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Report of Independent Accountants

To the Management of Apple:

We have examined the accompanying [assertion](#) made by the management of Apple Inc. (Apple), titled "Management's Assertion Regarding the Effectiveness of Its Controls Over the Certification Authority Operations Based on the WebTrust Principles and Criteria for Certification Authorities Version 2.2.2" that provides its Certification Authority (CA) services at Cupertino, California, and supporting facilities, at Prineville, Oregon; Maiden, North Carolina; Reno, Nevada; and Sunnyvale, California, USA locations for the Root CA(s) and Subordinate CA(s) referenced in Appendix A for the period of April 16, 2021 through April 15, 2022. Apple has:

- Disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in its Certificate Policy and Certificate Practice Statements:

Apple Root CA

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

Apple Application Integration
Certification Authority (Sub-CA under
Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Application
Integration Version 6.9](#)

Apple Application Integration 2
Certification Authority (Sub-CA under
Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Application
Integration Version 6.9](#)

Apple Worldwide Developer Relations
Certification Authority (Sub-CA under
Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Worldwide
Developer Relations Version 1.26](#)

Apple Worldwide Developer Relations
Certification Authority G3 (Sub-CA
under Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Worldwide
Developer Relations Version 1.26](#)

Developer Authentication Certification Authority (Sub-CA under Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority Certification Practice Statement Worldwide Developer Relations Version 1.26](#)

Developer ID Certification Authority (Sub-CA under Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Practice Statement Developer ID Version 3.3](#)

Apple Software Update Certification Authority (Sub-CA under Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Practice Statement Software Update Version 4.0](#)

Apple Software Update Certification Authority - G4 (Sub-CA under Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Practice Statement Software Update Version 4.0](#)

Apple Worldwide Developer Relations Certification Authority G4 (Sub-CA under Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority Certification Practice Statement Worldwide Developer Relations Version 1.26](#)

Apple Worldwide Developer Relations Certification Authority G5 (Sub-CA under Apple Root CA)

[Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority Certification Practice Statement Worldwide Developer Relations Version 1.26](#)

Developer ID Certification Authority
G2 (Sub-CA under Apple Root CA)

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

[Apple Inc. Certification Practice Statement
Developer ID Version 3.3](#)

Apple Root CA - G3

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

Apple Application Integration CA - G3
(Sub-CA under Apple Root CA - G3)

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Application
Integration Version 6.9](#)

Apple Application Integration CA 5 -
G1 (Sub-CA under Apple Root CA - G3)

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Application
Integration Version 6.9](#)

Apple Worldwide Developer Relations -
G2 (Sub-CA under Apple Root CA - G3)

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Worldwide
Developer Relations Version 1.26](#)

Apple Application Integration CA 6 -
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Apple Worldwide Developer Relations -
G6 (Sub-CA under Apple Root CA - G3)

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

[Apple Inc. Certification Authority
Certification Practice Statement Worldwide
Developer Relations Version 1.26](#)

- Maintained effective controls to provide reasonable assurance that:

- Apple's CA Certification Practice Statements are consistent with its Certificate Policy; and
- Apple provides its services in accordance with its Certificate Policy and Certification Practice Statements.

- Maintained effective controls to provide reasonable assurance that:
 - The integrity of keys and certificates it manages is established and protected throughout their lifecycles; and
 - The integrity of subscriber keys and certificates it manages is established and protected throughout their lifecycles; and
 - Subscriber information is properly authenticated; and
 - 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; and
 - 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 Chartered Professional Accountants of Canada ("CPA Canada")'s [WebTrust Principles and Criteria for Certification Authorities Version 2.2.2](#).

Apple's management is responsible for its assertion and for specifying the aforementioned Criteria. Our responsibility is to express an opinion on management's assertion based on our examination.

Apple does not escrow its CA keys and does not provide subscriber key generation services. Accordingly, our examination did not extend to controls that would address those criteria.

