# RiskyProject Lite 7

**Project Risk Management Software**

# Getting Started Guide

## Intaver Institute Inc.

# Chapter 1: Introduction to RiskyProject

# 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 lessons 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 there is no project data (cost or schedule), RiskyProject performs qualitative risks analysis.
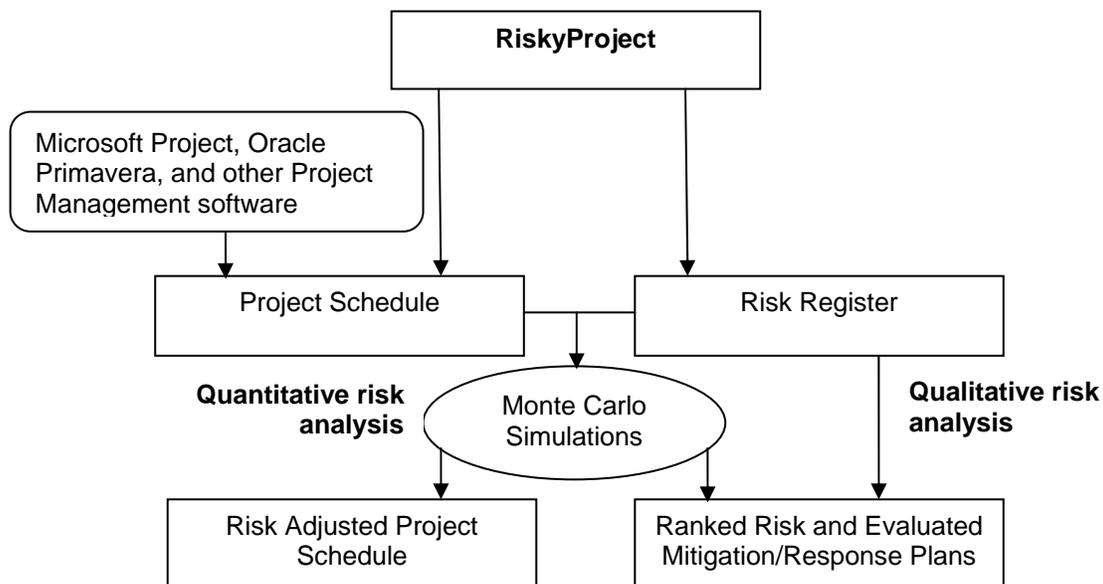
RiskyProject seamlessly integrates with Microsoft Project or can run as a standalone application. RiskyProject integrates with other project management software such as Oracle Primavera.

# Qualitative vs. Quantitative Risk Analysis

RiskyProject performs both qualitative and quantitative risk analysis.

A typical **qualitative risk analysis** workflow is used to:

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 is used to:

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 a project schedule.

**Adding or removing
project schedule**

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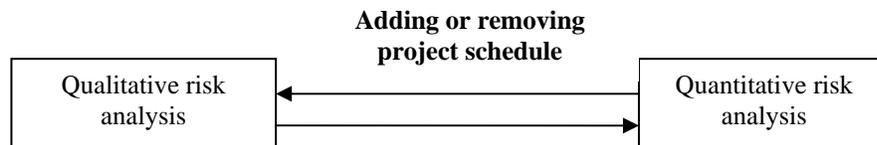
Due to the nature of qualitative and quantitative analysis the results can be different even with the same risks, particularly for schedule-related risks affecting project duration and cost.

# 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:



**Use the Risk Register to:**

1. View risks with their attributes such as probabilities, impacts, scores, and properties.

2. Create a risk register hierarchy based on:

   - Risk categories
   - Open/Closed risks
   - Risk/Issues/Lessons Learned
   - Risks assigned to managers
   - Risks assigned to owners
   - Threat mitigation or opportunity mitigation strategies
   - Assigned/Unassigned Risks (active or inactive)

- Hidden and Visible risks (available in RiskyProject Enterprise only, see *RiskyProject Enterprise User Guide*)

3. Rank risks based on risk score.

4. Sort risks alphabetically or using risk IDs.

5. Filter risks based on risk properties: Open, Closed, Risk, Issue, or Lessons 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 |
|---|---|---|---|

### Adding risks to the Risk Register

1. Click the **Risks** tab. On the **Risk 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 a single risk or multiple risks.

3. Right-click on the Risk ID and choose **Delete Risk** from the shortcut menu.

### Updating risk properties for individual risks

To modify the risk properties using the Risk Register:

1. Open the Risk Register.

2. Click on the risk properties and make desired changes.

### Updating risk properties for a group of risks

You can define the same risk properties for a group of risks at the same time.

1. Open the Risk Register.

2. Select the risks to which you would like to add properties.

3. Right-click on the risk **ID** and select **Risk Properties**.

4. For each property, add a value as required. If properties are different for the selected risks, you will be shown with \*\*\*\*\*\*\*.

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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 risks inside the Risk Register.

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## 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 are:

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

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

You can customize the risk categories in the Risk Categories 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. While every risk category must have a least one outcome, they can have 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 Categories dialog box.

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The set of risk outcome 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.

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## 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 indicate 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**:
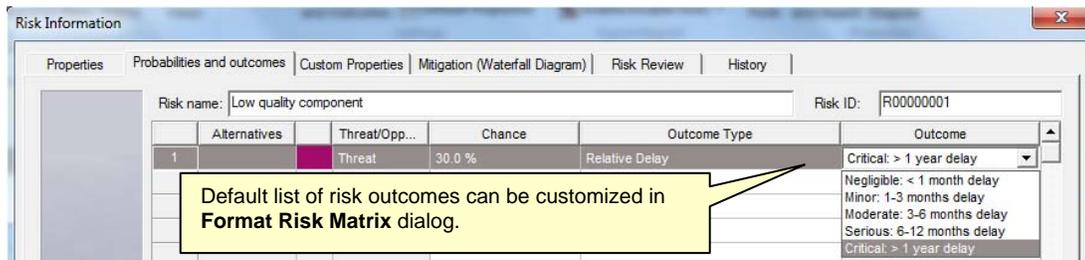


