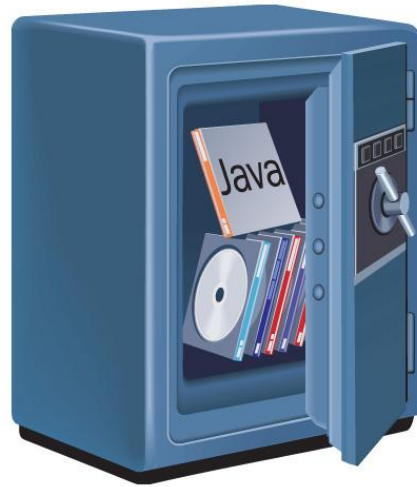


Protect your investments with Protection!



Protection!™

Licensing Toolkit

v5

User Guide

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Applicability

This document applies to Protection! Licensing Toolkit v5 software.

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Chapter 1

Overview – what is Protection!

Protection! is a licensing toolkit for Java that ensures that users adhere to the terms of your applications' licensing agreements. Protection! lets you embed powerful license reading and validation code into the components and applications that you sell, preventing unlicensed use of your software.

Protection! locks out unlicensed users, and ensures that licensed users can only access those features that they've paid for. Whether you license your software on a per seat basis or per running copy basis, you have complete control over the number of copies that can run simultaneously.

Protection! Licensing Toolkit ensures that the license was issued for the correct product; that only the licensed features are available; that the license has not expired; that the user has accepted the terms of the license agreement; and that the proper numbers of copies are running on the network.

Protection! locks out the pirates. This comprehensive toolkit for Java solves today's complex licensing challenges. The program minimizes users' ability to make unauthorized use of your applications, and frees you to work on the core functionality that makes your applications great.

Protection! Licensing Toolkit has two editions: Standard (will be referred to, in this User Guide, as Std) and Professional (will be referred to as Pro) and several additional applications designed to provide developer/publisher with most complete protection and licensing environment. For additional Protection! applications see the corresponding topic later in this manual.

Protection!'s main features:

- Quick and easy embedding into custom applications or components with the ability to get full control of license reading and validation.
- Ability to specify an unlimited set of application features, whose usage is permitted according to the supplied license.
- Ability to specify an unlimited number of application editions (i.e., Basic, Professional, Enterprise, etc).
- Licensing Server and Licensing Server Management Console applications.
- "Named User" licensing models that lock the license to a network card MAC address or other, user-definable attribute.
- "Floating User" licensing models allowing multiple concurrent users with the same license.
- Trial version(s) support.
- Date based expiration models.
- Usage based expiration models.
- "Grace Period" support wherein publishers of subscription-based software can define a specified number of days or usages past a payment deadline before service stops.
- Serial Numbers support.
- Ability to embed a license into the application to allow CD distribution of trial and/or evaluation versions.

- Ability to discover patched application parts.
- License Activation Support and Activation Grace Period Support.
- License Deactivation Support.
- Powerful Control Center application to allow easy maintenance of products and licenses.
- Web Services Support, which gives developers the ability to visually specify properties for Protection! Pro Web services applications, including general, plug-in, database options, e-mail and e-mail templates.
- Powerful Back-End Development Support, offering a default implementation as a foundation for easily building custom back-ends that are exported through Web services.
- Plug-ins Support to allow easy extension of default implementations.
- Multiple Feature Configurations that are linked to the specific type of license and state granted to the user. This feature enables the creation of multi-level software products (e.g., Basic, Standard, or Scientific), each with its own rules (e.g., Commercial, Evaluation, Expired Commercial, Expired Evaluation, Invalid License, etc.)
- Powerful Licensing and License Activation Wizards to simplify rules for license activation, evaluation, and upgrades both online and offline.
- Powerful Resolver feature that can be used to intercept and fix any issue that occurs during license reading and/or validation.

Welcome to the Protection! Licensing Toolkit

2.1 Compatibility with earlier versions

Protection! v3 can read product storages from Protection! v1 and v2 without any changes to the product storage. There is no special procedure needed to open Protection! v1 and v2 product storages.

2.2 Who should use this guide

This guide provides information to:

- Assist developers interested in using the Protection! Licensing Toolkit to secure their application and to utilize various licensing models supported by Protection! For a quick start with Protection! see [online videos](#).
- Assist sales staff during licenses generation.

2.3 Related Documentation

For additional information on using Protection! see Protection! Developers Guide and Protection! FAQ documents.

If you require more technical information about Protection! refer to the Protection! API, available from the [jProductivity web site](#) and via ProtectionDoc.jar

2.4 Accessing documentation online

The following URL links provide access to the Protection! online technical documentation giving you greater understanding of the Protection! Licensing Toolkit:

- [Protection! API \(HTML\)](#)
- [Feature Matrix \(PDF\)](#)
- [User Guide \(PDF\) \(this guide\)](#)
- [Developers Guide \(PDF\)](#)
- [FAQ \(PDF\)](#)

2.5 Privacy policy

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2.6 We welcome your comments

We are interested in improving our documentation and welcome your comments and suggestions. You can email your comments to us at: protection@jproductivity.com

2.7 Protection! Applications

Protection! provides the following core applications:

2.7.1 Protection! Developer Control Center

Protection! Control Center offers a central location for Product Management, License Generation, License Maintenance and generation of the corresponding code Snippets as ready-to-use Java implementation files, License deployment and Protection! Web Services application configuration. Protection! Control Center allows the developer to manage an unlimited number of products and product feature sets.

2.7.2 Protection! Sales Control Center

Protection! Sales application designed for the companies' sales team. Protection! Sales provide Protection! Control Center with complete licensing functionality and hides all of the developer-oriented features. With Protection! Sales users are able to work *only* with the existing products storages.

Protection! Sales also extend Protection! Developer functionality by providing additional sales related functionalities like Validating Deactivation Key dialog box. All of the Protection! Sales only related functionalities are identified later in this guide.

2.7.3 Protection! Builder Utility

This new command line utility allows building various Protection! resources. Protection! Builder Utility allows for the use of various build systems (i.e., [Apache Ant](#)) and scripts to automate assembling of protected applications. This utility allows building:

- Protection! Launchers using specified configuration and optional target.
- Integrity modules using specified configuration and optional target.
- Protection! Web Services application.

2.7.4 Protection! Backend

Protection! Backend is designed to automate all of the manual licensing functions as well as provide the ability to tie Protection! Backend to *ANY* back-office systems (CRM, SFA, Databases, ERP, etc).

Protection! Developer Professional includes the ability for developers to architect, implement and test their backend solution without the need for a commercial deployment license. The following are few limitations that will be applied:

- Every license generated will have an embedded expiration.
- Protection! Backend cannot be deployed to any production environment and can only be used in the development environment.

To deploy Protection! Backend Application for commercial use a valid Protection! Backend Deployment license needs to be purchased.

2.7.5 Protection! Licensing Server

Licensing Server is a new Protection! sub-system responsible for distribution of licenses and for tracking of the concurrent use of licenses. The Licensing Server application is a

turnkey solution that is deployed inside the customer's network. It can be run as a Windows service or as a UNIX daemon. The main features of the Licensing Server are:

- Support for Floating and Named User models by tracking licenses usage using the concept of license lock (acquire) and unlock (release).
- Ability to revoke license locks sessions to force client applications to unlock (release) licenses.
- License lock session's expiration to allow correctly releasing of the license lock when the client application is not responding or the network (connection to the Licensing Server) is down.
- Ability to host and to distribute an unlimited number of licenses for an unlimited number of products.
- Ability to allocate licenses for specified users and/or user groups.
- Ability to control access to the Licensing Server by using access control lists (whitelist and blacklist) for any types of operations.
- Ability to remotely monitor and manage the Licensing Server via supplied Management Console application.

2.7.6 Protection! Licensing Server Management Console

The Management Console is a GUI application intended for remote monitoring and management the Licensing Server(s). The main features of the Management Console are:

- Authentication and authorization per Licensing Server with the ability to maintain the Licensing Server users.
- Support for multiple Licensing Server connections.
- Ability to discover running instances of the Licensing Servers via network broadcast.
- Ability to maintain access control lists.
- Ability to view licensing statistics and server statistics.
- Ability to disable/enable any licensing activities.
- Ability to shut down the Licensing Server.
- Ability to visually monitor current license sessions.
- Ability to revoke specific license sessions.
- Ability to maintain license storages.
- Ability to maintain license users/groups
- Ability to allocate licenses for specified users and/or user groups.

2.7.7 Demo Calculator Application

Demo Calculator is simple straight forward implementation of Protection! designed to illustrate quick how-to. Demo Calculator is a demo only product outlining basic Protection! principals and usages. *In no way Demo Calculator could be considered as a complete licensing solution.*

2.8 Finding Information

2.8.1 Overview

Protection! online Help is your comprehensive guide to work with the Protection! Control Center modules. As you work with Protection! Control Center, you probably already know what business task you want to accomplish—such as building and managing your products, creating and sending licenses to your end-users, and performing other licensing activities. Protection!'s Help and guides have the answers you're looking for. The types of documentation you can expect to find to help you with Protection! include:

- F1 Help – context-sensitive help for all the Screens and dialogs.

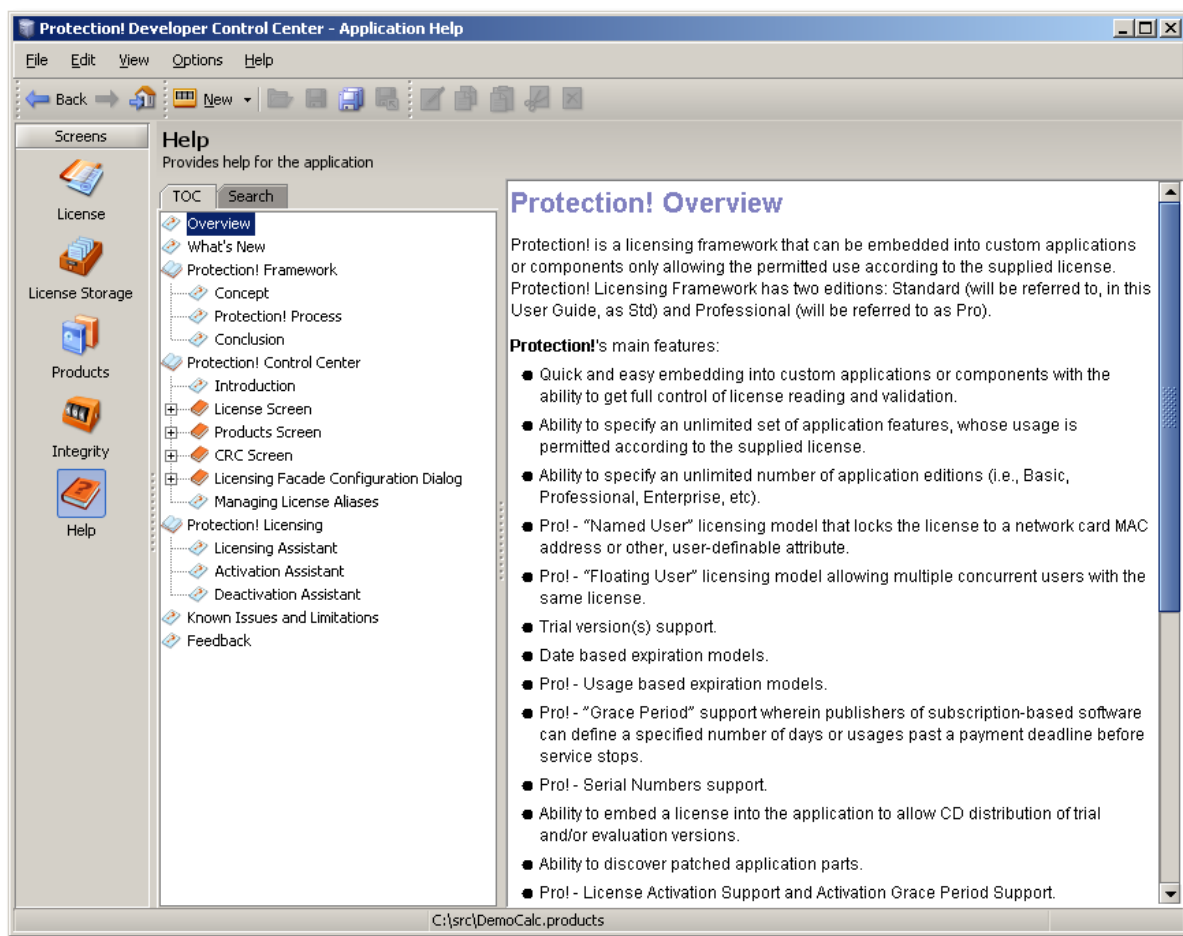
- Help Contents – step-by-step instructions with a table of contents, an index, and search.
- Manuals – on-screen versions of the printed documentation that you can read using Adobe Acrobat Reader.

