

**SPECIFICATION DEVELOPMENT AGREEMENT
FOR CLOUD HDD FAST FAIL READ RETRY**

This Specification Development Agreement for Cloud HDD Fast Fail Read Retry and the attached Exhibits (“**Agreement**”) is by and between Open Compute Project Foundation, a Delaware nonprofit nonstock corporation (“**OCP**”), and the undersigned Member (“**Member**”) and is made as of the date set forth in the signature block for Member below (“**Effective Date**”).

Recitals

Whereas, OCP is in the process of developing Cloud HDD Fast Fail Read Retry specifications (“**Project**”) to meet the requirements and objectives set forth in Exhibit A attached hereto (“**Scope**”); and

Whereas, Member desires to participate in Project and OCP requires as a condition of such participation, that participants agree to the terms and conditions set forth in this Agreement.

NOW, THEREFORE, the parties agree as follows:

Agreement

1. **CONTRIBUTION LICENSE.** Any “**Contributions,**” as defined in OWF Contributor License Agreement 1.0 attached hereto as Exhibit B (“**OWF CLA**”), submitted by Member within the bounds of the Scope of the Project, whether electronically, orally, or in writing, shall be submitted pursuant to the terms of the OWF CLA, including without limitation the Copyright provisions in Section 2 and the Patent Provisions in Section 3, except as provided below:

- a. Scope. Notwithstanding the Definition of Contribution set forth in Section 10.3 of the OWF CLA, an original work of authorship shall not be considered a “Contribution” unless it is within the bounds of the Scope.
- b. Intent to Contribute. Notwithstanding the Definition of Contribution set forth in Section 10.3 of the OWF CLA, unless conspicuously designated in writing as “NOT A CONTRIBUTION” contemporaneous with the initial submission or disclosure if submitted by Member electronically or in writing, or within two (2) business days from the time that such communication is memorialized in written form, if only submitted orally, any original work of authorship submitted by Member in the course of participation in the Project shall be deemed intentionally submitted.
- c. Limited Opt Out. The period for Member to withdraw its Contribution as set forth in Section 5 of the OWF CLA shall (a) in the case of submissions only made by Member orally, be changed from forty five (45) days to two (2) business days from the time that such communication is memorialized in written form (including without limitation in a proposed specification, meeting minutes, Google Docs versioning or other submitted materials) and made available to or accessible by Member (“**Opt**

Out"); and (b) in the case of Contributions that are submitted by Member electronically or in writing, be deleted. For avoidance of doubt, Members making a contribution in a tangible form of expression are not permitted to withdraw such Contribution.

Member agrees to execute the OWF CLA as modified as attached hereto as Exhibit B in connection with any Contributions submitted by Member within the bounds of the Scope of the Project.

2. **SPECIFICATION LICENSE.** Notwithstanding Section 6 of the OWF CLA, Member agrees that with respect to the final specification resulting from the Project within the bounds of the Scope, Member will execute the Open Web Foundation Agreement version 1.0 as modified as attached hereto ("**OWFa**"), unless Member "**Withdraws**" as set forth below. Member may only withdraw from the obligation to execute the OWFa if it withdraws from the Project in writing within twenty (20) days from when a pre-release version of a proposed specification or the final specification is first made accessible (including without limitation via Google Docs) to participants in the Project ("**Withdraw**"), provided that such withdrawal shall not be deemed effective as to (a) any Contribution of such Member with respect to which Member did not properly Opt Out; or (b) any upon any version of a proposed specification made available to or accessible by Member that Member did not previously Withdraw from. For avoidance of doubt, if Member failed to Withdraw from a previous version of a proposed specification within the Scope made available to or accessible by Member but Withdraws from a subsequent version of a proposed specification or the final specification, such withdrawal shall be deemed effective only with respect to the new matter introduced by subsequent versions.

3. **COOPERATION.** Member shall reasonably cooperate at Member's expense in effectuating and/or memorializing Member's obligations under the this Agreement, including without limitation executing the OWF CLA and the OWFa as amended to reflect the terms of this Agreement as set forth in Exhibit B and/or Exhibit C and taking other actions as reasonably requested by OCP.