Outcome types can be a label (e.g. Critical > 1 year delay) or a percentage (e.g. 5%), or a combination of both. You can set how you want to enter and view risk outcomes in the **Format**

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**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.
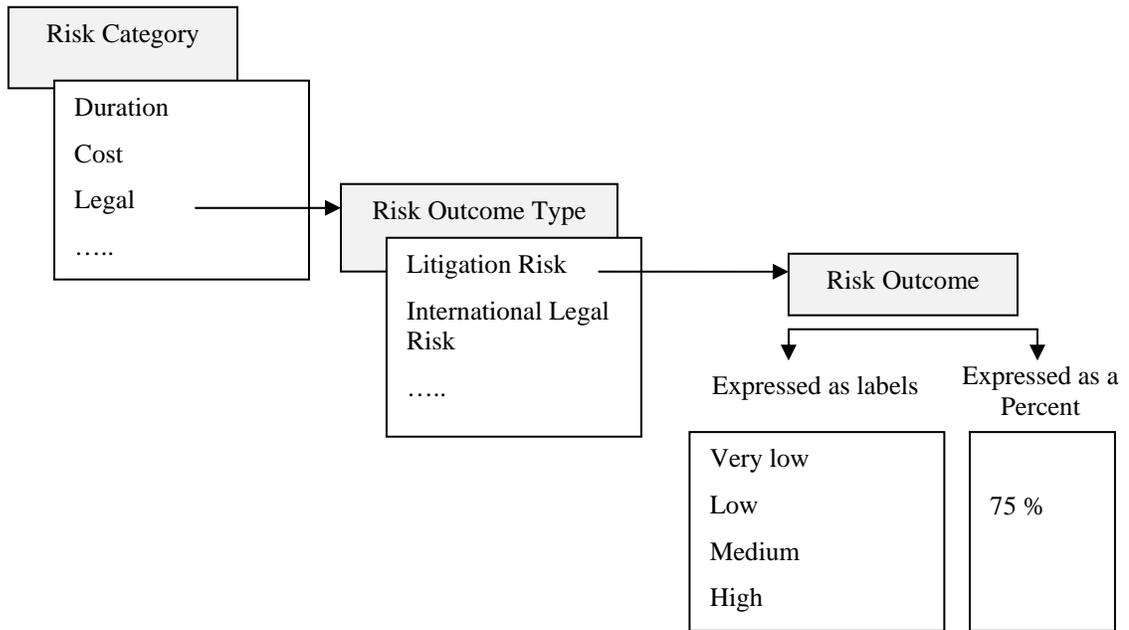


## Threats and Opportunities

Risks can be threats, opportunities or both. Threats and opportunities are defined for risk assignment depending on results of the risk outcome. Negative risk outcomes mean opportunities.

## 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.

The diagram below shows the difference between risk chances and outcomes (input parameters) and risk probabilities and impacts (output parameters):

| Risk 1 has multiple outcomes: for different categories and different mutually exclusive alternatives |
|---|

| Outcome | Chance | | Integrated probability and impact for all parameters | |
|---|---|---|---|---|
| Safety – 70% | Safety – 30% | Calcu lation | Impact - 70% | Probability – 30% |
| Schedule – 50% | Schedule – 30% | | | |
| Cost – 50% | Cost – 30% | | | |
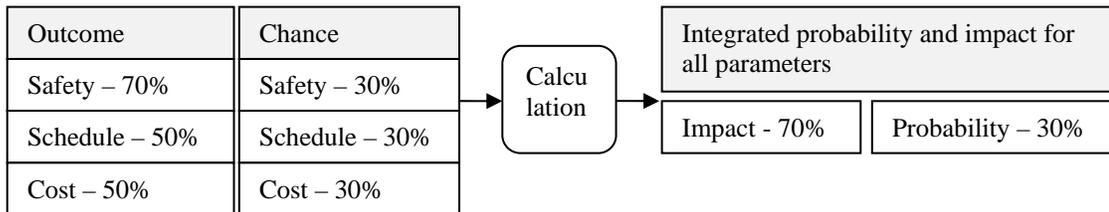
## Risk Score

Risk score is a calculated parameter that equals probability multiplied by impact. Risk score is calculated for each risk category as well as all risk categories.

## Original, Pre-, and Post-Mitigation Probabilities, Impacts and Scores

RiskyProject calculates three sets of probabilities, impacts and scores for each risk category as well as for all categories:

1. **Original**: when risk chance and outcome are defined. This information is saved in Risk History. If you want to change original probabilities, impacts and scores you would need to make modifications in Risk History using the History tab on the Risk Information dialog.

2. **Pre-mitigation or Current**: reflects most recent changes to chance and outcomes. If you simply enter chance and outcome, your original probability, impact and score will be represented as Pre-mitigation or Current value.

3. **Post-Mitigation**: Pre-mitigation probability, impact and score, with changes to do mitigation plans.

You can view all sets of probabilities, impacts, and scores in the Risk Register.

## Risk Properties

Risk Properties are other risk attributes, which 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 risk 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.

A mitigation or/and response plan must be assigned to a particular risk. Please read "Assigning Risk Response Plans" and "Assigning 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 outcome types are automatically populated based on the list of outcome types.

5.  Enter the **Cost** of the mitigation or response plan

6.  For Mitigation plans, enter the default reduction of probability and impact if the mitigation plan is assigned to the risk.
    For example, a mitigation plan reduces probability on 5% and impact on 10%. If a 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.

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A mitigation or response plan can be assigned to multiple risks. The cost of mitigation or response plans will be included with each risk.

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### Creating Summary and Sub-plans

Mitigation plans can be composed of Summary plans with associated sub-plans. This can be very useful if your mitigation plans have several activities or steps that have distinct costs and outcomes that you want to monitor items separately.

Summary plans have names only and do not have Plan Type, Outcome Type etc. Summary and sub-plans are defined using the Indent and Outdent commands similar to Summary and Subtasks on the Gantt Chart.

