



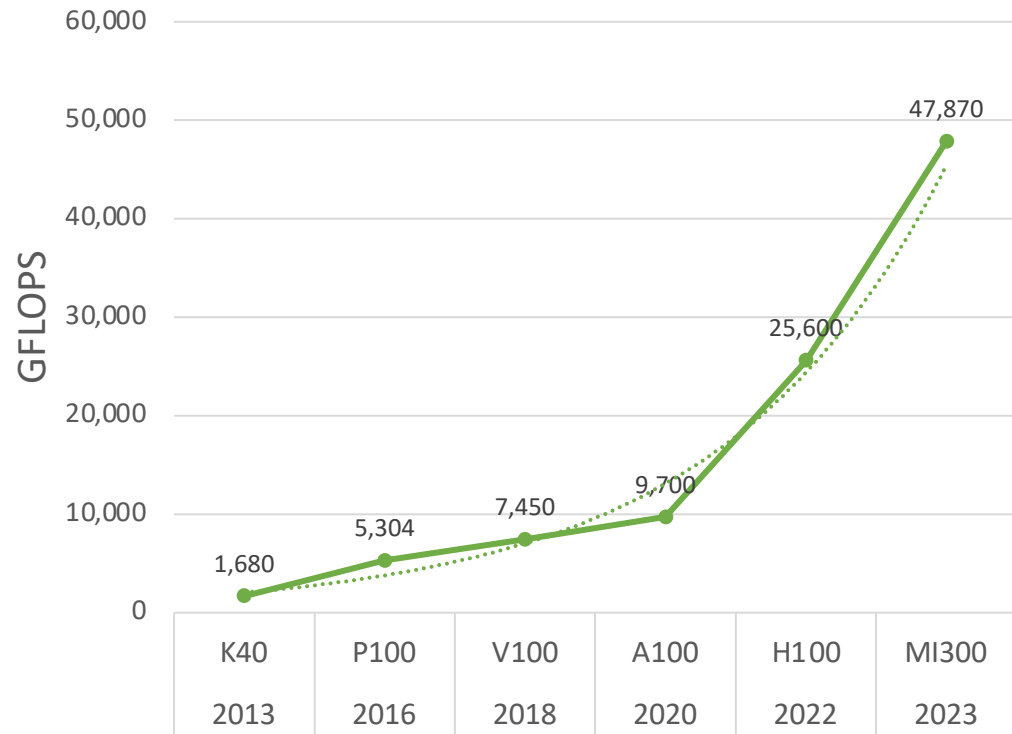
CS 839: Topics in Database Management Systems

