

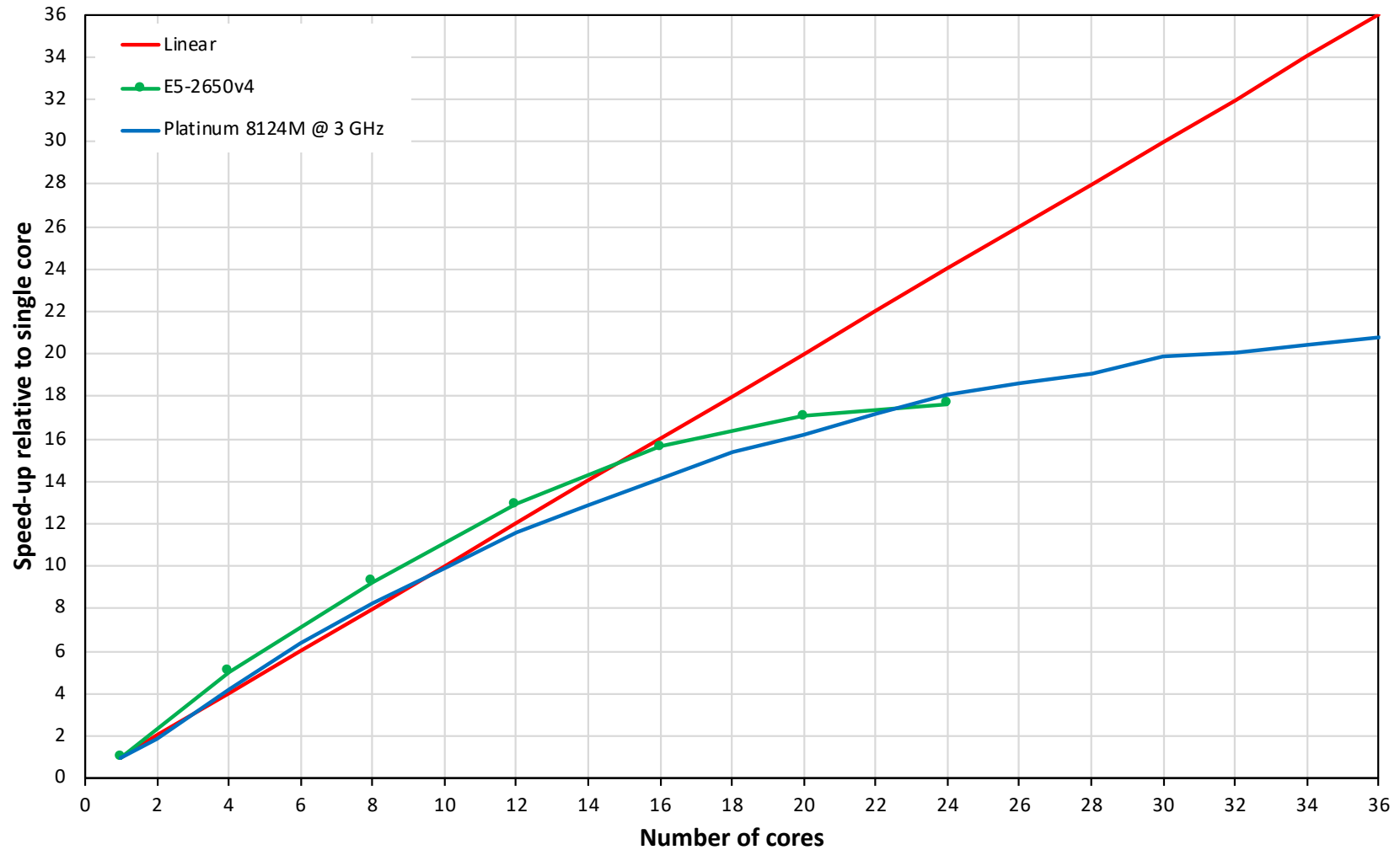


Cloud HPC : TCO

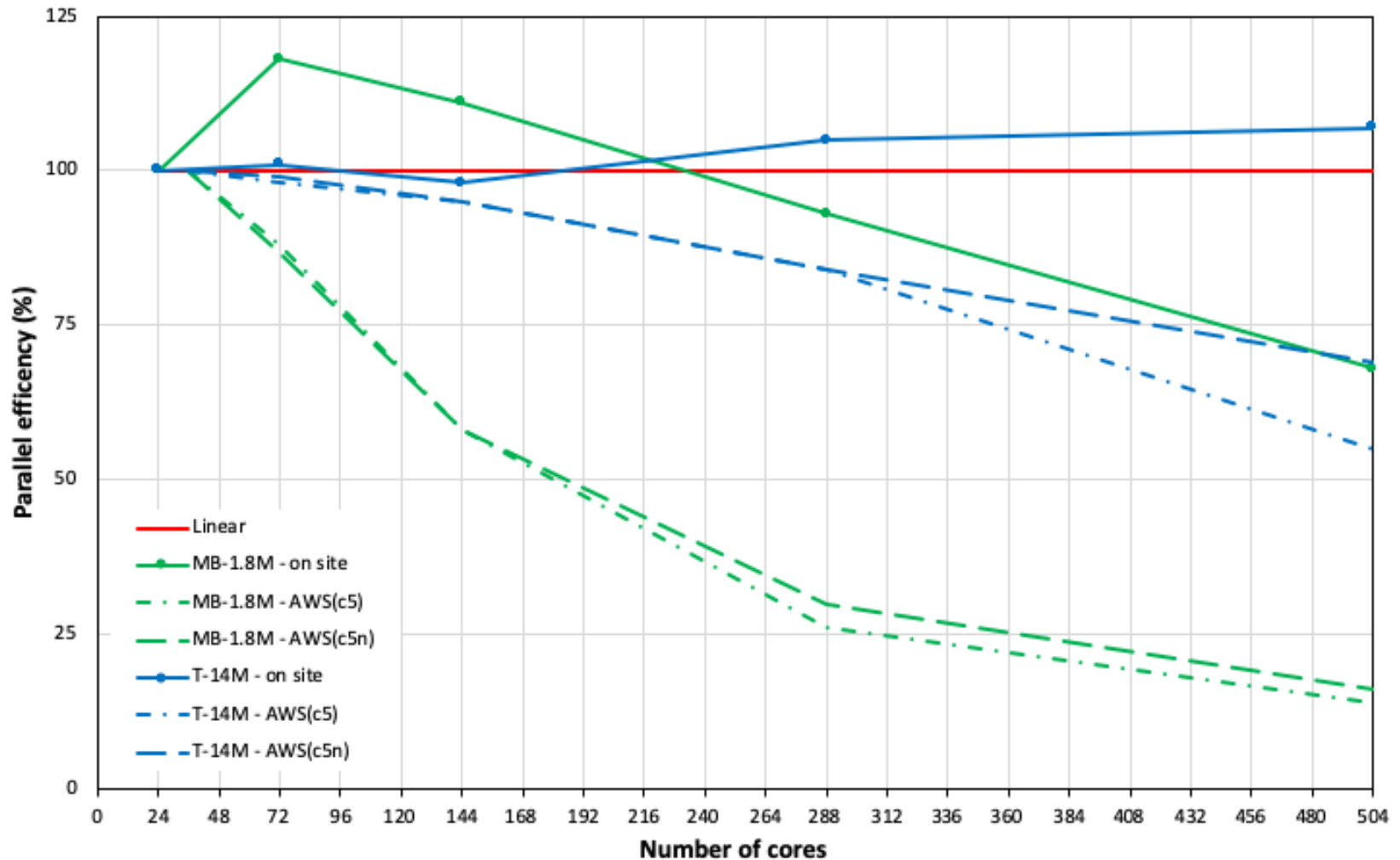
Dr. Darrin Stephens,
9th October 2019

Intra scaling

One node - Two CPUs



Inter scaling



Real example

TCO MODEL FOR CLOUD COMPUTING TO DELIVER SAME AMOUNT OF ACTUAL USED CORE-HRS

PARAMETERS

Cost of cloud cycles - \$ per core-hr	0.0518242
Total number of core-hrs user per year [calculated]	3,395,376
Data storage (per TB per month)	90
Data transfer (\$ per TB per month)	170
Cost of a person per year	150000
Effort spent on procurement & commissioning (weeks)	1.00

On demand

KEY METRICS

TCO to use this same computing capacity from on-premises system	\$ 462,194
TCO to use this same computing capacity from the cloud	\$ 1,881,195
Actual TCO per core-hr used in the cloud	\$ 0.185
Actual TCO per core-hr used on-premises	\$ 0.045
Ratio of cloud TCO to on-premise TCO (i.e., cloud is more expensive than on-premises if factor is >1)	4.07