**To create a sub-plan:**

1.  Enter a name for the **Summary** plan.

2.  Click the row below the plan

3.  Enter a name for the plan.

4. Right-click on the plan and on the shortcut menu click **Indent**. The plan now becomes a sub-plan of the mitigation plan.

5. Enter information for the sub-plan.

# 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:** the risk name 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 should not be deleted from the risk register..
- **Risks, issues, lessons learned**: risks are events that may or may not occur and have 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 a new record to the risk register, by default it is a risk.
- **Risk statement, objectives, assumption, cause and trigger:** contain 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 the risk management process.
- **Risk mitigation strategy:** you can enter mitigation strategies for threats and/or opportunities. Status of 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 a particular 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**.

## Risk Probabilities and Impacts

There are two ways probabilities and impacts can be defined in RiskyProject:

- You can define chance and outcome for each risk in the Probabilities and Outcomes tab of the Risk Information dialog box.
- You can also define risk chance and outcome directly in the Risk Register grid. However, in this case, risk cannot be assigned to any tasks or resources. If risk is already assigned to at least one task or resource, you will not be able to modify chance and outcome using the grid and the Risk Information dialog box will appear. This method is preferable for qualitative risk analysis and risk management.

### Defining risk chances and outcomes in the Risk Information dialog box

You must enter the 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 to calculated risk probabilities and impacts 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)

**To define risk chances and outcomes in the Risk Information dialog:**

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 dropdown list.

6. Select **Outcome** label from dropdown list or enter percent.

7. Threat/Opportunity will be calculated automatically if you enter a negative outcome.

8. If required, repeat steps 5 -7 for each mutually exclusive alternative.

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

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## Defining risk chances and outcomes in the Risk Register grid

By default, the Risk Register's columns don't allow you to enter risk chance and outcome directly. You need to define appropriate columns first:

1. Within **Risk Register** or **Risk Properties** views, right click on the header of the column next to which you want to define that column in order to enter chances and outcomes.

2. Click on **Insert Column Before** or **Insert Column After**.

3. Select field from the **Field Type** dropdown list. Here is the list of columns which can be presented in the Risk Register:

| Field | Description | Calculated (Read Only) |
|---|---|---|
| Impact Original | Calculated impact of risk when it is first entered in the Risk Register | Calculated |
| Impact Pre-mitigation | Current calculated risk impact | Calculated |
| Impact Pre-mitigation | Current calculated risk impact with minus changes due to mitigation efforts factored in | Calculated |
| Impact: Cost | Risk Outcome: Cost Category, current or pre-mitigation | |
| Impact: Cost, Post-mitigation | Risk Outcome: Cost Category, post-mitigation | |
| Impact: Environment | Risk Environment: Cost Category, current or pre-mitigation | |
| Impact: Environment, Post-mitigation | Risk Environment: Cost Category, post-mitigation | Calculated |

Columns for Chance (Probability) and Score are defined the same way. After you define appropriate columns, they can then be used to enter the risk chance and outcome for each category.

# 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 was supplied.

2. **Probability Before Mitigation** comes from the **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 is 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 Plans" 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 in to 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 the **Mitigation and Response** view to your risks. One risk may have multiple sequential mitigation plans. They can be shown as a Waterfall diagram.

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



- Pre-mitigation probability and impact are the 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.

- You can view Planned and Actual risk mitigation efforts. Actual mitigation efforts are taken from the History tab on the Risk Information dialog.

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**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.

4. Enable or disable Actual and Planned mitigation lines using check boxes on the left bottom corner.

# Risk Matrix and Risk Trend Chart

Risk Matrix and Risk Trend views allow you to determine the severity of a risk and analyze how risks are changing over time:

- 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.
- The **Risk Trend** shows how project risk change over time. The Risk Trend can be presented as bar chart, stack area chart, or in table format (**Total Risks**).
- The **Risk History** shows how the probability and impact of an individual risk has changed over time.
- The **Risk Monitor** shows the number of risks per cell in the risk matrix.
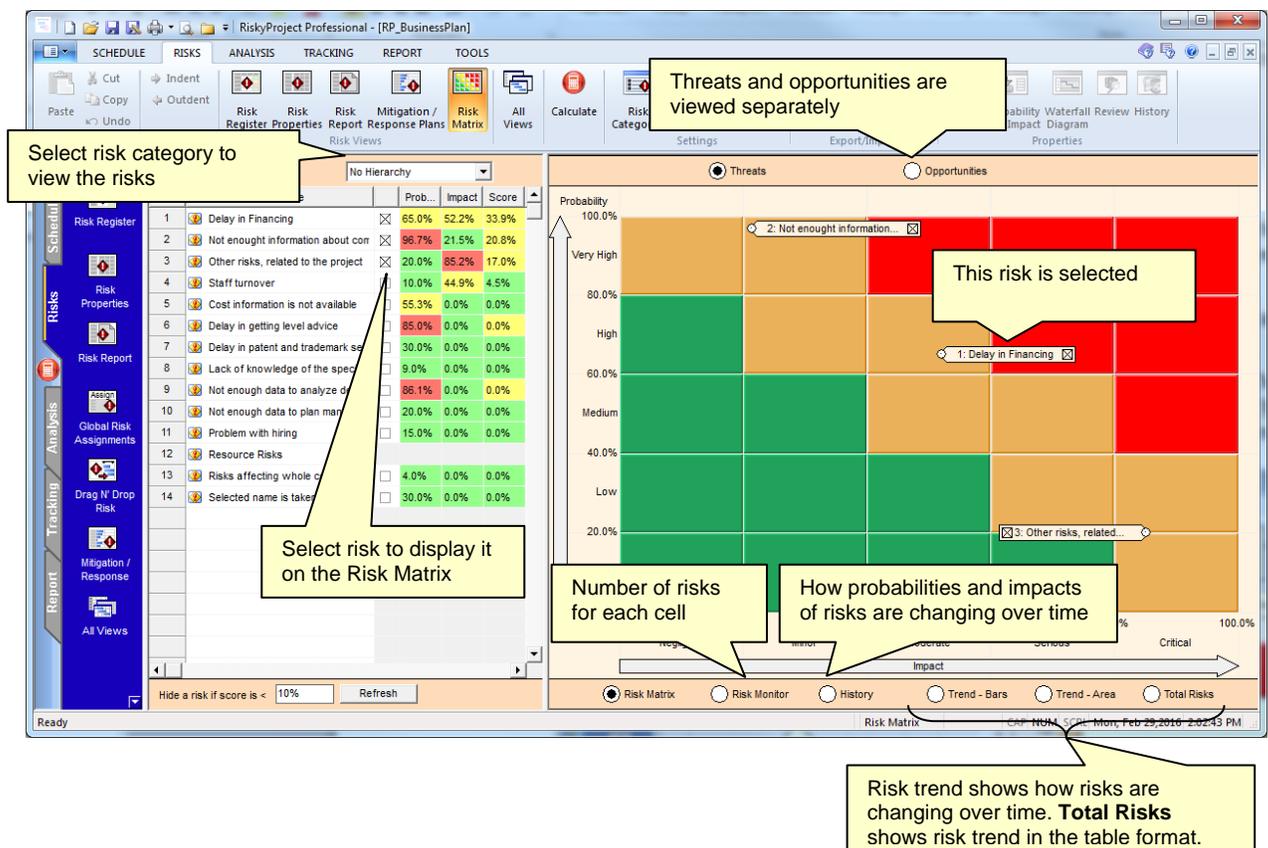
# Risk Report

