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Chapter 1

Costing, Budgets and Earned Value

Project provides the flexibility to be a budgeting tool and can provide earned value calculations. Cost information is required to be entered to take advantage of these features.

As a review, the total cost for a task consists of all fixed costs plus all resource costs. Fixed costs are entered one time on the task in the fixed cost field.

To enter a fixed cost:

1. Using your preferred method, select **Gantt Chart** view
2. Click the **View** tab
3. Click the drop-down arrow on **Tables** in the Data group
4. Click **Cost**
5. Enter the fixed cost value



The default table for Gantt Chart view is Entry.

Resource costs include all of the following:

- For a work resource - hourly rate multiplied by a number of hours,
- For a material resource – unit rate multiplied by number of units
- For a cost resource – amount entered at the time of the task assignment
- Overtime costs – if resource hours on a task are specifically entered in the overtime field, the hours entered will be multiplied by the overtime rate and the standard rate will be ignored
- Cost per use - if used on a work or material resource, this cost will be added to the task each time the resource is used



Refer to the Managing Projects with Microsoft Project Introduction book for information on how to enter standard resource costs.



Project assumes prorated cost calculations unless otherwise specified so costs are current based on the progress of the task. This will be important for organizations using Project for earned value management.

Setting Alternate Rates for Resources

In this topic, we will cover alternate rate scenarios for resources. Some organizations bill out resources to another company. In those scenarios, you might need a resource that has different rates depending on the job function they are doing or depending on the contract with the other company. For example, you may have a resource with multiple skills who can perform both engineering work and project management work but each skill needs to be charged at a different rate. Project provides work and material resources between one to five different rates. In addition, each rate has the capability to incorporate a rate increase or decrease on a specific date. For example, you may have given a resource a pay raise in which you need to incorporate this new rate.

To set an alternate rate for a resource:

1. Using your preferred method, select **Resource Sheet** view
2. Right-click on the desired resource name and click **Information**
3. Click the **Costs** tab
4. Click the desired rate table and enter the desired rate(s)
5. Click **OK**



Be sure to apply the alternate rate table to the desired task assignment for Project to apply the new costs.

To apply an alternate rate on a task assignment:

1. Using your preferred method, select **Resource Usage** view
2. Underneath the desired resource, locate the desired task
3. Double-click the task name
4. In **Cost Rate Table**, choose the desired table
5. Click **OK**

To set a rate change on a specific day:

1. Using your preferred method, select **Resource Sheet** view
2. Right-click on the desired resource name and click **Information**
3. Click the **Costs** tab
4. Optional - In **Cost Rate Table**, choose the desired table

5. In **Effective Date**, choose or enter the desired date and choose or enter the desired rates
6. Click **ok**



Project automatically applies the new rate on tasks but historical information is protected.

Creating a Budget Resource

A budget resource is simply a setting on an existing resource that limits its assignment capabilities to only the Project Summary task. For this reason, it is useful for overall budgeting purposes. Budget resources can be used to budget by cost or by work hours.

To create a budget resource that will be used to create an overall project cost:

1. Using your preferred method, select **Resource Sheet** view
2. Enter a new resource to represent your budget resource (e.g. Budget Cost)
3. In **Type**, choose **Cost**
4. Right-click on the resource name and click **Information**
5. Click **Budget** on the General tab
6. Click **OK**

To assign a budget resource and enter a cost budget value:

1. Using your preferred method, select **Task Usage** view
2. Click the **Format** tab
3. Click **Project Summary Task** in the Show/Hide group
4. Right-click the task name on Row 0
5. Click **Information**
6. Click the **Resources** tab
7. In **Resource Name** choose **Budget Cost** (or your budget resource name)
8. Click **OK**
9. Click the column heading to the right of Task Name
10. Click the **Format** tab
11. Click **Insert Column** in the Columns group
12. Click **Budget Cost**
13. Enter the budget value in the Budget Cost field



Project automatically spreads the value across the life of the project. If you desire, you could instead zoom in or zoom out the timescale, add the Budget Cost field to the grid, and enter time phased budget values.

Creating a Budget Field

A budget field is using one of Project's open fields to enter budget information. The advantage of using this approach is you can enter a budget at any level of detail desired including summary tasks or detail tasks. You can also choose to enable rollup of budget information to the summary levels. Budget fields can be set to capture either cost or work budget values as desired.

To create a budget field:

1. Using your preferred method, select **Gantt Chart** view
2. Click the **Project** tab
3. Click **Custom Fields** in the Properties group
4. Click the drop-down arrow next to **Type** and click **Cost**
5. Click an available cost field and click **Rename**
6. Enter a friendly name such as **Budget** and click **ok**
7. Optional – choose a **Rollup** option for **Calculation for task and group summary rows**
8. Click **ok**
9. Click a column heading to the right of where you want the budget field to appear
10. Click the **Format** tab
11. Click **Insert Column** in the Columns group
12. Click **Budget** (or your budget field name)
13. Enter the budget value in the Budget field



Whether you use a budget resource or a budget field approach, both can be used to compare against the total cost or total hours of the project.



If you have captured a baseline, include that field as well to provide information about planned cost/work, budgeted cost/work, and actual cost/work.

Earned Value Reporting

Earned Value analysis is a method for measuring project performance at a specific point in time. It indicates how much of the budget should have been spent in view of the amount of work done so far, and the baseline cost for the task, assignment, or resource. Earned Value is also referred to as budgeted cost of work performed (bcwp). The Status Date in Project provides the “point in time” marker used in Earned Value measurements.

Earned Value analysis in project requires cost-based information to calculate. Cost-based information is typically generated automatically after resources are assigned and other task costs are entered. Although the schedule will be evaluated by cost, that information will be able to determine if the schedule is ahead or behind. Refer to the rest of this chapter for more information.



Project provides you the earned value for the task based on the percent complete which is entered directly during tracking or calculated based on information provided such as actual duration and remaining duration. If your organization prescribes to another project management technique for earning earned value, you will need to add tasks to your project plan so when a percentage is entered you will receive the expected earned value amount.



Project follows the prorated approach for accrual of earned value which means you will receive earned value at every point of task progress 25%, 50%, 100%. You can change this setting for both resources and fixed costs if you desire.

Setting Earned Value and Calculation Options

Options should be set that reflect how you want Project to calculate Earned Value.

To set Earned Value and Calculation Options:

1. Click the **File** tab.
2. Click **Options**.
3. Click **Advanced**.
4. In the **Earned Value options for this project list**, select either **All New Projects** or **Project Name**.
5. In the **Default task Earned Value method** list, select either **% Complete** or **Physical % Complete**.

Since % Complete values are often filled in automatically by Project as a result of other actions, you may prefer to use Physical % Complete so you can enter your own values at any time. Another use for Physical % Complete is that it can be used to keep track of progress on the physical product separate from the task itself (e.g., the task “remodel kitchen” may be listed as 50% complete; however, since the cabinets have not been installed and they are a large component of the kitchen, you may only give a Physical % Complete value of 30%.)

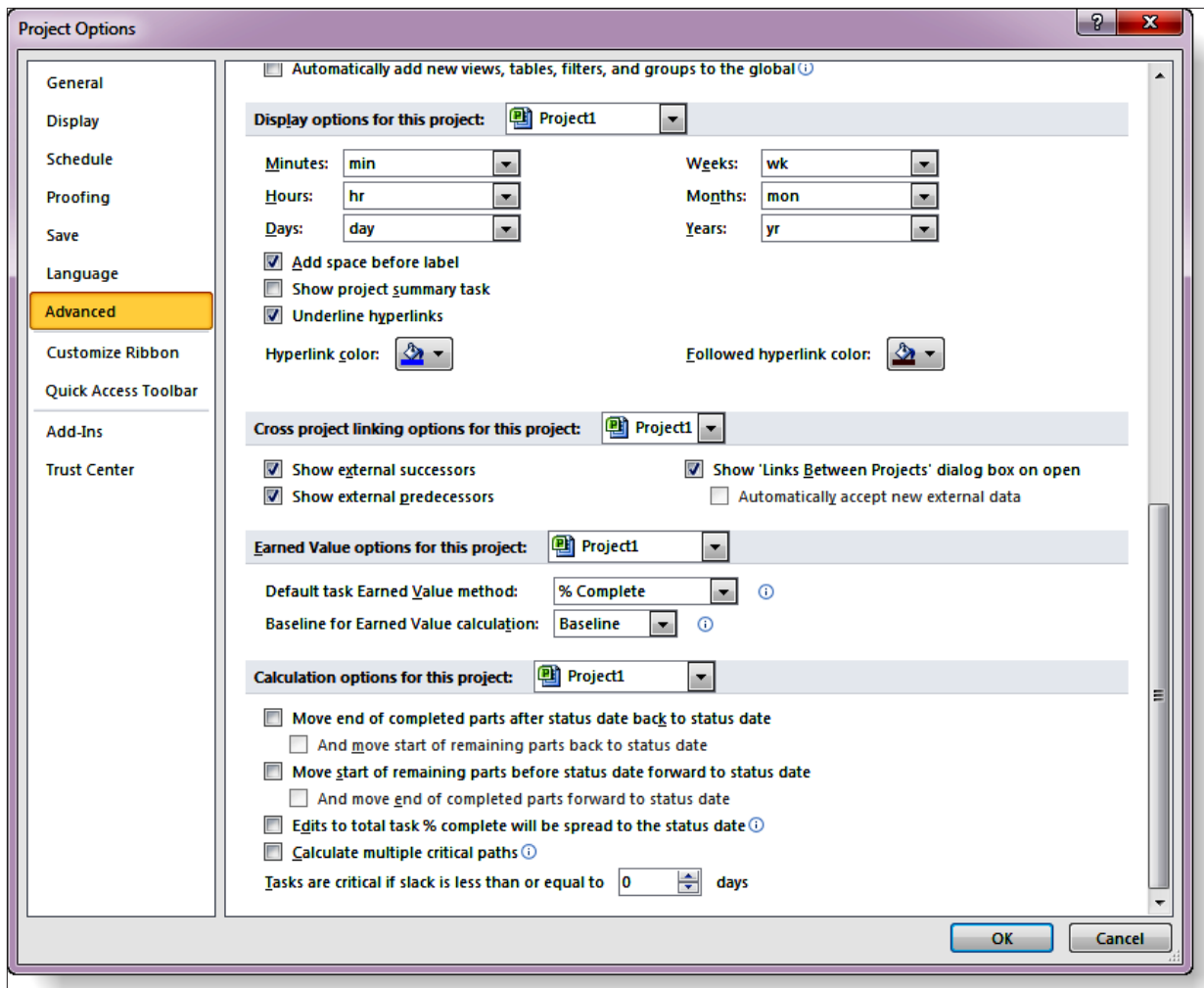


Figure 1-1 Project Options – Earned Value Options

6. In the **Baseline for Earned Value calculation** list, select the appropriate Baseline value.
7. If you have only set one baseline, use Baseline. If you instead want Project to use an alternate baseline, select the appropriate alternate baseline.
8. In the **Calculation options for this project**, select either **All New Projects** or **Project Name**.
9. Select or clear **Move end of completed parts after status date back to status date**. This means work you completed ahead of schedule will be properly moved to the left of the status date and placed in the past.



You can apply this option later on a task by task basis as desired instead of turning it on here. Refer to “**Rescheduling/Moving a Task**” in chapter 16, “Tracking Resource Progress.”

10. Select or clear **Move start of remaining parts before status date forward to status date**. This means work that is leftover in the past will be properly moved to the right of the status date and placed in the future.



You can apply this option later on a task by task basis as desired instead of turning it on here. Refer to “**Rescheduling/Moving a Task**” in chapter 16, “Tracking Resource Progress.”

11. Click ok.



For the **Calculation options for this project** to work properly, you have to ensure **Split in-progress tasks** under **Scheduling options for this project** is selected in the **Schedule** section of **Options**.

Why Should I Perform Earned Value Analysis?

When you perform Earned Value analysis, you get reliable answers to key questions such as “Is there enough money left in the budget to complete the project?” and “Is there enough time left in the schedule to finish the project on time?” Earned Value indicators express project progress in terms of cost and schedule. If you want to know whether you’ll run out of money before work on the project is completed (or have a surprise after it’s over) an Earned Value analysis is one way to find the answer.

How Do I Interpret Earned Value?

Earned Value indicators that are variances, such as cost variance, can be either positive or negative. A positive variance indicates that you are ahead of schedule or under budget. Positive variances might enable you to reallocate money and resources from tasks or projects with positive variances to tasks or projects with negative variances.

A negative variance indicates that you're behind schedule or over budget, and you need to take action. If a task or project has a negative cost variance (cv), you might have to increase your budget or accept reduced profit margins.

Earned Value indicators that are ratios, such as the cost performance index (CPI) and the schedule performance index (SPI), can be greater than 1 or less than 1. A value that is greater than 1 indicates that the project is ahead of schedule or under budget. A value that is less than 1 indicates that the project is behind schedule or over budget. For example, an SPI of 1.5 means that the project are progressing through the schedule faster than planned and a CPI of 0.8 means that you are spending more money than planned. If both of these conditions exist on the same schedule, this could mean that you are paying a higher rate for more efficient resources who are doing the work faster.

Which Earned Value Quantities Can I Show in Microsoft Project?

During tracking you may want to display Earned Value information so you can quickly evaluate if you are on schedule and within budget.

There are three tables that provide Earned Value information:

- Earned Value
- Earned Value Cost Indicators
- Earned Value Schedule Indicators

To change to an Earned Value table, complete the following steps:

1. In the **View** tab, **Data** group, click **Tables**.
2. Click **More Tables** from the dropdown list.
3. Select the desired table.
4. Click **Apply**.

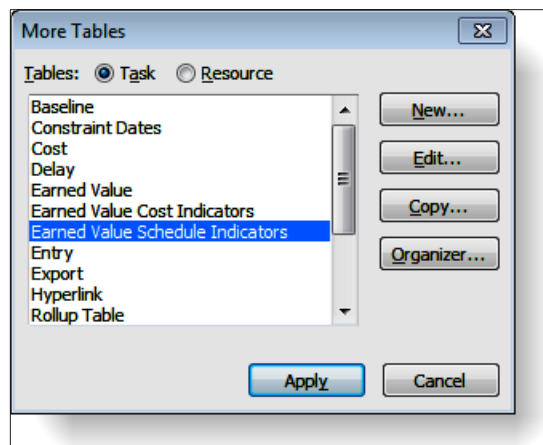


Figure 1-2 More Tables Dialog Box



Chapter 2

Advanced Resource Management

A resource assignment is attaching one or many resources to one or many tasks in the project plan. The level of detail you involve yourself in for each assignment can vary. For example, you may simply be interested in who does what task or you may be interested in the hours of work assigned to the resource for each day the task is scheduled. When working with resources that are in limited supply, you may need to fine tune resource assignments to resolve resource overallocations. In this chapter we will explore a variety of options that you can choose to apply to your project plan.

Creating a New Resource Assignment (Review)

1. Using your preferred method, select **Gantt Chart** view
2. Click the **Resource** tab
3. Click **Assign Resources** in the Assignments group
4. Click the desired task(s)
5. Click the desired resource(s)
6. In the Assign Resources dialog box, click **Assign**

Evaluating Resource Availability Before Making an Assignment

When creating new resource assignments, Project provides a proactive option to evaluate resource availability before you make an assignment. With this option, when you select the task and use the Assign Resources dialog box, Project automatically uses the Start and Finish date of the task as the date range for the availability of the resource you want to evaluate. Simply entering the desired hours will show you if that resource is available or hide the resource name from the list if the resource is unavailable.

1. Using your preferred method, select **Gantt Chart** view
2. Click the **Resource** tab
3. Click **Assign Resources** in the Assignments group
4. Click the desired task
5. In the Assign Resources dialog box, click **Available to Work** and enter the number of hours you need a resource for during the length of the task
6. The resource list will automatically filter and hide work resources that do not have enough capacity during the timeframe of the task



Already assigned resources will never hide from the list.



Remember to clear the Available to Work option to list all resources in the Assign Resources dialog box for future task assignments.

Assigning a Part-Time Resource to a Task

The current and previous version of Project support alternate approaches for a resource that is available to work part time. You can assign a resource with an alternate assignment units percentage and that will recalculate the task based on the availability (e.g. 50%). You can also assign a resource at 100% and adjust the working hours as needed to reflect a part-time resource.



It is a best practice to choose an approach and remain consistent throughout your schedule to simplify the process of auditing and to make it easier for others to follow your scheduling methodology.

1. Using your preferred method, select **Gantt Chart** view
2. Click the **Resource** tab
3. Click **Assign Resources** in the Assignments group
4. Click the desired task
5. For the desired resource, in **Units**, enter the desired percentage (e.g. 50) or hours (e.g. 4h) and press the **Enter** key



Project converts hours entered into units automatically in the Assign Resource dialog box.



Entering hours is not recommended for Fixed Work tasks where the task hours have already been provided. An error message may appear.



See Chapter 3, *Advanced Work with Task Types* for more information about controlling calculations in Project.

Setting Overtime Hours on a Task Assignment

If your schedule uses alternate rates for Overtime, Project needs to know when to apply that rate on a task. Also, if you are fast tracking a Fixed Work task, Project needs to know which resource is working overtime hours to get the task done sooner.

1. Using your preferred method, select **Gantt Chart** view
2. Click the **View** tab
3. Click **Details** in the Split View group and ensure Task Form is displayed in the drop-down list
4. On the Task Form, right-click to bring up alternative views and click **Work**
5. For the desired resource, in **Work**, enter the total hours the resource is working that apply to standard time, in **Ovt. Work**, enter the total hours the resource is working that apply to overtime

Shifting Resource Assignments with Delay

If multiple resources are working on one task, you may have some resources who have a conflict with another task and are therefore unavailable until the task is in progress. Switching the resource to a part-time resource would not solve this problem since that would assume the resource is available the entire timeframe of the task. However, delaying the start of the resource on a specific task and reducing hours (if needed) will eliminate overallocation problems at the beginning of a task.

1. Using your preferred method, select **Gantt Chart** view
2. Click the **View** tab
3. Click **Details** in the Split View group and ensure Task Form is displayed in the drop-down list
4. On the Task Form, right-click to bring up alternative views and click **Schedule**
5. For the desired resource, in **Work**, enter the new total hours the resource is available to work on the task (optional), in **Delay**, enter the delay time before the resource can start.



If you do not reduce the total hours of work for the resource when adding delay time, the length of the task may extend.



See Chapter 3, *Advanced Work with Task Types* for more information about controlling calculations in Project.



You may also decide to create separate tasks to solve this problem.

Moving a Task Until a Resource is Available

If a resource is overallocated or assigned to another project, you might be required to move a task to a new time period before it can be worked on. While there are several approaches to this, below are some steps to incorporate very quick changes to your schedule.

1. Using your preferred method, select **Gantt Chart** view
2. Click the **Task** tab
3. Click the desired task
4. Click the drop-down arrow on **Move** in the Tasks group
5. Select the desired move task option.



Move Task Forward or Reschedule Task are most popular for this scenario.



These techniques create constraints in your schedule. Apply this only if the resource limitation is truly driving your schedule.



If you prefer, you can drag a task in Team Planner view as well.



Team Planner view moves the work for that resource only not the entire task.

Replacing a Resource on a Task in Progress

Resources often leave a project or have changes in their availability where they can no longer work on a project. A popular scenario is giving remaining work to a new resource. Refer to the following steps to complete this process.

1. Using your preferred method, select **Gantt Chart** view
2. Click the **Resource** tab
3. Click **Assign Resources** in the Assignments group
4. Click the desired task
5. Click the name of the resource that is currently assigned in the Assign Resources dialog box and click **Replace**
6. Click the name of the resource who will be finished the task and click **OK**



If you view the details of the task in Task Usage view, you will notice that it still shows the previous resource for work that is already completed, but the remaining work for the previous resource is now at zero and all remaining work has been shifted to the new resource.



Avoid deleting a resource from an assignment where a task is in progress. You will lose historical information.

Excluding Tasks From Leveling

Leveling is a Project feature where tasks are delayed due to a resource conflict. Most projects have tasks that cannot be delayed due to restrictions from the project sponsor, customer, or other reasons. In these instances, you should exclude those tasks from leveling.

1. Using your preferred method, select **Gantt Chart** view
2. Click the **Format** tab
3. Click the column heading to the right of where you will be adding a new field
4. Click **Insert Column** in the Columns group
5. Click **Level Assignments**
6. For the desired tasks, change the drop-down option to No to exclude them from leveling

Excluding Resources From Leveling

Even though your project may have resource overallocation issues, you may not want any task work delayed for a particular resource. This could be because you know another resource is being added to your project to assist or because the resource is available more than full time on your project.

1. Using your preferred method, select **Resource Sheet** view
2. Click the **Format** tab
3. Click the column heading to the right of where you will be adding a new field
4. Click **Insert Column** in the Columns group
5. Click **Can Level**
6. For the desired resources, change the drop-down option to No to exclude them from leveling

Using Task Priorities in Leveling

For organizations that use leveling, they typically like to fine tune how the leveling feature is applied to specific tasks. Setting task priorities is another way to control leveling which provides a scale of importance for a task over a previous method discussed which involved turning on and off leveling for a task.

1. Using your preferred method, select **Gantt Chart** view
2. Double-click a task
3. Click the **General** tab
4. In **Priority**, choose or enter the desired priority number
5. Click **OK**
6. Repeat as needed for as many tasks as desired.



1000 is highest priority is Project. Choose this option for tasks that should not be moved.



Consider using Priority to set tasks that should be selected first for leveling (1 priority) and tasks that should not be selected for leveling (1000 priority). This should reduce the number of tasks you need to manually set a priority number on since all the remaining tasks will be average priority (500 priority).



Priorities will only be considered first in leveling if you change the Leveling Options setting for Leveling Order to Priority, Standard.

Applying a Work Contour

Project by default applies a flat contour to all resource assignments. This means that work is evenly distributed throughout the life of the task. If a resource is overallocated or to further control resource assignments, you may choose to alter how the hours are spread across the life of a task. A feature called work contouring provides several different options that can be applied to tasks to help alter the work burden on your resources.

1. Using your preferred method, select **Resource Usage** view
2. Double-click the desired task name
3. In **Work Contour**, click the drop-down arrow and choose the desired option
4. Click **ok**



The name of the contour is supposed to visually remind you of a shape.



Notice you can pause on the indicator symbol to read a note about the contour that has been applied to the task.

Advanced Resource Assignment Analysis

Project provides a number of fields that can help you make informed decisions about resources. Typically project managers and advanced schedulers use either the Resource Usage view or Task Usage view to perform further analysis because of the ability to add summary fields to the table portion of the view (left-side) and detailed time phased fields to the grid portion of the view (right-side).

1. Using your preferred method, select **Task Usage** view
2. Click the column heading to the right of where you will be adding a new field
3. Click the **Format** tab
4. Click **Insert Column** in the Columns group
5. Click the desired field that you want to display a summary for
6. Repeat as needed until all fields are included
7. Right-click on the grid portion of the view (right side)
8. Click an item in the frequently used fields menu to add or hide it from the view
9. Click **Detail Styles** for more options
10. Click the desired field(s) and click **Show** or **Hide** as desired
11. Click **ok**
12. Repeat as needed until all fields are included



Some fields can only be shown in certain views. Also some fields can only be displayed on the left-side or right-side of the screen.



Chapter 3

Advanced Work with Task Types

Overview

Upon completion of this chapter, the participant will be able to:

- Differentiate between max units, assignment units, and peak units.
- List best practices with task types when entering tasks.
- Generate desired value calculations by applying appropriate task type settings.
- Make assignment changes using best practice techniques and recommended views.
- Describe the purpose of peak units and its role in staffing decisions.

Understanding Project's Scheduling Engine

Understanding the scheduling engine at work behind the scenes is the most complex component of Project. Many excellent project managers have given up using Project because they get too frustrated using the tool to track and manage their project schedules. The simple fact is that they do not completely understand how Project thinks when it comes to calculating and recalculating duration, work, and units. They become frustrated with the fact that numbers change in an almost random fashion and they are constantly trying to fix the tool, instead of addressing how resources dynamically impact the schedule.

Mastering Task Types

In Chapter 1, *Best Practices with Task Development* you were introduced to the concept of task type and how you should set it to drive calculations in Project. However, a task is not fully calculated until you add resources. This section expands on the resource discussion by differentiating between the different types of units and how to maximize the built-in assignment features to generate results that help you make staffing decisions.

Max Units, Peak Units and Assignment Units

The different unit options in Project have different purposes and behave differently from each other when you assign resources. You need to understand max units, peak units, and assignment units to maximize the usefulness of the tool.

Max Units – this field is available on the Resource Sheet. It indicates the portion of a resource that you have available on this project. Values 100% or less typically represent the availability of one resource, while values such as 300% may indicate three resources.

Peak Units – in Project, Peak Units is displayed sometimes as Peak and sometimes as Peak Units. The word Units is being added where necessary to aid in understanding the function of this field. This field is best displayed in an assignment view such as Task Usage or Resource Usage. The purpose of this field is to show you, during the life of the task, the maximum percentage that will be needed for that resource. Let's say that a resource is assigned on a task 50% on the first day, 100% on the second day, 150% on the third day, and 75% on the fourth day. The Peak Units value would be 150% which is the maximum percentage you will need the resource during the life of the task.

Assignment Units – in Project, sometimes Assignment Units will only

display as Units. When you assign a resource to a task, you designate how much of that resource you want to apply to the task. If you choose 100%, the resource is working full-time on the task. If you choose 50%, the resource is working part-time. Assignment Units can vary task by task and resource by resource. This field can be viewed in Gantt Chart view by clicking the Information button, on the Task tab or by clicking the Assign Resources button on the Resource tab. Despite the max units value for a resource, you can always assign any percentage of assignment units to a task.



If you have used any prior version of Project, you should take note that the assignment units field does not function as it did in the past. Now if you assign one person full time at 100%, the units of that person will not automatically recalculate when you modify the task. This new functionality ensures your resource assignments remain constant throughout the planning and tracking of your project.



Project initially created in an older version of Project will not apply the new assignment units functionality. You may need to transfer those tasks to a new blank schedule to see proper results.

Working with Task Types

There are several different approaches to planning the time for your task. One option is to plan the Duration, a second option is to plan the Work, and a third option is to plan both. Task types go hand-in-hand with these options and are the way to control how Project calculates values of specific fields when resources are assigned.

Best Practices

- Enter a duration value and choose **fixed duration** when you want to make sure that Project never changes the duration value for the task.
- Choose **fixed duration, effort driven on** when you want Project to lock down the duration value, but divide work across available resources.
- Choose **fixed duration, effort driven off** when you want Project to lock down the duration value, but assume each resource must perform the same number of hours of work.
- Enter a work value and choose **fixed work** when you want to make sure that Project never changes the total work value for the task.
- Enter both duration and work values when you want Project to calculate resource units needed to accomplish the task.

Controlling Calculations During Initial Assignments (application of the formula)

Entering Duration and Work values and setting the Task Type and Effort Driven settings clearly have an impact on how the scheduling engine drives calculations. Project uses a formula to drive its calculations. The formula is $\text{Duration} \times \text{Assignment Units} = \text{Work}$.

Review the following examples to more fully understand how assignments dynamically change the schedule.

Example 1 – Fixed Duration

The Prepare Facilities task was set to a duration of 4 days. Notice the auto calculation of Work in these illustrations.

Task Type: Fixed Duration, Effort Driven Off

- With one resource assigned at 100%, the work is calculated to 32 hours.
- The calculation becomes: 4 days [Duration] × 8hrs [Assignment Units] = 32 [Total Work].

	Task Name	Duration	Work						
1	Set Up Project Environment	4 days	32 hrs						
2	Prepare Facilities	4 days	32 hrs						
3	Set Up Project Standards and Procedures	1 day	0 hrs						
4	Set Up Project Management Tools	1 day	0 hrs						
5	Set Up Project Book	1 day	0 hrs						

Name:	Prepare Facilities	Duration:	4 days	<input type="checkbox"/> Effort driven	<input type="checkbox"/> Manually Scheduled	Pre
Start:	Thu Mar 24, '11	Finish:	Tue Mar 29, '11	Task type:	Fixed Duration	%
ID	Resource Name	Units	Work	ID	Predecessor Name	
2	Building Manager	100%	32h			

Figure 3-1 Fixed Duration – One Resource Assigned

- If 2 resources are assigned, the work value doubles because you now have 16 hours per day of resources' time going toward the task. So now the work value is 64 hours.
- The calculation becomes: 4 days [Duration] × 16 hrs [Assignment Units] = 64 Hours [Total Work].

	Task Name	Duration	Work						
1	Set Up Project Environment	4 days	64 hrs						
2	Prepare Facilities	4 days	64 hrs						
3	Set Up Project Standards and Procedures	1 day	0 hrs						
4	Set Up Project Management Tools	1 day	0 hrs						
5	Set Up Project Book	1 day	0 hrs						

Name:	Prepare Facilities	Duration:	4 days	<input type="checkbox"/> Effort driven	<input type="checkbox"/> Manually Scheduled	Pre
Start:	Thu Mar 24, '11	Finish:	Tue Mar 29, '11	Task type:	Fixed Duration	%
ID	Resource Name	Units	Work	ID	Predecessor Name	
2	Building Manager	100%	32h			
1	Project Director	100%	32h			

Figure 3-2 Fixed Duration – Two Resource Assigned

Task Type: Fixed Duration, Effort Driven On

Fixed Duration, Effort Driven On produces the following result and Peak Units (not visible) is 50% for each resource.

- With Effort Driven factored in Project splits the work between the two resources, resulting in each resource dedicating 4 hours per day (instead of 8 hours) toward the task.
- The calculation becomes: 4 days [Duration] × 16 hours [effort split between all resources] = 32 hours [Total Work].

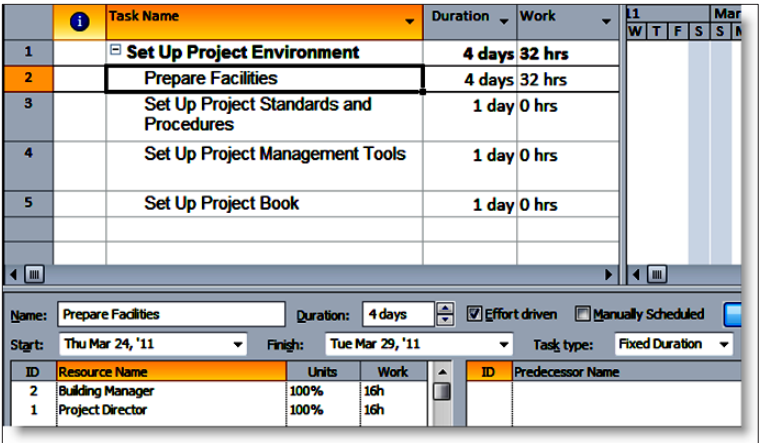


Figure 3-3 Fixed Duration – Effort Driven

Example 2 – Fixed Work

The Prepare Facilities task was set with a Work value of 24 hours. Notice the auto calculation of Duration in these illustrations.

Task Type: Fixed Work

The screenshot shows a task list with the following tasks:

ID	Task Name	Duration	Work
1	Set Up Project Environment	3 days	24 hrs
2	Prepare Facilities	3 days	24 hrs
3	Set Up Project Standards and Procedures	1 day	0 hrs
4	Set Up Project Management Tools	1 day	0 hrs
5	Set Up Project Book	1 day	0 hrs

The detailed view for 'Prepare Facilities' shows the following information:

- Name: Prepare Facilities
- Duration: 3 days
- Effort driven: ☒ Effort driven, ☐ Manually Scheduled
- Start: Thu Mar 24, '11
- Finish: Mon Mar 28, '11
- Task type: Fixed Work

The resource assignment table shows:

ID	Resource Name	Units	Work
1	Project Director	100%	24h

Figure 3-4 Fixed Work – One Resource Assigned

As more resources are added on a Fixed Work, effort-driven task, duration reduces.

