

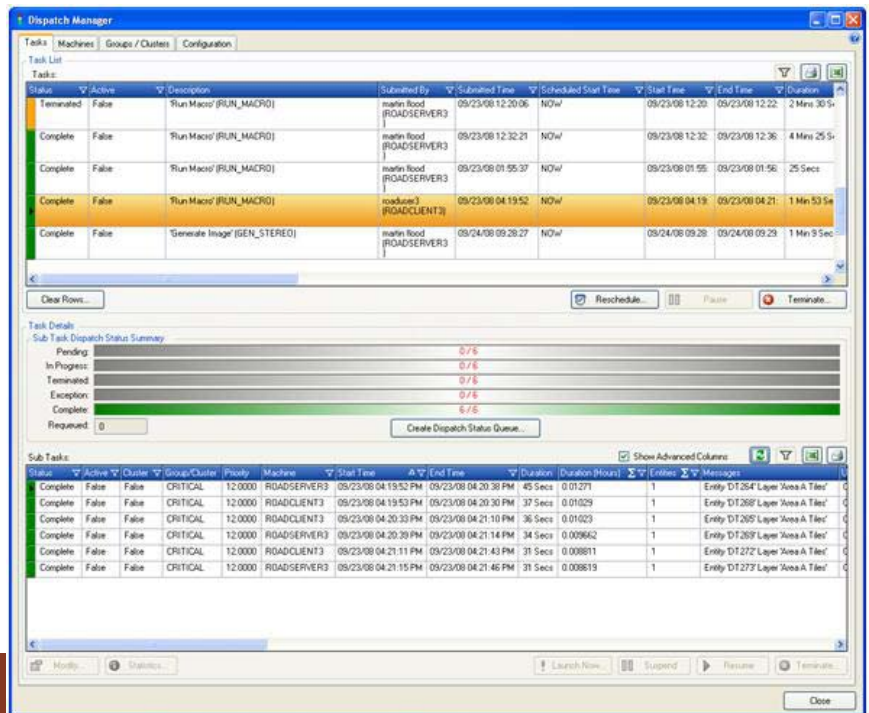
TerraSlave for GeoCue

Improving Production Efficiency with TerraSlave for GeoCue

At GeoCue Corporation we are often approached by organizations who have invested heavily in the latest mapping hardware and software tools, but whose business performance—as measured by metrics such as data quality, schedule adherence, project margins, rework, and staff morale—is no better off, and in some cases is even worse, than it was a decade ago. Obviously having today's latest and greatest hardware doesn't stop you from struggling with the same bottlenecks and headaches you had yesterday; in fact it often makes those problems worse. Distributed processing—scheduling tasks to automatically run remotely on any available workstation in your network as memory resources and CPU loads allow—is an effective way to make maximum use of your existing workstations and significantly improve your team's efficiency. In fact, many of today's leaders in lidar data production have achieved their position by making distributed processing the cornerstone of everything they do to improve their efficiency. It is this focus on continuous workflow improvement

Computers can work 24 hours a day, make them work for you with the Geocue Command Dispatch System and TerraSlave.

and optimizing throughput that ensures they remain competitive. GeoCue's integrated distributed processing engine, referred to as the Command Dispatch System (CDS), is at the heart of bringing this same cost-effective approach to your own lidar data production. In conjunction with TerraSlave for GeoCue, distributed processing has made processing lidar data using arrays of remote slave computers an extremely cost-effective way to significantly improve your production throughput assuring that you remain competitive.



TerraSlave for GeoCue: What is It and How does It Work?

We have worked with Terrasolid to integrate the TerraScan 'slave' processor directly into GeoCue. TerraSlave for GeoCue allows a remote workstation to run TerraScan macros submitted to it from the user's local machine. It eliminates the need to have a MicroStation license on the remote machine, significantly reducing software costs. Removing the MicroStation limitation also allows you to use more memory, queue more tasks and in general makes optimizing your hardware easier. TerraSlave for GeoCue allows users to easily manage multiple batch processing jobs across your network. This saves considerable time, both in processing (by parallel processing to the limits of your available hardware resources) and error control (by providing robust error trapping of single subtasks, so entire batches are not corrupted by a single failure).

