

RiskyProject Lite 4.2

Project Risk Management Software

Getting Started Guide

Chapter 1: Introduction to Risky Project

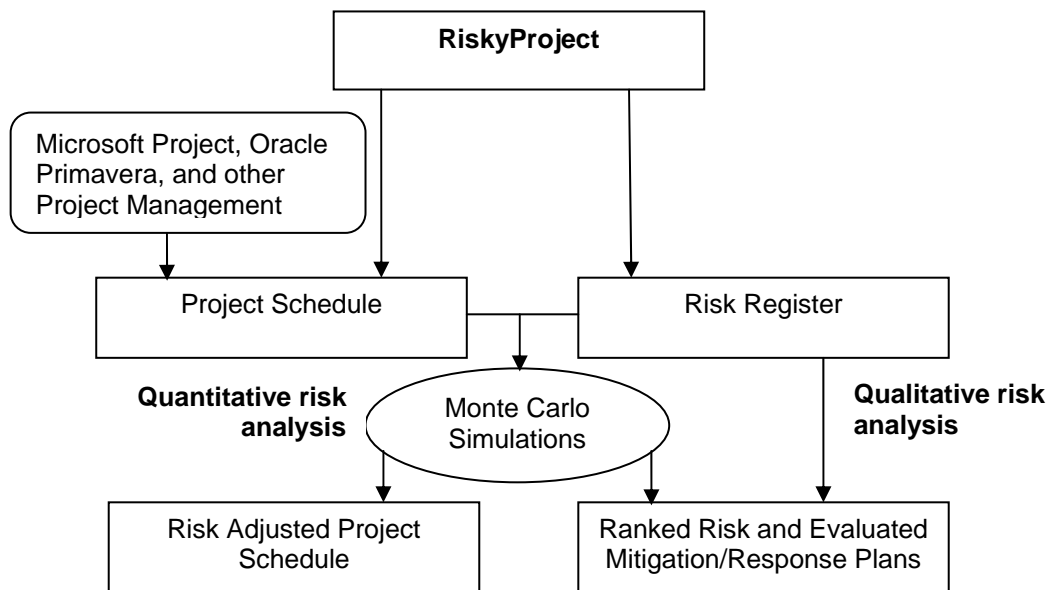
What is RiskyProject?

RiskyProject is advanced project risk management software with integrated risk analysis. Most projects contain many uncertain parameters: task duration, start and finish times, uncertainties in costs and resources, uncertainties in quality, safety, technology, and others. RiskyProject analyzes project schedules with risks and uncertainties, calculates the chance that projects will be completed within a given period of time and budget, ranks risks, and presents the results in formats that are easy to read and understand.

RiskyProject also helps you to perform project risk management:

- identify project risks
- rank risks
- identify mitigation and response plans
- manage risk properties, including descriptions, probabilities and impacts, costs associated with risks, mitigation strategies, and all other information about risks
- facilitate risk reviews, opening, and closing risks, conversion of risks to issues and lesson learned
- save risk history

RiskyProject performs both qualitative and quantitative risk analysis. If both the risk register and project schedule are populated, RiskyProject performs quantitative risk analysis. If no project schedule, RiskyProject performs qualitative risks analysis.



RiskyProject seamlessly integrates with Microsoft Project or can run as a standalone application. RiskyProject integrates with other project management software such as Oracle, Primavera, FastTrack, Project KickStart, Sciforma PS8, and others.

Qualitative vs. Quantitative Risk Analysis

RiskyProject performs both qualitative and quantitative risk analysis.

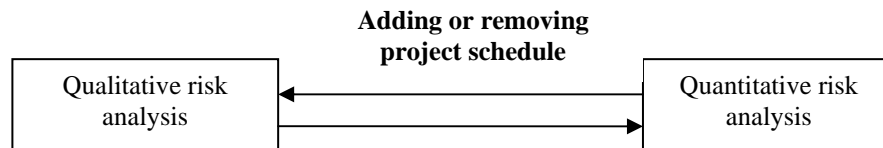
A typical **qualitative risk analysis** workflow:

1. Identify risks and add risks to the risk register.
2. Define risk properties, probabilities, and outcomes.
3. Analyze risks and prioritize risks.
4. Assign mitigation and/or response plans.
5. Update risk properties, probabilities, outcomes as necessary.
6. Review status and properties of the risk and report information about risks.

A typical **quantitative risk analysis** workflow:

1. Create a project schedule.
2. Add risks, uncertainties, and other risk-related information.
3. Run a simulation, perform an analysis and generate a report of the results. .
4. Update risks and uncertainties as necessary.
5. During project execution, perform project tracking with risks and uncertainties at key phases or milestones to update forecasts.
6. Report results

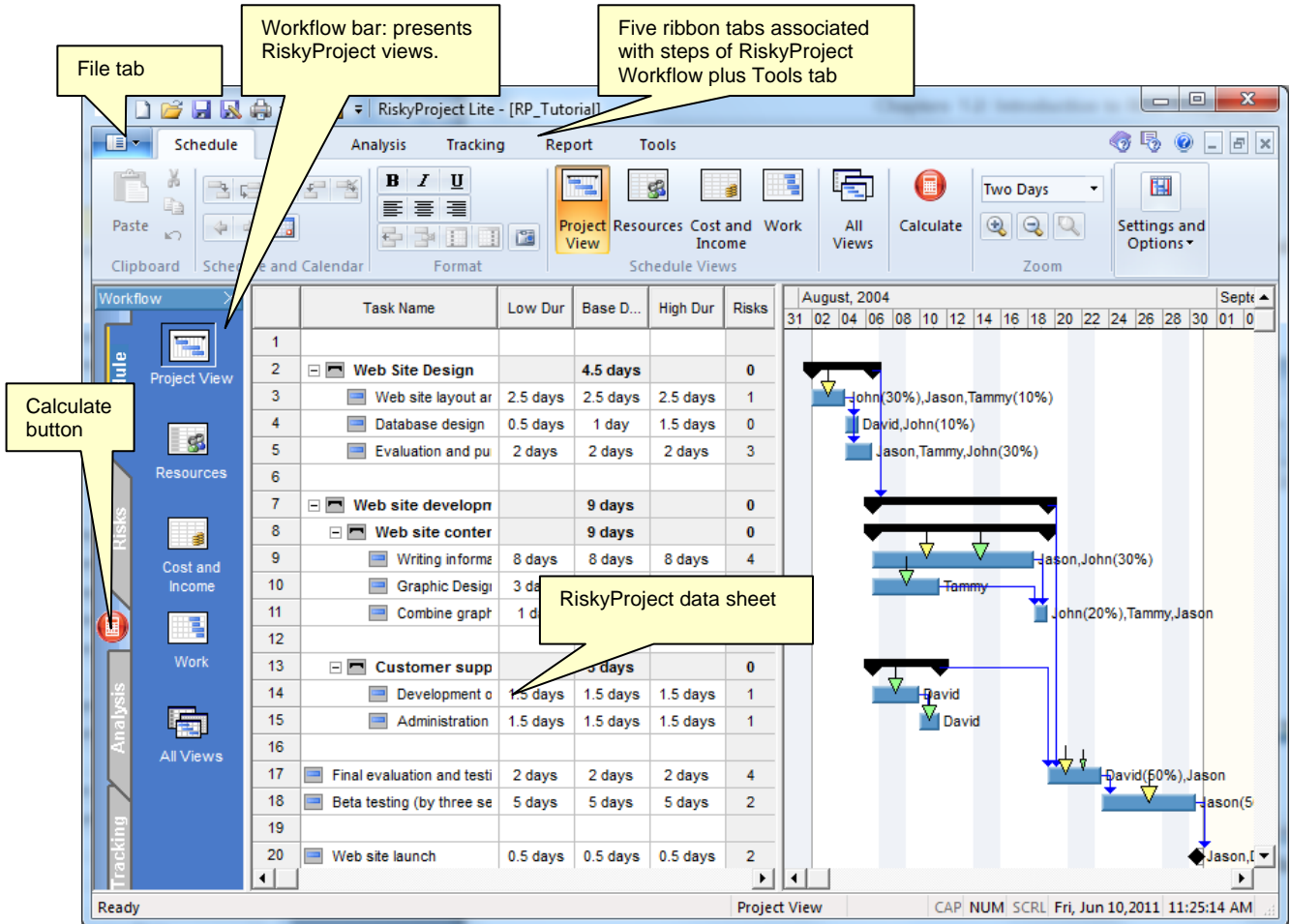
If you do not have a schedule for your project, RiskyProject will only perform qualitative risk analysis. However, if you add a schedule by either adding activities or importing a schedule, RiskyProject automatically switches to quantitative analysis. You may switch between qualitative and quantitative analysis by adding or removing project schedule.



Due to a nature of qualitative and quantitative analysis the results can be different even with the same risks, particularly for schedule-related risks affecting project duration and cost.

RiskyProject Interface

RiskyProject supports a multi-document interface. You can open and close multiple project schedules during one session in RiskyProject.



The Risk Register is a set of all your project risks. You can view the project Risk Register in the Risk Register and Risk Properties views.

RiskyProject Data Sheets

All RiskyProject views, except for the Project Summary view and Project Dashboard, contain data sheets. Data sheets are used to enter and present data in a grid format. Grids are also used in some dialog boxes. All data sheets have similar features.

Data sheets are used to display task information, resources, risks, and results of sensitivity analysis. Data sheets are composed of columns and rows. Each column has specific properties, which represent a specific data type. For example, resource name, resource type, etc. You can customize data sheets to display the columns in any order and any with a title in the column header. See the appendix for a full description of each field.

Chapter 2: Qualitative Risk Analysis and Management

Risks in RiskyProject

Risk Register

The Risk Register is a set of all the project risks. You can enter risks in either the **Risk Register** or **Risk Properties** views:

The screenshot shows the Risk Register window in RiskyProject Lite. The interface includes a menu bar (Risks, Analysis, Tracking, Report, Tools), a toolbar with icons for various actions, and a main data table. The table is divided into 'Pre-Mitigation' and 'Post-Mitigation' sections, with columns for Prob., Impac., Sco., Score, and Cost. A status bar at the bottom allows filtering by risk status (Open, Closed, Risk, Issue, Lesson Learned).

