Managing Projects with MS Project 2010

Session: 8

Tasks, Resources, and Team Planner

Objectives

- Describe assignments and task timings
- Define types of tasks
- Explain how to make effort-driven settings
- Describe how to find and select resources
- Describe work contours
- Explain how to work with Team Planner
- Explain how to assign work to resources using the Team Planner

Introduction

- Project managers need to finalize project plans avoiding any resource over-allocation owing to resources working on several concurrent tasks in a project.
- A resource having either a cost per hour or cost per use in a project will impact the project budget once a task is assigned to it.
- While making assignments, the project manager must anticipate change in duration of some tasks and the result of a change in duration may impact resource timing and cost of the project.
- MS Project provides necessary tools and techniques to manage the entire process of identifying appropriate resources and allocating tasks to resources.

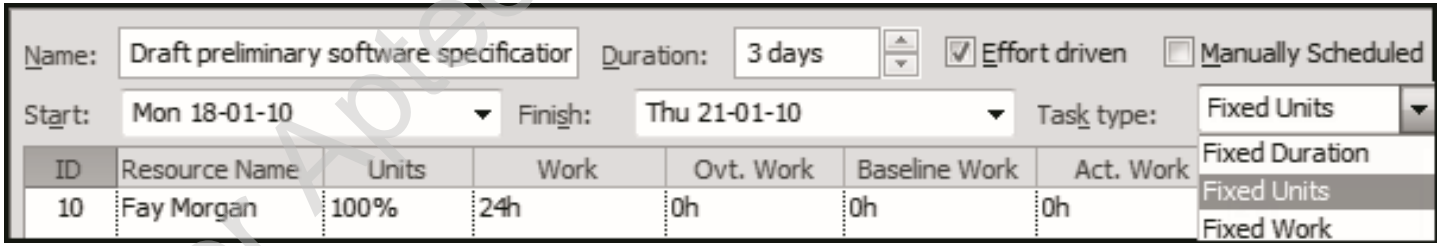
Assignments and Timing 1-2

Auto-scheduled tasks in MS Project can be of the following three types:

Fixed units	Fixed work	Fixed duration

Assignments and Timing 2-2

- Each task type defines the relationship between a task's duration and the amount of work required to complete that task along with resource assignment units.
- The combination of these task types in a project and the effort-driven settings to the tasks automatically affects the duration of the tasks in the project schedule.
- In case of manually scheduled tasks, the duration of the tasks is not affected unless a project manager makes an effort-driven setting for the task.
- Following figure illustrates the display of Fixed Units, Fixed Work, and Fixed Duration in Task Form:



Types of Tasks

- To accurately determine task durations assigned to resources, project managers need to understand the various task types.
- The key to a perfect project plan is to understand:

which task type remains fixed

when work resources are added or removed from the task during task execution

which tasks get affected by the slightest change to the allocations made before initiating the task

Fixed Units Tasks

- By default, all tasks in MS Project are fixed units tasks.
- In case of fixed units tasks, the task duration and the resource effort, together determine the assignment units.
- The assignment units of resources will not change even if the number of hours required to complete the task increases or decreases.
- When the resources are increased or decreased, if the effort-driven setting for the task is enabled, MSProject changes the task duration accordingly, based on the assignment units specified.

Fixed Work Tasks

- By default, fixed work tasks are effort-driven.
- The task duration changes based on the number of resource units assigned to the task.
- If the amount of work changes, resource assignments may also change.
- MS Project does not modify the total hours of work required to complete the task.
- Instead, it modifies the hours of work scheduled for each resource, based on assignment units within the specified timeframe.
- If the duration of a task is reduced, resource assignment units increased to maintain the same total number of hours.

Fixed Duration Tasks

- A fixed duration task does not vary the duration of the task, even if the resource assignments change.

- That is, Task A will take four days, irrespective of whether additional resources are assigned or removed for the task.

Effort-driven Scheduling 1-3

- If effort-driven scheduling is enabled for a task, it will be affected by the total number of resources, adding their effort towards the completion of the task.
- Increasing the number of resources of a task will decrease the duration and decreasing the resources will increase the duration of the task.
- Hence, the hours assigned to each resource will change with the change in assignment units.
- MS Project calculates work, task duration, and assignment units based not only on task types but also on the effort-driven setting.
- In case of fixed work task type, the effort-driven setting is automatically turned On and cannot be turned Off.