Whether you're looking for help using a particular dialog box or looking for instructions on how to perform an activity, you can always find what you're looking for in the online Help. Protection! Help provides not only step-by-step instructions for each module, but also detailed descriptions of every control in every dialog box and Screen. Each Protection! module has its own Help. To find out how to use a module, select Contents from the module's Help menu or press F1 in any Screen or dialog box. In addition to the Protection! User's Guide (this manual), Protection! also includes other documentation and guides:

- [Protection! API \(HTML\)](#)
- [Feature Matrix \(PDF\)](#)
- [User Guide \(PDF\) \(this guide\)](#)
- [Developers Guide \(PDF\)](#)
- [FAQ \(PDF\)](#)

2.8.2 Press F1 for Help

If you come across a Screen or dialogs you don't know how to use, press the F1 key to see brief descriptions of the Screen or dialog box options. Frequently, help topics have convenient links to related step-by-step instructions. From the Help Screen you can search the module's Help for information on other Screens, dialog boxes, or features—simply enter a keyword. Or, if you prefer to find information using a table of contents or index, click the Help Topics button in the Help Screen.



Each Protection! Control Center module has its own online Help that will provide you with step by- step instructions. You can look up Help topics the same way you would in a book—the table of contents lists the topics in a logical order, and the index lets you look up topics by keyword. Protection!'s Help also lets you perform a search for any word or words in any topic.

- To open the Help Contents for a module: In any module, select Help.
- To Search for topics by any word or words: In the Search tab, type the word or words you are looking for and click the Enter key. Help lists the matching topics and indicates how many times the searched word was found in each topic.

2.8.3 Read the Protection! Guides Online

A typical installation of Protection! includes manuals that you can read online using Adobe Acrobat or Acrobat Reader. Having the Protection! manuals in this format offer the advantage of full-text search, as well as hyperlinks on the table of contents, index, and any cross-references. To access the online guides:

- From the Help menu, select the guide you would like to use. – or –
- From the Start menu, select Programs > Protection! > select the guide you would like to use.

2.8.4 Premium Support

Get Premium Support and Upgrades subscription for Protection! Licensing Toolkit and add even more power to your application protection and licensing solutions. With

Premium Support you will receive a full year of phone and email support. Your subscription also includes free product upgrades; help with custom code extensions, along with fast answers and how-to assistance. For more information see [Protection! Support pages](#).

2.9 Where to Go from Here...

In a typical installation of Protection!, the Protection! setup program creates several complete sample projects for a fictitious application called Demo Calculator. This Demo application is designed to be used as an environment in which you can learn how to use Protection! and explore Protection! in a safe training ground. Using the example of Demo Calculator you can follow tutorials that take you through examples of how to use the various components of Protection!.

Protection! Licensing Toolkit – How it works

This chapter outlines the basics and the major concepts of Protection! Licensing Toolkit and gives a quick overview of the components of Protection! Control Center.

Protection! Control Center offers a central location for Product Management, License Generation, License Maintenance, and generation of the corresponding code Snippets. Control Center allows the developer to manage an unlimited number of products and product feature sets. All the functionality of Control Center is exposed through the following set of Screens:

- License Screen – provides the ability to create and maintain licenses.
- License Storage Screen – provides the ability to create and maintain license storages.
- Products Screen – provides the ability to maintain product's structure.
- Integrity Screen – provides the ability to prepare information required to implement Integrity checking.
- Help Screen – provides the ability to get help for Protection!

3.1 Key Concepts

3.1.1 Protection! is a Framework

The key concept of Protection! is to verify the presence of a valid license required by the product as well as to prevent license tampering. Protection! Licensing Toolkit is a set of Java classes that need to be embedded into the custom application in order to allow only authorized use of the application. Authorized use of a custom application is based on the supplied license. Protection! Licensing Toolkit gives application developers full control over the license checking and validation mechanism. Protection! classes provide all the necessary functionality to allow license discovery, license reading and validation, as well as several other utility functions such as the ability to implement and further check Integrity for desired classes/resources in order to avoid malicious application patching.

3.1.2 License File

License File represents a way to transfer the appropriate rights to the end-user for use of a particular application. Protection! License File is implemented as an encoded file that contains information about the product, version, license type, etc. Protection! License File can either be bundled with the application and loaded as a resource, or be located anywhere in the file system. The license File, generated by Protection! Control Center, is a strongly encrypted file ensuring that no one can break its protection by the simple re-generation of the license file. To meet this goal, a non-symmetric cipher algorithm is used where keys used to encrypt and decrypt the license are different. This approach makes it impossible to restore the private key by having knowledge of the public key and vice versa.

3.1.3 Protection! Control Center

Protection! Control Center offers a central location for Product Management, License Generation, License Maintenance and generation of the corresponding code Snippets as

ready-to-use Java implementation files, License deployment and Protection! Web Services application configuration. Protection! Control Center allows the developer to manage an unlimited number of products and product feature sets.

3.1.4 Product Storage

Protection! Control Center saves the entire Product's data in a single file with a *.products extension called *Product Storage*. The user can create as many product storage files as necessary.

3.1.5 Secret Storage

Secret Storage provides a way to persistently and secretly store various and important information about the application. Secret Storage can also be used to store various actions performed by the end-user. The following information is currently stored in Secret Storage:

- First encountered expiration time (to prevent unauthorized use by getting a newer evaluation licenses).
- A flag that specifies whether the user has accepted the terms of the license agreement (this could be used in order to suppress showing such a dialog at application startup).

Protection!'s default implementation provides File and/or Preferences based secret storage and Protection! is able to generate the appropriate code in the Code Snippet to employ these secret storages. If a Preferences based secret storage is chosen then developers must specify an appropriate System or User preferences node where the Secret Storage information should be saved (e.g. `com.mycompany.pref`) where "." denotes a new child node (e.g. "com.mycompany.org" would be translated to the following structure "com/mycompany/org") Note: See Java [Preferences](#) specification for additional information on proper node naming conventions. Because Protection! is a framework - application developers are free to provide their own implementation of Secret Storage. Protection! supports working with several Secret Storage files at a time in order to provide greater redundancy to protect the data.

3.2 Protection! Process

Protection! Process consists of the following steps:

3.2.1 Reading a License

Protection!'s license support subsystem is responsible for locating, reading and validating the license, providing access to the license file and firing notifications during the license load process (e.g. when the license is valid, missing or invalid).

License reading is performed using the following simple steps:

1. Locating the License. If it is determined that the required license is missing, the developer can call the Resolver mechanism in order to attempt to resolve the missing license issue. If Resolver does provide a valid license, then the process of locating the license is repeated from step 1.
2. Reading and Decoding the License. If the license is corrupted, the developer can call the Resolver mechanism in order to attempt to fix the corrupted license issue. If Resolver does provide a valid license, then the process of license Reading and Decoding is repeated starting from step 1.

3.2.2 Checking the License

The following steps are only performed if the license was discovered and read successfully:

1. Verify that the license was issued for the correct product. Default implementation assumes that the license is valid only if the product's identifier is equal to the product's identifier within the license file.
2. Check that major and minor version within the license file are valid for the product. Default implementation assumes that the license is valid if the major version for the product stored within the license is equal to the product's major version. Minor version is ignored within default implementation.
3. Check product's features embedded within the license. Default implementation always assumes that any feature set is valid. However, application developers are always able to add their own checking and verifications.
4. Check that the license has not expired. If the license is an evaluation license, additional checking is performed to verify that the license did not expire earlier using the value obtained from the Secret Storage. If it is determined that the license is expired, the developer can call the Resolver mechanism in order to attempt to resolve an expired license issue. If Resolver does provide a valid license, then the process is repeated starting from step 1 of Reading a License.
5. Check that the license is activated. If the license is not activated, the developer can call the Resolver mechanism in order to try to activate the license. If the Resolver successfully activates the license, then the process is repeated starting from step 1 of Reading a License.
6. Check that the user has accepted the terms of the License Agreement
7. Check the number of running copies over the network (Professional Edition only)
8. Save the earliest expiration time for the evaluation license and the License Agreement acceptance flag to the Secret Storage.

During license checking and validation, Protection! Licensing Toolkit provides detailed feedback about the process status and its results back to the application. This feedback is provided by firing appropriate sets of events. It is the responsibility of the application developer to decide which action should be taken in response to a particular Protection! event. Default implementation assumes no actions for any such events provided by Protection! Licensing Toolkit. For example: when it is determined by Protection! that the license file is invalid, the application can either exit or the application could disable all or part of its functionality. Such a decision is the responsibility of the application developer (there is no default behavior provided by Protection! Licensing Toolkit). In addition to the event based analysis/action, it is always possible to get the current status of the license at anytime during an application run to see whether it is valid.

While default implementation of the license checking mechanism provides functionality that would be enough for the majority of the applications, developers can easily override/extend any license reading/validating steps stated above to get the desired results.

3.2.3 Checking Integrity

The Integrity verification subsystem allows for checking and validation that the designated key classes/resources/files of the product have not been changed. This type of check is done by comparing the generated digest of those classes/resources/files with the original value stored somewhere in the product code, resources or files. The Integrity subsystem significantly increases the time and effort needed to diagnose and locate specific parts of the protection system in order to attempt to break it.

3.2.4 Conclusion

In addition to the core Protection! responsibilities such as license discovery, license reading and validation, Protection! Licensing Toolkit provides developers with various helper classes and a default implementation of the set of listeners, which provides users

with feedback information regarding the Protection! license checking process and its results. Such helper classes and listeners allow the following functionalities:

- Ability to pop up a message window and/or Licensing Assistant Wizard if the license file was not found, or is corrupted, invalid or expired
- Ability to prompt the end-user to accept the terms of the license agreement using the License Acceptance dialog
- Ability to show the About Dialog with license information, application name and version, feedback information, a hyperlink to the developer's website, License type, Issue and Expiration Dates, License Number, Licensee information and a hyperlink to view the license agreement.
- Ability to check Integrity for desired classes/resources in order to avoid malicious application patching.

Explore Protection! with the Sample Demo Calculator Application

Note: In this section of the User Guide we will illustrate principles of product creation, configuration, generation of the license file for the product and testing the protected application. These illustrations would be done on the sample product Demo Calculator. Developers are encouraged to open the provided Demo Calculator sample product storage and to follow the Getting Started topics to get a better understanding of the Protection! principles and implementation techniques.

4.1 Getting Started

The following procedures are performed via Protection! Control Center. Protection! Control Center is a main application that maintains a product's database and allows for a license generation for a particular product. Control Center also allows generation of the implementation-ready Java code snippets to assist developers in the implementation of Protection! into their application. Prior to generating any license files, you must create product storage and at least one product using Protection! Control Center. We will be using Demo Calculator Product to illustrate the necessary steps required to create a product, generate the product's license and to test the protected application.

Note

Protection! Control Center comes with the sample product storage containing a sample product called "Demo Calculator". This sample product is designed to illustrate basic principles of Protection! as well as associated implementation techniques which covers basic embedding principles of Protection! into the custom Java application. Developers should open the Demo Calculator product storage to see examples of product configuration used in this topic.