Lecture 23: GPU Database

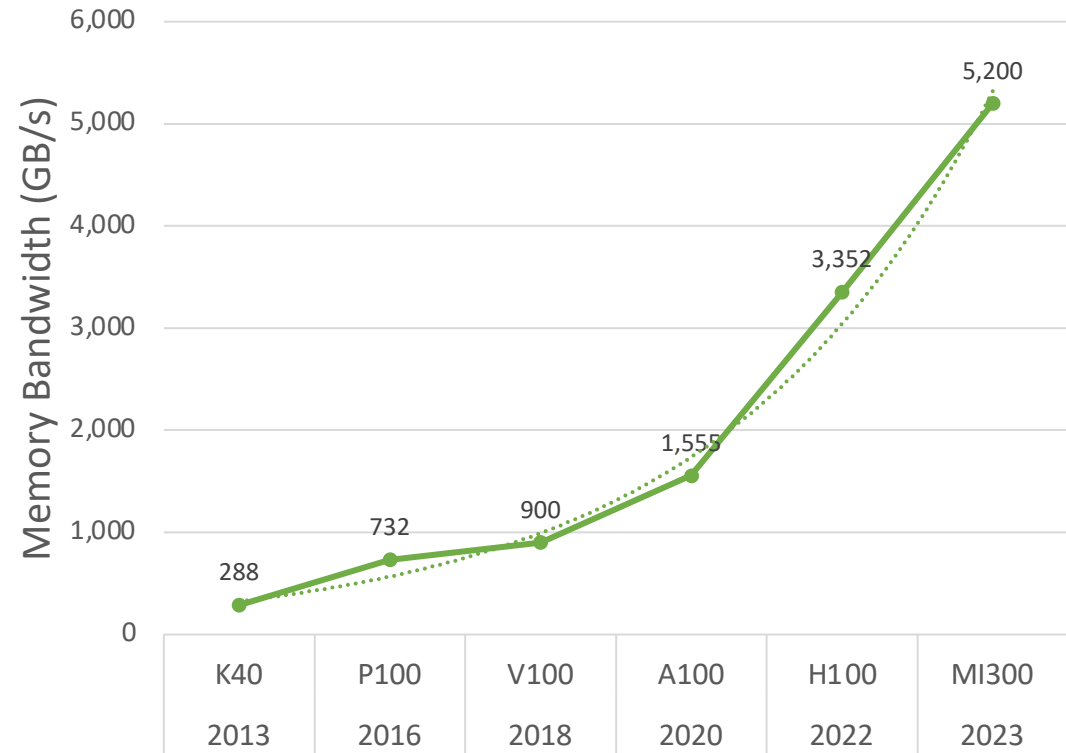
Xiangyao Yu

11/22/2023

GPU Trend



(a) GPU Peak Performance

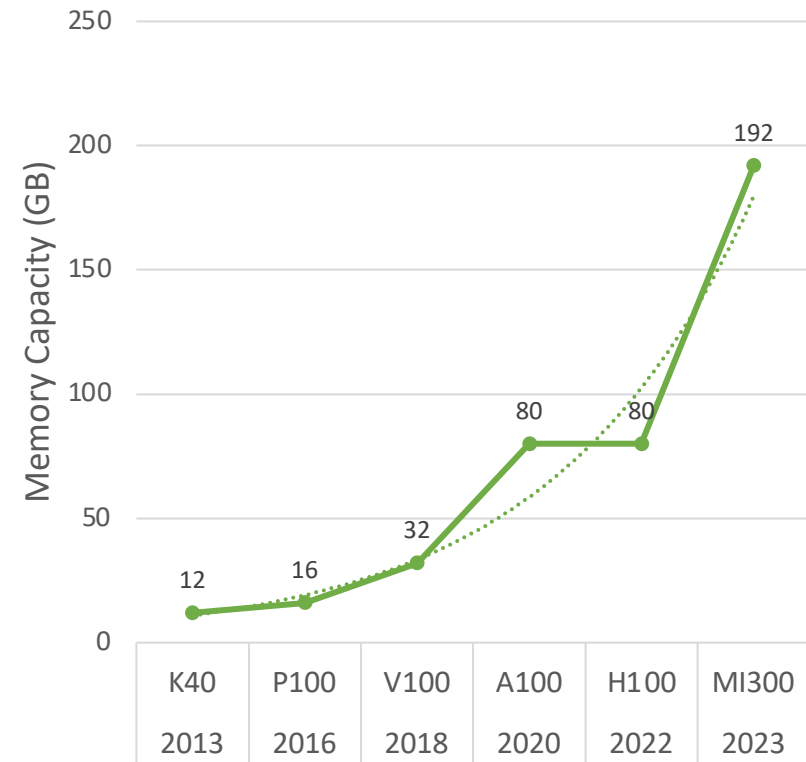


(b) GPU Memory Bandwidth

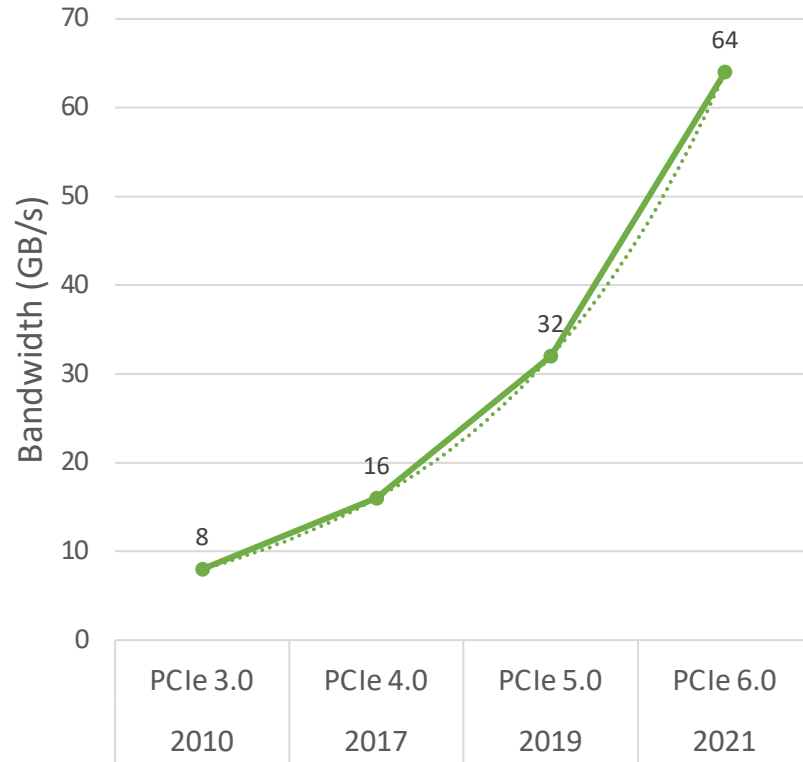
GPU peak performance increase by 5x from 2020 to 2023.

GPU memory bandwidth increase by 3.5x from 2020 to 2023.

