



Advanced In-Memory Computing using Supermicro MemX Solution

What is In-Memory Computing

With the explosion of data gathering we are seeing today, organizations need to find new ways of collecting, sorting, and analyzing this data in order to make real time business decision. Having a large amount of data at your disposal is only one part of the equation. Being able to use the data is the other part. Traditional storage systems can no longer keep up with the demand of real-time analytics, so Big Data System Administrators have turned to large scale-up systems populated with massive amounts of DRAM.

Benefits of IMC

By turning to in-memory computing, businesses can quickly discover patterns, analyze massive data volumes, and perform business intelligence operations in real time. In-Memory Computing is used in diverse industries such as financial services, telecommunications, healthcare and life sciences, government, energy, transportation, among many others.

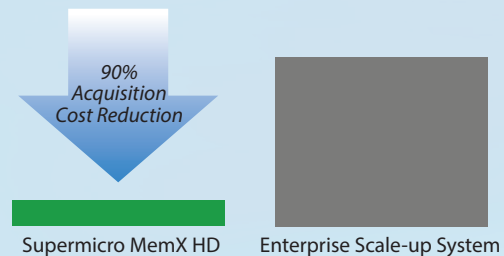
Some of the benefits to in-memory computing include:

- **Mitigating Errors and Avoiding Future Failures**
Real-time data analytics allows businesses to quickly react to, or avoid future operating problems. Doing so protects business continuity and keeps customers satisfied.
- **Advanced Business Intelligence**
Staying ahead of the competition is key. Using in-memory computing for BI applications allows businesses to become dynamic, and transform their strategies on the fly.
- **Fraud Detection**
Security is paramount. Cyber-attacks lead to financial losses and business down-time. Real-time security systems expose these threats and allow them to be mitigated instantly.

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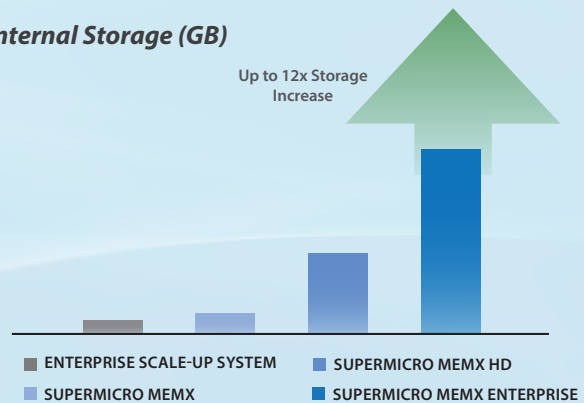
By replacing large monolithic servers with Supermicro's high-performance NVMe solutions, system administrators can now use NVMe Solid State Drives in place of expensive DRAM and slow external SAN or NAS storage. This greatly reduces initial acquisition costs by up to 85%, while reducing operational costs and providing added scale-out flexibility over competing DRAM In-Memory Computing solutions.

Solution Cost

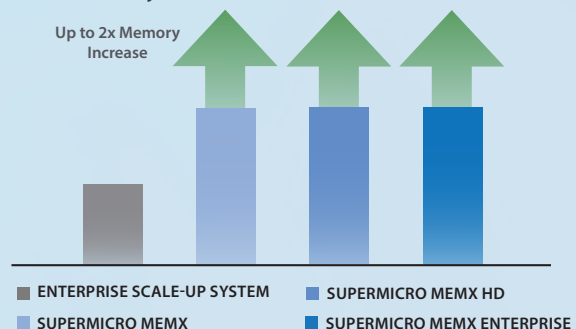


With Supermicro's MemX Solution, end users can increase their internal storage up to 10x and system memory up to 2x. This allows for greater server consolidation, making Supermicro MemX the most flexible, scalable IMC solution on the market.

Internal Storage (GB)



System Memory (GB)



Reference Architecture



	MEMX CLOUD <small>(PER NODE)</small> SYS-2028BT-HNR+	MEMX HD SYS-1028U-TN10RT+	MEMX SYS-2028U-TN24R4T+	MEMX ENTERPRISE SSG-2028R-NR48N
Processors	E5-2683 v4	E5-2683 v4	E5-2683 v4	E5-2699 v4
Total Cores	32 cores @ 2.1GHz	32 cores @ 2.1GHz	32 cores @ 2.1GHz	44 cores @ 2.2GHz
Total System Memory (GB)*	3,328 / 11,776	3,328 / 11,776	3,328 / 11,776	6,656 / 11,776
Total SSD Storage Size (GB)	1,920	9,600 / 38,400	60,800 / 145,920	137,600 / 330,240
SSD Storage Model	2 x 10GBase-T ports (SIOM)	2 x 10GBase-T ports	2 x 10GBase-T ports	2 x 10GBase-T ports



MemX White Paper