

RiskyProject Enterprise 7.2

Project Risk Management Software

RiskyProject Enterprise User Guide



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Chapter 1: Introduction to RiskyProject Enterprise

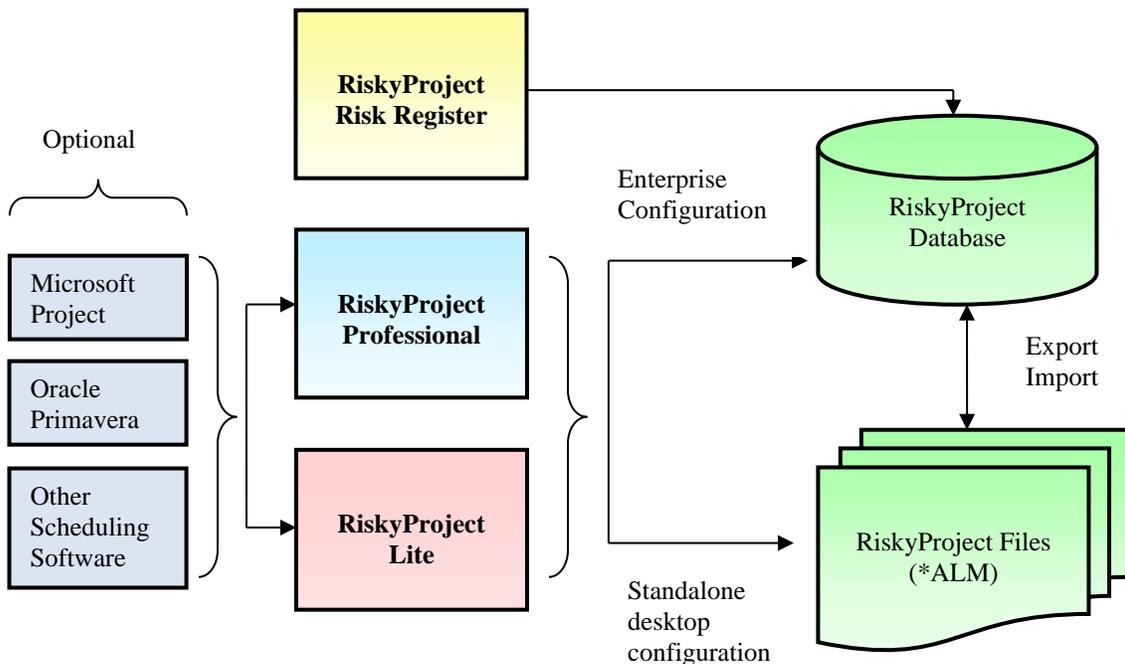
About RiskyProject Enterprise

RiskyProject is a project risk management software. RiskyProject can be configured as standalone desktop software, which saves files to the set of files for each project, or enterprise software, which saves data in the database. As the same installation package is used for both desktop and enterprise versions of the software, switching from one version to another is quick and easy. You can switch from one configuration to another using the RiskyProject License Wizard. RiskyProject Enterprise is a flexible project portfolio risk analysis and management system.

The enterprise system is comprised of three main components:

RiskyProject Server: The server contains the RiskyProject database. For the current version of RiskyProject, the server can be run on a Microsoft SQL Server. The database contains all project and risk data including Monte Carlo simulation results.

RiskyProject Enterprise Desktop Client: The enterprise client is required to perform quantitative risk analysis and management. The client used with enterprise software can be the Professional, Lite, or Risk Register modules. If enterprise client is RiskyProject Professional or RiskyProject Lite, the enterprise client includes three Portfolio views: Risked Projects view, Portfolio Gantt view and Project Portfolio view. These are portfolio-level views of project schedules and costs.



RiskyProject Installation and Configuration

Before you start working with RiskyProject Enterprise, the RiskyProject database must be configured and user names, passwords and portfolio settings must be defined. Please read the *RiskyProject Enterprise Administrator's Guide* for additional information.

About RiskyProject License Types

When you start RiskyProject Professional and RiskyProject Lite for the first time on your computer, you will be prompted to define the license type or mode of RiskyProject operation. When installing RiskyProject, you may choose between three installation modes:

- **Enterprise Client Mode:** RiskyProject will be connected to the database. In this mode, you can save projects to the database or in a file format. In addition, this mode contains additional views (Portfolio Gantt, Project Portfolio and Risked Projects) for managing and analyzing your project portfolio. You must have an enterprise client license to enable this mode.
- **Regular Desktop Mode:** the desktop license is not connected to a database (standalone RiskyProject). Projects can only be saved in RiskyProject's file format (*.alm).
- **Trial Mode:** the trial license is a full version of the desktop license that can be used for 30 days, at which time you must enter a license code to continue using the software.

About This Document

Installed versions of RiskyProject Professional, RiskyProject Lite and RiskyProject Risk Register can be connected to the database or run as standalone desktop applications.

This document describes only specific features of the RiskyProject Enterprise desktop client (features which apply when RiskyProject is connected to the database). For all other features, which are identical in Enterprise client mode and Regular desktop mode, please consult with the *RiskyProject User Guide* or *Getting Started with RiskyProject Guide*.

Updating Your License

If you have recently purchased or upgraded your license, you must update it.

To update your license type:

1. Click the **Tools** tab. In the RiskyProject Configuration group, click **Update RiskyProject License**. The License Wizard opens.
2. Select the license type (**Trial**, **Regular** or **Enterprise**). If you have already activated your license, only the alternate license type will be available.
3. Click **Next**.
4. If you selected **Regular Desktop** license and did not validate your license code on your computer before, input your new license code and click **Next**.

Logging on to RiskyProject Enterprise

To logon to RiskyProject Enterprise, you must have a database connection set up.

To logon:

1. Launch RiskyProject. The **Logon** window opens.
2. Enter in your name and password.
3. Click **OK**.

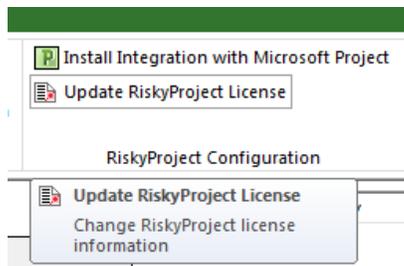
When you logon to RiskyProject for the first time, your system Administrator will issue you a temporary password. You will need to change this password after logon in the subsequent dialog.



When logging on to RiskyProject Enterprise, you may switch your desktop or trial license by clicking on **Start regular desktop license (no database)**.

Switching Between Enterprise and Standalone Desktop Configurations

You may switch between Enterprise and Standalone desktop configurations of RiskyProject, and vice versa, at any moment. To do so, use the **Update RiskyProject License** button under the Tools pane on the toolbar.



- If you switch from **Enterprise** configuration to **standalone desktop** configuration you must have a license for RiskyProject standalone on your computer. If an Enterprise configuration is saved in the database, the standalone license will be saved in the Windows registry.
- If you switch from standalone desktop configuration to enterprise configuration, you need to define database connection properties in the manner outlined in the *RiskyProject Enterprise Administrator's Guide*.
- If you are in Enterprise mode, you may want to connect to a different database. Click on **Update RiskyProject License** and select **Enterprise: update database parameters**. You will be prompted to define database connection properties.



You may switch from Enterprise configuration to standalone desktop configuration by clicking on **Start regular desktop license (no database)** using the RiskyProject Enterprise logon dialog.

Chapter 2: Managing Projects

About Organizing Your Project Portfolio

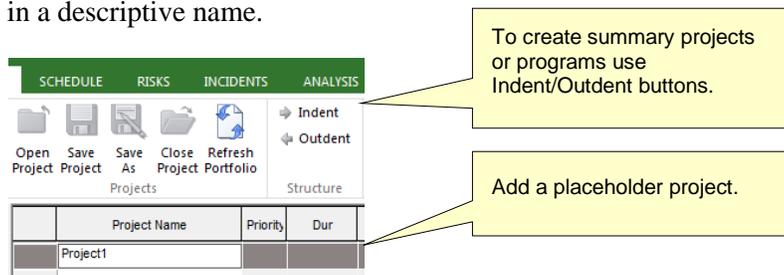
You may organize a portfolio similarly to how you organize a project, using summary tasks and sub tasks. In the Portfolio views, programs are represented as summary projects and their data is the rollup of all projects listed under the specific program.

Creating a Portfolio Hierarchy

By default, RiskyProject Enterprise will “add” all projects in your database to the Project Portfolio. All projects will be considered to be part of your portfolio, but will not be organized in a hierarchical structure: Portfolio > Programs > Projects. Your portfolio can be organized to reflect any types of business units, regions, project types etc. If your projects are not organized or you are adding a new project to the database, you will need to organize your Portfolio.

To create a project or program:

1. Click the **Projects** tab. In the **Project Views** group, click any project view. In these views, you will be able to see all your projects. In a new database, there will be no projects shown in the views.
2. To begin building the hierarchy and adding projects, first create a project. This will serve as a starting point to begin building the hierarchy. If the project contains any tasks or resources, it will be an actual project. Otherwise it will be a project placeholder. Project placeholders will not have a Gantt bar associated with them in any **Project** views: **Portfolio Gantt**, **Risk Project**, and **Project Portfolio** views. To add the initial project, click in the top row and type in a descriptive name.



3. To add the project to the program, right-click on the project directly below the Program and choose **Indent**.
4. To create an empty row, right-click on the Project ID and click on **Insert Project**.
5. By repeating these steps, you can create a hierarchy which will include multiple programs and projects.

Opening Projects

To open a project:

1. Select the project in one of the Project views.
2. Click the **Projects** tab, and in the Projects group click **Open Project** or,
 - Double click on Project ID or
 - Right click on Project ID and click on **Open Project** on the shortcut menuThe project will open in the **Schedule > Project Views**.

You can open summary projects or subprojects as long as you have permissions to do so. However, if you open a summary project, you cannot add a project schedule or resources. You may only manage risks associated with the summary project.



If you open a placeholder project, it will not have any tasks or resources associated with it. Once you add at least one task, resource or risk, it will become an active project. Each active project is represented by a Gantt bar in the **Portfolio Gantt** view. A project can contain qualitative risks.

About the Current Project

Once you open a project it becomes the current project, and schedule or risk data that is added, modified or deleted is added at the current project level. The current project is indicated by either a blue bar for project or red bar for summary project at the top of the RiskyProject workspace. The current project is indicated with *italics* and an arrow  next to the project name as in the below example:



A red asterix symbol indicates that the project is currently being edited.



If the **Current Project** bar is not visible, then you are currently viewing the Portfolio. This is especially important if you are in the **Risks** views, as this would mean you are looking at the Portfolio level risk views.

The screenshot shows the RiskyProject Professional interface with a table of projects. The table has columns for Project Name, Priority, Duration, Start, Finish, and a percentage completion column. The 'Project Planning' project is highlighted with a blue bar, and the 'Software Elaboration' project is highlighted with a red bar. Callouts explain these indicators and point to a refresh icon in the Projects sidebar.

Project ID	Project Name	Priority	Dur	Start	Finish	%
1	Software Inception		81 days	07/01/16 00:00	10/21/16 17:00	
2	Business Plan	100%	21 days	07/01/16 00:00	07/31/16 00:00	
3	Requirement Gather	100%	33 days	08/01/16 00:00	09/15/16 00:00	
4	Project Planning	100%	32 days	09/01/16 08:00	10/14/16 17:00	
6	Software Elaboration		46 days	10/11/16 08:00	12/13/16 17:00	0%
7	Product Design	100%	41 days	10/11/16 08:00	12/06/16 17:00	0%
9			days	12/13/16 08:00	01/17/17 17:00	0%
10			days	12/13/16 08:00	01/16/17 17:00	0%
12			days	03/13/17 00:00	04/28/17 00:00	0%
13	Implementation and T	100%	34 days	03/13/17 00:00	04/28/17 00:00	0%
14	Marketing: Trade Sh	80%	27 days	03/22/17 00:00	04/28/17 00:00	0%

Callouts in the image:

- Blue bar indicates the current project.
- Red bar indicates a current summary project.
- An arrow next to the project name indicates current project.
- Click here to close project.

Refreshing the Hierarchy

The hierarchy will be read from the database each time you open any Project view: Project Gantt, Risked Projects, or Project Portfolio. If another concurrent user has modified the hierarchy while you are in any project view, you may need to refresh the project portfolio.

To refresh the project hierarchy:

1. Click the **Projects** tab.
2. Click **Refresh Portfolio**.

Locking and Unlocking Projects

Only one user can open a project at a time. Projects will be locked for all other users if somebody opens a project. Locked projects are indicated by an icon  next to the project name. A project will be automatically unlocked when a project is closed.

If a project is locked it can be unlocked by an administrator. As an example, it may be necessary to do so if a user left the project open for a long time period.

To unlock a project or group of projects:

1. Click the **Projects** tab. In the **Project Views** group, click any **Project** view.
2. Select the project you would like to unlock.
3. Right-click on the project ID and from the shortcut menu, click **Unlock Project**.