Sample Product Storage for the Demo Calculator can be found under the `<Protection_Install_Folder>/samples` folder:

- `IDEA_prj/DemoCalc.products`
- `JBuilder_prj/DemoCalc.product`

Corresponding source code for sample Demo Calculator is located in:

`<Protection_Install_Folder>\samples\src\com\jp\samples\protection`

Several preconfigured sample projects for popular Java IDE products also provided for your convenience. These projects can be found in:

`<Protection_Install_Folder>\samples`

- `IDEA_prj/` - sample project for IntelliJ IDEA IDE
- `JBuilder_prj/` - sample project for Borland JBuilder IDE


4.2 Building and Running Sample Demo Calculator Application

Sample Demo Calculator (DemoCalc) application is provided to illustrate Protection! principles and implementation techniques. In addition to the source files for Demo Calculator application, for developer's convenience, there are two preconfigured projects for IntelliJ IDEA and for Borland JBuilder IDEs.

1. Open desired project:
 - a. For IntelliJ IDEA use \samples\IDEA_prj\DemoCalc.ipr
 - b. For Borland JBuilder use \samples\JBuilder_prj\DemoCalc.jpx
2. Build the Project.
3. With Protection! Control Center open appropriate DemoCalc product storage:
 - a. For IntelliJ IDEA use \samples\IDEA_prj\DemoCalc.products
 - b. For Borland JBuilder use \samples\JBuilder_prj\DemoCalc.product
4. Build Launcher file using "Develop" Configuration:
 - a. Protection! Control Center | Products Screen.
 - b. Build | Build Launcher menu item.
5. Build Integrity using "Develop" configuration:
 - a. Protection! Control Center | Integrity Screen.
 - b. Build | Build Integrity menu item.
6. Generate test license:
 - a. Protection! Control Center | License Screen.
 - b. Specify License Number and any other license configuration parameters you would like to test.
7. Switch to your IDE and run DemoCalc application.
8. Follow the Licensing Assistant wizard to locate previously generated license.



4.3 Creating a Product

The following procedure creates a new product:

- Select the Products Shortcut  on Control Center's Shortcuts Side Bar
- Click the "New" button


A Product can also be generated either by selecting the "File | New | Product" menu item or selecting the drop-down Icon on the "New" button and choosing "Product". In addition, the *Ctrl+Shift+P* key combination can also be used to generate a new product. Generation of the new product would launch the "New Product" dialog. This dialog is used to set-up and configures all necessary product information and properties that would be used during license generation.

Note: In our scenario we will be opening existing product storage for the Demo Calculator and would not create a new product. To open our sample product storage:

- Select the Products Shortcut  on Control Center's Shortcuts Side Bar
- Click the "Open"  button on the Control Center's toolbar

A Product's storage can also be opened either by selecting the "File | Open" menu item or "File | Reopen" menu item (Reopens previously used product storage where users can select from a history list). In addition, the *Ctrl+O* key combination can also be used to open product storage.

When sample Demo Calculator product storage is open we would see main Protection! Control Center Screen with our product loaded. Now we can edit the Demo Calculator

product to see how it was configured. Click the "Edit" button  on the Control Center's toolbar to launch the product configuration dialog.

4.3.1 Product Page

The following entries in their appropriate fields illustrate the initial product's set-up steps.

- "Demo Calculator" in the "Name" field – our product name
- "DemoCalc" in the "ID" field – a unique identifier for our product
- "3" as "Major" and "0" as "Minor Versions" – product's major and minor versions
- The "Enabled" checkbox– indication for the Control Center that this is a live product and therefore Protection! Control Center will be able to generate licenses for this product.

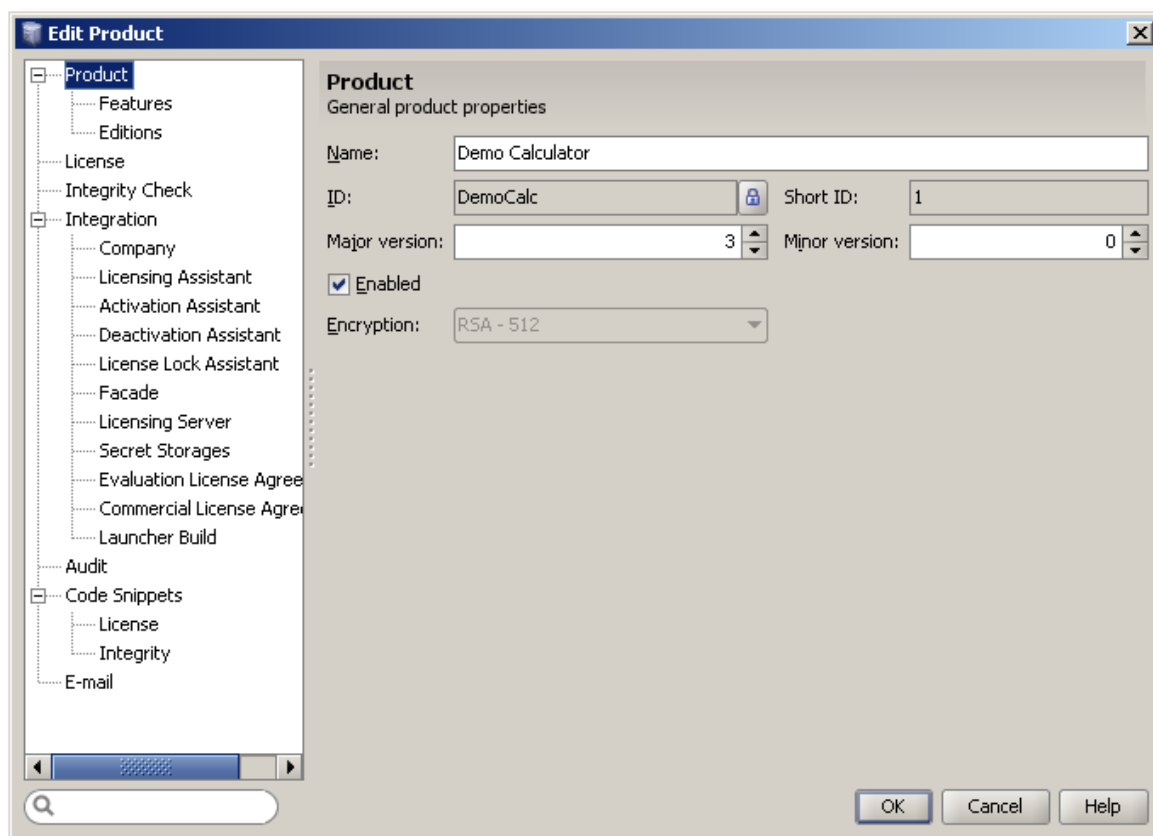


Figure 1: General Product Information

4.3.2 Features Page

The Product's Features Page allows the user to define all product features. In our example we use two features "Basic" and "Scientific", however, product features could contain any number of features. This page shows the features list as a grid where each feature occupies one row and the features' attributes are shown as columns.

The user is able to enter feature attributes directly in the grid using in-place editing. The following entries in their appropriate fields illustrate the initial Features set-up steps:

- "1" in the "ID" field – a unique identifier for the product's feature
- "Basic" in the "Feature Name" field – the name of the feature

- c. Enabled "C" (Commercial) checkbox – indicates that the feature is enabled for the commercial license
- d. Enabled "E" (Evaluation) checkbox – indicates that feature is enabled for the evaluation license

Repeat the above steps for the "Scientific" Feature.

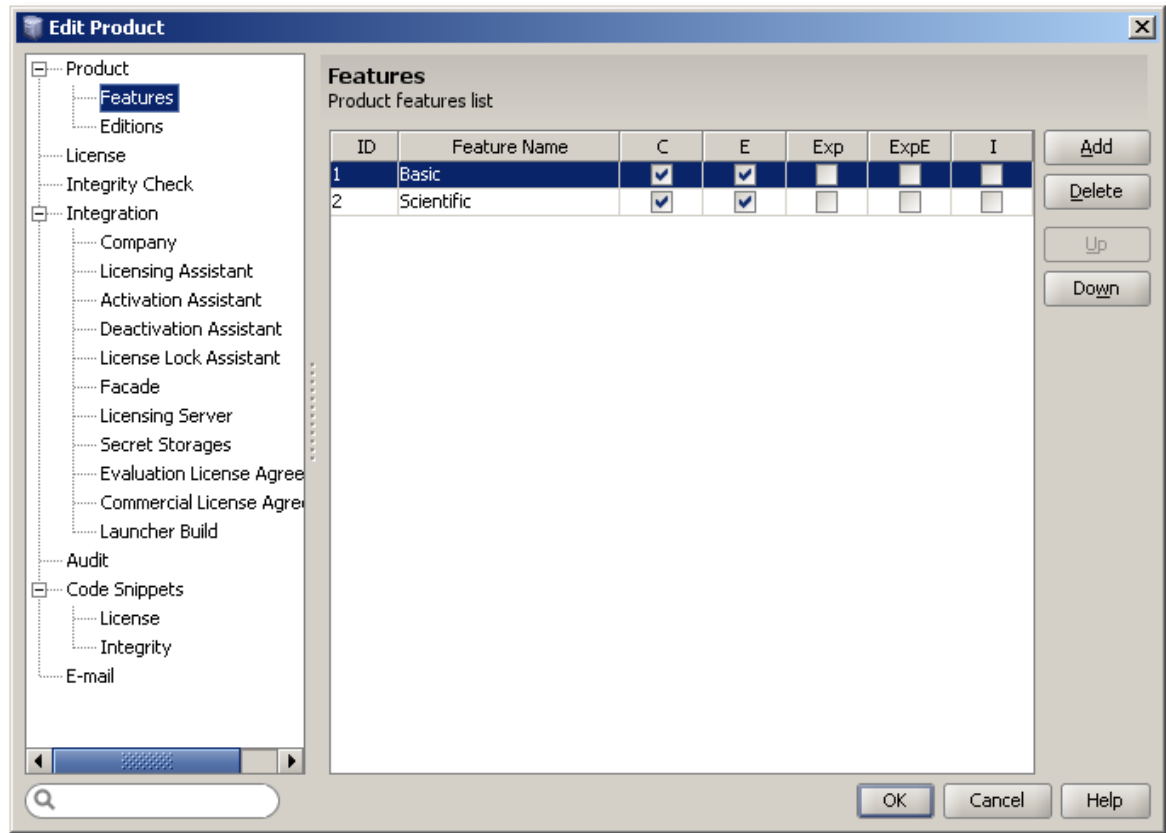


Figure 2: Product Features

4.3.3 Editions Page

The Product's Editions Page allows the user to define all product editions. In our example we use two editions "Standard" and "Professional", however, product features could contain any number of features. This page shows the Editions list as a grid where each edition occupies one row and each editions' attributes are shown as columns. The Features grid shows the features state for currently selected edition.

The user is able to enter edition attributes directly in the grid using in-place editing. The following entries in their appropriate fields illustrate the initial Editions set-up steps:

- a. "1" in the "ID" field - a unique ID for the product's edition
- b. "Standard" in the "Edition Name" field – a name for the edition

Repeat the above steps for the "Professional" Edition.

By default, features are selected (enabled) only for "C" (Commercial) and "E" (Evaluation) for each of the application's edition. In our Demo Calculator we modified our product feature set for the Standard and Professional Edition. In the Standard Edition we have unchecked Scientific Feature's "C" (Commercial) and "E" (Evaluation) check-boxes as Scientific Feature is not available in Demo Calculator's Standard Edition

for either commercial nor evaluation license. We left Professional Edition unchanged as both Features are already selected by default.

