



REPORT OF THE INDEPENDENT ACCOUNTANT

To the management of SecureTrust,

We have examined SecureTrust, a Trustwave Holdings, Inc. division ("SecureTrust"), management's [assertion](#) that for its Certification Authority ("CA") operations at Chicago, Illinois in the United States of America, throughout the period October 1, 2018 to September 30, 2019 for its CAs as enumerated in [Attachment B](#), SecureTrust has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in the applicable versions of its SecureTrust Certificate Policy and Certification Practices Statement enumerated in [Attachment A](#)
- maintained effective controls to provide reasonable assurance that SecureTrust provides its services in accordance with its SecureTrust Certificate Policy and Certification Practice Statement
- maintained effective controls to provide reasonable assurance that:
 - the integrity of keys and certificates it manages is established and protected throughout their lifecycles; and
 - subscriber information is properly authenticated for the registration activities performed by SecureTrust
- 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

based on the [WebTrust Principles and Criteria for Certification Authorities v2.1](#). SecureTrust's management is responsible for its assertion. Our responsibility is to express an opinion on management's assertion, based on our examination.

The relative effectiveness and significance of specific controls at SecureTrust 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. Our examination did not extend to controls at individual subscriber and relying party locations and we have not evaluated the effectiveness of such controls.

SecureTrust makes use of external registration authorities for subscriber registration activities of client authentication certificates as disclosed in SecureTrust's business practices. Our examination did not extend to the controls exercised by these external registration authorities.

SecureTrust does not escrow its CA keys, does not provide subscriber key lifecycle controls, does not provide certificate suspension services, and does not provide subordinate CA certificate



lifecycle management services to third parties. Accordingly, our examination did not extend to controls that would address those criteria.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether management’s assertion is fairly stated, in all material respects. An examination involves performing procedures to obtain evidence about management’s assertion. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risks of material misstatement of management’s assertion, whether due to fraud or error. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

Because of the nature and inherent limitations of controls, SecureTrust’s ability to meet the aforementioned criteria may be affected. For example, controls may not prevent, or detect and correct, error, fraud, unauthorized access to systems and information, or failure to comply with internal and external policies or requirements. Also, the projection of any conclusions based on our findings to future periods is subject to the risk that changes may alter the validity of such conclusions.

In our opinion management’s assertion, as referred to above, is fairly stated, in all material respects.

Without modifying our opinion, we noted the following other matters during our procedures:

Matter Topic		Matter Description
1	Certificate Content	Two certificates were issued containing the phrase “Some-State” in the stateOrProvinceName field. This matter has been disclosed by SecureTrust in Mozilla Bug 1551374 .
2	Certificate Validation	During an internal self-audit on April 23, 2019, SecureTrust discovered a certificate that was intended to be an internal only test certificate was issued using a deprecated validation method. The certificate was issued as a publicly trusted certificate. This matter has been disclosed by SecureTrust in Mozilla Bug 1546776 .

This report does not include any representation as to the quality of SecureTrust’s services other than its CA operations at Chicago, Illinois, in the United States of America nor the suitability of any of SecureTrust’s services for any customer’s intended purpose.



SecureTrust'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.

BDO USA, LLP

St. Louis, Missouri
November 19, 2019



**ATTACHMENT A - CERTIFICATION PRACTICE STATEMENT AND CERTIFICATE
POLICY VERSIONS IN-SCOPE**

Policy Name	Policy Version	Policy Date
SecureTrust Certificate Policy and Certification Practices Statement	Version 6.0	April 24, 2019
Trustwave Certificate Policy and Certification Practices Statement	Version 5.2	November 14, 2018
Trustwave Certificate Policy and Certification Practices Statement	Version 5.1	October 1, 2018