4. **TERM.** This Agreement will commence on the Effective Date and continue until the earlier of (a) the approval by OCP of the final specification for the Project or (b) the termination of the Project by OCP. The obligations set forth in Section 3 (*Cooperation*) as well as the terms and conditions of any executed Exhibit B and/or Exhibit C shall survive any termination of this Agreement with respect to any approved final OCP specification.

5. **MISCELLANEOUS.** This Agreement will bind and inure to the benefit of the parties hereto and their successors and assigns, provided, however, that Member may not assign or transfer this Agreement, including by operation of law, or through a merger or acquisition, unless, (i) OCP provides its prior written consent to such assignment, and (ii) the assignee agrees in writing to be bound by this Agreement. OCP may assign this Agreement upon written notice to Member. This Agreement will be governed by the laws of the State of Texas, without reference to conflict of laws principles. The parties agree that any dispute arising out of or related to this Agreement will be subject to, and Member hereby consents to, the exclusive jurisdiction of the state and federal courts located in Travis County, Texas. This Agreement, including without limitation its

Exhibits, together with OCP's policies and procedures, contains the entire agreement between the parties with respect to the subject matter hereof. In the event of any conflict between the terms and conditions of this Agreement and any other policies and procedures of OCP to which Member is bound, including without limitation the OCP Intellectual Property Rights Management Policy, this Agreement shall prevail over such conflicting policies and procedures solely with respect to the Project and only to the extent of such conflict. Any failure to enforce any provision of this Agreement shall not constitute a waiver thereof or of any other provision hereof. This Agreement may not be amended, nor any obligations waived, except by a writing signed by both parties hereto. The person signing on behalf of Member below, agrees to the terms and conditions set forth in this Agreement, including without limitation as applicable Exhibit B and/or Exhibit C, as an agent of such Member entity and represents that he/she is has the authority to bind and does hereby bind such Member entity to such terms and conditions.

Open Compute Project Foundation

Member (Organization Name)

Signature

Signature

Printed Name

Printed Name

Title

Title

Date

Date

EXHIBIT A

SCOPE FOR CLOUD HDD FAST FAIL READ RETRY

The creation of two policies for reads. The default policy would be the current one, which is “really try hard to read”. However, many reads would be issued with a “fast read” policy, which returns an error to the host if the read cannot be completed quickly (due to any reason, including read retry or uninterruptable firmware background task). In addition, after a “fast read” fails, the host still has the option to use the “really try hard to read” option if it desires.

Note that the followings are specifically “out of scope” under this proposal:

- Changes to command queueing and/or caching in order to support different read traffic classes or quota system, as well as changes to HDD queue management in general
- Generic host management of disk background commands, tasks, or services
- Generic logging or health monitoring

EXHIBIT B

OWF CLA

OWF Contributor License Agreement 1.0 - Copyright and Patent
Open Web Foundation

Contributor License Agreement (CLA 1.0)
(Patent and Copyright Grants)

1. **THE PURPOSE OF THIS CONTRIBUTOR LICENSE AGREEMENT.** This CLA sets forth the terms under which I will participate in and contribute to the development of the Specification. Capitalized terms are defined in the CLA's last section.

2. COPYRIGHTS.

2.1. **Copyright Grant.** I grant to you a perpetual (for the duration of the applicable copyright), worldwide, non-exclusive, no-charge, royalty-free, copyright license, without any obligation for accounting to me, to reproduce, prepare derivative works of, publicly display, publicly perform, sublicense, distribute, and implement any Contribution to the full extent of my copyright interest in the Contribution.

2.2. **Attribution.** As a condition of the copyright grant, you must include an attribution to the Specification in any derivative work you make based on the Specification. That attribution must include, at minimum, the Specification name and version number.

3. PATENTS.

3.1. Patent Non-Assert.

3.1.1. The Promise. I, on behalf of myself and my successors in interest and assigns, irrevocably promise not to assert my Granted Claims against you for your Permitted Uses, subject to the terms and conditions of Section 3.1. This is a personal promise directly from me to you, and you acknowledge as a condition of benefiting from it that no rights from me are received from suppliers, distributors, or otherwise in connection with this promise. This promise also applies to your Permitted Uses of any other specifications incorporating all required portions of the Specification.