Callout boxes provide the following instructions:

- Click Risk Register or Risk Properties to view risk register
- Sort and filter risks based on the categories it is assigned to
- Filter risks based on their properties
- Sort risks alphabetically or on risk ID
- Risks are ranked based on their scores
- Click Risk Register or Risk Properties to view risk register
- Select open or/and closed risks
- Select risks, issues or lesson learned

Use the Risk Register to:

1. View risks with their attributes such as probabilities, impacts, scores, properties, etc.
2. Rank risks based on risk score.
3. Sort risks alphabetically or using risk IDs.
4. Filter risks based on risk properties, whether they are Open, Closed, Risk, Issue, or Lesson Learned.

Data for the Risk Register can be subdivided into three categories: risk registry, risk mitigation/response plans, and settings:

Risk Register

Risk 1 with attributes:

General Information	Risk cost	Probabilities and impacts	Mitigation / response plan assignments
Risk history	Risk reviews	Custom properties	

Risk 2 with attributes

Risk 3 with attributes

.....

Mitigation or response plans

Plan 1 with attributes

Plan 2 with attributes

.....

Risk Register Settings

Risk Categories and Outcomes	Default Risk Properties	Risk Matrix settings	Risk ID generation rules
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Adding risks to the Risk Register

1. Click the **Risks** tab. On the **Schedule Views** group, click the **Risk Register**.
2. On the Risk Register, click an empty row.
3. Enter a unique name for the risk. The risk is now added to the register.

Deleting risks from the Risk Register

1. Click the **Risks** tab. On the **Schedule Views** group, click the **Risk Register**.
2. Select the risk you want to delete. You can select multiple risks.
3. Right-click on the Risk ID and choose Delete Risk from the shortcut menu.



With the Risk Register or Risk Properties views, you can rename risks and copy risk information to the clipboard. You may also copy and paste risk inside risk register.

About Risk Categories, Probabilities and Impacts

Risk Categories

Risk Categories are a group of risk outcomes. RiskyProject calculates risk probabilities, impacts and scores for each category. The default risk categories:

- Duration
- Cost
- Safety
- Environment
- Legal
- Performance
- Technology

RiskyProject calculates the score and rank for all risks for each risk category. You can view risk scores and rankings for each risk category or for all categories.

The screenshot shows the Risk Register interface. At the top, there are controls for 'Filter', 'Show All', and sorting options. Below is a table with columns for 'Risk Name', 'Open', 'Threat/O...', 'Prob...', 'Impa...', 'Sco...', and 'Sco...'. The table lists three risks: 'Low quality component', 'Financing delay', and 'Delay with assembling'. A dropdown menu is open, showing 'All Parameters' and a list of risk categories: 'Duration', 'Cost', 'Safety', 'Environment', 'Quality', and 'Legal'. A callout box points to the 'Quality' category with the text: 'In the Risk Register, Risk Properties, Risk Matrix, and Risk Report you can view risks associated with a specific risk category'.

	Risk Name	Open	Threat/O...	Prob...	Impa...	Sco...	Sco...
1	Low quality component	Open	Threat	50.0%	72.0%	36.0%	
2	Financing delay	Open	Threat	56.0%	10.0%	5.6%	
3	Delay with assembling						

You can customize the risk categories in the Risk **Outcomes** dialog box. For more information about customizing risk categories, read **Managing Risk Categories and Outcomes**.

Risk Outcome Types

A Risk Outcome Type is the result if a risk occurs. Every risk category must have a least one outcome, but can several. For example, one of the default risk categories is Legal. You may want to further define the outcome types as Litigation Risk, International Legal Risk, etc.

You can customize the set of outcome types using the **Risk Outcomes** dialog box. For more information about customization of risk outcomes, read **Managing Risk Categories and Outcomes**.



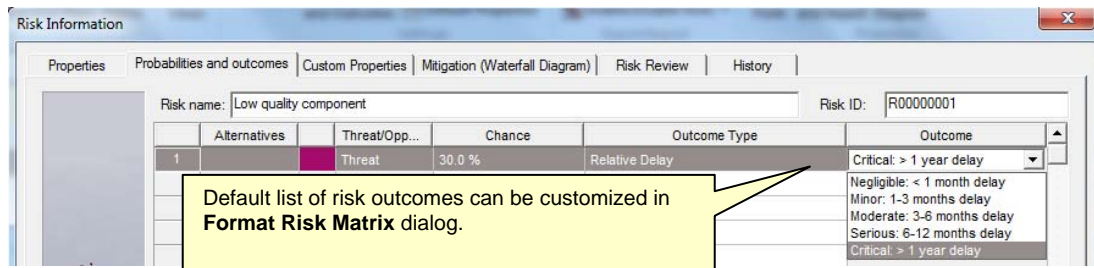
The set of risk outcomes types are different for qualitative and quantitative risk analysis. For quantitative risk analysis, RiskyProject automatically adds a number of schedule specific risk outcomes, such as restart task, fixed cost increase, etc. For more information about risk impact, read **Quantitative Risk Analysis**.

Risk Probability and Chance

Risk Probability is the calculated chance that an event will occur. You can view risk probability in the **Risk Matrix**, **Risk Register**, and other views and dialog boxes. Risk Chance is the input parameter for risk probability. Risk chance (input parameter) and risk probability (calculated attribute) can be different; particularly when a risk has multiple mutually exclusive alternatives as risk chance is an input parameter for each alternative. In these cases, Risk probability is calculated based on the risk chance for each mutually exclusive alternative.

Risk Outcome

Risk Outcomes are the severity of a risk event for the specific risk category. You need to enter risk outcomes when you define risk chance and outcome type. For example, here are the default risk outcomes for the risk category **Schedule**:

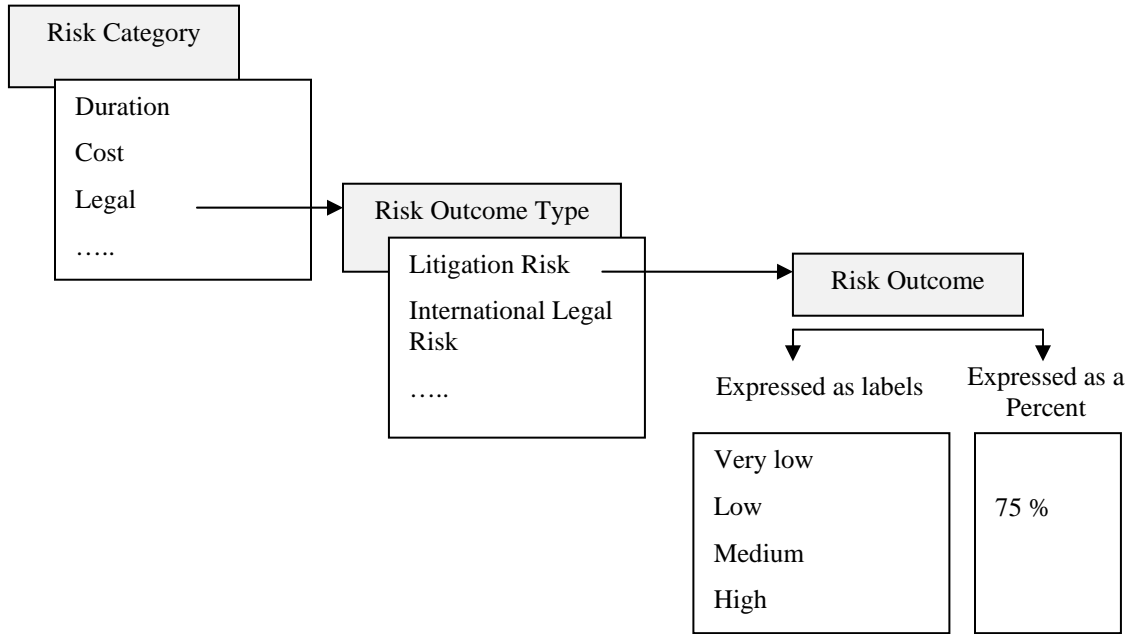


Outcome types can be a label (e.g. Critical > 1 year delay) or a percentage (e.g. 5%), or a combination of both. You may set how you want to enter and view risk outcomes in the **Format Risk Matrix** dialog box. Each label is associated with percentage, which is the midpoint of the interval for each label:

Label	Interval	Midpoint
Negligible: < 1 month delay	From 0% to 20%	10%
Minor: 1-3 month delay	From 20% to 40%	30%
Moderate: 3-6 months delay	From 40% to 60%	50%
Serious: 6-12 months delay	From 60% to 80%	70%
Critical: > 1 year delay	From 80% to 100%	90%

When you define outcome types as a percentage, you can enter it as any number from 0% to 100%. In this scenario, it will be associated with a label based on the interval to which this percentage belongs. For example 76%, corresponds with the “Serious: 6-12 months delay” outcome type.

The diagram below shows the relationship between risk categories, risk outcome types, and risk outcomes.



Risk Impact

Risk impact is the calculated result of the risk event. Risk outcome (input parameter) and risk impact (calculated attribute) can be different, particularly when a risk has multiple mutually exclusive alternatives, in which case the risk outcome is a parameter of each alternative. Risk impact is calculated based on the risk chance for each alternative.

Risk Score

Risk score is a calculated parameter that equals probability multiplied by impact. Risk probability, impacts and scores are calculated before and after risk mitigation. Risk score is calculated for each risk category as well as all risk categories.

Risk Properties

Risk Properties are other risk attributes that include:

- Risk Name, ID, description, statement, objectives, assumption, cause and trigger
- Open/close risk.
- Risk life cycle status: Risks, issues, lesson learned.
- Risk ownership
- Risk mitigation strategy
- Risk costs
- Risk start and end date
- Other information about risk

Some risk properties are predefined as General Information about risk and Risk Costs. However, you may define any other risks properties.