The screenshot shows the same task list as Figure 3-4. The detailed view for 'Prepare Facilities' now shows:

- Name: Prepare Facilities
- Duration: 1.5 days
- Effort driven: ☒ Effort driven, ☐ Manually Scheduled
- Start: Thu Mar 24, '11
- Finish: Fri Mar 25, '11
- Task type: Fixed Work

The resource assignment table now shows two resources:

ID	Resource Name	Units	Work
1	Project Director	100%	12h
2	Building Manager	100%	12h

Figure 3-5 Fixed Work – Two Resources Assigned



Since the Fixed Work task type is based on work effort, it is already (in theory) Effort Driven. There is no Effort Driven Off option.

Example 3 – Planning Both Duration and Work

Task type: Fixed Duration, Effort Driven On

This is essentially fixing both Duration and Work values.

The Prepare Facilities task has been set with a Duration Value of 4 days and a Work value of 112 hours.

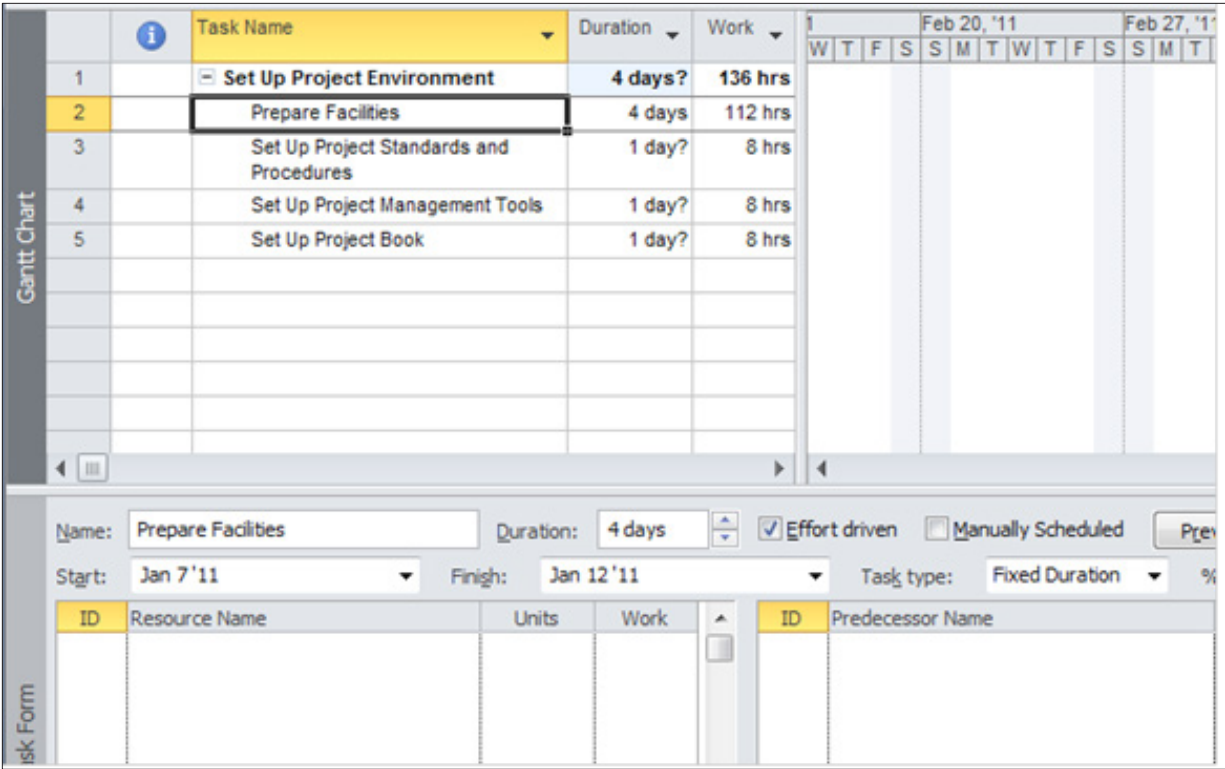


Figure 3-6 Fixed Duration and Work – Table Entry

Given these two values, how many Furniture Movers are needed for this task? After adding the Furniture Movers resource, the results indicate approximately 3.5 resources. You may want to consider planning for 4 resources to accomplish the amount of work you need done in 4 days.

Example 4 – Fixed Units



You may still control calculations in Gantt Chart view as you did in previous versions; however, there are some added benefits to using alternate views before changing a calculation.

This illustration references an example where you may want to set Fixed Units.

Let's say you have a project manager only available 20% of their time throughout the life of the project.

The screenshot displays the Gantt Chart view of a project. A task named 'Project Management Activities' is selected, showing a duration of 120 days and 192 hours of work. The Task Information dialog box is open, showing the task's details. The task type is set to 'Fixed Duration'. The resource 'Project Manager' is assigned with 20% units, resulting in 192 hours of work. The task's start date is Jan 7 '11 and the finish date is Jun 23 '11.

ID	Resource Name	Units	Work
2	Project Manager	20%	192h

Figure 3-7 Fixed Units Entry Table

Due to a change in the project, the overall duration of the project will now be 150 days instead of 120 and you want to ensure that the project manager remains at 20% allocation.

Setting Fixed Units before making the duration change is recom-

mended below to accomplish that result.

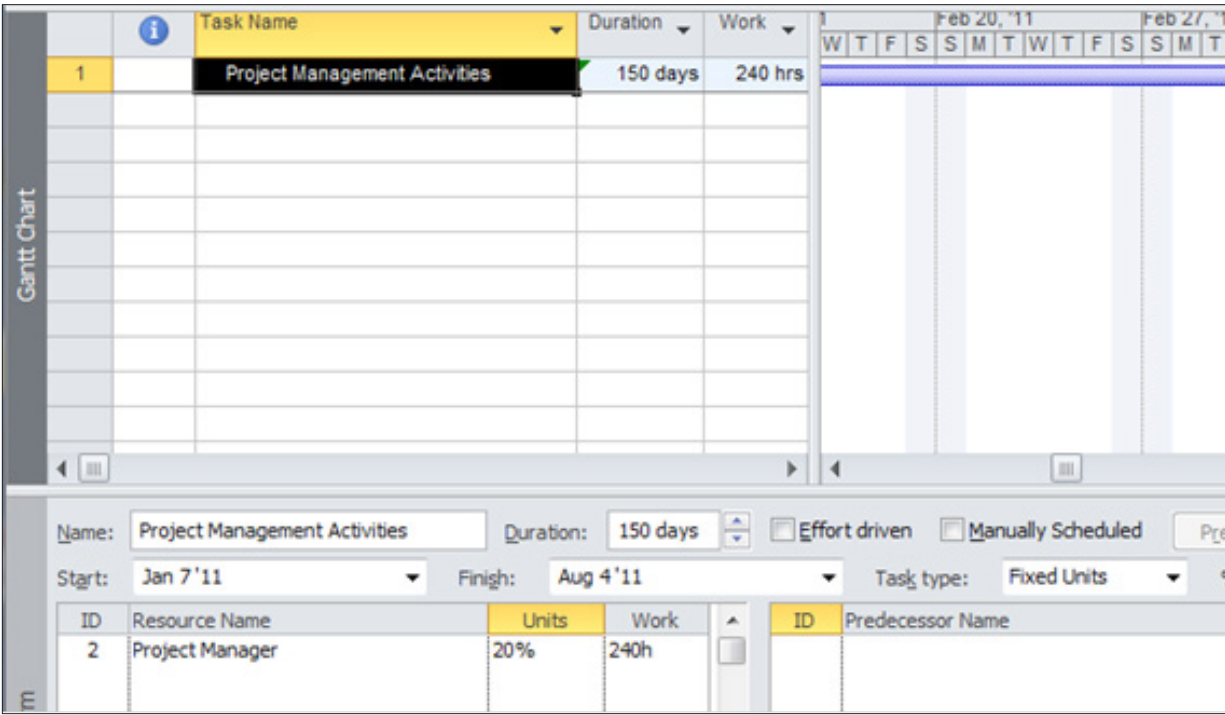


Figure 3-8 Fixed Units – Results for 20% Allocation



Using Fixed Units alters the calculation of Peak Units and can be confusing. It is recommended to use this task type only in the specific occasions where the other task types will not meet the scheduling needs.

Now that you have become more familiar with how an initial assignment generates a calculation, let's look at making changes to assignments, values, and what Peak Units tells us.

Controlling Calculations During Assignment Changes

Throughout your project there will be changes to things such as scope, resource availability, and funding. These changes may require you to modify tasks that are already fully staffed with resources. In this section, you will discover the best approach for making changes to tasks with existing resource assignments.



Sometimes Peak Units and Assignment Units are the same value, sometimes they are not. Be sure to review Peak Units in either Task Usage or Resource Usage views.

Before making any changes on a task that has resources assigned, switch to the Task Usage view and display Duration, Work, Assignment Units, and Peak Units fields.

Task Name ▾	Duration ▾	Work ▾	Assignment Units ▾	Peak ▾
<input checked="" type="checkbox"/> Set Up Project Environnn	4 days	20 hrs		
<input checked="" type="checkbox"/> Prepare Facilities	4 days	20 hrs		
<i>Project Director</i>		10 hrs	63%	31%
<i>Building Manager</i>		10 hrs	63%	31%
Set Up Project Standarc	1 day	0 hrs		
Set Up Project Manager	1 day	0 hrs		
Set Up Project Book	1 day	0 hrs		

Figure 3-9 Task Usage View

Before you make any changes, review your task type and effort driven settings.

Extending Duration with Same Total Work Hours

You need to extend the duration of a task to give the resources more time to work on other projects, but leave the total hours of work the same:

- 1. Set the task to **Fixed Work** first.
- 2. Change the duration from 4 to 8.
- 3. Observe the change in the Peak Units field.

Task Name ▾	Duration ▾	Work ▾	Assignment Units ▾	Peak ▾
[-] Set Up Project Environn	8 days	20 hrs		
[-] Prepare Facilities	8 days	20 hrs		
Project Director		10 hrs	63%	16%
Building Manager		10 hrs	63%	16%
Set Up Project Standarc	1 day	0 hrs		
Set Up Project Manager	1 day	0 hrs		
Set Up Project Book	1 day	0 hrs		

Figure 3-10 Task Usage View

Increasing Work Hours with Same Duration

You need to keep the duration the same, but put more hours on the task since the task is more complex than originally thought.

- 1. Set the task to **Fixed Duration** first.
- 2. Change the work from 20 to 30.
- 3. Observe the change in the Peak Units field.

Task Name	Duration	Work	Assignment Units	Peak
Set Up Project Environment	4 days	30 hrs		
Prepare Facilities	4 days	30 hrs		
Project Director		15 hrs	63%	47%
Building Manager		15 hrs	63%	47%
Set Up Project Standards and Procedures	1 day	0 hrs		
Set Up Project Management Tools	1 day	0 hrs		
Set Up Project Book	1 day	0 hrs		

Figure 3-11 Task Usage View

Notice what happens if you assign more work hours than what would normally be available based on the duration. Peak Units tells you that you have overallocated the resource. Correcting an overallocation will be covered in Chapter <?>, *Resolving Resource Conflicts*.

	Task Name	Duration	Work	Assignment Units	Peak
	Set Up Project Environment	4 days	80 hrs		
	Prepare Facilities	4 days	80 hrs		
	Project Director		40 hrs	63%	125%
	Building Manager		40 hrs	63%	125%
	Set Up Project Standards and Procedures	1 day	0 hrs		
	Set Up Project Management Tools	1 day	0 hrs		
	Set Up Project Book	1 day	0 hrs		

Figure 3-12 Task Usage View with Overallocated Resource

Adjusting Assignment Units Due to Limited Resource Availability

You want to adjust assignment units because you now have limited availability of your resources.

1. Set the task to **Fixed Duration** or **Fixed Work** first.

- 2. Change the assignment units.
- 3. Observe the change in the field you did not fix earlier and the Peak Units field.

Notice the recalculation of work on a fixed duration example.

Task Name ▾	Duration ▾	Work ▾	Assignment Units ▾	Peak ▾
<input type="checkbox"/> Set Up Project Environment	4 days	16 hrs		
<input type="checkbox"/> Prepare Facilities	4 days	16 hrs		
Project Director		8 hrs	25%	25%
Building Manager		8 hrs	25%	25%
Set Up Project Standards and Procedures	1 day	0 hrs		
Set Up Project Management Tools	1 day	0 hrs		
Set Up Project Book	1 day	0 hrs		

Figure 3-13 Task Usage View

Using Peak Units for Resource Planning

Since Peak Units tell you the maximum capacity of a resource over the life of the project, you can use it to alert you of a resource being assigned too much or too little work. When you display the column for Peak Units, you know at a glance the greatest amount of that resource needed for the project; however, it does not indicate overall peaks and valleys across the project. Instead display Peak Units across a time scale to alert you to both high and low points for resources. This will allow you to have more complete information about staffing your project and help you determine if you only need to increase or decrease staff at specific time periods instead of for the entire project.

To configure the Resource Usage view to show Peak Units across a time frame:

- 1. On the **View** tab, **Resource Views** group, click **Resource Usage**.

2. On the **Format** tab, **Details** group, click **Add Details**.
3. In the **Detail Styles** dialog box under **Available** fields, click **Peak Units**, and click **Show**.
4. Click **OK**.

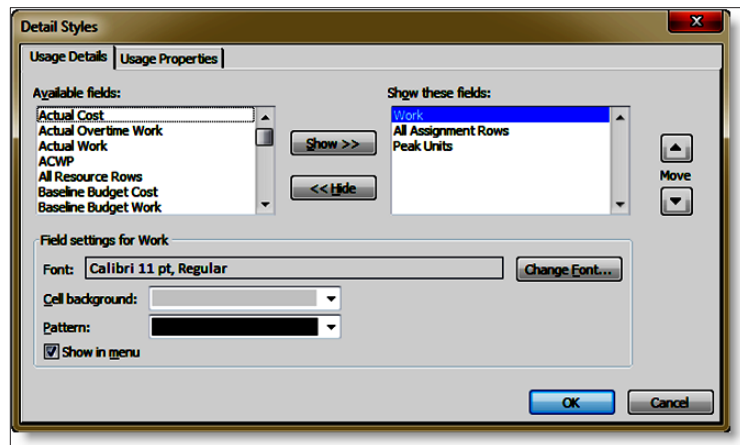


Figure 3-14 Detail Styles Dialog

Project Director	16 hrs	Work			16h
		Peak Units			175%
Prepare Facilities	8 hrs	Work			8h
		Peak Units			25%
Set Up Project St	8 hrs	Work			8h
		Peak Units			150%

Figure 3-15 Overallocated Resources

Key Points to Remember

- Max units represent resource availability on the project.
- Peak units represent the maximum portion of that resource you will need over the time frame of the task.
- Assignment units is the portion of the resource preferred on the task (e.g., 50% is a part-time assignment).
- Fixed duration tasks freeze the duration value but calculate work values when resources are assigned.
- Fixed work tasks are always effort driven and they fix the total work value but calculate duration when resources are assigned.
- When you plan both duration and work, resource assignment units will be calculated.
- When making changes on a task with assignments use Task Usage view and display Duration, Work, Assignment Units, and Peak Units.
- Peak units helps you identify high and low points for your resources and can be used in staffing planning.



Chapter 4

Managing Multiple Projects

Lesson 1: Linking Multiple Projects

When managing more than one project, combining information from multiple project schedules can be helpful. The completion date of a task in one project could influence the start date of a task in another project and what would be the impact if a change was made.

In this lesson we will discuss:

1. Overview of Multiple projects
2. New window
3. Linking tasks across projects
4. Analyzing the effects of changing values

Overview of Multiple Projects

Managing more than one project at a time can be challenging. Whether the projects are part of a larger program or separate ventures, combining the information to see a big picture can be valuable. Knowing how the resources are distributed across the projects and the impacts of resource availability on project schedules will give you more information to make better project management decisions.

Project 2010 has various capabilities for handling information concerning multiple projects:

Master Project: This is the easiest method of handling multiple projects. A project file is created and saved usually with a name inferring that the file will be a Master Project. Other existing projects are inserted into the Master Project file. The inserted projects are called member projects. When the Master Project is opened, the member projects can optionally be opened inside the Master Project. Reporting across the projects is easy with the aid of groups, custom values and filters. Master Projects are very helpful when managing large projects or managing unrelated projects. Inserted projects may be managed by multiple project managers and all information combined when necessary.

External links between projects: A task in one project can be the

predecessor of a task in another project. Relationship links can be created across projects using a temporary file created by the New Window function. Links may also be created when project files are opened in a Master Project.

New Window: This function is used to combine projects on a temporary basis for reporting across projects or for resource leveling across projects.

Resource Pools: Typically resources are not dedicated to one project but are shared over many projects. Using an external resource pool can allow for resource sharing across multiple projects. The ability to see all resource assignments in one place could then be viewed through any of the sharer projects or through the resource pool. Another advantage of using a shared resource pool is that resource availability could be updated in the resource pool and the impact will be seen through the sharer projects. Resource leveling can then be performed across the sharer projects using project priorities.

Shared resource pools are constructed using links. Best use for shared resource pools is a limited number of projects and project managers accessing the same resource pool file. Shared resource pools use exact disk path locations. Once the links are created the file locations cannot be moved without breaking the links.



This structure is not meant for large resource pools with multiple project managers. Project Server was designed to handle the need for increased functionality.

Using New Window Feature

Use the New Window feature to combine projects into one window for reporting purposes. The New Window feature will create a temporary window where information from the selected projects may be updated. This view is considered temporary and is not usually saved.

To create a temporary New Window view:

- Open all projects to be combined.
- **View → New Window.**
- Select specific projects you wish to combine into a new project.

- Select the View format.
- Click ok.

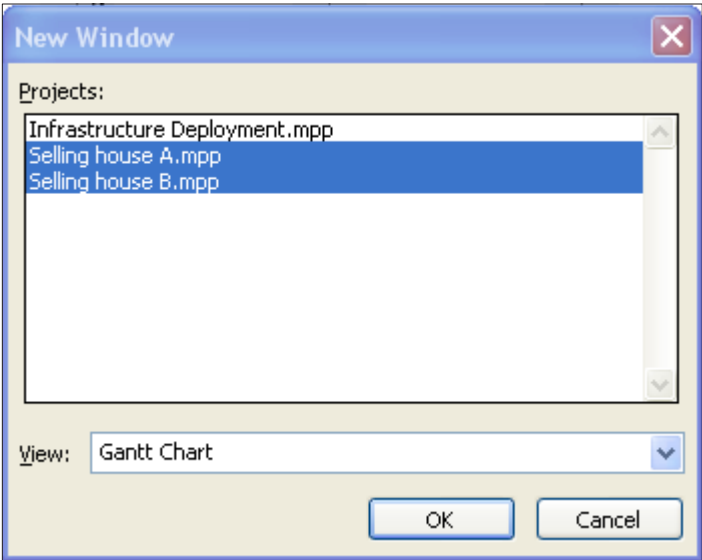


Figure 4-1 PLACEHOLDER

Below is an example of projects combined in a new window. The outline level has been rolled up to see a high level picture of when the projects are scheduled:

		Task Mode	Task Name	Duration	Jun 9, '13	Jun 30, '13	Jul 21, '13	Aug 11, '13	Sep 1, '13	S
					S	M	T	W	T	F
1			+ Selling house A	52 days						
2			+ Selling house B	52 days						

Figure 4-2 PLACEHOLDER

Expanding the wbs outline level to the next level will enhance the view. When similar task names are used, inserting the Project column will give more information regarding the origin of the task. See the example below:

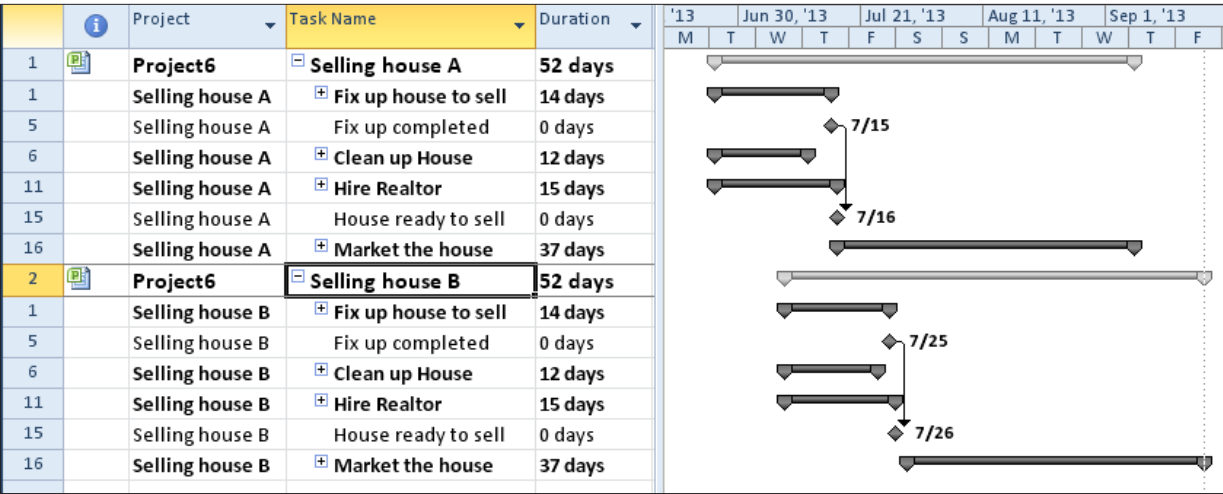


Figure 4-3 PLACEHOLDER

When projects are combined, groups and filters may be used to help refine information. In Module 8 we discussed creating a custom group that would show start dates of tasks grouped by week. With the outline levels fully opened, this group is applied to the new window view below. Notice the different project names in the project column:



It is advantageous to use short project names. At times the entire project location path will be shown in the Project column. If this occurs, consider creating a custom task field called “Project Name” and create a short project name to be used for reports.

Linking Across Projects


Tasks in one project might influence when a task in another project may start. Linking tasks from one project to another is a helpful tool to assist with this scheduling challenge. The links between projects are called external dependencies. These dependencies are easily created by opening the projects that contain the tasks to be linked in a temporary window.



The links that are between projects carry direct path file locations. After a link has been created, do not move the files.

To create an external dependency between projects, the projects that contain the tasks must be open in read-write mode. In the previous lesson we discussed combining projects into a temporary new window. Once the projects are combined, open the outline level in the projects to view the tasks to be linked.

To create external dependencies:

- Open all projects to be combined.
- **View → New Window.**
- Select specific projects you wish to combine into a new project.
- Select the View format.
- Click **OK**.
- Click the predecessor task.
- Press and hold **CTRL** and click the successor task.
- Click the link button  on the Task bar.

The result is shown below. When the painting for House A has been completed, painting for House B can start. The tasks and link is outlined below:

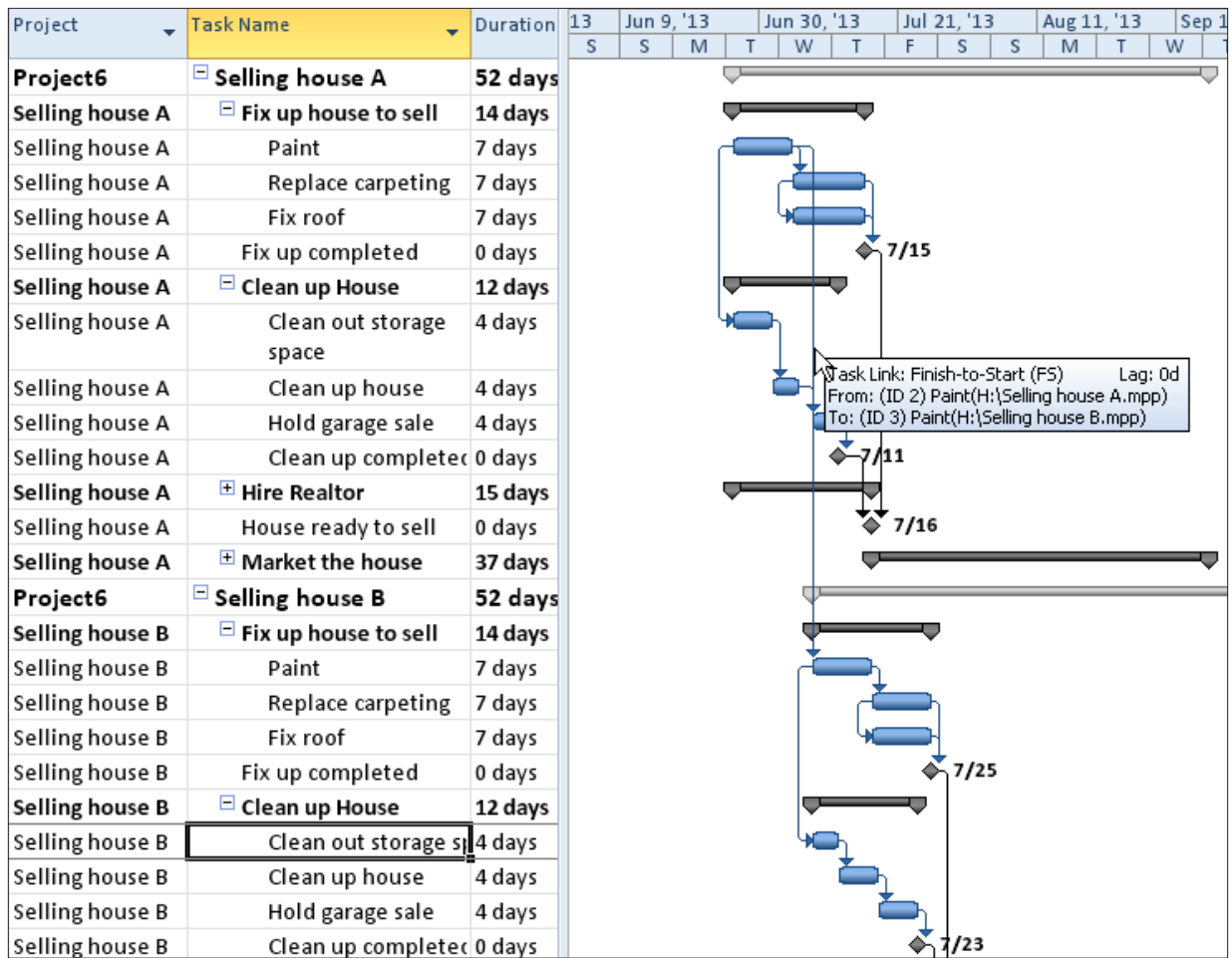


Figure 4-4 PLACEHOLDER

Once a link is created, close and do not save the temporary file. The relationship has been updated to the member files. Below is the view of the external link in a member file. The link appears as a task but is grayed out. The project name column has been added to the view.

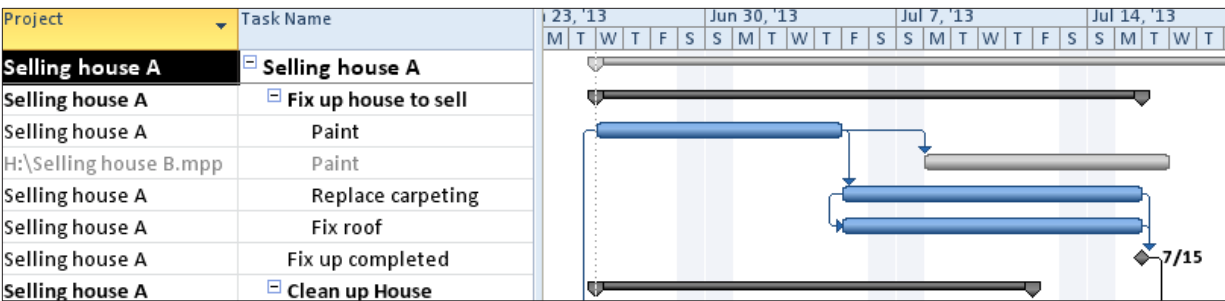


Figure 4-5 PLACEHOLDER

Analyzing the Effects of Changing Values

If a change is made in the project which contains the predecessor task, the impact will be seen in the project with the successor task. The project containing the successor task does not have to be open at the time of the change.

In the example below, painting of House A is scheduled to conclude on July 16. Painting House B is schedule to start on July 17.

Project	Task Name	Duration	Start	Finish
Selling house A	Selling house A	52 days	7/8/13	9/17/13
Selling house A	Fix up house to sell	14 days	7/8/13	7/25/13
Selling house A	Paint	7 days	7/8/13	7/16/13
H:\Selling house B.mpp	Paint	7 days	7/17/13	7/25/13
Selling house A	Replace carpeting	7 days	7/17/13	7/25/13
Selling house A	Fix roof	7 days	7/17/13	7/25/13

Figure 4-6 PLACEHOLDER

A change is made in the duration for painting House A from 7 to 10

days. The Selling House B project is not open at the time the change was made. Note the changes in the dates for the task to paint House B.

Project ▼	Task Name ▼	Duration ▼	Start ▼	Finish ▼
Selling house A	<input type="checkbox"/> Selling house A	54 days	7/8/13	9/19/13
Selling house A	<input type="checkbox"/> Fix up house to sell	17 days	7/8/13	7/30/13
Selling house A	Paint	10 days	7/8/13	7/19/13
H:\Selling house B.mpp	Paint	7 days	7/22/13	7/30/13
Selling house A	Replace carpeting	7 days	7/22/13	7/30/13
Selling house A	Fix roof	7 days	7/22/13	7/30/13
Selling house A	Fix up completed	0 days	7/30/13	7/30/13

Figure 4-7 PLACEHOLDER

When the Selling House B project is opened, the Links between Projects box will appear. This is an alert to let you know there has been a change to your project flowing from an external link.

- To accept the changes, click **All** to accept all.
- To reject the changes, click **Close**.

The **Links Between Projects** In dialog box is shown below:

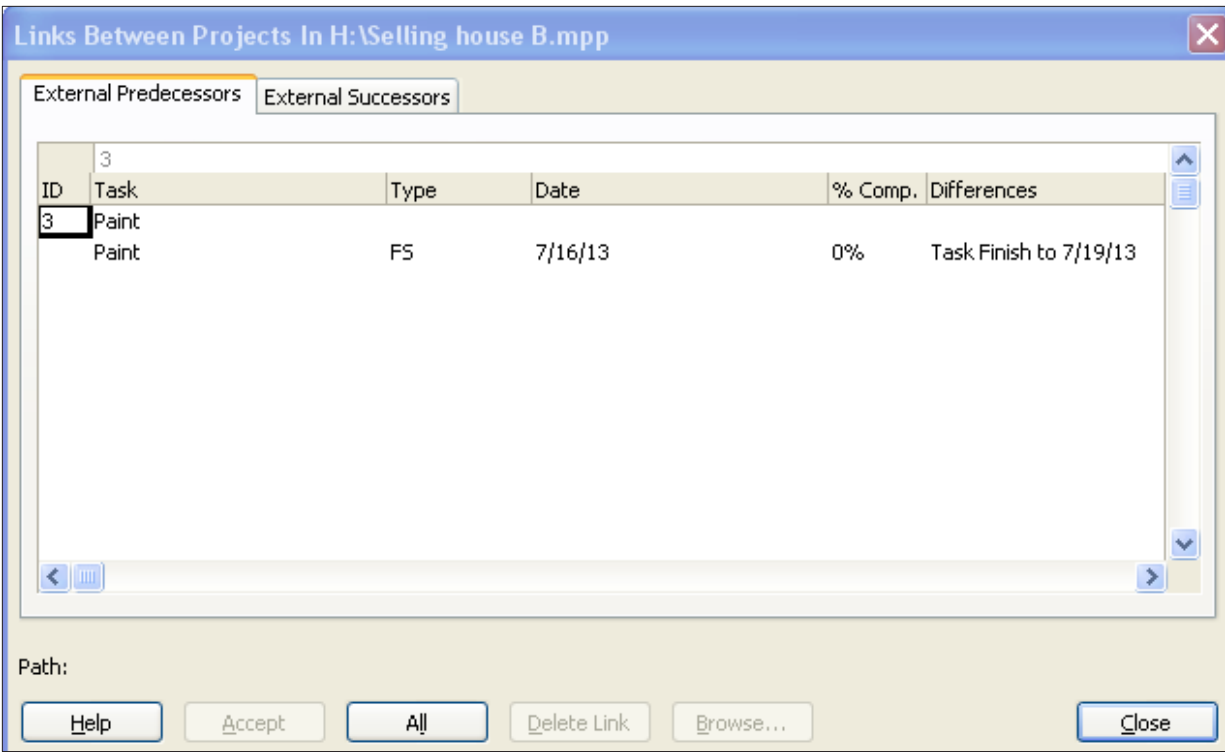


Figure 4-8 PLACEHOLDER

To view the Links Between Projects In dialog box below:

- **Project → Links Between Projects**
You can also choose to accept or delete links individually.