Modifying Projects

To modify a project schedule, you must open it. If the project has risks and uncertainties, they will be reflected in the project portfolio as soon the project is saved. In particular, risk scores will be re-calculated and the Project Gantt chart will be updated. Project names and project priorities can be updated without opening the project. You may be required to modify the project start time.

To modify a project start time:

1. Open the project.
2. Click the **Schedule** tab, and in the **Settings and Options** group, click **Project Settings**.
3. Click on the **Project Start Time** box. A calendar opens.
4. Select the new project start time from the calendar.
5. Click **OK**. Close the project and the new start time will be reflected in the project hierarchy.

Closing a Project

To close the Current Project:

1. Click on the **X** on the Current Project bar at the top of RiskyProject workspace,
2. Click the **Projects** tab and then **Close Project**, or
3. Right-click on the project ID and from the shortcut menu, click **Close Project**.

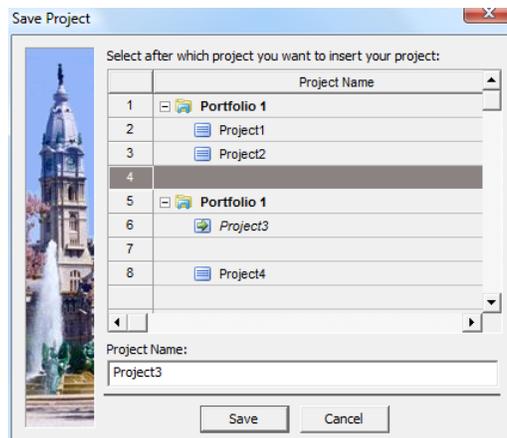
If the project has not been saved, you will be prompted to save changes.

Saving a Project

You can add or save an imported project to the database.

To save a project:

1. In the **Projects** view, select the project that you want to save or select an empty project row.
2. In the **Projects** group, click **Save** or **Save As**. The **Save Project** dialog box opens. The Save Project dialog box allows you to insert the project into your portfolio hierarchy at any level.



3. From the hierarchy, select the position where you want to insert or save the project. You can rename the project if required in the **Project Name** box.
4. Click **Save**.

Creating a New Project without a Placeholder

If you don't have a current project opened, you can create one by adding tasks to the **Project View** or resources to the **Resource View**. A new current project will be created automatically and added to the bottom of the hierarchy.

The screenshot shows the RiskyProject Professional interface. The main window displays a project hierarchy table with columns for Project Name, Priority, Duration, Start, Finish, and % done. A red star icon is visible next to the 'Project1' entry at the bottom of the list, which is highlighted with a red box. A yellow callout box points to this star with the text: "Red star indicates that project is currently being edited". Another yellow callout box points to the 'Project1' entry with the text: "The new project will be added to the bottom of the hierarchy." To the right of the table is a Gantt chart showing task bars for various projects. A third yellow callout box points to the Gantt chart area with the text: "When you start entering task or resource information, the new project will become the current project". The software title bar indicates the current project is 'Project1'.

Project Name	Priority	Dur	Start	Finish	% done
1 Software Inception	81 days	07/01/16 00:00	10/21/16 17:00	0%	
2 Business Plan	100% 21 days	07/01/16 00:00	07/31/16 00:00	0%	
3 Requirement Gather	100% 33 days	08/01/16 00:00	09/15/16 00:00	0%	
4 Project Planning	100% 32 days	09/01/16 08:00	10/14/16 17:00	0%	
6 Software Elaboration	46 days	10/11/16 08:00	12/13/16 17:00	0%	
7 Product Design	100% 41 days	10/11/16 08:00	12/06/16 17:00	0%	
12 Project Transition	34 days	03/13/17 00:00	04/28/17 00:00	0%	
13 Implementation and T	100% 34 days	03/13/17 00:00	04/28/17 00:00	0%	
14 Marketing: Trade Sh	80% 27 days	03/22/17 00:00	04/28/17 00:00	0%	
16 Project1	100%			0%	

You are also able to rename or save this project to a different position in the project hierarchy.

Importing a Project File to the Database

Importing projects allows you to import RiskyProject project files into your database and portfolio. These files are created by RiskyProject when using the standalone desktop mode.

To import a file:

1. Click on **File -> Import -> RiskyProject (ALM) file...**
2. You can also click the **Projects** tab. In the **Project Views** group, click any **Project** view. In the **Export/Import** group, click the **Import from file**. The Open dialog box opens.
3. Navigate to the file (*.alm) and click **Open**. RiskyProject will check if the project file has any risks or mitigation plans. If it does the **Insert risks and mitigation plans from file to Risk Register** dialog box opens. This dialog box allows you to add, ignore or match the risks or

plans to existing ones (rename). If you do not want to use this process click **Skip**. If the project has a schedule you will also be prompted if you would like to run a simulation.

4. Select the hierarchy location where you want to place the project. You can rename the project if required in the **Project Name** box.
5. Select the hierarchy location where you want to place the project. You can rename the project in the **Project Name** box.
6. If you select project, which already exists in the hierarchy, you have an option to overwrite existing project or insert project after the selected project.
7. If you choose **Overwrite** existing file, you have an option to apply risks and uncertainties to the imported project from the project you overwrite. For example, you import *Project A* and overwrite *Project B*. *Project B* has risks assigned to certain tasks and uncertainties in task duration. You have an option to apply risks assignment and uncertainties from *Project B* to *Project A* based on Task unique ID (GUID field). Only duration and start time uncertainties will be applied. Fixed cost, work, income and lag uncertainties will be not applied to imported project.

Importing an XML or XER Files

Importing xml files allows you to import supported xml project files (Microsoft Project xml schema) as well as Primavera P6 XER files into your database and portfolio. The XML/XER file import procedure is the same as Import a Project File, but risks and mitigation plans import step is omitted.

To import an XML or XER file:

1. Click on **File -> Import -> Microsoft Project (XML)...** or **Oracle Primavera (XER)...** .
2. For XML file import you can also click the **Projects** tab. In the **Project Views** group, click any **Project** view. In the **Export/Import** group, click the **Import from XML**. The Open dialog box opens.
3. Navigate to the file (*.xer or *.xml) and click Open.
4. Select the hierarchy location where you want to place the project. You can rename the project if required in the **Project Name** box.
5. If you select project, which already exists in the hierarchy, you have an option to overwrite existing project or insert project after the selected project.
6. If you choose **Overwrite** existing file, you have an option to apply risks and uncertainties to the imported project from the project you overwrite.

Importing Envision Schedules

You can import schedule from Envision database. Connection to Envision database can be configured in Preferences dialog (see **About Preferences**).

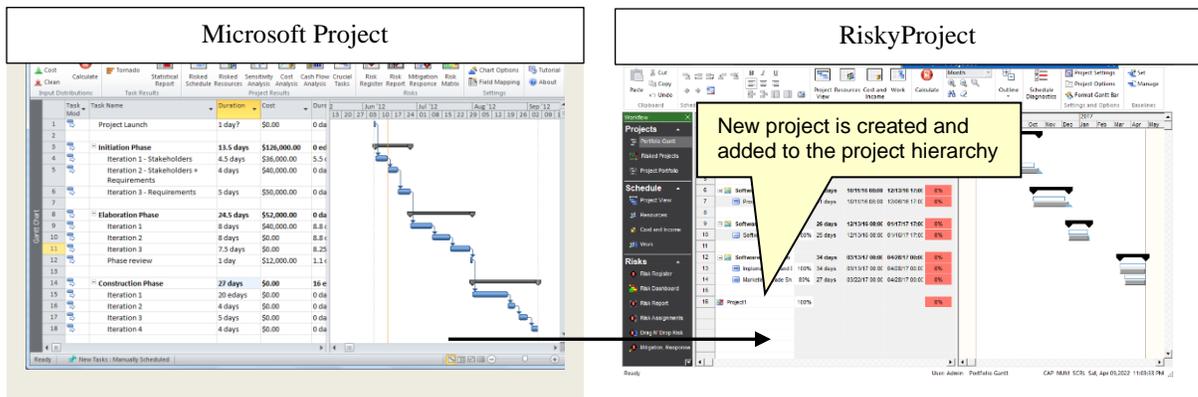
To import an Envision Schedule:

1. Click on **File -> Import -> Envision Schedule...** .
2. If you did not configure a connection in Preferences dialog, you can configure it here.
3. Select project from Envision database and click OK.

4. Select the hierarchy location where you want to place the project. You can rename the project if required in the **Project Name** box.
5. If you select project, while already exists in the hierarchy, you have an option to overwrite existing project or insert project after the selected project.
6. If you choose **Overwrite** existing file, you have an option to apply risks and uncertainties to the imported project from the project you overwrite. The procedure is described in **Import a Project File**.

Creating projects from Microsoft Project

If you are using the **RiskyProject Add-in** for Microsoft Project and want to move the project data to RiskyProject Enterprise, you will be required to logon to the RiskyProject database in which you want to add the project. You can then add the project to your portfolio. You may rename or save this project to a different place at any point in the project hierarchy.



If your schedule from Microsoft Project is currently in the database, it will remain linked to your Microsoft Project file; therefore, if you make any changes to the schedule in Microsoft Project it will be reflected in the schedule within RiskyProject.

Exporting a Project

You can export your project files to the RiskyProject file format (*.alm).

To export a project to a file:

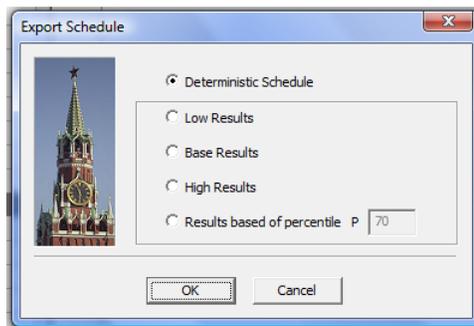
1. Click the **Projects** tab. In the **Project Views** group, click any **Project** view.
2. Select the project you want to export to a file.
3. In the **Export/Import** group, click the **Export to File** button. The **Save As** dialog box opens.
4. Navigate to the folder to which you want to save the file.
5. Enter a name in the **File Name** box and click **Save**.

Exporting a Project Schedule in XML Format

You can export your project files to the Microsoft Project xml file format (*.xml)

To export a project as xml:

1. Click the **Projects** tab. In the **Project Views** group, click any **Portfolio** view.
2. Select the project you want to export to a file.
3. In the **Export/Import** group, click the **Export to XML** button. The **Export Schedule** dialog box opens. You can select either the original schedule or results of the Monte Carlo simulation.



4. Select the schedule results option that you would like to export and click **OK**.

Copying and Pasting a Project

You can copy projects and paste projects in your portfolio.

To copy a project:

1. In any **Project** view, select the project that you want to copy.
2. Right-click and choose **Copy** from the shortcut.
3. Select a row in your portfolio where you want to place the copied file.
4. Right-click and choose **Paste**. The copy of the file is placed in the new location.
 - If you select a row with a project in it, the project will be inserted above the selected row. It will not overwrite the existing project.
 - By default, the copy of the project will have the same name. You should rename the copy.



You can use *Copy* and *Paste* to move projects to a different location in the hierarchy.

Deleting a Project

Deleting a project deletes it from both the hierarchy and the database.

To delete a project:

1. In any **Project** view, select the project that you want to delete.
2. Right-click and from the shortcut menu choose **Delete**. The project will be deleted from the database.



- You cannot delete the current project. You must close a project before you can delete it.
 - You must have appropriate permissions to be able to delete a project.
-

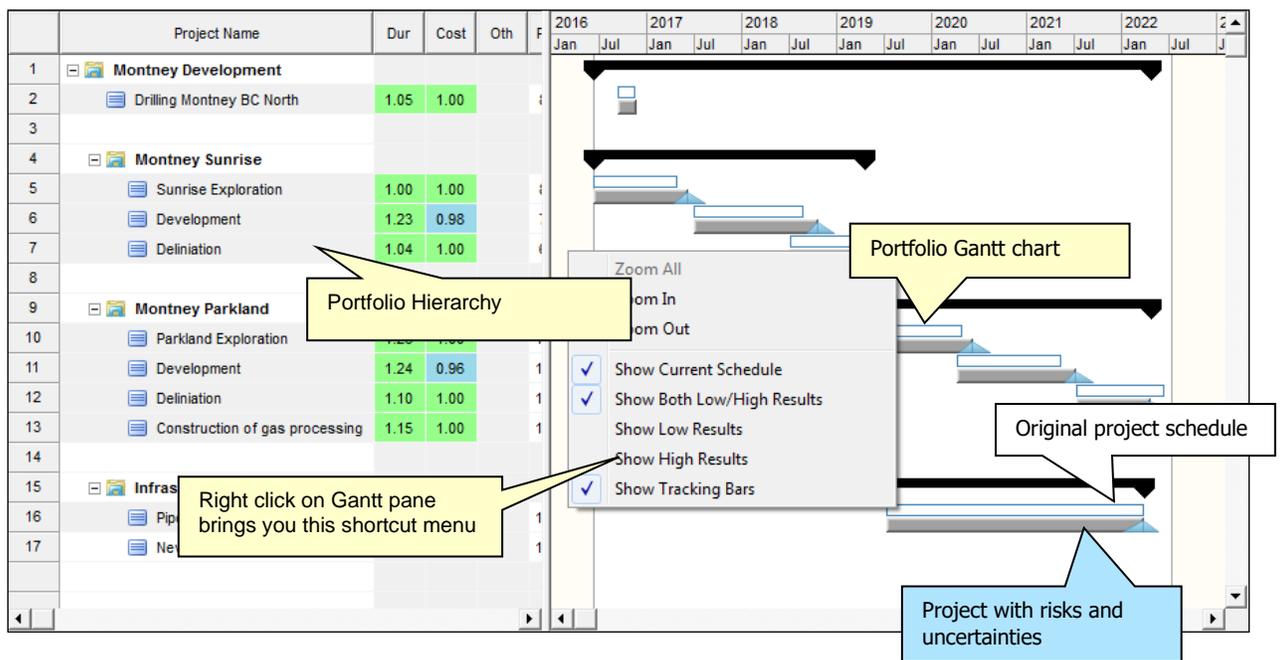
About the Project Views

The desktop client for RiskyProject Enterprise comes with 3 additional views:

- Portfolio Gantt
- Risked Projects
- Project Portfolio

About the Portfolio Gantt View

The Portfolio Gantt view is a Gantt chart view of your project portfolio. In the Portfolio Hierarchy you can view your programs and projects. If you have permission, you can also modify the hierarchy by adding, deleting, moving etc. programs or projects.