Risk Report is a view, which presents attributes of selected risks. The report for one risk may contain one or many pages. The total number of pages per report equals the number of selected risks multiplied by the number of pages per risk. The Risk Report includes six sections:

1. General Properties
2. Pre- and post- mitigation probabilities, impact and score
3. Cost of Risk
4. Custom Properties
5. Waterfall Chart
6. Mitigation Plans

Each page of the risk report contains a header and footer. The header and footer may include up to three lines of text and a logo located on the left or right side.

You can customize the Risk Report in the following ways:

- Select the order and turn on and off any section of the report
- Customize any particular section by enabling or disabling any attribute and customizing labels of the attribute. For example, by default the label for risk detailed description is called "Description". Instead you may use "Information about risk".
- Customize headers and footers. Specifically, you can select a logo (company) that can be placed in the header and/or footer.
- Modify attribute values or labels.

# 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.
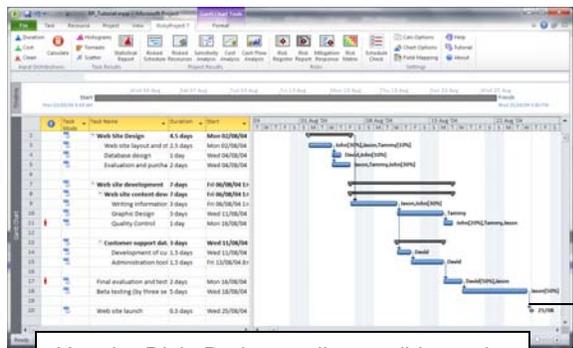
## RiskyProject for Microsoft Project

RiskyProject seamlessly integrates with all versions of Microsoft Project from 2003 and later. When you install RiskyProject, it checks if Microsoft Project is installed on the computer. If Microsoft Project 2003/2007 is installed, RiskyProject and adds a toolbar and macro to Microsoft Project. If Microsoft Project 2010/2016 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 2010/2016) 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 2010/2016, 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. If you use ribbon for Microsoft Project 2010/2016:

   - Define statistical distributions for cost and duration of for selected tasks inside Microsoft Project; all statistical distributions are saved in RiskyProject file.
   - Add risk-related information in the RiskyProject views if necessary: risk events, probabilistic and conditional branching, probabilistic calendars, etc.
   - Perform Monte Carlo simulations
   - View results of analysis and reports in Microsoft Project

   If you use toolbar for Microsoft Project 2003/2007 statistical distributions need to be defined in RiskyProject views

4. 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:

1. Define statistical distributions for selected task or group of tasks

2. Run Monte Carlo Simulations

3. View results of selected task or group of tasks

4. Open the selected risk view or report RiskyProject.

**Microsoft Project**
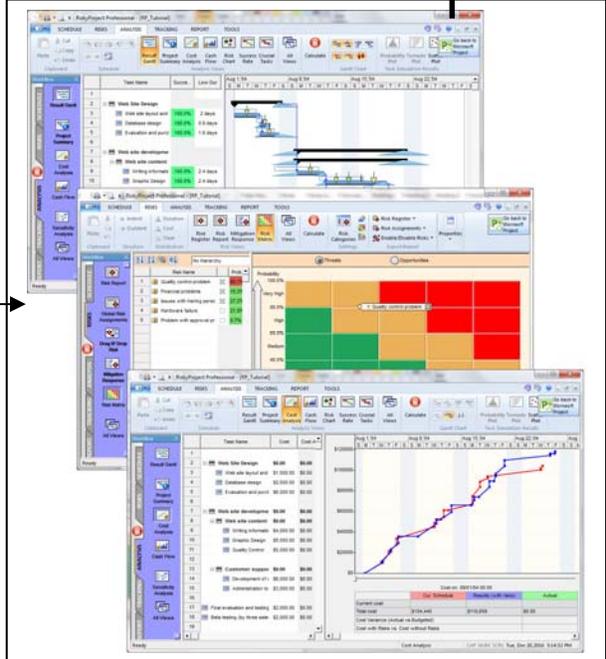
**RiskyProject Add-In**

## Using Microsoft Project 2010/2016 Add-In

Using the RiskyProject Add-In you can quickly add Low and High estimates for Cost and Schedule directly to your Microsoft Project file, run the simulation, and view the results of the analysis.