Lesson 3: Working with Master and Sub-Projects

Project managers are usually managing more than one project. When multiple projects are related they are called Programs. Project managers might have other project managers who are helping them manage subprojects related to larger projects. Master Projects are an easy way to work with multiple projects and see the big picture for the entire project when necessary.

In this lesson we will discuss:

1. Overview of Master Projects
2. Creating a Master Project
3. Inserting sub-projects

Overview of Master Projects

A Master project is a project that contains inserted projects, called sub-projects. The insert projects may be related to a program or a group of unrelated projects.

Some advantages of working with Master Projects include:

- Sub-projects may be maintained by multiple project managers and the results will appear in the Master Project.
- Master Projects differ from New Window in that the projects are actually inserted into a Master file and will remain with the Master file.
- When a Master Project is opened, the sub-projects are optionally opened.
- Sub-projects may be inserted in read-only or read-write mode.
- Sub-project data may be linked to the data contained in the Master file.
- Changes made in the Master Project will reflect in the member projects.
- Master projects allow for pulling together of multiple projects for reporting.
- Custom objects created may be used across the projects.
- Works well with related and unrelated projects.

Creating a Master Project and Inserting Sub-projects

To create a Master Project:

- **File** → **New** → **Blank Project** (double click)
- **File** → **Save As** (Best Practice: name file to reflect that it is a Master file)
- Click **ok**



Turn on Project Summary Task

4. **Task** → **Gantt Chart** → **View** → **Project Summary Task**

Below is a view of a Master Project with project summary task:

		Task Mode ▾	Task Name ▾	Duration ▾	Start ▾		
0			Master Project	0 days?	6/26/10	F	S

Figure 4-9 PLACEHOLDER

To insert sub-projects into a Master Project:

- Click in the **Task Name** for the next open task in the project.
- **Project** → **Sub-Project**.
- Navigate to the project schedule to be inserted.
- Select the file name.
- **Link to Project**: Click this option if you would like the Master file updated when changes are made to the sub-projects.
- Click the **Inserted** button to insert the sub-project in read-write mode.
OR
- Click the down arrow to the right of the **Inserted** button to select insert sub-project in read-only mode.

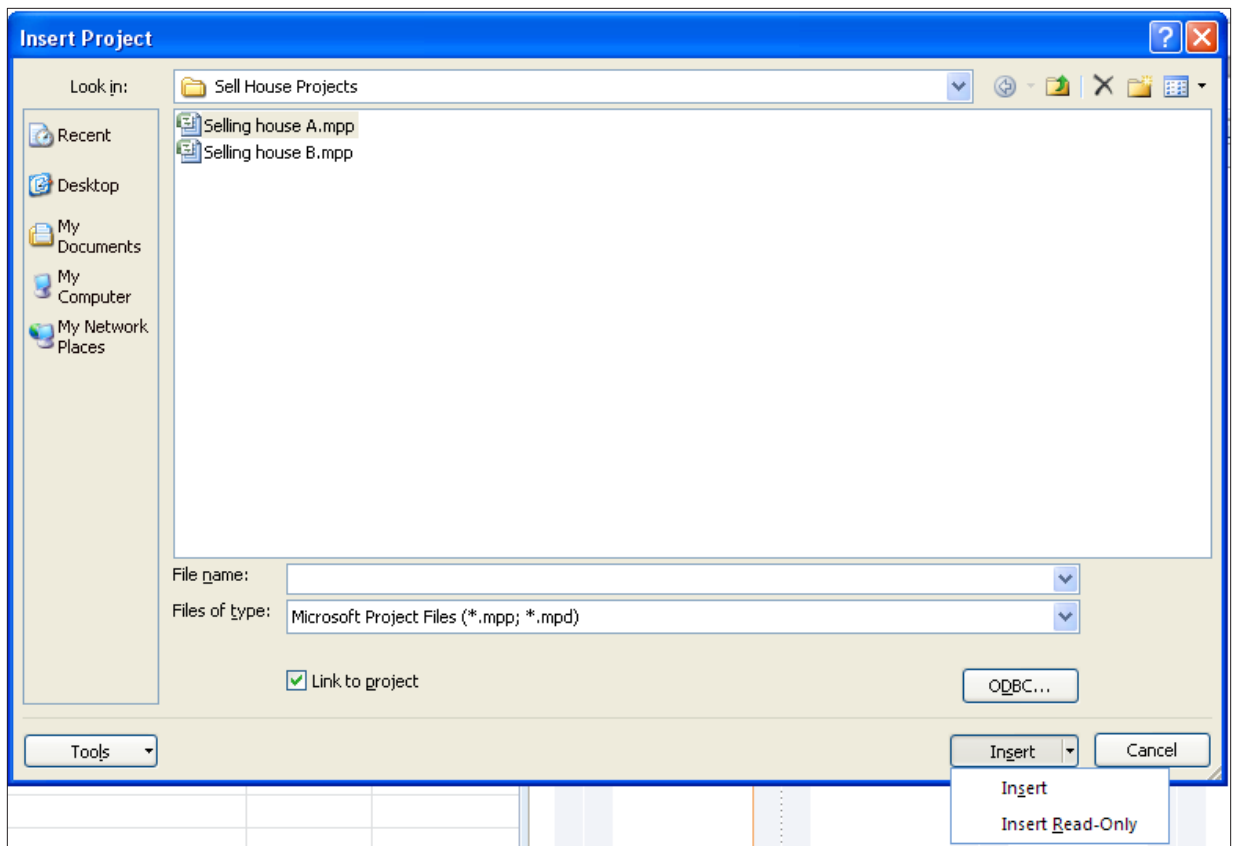


Figure 4-10 PLACEHOLDER

Below is a view with 2 projects inserted. Projects are rolled up to project summary tasks and are not actually opened until the + sign to the left of the project name is clicked. Note the summary bars. The Master project summary bar reflects the combined length of the all member projects and the sub-projects indicate the length of the individual sub-project only.

		Task Mode ▾	Task Name ▾	Duration ▾	13	Jun 30, '13	Jul 21, '13	Aug 11, '13	Sep 1, '13	Sep 22, '13						
					F	S	T	T	S	M	W	F	S	T	T	S
0			Master Project	62 days												
1			Selling house A	54 days												
2			Selling house B	52 days												

Figure 4-11 PLACEHOLDER



To remove an inserted project from a Master Project, select the project name, press the **delete** key and approve the deletion.



If a project file will be using an external resource pool, share the pool with the project file before inserting the project into the Master Project.



If inserting projects into a Master Project with existing inserted project open, the new inserted project will result as a sub-project of the open inserted project.

Leveling Resources across Projects

Resource leveling can occur across open projects sharing the same resource pool. When leveling occurs, priorities at the project level may be set to give one project priority for resources over another project.

Resource leveling can also be performed using the New Window option described above. If the same resource name exists in the multiple projects, they will be treated as unique resources and will not be combined.

To level resources across Multiple Projects using a Master Project or a New Window:

- Open the Master Project or open all projects to be leveled in a New Window.
 - If creating a New Window: View → New Window → select projects to be included → click ok
- Expand the outline level of the projects to open all projects and show all tasks.
- Adjust priorities for projects (optional)
 - Double click on the project summary task for a project
 - Alter the Priority on the General tab (1 = low, 1000 = highest)
 - Click **OK** to close the **Project Summary** dialog box
 - Repeat for each project
- **Task → Gantt Chart → More Views → Leveling Gantt → Apply**

Below is the Leveling Gantt view before leveling the work assignments. Note the red indicators in the Indicator column alerting overallocated tasks:

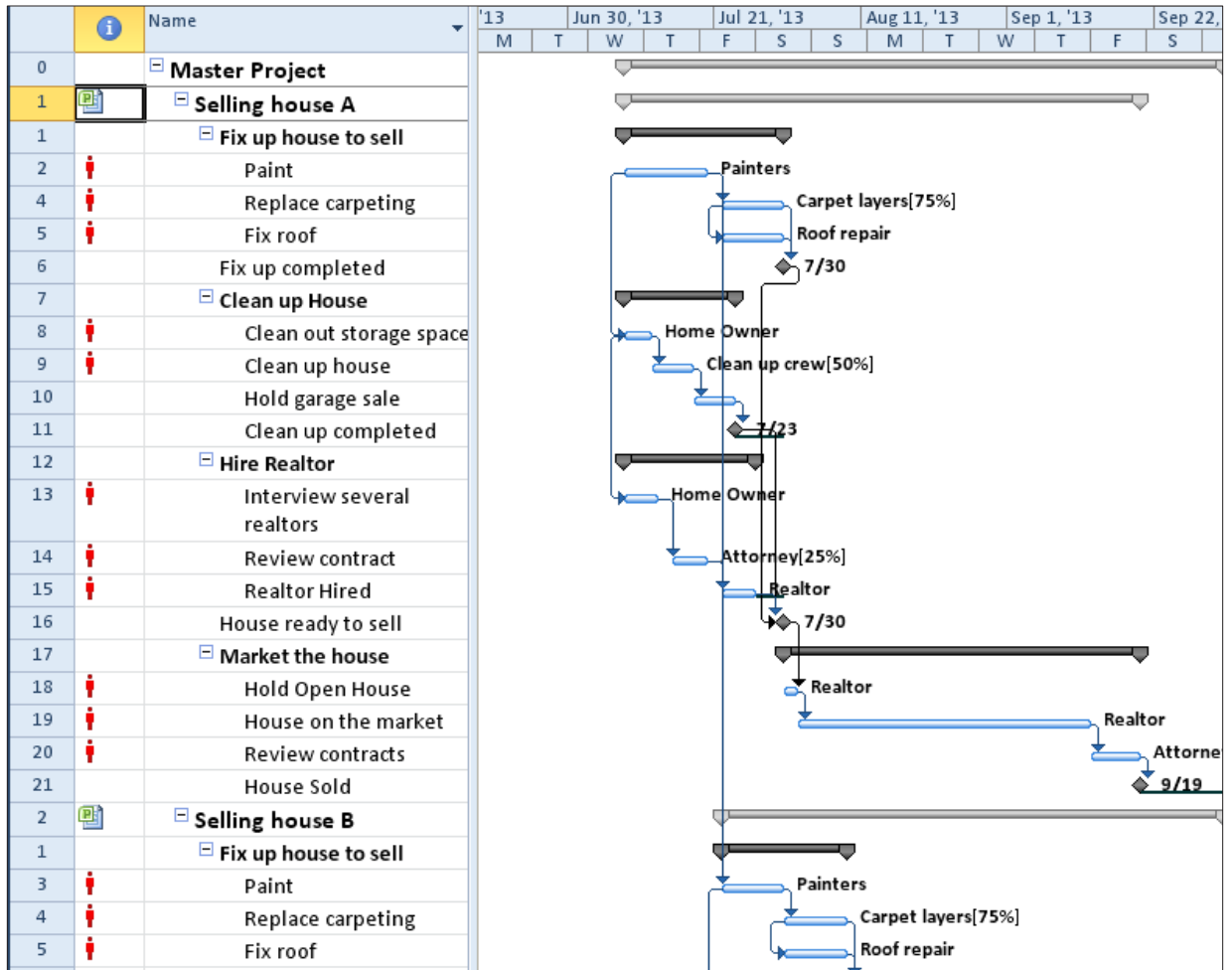


Figure 4-12 PLACEHOLDER

To level resources in a Master Project or in a New window:

- **Project → Resource → Level all**

The result of the resource leveling is shown below. The Leveling Gantt view will show before leveling status (in beige) and after leveling status (in blue). The resource overallocations have been solved and the schedule dates for all tasks have been affected:

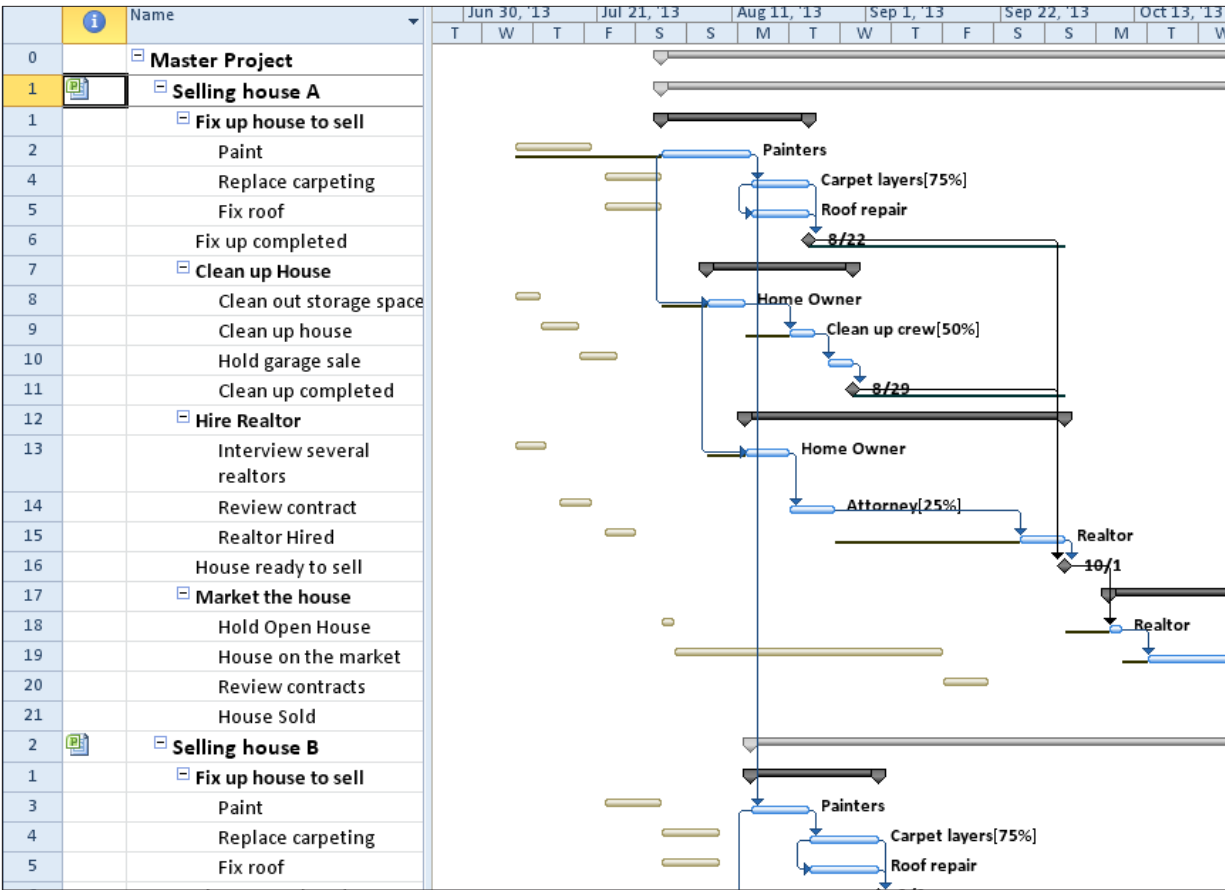


Figure 4-13 PLACEHOLDER



Chapter 5

Working with Resource Pools

Lesson 2: Working with Resource Pools

External resource pools are an effective means of tracking resource allocations. Most resources will have work assignments that span multiple projects. Sharing resources using an external resource pool will allow for resource availability to be controlled and assignments seen in a single location.

In this lesson we will discuss:

1. What is a resource pool.
2. Creating a resource pool.
3. Sharing resources across multiple projects.

What is a Resource Pool

A resource pool is an .mpp file which contains resource information but does not contain tasks. Project 2010 is written to acknowledge this format and will treat the file differently than project file which contains tasks.

Once a resource pool is created, multiple project schedules may share the resources of the external pool. Some of the benefits of sharing resources in this manner are:

- All assignments for projects sharing the resources may be viewed using the Resource Usage view in any member project file.
- Resource assignments may be leveled across multiple projects.
- Project and task priorities may be used during resource leveling.
- The Team Planner View will show assignments across projects (MSP Pro only).
- Updating resource calendar availability will affect all assignments from projects sharing the resource pool.

Some restrictions are:

- Resource pools are normal read-write files. If multiple project managers try to access the file at the same time the first user will open the resource pool

in read-write access and subsequent users will have read-only access. If a project manager who has opened the resource pool read-only makes changes to an assignment in a project schedule, updates to the resource pool will be made at a later point in time.

- Maintaining the resource pool must occur when the resource pool is open in read-write mode. Other users may not have the resource pool open when maintenance occurs. For convenience, it is best to add new resources and maintain resource calendars at the beginning or the end of the work day.
- External resource pools sharing and resource assignments are built using a network of links. Once a link is established, the files may not be moved or the links will be broken. Links will contain disk locations.
- Due to the above limitations, the fewer users accessing the resource pools the better. Project Server 2010 is better suited for large scale projects with multiple project managers accessing shared resource data.

Creating a Resource Pool

The easiest method to create a resource pool is to create a blank project file. The contents of the file will indicate that is a resource pool. Once a blank file has been created, add the resources which will be shared across projects.

To create a resource pool:

- Open a new project file – **File → New → Blank Project** (double click).
- **Task → Gantt Chart → Resource Sheet.**
- Enter information for each resource.
- **File → Save as.**
- **File → Close**



Name the resource pool with name that will identify the file as a resource pool.



Using last name first name for resource names will make finding of resources easier.

How to Share Resources across Multiple Projects

Projects that will be sharing the resources of the resource pool may contain some resources or no resources. If the same resource name is contained in the project schedule and the resource pool, Project 2010 will not combine the 2 resources and will treat them as separate resources.

Looking at the resource sheet of the Selling House A project we can see that the file does not resources.

	i	Resource Name	Type	Material	Initials	Group	Max.

Figure 5-1 PLACEHOLDER

To share resources using a resource pool:

- Open the resource pool file
- Open the file that will be sharing the resources
- **Resource → Resource Pool → Share Resources**

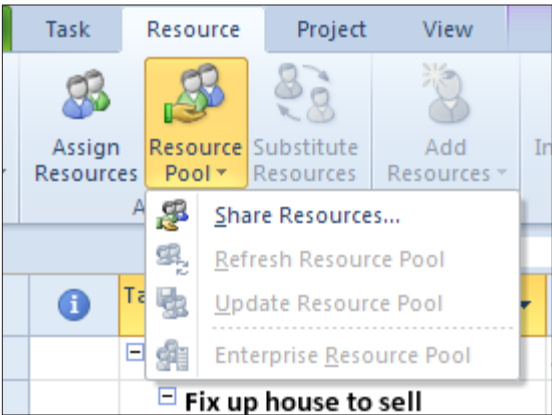


Figure 5-2 PLACEHOLDER

The Share Resources dialog box will open:

- Click **Use Resources**
- From the **From** drop down list, select an open resource pool
NOTE: Resource sharing may occur from other open project schedules as well as a resource pool but sharing may only be from one project file.
- Click **Pool takes precedence**
- Click **OK**

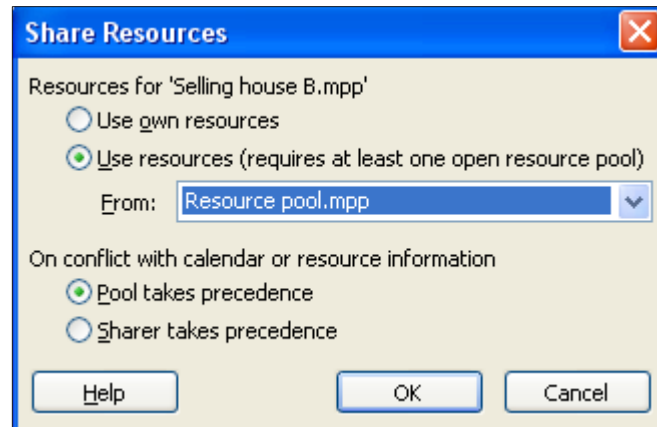


Figure 5-3 PLACEHOLDER

The resource sheet now contains resources from the pool that was chosen in the above step.

	i	Resource Name ▼	Type ▼	Material ▼	Initials ▼	Group ▼	Max. ▼
1		Painters	Work		P		100%
2		Carpenters	Work		C		100%
3		Movers	Work		M		100%
4		Realtor	Work		R		100%
5		Roof repair	Work		R		100%
6		Home Owner	Work		H		100%

Figure 5-4 PLACEHOLDER

When a resource pool is opened the following Open Resource Dialog box will appear. Project 2010 has recognized that the file is a resource pool file and is asking how you want to open the file. The choices are:

- Open the resource pool read-only
- Open the resource pool read-write for maintenance

- Open the resource pool read-write as well as any sharer projects and combine into a new master file.

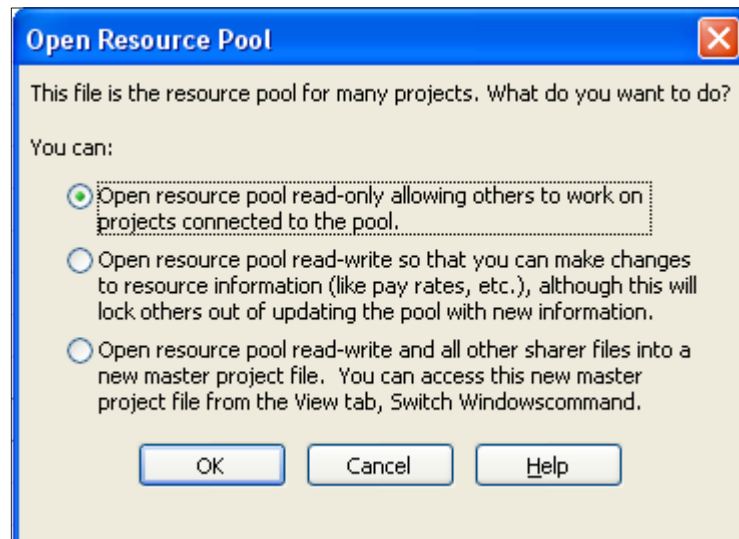


Figure 5-5 PLACEHOLDER

To detach a project from the resource pool:

- Open the project attached to the resource pool
- **Resources** → **Resource Pool** → **Share Resources**
- Click **Use own Resources**
- Click **OK** to close.

Viewing Resource Usage in the Resource Pool

Once assignments have been made using the shared resource pool, combined project assignments can be viewed using the Resource Usage View and the Team Planner View. In the example below, Selling House A & Selling House B are sharing the resource pool. Assignments have been created in each project.

In the view below, the Project column has been inserted to clarify the project source for similarly named tasks. On the right side of the view the resource availability column has been added. The timeline has been set to a per week level.

To view the Resource Usage View:

- **Task → Resource Usage**

Project ▼	Resource Name ▼	Work ▼	Details	8/11	8/18	8/25	September 9/1
Resource pool	Realtor	592 hrs	Work	80h	80h	80h	80h
			Rem. Avail.	0h	0h	0h	0h
Selling house B	Realtor Hired	40 hrs	Work				
			Rem. Avail.				
Selling house B	Hold Open House	16 hrs	Work	16h			
			Rem. Avail.				
Selling house B	House on the market	240 hrs	Work	24h	40h	40h	40h
			Rem. Avail.				
Selling house A	Realtor Hired	40 hrs	Work				
			Rem. Avail.				
Selling house A	Hold Open House	16 hrs	Work				
			Rem. Avail.				
Selling house A	House on the market	240 hrs	Work	40h	40h	40h	40h
			Rem. Avail.				

Figure 5-6 PLACEHOLDER

For Project Professional 2010 users the Team Planner View is a helpful source to see assignments from multiple projects on one screen. The Team Planner View is a resource based view and the project column cannot be added. To view the source of the task for an assignment block, hover your mouse pointer over the block and a pop up window will appear. This view could also be used to resource level resources across multiple projects.

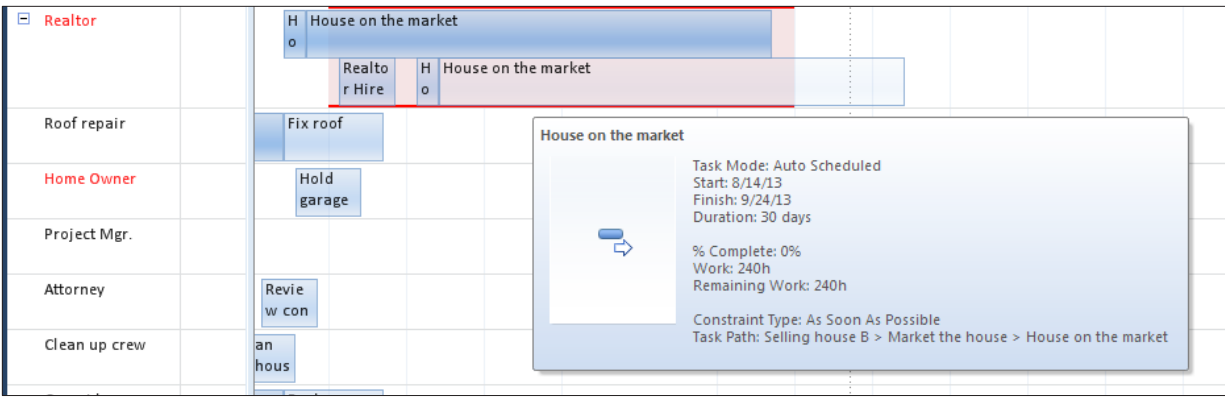


Figure 5-7 PLACEHOLDER



Chapter 6

Customizing Project Features

Module Overview

The customizing features of Project 2010 will help to fine tune your version of Project to meet your needs. Perhaps you would like to add a button to a ribbon bar or create a custom field to hold data required for your project. You might need to know what is occurring next week or need specific formatting on a Gantt chart. These can all be created using the customization features of Project 2010.

In this Module, we will discuss:

1. Customizing the ribbon bar.
2. Export/import customized ribbon bars.
3. Customizing views.
4. Retaining customized objects using the Organizer.
5. Creating custom objects.

Lesson 1: Customize User Interface

The ribbon interface and the Quick Access bar are new to Project 2010. Both can be customized to meet individual needs. Ribbon bars may also be imported/exported across project schedules and users.

In this Lesson, we will discuss:

1. Customizing the Quick Access bar.
2. Customizing ribbon bars.
3. Export/Import ribbon bars.

Customize Quick Access Toolbar

The Quick Access Toolbar is a small collection of commands in the upper left corner of the Project 2010 desktop that provides quick and easy access to your most used commands. The default icon functions are: Save, Undo, Redo buttons. Additional commands can be added using the down arrow on the right side of the bar. Other options available are to move the bar under the ribbon bar or select icons from a list of popular suggested icons. Below is a view of the Quick Access Toolbar.



Figure 6-1 PLACEHOLDER

To add a command from the short list to the Quick Access Toolbar:

- Click on the **down arrow** on the right side of the Quick Access Toolbar
- Select a command
- The command is added

In the view below, the customization options have been displayed and “Open” has been selected to be added to the Quick Access Toolbar.

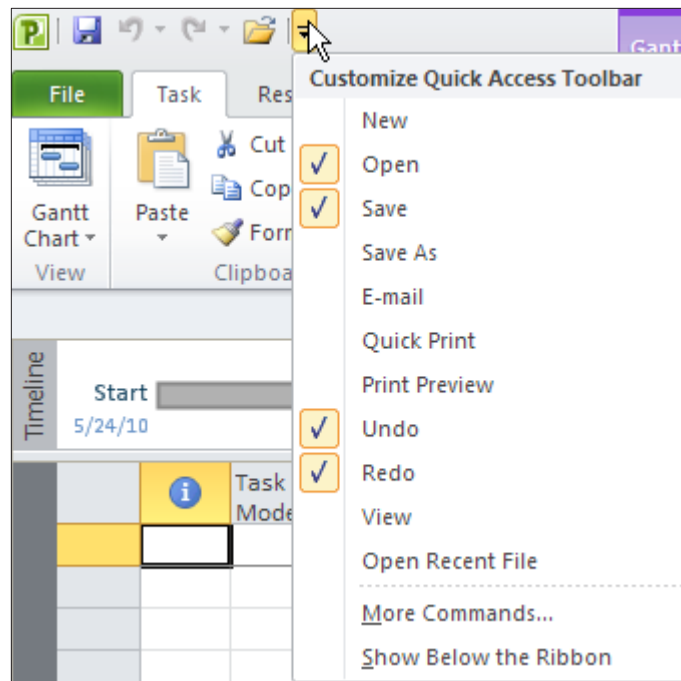


Figure 6-2 PLACEHOLDER

The view below shows the result of adding the Open icon the Quick Access Toolbar:



Figure 6-3 PLACEHOLDER

To add other commands not shown on the Quick Access Toolbar short menu:

- Click on the **down arrow** on the right side of the Quick Access Toolbar
- Select **More Commands** at the bottom of the choices
- Select a command from the list on the left and click **Add**
- Use the **Up/Down** arrows to the far right to arrange the order of appearance of commands on your Quick Access Toolbar
- Click **ok** to close

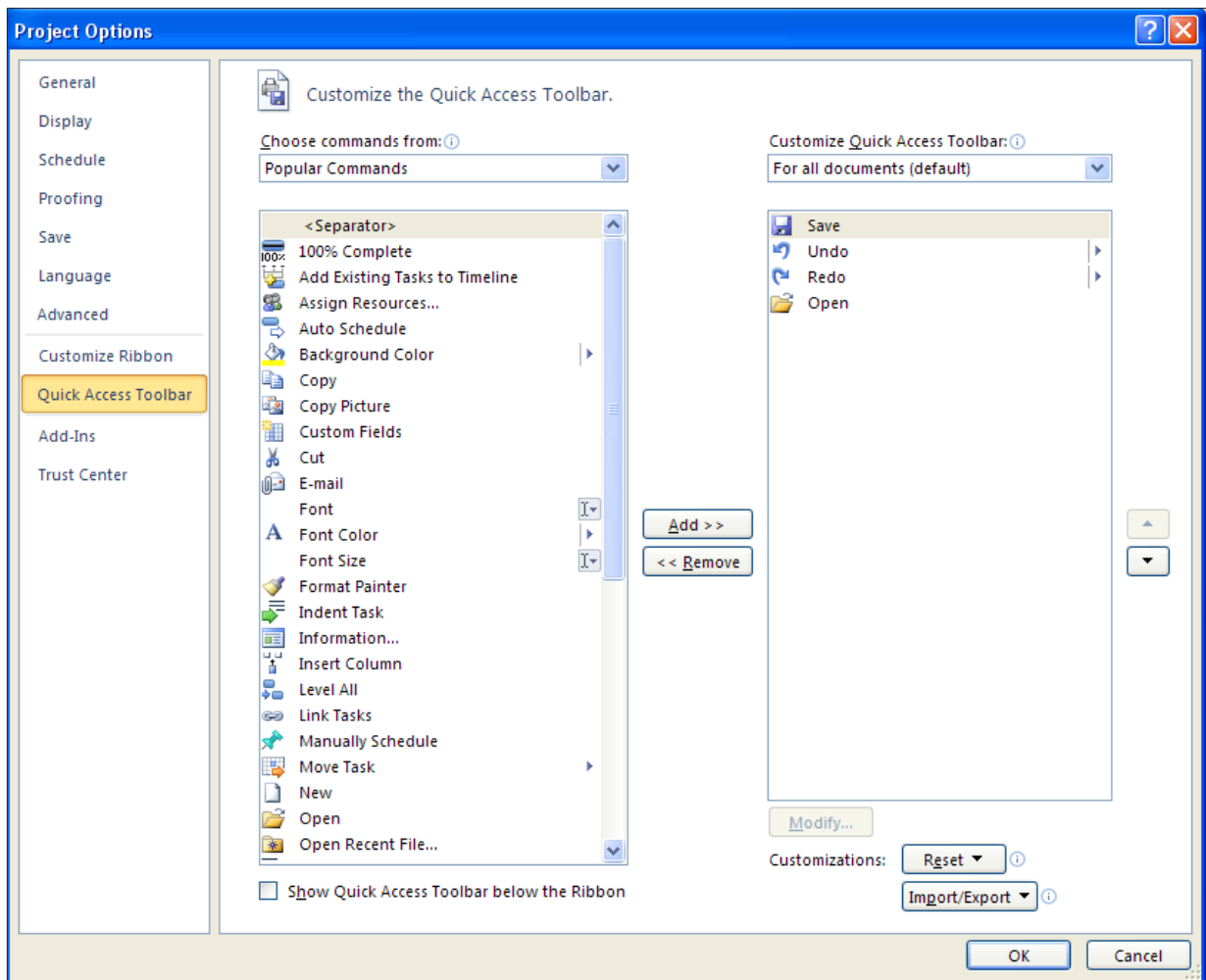


Figure 6-4 PLACEHOLDER

The Quick Access Toolbar default can be restored by clicking Reset and confirming you wish to do so.

