

STK Parallel Computing scales calculations across multiple workstation cores to increase computational performance for resource-intensive applications of STK.

As the level of detail required for a calculation grows, so does the amount of time and memory needed to compute. STK Parallel Computing Server provides the development and runtime environment to distribute large-scale jobs, using multiple computing resources to process more at once. The server can be shared amongst multiple users.

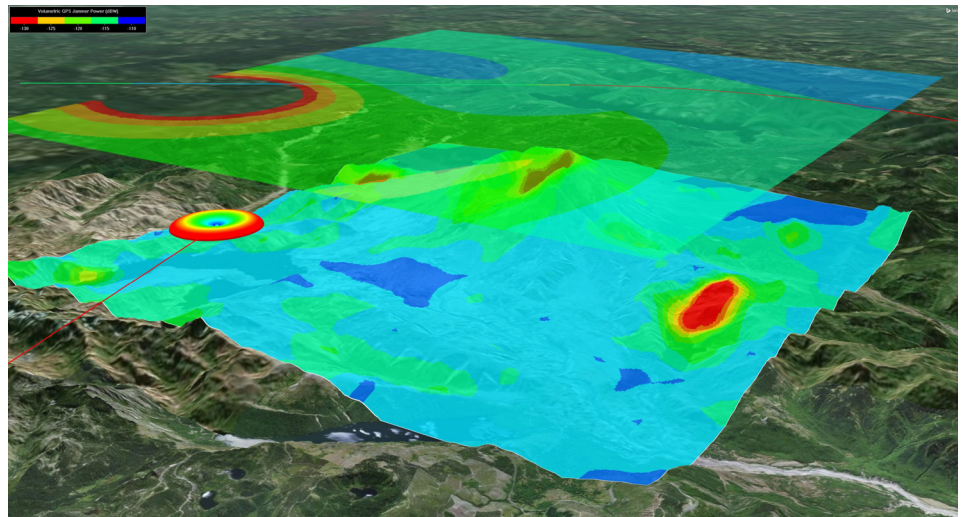
STK Parallel Computing Server Core Capabilities

STK Parallel Computing Server provides all of the infrastructure needed to assemble multi-core computing resources, receive and execute jobs in parallel, and administrate the system. This includes:

- A **Coordinator** that receives jobs and handles the distribution of their tasks, based on configurable priorities, for parallel execution amongst the Agents.
- An **Agent** that runs on each compute node and is responsible for executing the tasks that the Coordinator assigns to it.
- The **Portal**, a website that provides task queue management and real-time monitoring capabilities for the Coordinator machine and all connected Agents.

The STK Parallel Computing Server infrastructure and client APIs provide the following capabilities:

- Automatic deployment of .NET, Python, or Java code
- Execution of jobs in isolated processes
- Cross-machine communication and security
- Return of the results to the client
- Thorough error handling
- Fine grain worker selection
- Flexible scheduling algorithms



- Cancellation support
- Progress reporting
- System monitoring and logging
- Computing resource management
- User management

Integration with AGI products

Parallel Computing Server works with STK to scale up Coverage, Deck Access, Chains, Volumetrics, and Analyzer trade study computations, using more resources than are available locally on the machine running STK. You can use the provided STK Parallel Computing Desktop API to benefit from the same STK infrastructure to parallelize your own computations.

The provided Parallel Computing Server SDKs can also be used with other AGI development libraries, such as STK Components, STK Engine, and ODTK to distribute workflows, including large scale orbit determination, conjunction analysis, and other custom computations.

STK Parallel Computing Server Software Development Kit (SDK)

In addition to the out of the box, no programming involved STK integration, Software Development Kits (SDKs) are available for .NET, Java, and Python. These SDKs make it easy to parallelize the execution of custom models and algorithms. The SDKs are fully documented and include tutorials, tools, and instructions to help you get the most out of the API and runtime environment.