

Switching from Tracking Mode to Planning Mode When Your Project is Under Way

Introduction

This document describes an approach for rescheduling a project that is under way. First of all you need to perfectly understand what happened when you switched from Planning Mode to Tracking mode the very first time. This will help to understand what's going on when you do the opposite manipulation.

But switching back from Tracking to Planning should never happen!

In theory, Feeding buffers and Project buffer should protect the plan from errors and underestimating some of the tasks.

One of the key steps in a critical chain project definition is the network creation and you were supposed to spend enough time to make sure you have the correct level of detail. Also, all the project contributors should have approved the network.

Buffer management is also a good antidote to micro-management, and you could probably avoid going back in the planning phase and adding lots of tasks.

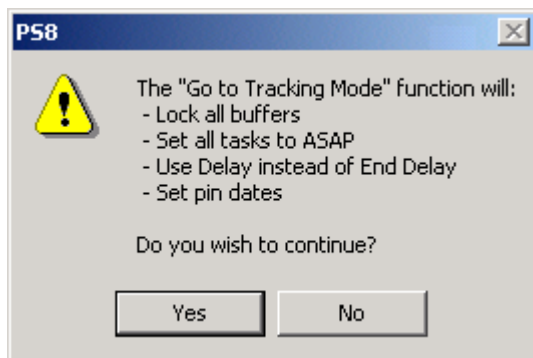
Well, we know what the reality is...

Switching to Tracking Mode for the First Time

In Planning Mode, PS8 schedules all the tasks ALAP from the Target Finish. The Network is created in a reverse mode, then resource contentions are resolved, the Critical Chain is identified and buffers are finally inserted. One of the main impacts on your schedule is to define a project start date.

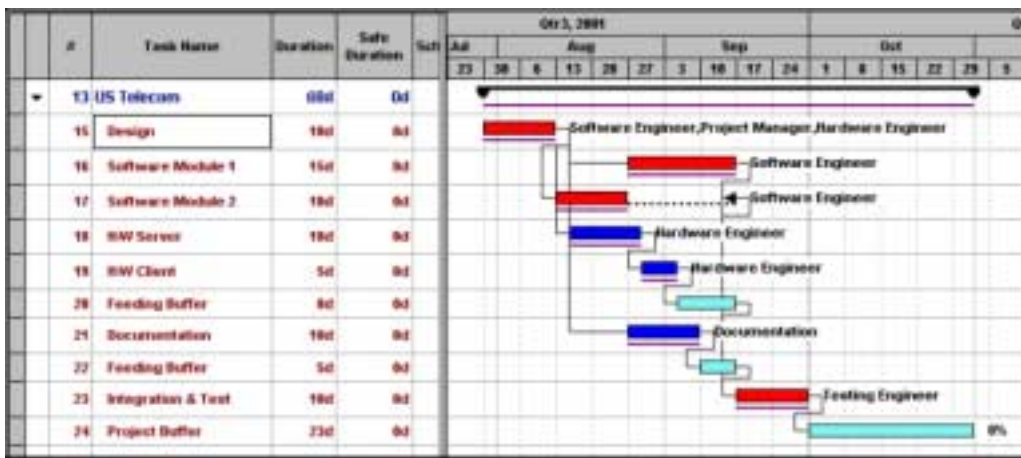
In tracking mode, the schedule is in a "Forward" direction. The main consequence of changing task remaining duration and resolve contention will now be to cause buffer incursion and eventually change the project Finish date (not the Target Finish) if the Project Buffer incursion is over 100%.

When switching from the Planning mode to Tracking Mode, you will get the following message:



