

Chapter 5 - Resolving Scheduling Conflicts

Learning Objectives:

- Identifying scheduling problems
- Resolving scheduling conflicts
- Using the critical path to shorten a project

Identifying the critical path

Use the Gantt Chart Wizard to format your project to highlight the critical path.

Using formatting to identify the critical path (Fig.5.1)

Project provides you with a quick and easy way to display critical tasks in your project in red. Follow these steps:

1. Display the Gantt Chart view and
2. Click the Gantt Chart Tools Format tab.
3. In the Bar Styles section, place a check in the Critical Tasks check box.
4. Project changes the color of all critical tasks to red.

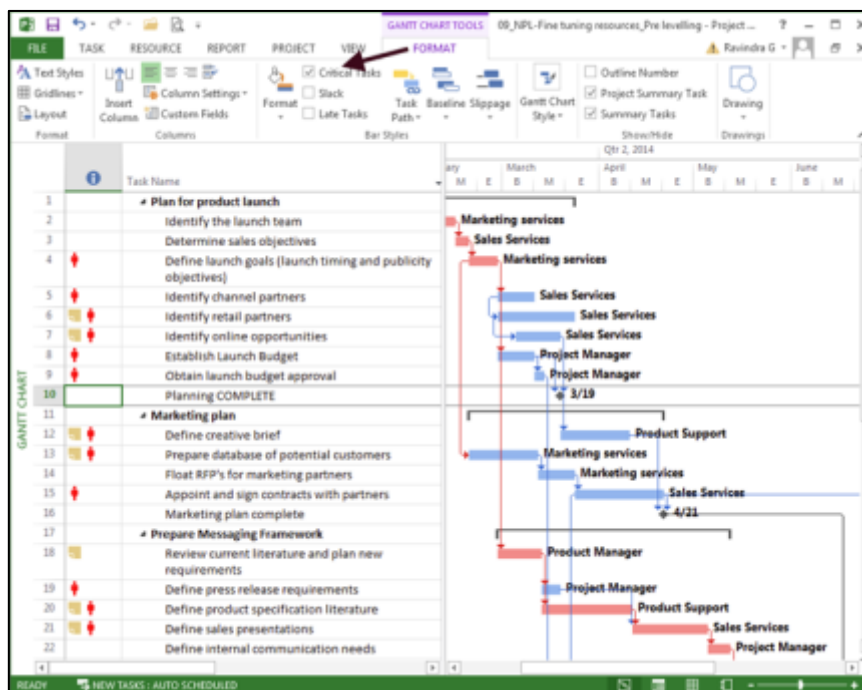


Fig: 5.1: View critical path



Shortening the critical path

1. Shortening the time allotted on the critical path shortens your project's duration.
2. To reduce the time allotted on the critical path, Reduce the duration of critical tasks or Overlap critical tasks to reduce the overall project duration
3. To reduce the duration of critical tasks, you can do any of the following:
 - i. Reassess estimates and use a more optimistic task time. Add resources to a critical task.
 - ii. Remember, however, that the task must not be a fixed-duration task; adding resources to a fixed-duration task does not reduce the time needed to complete the task.
4. Add overtime to a critical task.
5. To overlap critical tasks, you can do one or both of the following:
 - I. Adjust dependencies and task date constraints.
 - II. Redefine a finish-to-start relationship to either a start-to-start or a finish-to-finish relationship.
6. Select a view and filter it to show only critical tasks.
7. Prefer the combination view of the Gantt Chart and the Task Details Form view,
 - I. The top pane graphically presents the project and,
 - II. in the bottom pane, you can display most of the fields that you may want to change for any given task

To display this view, follow these steps:

- a) Display the Gantt Chart view.
- b) Filter the view for critical tasks by clicking the View tab and, in the Data group, selecting Critical from the Filter list.(Fig.5.2)
- c) Create the combination view by clicking the Task tab and, in the Properties group, clicking the Display Task Details button. (Fig.5.3)