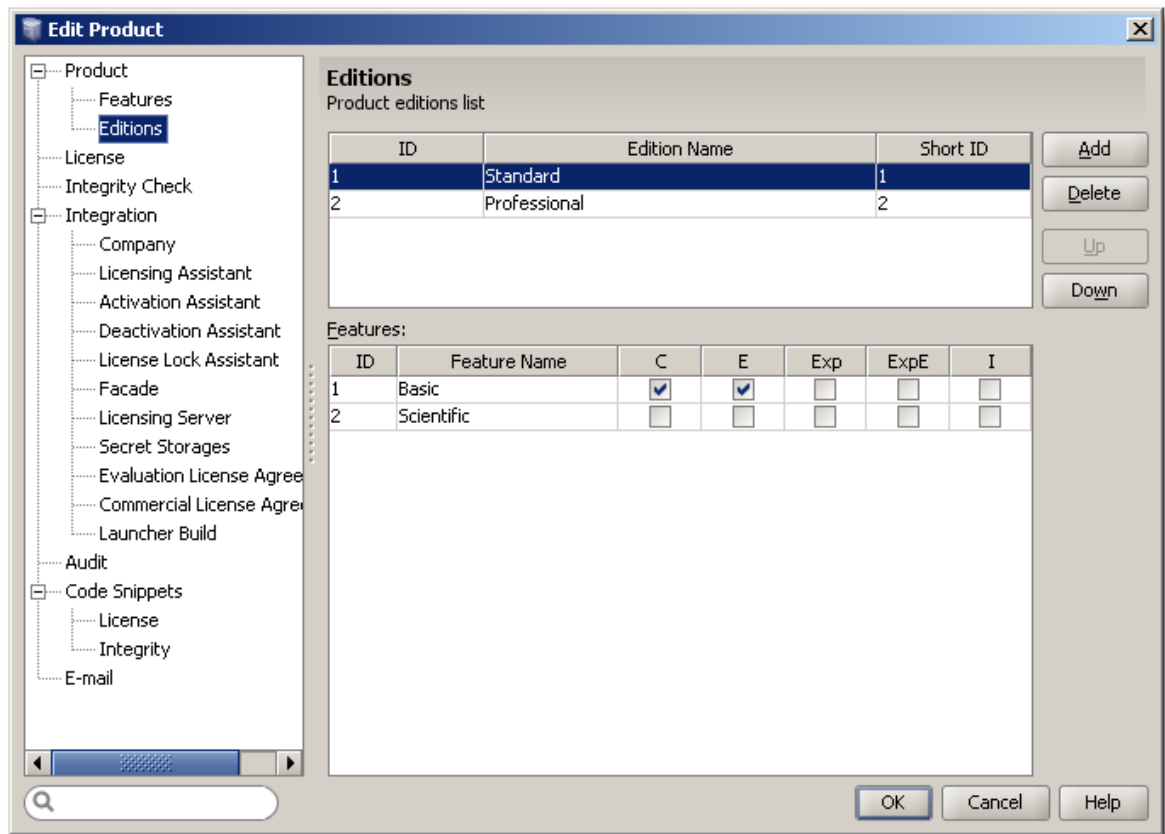


Figure 3: Product Editions

4.3.4 License Page

The Product's License Page allows the user to define default license attributes. Later when a license is generated for our product these parameters would be set for every new license.

For our Demo Calculator product we pre-set default Evaluation and Grace period. These values will be used as the default values for Evaluation and Grace periods during generation of the License file. Both of these values can be changed at a later time when you are ready to generate a License.

The following entries in their appropriate fields illustrate the initial License attributes set-up steps:

- a. "15" in the "Evaluation Period" field – default Evaluation Period
- b. "0" in the "Grace Period" field – default Grace Period

Note: Even though we had left them blank, the developer can specify an unlimited number of custom properties. These properties represent name-value pairs that could be embedded into a license and used by the application during license reading/validation.

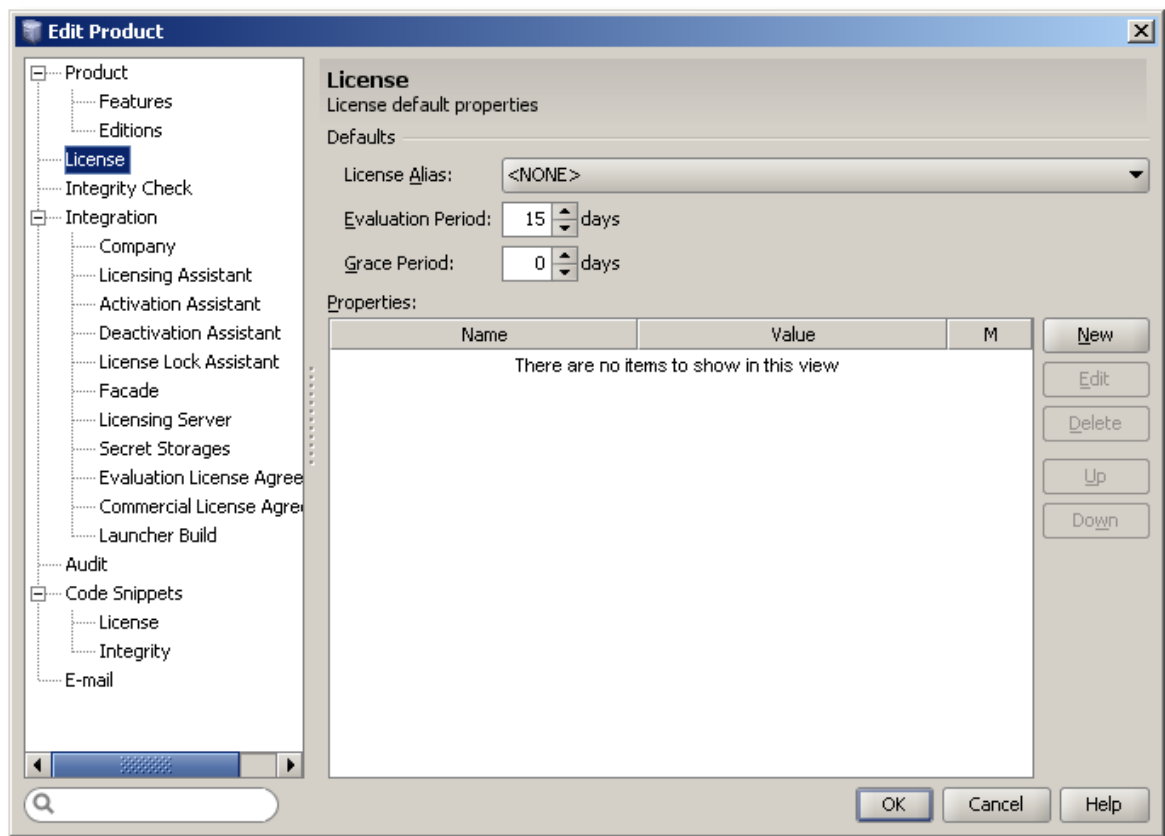


Figure 4: Default License Properties

4.3.5 Integrity Check Page

The Product's Integrity Check Page allows the user to specify various Integrity Check configuration parameters which will be used by Control Center to generate appropriate integration code snippets and Integrity Build Configurations.

We are going to skip Integrity Check Page for this exercise. For more information on Integrity Check Page see "New/Edit Product Dialog" topic later in this guide.

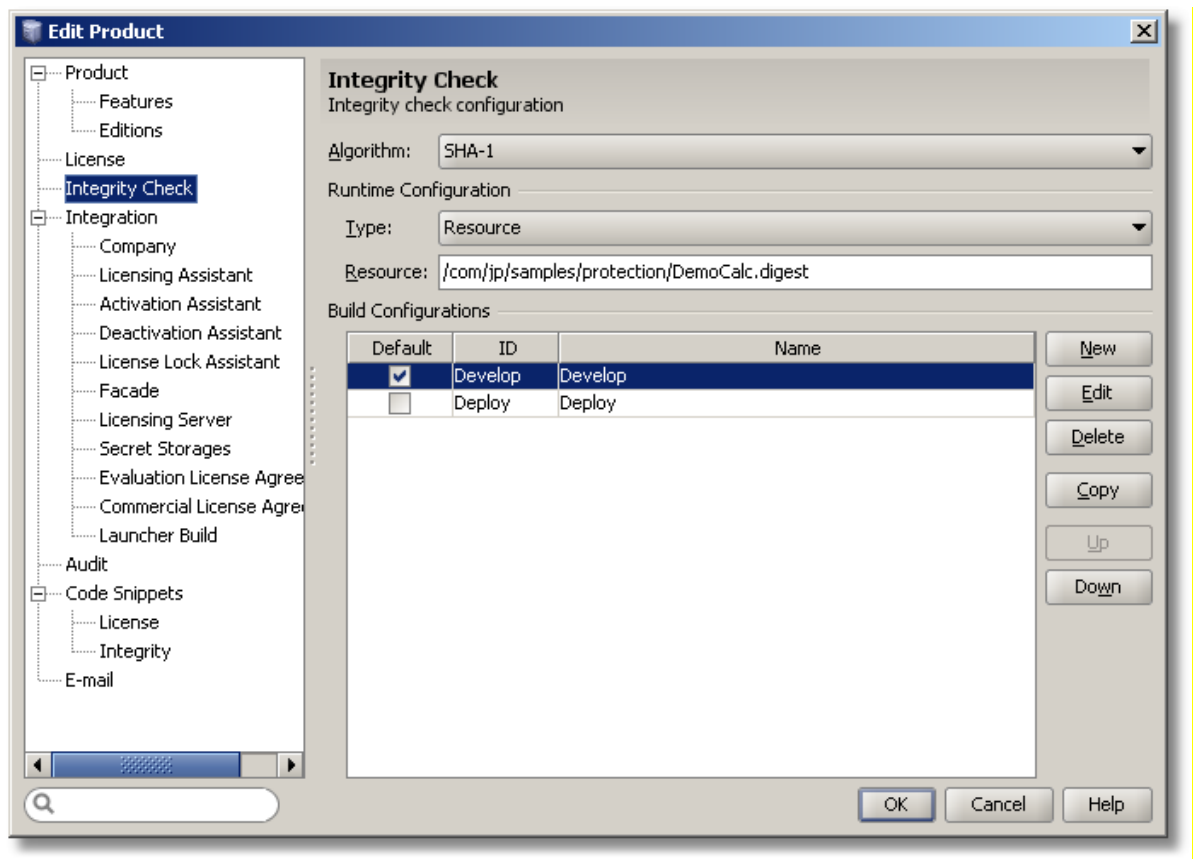


Figure 5: Edit Product Dialog – Integrity Check Page

4.3.6 Integration Page

The Product's Integration Page allows the user to specify various Protection! API configuration parameters which will be used by Control Center to generate appropriate integration code snippets.

Note: Developers are strongly encouraged to use the generated code snippets as the main starting point during learning and integration of Protection! into their custom Java application.

Here is a brief description of the License Location group:

- The "Folder" field – used to specify the folder where Protection! should expect to find the license file for the application.
- The "File Name" field – used to specify the name of the license file.
- The "Relative to Users Home" option– if checked would inform Protection! to check for presence of the license file in the user's home directory.
- The "Resource Folder" field - is used to embed (usually Evaluation License) into the application archive. This allows the developer to distribute his/her protected application with the embedded evaluation license and therefore minimizes the need for evaluators to contact the original developer/publisher in order to obtain an evaluation key.

Note: In our scenario we left the "Folder" field blank and checked the "Relative to User Home" option. This will inform Protection! to check for the presence of the license file in the user's home directory.

If the License should be locked to a specific computer system then the *"Lock License to"* section could be used to specify default system attributes supported by Protection! Note: Other, user-definable attributes could also be used by the application developer if needed. Please see Protection! Developers Guide for additional information.

It is possible to specify additional configuration options:

- *"Use Flexible Expiration"* - specifies whether the expiration date of the read license should be adjusted based on the combination of the current system date and the specified duration of the evaluation period. This option is useful when creating evaluation bundles where the end-user can use the product for a specified number of days starting from the application's first usage date rather than from the license issue date.
- *"Check Shutdown Date"* - specifies that checking for the application's previous shutdown date is enabled.
- *"Maintain Shutdown Date"* - specifies whether the application's previous shutdown date should be maintained.
- *"Use Stripped Activation Key Chars"* - specifies that usage of the stripped activation key characters is enabled. If enabled then usage of the following alpha-numeric characters: 2, Z, 0, O, I, L, 1, 5, S is removed from the alphabet that is used to generate the Serial Number. Removal of these characters and numbers from generated Serial Number will reduce errors that could potentially occur during the manual typing of the Serial Number by the end-users.
- *"Allow Silent Activation"* - specifies that the Resolver should silently try to activate the license using the Licensing Facade without showing any messages to the end-user. In such a case activation is fully transparent to the end-user. If silent activation fails the end-user will be prompted for the input via License Activation Assistant Wizard.
- *"Accept License Agreement"* - specifies whether the end-user should be prompted to accept the terms of the license agreement.

