Tel: 314-889-1100
Fax: 314-889-1101
www.bdo.com

101 S Hanley Rd, #800
St. Louis, MO 63105

REPORT OF THE INDEPENDENT ACCOUNTANT

To the Management of Microsoft Corporation Digital Security & Risk Engineering ("Microsoft DSRE"):

We have examined for Microsoft DSRE's assertion that for its Certification Authority ("CA") operations in the state of Washington in United States of America, Puerto Rico, and Ireland, throughout the period July 1, 2019 to June 30, 2020 for its CAs enumerated in Attachment A, Microsoft DSRE has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in the applicable versions of its Certificate Policy/Certification Practice Statement enumerated in Attachment B:

- maintained effective controls to provide reasonable assurance that Microsoft DSRE provides its services in accordance with its Certificate Policy/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;
  - the integrity of subscriber keys and certificates it manages is established and protected throughout their lifecycles; and
  - 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

based on the WebTrust Principles and Criteria for Certification Authorities v2.2. Microsoft DSRE 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 Microsoft DSRE 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.

Microsoft DSRE does not escrow its CA keys, does not provide subscriber key lifecycle management services, does not provide certificate suspension services, and does not manage any third party subordinate CAs. 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, Microsoft DSRE'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, Microsoft DSRE's management assertion, as referred to above, is fairly stated, in all material respects.

This report does not include any representation as to the quality of Microsoft DSRE's services other than its CA operations at in the state of Washington in United States of America, Puerto Rico, and Ireland, nor the suitability of any of Microsoft DSRE's services for any customer's intended purpose.

Microsoft DSRE'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.

The World Health Organization classified the COVID-19 outbreak as a pandemic in March 2020. Based on the rapid increase in exposure globally, the gravity or length of the impact of the COVID-19 outbreak cannot be estimated at this time.

BDO USA, LLP

August 17, 2020

ATTACHMENT A – IN-SCOPE CAs

Issuing CAs	Serial Number	SHA2 Thumbprint
CN = Microsoft IT TLS CA 1 OU = Microsoft IT O = Microsoft Corporation L = Redmond S = Washington C = US	08 b8 7a 50 1b be 9c da 2d 16 4d 3e 39 51 bf 55	4f f4 04 f0 2e 2c d0 01 88 f1 5d 1c 00 f4 b6 d1 e3 8b 5a 39 5c f8 53 14 ea eb a8 55 b6 a6 4b 75
CN = Microsoft IT TLS CA 2 OU = Microsoft IT O = Microsoft Corporation L = Redmond S = Washington C = US	0f 2c 10 c9 5b 06 c0 93 7f b8 d4 49 f8 3e 85 69	4e 10 7c 98 1b 42 ac be 41 c0 10 67 e1 6d 44 db 64 81 4d 41 93 e5 72 31 7e a0 4b 87 c7 9c 47 5f
CN = Microsoft IT TLS CA 4 OU = Microsoft IT O = Microsoft Corporation L = Redmond S = Washington C = US	0b 6a b3 b0 3e b1 a9 f6 c4 60 92 6a a8 cd fe b3	5f fa c4 3e 0d dc 5b 4a f2 b6 96 f6 bc 4d b7 e9 1d f3 14 bb 8f e0 d0 71 3a 0b 1a 7a d2 a6 8f ac
CN = Microsoft IT TLS CA 5 OU = Microsoft IT O = Microsoft Corporation L = Redmond S = Washington C = US	08 88 cd 52 5f 19 24 44 4d 14 a5 82 91 de b9 52	f0 ee 59 14 ed 94 c7 25 2d 05 8b 4e 39 80 8a ee 6f a8 f6 2c f0 97 4f b7 d6 d2 a9 df 16 e3 a8 7f

ATTACHMENT B – IN-SCOPE CERTIFICATION PRACTICE STATEMENT AND CERTIFICATE POLICY VERSIONS

Policy Name	Version	Effective Date
DSRE PKI Certificate Policy/Certification Practice Statement for TLS CAs	2.3	June 1, 2019
DSRE PKI Certificate Policy/Certification Practice Statement for TLS CAs	2.4	April 1, 2020

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 706 7329
www.microsoft.com

Microsoft

Microsoft Corporation Digital Security & Risk Engineering's Assertion

Microsoft Corporation Digital Security & Risk Engineering ("Microsoft DSRE") operates the Certification Authority ("CA") services for its CAs enumerated in Attachment A, and provides the following CA services:

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

The management of Microsoft DSRE 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, and 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 Microsoft DSRE's CA operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

Microsoft DSRE's management has assessed its disclosures of its certificate practices and controls over its CA services. Based on that assessment, in Microsoft DSRE management's opinion, in providing its CA services in the state of Washington in United States of America, Puerto Rico, and Ireland, throughout the period July 1, 2019 to June 30, 2020, Microsoft DSRE has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in the applicable versions of its Certificate Policy/Certificate Practice Statement enumerated in Attachment B.

- maintained effective controls to provide reasonable assurance that Microsoft DSRE provides its services in accordance with its Certificate Policy/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;
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Microsoft Corporation
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- 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

based on the WebTrust Principles and Criteria for Certification Authorities v2.2, 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 & Environmental Security
- Operations Management
- System Access Management
- System Development and Maintenance
- 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

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399

Tel 425 882 8080
Fax 425 706 7329
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- CA Key Transportation
- CA Key Migration

Certificate Lifecycle Management Controls

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

Microsoft DSRE does not escrow its CA keys, does not provide subscriber key lifecycle management services, does not provide certificate suspension services, and does not manage any third-party subordinate CAs. Accordingly, our assertion does not extend to controls that would address those criteria.

Biju Mathew
Principal Service Engineering Manager
August 17, 2020

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CN = Microsoft IT TLS CA 4 OU = Microsoft IT O = Microsoft Corporation L = Redmond S = Washington C = US	0b 6a b3 b0 3e b1 a9 f6 c4 60 92 6a a8 cd fe b3	5f fa c4 3e 0d dc 5b 4a f2 b6 96 f6 bc 4d b7 e9 1d f3 14 bb 8f e0 d0 71 3a 0b 1a 7a d2 a6 8f ac
CN = Microsoft IT TLS CA 5 OU = Microsoft IT O = Microsoft Corporation L = Redmond S = Washington C = US	08 88 cd 52 5f 19 24 44 4d 14 a5 82 91 de b9 52	f0 ee 59 14 ed 94 c7 25 2d 05 8b 4e 39 80 8a ee 6f a8 f6 2c f0 97 4f b7 d6 d2 a9 df 16 e3 a8 7f

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