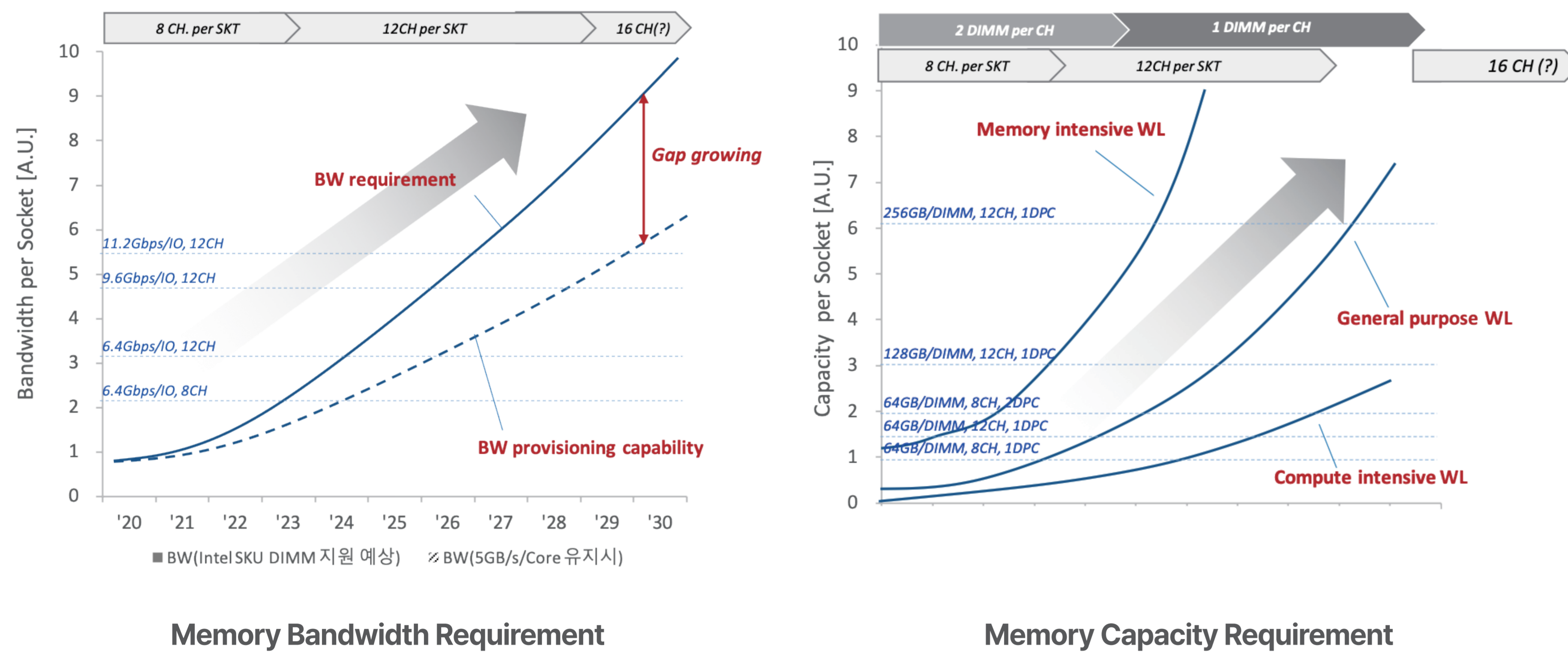


Why CXL™ technology is requiring Memory Bandwidth and Capacity Gap

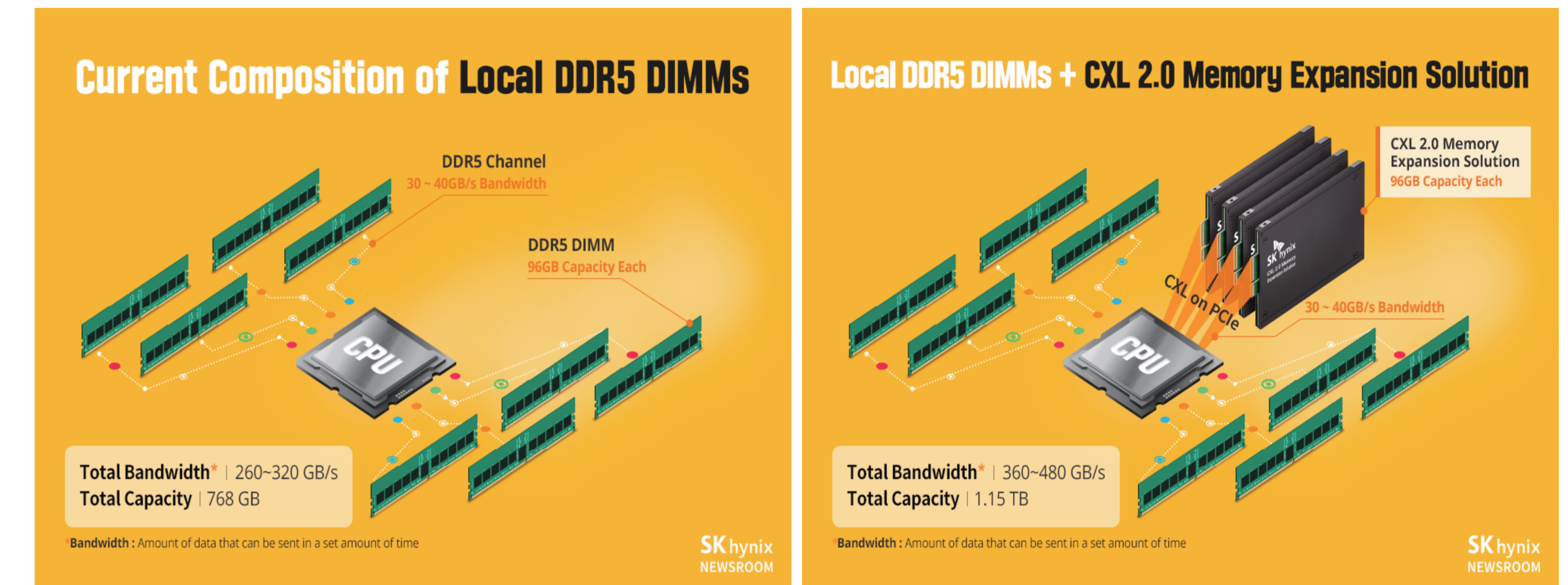
Increase in SoC core counts requires continued increase in memory bandwidth and capacity, but the gap between such requirements and platform provisioning capability is growing