Define distributions

Run Monte Carlo

View results for selected tasks

View results and generate reports
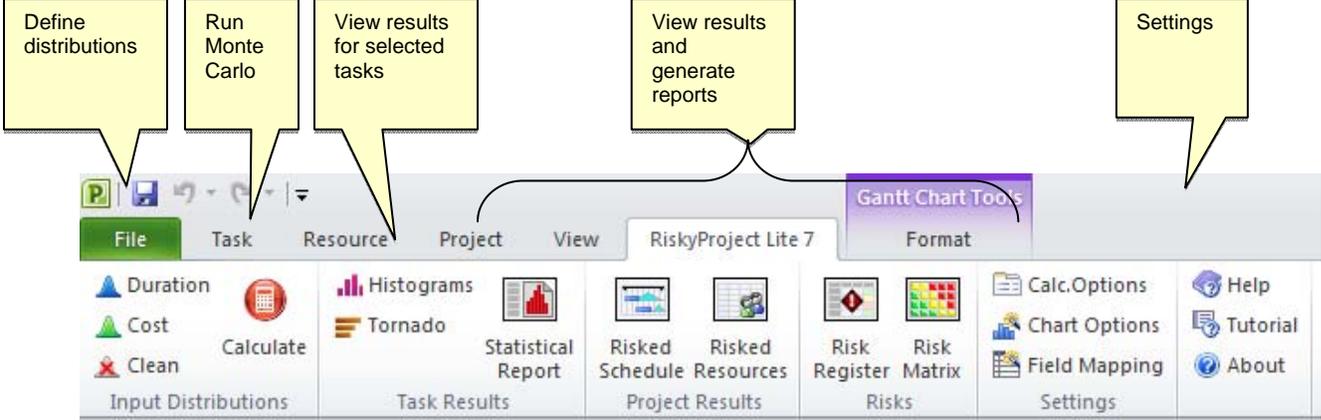
Settings

### Setting up the Add-In options

You can set up your Monte Carlo calculation, chart, and field mapping options using the Add-In.

- Calculation options include the maximum number of iterations and convergence monitoring and more. To read more about calculation options, read **Error! Reference source not found.**.
- Field mappings allow you to modify the default fields where the distributions for duration and cost are saved. To read more about the mapping, read **Error! Reference source not found.**

## Adding Low and High Duration or Cost in Microsoft Project

1. Select one or more activities.
2. Click the **RiskyProject 7** tab. On the **Input Distributions** group, click **Duration** or **Cost**. The **Statistical Distribution** dialog box opens.
3. Enter in the Low and High estimates using coefficients or fixed values (single activity).
4. Select a distribution and modify any parameters required by the distribution.
5. Click **OK**.



**To clean edits made to distributions:**

1. Select the task or tasks in which you want to remove the distributions.
2. Click the **RiskyProject 7** tab.
3. On the **Input Distributions** group, click **Clean**.

## Run a Monte Carlo simulation using the Microsoft Project Add-In

Once you have added low and high estimates and distributions to your activities, you can run a simulation.

**To run a Monte Carlo simulation:**

1. Click the **RiskyProject 7** tab.

2. On the **Input Distributions** group, click **Calculate**. A progress bar will open and indicating the number of iterations that have been completed.

3. When the simulations are completed the **Project Information** report opens, which contains a project summary of the results of the simulation.
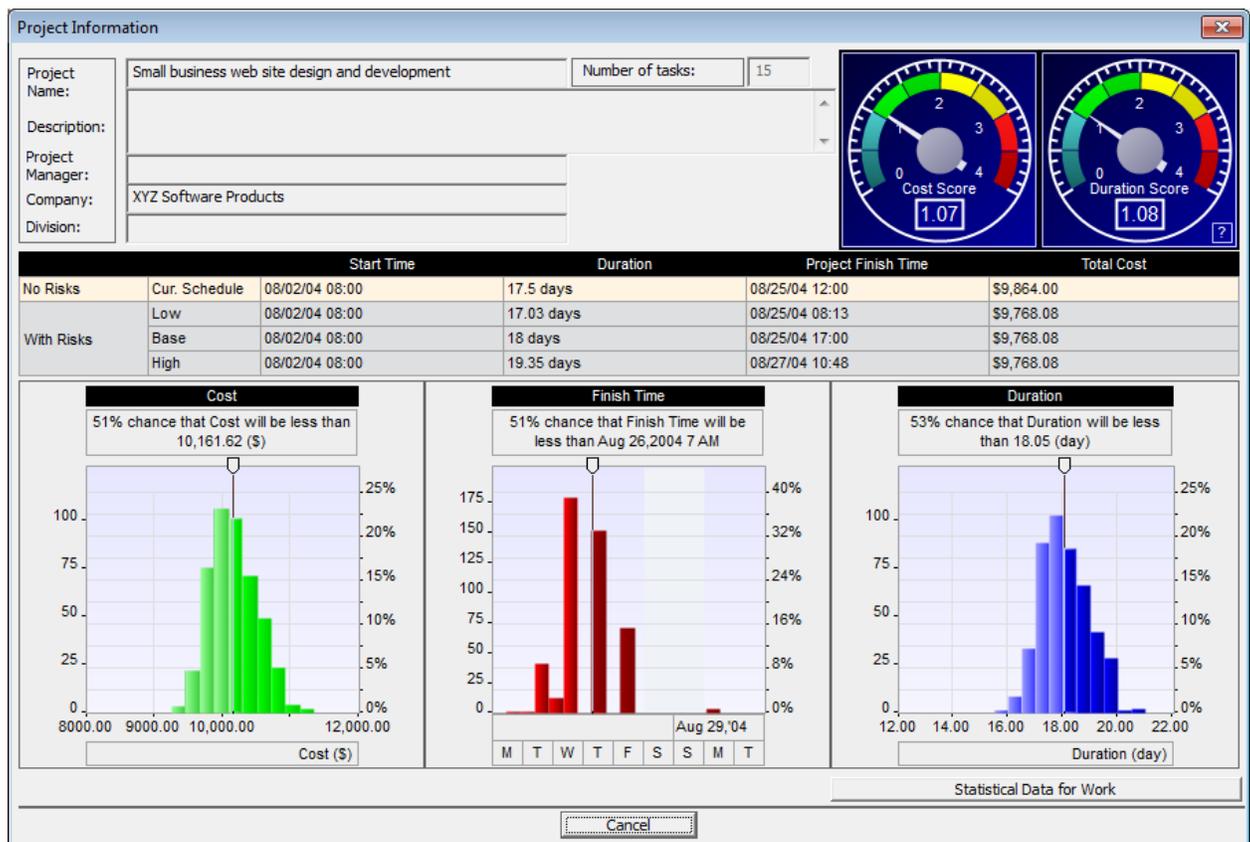


## View the results of the simulation for a task

You can quickly view either histograms or tornado charts for a task. Only one task can be selected.

