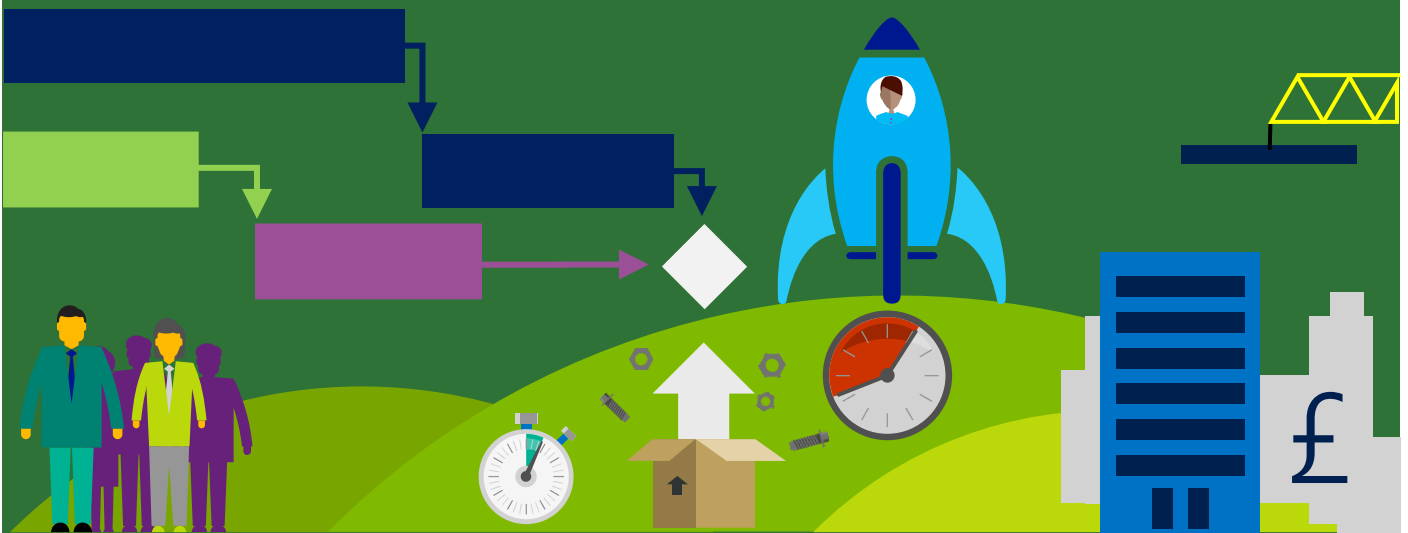




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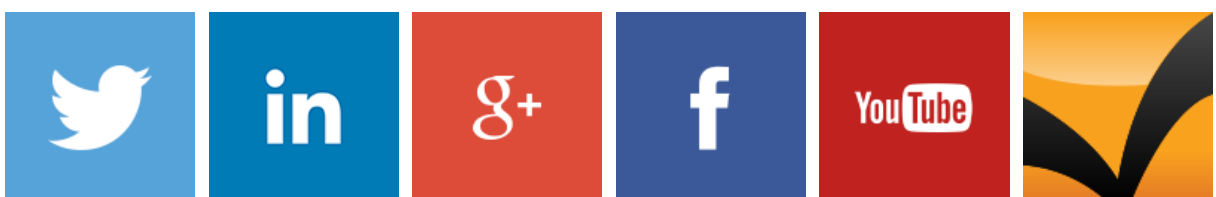
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Managing and Balancing Resources and Costs

Recap on Dependencies and Constraints

Predecessors and successors

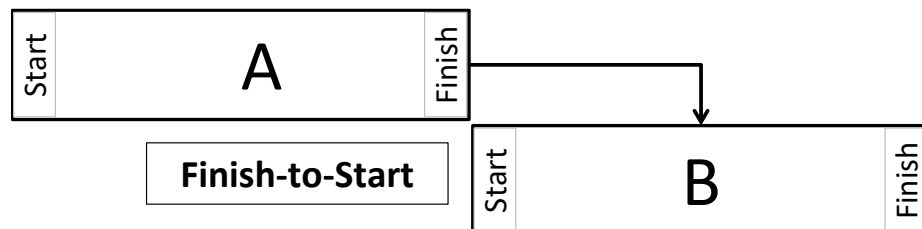
When tasks are connected they take on the following roles:

Predecessor is the task whose start or finish drives the start or finish of the successor

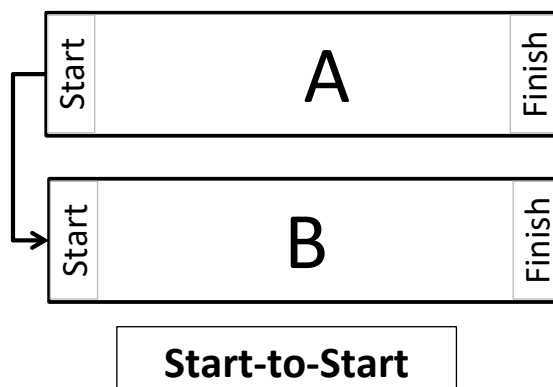
Successor is the task whose start or finish is driven by the predecessor task

There are four types of dependency that can link Predecessors and Successors. You choose the type that best describes the relationship between them:

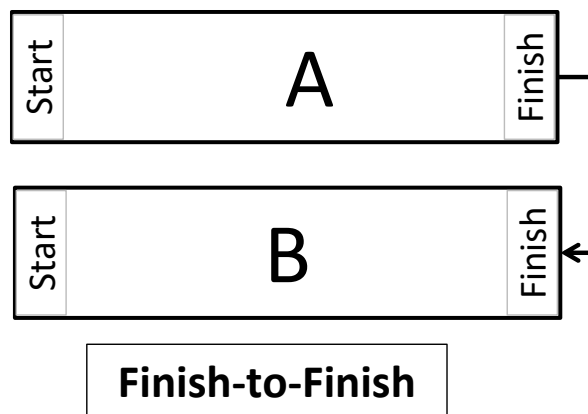
Finish to Start (FS) - **Finish** of Predecessor drives **Start** of Successor



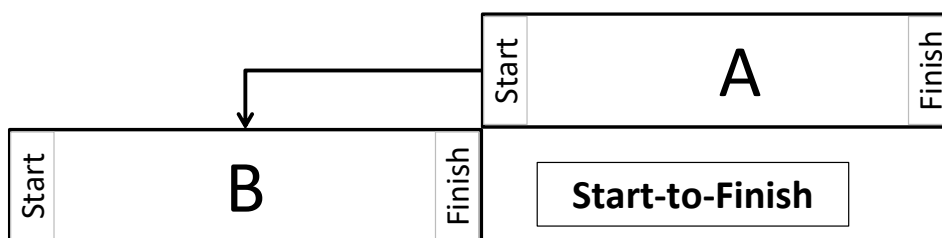
Start to Start (SS) - **Start** of Predecessor drives **Start** of Successor



Finish to Finish (FF) - **Finish** of Predecessor drives **Finish** of Successor



Start to Finish (SF) - **Start** of Predecessor drives **Finish** of Successor



Constraints

Use constraints to model dates that affect the start or finish of your tasks. In addition to the constraint and date you set, Project will also take into account other factors such as calendars, resource availability and dependencies when calculating where to place the task on the chart.

All automatically scheduled tasks have a constraint. By default, this is set to As Soon As Possible (ASAP). This means that unless another task or link gets in the way Project will position the task as early in the plan as it can.

Constraints can be modified by:

Double clicking on the name of the task to be constrained then from the advanced tab choose the constraint type and if appropriate add a date:

As Late As Possible (ALAP) the task will take place as late it can

Finish No Earlier Than (FNET) models a task that is not able to finish before a certain date, but could be delayed beyond it

Finish No Later Than (FNLT) is used to describe tasks that are not able to finish beyond a date, but are able to finish earlier

| | |
|-------------------------------------|---|
| Must Finish On (MFO) | positions the task's finish on the specified date |
| Must Start On (MSO) | as MFO but positions the task's start on the specified date. |
| Start No Earlier Than (SNET) | the task starts on or after the specified date but no earlier |
| Start No Later Than (SNLT) | for activities that must start on or before a specified date. |

Working with Resources

Resources are best defined using the **Resource Sheet**, which can be accessed via the View ribbon, Task ribbon, Resource ribbon, the Quick Access Toolbar or the View bar.

| | Resource Name | Type | Material | Initials | Group | Max. | Std. Rate | Ovt. | Cost/Use | Accrue | Base | C |
|---|----------------------|------|----------|----------|-------|------|------------|----------|----------|----------|----------|---|
| 1 | Business Advisor | Work | | B | | 100% | £15.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |
| 2 | Peers | Work | | P | | 100% | £55.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |
| 3 | Lawyer | Work | | L | | 100% | £740.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |
| 4 | Government Agency | Work | | G | | 100% | £46.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |
| 5 | Manager | Work | | M | | 100% | £36.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |
| 6 | Owners | Work | | O | | 100% | £55.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |
| 7 | Accountant | Work | | A | | 100% | £250.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |
| 8 | Information Services | Work | | I | | 100% | £39.00/hr | £0.00/hr | £0.00 | Prorated | Standard | |

Creating work and material resources

Each resource is entered on its own line as follows:

Basic resource properties

| | |
|-------------|---|
| Name | Enter an appropriate name for the resource. This can either be the name of an individual, a job role or a team name for generic resources. |
| Type | Resources can be either work , material or cost . Use the Work resource type for people and equipment whose availability is capped (Max Units) so you can see if they become over-allocated. Use the material resource type if the resource is a consumable. |

Use the cost resource type to track variable items such as expenses. The rate for the resource is not stored in the resource sheet. Each time cost is assigned to a task you can enter the cost that applies just to that task.

| | |
|-----------------------|--|
| Material Label | Only applicable for material resources. This is the quantity that the resource is purchased in. For example paint might be purchased in litres. |
| Initials | An alternative to having the full name beside bars on the GANTT chart |
| Group | Can be used to categorise resources appropriately for reports, filters and grouping. Typical uses are team names, departments, subcontractors etc. |
| Max Units | The maximum number of units of the resource. 100% generally means one individual; 300% 3 individuals. (Work type only) |
| Standard Rate | Cost of standard work, can be recorded as Hourly/Daily/Weekly/Monthly/Yearly e.g. £200/d for a daily rate |
| Overtime Rate | Cost of resource when work is specified as overtime. (work type only) |
| Cost/Use | A one off cost associated with the resource. Is charged every time resource is allocated to a task. Can also be used in addition to Standard Rate. |
| Accrue At | Determines if the resource costs are charged at the start of the task; throughout the task, or at its end. |
| Base Calendar | The base calendar which determines the resource's working time. (Work Type only) |
| Code | A general code that can be used to identify the resource or resource group. A typical example would be a cost centre code. |

Creating cost resources

Cost resources (such as travel or accommodation) are created as a type of resource in the Resource Sheet.

| | i | Resource Name | Type | Mat |
|----|---|----------------------|------|-----|
| 1 | | Business advisor | Work | |
| 2 | | Peers | Work | |
| 3 | | Lawyer | Work | |
| 4 | | Government agency | Work | |
| 5 | | Manager | Work | |
| 6 | | Owners | Work | |
| 7 | | Accountant | Work | |
| 8 | | Banker | Work | |
| 9 | | Information services | Work | |
| 10 | | Manager 2 | Work | |
| 11 | | Travel Expenses | Cost | |

Work

Material

Cost

Cost resources are used when you want to apply (to a single task) multiple separate miscellaneous costs that aren't changed by the amount of work performed on the task. For example, an executive working on a new project proposal might have three separate cost resources applied to him or her: one for airfare, one for food expenses, and one for hotel room expenses. In this way, several "fixed" costs can be applied to a single task. Unlike with work resources and material resources, cost rates cannot be applied to cost resources.

After you create the cost resource, you assign it to tasks using the Assign Resources dialog box. It is at this point that you type in the amount:

Working with multiple calendars

Assign Resources

Task: Interview owners of similar businesses

☐ Resource list options

Filter by:

☐ All Resources More Filters...

☐ Available to work 0h

Add Resources

Resources from New Business.mpp

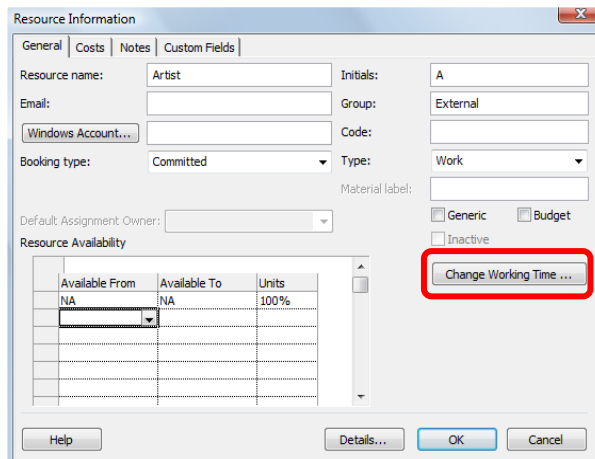
| | £150.00 | Resource Name | R/D | Units | Cost |
|-------------------------------------|---------|----------------------|-----|-------|---------|
| <input checked="" type="checkbox"/> | | Owners | | 1.00 | £0.00 |
| <input checked="" type="checkbox"/> | | Travel Expenses | | | £150.00 |
| <input type="checkbox"/> | | Accountant | | | |
| <input type="checkbox"/> | | Banker | | | |
| <input type="checkbox"/> | | Business advisor | | | |
| <input type="checkbox"/> | | Government agency | | | |
| <input type="checkbox"/> | | Information services | | | |
| <input type="checkbox"/> | | Lawyer | | | |
| <input type="checkbox"/> | | Manager | | | |
| <input type="checkbox"/> | | Manager 2 | | | |

Hold down Ctrl and click to select multiple resources

Assign Remove Replace... Graphs... Close Help

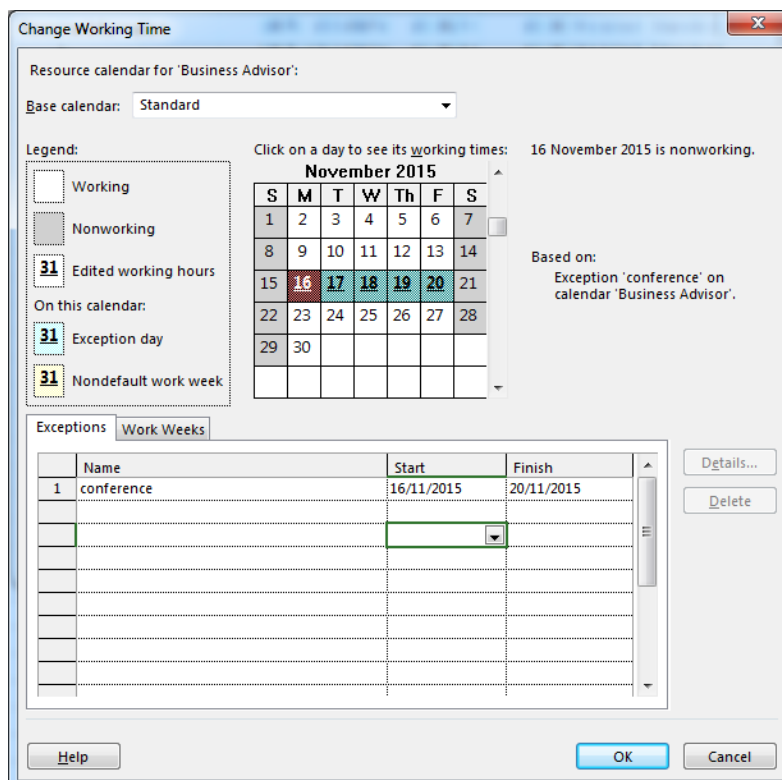
Assigning and amending a resource calendar

1. If necessary, in the Resource Sheet Base Calendar column, select the relevant Base Calendar:
2. Double click the Resource to display the Resource Information Dialog Box and click the **Change Working Time** button



The Resource Information dialog box is shown with the 'General' tab selected. It contains fields for Resource name, Email, Windows Account, Initials, Group, Code, Booking type, Type, and Material label. There are also checkboxes for Generic, Budget, and Inactive. A table for Resource Availability is visible, showing Available From, Available To, and Units. The 'Change Working Time...' button is highlighted with a red rectangle.