More command choices are available in the drop down list in the **Choose commands from:** box and selecting from **Commands Not in the Ribbon** or **All Commands** options. Note the choices in the view below.

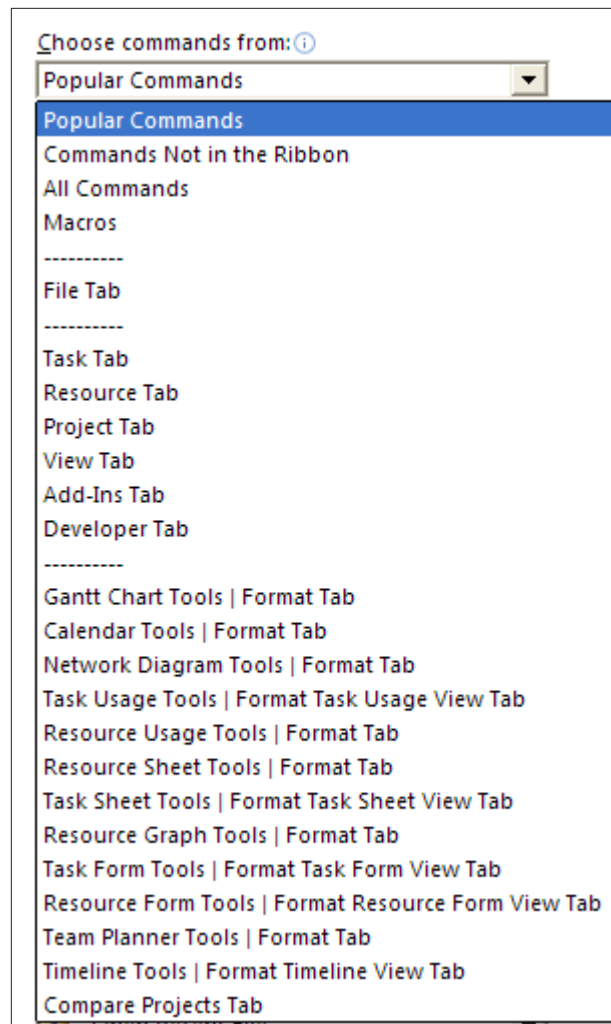


Figure 6-5 PLACEHOLDER

Some helpful icons to add to the Quick Access Toolbar include:

- New
- Open
- Print Preview or Quick Print
- Status date
- Scroll to task
- Task Entry View and other frequently used views
- Show Outline
- View, table, filter, grouping galleries

The drop down menus for view, group, filters, and tables can also be added to the Quick Access bar in the upper left hand corner of the screen. The instructions below are the steps to add the Filter drop down menu to the Quick Access Toolbar. Adding other galleries will use similar steps. Many of the ribbon icons may be added to the Quick Access bar using this method.

To add a drop down menu (gallery) to the Quick Access Toolbar:

- Task → Gantt Chart → View
- Right click on the down arrow for Filters
- Select **Add to Quick Access Toolbar**

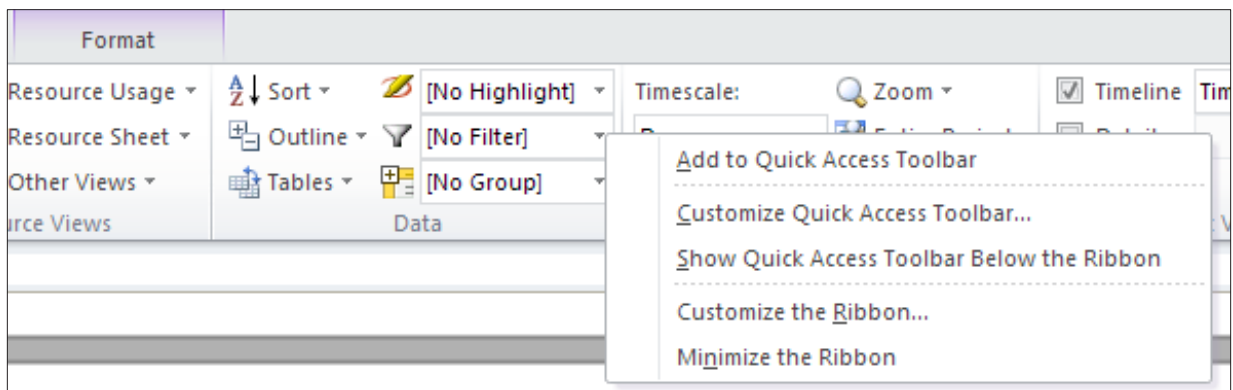


Figure 6-6 PLACEHOLDER

The drop down menu for filters on the Quick Access Toolbar is shown below:

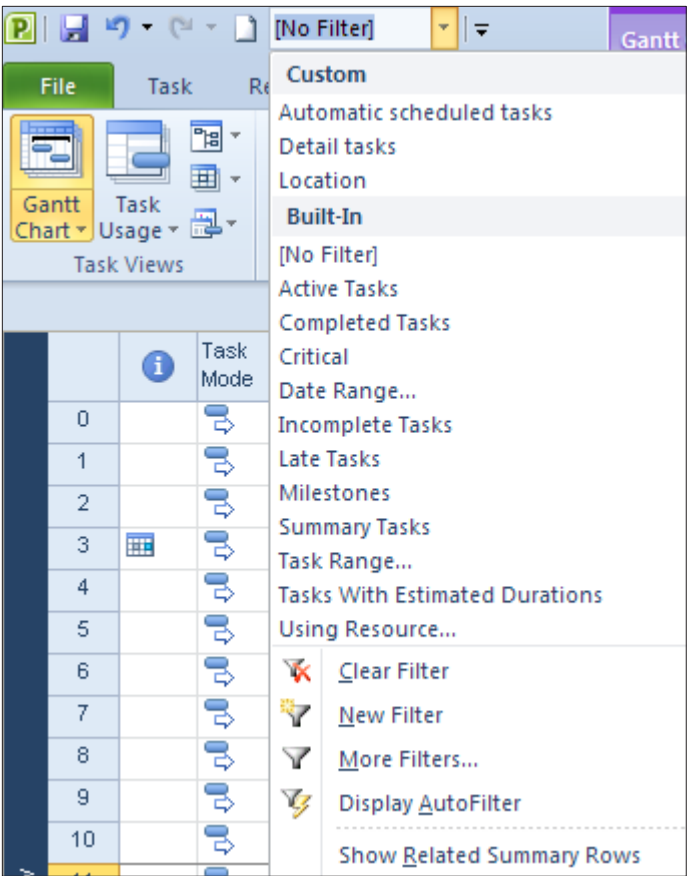


Figure 6-7 PLACEHOLDER



Individual items in a drop down menu cannot be added to the Quick Access Toolbar but the options at the bottom (Clear Filter, New filter, More Filters, Display Autofilter) are available. Right click on the selection and select Add to Quick Access Toolbar.

To remove buttons from the Quick Access bar, right click on the button and select the remove option.

Customizing the Ribbon

Each ribbon bar contains sections of related function icons. Icons from an existing section or group cannot be modified or deleted. When icons are added to a ribbon bar, a new section will be added to contain the additional icons. Additional ribbon bars may also be created. Below is a view of the Resource ribbon bar. The grouping names are at the bottom of each bar section:

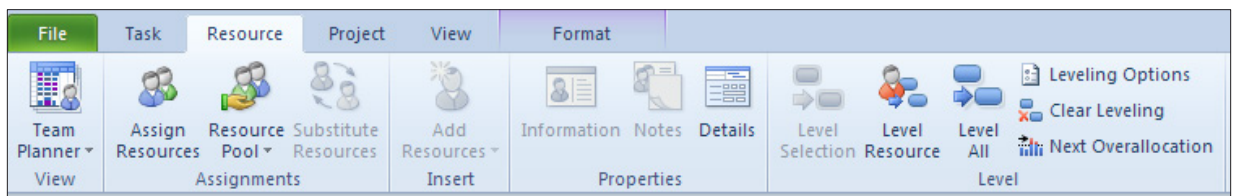


Figure 6-8 PLACEHOLDER

To view the Customize Ribbon dialog box:

- **File → Options → Customize Ribbon**

On the left of the box are Popular Commands and the existing ribbon bars are shown on the right. On the right side click a + to expand and view the details of the bar. Each section can be expanded further to view the commands within. These sections or groups are standard and cannot be changed. An entire group of commands may be deleted (right click on the command title for option) from a ribbon bar but not an individual command.

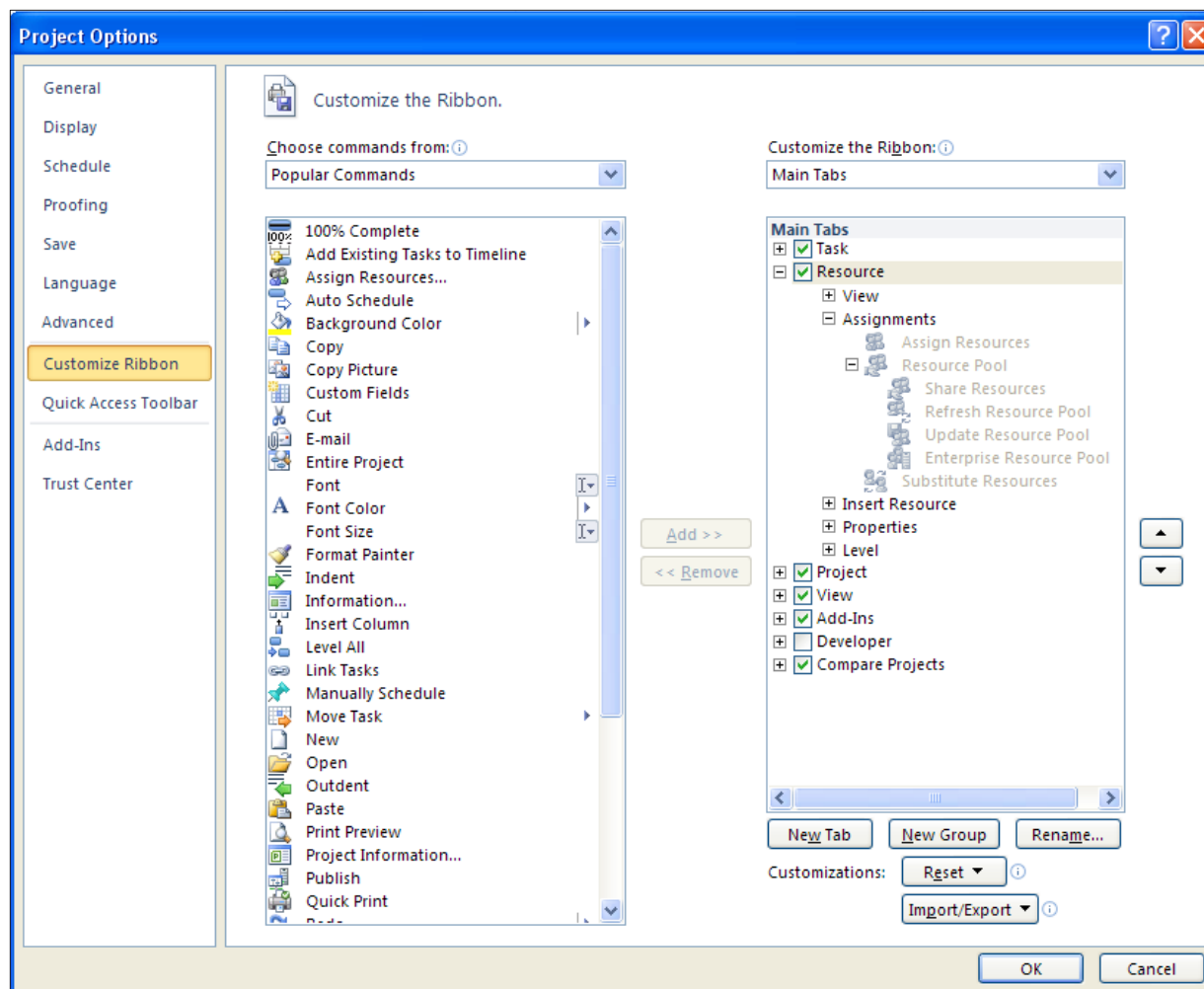


Figure 6-9 PLACEHOLDER

A new group or tab must be added to the ribbon before new commands can be added.

To create a new group within an existing ribbon bar:

- In the right side box, click on the ribbon tab you would like to add a group to.
- Click **New Group** at the bottom of the right side box.
- Click **Rename** to the right of the New Group button .
- Type the display name of the new group.

To add icons to the new group

- Click the group name in the box on the right.

- Click on the icon or command choice on the left.
More Icons are available when All Commands is selected from “Choose commands from” .
- Click **Add** in the middle to add the icon to the group on the right.
In the diagram below, a new group was added to the View ribbon bar and was renamed “Scrolling”. The “Scroll to task” icon was added to the “Scrolling” group.

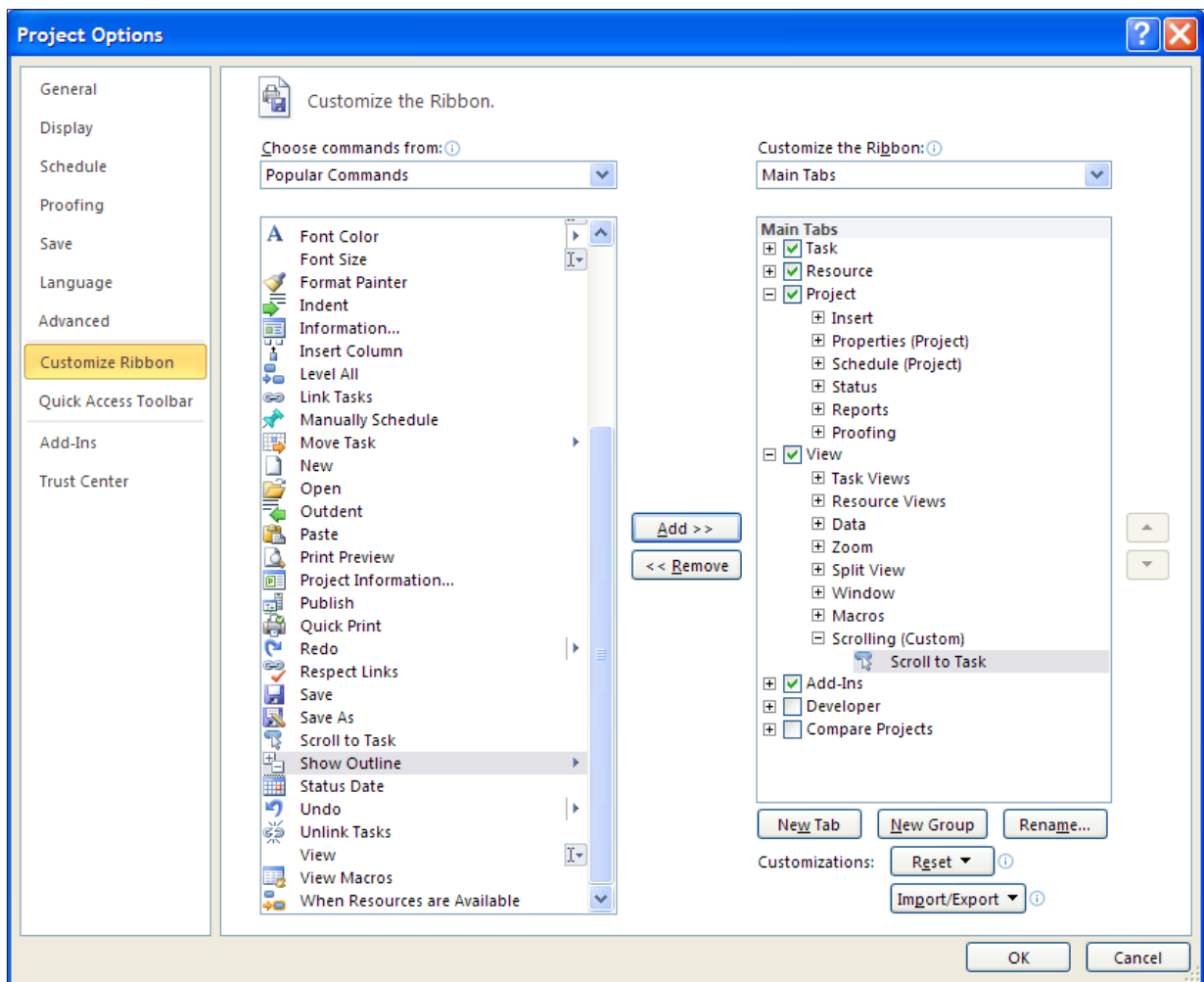


Figure 6-10 PLACEHOLDER

The result of the group and icon addition to the View ribbon bar is shown below. When the mouse pointer hovers over the icon button, help will be available the same way it is available for the other icons.



Use short group names. Long names will determine the width of the group shown on the ribbon bar. You cannot use Undo to remove the group.

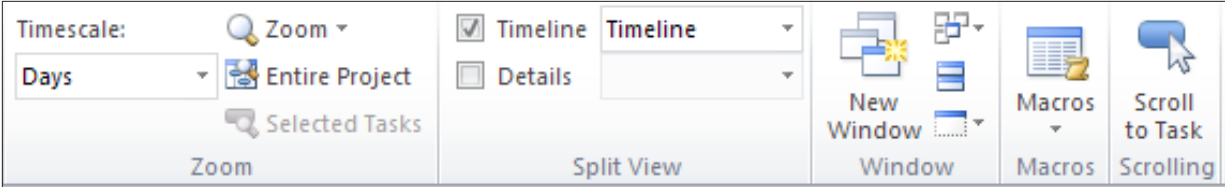


Figure 6-11 PLACEHOLDER

The Format bar content will change based on the view which is displayed. These unique Format bars may also be customized and are highlighted below. Click on the choices under “Customize the ribbon” on the right side and select “Tool Tabs” to display the format bars available for customization. In the view below, a new group has been added to the Format bar available when Gantt charts are displayed. The icon “Gantt Chart Wizard” (a Gantt chart formatting tool) has been added.



PLACEHOLDER

shown below:

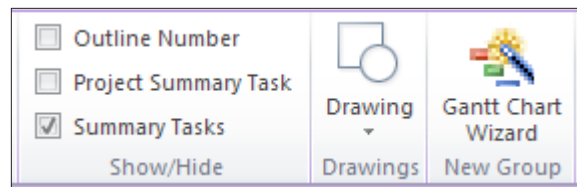


Figure 6-13 PLACEHOLDER



Ribbon bars can be restored to their default settings at any time using the Reset button. You can also choose to reset customizations on all ribbons or selected ribbons only.

Exporting / Importing the Customization File

Customizations made to the ribbon bars, will reside within your project schedules and remain with your installation of Project 2010. The customization values will be able to be accessed by all projects on your desktop. Sharing your customized configuration with others is easy and advantageous for organizations with a desire to standardize their project management process. Backing up the customized configuration is also recommended to avoid loss of data. The configuration of your ribbon bars maybe exported to a file which may be imported by other users or used if reinstallation of your software is necessary.

When the ribbon values are exported, they are exported to a default file name Project Customizations.exportedui. This file may be used to reload your setting in the future or other users may use this file to import ribbon settings for their application.

To export all ribbon values to an Exported Office ui file (.exportedui).

- **File → Options → Customize Ribbon → Import/Export**
- Click **Export all customizations**
- Enter a file name or use the default and a file location
- Click **Save** to complete the export

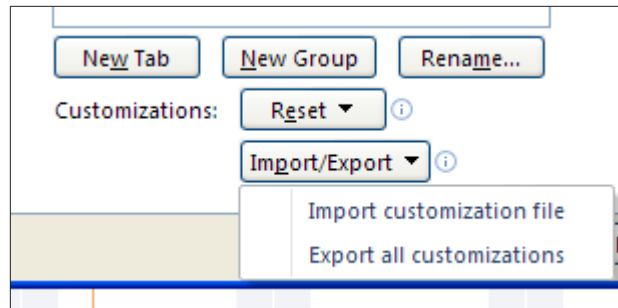


Figure 6-14 PLACEHOLDER

To import a Project Customizations.exportedui file:

- **File** → **Options** → **Customize Ribbon** → **Import/Export**
- Click **Import Customized file**
- Navigate to the file location
- Select **File** and click **Open**

The following message will be returned.

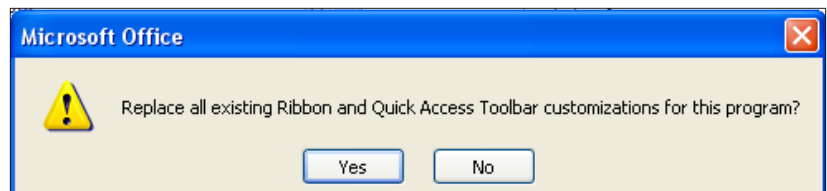


Figure 6-15 PLACEHOLDER

Click **Yes** to complete the import.

Practice: Customizing the User Interface

The Practice page is where you write detailed instructions for completing work listed as Exercises.

Type the Exercise Title and write a brief summary what the student will be doing in the exercise. Then list your ideas what they will be doing.

SAMPLE

In this practice you will create a Project Server Authentication profile and then configure the local cache settings in Project Professional 2007.

Exercise 1: Create Project Server Authentication Profile

In this exercise you will create Project Server authentication profile to connect to the Project Web Access site.



Perform the following exercise on the ps07 virtual machine.

- 1. From the **Start** menu, click **All Programs → Microsoft Office → Microsoft Office Tools** and click **Microsoft Office Project Server 2007 Accounts**.
- 2. In the **Project Server Accounts** dialog box, click **Add**.
In the **Account Properties** dialog box, and complete the following settings and click **OK**.

Table 6.1 PLACEHOLDER

Setting	Perform the following:
Account Name	Type Project Server
Project Server URL	Type http://epm/pwa
When connecting	Select Use Windows user account
Set as default account	Select check box

Lesson 2: Customizing Formats and Views

All views in Project 2010 can be customized and formatted to help communicate your project schedules to stakeholders. A wide range of flexible tools are available to assist the project manager in this effort. New formatting capabilities have been added to Project 2010 to complement the new features of the software. In addition, most of the customization capabilities of the older versions of Project are still available in Project 2010. Project 2010 also contains a new view called the Timeline view which allows users to customize and see their resource assignments in a timeline format.

In this lesson we will examine:

1. Overview of custom formats and styles.
2. Customizing Gantt charts.
3. Customizing the Timeline view.

Overview of Custom Formats and Styles

Almost every aspect of a view can be modified and changed. From the character font to the colors of the Gantt bars, almost every element is format ready. Because of this extreme formatting capability, not all features can be addressed in the framework of this course. It is recommended that you consider a more detailed reference manual if you decide to dive deeper into custom formats and styles.

Gantt chart changes made are unique to a Gantt chart view. When switching from one Gantt view to another, formatting in previous views will not appear in the newly displayed view. As a comparison table formatting will carry its values when switching to different tables.

Some of the customization capabilities include:

- Text styles

- Gridlines
- Layout
- Gantt Chart Wizard
- Formatting Gantt bars – styles
- Drawing tools
- Adding multiple baselines
- Critical and late tasks
- Word wrap

Best Practice: Imagine the confusion that would be created if each project manager had their own formatting standards. For this reason, companies should set a standard format that all users are comfortable using. When Gantt charts are radically changed, a legend should accompany the chart to assist with interpretation.



If an organization is using Project Server, the changes in the formatting through the desktop will not be transferred to the server. The server has its own formatting settings that can only be changed by the Project Server administrator.

Customizing Gantt Views

There are many ways to format Project 2010 Gantt charts. A best practice is to make a copy of a view before adding formatting. The original will remain with your software as an available view and the customized view could be copied using the Organizer and saved for use in future projects. The customized charts can be shared with other project schedules, and will be discussed in the next lesson.

To make a copy of a view:

- **Tasks → Gantt Chart → Move Views**
- Select the view to be copied
- Click **Copy**
- Enter a new name for the view
- Click **Apply** to close

With the Gantt Chart showing, click the **Format** ribbon tab. There are several Gantt Chart formatting tools available.

Format Bar - used to change the formatting for one Gantt bar. Use this feature to highlight information concerning a specific Gantt bar.

To change the color of one Gantt bar and add the start date to the left side of the Gantt bar and the finish date to the right side of the Gantt bar:

- Click on the task you wish to change
- Click **Format** → **Bar**

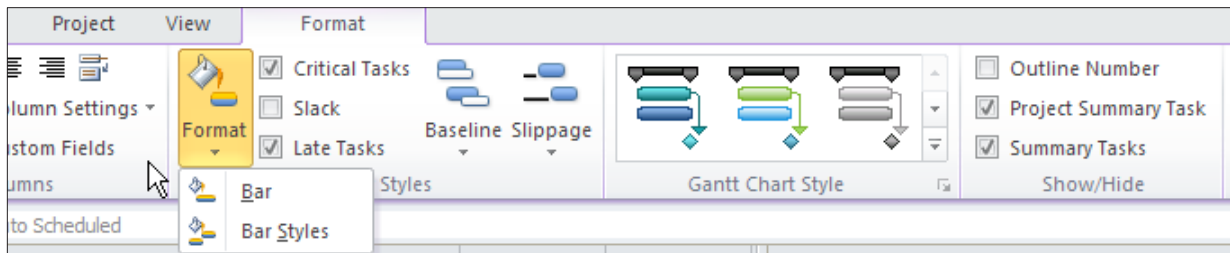


Figure 6-16 PLACEHOLDER

Change the color of the Gantt bar in the Middle section of the Format bar box.

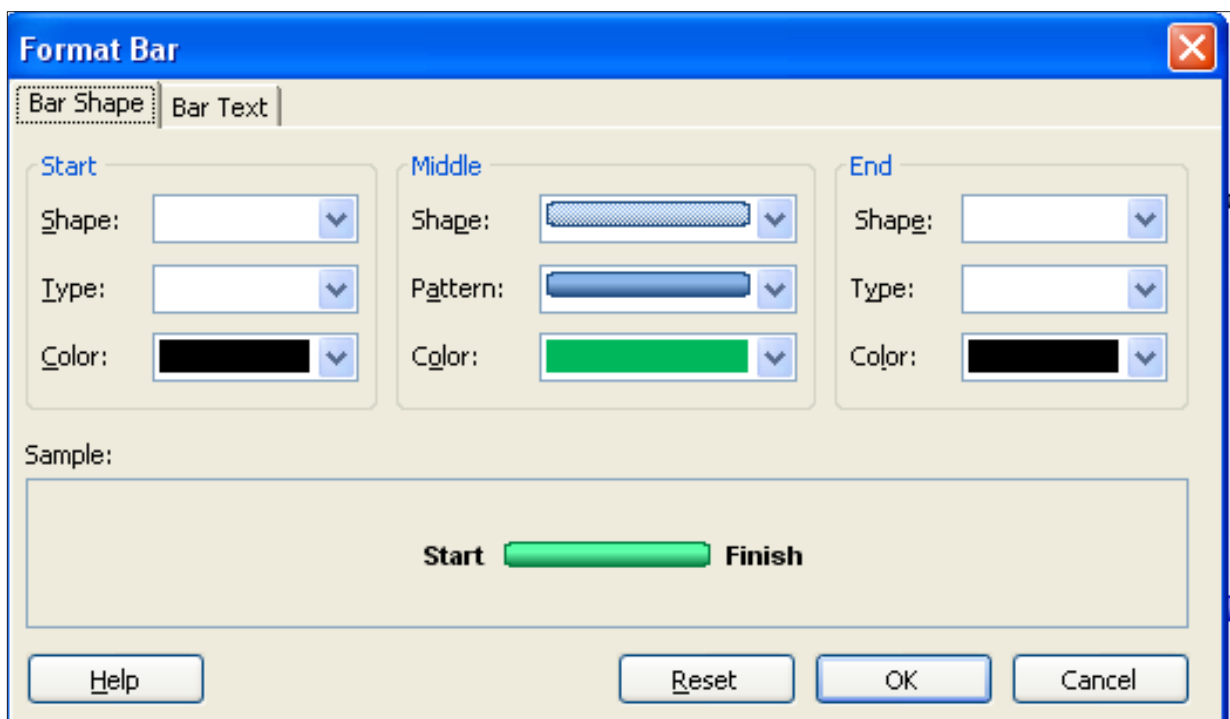


Figure 6-17 PLACEHOLDER

To add the Start date to the left side of the bar and the finish date to

the right side of the bar:

- Click **Bar Text** tab
- Click the Left box and select **Start**
- Click the Right box and select **Finish**
- Click ok to close

Note the suggested changed format image at the bottom of the dialog box.

