server Authentication	c3f7d0b52a30adaf0d9121703954ddbc8970c73a	CA290389E0D8C62A4083F628A39F52FE3F38B73199CFFAF7C0372378A440FB6A
37	2	CN=Entrust Certification Authority - L1M OU=(c) 2014 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	61a1e7d20000000051d366a6	RSA 2048-bits	RSA SHA-256	2014-12-15 15:25:03	2030-10-15 15:55:03		TLS Web Client Authentication, TLS Web Server Authentication	c3f7d0b52a30adaf0d9121703954ddbc8970c73a	75C5B3F01FD1F51A2C447AB7C785D72E69FA9C472C08571E7EADF3B8EABAE70C
38	1	CN=Entrust Certification Authority - L1N OU=(c) 2014 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G4 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	00abec77ff1b410c07000000005565d805	RSA 2048-bits	RSA SHA-256	2017-11-22 20:04:20	2030-12-22 20:34:20		TLS Web Server Authentication, TLS Web Client Authentication	ee47d18571f1fd2db73fbb3e6358771749400e95	B14D5089079C1D8F7649DB9A5D3CEFB1AAC06F66AFC49225C5BE2AA19FD41A35
39	1	CN=Entrust Certification Authority - QTSP1 C=ES O=Entrust Datacard Europe S.L. organizationIdentifier=VATES-B81188047	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	009c6cf695700c6000000000051d393a6	RSA 2048-bits	RSA SHA-256	2019-07-26 18:31:45	2030-11-26 19:01:45	09/25/2024	TLS Web Server Authentication, TLS Web Client Authentication	1cad3f9cd72d2219a19c4be9daf12a33f7fbb90d	681EBC1822B079B97E0404E4687D9B6C0C0892C820F55738A282AAE62529BDD8
40	1	CN=Entrust Certification Authority - ES QWAC2 ON=VATES-B81188047 O=Entrust EU, S.L. C=ES	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	7a8872b868a359dab1b02ecf4fc9718d	RSA 2048-bits	RSA SHA-256	2021-11-16 00:00:00	2030-12-01 00:00:00		TLS Web Server Authentication, TLS Web Client Authentication	41cfae2b1d633bcb4cf5904479b65a2489df929c	C97F2F6E6A8ADB6ECFE4978F08CA8F6F0123A94784522B610ADF6AB51439FC62
41	1	CN = Entrust 4K TLS Certification Authority - EV TLS1 O = Entrust, Inc. C = US	CN = Entrust 4K EV TLS Root CA - 2022 O = Entrust, Inc. C = US	31ef81d7823f9a0f27b5d3085df41ec0	EC 384-bits	ECDSA SHA-384	2022-12-14 14:16:26	2040-12-29 19:59:59		Server Authentication (1.3.6.1.5.5.7.3.1) Client Authentication (1.3.6.1.5.5.7.3.2)	9930115c04d2448b259713c665d21616c9678792	AAC8B9394C3BB037662244235343371C59E951FF85A151B3FE19C288076E2B5
42	1	CN = Entrust P384 TLS Certification Authority - EV TLS2 O = Entrust, Inc. C = US	CN = Entrust P384 EV TLS Root CA - 2022 O = Entrust, Inc. C = US	2ecf71fbc3f43015ca8bea5edd3dc763	EC 384-bits	ECDSA SHA-384	2022-12-14 14:20:13	2040-12-29 19:59:59		Server Authentication (1.3.6.1.5.5.7.3.1) Client Authentication (1.3.6.1.5.5.7.3.2)	2cc1fad3279c77e73038c8c95ca43c02a36775c4	2426C77CFA12EB0DB6B013225496C0E7AAD66D63597AE5EF9A0BEB3830C23EC2