3. Edit on the Exceptions or Work Weeks tabs



The Change Working Time dialog box is shown with the 'Exceptions' tab selected. It displays the Resource calendar for 'Business Advisor' and the Base calendar: Standard. A legend on the left shows Working, Nonworking, Edited working hours, Exception day, and Nondefault work week. A calendar grid for November 2015 is shown, with 16 November 2015 highlighted as nonworking. A table at the bottom lists exceptions, with the first entry being 'conference' from 16/11/2015 to 20/11/2015.

| Name | Start | Finish |
|--------------|------------|------------|
| 1 conference | 16/11/2015 | 20/11/2015 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Note: the name of the underlying Base Calendar is displayed beneath the name of the Resource. Any subsequent changes you make to a Base Calendar will be automatically reflected in any dependant Resource Calendars.

To access the additional resource properties, double click on the resource in the resource sheet and then modify the properties in the Resource Properties Dialog.

**General
(Availability)**

Allows user to specify different availability levels for different time periods. For example, a resource might only be available for 50% of its time for the month of March. This can be modelled by selecting the start and end date, together with the level of availability during this period.

Costs

Use this to:

1. Model inflation. If the resource's costs are likely to change during the course of the project, simply select the date of the change in a new row on the cost sheet, and then enter the new costs. The new costs can be entered directly, or as an increase on the previous figure e.g. +10% would increase the cost by 10%.
2. Add additional cost rates. A typical use would be for a resource that is paid different rates for different tasks. For example, a resource might be paid one rate for training and another for consulting. To add the rate simply select one of the additional tabs (B-E) on the cost sheet and enter the rates as appropriate.

Notes

Used to add freeform notes or attach documents relating to the resource.

Assigning Resources to Tasks

There are two stages of resource allocation. The Initial allocation, where resources are first allocated to a task; and then any changes made to that allocation, for example adding extra resources, or removing resources.

Initial allocation

The initial allocation of resources involves specifying the resources necessary to complete each task in the duration specified.

Procedure

3. On the View tab make sure the Gantt chart view is active
4. Next tick the box called Details in the Split View group. By default, this shows Task Form view below the Gantt Chart
5. Next click on the task which is to be resourced
- 6.
7. Then in the lower Task Form pane, under resources:
- 8.
9. Select each resource required for the task
10. Then Click OK (Note all required resources must be selected before OK is clicked)

Allocating multiple resources

When multiple resources are allocated to a task Project will assume that each resource must work on the task for the specified duration. So if two resources are to work on a 2 day task, then each resource must work on it for 2 days. If both resources can work at the same time, then the total duration of the task will remain unchanged. If, however, they are working at different times then the duration of the task will likely change.

Example

A two day task starts on Monday and finishes on Tuesday. Two resources are then allocated to it.

Resource 1, works both Monday and Tuesday, thus finishing its contribution within the 2 day duration. Resource 2 however is on holiday on Monday, and therefore starts its 2 day contribution on Tuesday, finishing Wednesday.

Therefore, the task starts on Monday with resource 1 and finishes on Wednesday with resource 2; thus having a new duration of 3 days.

Modifying allocations

When modifying a resource allocation, it is necessary to understand that you are changing one of three variables, *units of resource*, *task duration* or *work*.

When you change the units of resource, either the duration of the task will change, or the amount of work will change, and the three variables can be represented in the following formula: -

$$\underline{\text{Duration}} \times \underline{\text{Units of Resource}} = \underline{\text{Work}}$$

So, increasing the units of resource would require either the duration to decrease and work to remain fixed; or for Work to increase and duration to remain fixed.

The key is to be able to specify which option applies.

Procedure

1. Select the Gantt chart view
2. Split the screen to show the details pane from the View ribbon
3. Select the task to be modified.
4. If you want the duration to alter change the task type to "fixed work" or leave it as Fixed Units with Effort Driven check box ticked.
5. If you want work to alter change the task type to "fixed duration" and remove the tick from the Effort Driven check box.
6. Click OK to commit any changes you have made to Task Type
7. Next add or remove resources as required
8. Click OK once more

The screenshot displays the Microsoft Project interface. At the top, a Gantt chart shows a task bar for 'Define business vision' starting on Thursday, 01/09/11, and ending on Thursday, 01/09/11. Below the Gantt chart, the 'Task Name' list shows the task hierarchy: 'New Business' (127 days), 'Phase 1 - Strategic Plan' (26 days), 'Self-Assessment' (3 days), and 'Define business vision' (1 day). The 'Define business vision' task is selected. The bottom pane shows the 'Task Information' dialog box for this task. The 'Name' field contains 'Define business vision'. The 'Duration' is set to '1d'. The 'Start' date is 'Thu 01/09/11 08:00' and the 'Finish' date is 'Thu 01/09/11 17:00'. The 'Task type' dropdown is set to 'Fixed Units', and the 'Effort driven' checkbox is checked. The 'Resource' list shows 'Manager' with 1 unit and 8 hours of work. The 'Task type' dropdown menu is open, showing options: 'Fixed Duration', 'Fixed Units' (selected), and 'Fixed Work'.

Effort Driven Scheduling

Assigning Additional Resources to a Task

If additional resources are assigned to a task that already has resources on it. MS Project does not assume the work is shared between existing resources and the new resource. If you are adding resource to help lift the load from those already working on the task you may wish to apply **effort-driven scheduling** before adding the new resource. Effort driven scheduling keeps the work value unchanged but distributes it across all resources.

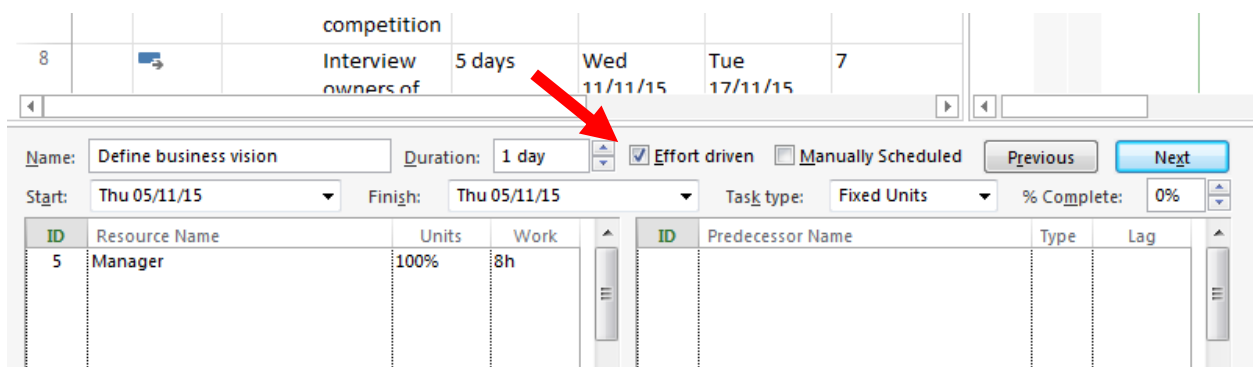
When Effort driven is ticked the work is completed sooner. Duration is decreased. For example, if painting the walls of a room takes 1 day with one person, adding an extra person will reduce that time to half a day.

There are two issues here:

1. Some task durations do not respond to extra resources. It is unlikely that a meeting will go more quickly if more people get involved.
2. Even if a task's duration does respond to extra resources, it is unlikely to be a simple linear relationship. To take an extreme example, if it takes 1 person 1 day to paint a 100 square meter room, then according to effort driven scheduling, 100 people could do it in 3.8 minutes. This is clearly unrealistic as 100 people would be unable to fit into a room of that size!

Effort driven scheduling can be switched on for any task:

From the split screen view tick the Effort Driven scheduling box and click OK before adding the additional resource.



Effort Driven Scheduling can also be set so that it is always switched on for new tasks. To do this go to the file menu and choose **Options, Schedule**.

Find the section called "Scheduling Options for this Project"

1. Choose **All New Projects** from the drop down
2. Then add a tick in **New tasks are effort driven** check box
3. Click OK

Task Types

You can control the way your task schedule is managed by selecting task types. By using task types, you can make one of the following three variables—duration, work, or units— unchangeable in scheduling calculations. Setting any of the three task variables as fixed provides an extra measure of control over the project schedule. Since the duration of each task is determined by the formula $\text{Duration} = \text{Work} / \text{Units}$, you can choose that part of the equation that Project calculates by setting the **Task type**.

You can set any of the three task variables as fixed using the **Task type** drop-down list.

Fixed Units A task with a fixed unit value. This is the default **Task type**. Assigning additional resources to a task reduces the task's duration. For example, if one resource is assigned to complete the task of stuffing envelopes, adding another resource will shorten this task's duration.

Fixed Duration A task with a fixed value of duration. Any changes made to the work or to the assigned resources does not impact the task's duration. Assigning additional resources to this task type decreases the individual unit values for resources. For example, if a delivery is made from one site to another and only one truck is necessary to complete the task, assigning additional resources to the task does not decrease the task's duration.

Fixed Work A task in which the amount of work to be completed is fixed. If changes are made to the task's duration or to the number of

assigned resources, there is no impact on work. Assigning additional resources shortens the duration of the task for this task type. If a task has a task type of **Fixed Work**, you cannot change the **Effort driven** setting for that task.

Finalising the Plan

Reviewing the schedule

Once your project plan has been set up with all the required tasks durations, resources assignments and task relationships... your project plan will be ready to use to track the actual progress that takes place. At that point you will also be able to set a Baseline for the project keeping all the statistics for later analysis.

Before setting a Baseline it would be good to review your schedule and examine certain areas of your plan to make sure that everything is in place to ensure a successful outcome for your project. Here is a checklist of areas that need to be reviewed before proceeding:

Final Plan Checklist

1. Check that your **Calendar** settings are correct (all **exceptions** entered).
2. Check that the correct calendar has been assigned to the project.
3. Ensure that all resource calendars have been updated with the correct working times and **annual leave** exceptions entered for each resource.
4. Check that all **Summary Tasks** have been inserted at the correct level.
5. Check that all **Milestone** tasks have been inserted into your project.
6. Check all **Durations** are as planned.
7. Check that all tasks have **Assignments**.
8. Check that the **predecessor** and **successor** links in the project are correct.
9. If there are any tasks that can be performed simultaneously consider changing the link if the successor to a **Start-to-Start** or **Finish-to-Finish** relationship. You can edit these in the Predecessors column of the Task Entry table or by selecting Task Information (Double Click the successor).
10. Choose which tasks should be set to **Effort Driven**. (Select Task Information, Advanced tick Effort Driven. These tasks will reduce in

duration if an additional resource is assigned and increase duration if one of several resources is unassigned.

11. Check if any tasks should be set to **Fixed Duration**. Select Task Information, Advanced, Task Type.
12. Check for any **over allocated** resources and adjust the schedule accordingly.
13. Check that all **Recurring Tasks** such as meetings etc. have been inserted.
14. Check that all required **Constraints** have been set. Task Information, Advanced, Constraint Type.

You are now ready for the next step of setting your Baseline and then on to tracking the progress of your project. Before doing that that, let's take a look at working with resource over allocations.







Leveling Resource over-allocation

Resource leveling is the process that ensures resource demand does not exceed resource availability.

There are two stages to this process; first identify specific over allocations, and then find the best way to resolve them.

Identifying over allocations

Go to the Gantt chart. All over allocations of resources will be shown in the Indicators column by a red icon (a jelly bean shaped person).

| | | | | |
|-------------|----|---|---|--------------------------|
| GANTT CHART | 18 | | | Estimate t |
| | 19 |  |  | Assess ne availabilit |
| | 20 | |  | Evaluate r market sh |
| | 21 |  |  | Determini requireme |
| | 22 | |  | Review pe |

Resolving over allocations

There are 6 general approaches to resolving over allocations:

1. Increase the resource's working time for the period in question
2. Swop the resource for another resource who is available

3. Delay the task until the resource has availability
4. Temporarily suspend work on a task (splitting)
5. Contouring resource allocation
6. Changing the logic of the program (change relationships, lag time)

Increasing the working time

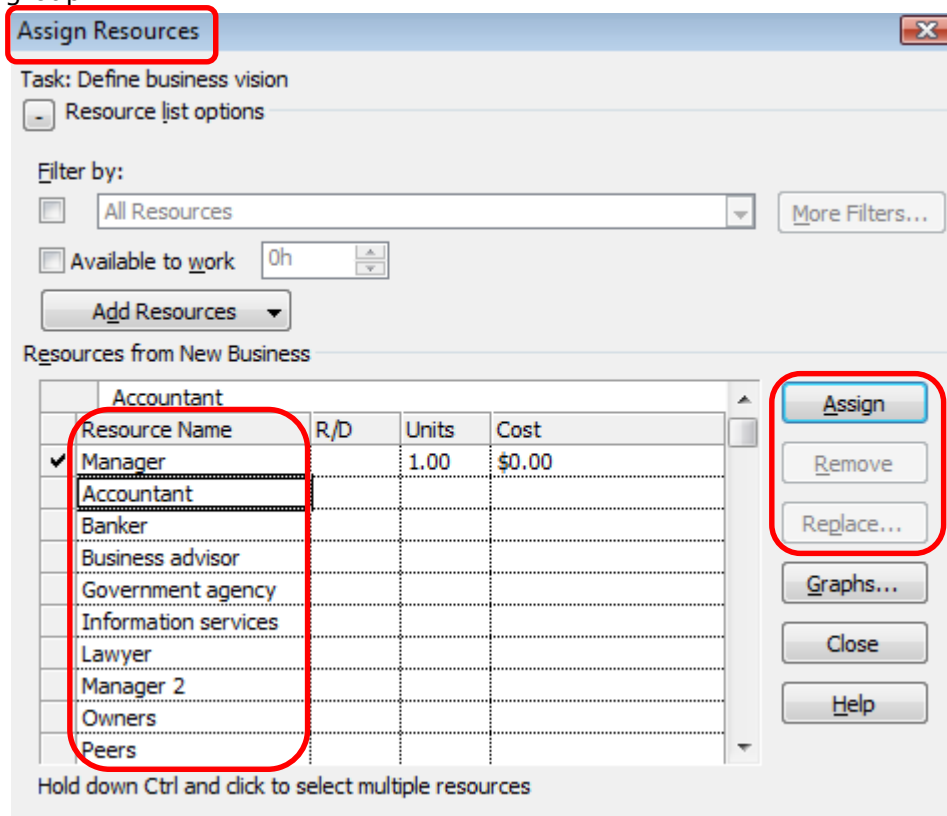
1. Go to the Resource sheet
2. Double click on the resource
3. On the general tab alter the resource's availability by:
 - a. First, specify a start and end date and then,
 - b. Change the percentage availability to a point where they can cover all the available work.