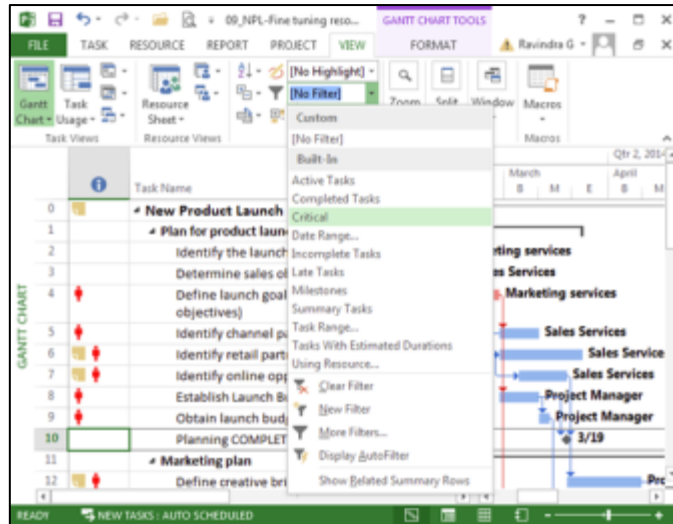


Fig.5.2: Applying Filters

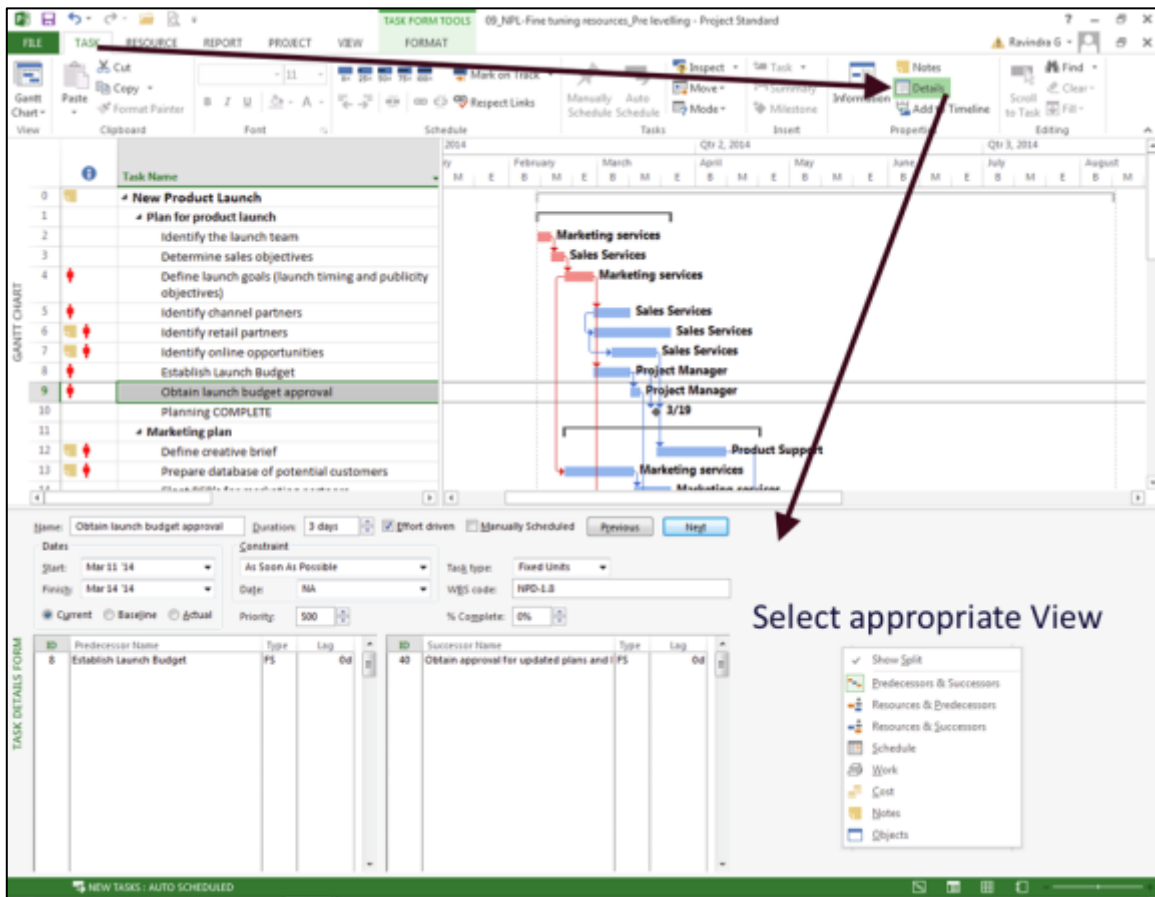


Fig.5.3: Combination View

Adjusting dependencies

By changing task dependencies, you can tighten the schedule and eliminate scheduling conflicts. Remove unnecessary links,

1. Click the Task tab > In the Tasks group, click Inspect to display the pane.
2. Select a task and, in the Task Inspector pane, Project displays the predecessor task that drives the timing of the selected task.