CA #	Cert #	Subject	Issuer	Serial Number	Key Type	Hash Type	Not Before	Not After	Revoked Date	Extended Key Usage	Subject Key Identifier	SHA256 Fingerprint
43	1	CN = Namirial EV SSL CA 2023 O = Namirial S.p.A C = IT	CN = Entrust Root Certification Authority - G2 OU = (c) 2009 Entrust, Inc. - for authorized use only OU = See www.entrust.net/legal-terms O = Entrust, Inc. C = US	7b0350a7b1d46885af4cc8c740a568b0	RSA 2048-bits	RSA SHA-256	2023-02-09 16:13:06	2030-12-07 8:59:59		Server Authentication (1.3.6.1.5.5.7.3.1) Client Authentication (1.3.6.1.5.5.7.3.2)	eafeeb5847b833d9d2367bc88c677ab1338bd52	366DD61ECE49EF68A7E0705915ECE7EE7BAA3C5D71B9363CD487E0FE0242A634
44	1	CN= AffirmTrust Extended Validation CA - EV1 OU= See www.affirmtrust.com/repository ON= AffirmTrust C= CA	CN= AffirmTrust Commercial ON= AffirmTrust C= US	4679446353986764952	RSA 2048-bits	RSA SHA-256	2016-11-29 04:00	2030-12-02 04:00			DBEF65370BE547CB35D1901F03C1BC88C7A7EA80	CF88915CF996932C2B4CBE3039076D119B8728B4F31E49B63A5022FE65489A12
44	2	CN= AffirmTrust Extended Validation CA - EV1 OU= See www.affirmtrust.com/repository ON= AffirmTrust C= CA	CN= AffirmTrust Commercial ON= AffirmTrust C= US	1729551ed68e7fb1edf57300f35d7fd5	RSA 2048-bits	RSA SHA-256	2019-03-21 20:27:00	2030-12-02 04:00			DBEF65370BE547CB35D1901F03C1BC88C7A7EA80	ED3C991466C8C45B5FD1DA281028F9587B8219523647E0CA1B47F2C527D2920F
45	1	CN= AffirmTrust Extended Validation CA – EV2 OU= See www.affirmtrust.com/repository ON= AffirmTrust C= CA	CN= AffirmTrust Premium ON= AffirmTrust C= US	5371c8eb0784fd5108e5d4f3e323ec46	RSA 2048-bits	RSA SHA-256	2019-03-21 20:46:35	2030-12-02 04:00:00			737C9A38683C517C4108FEA11F2A1EB461DBCD3C	9DF77488CA874AC32E3CEC4C643D001D5C3BABFA4001FFD193DCA10C8BE5CB3A
46	1	CN= AffirmTrust Extended Validation CA – EV3 OU= See www.affirmtrust.com/repository ON= AffirmTrust C= CA	CN= AffirmTrust Networking ON= AffirmTrust C= US	3424a1ecf8f0a35fe746b7011c43e844	RSA 2048-bits	RSA SHA-256	2019-03-21 20:46:35	2030-12-02 04:00:00			791EB1C917C71EACB1C714D7C3E87F8CB9509B15	B700BA49AF4D19E72FB15A2DAC3C213BA44C319FA7DA92772B3682E12B781093
47	1	CN= AffirmTrust Extended Validation CA – EVEC1 OU= See www.affirmtrust.com/repository ON= AffirmTrust C= CA	CN= AffirmTrust Premium ECC ON= AffirmTrust C= US	0202a584c134064dc9f32d207ea37298	RSA 2048-bits	RSA SHA-256	2019-03-21 20:55:07	2030-12-02 04:00:00			C6908C0283D75DE3BE3B9C2ED5657D2A1060EEE5	CDE23A52303C3CA67A4BBBCC9582FF5C9203AA98CB0F387139308CE2289506A2
48	1	CN=Entrust Code Signing CA - OVCS1 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	7ab8c4fc0000000051d373d4	RSA 2048-bits	RSA SHA-256	2015-06-09 18:03:40	2025-06-09 18:33:40		Code Signing	7e1a1f1a11745c64c90c1f9401abfd81642ea12c	7FBA43A4CCBB837B1CCC2DD11CE0C911DA3A2917B0CA0E846056854EF464C50C4
48	2	CN=Entrust Code Signing CA - OVCS1 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	43c10b1c0000000051d373da	RSA 2048-bits	RSA SHA-256	2015-06-10 13:46:05	2030-11-10 14:16:05		Code Signing	7e1a1f1a11745c64c90c1f9401abfd81642ea12c	CC5B7A0E5D6771BA348D3D763752F0667026B3531C5396EDBE24ADCE93215723