Effort-driven Scheduling 2-3

- Following figure illustrates auto-scheduled tasks of three different task types with effort-driven scheduling enabled for two of them:

Task Mode	Task Name	Work	Duration	Details	n '10 M	W	F	10 Jan '10 S	T	T
	Scope	**88 hrs**	**7 days**	Work	32h	16h	16h	16h	8h	
	Determine project scope - Fixed Duration not effort driven	32 hrs	2 days	Work	32h					
	Gary Zeus	*16 hrs*		Work	16h					
	SSU-Sr Mgmt	*16 hrs*		Work	16h					
	Secure project sponsorship - Fixed duration effort driven	16 hrs	2 days	Work		16h				
	SSU-Sr Mgmt	*8 hrs*		Work		8h				
	Gary Zeus	*8 hrs*		Work		8h				
	Define preliminary resources - Fixed Units not effort driven	32 hrs	2 days	Work			16h	16h		
	Gary Zeus	*16 hrs*		Work			8h	8h		
	Fay Morgan	*16 hrs*		Work			8h	8h		
	Secure core resources - Fixed Units effort driven	8 hrs	1 day	Work					8h	
	Gary Zeus	*8 hrs*		Work					8h	
	Analysis/Software Requirements	**112 hrs**	**11 days**	Work					16h	24h
	Conduct needs analysis -Fixed Work	32 hrs	2 days	Work					16h	16h
	Fay Morgan	*16 hrs*		Work					8h	8h
	Gary Zeus	*16 hrs*		Work					8h	8h

Effort-driven Scheduling 3-3

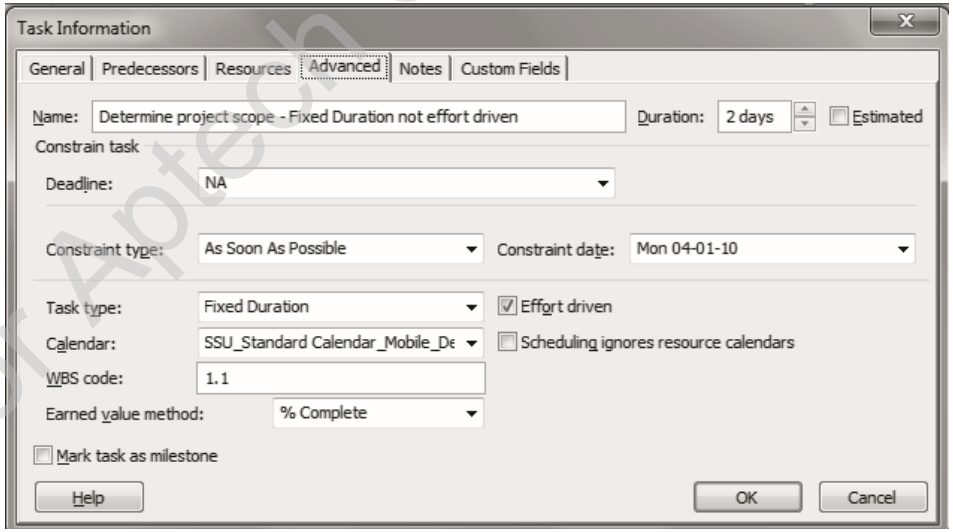
- The steps to change the settings for an effort-driven task are as follows:

Select a task in the **Gantt Chart** table and click **Information** on the **Task** tab to display the **Task Information** dialog box. On the **Advanced** tab, the **Effort-driven** check box is checked and enabled by default.

Deselect the **Effort-driven** check box to turn off the effort-driven setting.

Click **OK** to save the new setting.

- Following figure illustrates effort-driven setting in **Task Information** dialog box:



Finding Resources 1-3

- MS Project's '**Find**' feature helps to search for the right resource and also checks if a specific resource has enough time to handle another task.
- This feature finds resources by using various parameters, such as:

Specific rates

Initials

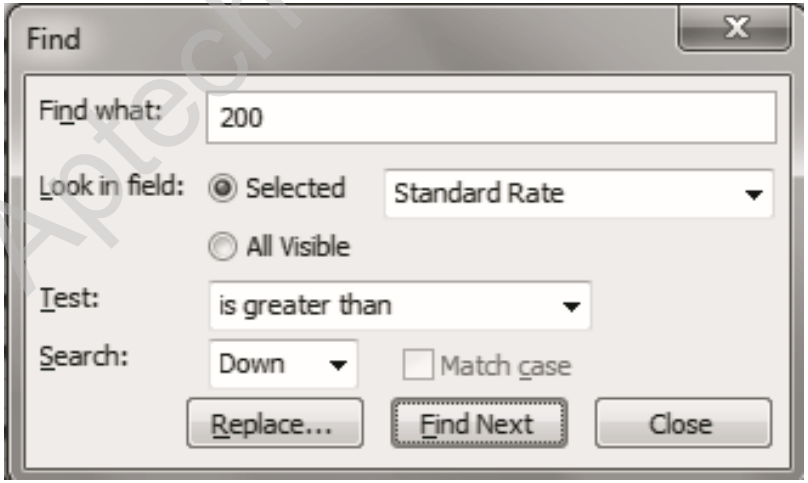
Maximum assignment units

Standard or overtime rate

Finding Resources 2-3

- The steps to find resource information are as follows:

