



Frequently Asked Questions (rev 2.0)

What is the STAC Benchmark Council?

The STAC Benchmark Council is a vendor-neutral body facilitated by the Securities Technology Analysis Center (STAC®) whose purpose is to develop and maintain standard benchmark specifications for technology used in the capital markets. It is also a forum to gain in-depth knowledge of new technologies and benchmarking best practices. The council consists of trading firms ("customers") and providers of technology used in the trading process ("vendors"). Vendors provide input to the standards, but only customers have voting rights.

What problems is the Council designed to solve?

The purpose of the Council is to create benchmark specifications that make it easier for both customers and vendors to understand the performance of different securities technologies. Trading firms today face increasingly difficult technical requirements, as competition and regulation force them to reduce latency and cope with increasing transaction and data volumes. Vendors are offering major performance innovations at every layer of the technology "stack"—from more efficient software to more advanced processors and faster networks. But evaluating this new technology accurately and quickly has become a key challenge for the industry. On an ongoing basis, customers need answers to questions such as:

- "Is my system as fast as the technology available, or am I at a disadvantage?"
- "Can I speed up my system by changing one or more parts of my stack? What are the truly important changes that I should evaluate?"
- "How much equipment will I need to keep up with volumes next year?"

Most customers simply don't have the resources to test the constant stream of new software platforms, chips, accelerator boards, servers, operating systems, networking technologies, storage mechanisms, and so on. Vendors sometimes publish benchmarks, but the methodologies and measurements are not standardized. This makes it difficult for customers to make apples-to-apples comparisons between new technologies and their existing systems. Sometimes benchmarks lack detail and don't measure a lot of the things customers care about. This lack of transparency also reduces innovation. If a particular vendor doesn't have hard data regarding areas where its performance falls behind competitors, it has less incentive to improve those aspects of its performance. These problems are a classic prescription for benchmarking standards.

What are STAC Benchmarks?

STAC Benchmarks measure the performance of key capital markets workloads when applied to a given "stack under test." The benchmark requirements currently identified fall into three sets, corresponding to the three basic steps in making a trade:

- STAC-M (market data): benchmarks based on workloads such as direct exchange-feed integration, market data distribution, tick storage and retrieval, etc.
- STAC-A (analysis): benchmarks based on workloads such as trading algorithms, price generation, risk calculation, etc.
- STAC-E (execution): benchmarks based on workloads such as smart order routing, execution-related communication, etc.

For details on how these break down into sub-domains, see www.STACresearch.com/domains.

STAC Benchmarks are oriented around workloads (inputs and outputs) rather than particular categories of technology, because technologies change quite quickly. They can be used to measure the capabilities of software such as market data systems, messaging middleware, in-memory caching, complex event processing systems (CEP), and (soon) trade-execution components such as smart order routers, gateways, and matching engines. They will also quantify the impact of new underlying technologies. Today those include things like hardware-based feed and messaging solutions, hardware-based analytics accelerators, compute and data grid solutions, InfiniBand and 10-gigabit Ethernet networks, multicore processors, and the latest operating system and server technologies. A fundamental goal of STAC Benchmarks is to be meaningful to technology buyers.

Most of the benchmarks aim to simulate real-world conditions (or future real world conditions) as closely as possible. Some of them may examine boundary conditions that reveal a stack's performance tradeoffs, but only if understanding those tradeoffs is important to customers. STAC Benchmarks are not constructed to create big numbers for the sake of publicity. While STAC Benchmarks are about performance, they also put that performance into a business context by relating it to key cost drivers such as power, space, and other operational resources. For example, the STAC-M1.OPRA specs include metrics such as "messages per second per watt," and current Council members tell us those kinds of metrics will continue to be crucial.

How does the Council make decisions?

Both customers and vendors have a crucial role to play. Customers have decision authority (voting rights) over the benchmark specifications. Vendors may make proposals and commentary but do not have voting rights. Vendors will lobby for standards that highlight the benefits of their products. This is a healthy process that will ensure that the standards are as comprehensive as possible. Reserving voting rights for customers will ensure that the benchmarks focus on the business needs that are most important to the market.

What kinds of organizations can join the Council?

The Council was established to serve the needs of firms involved in the trading process (sell-side, buy-side, exchanges) and technology vendors. At the moment, membership is not open to other types of institutions. We are considering the appropriate ways to involve organizations such as universities, the press, and consultancies.

Is the Council global in scope?

Absolutely. The Council welcomes customers and vendors from all geographic regions. Its charter members are some of the largest banks who trade in every market around the globe. The Council representatives from these firms sit on both sides of the Atlantic. While the bulk of the Council's communication is electronic (hence borderless), there are also in-person meetings for both New York and London. Plans are also forming for meetings in other European and Asian trading centers.

What are the benefits of membership, and how much does it cost?

The answers depend on the type of firm and the type of membership. Please see the relevant documents:

- Benefits for end-user firms: www.STACresearch.com/customer_benes
- Membership options for end-user firms: www.STACresearch.com/customer_memberships
- Benefits for vendors: www.STACresearch.com/vendor_benes
- Membership options for vendors: www.STACresearch.com/vendor_memberships

If I join the council, what is expected of me?

That depends on your membership type. Contributing Members (end-user firms involved in the specification process) are expected to serve on at least one working group. There are no set expectations for other member types. For more information on working groups, see www.STACresearch.com/workinggroups.

How do I join the STAC Benchmark Council?

That's simple. Send an email to council@STACresearch.com. We'll check whether your company is already a member. If so, we will let you know who your firm's primary representative is. If not, we'll contact you to sign up.

If you represent an end-user firm and would like to start with a free Observer Membership, which entitles you to attend key STAC events, please complete the online form at www.STACresearch.com/observer.