49	1	CN=Entrust Code Signing CA - OVCS2 O=Entrust, Inc. C=US	CN=Entrust Code Signing Root Certification Authority - CSBR1 O=Entrust, Inc. C=US	71ef5574af3554c35a2c69f66f4b6bcd	RSA 4096-bits	RSA SHA-512	2021-05-07 19:20:45	2040-12-29 23:59:00		Code Signing	ef9fba79b073f2251e789c03529c1b5384de8ded	95F843046BAC035572A3BA1B821DF8B759467F5B512DDFA8A72F0799447D6368
50	1	CN=Entrust Extended Validation Code Signing CA - EVCS1 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	417ace390000000051d373bb	RSA 2048-bits	RSA SHA-256	2015-06-09 17:54:53	2025-06-09 18:24:53		Code Signing	2a0a6f322c292021766ab1ac8c3caf938e0e6ba2	57BC151D924C5A43B57B6433A58A93885F773B4631FDEC885C9FC3545529F274
50	2	CN=Entrust Extended Validation Code Signing CA - EVCS1 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	00d9d6b8f20000000051d373d8	RSA 2048-bits	RSA SHA-256	2015-06-10 13:39:51	2025-06-10 14:09:51		Code Signing	2a0a6f322c292021766ab1ac8c3caf938e0e6ba2	091C6319936F0CAC4C7B5E027DCCA2B2B2A2AF4561EA2C71E650C1E3FB905FD0
50	3	CN=Entrust Extended Validation Code Signing CA - EVCS1 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	00878252600000000051d373d9	RSA 2048-bits	RSA SHA-256	2015-06-10 13:42:49	2030-11-10 14:12:49		Code Signing	2a0a6f322c292021766ab1ac8c3caf938e0e6ba2	D04DB927C663AA8C853D54716DD6DC2A4B2FEF9C3AE1BF8250447FC5D7771E57
51	1	CN=Entrust Extended Validation Code Signing CA - EVCS2 O=Entrust, Inc. C=US	CN=Entrust Code Signing Root Certification Authority - CSBR1 O=Entrust, Inc. C=US	35afb77b9d341f6afc8f8446ab31352b	RSA 4096-bits	RSA SHA-512	2021-05-07 19:19:52	2040-12-29 23:59:00		Code Signing	ce894f8251aa15a28462ca312361d261fbf8fe78	6510DC50A0D17DC438C2A85D738F558582B6C25361884F3882E207A51F4ED152
52	1	CN=Entrust Class 1 Client CA - SHA256 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust Root Certification Authority - G2 OU=(c) 2009 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	6e61669872bc9c300000000051d3931e	RSA 2048-bits	RSA SHA-256	2019-04-16 15:35:52	2030-11-16 16:05:52		TLS Web Client Authentication, E-mail Protection	e249b9ec25deb70cdee550185b48cc0c8e15f2a6	C6E9E993C258B72124AAD3C9C068B6EF23576155F310B305733361E20B17C943
53	1	CN=Entrust Class 2 Client CA OU=(c) 2010 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	00bcb4d843035b759f0000000051ce1709	RSA 2048-bits	RSA SHA-256	2017-06-20 20:34:33	2028-12-20 21:04:33		E-mail Protection, TLS Web Client Authentication	0991a5bae9f22e2a75dfcd7efe77caf2de6b9b24	95AD94E88F5B8604E40E5FFF36B0D34BE46C1D5BA06C0E735B72AA396735C415
53	2	CN=Entrust Class 2 Client CA OU=(c) 2010 Entrust, Inc. OU=www.entrust.net/CPS is incorporated by reference O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	00af1c04b2ac8cff9b0000000051ce18e3	RSA 2048-bits	RSA SHA-256	2020-07-29 15:48:30	2029-06-29 16:18:30		E-mail Protection, TLS Web Client Authentication	0991a5bae9f22e2a75dfcd7efe77caf2de6b9b24	1A20FEF46482A98BAC6CF6C7397C017310AC7FB78495438BC7A7DE9035C246679