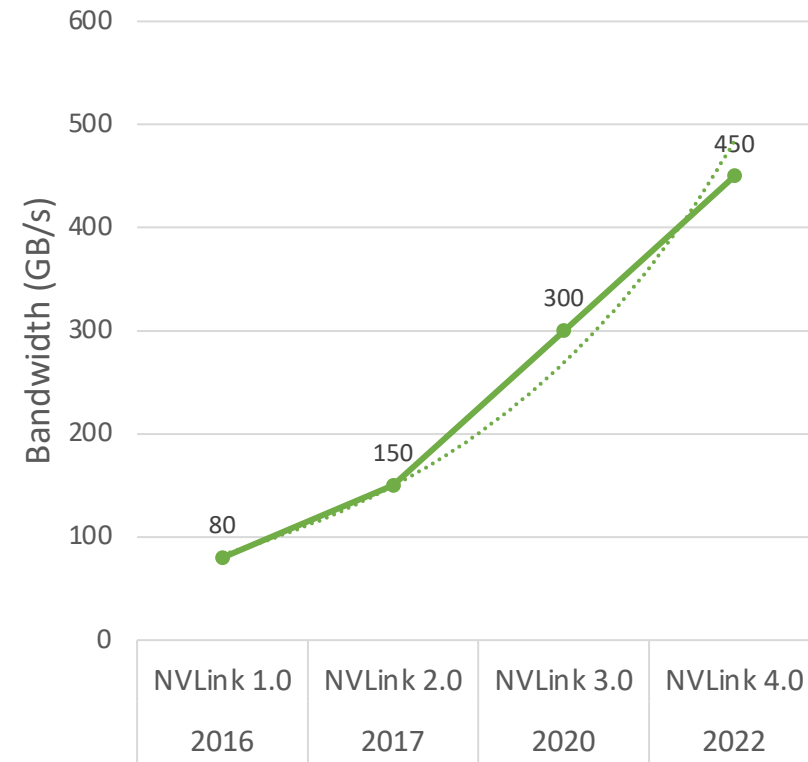
GPU Trend



(a) GPU Memory Capacity



(b) PCIe Bandwidth



(c) NVLink Bandwidth

GPU memory capacity increase by 6x in the last 5 years.

PCIe increase by 2x every two years.

NVLink Bandwidth increase by 3x in 5 years.

NVLink C2C (2022) connect NVIDIA GPU and NVIDIA CPU (450 GB/s).