Risk Mitigation and Response Plans

You can model risk mitigation or response efforts in RiskyProject using the **Mitigation or Response** View. Response plans are activities that are executed when a risk occurs and are used for quantitative risk analysis. Mitigation plans are actions that are performed to minimize risk probability and/or impact and can be visualized using the Risk Mitigation Waterfall diagram

Mitigation or/and response plan must be assigned to the risk. Please read **Assigning Risk Response Plans** and **Assigning Risk Mitigation Plans** for more information.

Creating a mitigation or risk response plan

1. Click the **Risks** tab. In the **Risk Views** group, click **Mitigation/ Response Plans**.
2. Enter the mitigation or response plan name. Summary entries will help you to organize information, but they are not considered a mitigation plan.
3. Select either **Mitigation** or **Response** plan
4. For Response plans, enter an **Outcome Type** and **Outcome** of the response. The outcomes types are populated automatically based not the list of outcome type.
5. Enter the **Cost** of the mitigation or response plan
6. For Mitigation plans, enter default reduction of probability and impact if the mitigation plan is assigned to the risk.
For example, mitigation plan reduces probability on 5% and impact on 10%. If mitigation plan is assigned to the risk that has 45% probability and 30% impact before mitigation, the risk will have 40% probability and 20% impact after mitigation.
7. Enter the mitigation or response plan description. If you double-click on a mitigation/response plan ID, the **Mitigation or Response Plan Description** dialog box will open.

Risk Attributes

About Risks

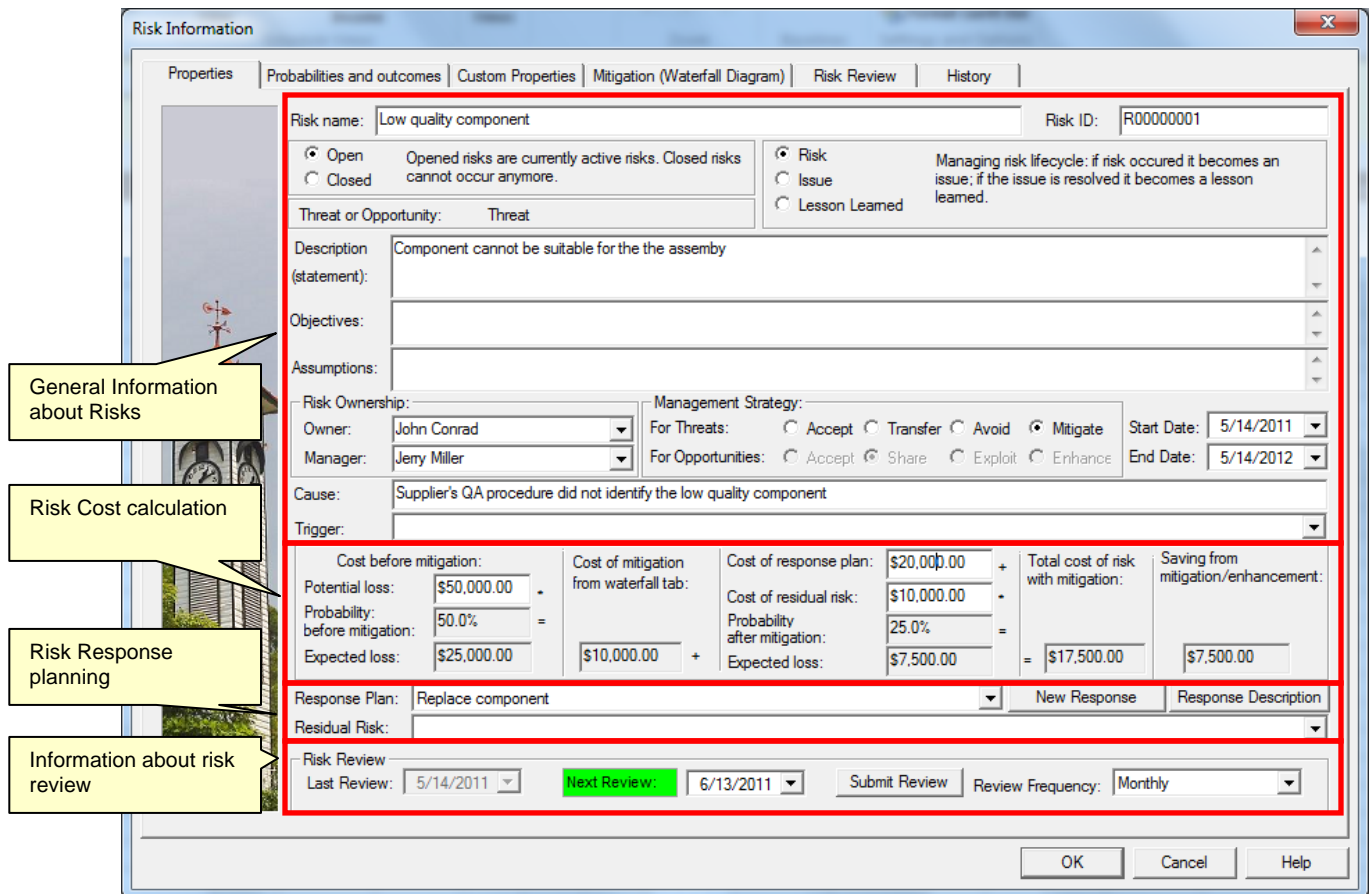
Each risk in RiskyProject can have a number of attributes. Some of the most common attributes are predefined and are found in the Properties tab of the Risk Information dialog box; however, you are not required to complete all of them. The information required should be defined as part of your risk management plan.

General Information includes:

- **Risk Name:** risk names for each risk must be unique. Names are case sensitive.
- **Open/closed risk:** open risks are active risks that may occur. Closed risks are those risks that are no longer active because of risk response or other factors or measures taken. Closed risks may contain important information and because they can become active or information regarding these risks may be useful for management of other risks (Lessons learned) they should not be deleted from the risk register.
- **Risks, issues, lesson learned:** risks are events that may or may not occur and has a probability between 0 – 100%. Issues are events that have already occurred and require a response. Lessons learned are events that occurred in the past and have a history associated with them. When you add new record to the risk register, by default it is a risk.
- **Risk statement, objectives, assumption, cause and trigger:** textual information about risks.
- **Risk ownership:** includes risk manager and risk owner. You may define other custom fields for risk reviewer, recorder, and other participants in risk management process.
- **Risk mitigation strategy:** you can enter mitigation strategies for threats and/or opportunities. Status as a threats and/or opportunities are automatically calculated when you enter risk probabilities and impacts. If the risk is only a threat, you will only be able to enter strategies for threats and vice versa. For more information about threats and opportunities, read **Risk Probabilities and Impacts**.
- **Risk start and end date (risk sunrise and sunset):** dates between which this risk is active.
- **Risk ID:** Risk ID can be automatically generated when you create a new risk. You may sort the Risk Register based on Risk IDs. You can overwrite the automatically generated risk ID. Rules for risk ID generation are defined in **Risk Options**. To view Risk Options, click the **Schedule** tab. In the **Settings** group, click **Options**.



- General Information about risks is a set of attributes that does not affect the calculation of probabilities, impacts, risk cost or mitigation efforts for qualitative risk analysis.
- In the case of quantitative risk analysis, changing a risk from **Open** to **Closed**, from **Risk** to **Issue** or **Lesson Learned** will affect risk probability and impact. For more information about this please read **Assigning Risks to Task and Resources**.
- You define the default risk mitigation strategy and default time between risk sunrise and sunset in the **Default Risk Properties** dialog box (**Risk** tab of the ribbon, **Settings** pane).



Defining General Information about risks

1. Click the **Risk** tab. In the Risk Views group, click **Risk Register**.
2. Double-click on risk ID to open the **Risk information** dialog box.
3. Enter general information about the risks in the **Properties** tab.

Defining Risk Probabilities and Impacts

You define probabilities and outcomes for each risk in the Probabilities and Outcomes tab of the Risk Information dialog box. You must enter risk chance, outcome type, and outcome for each risk. You may only define one alternative. Please remember that risk chance and outcome may not be equal calculated risk probabilities and impact in the following cases:

- For risks with multiple mutually exclusive alternatives
- If you define uncertainties in risk outcome
- In case of quantitative risk analysis (with project schedule)

Defining Risk Probabilities and Impact

1. Click the **Risk** tab. In the **Risk Views** group, click **Risk Register**.
2. Double-click on a risk ID to open the **Risk information** dialog box.
3. Click the **Probabilities and Outcome** tab.
4. Enter **Chance** which will be used to calculate probability.
5. Select **Outcome Type** from drop down list.
6. Select **Outcome** label from drop down list or enter percent .
7. Threat/Opportunity will be calculated automatically if you enter negative outcome.
8. If required, repeat steps 5 -7 for each mutually exclusive alternative.



Use the **Format Risk Matrix** dialog box to toggle between entering risk outcomes as labels, percentages, or both.

About Cost of Risk Calculations

Risk cost calculates the total cost of a risk that takes into account the risk mitigation plans linked to the risk. The Risk cost calculation is performed in the **Properties** tab of the **Risk Information** dialog box.

Risk cost calculation

1. Enter **Potential Loss**: the loss in monetary terms if the risk occurs.

For example, for the risk “low quality component”, the potential loss is \$50,000. It is the cost that you would incur if a low quality component were supplied.
2. **Probability before information** comes from **Probabilities and Outcome** tab of **Risk Information** dialog box. See **Risk Probabilities and Impacts** for more information.
3. **Expected Loss** takes into account that the risk may not occur It is an indicator that helps you to compare the costs of different risks.

Expected loss = Potential Loss * Probability (pre-mitigation)

For example, probability of risk “low quality component” equals 50%. Potential loss equals \$50,000. Expected loss will be \$25,000 = \$50,000 * 50%

4. **Cost of Mitigation** is taken from **Waterfall** tab of **Risk Information** dialog box. It is the cost associated with efforts to reduce the probability and impact of the risk.

For example, mitigation plans will include “Additional QA procedure” and “QA audit of supplier’s operation”, which would cost \$10,000 in total.
5. Even if a mitigation plan is executed as planned, there will still be a cost associated with a risk as it is possible to reduce risk, but not to eliminate it (an exception is when you are able to avoid the risk). The response plan may be executed if the risk occurs and will be calculated using the cost entered for the response plan associated with this risk. This cost is entered **Mitigation and Response** view.

