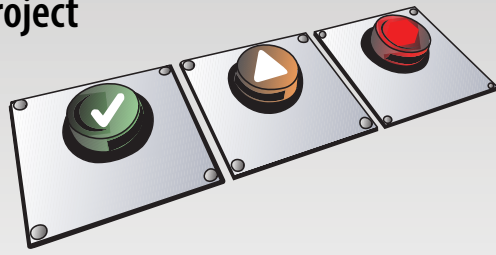


QPM Schedule Auditor

For MS Project



Tips and Tricks

This document provides examples of some of the checks available within QPM Schedule Auditor tool as well as ways to follow best practices.

Predecessor/Successor check

What's your project's critical path? Are you sure you have the right one & didn't forget to link some tasks that could be very important? How do you know everything is connected and the critical path is correct?

If your schedule has a few tasks, you can check it manually but once you have more than a few tasks, it is a pretty arduous process.

Here's a simple example of what can go wrong:

This schedule is simple and at first glance looks like it should be done in 5 days with a critical path that follows tasks 2 > 5 > 6 > 7

Task Name	Duration	Start	Finish	R 09 Jun 7, '09																
				W	T	F	S	S	M	T	W	T	F	S						
0 critical path	5 days?	Mon 6/8/09	Fri 6/12/09	[Gantt chart showing a critical path from task 2 to 5 to 6 to 7]																
1 w	2 days	Mon 6/8/09	Tue 6/9/09																	
2 w	2 days	Mon 6/8/09	Tue 6/9/09																	
3 e	2 days	Mon 6/8/09	Tue 6/9/09																	
4 d	2 days?	Wed 6/10/09	Thu 6/11/09																	
5 d	1 day?	Wed 6/10/09	Wed 6/10/09																	
6 s	1 day?	Thu 6/11/09	Thu 6/11/09																	
7 s	1 day?	Fri 6/12/09	Fri 6/12/09																	

A quick examination however identifies that task 3 is not linked to any other tasks in the project. Is it really independent of all other work? What if task 3 doesn't get completed when planned? In this example, it is difficult to know what the impact would be because we don't understand the linkage between the tasks.

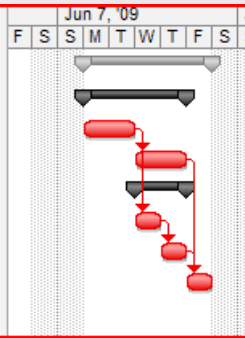
Perhaps, we just missed the link and it should have been done immediately after task 2. That change extends our project by several days.

Task Name	Duration	Start	Finish	Predecessor	Resource Names	Jun 7, '09 Jun 14, '09														
						F	S	S	M	T	W	T	F	S	S	S	M	T	W	T
0 critical path	7 days?	Mon 6/8/09	Tue 6/16/09			[Gantt chart showing a critical path from task 2 to 4 to 5 to 6 to 7]														
1 w	4 days	Mon 6/8/09	Thu 6/11/09																	
2 w	2 days	Mon 6/8/09	Tue 6/9/09																	
3 e	2 days	Wed 6/10/09	Thu 6/11/09	2																
4 d	2 days?	Fri 6/12/09	Mon 6/15/09																	
5 d	1 day?	Fri 6/12/09	Fri 6/12/09	3																
6 s	1 day?	Mon 6/15/09	Mon 6/15/09	5																
7 s	1 day?	Tue 6/16/09	Tue 6/16/09	6																

Another possibility is that it can be done in parallel with other tasks and must be completed prior to task 7.

In this case, the timeframe for our total project did not change.

Task Name	Duration	Start	Finish	Predecessor	Resource Names
0 <input type="checkbox"/> critical path	5 days?	Mon 6/8/09	Fri 6/12/09		
1 <input type="checkbox"/> w	4 days	Mon 6/8/09	Thu 6/11/09		
2 w	2 days	Mon 6/8/09	Tue 6/9/09		
3 e	2 days	Wed 6/10/09	Thu 6/11/09	2	
4 <input type="checkbox"/> d	2 days?	Wed 6/10/09	Thu 6/11/09		
5 d	1 day?	Wed 6/10/09	Wed 6/10/09	2	
6 s	1 day?	Thu 6/11/09	Thu 6/11/09	5	
7 s	1 day?	Fri 6/12/09	Fri 6/12/09	6,3	



The Gantt chart displays the project schedule from June 7, 2009, to June 14, 2009. It shows a critical path starting on Monday, June 8, and ending on Friday, June 12. Tasks are represented by bars with arrows indicating dependencies. Task 0 is the overall project duration. Tasks 1 through 7 are sub-tasks with varying durations and dependencies. Resources are assigned to tasks, with some tasks having multiple resource assignments.