You can view dependencies graphically if you use the Relationship Diagram view in combination with the Gantt view (Figure 5.4). The Relationship Diagram view shows you the selected task and its immediate predecessor and successor. Use the following steps to set up the combined view:

1. Click the Task tab. > Click the Gantt Chart button to display the Gantt Chart view.
2. In the Properties group, click the Display Task Details button. Project splits the view and displays the Task Details Form in the bottom of the window.
3. Click the bottom pane. Right-click the grey bar running down the left side of the bottom pane and choose More Views.
4. Select Relationship Diagram from the More Views window and click Apply.
5. In the upper pane, click each task in your project to review its dependencies graphically in the lower pane.

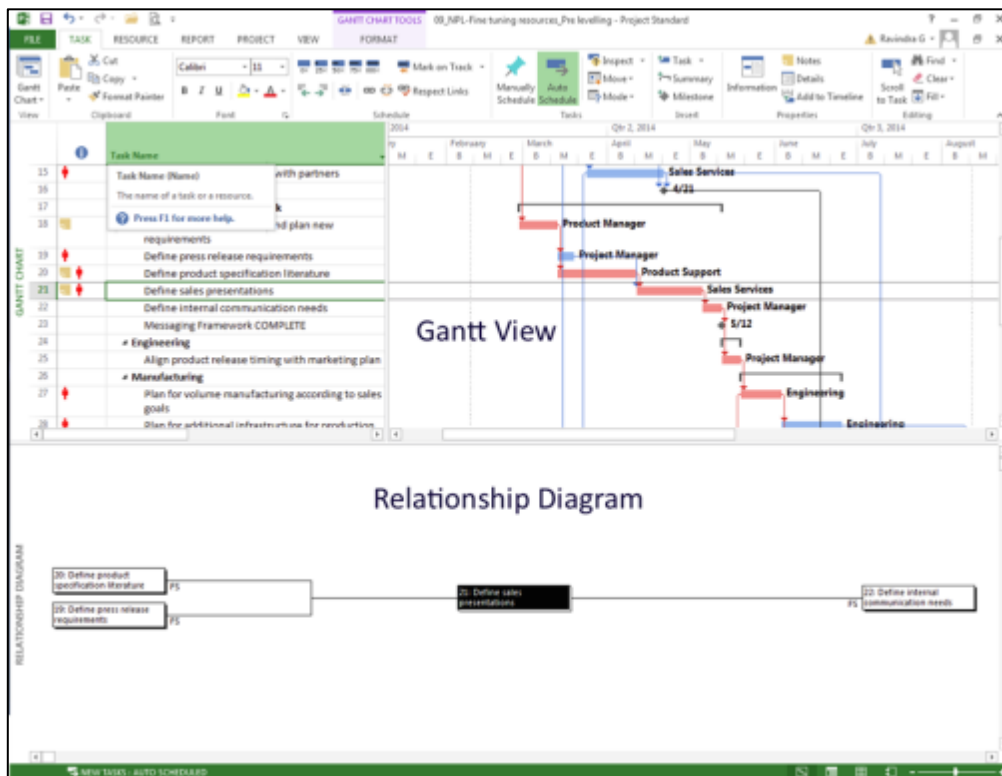


Fig.5.4: Relationship Diagram with Combination View



Splitting a task (Fig.5.5)

Splitting a task can sometimes be the best way to resolve a scheduling conflict. You may not be able to complete the task on consecutive days, but you can start the task, stop work on it for a period of time, and then come back to the task. Splitting a task creates a gap, which you see in the task's Gantt bar. Follow these steps to split a task:

1. Switch to the Gantt Chart view.
2. Click the Task tab and, in the Schedule group, click the Split Task button. The mouse pointer changes shape, and a screen tip tells you how to split a task.
3. Move the mouse pointer along the bar of the task that you want to split. As the mouse pointer moves, dates representing the split date appear in the screen tip.
4. Click when the screen tip shows the date on which you want to split the task.