Apple management has disclosed to us matters that have been posted publicly in the online forums of the Bugzilla site, as well as the online forums of individual internet browsers that comprise the CA/Browser Forum. We have considered the nature of these comments in determining the nature, timing, and extent of our procedures.

Our examination was conducted in accordance with attestation standards established by the AICPA. Those standards require that we plan and perform our 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, which includes: (1) obtaining an understanding of Apple's key and certificate life cycle management business practices, policies, processes and controls, and its suitability of the design and implementation of the controls intended to achieve the Criteria and examining evidence supporting management's assertion and performing such other procedures over key and certificate integrity, over the authenticity and confidentiality of subscriber and relying party information, over the continuity of key and certificate life cycle management operations, and over the development, maintenance and operation of systems integrity as we considered necessary in the circumstances; (2) selectively testing transactions executed in accordance with disclosed key and certificate life cycle 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. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement,

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.

The relative effectiveness and significance of specific controls at Apple 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.

Our examination was not conducted for the purpose of evaluating Apple's cybersecurity risk management program. Accordingly, we do not express an opinion or any other form of assurance on its cybersecurity risk management program.

We are required to be independent of Apple and to meet our other ethical responsibilities, as applicable for examination engagements set forth in the Preface: Applicable to All Members and Part 1 - Members in Public Practice of the Code of Professional Conduct established by the AICPA.

There are inherent limitations in the effectiveness of any system of internal control, including the possibility of human error and the circumvention of controls. Because of inherent limitations in its internal control, Apple may achieve reasonable, but not absolute assurance that all security events are prevented and, for those controls may provide reasonable, but not absolute assurance that its commitments and system requirements are achieved. 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.

Examples of inherent limitations of internal controls related to security include (a) vulnerabilities in information technology components as a result of design by their manufacturer or developer; (b) breakdown of internal control at a vendor or business partner; and (c) persistent attackers with the resources to use advanced technical means and sophisticated social engineering techniques specifically targeting the entity. Furthermore, the projection of any evaluations of effectiveness to future periods is subject to the risk that controls may become inadequate because of changes in conditions, that the degree of compliance with such controls may deteriorate, or that changes made to the system or controls, or the failure to make needed changes to the system or controls, may alter the validity of such evaluations.

In our opinion, Apple's management's assertion referred to above, is fairly stated, in all material respects, based on the aforementioned criteria.

The WebTrust seal of assurance for Certification Authority on Apple's website 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.



This report does not include any representation as to the quality of Apple's CA services beyond those covered by the [WebTrust Principles and Criteria for Certification Authorities Version 2.2.2](#) criteria, or the suitability of any of Apple's services for any customer's intended purpose.

Ernst & Young LLP

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6 July 2022

Appendix A - Apple Root and Subordinate CAs

Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
<p>Apple Root CA</p> <p>Subject: CN= Apple Root CA OU= Apple Certification Authority O= Apple Inc. C= US</p>	<p>2BD06947947609FEF4 6B8D2E40A6F7474D7 F085E</p>	<p>2</p>	<p>B0B1730ECBC7FF4505 142C49F1295E6EDA6B CAED7E2C68C5BE91B5 A11001F024</p>
<p>Apple Application Integration Certification Authority (Sub-CA under Apple Root CA)</p> <p>Subject: CN= Apple Application Integration Certification Authority OU= Apple Certification Authority O= Apple Inc. C= US</p>	<p>31EA76A92374A5DFD 4FDEEA0C1A69EC611 0E11EC</p>	<p>620396375747820 6451</p>	<p>E6A78796E0C7A3E543 7835CA16785B485AA9 DDC45CCD0A65AA8933 E3C3D08971</p>
<p>Apple Application Integration 2 Certification Authority (Sub-CA under Apple Root CA)</p> <p>Subject: CN= Apple Application Integration 2 Certification Authority OU= Apple Certification Authority O= Apple Inc. C= US</p>	<p>F7BE7C216091DB3D1 B7BD83A328169DF9E 6C7F9B</p>	<p>340579660491036 777</p>	<p>D3496F4B73CD67AAB9 F2FCB1D5AA41F8DC45 7769C455C792B70DDB 19E92023D6</p>
<p>Apple Worldwide Developer Relations Certification Authority (Sub-CA under Apple Root CA)</p> <p>Subject:</p>	<p>88271709A9B618608 BECEBBAF64759C552 54A3B7</p>	<p>134752589830791 184</p>	<p>CE057691D730F89CA2 5E916F7335F4C8A157 13DCD273A658C02402 3F8EB809C2</p>

Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
CN= Apple Worldwide Developer Relations Certification Authority OU= Apple Worldwide Developer Relations O= Apple Inc. C= US			
Apple Worldwide Developer Relations Certification Authority G3 (Sub-CA under Apple Root CA) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= G3 O= Apple Inc. C= US	09FEC01590F9AF640A 9212B92628630C97E CA7B2	7CAF690A25B739F E7B9B447AC178C5 EE	DCF21878C77F4198E4 B4614F03D696D89C66 C66008D4244E1B9916 1AAC91601F
Developer Authentication Certification Authority (Sub-CA under Apple Root CA) Subject: CN= Developer Authentication Certification Authority OU= Apple Worldwide Developer Relations O= Apple Inc. C= US	49F63609B81B23FA0 35BB6EA82A0D95D10 186706	743354494379534 8762	341FF0B1753889EB5F3 6921A7386129F302CE 4FF603FABAEBF06E01F DB236860
Developer ID Certification Authority (Sub-CA under Apple Root CA) Subject: CN= Developer ID Certification Authority OU= Apple Certification Authority O= Apple Inc.	5717EDA2CFDC7C98A 110E0FCBE872D2CF2E 31754	176390874635318 9132	7AFC9D01A62F03A2DE 9637936D4AFE68090D 2DE18D03F29C88CFB0 B1BA63587F

Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
C= US			
Apple Software Update Certification Authority (Sub-CA under Apple Root CA) Subject: CN= Apple Software Update Certification Authority OU= Certification Authority O= Apple Inc. C= US	5957FCBA39CFD3587 64313B3C8C406AD08 532B44	5AA247A11690DC2 82EFCF72C5F427D C2	1299E9BFE776A29FF4 52F8C4F5E55F3B4DFD 2934349DD1850B8274 F35C71745C
Apple Software Update Certification Authority - G4 (Sub-CA under Apple Root CA) Subject: CN= Apple Software Update CA - G4 OU= Apple Certification Authority O= Apple Inc. C= US	E1F1F631F5783C890C 392AE1C8FA4FE5D20 093B5	453042588642645 1257	534BD7BA1ACD655F38 3851FF327D73F3CF2A 17917CFEC8DAF04DB8 2157819237
Apple Worldwide Developer Relations Certification Authority G4 (Sub-CA under Apple Root CA) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= G4 O= Apple Inc. C= US	5BD9FA1DE79A1A0BA 399762250863E91C8 5B77A8	13DC77955271E53 DC632E8CCFFE521F 3CCC5CED2	EA4757885538DD8CB5 9FF4556F676087D83C 85E70902C122E42C08 08B5BCE14C
Apple Worldwide Developer Relations Certification Authority G5	198B978D4A5B61785 7F4A55C35128A3908 E3B075	3B7E800AEED302A 1E6ECDB97D9CAAC 289CF16994	53FD008278E5A595FE 1E908AE9C5E5675F26

Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
(Sub-CA under Apple Root CA) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= G5 O= Apple Inc. C= US			243264A5A6438C023E 3CE2870760
Developer ID Certification Authority G2 (Sub-CA under Apple Root CA) Subject: CN= Developer ID Certification Authority OU= G2 O= Apple Inc. C= US	F83A0C691176E0EDA CD1EBA659FA37D5C4 55B01E	7FB4003FCD97497 ACB834D92A48A78 73C2845D43	F16CD3C54C7F83CEA4 BF1A3E6A0819C8AAA8 E4A1528FD144715F35 0643D2DF3A
Apple Root CA - G3 Subject: CN= Apple Root CA - G3 OU= Apple Certification Authority O= Apple Inc. C= US	BBB0DEA15833889AA 48A99DEBEBDEBAFDA CB24AB	329831996670065 3461	63343ABFB89A6A03EB B57E9B3F5FA7BE7C4F 5C756F3017B3A8C488 C3653E9179
Apple Application Integration CA - G3 (Sub-CA under Apple Root CA - G3) Subject: CN= Apple Application Integration CA - G3 OU= Apple Certification Authority O= Apple Inc. C= US	23F249C44F93E4EF27 E6C4F6286C3FA2BBFD 2E4B	529093763559855 5799	A64B099DBD73EBB036 B4204E1675E8AA8216 37D09B84980899104A D59D664A3B

Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
<p>Apple Application Integration CA 5 - G1 (Sub-CA under Apple Root CA - G3)</p> <p>Subject: CN= Apple Application Integration CA 5 - G1 OU= Apple Certification Authority O= Apple Inc. C= US</p>	D917FE4B6790384B9 2F4DBCED55780140B 8F3DC9	56FB83D42BFF8DC 3379923B55AAE6E BD	COD8EFBEA821079D1B 8A98E1198BFCC66933 1FA7A9C14F09B969F0 AF08CE4A43
<p>Apple Worldwide Developer Relations - G2 (Sub-CA under Apple Root CA - G3)</p> <p>Subject: CN= Apple Worldwide Developer Relations CA - G2 OU= Apple Certification Authority O= Apple Inc. C= US</p>	84B684CC3A8662721 65994E81AA3BD48DF 3ADF0B	806590400834225 1502	9ED4B3B88C6A339CF1 387895BDA9CA6EA31A 6B5CE9EDF751184592 3BOC8AC94C
<p>Apple Application Integration CA 6 - G1 (Sub-CA under Apple Root CA - G3)</p> <p>Subject: CN= Apple Application Integration CA 6 - G1 OU= Apple Certification Authority O= Apple Inc. C= US</p>	B2A565A14108DA7F9 9E0516774484F20B8F 72B02	1B00376FC8EBDCF D0CE0CE0CB9D1F2 09	DC223D6A19441B8C37 6C5C8093B94C07735D 2C2B9CCEE85EB86A83 DE4FC75337
<p>Apple Worldwide Developer Relations - G6 (Sub-CA under Apple Root CA - G3)</p> <p>Subject:</p>	3F2F942351D350C99 A283DEDB07CE5CFA5 906299	22C1A1470A74736 9EF538612C9C69F 3D38F36CD7	BDD4ED6E74691F0C2B FD01BE0296197AF137 9E0418E2D300EFA9C3 BEF642CA30



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Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
CN= Apple Worldwide Developer Relations Certification Authority OU= G6 O= Apple Inc. C= US			



Management's Assertion Regarding the Effectiveness of Its Controls
Over the Certification Authority Operations
Based on the WebTrust Principles and Criteria for Certification Authorities Version 2.2.2

6 July 2022

We, as management of Apple Inc. (Apple), operate the Certification Authority (CA) services for Apple's root and subordinate CA certificates listed in **Appendix A** and provide the following CA services:

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

Apple Management 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.

