NVMe
Where We Are
Where We Came From
Where We’re Going
And what you’re going to hear today!

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July 25, 2015
Where We’ve Been & Where We’re Going

- NVMe 1.2 (Nov 2014)
- NVMe 1.1 (Oct 2012)
- NVMe 1.0 (Mar 2011)
- NVMeHCl 1.0 (April 2008)

- Work started on new architecture, NVMe (Feb 2010)
- Legal Framework Altered to Create Board and RANDZ IP Licensing (April 2011)
- NVM Express Incorporated (March 2014)
- Original NVMHCI Consortium Created (2007)
- 1st Member’s Meeting (April 2015)
- Plugfest #1 (May 2013)
- Plugfest #2 (Feb 2014)
- Plugfest #3 (Nov 2014)
- Plugfest #4 (June 2015)
Where We Are Today

• Governance and Legal Structure
  • Delaware Non-profit Corporation since 2014
    • Corporate Officers and Board-of-Directors
    • Governed by a set of By-Laws and Corporate Charter

• Members and Membership Growth
  • Currently have 89 members
  • 104 members at the end of 2013
  • 76 members at the end of 2014

• Technical groups and Efforts
  • Management Interface TWG – Started 2014
  • Working on NVMe Fabrics
  • NVMe-T11 MOU signed
  • NVMe-TCG Liaison Agreement underway
  • Technical proposals around client and even consumer related applications
  • Benchmarking tools

• Budget
  • We have ~ $200K yearly income
Board Of Directors
Governed by an elected board of 13 directors from member companies

- Cisco
- Dell
- EMC
- HGST
- Intel
- Micron
- Microsoft
- NetApp
- Oracle
- PMC-Sierra
- Samsung
- SanDisk
- Seagate
NVMe Ecosystem – Going Native!

- NVMe Drivers Available on Windows*, Linux*, Solaris*, VMware*, UEFI
- Many are native / in-box drivers

Wide Selection of Protocol Analyzers

- Agilent
- Teledyne LeCroy
- Others

*Other names and brands may be claimed as the property of others.
The Future is Bright

• NVMe products are accelerating in 2015 and 2016!

• 2nd NVMe Members Meeting next year

• Management Interface 1.0 coming in Q3

• NVMe over Fabrics specification in Q4

• More innovation for revision 1.3

“There’s not much else to say. NVMe seems to have achieved its goal of making PCIe drives as painless as their SATA peers…”

Digital Trends, 4/2/15
Its Real!

Go To

WWW.NVMExpress.org/Products

or

Google “NVMe Products”
Staying True to Our Principals and Ideals

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
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<tbody>
<tr>
<td>Parallelism and Scalability</td>
<td>Leading IOP and Throughput Performance in all Configurations</td>
</tr>
<tr>
<td>Resource Allocation &amp; Partitioning</td>
<td>Allows You to Put the Power Where it Matters Most</td>
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<tr>
<td>Optimized Queuing Layer</td>
<td>No Locks and minimized un-cacheable Register reads/writes</td>
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<td>Efficient command Set</td>
<td>No Bloated and Unnecessary Commands to Slow I/O</td>
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NVM Express is architected for performance!
The Track

• Management Interface
• Fabrics
• Security
• Ecosystem
• Real World use cases
• Mobile Platforms
• Future Directions