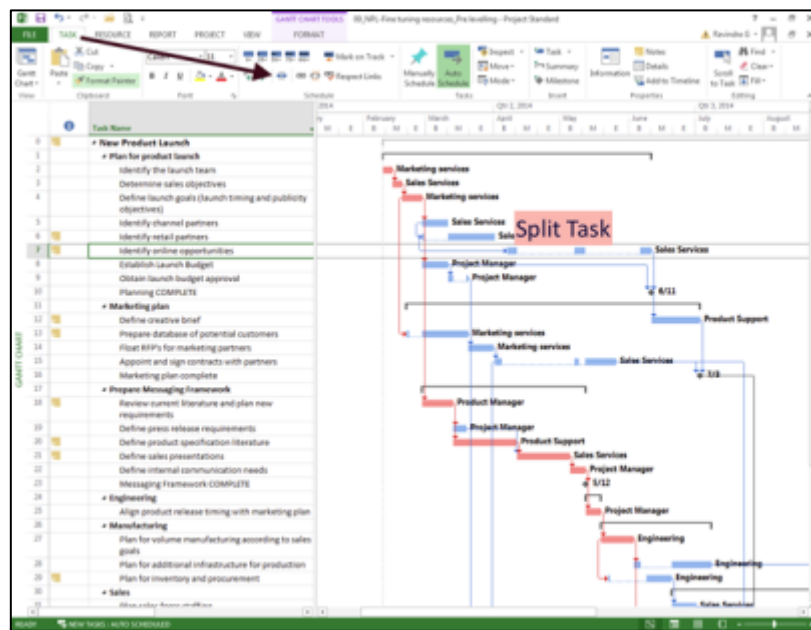


Fig.5.5: Splitting Task

Identifying Scheduling Problems

In addition to views and reports, Project contains two features you can use to help you identify scheduling problems:

1. Warnings and Suggestions
2. The Task Inspector

Working with Warnings and Suggestions

Follow these steps:

1. Click the File tab and, in the Backstage view that appears, click Options.
2. In the Project Options dialog box, click Schedule on the left. (Fig.5.6) You can opt to hide or display warnings and suggestions.
3. In the Schedule Alerts Options section, use the list box arrow to set options for the current project or for all projects.
4. Place a check in the Show Task Schedule Suggestions box.
5. Click OK to save your settings.