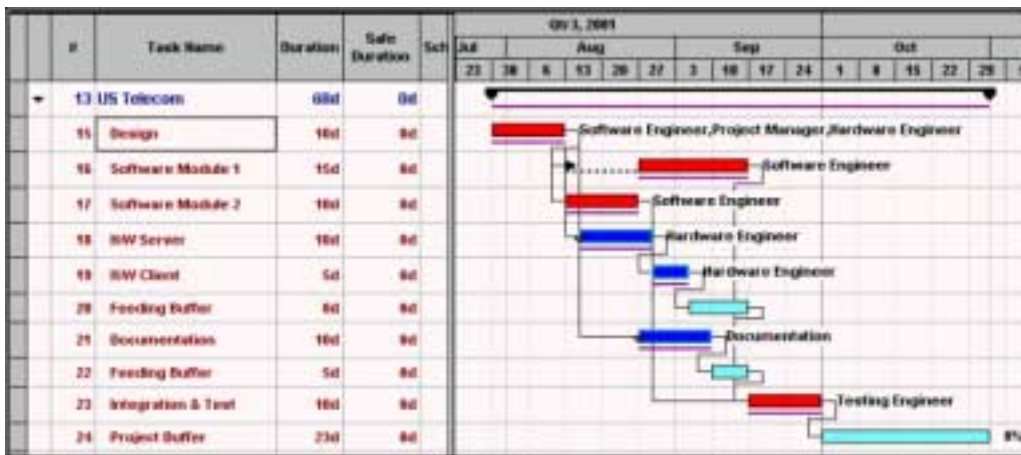
- *Lock all buffers*, is necessary for being able to cause incursion.
- *Set all tasks ASAP* permits the next task to be available in case of an early finish date.
- *Use Delay instead of End-delay* means that you will only be able to move a non-completed task from the left to the right. End delay was created because of resource contentions. In other words, when resolving resource contention, PS8 delays the task from its end to resolve the contention.
- *Set pin date*, will prevent non critical chain tasks to be moved when switching from ALAP to ASAP.

In the following picture (Planning Mode) note the gap between task #15 and its successor task #21. This gap is due to the ALAP status of task #21. Note also the End-delay on task #17.



In the following picture (Tracking Mode), the plan is now ASAP but the gap between task #15 and its successor task #21 is maintained by the pin date (represented by an orange triangle). If you remove a Pin date, the task will not be hold in place anymore and will be scheduled ASAP.

Note also the End-delay on task #17 has disappeared, but there is now a Delay on task #16.



Tracking your Plan

There are many ways to update your plan with PS8. The method and the level of details you will choose mostly depend on your goals.

Even if the Critical Chain theory focuses on the remaining duration only, you may want keep some historical data on, for instance, when a task actually began? Did we have to interrupt the work on the task? How much work (hours) were consumed on a task, or what is the actual cost of the task? Etc.

All these actual data are not mandatory for a day to day update of the plan and buffer management, but they will be very helpful for estimating and planning your future projects. Also, this may be required if you want to perform Earn Value Analysis on a Critical Chain type of schedule.

Preparing the Update

- Switch the project to Tracking Mode: **Tools/Critical Chain/Go to Tracking Mode.**
- Save a Baseline: **Tools/Baseline/Save**
- Add Critical Chain Resource links: **Tools/Critical Chain/Add Critical Chain Resource links.**

This command is optional. In some cases, it will prevent creating new resource contentions on the critical chain after increasing the remaining duration of a critical chain task. Also, if a task on the critical chain finishes earlier, the next task will be scheduled to start ASAP. For more details on this command, choose **PS8 Help Topics** from the **Help** menu and look for "Add Critical Chain Resource Links" in the Index. If you choose to add critical chain resources links, they will be automatically added in the network diagram view.

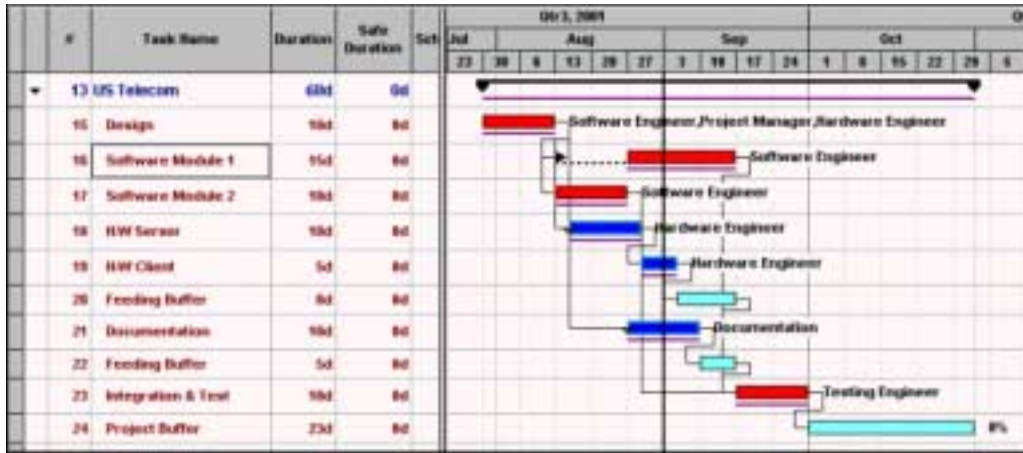
Attention: if you remove existing critical chain resource links, the task position may change according to their other explicit dependencies.