For example, if the risk “low quality component” occurs, this component needs to be replaced with a new one, which would cost \$20,000.

6. **Residual risk** may still occur after the risk response and its cost is calculated as the **Cost of Residual Risk**.

For example, the new component installed as a risk response can still be defective. The residual cost of the risk will be \$10,000.

7. **Probability after Mitigation** comes from **Waterfall** tab of **Risk Information** dialog box. See **Risk Mitigation and Response** for more information.

For example: Risk Probability after mitigation equals 25% as a result of the execution of the mitigation plan “additional QA procedure” probability of risk “low quality component” is reduced two times.

8. **Expected loss after mitigation** takes into account the fact that risk may not occur.

Expected loss after mitigation = (Cost of Response Plan + Cost of Residual Risk) * Probability after information

For example, probability of risk “low quality component” after mitigation equals 25%.
Expected loss after mitigation will be \$7,500 = (\$20,000 + \$10,000) * 25%

9. **Total Risk Cost after Mitigation = Expected loss after mitigation + Cost of Mitigation**

For example: Total cost after mitigation of risk “low quality component” will be \$17,500
= \$7,500 + \$10,000

10. **Saving from Mitigation** is the difference between costs with and without mitigation. If this number is negative mitigation efforts will not lead to cost saving.

Saving from Mitigation = Expected Loss – Total Risk Cost after Mitigation

For example, total cost after mitigation of risk “low quality component” will be \$17,500.
Expected loss \$25,000. Saving from Mitigation is \$7,500. Because this number is positive, it makes sense to perform mitigation efforts.

Assigning Mitigation Plans

You can assign mitigation plans defined in **Mitigation and Response** view to your risks. One risk may have multiple sequential mitigation plans. They are shown as a Waterfall diagram.

Waterfall diagrams can be used to visualize the timing of mitigation efforts over the course of the project.

Risk name: Low quality component

Threat

Mitigation Plan	Date	Proba...	Impact	Score	Cost (Miti...
1 Pre-mitigation	05/14/11	50.0%	72.0%	36.0%	\$0.00
2 Additional QA procedure	05/28/11	30.0%	60.0%	18.0%	\$5,000.00
3 QA audit of the supplier's operation	06/11/11	25.0%	20.0%	5.0%	\$5,000.00

Total mitigation cost: \$10,000.00

Probability and Impact of risk before and after mitigation are shown here.

Select a mitigation plan or subplan from the drop-down list. You can also enter a mitigation plan here and it will be automatically added to the Mitigation and Response view.

Enter probability and impact on each mitigation phase. The score will be calculated automatically.

Enter the date, when mitigation efforts will occur.

Mitigation cost

Colors for the waterfall diagrams are defined by the risk tolerance (see Format Risk Matrix).

- Pre-mitigation probability and impact are results of calculation. Therefore, they cannot be updated in the waterfall tab.
- Probability, impact, and score for the last mitigation effort are converted into the post-mitigation probability, impact, and score and will be shown in the Risk Register.

Viewing waterfall diagrams

1. Open the **Risk Register** view.
2. Double click on Risk ID. The **Risk Information** Dialog box opens.
3. Click the **Mitigation (Waterfall diagrams)** tab.

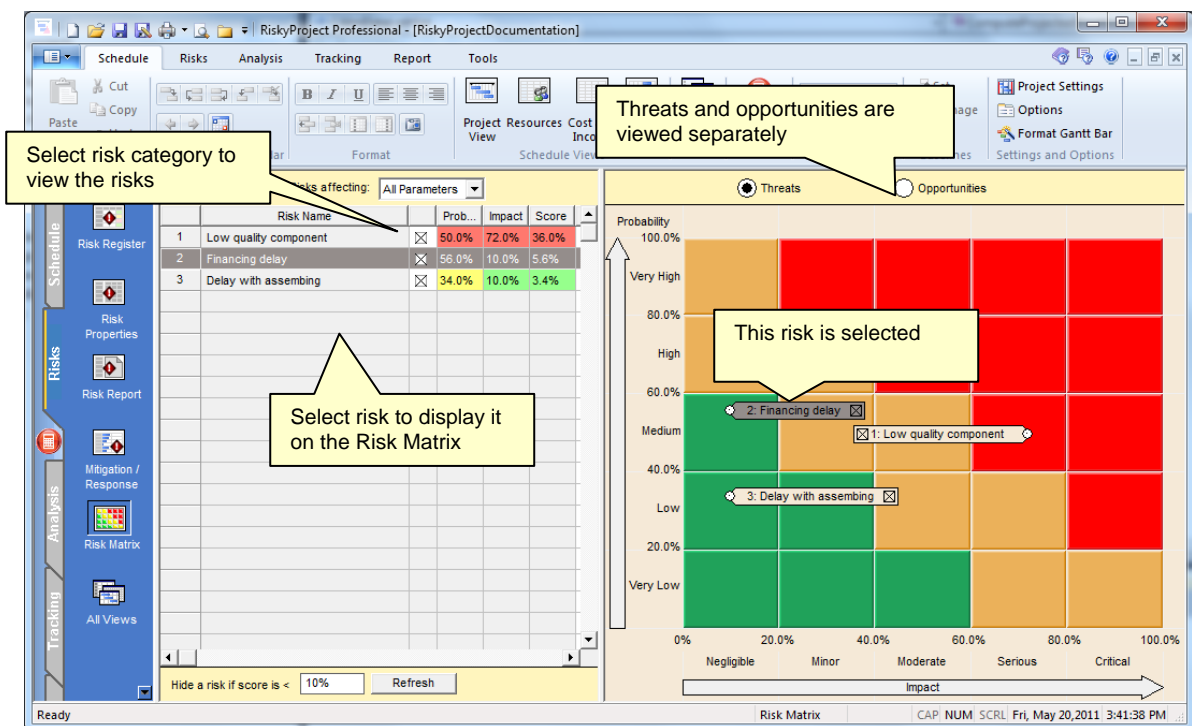
Risk Matrix

The **Risk Matrix** is a tool that allows you to determine the severity of a risk. The Risk Matrix view shows this using the risk probability (y-axis) vs. calculated risk impact (x-axis) of the project risks.

The Risk Matrix view is divided into two sections: a table with a list of risks with their actual calculated values for probability, impact, and score. When you select these risks, they are shown visually on a matrix, which provides a visual comparison of this data put as well as putting each risk into the context of your organization's risk tolerance. Is the risk in the green, yellow, or red areas of the matrix?

Viewing the Risk Matrix

1. Click the **Risks** tab. In the **Risk Views** group, click **Risk Matrix**.
2. Select a risk category from the **Risks affected** drop-down list. Lists of all risks associated with the selected risk category are shown in the table. Select **All Parameters** to view all of the risks in all risk categories.
3. Select the **Threats** or **Opportunities** option at the top of the matrix. You cannot view Threats and Opportunities at the same time.
4. Select the check boxes beside the risk names to view the risks on the Risk Matrix. To hide a risk, simply clear the check box. By default, risks with zero impact cannot be selected. Use the "Hide a risk if Score is <" box to show/hide risks below the entered threshold.



Chapter 3: Managing Project Schedules

RiskyProject for Microsoft Project as a Standalone Application

RiskyProject as a Standalone Application

You can launch RiskyProject directly from the Windows Program menu. When you open RiskyProject, the main Project view appears in which you can enter schedule and risk, perform the analysis, track project performance and report the results.

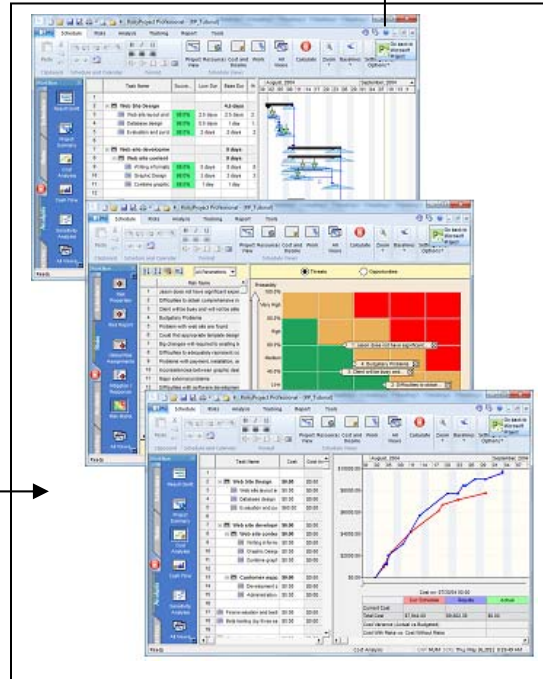
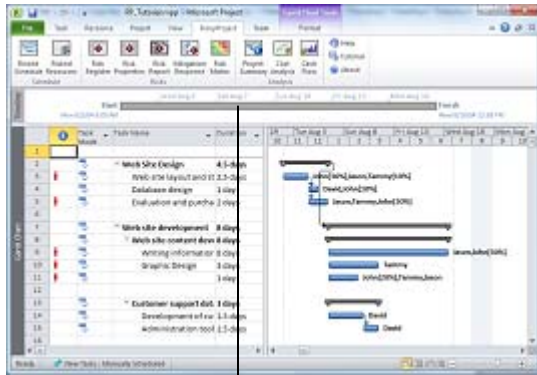
RiskyProject for Microsoft Project

RiskyProject seamlessly integrates with all versions of Microsoft Project from 2003 and higher. When you install RiskyProject, it checks if Microsoft Project is installed on the computer. If Microsoft Project 2003/2007 is installed, RiskyProject adds a toolbar and macro to Microsoft Project. If Microsoft Project 2010 is installed RiskyProject installs ribbon tab and Add-In to Microsoft Project.