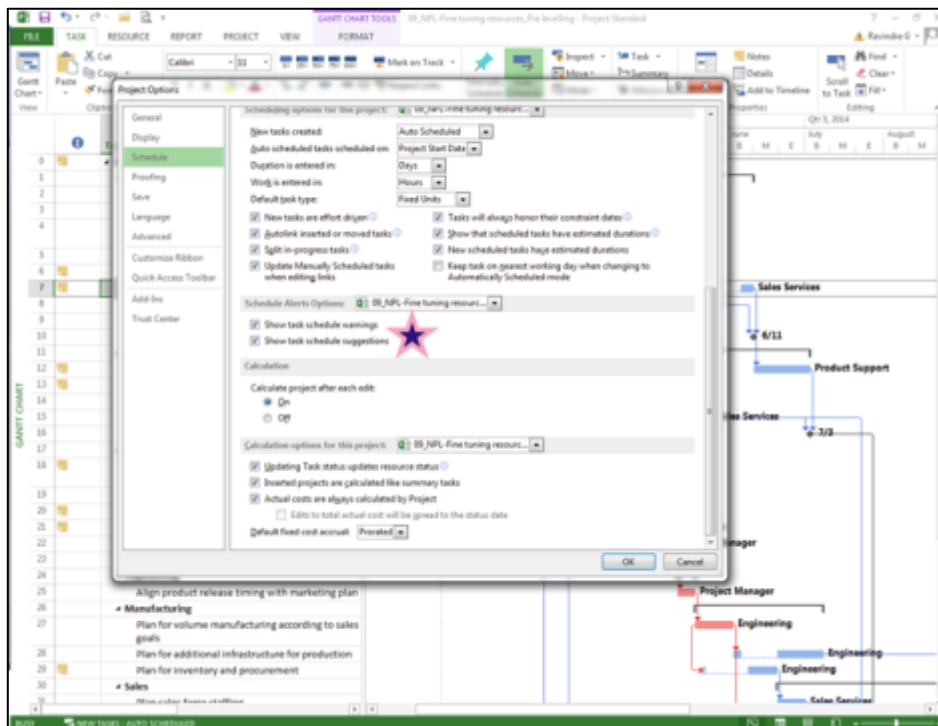


Fig.5.6: Enabling Scheduling Warning



Resolving Scheduling Conflicts

Project provides several techniques you can use to resolve scheduling conflicts. This section covers the following strategies:

1. Adding resources
2. Using overtime - Adding time
3. Making a task inactive
4. Adjusting slack
5. Changing constraints
6. Adjusting dependencies
7. Splitting a task

Adding resources to tasks

1. Adding resources to a task can decrease the time that's necessary to complete it.
2. On the Advanced tab of the Task Information dialog box set the task type to Fixed Units.
3. In this instance, adding resources to the task reduces the duration of the task.
4. Check mark appears by default in the Effort Driven check box of the Task Information dialog box.
5. In Effort Driven option, Project reallocates the work among the assigned resource

Using overtime

Sometimes adding resources may not be an option. In such cases use overtime to shorten a task's duration, this is the next strategy to resolve scheduling problems.

Overtime in Project is defined as the amount of work that is scheduled beyond an assigned resource's regular working hours. Overtime hours are charged at the resource's overtime rate.

To enter overtime, follow these steps: (Fig.5.7)

1. Display the Gantt Chart view by right-clicking the gray bar at the left edge of the Project screen and choosing Gantt Chart.
2. Click the task to add overtime.
3. Click the Task tab, and, in the Properties group, click the Display Task Details button to display the Task Details Form in the bottom pane of the Project window. Information about the task selected in Step 2 appears in the Task Details Form.
4. Click the Task Details Form to make it the active pane.
5. Click the Task Form Tools Format tab.
6. In the Details group, click the Work button to display work fields, including the Ovt. Work field.
7. Fill in the overtime amount for the appropriate resource.
8. Click OK. Project adjusts the schedule.

After you finish entering overtime, hide the Task Details Form clicking the Display Task Details button again.



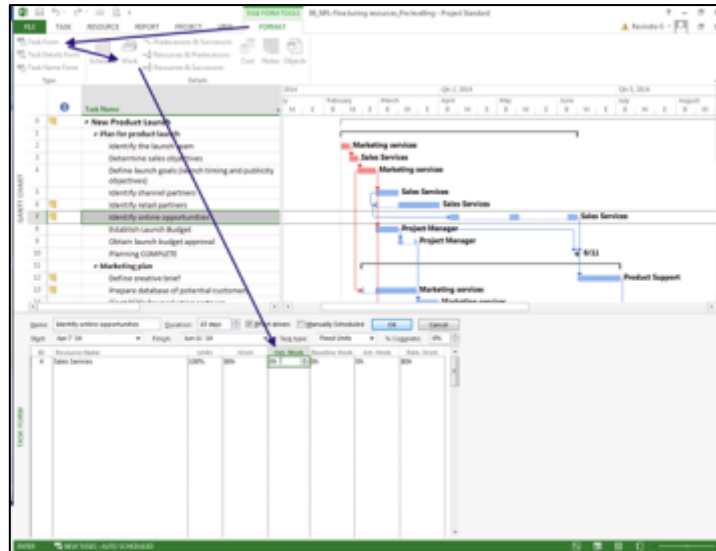


Fig.5.7: Adding Overtime using Combination View

Adding time to tasks

Another way to resolve scheduling conflicts is by increasing the duration of a task. There are several different views, such as the

1. Task Usage view or the Gantt Chart view.
2. Task Information dialog box to complete this task

Adjusting slack

Slack time is the amount of time that a task can slip before it affects another task's dates or the finish date of the project.