For example, if a resource normally works 8 hours in a day, increasing their availability to 150% would mean that on the days specified they are available for 12 hours.

Swapping the resource

Select the relevant task in the Gantt chart

Click on the "Assign Resources" button on the Resource ribbon in the Assignments group.

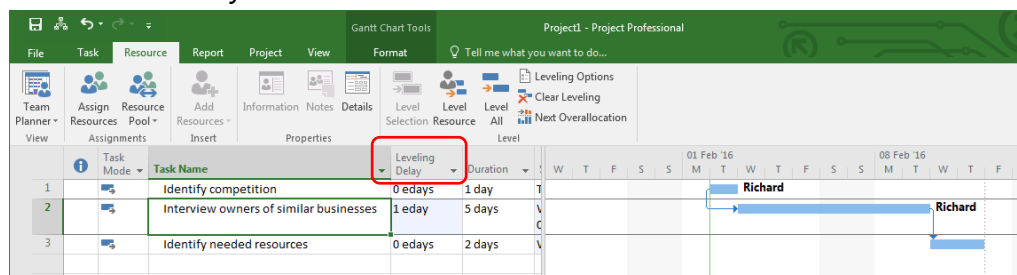


1. Select the resource to be replaced
2. Click replace
3. Select the new resource
4. Click OK

Delaying the task

This involves using the levelling delay field. A levelling delay is a delay specifically associated with resourcing issues. We are saying that while the task can physically start at time X, we are delaying it to time Y as only then do we have the necessary resources available. The key point is it is easily identified and, in the event more resources become available, removed.

1. Go to the Gantt chart view
2. Add in the "Levelling Delay" column
3. Select the task to be delayed
4. Specify the duration of the delay in the levelling delay field. When inserted on the Task table the duration is measured in edays (elapsed time which includes non-working time). When inserted on the Resource Usage sheet it is entered in days.

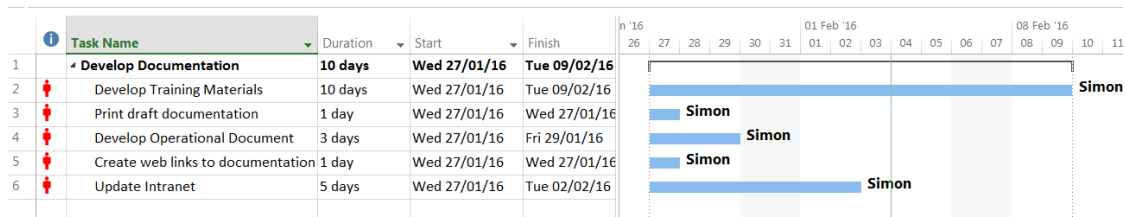


In this example entering a levelling delay of 1day resolves the over allocation of the resource assigned to tasks 1 and 2. In this case the same can be achieved can be achieved by selecting Resource, Level Resource.

Resource levelling is a complex topic and covered in detail in the Project Advanced course. Selecting Resource, Level All automatically adds levelling delays to tasks rescheduling them to resolve any over allocations. Here is an exercise to help understand more about resource levelling.

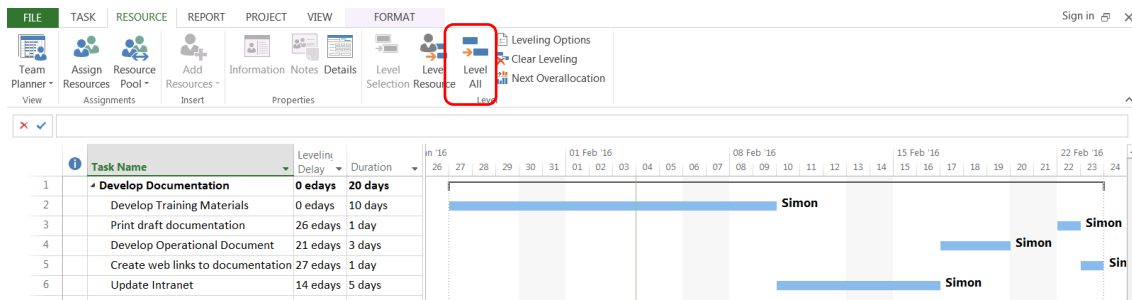
Exercise - Levelling

Open the project **Developing Docs**. Check the project start date is 27/01/16. Assign one resource (Simon) to all tasks.



There are no links between tasks so all tasks show the over allocation icon.

Now see what happens when selecting **Resource, Level All**.



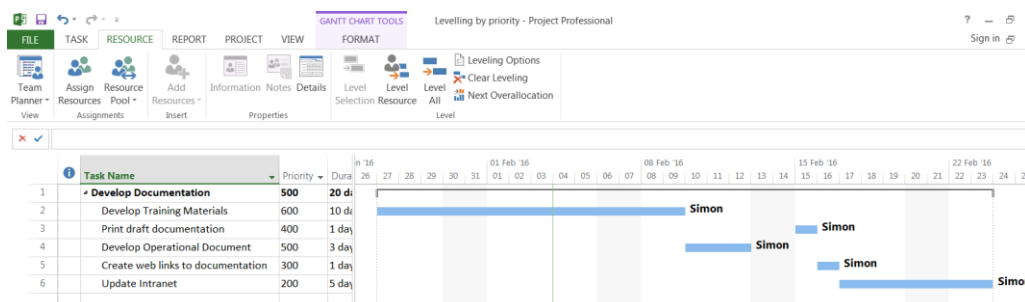
What results after levelling is that the tasks are rescheduled and the over allocation is resolved. Note that the longer tasks are scheduled ahead of shorter tasks.

Insert the Leveling Delay field to see that the Project has delayed the rescheduled tasks. (Update Intranet is delayed 14edays or 10 working days).

Level by Priority

In order to have more control over which tasks are leveled you set a priority value for each task. First insert the **Priority** field into the Gantt view (to the left of duration). You will see the Priority value is normally set to 500. It can be changed from the lowest priority of 0 to the highest value of 1000. Set tasks that need to be performed first to a high priority.

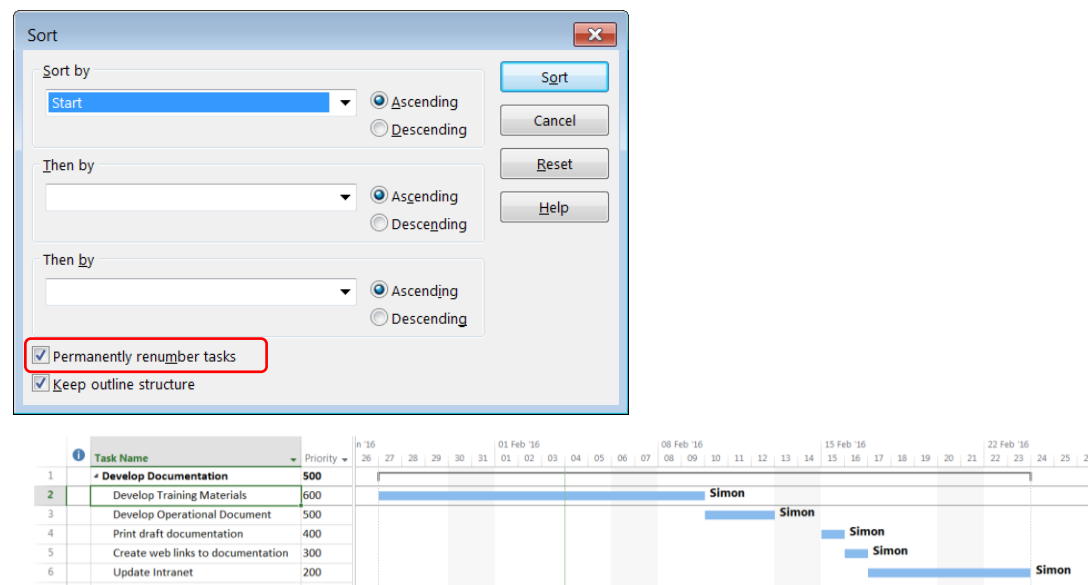
Enter the priority values shown below and then click **Level All**. This schedules the tasks in priority order. Notice Update Intranet is scheduled last as it has the lowest priority.



Sort by Start Date

Finally, after levelling by priority it makes sense to sort the project in order of start date. To do this select **View, Sort, Start Date**.

If you want this to be the final task order, then you can permanently renumber the Task IDs. To permanently renumber the Task ID select **View, Sort, Sort By**. Sort by Start and click **Permanently renumber tasks**.

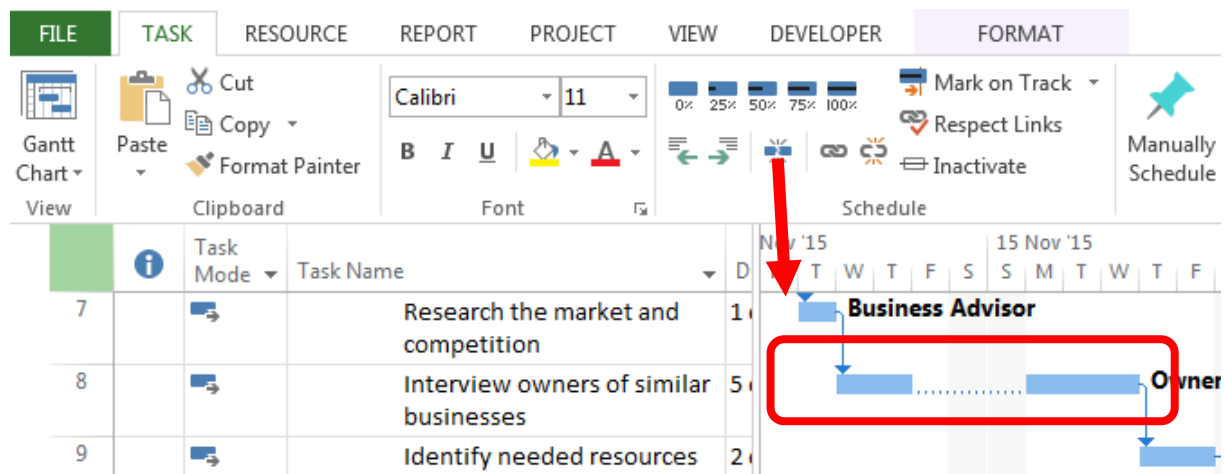


After sorting, save this project as **Developing Docs Plan**.

Splitting tasks

This allows you to start work on a task, and then suspend work for a period of time while the resource works on another task. To split a task:

1. Click on the Split Task button on the Task ribbon in the Schedule group
2. Then position the mouse pointer on the task where the split should start



- Click once to place a single day split (default) or click and drag to the right, along to the point where the split is to finish

Resource contouring

It is possible to specify the number of hours per day that a resource works on a task.

For example; a resource works an 8-hour day. It is allocated to two concurrent tasks and will initially be set to work 8 hours on the first task, and 8 hours on the second; thus working 16 hours in an 8-hour day. It may be however that the resource need only work 4 hours per day on task 1 and 4 hours per day on task 2, thus resolving the over-allocation. This is known as resource contouring.

- To contour a resource allocation, switch to the Resource Usage: from the View ribbon choose Resource Usage
- Then manually enter the daily hours worked alongside each resource's assignment

| | | | 04 Sep '11 | | | | | | | | | | | | | | 11 Sep '11 | | | | | | |
|--------------------|---------|---------|------------|---|---|---|---|---|---|---|---|---|---|---|---|---|------------|--|--|--|--|--|--|
| Resource Name | Work | Details | F | S | S | M | T | W | T | F | S | S | M | T | W | T | | | | | | | |
| Identify needed | 8 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Identify needed | 8 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Summarize ope | 8 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Assess market | 16 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Assess needed | 16 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Choose capital | 16 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Commit capital | 0 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Establish utilitie | 24 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Provide furnitur | 32 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Move in | 8 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Start up the bus | 0 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| 6 Owners | 40 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Interview owner | 40 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| 7 Accountant | 112 hrs | Work | | | | | | | | | | | | | | | | | | | | | |
| Identify operatin | 16 hrs | Work | | | | | | | | | | | | | | | | | | | | | |

Changing Project logic

Sometimes it is not possible to resolve over-allocation using the above methods. Under these circumstances it may be necessary to re-examine;

Task Dependencies

Task Constraints

In addition, if the project is to be completed on schedule, the only solution may be to bring in additional resources.

Tracking progress

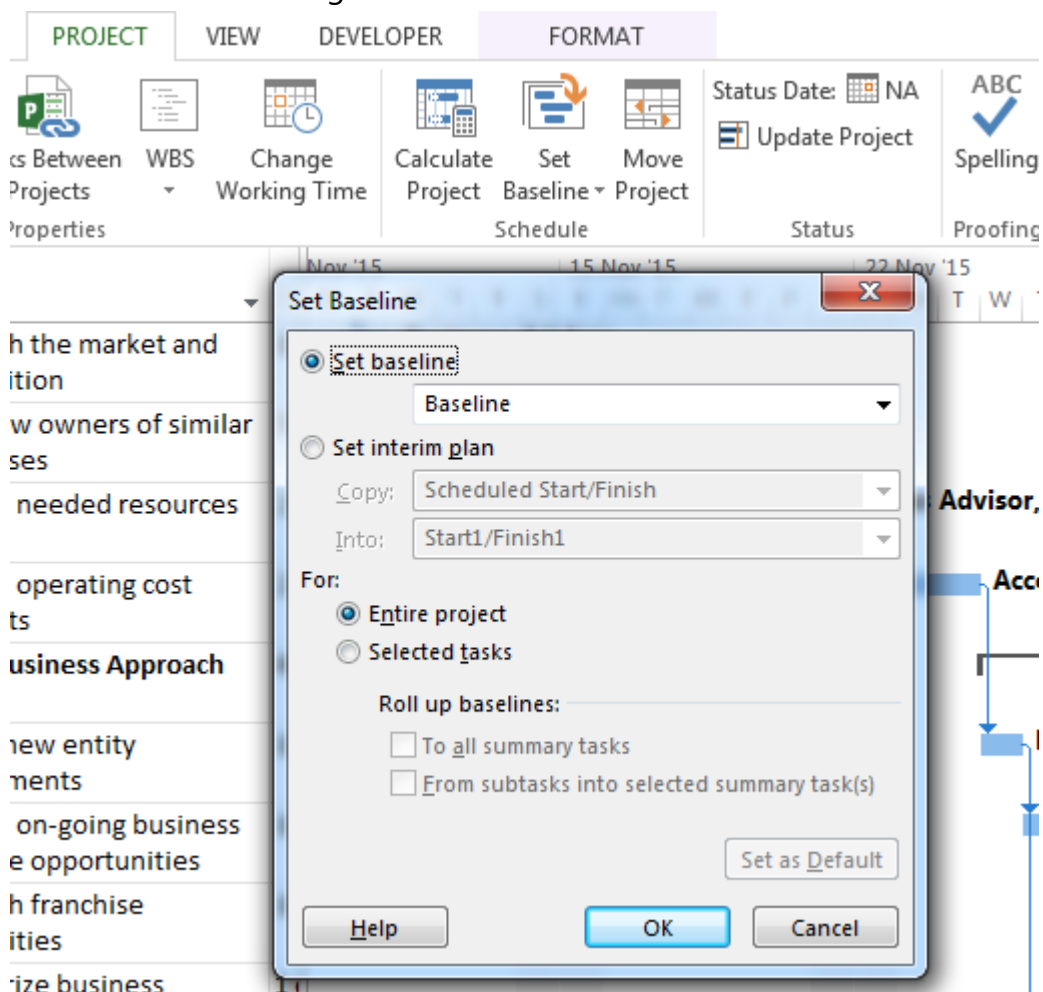
Project tracking involves measuring actual progress and performance and comparing that with the planned schedule.

