Chapter 6 - Resolving Resource Conflicts

Learning Objectives:

- 1. Understanding how resource conflicts occur
- 2. Spotting resource conflicts
- 3. Resolving conflicts

Resource allocation is the process of assigning resources to tasks in a project. Because the potential for resource over allocation always accompanies resource assignment,

Understanding How Resource Conflicts Occur

- 1. On assigning resource, Project checks the resource's calendar to make sure that the resource is working.
- 2. However, Project doesn't assess whether the resource is already assigned to a new task
- 3. If resource is already assigned, the additional assignment will probably lead to over allocating the resource.
- 4. Over allocation occurs when more work to a resource than the resource can accomplish in the time that you've allotted in resource sheet or resource calendar.



Spotting Resource Conflicts

In order to spot resource over-allocation use views or filters to help to identify resource-over allocation problems.

Using views to spot resource conflicts

You can spot resource conflicts in almost any view.

Gantt Chart

In the Gantt Chart view (see Figure 6.1) or the Task Usage view, a red indicator that looks like a person appears in the Indicators column.

- 1. The red person in the Indicators column flags a task containing over allocated resources.
- 2. In resource views such as the Resource Usage view
- 3. or the Resource Sheet, a caution sign appears in the indicator column beside an over allocated resource;

P	-	5.0	- 🧀 🛛	≩ ∓ 09_NF	L-Fine tuning	reso	GANTT CHART TO	OLS		?	_		×
F	ILE	TASK	RESOURCE	REPORT	PROJECT	VIEW	FORMAT		👍 Ravin	ndra G ≠		5	×
Gar Cha	ntt ert *	Paste	Font	0× 25× 50×	75× 100× 🗊 -	Manu Sched	ally Auto Jule Schedule	<mark>?</mark> - □ □? -	Insert P	roperties	Editin] g	
Vie	2W 1	Clipboard		200	edule		Tasks						^
		0	Task Name	e				-	Duration 🚽	Finish		*	s
	0	7	▲ New P	roduct Lau		119 days	1 '14		F				
	1			for product	1	28 days	Mar 24	1'14		F			
	2		Id	entify the la	4	4 days	Feb 14	'14		F			
	3		De	etermine sa	1	2 days	Feb 18	'14		F)			
CHART	4	•	De	efine launch ojectives)	1	7 days	Feb 27	'14		Fi			
Ĕ	5	•	Id	entify chan		7 days	Mar 11	'14		Fi			
SAN	6	1	Id	entify retai	l partners			1	L5 days	Mar 24	'14		Fr
<u> </u>	7	1	Id	entify onlin	1	10 days	Mar 19 '14			N			
	8	•	Es	tablish Laur	nch Budget			1	7 days	Mar 11	'14		F
	9	•	0	btain launch		3 days	Mar 14	'14		N			
10 Planning COMPLETE 0 days							Mar 19	'14		N			
	11	1 A Marketing plan								Apr 21	'14		Fi
	12 📲 🛉 Define creative brief 15 days Apr 10 '14										'14		N
	4												•
REA	DY	-> NEW I	ASKS : AUTC	SCHEDULED			E (#	E	8 E '				+

Fig.6.1: Spotting Resource Over allocation in Gantt Chart



Spotting over allocation in Resource Graph

- 1. You also can see a graphic representation of a resource's allocation by switching to the Resource Graph view.
- 2. To display the view go to Resource tab and choose Resource Graph (Fig.6.2).
- 3. Scroll through the resources assigned to tasks in your project by clicking the left and right scroll arrows that appear at the bottom of the left pane where the resource's name appears.



Fig.6.2: Graphical representation of Resource Over allocation

Using filters to spot resource conflicts

Use Resource Usage view to display only over allocated resources. To filter the view in this way, follow these steps: (Fig 6.3)

- 1. Click the View tab and, in the Resource Views group, click the Resource Usage button.
- Click the list box arrow beside the Filter button in the Data and choose Over allocated Resources.
- Add the Over allocation field to the view to identify the extent of the resource's over allocation: Right-click anywhere in the Details portion of the view and choose Over allocation.
- 4. As Figure 6.3 shows, Project adds a row to the timescale portion of the view to show you the number of hours that you need to eliminate to correct the over allocation.