Free slack is the amount of time that a task can be delayed without delaying another task. Most projects contain noncritical tasks with slack i.e. tasks that can start late without affecting the schedule.

To avoid creating slack time, use the As Soon As Possible constraint whenever possible. To identify tasks with slack time, follow these steps: (Fig.5.8)

1. Display the Gantt Chart view.
2. Click the Gantt Chart Tools Format tab.
3. In the Bar Styles group, place a check in the Slack box. Project displays thin lines extending out of the right side of the bar of each task that has slack time.

To see a numerical representation of slack, use the Schedule table. Right-click the "Select All" button and select Schedule from the list of tables. Drag the divider bar to the right to view more of the table and see the Free Slack and Total Slack fields



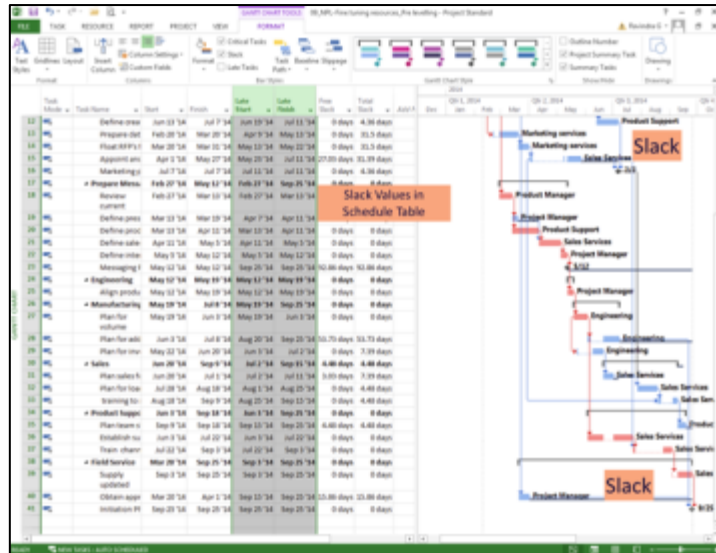


Fig.5.8: Adjusting Slack Values

Changing task constraints

By default, Project uses the Planning Wizard to warn when you are about to take an action that is likely to throw project off schedule. It can actually save effort.

1. To turn it ON again, (Fig.5.9)
2. Click the File tab and, in the Backstage view that appears, click Options.
3. Click Advanced on the left side of the Project Options dialog box and make sure checks appear in the Planning Wizard section.

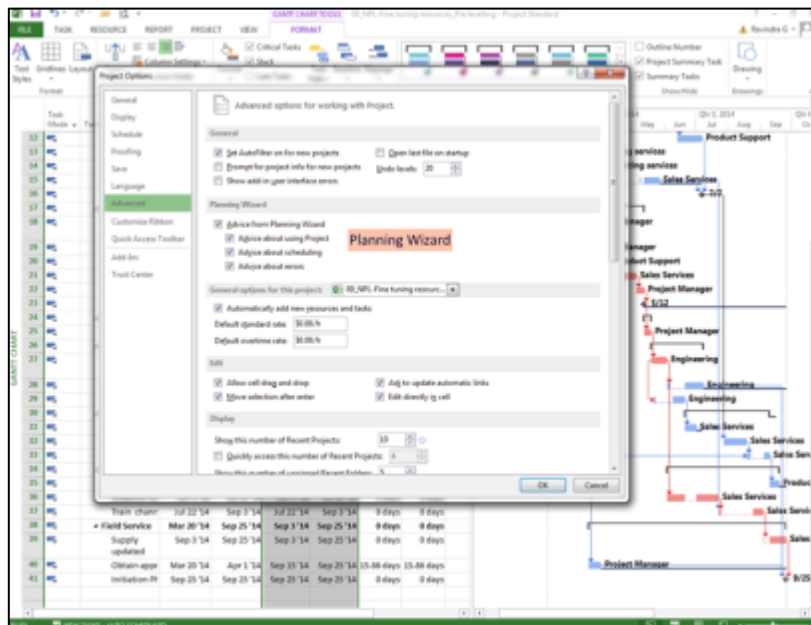


Fig.5.9: Turning ON Planning Wizard