Controls have inherent limitations, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even effective controls can provide only reasonable assurance with respect to Apple's CA operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

Apple management has assessed the disclosure of its certificate practices and its controls over its CA services. Based on that assessment, in Apple management's opinion, in providing its CA services for the root CA and subordinate CA certificates listed in **Appendix A** at its Cupertino, California; Prineville, Oregon; Maiden, North Carolina; Reno, Nevada; and Sunnyvale, California, USA locations, throughout the period April 16, 2021 to April 15, 2022, Apple has:

- Disclosed its business, key life cycle management, certificate life cycle management, and CA environmental control practices in its:

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Apple Root CA	Apple Inc. Certification Authority Certificate Policy Version 4.0
Apple Application Integration Certification Authority (Sub-CA under Apple Root CA)	Apple Inc. Certification Authority Certificate Policy Version 4.0 Apple Inc. Certification Authority Certification Practice Statement Application Integration Version 6.9
Apple Application Integration 2 Certification Authority (Sub-CA under Apple Root CA)	Apple Inc. Certification Authority Certificate Policy Version 4.0 Apple Inc. Certification Authority Certification Practice Statement Application Integration Version 6.9
Apple Worldwide Developer Relations Certification Authority (Sub-CA under Apple Root CA)	Apple Inc. Certification Authority Certificate Policy Version 4.0 Apple Inc. Certification Authority Certification Practice Statement Worldwide Developer Relations Version 1.26
Apple Worldwide Developer Relations Certification Authority G3 (Sub-CA under Apple Root CA)	Apple Inc. Certification Authority Certificate Policy Version 4.0 Apple Inc. Certification Authority Certification Practice Statement Worldwide Developer Relations Version 1.26

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Developer Authentication
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Developer ID Certification Authority
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[Apple Inc. Certification Practice Statement
Developer ID Version 3.3](#)

Apple Software Update Certification
Authority (Sub-CA under Apple Root
CA)

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Developer ID Version 3.3](#)

Apple Root CA - G3

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

Apple Application Integration CA - G3
(Sub-CA under Apple Root CA - G3)

[Apple Inc. Certification Authority Certificate
Policy Version 4.0](#)

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Apple Application Integration CA 5 -
G1 (Sub-CA under Apple Root CA -
G3)

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Policy Version 4.0](#)

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Integration Version 6.9](#)

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- G2 (Sub-CA under Apple Root CA -
G3)

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Developer Relations Version 1.26](#)

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Apple Worldwide Developer Relations - G6 (Sub-CA under Apple Root CA - G3) [Apple Inc. Certification Authority Certificate Policy Version 4.0](#)

[Apple Inc. Certification Authority Certification Practice Statement Worldwide Developer Relations Version 1.26](#)

- Maintained effective controls to provide reasonable assurance that:
 - Apple's Certification Practice Statements are consistent with its Certificate Policy; and
 - Apple provides its services in accordance with its Certificate Policy and Certification Practice Statements.

- Maintained effective controls to provide reasonable assurance that:
 - The integrity of keys and certificates it manages was established and protected throughout their life cycles; and
 - The integrity of subscriber keys and certificates it manages was established and protected throughout their life cycles; and
 - The Subscriber information was properly authenticated; and
 - Certificate requests were accurate, authenticated and approved.

- Maintained effective controls to provide reasonable assurance that:
 - Logical and physical access to CA systems and data was restricted to authorized individuals; and
 - The continuity of key and certificate management operations was maintained; and
 - CA systems development, maintenance and operations were properly authorized and performed to maintain CA systems integrity.

for the Root CAs and Subordinate CAs listed in Appendix A, based on the [WebTrust Principles and Criteria for Certification Authorities Version 2.2.2](#), 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
- CP and CPS Consistency

CA Environmental Controls

- Security Management

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- Asset Classification and Management
- Personnel Security
- Physical & 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 and Destruction
- CA Key Compromise
- CA Cryptographic Hardware Lifecycle Management

Subscriber Key Lifecycle Management Controls

- Requirements for Subscriber Key Management

Certificate Lifecycle Management Controls

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

Subordinate CA Certificate Lifecycle Management Controls

- Subordinate CA Certificate Lifecycle Management

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Appendix A – Apple Root and Subordinate CAs

Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
Apple Root CA Subject: CN= Apple Root CA OU= Apple Certification Authority O= Apple Inc. C= US	2BD06947947609FEF46B 8D2E40A6F7474D7F085E	2	B0B1730ECBC7FF4505142 C49F1295E6EDA6BCAED7 E2C68C5BE91B5A11001F0 24
Apple Application Integration Certification Authority (Sub-CA under Apple Root CA) Subject: CN= Apple Application Integration Certification Authority OU= Apple Certification Authority O= Apple Inc. C= US	31EA76A92374A5DFD4F DEEA0C1A69EC6110E11 EC	620396375747820645 1	E6A78796E0C7A3E543783 5CA16785B485AA9DDC4 5CCD0A65AA8933E3C3D 08971
Apple Application Integration 2 Certification Authority (Sub-CA under Apple Root CA) Subject: CN= Apple Application Integration 2 Certification Authority OU= Apple Certification Authority	F7BE7C216091DB3D1B7 BD83A328169DF9E6C7F 9B	340579660491036777	D3496F4B73CD67AAB9F2 FCB1D5AA41F8DC457769 C455C792B70DDB19E920 23D6

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Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
O= Apple Inc. C= US			
Apple Worldwide Developer Relations Certification Authority (Sub- CA under Apple Root CA) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= Apple Worldwide Developer Relations O= Apple Inc. C= US	88271709A9B618608BEC EBBAF64759C55254A3B 7	134752589830791184	CE057691D730F89CA25E 916F7335F4C8A15713DC D273A658C024023F8EB8 09C2
Apple Worldwide Developer Relations Certification Authority G3 (Sub-CA under Apple Root CA) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= G3 O= Apple Inc. C= US	09FEC01590F9AF640A92 12B92628630C97ECA7B 2	7CAF690A25B739FE7 B9B447AC178C5EE	DCF21878C77F4198E4B46 14F03D696D89C66C6600 8D4244E1B99161AAC916 01F
Developer Authentication Certification Authority (Sub- CA under Apple Root CA) Subject:	49F63609B81B23FA035B B6EA82A0D95D1018670 6	743354494379534876 2	341FF0B1753889EB5F369 21A7386129F302CE4FF60 3FABAEBF06E01FDB2368 60

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Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
CN= Developer Authentication Certification Authority OU= Apple Worldwide Developer Relations O= Apple Inc. C= US			
Developer ID Certification Authority (Sub-CA under Apple Root CA) Subject: CN= Developer ID Certification Authority OU= Apple Certification Authority O= Apple Inc. C= US	5717EDA2CFDC7C98A110E0FCBE872D2CF2E31754	1763908746353189132	7AFC9D01A62F03A2DE9637936D4AFE68090D2DE18D03F29C88CFB0B1BA63587F
Apple Software Update Certification Authority (Sub-CA under Apple Root CA) Subject: CN= Apple Software Update Certification Authority OU= Certification Authority O= Apple Inc. C= US	5957FCBA39CFD358764313B3C8C406AD08532B44	5AA247A11690DC282EFCF72C5F427DC2	1299E9BFE776A29FF452F8C4F5E55F3B4DFD2934349DD1850B8274F35C71745C
Apple Software Update Certification Authority - G4 (Sub-CA under Apple Root CA)	E1F1F631F5783C890C392AE1C8FA4FE5D20093B5	4530425886426451257	534BD7BA1ACD655F383851FF327D73F3CF2A17917CFEC8DAF04DB82157819237