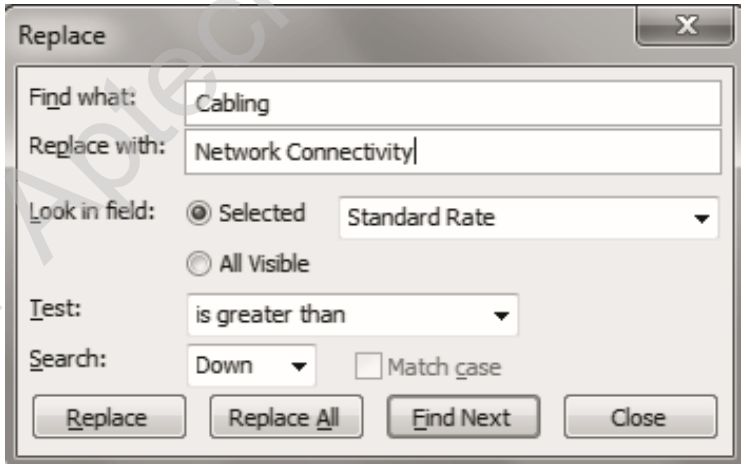
1. Click the down arrow on the **Gantt Chart** button on the Task tab and select the Resource Usage option.
2. On the **Task** tab, click the **Find** button in the **Editing** group to display the Find dialog box as shown in the given figure.
3. In the **Find what** text box, enter the text to find, such as **200**, to search for a resource with standard rate of $200 or less, or enter '**cable**' to search for a material resource whose material label contains the word '**cable**'.



Finding Resources 3-3

4. From the **Look in field** drop-down list, select the name of the field in which to search, such as **Standard Rate**.
5. Select a search criterion from the **Test** drop-down list.
6. To search backward from the current cell position, select **Up** from the **Search** drop-down list and **Down** to search forward from the current cell position.
7. Select the **Match case** check box to match the case of the search text.
8. Click **Find Next** to start the search. Continue to click **Find Next** until the right resource is found.

- Replace dialog box is shown in the following figure:

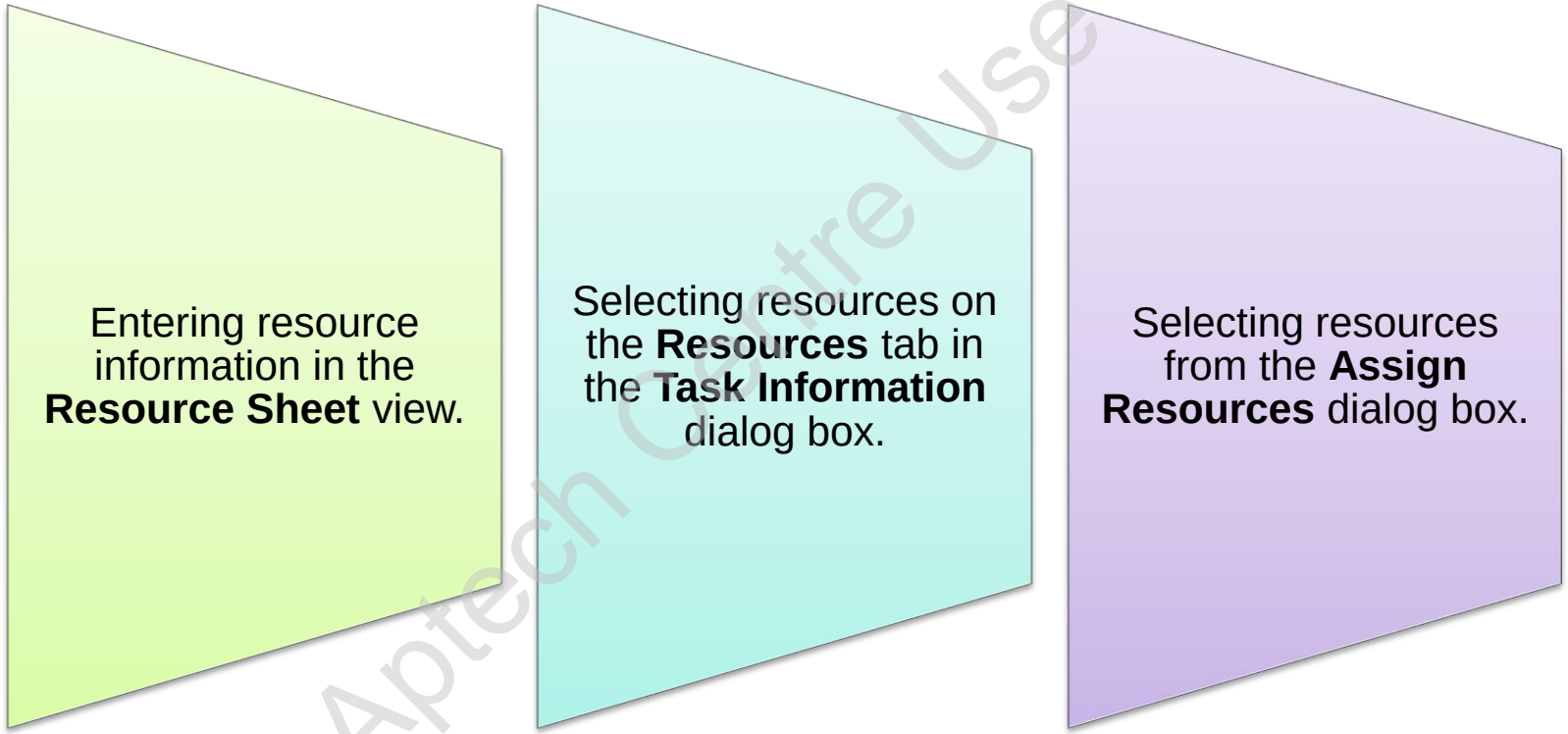


Work, Material, and Cost Resources

- Work resources are usually people assigned to a task and in percentage of units such as 100%, 50%, or 150%, and so forth.
- Resources are assigned at a percentage, based on the Resource calendar.
- That is, a resource with a Standard calendar will put eight hours per day when assigned at 100% units.
- Material resources are assigned in units, such as gallons, feet, or tons, and so forth.
- When assigning a material resource, determine the number of units of the material resource required for that task.
- Cost resources incur a variable cost every time they are assigned.

Selecting Resources

- Depending on the kind of assignments, project managers can use one of the following three main methods for selecting resources in MS Project:



- When assigning resources, the **Resource** field by default gets 100% assignment.

Entering Resources in the Resource Sheet View

- Following are the steps to assign resources in the **Resource Sheet** view:

1. Click the down arrow on the **Gantt Chart** button on the **Task** tab and select **Resource Sheet** from the drop-down menu.
2. Click the **Resource** column to enter the resource name and assignment as shown in the given figure.
3. On entering the resource name, by default, the **Max** field is updated with 100% units.
4. Click the up or down arrow in the **Max** field to increase or decrease the assignment units for the resource at a 50% increment or decrement.

Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue
Gary Zeus	Work		G		100%	$50.00/hr	$60.00/hr	$0.00	Prorated
Fay Morgan	Work		F		100%	$0.00/hr	$0.00/hr	$0.00	Prorated
SSU-Sr Mgmt	Work		S		100%	$0.00/hr	$0.00/hr	$0.00	Prorated
Mitchelle Yeomans	Work		M		50%	$0.00/hr	$0.00/hr	$0.00	Prorated
Sharon Gail	Work		S		100%	$0.00/hr	$0.00/hr	$0.00	Prorated
Ryan Patrick	Work		R	IT	0%	$0.00/hr	$0.00/hr	$0.00	Prorated
Jeff Smith	Work		J		100%	$0.00/hr	$0.00/hr	$0.00	Prorated
Melissa Raymond	Work		M		100%	$25.00/hr	$35.00/hr	$0.00	Prorated

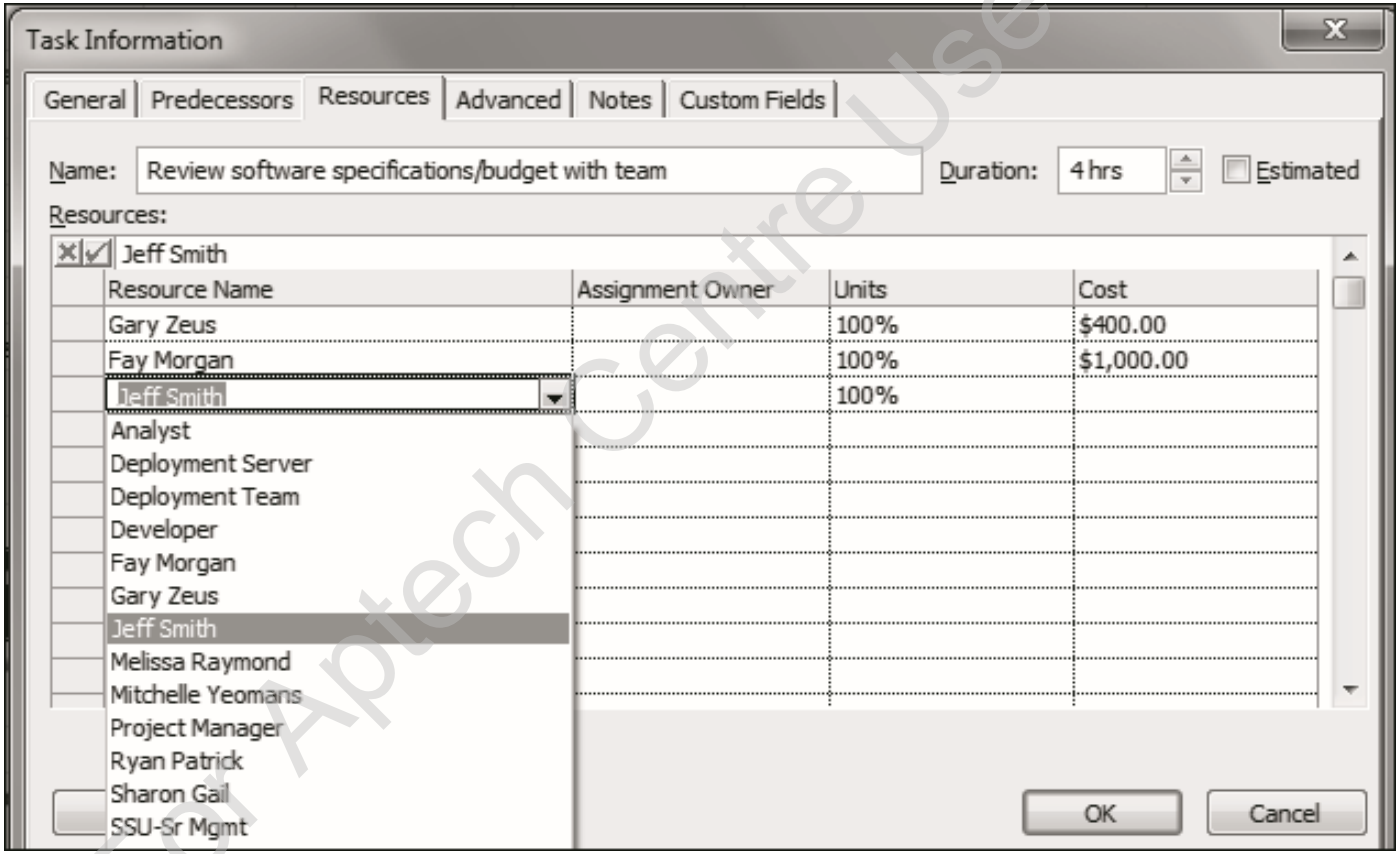
Selecting Resources from Task Information Dialog Box 1-2