**To view a histogram or tornado chart for a single task:**

1. Click the **RiskyProject 7** tab. On the **Task Results** group, click **Histograms** or **Tornado**. The Task Simulation Results report opens. To read more about these reports, see **Error! Reference source not found.**.

2. Double- click on any of the reports to open a detailed view of the results.

## Create a statistics report

You can automatically generate a report that includes a histogram, cumulative probability, and sensitivity analysis for one or multiple activities using the Statistics Report. To read more about the Statistics Report, see Statistics Report for Quantitative Analysis.

**To create report:**

1. Run a simulation.

2. On the **Task Results** group, click **Statistics Reports**. The **Statistics Report** view opens.

3. Select the activities that you want to include in the report.

4. From the **File** menu, click **Print** to open the **Print Options** dialog box.

# 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** [icon] and then **New**. The new project file opens.

2. To save the project click the **Save** button and type in a project name.

---

In addition to project 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 standard for project management software and is supported by Microsoft Project, Oracle Primavera, and many other project management software applications.

---

## 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 MS Project files using MPX, or XML formats.

1. Click **File** [icon] 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 MS 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.

---

### Importing data from other project management software

RiskyProject can import data from other project management software in MPX or Microsoft Project XML file formats.

1. Click **File** and then **Open**

2. Select the XML or MPX project schedule.

---

Due to the specific features of each application and the probabilistic nature of RiskyProject data, in very rare cases there may be discrepancies between the original project schedule and the imported

schedule in RiskyProject.

## Importing data from other project management software and retaining risk assignments

Sometimes you may want to import a project schedule from Microsoft Project or other software and retain existing risk assignments. It can be useful when you have imported a project schedule from Microsoft Project or other software, assigned risks in RiskyProject, and then updated the project schedule in Microsoft Project.

1. Click **File**  and then **Import**.

2. Select the format type of your project data (XML or MPX).

3. Select whether or not you want to import the risks already assigned to the project.

RiskyProject will associate assigned risks with new tasks based on unique task IDs. Unique IDs do not change when you insert or delete tasks. You can rename the task in Microsoft Project, but risks will be assigned to the proper task and resource based on this unique ID.

## Importing risks and uncertainties from different RiskyProject file

You can import risks and uncertainties from a different RiskyProject file and assign them to tasks and resources in the current schedule.

1. Click **File**  and then **Risks from Another Project**.

2. Select the RiskyProject file (alm extension) with risks and uncertainties.

If the schedule originated in Microsoft Project, the risks will be assigned to the correct task and resource using the unique ID. Unique IDs do not change when you insert or delete tasks. If you created the schedule in the RiskyProject the risk will be assigned based to the tasks or resources based on ID shown in the task or resource data sheets. Such ID changes when you insert or delete tasks.

# 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 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**
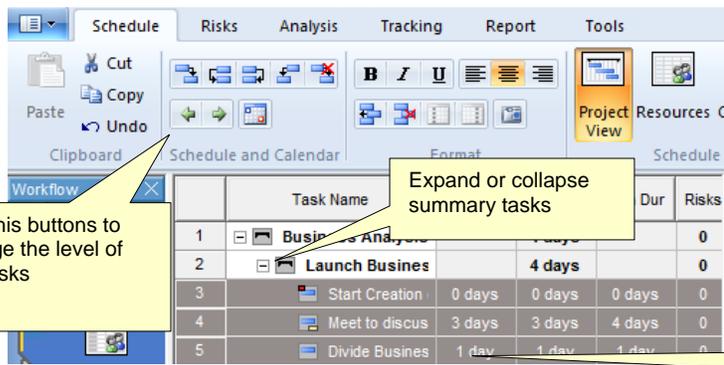
## Entering task name and duration

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 the task.

3. Enter a base duration in the **Base Duration** field. You can enter elapsed duration. Elapsed task duration is calculated using a 24-month calendar. To define elapsed duration, enter 'e' before units, for example, "10 edays".

## 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 at 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.



## Outline Selected Level

You may view summary tasks associated with a particular level of the hierarchy using the Outline button (Schedule tab).

## 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:
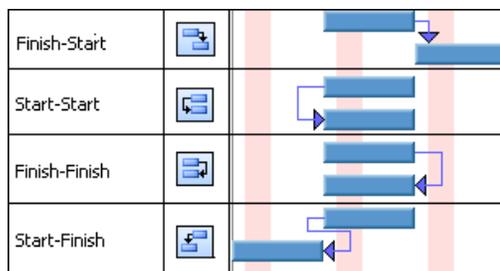


If you want a next task to be a predecessor of a previous task, for example task 5 to be a predecessor of task 3, you will have to use Predecessors tab in Task Information dialog box. You can also use the Predecessors tab if you want to define lags time greater than zero.

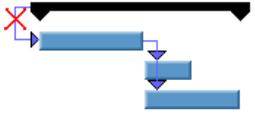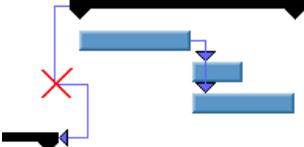**Remember the following rules:**

| | |
|---|---|
| 1. You cannot link summary task to one of its subtasks | |
| 2. The predecessors of a summary task must have a finish-start or start-start dependency. | |
| 3. You cannot create circular relationships. | |

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 limitations:

- You cannot link a task (from example Task #5) to a previous task (for example Task #3).
- You cannot input lag, which is time delay between predecessor and successor. RiskyProject allows you to setup probabilistic lag with statistical distribution defined by low, base, high number.