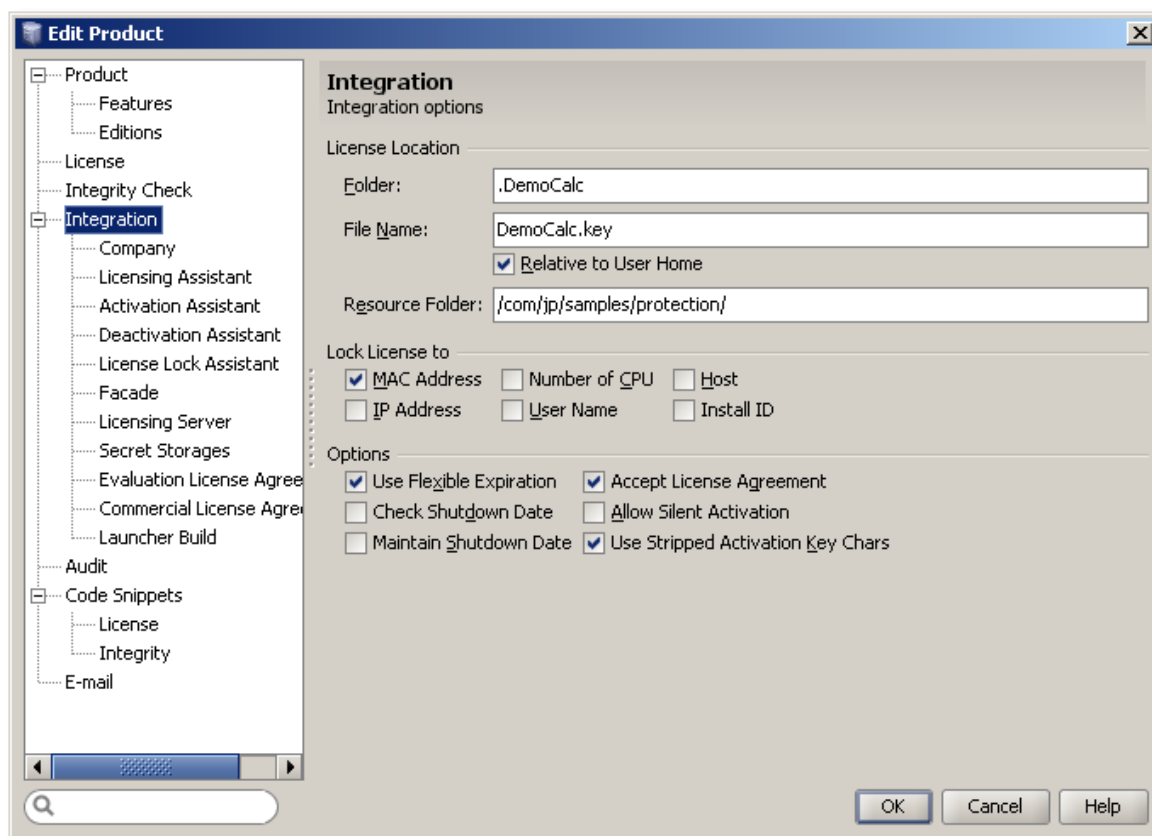


Figure 6: Integration Options

4.3.7 Company Page

The Product's Company page allows specifying information about the publisher/vendor company and product links.

The "Product Links" grid shows a list of the links where each link occupies one row and the link's attributes are shown as columns. There is a fixed set of product links so the user is able to specify only the link's attributes. The following attributes can be specified using in-place editing in the grid:

- "Text" - is the text that you would like end-users to see in Protection! Dialogs (Protection! has several helper dialogs such as the About Box. All Protection! dialogs are optional and can be turned on/off by developer). We will be using jProductivity website information to illustrate our example
- "URL" - a URL, such as <http://www.jproductivity.com>, which will be used when the user clicks on the website hyperlink in Protection! Dialogs. Note: mailto URL schema must be in conformance with the RFC 2368 <http://www.faqs.org/rfcs/rfc2368.html>
- "Tooltip" - is a Text that would render as a tooltip pop-up when the user moves his/her mouse pointer over the website hyperlink

The following company attributes can be specified:

- "Copyright" and "Company" sections. These should be representative of the developer company and its copyright statement.
- "Company/Product Logo" - either a path to the file or a path to the resource could be used.

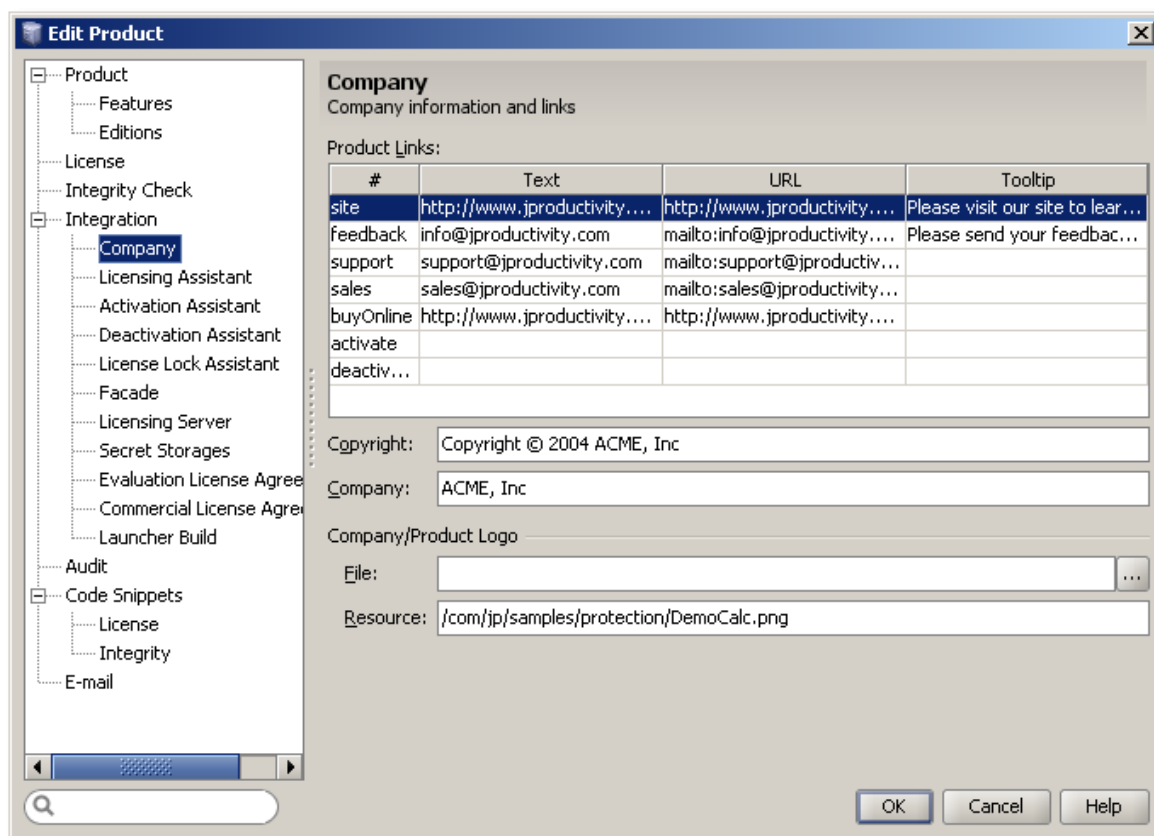


Figure 7: Company Information and Links

4.3.8 Secret Storages Page

The Product's Secret Storages Page allows the user to define parameters and location of the secret storages.

For our Demo Calculator product we pre-set a single file-based Secret Storage located with the Relative to User Home option. This will tell Protection! to check for the secret storage file in the user home directory.

Note

Even though we had setup only a single secret storage, the developer can specify an unlimited number of secret storages, both File and Preferences based.

The "Secret Storages" grid shows a list of the Secret Storages where each Secret Storage occupies one row and Secret Storage's attributes are shown as columns. The following controls allow maintaining the Secret Storages list:

- The "New" button - creates a new Secret Storage by showing the New Secret Storage Dialog.
- The "Edit" button - provides the ability to change currently selected Secret Storage.
- The "Delete" button - provides the ability to delete currently selected Secret Storage.

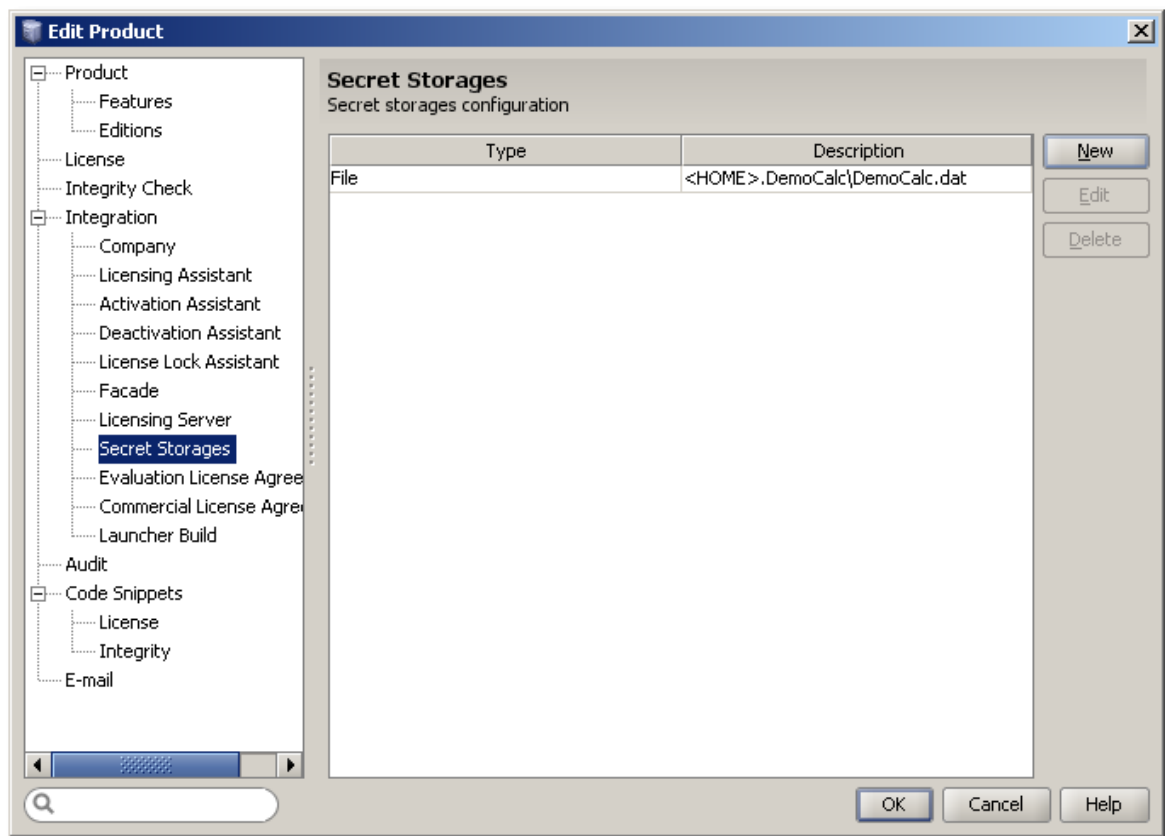


Figure 8: Secret Storages Configuration

In the New Secret Storage dialog it is possible to choose several secret storage types.

Choosing File Secret Storage

In this case the user is able to specify the name of the file containing Secret Storage, its location and whether the Secret Storage file should be located under the user's HOME folder.

