Welcome and Overview
SNIA Emerald V3.0 Training

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SNIA GSI Chair
SNIA Board of Directors Chair Emeritus

SNIA Emerald™ Training

SNIA Emerald™ Power Efficiency Measurement Specification

Version 3.0

February-March 2018

SNIA Emerald™

Greetings from the SNIA!

SNIA GSI | GREEN STORAGE

- The Storage Networking Industry Association welcomes you.
- Several SNIA groups have worked together to the SNIA Emerald™ Training:
  - SNIA Green Storage Initiative and Green Technical Working Group
  - EPA
  - SPEC
  - SNIA Staff

Welcome

- Training format – Webex ; 6 days, 4 hours each session
- Sessions audio recorded; posted 2-3 weeks later
- Attendance tracked
- Slides posted at https://www.snia.org/emerald/education/vendor-training
- Agenda may have time for per session Q&A ; will have time at end of each day Q&A
- Questions can be emailed to emerald-training@snia.org
- Audio controls
  - With your PC , find the microphone icon and click to mute/unmute
  - If calling in on a landline/cellphone, use the phone device options to mute/unmute
- Moderator may mute all lines

Webex Details Change Each Day

SNIA Emerald V3.0 Webex Details Per Day				
Date	**URL**	**Webex Password**	**Phone**	**Dialin Passcode**
Feb 20th	https://snia2.webex.com	none	+1-415-655-0002	666 077 228
Feb 21st	https://snia2.webex.com	none	+1-415-655-0002	663 657 901
Feb 22nd	https://snia.webex.com/meet/sniahost	none	+1-415-655-0002	800 388 486
Mar 6th	https://snia2.webex.com	none	+1-415-655-0002	660 005 378
Mar 7th	https://snia2.webex.com	none	+1-415-655-0002	665 640 182
Mar 8th	https://snia2.webex.com	none	+1-415-655-0002	666 449 876

Schedule at a Glance
Overview of the 6 Sessions

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SNIA Emerald V3.0 Training Schedule					
			Pacific		
Month	Date	Day	Time	Format	Theme
February	20th	Tuesday	10am-2pm	webinar	Storage Primer
February	21st	Wednesday	10am-2pm	webinar	SNIA and EPA Program Overview
February	22nd	Thursday	10am-12N	webinar	SNIA Emerald Programs TWG, GSI, RTP
March	6th	Tuesday	10am-2pm	webinar	Emerald 3.0 Specification and Tool Deep Dive
March	7th	Wednesday	10am-2pm	webinar	Generating Emerald Test Data
March	8th	Thursday	10am-2pm	webinar	Analyze and Report Emerald Metrics

- Feb 20 - Feb 22: Focus – “What it is”
- Mar 6 - Mar 8: Focus – “How to do it (File IO)”
  - *Block IO, refer to V2.0.2/V2.1 training materials
  - https://www.snia.org/emerald/training/July2015
  - https://www.snia.org/emerald/training/July2014