CA #	Cert #	Subject	Issuer	Serial Number	Key Type	Hash Type	Not Before	Not After	Revoked Date	Extended Key Usage	Subject Key Identifier	SHA256 Fingerprint
54	1	CN=Entrust Class 2 Client CA - C2CA2 O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	0088068b45c3fdd464000000051ce1961	RSA 2048-bits	RSA SHA-256	2021-03-16 14:22:40	2029-07-16 14:52:40		TLS Web Client Authentication, E-mail Protection	a2714ad5c264652f8dce2ae2c1b6e70dd0f932e4	B14CF550D8F573D93E90963C32A85FB51C983C98164F54D78915F6358C954F0E
55	1	CN = Entrust Personal Email Certification Authority - SMIME1 O = Entrust, Inc. C = US	CN = Entrust SMIME Root CA - 2022 O = Entrust, Inc. C = US	1bb7bc5a6a4f06be4f716105ecd2a74	RSA 4096-bits	SHA-384	2022-12-14 18:31	2040-12-29 23:59		E-mail Protection, TLS Web Client Authentication	03219B5F18632EC87EF9AEDAD9179FB6C91B8360	97E229CD78B38BD7B74AC431FA57E294CBAA35EB238293DEDE04B20B218D92BA
56	1	CN = Entrust Enterprise Email CA - SMIME2 O = Entrust, Inc. C = US	CN = Entrust SMIME Root CA - 2022 O = Entrust, Inc. C = US	1ab5936d245a2fe43421c2ef6513e3f3	RSA 4096-bits	SHA-384	2024-06-26 16:05	2040-12-29 23:59:59		E-mail Protection, TLS Web Client Authentication	E08815F1C58A919DBF95E8E676AD71CD0780F87F	D9F628050929FC422B1FCB73C11496923D7DB0E155769A134313C0E5E81FB2A8
57	1	CN = Entrust Certification Authority – ES QTS1 OrganizationIdentifier = VATES-B81188047 O = Entrust EU, S.L. C = ES	CN = Entrust Digital Signing Root Certification Authority – DSR1 O = Entrust, Inc. C = US	10b5a317770d5c645606941116538cdc	RSA 4096-bits	RSA SHA-256	2022-10-03 11:12:28	2040-12-28 20:00:00		Time Stamping (1.3.6.1.5.5.7.3.8)	696382cac2f1119a714332858bae37ca9676be80	253F463FB19E06D188A1F81AB6A3CA78C9352B08DC94DD74CF05336809363812
58	1	CN=Entrust Timestamping CA - TS1 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048)s OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	58da13ff00000000051ce0df7	RSA 2048-bits	RSA SHA-256	2015-07-22 19:02:54	2029-06-22 19:32:54		Time Stamping	c3c271d27bd76805ae3b399b34250c6203c75768	44DFCD2C573110E74BF4E85903595F660650ED925B7306542C54E87396671F03
59	1	CN=Entrust Time Stamping CA - TS2 O=Entrust, Inc. C=US	CN=Entrust Code Signing Root Certification Authority - CSBR1 O=Entrust, Inc. C=US	25bc2bf329ca107f1ea9ba8885d49d3b	RSA 4096-bits	RSA SHA-512	2021-05-07 19:22:14	2040-12-29 23:59:00		Time Stamping	260ff0c448081bccdd91f55454b6b3b3fc99f108	21E81685B352955B9ED48FB969BD2E4F95CFB85ED1260CF6B7FA70A035D0028F
60	1	CN = Entrust Time Stamping CA - TS4 O = Entrust C = US	CN=Entrust Code Signing Root Certification Authority - CSBR1 O=Entrust, Inc. C=US	29a427b69f9b74ac2f799250ed090d61	RSA 4096-bits	SHA-512 with RSA	2025-01-22 15:09:01	2040-12-29 23:59:59		Time Stamping	24D2F416EFE99F21232AC594D4247EBE641974B7	E46CD7BE45E1519532C06012B6785DF8512CCF0FCC9AD7E850606E185330F2E7
61	1	CN = Entrust Time Stamping CA – TS3 O = Entrust C = US	CN=Entrust Digital Signing Root Certification Authority - DSR1 O=Entrust, Inc. C=US	3408caf88bab2551c998e96caf61b9b6	RSA 4096-bits	RSA SHA-384	2025-01-22 15:07:36	2040-12-29 23:59:59		Time Stamping	0F5327BD8B991DEBF2F978D14CFBECF9F573D9EA	ACBCF6B5567192222C02B594792FE757BFC14BFDAB2C0C425B9345D546DA556B
62	1	CN=Entrust Verified Mark CA - VMC2 O=Entrust, Inc. C=US	CN=Entrust Verified Mark Root Certification Authority - VMCR1 O=Entrust, Inc. C=US	699d8fd758c2c39c1e53d1aa1476d1e6	RSA 4096-bits	RSA SHA-512	2021-05-07 19:23:23	2040-12-29 23:59:00		1.3.6.1.5.5.7.3.31	efbc3cb4af3ad0455e7654dfc76478e92d1d743f	C2695048A91DBF451A695B953711ADCS5CD70975B5FCA1E181EBBD2172CB07E0C