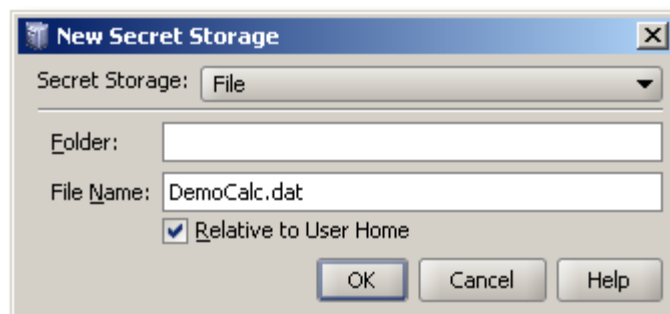


Figure 9: Adding a New File Secret Storage

Code Snippets Page

The Product's Code Snippet page provides the ability to specify options for generation of Code Snippets:

License Code Snippet section allows specifying Code Snippet attributes for license reading and checking:

- "File Name": Specifies the location of the License Code Snippet file. Control Center will save the License Code Snippet Java file using this specified location. When generated, this file is ready to be inserted into your Java Project structure.
- "Package": Specifies the package name to be used in the License Code Snippet file.
- "Class": specifies the class name to be used in the License Code Snippet file.

Integrity Code Snippet section allows specifying Code Snippet attributes for Integrity checking:

- "File Name": Specifies the location of the Integrity Code Snippet file. Control Center will save the Integrity Code Snippet Java file using this specified location. When generated, this file is ready to be inserted into your Java Project structure.
- "Package": Specifies the package name to be used in the Integrity Code Snippet file.
- "Class": specifies the class name to be used in the Integrity Code Snippet file.

Note

Developers are strongly encouraged to use the generated code snippets as the main starting point during integration of Protection! into their custom Java application.

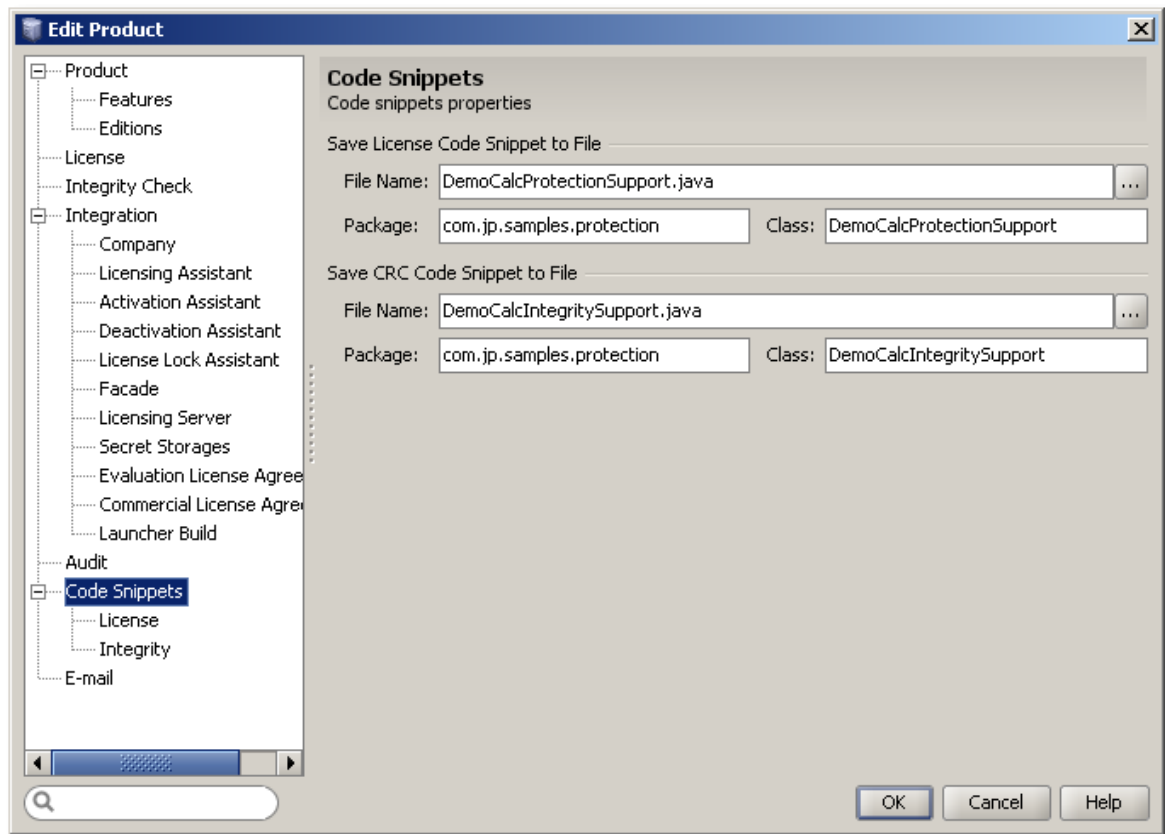


Figure 10: Code Snippets Properties

We are going to leave License Code Snippet, Integrity Code Snippet and E-mail Template blank for this exercise. These Pages allow for the design of custom code Snippets and e-mail templates for a more advanced product configuration. For more information on these pages see "New/Edit Product Dialog" topic later in this guide.

Click the "OK" Button to close the dialog and apply changes.

Click the "Save" button on the Protection! Control Center toolbar to save changes.

4.4 Using Code Snippets to Quickly Embed Protection! into your Application

After we had completed Demo Calculator product configuration, Protection! Control Center will generate ready-for-implementation java code snippets. To embed Protection! support into the custom Java application the developer needs to:

1. Add the Code Snippets generated by Protection! Control Center to your application. Write the appropriate code to handle license checking results (see `@todo` statements across source code for the places that need your attention).
2. Write the code to call the procedure that starts license checking. Typically, license checking should be called during the application startup; however, it can be called at any time during the application run cycle.

```
public static void main(String[] args)
{
    try
    {
        installLookAndFeels();
        UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
    }
    catch (Exception ex)
    {
        ex.printStackTrace();
    }

    DemoCalc demoCalc = new DemoCalc();

    demoCalc.setBasicFunctionalityEnabled(false);
    demoCalc.setScientificFunctionalityEnabled(false);

    if (! DemoCalcCRCSupport.checkCRC())
        demoCalc.badCRCAction();

    demoCalc.getProtectionSupport().checkLicense();


    demoCalc.pack();
    demoCalc.centerOnScreen();
    demoCalc.setVisible(true);
}
```

Figure 11: Sample Code Snippet illustrating license checking

3. Use Protection! Control Center to generate the license required to run the DemoCalc application.

4.5 Generating a License

The following procedure will generate a new license for our Demo Calculator product:

1. Select the License Shortcut  on Control Center's Shortcuts Side Bar.
2. The License screen, by default, is set to "New License" mode so you do not need to click the "New" button. If a new license needs to be generated, you can use the following: a new License can be generated either by selecting the "File | New | License" on the menu bar or by selecting the drop-down icon on the "New" button and choosing the "License" option. A *Ctrl+Shift+L* key combination could be used to generate a new License as well.
3. Select an appropriate product from the Product drop-down field. Because we only have one product in our product's database, Demo Calculator is already selected for us.
4. Select an appropriate edition. Please note: Protection! Control Center would automatically select the appropriate Product Features based on our Product Edition selection.
5. Select appropriate Major and Minor versions.
6. Type the new license number in the "License Number" field.
7. Select an appropriate license type. We will select Evaluation License at this time. Please note: Because we indicated 15 days as the Default Evaluation Period, the Protection! Control Center automatically sets our license expiration date 15 days from the current system date. However, this value can be changed at this time if desired. We will leave it at 15 days for this exercise.

Information in the License Screen should now appear as follows:

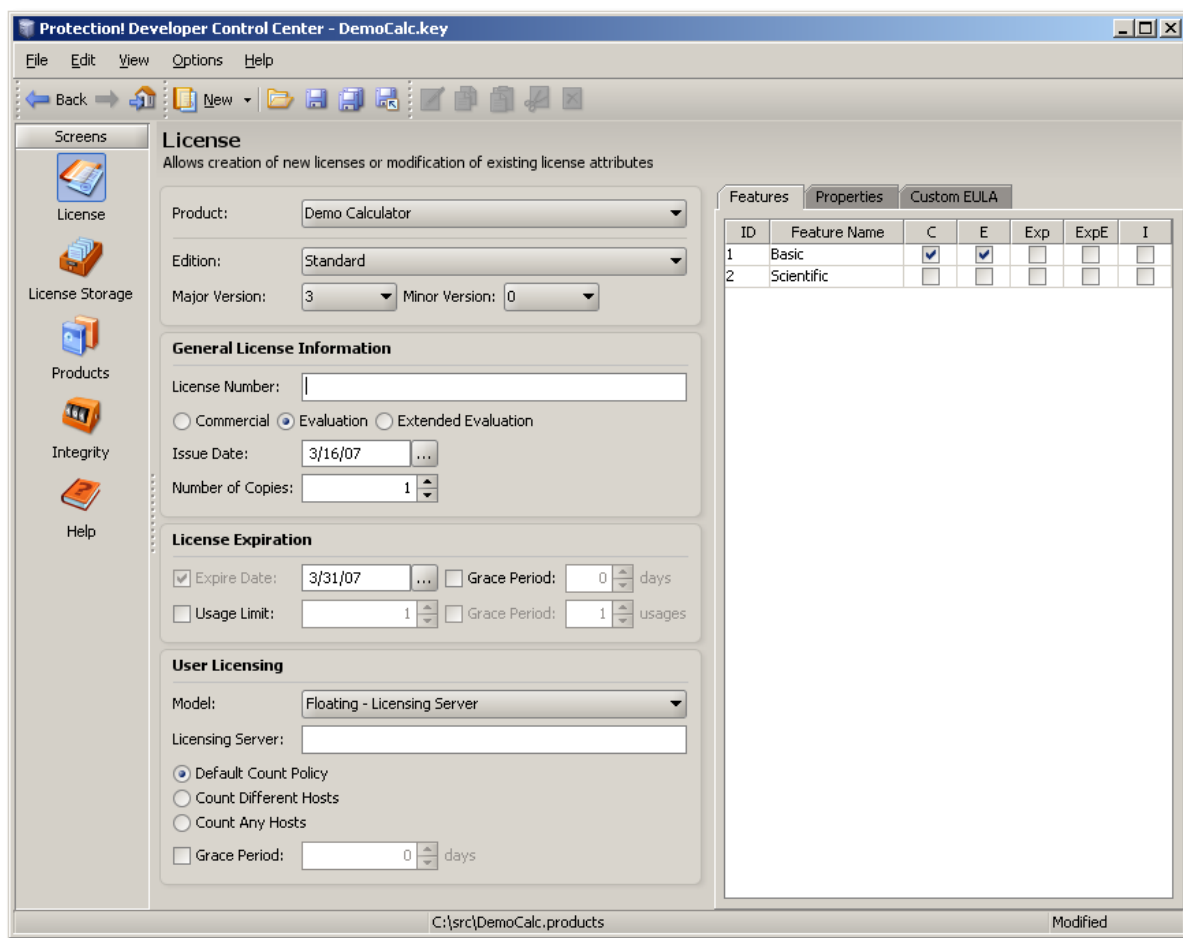


Figure 12: Generating Sample License

- Click the "Save" button  on the Control Center's toolbar to save the license to a file.

Now we are ready to deploy our license to the expected location (see the Integration Page for information on the correct license location).