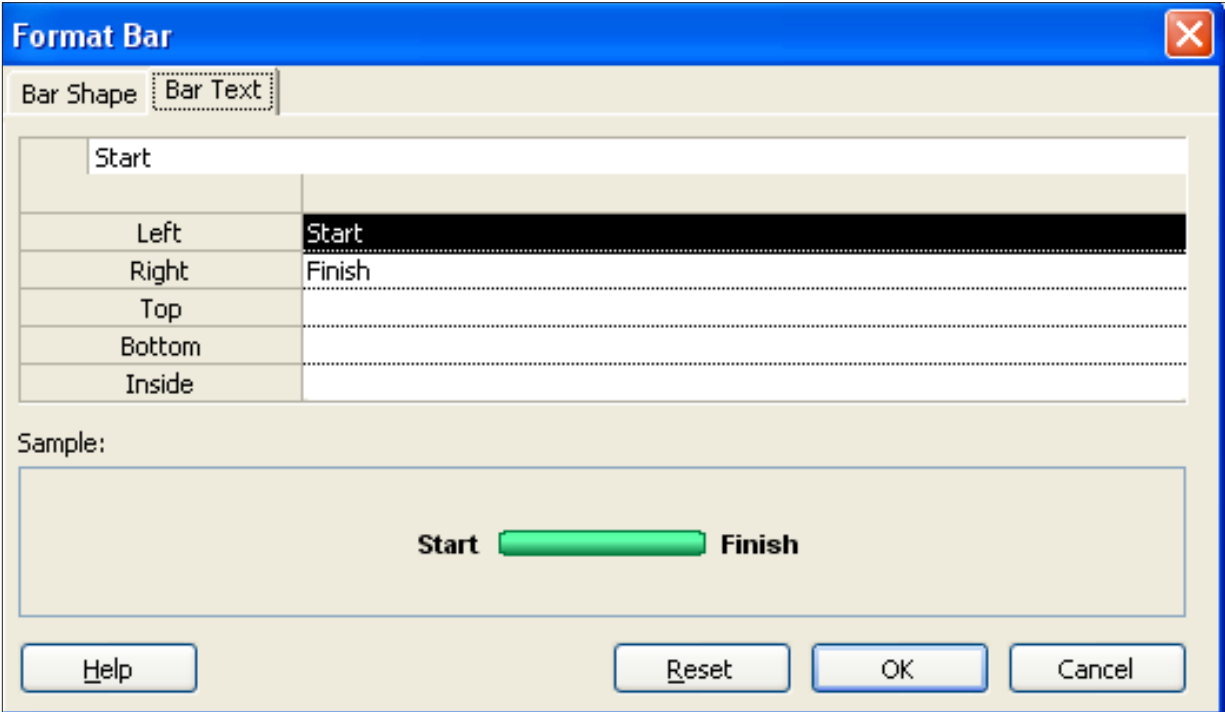


Figure 6-18 PLACEHOLDER

The Gantt bar for the task has been changed to green and the Start and Finish dates for the task are displayed on either side of the Gantt bar. The result of this formatting can be seen in the view below:

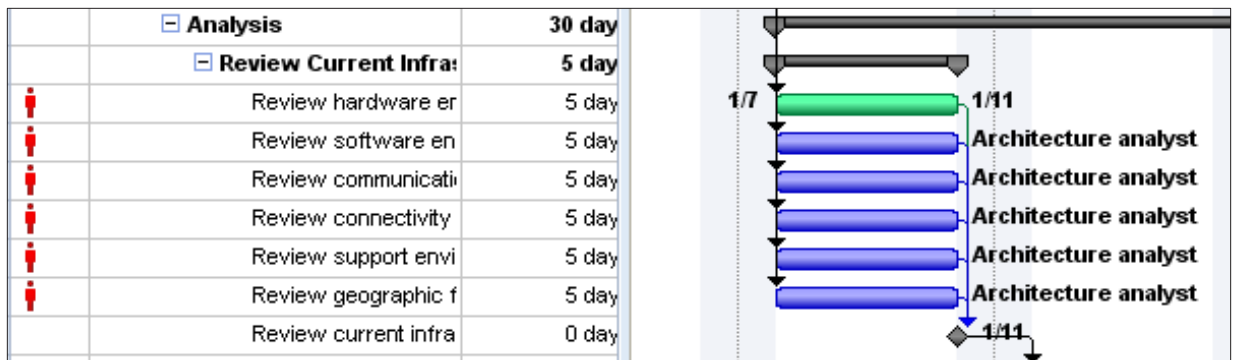


Figure 6-19 PLACEHOLDER

Bar styles for all Gantt bars - used to change the formatting in a Gantt chart view or add additional bars to a Gantt chart. Changes using the Bar Styles box will affect all Gantt bars for a specific Gantt chart view.

- Show the Gantt Chart view (or any other Gantt view you wish to change)
- Click **Format → Bar styles**
- Alter settings as needed – click on a category in the top section, then click in the bottom section to make changes
 - Top section is used to customize the values of a category of Gantt bars
 - Bottom section has two sections:
 - Bars – change bar formatting
 - Text – alter text values around the Gantt bars
- Click ok to close the box

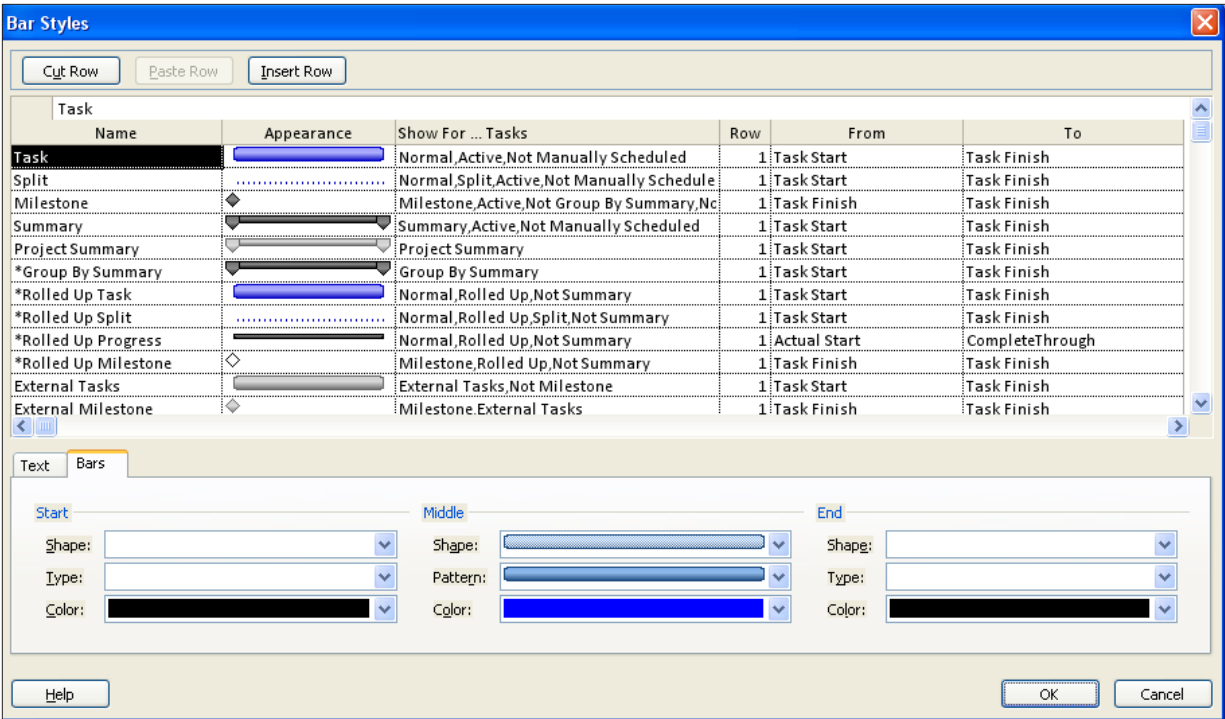


Figure 6-20 PLACEHOLDER

Scheduling styles - used to style changes formatting to all Gantt bars for a specific Gantt chart view.

- Display the Gantt Chart view, click the **Format** tab
- Click the slider to view all style selection options
- Click on a style option to be applied to the Gantt chart view

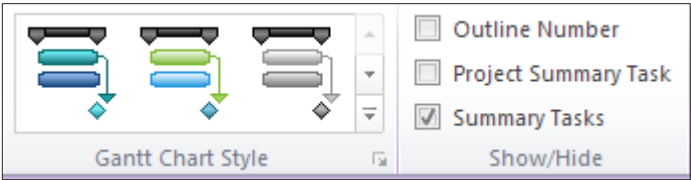


Figure 6-21 PLACEHOLDER

Below is the result of a Gantt chart that has been formatted using one of these styles:

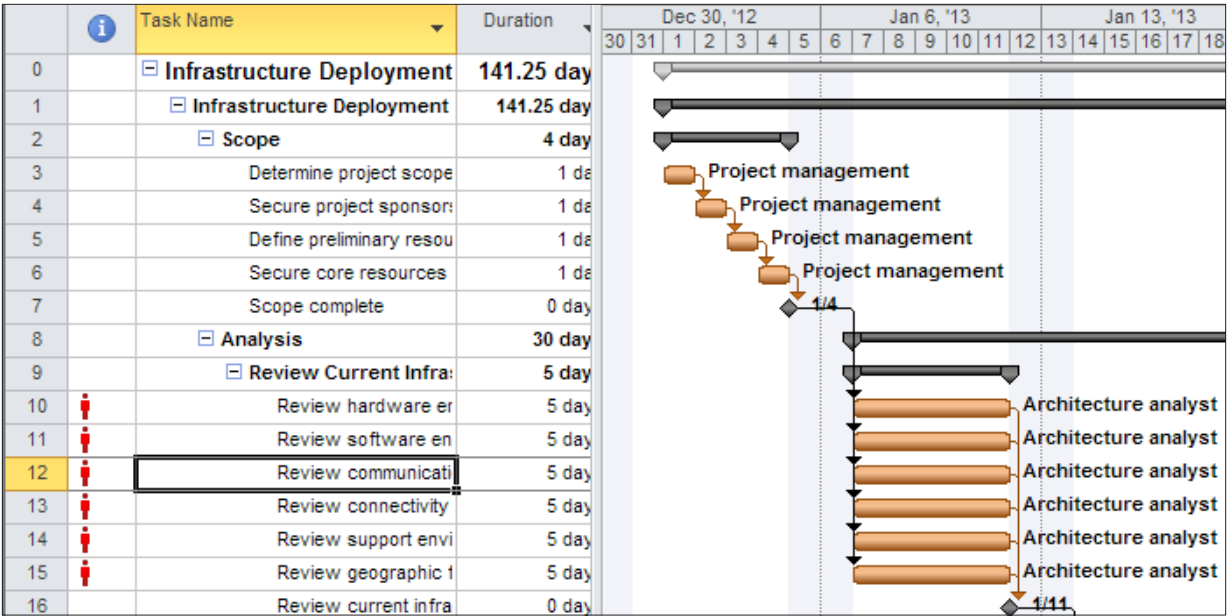


Figure 6-22 PLACEHOLDER

On the left side of the Format bar are 3 buttons used for formatting the text of tasks, gridlines and the Gantt chart layout.

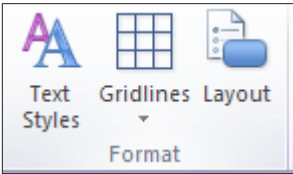


Figure 6-23 PLACEHOLDER

Text styles

The Text Styles formatting tool will format the text of tasks for tables based on a field value selected or for all task types for a specific Gantt chart view or table. There is also the ability to highlight a specific task. In the example, all milestone tasks will appear in red type with a light blue background.

To apply customized formatting based on a field value:

- Display a task table view
- **Format → Text Styles** to open the Text Styles dialog box
- Item to change: **Milestones**
- Color: **Red**
- Background color: **Light blue**
- Click **ok** to close

The box below is shown with these choices:

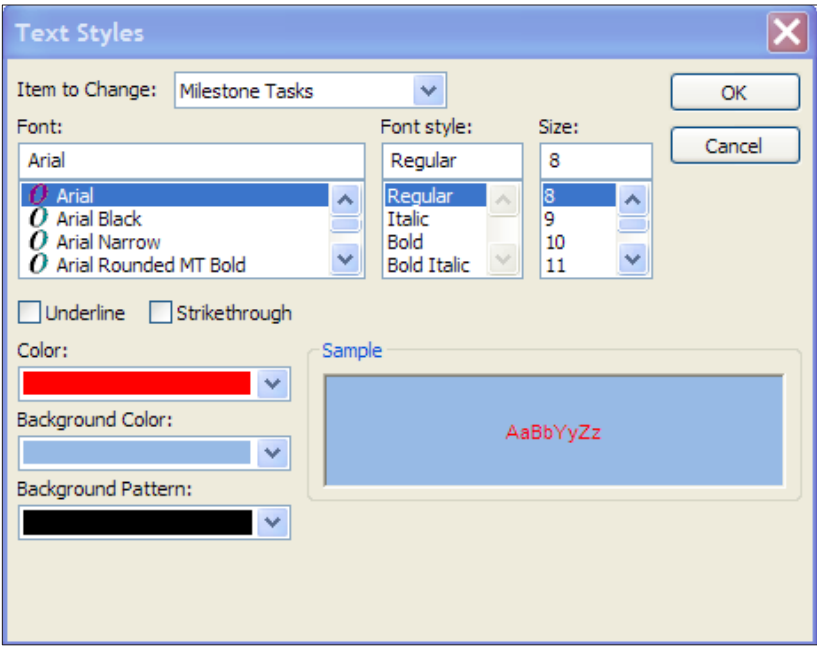


Figure 6-24 PLACEHOLDER

The result of this formatting is shown below.

52		Develop detailed sup	5 days	
53		Develop detailed infr	0 days	
54		Align long/short term infr	10 days	
55		Design complete	0 days	

Figure 6-25 PLACEHOLDER

To reset the formatting to normal state for all tasks:

- Display a task table view

- **Format → Text Styles**
- Item to change: **All**
- Color: **Automatic**
- Background color: **Automatic**
- Click **OK** to close

Suggestions for effective use of Text Styles:

- Format all critical tasks
- Color coding of summary tasks
- Highlighting specific tasks during presentations
- Marked tasks- using the field called Marked to mark selected tasks then change formatting based on this coding.

Gridlines - used to format the gridlines of a Gantt chart view and tables. In the following example the Project Finish date will be displayed as a blue line:

To change the color of gridlines on a task table for Gantt chart:

- Display a task table and Gantt chart
- **Format → Gridlines**
- Line to change: **Project Finish**
- Type: select a line style
- Color: Blue
- Click **OK** to close

The box below is shown with these choices:

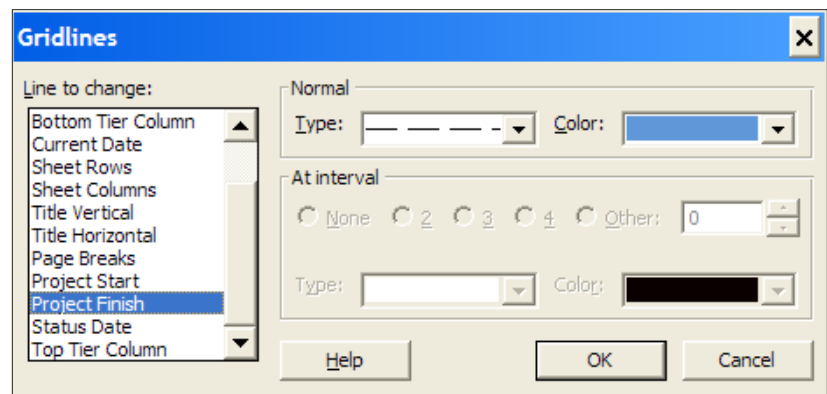


Figure 6-26 PLACEHOLDER

The result of this formatting is shown below. The Project Finish date is highlighted:

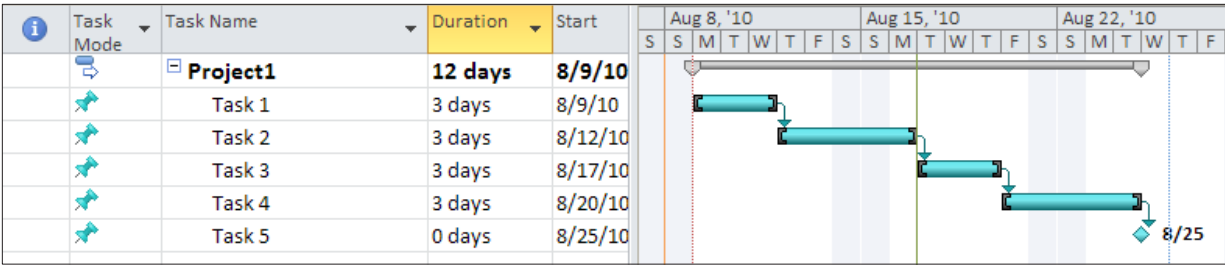


Figure 6-27 PLACEHOLDER

Suggested uses for gridline formats are:

- Status Date
- Current date
- Project Start date
- Project Finish date

Layout

Layout is very helpful in customizing several features shown in Gantt chart views.

- Format → Layout

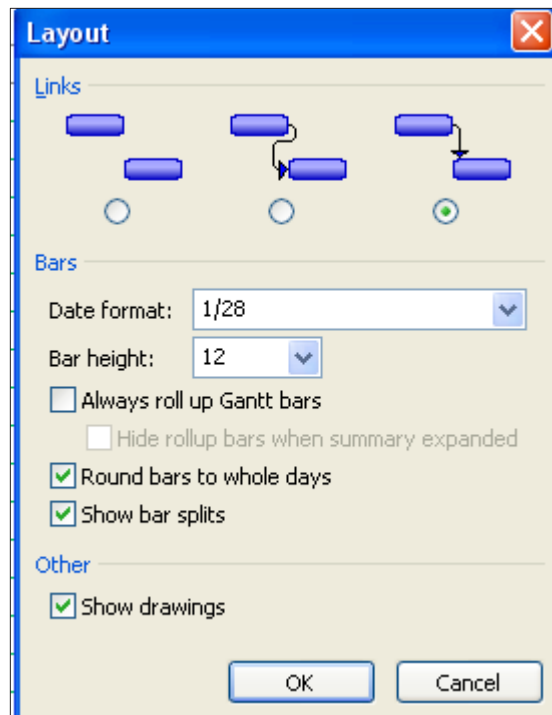


Figure 6-28 PLACEHOLDER

- **Links** - used to change the look of the link lines or turn them off.
- **Date format** - used to change the date format on the Gantt chart and will not affect the date shown in the tables.
- **Bar Height** - used to adjust the Gantt bars.
- **Always roll up Gantt bars** – used to roll up the Gantt bars when the outline level is collapsed, roll up the Gantt bars (example of rolled up bars is shown below).
- **Round bars to whole days** – used to make very short tasks more visible.
- **Show bar splits** - used when you have split tasks. Split tasks will also appear during tracking.
- **Show drawings** – drawing tools are located on the Format tab. Text boxes and arrows may be drawn on Gantt charts. Use this option to hide the drawings when needed.

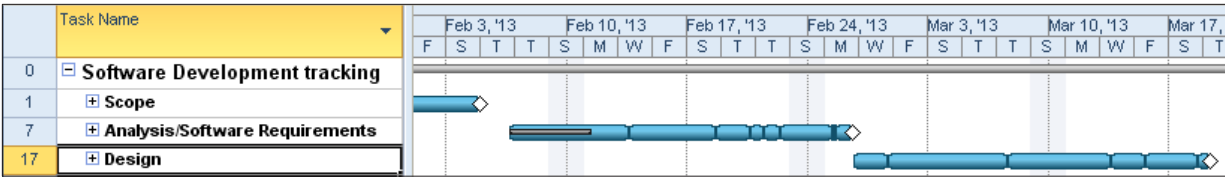


Figure 6-29 PLACEHOLDER



Using the Gantt Chart Wizard, you can reset the Gantt chart formatting to its default settings. Gantt Chart Wizard must be added to a ribbon before you can use it. The Gantt Chart Wizard contains several additional formatting styles.

Customizing Timeline Views

The Timeline view is new view to Project 2010. The purpose of the Timeline view is to display project tasks using a timeline format and export the view to other applications such as Word, Excel, Outlook and Powerpoint.

Gantt Chart with Timeline is the default view in Project 2010. This view is a split screen with the Timeline view on the top and the Gantt Chart View on the bottom.

To turn Timeline view off/on:

- **Task → Gantt Chart**
- **View → Timeline**

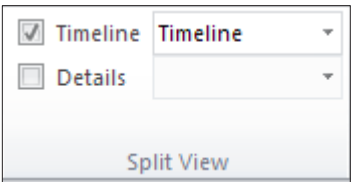


Figure 6-30 PLACEHOLDER

Below is a view of the default Timeline view. The Timeline view is showing the information for the project summary task. The length of the timeline represents the duration of the project. There is a timeframe window open in the middle to highlight a specific timeframe:

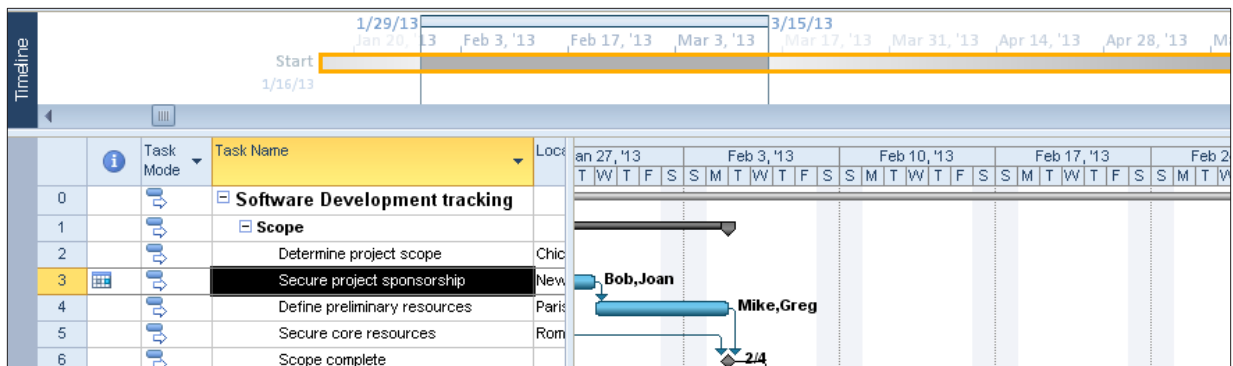
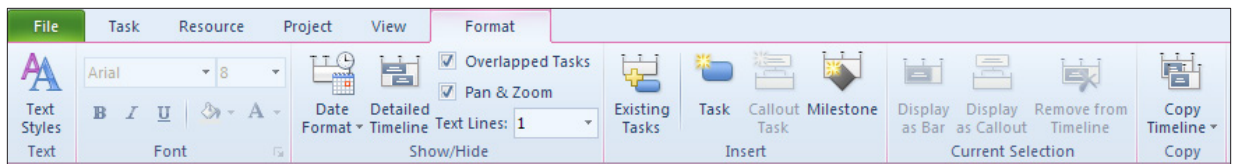


Figure 6-31 PLACEHOLDER

To format or add more data to the Timeline view:

- Click inside the Timeline view window
- Click on the Format tab

Below is a view of the Timeline format bar. Use the buttons on this bar to add additional tasks and format the Timeline view.



Within the Timeline view there is a timeframe window highlighted in the diagram below.

- The Timeframe window may be dragged left and right to emphasize different timeframes of the project schedule. The Gantt bars will adjust as the timeframe window is moved.
- Change the timeframe window by clicking in the timeline view and clicking the zoom slider in the lower right corner of the screen.
- The time density of the Timeline view does not have to match the time density of the Gantt Chart View.
- To turn on and off the Timeframe window, click the Pan & Zoom button on the Format bar.
- Use the Date format button on the Format bar to format the dates in the Timeline view.
- Use the Detailed Timeline button to show task names and dates in the view.

The view below shows the standard Timeline view with the Gantt chart

view below. The Timeframe window is highlighted:

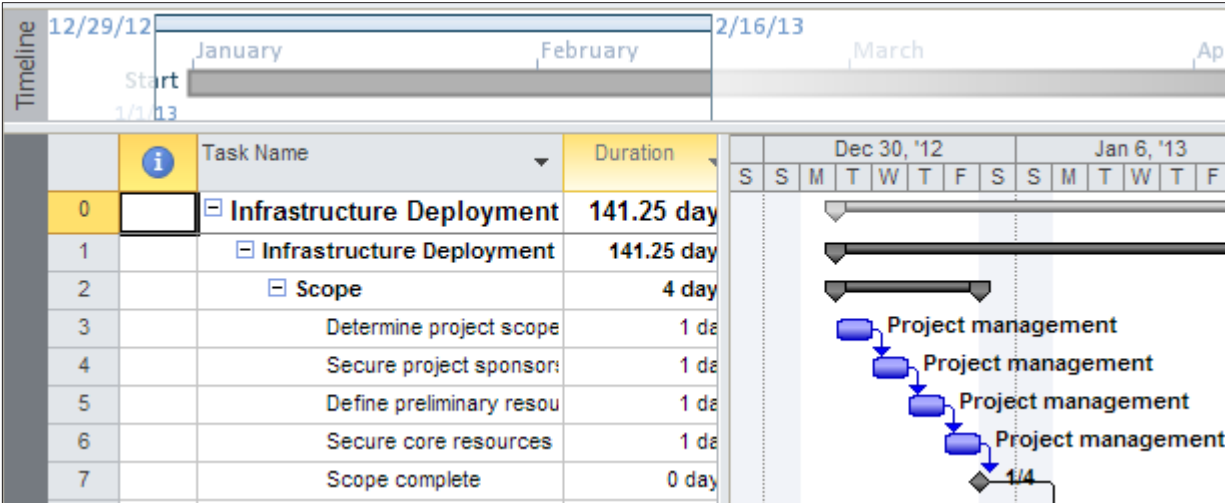


Figure 6-32 PLACEHOLDER

Adding additional tasks to the Timeline view will help build a better picture of your project. Tasks can be individually included to the Timeline view via the Task Information dialog box under the General tab. Double click a task to display the Task Information dialog box.

Task Information

General | Predecessors | Resources | Advanced | Notes | Custom Fields

Name: Define preliminary resources Duration: 4 days ☐ Estimated

Percent complete: 0% Priority: 500

Schedule Mode: ☐ Manually Scheduled ☒ Auto Scheduled ☐ Inactive

Dates

Start: 1/30/13 Finish: 2/4/13

☐ Display on Timeline
☐ Hide Bar
☐ Rollup

Help OK Cancel

Figure 6-33 PLACEHOLDER

The timeline format bar has several command buttons that will help flag tasks for inclusion into the Timeline view. Clicking the Existing Tasks button will display a list of all tasks for a project where you can scroll through and select the tasks you want displayed in the Timeline view.

To add tasks to the timeline view using the Existing Tasks button:

- Click **Existing Tasks**
- Using the check boxes, select the tasks to add
- Click **OK** to close.

See below for an example of the Existing Tasks choice list. It is easy to tell the difference between summary and detail tasks:

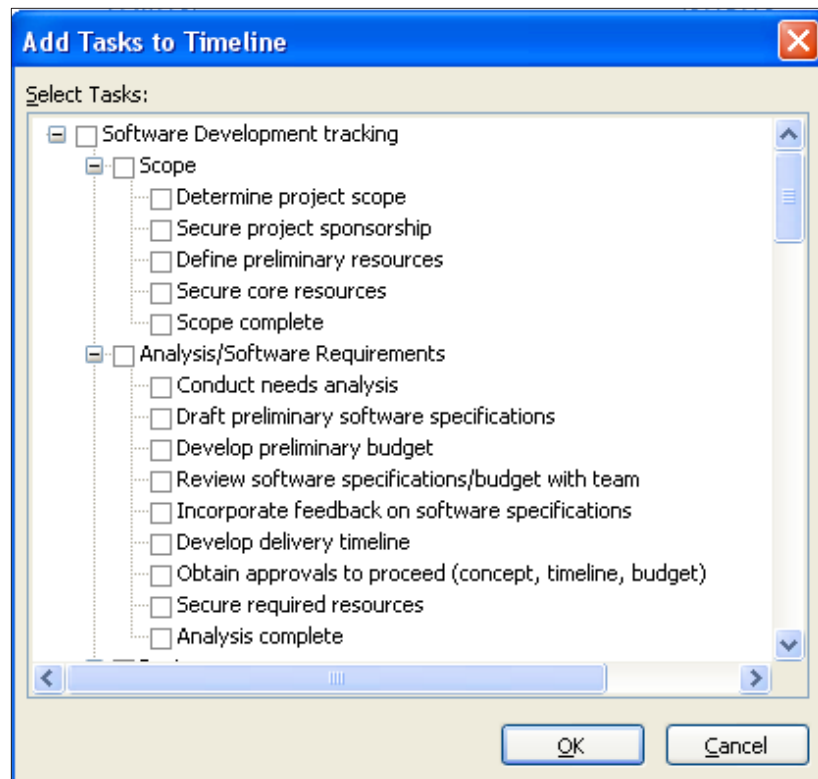


Figure 6-34 PLACEHOLDER

The timeline view should be planned carefully to create a meaningful report. Too much information can confuse the reader. Consider creating a high level tasks report that shows sections of work planned to be completed within timeframes. Below is a view where outline Level 1 tasks have been added to the Timeline view.

To add Outline Level 1 tasks (Summaries) to the Timeline view:

- **Tasks → Gantt Chart**
- **View → Outline → Outline level 1**
- For each summary task to be added to the Timeline view, Select and Right click. Multiple selections maybe made.
- Click **Add to timeline**

The Timeline view below, displays Outline Level 1 Summary tasks only and the Gantt chart displays the same Outline Level 1 Summary tasks.

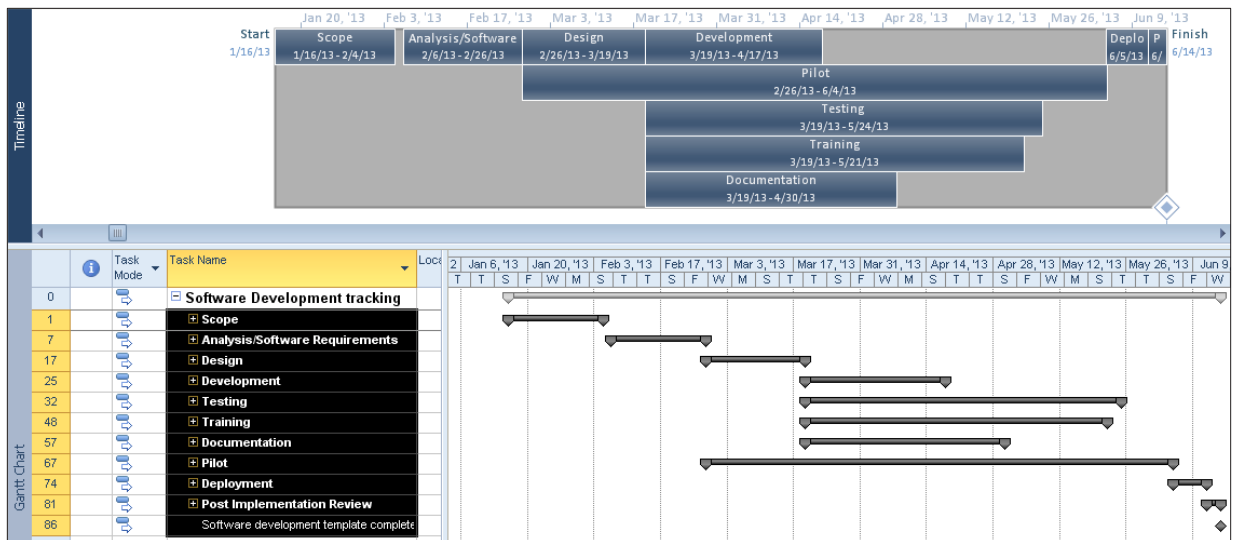


Figure 6-35 PLACEHOLDER

Milestone can also be added to the Timeline view.

To add a milestone to the Timeline view:

- **Tasks → Gantt Chart**
- **View → Filter → Milestone**
- Select the milestone tasks and Right click
- Click **Add to timeline**

The diagram below displays Outline Level 1 tasks with milestones added:

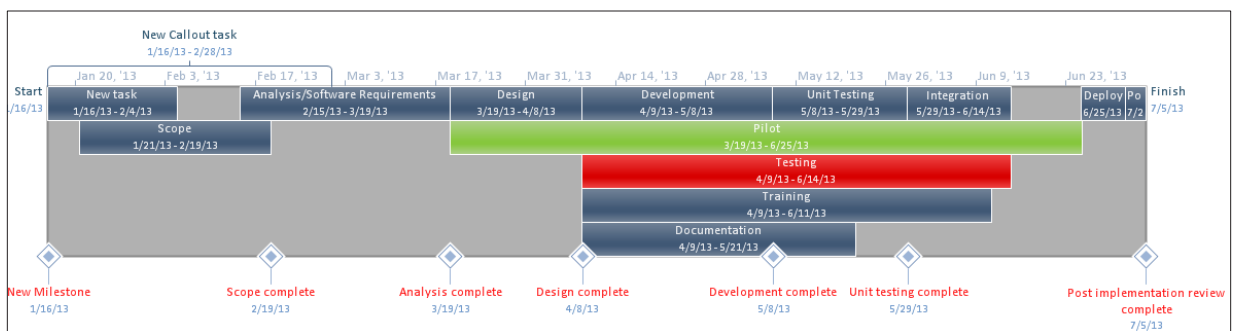


Figure 6-36 PLACEHOLDER

Tasks may be added to the project using the Timeline view format bar. When adding tasks using these buttons, the tasks will be added to the end

of the project schedule and will start on the first day of the project or the current date depending on the scheduling option. The choices are:

- Adding a new task to the timeline
- Adding a new callout task to the timeline
- Adding a new milestone to the timeline

Below is a view showing a new task, a new callout task and a new milestone added to the timeline and the project schedule. The lower half of the view shows the tasks added to the Gantt Chart view. Callout tasks are originally placed above the timeline spanning the timeframe of the task. After they are created, they may be dragged to alternate locations within the Timeline View.