3.1.2. Termination.

3.1.2.1. *As a Result of Claims by You.* All rights, grants, and promises made by me to you under this CLA are terminated if you file, maintain, or voluntarily participate in a lawsuit against me or any person or entity asserting that its Permitted Uses infringe any Granted Claims you would have had the right to enforce had you signed this CLA, unless that suit was in response to a corresponding suit first brought against you.

3.1.2.2. *As a Result of Claims by a Related Entity of Mine.* If a Related Entity of mine files, maintains, or voluntarily participates in a lawsuit asserting that a Permitted Use infringes any Granted Claims it would have had the right to enforce had it signed this CLA, then I relinquish any rights, grants, and promises I have received for the Specification from other signatories of this CLA, unless a) my promise to you was terminated pursuant to section 3.1.2.1, or b) that suit was in response to a corresponding suit first brought by you against the Related Entity.

3.1.3. Additional Conditions. This promise is not an assurance (i) that any of my copyrights or issued patent claims cover an implementation of the Specification or are enforceable or (ii) that an implementation of the Specification would not infringe intellectual property rights of any third party. Notwithstanding the personal nature of my promise, this promise is intended to be binding on any future owner, assignee or exclusive licensee who has been given the right to enforce any Granted Claims against third parties.

3.1.4. Bankruptcy. Solely for purposes of Section 365(n) of Title 11, United States Bankruptcy Code and any equivalent law in any foreign jurisdiction, this promise will be treated as if it were a license and you may elect to retain your rights under this promise if I (or any owner of any patents or patent applications referenced herein), as a debtor in possession, or a bankruptcy trustee, reject this non-assert.

3.2. **Patent License Commitment.** In addition to rights granted in 3.1, on behalf of me and my successors in interest and assigns, I agree to grant to you a no charge, royalty free license to my Granted Claims on reasonable and non-discriminatory terms, where such license applies only to those Granted Claims infringed by the implementation of my Contribution(s) alone or by combination of my Contribution(s) with the Specification, solely for your Permitted Uses.

4. **NO OTHER RIGHTS.** Except as specifically set forth in this CLA, no other express or implied patent, trademark, copyright, or other property rights are granted under this CLA, including by implication, waiver, or estoppel.

5. **LIMITED OPT-OUT.** In the case of Contributions I only submit orally, I may withdraw my Contribution by providing written notice of that withdrawal within ~~45 days of submitting that Contribution~~two (2) business days from the time that such communication is memorialized in written form (including without limitation in a proposed specification, meeting minutes, Google Docs versioning or other submitted materials) and made available to or accessible by Me. Notice of a Contribution withdrawal must be made, at minimum, in writing using the same communication mechanisms that were used to submit the corresponding Contribution and must include the exact material being withdrawn. Upon providing such valid notice, any obligations I incurred under this CLA for that particular identified Contribution will be null and void. For avoidance of doubt, Contributions I submit in a tangible form of expression are not subject to withdrawal.

6. **OPEN WEB FOUNDATION AGREEMENT ("OWFA") VERSION 1.0 EXECUTION.** I acknowledge that the goal of this CLA is to develop a specification that will be subject to the OWFA version 1.0. ~~While I have no legal obligation to execute the OWFA version 1.0 for any~~

~~version of the specification being developed under this CLA, as modified by the Specification Development Agreement signed by Me on [insert date of execution]~~ (“**Project Agreement**”). I agree that the selection and terms of the OWFa version 1.0 as modified by the Project Agreement will not be subject to negotiation.

7. **ANTITRUST COMPLIANCE.** I acknowledge that I may compete with other participants, that I am under no obligation to implement the Specification, that each participant is free to develop competing technologies and standards, and that each party is free to license its patent rights to third parties, including for the purpose of enabling competing technologies and standards.

8. **NON-CIRCUMVENTION.** I agree that I will not intentionally take or willfully assist any third party to take any action for the purpose of circumventing my obligations under this CLA.