To take advantage of GeoCue's Command Dispatch System when processing TerraScan macros typically requires very little reconfiguration of your normal production IT infrastructure. Each user needs a single dedicated workstation, primarily for performing

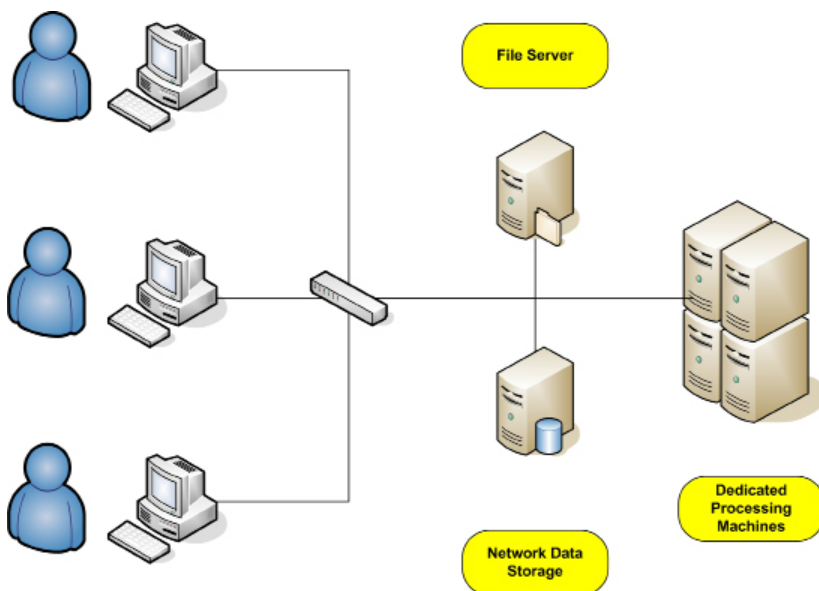
interactive tasks, such as manual editing of the lidar tiles or setting up automated batch processes, while the bulk of automated classification tasks are dispatched to an array of remote processing nodes or automatically distributed across idle workstations in the network. This configuration has the following immediate advantages:

a) Individual subtasks, for example each tile in a block of tiles, process separately and the tile is immediately ready for further work. Users do not have to wait for an entire batch process to finish before starting the next production step.

b) User-configurable prioritization tools ensure that the highest priority tasks are always given access to the resources they need, preventing lower priority projects from clogging the system, and allow you to move critical data, such as the client's priority area, to the front of the line.

c) GeoCue automatically handles intelligent queuing and processing of all the distributed tasks to the target computers so users never have to manually check to see which remote nodes are 'free' or which workstations have available resources.

d) Error trapping and recovery is much more robust than in other remote processing scenarios since a single process failure (e.g. a single tile crashing or single node going offline) will not stop the entire batch process.



Core Elements of an Effective Distributed Processing System

There are three core features of a distributed processing strategy that can directly impact your lidar data production efficiency:

- Remoting or running a task on a computer other than the one from which it was invoked.
- Scheduling a task to run at a later time.
- Distributing a task that processes multiple files across multiple computers.

These three features are all included in the GeoCue Command Dispatch System. Deploying TerraSlave for GeoCue automatically enables remote processing,

scheduled processing and distributed processing for any TerraScan macro batch job your production team needs to run. This effectively gives them “desktop distributed processing” out-of-the-box without requiring complex IT configurations. It also allows you to quickly and easily scale up production throughput by deploying additional remote processing nodes (inexpensive hardware) rather than hiring more staff (expensive labor).

Software Requirements

To deploy distributed processing using TerraSlave for GeoCue you will need GeoCue Enterprise Server, at least one GeoCue Client and the following additional components:

1. GeoCue Lidar 1 CuePac (1/workstation)
2. TerraSlave for GeoCue (1/workstation)
3. Distributed Subtask License (DSL) (1/ simultaneous process)
4. GeoCue Map Core License (MC) (1/remote (non-interactive) workstation)

For example, to add a quad-core, quad-processor workstation to your existing GeoCue Enterprise Server constellation to handle your TerraScan macro processing will require 1x TerraSlave for GeoCue, 1x Lidar 1 CuePac, 1x Map Core and 16 DSLs. This will improve your batch processing throughput by 16x for a one-time set-up cost of ~\$15k. It is not hard to see that break-even on the cost occurs very quickly with such a significant increase in batch processing capacity.

Contact Information

GeoCue Corporation
9668 Madison Blvd.
Suite 101
Madison, AL 35758



Phone: 256.461.8289
Fax: 256.461.8249
E-mail: info@geocue.com
www.geocue.com