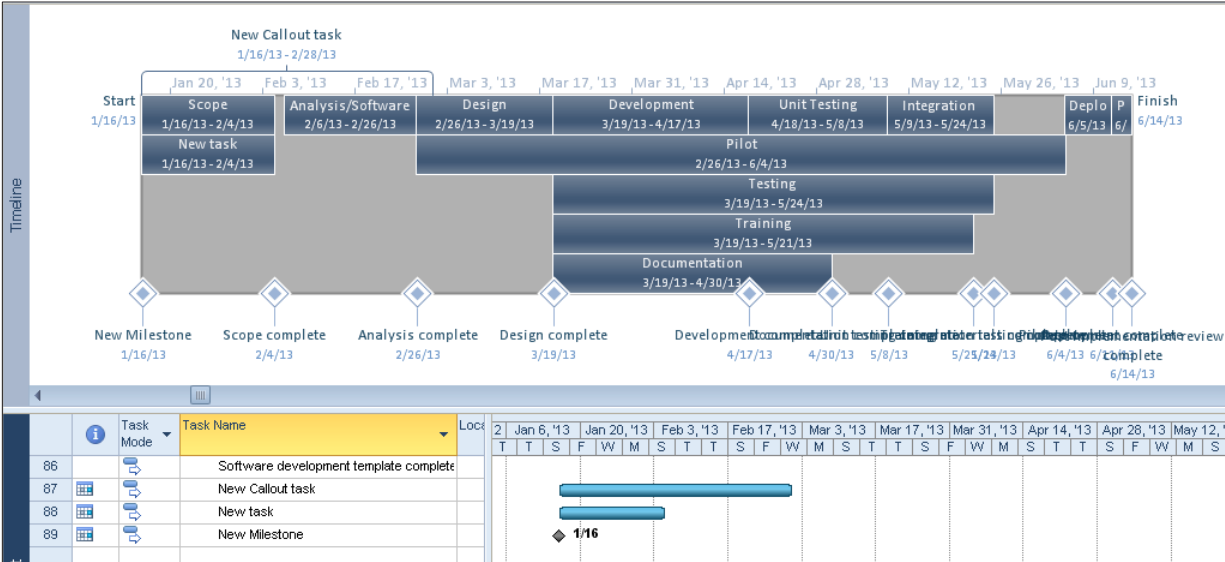


Figure 6-37 PLACEHOLDER

To display an existing task as a callout task:

- Click on a task in the Timeline view
- Click **Display as a Callout**

To display a Callout task as a bar:

- Click on the Callout task
- Click **Display as Bar**

To remove tasks from the Timeline view using the Timeline format bar:

- Click the task in the Timeline view
- Click **Remove from Timeline**

Tasks may be formatted and highlighted as necessary. Text styles and

format buttons are available on the Timeline format bar. Tasks may Changing the colors of the timeline bars is helpful when highlighting information.

To export a Timeline view to Outlook, Excel, Word, or Powerpoint to the clipboard:

- Click in the **Timeline** view
- Click **Copy timeline**
- Select copy choice:
 - For email
 - For presentation
 - Full size
- Navigate to destination
- Click **Copy**

Best Practice: Too much information results in a hard to read Timeline view. Select what is important and what will convey your message. The view will become more meaningful and will result in a useful reporting tool.

Practice: Customizing the User Interface

The Practice page is where you write detailed instructions for completing work listed as Exercises.

Type the Exercise Title and write a brief summary what the student will be doing in the exercise. Then list your ideas what they will be doing.

SAMPLE

In this practice you will create a Project Server Authentication profile and then configure the local cache settings in Project Professional 2007.

Exercise 1: Create Project Server Authentication Profile

In this exercise you will create Project Server authentication profile to connect to the Project Web Access site.



Perform the following exercise on the ps07 virtual machine.

- 4. From the **Start** menu, click **All Programs → Microsoft Office → Microsoft Office Tools** and click **Microsoft Office Project Server 2007 Accounts**.
- 5. In the **Project Server Accounts** dialog box, click **Add**.
In the **Account Properties** dialog box, and complete the following settings and click **ok**.

Table 6.2 PLACEHOLDER

Setting	Perform the following:
Account Name	Type Project Server
Project Server URL	Type http://epm/pwa
When connecting	Select Use Windows user account
Set as default account	Select check box

Lesson 3: Working with the Organizer

Fields, tables and views in Project 2010 are called objects. Creating objects is easy and can be very powerful. Creating objects is a way of getting the information you need from your unique project schedules. Objects may be created for one specific project schedule or may be saved for reuse in other projects. To retain objects they must be copied into the Global.mpt using a tool called the Organizer.

In this lesson, we will talk about:

1. What is an object.
2. What types of objects are available.
3. Define settings for using the Organizer.
4. Sharing objects between projects.

What is an Object & What Objects are Available

A project schedule might have tasks occurring in different locations. Reporting tasks by location would help to communicate information regarding the project more accurately. To allow for this type of reporting a task field could be created to contain the location information. The created field is called an Object.

An object is an element of Project 2010 which can be standard to Project 2010 or is custom created for use in a project schedule. Standard objects which are contained in Project 2010 may be altered as needed and saved. Once an object is created or a standard object changed, objects may be available for use in one unique project schedule or can be shared for use in other projects. Objects may be copied between project schedules to enable sharing among projects and other Project 2010 users. All objects are stored in the Global.mpt file that was created when Project

2010 was installed.
Available Objects:

Table 6.3 PLACEHOLDER

Object	Available for
Filters	Resource and Task
Groups	Resource and Task
Import/Export Maps	Both
Tables	Resource and Task
Reports	Both
Views	Resource and Task
Calendars	Project level
Modules (Macros)	Both
Fields	Resource and Task

Best uses for objects:

- Calendar – create it once and apply to future projects.
- Establishing a standard process for project schedules.
- Project managers can use the same value fields to collect common data.
- Projects may be combined and data reported across multiple projects.
- Creating unique values that apply to an individual project.
- Creating standardized reports for use with all projects.



A custom view may be a combination of a customized table, filter and group. Reports may contain tables and filters. Tables may contain fields. All pieces of the custom object must be copied individually using the Organizer into the Global.MPT. Project 2010 is not aware of dependent objects. All children objects must be copied for the parents to function.

Define Settings in Organizer

When objects are created using Project 2010, they will be placed either in the global value for the project file in which they were created or in the Global.mpt file. A new display option in Project 2010 allows objects to be automatically added to the local Global.mpt. Some objects such as import/export maps and macros (modules) will automatically be placed in the Global.mpt.

To display the Display options:

- **File → Options → Advanced**

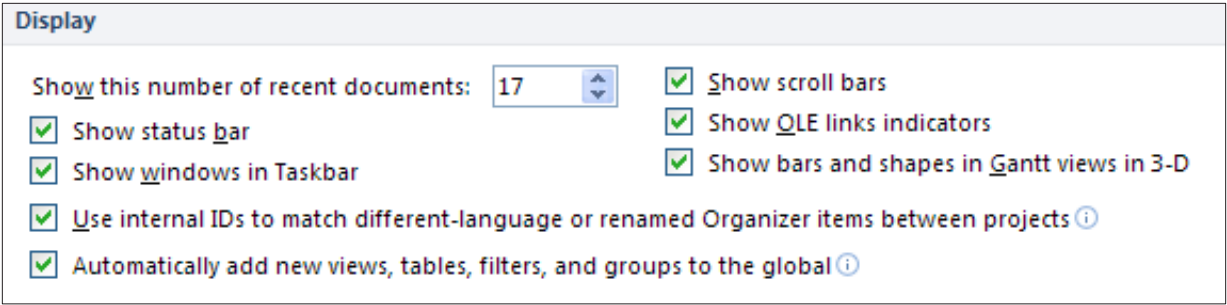


Figure 6-38 PLACEHOLDER

Using the Organizer to Share Objects

Across the top of the Organizer dialog box are multiple tabs for the different types of objects used by Project 2010. The box to the left displays all Global.MPT values and the box to the right displays values specific to the open project file. Use the organizer to copy objects between projects or into the local Global.MPT file.

To display the Organizer:

- File → Info → Organizer

To copy an object from a particular project schedule to the Global.MPT:

- Click on the object in the pane to the right
- Click **Copy** to copy the object to the Global.MPT on the left

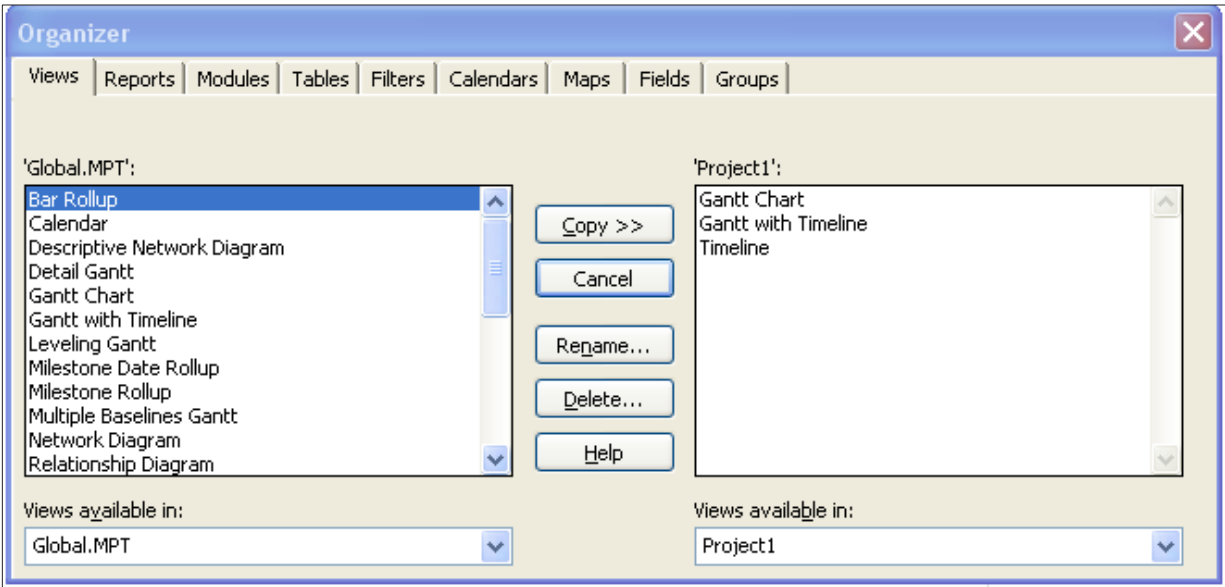


Figure 6-39 PLACEHOLDER

The two “Views available in” boxes at the bottom of the Organizer box will allow for selecting objects from alternate open project schedules.



The Organizer is also used to rename and delete objects from Project 2010.

Practice: Working with the Organizer

The Practice page is where you write detailed instructions for completing work listed as Exercises.

Type the Exercise Title and write a brief summary what the student will

be doing in the exercise. Then list your ideas what they will be doing.

SAMPLE

In this practice you will create a Project Server Authentication profile and then configure the local cache settings in Project Professional 2007.

Exercise 1: Create Project Server Authentication Profile

In this exercise you will create Project Server authentication profile to connect to the Project Web Access site.



Perform the following exercise on the **ps07** virtual machine.

- 5. From the Start menu, click All Programs → Microsoft Office → Microsoft Office Tools and click Microsoft Office Project Server 2007 Accounts.
- 6. In the Project Server Accounts dialog box, click Add.
- 7. In the Account Properties dialog box, and complete the following settings and click ok.

Table 6.4 PLACEHOLDER

Setting	Perform the following:
Account Name	Type Project Server
Project Server URL	Type http://epm/pwa
When connecting	Select Use Windows user account
Set as default account	Select check box

Lesson 4: Creating Custom Objects

Objects offer the Project Manager significant flexibility for creating customized and meaningful project reports. Each project is different and objects may be created for one unique project or copied using the Organizer for use in existing and future projects.

In this Lesson, we will discuss:

- 1. Creating custom fields.
- 2. Creating custom filters.
- 3. Creating custom groups.
- 4. Creating custom tables.
- 5. Creating custom views.

Creating a Custom Field

Project 2010 provides over 100 fields in the Task and Resource data sections that are available for use by the project scheduler. Customized or free-use fields are available in different data types. When creating a customized field, the type of data stored in the field and how the field will be used will determine the data type selected.

Below is a list of the customizable fields available in Project 2010. The same set of fields is available in both the Task and Resource data sections:

Table 6.5 PLACEHOLDER

Field name	Field type	Number of available fields
Text1- Text 30	Text	30

Table 6.5 PLACEHOLDER

Field name	Field type	Number of available fields
Duration1 – Duration10	Time	10
Number1 – Number 10	Numeric	10
Date1- Date10	Date	10
Finish1 – Finish10	Date	10
Start1 – Start10	Date	10
Flag1 – Flag10	Yes/No	10
Cost1 – Cost 10	Monetary value	10
Outline1 – Outline10	Hierarchical structure - Text	10

Custom fields are very flexible and can contain one or more of the following traits:

- Lookup table
- Formula
- Graphical indicators
- Data

To create a custom field, follow the steps below. In this example, a custom field called Location will be created with a lookup table.

To display the Custom Fields dialog box:

- **Project → Custom Fields**
 - OR -
 - Right click any field name and select **Custom Fields**
- The following Custom Fields dialog box will appear:
- Type: Select **Text**
 - Select one of the unused fields available



A field that has been used will display the name the field was changed to.

Figure 6-40 PLACEHOLDER

- Click **Rename**
- Type **Location**
NOTE: Field names must be unique
- Click **OK** to close

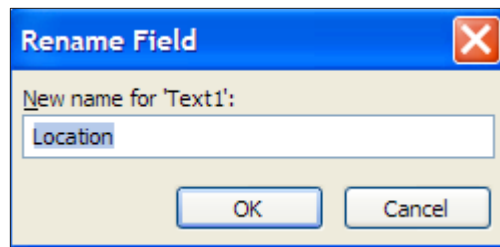


Figure 6-41 PLACEHOLDER

When a field is renamed, the old name will be shown following the new name in parenthesis. When using the field either name may be used to refer to the field.

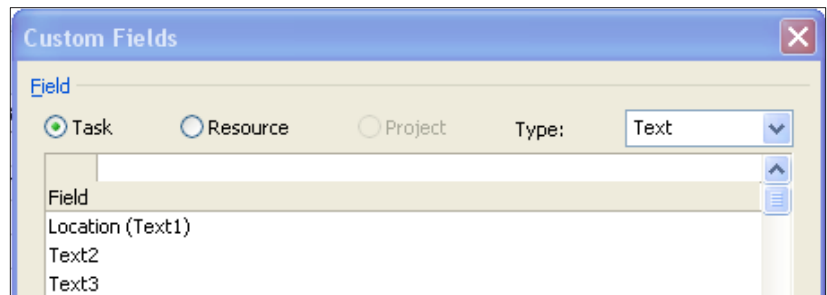


Figure 6-42 PLACEHOLDER

The next steps will create the Lookup table used to standardize the data entered into the Location field. Several values have been added in the view below:

- Click **Lookup** (box below will appear)
- In the value column on the left, enter the Lookup table values – repeat to complete the list
- In the description on the right enter a description for the Lookup table value (optional)
- Check box to set one of the values as a default value (optional)
- Click radio button to sort the list (optional)
- Check box to allow user to add values to the list (optional)
- Click **Close** to close
- Click **OK** to close the Custom Fields box



Lookup tables may be imported from other projects or imported between task fields and resource fields.

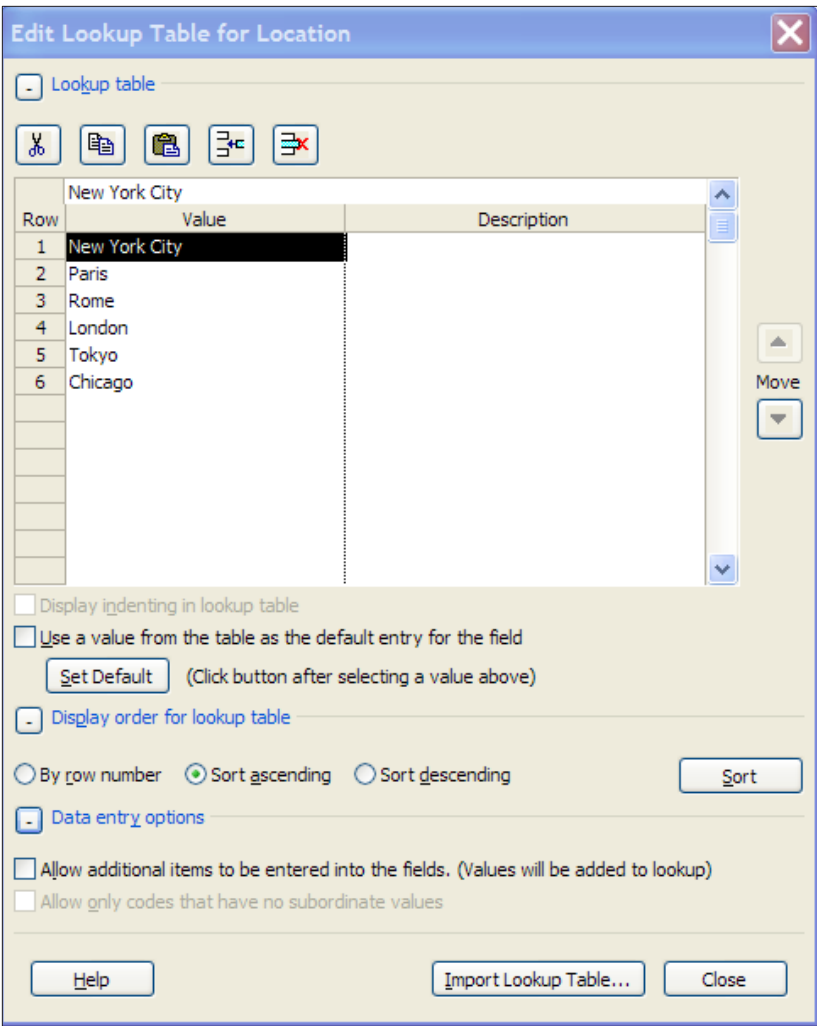


Figure 6-43 PLACEHOLDER

To use the newly customized field above, insert the field into a Task table. A pull down list is now available to access the Location lookup table of values. The result is shown in the view below:

Task Name ▼	Location ▼	Duration ▼
<input checked="" type="checkbox"/> Software Development tracking		108 days
<input checked="" type="checkbox"/> Scope		14 days
Determine project scope	Chicago	2.5 days
Secure project sponsorship	New York City	5.5 days
Define preliminary resources	Paris	4 days
Secure core resources	Rome	5 days
Scope complete		0 days
<input checked="" type="checkbox"/> Analysis/Software Requirements		14 days
Conduct needs analysis	London	5 days
Draft preliminary software specificati	▼	3 days
Develop preliminary budget	Chicago	2 days
Review software specifications/budg	London	4 hrs
Incorporate feedback on software sp	New York City	1 day
Develop delivery timeline	Paris	1 day
Obtain approvals to proceed (concep	Rome	4 hrs
Secure required resources	Tokyo	1 day

Figure 6-44 PLACEHOLDER

To save the newly created field for use in existing and future projects:

- **File → Info → Organizer**
- **Fields** tab
- Click on the Location field in the right pane
- Click **Copy** in the middle to copy the object into the Global.mpt in the left pane

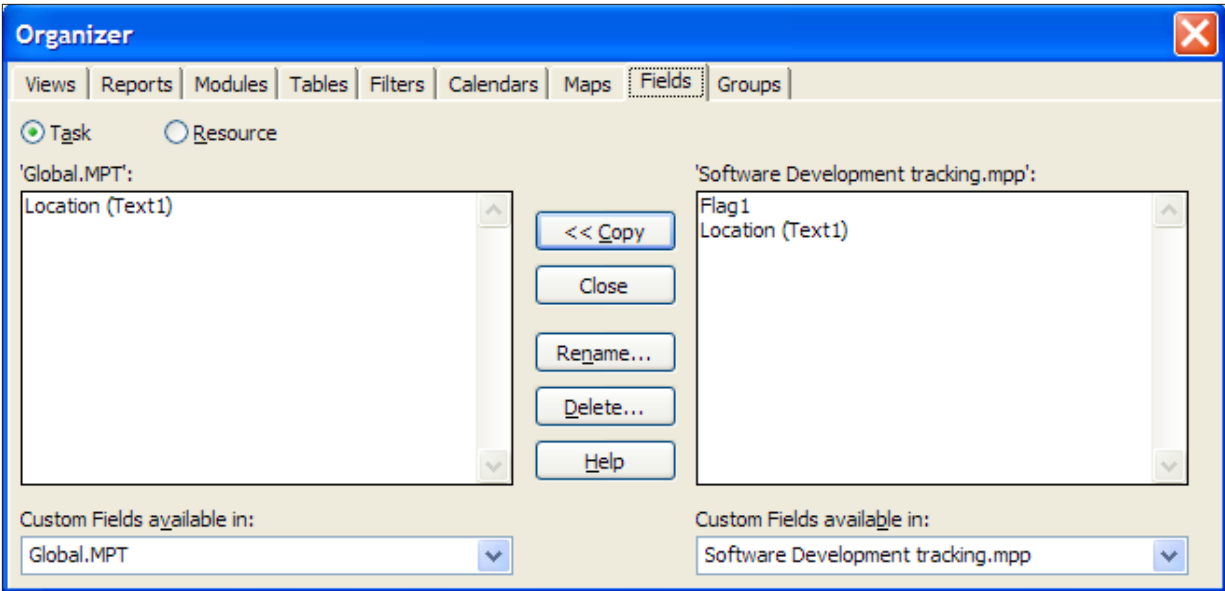


Figure 6-45 PLACEHOLDER



The Task Information box and the Resource Information box contain tabs called “Custom Fields”. Accessing the custom fields through the information boxes will display all custom fields available in either of the data sections and offer an easy access point.



Not all custom field capabilities could be addressed in the framework of this course. Formulas are very helpful for calculating values between fields. Graphic indicators may be used to create stop light reports. Further information on custom field values can be found in a complete Microsoft Project 2010 reference book.

Creating a Custom Filter

Filters offer a useful means of filtering out unwanted data, thereby retaining only the data you need to see. As part of the standard software Project 2010 contains with over 30 standard filters. Filters can be applied to tables, reports and views to return specific data for reporting purposes. Custom filters can also be created using standard or customized fields.

With the numerous built-in filters available in Project 2010 it is a good practice to verify the standard filters before creating a new custom filter to see if the filter you require has already been provided.

In the following example, a filter will be created to filter for automatic scheduled tasks:

To create a custom filter:

- **View → Filter → New Filter**

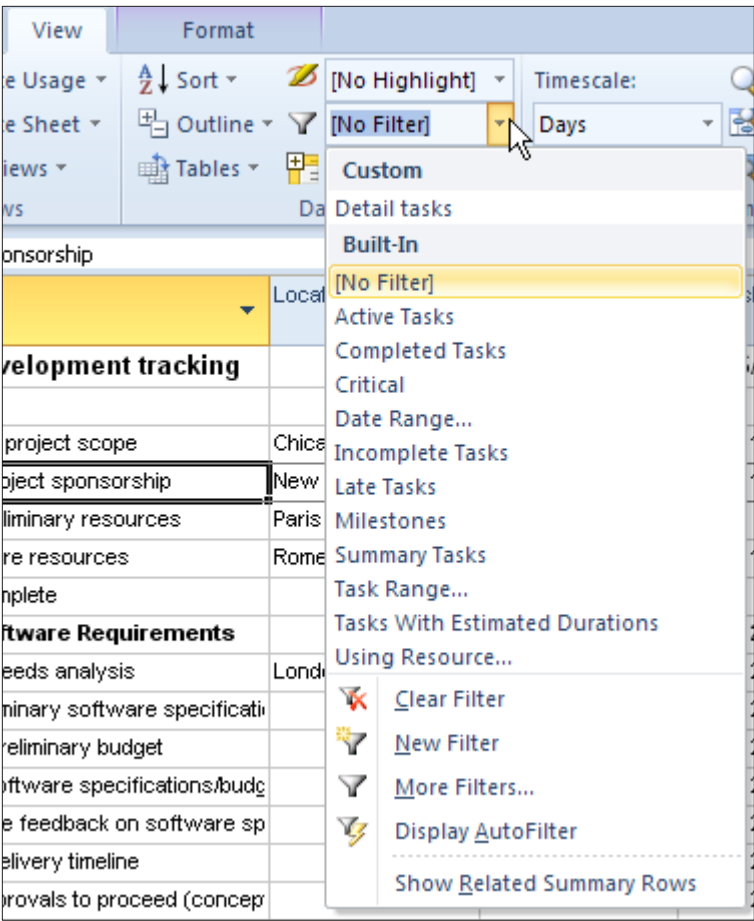


Figure 6-46 PLACEHOLDER

The Filter definition box will appear, shown below. The following entries are made:

Table 6.6 PLACEHOLDER

Field	Entry
Name	Automatic Scheduled Tasks
Show in the menu	Check to turn on

Table 6.6 PLACEHOLDER

Field	Entry
Field name	Task Mode
Test	Equals
Value	Auto Scheduled
Save	

The completed box is shown below:

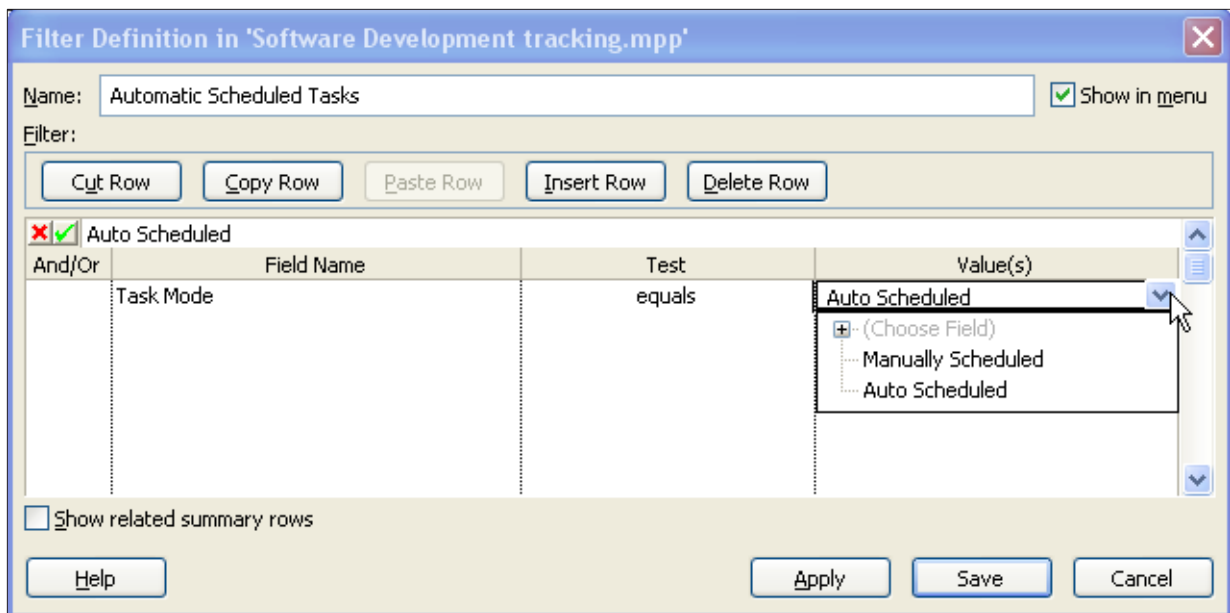


Figure 6-47 PLACEHOLDER

Created custom filters are added to the list of Custom filters in the filter drop down selection box. Click on the new filter to apply it. F3 key or Clear Filter to remove the applied filter and reset the data to the pre-filtered state. The new filter entry is shown below:

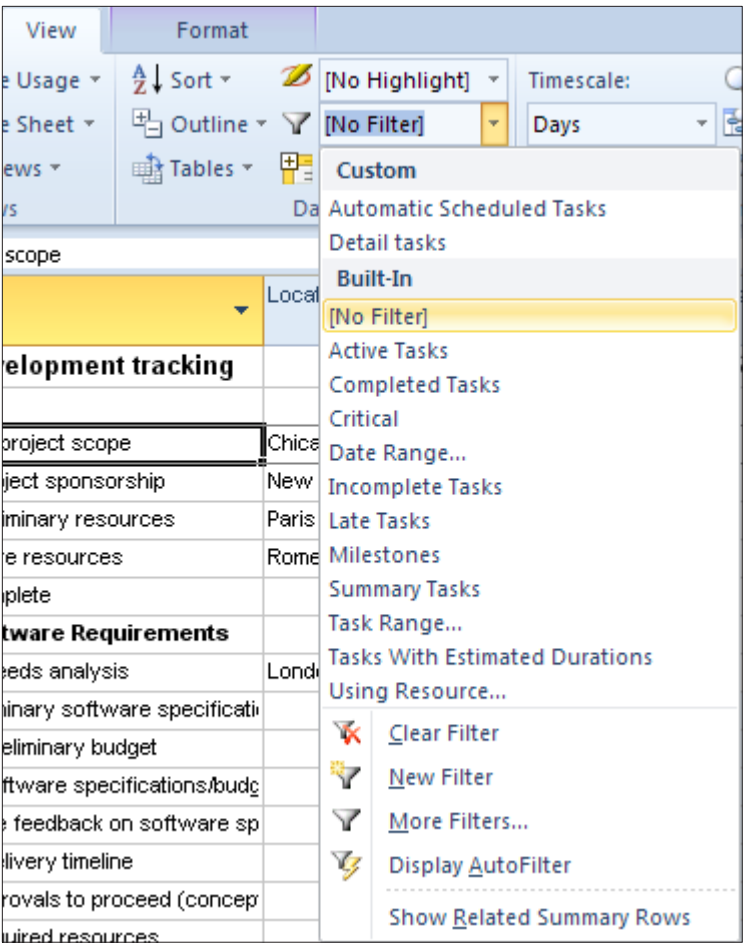


Figure 6-48 PLACEHOLDER

Creating a Custom Group

Categorizing tasks, resources or assignments by specific column values is called Grouping. As discussed earlier, Project 2010 provides many standard groupings. Custom groupings may be created using custom or

standard fields. Groups can use up to 10 levels of detail.

To create a custom group:

In the following example, a group is created using the Location field from the previous lesson.