Here is how the integration works:

1. The first time you open Microsoft Project after installing RiskyProject for Project, check to see that the RiskyProject toolbar (for Microsoft Project 2003/2007) or ribbon tab (for Microsoft Project 2010) is visible. In Microsoft Project 2003/2007, you can enable or disable the toolbar by clicking on **Toolbars** in the **View** menu. In Microsoft Project 2010, you can enable/disable ribbon tab by clicking on **Options** in the **File** menu. Project Options dialog will come up where you can select **Customize Ribbon**. You can also check the installed RiskyProject add-in by selecting **Add-Ins**.
2. Create a schedule in Microsoft Project.
3. Click one of buttons on the RiskyProject toolbar in Microsoft Project 2003/2007 or RiskyProject ribbon tab in Microsoft Project 2010 to go to selected RiskyProject view. Essentially, RiskyProject offers additional risk related views to Microsoft Project such as a risk adjusted Gantt chart, a Risk Matrix, a risk adjusted cash flow chart and more.
4. Add risks, uncertainties, and other risk-related information in the RiskyProject views.
5. Run a simulation, perform an analysis and generate a report.
6. At any moment, you can go back to Microsoft Project and make changes to your schedule. All changes will be reflected in RiskyProject. However, if you make changes to the deterministic project schedule in RiskyProject, these changes may be overwritten by the Microsoft Project schedule.

Click the **Go Back to Microsoft Project** button in RiskyProject to view original schedule and resources



Use the RiskyProject toolbar or ribbon tab in Microsoft Project to open the selected risk view in RiskyProject.

Microsoft Project

RiskyProject

Mapping custom fields in Microsoft Project to low/high duration/cost fields in RiskyProject

You can use duration or cost fields in Microsoft Project or in any other software that uses Microsoft Project XML schema: duration1, duration2, duration3 ... to define low and high duration in RiskyProject. You can also use duration1, duration2, duration3... fields in XML file to define low and high remaining duration for partially completed tasks.

You can use cost1, cost2, cost3, ... fields in XML file to define low, base, and high cost.

To use these fields, you must map them to the corresponding fields in before you import the schedule into RiskyProject. This includes if you are using the RiskyProject toolbar or ribbon in Microsoft Project:

To map xml fields:


1. Click the **File** tab and choose **Import > Map XML File Fields...**
2. Select the XML fields associated with low/high duration and cost, in RiskyProject. Click **OK**.

Once you define mappings, it will stay in the system registry for all projects transferred from Microsoft Project to RiskyProject.

Creating Projects

Creating a new project

The original view for a new document is defined in the **Options, View** tab. The default view can be the last view in the previous RiskyProject session.

1. Click **File**  and then **New**. The new project file opens.
2. To save project click the Save button and type in a project name.




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- In addition to projects files created in RiskyProject, you can also open files that have been saved as a Microsoft Project XML or MPX format. Microsoft Project XML is the industry standards for project management software and is supported by Microsoft Project, Oracle Primavera, and many other project management software applications.
 - MPX format is a legacy Microsoft Project format supported by many applications. MPX format may not contain some scheduling information fields. For example, it does not distinguish between material and work resources.
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Importing existing project schedules

You can import existing project schedules from Microsoft Project, Primavera and other project management tools using a variety of file formats.

Importing Microsoft Project files

You can import Microsoft Project files using MPX, or XML formats.

1. Click **File**  and then **Open**. The **Open File** dialog box opens.
2. Select the format that the project file is in from the **Files of type** drop-down list.
3. Select the Microsoft Project file format that you just saved.
4. Click **OK**.



You can use the RiskyProject toolbar or ribbon in Microsoft Project to transfer your schedule from Microsoft Project to RiskyProject. When you use the RiskyProject toolbar or ribbon, your schedule in Microsoft Project will be associated with risks and uncertainties defined in RiskyProject. Please read “RiskyProject for Microsoft Project” for more information.

Project Tasks

When you first start RiskyProject, the Project view opens. Start the scheduling process by adding tasks. Each task should have a name and a base duration. You can enter this information directly onto the datasheet or using the Task Information dialog box.

Opening the Task Information dialog box

The **Task information** dialog box can be used to enter task parameters (duration, start, finish times, assign resources to tasks, assign risks, etc.). You can open the task information dialog can in invoked using one of the following ways:

- Double click on Task ID
- Right click on task ID and Select Task Information
- Select Task and Click on **Project > Task Information**

Entering task name and duration

When you create a task, the first step is to enter a name and a base duration.

1. Click on the **Task Name** field in the **Project** view.
2. Provide a name for task.
3. Enter a base duration in the **Base Duration** field.

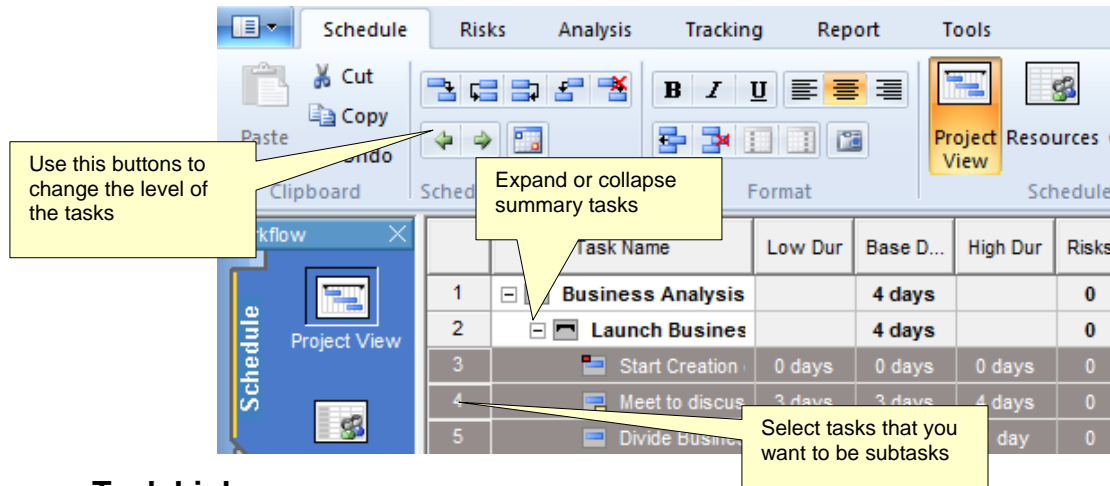


The default Start Time for tasks is defined in the **Calendar** tab of the **Options** dialog box. The start time can be either the current date or a project start date, defined in **Schedule Tab > Project Settings**. You can always change start time using constraints (see **Start, Finish Times and Constraints**). You can also change other default parameters in the **Options** dialog box.

Defining summary tasks and subtasks

Summary tasks represent groups of tasks (subtasks) that can be logically grouped together under a larger task. In large projects with many tasks, this is a useful method of organizing your tasks.

1. Create a task directly above the tasks that you want to group under it. This will become the **Summary Task**.
2. Select the tasks that you want to be the subtasks of the summary task you created in step 1.
3. Click the **Indent** button located on the **Format** toolbar to indent the tasks. The indented tasks are automatically recognized as subtasks of the summary task. If you want to move a task out from under the summary task, select the task and click the **Outdent** buttons. After you click on an **Indent** or **Outdent** button, RiskyProject automatically recalculates the project.

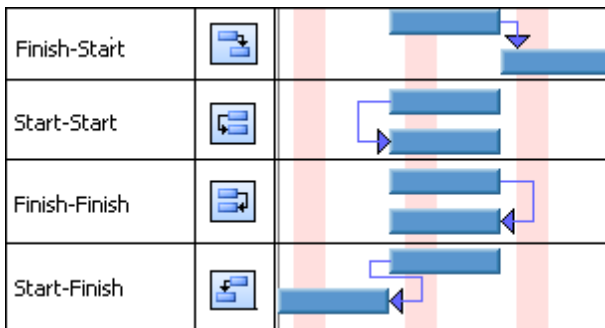


Task Links

All projects require that the WBS tasks be performed in a certain order. These relationships are defined in RiskyProject using the four linking buttons located on the standard toolbar.



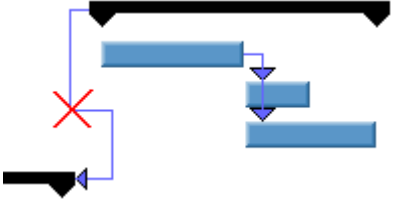

The four types of task dependencies are show in the following figure:



If you want next task to be predecessor of previous task, for example task 5 to be a predecessor of task 3, you will have to use Predecessors tab in Task Information dialog box . You should also use Predecessors tab if you want to define lag time greater than zero.

Remember the following rules:

<p>1. You cannot link summary task to one of its subtasks</p>	
---	--

<p>2. The predecessors of a summary task must have a finish-start or start-start dependency.</p>	
<p>3. You cannot create circular relationships.</p>	

The connecting line between successors and predecessors will be red if there is a scheduling conflict:



Predecessors and Lags

You define information about predecessors and lags in the **Predecessor** tab of **Task Information** dialog box.

You can use the **Standard** toolbar button to link tasks; however, this method of creating task dependencies has a limitations: you cannot link a task (from example Task #5) to a previous task (for example Task #3).



- Sometimes it is convenient to use predecessor tab instead of link toolbar buttons when task has multiple predecessor or if there is a big difference in task Ids between current task and predecessor. For example, it is not convenient to link task number 5 to task number 74 using toolbar buttons.
- You can use Predecessor column within Project view to define or modify predecessors. Text: “1, 2+2 days” would mean than current task has two predecessors (Task 1 and Task 2 with lag 2 days).

Adding a predecessor to a task

1. Select the task to which you want to add a predecessor.
2. Open the **Task Information** dialog box.
3. Click the **Predecessor** tab.
4. On the first row of the grid, click in the **Task Name** cell. A drop-down list appears containing a list of all available tasks or type
5. Select the predecessor from the drop-down list. By default, the predecessor type is **Finish-Start (FS)**.
6. If required, enter a **lag** time.
7. Click **OK**.



- You cannot make a task be a predecessor to itself
 - You cannot create a schedule that it will lead to a circular relationship between tasks
 - You cannot link a summary task to one of its subtasks
 - You cannot link two tasks twice.
-

Constraints

Constraints are limitations that you set on tasks. For example, you can specify that a task must start on a particular date or finish no later than a particular date. In RiskyProject, you can assign one of four constraints to a task:

- As Soon As Possible (default)
- Start Not Early Than
- Must Start On
- Must Finish On

Summary tasks have only “As Soon As Possible” and “Start Not Earlier Than”.