There are endless possibilities if we extend this simple example to a larger project with more relationships and more tasks. The problem is complex and the amount of time it will take to validate the schedule could be very large.

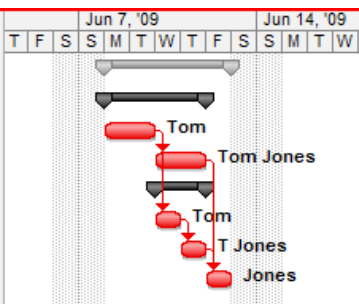
Best Practices

1. Begin at the end of your schedule and move backwards through the task list. Ask the question: What needs to happen before this can happen?
2. Use a start task for linking anything that begins on the first day of the project.
3. Use milestones at the end of each logical grouping of tasks and make sure all tasks within the group are linked to at least one other task within the group.
4. Use QSA to identify anything you missed. It will save you time and help you identify the gaps.

Resource Names

Assigning work to resources on a project needs to be done in a consistent manner or it will lead you to over-allocation of individuals that is very difficult to find. Consider the simple example shown here with a total of five tasks assigned to several unique names. Is this one person? 2? 3? 4?

Task Name	Duration	Start	Finish	Resource Names
0 <input type="checkbox"/> resource	5 days?	Mon 6/8/09	Fri 6/12/09	
1 <input type="checkbox"/> w	4 days	Mon 6/8/09	Thu 6/11/09	
2 w	2 days	Mon 6/8/09	Tue 6/9/09	Tom
3 e	2 days	Wed 6/10/09	Thu 6/11/09	Tom Jones
4 <input type="checkbox"/> d	2 days?	Wed 6/10/09	Thu 6/11/09	
5 d	1 day?	Wed 6/10/09	Wed 6/10/09	Tom
6 s	1 day?	Thu 6/11/09	Thu 6/11/09	T Jones
7 s	1 day?	Fri 6/12/09	Fri 6/12/09	Jones



The Gantt chart displays the project schedule from June 7, 2009, to June 14, 2009. It shows a critical path starting on Monday, June 8, and ending on Friday, June 12. Tasks are represented by bars with arrows indicating dependencies. Task 0 is the overall project duration. Tasks 1 through 7 are sub-tasks with varying durations and dependencies. Resources are assigned to tasks, with some tasks having multiple resource assignments. The chart shows that the same name 'Tom' is used for different tasks, which could lead to confusion or over-allocation.

	Resource Name	Type	Material Label	Initials	Group	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar
1	Tom	Work		T		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
2	T Jones	Work		T		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
3	Tom Jones	Work		T		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
4	Jones	Work		J		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard

Multiply this problem with additional work and additional resources. It will be almost impossible to know if you have properly assigned and allocated the right people to the right tasks. How will you know if you have duplicated resources and if resources are over allocated to perform several tasks at the same time?

Best Practices

1. Create your resources using a resource pool approach (For desktop only users, this can be done using the Resource Sheet view.)
2. Do not type resource names directly into the Resource Name column. Select from the drop down list only to avoid typos.
3. Use QSA to identify potential duplicate names.

Constraints and Deadlines

What do you do to identify a very important date in your schedule that you do not want to miss? One of the ways that people often try to show this is by using the Constraint feature in Microsoft Project. In this example, a constraint (highlighted icon) has been set for task 8 to complete on Friday, June 12th.

