



# Tutorial T1C

## Testing/Performance/Endurance

**Wednesday, August 10 8:30 am - 10:50 am.**

FMS Program Organization

Eden Kim, Organizer

June 16, 2010

Rev 1.2



# FMS 2011 Tutorial T1C

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# Logistics

- **FMS** — August 9 – 11, 2011
- **Venue** — Santa Clara Convention Center
- **Day** — Wednesday, August 9, 2011
- **Time** — 8:30 am – 10:50 am
- **Topic** — “Testing/Performance/Endurance”
- **Speaker Slots** — (5)
- **Presentation Time** — 20 minutes each
- **Organizer** — Eden Kim, [edenkim@calypsotesters.com](mailto:edenkim@calypsotesters.com)



# Participants

- **Doug Rollins**, Sr Applications Engineer, Micron [dougormlins@micron.com](mailto:dougormlins@micron.com), “Accurately Measuring SSD Endurance and Performance” 1-208-363-1079
- **Gary Tressler**, Sr Technical Staff Member, IBM [gtressle@us.ibm.com](mailto:gtressle@us.ibm.com), “Enterprise SSD Competitive Analysis” 1-845-435-7528
- **Ilana Golan**, Technical Director, QualiSystems [ilana.g@qualisystems.com](mailto:ilana.g@qualisystems.com), “Accelerating Benchmark Testing Through Automation” [\(408\) 313-0487](tel:4083130487)
- **Bob Weisickle, CEO**, OakGate Technology [bob.weisickle@oakgatetech.com](mailto:bob.weisickle@oakgatetech.com), and **Mike Engbretson**, Chief Technology Engineer, Granite River Labs [mikeen@graniteriverlabs.com](mailto:mikeen@graniteriverlabs.com) [\(408\)627-7608](tel:4086277608)  
“Changing Dynamics of Flash Performance Benchmarks” [\(916\) 791-7632](tel:9167917632)
- **Jim Fitzpatrick**, Principal Engineer, SMART Modular [jim.fitzpatrick@smartm.com](mailto:jim.fitzpatrick@smartm.com), “Reliability in the Enterprise: How to Ensure Flash-Based SSDs Make the Grade” [\(978\) 805-2153](tel:9788052153)



# Speaker Checklist – due date<sup>1</sup>

Speaker	Participation Confirmation Contact Info	Introductory BIO blub	Tutorial Summary	Tutorial Presentation Draft 1	Tutorial Approval & Submission
Doug Rollins	Done	Done	Done	ASAP	08JUL11
Gary Tressler	09JUN11	13JUN11	13JUN11	ASAP	08JUL11
Ilana Golan	09JUN11	13JUN11	13JUN11	ASAP	08JUL11
Mike Engbretson <sup>2</sup>	09JUN11	13JUN11	13JUN11	ASAP	08JUL11
Bob Weisickle <sup>2</sup>	Done	13JUN11	13JUN11	ASAP	08JUL11
Jim Fitzpatrick	Done	13JUN11	13JUN11	ASAP	08JUL11

- Note <sup>1</sup> – please send info to Organizer Eden Kim edenkim@calypsotesters.com
- Note <sup>2</sup> -these are a combined Tutorial



# Speaker Information 1 of 2

Speaker Name	Company Title, Email, Tel	Introductory Bio
<b>Doug Rollins</b>	<b>Micron</b> <b>Sr. App Eng</b> <a href="mailto:dougorollins@micron.com">dougorollins@micron.com</a> <b>208-363-1079</b>	<p>Doug Rollins joined Micron in 2009 as an applications engineer with the Enterprise SSD Products group. Prior to joining Micron, Mr. Rollins spent 13 years working in server system, network appliance, and storage platform/data protection design and manufacture.</p> <p>Mr. Rollins is the named inventor in 13 U.S. patents and has been recognized by both the Storage Networking Industry Association (SNIA) and Intel Corporation for outstanding technical achievement. Mr. Rollins is an active member of several technical groups within SNIA including: The Solid State Storage Initiative and its Technical Working Group; Data Protection and Capacity Optimization; Marketing and Technical Development; Total Cost of Ownership; and the IO and Trace Tools Analysis. As co-chair of SNIA's Solid State Storage Initiative's Technical Working Group, Mr. Rollins was instrumental in the early development and validation of SNIA's SSD Performance Test Specification.</p> <p>Mr. Rollins earned his BA degree in mathematics from Humboldt State University.</p>
<b>Gary Tressler</b>	<b>IBM</b> <b>Sr Technical Staff Member</b> <a href="mailto:gtressle@us.ibm.com">gtressle@us.ibm.com</a> <b>845-435-7528</b>	
<b>Ilana Golan</b>	<b>QualiSystems</b> <b>Technical</b> <b>Director</b> <a href="mailto:ilana.g@qualisystems.com">ilana.g@qualisystems.com</a>	