Fig.6.3: Spotting over allocation using filters

Changing resource allocations

- 1. Use the Task Inspector. Project displays more details about the over allocation that might help you decide how to approach solving it, as shown in the next figure.(Fig.6.4).You can use following options to resolve resource conflict
 - a. Add a new resource if appropriate by using Assign Resource dialog box
 - b. You can replace resource by using another more capable resource by switching resources
 - c. Adding task assignment to resource using combination view of Gantt chart and Resource usage view
 - d. Add/Delete resource assignment
 - e. Schedule overtime to a resource (Fig.6.5)
 - f. Redefine Resource Calendar using Exception/Working time





Fig. 6.4: Task inspector provides various options to resolve resource conflict

P		5 - d)- 🚔 🔯 =	_	GAN	IT CHAR	T TOOLS 0	9_NPL-Fine tuning	resource	s_P ?	_	•	×
1	FILE	TASK	RESOURCE REPORT I	PROJECT	VIEW	FORM	AT		🔥 Ra	vindra G 🔹	Р	8 3	×
Gi	entt art = Us	Task sage - 🚰 -	Resource Sheet * 2↓ * 20 Resource Sheet * 2↓ * 20 Resource	No Highlight] No Filter] No Group]	 Timescall [45] Døys 	-	व □ दि द	Timeline Details Task For	- m •	Window	Macn	l os	
	Task	Olews	Task Name	Data		coom -	Duration -	Finish	- Start		Re N	esource ames	Ē
ART	0		4 New Product Launch			-	119 days	Aug 11 '14	Feb	10'14	-		
5	1		Plan for product launce	h			28 days	Mar 24 '14		Feb 10 '14			
Ę	2		Identify the launch	team			4 days	Feb 14 '14		Feb 10 '14		arketin	
9	3		Determine sales ob	jectives			2 days	Feb 18 '14	Feb	Feb 14 '14		Sales Sen	
	4	٠	Define launch goals	(launch tim	ing and publ	icity	7 days	Feb 27 '14	Feb	18'14	M	arketin	G
	4											Þ	
	Name	E: Define o	reative brief	ation: 15 day	s 🗧 🗹 🗗	fort driv	en 🛛 Man	ually Scheduled	Previou	15	Negt		
	Start	Mar 19	14 • Finight	Apr 10 '14		• 1	asha per	Fixed Units •	% Co	mplete:	0%	*	
	ID	Resource	e Name	Units	Work	OV	t. Work Bas	seline Work Act	Work	Rem. Wo	rk	*	
TASK FORM	5	Product 5	Support	100%	120h	Oh	on	Oh		120h			
RE	ADY	NEW	TASKS : AUTO SCHEDULED		1		1		11			++	

Fig.6.5 Add Overtime using Task Form



Delaying tasks by leveling resource workloads

Leveling is the process of resolving resource conflicts by delaying or splitting tasks to accommodate the schedules of assigned resources. The Project will

- 1. Select the tasks to delay or split by using its leveling feature, or
- 2. Control the process manually by examining the project to identify tasks that you are willing to delay or split.

Project will redistributes a resource's assignments and reschedules them according to each resource's working capacity, assignment units, and calendar. Project also considers the task's duration, constraints, and priority.

 Click the Resource tab and, in the Level group, click Leveling Options to open the Resource Leveling dialog box (see Figure 6.6)

PG	-	5.0	- 🧀 🛛	à, ≠			G	ANTT CHA	RT TOOLS	09_NPL	-Fine tuni	ng resource	:s_P ?	-		\times
FI	LE	TASK	RESOURC	E REPOR	T P	ROJECT VIE	EW	FORM	1AT			🔥 Ra	vindra G 🔹	Р	8	×
	ņ	.	.	.	-	<u>2</u> 8		-> ∭	ý.		Leveling	Options				
Reso	urce	Assign	Resource	Add	Inform	ation Notes D	etails	Level	Level	Level			-			
She	et -	Resources	Pool *	Resources *	- 1	Resource Leveli	ing						×			
Vi	ew	Assign	ments	Insert		I avaling calc	ulations									^
		0	Task Nam	e		Automatic Look for over	c rallocation	ns on a	Manual Week by	al Week	 basis 			+ Re N	isourc	e
	0	New Product Launch		Clear leveling values before leveling												
	1		 Plan for product launce Identify the launch 		launc	Leveling range for '09_NPL-Fine tuning resources_Pre leve'										
	2				aunch										arketi	in
	3	Determine sales ob		les ob	ever entire projett									les Se	en	
	4	٠	De	efine launch	goals	O Level		From: To:	Aug 11	14	Ŧ			M	arketi	inį
ART	5	4	00	ojectivesj	and and	Resolving over	erallocatio	205						se	rvice:	2
3	6		Identify channel pa		Leveline and	cronocaci	2112	Standar	ed.	-			58	les se	217	
Ę.	0		Id	entity retail	I and antomithin multiple stack								Sa	les Se	ND	
AN .	/	1	Id	entify onlin	e opp	Level only within available slack Leveling can adjust individual assignments on a task Leveling can create splits in remaining work							Sa	les Se	n i	
Ŭ	8	•	Es	tablish Laur	nch Bu								Pr	oject	м	
	9	•	0	btain launch	h budg								Pr	oject	М	
	10		PI	anning CON	IPLETE	Level manually scheduled tasks								Pr	oject	М
	11		A Mari	A Marketing plan												
	12	11 🛉	D	efine creativ	ve brie	Help	Clear	Leveling	le	vel All	OK		ancel	Pr	oduct	t S
L 1	13	11	Pr	epare datab	ase of	potentiai cust	tomers	_	15 day	s ma	r 12 14	reo	18 14	M	arketi	in
1	14		r)	ant nrnis fa	emarka	ting narthous			7 days			Mar	10.114		arly at	
BUS	٧	S NEW 1	TASKS : AUTO	SCHEDULED								⊞ €		-		+