Spot

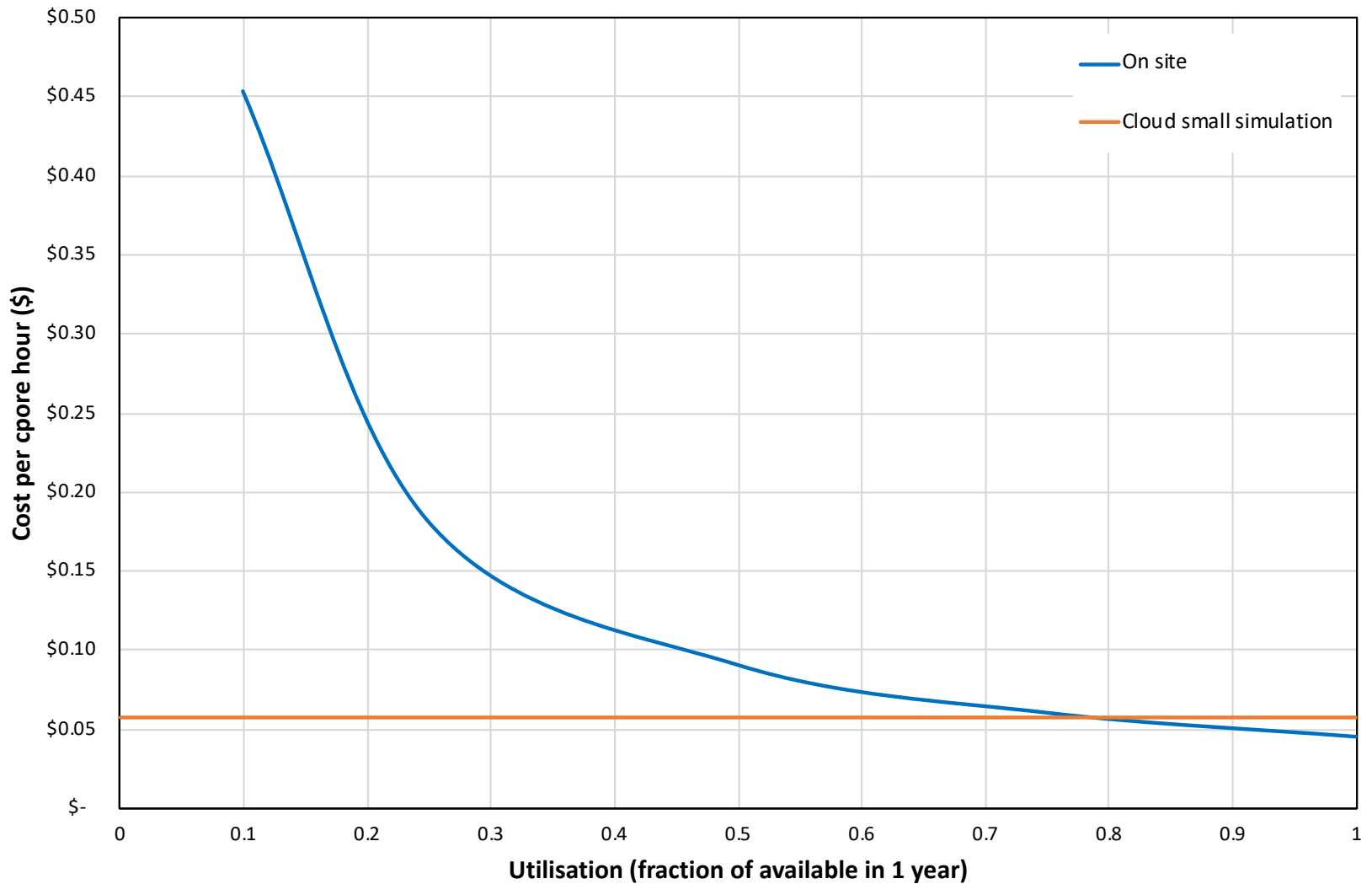
KEY METRICS

TCO to use this same computing capacity from on-premises system	\$ 462,194
TCO to use this same computing capacity from the cloud	\$ 587,873
Actual TCO per core-hr used in the cloud	\$ 0.058
Actual TCO per core-hr used on-premises	\$ 0.045
Ratio of cloud TCO to on-premise TCO (i.e., cloud is more expensive than on-premises if factor is >1)	1.27