- Define and display the Project As of Date.

You can define in the Project List View or by choosing the **Tools/Multi-project/ Set As of**

Date... command. 

To display the As Of Date across your Gantt Chart, double click the time axis, choose the **Vertical Line** Tab and check the appropriate radio button.



Detailed Tracking

You can enter information in the Task Template/Tracking Tab or you can edit your Gantt or Task Spreadsheet to show the following fields:

- Task Name
- Duration
- Scheduled Start
- Scheduled Finish
- Actual Start
- Completed Date
- Remaining Duration
- Actual Finish

Question 1: Is the task started?

Answers:

Yes -> Enter its Actual Start.

Note:

1. Once an Actual start is entered, you cannot move the task anymore. The Actual Start is the strongest date constraint available in PS8. It will overwrite any other start date in your schedule because it is meant to represent the reality of the work.
2. If the first task of the project started earlier than it was scheduled, you first need to change the **Project Start** date in the Project List View.

No -> Delay the task up to the **As Of Date** or later if needed. Use the cursor in the Gantt View to delay the task where needed.



Question 2: Is the task finished?

Answers:

Yes -> Enter its **Actual Finish**. You are done. Skip question 3 below.

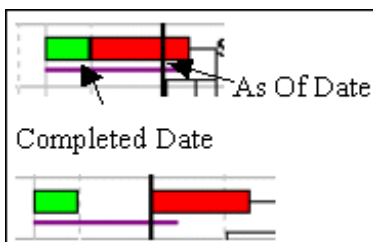
No -> Continue to question 3 below.

Question 3: Did the task get interrupted before the As Of Date?

Answers:

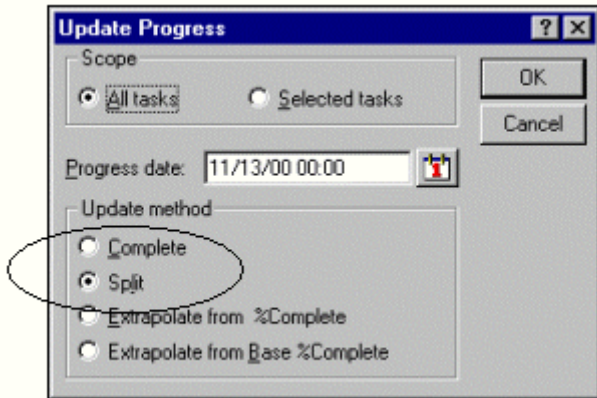
Yes -> If the task's current **Schedule Finish** date is earlier than the date the task was interrupted, reset the task's **Schedule Finish** date to the date the task was interrupted (note that this new **Schedule Finish** date is only temporary--the "correct" value will be entered later). Then enter the date the task was interrupted into the **Completed Date** field, shift the task's Gantt bar's **Remaining Duration** to start on the date the task resumes (either with the mouse or with the Update Progress operation with Split option), and adjust the task's finish date (by either entering a **Schedule Finish**, extending the task's Gantt bar's **Remaining Duration** (right edge) with the mouse, or entering a new estimate for **Remaining Duration**).

No -> Adjust the task's finish date by either entering a **Schedule Finish** or extending the task's Gantt bar's **Remaining Duration** (right edge) with the mouse, and then enter the **As Of Date** into the **Completed Date** field.



It is important that you update every task in the schedule. You can use the "automatic" update tools provided with PS8 to either complete or delay the tasks in the plan.

