

NVMe Testing Consortium

Charter Document

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MODIFICATION RECORD

- October 18, 2011 Version 1.0 - Final Version of New Charter Developed

NVMe Testing Consortium Charter

1.0 Extension of UNH-IOL Usage Agreement

This UNH-IOL NVMe Testing Consortium (hereafter referred to as Consortium) Charter serves as an extension of the University of New Hampshire InterOperability Laboratory (UNH-IOL) Usage Agreement. As a result, this Consortium Charter is bound to the full acceptance of the UNH-IOL Usage Agreement. The section numbers outlined in this Consortium Charter reference the corresponding section numbers in the UNH-IOL Usage Agreement.

2.0 Additional Definitions

Consortium Manager A representative of the UNH-IOL assigned to lead and support the efforts of the Consortium. The Consortium Manager is the primary contact for all members to the UNH-IOL.

3.0 Consortium Purpose and Goals

3.1 Purpose

The purpose of the *Consortium* is three-fold:

- 3.1.1 To provide the facilities, services, tools, and procedures that will allow a quantitative assessment of a device(s) or component(s) ability to properly participate in multi-vendor NVMe implementations.
- 3.1.2 To investigate interoperability issues related to NVMe and to provide a forum for their discussion.
- 3.1.3 To develop and disseminate technical information relative to proper implementation and use of NVMe technology, including but not limited to: aiding in the interpretation of NVMe documents, integration issues, and prototyping of NVMe protocols.

3.2 Goals

This agreement establishes the following items as goals for *Consortium* members:

- 3.2.1 To provide a long-term independent facility for an Interop Test Bed where NVMe products can be tested in a heterogeneous environment.

- 3.2.2 To document a set of interoperability tests and testing procedures that will provide a high level of confidence in product interoperability.
- 3.2.3 To develop tests and procedures to diagnose interoperability problems, as defined by the Steering Committee.
- 3.2.4 To simplify interoperability testing procedures by reducing organizational overhead.
- 3.2.5 To provide a forum for the exchange of technical information between *Consortium* members concerning issues related to NVMe implementations and products.
- 3.2.6 To contribute to NVMe standards development activities by providing feedback that will enhance interoperability.
- 3.2.7 To support the development of testing tools and test suites and scripts allowing a detailed conformance examination of NVMe protocols.
- 3.2.8 To promote NVMe conformance to published wire-level standards and wire-level interoperability in heterogeneous vendor environments.
- 3.2.9 To develop conformance Test Suites, Test Scripts, and Diagnostic Tools for NVMe standards. This may include 1) additions to any NVMe reference driver enabling it to communicate status to the user. 2) Software for exercising a NVMe driver in order to create traffic on the PCIe bus 3) Software/scripts to be used with a PCIe generator to check corner cases in the NVMe conformance tests.
- 3.2.10 To organize and support an interoperability verification process. To carry out Interop Workshops for both members and non-members as deemed necessary by the Steering Committee.
- 3.2.11 To provide a mechanism for members to do conformance testing of NVMe protocols in their own facilities.

3.3 Compliance With Antitrust Laws

The University and Consortium Members are committed to fostering open competition in the development of products and services based on the NVMe technology. The Consortium Members understand that in certain lines of business they are or may be direct competitors and that it is imperative that they and their representatives act in a manner which does not violate any state, federal or international antitrust laws and regulations. Without limiting the generality of the foregoing, the Consortium Members acknowledge that Consortium Members will not engage in any communications regarding costs, prices, quantity or quality of production levels, methods or channels of distribution, markets, customers, exclusion of competitors or any other topic, which may be construed as a violation of antitrust laws. Accordingly, each Consortium Member will counsel its representatives who participate in any activities relating to NVMe standards

or testing on the importance of limiting the scope of their discussions and communications to the topics that relate to the purposes of NVMe standards or testing, whether or not such discussions and communications take place during formal meetings, informal gatherings, or otherwise.

