



SUT Configuration Overview & Setup

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SNIA Emerald™ Training

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

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Agenda

- Hardware Configuration Overview
- Software Configuration Overview

➤ 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: $\pm 1.0\%$, > 1500W: $\pm 5.0\%$
- ◆ 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

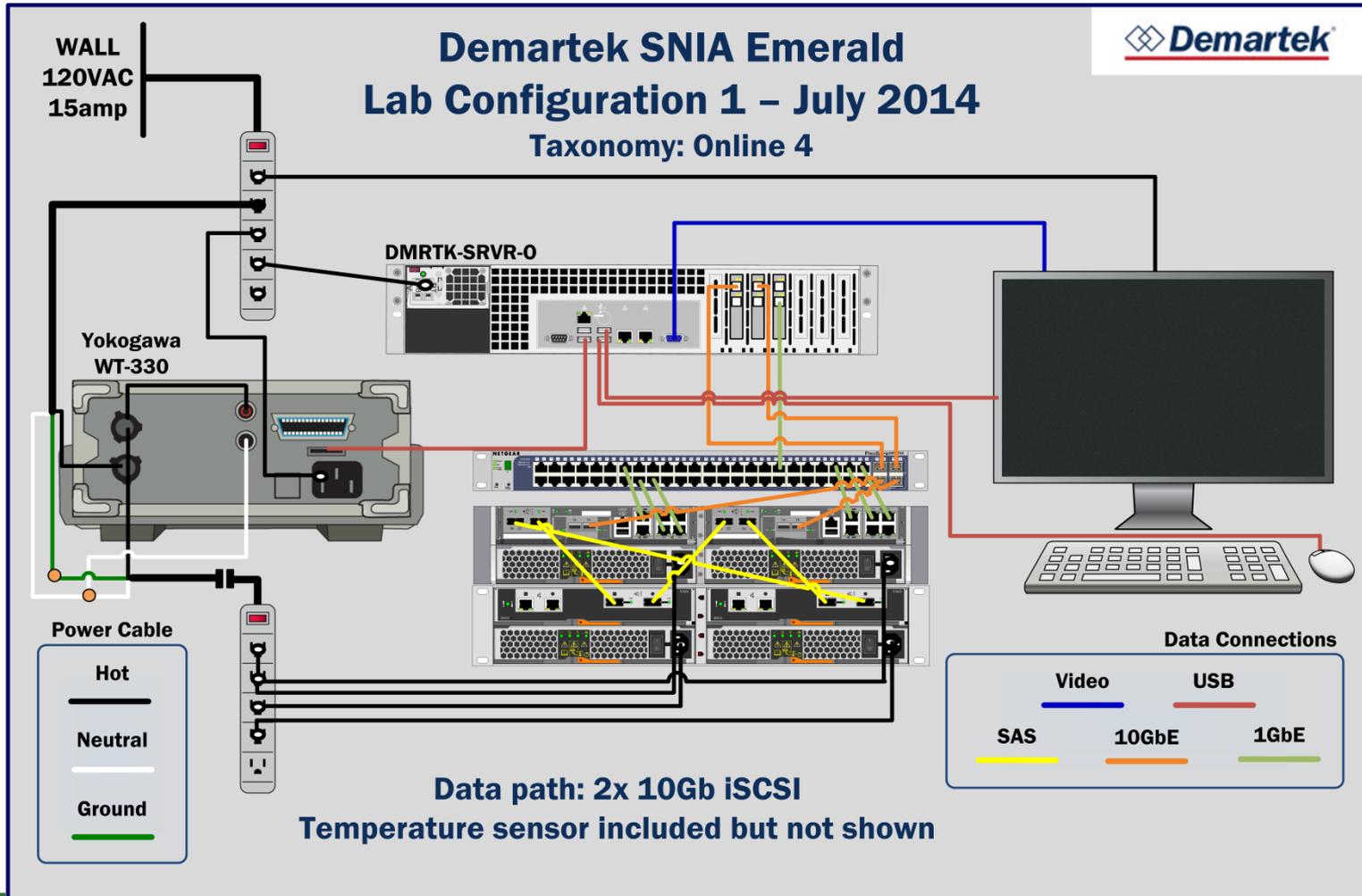
➤ Configuration 2

- ◆ 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



Configuration Diagram #2