9. **REPRESENTATIONS, WARRANTIES AND DISCLAIMERS.** I represent and warrant that 1) I am legally entitled to grant the rights and promises set forth in this CLA and 2) I will not intentionally include any third party materials in any Contribution unless those materials are available under terms that do not conflict with this CLA. IN ALL OTHER RESPECTS MY CONTRIBUTIONS ARE PROVIDED "AS IS." The entire risk as to implementing or otherwise using the Contribution or the Specification is assumed by the implementer and user. Except as stated herein, I expressly disclaim any warranties (express, implied, or otherwise), including implied warranties of merchantability, non-infringement, fitness for a particular purpose, or title, related to the Contribution or the Specification. IN NO EVENT WILL ANY PARTY BE LIABLE TO ANY OTHER PARTY FOR LOST PROFITS OR ANY FORM OF INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER FROM ANY CAUSES OF ACTION OF ANY KIND WITH RESPECT TO THIS CLA, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), OR OTHERWISE, AND WHETHER OR NOT THE OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. All of my obligations under Section 3 regarding the transfer, successors in interest, or assignment of Granted Claims will be satisfied if I notify the transferee or assignee of any patent that I know contains Granted Claims of the obligations under Section 3. Nothing in this CLA requires me to undertake a patent search.

10. **DEFINITIONS.**

10.1. **Bound Entities.** “Bound Entities” means the entity listed below and any entities that the Bound Entity Controls.

10.2. **CLA.** “CLA” means this document, which sets forth the rights, grants, promises, limitations, conditions, obligations, and disclaimers made available for my Contributions to the particular Specification.

10.3. **Contribution.** “Contribution” means any original work of authorship, including any modifications or additions to an existing work, that I intentionally submit for inclusion in the Specification, which is included in the Specification. For the purposes of this definition, “submit” means any form of electronic, oral, or written communication for the purpose of discussing and improving the Specification, ~~but excluding communication that.~~ For the purposes

of this definition, such original work of authorship will be deemed intentionally submitted for inclusion in the Specification unless I conspicuously designate such work in writing as ~~not a contribution~~. "NOT A CONTRIBUTION" contemporaneous with the initial submission or disclosure if submitted by Me electronically or in writing, or within two (2) business days from the time that such communication is memorialized in written form made available to or accessible by Me, if I initially only submitted the Contribution orally.

10.4. **Control.** "Control" means direct or indirect control of more than 50% of the voting power to elect directors of that corporation, or for any other entity, the power to direct management of such entity.

10.5. **Granted Claims.** "Granted Claims" are those patent claims that I own or control, including those patent claims I acquire or control after the Date below, that are infringed by Permitted Uses. Granted Claims include only those patent claims that are infringed by the implementation of any portions of the Specification within the bounds of the Scope where the Specification describes the functionality causing the infringement in detail and does not merely reference the functionality causing the infringement. Granted Claims under this CLA exclude those patent claims that would be infringed by an implementation of the Specification if my Contribution to that Specification were removed.

10.6. **I, Me, or My.** "I," "me," or "my" refers to the signatory below and its Bound Entities, if applicable.

10.7. **Permitted Uses.** "Permitted Uses" means making, using, selling, offering for sale, importing or distributing any implementation of the Specification within the bounds of the Scope 1) only to the extent it implements the Specification and 2) so long as all required portions of the Specification are implemented. Permitted Uses do not extend to any portion of an implementation that is not included in the Specification.

10.8. **Related Entities.** "Related Entities" means 1) any entity that Controls the Bound Entity ("Upstream Entity"), and 2) any other entity that is Controlled by an Upstream Entity that is not itself a Bound Entity.

10.9. **Specification.** "Specification" means the Specification identified below as of the date of my last Contribution.

10.10. **You or Your.** "You," "you," or "your" means any person or entity who exercises copyright or patent rights granted under this CLA, and any person or entity you Control.

Identify the Specification here:

(Signature Page to Follow)

If signing this CLA as an individual:

I acknowledge that, depending upon local law or contractual agreements, when I am employed by or acting on behalf of another entity, the promises I make relating to this Specification may actually be obligations of that other entity. In such a situation, I represent that I have been authorized by that entity to make these promises. I also understand that certain Specification projects may require additional private identifying information or certifications from me before they accept my Contributions.