Double-click on a Gantt bar to view detailed information about a selected project. See **Viewing Project Details in the Portfolio Views** for more information.

Using Portfolio Gantt view you can visualize:

- Projects with risks and uncertainties alongside original project schedules
- Low and high project durations
- Project performance - tracking bars will be shown
- Low and high project results, which may be shown separately

To view the different settings listed above on the Portfolio Gantt view:

- Right-click on the Gantt chart
- Make a selection from the shortcut menu: show current schedule, show both Low/High Results, etc.



Low and high results are associated with the particular percentile; definition of low and high results can be changed in Portfolio Options (Calculation tab). See About Portfolio Options and Preferences for more information.

About the Risked Projects View

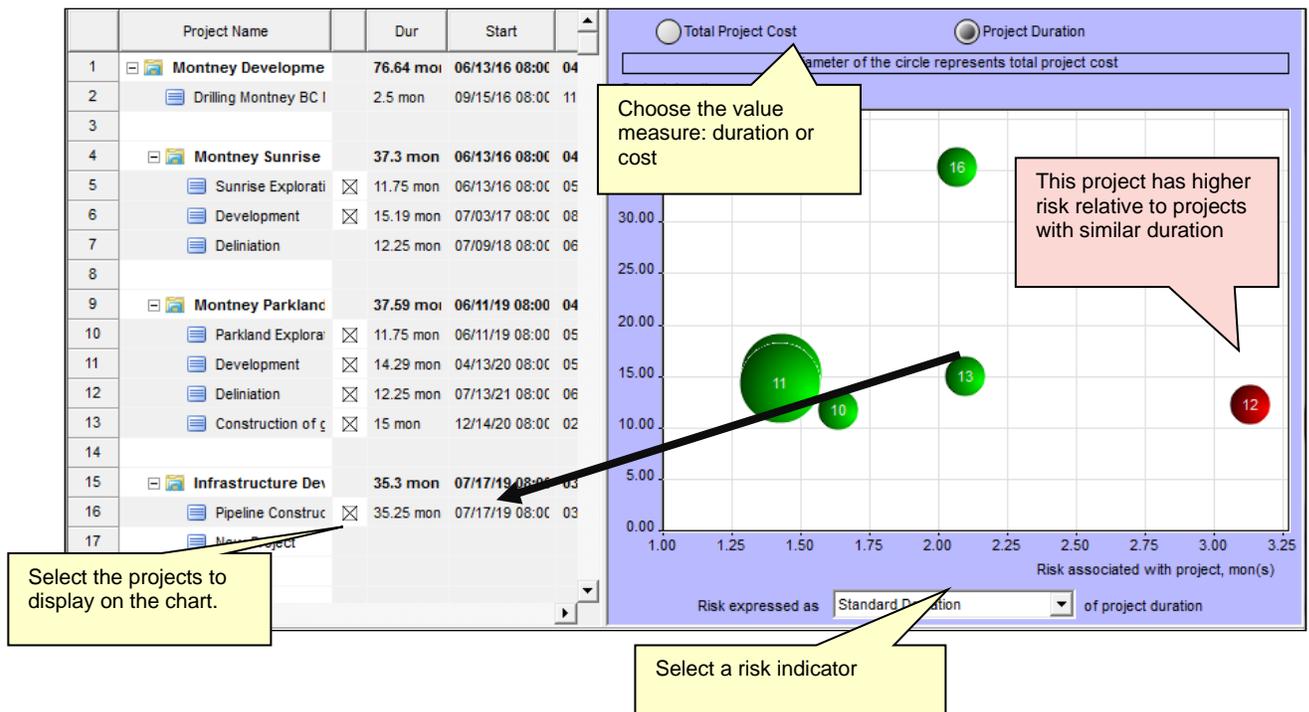
The Risked Project view shows the relative risk associated with a project versus project duration or total project cost. The risk is expressed as:

- project standard deviation of task duration or cost
- maximum or minimum values
- ranges: the difference between maximum and minimum values
- percentiles, or Project Value at Risk (PVatR™).

In a well-balanced portfolio, different projects will have similar levels of risk. However, if the relative risk associated with a project is higher than similar projects, the project should be flagged for additional analysis. Alternatively, if a project has less relative risk, it may represent an opportunity where additional cost or schedule risk could be transferred to it to mitigate projects with higher risk in your portfolio.

Risked Projects view is implemented similarly to Risk Chart view for the project schedule. Risk Chart view shows a bubble chart for the tasks, while Risked Projects view shows a bubble chart for the projects. To read more about how to view and use the Risked Projects view, see **Risk Chart** in *RiskyProject User Guide*.

Project Value at Risk (PVatR™) concept was developed by Nicki Kons. See Kons, N. 2016. *PVaR - Project Value at Risk*. CreateSpace Independent Publishing Platform (April 28, 2016).



About the Project Portfolio View

The Project Portfolio view is a table, which displays the results of a probabilistic analysis of the projects in your portfolio. This view can be used for both analysis and reporting. You can modify the data that appears in this view by adding or hiding columns.

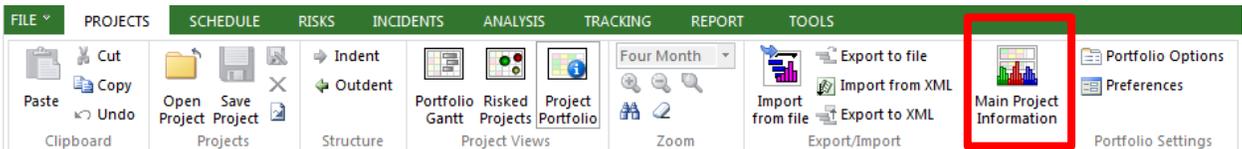
	Project Name	Manager	Modified	Dur	Cost	Pri...	Dur	Cost	Start	Finish	% done	Start Low	St...
1	Montney Developme		05/04/16						06/13/16 08:00	04/27/22 16:01	3%		
2	Drilling Montney BC I		07/26/16						09/15/16 08:00	11/23/16 17:00	0%	09/15/16 08:00	09/16/16 17:00
3													
4	Montney Sunrise		06/11/16						06/13/16 08:00	04/22/19 17:00	0%		
5	Sunrise Explorati		12/12/16						06/13/16 08:00	05/05/17 17:00	0%	06/13/16 08:00	06/14/16 17:00
6	Development		12/12/16 17:23	1.23	0.98	70%	15.19 mon	\$1,406,580	07/03/17 08:00	08/30/18 14:43	0%	07/03/17 08:00	07/04/17 17:00
7	Delineation		12/23/16 17:45	1.04	1.00	60%	12.25 mon		07/09/18 08:00	06/14/19 17:00	0%	07/09/18 08:00	07/10/18 17:00
8													
9	Montney Parkland		12/16/16 16:38				37.59 mo		06/11/19 08:00	04/27/22 16:01	0%		
10	Parkland		12/16/16 16:38	1.26	1.00	100%	11.75 mon		06/11/19 08:00	05/04/20 17:00	0%	06/11/19 08:00	06/12/19 17:00
11	Development		12/16/16 16:38	1.24	0.96	100%	14.29 mon	\$1,432,370	04/13/20 08:00	05/17/21 14:41	0%	04/13/20 08:00	04/14/20 17:00
12	Delineation		12/12/16 20:30	1.10	1.00	100%	12.25 mon		07/13/21 08:00	06/20/22 17:00	0%	07/13/21 08:00	07/14/21 17:00
13	Construction of		12/12/16 20:30	1.15	1.00	100%	15 mon		12/14/20 08:00	02/04/22 17:00	0%	12/14/20 08:00	12/15/20 17:00
14													
15	Infrastructure Dev		12/23/16 17:47				35.3 mon		07/17/19 08:00	03/30/22 16:33	10%		
16	Pipeline Construc		12/23/16 17:57		1.00	100%	35.25 mon		07/17/19 08:00	03/29/22 17:00	10%	07/17/19 08:00	07/18/19 17:00
17	New Project		12/23/16 17:45			100%					0%		

Viewing Project Details in the Portfolio Views

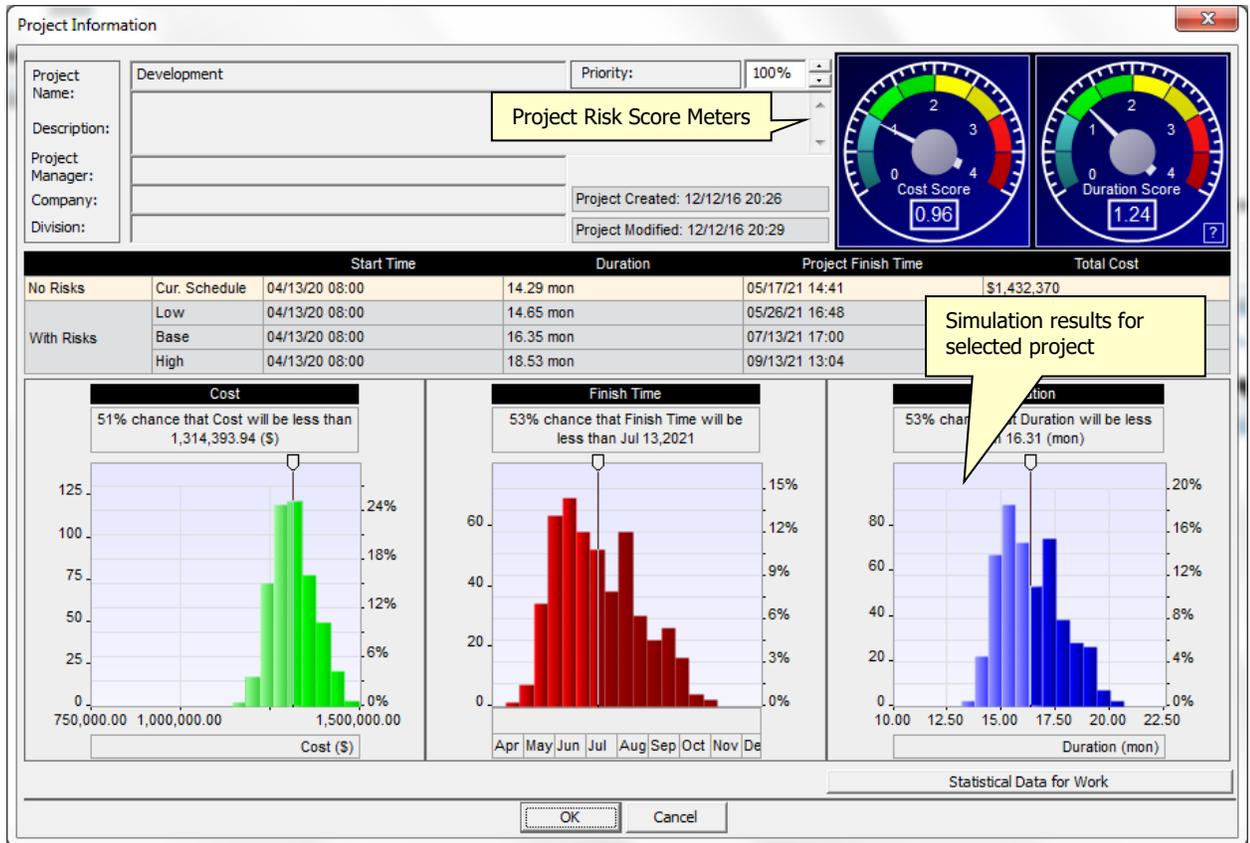
You can view general project information as well as the simulation results for projects .

To view project details:

- Right-click on the **Project ID** and select **Project Details** from the shortcut menu. Double-click on a project's Gantt bar on a **Project Gantt** view, or
- Click the **Projects** tab and then **Main Project Information**.



