

Lehnert Computer Services

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Subject: Resource Leveling – what do the options mean??

Question: When I try an leveling in a project that has over-allocation of resources, I'm never sure what to do with the options I'm shown during the process. Can you explain the basics of leveling?

Answer: Leveling is a function that confuses most people so I am glad to see this question submitted by a reader. Leveling is an action that will help level out the work load of resources assigned to tasks. The leveling options that are selected will influence how the leveling process will perform. There is always the option to remove the leveling that occurs so you have nothing to lose in trying the function. Most people feel they get questionable results. They do not want the end date of the project to change yet they want their resources leveled. The reality is that leveling will not find more time for your resources to work, they still have limited availability controlled by their resource calendars and the percentage that a resource is assigned to a task. Therefore, I believe the best leveling is a process that you actually do manually. Before trying the programmatic leveling function, try some of the manual ideas below.

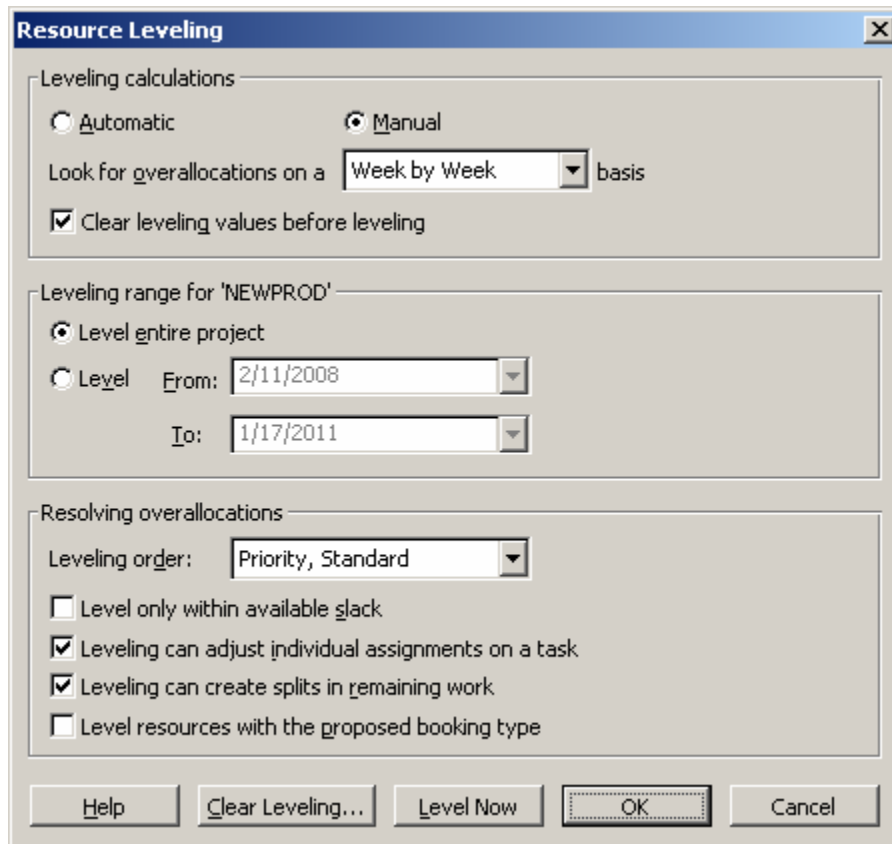
- Remove a critical resource from a non-critical task.
- Break up a task – can pieces be assigned to lesser talented resources?
- Ask yourself if a resource really needs to be involved in a task – if not, remove him from the task.
- Extend the work day for the resource on their calendar.
- Increase the percent of the assignment on a task.
- Can more resources of the correct skill type be obtained?
- Cancel vacations until after the project is over. (Not a very popular option!!!)
- Eliminate unnecessary tasks

Before starting this function, you must first decide if you are leveling tasks or resources. If you want to level specific resources, go to a resource screen and select the resources to level. If you want to level specific tasks, go to a task screen and select the specific tasks. Or you could level all resources or all tasks.

Always check the resource sheet for RED resources to see where over allocations exist. The best view to be in during the leveling process is either the Resource Allocation view or the Leveling Gantt View. The Leveling Gantt will show the leveled project in blue and what it was before the schedule was leveled in green so you can see the effect on the schedule.

I would also recommend noting the schedule ending date before starting any leveling process. Performing leveling on a copy of the active schedule and not the active schedule itself is also a good practice.

NOTE: Take a look at the Resource Usage view before starting this process. Many times you will see resources that are in RED (over-allocated) yet they are only booked to 2 hours in a day. What is occurring is that the same hour of the day is double booked. This is very common particularly if you are using recurring tasks. I personally do not consider these resources to be overallocated but Microsoft Project does and will be affected by the leveling process.



The leveling function has several options that will control how the leveling process functions – please see below:

- **Automatic or Manual.** Most people function better with manual. This allows you to control when leveling occurs. If you use the automatic option, the schedule will level every time you change a task. This can be very memory intense particularly for a large schedule.
- **Look for over-allocations on a:** I suggest the week by week basis. If you chose day by day, the program will try to make sure that all resources are not overbooked by even 1 minute during any day. This is not realistic. Week by week is saying that some days can be up and some days can be short but the total for the week will match the availability calendar and the percentage assigned to the task.
- **Clear leveling values before leveling:** If you have leveled before, this option will clear anything that was leveled before.
- **Entire project or range of dates:** If it is a long project, you might want to select a range of dates – probably is a 6-8 week window. How far in advance can you really predict a resource assignment? On the other hand, I have client who open all of their projects and level fully across all of them to try to figure out when they are all going to be completed. So

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you must decide on your goals. Are you looking for short term assignments or when the project is really going to be completed. If you choose the entire project option, make sure your resource availability calendars are up to date. This should determine your option selection.

- **Level within available slack:** Do you have any slack in your schedule? Insert the Total Slack column in a task table and take a look. If there is zero slack or negative slack, the result of leveling will always be that your ending date will push out.
- **Leveling can adjust individual assignments on a task:** This wording as always been a bit odd to me. Leveling can never remove or replace a resource on a task. This option refers to the concept of keeping all resources together on the task or can they perform their work individually. This option is being set for the entire schedule which might not be the case. Some tasks can be scheduled at different times and others might have to be scheduled together. There is a field on each task that will control this option called Level Assignments. To make this a task level value, insert the column Level Assignments and you will have the ability to control this value per task.
- **Leveling can create splits in remaining work:** Does the remaining work on a task have to be scheduled together or can it be split. Again, you are setting this value for the entire schedule and it can be control per task using the task field Leveling Can Split.
- **Resources with Proposed booking types:** This will effect MS Project Server users only. If you have resources that are proposed for your project but not committed to it, do you want to include them in the leveling process?

NOTE: To clear leveling, you should be in a task based screen. Also – Help can be helpful.

You might not get the results you would like. In many cases I feel you have a case to take to management to let them see that you just don't have enough resources to get the job done in the timeframe allowed. Leveling will also allow you to see problems sooner than later in your schedule.