ATTACHMENT B - IN-SCOPE CAs

Root CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = XRamp Global Certification Authority O = XRamp Security Services Inc OU = www.xrampsecurity.com C = US	CECDCC905099D8DADFC5B1D209B737CBE2C18CFB2C10C0FF0BCF0D3286FC1AA2	11/1/2004	1/1/2035
CN = SecureTrust CA O = SecureTrust Corporation C = US	F1C1B50AE5A20DD8030EC9F6BC24823DD367B5255759B4E71B61FCE9F7375D73	11/7/2006	12/31/2029
CN = Secure Global CA O = SecureTrust Corporation C = US	4200F5043AC8590EBB527D209ED1503029FBCBD41CA1B506EC27F15ADE7DAC69	11/7/2006	12/31/2029
CN = Trustwave Global Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	97552015F5DDFC3C8788C006944555408894450084F100867086BC1A2BB58DC8	8/23/2017	8/23/2042



Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = Trustwave Global ECC P256 Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	945BBC825EA554F489D1FD51A73DDF2EA624AC7019A05205225C22A78CCFA8B4	8/23/2017	8/23/2042
CN = Trustwave Global ECC P384 Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	55903859C8C0C3EBB8759ECE4E2557225FF5758BBD38EBD48276601E1BD58097	8/23/2017	8/23/2042



SSL/TLS Issuing CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave Extended Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	EEA36C0FFA3F54FFDB0CF14B3BD34A53EC7B775F54053DD8B07DFD2F8BEC9083	10/13/2014	10/10/2024
E = ca@trustwave.com CN = Trustwave Extended Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	49C58270F70F1BE0B7C19D1BC2C2EBC41E2FDE0D4885D4FA65EF0370ACEC7A00	9/1/2016	9/29/2024
E = ca@trustwave.com CN = Trustwave Secure Global Extended Validation CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	45B2B08E1B58948A028BE13A67C0E20D4B2466AE2B6EC6250EBB10FD6B7F8239	8/12/2015	8/9/2025
E = ca@trustwave.com CN = Trustwave XRamp Global Extended Validation CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	1D0CD7EF3C19265508E20E58B3538964F4A11ADEC8A71D8AB8A8AFF15683C6AE	8/12/2015	8/9/2025
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Extended Validation CA, Level 1	DD23355C61D59970423004729795CAEF77AFDB39767A795740D4E04CB6158A99	1/29/2019	1/29/2029



Subject DN	SHA2 Thumbprint	Valid From	Valid To
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Extended Validation CA, Level 1	18626A3B7211128D563469C654557D13C9366D7FCEC8B94DB4F0AA7E05944041	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Extended Validation CA, Level 1	275BF0046E0270178B13B67E4DB150A10197CB71F9A061FAD36B3D76639FE186	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Extended Validation CA, Level 1	29F8E104DF38E612BF4F505365B5D0B0B20DD4E89C908306484EB8374C1E66D8	2/6/2018	2/24/2028
E = ca@trustwave.com CN = Trustwave Organization Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	FF1E0D233196B7EC20BEDFC65988E0AE1985EC6AC332A79ADFFE71B86BC0208A	10/1/2014	9/28/2024
E = ca@trustwave.com CN = Trustwave Organization Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	58EA0688B7909AAA8EAAA2FFF36F3BBE8F4A2AD03BD70243B3903469DB4890F7	9/1/2016	9/29/2024



Subject DN	SHA2 Thumbprint	Valid From	Valid To
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Organization Validation CA, Level 1	11D9330D1A2398508DD50D3094EB28B1B44900D9928F8C22B25EF7A781BDB403	1/29/2019	1/29/2029
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Organization Validation CA, Level 1	2E63DC1BECF427F9902B49DE6330FD3E8EEBF88B14E653B3BA2E37D4E4880965	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Organization Validation CA, Level 1	18ABD6E9CA907BB36754D0C046EBB50DD9B95D527824D9581A31B750FCFDBAEF	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Organization Validation CA, Level 1	87D42169B2693551CA205CCF17F06F6E6651F7218CD6D26607BF5BA4DD2F26F2	2/6/2018	2/24/2028
E = ca@trustwave.com CN = Trustwave Domain Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	859968F9278B4DC82EE30FD118A5D297D284B687CB64CF9755AB8A9D38F2B70F	10/1/2014	9/28/2024



Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave Domain Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	74F56E1AB339D83E80F2F6E264F894775B426C89B44703DF4FA8A3231163A2BD	9/1/2016	9/29/2024
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Domain Validation CA, Level 1	5E60965804461930AC27B6DBE3445679EAE4131C22AFB88AF7ACF6A1917B5ABA	1/29/2019	1/29/2029
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Domain Validation CA, Level 1	6782C6E9ADBF9216E268306D46333FBC674BDEDF86B67BE777079E2C0E36888E	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Domain Validation CA, Level 1	F62E35AAD345FB253863CFC0E65823ACD3E7F0846D19B8326D709C7919A22D7E	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Domain Validation CA, Level 1	C63DF9618FBAF48662BA12ABE87B212CF777C27A446A0FA555D7A9D191148ED7	2/6/2018	2/24/2028



S/MIME CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave S/MIME SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	5C4BC597291AB9C7023FB6445FD60381A65C60DDD404F124E5FA143FE98B05F3	10/1/2014	9/28/2024
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Client CA, Level 1	95811E24BEC41B5F2BCCCAFEEADA7711404EDF6604B8FF119C2E433500990BEB	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Client CA, Level 1	D2BB9489EFACF48AD6B342D339C042953058E8F5DA4226ED3E76CA70C172E053	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Client CA, Level 1	84C15D35B6E2F2F41E4A45E87BD3E96C1953A4FEEF196E425C8046650A75CE07	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Secure Email CA, Level 1	1A948CB5E91C7907430930458891A65A0FAAFE8FB3AF07824AB637F220F66D29	1/29/2019	1/29/2029



Client Authentication CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = Trustwave Client Authentication Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	B98FD59783CEA8FE08AD61EC7AA91E5393138E72434E9F950001F95FEF10DF38	6/24/2009	6/22/2019
E = ca@trustwave.com CN = Trustwave Client Authentication SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	7FE20CEEE2B6972D862542060AE9A88FEA5E43A977A7FB25C95246F7F76C0668	10/1/2014	9/28/2024
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Client Authentication CA, Level 1	2F50860F968053A7DBA17851341759B0D5C0412F857A2CD19F3731DD3BED1B6B	1/29/2019	1/29/2029

*Revoked on 1/29/2019.



Code Signing CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave Code Signing CA, Level 2 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	95469A45EE12F3A7D1CA880A2F52442E2863593923FEC08AF6BCAB2375459E9B	12/22/2008	12/22/2028
E = ca@trustwave.com CN = Trustwave Code Signing SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	F420949BB55A462D9B927449E49DA23F683AB4B6166E05815808F5D9FD36646B	10/1/2014	9/28/2024
E = ca@trustwave.com CN = Trustwave Code Signing SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	53A8129F71A9827D03704670720C375061821155C076E86A490D6EB871E03AF0	9/1/2016	9/29/2024
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Code Signing CA, Level 1	4D10A086866731C0E16174192114C6076C7995DD5493006DD2054EFBD169AE2B	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Code Signing CA, Level 1	730E02CD3AFD489FDB9D708F674B45FA8CFD73AB926B94855B2C0376F9A528D9	2/6/2018	8/21/2042



Subject DN	SHA2 Thumbprint	Valid From	Valid To
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Code Signing CA, Level 1	7F2A890E8D9AFDB9C0F08AF1CB8DDA18C5802C5BEA50E0B18071D3CF973A46BD	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Code Signing CA, Level 1	5E4FF34628DABED6859BACF2E128A807A08F49B0C259D9BE2E33FEE066AC7AF7	1/29/2019	1/29/2029



Timestamping CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = Trustwave Timestamping CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	EF5AE8BBF214337779B8A30730962638BB3AFE100C615A49730F709A2518861B	1/25/2017	12/25/2034
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Timestamping CA, Level 1	643B81C90B3505BFAFF80EAAC9EE28C9F406362A8F56DD26ECFA29335958C856	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Timestamping CA, Level 1	7FC29B856B23EEFC3A5E68775E0B37DC320627FD5C19368BB68397EE219A667A	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Timestamping CA, Level 1	F75E65420AD6C018D915BBBA40A77122B30ACFD417DA3A885E4C4CD9E065A415	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Timestamping CA, Level 1	090DF1220A60E8E865F8607B9A24BC3BE00D933D438FB686A3173DEF5BFBB40	1/29/2019	12/31/2034