- Users can also select resources to assign to tasks by using the **Task Information** dialog box.
- The steps to assign resources in the **Task Information** dialog box are as follows:

1. Select a task in the **Gantt Chart** table and click the Information button on the **Task** tab, to display the **Task Information** dialog box.
2. On the **Resources** tab, click in a blank cell in the **Resource Name** column and select a resource from the drop-down list. For a **work** or **material** resource, click in the **Units** column and specify in percentage.
3. Repeat Step 2 to assign any additional resources.
4. Click **OK** to save the information and close the dialog box.

Selecting Resources from Task Information Dialog Box 2-2

- Following figure illustrates selection of resources from the **Task Information** dialog box:



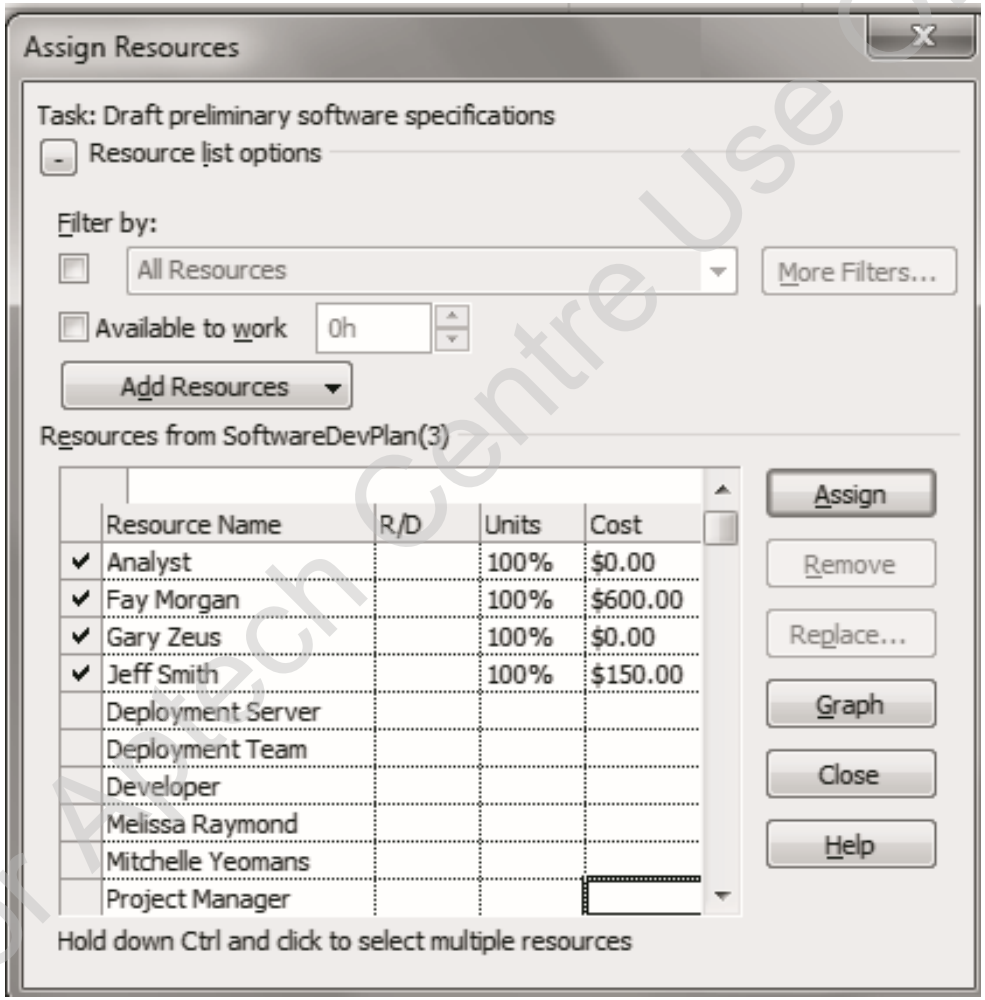
Selecting Resources from the Assign Resources Dialog Box 1-3

