SUT Configuration Overview & Setup

Dennis Martin

SNIA Emerald™ Training

SNIA Emerald Power Efficiency Measurement Specification, for use in EPA ENERGY STAR®

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SNIA Green Storage Initiative

SNIA Emerald™
Agenda

- Hardware Configuration Overview
- Software Configuration Overview
Hardware Configuration: Power Gear

- **A/C Source setup (EPA ENERGY STAR only)**
  - Specs require either 230v or 115v for single-phase systems
  - 230v is generally more efficient and will yield better results
  - Voltage tolerances – Up to 1500W: ±1.0%, > 1500W: ±5.0%
  - Total Harmonic Distortion – Up to 1500W: 2.0%, > 1500W: 5.0%

- **Power Meter setup**
  - USB connection for data capture is becoming more common
  - Some meters use special power strips or break-out boxes
  - Power Meter must capture Total Harmonic Distortion (THD) for EPA ENERGY STAR tests (optional on some power meters)
  - Uncertainty data should be available on watts measured
Hardware Configuration: Servers

- **Server setup (two identical servers)**
  - Intel Xeon E3-1275 v3, 3.5 GHz, 4 cores, 8 threads
  - 32GB RAM
  - PCIe 3.0 I/O slots
  - Local boot SSD (SATA)
  - On-board dual 1GbE NICs

- **I/O adapters**
  - Config. #1: 10GbE dual-port NIC for iSCSI connection to storage
  - Config. #2: 8GFC HBA for Fibre Channel connection to storage
Hardware Configuration: Storage

- **Configuration 1**
  - NetApp 2240-2 + NetApp DS2246 disk shelf
  - All HDD solution
  - Taxonomy: Online 4
  - Block storage: 10Gb iSCSI

- **Configuration 2**
  - NetApp E2600
  - All HDD solution
  - Taxonomy: Online 2
  - Block storage: 8Gb Fibre Channel
Software Configuration Overview

- Server Operating Systems:
  - Windows Server 2008 R2 and Windows Server 2012 R2
- Latest version of Java
- Latest version of the SNIA Emerald VDbench scripts
- Temperature sensor software
- Power meter software
Configuration Diagram #1

Demartek SNIA Emerald
Lab Configuration 1 – July 2014
Taxonomy: Online 4

Data path: 2x 10Gb iSCSI
Temperature sensor included but not shown
Configuration Diagram #2

Demartek SNIA Emerald
Lab Configuration 2 – July 2014
Taxonomy: Online 2

Data path: 2x 8G Fibre Channel
Temperature sensor included but not shown