Setting the baseline

Once a project plan has been completed and its resources assigned, it is necessary to set a baseline. A Baseline is a snapshot of the project, and is used to compare what is planned to happen with what actually does happen. The baseline is very important, in that it is fundamental to analysing cost and schedule variances. If you are connecting several plans to a resource pool, set the baseline on each individual plan. You will then be able to see the combined baselines in a master project.

To set the baseline:

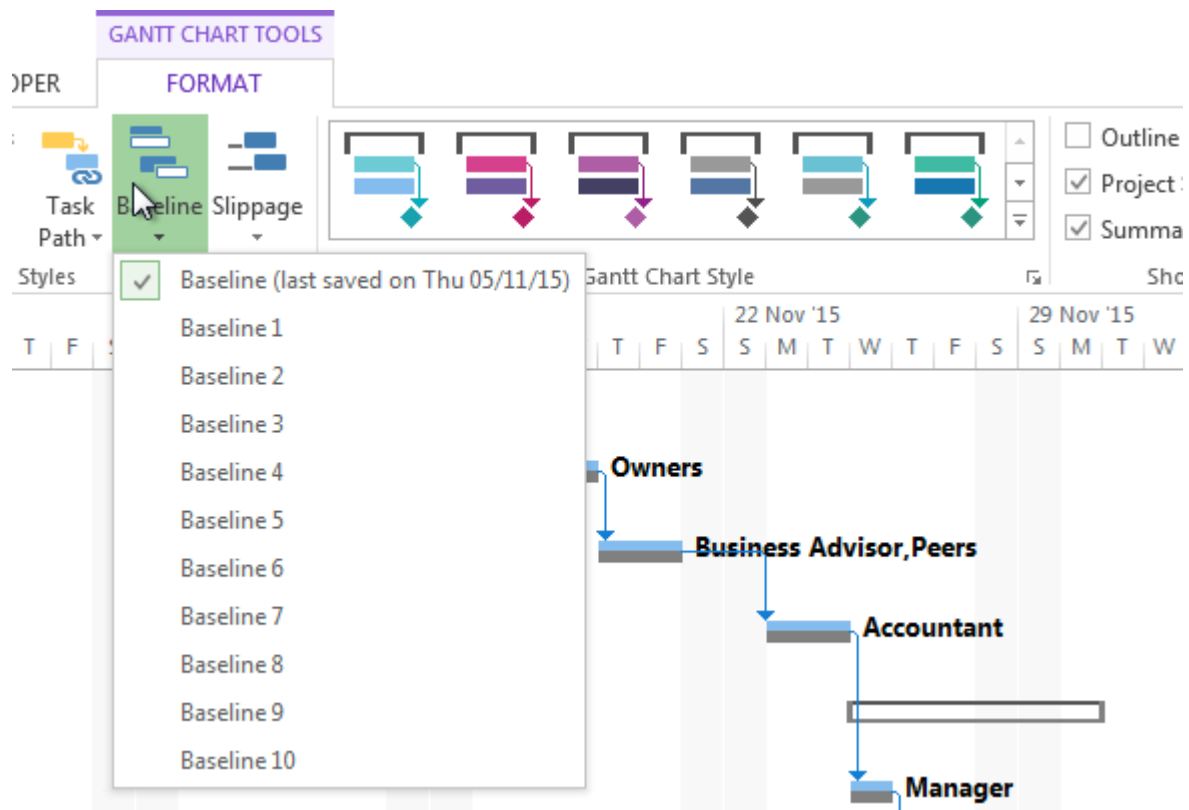
1. First switch to the Tracking Gantt view.
2. From the Project ribbon in the Schedule group click Set Baseline
3. Click Set baseline again



4. Set Baseline and Entire Project are already selected by default
5. Click OK

Displaying the Baseline

To see the Baseline displayed alongside the current plan go to the **Format** tab and click the **Baseline** button. From here you can choose the Baseline to display. On the Chart the current plan is displayed above the Baseline plan.

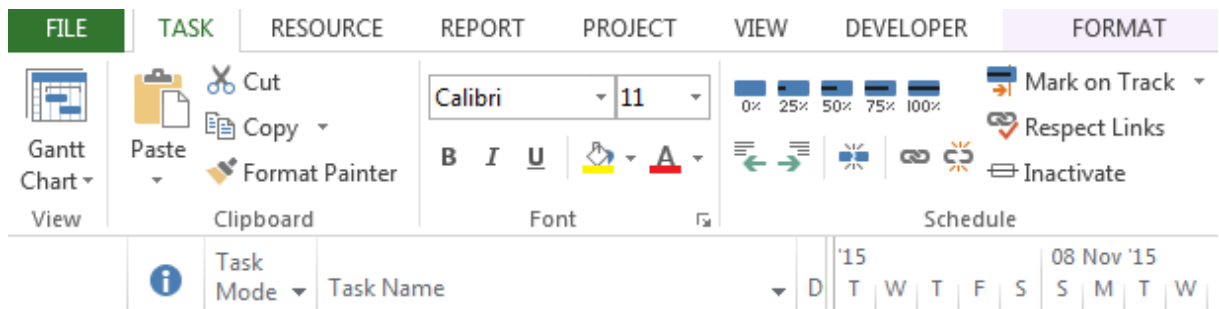


Entering project progress

Tracking actual durations involves marking off tasks to indicate how much of the scheduled task has been completed.

One method is to use the pre-set progress buttons which can be located on the Task ribbon in the Schedule group.

Progress can be marked off using the 25%, 50%, 75%, 100% and the **Mark on Track** buttons.



More detail can be accessed by clicking on the Mark on Track drop down then clicking the **Update Tasks** option, which activates the dialog box of the same name.

Progress can be marked off in the following ways:

- Percentage Complete** Use this to mark off how much of the task's total duration has been completed.
- Actual Duration** This can be used to mark off how long a task actually took to complete
- Actual Start** When a task actually started
- Actual Finish** When a task actually finished
- Remaining Duration** How much time is actually required to complete a task

Progress - Work

It is also possible to track the amount of work carried out on a task. To do this:

1. Go to the Resource Usage view
2. Double click on a task assigned to the resource whose progress you want to record
3. From the dialog box that appears choose Tracking

The screenshot shows the 'Assignment Information' dialog box with the 'Tracking' tab selected. The 'Task' field contains 'Identify available skills, information and support' and the 'Resource' field contains 'Business advisor'. The 'Work' field is set to '8h', 'Actual work' is '0h', '% Work complete' is '0%', and 'Remaining work' is '8h'. The 'Actual start' and 'Actual finish' fields are set to 'NA', and the 'Actual cost' is '\$0.00'. The 'Cost rate table' is set to 'A'. The 'OK' and 'Cancel' buttons are at the bottom right.

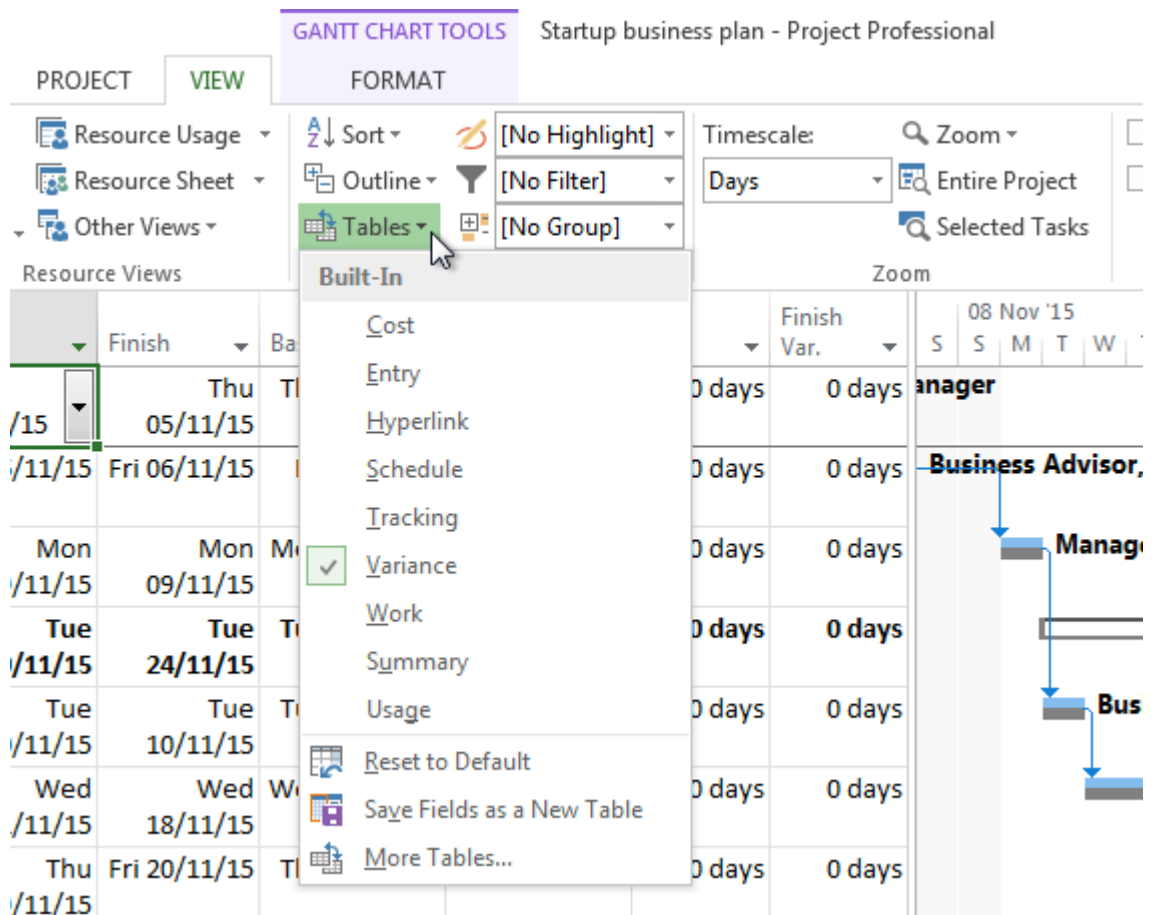
4. Enter the Actual Work completed (in hours) and remaining work still to be done.

Viewing Variance information

The Variance Table

The **Variance** table allows you to check if your project is on track. The **Start** and **Finish** columns display actual dates for tasks that have started and projected dates for those that have not, respectively. The **Baseline Start** and **Baseline Finish** columns display the planned start and finish dates. The **Start Var.** and **Finish Var.** columns show the difference between the actual and baseline dates. Negative numbers indicate tasks that are ahead of schedule, whereas positive numbers indicate tasks that are behind the schedule.

From the View ribbon, click Tables and then select Variance.

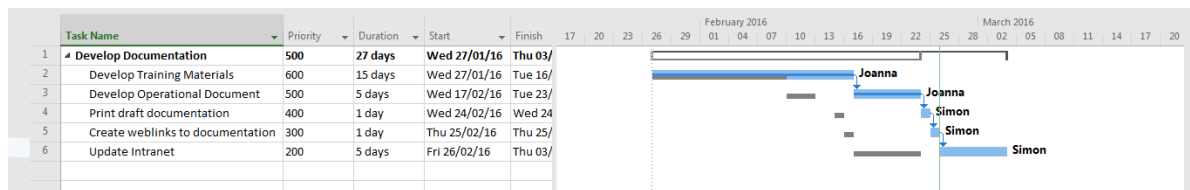


The Variance table shows start and finish dates for both scheduled information and baseline information, making it possible to evaluate your prediction of how the project would progress (baseline) by comparing that prediction with how the project is in fact progressing (actual).

Exercise – Save Baseline and Monitoring

1. Open the project **Developing Docs Plan**.
2. In the resource sheet enter a standard rate of £150/day for Simon and £200/day for Joanna then return to the Gantt view.
3. Change the current date to 26/2/16.
4. Reassign the first two tasks from Simon to Joanna.
5. Link all the tasks as Finish to Start. Note that the levelling delay resets to 0.
6. Now set the Baseline for the entire project.
7. Using Mark on Track, Update Task make the following updates:
 - a. Developing Training Materials (Task 2) actually finished on 16/2/16.
 - b. Developing the Operational Document (Task 3) finished on 23/2/16.

8. Select Format, Baseline to compare the Baseline with the actual plan.



9. Save as Developing Docs tracking.

Project Statistics for 'Developing Docs Tracking'

| | | |
|----------|--------------|--------------|
| | Start | Finish |
| Current | Wed 27/01/16 | Thu 03/03/16 |
| Baseline | Wed 27/01/16 | Tue 23/02/16 |
| Actual | Wed 27/01/16 | NA |
| Variance | 0d | 7d |

| | | | |
|-----------|----------|------|-----------|
| | Duration | Work | Cost |
| Current | 27d | 216h | £5,050.00 |
| Baseline | 20d | 160h | £3,650.00 |
| Actual | 20d | 160h | £4,000.00 |
| Remaining | 7d | 56h | £1,050.00 |

Percent complete:

Duration: 74% Work: 74%

Close

View the Project Statistics to see that the project is 7 days behind schedule and £1,400 over the baseline cost.

To help bring the project back on track Joanna is going to help with updating the intranet. Change Task 6 (Update Intranet) to Effort Driven and assign her to the task with Simon.

The expected finish date should be now 1/3/16 which is 4.5 days later than planned.

Project Statistics for 'Developing Docs Tracking'

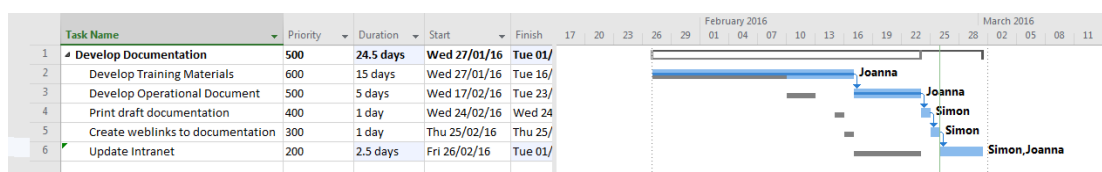
| | Start | Finish |
|----------|--------------|--------------|
| Current | Wed 27/01/16 | Tue 01/03/16 |
| Baseline | Wed 27/01/16 | Tue 23/02/16 |
| Actual | Wed 27/01/16 | NA |
| Variance | 0d | 4.5d |

| | Duration | Work | Cost |
|-----------|----------|------|-----------|
| Current | 24.5d | 216h | £5,175.00 |
| Baseline | 20d | 160h | £3,650.00 |
| Actual | 20d | 160h | £4,000.00 |
| Remaining | 4.5d | 56h | £1,175.00 |

Percent complete:

Duration: 82%Work: 74%

Close

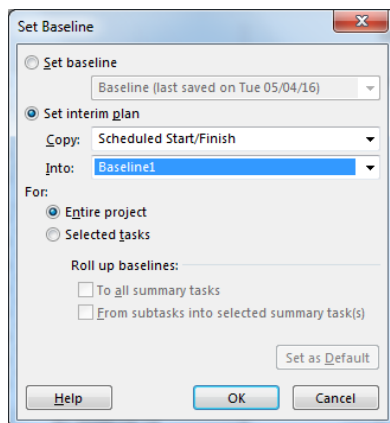


Multiple Baselines

Quite often all the information or resources are not available when a project is first planned. Major changes can occur where the plan needs readjusting perhaps several times throughout the lifetime of the project.