Choose **Tools/Update Progress**

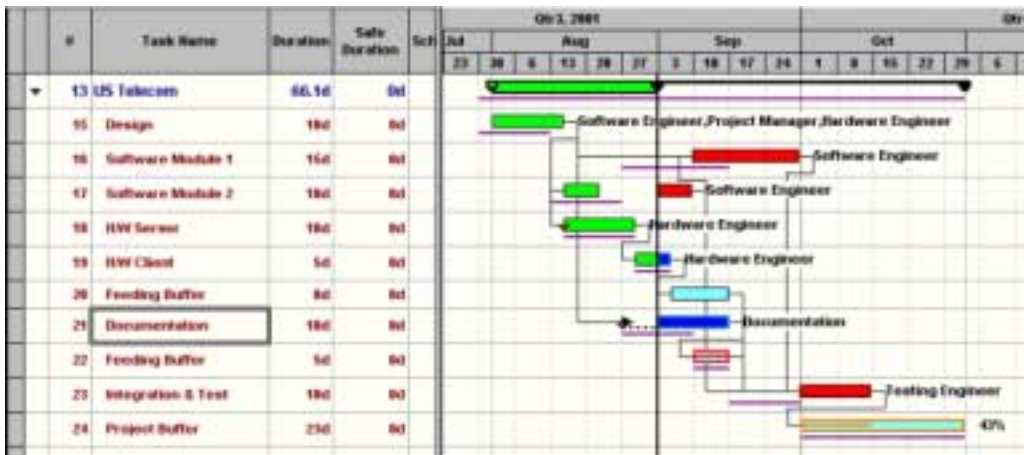


The current As Of Date will be used as the Progress date, but you can specify a different progress date as needed.

- Choose the **Complete** option to complete all tasks or a subset of tasks until the progress date
- Choose the **Split** option to delay the remaining portion up to the Progress Date.

Here is an example of a partially completed project:

- Task #15 and #18 are completed.
- Task #17 was started, interrupted and then rescheduled after the As Of Date. This caused Task #16 to move because of a resource link.
- Task #19 is on schedule but not completed.
- Task #21 was rescheduled after the As Of date.





- If you are tracking resource actuals, enter actual units and costs, either as lump-sum values for each resource assignment through the Task Template > Assignments tab, or in a time-distributed manner through the Distribution Spreadsheet view.
- If you are tracking work performed, collect from your resources their estimates of the percentage of budgeted work that they accomplished for each of their assignments, and enter these values into the assignments' Base Unit %Complete field. (Tracking work performed is an advanced concept. Note that PS8 provides alternate methods for entering work performed data. Please refer to PS8's online help or User's Guide for more information about tracking work performed.)

Switching Back to Planning Mode

Note: *You should switch back to Planning mode only if you find that the original plan was significantly inaccurate and you want to basically "start all over" by re-identifying a new critical chain and re-inserting new buffers. If you can perform everything you need (like adding/deleting tasks, or changing the remaining durations of tasks, for example) in Tracking mode, and the changes are not significant enough to warrant the identification of a new critical chain and the insertion of new buffers, then we generally recommend that you stay in Tracking mode and do not switch back to Planning mode.*

If you need to reschedule your plan, you may want to go back to Planning mode. Then you may add/delete tasks, change the remaining duration of existing tasks and even change your target finish date.

It is very likely that this will have an impact on your current buffers size and therefore, the first step you want to perform is to dissolve existing non completed buffers.

Then you will switch back to Planning mode and rework your plan before you insert new buffers.

Dissolving Buffers

- Select the "Buffer" filter and set it active.
- Then select all the buffers and click the Dissolve task button in the secondary toolbar.
- Clear the task filter.

You can create or edit your Buffer filter as follows:

This filter will only display non-completed buffers. Pay special attention to the logic at the bottom of the dialog box.

Edit Filter [?] [X]

Filter name:

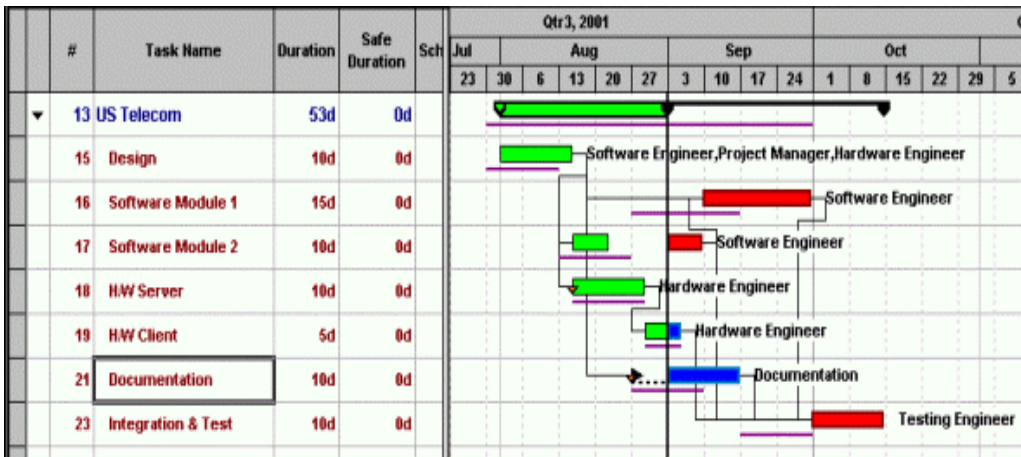
[Scissors] [Folder] [Copy]