SECURETRUST MANAGEMENT'S ASSERTION

SecureTrust, a Trustwave Holdings, Inc. division ("SecureTrust"), operates the Certification Authority ("CA") services for its CAs enumerated in [Attachment B](#), and provides the following CA services:

- Subscriber registration
- Certificate renewal
- Certificate rekey
- Certificate issuance
- Certificate distribution
- Certificate revocation
- Certificate validation

The management of SecureTrust is responsible for establishing and maintaining effective controls over its CA operations, including its CA business practices disclosure on its [repository](#), CA business practices management, CA environmental controls, CA 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.

SecureTrust makes use of external registration authorities for subscriber registration activities of client authentication certificates as disclosed in SecureTrust's business practices. Our assertion does not extend to the controls exercised by these external registration authorities.

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 SecureTrust's Certification Authority operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

SecureTrust management has assessed its disclosures of its certificate practices and controls over its CA services. Based on that assessment, in SecureTrust management's opinion, in providing its CA services at Chicago, Illinois, in the United States of America throughout the period October 1, 2018 to September 30, 2019, SecureTrust has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environment control practices in its applicable versions of its SecureTrust Certificate Policy and Certification Practices Statement enumerated in [Attachment A](#)
- maintained effective controls to provide reasonable assurance that SecureTrust provides its services in accordance with its SecureTrust Certificate Policy and Certification Practice Statement
- maintained effective controls to provide reasonable assurance that:
 - the integrity of keys and certificates it manages is established and protected throughout their lifecycles; and
 - subscriber information is properly authenticated for the registration activities performed by SecureTrust

- 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

based on the WebTrust Principles and Criteria for Certification Authorities v2.1, including the following:

CA Business Practices Disclosure

- Certification Practice Statement (CPS)
- Certificate Policy (CP)

CA Business Practices Management

- Certificate Policy 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 Archival
- CA Key Destruction
- CA Key Compromise
- CA Cryptographic Hardware Lifecycle Management
- CA Key Transportation
- CA Key Migration

Certificate Lifecycle Management Controls

- Subscriber Registration
- Certificate Renewal
- Certificate Rekey

- Certificate Issuance
- Certificate Distribution
- Certificate Revocation
- Certificate Validation

SecureTrust does not escrow its CA keys, does not provide subscriber key lifecycle controls, does not provide certificate suspension services, and does not provide subordinate CA certificate lifecycle management services. Accordingly, our assertion does not extend to controls that would address those criteria.

A handwritten signature in cursive script, appearing to read "Tom Wallace", written in black ink over a horizontal line.

Tom Wallace
Chief Operating Officer, SecureTrust
November 19, 2019

ATTACHMENT A - CERTIFICATION PRACTICE STATEMENT AND CERTIFICATE POLICY VERSIONS IN-SCOPE

Policy Name	Policy Version	Policy Date
SecureTrust Certificate Policy and Certification Practices Statement	Version 6.0	April 24, 2019
Trustwave Certificate Policy and Certification Practices Statement	Version 5.2	November 14, 2018
Trustwave Certificate Policy and Certification Practices Statement	Version 5.1	October 1, 2018

ATTACHMENT B - IN-SCOPE CAs

Root CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = XRamp Global Certification Authority O = XRamp Security Services Inc OU = www.xrampsecurity.com C = US	CECDDC905099D8DADFC5B1D209B737CBE2C18CFB2C10C0FF0BCF0D3286FC1AA2	11/1/2004	1/1/2035
CN = SecureTrust CA O = SecureTrust Corporation C = US	F1C1B50AE5A20DD8030EC9F6BC24823DD367B5255759B4E71B61FCE9F7375D73	11/7/2006	12/31/2029
CN = Secure Global CA O = SecureTrust Corporation C = US	4200F5043AC8590EBB527D209ED1503029FBCBD41CA1B506EC27F15ADE7DAC69	11/7/2006	12/31/2029
CN = Trustwave Global Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	97552015F5DDFC3C8788C006944555408894450084F100867086BC1A2BB58DC8	8/23/2017	8/23/2042
CN = Trustwave Global ECC P256 Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	945BBC825EA554F489D1FD51A73DDF2EA624AC7019A05205225C22A78CCFA8B4	8/23/2017	8/23/2042

Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = Trustwave Global ECC P384 Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	55903859C8C0C3EBB8759ECE4E2557225FF5758BBD38EBD48276601E1BD58097	8/23/2017	8/23/2042

SSL/TLS Issuing CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave Extended Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	EEA36C0FFA3F54FFDB0CF14B3BD34A53EC7B775F54053DD8B07DFD2F8BEC9083	10/13/2014	10/10/2024
E = ca@trustwave.com CN = Trustwave Extended Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	49C58270F70F1BE0B7C19D1BC2C2EBC41E2FDE0D4885D4FA65EF0370ACEC7A00	9/1/2016	9/29/2024
E = ca@trustwave.com CN = Trustwave Secure Global Extended Validation CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	45B2B08E1B58948A028BE13A67C0E20D4B2466AE2B6EC6250EBB10FD6B7F8239	8/12/2015	8/9/2025
E = ca@trustwave.com CN = Trustwave XRamp Global Extended Validation CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	1D0CD7EF3C19265508E20E58B3538964F4A11ADEC8A71D8AB8A8AFF15683C6AE	8/12/2015	8/9/2025
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Extended Validation CA, Level 1	DD23355C61D59970423004729795CAEF77AFDB39767A795740D4E04CB6158A99	1/29/2019	1/29/2029

Subject DN	SHA2 Thumbprint	Valid From	Valid To
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Extended Validation CA, Level 1	18626A3B7211128D563469C654557D13C9366D7FCEC8B94DB4F0AA7E05944041	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Extended Validation CA, Level 1	275BF0046E0270178B13B67E4DB150A10197CB71F9A061FAD36B3D76639FE186	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Extended Validation CA, Level 1	29F8E104DF38E612BF4F505365B5D0B0B20DD4E89C908306484EB8374C1E66D8	2/6/2018	2/24/2028
E = ca@trustwave.com CN = Trustwave Organization Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	FF1E0D233196B7EC20BEDFC65988E0AE1985EC6AC332A79ADFFE71B86BC0208A	10/1/2014	9/28/2024
E = ca@trustwave.com CN = Trustwave Organization Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	58EA0688B7909AAA8EAAA2FFF36F3BBE8F4A2AD03BD70243B3903469DB4890F7	9/1/2016	9/29/2024

Subject DN	SHA2 Thumbprint	Valid From	Valid To
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Organization Validation CA, Level 1	11D9330D1A2398508DD50D3094EB28B1B44900D9928F8C22B25EF7A781BDB403	1/29/2019	1/29/2029
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Organization Validation CA, Level 1	2E63DC1BECF427F9902B49DE6330FD3E8EEBF88B14E653B3BA2E37D4E4880965	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Organization Validation CA, Level 1	18ABD6E9CA907BB36754D0C046EBB50DD9B95D527824D9581A31B750FCFDBAEF	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Organization Validation CA, Level 1	87D42169B2693551CA205CCF17F06F6E6651F7218CD6D26607BF5BA4DD2F26F2	2/6/2018	2/24/2028
E = ca@trustwave.com CN = Trustwave Domain Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	859968F9278B4DC82EE30FD118A5D297D284B687CB64CF9755AB8A9D38F2B70F	10/1/2014	9/28/2024

Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave Domain Validation SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	74F56E1AB339D83E80F2F6E264F894775B426C89B44703DF4FA8A3231163A2BD	9/1/2016	9/29/2024
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Domain Validation CA, Level 1	5E60965804461930AC27B6DBE3445679EAE4131C22AFB88AF7ACF6A1917B5ABA	1/29/2019	1/29/2029
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Domain Validation CA, Level 1	6782C6E9ADBF9216E268306D46333FBC674BDEDF86B67BE777079E2C0E36888E	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Domain Validation CA, Level 1	F62E35AAD345FB253863CFC0E65823ACD3E7F0846D19B8326D709C7919A22D7E	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Domain Validation CA, Level 1	C63DF9618FBAF48662BA12ABE87B212CF777C27A446A0FA555D7A9D191148ED7	2/6/2018	2/24/2028