	Task Name	Duration	Start	Finish	Predecessors	Resource Names
0	Constraint	9 days?	Sun 6/7/09	Thu 6/18/09		
1	Start	0 days	Sun 6/7/09	Sun 6/7/09		
2	WP1	4 days	Mon 6/8/09	Thu 6/11/09		
3	w	2 days	Mon 6/8/09	Tue 6/9/09	1	Tom
4	e	2 days	Wed 6/10/09	Thu 6/11/09	3	Tom
5	WP2	5 days?	Mon 6/8/09	Fri 6/12/09		
6	d	1 day?	Mon 6/8/09	Mon 6/8/09	1	Jane
7	s	1 day?	Tue 6/9/09	Tue 6/9/09	6	Jane
8	s	1 day?	Fri 6/12/09	Fri 6/12/09	7,4	Jane
9	WP3	4 days?	Mon 6/15/09	Thu 6/18/09		
10	b	1 day?	Mon 6/15/09	Mon 6/15/09	8	Jane
11	c	1 day?	Tue 6/16/09	Tue 6/16/09	10	Tom
12	d	1 day?	Wed 6/17/09	Wed 6/17/09	11	Tom
13	e	1 day?	Thu 6/18/09	Thu 6/18/09	12	Tom
14	Project End	0 days	Thu 6/18/09	Thu 6/18/09	13	

Although the intent is to show that this task needs to be completed by a specific date, the actual impact of setting a constraint like this is to limit the ability of the software to help you identify when a task is in danger of missing the planned completion timeframe.

What happens if the task slips beyond the date as shown below? If constrained, the software is prevented from rescheduling the subsequent work. The project manager needs to know that the work is slipping but also needs the software to help plan an alternative.

Task ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names
0	Constraint	9 days?	Sun 6/7/09	Thu 6/18/09		
1	Start	0 days	Sun 6/7/09	Sun 6/7/09		
2	WP1	4 days	Mon 6/8/09	Thu 6/11/09		
3	w	2 days	Mon 6/8/09	Tue 6/9/09		1 Tom
4	e	2 days	Wed 6/10/09	Thu 6/11/09		3 Tom
5	WP2	5 days?	Mon 6/8/09	Fri 6/12/09		
6	d	1 day?	Mon 6/8/09	Mon 6/8/09		1 Jane
7	s	1 day?	Tue 6/9/09	Tue 6/9/09		6 Jane
8	s	1 day?	Tue 6/9/09	Tue 6/9/09		6 Jane
9	WP3	4 days?	Tue 6/16/09	Fri 6/19/09		
10	b	1 day?	Tue 6/16/09	Tue 6/16/09		8 Jane
11	c	1 day?	Wed 6/17/09	Wed 6/17/09		10 Tom
12	d	1 day?	Thu 6/18/09	Thu 6/18/09		11 Tom
13	e	1 day?	Fri 6/19/09	Fri 6/19/09		12 Tom
14	Project End	0 days	Fri 6/19/09	Fri 6/19/09		13

Best Practice

1. For standard scheduling, avoid using constraints when establishing your original schedule. Use a deadline instead. The software can then do its normal scheduling process and will alert you about the deadline so that you can make changes to mitigate the impact of the problem.

Task ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names
0	Constraint	10 days?	Mon 6/8/09	Fri 6/19/09		
1	Start	0 days	Thu 6/11/09	Thu 6/11/09		
2	WP1	5 days	Mon 6/8/09	Fri 6/12/09		
3	w	2 days	Mon 6/8/09	Tue 6/9/09		1 Tom
4	e	2 days	Wed 6/10/09	Fri 6/12/09		3 Tom
5	WP2	6 days?	Mon 6/8/09	Mon 6/15/09		
6	d	1 day?	Mon 6/8/09	Mon 6/8/09		1 Jane
7	s	1 day?	Tue 6/9/09	Tue 6/9/09		6 Jane
8	s	1 day?	Mon 6/15/09	Mon 6/15/09		7,4 Jane
9	WP3	4 days?	Tue 6/16/09	Fri 6/19/09		
10	b	1 day?	Tue 6/16/09	Tue 6/16/09		8 Jane
11	c	1 day?	Wed 6/17/09	Wed 6/17/09		10 Tom
12	d	1 day?	Thu 6/18/09	Thu 6/18/09		11 Tom
13	e	1 day?	Fri 6/19/09	Fri 6/19/09		12 Tom
14	Project End	0 days	Fri 6/19/09	Fri 6/19/09		13

2. Use QSA to identify constraints and see if there are better ways to identify critical dates.

Note: There are advanced techniques for appropriate uses of the constraint feature. This discussion only addresses the basic best practice.