The general project information for the selected project will open.



- Double-clicking on any chart will bring up the detailed view for each chart.
- You may update priorities, project name, description, and other project information here.

About Project Priorities

The Priority field indicates the level of importance given to the project. The project priority is then used in calculating the risk score for the project. Projects with higher priority will be given a higher weighting in calculating the risk impact.

Priority levels range from 0% - 100%. The lowest priority is 0%. The default priority is 100%. Summary projects (programs) don't have priorities.

Priorities can be changed in any Project view: Portfolio Gantt, Risked Projects, and Project Portfolio. You don't need to open individual projects to change the project priority. You must have appropriate permissions to change a priority:

- Administrators can change priorities for any project
- Managers can change priorities in projects for which he/she has permission
- Users cannot change priorities

Project priorities are used in the following calculations:

1. Project risk scores for non-schedule risks are multiplied on project priority. Read **The Project Risk Score and Project Ranking** for more information.
2. Risk impact is multiplied on project priority. Here is an example. The project with project priority 50% has a summary project:

Project Name	Priority
Summary Project	
Project #1	50%

Project #1 has a risk assigned to it. For Project #1, the risk register would look like:

Risk Name	Probability	Impact	Score
Risk 1	50%	80%	40%

A risk register with the same risk for a summary project would look like:

Risk Name	Probability	Impact	Score
Risk 1	50%	40%	20%

The risk impact is multiplied on Project #1 priority = 50% for the summary project only.



To reflect project priority in the risk impacts you should open, recalculate and save the project.

About Project Risk Scores and Rankings

Project risk scores represent the level of risk in the project. The project risk score allows you to compare and rank projects based on their risk exposure. Project risk scores are shown in the **Portfolio Gantt** and **Project Portfolio** views.

RiskyProject calculates three risk scores separately:

- For duration
- For cost
- For non-schedule risk categories

How Cost and Schedule Risk Scores Are Calculated

Project duration score is calculated using the following formula:

$$\text{Score} = \frac{\text{Risky Duration}}{\text{Original Duration}}$$

Where:

Risky Duration – could be mean project duration as a result of analysis, mean project duration plus a standard deviation of duration, or a certain percentile of the entire project duration.

Original Duration - Original (baseline) project duration with no risks and uncertainties

- If the project does not have duration risks, the **Duration** score will be equal 1.
- If the Duration risk score is > 1, the project has threats related to duration.
- If the Duration risk score is < 1, the project has opportunities related to duration.

How Non-Schedule and Cost Risk Scores Are Calculated

Risk scores for non-schedule or cost risks are calculated in the following manner:

1. For each project and category there is an array for risk results. For example, if there are two risks “Quality of installation” (probability 50%, impact 30%) and “Quality of manufacturing” (probability 20%, impact 40%), the array for the quality category may look like this:

Iteration	Cumulative Impact
1	0
2	30% + 40% = 70%
3	30%
4	0
5	40%
6	0

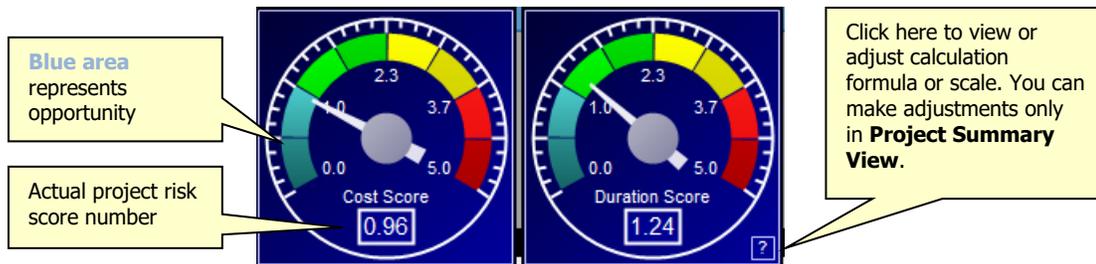
7	0
8	30%
9	30%
10	30%

2. The mean of this array is calculated and multiplied by the weight for each non-schedule risk category
3. The sum of values from Step 2 is calculated for the particular project for all risk categories; this number represents the absolute non-schedule risk score for the particular project.
4. Absolute non-schedule risk scores for all projects are normalized in such a way that:
 - if a project does not have any risks, the score will = 1
 - if a project has opportunities, the score will be < 1
 - if a project has threats, the score will be > 1.

In this way the risk scores for non-schedule risks will be compatible with risk scores for duration and cost.

Risk Meters

Project risk score factoring in duration and cost only is displayed using the Risk Meter in Project Summary view and the Project Information dialog (see *Viewing Project Details in the Portfolio Views*).



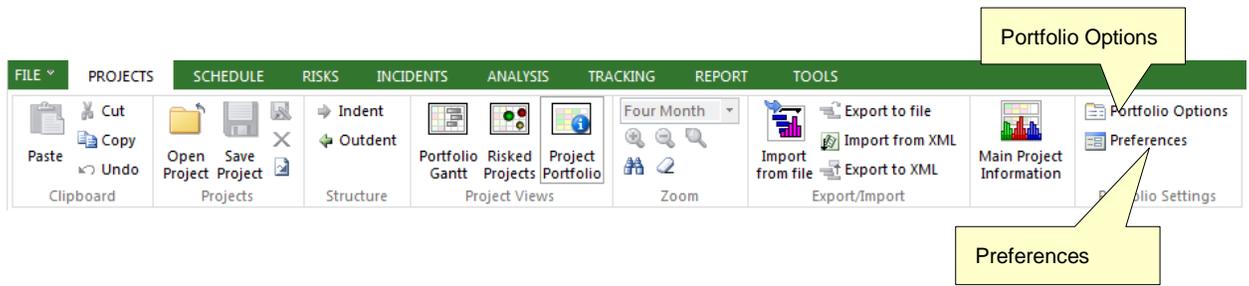
About Portfolio Options and Preferences

In RiskyProject Enterprise, there are three types of project defaults that can be set:

- **Portfolio Options** are common settings for all projects in the portfolio - these options include units, currencies, defaults calculation parameters, among others. Portfolio settings are applied to each project setting either when the project is created (imported) or each time the project is opened.
- **Project Options** can be adjusted separately for each project; Project Options and Portfolio Options are very similar.
- **Preferences** are specific to each computer and can be set by any user.

To change Portfolio Options or Preferences:

1. Click the **Projects** tab.
2. In the **Portfolio Settings** group, click **Portfolio Options** or **Preferences**.



To Change Project Options:

1. Open a project.
2. Click the **Schedule** tab.
3. In the **Settings and Options** group, click **Project Options**.

About Portfolio Options

Portfolio options set the defaults that are applied to all new projects in the database and require administrative permissions to configure.

The **Portfolio Options** dialog box includes seven tabs:

- **General** tab to set up general information regarding the organization and can be used for reporting purposes
- **Duration** tab to define the calculation of task durations
- **Calendar** tab to calculate project schedules
- **Units** tab to define how time units are displayed or input
- **Calculation** tab to set up default calculation parameters
- **Cost** tab to input default cost parameters and calculations
- **Risk** tab to define defaults for the Global and Local risks

To read more about **Options and Settings**, see Setting up your Projects in the *RiskyProject User Guide*.



The Portfolio calendar is used to display the Portfolio Gantt chart. The Portfolio Calendar is always the **Standard** calendar.

How Portfolio Options Are Applied

These are two ways by which portfolio options are applied to a particular project:

- Apply portfolio options to all new or imported projects - the user may change individual project options at any time.
- Use only portfolio options - individual project options cannot be changed.

To change these rules:

1. Click the **Projects** tab.
2. In the **Portfolio Settings** group, click **Project Options**.
3. Click the **General** tab.
4. Select on the rules to apply to the Portfolio.
5. Click **OK**.

Individual Risk Matrixes for Different Projects or Users

By default, there is one global risk matrix for all users or projects. However, you have the option to assign individual risk matrixes for different projects or users. If you assign individual risk matrixes for a particular summary project, these will automatically be propagated to all subprojects. If you assign individual matrixes to the users, these will be assigned to all users within a selected user group in your organizational breakdown structure.

To define individual matrixes for users and projects:

1. Click the **Risks** tab and then click on Format Risk Matrix
-

2. Click on **Advanced Settings**
3. Select **Risk Matrix Settings**: global, per project or per user

About Risk Visibility (Approval) Rules

When a new risk is added to the project, this risk will be visible for the current project, the immediate summary project, all summary projects for the current project, and the entire project portfolio. The visibility rules are defined in the Risk tab of the Portfolio Options dialog.



You may always change risk visibility for a particular risk using the Risk Information dialog box. A manager or administrator can make a risk or group of risks visible by clicking on the risk ID and selecting "Make Visible (Approve)" from the shortcut menu.

Here are examples which demonstrate the ways in which particular risks will be visible for different projects within a project hierarchy, depending on risk visibility rules.

Enterprise Level (all projects)	All Summary Projects																												
<table border="1"> <thead> <tr> <th>Project</th> <th>Visible</th> </tr> </thead> <tbody> <tr> <td>Project 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Summary Project 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Project 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Summary Project 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Summary Project 3</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Project 2</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Project	Visible	Project 1	<input checked="" type="checkbox"/>	Summary Project 1	<input checked="" type="checkbox"/>	Project 1	<input checked="" type="checkbox"/>	Summary Project 2	<input checked="" type="checkbox"/>	Summary Project 3	<input checked="" type="checkbox"/>	Project 2	<input checked="" type="checkbox"/>	<table border="1"> <thead> <tr> <th>Project</th> <th>Visible</th> </tr> </thead> <tbody> <tr> <td>Project 1</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Summary Project 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Project 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Summary Project 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Summary Project 3</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Project 2</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Project	Visible	Project 1	<input type="checkbox"/>	Summary Project 1	<input checked="" type="checkbox"/>	Project 1	<input checked="" type="checkbox"/>	Summary Project 2	<input checked="" type="checkbox"/>	Summary Project 3	<input checked="" type="checkbox"/>	Project 2	<input checked="" type="checkbox"/>
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To Define Risk Visibility Rules:

1. Click the **Project** tab. In the **Portfolio Settings** group, click **Portfolio Options**.
2. Click the **Risk** tab
3. Click the **Risk Visibility (Approval) Rules**.
4. Select one of the four visibility (approval) rules.
5. Click **OK**.

About Preferences

The Preferences dialog allows individual users to set up preferences for project desktop behavior and appearance, as well as setting up default export and 3rd party settings:

1. Select the project view that will appear whenever RiskyProject is opened from the Default View list. “***LAST VIEW***” will automatically load the RiskyProject session which was opened most recently.
2. Select or clear the **Show or hide startup view** check boxes to enable or disable the workflow bar, legends and splash screens.

Click on **Envision Database Connection Settings** to configure integration with the Proteus Envision® database. This can be done the same way as configuration for connecting with RiskyProject database, as outlined in the *RiskyProject Enterprise Administrator's Guide*.

Chapter 3: Managing Risks, Mitigation and Response Plans, Incidents

Introduction to Managing Enterprise Risks

The Risk Register and Mitigation/Response Plans in RiskyProject Enterprise behave in a manner similar to the standalone desktop version of RiskyProject. However, there are a number of important differences:

- Each time you add a risk to the Risk Register in RiskyProject Enterprise, it will be instantly saved to the database. You can add risks using the **Risk Register** view or the **Risk** tab in **Task Information** or **Resource Information** dialog boxes in a project.
- Similarly, if you add mitigation or response plans, these will be instantly saved to the database and shared between different projects.
- You must have permissions to add, modify or delete risks, mitigation, and response plans.
- Once added to the register, you can share risks among different projects based on their portfolio visibility (approval) settings.
- Risk cost calculation for summary project and on enterprise level includes risk cost for subprojects.
- You may choose to assign risks to specific projects, summary projects, or the enterprise level of the project hierarchy.
- You can assign different probabilities and impacts for the same risk to different projects or levels of the hierarchy.
- Risks can be visible (approved) in some projects and hidden (not approved) in others.
- Risk may have documents associated with them - documents can be any files, including files found in Microsoft Word, Microsoft Excel, Microsoft Power Point, JPEG or Bitmap images, PDF files, among others.

This section focuses on features specific to the Risk Register in Enterprise. The *RiskyProject User Guide* contains more detailed information regarding how to use the Risk Register.

How to Setup Risk Register

Risk Register view needs to be defined in advance and saved in the database to ensure consistency for all users and projects. Use the following workflow to setup Risk Register:

1. **Define risk categories.** If you define Risk Register columns to input risk probabilities and impacts you cannot change risk categories unless you hide these columns. Therefore, it is important to define risk categories as a first step. To define risk categories go to **Risks -> Risk Categories**.
2. Define risk properties: **Risks -> Risk Properties**.
3. Define risk matrix settings (**Risks -> Format Risk Matrix**):
 - A. Names and number of cell of risk matrix for each risk category
 - B. How probability and impact will be presented in Risk Register
 - C. Colors for different cells
 - D. Risk tolerance: relative number of cells for different colors
 - E. Order and names of bars on Risk Trend Chart
 - F. Risk Impact Calculation Algorithm: sum of impact for all categories or maximum impact of all categories
 - G. How the risk matrix is set: for all users and organizational units, for projects, or for organizational units

If you the risk matrix is set for Organizational Unit, when you logon, the risk matrix setting will be based upon you organizational unit membership. If a risk matrix is not defined for an a specific Organizational Unit project, RiskyProject will use the default risk matrix.

