

Managing the Job Queue

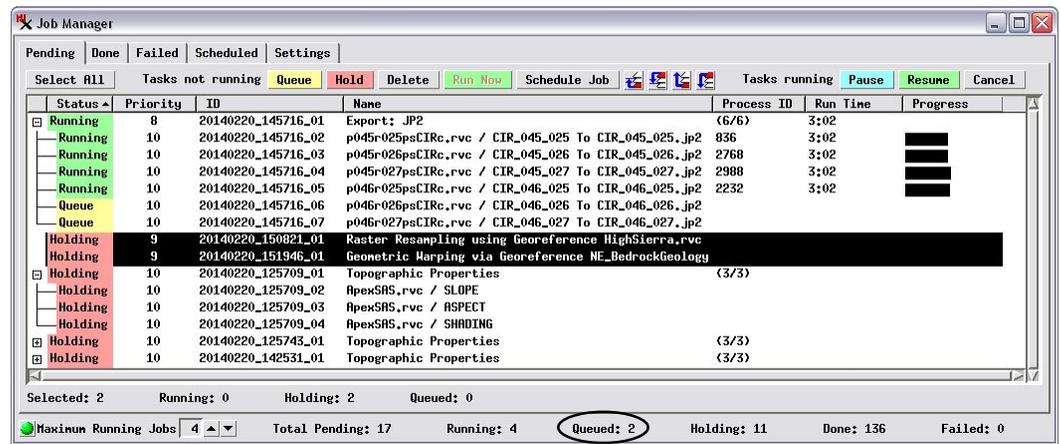
The TNTmips Job Manager is the interface that allows you to control the TNTmips Job Processing System. The part of this dialog that you will probably use most often is the Pending tabbed panel, which lists all current jobs that have not yet completed. This list shows the current status, priority, process name, running time, and other information for each job. More importantly, this panel allows you to manage the status and priority of pending jobs to determine the order in which they are run. These queue management tasks are described in detail below. A general introduction to the Job Manager is provided in the Technical Guide entitled *System: Managing Job Processing*.

Job Status

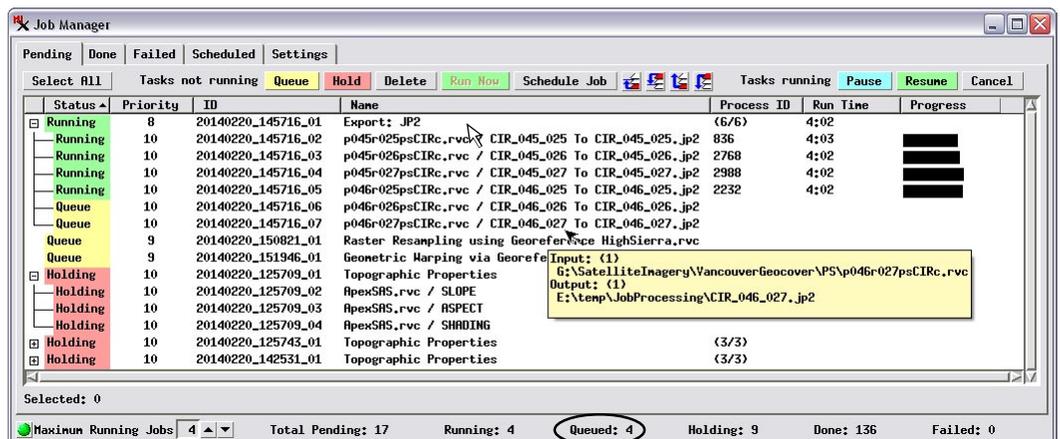
TNTmips processes provide two buttons to create jobs, a Queue Job button and a Save Job button. When you create a job with the Queue Job button, the job runs immediately if there are fewer than the maximum allowed number of jobs already running. In that case the job is added to the Pending list with its status shown as *Running* and the background color of its status field set to green. If the maximum allowed number of jobs are already running, any new jobs are added to the pending list with their status set to *Queue* and the background color of their status fields set to yellow. Jobs with *Queue* status are in a “waiting” state and are run automatically as previously running jobs complete and slots for running jobs open up. Therefore, if you don’t wish to actively manage the job queue, you can simply use the Queue Job button to create all of your job files and let the Job Processing System automatically handle the execution of the jobs using the resources you have allocated to it. The labels at the bottom of the Job Manager window are continuously updated to show the current number of jobs in the various status categories.

You can press the small colored icon button in the bottom left corner of the Job Manager to disable or enable queueing of jobs. This button is green when queueing is enabled and red when disabled.

When you create a job with the Save Job button in a TNTmips process, the job is added to the Pending list with its status set to *Holding* and the background color of its status field set to red. Jobs that are *Holding* remain in the pending list unprocessed until you manually release them to the queue. This allows you to save a number of jobs (perhaps from different processes) to the pending list and later determine when and in what order you want to release them for processing. It also enables you to set up scheduling for jobs (see the TechGuides entitled *System: Managing Job Processing* and *System: Scheduling Individual and Repeating Jobs*).



