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REPORT OF THE INDEPENDENT ACCOUNTANT

To the management of Amazon Trust Services, LLC ("ATS"):

We have examined ATS management's [assertion](#) that for its Certification Authority ("CA") operations in the United States of America, throughout the period January 16, 2018 to January 15, 2019 for its CAs enumerated in [Attachment B](#) in scope for SSL Baseline Requirements and Network Security Requirements, ATS has:

- disclosed its SSL certificate lifecycle management business practices in the applicable versions of its Certification Practice Statement and Certificate Policy enumerated in [Attachment A](#), including its commitment to provide SSL certificates in conformity with the CA/Browser Forum Requirements on the ATS [repository](#), and provided such services in accordance with its disclosed practices
- maintained effective controls to provide reasonable assurance that:
 - the integrity of keys and SSL certificates it manages is established and protected throughout their lifecycles; and
 - SSL subscriber information is properly authenticated
- 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
- maintained effective controls to provide reasonable assurance that it meets the Network and Certificate System Security Requirements as set forth by the CA/Browser Forum

based on the [WebTrust Principles and Criteria for Certification Authorities - SSL Baseline with Network Security v2.2](#). ATS' 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 ATS 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.

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, ATS' 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.

This report does not include any representation as to the quality of ATS' services other than is CA operations in the United States of America, nor the suitability of any of ATS' services for any customer's intended purpose.

ATS' use of the WebTrust for Certification Authorities - SSL Baseline with Network Security 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
April 8, 2019



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

Amazon Trust Services, LLC Certification Practice Statement and Certificate Policy Versions in Scope

Policy Name	Version	Date
Amazon Trust Services Certification Practice Statement	1.0.7	April 13, 2018
Amazon Trust Services Certification Practice Statement	1.0.6	January 15, 2018
Amazon Trust Services Certificate Policy	1.0.6	April 13, 2018
Amazon Trust Services Certificate Policy	1.0.5	January 15, 2018



ATTACHMENT B - IN-SCOPE CAs

Root CAs	Serial Number	SHA1 Thumbprint	SHA2 Thumbprint
CN=Amazon Root CA 1,O=Amazon,C=US	06 6c 9f cf 99 bf 8c 0a 39 e2 f0 78 8a 43 e6 96 36 5b ca	8d a7 f9 65 ec 5e fc 37 91 0f 1c 6e 59 fd c1 cc 6a 6e de 16	8e cd e6 88 4f 3d 87 b1 12 5b a3 1a c3 fc b1 3d 70 16 de 7f 57 cc 90 4f e1 cb 97 c6 ae 98 19 6e
CN=Amazon Root CA 2,O=Amazon,C=US	06 6c 9f d2 96 35 86 9f 0a 0f e5 86 78 f8 5b 26 bb 8a 37	5a 8c ef 45 d7 a6 98 59 76 7a 8c 8b 44 96 b5 78 cf 47 4b 1a	1b a5 b2 aa 8c 65 40 1a 82 96 01 18 f8 0b ec 4f 62 30 4d 83 ce c4 71 3a 19 c3 9c 01 1e a4 6d b4
CN=Amazon Root CA 3,O=Amazon,C=US	06 6c 9f d5 74 97 36 66 3f 3b 0b 9a d9 e8 9e 76 03 f2 4a	0d 44 dd 8c 3c 8c 1a 1a 58 75 64 81 e9 0f 2e 2a ff b3 d2 6e	18 ce 6c fe 7b f1 4e 60 b2 e3 47 b8 df e8 68 cb 31 d0 2e bb 3a da 27 15 69 f5 03 43 b4 6d b3 a4
CN=Amazon Root CA 4,O=Amazon,C=US	06 6c 9f d7 c1 bb 10 4c 29 43 e5 71 7b 7b 2c c8 1a c1 0e	f6 10 84 07 d6 f8 bb 67 98 0c c2 e2 44 c2 eb ae 1c ef 63 be	e3 5d 28 41 9e d0 20 25 cf a6 90 38 cd 62 39 62 45 8d a5 c6 95 fb de a3 c2 2b 0b fb 25 89 70 92
CN=Starfield Services Root Certificate Authority - G2,O=Starfield Technologies, Inc.,L=Scottsdale,ST=Arizona,C=US	00	92 5a 8f 8d 2c 6d 04 e0 66 5f 59 6a ff 22 d8 63 e8 25 6f 3f	56 8d 69 05 a2 c8 87 08 a4 b3 02 51 90 ed cf ed b1 97 4a 60 6a 13 c6 e5 29 0f cb 2a e6 3e da b5