- **View → Group → New Group by**

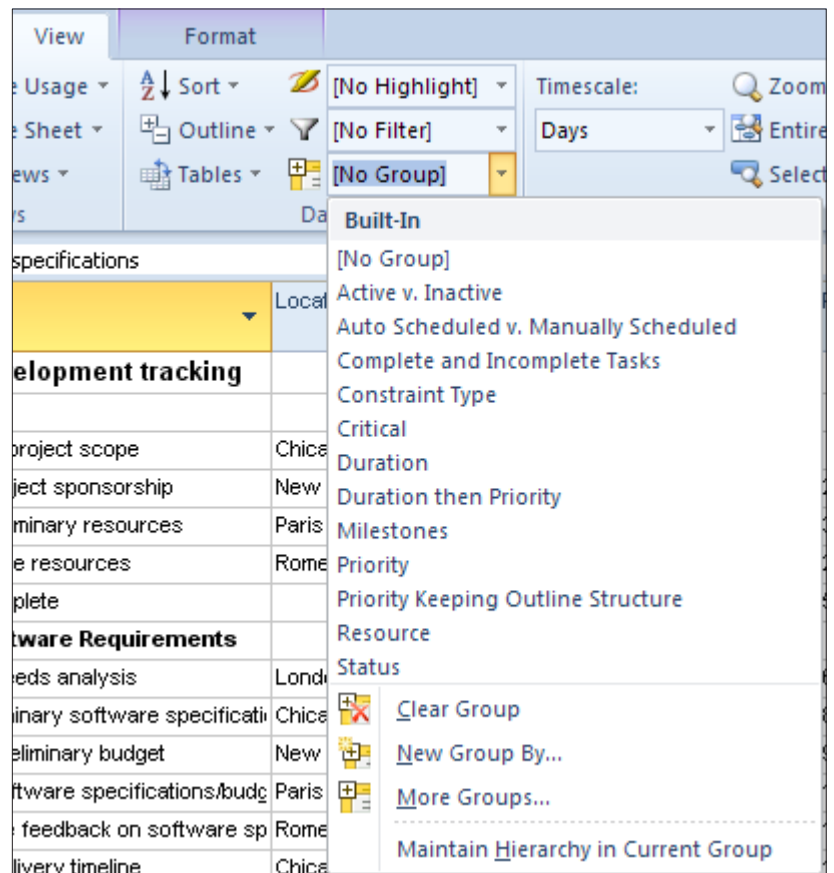


Figure 6-49 PLACEHOLDER

The following entries are shown in the view below.

- Name: **Location**
- Show in menu: **Checkmark**
- Group by: **Location**
- Click **Save** to close

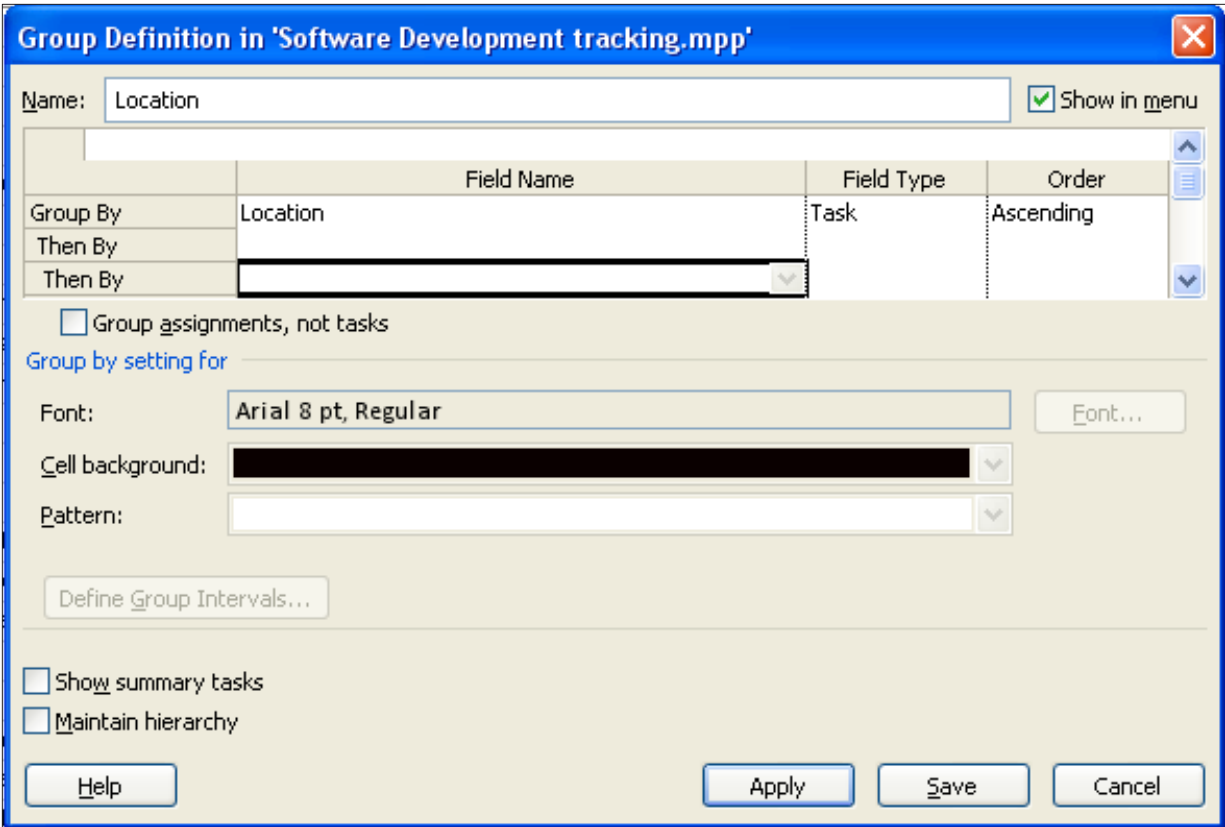


Figure 6-50 PLACEHOLDER

The resulting grouping is shown below:

Task Name	Location	Start	Finish	Predecessors	Resource Names
No Value		2/4/13	6/14/13		
Chicago		1/16/13	3/13/13		
Determine project scope	Chicago	1/16/13	1/22/13		Bob,Cathy
Draft preliminary software specifications	Chicago	2/13/13	2/18/13	8	Cathy,Ed
Develop delivery timeline	Chicago	2/22/13	2/25/13	12	Mike
Develop prototype based on functional s	Chicago	3/7/13	3/13/13	19	Cathy
London		2/6/13	2/13/13		
Conduct needs analysis	London	2/6/13	2/13/13	6	Cathy,Mike
New York City		1/22/13	2/25/13		
Secure project sponsorship	New York City	1/22/13	1/29/13	2	Bob,Joan
Develop preliminary budget	New York City	2/18/13	2/20/13	9	Mike
Obtain approvals to proceed (concept, tir	New York City	2/25/13	2/25/13	13	Bob,Mike
Paris		1/30/13	2/26/13		
Define preliminary resources	Paris	1/30/13	2/4/13	3	Mike,Greg
Review software specifications/budget	Paris	2/20/13	2/21/13	10	Mike,Cathy
Secure required resources	Paris	2/25/13	2/26/13	14	Mike
Rome		1/16/13	2/22/13		
Secure core resources	Rome	1/16/13	1/24/13	2SS	Mike,Fran
Incorporate feedback on software speci	Rome	2/21/13	2/22/13	11	Cathy

Figure 6-51 PLACEHOLDER



The option to show the summary tasks is turned off. When the grouping is removed, the summary tasks will be displayed.

To remove an applied grouping and reset data to a pre-grouped state:

- **View → Groups → No Group or Clear Group**

A grouping by Start or Finish date is very helpful for focusing on short-term timeframes, particularly for large schedules or schedules with multiple parallel paths.

To create a grouping by Start date for per week time intervals:

- **View → Group → New group by**

Enter the following values:

- Name: **Start by Week**
- Group by: **Start**
- Click **Define Group Intervals**

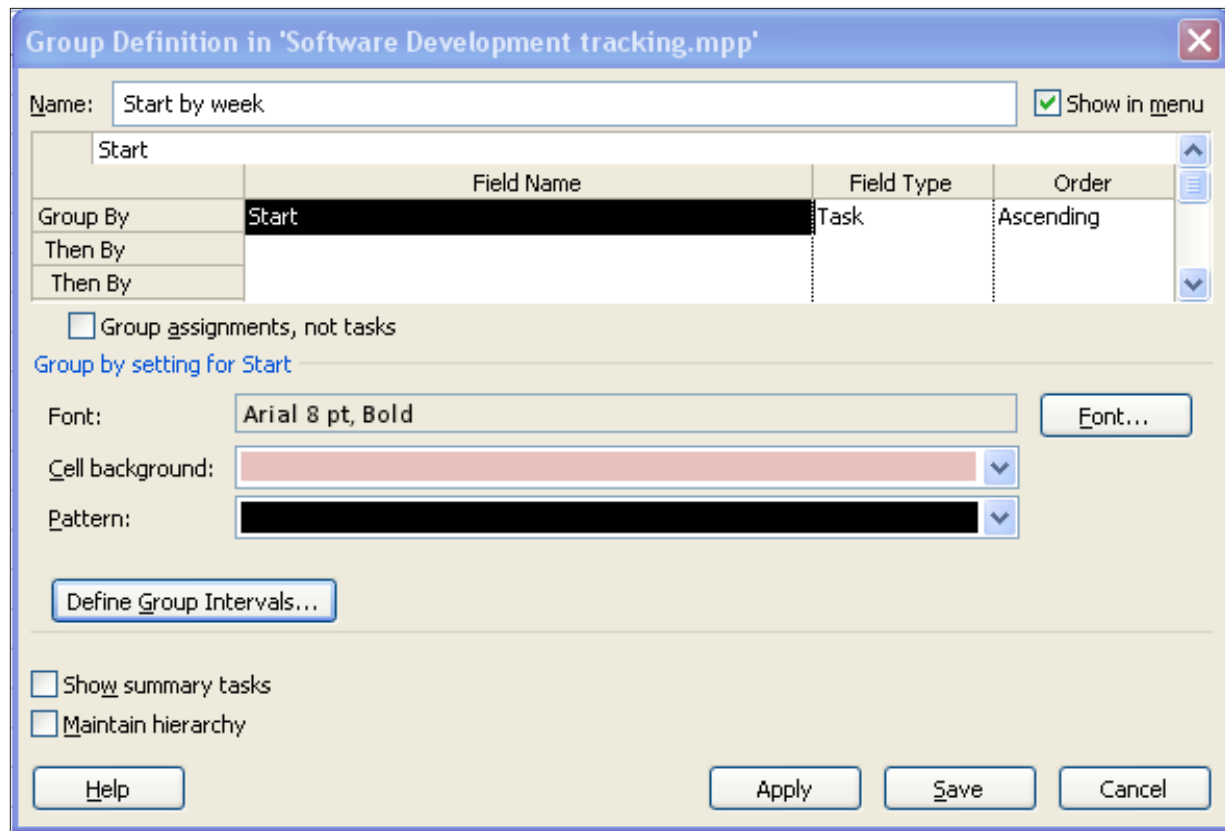
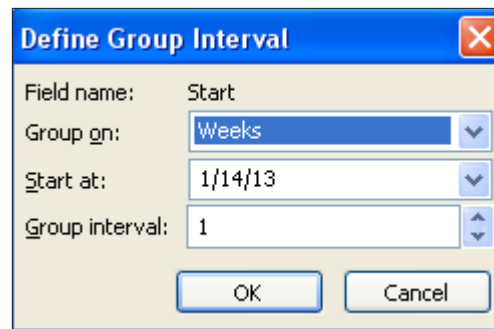


Figure 6-52 PLACEHOLDER

Select:

- Group on: **Weeks**
- Group Interval: **1 (weekly)**
Note: Selecting 2 would result in bi-monthly grouping of the data
- Click **ok** to close
- Click **Save** to close Group Definition dialog box



The dialog box titled "Define Group Interval" has a close button (X) in the top right corner. It contains the following fields:

- Field name: Start
- Group on: Weeks (dropdown menu)
- Start at: 1/14/13 (dropdown menu)
- Group interval: 1 (spin box)

At the bottom are "OK" and "Cancel" buttons.

Figure 6-53 PLACEHOLDER

An example of a weekly grouping is shown below

Task Name	Location	Start	Finish	Predecessors	Resource Names
Start: 1/14/13 - 1/20/13		1/16/13	1/24/13		
Determine project scope	Chicago	1/16/13	1/22/13		Bob,Cathy
Secure core resources	Rome	1/16/13	1/24/13	2SS	Mike,Fran
Start: 1/21/13 - 1/27/13		1/22/13	1/29/13		
Secure project sponsorship	New York City	1/22/13	1/29/13	2	Bob,Joan
Start: 1/28/13 - 2/3/13		1/30/13	2/4/13		
Define preliminary resources	Paris	1/30/13	2/4/13	3	Mike,Greg
Start: 2/4/13 - 2/10/13		2/4/13	2/13/13		
Scope complete		2/4/13	2/4/13	5,4	
Conduct needs analysis	London	2/6/13	2/13/13	6	Cathy,Mike
Start: 2/11/13 - 2/17/13		2/13/13	2/18/13		
Draft preliminary software specifications	Chicago	2/13/13	2/18/13	8	Cathy,Ed
Start: 2/18/13 - 2/24/13		2/18/13	2/25/13		
Develop preliminary budget	New York City	2/18/13	2/20/13	9	Mike
Review software specifications/budget	Paris	2/20/13	2/21/13	10	Mike,Cathy
Incorporate feedback on software specifications	Rome	2/21/13	2/22/13	11	Cathy
Develop delivery timeline	Chicago	2/22/13	2/25/13	12	Mike
Start: 2/25/13 - 3/3/13		2/25/13	3/7/13		
Obtain approvals to proceed (concept, timeline)	New York City	2/25/13	2/25/13	13	Bob,Mike
Secure required resources	Paris	2/25/13	2/26/13	14	Mike
Analysis complete		2/26/13	2/26/13	15	
Review preliminary software specifications		2/26/13	2/28/13	16	Cathy
Develop functional specifications		2/28/13	3/7/13	18	Cathy
Identify test group		2/26/13	2/27/13	16	Mike
Develop software delivery mechanism		2/27/13	2/28/13	68	

Figure 6-54 PLACEHOLDER

To collapse the weeks and summarize the report (shown below):

- **View → Outline → Outline Level 1**

Task Name	Location	Start	Finish	Predecessors	Resource Names
Start: 1/14/13 - 1/20/13		1/16/13	1/24/13		
Start: 1/21/13 - 1/27/13		1/22/13	1/29/13		
Start: 1/28/13 - 2/3/13		1/30/13	2/4/13		
Start: 2/4/13 - 2/10/13		2/4/13	2/13/13		
Start: 2/11/13 - 2/17/13		2/13/13	2/18/13		
Start: 2/18/13 - 2/24/13		2/18/13	2/25/13		

Figure 6-55 PLACEHOLDER



Using the weekly grouping and displaying the Cost table will provide weekly cost totals.



Creating a grouping by Finish date will show which tasks are scheduled to complete in timeframes by week. This will provide an easy way to know when tasks will need status checking.

Creating a Custom Table

Tables are the foundation for views and reports. Project 2010 contains multiple tables for tasks and resources based on topical areas. Consider these standard tables as topical starting points and are intended to be customized by users to their needs. Columns may be added and deleted as necessary for reporting or data input.

Best Practice: copy a table and make changes to the copy

To copy a table:

- **View → Tables → More tables**
- Select a table
- Click **Copy**

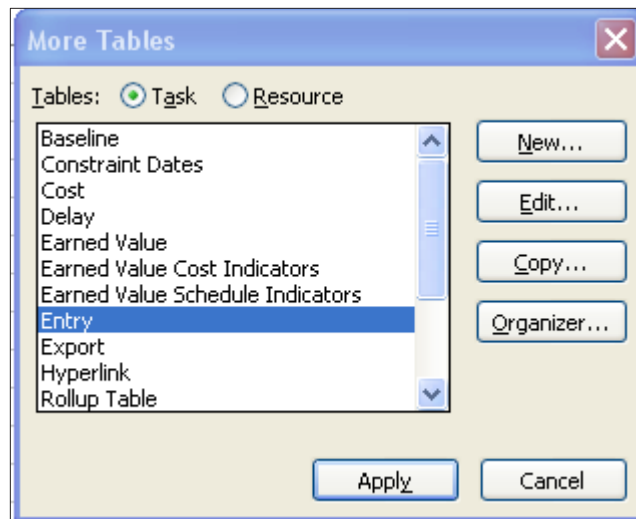


Figure 6-56 PLACEHOLDER

In the example below, a copy of the Entry table will be altered. The Predecessor column will be deleted and the Work column added. In addition, the Start column will be resized to 10 characters. The following table shows the keystrokes to accomplish these changes. The completed view is shown below:

Table 6.7 PLACEHOLDER

Field	Action
Name	Duration and Work Table
Show in menu	Check on
In the field name column, click on Predecessors	Click Delete row
In the field name column, click on Start	Click on Insert row, click on "Wo", select Work

Table 6.7 PLACEHOLDER

Field	Action
Click on the width for the start column	Change 16 to 10
Click OK	Close the box

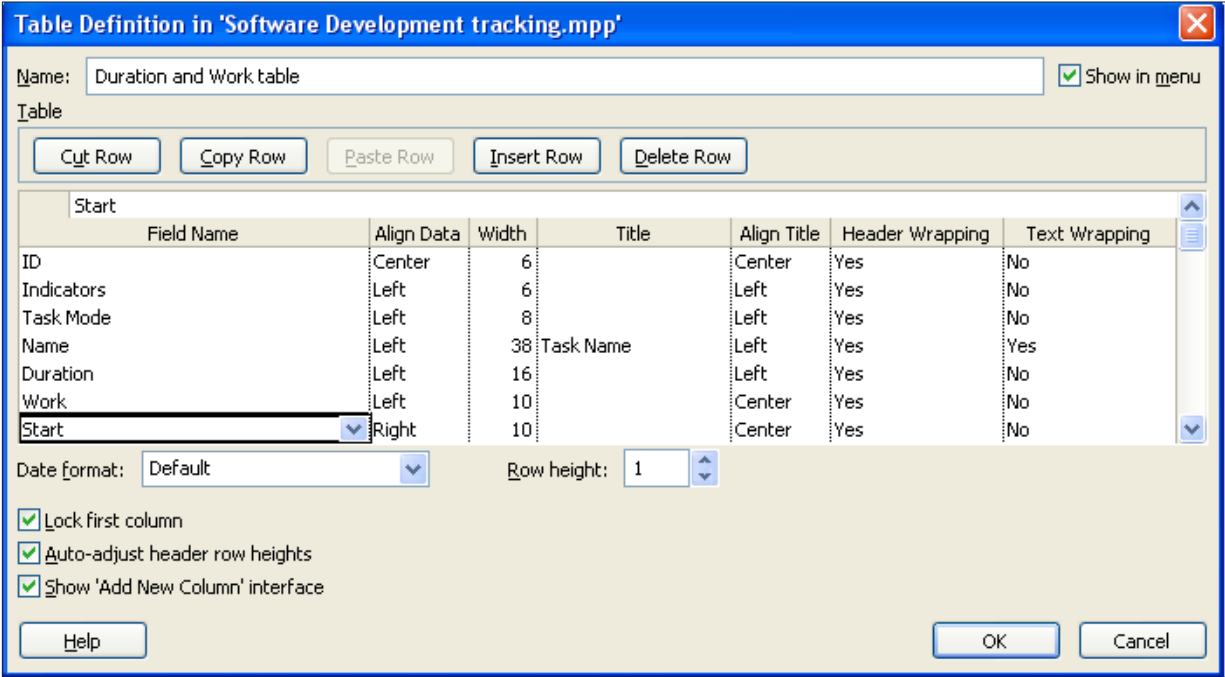


Figure 6-57 PLACEHOLDER

Below is the table view as defined above:















		Task Mode ▾	Task Name ▾	Duration ▾	Work ▾	Start ▾	Finish ▾	Resource Names ▾
0			 Software Development tracking	108 days	1,808 hrs	1/16/13	6/14/13	
1			 Scope	14 days	240 hrs	1/16/13	2/4/13	
2			Determine project scope	2.5 days	32 hrs	1/16/13	1/22/13	Bob,Cathy
3			Secure project sponsorship	5.5 days	64 hrs	1/22/13	1/29/13	Bob,Joan
4			Define preliminary resources	4 days	64 hrs	1/30/13	2/4/13	Mike,Greg
5			Secure core resources	5 days	80 hrs	1/16/13	1/24/13	Mike,Fran
6			Scope complete	0 days	0 hrs	2/4/13	2/4/13	
7			 Analysis/Software Requirements	14 days	184 hrs	2/6/13	2/26/13	
8			Conduct needs analysis	5 days	80 hrs	2/6/13	2/13/13	Cathy,Mike

Figure 6-58 PLACEHOLDER

Project 2010 provides a new method of creating tables. When columns are added to standard tables, the resulting table could be saved.

To save a table that has had columns added:

- **View → Table → Save Fields as New Table**

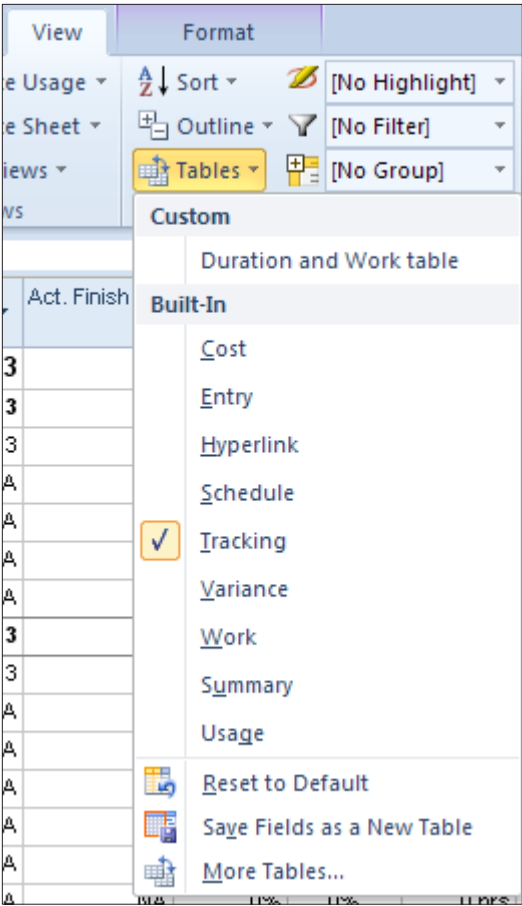


Figure 6-59 PLACEHOLDER

- Select **Update Current Table** or **Save as New Table**
- Enter new table name
- Click **ok** to close

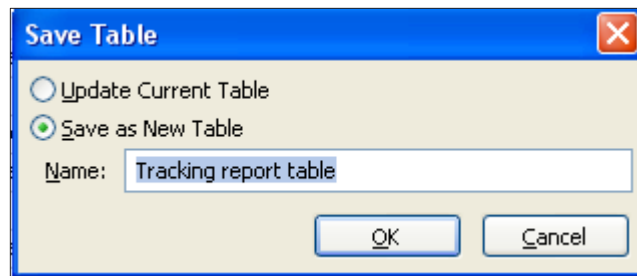


Figure 6-60 PLACEHOLDER



Changes made to tables will be reflected in the table definition. If the value ##### appears in a column it will indicate that the column content exceeds the width of the column. Double click between the column headings to auto adjust the width of the column to the width of the contents of the columns.

Creating a Custom View

Project 2010 provides the ability to create views to put appropriate information in front of the project manager as needed. Views can be created from copies of existing views or new views may be created. To avoid overwriting an existing view, make a copy of a view and use the copy for edits. In the More Views box below, note that a Copy button is provided on the right side of the box for this purpose. Filters, groups and tables can be incorporated into custom views. Split screen or single views may be created.



View names must be unique

To create a new single view:

- **View (Resource or Task) → Gantt Chart → More Views**
- Click **New**
- Select **Single** or **Combination view** (split screen)

- Click ok

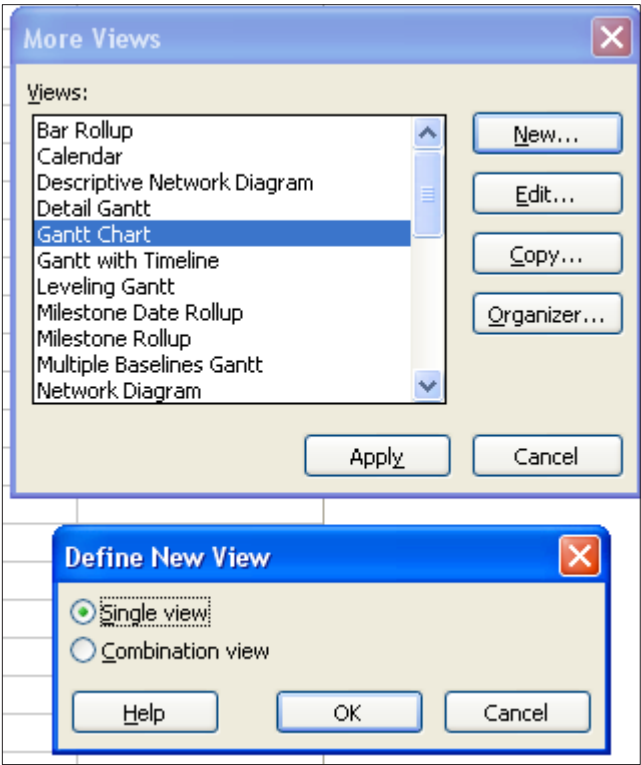


Figure 6-61 PLACEHOLDER

The following field values were entered in the view below:

Table 6.8 PLACEHOLDER

Field	Object
Name	PM Gantt chart view
Screen	Gantt Chart
Table	Duration and Work table
Group	Start by week

Table 6.8 PLACEHOLDER

Field	Object
Filter	Automatic scheduled tasks
Show in menu	New view will appear in the short menu for views

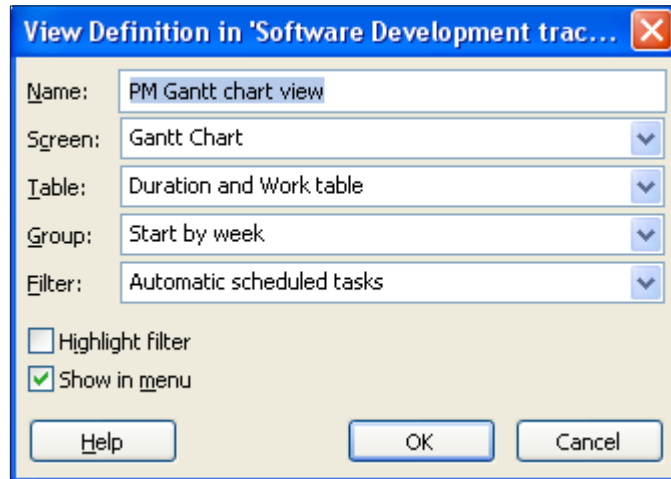


Figure 6-62 PLACEHOLDER

The result of the “Show in the menu” option is shown below:

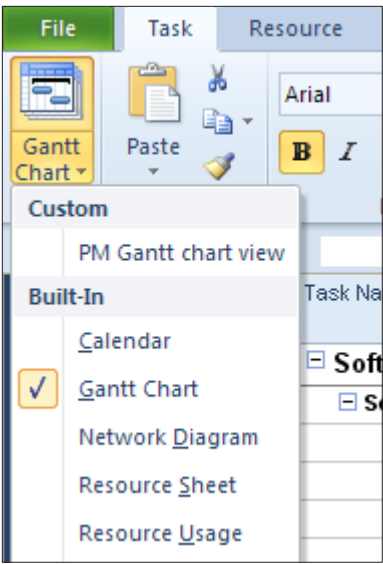


Figure 6-63 PLACEHOLDER

The resulting view will appear as shown below:

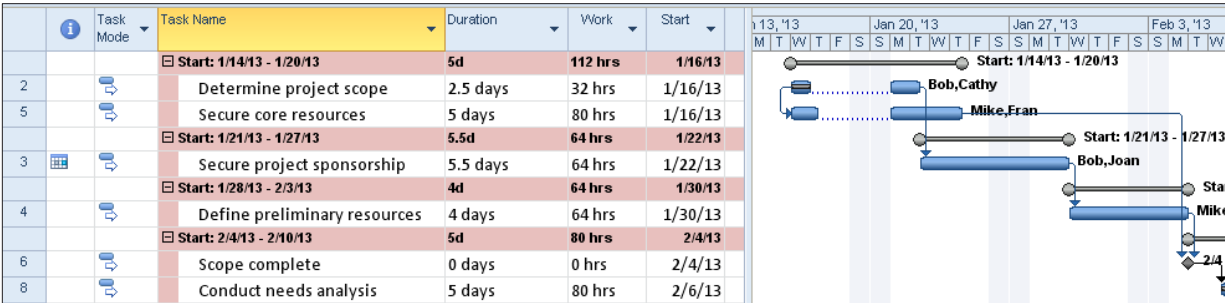


Figure 6-64 PLACEHOLDER

Practice: Creating Custom Objects

The Practice page is where you write detailed instructions for completing work listed as Exercises.

Type the Exercise Title and write a brief summary what the student will be doing in the exercise. Then list your ideas what they will be doing.

SAMPLE

In this practice you will create a Project Server Authentication profile and then configure the local cache settings in Project Professional 2007.

Exercise 1: Create Project Server Authentication Profile

In this exercise you will create Project Server authentication profile to connect to the Project Web Access site.



Perform the following exercise on the **ps07** virtual machine.

6. From the Start menu, click All Programs → Microsoft Office → Microsoft Office Tools and click Microsoft Office Project Server 2007 Accounts.
7. In the Project Server Accounts dialog box, click Add.
8. In the Account Properties dialog box, and complete the following settings and click ok.

Table 6.9 PLACEHOLDER

Setting	Perform the following:
---------	------------------------

Account Name	Type Project Server
--------------	---------------------

Project Server URL	Type <code>http://epm/pwa</code>
--------------------	----------------------------------

Table 6.9 PLACEHOLDER

Setting	Perform the following:
When connecting	Select Use Windows user account
Set as default account	Select check box

Summary

The customizing features of Project 2010 are extremely flexible and are limited only by the Project Manager's imagination. Use these objects to create customized data for an individual project or complete processes for an organization. Store the objects in one project schedule, use for all your project schedules or share with other users. Deciding what information is required will be harder than defining the objects themselves.

In this Module, we discussed:

1. Customizing the ribbon bar.
2. Export/import customized ribbon bars.
3. Customizing views.
4. Retaining customized objects using the Organizer.
5. Creating custom objects.



Chapter 7

Customizing Reports and Dashboards

Lesson 3: Working with Visual Reports

Visual reports are graphical type reports that are available in Project 2010. These reports are defined using a template in Project 2010 and use either a Visio PivotDiagram or Excel PivotTable technology to generate the final report. Once a report is generated, changes and fine-tuning of the report can be performed through Visio or Excel.

Since Visual Reports use Pivot table technology, knowledge of Pivot tables is helpful for the project manager to gain the greatest benefit from these reports.

In this lesson we will discuss:

- Overview of Visual Reports
- The Anatomy of Pivot Tables
- Viewing a Visual Report
- Creating a Visual Report template

Overview of Visual Reports

Visual Reports are reports based on dimensions and measures that produce graphs using Pivot Tables. Pivot Tables will be discussed in the next lesson. When a Visual Report is run, an On-line Analytical Processing (OLAP) cube of data is built based on the metrics stated in the specifications for the Visual Report. After the cube is built, Project 2010 connects to either Visio or Excel to display the report. If an Excel-based report is selected, the report will be based on Pivot Tables. If a Visio-based report is selected, a Visio Pivot Diagram will be produced.

Once a report is generated, it can be manipulated as a Pivot Table and tailored to fit your needs. Types of manipulations include expanding and contracting outline levels, changing field values, selecting options, adding totals and changing the appearance of graphs. After the Visual Reports are generated, they can be saved or published to a reporting website.

Project 2010 provides multiple Visual Report definition templates found in the Visual Reports - Create Report dialog box. Options are available to filter the Excel templates from the Visio templates. All templates are contained in the All tab within the dialog box.