- Project managers can select and assign a work or material resource to a task using the **Assign Resources** dialog box.
- The steps to assign resources using the **Assign Resources** dialog box are as follows:

1. In the **Gantt Chart** table, select a task to assign resources, and click the **Assign Resources** button in **Assignments** group on the **Resource** tab. This displays the **Assign Resources** dialog box.
2. While keeping the **Assign Resources** dialog box open, users can select multiple tasks for assigning, from the **Gantt Chart** table.

Selecting Resources from the Assign Resources Dialog Box 2-3

- Following figure displays the **Assign Resources** dialog box:



Selecting Resources from the Assign Resources Dialog Box 3-3

3. In the **Resources** table in the **Assign Resources** dialog box, against each resource to be assigned to the selected task(s), click in the **Units** column and enter the units of work or material resource to assign.
4. In case of cost resources, click the **Cost** column to specify the unit cost for the cost resource to assign.
5. Select all resources to be assigned to the task (while holding the Ctrl key) and for which information has been specified, and then click the **Assign** button.
6. To replace one resource with another, click an assigned resource (indicated with a check mark) and click the **Replace** button. Then, select another name on the list, set its units, and click **OK**.
7. Click **Close** to save the resource assignment.

Working with Work Contours 1-5

- The level of work during the life of an auto-scheduled task is known as a work contour.
- While making work resource assignments, by default, MS Project distributes the work evenly over the task.
- However, in reality, the actual pace of work may be different.
- Hence, project managers can modify the level of work during the life of an auto-scheduled task.
- To resolve a resource conflict, managers can use a different contour on a particular resource's task assignment to free that resource and to work on another task that may occur during the life of the first task.

Working with Work Contours 2-5

- The steps to define the work contour for a resource are as follows:

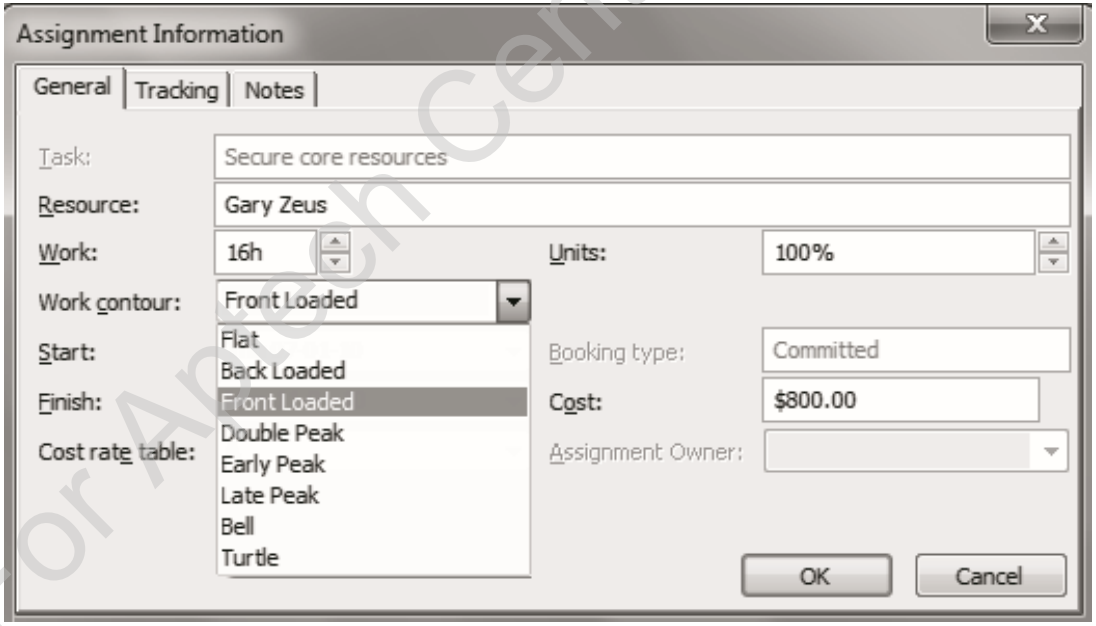
1. Click the down arrow on the **Gantt Chart** button on the **Task** tab and select **Task Usage** from the drop-down menu to display the **Task Usage** view. The Task Usage view displays resource assignments by task.
2. Select a resource under a task from the **Task Name** column.
3. Click the **Task Usage Tools** tab and click the **Information** button in the **Assignment** group to display the **Assignment Information** dialog box.
4. From the **Work Contour** drop-down list, select the required preset pattern.
5. Click **OK** to save the setting.