Other CAs	Serial Number	SHA1 Thumbprint	SHA2 Thumbprint
CN=Amazon,OU=Server CA 0A,O=Amazon,C=US	06 7f 94 57 4b b7 07 5d 3e 48 96 5c 78 32 24 aa 75 4f ed	fe 19 62 07 e8 36 b7 16 72 89 cd b1 f9 12 b5 07 c5 9c 3f c1	df cc 77 5c 64 4d b4 a3 3a d7 12 93 43 3f 46 3c 8e 31 05 7c e2 2c b2 67 f9 d3 1a 03 53 f4 fc 2f
CN=Amazon,OU=Server CA 1A,O=Amazon,C=US	06 7f 94 57 50 8c 64 8c 09 ca 65 2e 71 79 18 30 e7 25 92	10 18 8c 71 0f c3 2d 05 e0 75 8a 2f 5b 70 f8 ff a8 f0 f7 77	39 c7 63 a9 cf 19 d9 23 f9 77 d2 36 26 ab 89 04 49 a4 44 ab 8b 79 5c 81 5e f1 ef 81 fe bc 1e 38
CN=Amazon,OU=Server CA 2A,O=Amazon,C=US	06 7f 94 57 55 f1 87 a9 1f 81 63 f3 e6 24 62 01 77 ff 38	1c ec 96 ae 3d 32 91 42 53 df 97 5f 82 aa e8 3c 9e 8a a3 4d	72 13 0e 3b 28 90 03 49 21 46 17 f4 d6 f3 fb 85 d0 84 75 ee 78 bf 09 5c 59 45 8a 14 d1 82 88 66
CN=Amazon,OU=Server CA 3A,O=Amazon,C=US	06 7f 94 57 58 fe 55 b9 ee 3f 75 83 1d 47 f0 7d 22 6c 8a	46 54 d1 6b fb 1f 55 16 01 0b b1 e3 a2 54 45 fd 06 d7 9f 6d	20 51 54 b7 77 ed c5 5a 51 46 58 5a 5e 54 e0 54 a7 0b e4 aa d3 b8 5d 02 31 8d a2 7b f8 07 ad f1



CN=Amazon,OU=Server CA 4A,O=Amazon,C=US	06 7f 94 57 5a 88 62 a9 07 2e 32 39 c3 7c eb a1 27 4e 18	f0 e7 a2 72 b0 b8 1d dc 46 e1 bd b7 ca 01 a6 08 58 d2 ec 85	7b ed 29 27 6a cb ed 9f 17 6f 38 bb a3 a6 7c e5 81 5b 5c bf 15 22 c7 bb 59 ec d8 6b 09 e1 6e d2
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Note: Amazon Trust Services assumed operation of Starfield Services Root Certificate Authority - G2 ("SFSG2") on June 10, 2015. Starfield Technologies operated SFSG2 prior to June 10, 2015 and was responsible for the key generation for SFSG2.



Amazon Trust Services, LLC Management's Assertion

Amazon Trust Services, LLC ("ATS") operates the Certification Authority ("CA") services for the CAs enumerated in [Attachment B](#) in scope for SSL Baseline Requirements and Network Security Requirements and provides SSL CA services.

ATS management has assessed its disclosures of its certificate practices and controls over its SSL CA services. Based on that assessment, in providing its SSL CA services in the United States of America, throughout the period January 16, 2018 to January 15, 2019, ATS has:

- disclosed its SSL certificate lifecycle management business practices in the applicable versions of its Certificate Practice Statement and Certificate Policy enumerated in [Attachment A](#) including its commitment to provide SSL certificates in conformity with the CA/Browser Forum Requirements on the ATS [repository](#), and provided such services in accordance with its disclosed practices
- maintained effective controls to provide reasonable assurance that:
 - the integrity of keys and SSL certificates it manages is established and protected throughout their lifecycles; and
 - SSL subscriber information is properly authenticated
- 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
- maintained effective controls to provide reasonable assurance that it meets the Network and Certificate System Security Requirements as set forth by the CA/Browser Forum

based on the [WebTrust Principles and Criteria for Certification Authorities – SSL Baseline with Network Security, Version 2.2](#).

