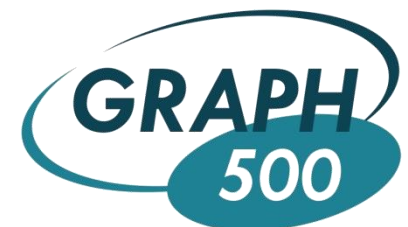




Torsten Hoefler
ETH Zürich
ISC' 16, Frankfurt, Germany

*With support of David Bader, Andrew Lumsdaine, Richard Murphy,
and Marc Snir*

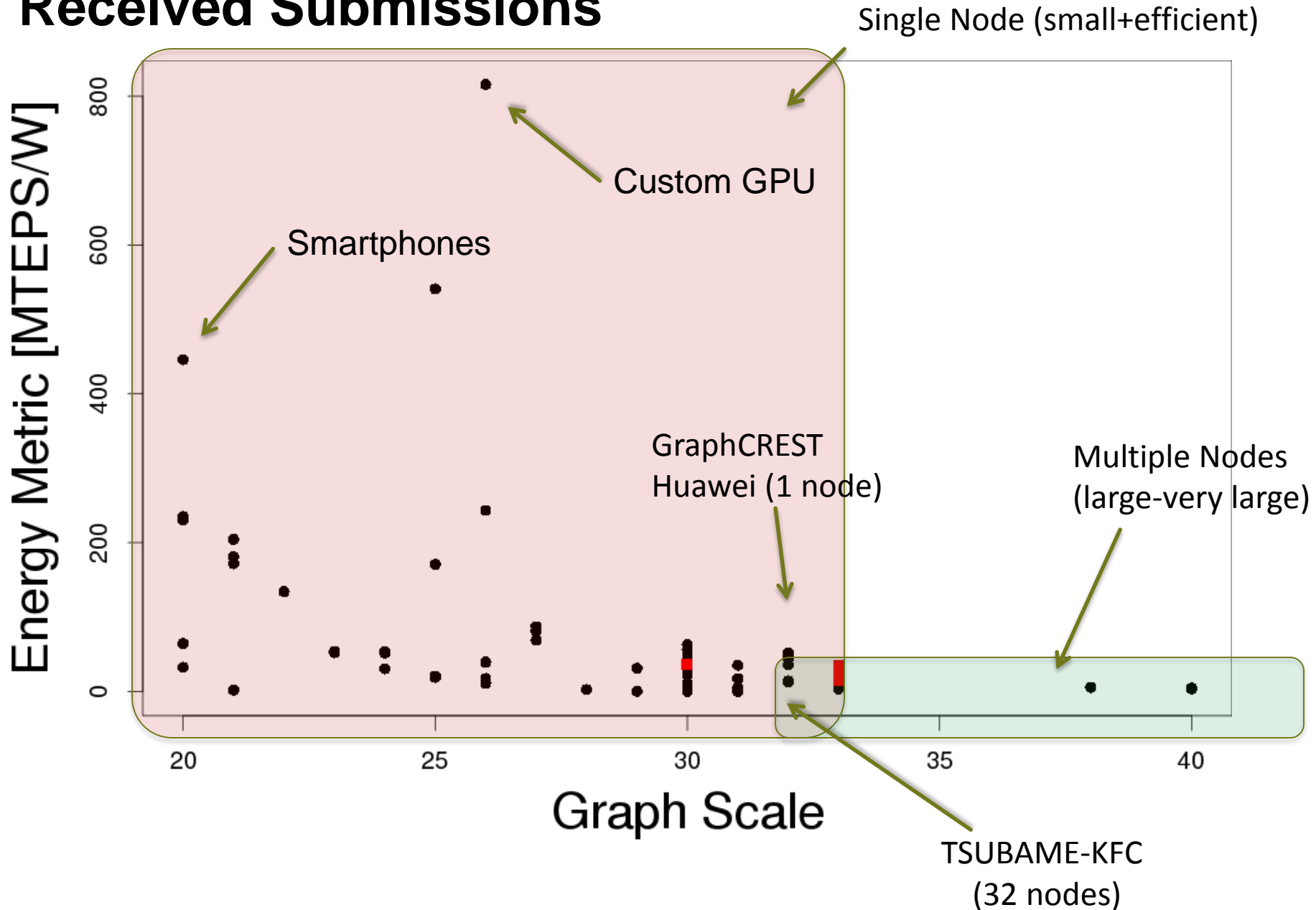


The Green Graph500 List

- **In close collaboration with Graph500 (same rules)**
 - Will have a separate list and separate awards
 - <http://green.graph500.org/>
- **Measurement techniques compatible with established practice and Green500**
 - Allows comparisons and cross-analyses
 - Only real measurements, no TDP etc.