S/MIME CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave S/MIME SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	5C4BC597291AB9C7023FB6445FD60381A65C60DDD404F124E5FA143FE98B05F3	10/1/2014	9/28/2024
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Client CA, Level 1	95811E24BEC41B5F2BCCCAFEEADA7711404EDF6604B8FF119C2E433500990BEB	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Client CA, Level 1	D2BB9489EFACF48AD6B342D339C042953058E8F5DA4226ED3E76CA70C172E053	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Client CA, Level 1	84C15D35B6E2F2F41E4A45E87BD3E96C1953A4FEEF196E425C8046650A75CE07	2/6/2018	2/24/2028
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Secure Email CA, Level 1	1A948CB5E91C7907430930458891A65A0FAAFE8FB3AF07824AB637F220F66D29	1/29/2019	1/29/2029

Client Authentication CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = Trustwave Client Authentication Certification Authority O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	B98FD59783CEA8FE08AD61EC7AA91E5393138E72434E9F950001F95FEF10DF38	6/24/2009	6/22/2019
E = ca@trustwave.com CN = Trustwave Client Authentication SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	7FE20CEEE2B6972D862542060AE9A88FEA5E43A977A7FB25C95246F7F76C0668	10/1/2014	9/28/2024
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Client Authentication CA, Level 1	2F50860F968053A7DBA17851341759B0D5C0412F857A2CD19F3731DD3BED1B6B	1/29/2019	1/29/2029

*Revoked on 1/29/2019.

Code Signing CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
E = ca@trustwave.com CN = Trustwave Code Signing CA, Level 2 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	95469A45EE12F3A7D1CA880A2F52442E2863593923FEC08AF6BCAB2375459E9B	12/22/2008	12/22/2028
E = ca@trustwave.com CN = Trustwave Code Signing SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	F420949BB55A462D9B927449E49DA23F683AB4B6166E05815808F5D9FD36646B	10/1/2014	9/28/2024
E = ca@trustwave.com CN = Trustwave Code Signing SHA256 CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	53A8129F71A9827D03704670720C375061821155C076E86A490D6EB871E03AF0	9/1/2016	9/29/2024
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Code Signing CA, Level 1	4D10A086866731C0E16174192114C6076C7995DD5493006DD2054EFBD169AE2B	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Code Signing CA, Level 1	730E02CD3AFD489FDB9D708F674B45FA8CFD73AB926B94855B2C0376F9A528D9	2/6/2018	8/21/2042

Subject DN	SHA2 Thumbprint	Valid From	Valid To
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Code Signing CA, Level 1	7F2A890E8D9AFDB9C0F08AF1CB8DDA18C5802C5BEA50E0B18071D3CF973A46BD	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Code Signing CA, Level 1	5E4FF34628DABED6859BACF2E128A807A08F49B0C259D9BE2E33FEE066AC7AF7	1/29/2019	1/29/2029

Timestamping CAs

Subject DN	SHA2 Thumbprint	Valid From	Valid To
CN = Trustwave Timestamping CA, Level 1 O = Trustwave Holdings, Inc. L = Chicago S = Illinois C = US	EF5AE8BBF214337779B8A30730962638BB3AFE100C615A49730F709A2518861B	1/25/2017	12/25/2034
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global Timestamping CA, Level 1	643B81C90B3505BFAFF80EAAC9EE28C9F406362A8F56DD26ECFA29335958C856	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-256 Timestamping CA, Level 1	7FC29B856B23EEFC3A5E68775E0B37DC320627FD5C19368BB68397EE219A667A	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = Trustwave Holdings, Inc. CN = Trustwave Global ECDSA P-384 Timestamping CA, Level 1	F75E65420AD6C018D915BBBA40A77122B30ACFD417DA3A885E4C4CD9E065A415	2/6/2018	8/21/2042
C = US S = Illinois L = Chicago O = SecureTrust CN = SecureTrust Timestamping CA, Level 1	090DF1220A60E8E865F8607B9A24BC3BE00D933D438FB686A3173DEFC5BFBB40	1/29/2019	12/31/2034