Use the **General** tab of **Task Information** dialog box to add or modify constraints. If you set a constraint to Start Not Early Than, an additional edit box opens in which you set the date for this constraint.

If you assign a constraint other than **As Soon As Possible**, the background color for low, base, and high Start Times or low, base and high Finish Times changes to orange and the icon next to the task name has a red dot added to indicate that the constraint is other than **As Soon As Possible**.

	Task Name	Base Dur		
1	Development	6 days	02/19/09 08:00	02/26/09 17:00

Use constraints to ensure that that task starts or finishes on the specific dates. Use caution when you link tasks with a constrained start or finish time with predecessors because of the potential for scheduling conflicts. In this situation, to avoid scheduling conflicts, set the constraint to **As Soon As Possible**.

Constraints affect both probabilistic and deterministic calculations. If you change the Low or High Start times, the constraint is set to Must Start On, similar to when you change the Base Start time.



- When a task has a constraint other than As Soon as Possible, it may not shift due to the nature of Monte Carlo calculations, even if predecessors have risks and uncertainties. Therefore, use caution when you planning to perform probabilistic calculation with constraints.

- When you enter actual start date of the task as part of tracking input, task would become constrained for the probabilistic calculation only. Start time will not change regardless of risks and uncertainties for predecessors.
-

Adding constraints

Before you add a constraint, you should define the task name and duration.

1. Double-click the task to which you want to add a constraint.
2. Click the **General** tab.
3. From the **Constraints** drop-down list, select a constraint that you want to add to the task.

Managing Resources and Work

Resources are the people and equipment that are assigned or the material that is used to complete a task.

Adding resources

1. Click the **Schedule** tab. In the **Schedule Views** group, click **Resources**.
2. Click on a row.
3. Provide a **Name** (mandatory), **Initials** (optional), and **Rate** (mandatory).
 - You can group resources to define teams using the indent and outdent buttons.
 - Initials and notes are for information only and do not affect the calculations.
 - Rates affect the cost the task to which the resource is assigned. Rates for work resources can be per year, month, week, day, hour and minute. Rates for material resources are per unit (e.g. 10 tons).
4. Select the resource type: **Material** or **Work**.
 - Material label indicates type of material resources (e.g. tons)
5. Maximum units are used to calculate Overallocation of work resources. It is not used for the material resources.



- Use the Resource Information dialog box to assign resources risks.
 - You can add risks to a resource using the Risk tab of Resource Information dialog box. If you have only a few risks assigned to a few resources, this is the preferred method to define resource risks. If you have many resources, we recommend that you add the risks in the Risk Register of Risk workflow tab and then assign them to the resources from one of the risk views.
 - Default rate for resource type Work is defined in **Tools >Options Cost** tab.
-

Assigning resources to tasks

1. On the **Schedule** tab, in the **Schedule Views** group, click **Project View**.
2. Select the task to which you want to assign the resource.
3. Click in the **Resource** field associated with the task.
4. Select a resource from the drop-down list. If you type in a new resource name, it will be added to the list of resources in the resource view. When you add a new resource in this manner, it will be assigned at 100% effort for work resource.

Managing Costs

Cost Calculations in RiskyProject

You can define cost associated for tasks with risks and uncertainties. The example below illustrates how fixed and variable (resource) costs are calculated with respect to tasks and subtasks:

	Task Name	Cost Low	Cost	Cost Hi...	Accrual	Res.Cost	Tot.Cost	Income A...
1	Web design	\$0.00	\$0.00	\$0.00	Start	\$1004.8	\$1604.8	\$0.00
2	Art works	\$0.00	\$0.00	\$0.00	Start	\$864.00	\$1464.0	\$0.00
3	Selection of art	\$200.00	\$200.00	\$200.00	Start	\$800.00	\$1000.00	\$0.00
4	Purchase of ar	\$400.00	\$400.00	\$400.00	Start	\$64.00	\$464.00	\$0.00

	Task Name	Base Dur	Feb 22, '09						
			Th	Fr	Sa	Su	Mo	Tu	
1	Web design	2.2 days	Proj						
2	Art works	2.2 days	Proj						
3	Selection of art	2 days	Graphic Art						
4	Purchase of ar	0.2 days	Purch						

The project schedule includes the summary task “Web Site Design”, the summary task “Art Works”, and subtasks “Selection of art work” (2 days duration) and “Purchase of art work” (0.2 days duration). “Selection of art work...” has base fixed cost \$200 and is assigned to the Graphic Artist with rate \$50.00/hour. “Purchase of art work” has a base fixed cost of \$400 and is performed by Purchaser with a rate of \$40.00/hour. The work is supervised by project manager with rate \$80.00/hour, but is only 10% his time is assigned to this project. It is assumed that a day has eight (8) working hours.

	Resource name	Chart	Type	Initials	Rate	Max.Units	Base Cale...
1	Graphic Artist	<input type="checkbox"/>	Work	G	50.00/hr	100.00%	Standard
2	Purchaser	<input type="checkbox"/>	Work	P	40.00/hr	100.00%	Standard
3	Project Manager	<input type="checkbox"/>	Work	P	80.00/hr	100.00%	Standard

The Fixed cost for the summary task is calculated as the sum cost of all subtasks, which do not have subtasks under them. Resource costs for summary tasks are calculated as cost of all resources assigned to summary task plus resource cost of all subtasks.

A. Calculation of base fixed cost for summary task “Web Site Design”:

Base fixed cost for “Selection of art work...” (Task 3) = \$200.00

Base fixed cost for “Purchase of art work” (Task 4) = \$400.00

Total = \$600.00

B. Calculation of variable (resource) cost for summary task “Web Site Design”:

Resource cost for project manager = 17.6 hours * \$80/hr / 10 = \$140.80

Resource cost for Selection of art work (Task 3) 16 hours * \$50/hr = \$800.00

Resource cost for Purchase of art work (Task 4) = 1.6 hours * 40/hr = \$64.00

Total = \$1004.80

Chapter 4: Quantitative Risk Analysis

Assigning Risks to Tasks and Resources

Risk Assignments

Risks must be assigned to calculate their impact. If risk is not assigned to any tasks or resources it will remain in risk register, but probability, impact, and score will not be shown.

RiskyProject has two types of risks assignment:

- **Global Risk Assignments** – Global risk assignment are those risk assignments, which have a chance of affecting the project as a whole and are not limited to specific tasks or resources. For example, political or weather risks would be assigned as global.
- **Local Assignment** – Local risk assignments are those risks that have a chance of affecting only specific tasks or resources. A local risk assignment can affect more than one task or resource. For example, risks affecting the delivery of specific equipment for a certain phase of a project would be assigned local.

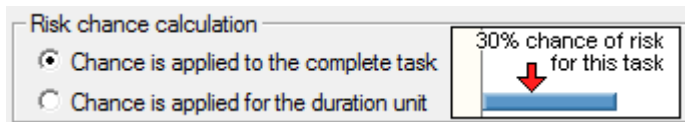
You can edit or view risk assignments in the following dialog boxes and views:

View	Dialog/Tab	Local or Global	Assigned to tasks or resources
Global Risk Assignment View		Global Risks. Local risks can be assigned from global risks	Both task and resources
Risk Register	Risk information dialog (double click on Risk ID), Assignment tab	Both local and global risk	Both task and resources
Any view with task information (Project View, Result Gantt, etc.)	Task information dialog (double click on Task ID), Risk tab	Local risks	Task
Resource View	Resource information dialog (double click on Resource ID), Risk tab	Local risks	Resources

Risk Attributes for Quantitative Risk Analysis

Each risk has the following information related to quantitative analysis.

- Risks can be assigned to Tasks or Resources
- Risks are defined by the **chance of occurrence** (from 0% to 100%). The chance can be defined per task (by default) or per duration unit. For example, if there is a 30% chance that task can be restarted per day. If task duration is 2 days, the chance of the risk occurring per task is 60%. This chance calculation option is defined for **all tasks and resources** for the project in the **Risk** tab of the **Options** dialog box:



- Each risk has a different **outcome types**. Outcome types can be schedule and cost related and non-schedule related, which you can customize using the Risk Outcome dialog box. Standard schedule-related risk outcomes are shown in the table.

Outcome Type	Description	
No Impact	This is for information only and has no impact on project schedule	
Relative Delay Fixed Delay	Durations will be expanded in the period, defined in the Result field regardless of, when the risk occurs. If the Result is negative, the task duration will be reduced.	<p>The diagram shows a blue task bar. A red arrow labeled "Risk" points down to the bar. A bracket below the bar indicates a 35% increase in duration compared to the "baseline" bar.</p>
Relative Cost Increase Fixed Cost Increase	Task related fixed costs are increased by the amount, defined in the field Result regardless of when the risk occurs. If the Result is negative, costs are reduced.	
Restart Task	Tasks are restarted from the moment the risk occurs. As a result, the task duration is increased.	<p>The diagram shows a blue task bar. A red arrow labeled "Risk" points down to the bar. A second, longer blue bar starts from the end of the first bar, indicating an increase in total duration.</p>
End Task	Tasks are successfully completed when the risk occurs. As a result, the task duration is reduced.	<p>The diagram shows a blue task bar. A red arrow labeled "Risk" points down to the bar. A shorter blue bar is shown below it, indicating a reduction in duration.</p>
Cancel Task	Tasks are canceled when the risk occurs. As a result, the task duration is reduced and the task is marked as canceled.	
Cancel Task + all successors	Tasks and all its successors are canceled when the risk occurs. As a result, the task duration is reduced and the task and all its successors are marked as canceled.	<p>The diagram shows a blue task bar and a successor task bar. A red arrow labeled "Risk" points down to the first bar. Both bars are shown as shorter and with a diagonal line through them, indicating they are canceled.</p>
Execute Response Plan	Result field for this risk contains a drop down list with mitigation plans. They come from Risk Mitigation or Response view. If task has multiple local and global risks, which require execution of the particular mitigation or	

	response plan, this plan will be executed only once.	
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Assigning local and global risks