Signed name

Print name

Email address

Date

If signing this CLA as a Bound Entity:

I certify that I am authorized to execute this agreement on behalf of the Bound Entity named below, and that all promises made herein relating to this Specification are commitments of the Bound Entity.

Signed name

Print name

Email address

Date

Title

Bound Entity

Address

EXHIBIT C

OWFa 1.0

OWFa 1.0
Open Web Foundation

Final Specification Agreement (OWFa 1.0)
(Patent and Copyright Grants)

1. **THE PURPOSE OF THIS AGREEMENT.** This Agreement sets forth the terms under which I make certain copyright and patent rights available to you for your Permitted Uses of the Specification. Capitalized terms are defined in the Agreement's last section.

2. **COPYRIGHTS.**

2.1. **Copyright Grant.** I grant to you a perpetual (for the duration of the applicable copyright), worldwide, non-exclusive, no-charge, royalty-free, copyright license, without any obligation for accounting to me, to reproduce, prepare derivative works of, publicly display, publicly perform, sublicense, distribute, and implement the Specification to the full extent of my copyright interest in the Specification.

2.2. **Attribution.** As a condition of the copyright grant, you must include an attribution to the Specification in any derivative work you make based on the Specification. That attribution must include, at minimum, the Specification name and version number.

3. **PATENTS.**

3.1. **Patent Non-Assert.**

3.1.1. The Promise. I, on behalf of myself and my successors in interest and assigns, irrevocably promise not to assert my Granted Claims against you for your Permitted Uses, subject to the terms and conditions of Section 3.1. This is a personal promise directly from me to you, and you acknowledge as a condition of benefiting from it that no rights from me are received from suppliers, distributors, or otherwise in connection with this promise. This promise also applies to your Permitted Uses of any other specifications incorporating all required portions of the Specification.

3.1.2. Termination.

3.1.2.1. *As a Result of Claims by You.* All rights, grants, and promises made by me to you under this Agreement are terminated if you file, maintain, or voluntarily participate in a lawsuit against me or any person or entity asserting that its Permitted Uses infringe any Granted Claims you

would have had the right to enforce had you signed this Agreement, unless that suit was in response to a corresponding suit first brought against you.

3.1.2.2. *As a Result of Claims by a Related Entity of Mine.* If a Related Entity of mine files, maintains, or voluntarily participates in a lawsuit asserting that a Permitted Use infringes any Granted Claims it would have had the right to enforce had it signed this Agreement, then I relinquish any rights, grants, and promises I have received for the Specification from other signatories of this Agreement, unless a) my promise to you was terminated pursuant to section 3.1.2.1, or b) that suit was in response to a corresponding suit first brought by you against the Related Entity.

3.1.3. Additional Conditions. This promise is not an assurance (i) that any of my copyrights or issued patent claims cover an implementation of the Specification or are enforceable or (ii) that an implementation of the Specification would not infringe intellectual property rights of any third party. Notwithstanding the personal nature of my promise, this promise is intended to be binding on any future owner, assignee or exclusive licensee to whom has been given the right to enforce any Granted Claims against third parties.

3.1.4. Bankruptcy. Solely for purposes of Section 365(n) of Title 11, United States Bankruptcy Code and any equivalent law in any foreign jurisdiction, this promise will be treated as if it were a license and you may elect to retain your rights under this promise if I (or any owner of any patents or patent applications referenced herein), as a debtor in possession, or a bankruptcy trustee, reject this non-assert.

3.2. **Patent License Commitment.** In addition to rights granted in 3.1, on behalf of me and my successors in interest and assigns, I agree to grant to you a no charge, royalty free license to my Granted Claims on reasonable and non-discriminatory terms, where such license applies only to those Granted Claims infringed by the implementation of the Specification, solely for your Permitted Uses.

4. **NO OTHER RIGHTS.** Except as specifically set forth in this Agreement, no other express or implied patent, trademark, copyright, or other property rights are granted under this Agreement, including by implication, waiver, or estoppel.