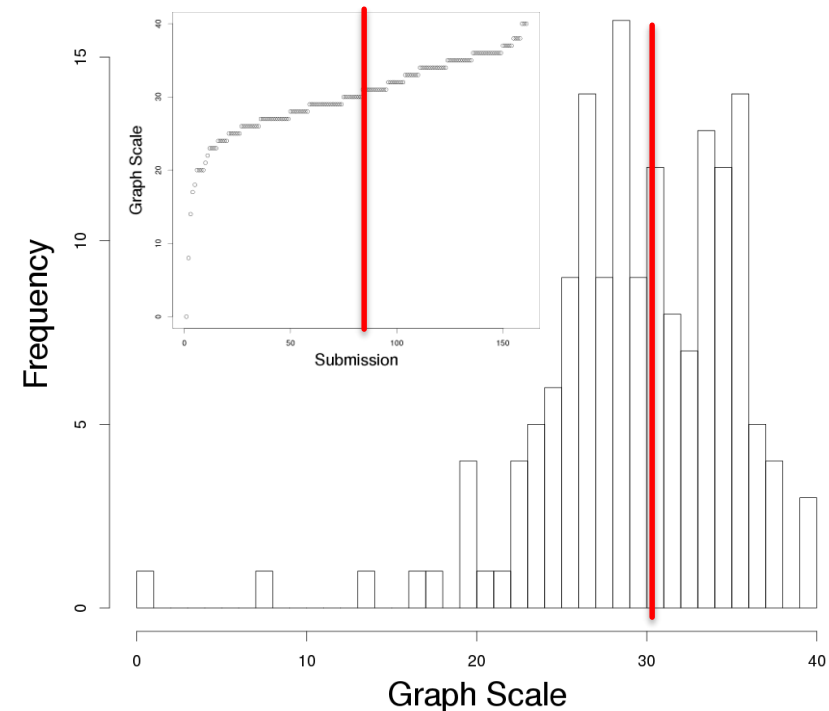
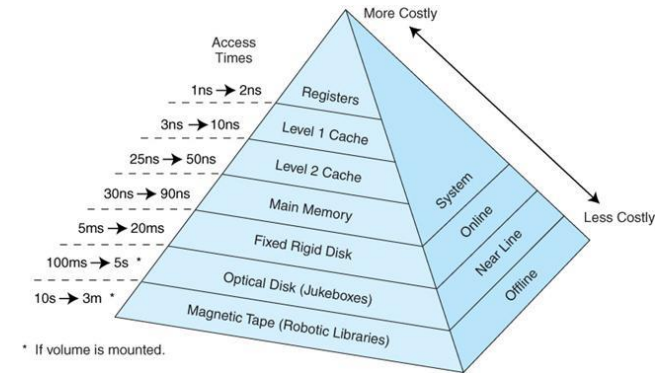
Received Submissions



A Natural Split

- **Small Data vs. Big Data**
 - Fundamentally different categories
 - Often: single node vs. multiple nodes
 - *Or: in cache vs. in memory?*
 - *Or: in registers???*

- **Graph500 doesn't limit the "minimal submission" (yet)**
 - Median of Graph500 scales
 - Unchanged since 2014: Scale 30



The Small Data List

Rank	MTEPS/W	Site	Machine	G500 rank	Scale	GTEPS	Nodes
<u>1</u>	815.68	forsite-company.ru & NVidia LTD	TitanX_forsite		26	132.14	1
<u>2</u>	540.94	Keldysh Institute of Applied Mathematics	Titan_Keldysh		25	114.68	1
<u>3</u>	445.92	George Washington University	Colonial	47	20	122.18	1
<u>4</u>	243.42	CODE@TACC	Monty Pi-thon		26	35.83	32
<u>5</u>	235.15	Kyushu University	GraphCREST-Xperia-Z1-SO-01F	157	20	1.03	1
<u>6</u>	230.40	Kyushu University	GraphCREST-Xperia-A-SO-04E	171	20	0.74	1
<u>7</u>	204.38	Tokyo Tech	EBD-GoldenBox-Prototype	139	21	1.64	1

The Big Data List

Rank	MTEPS/W	Site	Machine	G500 rank	Scale	GTEPS	Nodes
1	62.93	Kyushu University	GraphCREST-SandybridgeEP-2.4GHz	68	30	31.33	1
2	61.48	Kyushu University	GraphCREST-SandybridgeEP-2.4GHz		30	28.61	1
3	51.95	Kyushu University	GraphCREST-Huawei		32	59.90	1
4	48.28	Kyushu University	GraphCREST-Sandybridge-EP-2.7GHz	67	30	31.95	1
5	44.42	Kyushu University	GraphCREST-Sandybridge-EP-2.7GHz		32	55.74	1
6	44.35	Tokyo Tech	EBD-RH2288V3	80	32	14.86	1
7	36.86	George Washington University	Colonial0	-	30	12.90	1

The Future of the List

- **Next list: Nov. 2016 (SC16)**
 - Submission deadline: aligned with Graph500
- **Submission details:**
 - Through Graph500, provide output data and energy information, or power trace
- **Watch <http://green.graph500.org/>**
- **Thanks for Support:**
 - Thanks to David Bader, Andrew Lumsdaine, Richard Murphy, and Marc Snir

Backup