Working with Work Contours 3-5

6

- If none of the present patterns fit the situation, managers can manually modify the resource's work by changing the number of hours the resource puts in day by day on a task, in the **Task Usage** view.

- Following figure illustrates the display of various **Work contour** preset patterns:



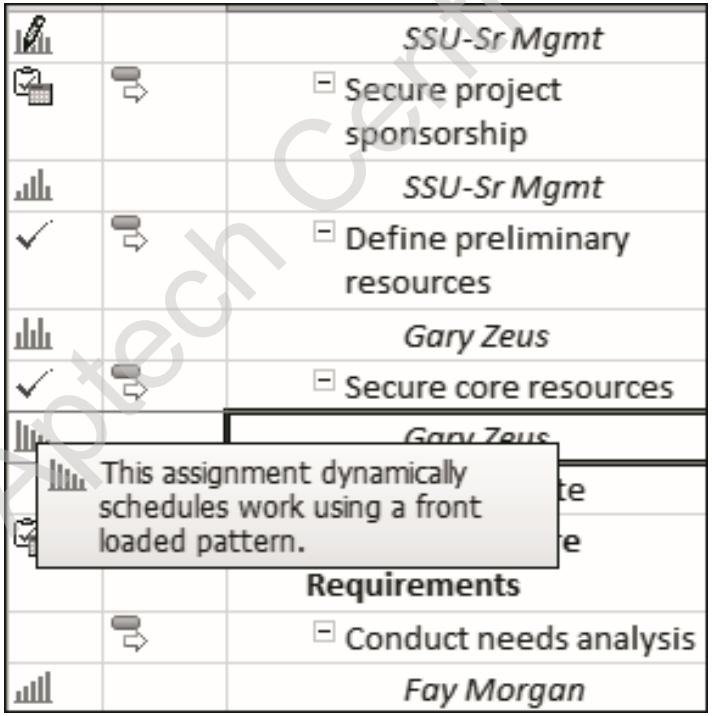
Working with Work Contours 4-5

- Following table lists various preset work contour patterns and their purpose:

Preset Pattern	Purpose
Flat	MS Project 2010 by default assigns Flat contour pattern to new tasks.
Back Loaded	This contour starts slow at the beginning of the task and gradually increases till the completion of the task.
Front Loaded	This contour starts at full effort at the beginning of the task and gradually decreases during the life of the task.
Double Peak	This contour looks like a suspension bridge with a peak near each end and lower hours at the beginning, middle, and end.
Early Peak	This contour starts slowly but quickly peaks and then drops off. This gives you some time to get oriented to a task before really digging in.
Late Peak	This contour peaks ramp up but drops off at the end of loose ends.
Bell	The contour represents a bell with a back loaded contour followed by a front Loaded contour. The work continually increases to a peak and then gradually drops off.
Turtle	This contour has low levels at the beginning and the end with fully scheduled resources in the middle.

Working with Work Contours 5-5

- After specifying work contours for the resources, one can use the Resource Usage view or Task Usage view to find the preset patterns of the tasks.
- A contour pattern symbol representing the selected work contour is displayed in the Indicator column for the resource.
- Following figure illustrates the result of work contour preset pattern in **Task Usage** view:



Team Planner View 1-3

- In various resource views, MS Project alerts project managers of overbooked resources, by displaying them in red.
- MS Project 2010 provides a new view called the 'Team Planner', which is used to fix workload issues.
- It helps project managers ensure that the work is distributed among all the resources in a manageable way.
- This view enables managers to move assignments among resources, assign tasks that have not been assigned, and schedule tasks that have not been scheduled.
- Perform the following steps to display and configure the **Team Planner** view:

