10 ESSENTIAL STEPS IN SCALING THE CSP DATA CENTER

Rising and evolving application performance requirements, multiplied by growing user bases, are stretching data centers to the limits. At the same time, businesses are hyper-focused on reducing the cost of delivering on these new expectations.

So how do smart CSPs scale without breaking the bank? It starts with selecting a partner that can put complete solution pieces—servers, storage, networking, plus software—into place. **From there, it's ten simple steps.**

Best practices for architecting and deploying a modern data center

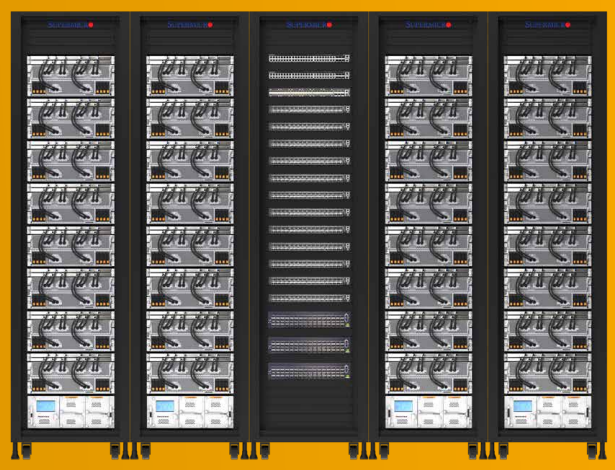
1 STANDARDIZE AND SCALE

Standardize around a preferred config of compute, storage, and networking, then scale up as required. New workload? It's time to revisit and optimize config, and scale out.

OPTIMIZE FOR APPLICATIONS

2

Your application workloads determine your performance needs. Tailoring the tech stack—from processing power to storage needs—will make all the difference.[1]



DID YOU KNOW?

49% of the total average server cost goes to memory, according to the Semiconductor Research Consortium (SRC).

3

PLAN FOR TECHNOLOGY REFRESHES

Even the best tech can't stay sharper forever. Plan for the capacity to navigate upcoming technology transitions, even a disruption or two. Choose a partner with deep relationships across the whole ecosystem.

EMBRACE NEW ARCHITECTURAL APPROACHES

4

Work with a partner who gives you early access to advanced Proof of Concept (POC) solutions that let you preview what's coming next, experimenting and iterating with larger deployments in mind.

5

PLAN YOUR SUPPORT

Your data center is going to work 24x7. When something goes wrong, you need a support partner that can make disruption and downtime as rare and brief as possible.

6 DESIGN FOR THE DATA CENTER AS A WHOLE

A full data center behaves differently than an empty one. You have to design and build for a working whole from the start, anticipating cooling and power needs early and often.

7 CONSIDER LIQUID COOLING

Growing racks mean higher power bills, especially with new GPU requirements. Liquid cooling solutions let higher-density servers, including GPU platforms, minimize PUE without slowing down a bit.

8 MEASURE WHAT MATTERS

A data center is a million pieces in motion. Using the right instrumentation and management software gives you an accurate picture, at node, server, rack, and data center level, of performance, utilization, and efficiency.

9 JOB MANAGEMENT

Managing the data center means managing jobs. This is what all CSP customers care about—performance when they need it. Job scheduling is another big-picture consideration that can make or break growth.

SIMPLIFY YOUR SUPPLY CHAIN

10

Complexity will slow you down every time. Simplifying your data center supply chain means moving bigger pieces into place faster—and with less stress. Pick a partner who can deliver integrated, validated, solutions that are ready to work.

BONUS!

11

MANUFACTURING EXPERTISE MATTERS

It's an open secret that most of the large OEMs outsource their manufacturing, design, and supply chain to Original Design and Contract Manufacturers (ODM/CMs). Choosing a company that designs all its products and manufactures close to customers' locations means greater flexibility, faster time-to-delivery, and lower TCO.

12

EXPERIENCE MATTERS, TOO

It's important to work with a B2B company focused only on the data center that has been working for decades with service providers, HPC supercomputers, and powering solutions for the largest hyperscalers, OEMs, and enterprises.

Supermicro is a leader in supplying rack-scale solutions to CSPs, both large and small, with significant experience in product development but also supply chain logistics, service and support, and sizing and testing.

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[1] Semiconductor Research Corporation, "Decadal Plan for Semiconductors Full Report", January 2021, Page 55.

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