Open. Together.
OCP NIC Thermal Test Fixture (TTF) Standardization and Demo

Jon Lewis, Distinguished Engineer, Dell EMC
Hemal Shah, Distinguished Engineer, Broadcom
Yueming Li, Thermal Engineer, Facebook
Agenda

Why?
Purpose & Benefits

How?
TTF Features, Setup & System Management

What?
Participation & Open Together
Background

Purpose:
• Provide standardized methodology to get comparable thermal test data across different NIC and system vendors

Benefits:
• Simple and easy adoption by both NIC and system vendors
• Functional test board for power delivery and reporting interfaces
• Pre-defined sensor locations for testing repeatability among partners
• Representative thermal data to define cooling tiers across different use cases
Test Fixture Features

- PCIe Technology 4.0 capable
- Provides access to scan chain, USB port, SMBus and RBT
- LFF TTF adds UART, x16 PCIe, and power
- Supports candlestick airflow sensors
- Passive PCIe riser configuration
- Air block passive HHHL PCIe adapter
- Powered Riser also included for user defined purposes
TTF Setup

OCP installed

Riser/Blocker installed

TTF Connected to Flowbench and host server.
Thermal Management

- Thermal tiers have been defined
- The adapter's thermal tier info can be read from its FRU EEPROM allowing the BMC to safely decide when to enable the adapter
- Real-time temperature reporting is required for components with TDP > 5W
Open Together

- OCP NIC TTF Demo @ OCP Experience lab
- OCP NIC TTF Design Files (3D CAD + board files)
- OCP NIC mailing list


Thermal Test Fixture Mechanical File: [3D CAD Files for Small and Large Form Factor NIC](http://lists.opencompute.org/mailman/listinfo/opencompute-mezz-card)

Thermal Test Fixture Board Files: [Electrical Board Files](http://lists.opencompute.org/mailman/listinfo/opencompute-mezz-card)