63	1	CN=Entrust Class 3 Client CA - SHA256 OU=(c) 2015 Entrust, Inc. - for authorized use only OU=See www.entrust.net/legal-terms O=Entrust, Inc. C=US	CN=Entrust.net Certification Authority (2048) OU=(c) 1999 Entrust.net Limited OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.) O=Entrust.net	551615150000000051ce160e	RSA 2048-bits	RSA SHA-256	2016-02-25 18:08:16	2029-06-25 18:38:16		TLS Web Client Authentication, E-mail Protection, 1.3.6.1.4.1.311.10.3.12, 2.16.840.1.114027.40.11	069f6f4ea2294e0f0cae17bfb69846efadb83b72	33857338361ECFC4858DDFF6B9EF6273E3DB856AB9CEA1C0E2C65925D1C87978
64	1	CN=Entrust Certification Authority - ES QSig1 C=ES O=Entrust Datacard Europe, S.L. organizationIdentifier=VATES-B81188047	CN=Entrust Certification Authority - AATL1 C=US O=Entrust, Inc.	4491ca5825be79842b29b0c37286215f	RSA 4096-bits	RSA SHA-512	2020-07-29 16:33:00	2037-12-19 23:59:00	2024-09-25	E-mail Protection, 1.3.6.1.4.1.311.10.3.12, 1.2.840.113583.1.1.5	5a53088a6130a90dead54397d3983b951e2e6d02	B2874B588A94034798319D5D329DB265F83A47F315BA5831A4970CB57166D594
65	1	CN=Entrust Certification Authority - ES QSig2 organizationIdentifier=VATES-B81188047 O=Entrust EU, S.L. C=ES	CN=Entrust Digital Signing Root Certification Authority - DSR1 O=Entrust, Inc. C=US	3f967d63188a95bf302f82e516cb991d	RSA 4096-bits	RSA SHA-512	2021-11-16 00:00:00	2040-12-29 00:00:00		1.3.6.1.4.1.311.10.3.12, 1.2.840.113583.1.1.5	f5560d69d7da6ac9d8c9a2096e74bedb80c61700	4671FDEAD3C5B32D834B36591D41496FCB8A0DB7D4F9F4CB9D34EABE0947EE87
66	1	CN=Entrust Certification Authority - ES QSeal1 C=ES O=Entrust Datacard Europe, S.L. organizationIdentifier=VATES-B81188047	CN=Entrust Certification Authority - AATL1 C=US O=Entrust, Inc.	13ee348e492f8dd6b5c49cf073f714ab	RSA 4096-bits	RSA SHA-512	2020-07-27 14:39:07	2037-12-19 23:59:00		E-mail Protection, 1.3.6.1.4.1.311.10.3.12, 1.2.840.113583.1.1.5	5680152395717fe72d90d0cd063a4f67637d3d75	1701DE38124C4458F32B88AE7E62AC15876C427A3AD38BAE8FD1479FF00030F3
67	1	CN=Entrust Certification Authority - ES QSeal2 organizationIdentifier=VATES-B81188047 O=Entrust EU, S.L. C=ES	CN=Entrust Digital Signing Root Certification Authority - DSR1 O=Entrust, Inc. C=US	12f04c327561e6f51e8d39b47e9884e1	RSA 4096-bits	RSA SHA-512	2021-11-16 00:00:00	2040-12-29 00:00:00		Document Signing (1.3.6.1.4.1.311.10.3.12) Unknown Key Usage (1.2.840.113583.1.1.5)	3618256ed95df710057c272eb8ecfa414a60ed1f	8C31D9375128D4B107F07678EEBFFF2CCA26A4CABB462F257F31A36FE7BCE104
68	1	CN = Entrust Digital Signing Certification Authority - DS1 O = Entrust, Inc. C = US	CN = Entrust Digital Signing Root Certification Authority - DSR1 O = Entrust, Inc. C = US	536373ce69ce48b59ab6f202780d6d75	RSA 4096-bits	RSA SHA-384	2022-12-14 14:12:49	2040-12-29 19:59:59		Unknown Key Usage (1.3.6.1.5.5.7.3.36) Document Signing (1.3.6.1.4.1.311.10.3.12) Unknown Key Usage (1.2.840.113583.1.1.5)	80a1841c29b421823c0e5d17fbb21ed1a3e2d82d	EEE2B2C76CF4A1DC6E90C14CC1986D120245294833BD6A739FBD3EBDE9B8972
69	1	CN = Entrust RSS Digital Signing CA - RSS1 O = Entrust, Inc. C = US	CN = Entrust Digital Signing Root Certification Authority - DSR1 O = Entrust, Inc. C = US	4e09de80dab7abb564ec883b235371cf	RSA 4096-bits	RSA SHA-384	2024-06-26 16:09:42	2040-12-29 23:59:59			25B5821F426E18029D9E0ED50DE83D12BFC7D7	BE7A936D231428C0DB3AEE0EE9DEC65A21637B9C3D287D4A2E4960C6E5D0A827
70	1	CN = Entrust SAS Digital Signing CA - SAS1 O = Entrust, Inc. C = US	CN = Entrust Digital Signing Root Certification Authority - DSR1 O = Entrust, Inc. C = US	6c8a610b9102af05a8f9f4ecbbebfe48	RSA 4096-bits	RSA SHA-384	2024-06-26 16:09:42	2040-12-29 23:59:59			FEE215BD58F8CD0A7281073B8D60ED067F1B70:87	2CE87D1F184A99E7CC39F122AB4ED19215261CCE27BC85FD1B2E065AB7FD7615