---

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. Use the **Lag low** and **Lag high** cells to enter a range of time. Lag can be positive or negative

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 seven constraints to a task:

- As soon as possible (default)
- Start no earlier than
- Must start on
- Must finish on
- Start no later than
- Finish no earlier than
- Finish no later than

Use the **General** tab of **Task Information** dialog box to add or modify constraints. If you set a constraint to Start no Earlier Then, 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 to indicate that the constraint is other than **As Soon As Possible**.



Use constraints to ensure that the 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.**

## Milestones

You can flag a task as a milestone. If you turn on a milestone, the task bar within a Gantt chart is displayed as:



Task Duration is greater than 0
Task Duration equals zero
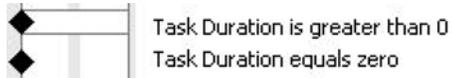
Any task with zero duration is automatically displayed as a milestone in the Gantt chart; however, any task can be marked as a milestone. The milestone flag is for display only and does not affect the project calculations.

If a task has no duration entered, it is automatically displayed as a milestone and you do not have to complete the following steps. If you want to flag a task that has duration, complete the following steps.

# 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 reams 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, Cost** 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 or cost 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.

5. Enter **Cost** for cost resources

---

- Multiple resources can be assigned to a particular task.

- Tasks do not have to have resources assigned to them.

---

# 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 | | | | | | Proje |
| 2 | ⊟ ▭ Art works | 2.2 days | | | | | | |
| 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 | ☐ | Work | G | 50.00/hr | 100.00% | Standard |
| 2 | Purchaser | ☐ | Work | P | 40.00/hr | 100.00% | Standard |
| 3 | Project Manager | ☐ | 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.

# Chapter 4: Quantitative Risk Analysis

# Assigning Risks to Tasks and Resources

## Risk Assignments

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

RiskyProject has two types of risks assignments:

- **Global Risk Assignments** – Global risk assignments 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 Assignments** – 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:
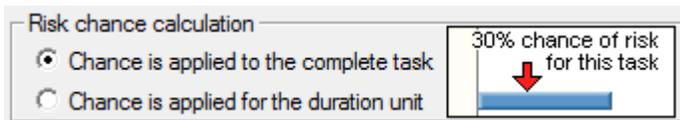


- Each risk has a different **outcome type**. Outcome types can be schedule and cost related and non-schedule related, which you can customize using the Risk Outcome dialog box. Standard schedule-related risk outcomes are shown in the table.

| Outcome Type | Description | |
|---|---|---|
| No Impact | This is for information only and has no impact on project schedule | |
| Relative Delay<br><br>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. If task duration is elapsed, the delay will also be represented in elapsed units (edays, ehour, etc.) |  |
| Relative Cost Increase<br><br>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. These risks don't affect cost per use. | |
| Restart Task | Tasks are restarted from the moment the risk occurs. As a result, the task duration is increased. |  |
| End Task | Tasks are successfully completed when the risk occurs. As a result, the task duration is reduced. |  |
| 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. |  |

| | | |
|---|---|---|
| Rate Increase | This risk can only be used on resources. If this risk occurs, the rate will be increase or reduce. For example, if the rate is $20/hour and risk outcome is 50%, the rate will be $30/hour if the risk occurs. This outcome affects project cost. | |
| Execute Response Plan | Result field for this risk contains a dropdown 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. | |

- The **Outcome** is related to the outcomes "**Fixed cost increase**", "**Relative cost increase**", "**Fixed delay**", "**Relative delay**", and "**Rate Increase**". It defines how much the duration or cost will be increased or reduced.
- RiskyProject calculates the **Risk Impact** for duration and cost using sensitivity analysis and displays this in the Risk Register, Global Risk Assignment views and Risk Tabs for Tasks and Resources. Colors are used to indicate the level of correlation between the risk and project duration and cost.
- Red indicates a strong correlation
- Yellow a medium correlation
- Green a weak or no correlation

Colors for threats are the opposite. Particular colors for the risk impact value depend on the risk tolerance defined in Format Risk Matrix dialog box.

- Most likely:     80%
- End:             100%

This description means that by default for A new task with duration 10 days risk would occur after 5$^{th}$ day, but most likely would occur on 8$^{th}$ day.

# 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 to assign risks to task and resources.

## Method 1: Assigning global and local risks using Risk Register

This method is 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**, and **Result** 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 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 a 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:

    - Click the **Enlarge** button to expand the view and make it easier to assign risks.

- Click the **Load Risks from Global Risk Assignment View** or **Load Risks from Template** button to load all risks from the Global Risk Assignment View or from a risk template. In this way, you can create a master list of risks in either the Global Risk View or a risk template, load it here and enable or disable risks as required.
- 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

| General | Pro...essors | Resources | Advanced | Deadline | Risks | Tracking |

Name: | Who are your Competitors ? | | 17 risks

← → Use these buttons to define risk breakdown structure for the task

| | Risk name | A... | Chance | Outcome Type | Outcome | All | Dur | Cos |
|---|---|---|---|---|---|---|---|---|
| 1 | Not enought information about comp | ☒ 1 | 25.0 % | Relative delay | 20.0 % | 29.1% | 29.1% | 0.0 |
| 2 | Not enought information about comp | ☒ 2 | 20.0 % | Relative delay | 40.0 % | 29.1% | 29.1% | 0.0 |
| | ght information about comp | ☒ 3 | 15.0 % | Relative delay | 60.0 % | 29.1% | 29.1% | 0.0 |
| | ght information about comp | ☒ 4 | 10.0 % | Restart task | | 29.1% | 29.1% | 0.0 |

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

# Managing Uncertainties

If you have accurate historical statistical data that is analogous to a particular element in your project, we recommend that you use this 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-point estimates for work will be calculated automatically based on uncertainty in duration. You may also define 3-point estimates for the lag.