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Subject: CN= Apple Software Update CA - G4 OU= Apple Certification Authority O= Apple Inc. C= US			
Apple Worldwide Developer Relations Certification Authority G4 (Sub-CA under Apple Root CA) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= G4 O= Apple Inc. C= US	5BD9FA1DE79A1A0BA399762250863E91C85B77A8	13DC77955271E53DC632E8CCFFE521F3CC5CED2	EA4757885538DD8CB59F F4556F676087D83C85E70 902C122E42C0808B5BCE 14C
Apple Worldwide Developer Relations Certification Authority G5 (Sub-CA under Apple Root CA) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= G5 O= Apple Inc. C= US	198B978D4A5B617857F4A55C35128A3908E3B075	3B7E800AEED302A1E6ECDB97D9CAAC289CF16994	53FD008278E5A595FE1E9 08AE9C5E5675F26243264 A5A6438C023E3CE28707 60

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Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
Developer ID Certification Authority G2 (Sub-CA under Apple Root CA) Subject: CN= Developer ID Certification Authority OU= G2 O= Apple Inc. C= US	F83A0C691176E0EDACD 1EBA659FA37D5C455B0 1E	7FB4003FCD97497AC B834D92A48A7873C2 845D43	F16CD3C54C7F83CEA4BF 1A3E6A0819C8AAA8E4A1 528FD144715F350643D2 DF3A
Apple Root CA – G3 Subject: CN= Apple Root CA - G3 OU= Apple Certification Authority O= Apple Inc. C= US	BBB0DEA15833889AA48 A99DEBEBDEBAFDACB2 4AB	329831996670065346 1	63343ABFB89A6A03EBB5 7E9B3F5FA7BE7C4F5C756 F3017B3A8C488C3653E91 79
Apple Application Integration CA – G3 (Sub-CA under Apple Root CA – G3) Subject: CN= Apple Application Integration CA - G3 OU= Apple Certification Authority O= Apple Inc. C= US	23F249C44F93E4EF27E6 C4F6286C3FA2BBFD2E4 B	529093763559855579 9	A64B099DBD73EBB036B4 204E1675E8AA821637D0 9B84980899104AD59D66 4A3B

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Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
Apple Application Integration CA 5 - G1 (Sub-CA under Apple Root CA – G3) Subject: CN= Apple Application Integration CA 5 - G1 OU= Apple Certification Authority O= Apple Inc. C= US	D917FE4B6790384B92F4DBCED55780140B8F3DC9	56FB83D42BFF8DC3379923B55AAE6EBD	C0D8EFBEA821079D1B8A98E1198BFCC669331FA7A9C14F09B969F0AF08CE4A43
Apple Worldwide Developer Relations – G2 (Sub-CA under Apple Root CA – G3) Subject: CN= Apple Worldwide Developer Relations CA - G2 OU= Apple Certification Authority O= Apple Inc. C= US	84B684CC3A866272165994E81AA3BD48DF3ADF0B	8065904008342251502	9ED4B3B88C6A339CF1387895BDA9CA6EA31A6B5CE9EDF7511845923B0C8AC94C
Apple Application Integration CA 6 - G1 (Sub-CA under Apple Root CA – G3) Subject: CN= Apple Application Integration CA 6 - G1	B2A565A14108DA7F99E0516774484F20B8F72B02	1B00376FC8EBDCFD0CE0CE0CB9D1F209	DC223D6A19441B8C376C5C8093B94C07735D2C2B9CCEE85EB86A83DE4FC75337

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Root/Subordinate Name	Subject Key Identifier	Certificate Serial Number	SHA-256 Fingerprint
OU= Apple Certification Authority O= Apple Inc. C= US			
Apple Worldwide Developer Relations – G6 (Sub-CA under Apple Root CA – G3) Subject: CN= Apple Worldwide Developer Relations Certification Authority OU= G6 O= Apple Inc. C= US	3F2F942351D350C99A28 3DEDB07CE5CFA590629 9	22C1A1470A747369E F538612C9C69F3D38 F36CD7	BDD4ED6E74691F0C2BFD 01BE0296197AF1379E041 8E2D300EFA9C3BEF642C A30

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