4.0 Membership Agreement

4.1 Membership Structure and Fee Structure

The following Fee Structure terms will apply to the NVMe Testing Consortium. Members may also be bound by additional Fee Structure terms, such as those specified in Section 4.2 of the UNH-IOL Usage Agreement. Consortium Members must also be members in good standing in the NVMe Work Group. This ensures that Consortium Members have executed the NVMe Work Group licensing agreement and have proper access to implement the NVMe specification.

4.2.1 *UNH-IOL NVMe Testing Consortium Equipment Vendor Membership*

4.2.1.1 UNH-IOL NVMe Testing Consortium Membership Fee:

This fee is due annually at the anniversary of membership acceptance. This fee grants full access to the UNH-IOL as often as requested within the constraint of equitable allocation of UNH-IOL time. The annual membership fee for the NVMe Testing *Consortium* is **Nineteen Thousand U.S. Dollars (\$19,000.00 USD)**.

4.2.2 *UNH-IOL NVMe Membership Fee Adjustment*

The UNH-IOL may adjust any and/or all fees to ensure the ability of the UNH-IOL NVMe Testing *Consortium* to continue fulfilling the expectations of members. Adjustment of fees will occur no more than once a year following a suitable notification and comment period for members. These adjusted fees will be asked of new members and renewing members as their anniversary of membership occurs subsequent to the fee adjustment. In addition, this *Consortium* Charter will automatically be amended with the membership fee adjustment and noted in the modifications record.

4.2.3 *UNH-IOL NVMe Consortium Scheduling Policy*

The UNH-IOL is scheduled on a first come, first serve basis. Each member can have, at most, one active reservation per consortium membership at a given point in time. The Laboratory typically can

be reserved for a period of one business week. Provisions exist within the *Consortium* to schedule testing outside of the regular calendar.

4.2.3.1 *Regular Testing*

In order for a member to utilize regular testing services, the following requirements must be met: the vendor must be a member in good standing at the time of the requested testing week; each member can have, at most, one active reservation per membership at any given point in time; and the device(s) under test must be available during the test slot.

4.2.3.2 *Overtime Testing*

Overtime testing is an alternative for members to bypass the existing scheduling mechanism if time-critical services are required. Testing is performed outside of business hours, typically during weekends, such that the regularly scheduled testing service is not impacted. An additional service fee is required to schedule overtime testing. Specific costs, details and arrangements of overtime testing are coordinated with UNH-IOL personnel. In order for a member to utilize overtime testing services, the following requirements must be met: an overtime testing slot must be available; the requestor must be a member in good standing at the time of the test reservation; the device(s) under test must be available during the test slot.

4.2.3.3 *Waiting List*

The UNH-IOL personnel will maintain a list of testing requests from members who wish to use the Consortium facilities during a specific time slot currently reserved by another member. The administrative contact of the first member on the list will be notified if the slot becomes available.

4.2.3.4 *No show*

A NO SHOW is classified as a cancellation with less than two weeks notice, or failure to arrive at the UNH-IOL during the scheduled time period. A member who is guilty of a NO SHOW may not reserve the UNH-IOL for a period of eight (8) weeks in an effort to enforce fair and non-

abusive access to the *Consortium* for all members. The UNH-IOL may waive the penalty if just cause is given.

4.2.4 *UNH-IOL NVMe Testing Consortium Contributing Member*

The UNH-IOL will maintain a publicly available list of all companies who have contributed significantly to the establishment and ongoing support of the UNH-IOL NVMe Testing Consortium. The determination of a significant contribution is left solely to the UNH-IOL personnel. This designation offers no entitlements beyond this public acknowledgement.

4.2.5 UNH-IOL NVMe Testing Consortium Founding Member

The UNH-IOL NVMe Testing *Consortium* will maintain a publicly available list of members who have contributed in the founding of any specific effort. A member will be designated a Founding Member should the member join by March 1, 2012, and may do so at a reduced annual rate, for the first year of membership only, of **Fifteen Thousand U.S. Dollars (\$15,000.00 USD)**. Beyond this reduced initial fee, this designation offers no entitlements beyond permanent web-based public acknowledgement of the member's status as a founder for the lifetime of the technical effort.

