As media companies generate increasing revenue through file-based workflows, they cannot afford interruptions or inefficiencies in their media processing. This is especially true in mission-critical commercial workflows, time-critical news workflows, and high-volume content repurposing environments. So much content is moving through these facilities that any workflow interruptions or inefficiencies would cause serious delays.

**No single point of failure**

Advanced Task Scheduling is an option to highly-resilient Vantage Array technology, which can cluster as many servers as necessary to meet your workflow throughput requirements. Distributed control in a peer-to-peer redundancy architecture ensures that there is no single point of failure in the Vantage system that will ever bring your system down. If any machine goes down, the system automatically recovers and keeps running.

**Optimize Server Utilization**

All media processing tasks are not equal, and more than 60% of server CPU time can be wasted by traditional queue-based load balancing. Workflows with mixed video processing requirements and fluctuating media loads require task allocation that is not only aware of which servers are available, but also the nature of the tasks being assigned. Otherwise, servers may be over-allocated with too many heavy tasks, or under-allocated with insufficient work to keep them busy.

More throughput, fewer servers

Maximize your workflow throughput and reliability with complete control over user access, load balancing, and failure recovery.
With Vantage Advanced Task Scheduling, optimal hardware utilization is achieved by using the industry’s leading task scheduling. Load balancing is CPU-aware, and cost-based resource allocation allows administrators to assign a cost to each individual task in a workflow, and also to specify the capacity of each server in the system. When a job executes, each task in the job is independently load-balanced across available servers. Task allocation is done dynamically, and queues are re-balanced every time a task completes on any machine.

**Vantage Advanced Task Scheduling**

Each server optimizes its load, targeting the specified average capacity as indicated by the administrator. This ensures that servers are balanced appropriately based upon the actual processing requirements of their tasks.

Cost-based task scheduling also reduces the risk of server failure by avoiding CPU overloading. Unlike “round-robin” task scheduling, where server CPU or RAM may become overloaded, cost-based task scheduling allows administrators to target an optimal CPU utilization on every server. This avoids situations where servers may crash because they are asked to do too much work.

The ability to do more with fewer servers results in hardware cost savings, less rack space, lower cooling and power requirements, and reduces the chance of system failure because there are fewer servers involved.

Load balancing is performed in a peer-to-peer fashion, where the Windows service completing each task is responsible for choosing the next machine. This avoids “master control” bottlenecks and creates a highly resilient workflow automation system.

**Environmental Failure Recovery**

In mission-critical workflows, media processing throughput cannot be compromised even if external systems fail. The ability to recover from environmental failures, such as Internet loss or SAN disconnects, is necessary to ensure that a workflow is truly predictable and reliable. In today’s demanding workflow environments, submitted media must be processed without requiring administrator oversight, no matter what challenges occur.

Vantage Advanced Task Scheduling achieves this goal with the ability to recover from external errors such as Internet, FTP, SAN, or other system failures. Automated task retries allow administrators to specify when failed tasks should be retried, and how many times to try before an external system is deemed fatally inaccessible. Customizable retry schedules ensure that recovery is appropriate for the type of failure – restarting in seconds when a SAN has a brief disconnect, or waiting hours (if necessary) in the case of a loss of Internet connectivity. This ensures that media submitted to a workflow will be processed in a predictable, reliable manner and delivers 24/7 hands-free operation where jobs will only fail if they are truly not recoverable.

**Optimizing GPU Utilization**

In array environments where there is a mix of CPU-only servers and GPU-enabled Lightspeed Servers, Advanced Task Scheduling will allow you to optimize the use of your GPU-enabled hardware. Each transcode can have rules set for when to fall back to “CPU-only mode” based upon how busy the Lightspeed Servers are when the job is being scheduled. This allows you to emphasize higher-priority work for the GPU-enabled servers, using them for lower-priority work when they are idle. The Array will also recover in the case the Lightspeed Servers become unavailable, automatically converting all GPU jobs to CPU-only, ensuring that your media is processed efficiently and reliably regardless of the underlying hardware.

**Distributed Licensing, N+1 Redundancy**

Licenses for the actual Vantage Windows services are stored in the database, and can be acquired by services connected to that database. In the case of service or server failure, licenses acquired by the affected services are released back into the database, allowing other machines in the Array to acquire them. This allows true N+1 redundancy within the Vantage system simply by adding additional machines to support licensed Vantage services.

**Shared Storage**

Vantage Array installation requires shared storage, as each task may be independently load balanced, and all files involved in the job must be available over the network. Telestream recommends a high-speed NAS or fiber-attached SAN as the shared storage environment. Vantage has been qualified with EMC, XSAN (Stornext) and Rorke storage environments. For more information about Rorke and EMC storage solutions, please contact Telestream for ordering information.

**Best in Class Customer Support**

You can rest assured that our highly-skilled technical team will be available to provide the quick and comprehensive support and guidance you need to fully leverage the power of your Telestream product.
Technical Specifications

What's Included in Vantage Advanced Task Scheduling

System Optimization
■ Customizable cost-based and CPU-aware task scheduling
■ Ability to specify capacity for each server

Environmental Failure Recovery
■ Automated task retries in case of environmental failure
■ Customizable schedules for task restarts

System Requirements
Minimum Server: Dual, Six Core Processors - or better (a total of 12 cores or more is recommended), with 16 GB DDR Memory, High-Speed NAS or SAN storage recommended; GigE Ethernet adapter
Database: SQL 2008 or 2012, Standard or Enterprise