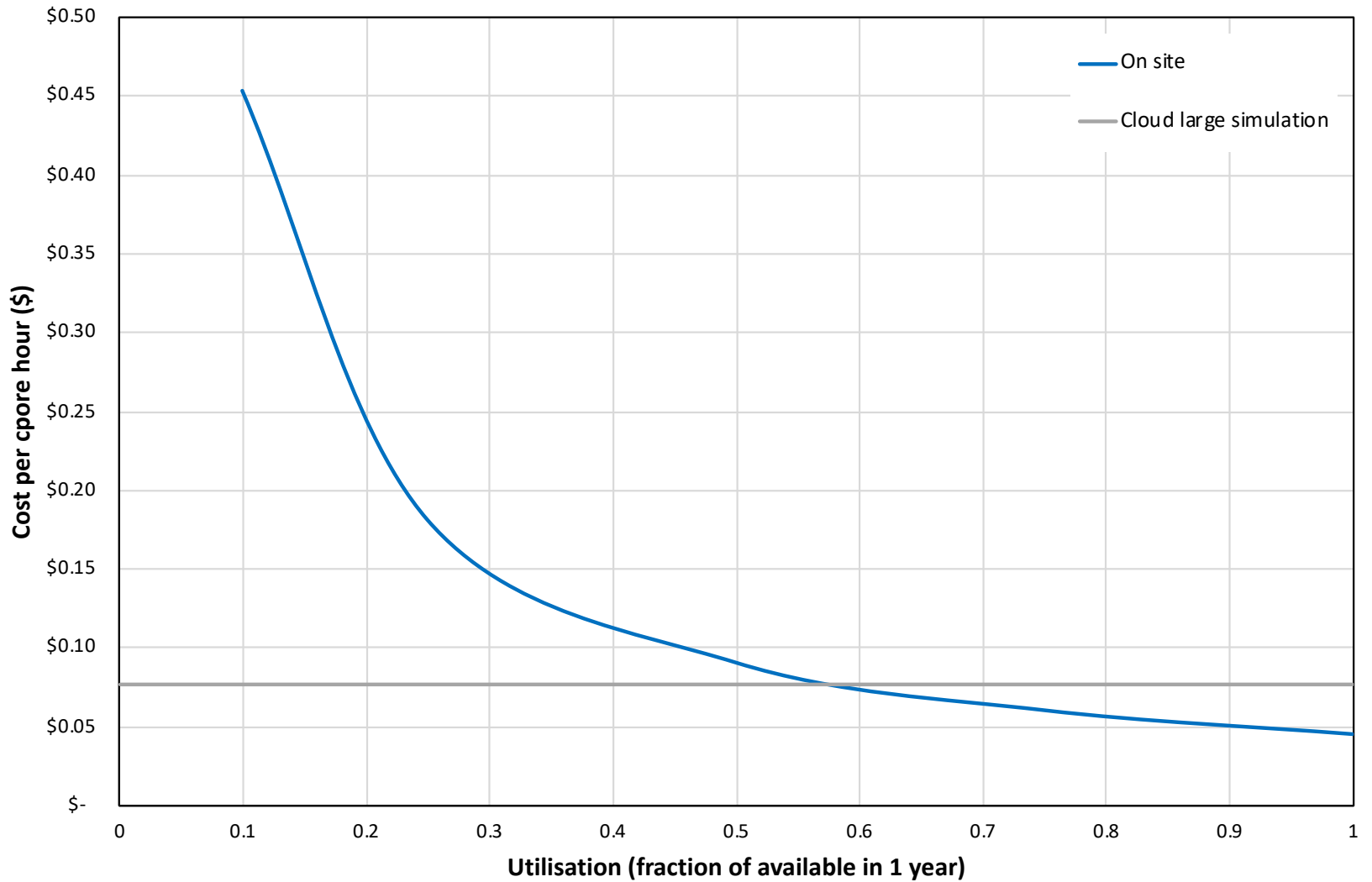
TCO/core-hour = 5.8 to 18 ¢



Cost vs Utilisation



Cost vs Utilisation



Questions

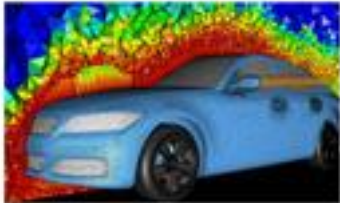
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