If Risk Matrixes are defined by project, RiskyProject will be present different risk matrixes based upon the project settings. If the risk matrix is not defined for a project, RiskyProject will use the default risk matrix.

A. Select risk matrix and enter description.

C. Assign matrix to project or Org Unit

B. Select project or Org Unit

You can have

- a) One risk matrix for all projects and org. units
- b) For each project
- c) For each organizational unit

4. Define columns to be presented within Risk Register for different views (tabs). In addition to entering all risk properties Risk Register allows you to input current probabilities and impacts. To define columns click on Risk Register header and select column from drop down list. Within a dropdown list you will find different types columns for probability, impact and score. You can enter probabilities impacts and scores for each category, as well as display original, pre- and post-mitigation probabilities and impacts.



In many cases probabilities for all risk categories can be the same. If such case you can define probability column only for one category, for example probability for the schedule. If you enter this probability in Risk Register, RiskyProject will automatically assign the same value to all other risk categories, such as probability for cost or probability for safety.

Below is an example how to define columns for impact. Columns for probabilities and scores are defined similarly.

Selecting probability/impact/score columns for Risk Register

Impact (Original): First impact value, which was entered for this risk - Read only

Impact (Post-Mitigation and Pre-Mitigation): Calculated Impact for all categories - Read only

Impact (for each category): Current Impact value for individual category: Editable – pre-mitigation, read-only for post mitigation

General risk information		Calculated Results: Pre-Mitigation		
Risk Name	Probability	Impact	Score	Score
1 QA process takes longer	3	4	12	
2 Failed performance test	4	2	8	
3 Delay in getting updated	4	2	8	
7 Key software development	4	2	8	
8 Failed software installation	4	2	8	
9 Calculation algorithm has errors	4	2	8	
10 Unit test found serious bugs	4	2	8	
11 Product champion is not available	4	2	8	
12 Delay in developing software	4	2	8	
13 Software reporting component	4	2	8	
14 Delay in getting responses	4	2	8	
15 Delay in financing	4	2	8	
16 New team member required	4	2	8	

Please read *RiskyProject User Guide* for more information how to define categories, properties, risk matrix settings, and columns.

About Risk Visibility and Risk Assignment

Each risk can be visible and assigned to specific projects. Visibility and assignment are not identical:

Visibility	Assignment
<p>Visibility means that a risk can be accessible for the specific project, summary project and at the enterprise level.</p> <p>If a risk is not visible, it cannot be assigned to any project.</p>	<p>Assignment means that a risk may occur (affect) the specific project, summary project or at the enterprise level.</p> <p>The user specifically attaches a risk to a project. Only a visible risk can be assigned.</p>

The screenshot shows a table with the following columns: Risk Name, Open..., Threat/O..., Risk Assigned To, Prob..., Imp..., and Sco... (Pre-M). Row 1 is highlighted with a red box around the 'Visible' checkbox and the 'Risk Assigned To' column. A pink callout box on the left points to rows 2-13, stating 'These risks are visible in this project'. A green callout box on the right points to rows 2-10, stating 'These risks are assigned to this project'. Row 10 is assigned to 'Project 8'.

When you create a new risk, it will inherit the default visibility settings. Default visibility is defined in **Portfolio Options**. See **Risk Visibility (Approval) Rules** for more information.

Default visibility can be set for:

- Projects which are currently opened (Current Project)
- Only the Immediate Summary Project
- All Summary projects for this project
- At the Enterprise Level

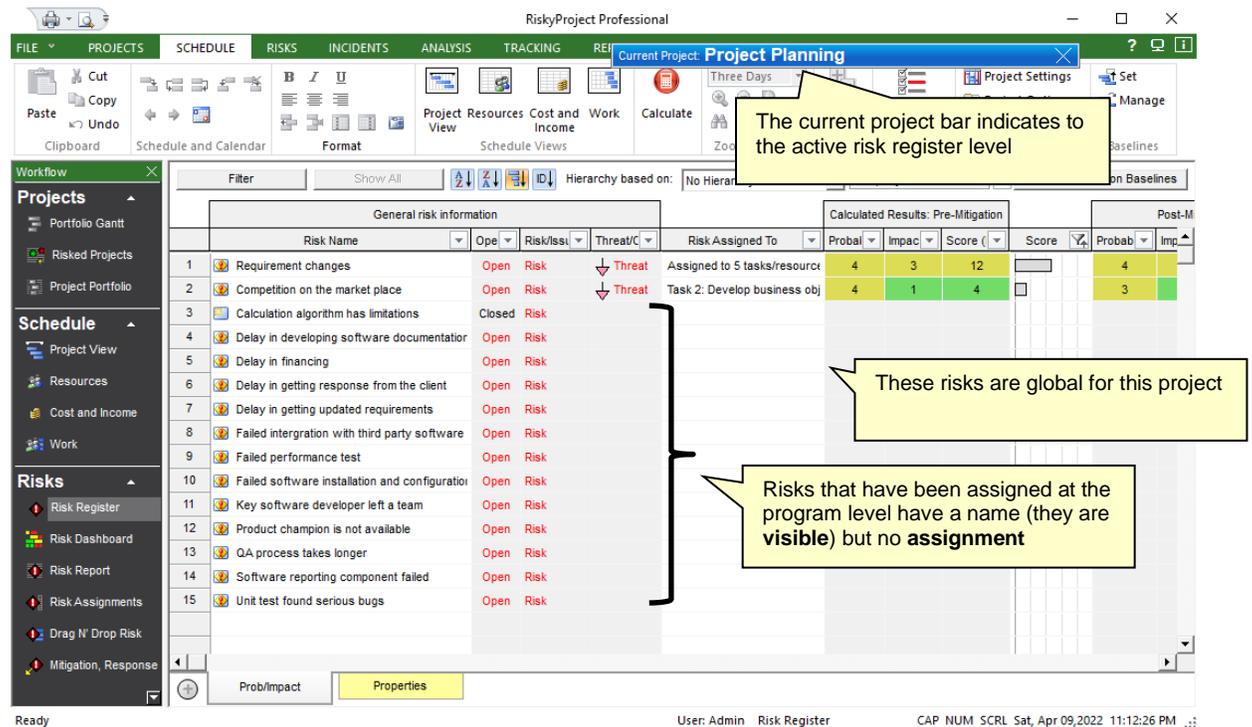
After a risk is created, you can change the visibility if you have permissions to the projects in which you want to make this risk visible.

Assigning Risks to Projects

Risk must be assigned to a specific project, a summary project, or at the enterprise (upper) level of the project hierarchy.

To assign a risk to a project or program:

1. Open the project to which you want to assign the risk; if you do not open a project or program, the risk will be assigned to the enterprise (upper) level of the project hierarchy.



2. Click the **Risks** tab and then in the **Risk Views** group, click **Risk Register** or **Risk Properties**.
3. Double-click on a Risk ID to open the Risk Information dialog box.
4. Enter all risk properties including probabilities and impacts; you may define different risk alternatives, risk categories, moment of risk (if a risk is assigned to a task or resource). For more information, please read the *RiskyProject User Guide*.
5. Click **OK**.

To view risk register on enterprise level:

If you do not have an open project or program (no blue or red bars), this indicates you are looking at the enterprise risk register:

Current Project bar is not shown, therefore, this is the enterprise risk register.

This column shows projects this risk is assigned to.

These risks are assigned to these projects. Other risks are assigned at the enterprise level.

This risk is not assigned to any projects.

General risk information				Calculated Residual			Post-Mitigation	
Risk Name	Open	Risk/Issu	Threat/C	Probab	Impact	Score	Probab	Impact (F)
1 QA process takes longer	Open	Risk	Threat	4	3	12	5	3
2 Requirement changes	Open	Risk	Threat	4	2	8	4	2
3 Competition on the market				4	2	8	3	2
4 Failed software installation				1	5	5	1	5
5 Failed integration with existing system				2	2	4	2	2
6 Delay in getting updates				4	1	4	4	1
7 Unit test found serious bugs				1	4	4	4	1
8 Delay in developing software documentation	Open	Risk	Threat	1	4	4	3	2
9 Software reporting component failed	Open	Risk	Threat	1	3	3	1	3
10 Delay in getting response from the client	Open	Risk	Threat	1	3	3	1	3
11 Delay in financing	Open	Risk	Threat	3	1	3	5	1
12 Key software developer left a team	Open	Risk	Threat	2	1	2	1	2
13 Product champion is not available	Open	Risk	Threat	1	2	2	1	2
14 Calculation algorithm has limitations	Closed	Risk	Threat	1	2	2	1	2
15 Failed performance test	Open	Risk	Threat	2			2	2

To view the projects to which a risk is assigned:

When viewing the portfolio or program risk register, the **Risk Assigned To** field displays the projects (or programs) to which a risk is assigned.

In the above example, the Current Project bar is not open, which indicates that you are looking at the Enterprise level risk register. If the risk is assigned to more than one project, the **Risk Assigned To** will become a drop-down list. Click on the list to view all of the projects to which the risk is assigned.

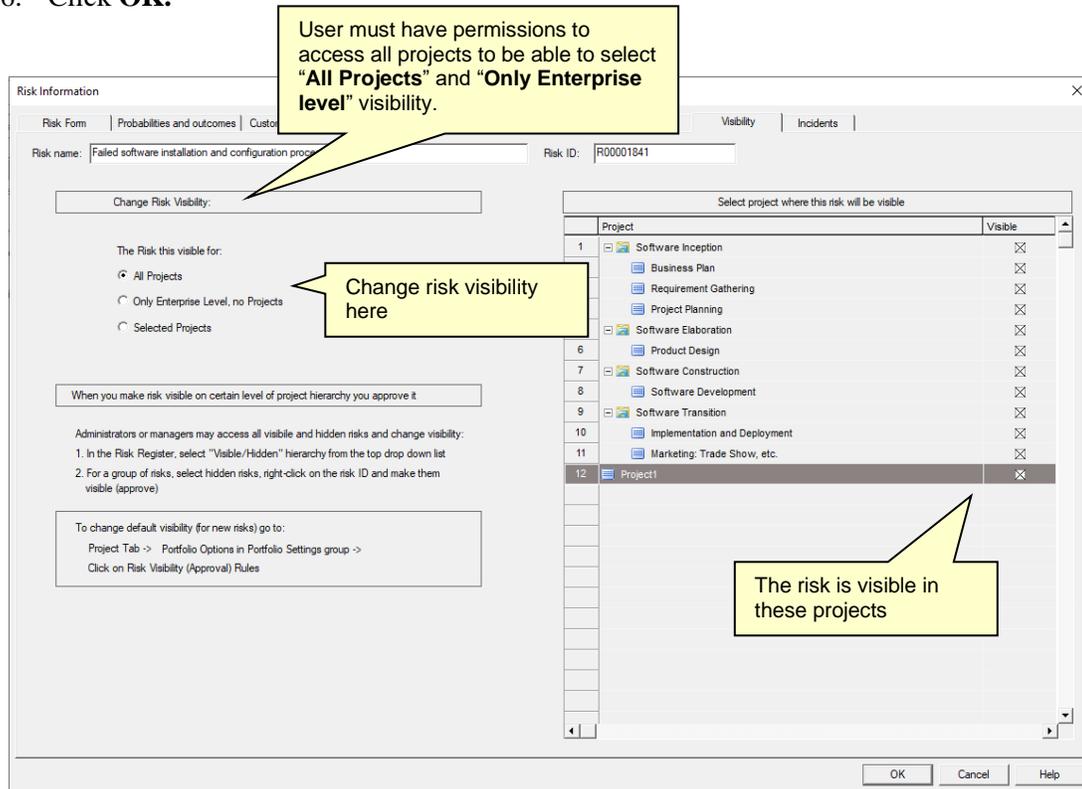
Changing Risk Visibility

After a risk is created, you may change the list of projects within which the risk is visible.

To change risk visibility:

1. Click the **Risks** tab and then 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 **Visibility** tab.
4. Select a visibility level. You may choose to make this risk visible:
 - For all projects/all levels of the hierarchy

- Only at the enterprise level of the hierarchy
 - For specific projects
5. If you need to make your risk visible for a particular project, select projects in which you would like your project to be visible.
 6. Click **OK**.



Automatically Assign Risks to Upper Levels of the Hierarchy

In the above example, the risk “Issue with the hardware” is visible for Project 7 and for Summary Project 7. Here is an important rule:

If you assign a risk to a low level of the hierarchy, it will be automatically assigned to levels directly above it unless visibility is explicitly limited to the project.

In our previous example, if you assign the risk “Issue with the hardware” to Project 7, it will be automatically assigned to Summary Project 3.