2. After you define 3-point estimates, a statistical distribution will be assigned.

## 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.

## Adding 3-point estimates for lags

1. On the **Project** view, double-click on the task ID.

2. Click the **Predecessor** tab.

3. Enter Low, Base, and High Lag. Default triangular statistical distribution will be generated automatically.

4. Click **OK** to save the estimates.

# Analyzing Results

## Results Gantt Chart

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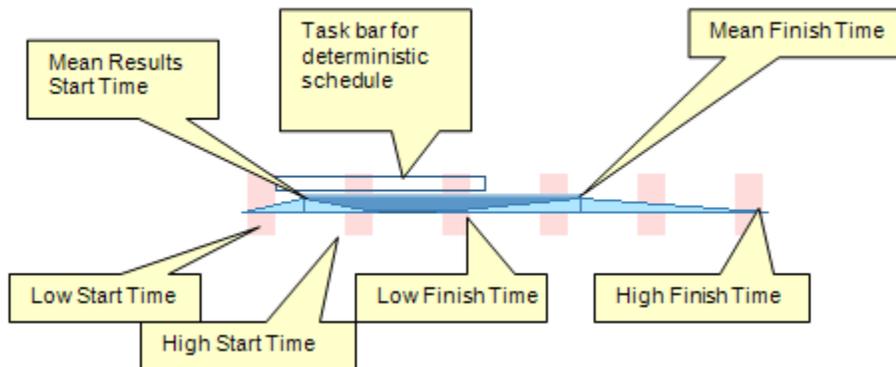


You can display Result Gantt associated only with low (optimistic) and high (pessimistic) results.

### 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.
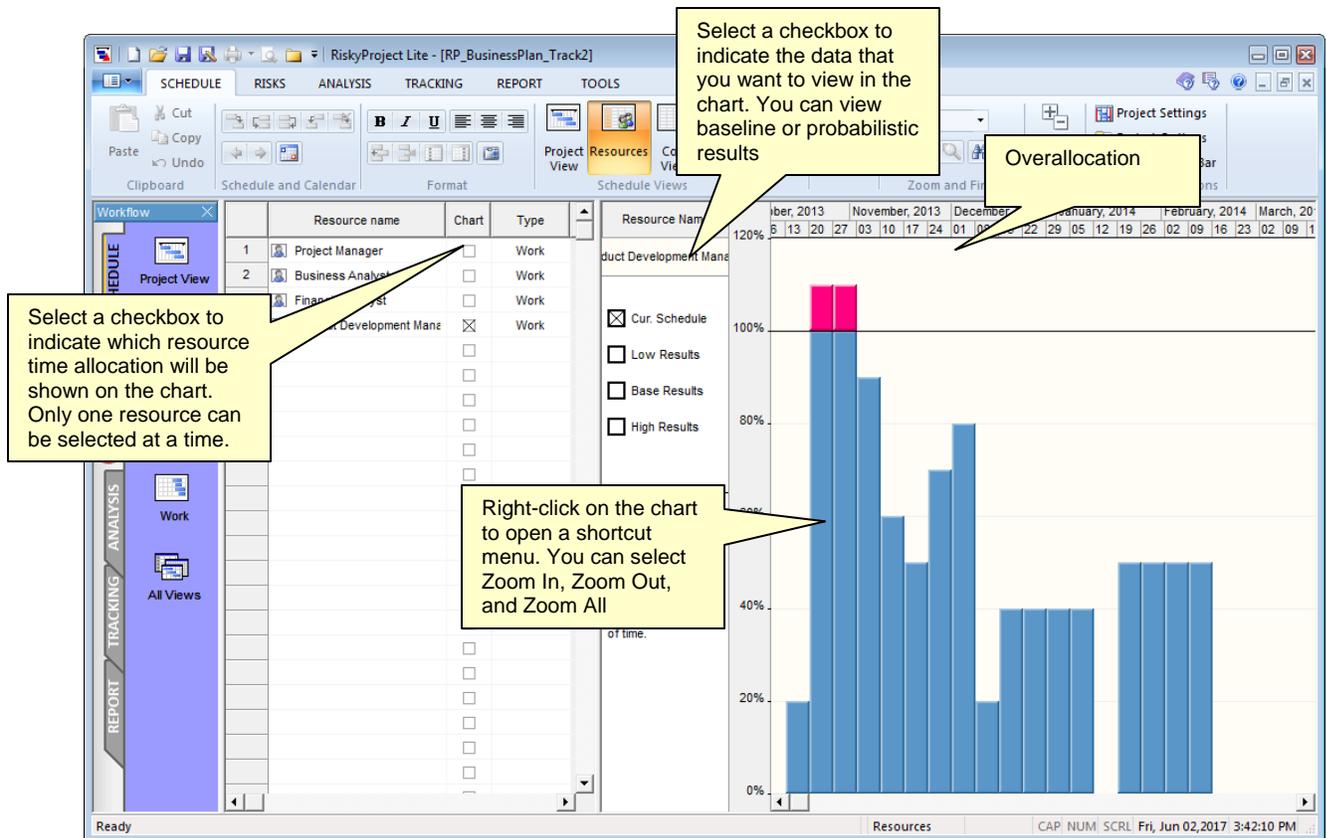


For the resource chart to open, two conditions must be met:

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

# Statistics Report for Quantitative Analysis

Once you have completed the Monte Carlo simulation, you can quickly generate a statistics report for selected tasks in your project schedule. The statistics report can include histograms for Start Time, Finish Time, Duration, and Cost as well as a Sensitivity to Finish Time table with a Tornado chart. Statistics reports can be exported to PowerPoint.

**To create a statistics report**:

1. Run a simulation on your project.

2. Click the **Reports** tab. In the **Report Views** group, click **Statistics Repor**t.

3. Select the activities that you want to report on by clicking the check boxes beside the activity names.



**To export a statistics report to PowerPoint**

1. Click the **Report** tab. Click **Statistics to PowerPoint**. Alternatively you may click on Click **File** and then click **Export -> Microsoft PowerPoint**.

2. If Microsoft PowerPoint is installed on your computer, PowerPoint will be launched and the report will be generated using settings defined in Customize Report dialog. Only frequency and cumulative probability charts and tornado (sensitivity) plots are exported to PowerPoint.