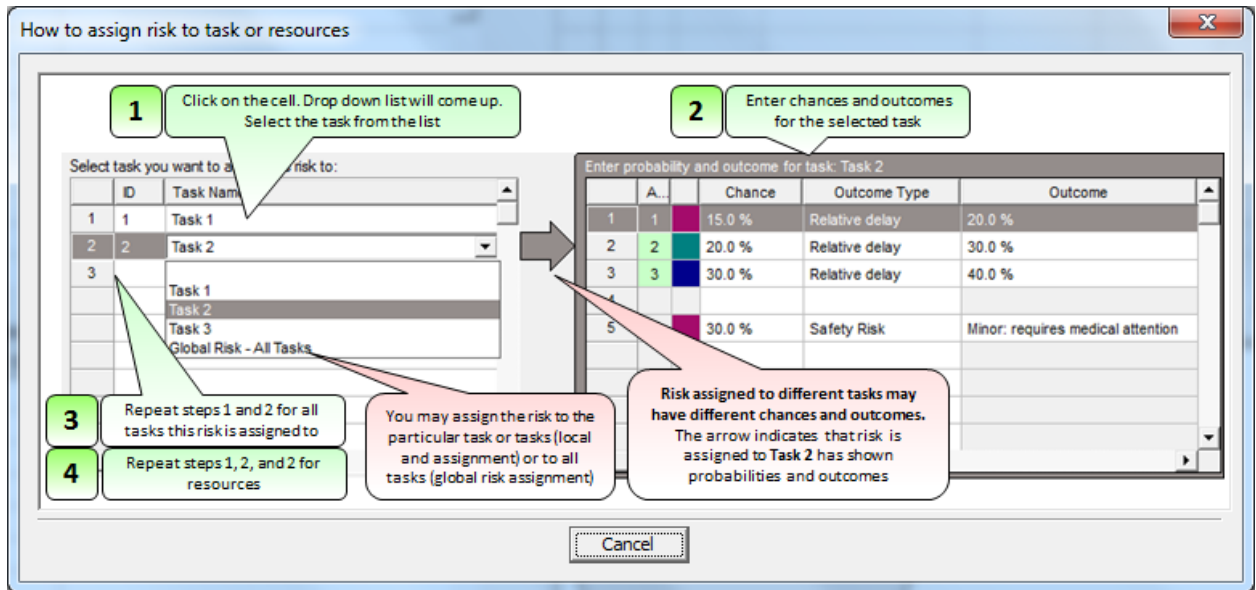
Once you have added your risks you can start assigning your local risks to tasks and resources. You cannot assign the same local risk to both a task and a resource. RiskyProject offers a number of ways how risks can be assigned to task and resources.

Method 1: Assigning global and local risks using risk register

This is a preferred method for assigning risk in complex project. This method is also useful when you edit risk assignment, for example for mitigation planning. You will be able to view all risk assignments in one place. With the risk register, you can assign both local and global risks.

1. Open the **Risk Register**.
2. Double-click on the risk to which you want to add properties.
3. Click the **Assign to tasks or resources** tab.
4. Depending upon whether you are assigning local or global risk to a task or resource click on the first empty row in either the Tasks or Resources tables.
5. Select the task or resource from the drop-down list. You may select “All Tasks” or “All Resources” for global risk assignments. If you select a specific task or resource, it will have a local risk assignment.
6. Click the row ID cell the item you just select to enable the **Selected assignment** table to the right. This is where you define the risk assignment.
7. Click in the **Chance** cell to start entering the **Chance, Outcome Type, and Outcome** of the risk.
8. Click in an additional row to enter a mutually exclusive risk alternative. A risk alternative is a different outcome from the same event.

This shows how you assign risks to tasks in the Risk Register. Click the How to Assign Risk button to view this directly in the application..



- Use the Pie Chart for mutually exclusive risk alternatives to as a guide for how they affect the overall chance that the risk will occur.
- If you do not enter chance, outcome, results, or moment of risk assignment will not be saved even you selected task or resources.

Method 2: Assigning Local Risks Using the Task Information dialog box and Resource Information Dialog Box

You can define task risks in the **Risk** Tab of **Task Information** dialog box. All risks entered here are “local risks” and will not appear in the **Global Risk Assignment** view. It is a preferred method if you want to assign few different risks to few separate tasks and resources.

1. Open the **Task Information** or the **Resources Information** dialog box.
2. Click the **Risks** tab.
3. Double click on **Risk Name** field and type in the name of the risk.
4. Use the **Indent/Outdent** buttons to create hierarchical structure of risks. This simplifies the enabling and disabling of risks. If you enable a summary risk, all of its risks are enabled and vice versa.
5. In addition to the above steps, you can clear the **Apply global risks to this task** check box (it is selected by default) if you do not want to include this task in global risk calculations.



- You cannot add risks to summary tasks.
- Ensure that you have clearly defined your risks and uncertainties. For example, if you have already accounted for risk using a range (Base, High, and Low) of durations; do not add this as a risk as it is accounted for twice in the calculations.

Use indent/outdent buttons to create summary risks

	Risk name	A...	Chance	Outcome Type	Outcome	All	Dur	Cost
1	Difficulties to obtain comprehen:	<input checked="" type="checkbox"/>						
2	Difficulties to obtain compreh	<input checked="" type="checkbox"/>	1 10.0 %	Relative delay	30.0 %			
3	Difficulties to obtain compreh	<input checked="" type="checkbox"/>	2 10.0 %	Relative delay	50.0 %			
4		<input type="checkbox"/>						
	Difficulties with HTML edi	<input checked="" type="checkbox"/>	25.0 %	Relative delay	5.0 %			
		<input type="checkbox"/>						
		<input type="checkbox"/>						
		<input type="checkbox"/>						
		<input type="checkbox"/>						

Uncheck this box if you don't want to apply global risks to this task

Apply global risks to this task (see Global Risk Assignment View)

OK Cancel Help



You can copy and paste risks between tasks. Right-click and choose **Copy Risks** to copy a risk. In the target task's risk list, right-click and choose **Paste Risk** to add the risk to the task.

Managing Uncertainties

If you have good historical statistical data that is analogous to a particular in your project, we recommend that you use these data to model uncertainty in your project as opposed to risk events. Be aware of double-counting risk and uncertainty as most of the uncertainty in a project is due to the probability of risk events occurring.

To define uncertainties:

1. Define a 3-point estimate for any of task parameters: cost, duration, and start time. 3 points estimates for work will be calculated automatically based on uncertainty in duration. You may also define 3 points estimates for the lag.
2. After you define 3-points estimates, a triangular statistical distribution will be assigned automatically.

Adding 3-point estimates for task duration and start times

1. On the **Project** view, double-click on the task ID.
2. Click the **General** tab.
3. Select a **Base**, **Low**, and **High** dates for **Start Time**.
4. Select a **Base**, **Low**, and **High** values for **Duration**. By default when you enter a value for duration, the default values for Low and High are calculated based on the defaults set in the Duration Options.
5. Click **OK** to save the estimates.

Adding 3-point estimates for task cost

1. On the **Cost** view, select the task to which you want to add cost estimates
2. Enter cost data for **Cost Low**, **Cost**, and **Cost High**. By default when you enter a value for Cost, the default values for Low and High are calculated based on the Cost defaults set in the Cost Options.
3. Click **OK** to save the estimates.

Assigning Low and High Estimates for Duration and Cost for Group of Tasks

You may assign statistical distribution for duration and cost for a selected group of tasks:

1. Open the **Project** View.
2. Select a group of tasks.
3. Right-click on a Task ID.
4. Select **Set Low/High Duration** or **Low/High Fixed Cost**.
5. Enter fixed values and a coefficient to calculate **Low and High duration** or cost based on **Base duration or Cost**.
6. Select a distribution from the drop-down list: uniform or triangular

Chapter 5: Analyzing Project Results

Calculations

RiskyProject has two types of calculations:

- **Deterministic calculation of current schedule** - The default calculation automatically performed when you modify a project schedule. As this calculation occurs automatically, you do not need to press the Calculation button. This calculation uses the Base input parameters (duration, start time, lag) without calculating the effect of risk or uncertainty.
- **Probabilistic (Monte Carlo simulations)** – Use this to calculate the project schedule and costs with uncertainties and risks.
- Automatic Monte Carlo simulations for small tasks are enabled by default.

Enabling or disabling automatic Monte Carlo simulations for small projects

1. Click the **Schedule** tab. In the **Settings and Options**, click **Options**. The Options dialog box opens.
2. Click the **Calculations** tab.
3. From the **Default Calculation for Small Projects** option box, select one of the two options:
 - Current Schedule Calculation only
 - Probabilistic Calculation (Monte Carlo simulations)
4. Click **OK**. RiskyProject automatically determines which project is small based on your computer's performance and the size of the project.

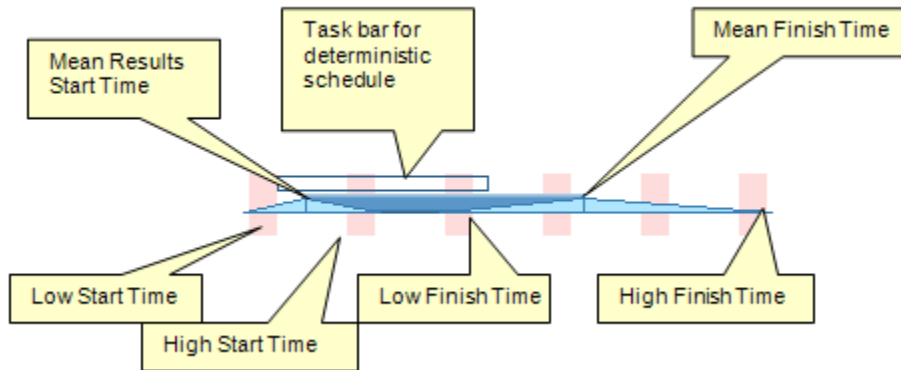
Running probabilistic calculations

Click the **Calculation** button. You may cancel the probabilistic calculation at any time; however, if number of simulations performed is less than 20, no probabilistic results will be calculated.