To help keep track of a changing project a good practice is to update the baseline but then keep a copy of the previous baseline each time it is updated. This can be done by creating an **Interim Plan** and copying it to Baseline1.

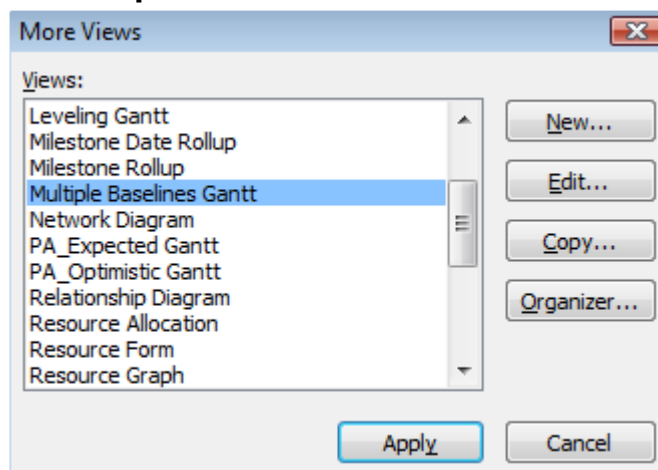
- Select **Project, Set Baseline**
- Select **Set interim plan**
- Copy into Baseline1 for the **Entire project**.



Then when a baseline is newly saved it can still be viewed alongside the original plan (baseline1).

Multiple Baselines Gantt view

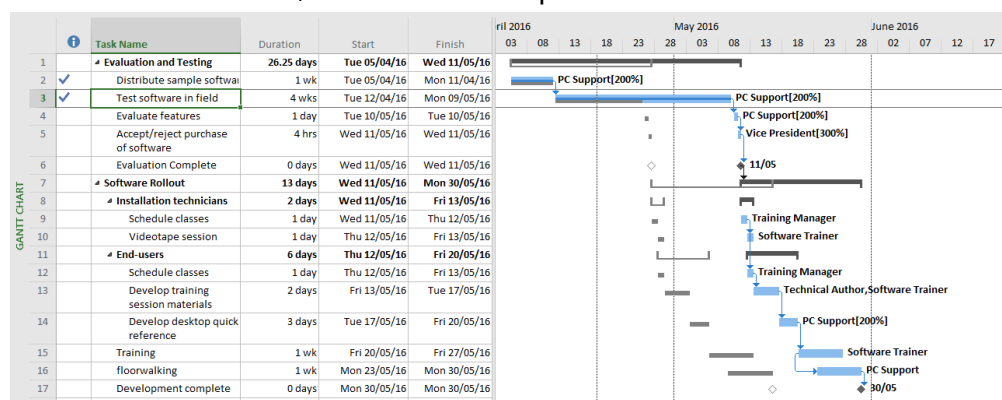
It is possible to view more than 2 baselines at once with the multiple baseline Gantt view. Click the **View** ribbon, click **Other Views, More Views** and choose **Multiple Baselines Gantt**:



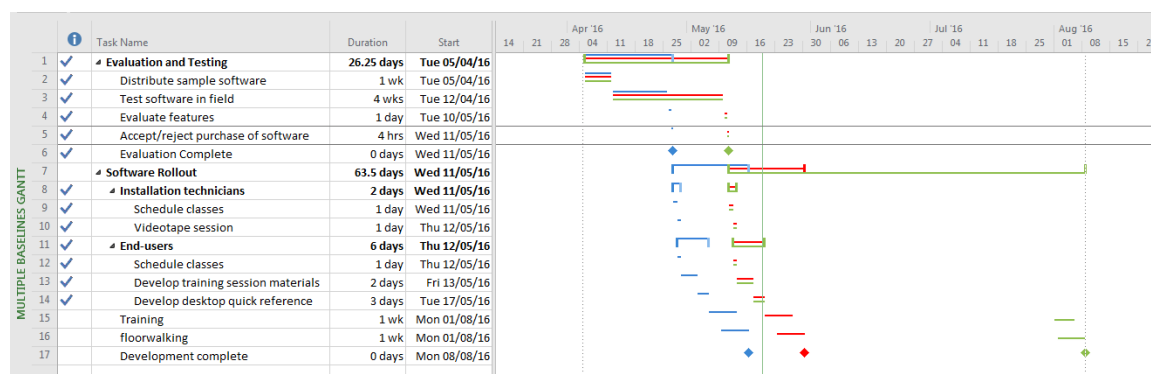
The Multiple Baselines Gantt view shows the first three baselines (Baseline, Baseline1, and Baseline2). See the last part of the Exercise – multiple baselines where 3 baselines are displayed together.

Exercise – Multiple Baselines

1. Open the project **Multiple Baselines**.
2. Check that the project start date is 5/4/16 and set the baseline. (Project, Set Baseline for the entire project).
3. Task 2 was completed as scheduled but testing in the field (task 3) was completed in 4 weeks instead of 2 weeks. This causes a variance of 10 days.
4. Select Format, Baseline to compare the saved baseline with current plan.



5. Create an interim plan to be used later by copying the current plan to Baseline1.
6. It is now 20/5/16 and all other tasks have gone as planned. Select all tasks and choose Mark on Track.
7. Staff prefer to have their IT training later in the summer. Change the start date for training to 1/8/16 by selecting Task, Mark on Track, Update Task and choose 1/8/16 as the actual start date.
8. Use Set Baseline again to create an interim plan as Baseline2. Check the project statistics shows a duration variance of 60.5 days.



- Change to the multiple baseline Gantt view for this project to display Baseline2 (green), Baseline1 (red) and Baseline (blue) in one view.
Save as **Multiple Baselines completed**.

Filters and Sort

Working with auto filters

In addition to the default AutoFilter, Project provides several built-in filters. The AutoFilter is visible in any table view by means of a drop down arrow on the right side of the column headings:

| Task Mode ▾ | Task Name ▾ | Start ▾ | Finish ▾ | Baseline Start ▾ | Baseline Finish ▾ | Start Var. ▾ | Finish Var. ▾ |
|-------------|-------------|---------|----------|------------------|-------------------|--------------|---------------|
|-------------|-------------|---------|----------|------------------|-------------------|--------------|---------------|

The View ribbon provides access to tools that help Project Managers focus on key tasks by applying filters and sorting of tasks and resources.

The screenshot shows the 'VIEW' ribbon in Microsoft Project. The 'Data' group contains buttons for 'Sort', 'Outline', 'Tables', and 'Filter'. The 'Filter' button is highlighted with a red circle and an arrow pointing to the 'Start' column header in the task sheet below. The task sheet shows a list of tasks with columns for Task Mode, Task Name, Duration, Start, Finish, and Predecessors. A filter is applied to the 'Start' column, showing dates like 'Thu 05/11/15' and 'Wed 04/05/15'.

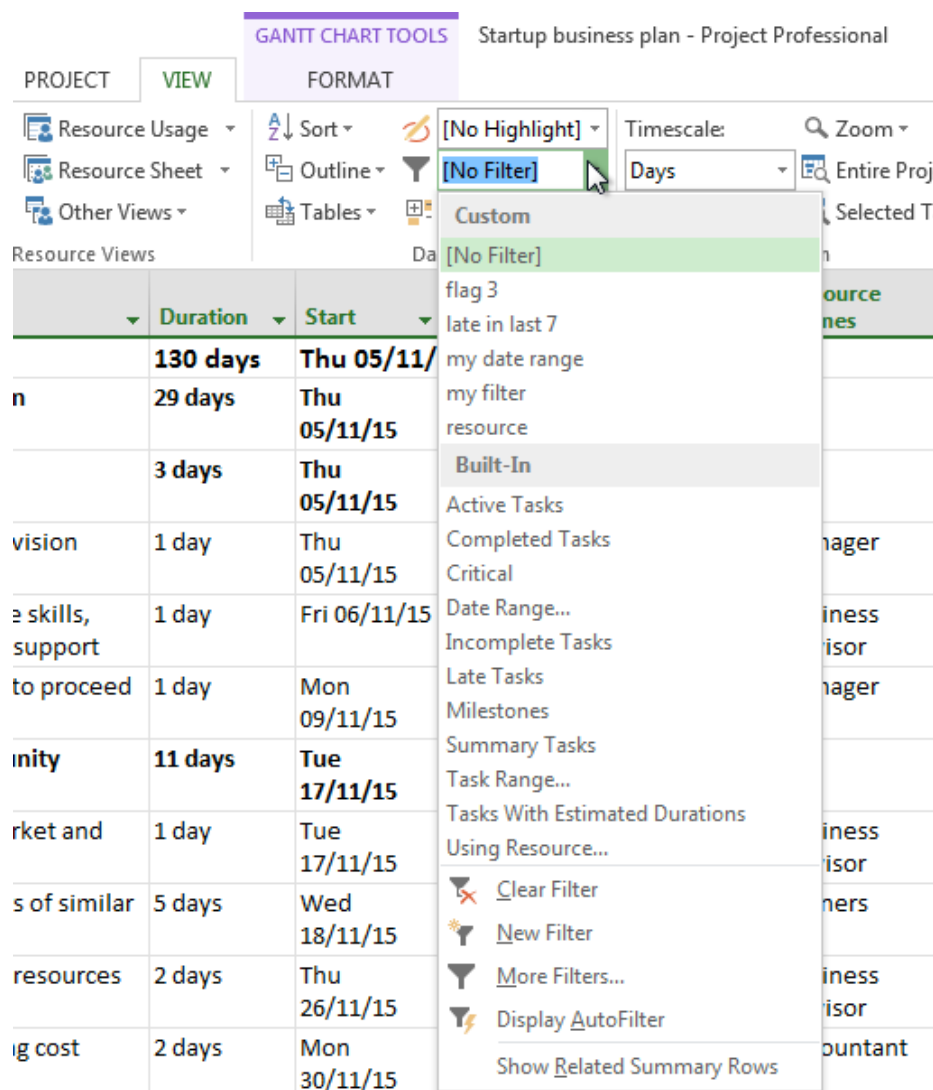
The triangular buttons at the top of each column in the sheet can be used to apply filters by column. The funnel symbol indicates a filter is active on that column.

Applying built-in filters

A filter is used to screen out unwanted tasks for a particular view to identify a particular aspect of the current state of the project, for example the filter can be set to show the tasks that make up the Critical Path.

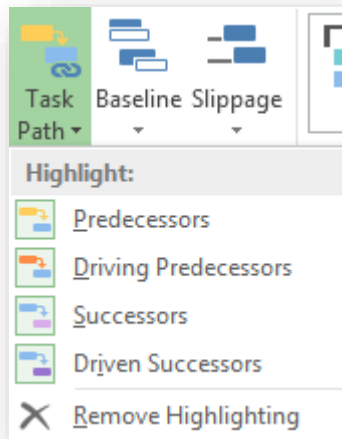
As with tables there are different filters for tasks and resources and depending on the current view the appropriate list of filters will be shown for the selection.

1. Select the view you want to filter (e.g. Gantt Chart, Resource Sheet, etc.)
2. From the View ribbon click the Filter: [No Filter] drop down arrow
3. Choose the required built-in Filter from the list
4. Remove the filter by choosing [No Filter] or Clear Filter.
5. Pressing the keyboard shortcut F3 removes filters on all columns.



Task Path

With a complex project, your Gantt chart can start to look like a tangled knot of bars and link lines. To help sort this out, you can highlight the link chain, or task path for any task. When you click a task, all of its predecessor tasks show up in

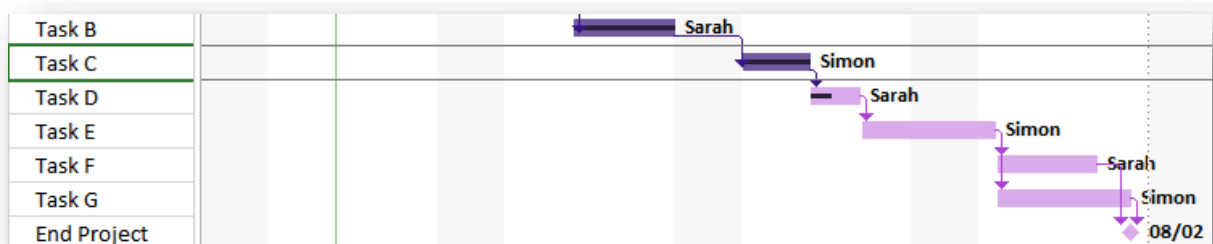


one colour and all of its successor tasks show up in another colour. On the Gantt chart, click the Format tab.

Click Task Path, and then pick the related task to highlight:

- Predecessors Tasks that link to and come before the selected task.
- Driving Predecessors Tasks that come before the selected task and directly impact it. When the driving predecessor task moves, the selected task also moves.
- Successors Tasks that link to and follow the selected task.

Driven Successors Tasks that follow the selected task and are directly impacted by it. When the selected task moves, the driven successor task also moves. This image shows that predecessors and successors are highlighted on the



Gantt chart.

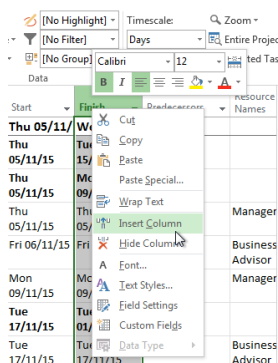
The example above shows the task path for the Successors for task C in the lighter shading.

Adding new columns

It often happens that you may wish to view additional data in a table and to do this you need to insert a new column using a specific Project field. Each table in Project has a set number of columns, the headings of which are known as field names. Column headings may be different to the actual field name if a title has been given.

It is useful to know what fields are available before adding a new column. To add a new column to a table, click the Format ribbon and then click Insert Column. Please note that new columns are added to the left of the selected column. Columns can be moved by first clicking the column heading then with the left mouse button clicked and held down, drag the column to a new position.

New columns can also be inserted by clicking the Add New Column 'column' located at the right side of each table or by right clicking a column heading and choosing Insert Column.



This will open a list of fields for you to select from. If you wish to change any of the field settings then right click the column heading, choose Field Settings and make any changes that are required.

Remove a column

To remove a column from a table you will have to hide it. To do this, right click the necessary column and click Hide column. If you want the same column back again, you must re-insert it as there is no unhide column facility.

Analyse and adjust a schedule

Analysing schedules

Review schedule differences

As you track progress through your project, you can review the differences between planned, scheduled, and actual work. This helps you assess whether work on your project is progressing as expected. You can compare work amounts for tasks as a whole, or for resources and their individual assignments.