Fig 6.6: Resource Leveling Options

 Select Automatic or Manual leveling. If you select the Automatic option button, Project automatically levels resources. Select the Manual option if you prefer to perform leveling only when you click the Level Now button in this dialog box.



- 3. Use the Look for Over allocations on a . . . Basis list box to select a basis. The basis is a time frame, such as Day by Day or Week by Week.
- 4. Select the Clear Leveling Values before Leveling check box to make Project reset all leveling delay values to 0 before leveling. If this box is not checked then Project does not reset leveling values but builds upon the values. During leveling, the scheduling for previously leveled tasks will probably not change.
- 5. In the Leveling Range For area, select either to level the entire project or to level only for specified dates.
- 6. In the Leveling Order list box, select the order that you want Project to consider when leveling your project:
- 7. Select any of the following options:
 - a) Level Only Within Available Slack: This avoids changing the end date of your project.
 - b) Leveling Can Adjust Individual Assignments on a Task: In this case, leveling adjusts one resource's work schedule on a task independent of other resources that are working on the same task.
 - c) Leveling Can Create Splits in Remaining Work: This allows leveling to split tasks to resolve resource conflicts.
 - d) Level Resources with the Proposed Booking Type: Check this box to have Project include tasks containing proposed resources during the leveling process.
 - e) Level manually scheduled tasks: Check this box to include manually scheduled tasks when you level resource assignments.
- 8. Click Level All to apply leveling.

Figure 6.7 shows the effects on you plan post Resource leveling.

- 1. Select Leveling Gantt view
- Project shows light-green bars above blue bars in the Gantt Chart; the light-green bars represent the duration of tasks before leveling and the blue bars represent the tasks after leveling
- 3. Depending on the nature of project, Project may build more slack into your tasks.(Shown with arrows in fig.6.8)



PS		ۍ .	e - 📔 🗟 =				GANT	CHART TOOLS	10_NPL-Fine	tuning r	resources_P	? –	×		
E	ILE	TAS	K RESOURCE	REPORT	PROJECT	VIEW	F	ORMAT			🛕 Ravindra G	· 🖸	σ×		
Gar Cha	ntt ert •	Paste	Calibri B I U ✓	- 11	• 0× 25× 50×	"5× 100× ∞ čž	, ∾	Manually Ar Schedule Schr	→ ato edule	tan Insert	Information	Editing			
Vie	SW .	Clipbo	pard Font	t	ra Sch	edule		Tas	sks		Properties		^		
		0	Name		Leveling Delay	- Durat	ion + S	Feb 2, 1	14 Mar9, S S	14 M	Apr13, '14 M T W T	lay 18, '14 F	 SS		
	6	5	Identify re partners	tail	0 eda	/s 15 da	ys		4	Sale	es Services				
	7	7 dentify online opportunities 8 Establish Launch Budget		ties	28.04 edays	- 10 da	ys		4	.	Sales	Service	5		
L .	8			aunch	0 edays 7 day		5		Proj	Project Manager					
GANT	9		Obtain lau budget app	nch proval	0 edays 3		3 days Before Levelling		g						
ELING	10		Planning COMPLETE		0 edays 0		0 days		Afte	er Lev	elling 5/8	g 5/8			
LEV	11		 Marketing pla 	an	0 eda	ys 56.88	days			-					
	12		Define crea	ative	0 eda	/s 15 da	ys				+	Prod	uct Su		
	13		Prepare da of potentia customers	atabase al	9.21 eda	/s 15 da	γs			Market	ting services				
	14		Float RFP's marketing	for partners	0 eda	ys 7 day	s			Ma	rketing services	•	٣		
REA	DY	3 N	EW TASKS : AUTO SCHE	EDULED			•				fl		+		

Fig.6.7: Pre and Post Leveling

- 4. If Project can't resolve an over allocation by leveling, It will show message to that effect during the leveling process and the over allocation indicator will remain for that task.
- 5. To remove the effects of leveling, reopen the Resource Leveling dialog box (on the Resource tab in the Level group, click Leveling Options) and click the Clear Leveling button. A subsequent dialog box enables you to clear leveling for the entire project or for selected tasks only.
- 6. Adjust leveling when automatic leveling doesn't provide acceptable results instead choose manual leveling options and adjust the resource allocation for the required task