Analyzing Results

Results Gantt Chart

RiskyProject displays the start and finish ranges of each task in the Result Gantt view. The calculated project and original schedules are shown in the same Gantt chart. You can use the task bar for deterministic current schedule to compare deterministic and probabilistic schedules.



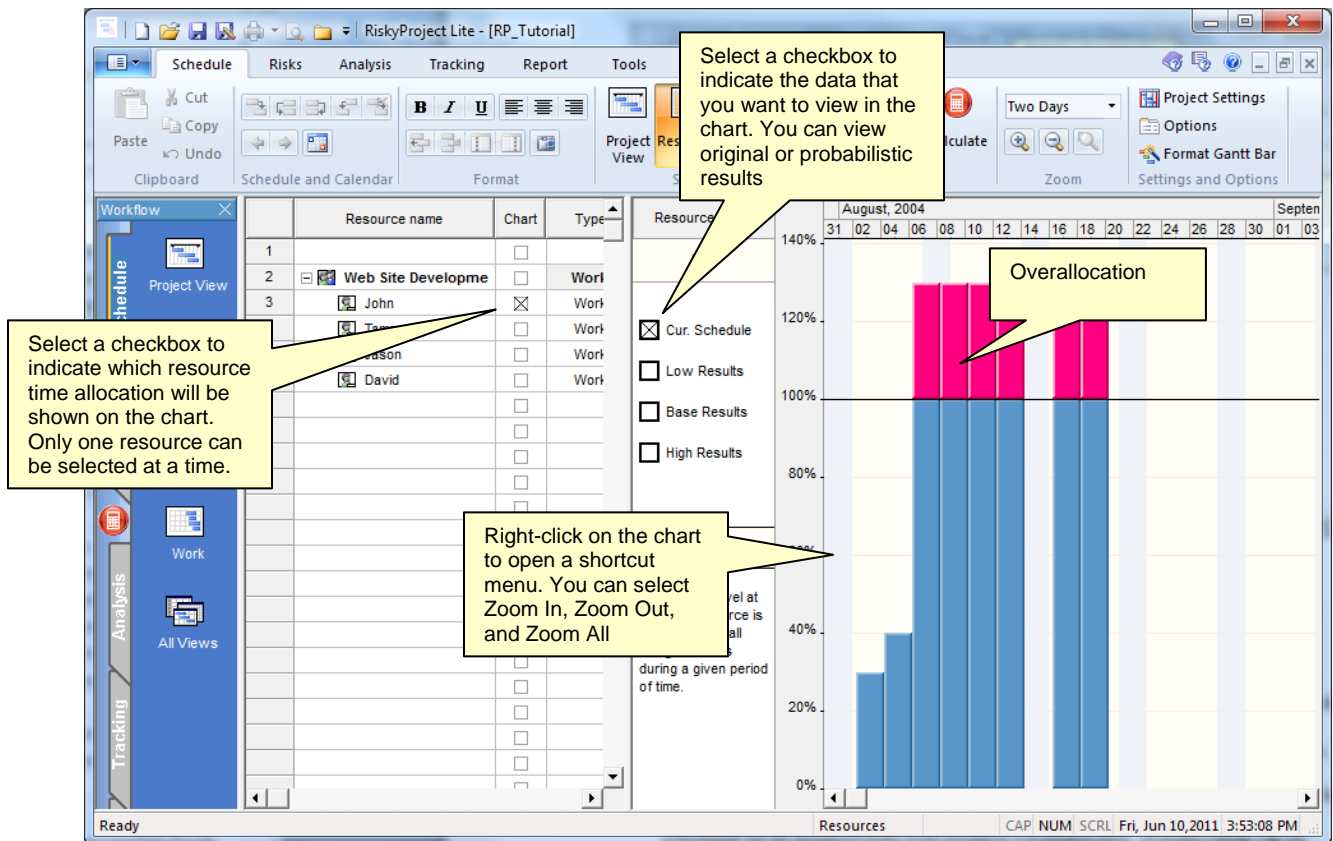
You can display Result Gantt associated only with low (optimistic) and high (pessimistic) results.

Showing or Hiding Low/High Results

1. Right-click on the chart and a shortcut menu opens.
2. From the shortcut menu, choose one of the following viewing options:
 - Show Low/High Results
 - Show Low Results
 - Show High Results
 - Show Current Schedule.

Resource Allocation

The Resource chart shows the time allocation for a selected resource.



For the resource chart to open, two conditions must be met:

- You must select the **Chart** check box for a resource in the resource sheet.
- The selected resource must be assigned to a task.

You can select four different types of resource charts:

- **Peak units:** The highest level at which a resource is scheduled for all assigned tasks during a given period.
- **Work:** The total number of hours a resource is scheduled for all assigned tasks during a given period.
- **Overallocation:** A resource is over allocated when it has more work assigned than can be done in the resource's available time. Overallocation is number of hours a resource is scheduled for all assigned tasks over resource's available time. Overallocation can be presented only for work (not material) resources.
- **Percent allocation:** The percentage of a resource's capacity taken up by all of its assigned tasks during a given period. Percent allocation is only available for work (not material) resources.

Selecting the resource chart type

1. Select the **Chart** check box associated with the resource.
2. Right-click on the **Resource** chart and choose one of chart types from the shortcut menu.



Overallocation for work resources is calculated based on Maximum Units, defined for the resource in the Resource view. For example, if maximum units are 150%, overallocation can be work above 150%.

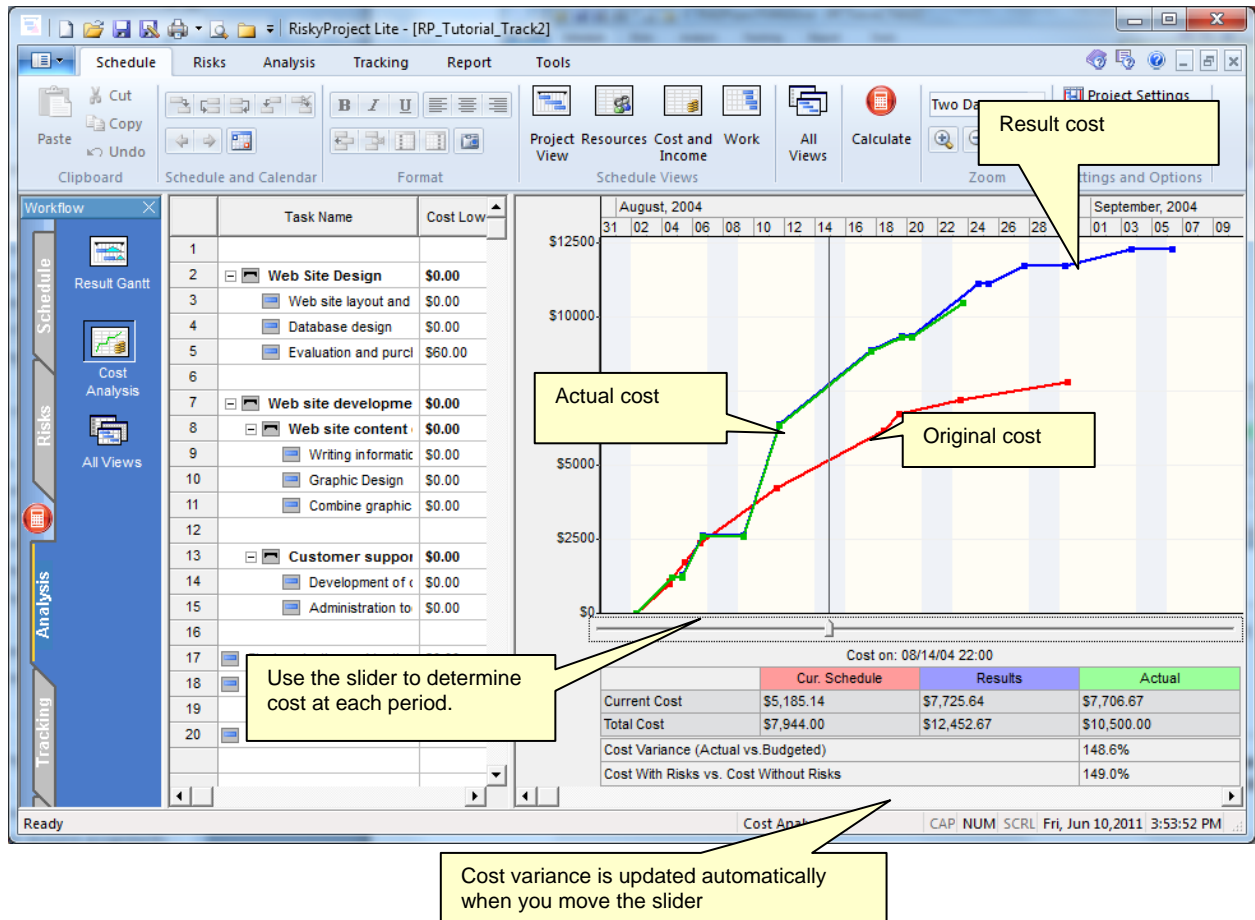
Analyzing Cost

Use the **Cost Analysis** view to analyze cost on each stage of the project. The Cost Analysis view has up to three cost diagrams:

Cost diagram	Description	Color	When it is shown
Current schedule (budgeted) cost	Cost diagram with current project schedule (no risks)	Red	Always when cost for any task is defined
Result cost	Cost diagram with risk and uncertainties (calculation results)	Blue	Shown after calculation if uncertainties are defined
Actual cost	Cost diagram represents actual cost	Green	Shown after calculation if uncertainties are defined and actual cost is available (either entered directly or percent done for at least one task is defined)

You may use the slider to determine:

- Cost Variance (actual vs. budgeted cost)
- Cost with Risks and uncertainties vs. Current schedule (budgeted) cost.



- Use the shortcut menu to manipulate with chart. In particular, instead of presenting a **line** chart of current schedule, result, and actual cost, you can present an **area** chart by choosing **Fill Chart** from the shortcut menu.