The Pending tabbed panel of the Job Manager lists jobs that are currently running, waiting to run (Queue status), or being held. In above illustration two jobs that are holding (black highlight in list) have been selected to release to Queue status using the Queue button at the top of the window. In illustration below, these jobs now are queued to run, and the statistics at the bottom of the window have updated accordingly to show the addition of the two jobs to Queued status. Hovering the cursor over the name of a job pops in a DataTip showing the input and output file names.



(over)

Changing Job Status

You can select one or more jobs in the Pending list to change their status. Left-click on the job entry to select a particular job; pressing the <Ctrl> key while left-clicking toggles the selection status of the job on or off. Press the <Shift> key while left-clicking to select a range of job entries in the list.

TNT processes that support batch processing (multiple inputs and outputs) create one job file for each input-output set and a group job file that references all of the job files in the set. The group job is shown in the Pending list with the parent process name in the Name column. A group job is also provided with a tree control that allows you to expand the listing to show the individual jobs in the set (see illustration to the right).

You can select the group job to change the status of all jobs in the set, or expand the group and select one or more of the individual jobs to change their status.

Group of jobs closed. 

Holding	10	20140220_125743_01	Topographic Properties	(3/3)
Holding	10	20140220_142531_01	Topographic Properties	(3/3)

Group of jobs open. 

Holding	10	20140220_142531_01	Topographic Properties	(3/3)
Holding	10	20140220_142531_02	HendersonSRS_rvc / SLOPE	
Holding	10	20140220_142531_03	HendersonSRS_rvc / ASPECT	
Holding	10	20140220_142531_04	HendersonSRS_rvc / SHADING	

You can change the status of jobs you have selected in the list using one of the pushbuttons above the list. For jobs with Queue or Holding status, you can use the pushbuttons in the *Tasks not running* button row. Press the Queue button to release selected *Holding* jobs or the Hold button to convert selected *Queue* jobs to *Holding* status (note that the button color matches the color used for the result in the Status field). The Run Now button immediately runs the currently selected *Queue* or *Holding* jobs, even if doing so means that the number of running jobs exceeds the maximum allowed number of jobs you have specified in the Maximum Running Jobs field at the bottom of the Job Manager. Press Delete to remove the selected jobs from the list and delete their job files from the Jobs directory.

For jobs that are currently running you can use buttons in the *Tasks running* button row to Pause or Cancel the job and Resume jobs you have previously paused.



Progress bars are shown for running jobs on the Pending panel.

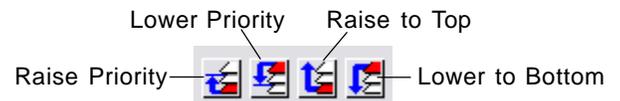
You can also perform each of these management tasks directly on a list entry without first selecting it by right-clicking on the entry and choosing the appropriate operation from the right mouse-button menu.

Progress bars are shown for running jobs in the Progress column of the Pending tabbed panel. Each of these bars reproduces the progress bar of the underlying process currently running as a job. Some TNTmips processes have multiple steps and thus when you run the process interactively they show and increment a separate progress bar for each step. If the Job Manager is running such a multi-step process, the progress bar shown in the Job Manager also shows the progress for that job's current step, and thus you may see the bar finish and then restart for the same job. Jobs that run SML scripts may not show progress bars.

Job Priority

The order in which queued jobs are started depends upon the order in which they are created and their Priority. Jobs are added to and listed in the Pending panel in the order in which they are created, with newer jobs at the bottom of the list. Queued jobs at the top of the list are started before jobs lower in the list.

All jobs also have a numerical Priority value. A default priority value of 10 is assigned when a job is created by a TNTmips process. Queued jobs of equal priority are started in the order in which the jobs were created, but you can raise or lower the priority of nonrunning jobs (queued or holding) in the Pending list to change the order in which they are listed and run. You can use the Priority icon buttons in the toolbar to change the priority of a selected job or jobs, or right-click on a job entry and choose Raise Priority or Lower Priority from the right mouse-button menu. An SML script or other application can set the priority for job files in the Job Processing System.



Status	Priority	ID	Name
Holding	10	20140221_091146_01	Topographic Properties Slope_rvc / SLOPE
Holding	10	20140221_091259_01	Export To CIR_046_027.jp2
Holding	10	20140221_091515_01	Raster Extract AntiAtlasComposite_rvc /

You can assign higher priorities (lower numerical priority values) to jobs to change the order in which they are listed in the Pending tabbed panel and the order in which they will be started. These illustrations shows three jobs with their default priority of 10 (above) and the same three jobs reordered by assigning different priority values (below). If all of these jobs are released to Queue status at the same time, they will be started in the new order shown below.

Status	Priority	ID	Name
Holding	8	20140221_091259_01	Export To CIR_046_027.jp2
Holding	9	20140221_091515_01	Raster Extract AntiAtlasComposite_rvc /
Holding	10	20140221_091146_01	Topographic Properties Slope_rvc / SLOPE