Table – New Root/Subordinate CAs deployed in production during Audit Period

New CAs	Subject Key Identifier	Key Generation Details
Entrust Root Certification Authority – 4K ClientR 2024	143879FB85583B6138F45DE28B32A7A507E27507	Key was generated on April 30, 2021 Key Name – 300006.
Entrust Root Certification Authority – P384 ClientR 2024	6C79BDFE09E30965CD682D370EB693E60CFFC314	Key was generated on November 22, 2022 Key Name – 500053.
Entrust Root Certification Authority – Client1	4775F09CF58D101D755B9EF38C855733A535330D	Key was generated on April 30, 2021 Key Name – 300006.
Entrust Root Certification Authority – Client2	1B21F09CADC08D0C57561B429C4DF2A77815CAC2	Key was generated on November 22, 2022 Key Name – 500053.

ATTACHMENT B
LIST OF ENTRUST CERTIFICATION PRACTICE STATEMENTS

CPS Name	Version	Date
Entrust Certificate Services Certification Practice Statement	3.29	21 Feb 2025
Entrust Certificate Services Certification Practice Statement	3.28	21 Nov 2024
Entrust Certificate Services Certification Practice Statement	3.27	7 Nov 2024
Entrust Certificate Services Certification Practice Statement	3.26	15 Oct 2024
Entrust Certificate Services Certification Practice Statement	3.25	9 Oct 2024
Entrust Certificate Services Certification Practice Statement	3.24	19 Sept 2024
Entrust Certificate Services Certification Practice Statement	3.23	11 Sept 2024
Entrust Certificate Services Certification Practice Statement	3.22	31 July 2024
Entrust Certificate Services Certification Practice Statement	3.21	14 May 2024
Entrust Certificate Services Certification Practice Statement	3.20	26 March 2024
Entrust Certificate Services Certification Practice Statement	3.19	25 March 2024
Entrust Certificate Services Certification Practice Statement	3.18	22 March 2024
Entrust Certificate Services Certification Practice Statement	3.17	21 March 2024
Entrust Certificate Services Certification Practice Statement	3.16	20 Feb 2024
Entrust EU, S.L. Certification Practice Statement	2.2	27 Jan 2025
Entrust EU, S.L. Certification Practice Statement	2.1	1 May 2024
Entrust EU, S.L. Certification Practice Statement	2.0	31 Oct 2023
AffirmTrust Certification Practice Statement	3.18	15 Jan 2025
AffirmTrust Certification Practice Statement	3.17	21 Mar 2025
AffirmTrust Certification Practice Statement	3.16	20 Feb 2024



ENTRUST MANAGEMENT'S STATEMENT

Entrust Corporation ("Entrust") operates the Certification Authority ("CA") services as enumerated in [Attachment A](#), and provides the following CA services:

- Subscriber registration
- Certificate renewal
- Certificate rekey
- Certificate issuance
- Certificate distribution
- Certificate revocation
- Certificate validation
- Subscriber key generation and management
- Subordinate CA cross-certification

The management of Entrust is responsible for establishing and maintaining effective controls over its CA operations, including its CA business practices disclosure on its [website](#), CA business practices management, CA environmental controls, CA key lifecycle management controls, subscriber key lifecycle management controls, certificate lifecycle management controls, and subordinate CA certificate lifecycle management controls. These controls contain monitoring mechanisms, and actions are taken to correct deficiencies identified.

