

Using effort-driven tasks

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Related Document(s)

Assigning resources to tasks www.projectlearning.net/pdf/X3.1.pdf

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Introduction

How often have you wondered why work, duration and unit values change when resources are added to or taken away from tasks? Why is it that you can assign resources one way and the schedule is easy to interpret, and then you assign the same resources differently and the schedule seemingly makes no sense?

The 'Effort Driven' flag is usually the first place that you look. It seems a pretty straightforward option after all.

These tips and tricks illustrate how you can use the Effort Driven field to your advantage, creating a more realistic schedule of work against tasks in the process.

Background

Along with task types, a task's effort driven status has a significant influence upon the schedule of tasks within a Microsoft Project plan. If a task has just one assignment against it, then the total work for the task and the assigned work for the resource will be identical. If there is more than one resource assigned to a task, the total work will be shared between the resources. The way that this is shared depends upon the task's effort driven status.

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Effort driven tasks defined

When an initial assignment is made, the scheduling formula calculates the total work for the task. As tasks in Microsoft Project are effort driven by default, any subsequent assignments share the total work between them.

Initial assignment:

The screenshot shows the task form for 'Effort driven task'. The duration is 10 days, starting on Feb 2 '04 and finishing on Feb 13 '04. The task is assigned to Resource 1 with 100% units and 80h of work. The Gantt chart shows a 10-day bar for Resource 1.

ID	Resource Name	Units	Work
1	Resource 1	100%	80h

Subsequent assignment:

The screenshot shows the task form for 'Effort driven task' after a second resource is added. The duration is now 5 days, starting on Feb 2 '04 and finishing on Feb 6 '04. The task is assigned to Resource 1 and Resource 2, each with 100% units and 40h of work. The Gantt chart shows a 5-day bar for Resource 1 and Resource 2.

ID	Resource Name	Units	Work
1	Resource 1	100%	40h
2	Resource 2	100%	40h

The duration of the task has now halved, as the task's total work (defined by the initial assignment) is now shared as assigned work for the two resources assigned to the task:

Before: 80 hours = 100% (assigned units) of Resource 1 x 10 days task duration.

After: 80 hours = 100% of Resource 1 x 5 days duration PLUS
100% of Resource 2 x 5 days duration.

Hints

- The task form is a useful place to make / edit assignments as it can display BOTH work AND unit values.
- Any further assignments will share the total work and reduce the duration even more.
- Assigning material resources will have no effect upon an effort driven task as material resources do not incur work.
- Effort driven assumes that resource work (and skill) is interchangeable. Could 10 people do 80 hours total work in one day?

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Simultaneous effort driven assignments

If a task with no assignments has more than one resource assigned to it simultaneously, Microsoft Project will use the scheduling formula to calculate the total work for the task thus:

Before OK:

ID	Resource Name	Units	Work
1	Resource 1		
2	Resource 2		

After OK:

ID	Resource Name	Units	Work
1	Resource 1	100%	80h
2	Resource 2	100%	80h

The duration of the task has now remained the same. This is because the initial assignment is for BOTH Resource 1 AND Resource 2. Therefore the assigned work for each resource is 80 hours and the task's total work is 160 hours.

Hints

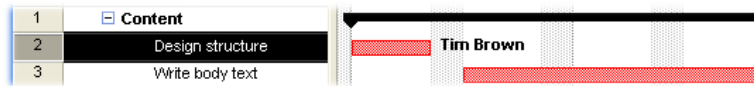
- Any subsequent assignments will share the 10 days total work and consequently the task's duration will reduce. For example; 160 hours / 3 resources would be 53.33 hours for each resource and a task duration of 6.67 days.
- Aim to keep task durations in full units (weeks / days / hours) as this makes the project schedule easier to understand.
- When assignments are created or edited in a task form, the scheduling formula calculates the assignment values when OK is clicked, or when the upper pane is made active.


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Switching effort driven on and off

The fastest way to change a task's effort driven status is to use the Task Information dialog:

a) Select a task to change:



b) Click on the Task Information button ().

c) On the Advanced tab, clear the Effort driven check box and confirm with OK.

A screenshot of the 'Task Information' dialog box, 'Advanced' tab. The 'Name' field contains 'Design structure' and 'Duration' is '5d'. The 'Effort driven' checkbox is checked and circled in red. Other fields include 'Deadline: NA', 'Constraint type: As Soon As Possible', 'Task type: Fixed Units', 'Calendar: Monday to Saturday', 'WBS code: 1.1', and 'Earned value method: % Complete'. Buttons for 'Help', 'OK', and 'Cancel' are at the bottom.

