STAC Update:
Simulation stacks

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STAC-A2: Risk computation

- Non-trivial Monte Carlo calculations
  - Heston-based Greeks for multi-asset, path-dependent options with early exercise
  - Metrics: Speed, capacity, quality, efficiency
- Numerous reports
  - Some public, some in the STAC Vault
- Premium STAC members get:
  - Reports in STAC Vault
  - Detailed config info on public and private reports
  - Code from vendor implementations of the benchmarks

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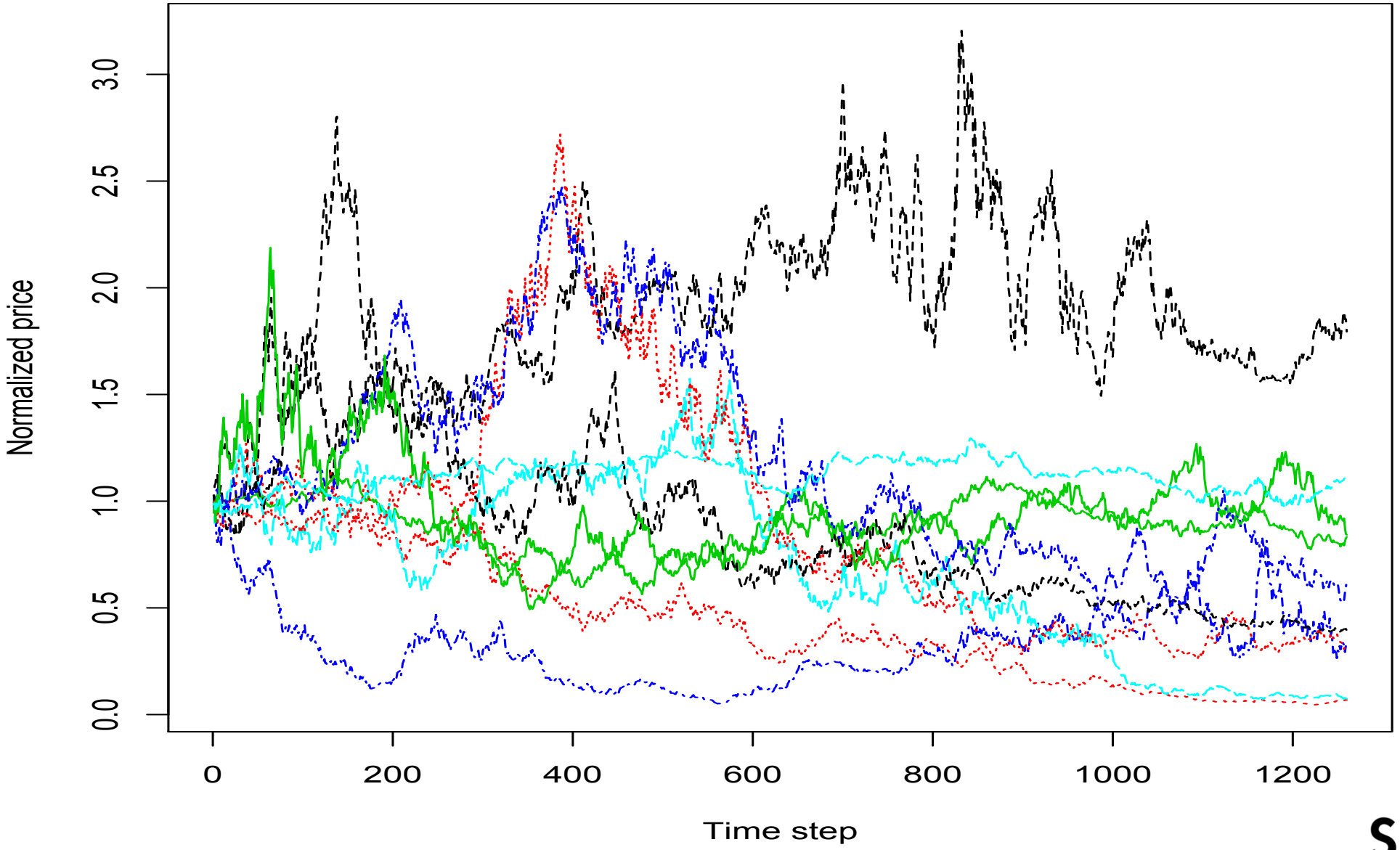
STAC-A2: Risk computation