To view the projects or programs to which a risk is assigned:

1. Open a **summary project** (Summary Project 3 in our example).
2. Click the **Risks** tab and then in the **Risk Views** group, click **Risk Register** or **Risk Properties**.
3. Double-click on a Risk ID to open the **Risk Information** dialog box.
4. Click the **Probability and Outcome** tab (if you do not have a project schedule) or **Assign to Tasks or Resources** Tab (if you have a project schedule).

- You will be able to see the risk, which is automatically assigned to the summary project. Column **From Project** indicates where the risk was assigned originally. The original assignment can be changed here. You would have to go to the sub project (Project 7 in our example) to make any changes to the risk assignment.

The screenshot shows a risk management window with a table of alternatives and a pie chart below. Callouts provide context for the interface elements.

Alternatives	From Project	Threat/Opportu	Chance	Outcome Type	Outcome
1	Software Transition	Threat	1	Relative Cost Increase	3
2	Software Transition	Threat	1	Relative Delay	2
3	Software Transition	Threat	1	Reputational Risk	4
4					
5		Threat	1	Safety Risk	4
6					
7		Threat	1	Environmental Risk	4

Callout 1: You can delete automatic risk assignment here, but you would need to modify it in the original project

Callout 2: Automatic risk assignment (from projects)
Outcomes and changes are greyed out. From Project indicates where the risk was assigned originally

Callout 3: Risk is assigned to this level of hierarchy. Probabilities and impacts can be changed here.

Legend for Mutually exclusive alternatives:

- No Risk: Chance 90.0%
- 10.00% chance of Environmental Risk : 4

The same process of automatic risk assignment also works at the enterprise level. Therefore, if a risk is visible at the enterprise level and you assign it to a particular project, the risk will be automatically assigned to the enterprise level.



You may assign the risk to a summary level, even it is already assigned to the project level. This is useful in situations where the project level and summary level risk is assigned to different categories. For example, at the project level "Pipeline Crack" is a quality risk, whereas on the portfolio level the same risk can also be defined as a public relations risk.



- When you change the visibility for the risk, it will automatically be assigned to the associated summary project or to the enterprise level.
- You must have appropriate permissions to make a risk visible for a summary project or at the enterprise level. If you do not have these permissions, your risk will not be automatically assigned to the upper level of the hierarchy.
- Automatic risk assignment only goes upward from lower to higher levels of the hierarchy (summary project and enterprise level), but not from summary projects down to sub projects.
- Original risk assignments may have multiple mutually-exclusive alternatives with different probabilities and impacts. These risk assignments may also have a particular distribution of

risk outcomes. When a risk is automatically assigned to the upper levels of the hierarchy, one integrated risk assignment will be generated, the impact and probability of which will be equivalent to the original risk assignment.

About Hidden Risks

Risks that are not visible for certain projects will be flagged as hidden for those projects. They will still exist in the risk register, but only administrators, managers and the particular owner/manager of the risks will be able to see them.

To see a hidden risk:

1. Click the **Risks** tab and then in the **Risk Views** group, click **Risk Register** or **Risky Properties**.
2. From **Hierarchy based on** drop-down list select **Visible/Hidden**.
3. You will be able to see all hidden risks for the current project or at the enterprise level, if no projects are opened.

About the Risk Approval Process

Risks entered into the system may need to be **approved** by a manager before they become visible to other users. The manager or administrator can make risks assigned to specific projects visible in other projects. There are two methods to make projects visible:

1. Using the **Risk Information** dialog box (see **Changing Risk Visibility**) - using this method you can only change the visibility for one risk at a time.
2. Using the **Make Visible (Approve)** command - you can modify the risk visibility for a group of risks.

To make a hidden risk visible:

1. Open the project where you want the risk to be visible. If you don't open any project, the risks will be visible at the enterprise level.
2. Click the **Risks** tab and then in the **Risk Views** group, click **Risk Register** or **Risky Properties**.
3. Select a single risk or a group of risks.
4. Right-click on the **Risk ID**.
5. Click **Make Visible (Approve)**.



You must be an administrator or a manager to make risks visible. Even if you are the manager or owner of a particular risk, you cannot make the risk visible for other levels of the hierarchy.

Deleting Risk Assignments

Risks can be deleted using the same process as in the standalone RiskyProject (see the *RiskyProject User Guide* for more information). You may:

- select a risk in the risk register and press **Delete** , or
- select a risk or group of risks, right-click on a risk ID and click **Delete Risk**.

All risk assignments will also be deleted. If these risks are assigned to the projects you need to open projects individually, recalculate them and save them. This will allow the project risk score and other information related to project uncertainties to be updated.

Calculating Risk Probability and Impacts

Risk probability, impact and scores for all risks associated with a particular project or at the enterprise level are updated each time the risk register is loaded or refreshed:

- When you click the **Refresh** button
- When you close the current project or load a new project
- When you input a new risk
- When you switch views to Risk Register, Risk Matrix, RiskyProperties, or Risk Details

To update the risk register, Monte Carlo simulations are automatically performed. This is required to statistically calculate the cumulative impact of each risk. Monte Carlo simulations are required because the same risk may be assigned to different projects and within a project's various tasks and resources. The process of impact calculation is outlined in **The Project Risk Score and Project Ranking**.

The probability for each risk is based on the maximum probability of all risk assignments.

Locking and Unlocking Risks

Only one user can edit a risk at a time. Risk editing is done in the Risk Information Dialog box. Once a user opens a risk, this risk will be locked for all other users. Locked risks have the icon  next to the risk name. The risk will be automatically unlocked once risk editing is complete (once the user closes the Risk Information Dialog box).

If a risk is locked it can be unlocked by an administrator. As an example, it may be necessary for an administrator to intervene if a user has a risk opened for a long time period.

To unlock a project or a group of projects:

1. Click the **Risks** tab. In the **Risks Views** group, click **Risk Register** or **Risk Properties** view.
2. Select the risk or multiple risks you would like to unlock.
3. Right-click on the project ID and from the shortcut menu, click **Unlock Risk**.

About Cost of Risk Calculations

Cost of risk calculates the total cost of a risk that takes into account the risk mitigation plans linked to the risk. Cost of risk calculation in RiskyProject Enterprise includes calculation of risk cost for subprojects for summary projects and at the enterprise level. The Risk cost calculation is performed in the **Risk Form** tab of the **Risk Information** dialog box. Only Cost of Residual Risk and Potential Loss can be entered in Risk Form. Other cost parameters are calculated. You can modify Risk Form to show or hide different fields.

Cost before mitigation:		Cost after mitigation:	
Potential Lost:	\$400.00	Cost of Response Plan:	\$0.00
Probability before mitigation:	60.0 %	Cost of Residual Risk:	\$0.00
Expected Loss:	\$240.00	Probability After Mitigation:	60.0 %
Cost from subprojects:	\$145.36	Expected Loss:	\$0.00
Auto calculation of expected loss (from Monte Carlo):		No	
Cost of Mitigation from Waterfall tab:		Total cost of risk with mitigation:	
\$0.00		\$0.00	
		Saving from mitigation/enhancement:	
		\$240.00	

Cost Before Mitigation

1. **Potential Loss** (property “*Cost before mitigation*”): the loss in monetary terms if the risk occurs. This value can be entered manually if you select No for “*Auto calculation of expected loss (from Monte Carlo)*” or if you don’t open a schedule.

For example, for the risk “low quality component”, the potential loss is \$50,000. You would incur this cost if a low quality component were supplied.

2. If you don’t open a schedule, the **Probability Before Mitigation** value is based on the risk values entered in the **Probabilities and Outcome** tab of **Risk Information** dialog box. See **Risk Probabilities and Impacts** for more information. If you have a schedule **Probability Before Mitigation** comes from results of Monte Carlo simulations.
3. **Expected Loss** (property “*Pre-Mitigation Expected Loss*”) takes into account risk probability. It is an indicator that helps you to compare the costs of different risks. Expected loss can be calculated manually or automatically depending on selection “*Auto calculation of expected loss (from Monte Carlo)*”.

- a. Manual calculation of Expected Loss: You can manually calculate the expected loss for individual risks by running two simulations: one with the risk open and the other with the risk closed. The difference in the total project costs is the expected cost of the risk.

$$\text{Expected loss} = \text{Potential Loss} * \text{Probability (pre-mitigation)}$$

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

- b. Automatic calculation of Expected Loss is done based on results of Monte Carlo simulations of project schedule:

$$\text{Expected loss} = (\text{Project Cost with Risks} - \text{Project Cost Original}) * \text{Correlation Coefficient}$$

The correlation coefficient is calculated using project cost and cost increases due to a specific risk occurring. For example, the project cost with risks and uncertainties is \$100,000. Project cost without risks and uncertainties is \$90,000. In addition, the correlation coefficient for the specific risk is 0.8. Expected loss will be $(\$100,000 - \$90,000) * 0.8 = \$8,000$. The automatic calculation cannot be performed at the enterprise level or on summary projects, as they do not include project activities. For automatic calculation of Expected loss of the current project, RiskyProject will calculate Potential Loss for current project = Expected loss / Probability (pre mitigation).

4. **Cost from Subprojects** (property “*Pre-Mitigation Expected Loss (Sub-Projects)*”) is an expected cost from all subprojects where “*Auto calculation of expected loss (from Monte Carlo)*” is “Yes”. It is calculated only for summary projects and at the enterprise level. It is always zero for subprojects.

5. **Pre-Mitigation Loss (Total Expected Loss):**

$$\text{Total Expected loss} = \text{Expected Loss on Current Level of Project Hierarchy} + \text{Cost from Subprojects}$$

Total expected loss is calculated at the enterprise or at the summary project level. For example, a summary project has two sub projects with expected loss \$8,000 and \$7,000,

which are calculated automatically. The summary project itself has expected losses of \$5,000, defined manually. Total expected loss will be \$20,000.

Total expected loss cannot be shown on Risk Form, but can be inserted as a column in the Risk Register.

Cost Of Mitigation

1. **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.

Cost After Mitigation

2. **Cost of Response Plan.** 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.

3. Residual risk may still exist 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.

4. **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% because of the execution of the mitigation plan “additional QA procedure”, probability of risk “Low quality component” is reduced two times.

5. **Expected Loss After Mitigation** (property “*Post-mitigation Expected Loss*”) 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 Mitigation

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%.

Other Cost Indicators (Properties)

1. **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

2. **Saving from Mitigation/Enhancement** 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

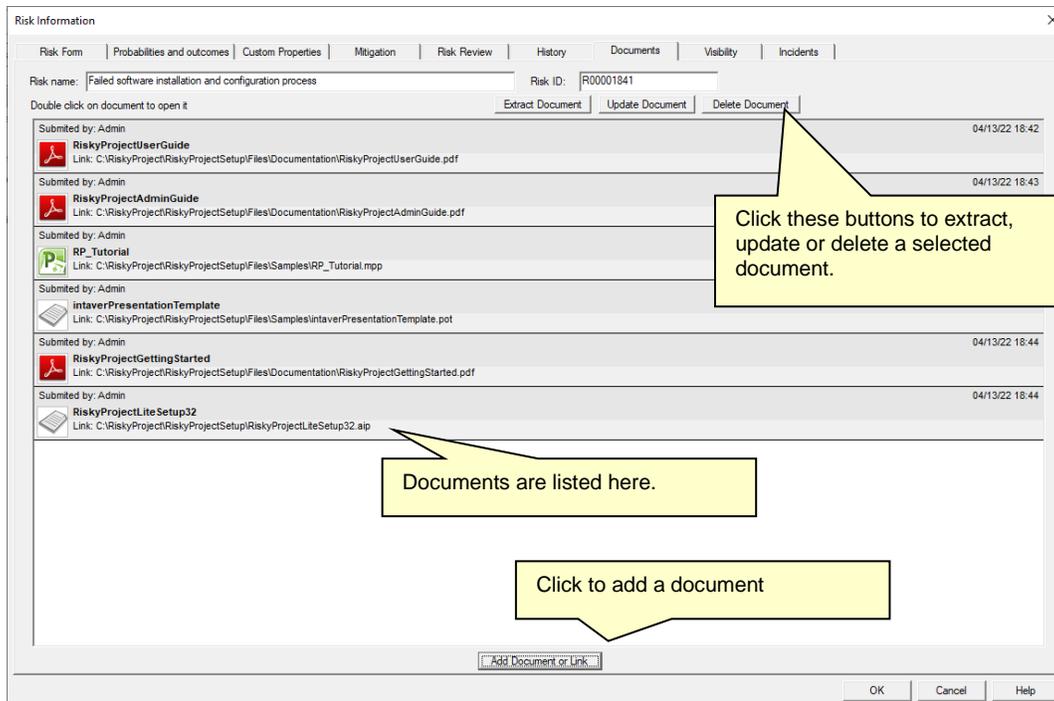
For example, total cost after mitigation of risk “low quality component” will be \$17,500. Expected loss \$25,000. Saving from Mitigation is \$7,500. Because this number is positive, it makes sense to perform mitigation efforts.

About Risk Documents

You can add documents related to a risk to the risk register as part of your risk management process. This can be useful in order to add artifacts that were used during risk identification, assessment or other processes that are considered important to managing the current risk, but also for future reviews.