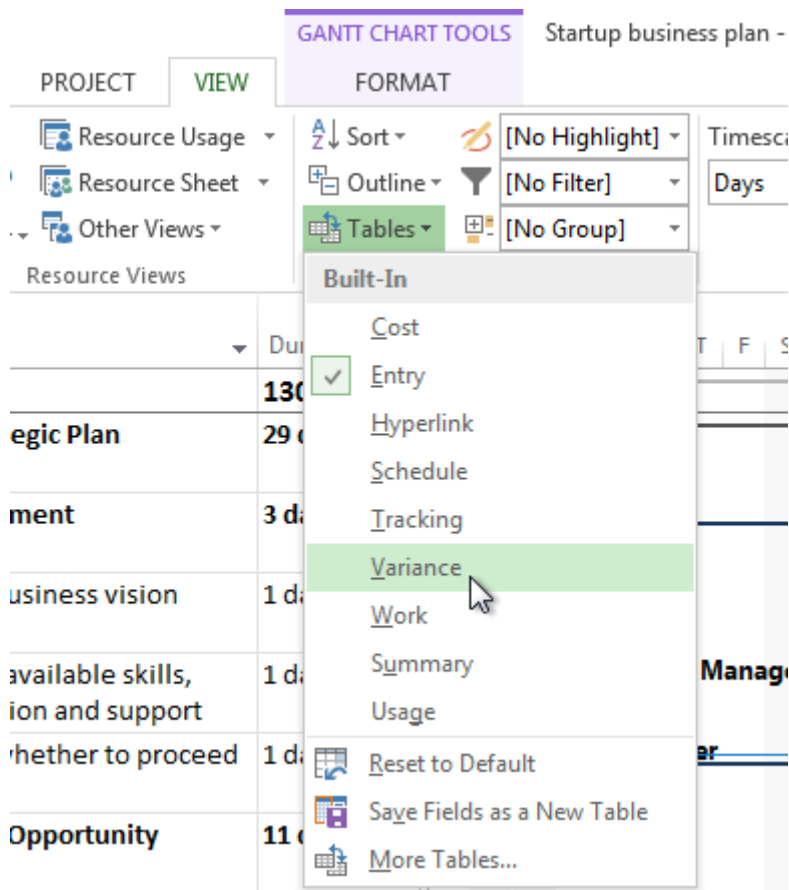
The easiest way to compare work amounts with your original plan is to apply the **Work table** to a sheet view, such as the **Gantt Chart** view or **Resource Usage** view. The value in the Work field represents the current scheduled work value, showing the total of actual and remaining work for tasks that have started, and showing the latest projected work value for tasks that have not yet started.

If you set a baseline, then your original planned work amounts are stored in the **Baseline** field. With this field, you can compare work amounts in your original plan to currently scheduled work amounts. The **Variance** field shows the calculated variance between planned and scheduled work, that is, the difference between the **Baseline** and **Work** fields.

You can also review actual work amounts in the **Actual** fields. For completed tasks, the **Work** and **Actual** fields contain the same value.

Compare Baseline and Scheduled Information

You can compare baseline and scheduled information in either of two ways:
To view variance information in a sheet view, click the **View** ribbon, click on **Tables**, and then click **Variance**.



To view variance information graphically, click the View ribbon then click the Gantt Chart drop down and then choose Tracking Gantt.

The Variance table shows start and finish dates for both scheduled information and baseline information, making it possible to evaluate your prediction of how the project would progress (baseline) by comparing that prediction with how the project is in fact progressing (actual).

If the variance in your project doesn't show the values that you expect, there are several possible explanations:

- You might not have set a baseline. The variance is the baseline value compared with the actual value for a field. If there is no baseline, Project calculates this difference by using a 0 value for the baseline fields, resulting in variances that are as large as the scheduled field itself. For example, suppose that you have a scheduled cost of £60 for a task. If no baseline is set, the baseline cost is \$0. The **Cost Variance** field therefore shows £60.
- You might have set multiple baselines, but Project uses only the initial baseline values (that is, the values for the **Baseline** field, and not the values for **Baseline1** through **Baseline10**) when calculating variance. In this case,

you might see information in variance fields, but the information might seem to be outdated and possibly too large.

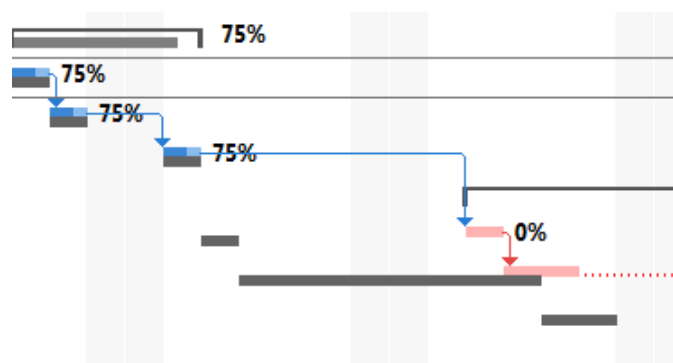
- You might have added new tasks to a project but not added them to the baseline plan. In this case, you might see variances that are equal to the scheduled values.
- You might not have updated actual values for those tasks that are completed or in progress. In this case, variances might be equal to the scheduled values, or otherwise larger than you expect.
- You might have added new tasks or assigned resources and then set a baseline plan, but the baseline information for the summary task has not yet been updated. In this case, accurate variance values are showing for the individual tasks but not for summary tasks.

Identify tasks that are behind schedule

If you have set a baseline for your project, you can see how tasks progress over time and see whether their start and finish dates are slipping. You can track progress by comparing baseline and scheduled or actual start and finish dates.

1. On the View ribbon click the Gantt Chart drop down and then choose Tracking Gantt.
2. In the View ribbon click Tables then select Variance.

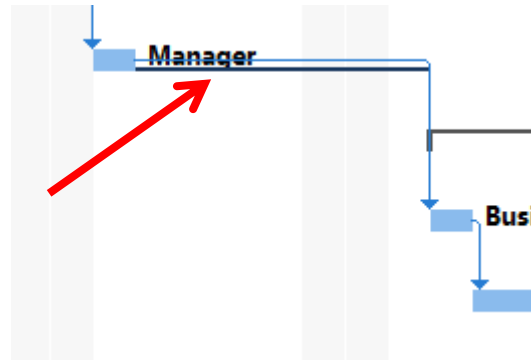
The **Tracking Gantt** view displays two task bars, one on top of the other, for each task. The lower bar shows baseline start and finish dates, and the upper bar shows scheduled start and finish dates so that you can see the difference between your plan and the current schedule.



Find slack in my schedule

The amount of slack in your schedule tells you how much you can delay tasks before other tasks or the project end date is affected.

1. On the Format Ribbon click the Slack checkbox. A line is added to the chart showing the extent of slack available in your project.



Reschedule the project

Reschedule a Task within a project

You have split a task in your project plan. However, when work is interrupted, you may want to specify the date on which uncompleted work should resume. In this topic, you will reschedule a task to resume on a specified date.

Situations may arise wherein an employee is unable to complete work on a task as scheduled, due to a higher-priority assignment or for personal reasons. In such cases, other resources may be unavailable to complete the work, or you may wish to retain the same employee on the task in light of their qualifications, skill level, or familiarity with the task. Project helps you handle such unavoidable delays by rescheduling the task to resume on a date of your specification with the same employee. This avoids rushing the task to completion, requiring unreasonable work hours, and assigning unqualified resources to meet the deadline.

How to Reschedule a Task

1. In the **Gantt Chart** view, select the task that is to be rescheduled.
2. If necessary, on the Task ribbon in the Schedule group, click the appropriate **% Complete** button, so that a progress bar indicating partial completion is drawn in the selected task's task bar.

3. If necessary, on the Task ribbon, click the **Scroll to Task** button to display the selected task's task bar in the Gantt chart.
4. Choose **Project** ribbon, **Update Project** to display the **Update Project** dialog box.
5. Select **Reschedule uncompleted work to start after** and specify the appropriate date on which uncompleted work should resume.
 - In the **Reschedule uncompleted work to start after** text box, select the appropriate date from the drop-down calendar.
6. Select 'Selected tasks' and click OK to reschedule the selected task.

Adjustment of resource schedules

Shorten the Project Duration

With the critical tasks identified, you now know the tasks that you have to work with to shorten the total project duration. You need to identify the various techniques for modifying the project end date. In this topic, you will shorten the project duration.

Knowing how to shorten the total project duration is key to being a successful project manager. As project manager, you will have to make decisions that may include assigning additional resources to tasks on the critical path, dividing tasks, or removing project requirements to shorten the total project duration.

Slack

Slack is the amount of time that a task can slip before it affects another task or the project's finish date. **Free Slack** is the amount of time a task can slip before it delays another task. **Total Slack** is the amount of time a task can slip before it delays the project finish date. If **Total Slack** is a negative number, it indicates the amount of time that must be saved so that the project finish date is not extended. Slack is displayed by the **Detail Gantt** view and is represented by thin green bars that extend from a Gantt bar for a task.

How to Shorten the Project Duration

Assign Additional Resources to a Task on the Critical Path

1. Use the **Format ribbon** to display the critical tasks in the **Gantt Chart** view.
2. Select a critical task that you wish to add additional resources to.
3. On the **Resources ribbon**, click the **Assign Resources** button.
4. In the **Assign Resources** dialog box, select the resources to be added to the critical task.
5. Click **Assign** and then click **Close** to assign the additional resource.

Divide Tasks

1. From the **Task Name column**, select a task to be divided into two tasks.
2. Select the text of the task and type the desired task name and press the **Enter** key.
3. In the **Duration** column, type the desired duration and press the **Enter** key.
4. Insert a task row above the divided task to add another task.
5. Type the task name and duration for this newly created task.
6. If necessary, assign another resource to the divided task
7. If necessary add links.

Removing a Task

To remove a task from the project plan, select the row indicator for the task to be deleted and press **Delete** to remove the task.

Progress lines

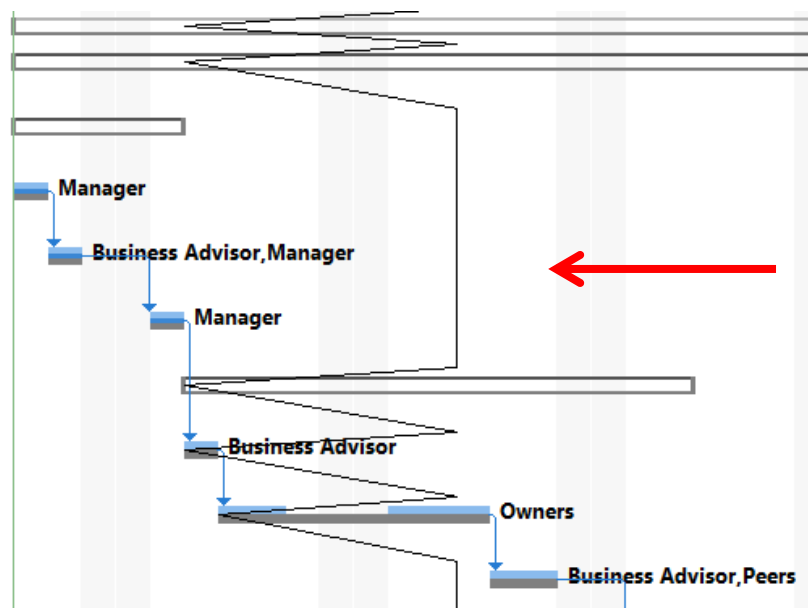
A Progress line is a visual representation of the progress of your project. For a given progress date, Microsoft Project draws a progress line connecting in-progress tasks, thereby creating a graph on the Gantt Chart with peaks pointing to the left for work that is behind schedule and peaks pointing to the right for work that is ahead of schedule. The distance of a peak from the vertical line indicates the degree to which the task is ahead of or behind schedule at the progress date.

To view Progress Lines

1. Right click the Gantt Chart and choose Progress Lines from the shortcut menu:
2. Click the Dates and Intervals tab and select the required Display options:

3. To always display the current progress line, select the Always display current progress line check box, and then click At project status date or At current date to indicate where you want the progress line drawn.
4. To display a progress line at specific time intervals, select the Display progress lines at recurring intervals check box, click Daily, Weekly, or Monthly to specify a time interval, and then click the options you want.
5. To begin progress lines at the beginning of the project, under Begin at, click Project start; otherwise, click the date option and then type or select the date on which you want the progress lines to start.
6. To display a progress line on a specific date, select the Display selected progress lines check box and then type or select the dates for which you want progress lines displayed. To delete a date for which you have set progress lines, select it, and then click Delete.

To show progress compared with a baseline plan, under Display progress lines in relation to, click Baseline plan.



Manage Multiple Projects

Consolidating and sharing projects

A consolidated project (also known as a master project) contains one or more inserted projects (known as subprojects). The inserted projects can retain links to their source projects so that any changes in the consolidated project are also made in the source files. The inserted projects may be linked to one another to create dependencies.

You can create a consolidated project by inserting copies of individual projects at any outline level into a single project file. With a consolidated project, you can view, print, and change information for all the projects you're working with (and even those projects "owned" by other project managers) as though they were a single project.

When to use a master project and subprojects

Creating a master project and subprojects allows you to break down a large project and delegate its parts to the appropriate people. In project management terms, assigning subprojects in this way gives responsibility to those who do the work and matches authority with accountability. In Microsoft Project terms, creating subprojects within a master project helps individual project managers gain access and control over their parts of the schedule.

To determine if you should break up a large project into a master project and subprojects, ask the following questions:

- Is the project very large and detailed? If your project will contain more than a few hundred tasks, it may be difficult to navigate and manipulate as one large file. Breaking it into subprojects can keep it more manageable because you can view each subproject individually. If some parts of the project contain work that is broken down into more detail than others, it may make sense to make those parts into separate subprojects so that most users will see only a rolled up description of the subproject, but interested parties can view it in more detail if they choose. A single file will almost always be the faster alternative, but the ability to focus on just a part of the project may be worth the trade-off.

- What is the corporate culture? In a decentralised or distributed environment, a master project and subprojects give workers greater control over their own work than one centralised project file does.
- Does your company do top-down or bottom-up planning? If lower-level managers are responsible for and know which tasks are needed on the project, it may make more sense to allow them to plan their work and then consolidate their project files in a master project. If top-down planning is the norm, you may want to reorganise the initial plan into subprojects when it is implemented so that individual project managers or teams have access to and control over their own schedules.
- Are you working on multiple projects? Project managers may have a set of projects they work with all the time, whether the projects are interrelated or not. Instead of opening them one by one, all the subprojects are opened at once when the master project is opened. This approach also makes it easy to generate reports on multiple projects quickly. If the projects are interrelated, the project manager can create task dependencies between tasks in different projects. Creating dependencies between projects makes it easier for different project managers to see how work by other project managers affects their schedules.
- Are some projects subordinate to other projects? You can accurately reflect the hierarchy of multiple projects by inserting various projects into other files. The resulting structure of subprojects should reflect the priorities and responsibilities of your team members as well as the interrelationships between tasks in different areas and the overall deadline.
- Is your project modified by several people? Ideally, one file is owned, managed, and modified by one project manager. But often a project is part of a larger program that upper-level managers may need to manage. If you have such a project, your team can retain focus on their work by viewing it as a separate file. And the project manager who controls the master project can coordinate each subproject team's schedule. It may even make sense to have the master project's milestones drive each subproject team's milestones in order to keep the schedules coordinated for a deadline. (Coordinating the milestones can be done by creating a dependency between the milestones or by copying and pasting the milestone tasks from the master project to each subproject).