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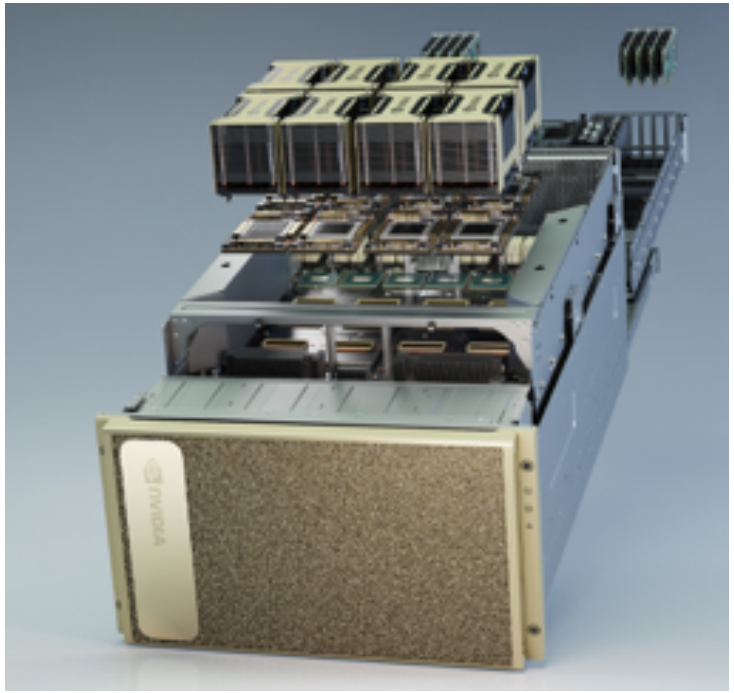
STAC-A2 / NVIDIA Ampere A100 GPU / NVIDIA DGX A100

- SUT ID: NVDA200909
- Stack:
  - STAC-A2 Pack for CUDA (Rev F)
  - NVIDIA CUDA 11.0
  - Ubuntu Linux 18.04
  - 8 x NVIDIA Ampere A100 SXM2 40GiB GPUs
  - 2 x AMD EPYC 7742 64-core CPUs @ 2.25 GHz
  - 1TiB DRAM: 16 x 64GiB ECC DDR4 @3200 MT/s
  - NVIDIA DGX A100



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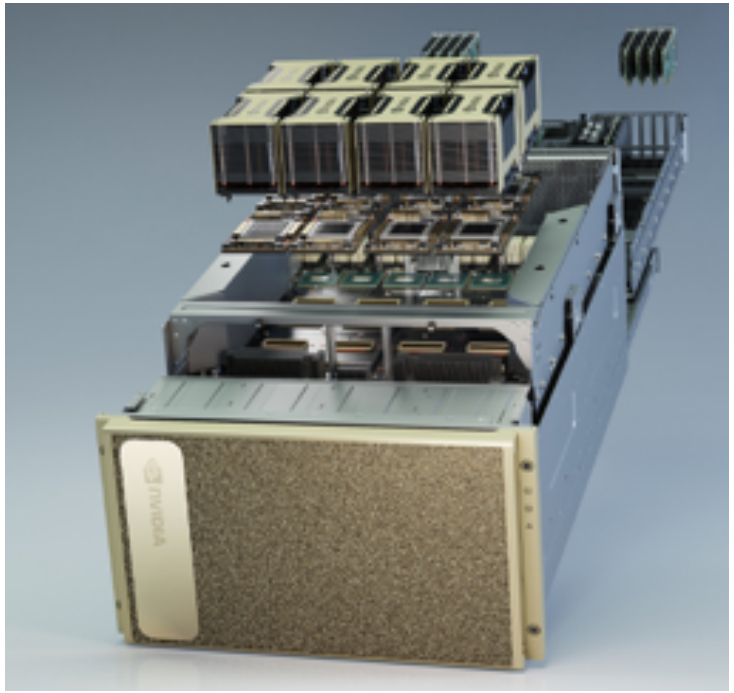
Compared to all publicly reported solutions to date

- The highest maximum paths (STAC-A2.β2.GREEKS.MAX_PATHS)
- The highest maximum assets (STAC-A2.β2.GREEKS.MAX_ASSETS)
- The fastest warm time in the baseline Greeks benchmark (STAC-A2.β2.GREEKS.TIME.WARM)