*** Mar 13-15 is possibility instead of Mar 6-8 , will announce on Feb 28th the Plan

Overview of February 20th – 22nd

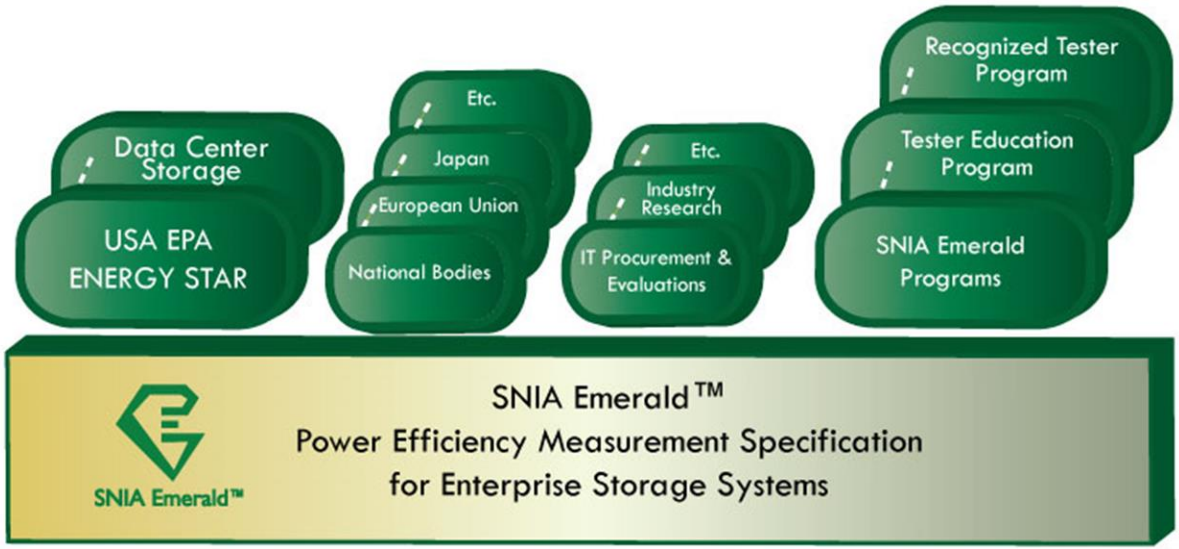
Feb 20th, Tuesday, 10-2	**Enterprise Storage and IO Primer**
10 mins	Training overview and objectives
220 mins	Part 1 Components of Enterprise Storage; How Does HDD work, SSS work, How do the pieceparts make an array, block, file, object,network
inc above	Part 2 Enterprise Storage (consolidate 2013 PI and PII into one module
inc above	Part 3 Storage Performance and IO Load Basics
inc above	Part 4 Capacity Optimization Techniques
10 mins	Q&A
Feb 21st , Wednesday 10-2	**Overview of Energy Efficiency, SNIA Emerald Storage Testing, EPA E* Program for Data Center Storage**
10 mins	Training Overview of 3 days and Overview objectives for Day 1
75 mins	EnergyStar Overview and relation to SNIA Emerald
inc above	Overview of E* Specification and E* Data Center Program, plus 2+ year outllook
inc above	Fill out E* Form; submit, post, and review on website
45 mins	Overview of SNIA Emerald Specification P1) Block ; P2) File
30 mins	Contrast differences of testing and reporting for Emerald and E*
45 mins	Overview- what is being tested and why P1) Block ; P2) File
15 mins	SNIA Emerald Taxonomy
10 mins	Power supply efficiency and testing
20 mins	Q&A
Feb 22nd, Thurs, 10-12	**Overview of SNIA Green Efforts, Programs, Committees Membership**
75 mins	SNIA Emerald Program and SNIA GSI ; SNIA Emerald Newsletter and Website
30 mins	SNIA Emerald Recognized Tester Program
2 mins	Overview and Reminder Mar 6th-8th
10 mins	Q&A

March 6th – 8th

***could be March 13th-15th, notice by Feb 28th

Mar 6, Tuesday, 10-2	PUT Config Overview and setup for File
10 mins	Overview of next 3 days of training
220 mins --- 55 mins Youtube	SFS 2014 Overview
45 mins Youtube - inc above	SFS 2014 SNIA Emerald
inc above	1. Setting up AC power.
15 mins - 2014 inc above	2. Setting up the power meter, and measurement system.
inc above	3. Setting up Sflow on the switch, and sflow collector.
inc above	4. Setting up the SFS2014 benchmark.
inc above	a. Software configuration.
inc above	b. Hardware configuration
inc above	c. Install and setup ssh automatic logins.
30 mins - 2014 inc above	Capacity Optimization testing and types (applies to both file and block)
10 mins	Q&A,
Mar 7th, Wednesday, 10-2	**Part 1 Run the SNIA Emerald Tests and Generate Data; Analyze Data**
10 mins	Overview of today agenda
220 mins	Continue - 4. Setting up the SFS2014 benchmark.
inc above	d. Finding the peak throughput, for each workload type.
inc above	e. Finding the optimal throughput versus power for each workload type
inc above	5. When things go wrong.
est 15 mins 2014 inc above	Run COM Test
10 mins	Q&A
Mar 8th, Thursday, 10-2	**Part 2 Run the SNIA Emerald Tests and Generate Data; Analyze Data**
10 mins	Overview of today agenda
210 mins	Continue - 4. Setting up the SFS2014 benchmark.
inc above	f. Merging the power meter results with Sflow results.
	g. data reduction, validation, and metric calculation
inc above	Mistakes to avoid, lessons learned - tests and - data analysis
30 mins 2014 inc above	SNIA Test Data Report elements
10 mins	Q&A
10 mins	Support, Help, Resources

SNIA Emerald Program
Building Block for Industry Programs



February 21st

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Training Materials

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- SNIA Emerald URL for download,
  - www.snia.org/emerald/training/downloads
  - https://www.snia.org/emerald/education/vendor-training
- Attendee List will be emailed for personal networking purposes. List will not be posted to the website

Questions?

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