To add a document to a risk:

1. Open the risk register.
2. Open the risk to which you want to add the document.
3. Click the **Documents** tab.
4. You can manage existing documents using the following buttons:
 - **Extract Document:** Click to extract a copy of a document saved to the database onto a local drive.
 - **Update Document:** Click to update a linked document.
 - **Delete Document:** Click to delete a document from the risk.



Adding a Document to a Risk

To add a document to a risk:

1. Open the **Document** tab.
2. Click the **Add or Link Document** button. The Document Description dialog box will open.
3. Type in a document name in the **Document Name** box.
4. Type in a description of the document in the **Document Description** box.
5. Select either the **Add link** or **Save document** in the database option.

There are some considerations you should note in regards to these options:

- If you choose to link a document, this provides a path to the local computer. Therefore, it may not be valid for other system users.
 - If you select **Add to database**, over time this can potentially impact database size and may lead to decreased performance.
6. Click the **Browse** button to locate the file.
 7. Click **OK**.

Risk Register and Organizational Units

The Risk Register can be filtered based on organizational units. The Organizational breakdown structure is defined in User Management console. For more information about organizational breakdown structures, please refer to *The RiskyProject Enterprise Administrator's Guide*.

Each risk can have organizational unit as a risk property. Organizational Unit risk property is a dropdown list defined in User Management dialog. It is possible to assign Organizational Unit properties:

- In the Risk Form (Risk Information Dialog)
- In the Custom Properties tab of Risk Information Dialog
- In the Risk Register view directly by inserting Organizational Unit column in Risk Register grid.

The screenshot shows the 'Risk Information' dialog box with the 'Custom Properties' tab selected. The 'Org. Unit' dropdown menu is open, displaying a list of organizational units: 'Company Level', 'Engineering', 'Software', 'Hardware', 'IT', and 'Security'. A yellow callout box with a pointer to the 'Org. Unit' dropdown contains the text 'Define Organizational unit using Risk Form'. Another yellow callout box with a pointer to the 'Custom Properties' tab contains the text 'You can also define Organizational unit using Custom Properties Tab of Risk Information Dialog'. The dialog also shows fields for 'Risk Lifecycle', 'Probability', 'Impact', 'Cost', 'Assumptions', 'Risk Ownership', 'Management Strategy', 'Timeline', and 'Cost' calculations.

Once Organizational Units are defined, you can filter the Risk Register based on organizational units. The Organizational Units are selected using the drop-down list located at the right top corner of the Risk Register, Risk Matrix, and Risk Trend views.

Filtering the Risk Register based on an organizational unit takes into account the Organizational Hierarchy or Organizational Breakdown Structure. For example, if you have Organizational Unit “Administration” and it has two subunits “Accounting” and “HR”. In this case, in the Risk Register, if you select “Administration” from drop down list, risks that belong to the organization units “Accounting” or “HR” will be shown.

If you select “Company Level” from “Organizational Unit” dropdown list, you will be presented with all visible (approved) risks in Risk Register.

RiskyProject Professional

FILE PROJECTS SCHEDULE RISKS INCIDENTS ANALYSIS TRACKING REPORT TOOLS

Paste Copy Open Save Save As Close Refresh Indent Outdent Portfolio Gantt Risked Projects Project Portfolio Days Import Export Import Export Main Project Information

Click here to expand dropdown list of org units

Workflow Filter Show All Hierarchy based on: No Hierarchy Org Unit: Company Level

General risk information						Calculated Results: Pre-Mitigation				Post-Mitigation			
Risk Name	Open	Risk/Iss	Threat/C	Risk Assigned To		Probab	Impact	Score (1-5)	Score	Probab	Impact (1-5)	Score	Score
1 Failed software installation and configurator	Open	Risk	Threat	Software Transition		4	1	4		4	1		
2 Delay in getting updated requirements	Open	Risk	Threat	Software Developer		4	1	4		4	1		
3 Unit test found serious bugs	Open	Risk	Threat	Software Developer		4	1	4		4	1		
4 Failed performance test	Open	Risk	Threat			4	1	4		2	2		
5 Delay in financing	Open	Risk	Threat			3	1	3		5	1		
6 Delay in getting response from the client	Open	Risk	Threat			1	2	2		1	3		
7 Software reporting component failed	Open	Risk	Threat			1	2	2		1	2		
8 Failed intergration with third party software	Open	Risk	Threat			2	1	2		2	1		
9 Key software developer left a team	Open	Risk	Threat			2	1	2		1	2		
10 Delay in developing software documentator	Open	Risk	Threat			1	2	2		2	6		
11 Product champion is not available	Open	Risk	Threat			2	1	2		2	1		
12 Calculation algorithm has limitations	Closed	Risk	Threat	Assigned to 2 projects									
13 QA process takes longer	Open	Risk	Threat										

Select Organizational Unit from dropdown list to filter Risk Register.

Ready User: Admin Risk Register CAP NUM SCRL Wed, Apr 13, 2022 7:12:51 PM

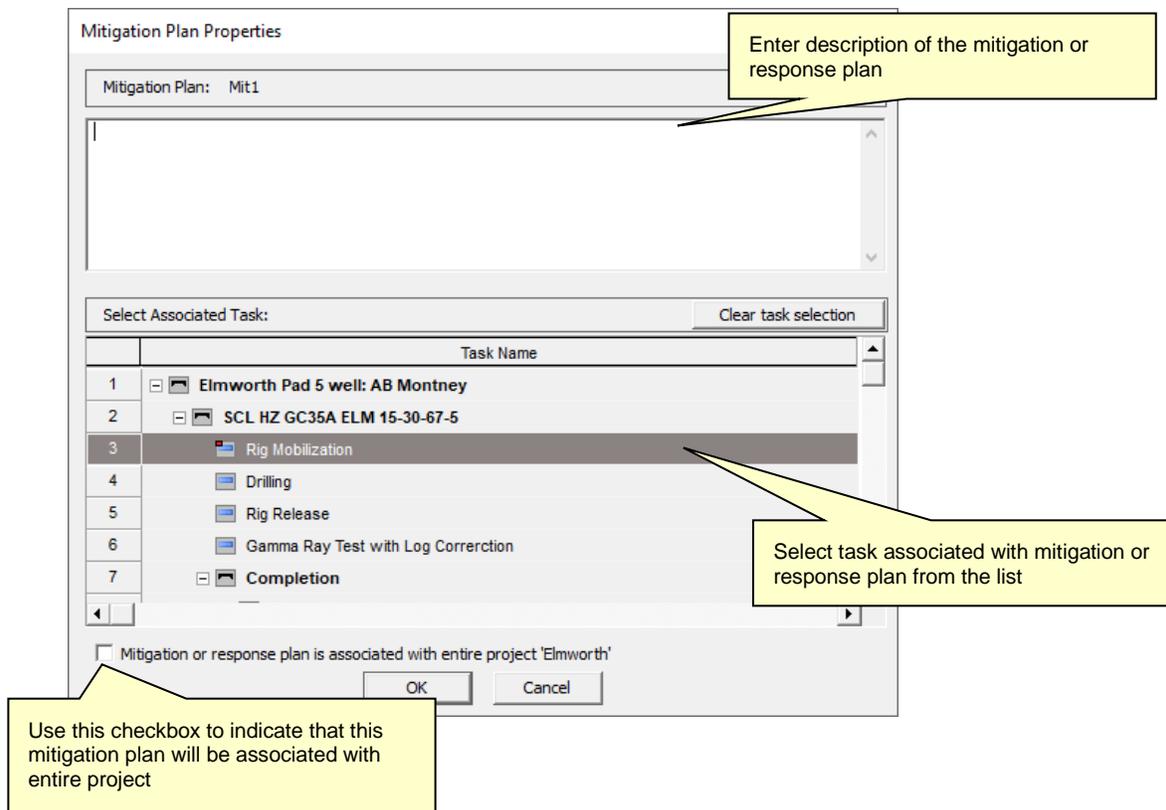
Managing Mitigation and Response Plans

In RiskyProject risk mitigation and response plans are available for all projects and organizational units. Risk Mitigation and response plan can be entered and edited in **Mitigation and Response View**. RiskyProject Enterprise allows linking mitigation and response plans not only to individual task as in standalone desktop version, but also to a project. If you associate plan with entire project cost, actual cost, and percent completed of entire project will be used in mitigation plan.

To link mitigation or response plan with a project or a task:

1. Open a project. This project will become current
2. On the Risks tab, click **Mitigation and Response** to open the view.
3. Double click on the **Mitigation** or **Response Plan ID**; the Mitigation of Response Plan properties dialog box opens.
4. Select task from the list of tasks; only one task can be selected.
5. If you want this mitigation and response plan to be associated with the current project, select the checkbox at bottom of dialog box.

To reset the selection of the task and project, click **Clear task selection**.



Managing Incidents

Incidents are events that can be recorded, viewed and reported in RiskyProject. In RiskyProject, incidents are managed similarly to risks. RiskyProject has an **Incident Register**. This register is similar to Risk Register. Each Incident has a list of customizable properties that are a different set than risk properties. Risks and incidents can be linked to each other: one risk may have different incidents, while one incident may have multiple risks. Incidents have customizable impact classifications such as Severe Impact, Moderate Impact, Low Impact. The Incidents feature is only available in RiskyProject Enterprise and requires connection to a database.

These views can be accessed using Incident tabs within the workflow bar or ribbon:

1. **Incidents** in the Incident Register
2. **Incident Statistics** as a chart showing occurrence of incidents over time

Enabling Incident Register

To enable Incidents Tabs in Workflow Bar and Ribbon:

1. On the **Projects** tab, click **Portfolio Options** > **General** tab.
2. Click **Enable incident tracking and reporting (Incident tab)**.
3. Click **OK**. Incidents are now available.

Incident Classification

You can define incident classifications and how incidents appear on the **Incident Statistics** chart. The order of the bars on the Incident Statistics are associated with particular incident classes (groups). For example, for each time period **Low** (green), **Moderate** (yellow), and **Severe** (Red color) are first, second, and third respectively.

Using **Incident Classification Settings** dialog box you can define:

1. The order using the **Move Up** and **Move Down** buttons.
2. The class name (group).
3. Chart periodicity (monthly, quarterly, yearly, etc.)
4. Maximum number of periods on the Statistics chart.

To open the Incident Classification Settings in Incidents tab, click **Classification** in the **Settings** group.

About Incident Properties

Similarly, to risks each incident has properties that record information about the incident. You can use incident properties to search and filter the Incident Register. Incident properties can be have the following types:

- String – text information
- Integer number
- Real number
- Resource – can be taken from list of resources
- Date
- Picklist: dropdown list with values

Integer numbers and real numbers have maximum and minimum values.

The list of incident properties supports a hierarchy and organized into groups.

Customizing the default incident properties

To customize the incident properties:

1. Click the **Incident** tab > **Settings** group > **Default Properties**.
2. Select a row under which you want to add a new incident property.
3. Right-click on the row number and choose **New Property Item**.
4. Type in the name.
5. Select the type and required values (i.e maximum and minimum values).
4. Use the **Indent** and **Outdent** arrows  to create groups of incident properties.
5. If you have Picklist type incident property double-click on incident property ID; Picklist dialog box will opens where you can enter the list of values.

Default incident properties are saved in the database and can be used for all projects. You may use the **Restore Default** button to overwrite changes in default incident properties you made with standard set of incident properties

Incident ID Settings

You can generate Incident IDs automatically. Alternatively, you can enter Incident IDs manually in the same manner as you enter any other incident property. If an Incident ID is generated automatically, you can overwrite it manually. Incident IDs will be incremented each time you enter a new incident.

Incident IDs can include four components:

1. **Prefix** – any symbols (optional)
2. **Number** – from 4 to 16 digits (optional)
3. **Suffix** – any symbols (optional)
4. **Date** – date format can be defined (optional)

The Incident ID may be not unique if you manually overwrite automatically generated IDs.

To enable automatic generation of Incident ID and define the format of Incident ID:

1. Click the **Schedule** tab. In the **Settings** group, click **Options**.
2. Click the **Incident** tab.
3. Click on **Incident ID Format** to define rules for Incident ID automatic generation; **Incident ID Format** dialog box opens.
4. Define the Incident ID prefix and suffix.
5. Define the number of digits for Incident ID generation.
6. Enable / disable dates as part of the Incident ID format and define the date format and position.
7. Define starting number of Incident ID

Viewing the Incident Register

The **Incident** view allows you to:

- View a list of incidents with their properties; you can use different incident hierarchies based on classification, owner, or manager
- Sort and filter the Incident Register by clicking on the icon on the right corner of the column header; to undo filtering click on Show All in left corner of the view.
- Insert or delete columns with incident properties, define headers for any individual column or group of columns;
- Create multiple views or tabs shown at the bottom of the view; each view may have different sets of columns and filters
- Edit incident properties either within a view directly or using Incident Information Dialog (double click on Incident ID)
- Print the Incident Register
- Export to Excel

The screenshot displays the RiskyProject Professional interface, specifically the 'INCIDENTS' tab. The main window shows a table of incidents with columns for ID, Description, Date, and Impact. A 'Hierarchy based on:' dropdown menu is open, showing options like 'No Hierarchy', 'Classification', 'Incident Owner', and 'Incident Manager'. The interface includes a sidebar with 'Risks' and 'Incidents' sections, and a top menu bar with various tool icons. Several callout boxes provide instructions on how to interact with the incident list.