Jonathan Kozolchyk

Jonathan Kozolchyk
Vice President
Amazon Trust Services LLC

April 8, 2019

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Root CAs	Serial Number	SHA1 Thumbprint	SHA2 Thumbprint
CN=Amazon Root CA 1,O=Amazon,C=US	06 6c 9f cf 99 bf 8c 0a 39 e2 f0 78 8a 43 e6 96 36 5b ca	8d a7 f9 65 ec 5e fc 37 91 0f 1c 6e 59 fd c1 cc 6a 6e de 16	8e cd e6 88 4f 3d 87 b1 12 5b a3 1a c3 fc b1 3d 70 16 de 7f 57 cc 90 4f e1 cb 97 c6 ae 98 19 6e
CN=Amazon Root CA 2,O=Amazon,C=US	06 6c 9f d2 96 35 86 9f 0a 0f e5 86 78 f8 5b 26 bb 8a 37	5a 8c ef 45 d7 a6 98 59 76 7a 8c 8b 44 96 b5 78 cf 47 4b 1a	1b a5 b2 aa 8c 65 40 1a 82 96 01 18 f8 0b ec 4f 62 30 4d 83 ce c4 71 3a 19 c3 9c 01 1e a4 6d b4
CN=Amazon Root CA 3,O=Amazon,C=US	06 6c 9f d5 74 97 36 66 3f 3b 0b 9a d9 e8 9e 76 03 f2 4a	0d 44 dd 8c 3c 8c 1a 1a 58 75 64 81 e9 0f 2e 2a ff b3 d2 6e	18 ce 6c fe 7b f1 4e 60 b2 e3 47 b8 df e8 68 cb 31 d0 2e bb 3a da 27 15 69 f5 03 43 b4 6d b3 a4
CN=Amazon Root CA 4,O=Amazon,C=US	06 6c 9f d7 c1 bb 10 4c 29 43 e5 71 7b 7b 2c c8 1a c1 0e	f6 10 84 07 d6 f8 bb 67 98 0c c2 e2 44 c2 eb ae 1c ef 63 be	e3 5d 28 41 9e d0 20 25 cf a6 90 38 cd 62 39 62 45 8d a5 c6 95 fb de a3 c2 2b 0b fb 25 89 70 92
CN=Starfield Services Root Certificate Authority - G2,O=Starfield Technologies, Inc.,L=Scottsdale,ST=Arizona,C=US	00	92 5a 8f 8d 2c 6d 04 e0 66 5f 59 6a ff 22 d8 63 e8 25 6f 3f	56 8d 69 05 a2 c8 87 08 a4 b3 02 51 90 ed cf ed b1 97 4a 60 6a 13 c6 e5 29 0f cb 2a e6 3e da b5

Other CAs	Serial Number	SHA1 Thumbprint	SHA2 Thumbprint
CN=Amazon,OU=Server CA 0A,O=Amazon,C=US	06 7f 94 57 4b b7 07 5d 3e 48 96 5c 78 32 24 aa 75 4f ed	fe 19 62 07 e8 36 b7 16 72 89 cd b1 f9 12 b5 07 c5 9c 3f c1	df cc 77 5c 64 4d b4 a3 3a d7 12 93 43 3f 46 3c 8e 31 05 7c e2 2c b2 67 f9 d3 1a 03 53 f4 fc 2f
CN=Amazon,OU=Server CA 1A,O=Amazon,C=US	06 7f 94 57 50 8c 64 8c 09 ca 65 2e 71 79 18 30 e7 25 92	10 18 8c 71 0f c3 2d 05 e0 75 8a 2f 5b 70 f8 ff a8 f0 f7 77	39 c7 63 a9 cf 19 d9 23 f9 77 d2 36 26 ab 89 04 49 a4 44 ab 8b 79 5c 81 5e f1 ef 81 fe bc 1e 38
CN=Amazon,OU=Server CA 2A,O=Amazon,C=US	06 7f 94 57 55 f1 87 a9 1f 81 63 f3 e6 24 62 01 77 ff 38	1c ec 96 ae 3d 32 91 42 53 df 97 5f 82 aa e8 3c 9e 8a a3 4d	72 13 0e 3b 28 90 03 49 21 46 17 f4 d6 f3 fb 85 d0 84 75 ee 78 bf 09 5c 59 45 8a 14 d1 82 88 66
CN=Amazon,OU=Server CA 3A,O=Amazon,C=US	06 7f 94 57 58 fe 55 b9 ee 3f 75 83 1d 47 f0 7d 22 6c 8a	46 54 d1 6b fb 1f 55 16 01 0b b1 e3 a2 54 45 fd 06 d7 9f 6d	20 51 54 b7 77 ed c5 5a 51 46 58 5a 5e 54 e0 54 a7 0b e4 aa d3 b8 5d 02 31 8d a2 7b f8 07 ad f1

CN=Amazon,OU=Server CA 4A,O=Amazon,C=US	06 7f 94 57 5a 88 62 a9 07 2e 32 39 c3 7c eb a1 27 4e 18	f0 e7 a2 72 b0 b8 1d dc 46 e1 bd b7 ca 01 a6 08 58 d2 ec 85	7b ed 29 27 6a cb ed 9f 17 6f 38 bb a3 a6 7c e5 81 5b 5c bf 15 22 c7 bb 59 ec d8 6b 09 e1 6e d2
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Note: Amazon Trust Services assumed operation of Starfield Services Root Certificate Authority - G2 (SFSG2) on June 10, 2015. Starfield Technologies operated SFSG2 prior to June 10, 2015 and was responsible for the key generation for SFSG2.