- Are there multiple stakeholders who care about different parts of the project? When people want to look at different details, project managers can put all the project files on a server and customise different views for various stakeholders. The same project file can be used as a subproject in different master projects to tailor the information displayed.
- Do you want the subprojects to be read-only? You can retain additional control over parts of a project by moving tasks to a subproject and restricting access to key people.
- Do you want to analyse the critical path for each phase as well as the overall project? Each individual project contains a critical path. Consolidating multiple projects into one master project file makes it easy to see the overall picture as multiple critical paths in the master project while retaining separate critical paths for each subproject.

Insert subprojects into a master project

1. Open the project that you want to become a master project – or create a new project.
2. In the Task Name field, click the row below where you want to insert the project.
3. From the Project ribbon within the Insert group click the Subproject button.
4. Navigate to the drive/folder of the required project
5. Select the project and click Insert.

Tips

- To insert multiple projects, hold down CTRL and click the projects in the order that you want to insert them.
- By default, the sub project is linked – meaning any changes you make in the master file will also be made in the individual project – you can uncheck the Link to project option.
- To insert a project in read-only format, click the arrow on the Insert button, and then click Insert Read-Only.
- After you've inserted a subproject, you can show a subproject's hidden subtasks by clicking the subtask's outline symbol, the plus sign that appears before the subproject's name.

- When consolidating projects into a master project, resources remain in the individual projects. You cannot assign a resource from one subproject to another subproject.

Resources pools - sharing resources across projects

It is very often the case that an organisation will be running multiple projects simultaneously and that as a consequence resources will be shared across those projects. It is therefore necessary to be able to allocate resources across different projects and to resolve resourcing issues as they arise.

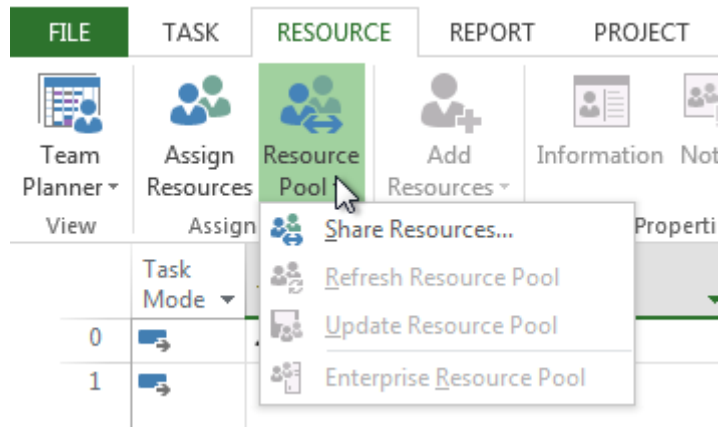
To do this it is necessary to create a shared resource pool and then set each project to get its resources from the shared pool.

Creating a resource pool

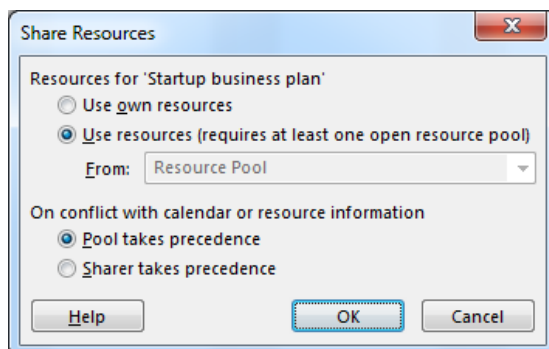
Create a new blank project and list all the organisation's resources in the resource sheet. As this will be the resource pool for all the organisation's future projects it is worth being thorough and including as much detail as possible. Then save the file in an easily accessible location with a suitable name, e.g. "Resource Pool". Existing resources can be copied from existing projects.

Linking projects to the resource pool

1. Open the resource pool plan
2. Open the project that you wish to link to the resource pool
3. Click on Resource ribbon, Resource Pool, Share Resources



4. From the dialog box that opens select "Use Resources" and choose the resource pool file in the "From" drop-down, then click OK → Save both files



5. Repeat this for each project file that will be connected to the resource pool.

Working with the master project

1. Open the resource pool
2. In the dialog box select the third option which prompts you to create a master file.

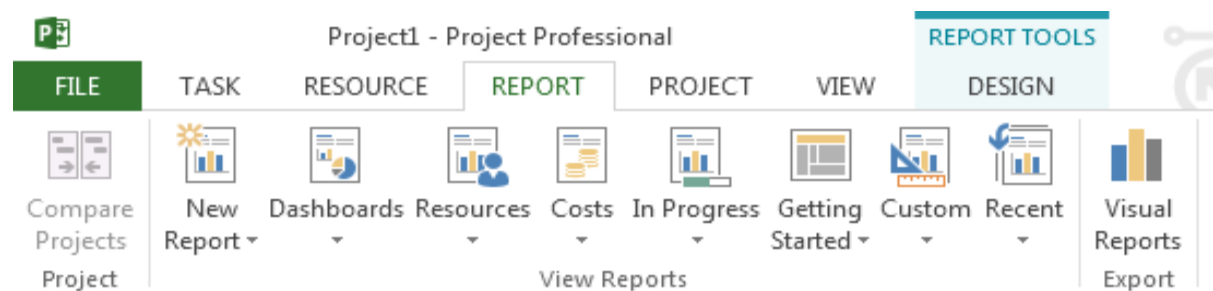
Project will then create a master file, which shows all the projects in one Gantt chart. You can then allocate and level resources in the normal way, across individual projects.

Reports

Using Project, you can create and customise striking graphical reports of whatever project data you want. As you work on the project, the reports change to reflect the latest info so there is no need to manually update.

Reporting tools are becoming more important in project management applications, as many companies need to delve deeper into the details of projects to see how their budgets are being spent. Accountability is huge, and improved reporting tools can give you the best views of project information and help you communicate it to management.

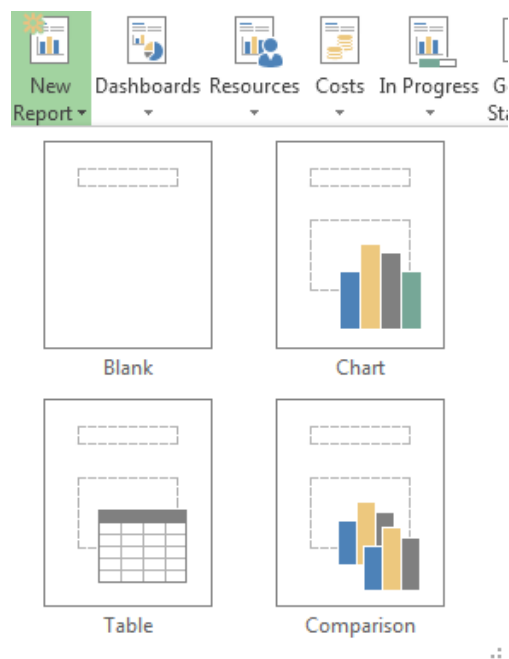
Project Professional 2013 and 2016 offers improved reporting tools that maintain the Office-like experience, making it easier for users of all levels to see and publish project information in a view that works for them. These tools offer dashboard-like reporting options.



The following Categories are available:

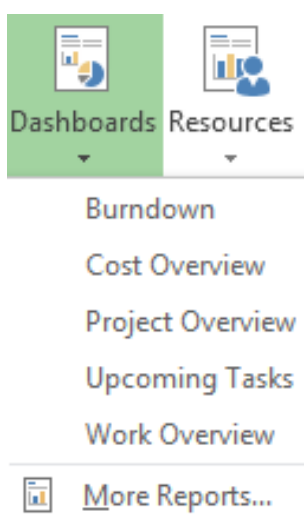
- New Report
- Dashboards
- Resources
- Costs
- In Progress
- Getting Started
- Custom
- Recent

New Report – Blank, Chart, Table or Comparison



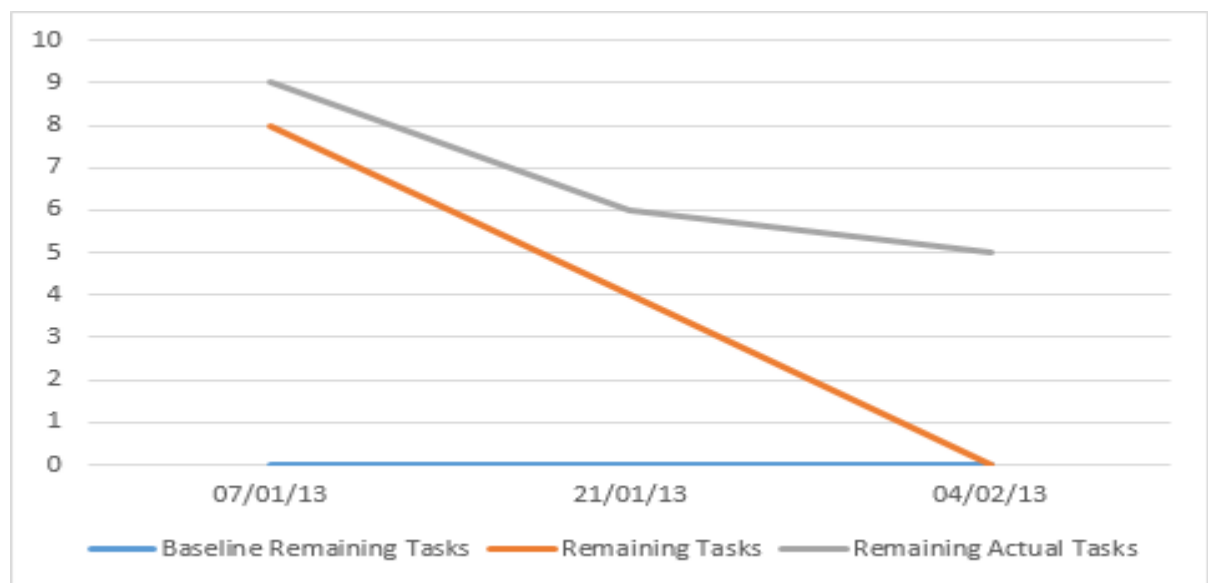
Dashboards

Burndown reports show planned work, completed work, and remaining work as lines on a graph. They give you and your stakeholders an at-a-glance status, letting you know if your project is behind schedule or ahead.



Dashboards are new graphical representations of your key project data which can be presented to the project board or directors. Dashboards organise and present information in a way that is easy to read.

The following report is a Burndown report:



Cost Report

The following report gives you progress made versus the cost over time:

COST OVERVIEW

COST STATUS

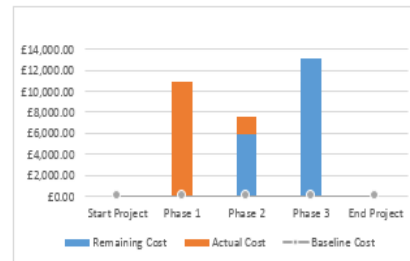
Cost status for top level tasks.

| Name | Actual Cost | Remaining Cost | Baseline Cost | Cost | Cost Variance |
|---------------|-------------|----------------|---------------|------------|---------------|
| Start Project | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |
| Phase 1 | £10,880.00 | £0.00 | £0.00 | £10,880.00 | £10,880.00 |
| Phase 2 | £1,600.00 | £5,920.00 | £0.00 | £7,520.00 | £7,520.00 |
| Phase 3 | £0.00 | £13,120.00 | £0.00 | £13,120.00 | £13,120.00 |
| End Project | £0.00 | £0.00 | £0.00 | £0.00 | £0.00 |

COST STATUS

Cost status for all top-level tasks. Is your baseline zero?

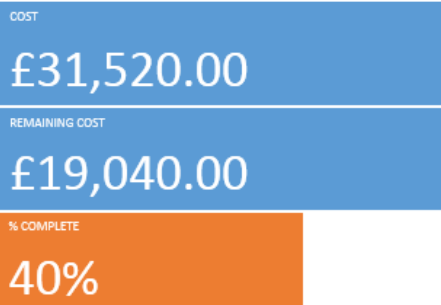
[Try setting as baseline](#)



COST OVERVIEW

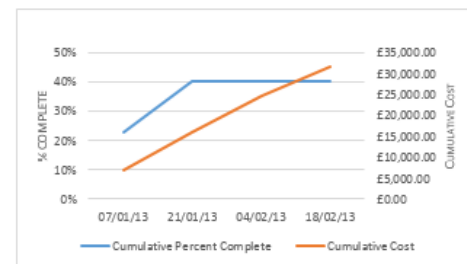
WED 09/01/13- TUE 26/02/13

COST OVERVIEW



PROGRESS VERSUS COST

Progress made versus the cost spent over time. If % Complete line below the cumulative cost line, your project may be over budget.



Project Overview

PROJECT OVERVIEW

PROJECT OVERVIEW

WED 09/01/13- TUE 26/02/13



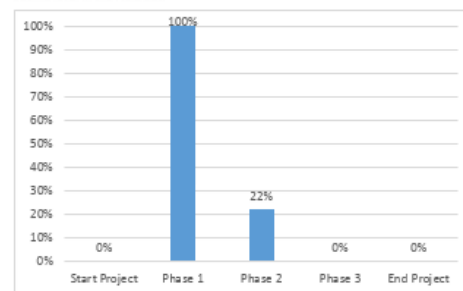
MILESTONES DUE

Milestones that are coming soon.

| Name | Finish |
|---------------|--------------|
| Start Project | Wed 09/01/13 |
| End Project | Tue 26/02/13 |

% COMPLETE

Status for all top-level tasks. To see the status for subtasks, click on the chart and update the outline level in the Field List.



LATE TASKS

Tasks that are past due.

| Name | Start | Finish | Duration | % Complete | Resource Names |
|------|-------|--------|----------|------------|----------------|
|------|-------|--------|----------|------------|----------------|

Resource Overview Dashboard report

COST STATUS

Cost status for work resources.



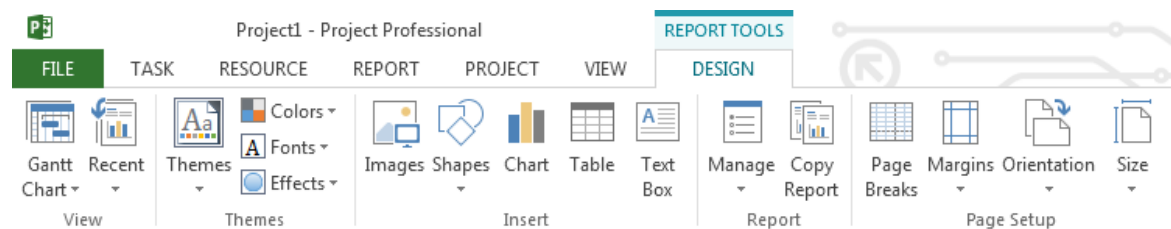
COST DETAILS

Cost details for all work resources.