There are inherent limitations in any controls, including the possibility of human error, and the circumvention or overriding of controls. Accordingly, even effective controls can only provide reasonable assurance with respect to Entrust's Certification Authority operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

Entrust management has assessed its disclosures of its certificate practices and controls over its CA services. Based on that assessment, in Entrust management's opinion, in providing its CA services at in Ontario - Canada, Texas - USA, Colorado - USA, Berkshire – UK throughout the period 1 March 2024 to 28 February 2025, Entrust has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environment control practices in its Certificate Policy/ Certification Practice Statements ("CP/CPS") as enumerated in [Attachment B](#)
- maintained effective controls to provide reasonable assurance that Entrust provides its services in accordance with its CP/CPS
- maintained effective controls to provide reasonable assurance that:
 - the integrity of keys and certificates it manages is established and protected throughout their lifecycles;
 - the integrity of subscriber keys and certificates it manages is established and protected throughout their lifecycles;
 - subscriber information is properly authenticated (for the registration activities performed by Entrust); and
 - subordinate CA certificate requests are accurate, authenticated, and approved
- maintained effective controls to provide reasonable assurance that:
 - logical and physical access to CA systems and data is restricted to authorized individuals;
 - the continuity of key and certificate management operations is maintained; and
 - CA systems development, maintenance, and operations are properly authorized and performed to maintain CA systems integrity

in accordance with the [WebTrust Principles and Criteria for Certification Authorities v2.2.2](#), including the following:

**CA Business Practices Disclosure**

- Certification Practice Statement (“CPS”)

CA Business Practices Management

- Certification Practice Statement Management

CA Environmental Controls

- Security Management
- Asset Classification and Management
- Personnel Security
- Physical and Environmental Security
- Operations Management
- System Access Management
- System Development, Maintenance, and Change Management
- Disaster Recovery, Backups, and Business Continuity Management
- Monitoring and Compliance
- Audit Logging

CA Key Lifecycle Management Controls

- CA Key Generation
- CA Key Storage, Backup, and Recovery
- CA Public Key Distribution
- CA Key Usage
- CA Key Destruction
- CA Key Compromise
- CA Cryptographic Hardware Lifecycle Management
- CA Key Transportation
- CA Key Migration

Subscriber Key Lifecycle Management Controls

- CA-Provided Subscriber Key Generation Services
- CA-Provided Subscriber Key Storage and Recovery Services
- Requirements for Subscriber Key Management

Certificate Lifecycle Management Controls

- Subscriber Registration
- Certificate Renewal
- Certificate Rekey
- Certificate Issuance
- Certificate Distribution
- Certificate Revocation
- Certificate Validation

Subordinate CA and Cross Certificate Lifecycle Management Controls

- Subordinate CA and Cross Certificate Lifecycle Management



Entrust does not escrow and archive its CA keys, does not provide integrated circuit card management services, and does not provide certificate suspension services. Accordingly, our statement does not extend to controls that would address those criteria.

A handwritten signature in black ink that reads 'Bruce Morton'.

Bruce Morton
Director, Entrust Certificate Services
June 27, 2025



ATTACHMENT A

LIST OF IN SCOPE CAs

Root CAs	
1.	Entrust.net Certification Authority (2048)
2.	Entrust Root Certification Authority- EV Root
3.	Entrust Root Certification Authority – G2
4.	Entrust Root Certification Authority – G4
5.	Entrust Root Certification Authority – EC1
6.	Entrust Root Certification Authority – CSBR1
7.	Entrust Root Certification Authority – DSR1
8.	Entrust Root Certification Authority – VMCR1
9.	Entrust Root Certification Authority – 4K EVTLSR 2022
10.	Entrust Root Certification Authority – P384 EVTLSR 2022
11.	Entrust Root Certification Authority – 4K TLSR 2022
12.	Entrust Root Certification Authority – P384 TLSR 2022
13.	Entrust Root Certification Authority - SMIMER 2022
14.	Entrust Root Certification Authority – 4K ClientR 2024
15.	Entrust Root Certification Authority – P384 ClientR 2024
16.	AffirmTrust Commercial
17.	AffirmTrust Networking
18.	AffirmTrust Premium
19.	AffirmTrust Premium ECC
20.	AffirmTrust 4K TLSR 2022
Client Authentication CAs	
21.	Entrust Root Certification Authority – Client1
22.	Entrust Root Certification Authority – Client2
Intermediate CAs	
23.	Entrust Certification Authority – AATL1
24.	Entrust Certification Authority – ICA1
DV SSL Issuing CAs	
25.	AffirmTrust Certificate Authority – DV1
26.	AffirmTrust Certificate Authority – DVTLS1
OV SSL Issuing CAs	
27.	Entrust Certification Authority – L1F
28.	Entrust Certification Authority – L1K
29.	Entrust Certification Authority – OVTLS1
30.	Entrust Certification Authority – OVTLS2
31.	Entrust Certification Authority – CrowdStrike TLS CA 2022
32.	Siemens 2020
33.	Entrust Certification Authority – Namirial OV SSL
34.	AffirmTrust Certificate Authority – OV1
EV SSL Issuing CAs	
35.	Entrust Certification Authority – L1E
36.	Entrust Certification Authority – L1J
37.	Entrust Certification Authority – L1M
38.	Entrust Certification Authority – L1N
39.	Entrust Certification Authority – QTSP1
40.	Entrust Certification Authority – ES QWAC2
41.	Entrust Certification Authority - EVTLS1
42.	Entrust Certification Authority - EVTLS2
43.	Entrust Certification Authority - Namirial EV SSL
44.	AffirmTrust Extended Validation CA – EV1
45.	AffirmTrust Extended Validation CA – EV2