ID	Description	Date	Impact
3	Network outage	10/13/21 00:00	Moderate Impact
4	Server Failure	09/09/21 00:00	Severe Impact
5	Software source code file is found	09/07/21 00:00	Low Impact
	Virus found on single workstation	05/06/21 00:00	Severe Impact

Callout 1: Reset Filters

Callout 2: Sort and filter incidents

Callout 3: Select incident hierarchy based on classification, owner, or manager

Callout 4: Double-click ID s to edit properties and assign incidents to risk

Callout 5: List of Incidents with their properties

Callout 6: Create multiple views with different sets of columns and filters

Viewing the Incident Statistics Chart

The Incident Statistics view is used to show the number of issues raised over time for each particular classification. Each classification can be modified. To edit colors, order, number of periods, and periodicity (yearly, monthly, etc) use the **Incident -> Classification** dialog box.

The screenshot displays the 'Incident Statistics' view in RiskyProject Professional. The central table lists the following incidents:

Incident	Date
1 Critical software bug found	08/11/21 00:00
2 Malware deleted on one of the workstations	09/08/21 00:00
3 Network outage	10/13/21 00:00
4 Server Failure	09/09/21 00:00
5 Software source code file is found	09/07/21 00:00
6 Virus found on single workstation	05/06/21 00:00

The bar chart on the right shows the number of incidents per month from July 2021 to April 2022. The legend indicates three impact levels: Severe Impact (red), Moderate Impact (orange), and Low Impact (green). The chart shows 1 Severe incident in August 2021, 1 Low incident in September 2021, and 1 Moderate incident in October 2021.

Callout boxes provide additional context:

- 'Define classification properties, including order and colors' points to the 'Classification' menu item.
- 'Incident classes' points to the 'Incident Statistics' menu item.
- 'View incidents raised in different period of time' points to the bar chart.

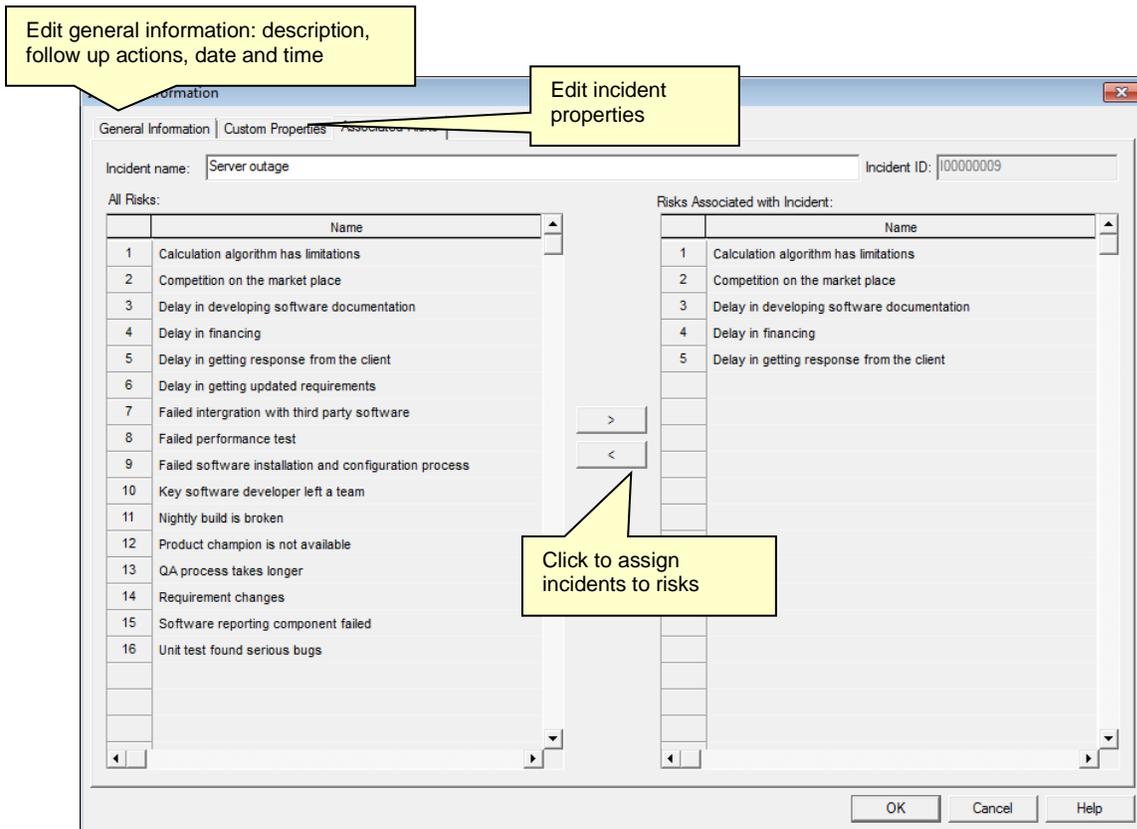
Editing Incident Information

To edit incident information:

In Incident view or Incident Statistics view double click on incident ID. The **Incident Information** dialog box will open.

Incident Information Dialog box includes the following tab:

- **General Tab:** allows you to edit Incident Name, Incident ID, Date and Time of Incident, Incident description, Incident follow up actions.
- **Custom Properties:** allows you to edit all individual custom properties.
- **Associated Risks:** allows you to assign risks to the incident.



You can assign incidents to risks in the Incidents tab of the Risk Information dialog box. When in the Risk Register you can double-click on a risk ID and go to Incident tab.

Chapter 4: User Management and RiskyProject Configuration

About User Management

In RiskyProject Enterprise, user management is based on users, roles and permissions. Each individual who accesses the system should be assigned user logon credentials which are defined in the User Administration panel. Users can be assigned one of three roles: Administrator, Manager or User. The *RiskyProject Enterprise Administrator's Guide* describes the user management process. This section describes only how the user can define personal information.

About Roles

RiskyProject Enterprise has 3 defined roles that can be assigned to users: Administrator, Manager and User.

- **Administrator:** the administrator has full access to RiskyProject functions.
- **Manager:** the manager may have full access to RiskyProject, except for the ability to manage users and change user permissions. The manager's permissions can be limited by the administrator.
- **User:** the users cannot edit managers, users, modify portfolio settings, or delete projects. In addition, the administrator can limit a user's permissions.

Only administrators can edit user information. A user can only edit their own information, including passwords. The administrator cannot set or modify user passwords. Only administrators and managers can change risk visibility information.

Updating Personal Information

To update personal information:

1. From the **File** menu, click **Users**. The **User Management** panel will open.
2. Review your permissions - permissions cannot be changed by users.
3. Update your personal information.
4. Click **OK**.

About Permissions

Each user has different permissions:

- Create, modify and delete risks
- Create, modify and delete mitigation and response plans
- Create projects

By default, the Administrator role has all available permissions. Only administrators can change permissions for users and managers. For more information about how to change user permissions, please read the *RiskyProject Enterprise Administrator's Guide*. All administrators, managers and users can view all projects and all visible risks. However, if a user does not have permission to modify a risk or a mitigation/response plan, the Risk Information or Mitigation Plans will be read-only. If a user attempts to open the project to which they do not have permission, they will be prompted that they do not have permission to perform this action.



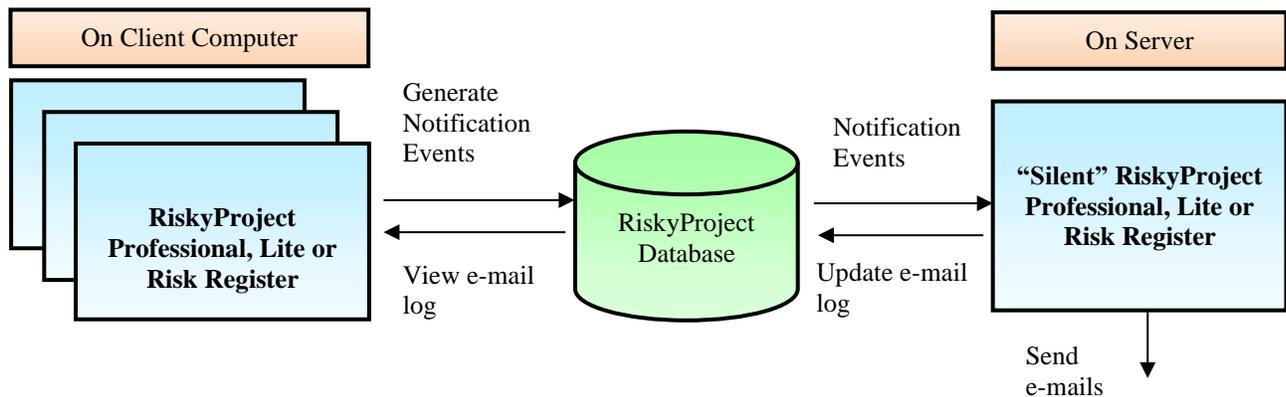
- You can always create risks in projects to which you have permission. However, you need permissions to create risks at the enterprise level.
 - Both managers and administrators can approve (make visible) risks at each level of the project hierarchy.
 - A user can always modify risks as soon as he or she is listed as an owner or a manager for this risk.
 - A user or manager must have permissions for all projects (the entire portfolio) to be able to create risks at the enterprise level.
 - If you use the RiskyProject add-in in Microsoft Project and the project does not exist in the RiskyProject database, it will automatically be created in RiskyProject regardless of user permissions.
-

Notification Manager

In RiskyProject, you can configure emails which will be sent to users to notify them regarding the status of risks, changes in their properties and upcoming risk reviews. Who needs to receive messages, what those messages are and when they will be sent are all fully configurable by administrators.

RiskyProject can be executed using Windows Task Scheduler every 5 – 15 minutes without preventing user interface and can send out notification e-mails. Notifications can be configured using **Notification Manager**. Notification Manager is accessible from **Tools -> Notification Manager** or from **File -> Users -> Users Tab -> Notification Manager**. After notifications are configured, RiskyProject can read data from notification messages in the RiskyProject database and send them.

To execute RiskyProject using Windows Task Scheduler to send notification messages, it is recommended to install RiskyProject Professional, Lite, or Risk Register on the server. This installation can be done exactly the same way as on a client's computer. A dedicated user can be created to execute RiskyProject for notification messages. The user name and password for RiskyProject installed on the server will be encrypted and saved in the registry. When RiskyProject is executed by the Task Scheduler, no interface will be prevented and user name and password will not be asked. For more information about how to configure a Windows Task Scheduler, please read the *RiskyProject Enterprise Administrator's Guide*.



Configuring Notification Messages

To start **Notification Manager**:

1. Go to **Tools**
 2. Click on **Notification Manager**
- Or
1. Go to **File**
 2. Click on **Users** - the User dialog will come up
 3. Go to **Users Tab**
 4. Click on **Notification Manager**

The Notification Messages tab allows you to configure individual messages. Double-click message ID to enter text for the message. You can use the buttons Risk, First Name, Last Name to substitute the message text with risk name and name of the message recipient.

The screenshot shows the 'Notification Manager' dialog box with the 'Notification Messages' tab selected. It contains a table with columns: Name, E... (checkbox), Type, When, and Whom. Row 5 is selected, showing 'Mitigation plan is updated' with a checked 'E...' box, 'Risk reviews have been updated' type, and 'Instantly' when. A dropdown menu is open for the 'When' column, showing options: 1 hour before, 2 hours before, Day before, 2 days before, and Week before. Callouts provide the following information:

- Double click on message ID to define message text
- Enable or disable messages
- Select different types of messages
- Risk review reminders can be sent instantly or in advance; other messages are sent instantly
- Messages can be sent to:
 - Owner
 - Contact
 - Manager
 - Recorder
 - Upper management of owner one level up



You can define multiple risk review reminder messages if you want to send reminders at different times, for example, one hour, one day or one week in advance.

Viewing Sent Notification E-mails

You can view all notification event e-mails which have been sent using the **Notification Events** tab of **Notification Manager**. To copy, delete or view details of notification messages:

1. Right click on the message ID
2. Select copy, delete or view details of notification messages from the dropdown menu
3. If you select **View details**, you will be presented with a dialog which will include an error if a message was not sent.

You can click the **Sent** button if you wish to force sending notification messages without waiting for the execution of a scheduled process.

You can also limit the number of records of sent messages stored in the RiskyProject database. Each time the scheduled process to send messages is executed, it will delete the oldest messages.

Configuring E-mails

You can configure how to send notification messages using the **Configure E-mail** tab of **Notification Manager**. This tab consists of two sections:

1. The upper section allows you to configure email server settings. It includes information about your e-mail server, port, encoding, etc. E-mail settings will be saved in the system registry.
2. The lower section allows to you send test e-mails to ensure that settings are correctly configured.