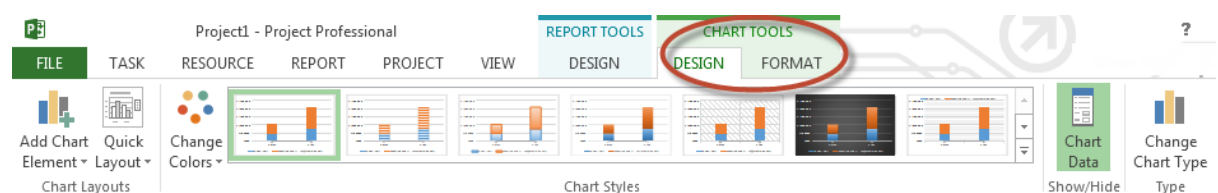
| Name | Actual Work | Actual Cost | Standard Rate |
|-------|-------------|-------------|---------------|
| Simon | 48 hrs | £4,800.00 | £100.00/hr |
| Sarah | 64 hrs | £7,680.00 | £120.00/hr |

You can edit or format the report by using the following tools:

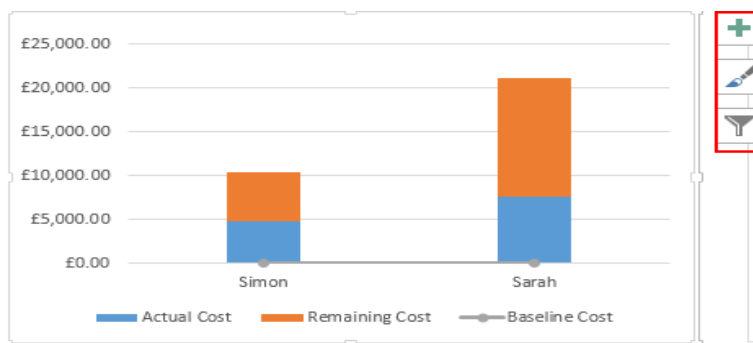
If you click in the background of the report the following REPORT TOOLS tab appears on the ribbon:



However, if you select a chart the following CHART TOOLS tab appears on the ribbon:



Another new feature of Project are contextual buttons that appear to the right hand corner of the selected object. These allow you to change the Chart elements, Chart Styles and Chart Titles.



Once you click on one of these buttons, you get the elements needed to manipulate the chart. As you can see, change or add titles, line and fill colours and filters.

CHART ELEMENTS

- ☒ Axes
- ☐ Axis Titles
- ☐ Chart Title
- ☐ Data Labels
- ☐ Data Table
- ☐ Error Bars
- ☒ Gridlines
- ☒ Legend
- ☐ Trendline
- ☐ Up/Down Bars

STYLE **COLOR**

VALUES

SERIES

- ☒ (Select All)
- ☒ Actual Work
- ☒ Remaining Work
- ☒ Baseline Work

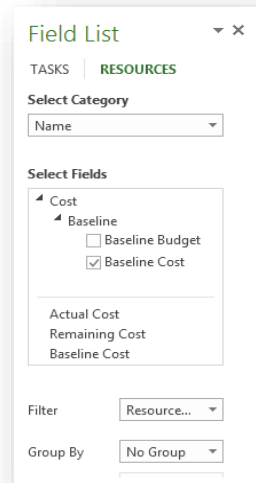
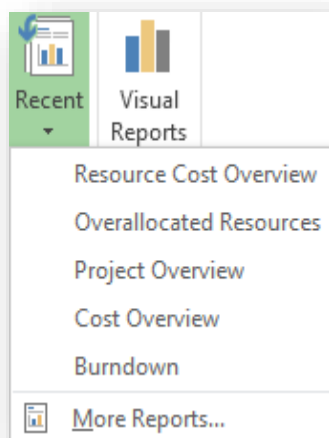
CATEGORIES

- ☒ (Select All)
- ☒ Simon
- ☒ Sarah

Apply

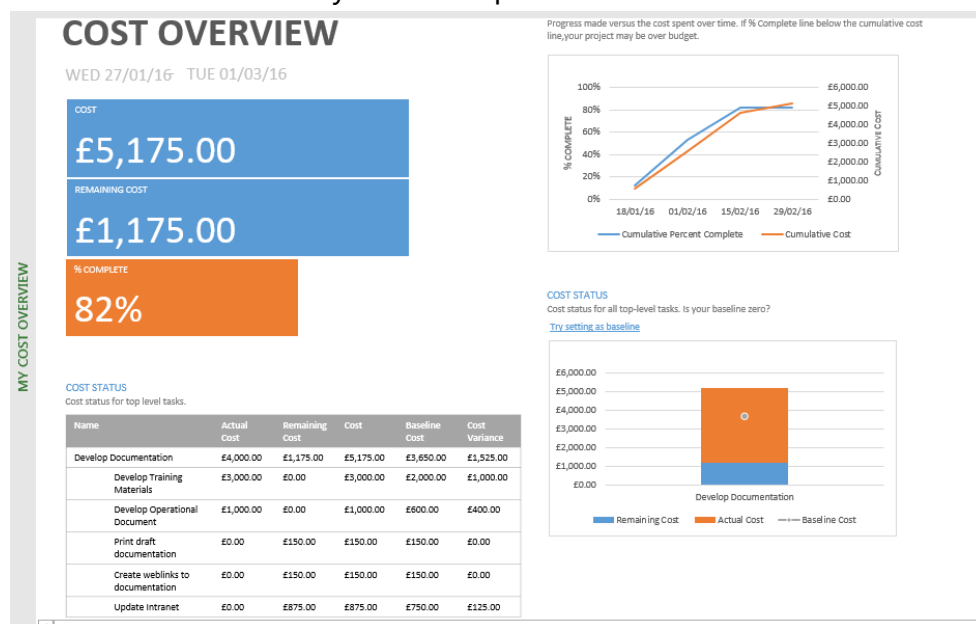
The Field list can filter, group and add additional fields to the chart. There is also the option to select the Tasks or Resources tab to change the way you analyse the current data.

The Recent option allows you quick access to return to the reports that have been created which is extremely useful as you don't have to create the reports again.



Exercise - Reports

1. Open **Developing Docs Tracking**.
2. View the Work Overview dashboard.
3. Click the first chart. In the Field List click the Edit button for the time category and display dates in 1 week intervals.
4. Click the + next to the chart and add the chart title 'WORK BURNDOW'.
5. Select Report Tools Design, Manage and rename the report to My Work Overview.
6. Switch to Cost Overview dashboard report.
7. Click into the Cost Status table and in the Field List show Outline level 2 and show hierarchy for the Name field.
8. Right click the Cost field in the Field List and select Move Up.
9. In the status table select all the cost columns (apart from Name) and distribute the columns equally.
10. Rename the report as My Cost Overview.
11. Return to the Cost Overview dashboard then select Custom to see if your two reports are listed.



12. Save as **Developing Docs Tracking reports**.

Exchange project data

Export to Microsoft Excel

Having created the project plan file in the Project Initiation and Project Planning phases, the file now becomes your plan's focal point, with essentially three "masters" to serve—the project manager (you), stakeholders (clients and management), and team members (resources). Each master will often have different requirements from the plan. In this lesson, you will learn how Project can help you meet these often wide-ranging requirements.

Each project involves the combined efforts of various team members. This frequently requires working with data in different formats to build the project plan and exchanging project information among team members. Fortunately, Project can exchange data with various file formats, thus saving time and avoiding the risk of committing mistakes that could occur while typing.

Export Project Plan Data into Excel

You want to share information in the project plan with your colleagues in a more user-friendly format. In this topic, you will export project plan information into an Excel workbook.

You have created an internal plan and wish to send this information to all your team mates. Since most of your team mates do not have Project installed, you decide to send the plan in a different format. Rather than recreating the data in Project, exporting the required information to the other applications will minimize your effort and save time.

The Export Wizard

Exporting is a method of transferring a copy of data from the application in use into a different application. The **Save As** dialog box, enables you to export project information with the help of the **Export Wizard**. Project can export all the data or selected data from the plan and save it in different file formats such as Excel files, Excel Pivot Tables, text files, comma-delimited text files, or XML files.

The **Export Wizard** allows you to pick the type of data to export—task, resource, or assignment. It reads the Project file and helps you map data from the source file into the destination file. Similar to importing data, once data is exported from a source file project plan to a new destination file format, no connection remains between the two files.

Maps

In Project, a *map* is a set of instructions that traces the type of data that is to be imported or exported, as well as the location where the data is to be imported into a project plan. It enables the user to specify which fields in the source file should correspond to fields in the destination file. Maps are of two types, import maps and export maps, which in turn may be custom or predefined.

How to export cost data into Microsoft Excel using an existing map

1. With the desired project plan open, choose **File, Save As**.
2. In the **Save As** dialog box, from the **Save as type** drop-down list, select **Excel Workbook (*.xlsx)**
3. Click **Save**.
4. On the **Export Wizard**, click 'Next'.
5. On the Export Wizard - Data page, select the format of the data you wish to export.
 - Select **Project Excel Template** to export the data completely into the Excel workbook.
 - Select **Selected Data** to export only the data you select into the Excel workbook and click **Next**.
 - a. On the **Export Wizard - Map** page, select **Use existing map**.
 - b. On the **Export Wizard - Map Selection** page, from the **Choose a map for your data** list box, choose **Cost Data by Task** map and click '**Next**'.
 - c. On the **Export Wizard - Map Options** page, select the type of data—Task, Resource, or Assignments—you want to export, and click **Next**.

- d. On the **Export Wizard - Data Mapping** page, choose the names of the database fields you want to export and then map them to the corresponding fields that will receive the exported data.
6. Click **Finish** to export the data.

Export Project data to Microsoft Excel using Custom Maps

1. Display the **Export Wizard (steps 1 – 3 above)**
2. On the **Export Wizard**, click '**Next**'.
3. On the **Export Wizard - Data** page, select **Selected Data** to export specific information and click **Next**.
4. On the **Export Wizard - Map** page, select **New map**.
5. On the **Export Wizard - Map Options** page, select the type of data to export, and click **Next**.
6. On the **Export Wizard - Data Mapping** page, map the fields as desired.
7. If necessary, click **Next** and save the map.
8. Click **Finish** to export the selected file using the custom export map created.

Importing data from Microsoft Excel

Project can interact with other applications. This capability allows you to incorporate data into the project plan from files in different formats. In this topic, you will import project information from other applications.

Assume that you need to include task information in Project using data from an Excel worksheet. Rather than retyping the data and risking typographical errors, you can dynamically transfer the Excel worksheet containing the desired data to Project. By doing this, you not only avoid data entry mistakes but also save time. Furthermore, Project allows you to choose the content that is to be inserted into the plan, thereby preventing the potential problem of accidentally deleting some necessary data along with unnecessary data.

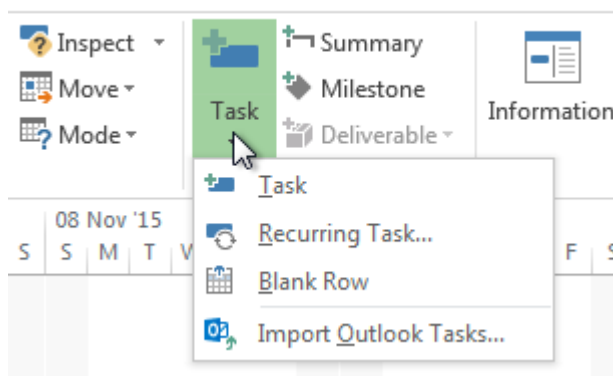
Import Formats

Importing is a method of fetching data from a source file in a particular application to a destination file in a different application. Project can import all the data or selected data from a file.

It can import task, resource, or assignment data into new or existing project plans. The imported data can be manipulated in the project plan without affecting the source file. Project can import file formats, such as Excel workbooks, Access databases, comma-delimited files, text files, XML files, and Outlook tasks. The **Import Wizard** is triggered for all file formats except Project files and Outlook tasks.

Import Outlook Tasks

Project can also import task information from Microsoft Office Outlook. To do so, from the **Task** ribbon in the **Insert** group click the **Task** drop down and choose **Import Outlook Tasks** and in the **Import Outlook Tasks** dialog box, select the tasks you wish to import. However, the user must possess an Outlook account to use this option.



The Import Wizard

In Project, the **Open** dialog box enables you to import files into the project plan. When a file format other than a Project file is opened, the **Import Wizard** is displayed. The **Import Wizard** helps you map data, if mapping is required. Mapping is not required for XML files and files created with Microsoft Project import templates. This wizard can import selected data or an entire file into a new project plan, or as an addendum to an existing, open project plan.

How to Import Project Information

Import a File Based on the Project Import Template into a New Project Plan

1. Open the project plan into which the Project import template-based file is to be imported.
2. Choose **File, Open**.
3. In the **Open** dialog box, from the file type drop-down list, select the format of the file you would be importing.
4. Select the desired Project Import template-based file you wish to import, and click **Open** to display the **Import Wizard**.
 1. On the **Import Wizard**, click **Next**.
 2. On the **Import Wizard - Data Type** page, select the format of the data you wish to import and click **Next** to import the selected format into the project plan.

Note: Selecting the **Only Selected Data** option requires that the user map the data to the project plan.

3. On the **Import Wizard - Import Mode** page, select the format in which you wish to import the data and click **Finish** to import the file based on a Project Import Template into a new project plan.

Create a Custom Import Map

1. Display the **Open** dialog box.
2. In the **Open** dialog box, select the file that is to be imported and click **Open**.
3. On the **Import Wizard**, click **Next**.
4. If necessary, on the **Import Wizard - Map** page, select **New Map**.
5. Click **Next**.
6. On the **Import Wizard - Import Mode** page, select the format in which you wish to import the data and click **Next**.
7. On the **Import Wizard - Map Options** page, check the type of data—Task, Resource, or Assignments—you want to import, and click **Next**.

8. On the **Import Wizard - Data Mapping** page, choose the names of the database fields you want to import and then map them to the corresponding Microsoft Project fields that will receive the imported data.
9. If necessary, click **Next** and save the map.
 - a. On the **Import Wizard - End of Map Definition** page, click **Save Map**.
 - b. In the **Save Map** dialog box, in the **Map Name** text box, type a name of the custom map.
 - c. Click **Save**.
10. Click **Finish** to import the selected file using the custom import map created.

Appendix

The list below is some of the most useful keyboard shortcut keys

| Shortcut | Action Performed |
|----------|--|
| Ctrl * | Zoom out |
| Ctrl / | Zoom in |
| Ctrl a | Unassigned |
| Ctrl b | Bold |
| Ctrl c | Copy |
| ctrl d | Fill Down |
| ctrl f | Find |
| F2 | Edit Task name |
| F3 | Remove Filter |
| Ctrl F3 | Reapply filter (must be done before it is removed) |
| Shift F3 | Remove sort or group |
| Alt F3 | Display column definition dialogue box |
| F5 | Go to |
| Alt F5 | Go to next over allocation |
| F6 | Activate other pane when screen split |
| Alt F8 | Display macro dialogue box |
| ctrl g | Go to |
| ctrl h | Replace |
| ctrl i | Italics |
| ctrl k | Insert Hyperlink |
| ctrl n | New Project File |
| ctrl o | Open Project File |
| ctrl p | Print |
| ctrl r | Fill Right |
| Shortcut | Action Performed |
| ctrl s | Save |
| ctrl u | Underline |
| ctrl v | Paste |
| ctrl x | Cut |
| ctrl z | Undo |

E&OE

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