Sub tabs are provided for various report categories, and contain the following report options:

Table 7.1 Task Summary Tab

Report	Content	Excel or Visio
Critical Tasks status report (Metric)	Work and Work remaining for critical and non-critical tasks.	Visio
Critical Tasks status report (US)	Work and Work remaining for critical and non-critical tasks.	Visio

Table 7.2 Resource Summary Tab

Report	Content	Excel or Visio
Resource remaining work report	Work, Remaining Work, total Work for work resources.	Excel

Table 7.3 Assignment Summary Tab

Report	Content	Excel or Visio
Resource status report (Metric)	Work and Cost values per resource.	Visio
Resource status report (US)	Work and Cost values per resource.	Visio

Table 7.3 Assignment Summary Tab

Report	Content	Excel or Visio
Task status report (Metric)	Work and percent of work completed by WBS level.	Visio
Task status report (US)	Work and percent of work completed by WBS level.	Visio

Table 7.4 Task Usage Tab

Report	Content	Excel or Visio
Cash flow report	Timephased task cost data.	Excel

Table 7.5 Resource Usage Tab

Report	Content	Excel or Visio
Cash flow report (Metric)	Baseline Cost vs Actual Cost over time by resource type.	Visio
Cash flow report (US)	Baseline Cost vs Actual Cost over time by resource type.	Visio
Resource Availability report (Metric)	Total capacity, Work and remaining availability per. resource	Visio
Resource Availability report (US)	Total capacity, Work and remaining availability per resource.	Visio

Table 7.5 Resource Usage Tab

Report	Content	Excel or Visio
Resource cost summary report	Resource costs per resource type.	Excel
Resource work availability report	Work and remaining availability over time.	Excel
Resource work summary report	Work, Actual Work and Remaining Availability per resource.	Excel

Table 7.6 Assignment Usage Tab

Report	Content	Excel or Visio
Baseline Cost Report	Compares Baseline Cost, Actual Cost and Cost.	Excel
Baseline Report (Metric)	Baseline, Actual Work and Cost over time.	Visio
Baseline Report (US)	Baseline, Actual Work and Cost over time.	Visio
Baseline Work Report	Baseline Work, Baseline Cost, and Actual Work.	Excel
Budget Cost Report	Budget Cost, Baseline Cost, Cost and Actual Cost.	Excel
Budget Work Report	Budget Work, Baseline Work, Work, Actual Work.	Excel

Table 7.6 Assignment Usage Tab

Report	Content	Excel or Visio
Earned Value Over Time Report	Timephased – Actual Cost of Work performed, baseline values and Earned Value.	Excel

Anatomy of a Pivot Table

To understand Visual Reports, some understanding of Pivot Tables is helpful. Pivot Tables are flexible tables based on measures and dimensions. The information below is an overview of a Pivot Table based report. Additional information regarding Pivot Tables can be found in any Excel reference book, through software Help, or online.

In the table below, sales data from The Chocolate Company shows that sales of different products have occurred in multiple locations. The Chocolate Company also keeps track of the customer type and products sold. We might want to know total sales by customer type, product or location. Pivot Tables have the flexibility to process any of these report requests quickly.

The data below is the source data that will be used to generate the Pivot Table:

Table 7.7 Chocolate Company Sales

Customer	Customer type	Location	Product	Quantity in bars	Price
Customer A	Retail	Chicago	Dark	48	120

Table 7.7 Chocolate Company Sales

Customer	Customer type	Location	Product	Quantity in bars	Price
Customer B	School	Rome	Milk	24	60
Customer C	Vending	Sydney	White	12	30
Customer D	Retail	Chicago	Dark almonds	36	45
Customer E	School	Rome	Milk almonds	48	120
Customer F	Vending	Sydney	White peanuts	24	60
Customer G	Retail	Chicago	Dark	12	30
Customer H	School	Rome	Milk	36	45
Customer I	Vending	Sydney	White	48	120
Customer J	Retail	Chicago	Dark almonds	24	60
Customer K	School	Rome	Milk almonds	12	30
Customer L	Vending	Sydney	White peanuts	36	45
Customer M	Retail	Chicago	Dark	48	120

In the view below, a Pivot Table has been created using the above data. The data below is consolidated to show sales by Customer type:

Table 7.8 PLACEHOLDER

Customer Type	Sum of Price
Retail	480
School	180
Vending	90
Wholesale	135
Grand Total	885

In the next example, the table was changed to show sales by Location:

Table 7.9 PLACEHOLDER

Location	Sum of Price
Chicago	375
Rome	255
Sydney	255
Grand Total	885

In the next example, sales by Product:

Table 7.10 PLACEHOLDER

Product	Sum of Price
Dark	270

Table 7.10 PLACEHOLDER

Product	Sum of Price
Dark almonds	105
Milk	105
Milk almonds	150
White	150
White peanuts	105
Grand Total	885

Pivot Tables are easily changed to create the type of report necessary for your reporting needs, based on the values contained in the Pivot Table data. Visual Reports will be used to create the Pivot Diagram or Pivot Table but the project manager will need to customize the generated report.

Viewing Visual Reports

Project 2010 comes with built in Visual Report templates to report on cost, work and resource data. Having a specific goal in mind for the type of report you want will help generate more meaningful report data.

To open the Visual Reports – Create Report dialog box:

- Project → Visual Reports

To create a report:

- Select any report.
- Change timeframe for assignment (usage) data.
- Click **View**.

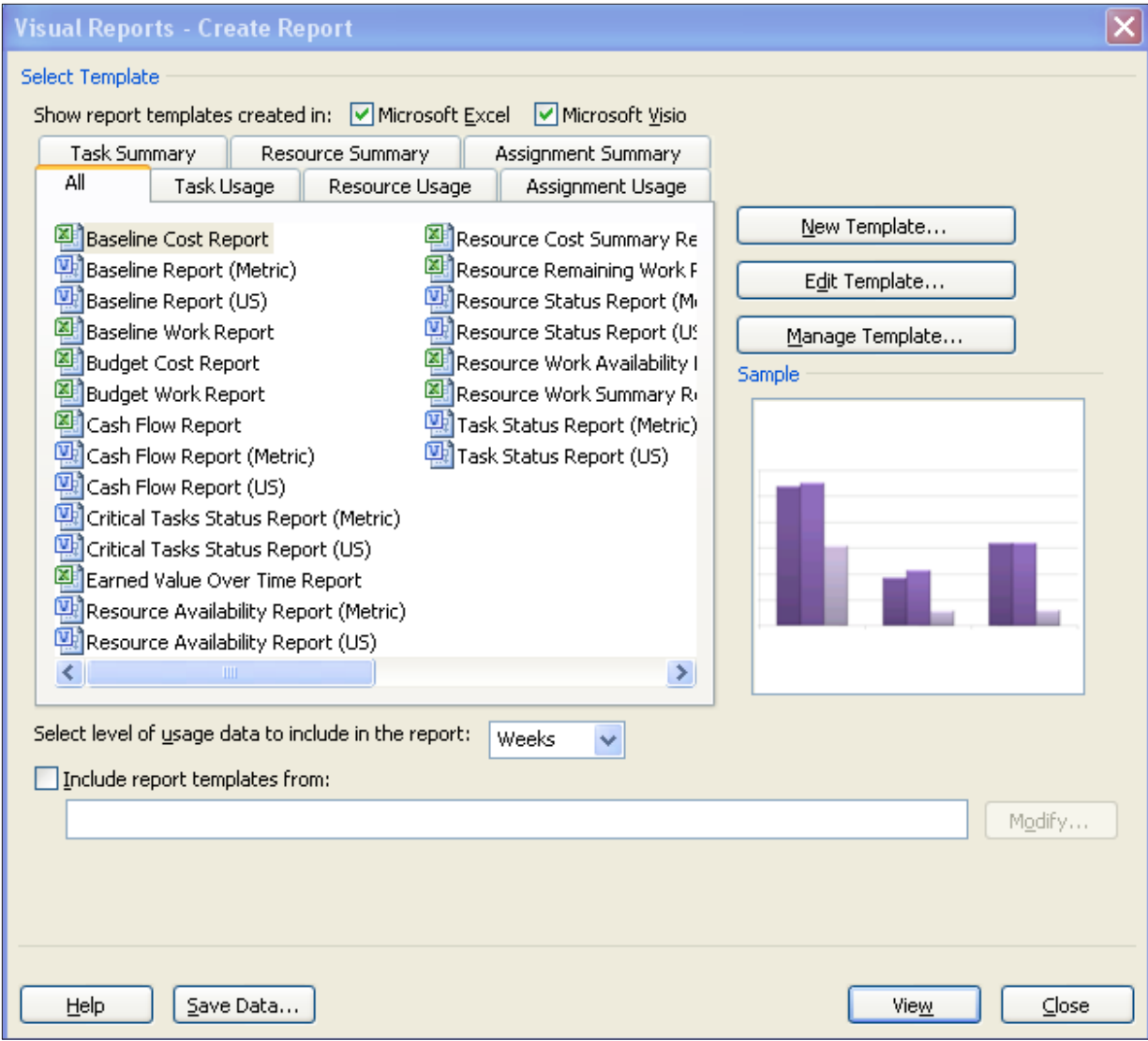


Figure 7-1 PLACEHOLDER

The report will generate by creating an OLAP cube and will open either Visio or Excel. In the generated Pivot Table select the data to be viewed on the report. Notice that the data viewed on the table can also be viewed in chart format.

Options are available for saving the generated OLAP cube or creating an Access database from the data by clicking the Save Data... button.

Creating Visual Report Templates

Creating customized Visual report templates will allow inclusion of customized fields in Visual Reports. Standard templates can also be edited to include or exclude selected data.

To edit a standard template:

- Project → Visual Reports.
- Select any report.
- Click **Edit**.
- See instructions for field choices below.

To create a new Visual report template:

- Project → Visual Reports.
- Click **New Template**.

Visual Reports – New Template dialog box opens:

- Select Application: Visio or Excel.
- Select Data Type (destination for completed template).
 - Task Usage
 - Resource Usage
 - Assignment Usage
 - Task Summary
 - Resource Summary
 - Assignment Summary

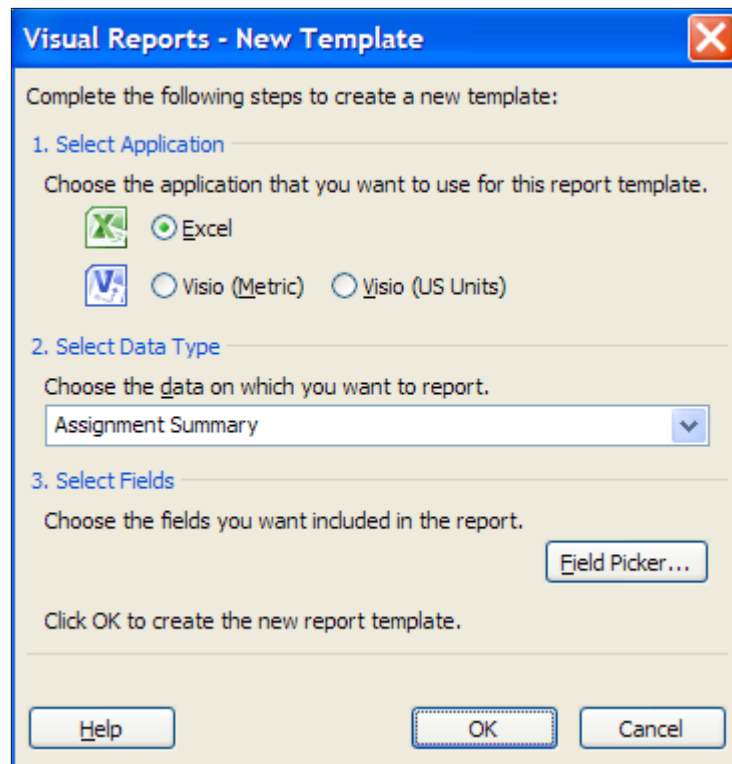


Figure 7-2 PLACEHOLDER

- Click on the **Field Picker** button.
- Add and remove fields from the report:
 - Select fields to add to the report on the left side and click Add.
 - Select fields to remove from the report on the right side and click Remove.
- Click **ok** when field selection is completed.
- Click **ok** to create the new template.

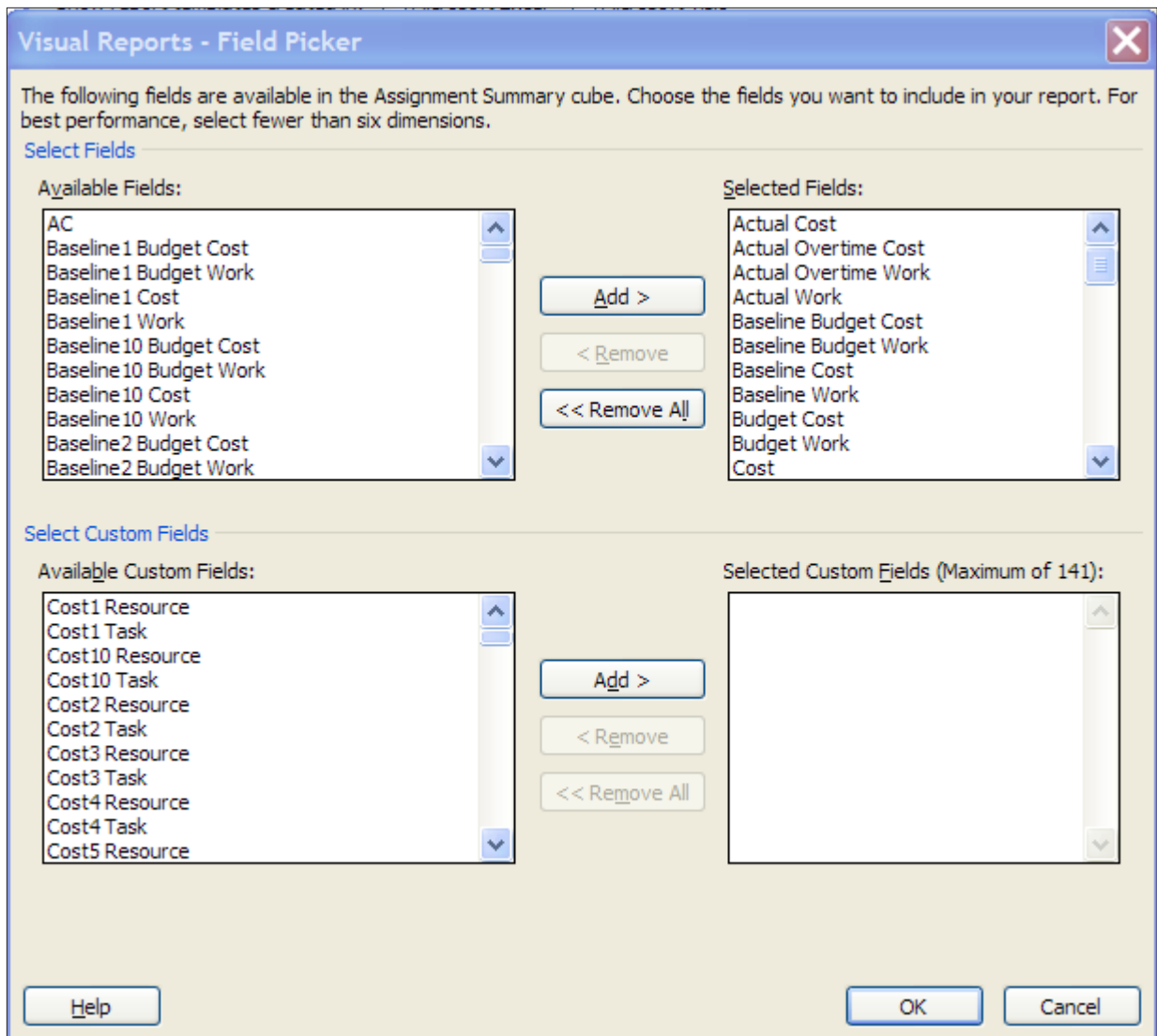


Figure 7-3 PLACEHOLDER

An OLAP cube will be generated and the will open in either Excel or Visio.

To save the template:

- In either Excel or Visio click the Office button → Save As .
- Give the template a name and leaving the template file extension of .xltx for Excel or .vsd for Visio.
- Click **OK** to create and save the template.

The following message will appear when an Excel template is created:

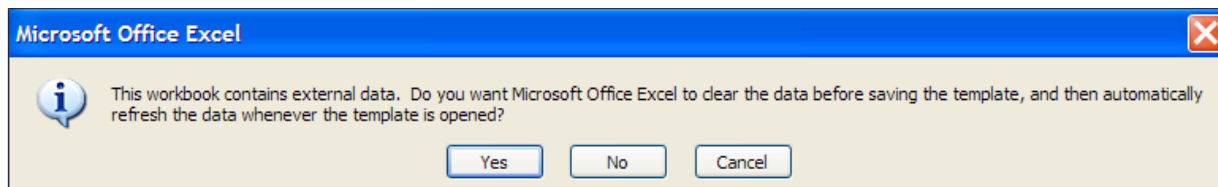


Figure 7-4 PLACEHOLDER

- Click Yes to refresh or create new data when the template is run.
The new template will be added to the list of already available Visual Report templates. In the example below, a new template called New Visual Report Template was created.

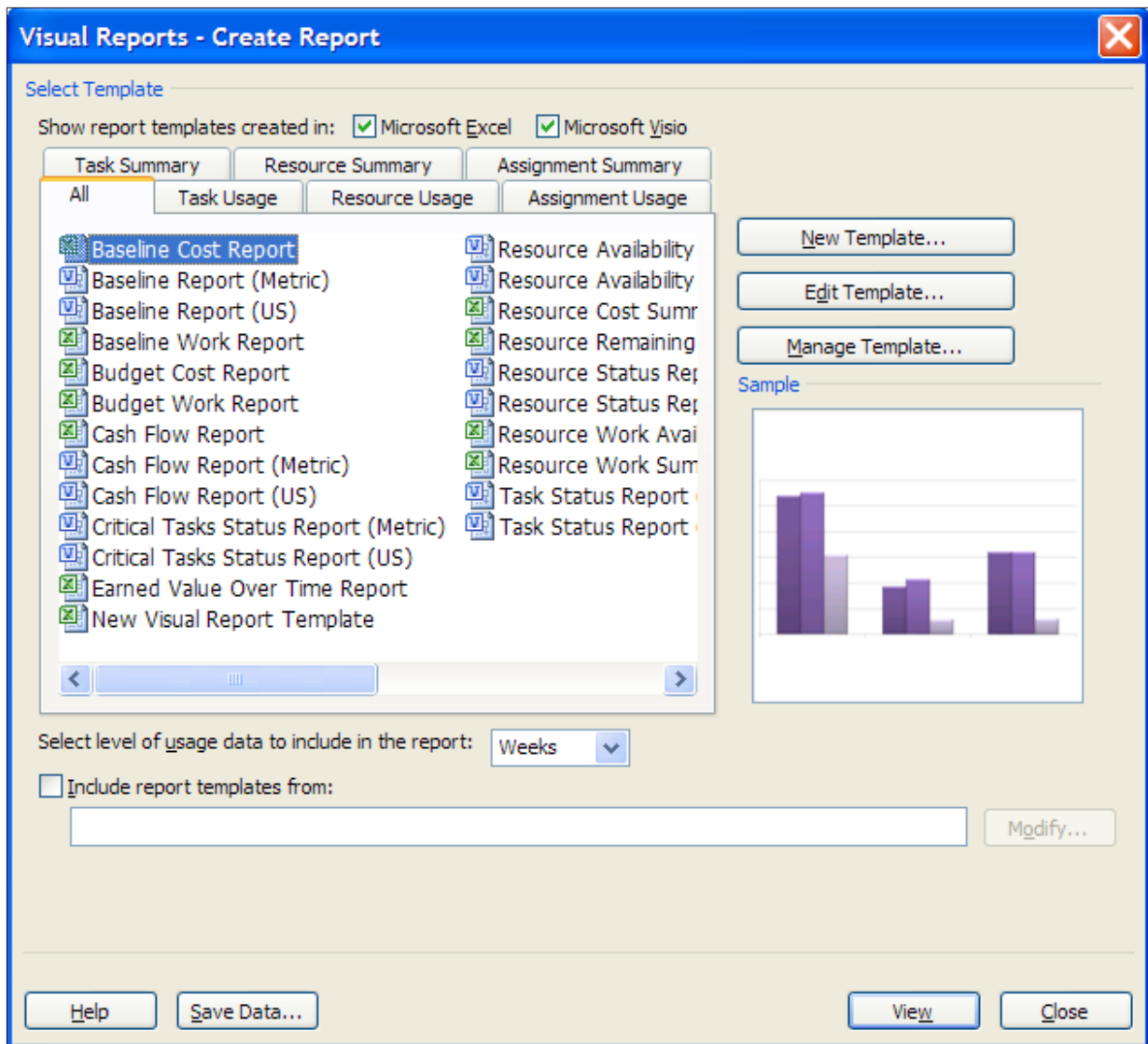


Figure 7-5 PLACEHOLDER

To rename or delete an existing template:

- Click the template to be renamed or deleted.
- Click **Manage Template**.
- Right-click the file.
- Select **Rename** or **Delete**.

Dashboard reports

What are Dashboard Reports?

Dashboard reports are reports that display project data in tabular and graphic form. Each report displays different data and can be customized to tailor the reports for each user's needs.

Below is an example of the Overallocated Resources Dashboard Report. Note that there are 2 charts each representing different resource data. The chart on the left represents Actual work v Remaining Work. The chart on the right is displaying resources that are Overallocated at the day level. Each of these reports may be altered to adjust the chart type, chart elements and details of the display data.

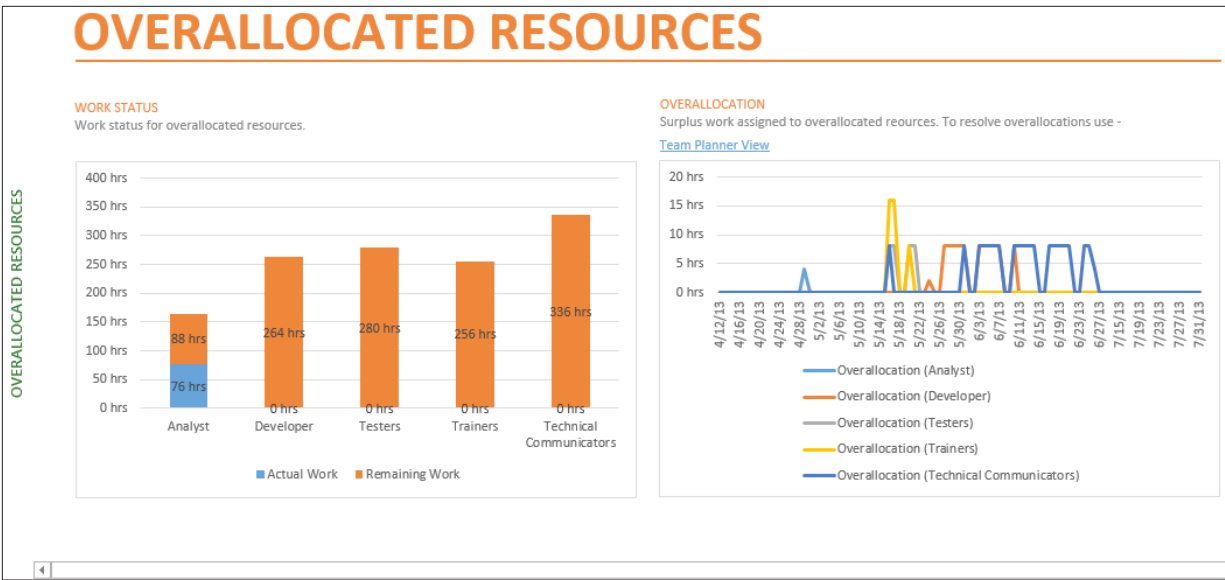


Figure 7-6 PLACEHOLDER

Data included in the Dashboard Reports

Dashboard Reports contain data relating to project progress, variance calculations, and critical path. Below are listed some of the data which are included in the reports. If you are not using the data needed to populate the reports, the reports will not display properly.

Some of the data needed for the reports includes the following project data values:

- Task Duration, Cost and Work.
- Resource Cost and Work.
- Baseline comparison.
- Status date.
- Status field: Late, On Time, Future

See below for a list of the Dashboard Reports and the data which is represented on each report. Use this as a guide to decide which reports would be useful for you.

Reports that come with MS Project 2013

Table 7.11 PLACEHOLDER

Included in Reports Section	Report Name	Data Shown on Report
Dashboard	Burndown	1) Remaining Cumulative Work v. Baseline Remaining Cumulative Work for active tasks; 2) Number of tasks completed and number left to be completed
	Cost overview	1) Cumulative Percent Complete, Cumulative Cost; 2) Remaining Cost, Actual Cost and Baseline Cost; 3) Cost outline summary level 1 tasks
	Project overview	1) Percentage complete of Outline level 1 tasks; 2) List of milestones and target dates; 3) Late tasks – tasks that are past due
	Upcoming Tasks	1) Work Percent complete is less than 100%, tasks starting within 5 days of system date; 2) Tasks starting soon list

Table 7.11 PLACEHOLDER

Included in Reports Section	Report Name	Data Shown on Report
	Work Overview	1) Remaining cumulative Work, Remaining Cumulative Actual Work, Baseline Remaining Cumulative Work; 2) Baseline work, actual work, remaining work at outline level 1; 3) Actual work v remaining work by resource and 4) Remaining availability by resource
Resources	Overallocated Resources	1) Actual work v Remaining work; 2) Hours assigned to overallocated resources
	Resource Overview	1) Remaining work, Actual work, Baseline work; 2) Percent work completed by resource; 3) Remaining work assigned by resource
Costs	Cash flow	1) Cost v Cumulative Cost, Cost Variance – Project Summary level; 2) Outline level 1 summaries Remaining cost, Actual Cost, Cost and Earned Value
	Cost Overruns	1) Task Cost Variance; 2) Resource Cost Variance

Table 7.11 PLACEHOLDER

Included in Reports Section	Report Name	Data Shown on Report
	Earned Value Report	1) Actual cost of work performed, Baseline cost of work performed, Baseline cost of work scheduled; 2) Cost Variance, Schedule Variance; 3) Cost Performance Index (CPI), Schedule Performance Index (SPI)
	Resource Cost Overview	1) Resource Remaining Cost, Actual Cost, Baseline Cost; 2) Cost distribution over resource types; 3) Cost details at the resource level
	Task Cost Overview	1) Cost status – Actual Cost, Remaining Cost, Baseline Cost; 2) Costs spread out amongst tasks based on their status (On Schedule, Late, Future); 3) Cost Details – outline level 1
In Progress	Critical Tasks	1) Chart – On Schedule, Late, Future 2) Table task level critical tasks
	Late Tasks	1) Chart – On Schedule, Late, Future; 2) Table task level – tasks that are late compared to status date.
	Milestone Report	Late Milestones, Milestone up next and Completed Milestones

Table 7.11 PLACEHOLDER

Included in Reports Section	Report Name	Data Shown on Report
	Slipping Tasks	1) Remaining Cumulative Work, Remaining Cumulative Actual Work; 2) Task list for tasks where finish date are past the baseline finish date.

To Display a Dashboard Report

1. Click on the **Reports** tab
2. Click on a Report Category: **Dashboards, Resources, Costs, In Progress**

3. Click on a Report to display

To change parameter values displayed on a Dashboard Report:

1. Click on the **Reports** tab
2. Click on a Report Category: **Dashboards, Resources, Costs, In Progress**
3. Click on a Report to display
4. Click inside of a graph. Options will appear on the right side of the view.
5. Change options as necessary. Close by options by clicking on the X in the upper left corner of the options box.
6. Other changes may be made by clicking on formatting changes on the Design ribbon which will appear when a Report is selected.



Changes to Dashboard Reports will be remembered within the file.



Clicking on the **Page Breaks** button will display the page breaks as for printing the report. The separate report graphics and tables may be dragged to different pages for printing purposes.



Appendix A

Appendix

Ask the Expert: April, 2013

Ellen Lehnert, MVP, PMP, MCT, MCP – MS Project & MS Project Server. www.lehnertcs.com

Topic: MS Project 2013 certification tests – 74-343 and 74-344

Inquiry from MPUG LinkedIn group: What can you tell us about the new MS Project 2013 certification tests? Any study tips?

Answer: Microsoft has issued the availability of two new Microsoft Project 2013 certification tests. The tests are:

74-343 – Managing Projects with Microsoft Project 2013:

<http://www.microsoft.com/learning/en/us/exam.aspx?id=74-343&locale=en-us#fbid=1b6yoykfp6N>

74-344 - Managing Programs and Projects with Project Server 2013:

<http://www.microsoft.com/learning/en/us/exam.aspx?id=74-344#fbid=1b6yoykfp6N>

I took (and passed) the 74-343 desktop test last week and thought it would be helpful to pass along what I observed taking the test and a few study suggestions. The two tests have very similar formats and standards.

At the start of the test 74-343 test you will see a screen that will tell you that the test contains 54 questions and you are allowed 2 hours to take the test. You will then answer some questions regarding your current experience and knowledge level using MS Project 2013. There is also an optional tutorial for taking the test. The survey and tutorial do not take away from the time allotted to take the test.

Most of the questions are multiple choice formatted questions. There are a few questions where you will need to place answers in the order in which you would perform an operation.

The question style is from the point of view of problem solving. The questions are real usage situation oriented of how you would use the software. You will be given a problem condition and asked to supply the best resolution for the situation. An example of this type of question would be:

You need to make dinner. What should you do to achieve this?

1. Read a book
2. Call for hotel reservations
3. Have coffee with a friend
4. Get some food out and start cooking

To study for the test

- Start with the test objectives provided at the links above. If the topic is in the objectives it will be on the test.
- Seek out and learn the new features of the 2013 software as this information is usually part of the tests.
- You will be asked questions regarding the best practices of using ms Project – what is the best way to accomplish an objective. Usually a good reference book will include many of these concepts. Any reference book which includes the test objectives (which is most of the books) will be helpful.
- Know the standard software: views, tables, options, choices on menus, and choices in selection boxes, location of data, use of filters, groupings, existing reports, etc.

Taking the test:

- It is suggested that you arrive at the test facility at least 20 minutes before the scheduled test time. You will be required to empty your pockets and check your coat, backpack, computer, purse, etc. You are only permitted to take your glasses and any writing materials they give you into the testing room. No food or drink is allowed.
- I was given a small white board and pen by the testing center to work through anything that I might want to write down during the test. I found this was unnecessary but some candidates might find it helpful.
- Keep your eye on the upper right corner of the screen at the countdown clock. Space your time out to make sure you can answer all of the questions. A question not answered is a wrong answer. You will have approximately 2 minutes and 22 seconds per question for the 74-343 test.
- Read the questions carefully. Understand what the question is asking you before you read the answer choices. You will be in a better frame of mind to select the correct answer.

- Some multiple choice questions will require more than one answer to fulfill the complete answer for a question. Make sure you supply all answers necessary to satisfy the requirements of the question.
- You can flag questions to return and review them at the end of the test before you indicate that you are finished taking the test. If a question is confusing or you are not sure of the answer, flag the question to return to it later.
- At the end of the test you will have an opportunity to comment of the quality and content of the questions. These comments will be allowed only **AFTER** you have indicated that the test is completed. During this time you will not be able to change any of your answers.

The test is offered through Prometric. The registration link is <http://www.register.prometric.com/Menu.asp>

At the Prometric website, click on:

1. **Locate a test center**
2. Select **Country**. Select **State/Province** (if applicable) There might be limited availability in some areas. Click **Next**.
3. Client – Select **Microsoft**.
4. Program – Select **Microsoft (070, 071, 074, MBX)**, click **Next**.
5. The page which starts with “Welcome to the Microsoft Certification Program” will contain some links. One of the links is titled “**Second Shot Offer**”. Click on this link.

At times you can obtain a code which will allow for a second shot at the test if you do not pass the first time. This offer is not always available but it is worth a try to see if it is currently available. If it is available, you will be given a code which must be entered when you sign up and pay for taking the test. You will not be able to take advantage of the second shot offer at a later time. If you entered the second shot code and failed the test, contact Prometric for your retake certificate. Click **Next** when ready.

6. Select the test you would like to take. At the writing of this article 74-343 and 74-344 are only offered in English. It will be translated into other languages in the future. You will also notice that the cost is \$150.00 (usd) to register for the test.
7. Select your testing location
8. Sign into Prometric and complete the registration.

It is also my opinion that the ms Project 2013 tests are harder tests than what we have seen for earlier software versions. Passing these tests will show a thorough understanding of the software. The more experienced users of ms Project and ms Project Server will be able to pass the tests easier than newer users. Just memorizing the buttons is not enough to

pass these tests.

Best of luck to you on the test.