# Speaker Information 2 of 2

Speaker Name	Company Title, Email, Tel	Introductory Bio
<p><b>Mike Engbretson</b></p>	<p><b>Granite River Labs Chief Technology Engineer</b>  <a href="mailto:mikeen@graniteriverlabs.com">mikeen@graniteriverlabs.com</a></p>	<p>A recognized high speed test guru, Mike Engbretson has been in the test solutions business for over 20 years. Prior to Granite River Labs, Mike was a Senior Professional in Tektronix's Technology Solutions Group where he was heavily involved with such standards as SATA, USB, and PCI Express. Mike represents GRL on the SATA Logo Committee and is currently the Editor of the DisplayPort 1.2 PHY Compliance Test Spec.</p> <p>GRL helps customers implement high speed connectivity technologies by providing compliance, characterization, benchmarking, stress testing, interoperability, and signal integrity test and debug services. Led by recognized veterans in the test &amp; measurement and semiconductor industries, GRL is the only Official SATA and DisplayPort Test Lab in Silicon Valley. GRL provides deep expertise in electrical, protocol, and system level tests for a wide range of standards including SATA, SAS, DDR, PCIe Gen3, USB 3, and 10G Ethernet. GRL goes beyond testing and helps customers if they need additional design, modeling, and simulation support in the areas of signal integrity, SERDES, IBIS, as well as IC packaging, PCB, and FPGA/IC design. GRL combines recognized industry experts, high performance test equipment, and convenient lab locations to provide the utmost in customer service.</p>
<p><b>Bob Weisickle</b></p>	<p><b>OakGate Technology CEO</b>  <a href="mailto:bob.weisickle@oakgateech.com">bob.weisickle@oakgateech.com</a></p>	<p>Bob is the CEO/Founder of OakGate Technology, Inc. Prior to OakGate, Bob held several executive and leadership Engineering positions at Hewlett Packard, Sun Microsystems, Network Appliance and Rackable Systems focused on delivering Storage, Server and Test &amp; Measurement Products. Bob has over 35 years of engineering experience in designing products and leading world class engineering teams.</p> <p>OakGate Technology, Inc was founded in 2008 with the mission to provide Storage, Server and Technology Providers the tools to deliver higher quality products with a shorter validation cycle and lower release cost. In concert with this mission, OakGate Technology provides Performance Benchmarking tools that are compliant with Industry Standards (SNIA, JEDEC) along with a full suite of automation suites based on industry best practices.</p>
<p><b>Jim Fitzpatrick</b></p>	<p><b>SMART Modular Principal Eng</b>  <a href="mailto:jim.fitzpatrick@smartm.com">jim.fitzpatrick@smartm.com</a></p>	



# Summary of Tutorials

Note <sup>1</sup> – these are a combined Tutorial

Speaker	Title	Description
<b>Doug Rollins</b>	Accurately Measuring SSD Performance	Enterprise performance measurement is different from Client performance measurement. At Micron, we make some base assumptions about Enterprise: 1. Assume drive is always full, always under heavy load 2. Assume steady state is region of interest 3. Always start from a repeatable, known, fixed point 4. Always precondition the drive in the same way 5. Always stimulate the drive with a single fixed stimulus until steady state
<b>Gary Tressler</b>	Enterprise SSD Competitive Analysis	
<b>Ilana Golan</b>	Accelerating Benchmark Testing Through Automation	
<b>Bob Weisickle<sup>1</sup> Mike Engbretson<sup>1</sup></b>	Changing Dynamics of Flash Performance Benchmarks	<ul style="list-style-type: none"> <li>- Changes in the Performance Landscape since 2010               <ul style="list-style-type: none"> <li>- Ways companies like GRL and Oakgate Technology can help customers in their SSD assessments</li> </ul> </li> <li>- New Benchmarking Methods/Examples</li> <li>- Challenges beyond just Performance               <ul style="list-style-type: none"> <li>- Data Validation</li> <li>- IO Stress</li> <li>- Endurance prediction</li> <li>- Conformance</li> </ul> </li> </ul>
<b>Jim Fitzpatrick</b>	Reliability in the Enterprise: How to Ensure Flash-Based SSDs Make the Grade	





# Guidelines

- **Presenter Materials** — Due 08JUL11 for submission to FMS CAB
- **Speaker Info Req** — name, job title, affiliation, contact info, bios
- **Organizer Duties** — determine order of speakers; assign time per slot; develop structure; introduce speakers; manage time; Q & A
- **Presentation Guidelines** — avoid overt commercialism (such as product pitches, detailed descriptions of specific products, or product roadmaps). Try to avoid overlap as well. Note FMS pptx guidelines.
  1. **Assume 1 to 1 1/2 minutes per slide.** This does not include your title slide and slides at the end about yourself and your organization.
  2. **No more than 30 words on any slide.** A picture is worth 1000 words, but not if there are 1000 words written on it!
  3. **No more than 3 to 5 items in any list.** If you have more, combine them into groups or omit the less important ones. This is supposed to be the number of things people can comprehend or remember at one time.
  4. **Don't include tiny or extremely complex graphs or figures with markings no one in the audience will be able to read.** Simplify these so their significance will be obvious with a quick glance.



# Open Items / Next Actions

- **Presenter Info** — please respond and provide requested info
- **Distribution of Summaries** — to speaker list to ensure no overlap
- **Speaker Bios & Intro** — needed for program & session intro
- **Presentation Draft** — review by FMS for clarity, relevance and adherence to FMS guidelines
- **Speaker webex** — set time for concall among speakers for coordination — Monday 13JUN11 1:00 PM PST okay?
- **Questions?** — contact Eden Kim [edenkim@calypsotesters.com](mailto:edenkim@calypsotesters.com) or Lance Leavanthal [lanclev@pacbell.net](mailto:lanclev@pacbell.net)