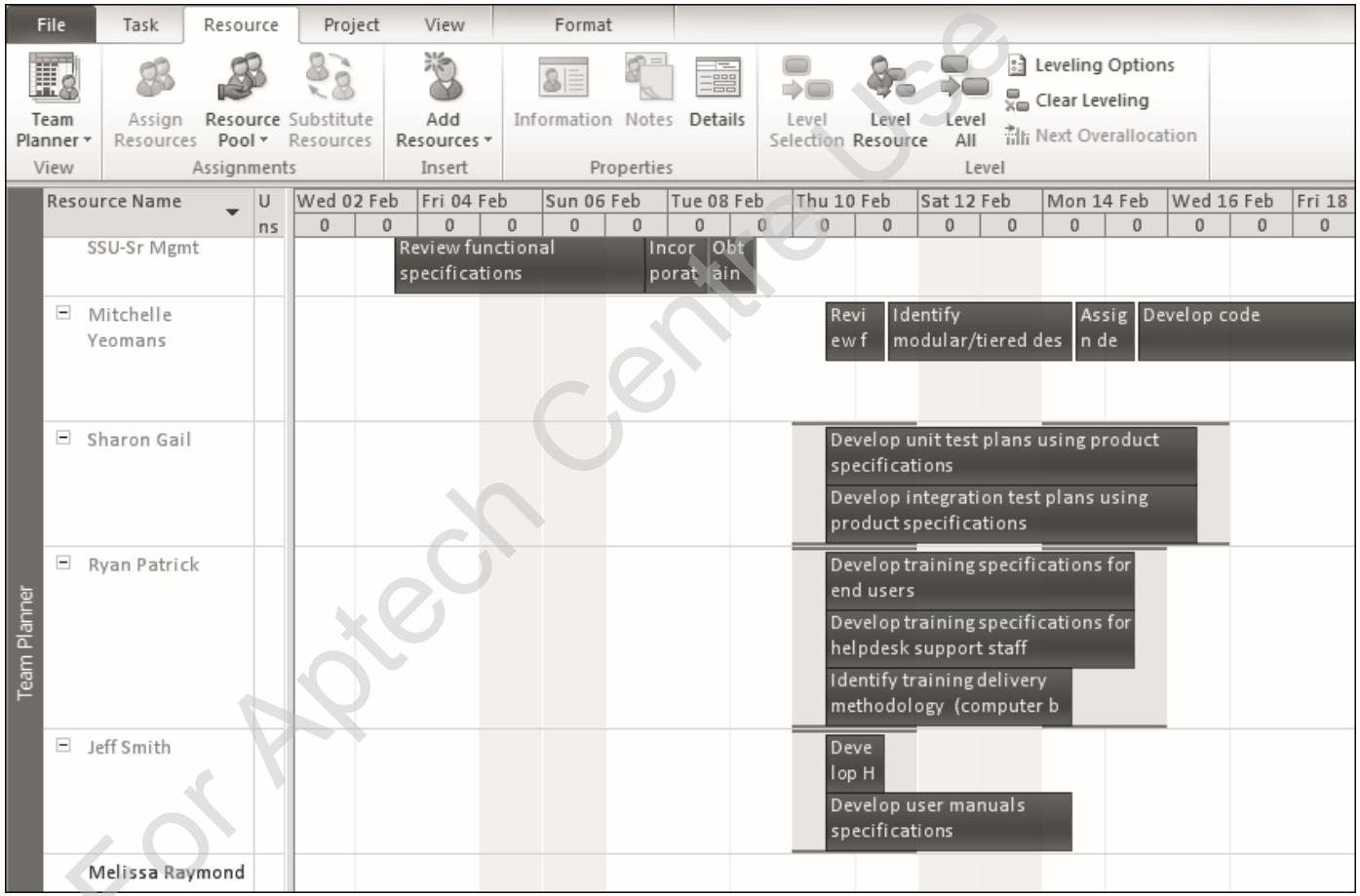
Click the down arrow at the bottom of the **Gantt Chart** button on the **Task** tab and then select **Team Planner** option.

Once the unassigned tasks are identified, drag and drop to correct any scheduling issues, by using a combination of the following techniques:

- **Fixing Resource Over-allocation**
- **Assigning an Unassigned Task**
- **To Schedule an Unscheduled Task**

Team Planner View 2-3

- Following figure displays the **Team Planner** view:



Team Planner View 3-3

- Dragging a task vertically from one resource to other changes the task assignment, while dragging horizontally changes the task schedule in Team Planner view.
- Placing the mouse over on any task displays basic information about a task in **Team Planner** view.
- To change the details of either a task or a resource, select it and click the Information button to display the **Task Information** dialog box or the **Resource Information** dialog box, respectively.
- In the dialog box, specify the information to be modified and click **OK**.
- To insert new tasks and resources into the project, use the **Insert Task** and **Add Resources** buttons in the Insert group on the **Task** tab and the **Resource** tab, respectively.

Summary

- MS Project classifies three types of tasks, fixed units, fixed work, and fixed duration. By default, all tasks in MS Project are fixed units tasks.
- If effort-driven scheduling is enabled for a task, the task duration will be affected by the total number of resources adding their effort towards the completion of the task.
- MS Project calculates work, task duration, and assignment units based not only on task types but also on the effort-driven setting.
- MS Project provides a Find feature that enables managers to search for the right resources using various parameters, such as specific rates, standard or overtime rate, and so forth.
- When assigning resources to a task, project managers need to determine the units of hours, quantity, or rate for which the resource is assigned to the task.
- Managers can select resources for a task in the Gantt Chart table, Task Information dialog box, or the Assign Resources dialog box.
- A new feature in MS Project 2010 is the Team Planner that provides managers an at-a-glance view of resource assignments and helps identify any unassigned resources or unscheduled tasks.