5. **ANTITRUST COMPLIANCE.** I acknowledge that I may compete with other participants, that I am under no obligation to implement the Specification, that each participant is free to develop competing technologies and standards, and that each party is free to license its patent rights to third parties, including for the purpose of enabling competing technologies and standards.

6. **NON-CIRCUMVENTION.** I agree that I will not intentionally take or willfully assist any third party to take any action for the purpose of circumventing my obligations under this Agreement.

7. **REPRESENTATIONS, WARRANTIES AND DISCLAIMERS.** I represent and warrant that I am legally entitled to grant the rights and promises set forth in this Agreement. IN ALL OTHER RESPECTS THE SPECIFICATION IS PROVIDED "AS IS." The entire risk as to implementing or otherwise using the Specification is assumed by the implementer and user.

Except as stated herein, I expressly disclaim any warranties (express, implied, or otherwise), including implied warranties of merchantability, non-infringement, fitness for a particular purpose, or title, related to the Specification. IN NO EVENT WILL ANY PARTY BE LIABLE TO ANY OTHER PARTY FOR LOST PROFITS OR ANY FORM OF INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER FROM ANY CAUSES OF ACTION OF ANY KIND WITH RESPECT TO THIS AGREEMENT, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), OR OTHERWISE, AND WHETHER OR NOT THE OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. All of my obligations under Section 3 regarding the transfer, successors in interest, or assignment of Granted Claims will be satisfied if I notify the transferee or assignee of any patent that I know contains Granted Claims of the obligations under Section 3. Nothing in this Agreement requires me to undertake a patent search.

8. DEFINITIONS.

8.1. **Agreement.** “Agreement” means this OWFa document, which sets forth the rights, grants, promises, limitations, conditions, obligations, and disclaimers made available for the particular Specification.

8.2. **Bound Entities.** “Bound Entities” means the entity listed below and any entities that the Bound Entity Controls.

8.3. **Control.** “Control” means direct or indirect control of more than 50% of the voting power to elect directors of that corporation, or for any other entity, the power to direct management of such entity.

8.4. **Granted Claims.** "Granted Claims" are those patent claims that I own or control, including those patent claims I acquire or control after the Date below, that are infringed by Permitted Uses. Granted Claims include only those patent claims that are infringed by the implementation of any portions of the Specification [within the bounds of the Scope](#) where the Specification describes the functionality causing the infringement in detail and does not merely reference the functionality causing the infringement.

8.5. **I, Me, or My.** “I,” “me,” or “my” refers to the signatory below and its Bound Entities, if applicable.

8.6. **Permitted Uses.** “Permitted Uses” means making, using, selling, offering for sale, importing or distributing any implementation of the Specification [within the bounds of the Scope](#) 1) only to the extent it implements the Specification and 2) so long as all required portions of the Specification are implemented. Permitted Uses do not extend to any portion of an implementation that is not included in the Specification.

8.7. **Related Entities.** “Related Entities” means 1) any entity that Controls the Bound Entity (“Upstream Entity”), and 2) any other entity that is Controlled by an Upstream Entity that is not itself a Bound Entity.

~~8.8. **Specification.** “Specification” means the Specification identified below.~~

8.8. **Scope.** “Scope” means [insert description from Exhibit A of Specification Development Agreement when finalized]

8.9 **Specification.** “Specification” means the Specification identified below.

~~8.9~~8.10. **You or Your.** “You,” “you,” or “your” means any person or entity who exercises copyright or patent rights granted under this Agreement, and any person or entity you Control.

Identify the Specification and version number here:

(Signature Page to Follow)

If signing this OWFa as an individual:

I acknowledge that, depending upon local law or contractual agreements, when I am employed by or acting on behalf of another entity, the promises I make relating to this Specification may actually be obligations of that other entity. In such a situation, I represent that I have been authorized by that entity to make these promises. I also understand that certain Specification projects may require additional private identifying information or certifications from me before they accept this Agreement.

Signed name

Print name

Email address

Date

If signing this OWFa as a Bound Entity:

I certify that I am authorized to execute this Agreement on behalf of the Bound Entity named below, and that all promises made herein relating to this Specification are commitments of the Bound Entity.

Signed name

Print name

Email address

Date

Title

Bound Entity

Address