Hints

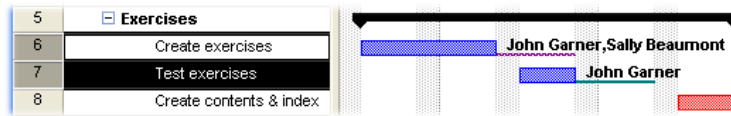
- Effort driven statuses can also be set within a task form (Window..Split).
- Establish the effort driven status for tasks BEFORE assigning any resources to them.

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Multiple effort driven changes

Effort driven status changes can be made to several tasks at once. The simplest way to achieve this is:

- a) Select the tasks to change (with Click and CTRL+Click):



- b) Click on the Task Information button ().

- c) Within the Multiple Task Information dialog, select or clear the effort driven check box, confirmed with OK.

A screenshot of the 'Task Information' dialog box. The 'General' tab is selected. The 'Name' field contains 'Design structure' and the 'Duration' is '5d'. The 'Effort driven' checkbox is checked and circled in red. Other fields include 'Deadline' (NA), 'Constraint type' (As Soon As Possible), 'Constraint date' (NA), 'Task type' (Fixed Units), 'Calendar' (Monday to Saturday), 'WBS code' (1.1), and 'Earned value method' (% Complete). There are 'Help', 'OK', and 'Cancel' buttons at the bottom.

Hints

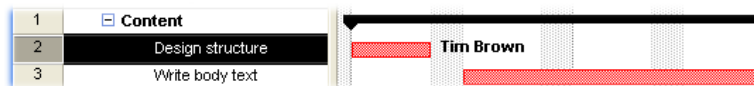
- If effort driven status changes are done frequently, or need to be reviewed, add the effort driven field as a column within a table.

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Increasing work with multiple assignments

When tasks are set as non effort driven, assignments are seen as independent of one another. Adding subsequent assignments will use the scheduling formula to calculate assigned work for each assignment independently and consequently increase the task's total work. To see the effect of this:

- a) Select a non effort driven task:



- b) To view work, units and duration values, choose Split from the Window menu to open up a task form:

A screenshot of the 'Task Form' for the task 'Design structure'. The form includes fields for Name, Duration (5d), Start (Feb 2 '04), Finish (Feb 6 '04), Task type (Fixed Units), and % Complete (0%). Below these fields is a table with columns: ID, Resource Name, Units, Work, ID, Predecessor Name, Type, and Lag. The table contains one row: ID 3, Resource Name 'Tim Brown', Units 100%, and Work 40h. The 'Units' and 'Work' columns are highlighted with a red box.

- c) Assign another resource to work on the task, confirmed with OK.

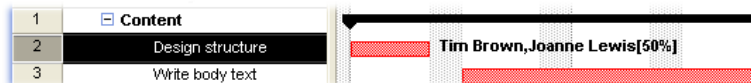
A screenshot of the 'Task Form' for the task 'Design structure'. The form is identical to the previous one, but the 'Resource Name' column in the table now shows a dropdown menu with 'Joanne Lewis' selected. The dropdown menu is highlighted with a red oval.

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- d) As this resource's max units are 50%, her assignment will be calculated by the scheduling formula to be 20 hours = 5 days duration at 50% assigned units. Tim's assignment remains unaltered.

The screenshot shows the 'Task Form' for a task named 'Design structure'. The 'Duration' is set to '5d'. The 'Start' date is 'Feb 2 '04' and the 'Finish' date is 'Feb 6 '04'. The 'Task type' is 'Fixed Units' and '% Complete' is '0%'. The 'Effort driven' checkbox is unchecked. Below the form is a table with two columns: 'Resource Name' and 'Work'. The table shows two resources: 'Tim Brown' with 40h of work and 'Joanne Lewis' with 20h of work. The 'Units' column is highlighted with a red box, showing 100% for Tim Brown and 50% for Joanne Lewis.

ID	Resource Name	Units	Work
3	Tim Brown	100%	40h
4	Joanne Lewis	50%	20h



Hints

- If changes are made to assigned work and assigned units within a task form, enter them BOTH before OK as the schedule is only recalculated once OK has been clicked.
- If the assign resources dialog is used instead of a task form, a smart tag will be invoked to determine the most appropriate assignment to make. Smart tags are only available within Microsoft Project 2002 / 2003