Field	Operator	Value(s)	ID
Task Type	=	"FEEDING BUFFER"	A
Task Type	=	"PROJECT BUFFER"	B
% Complete	<	1	C

Logic:

Use above spreadsheet row IDs and any of the following: AND OR NOT XOR ()

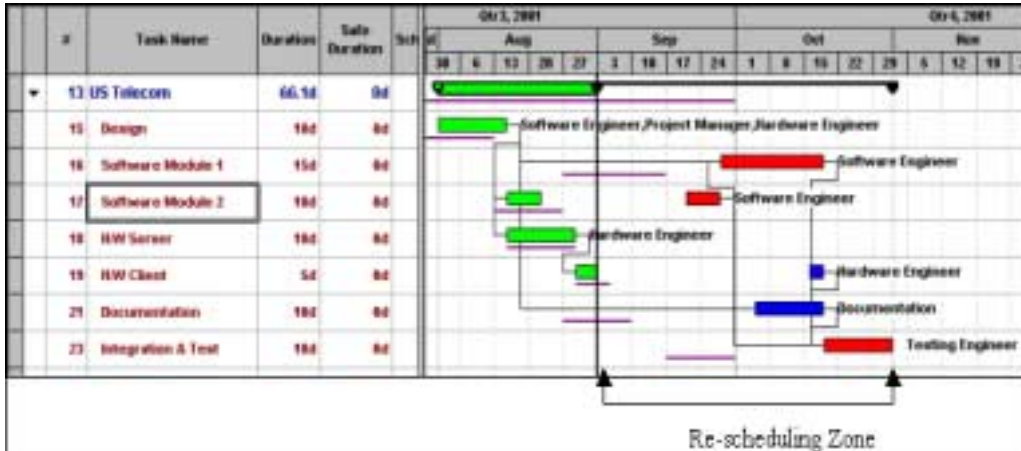
Here is the project after dissolving the buffers:





Switching to Planning Mode

When switching to Planning mode from the Tracking mode, all the non-completed tasks and non-completed portions of tasks will be set ALAP and therefore rescheduled towards the Target finish of the project with respect to their existing dependencies.

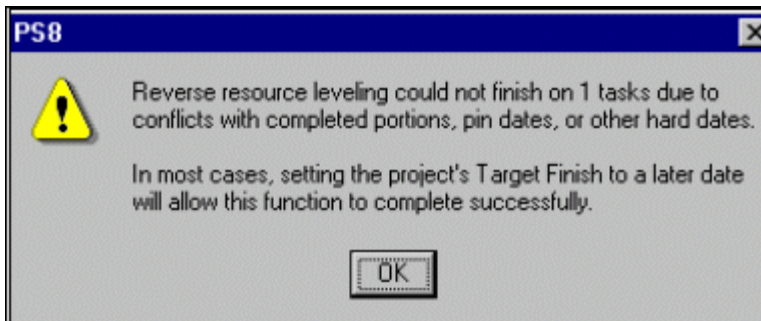


Using the Rescheduling Zone

You are now in a planning mode and you must follow the exact same steps as when you originally created the schedule. This includes:

- Creating/Deleting Tasks
- Creating/Deleting Network Dependencies
- Assigning Resources
- Estimating Duration (and Safe Duration)
- Resolving Resource Contention
- Identifying the Critical Chain
- Inserting Buffers.

However, this should be done within the Rescheduling zone. This zone is defined between your current project As Of Date and your current Target finish. For instance, in some cases, resolving resource contention may not work because your new schedule doesn't fit in your rescheduling zone.





The only way you can increase your rescheduling zone is to change your Target Finish.

Once your new schedule is ready, don't forget to synchronize it against the other projects, before you switch again to the Tracking mode.