4.2.6 UNH-IOL NVMe Testing Consortium Steering Committee

The UNH-IOL NVMe Testing Consortium will be advised by a Steering Committee. The Steering Committee is comprised of members of the Consortium who are also Promoter Members of the NVMe Work Group. The Steering Committee shall advise the UNH-IOL NVMe Consortium on the areas of scope, technical direction, financial investment and all areas of Consortium operations, with the UNH-IOL NVMe Consortium acting on the collective advice of the Steering Committee.

4.2 Equipment and Results

Equipment and Results are addressed in the UNH-IOL Usage Agreement.

5.0 Confidentiality

The following terms of confidentiality will apply to the NVMe Testing Consortium. Members may also be bound by additional terms of confidentiality, such as those specified in Section 5.0 of the UNH-IOL Usage Agreement. “Confidential Information” is defined in Section 5.2 of the UNH-IOL Usage Agreement.

5.1 Term for NVMe Testing *Consortium*

Each *Consortium* member shall comply with the Confidentiality obligations under this Charter. The Confidentiality obligations of each particular *Consortium* member under this Charter shall survive until such time as any one of the following occurs:

- (a) All Confidential Information of each of the other Disclosing Parties in the *Consortium* disclosed hereunder becomes publicly known and is made generally available through no action or inaction of such *Consortium* member;
- (b) Such *Consortium* member does not renew membership and becomes a non-member and a period of three (3) years passes;
- (c) Such *Consortium* member receives Confidential Information and a period of three (3) years passes after any Confidential Information was last disclosed to the member under this Charter.

6.0 Organization and Operation

Organization and Operation is addressed in the UNH-IOL Usage Agreement.

7.0 Security of Physical Equipment

Access to other member(s) device(s) or component(s) is allowed only via a specific network interface(s) defined by the member for gathering NVMe interoperability information. Information that can be obtained via the network is deemed interoperability information. Physical access to another members' equipment will be via UNH-IOL personnel only.

8.0 Warranty

The *University* makes no representations or warranties, express or implied. By way of example but not of limitation, The *University* MAKES NO REPRESENTATIONS OR WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. The *University* SHALL NOT BE LIABLE UNDER ANY CLAIM, CHARGE, OR DEMAND, WHETHER IN CONTRACT, TORT, CRIMINAL LAW, OR OTHERWISE, FOR ANY AND

ALL LOSS, COST, CHARGE, CLAIM, DEMAND, FEE, EXPENSE, OR DAMAGE OF EVERY NATURE AND KIND ARISING OUT OF, CONNECTED WITH, RESULTING FROM OR SUSTAINED AS A RESULT OF EXECUTING THIS AGREEMENT OR FOR PERFORMING ALL OR ANY PART OF THIS AGREEMENT. IN NO EVENT SHALL UNH BE LIABLE FOR SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSSES, COSTS, CHARGES, CLAIMS, DEMANDS, FEES OR EXPENSES OF ANY NATURE OR KIND.

9.0 Acceptance

A company that has submitted payment or a purchase order for payment of the Consortium membership fee outlined in Section 4.2.1 shall be construed to mean full acceptance of this *Consortium* Charter, UNH-IOL Usage Agreement and all provisions outlined. Signed membership forms listing Administrative and Technical Contacts shall be maintained by the *University* per Section 4.1.7 of the UNH-IOL Usage Agreement.

10.0 Amendments

Amendments to the Consortium Charter are made by the Consortium Representative in consultation with all Consortium members. Members may submit amendment requests for consideration to the Consortium Steering Committee. The Steering Committee will debate the amendment and draft a final version of the amendment for review by all Consortium members. All Consortium members will be contacted with the proposed amendment and asked to submit comments and questions in regards to the amendment. Members will be provided thirty days to respond. At any time during this review period, the Steering Committee may revise the proposed amendment, based on feedback. However, doing so will require all Consortium members to again be contacted and the thirty-day review period restarted. At the end of the review period, should the requested change not be in violation of the UNH-IOL Usage Agreement and have a majority interest of existing Consortium members, then the UNH-IOL will amend the Charter with the amendments noted in the modifications record.