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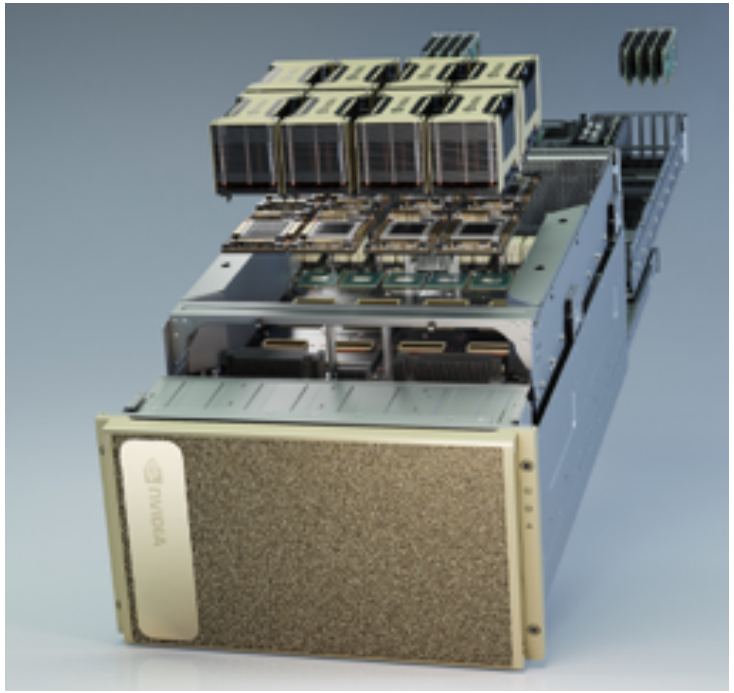
Compared to the best non-NVIDIA-based single server* solution

- 2.15x the speed in the baseline Greeks benchmark (STAC-A2.β2.GREEKS.TIME.WARM vs. SUT ID INTC181012)
- 1.78x the speed in the large Greeks benchmark (STAC-A2.β2.GREEKS.10-100k-1260.TIME.WARM vs. SUT ID INTC190903)
- 14% higher energy efficiency (STAC-A2.β2.HPORTFOLIO.ENERG_EFF vs. SUT ID INTC190903)



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*#servers in solution = #CPU motherboards

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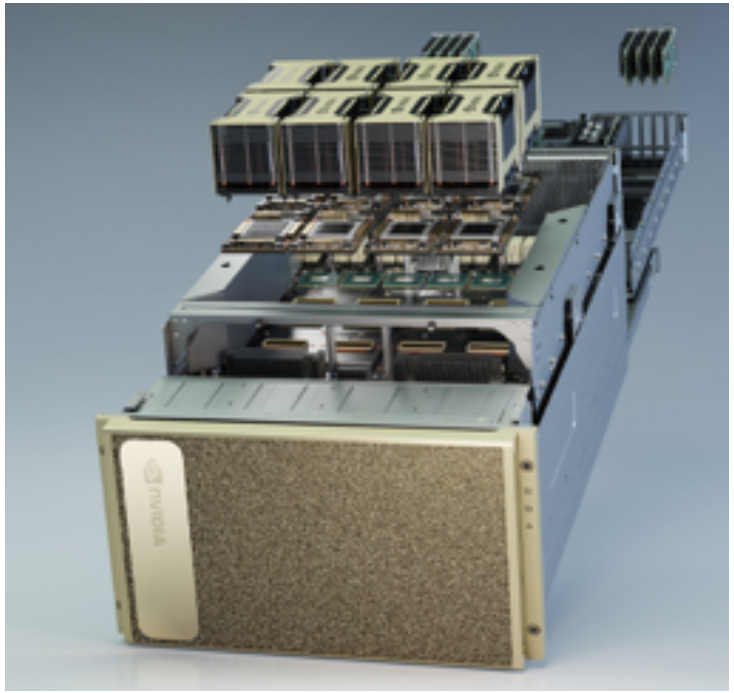
Compared to the previous best results for NVIDIA-based solutions

- Had 61% higher maximum paths (STAC-A2.β2.GREEKS.MAX_PATHS vs. SUT ID NVDA181105)
- Was 54% faster in the large Greeks benchmark. (STAC-A2.β2.GREEKS.10-100k-1260.TIME.WARM vs. SUT ID NVDA181105)



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STAC-A2: Generic C implementation

- Specs include R code for unambiguous specification of algorithms
  - Not a full implementation of STAC-A2
- STAC has now completed a Generic C Implementation
  - Full implementation
  - Validated
  - Not highly optimized
- Uses
  - Example of how full implementation works
  - Potentially a starting point for vendor implementation
  - Useful for informal testing as vendor does its own development
- Please contact STAC or email Michel for further information

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