CXL™ E3.S Benefits

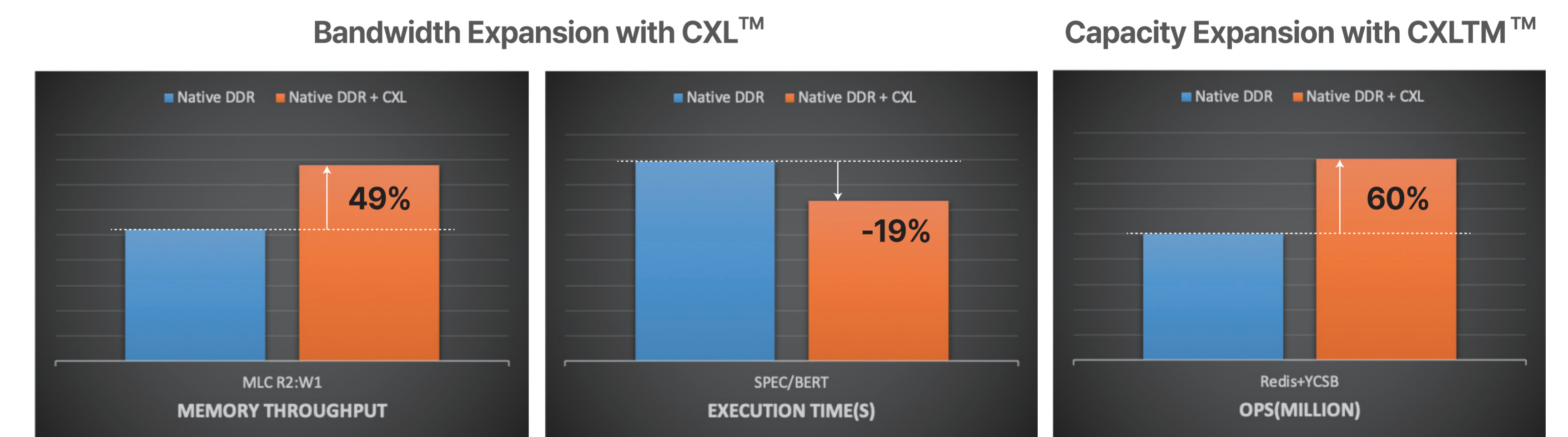
- 82% gains in system memory bandwidth (throughput) per socket
- Up to 2x larger capacity
(At maximum configuration of both 8 native DDR5 and eight x8 lanes CXL™ Memory cards per socket)

Below is conceptual graphic combining eight 96GB native DDR5 modules with four x8 CXL™ memory cards



SK hynix CXL™ memory scales system memory bandwidth and capacity, effectively boosting system performance

Results below demonstrate performance benefits across workloads using SK hynix CXL™ for added bandwidth and capacity.



Memory configuration for the Benchmark

- Host Memory : 2-channel, 1dimm per channel, 64GB DDR5-4800
- CXL™ Memory : CXL™ 2.0 on PCIe Gen5 x8 with 2 sub-ch 96GB DDR5 24Gb 2Rx4 4800
- BW expansion case : With the performance improvement from memory channel increase, execution time can be improved by 19.7% when running a lot of AI/ML and HPC workloads even in the full-channel memory system.
- Capacity expansion case : CXL™ enables 60.0% larger working set than host only memory system in Redis DB connected with YCSB benchmark without any performance drop. The capacity ratio between host and CXL™ is 2:1.

SK Hynix's CXL™ Memory Proposition Emerging CXL™ Memory Solution

- CXL™ (Compute Express Link) is an open industry standard for high BW, low latency interconnect.
- Using PCIe expansion bus, byte-addressable CXL™ protocol can improve scaling in memory resources



SK Hynix Sampling CXL™ Card in EDSFF Form Factor

SK Hynix Inc. (or "the company", www.skhynix.com) has developed its first DDR5 DRAM-based CXL™ (Compute Express Link) memory samples and strengthened its presence in next-generation memory solution market. The form factor of the sample is EDSFF E3.S and it supports PCIe 5.0 x8 Lane, uses DDR5 standard DRAM and is equipped with CXL™ controller.

- E3.S (EDSFF form factor)
- CXL™ on PCIe gen 5 x8 lane
- 96GB based on 1a tech DDR5
- DDR5-class BW, Latency within 1 numa hop, Server-Class RAS, best BW/\$