46. AffirmTrust Extended Validation CA – EV3
47. AffirmTrust Extended Validation CA – EVEC1
Publicly Trusted Code Signing Issuing CAs
48. Entrust Code Signing CA – OVCS1
49. Entrust Code Signing CA – OVCS2
EV Code Signing Issuing CA
50. Entrust Extended Validation Code Signing CA – EVCS1
51. Entrust Extended Validation Code Signing CA – EVCS2
Secure Email (S/MIME) CA
52. Class 1 Client CA – SHA256
53. Entrust Class 2 Client CA
54. Entrust Class 2 Client CA – C2CA2
55. Entrust SMIME1 Client CA
56. Entrust SMIME2 Client CA
Timestamp CA
57. Entrust Timestamping CA – ES QTS1
58. Entrust Timestamping CA – TS1
59. Entrust Timestamping CA – TS2
60. Entrust Time Stamping CA – TS3
61. Entrust Time Stamping CA – TS4
Verified Marks Certification CA
62. Entrust Certificate Authority – VMC2
Document Signing CAs
63. Entrust Class 3 Client CA - SHA256
64. Entrust Certification Authority - ES QSig1
65. Entrust Certification Authority - ES QSig2
66. Entrust Certification Authority - ES QSeal1
67. Entrust Certification Authority - ES QSeal2
68. Entrust Certification Authority – DS1
69. Entrust Certification Authority – RSS1
70. Entrust Certification Authority – SAS1

ATTACHMENT B

LIST OF ENTRUST CERTIFICATION PRACTICE STATEMENTS

CPS Name	Version	Date
Entrust Certificate Services Certification Practice Statement	3.29	21 Feb 2025
Entrust Certificate Services Certification Practice Statement	3.28	21 Nov 2024
Entrust Certificate Services Certification Practice Statement	3.27	7 Nov 2024
Entrust Certificate Services Certification Practice Statement	3.26	15 Oct 2024
Entrust Certificate Services Certification Practice Statement	3.25	9 Oct 2024
Entrust Certificate Services Certification Practice Statement	3.24	19 Sept 2024
Entrust Certificate Services Certification Practice Statement	3.23	11 Sept 2024
Entrust Certificate Services Certification Practice Statement	3.22	31 July 2024
Entrust Certificate Services Certification Practice Statement	3.21	14 May 2024
Entrust Certificate Services Certification Practice Statement	3.20	26 March 2024
Entrust Certificate Services Certification Practice Statement	3.19	25 March 2024
Entrust Certificate Services Certification Practice Statement	3.18	22 March 2024
Entrust Certificate Services Certification Practice Statement	3.17	21 March 2024
Entrust Certificate Services Certification Practice Statement	3.16	20 Feb 2024
Entrust EU, S.L. Certification Practice Statement	2.2	27 Jan 2025
Entrust EU, S.L. Certification Practice Statement	2.1	1 May 2024
Entrust EU, S.L. Certification Practice Statement	2.0	31 Oct 2023
AffirmTrust Certification Practice Statement	3.18	15 Jan 2025
AffirmTrust Certification Practice Statement	3.17	21 Mar 2025
AffirmTrust Certification Practice Statement	3.16	20 Feb 2024