4.6 Testing the Protected Application

To test our application, we would need to build our Java sources, deploy our license and run our Demo Calculator application. Please note that if the license is missing, Protection! will present the user with the following Licensing Assistant Wizard indicating that the license is missing and therefore providing several options in order to obtain the new license:

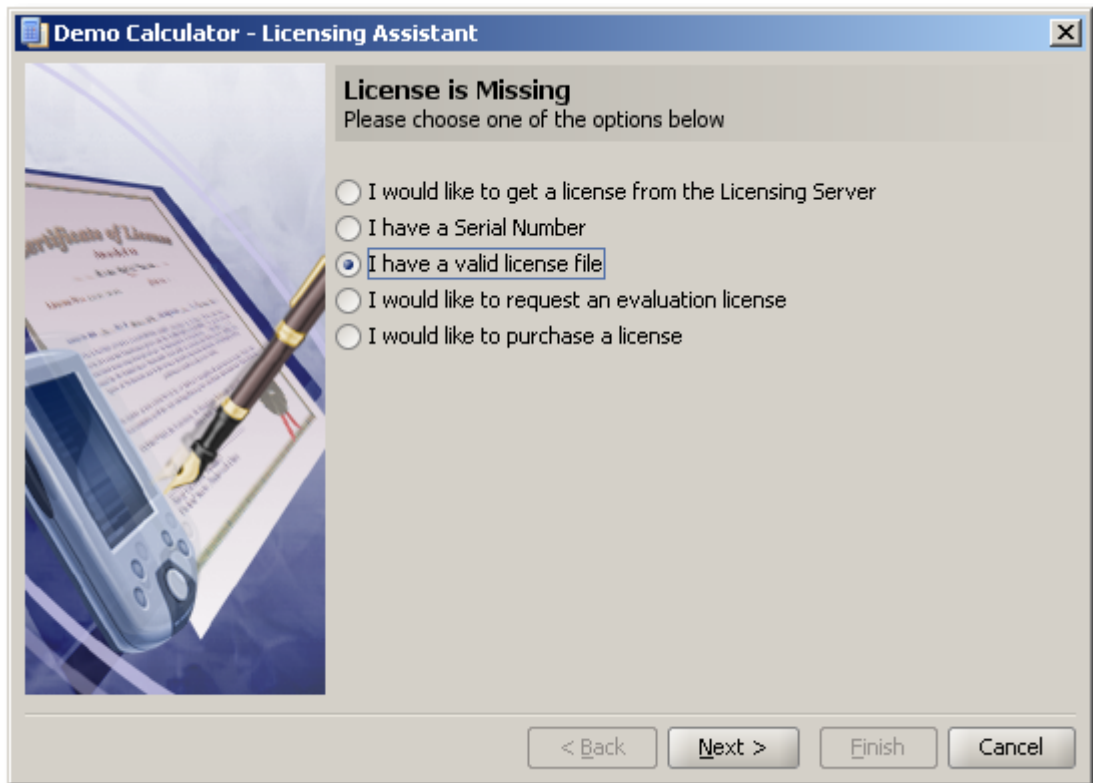


Figure 13: Licensing Assistant's "License is Missing" Message

If the user chooses to cancel this wizard, Protection! will present the user with the following message box indicating that the license is still missing, and also showing the expected license location:



Figure 14: License is Missing Message

In our scenario let's choose the first option "I have a valid license" and indicate the path to the DemoCalc.key license file which we generated previously:

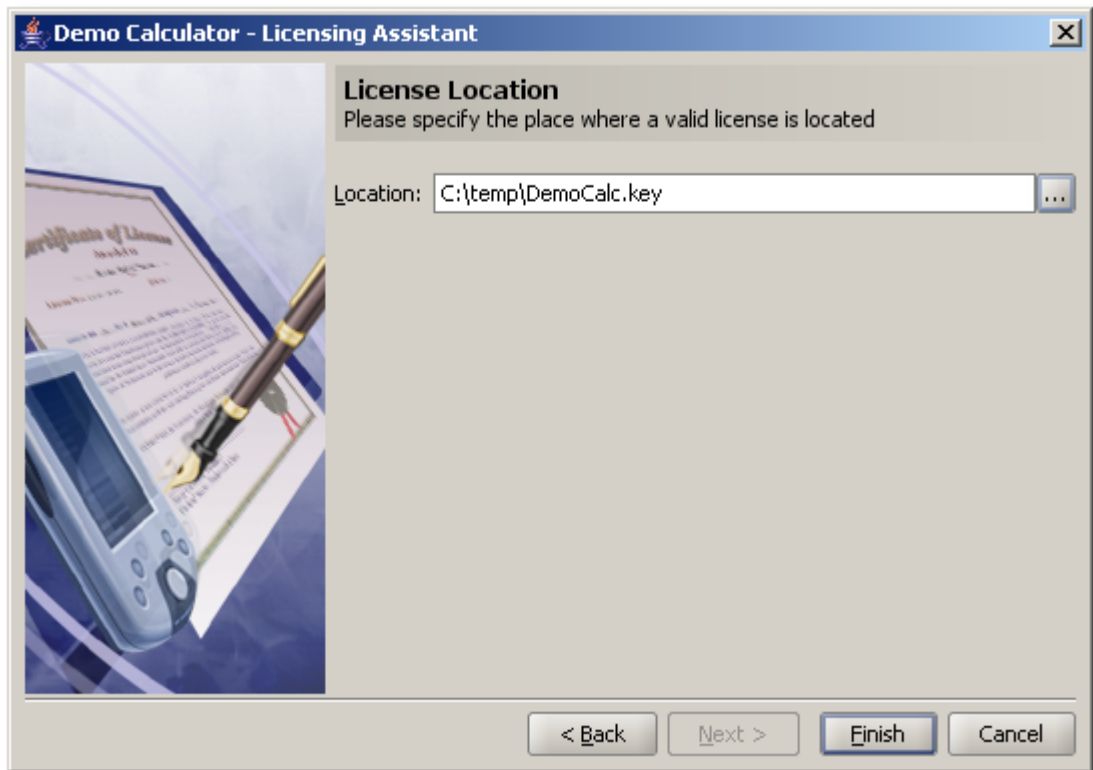


Figure 15: Specifying the license file location

If the license is located in the correct place and is not corrupted then the user would see the following “License Agreement Dialog” during the application’s first run. In our scenario the license agreement text is blank because in the previous steps we had intentionally left both the evaluation and the commercial license agreements text blank. Please note: the License Agreement **MUST** be accepted in order for the application to work:

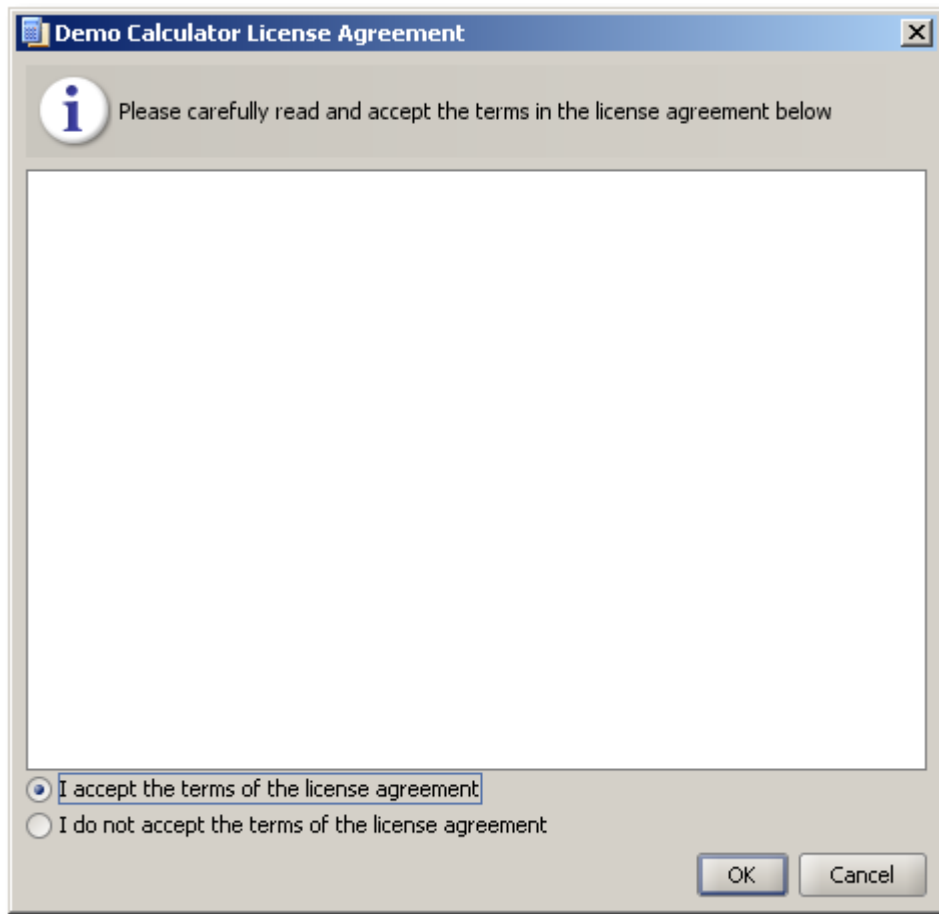


Figure 16: License Acceptance Dialog

After the License Agreement is accepted, our Demo Calculator runs:

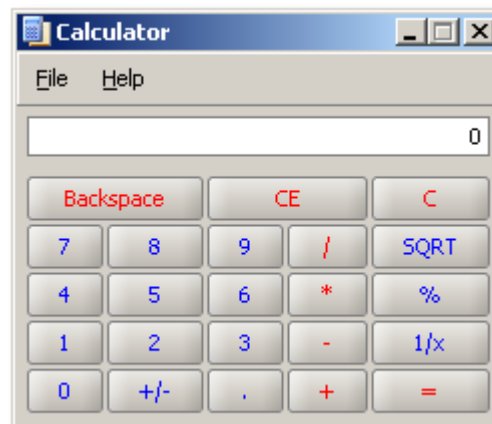


Figure 17: Sample Calculator in Action

Because we had generated an Evaluation license for our Demo Calculator with Basic Features only, Scientific Functionality is not available. To check which type of license our Demo Calculator application has, click the "Help | About" menu item. The following About Dialog indicates our application name and version, feedback information, hyperlink to our website, license type, issue and expiration dates, license number, and a hyperlink to view the license agreement.

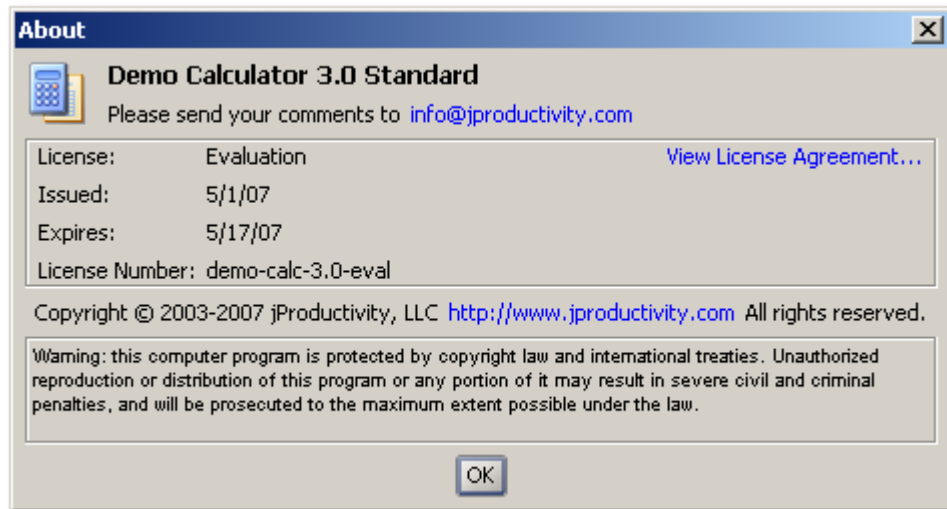


Figure 18: About Dialog

If the expiration day is past, the user would be presented with the following Licensing Assistant Wizard indicating that the license is expired and providing several options in order to obtain a new license:

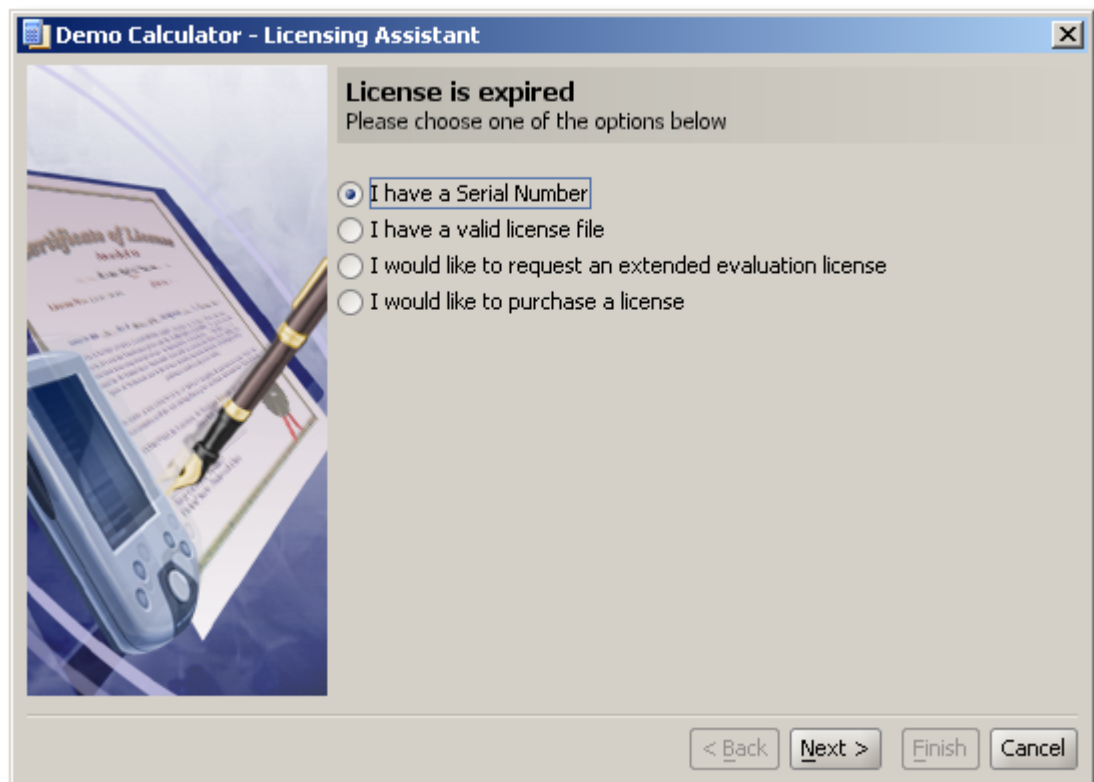


Figure 19: Licensing Assistant's License is Expired Message

If the user chooses to cancel this wizard, Protection! will present the user with the following message box indicating that the license is expired and showing the present license location:

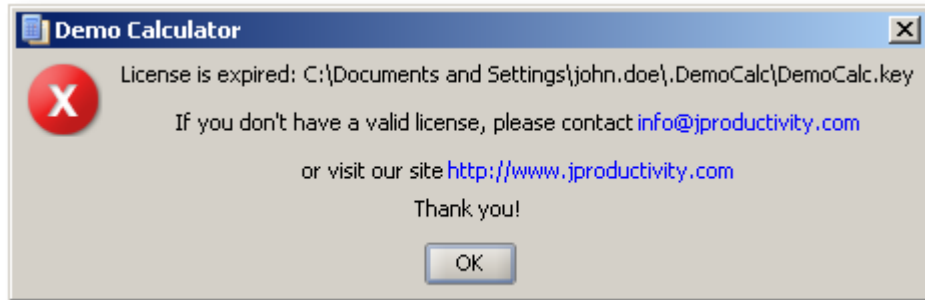


Figure 20: License Expired Message

Note: If the user attempts to set the system date back, the expired license will not be reset. The application will run only when a new, valid commercial or extended evaluation license is detected.

Now, let's generate a new license, but this time we will choose Professional Edition which will enable the scientific features of our Demo Calculator. Repeat steps 1 through 8 above and change Set Product Edition to indicate Professional Edition. Information in the License Screen will now appear as follows:

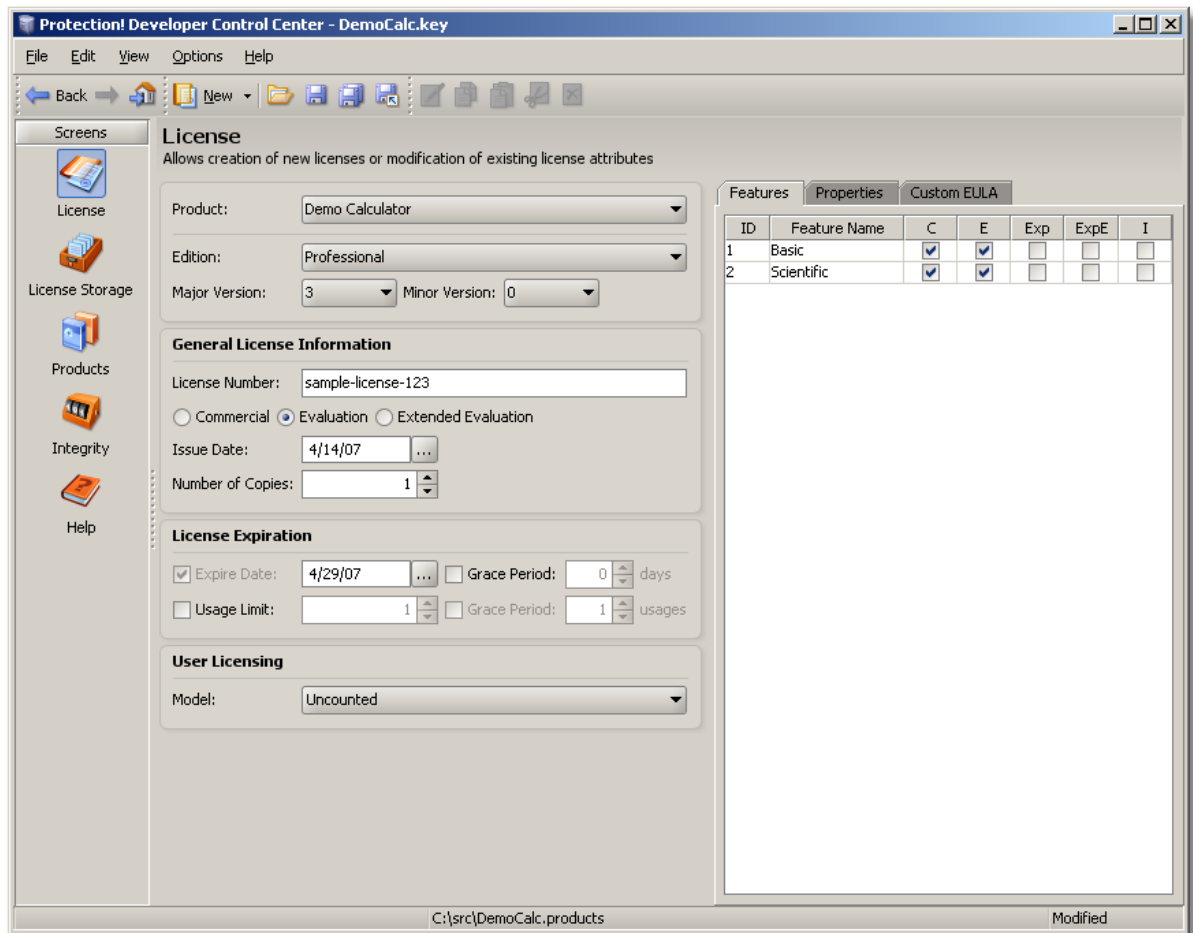


Figure 21: Generating License for Professional Edition of Demo Calculator

After generation and deployment of the new license, let's try to run our application again. As you can see, the Scientific Features are now available to the user:

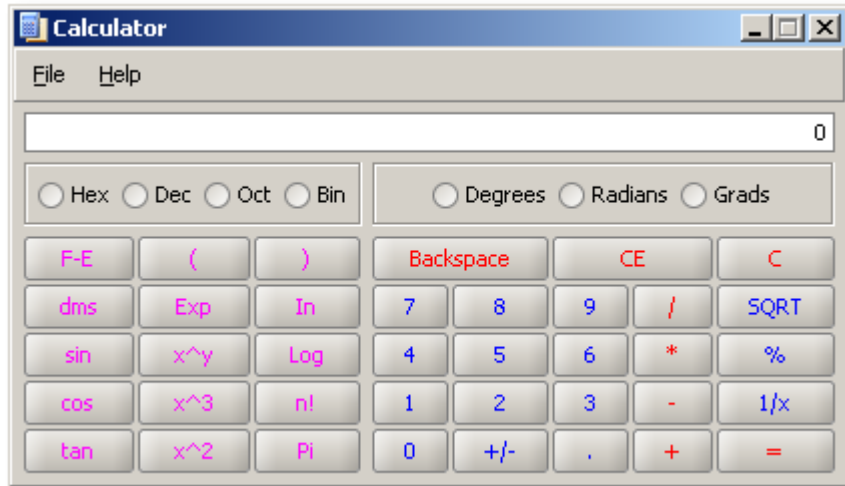


Figure 22: Professional Calculator in Action

Protection! Control Center offers a central location for Product Management, License Generation, License Maintenance, and generation of the corresponding code Snippets. Control Center allows the developer to manage an unlimited number of products and product feature sets.

5.1 Command Line

Protection! Control Center could be launched via command line using the following parameters:

```
usage: ControlCenter [options] [license]
-deactivate           show Deactivation Assistant
-deactivation_info    show deactivation information
-help                print this message
-sales               keep sales functionality only
-skip_jre_check      skip JRE compatibility check
-storage <storage file> product storage to work with
-verbose            show detailed information during startup
```

Example: `ControlCenter -storage DemoCalc.products`

5.2 Protection! User Interface

The following topics briefly describe the main UI elements of Protection! Control Center.

5.2.1 Screens

All the functionality of Control Center is exposed through the following set of Screens:

- License Screen – provides the ability to create and maintain licenses.
- License Storage Screen – provides the ability to create and maintain license storages
- Products Screen – provides the ability to maintain product's structure.
- Integrity Screen – provides the ability to prepare information required to implement Integrity checking.
- Help Screen – provides the ability to get help for Protection!

5.2.2 Menu, Toolbar and Status bar

The main menu is at the top of Protection! Control Center. For an explanation of each menu, see "Protection! menus" in the index of online help.

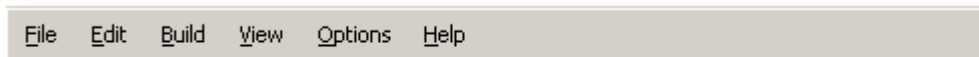


Figure 23: Main Menu

Context Menus

Functionality available through the Main menu is also available through pop up context menus. A list of options in the context menu varies depending on the context of the action and the item selected. Context menus could be invoked with a secondary mouse button (usually the right-hand button). Computers with a single-button mouse may use a keyboard-click combination, as with a *Control*-click in the Macintosh OS.

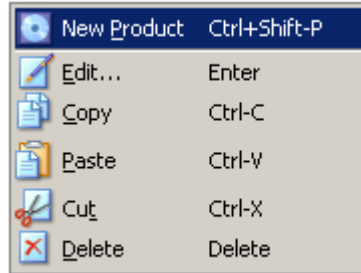


Figure 24: Context Menu

Toolbar

The main toolbar is displayed at the top of the Protection! Control Center under the menu bar. It is composed of smaller toolbars grouped by functionality. You cannot modify the toolbar display. You also can view the toolbar button name and a brief description of the button by moving the mouse cursor over the button. The button name appears below the button, and a brief description of the button appears in the main status bar. Available features vary slightly by Protection! edition.



Figure 25: Toolbar

Status Bar

The main status bar is displayed at the bottom of the Protection! Control Center Screen and keeps you updated on any operations, their results and the screen's status.



Figure 26: Status Bar

5.3 Protection! Screens Overview

Protection! Control Center uses several Screens to perform most of the product creation, configuration and licensing functions.

5.3.1 License Screen

The License Screen provides the ability to create and maintain licenses for products defined in the currently opened product's storage.

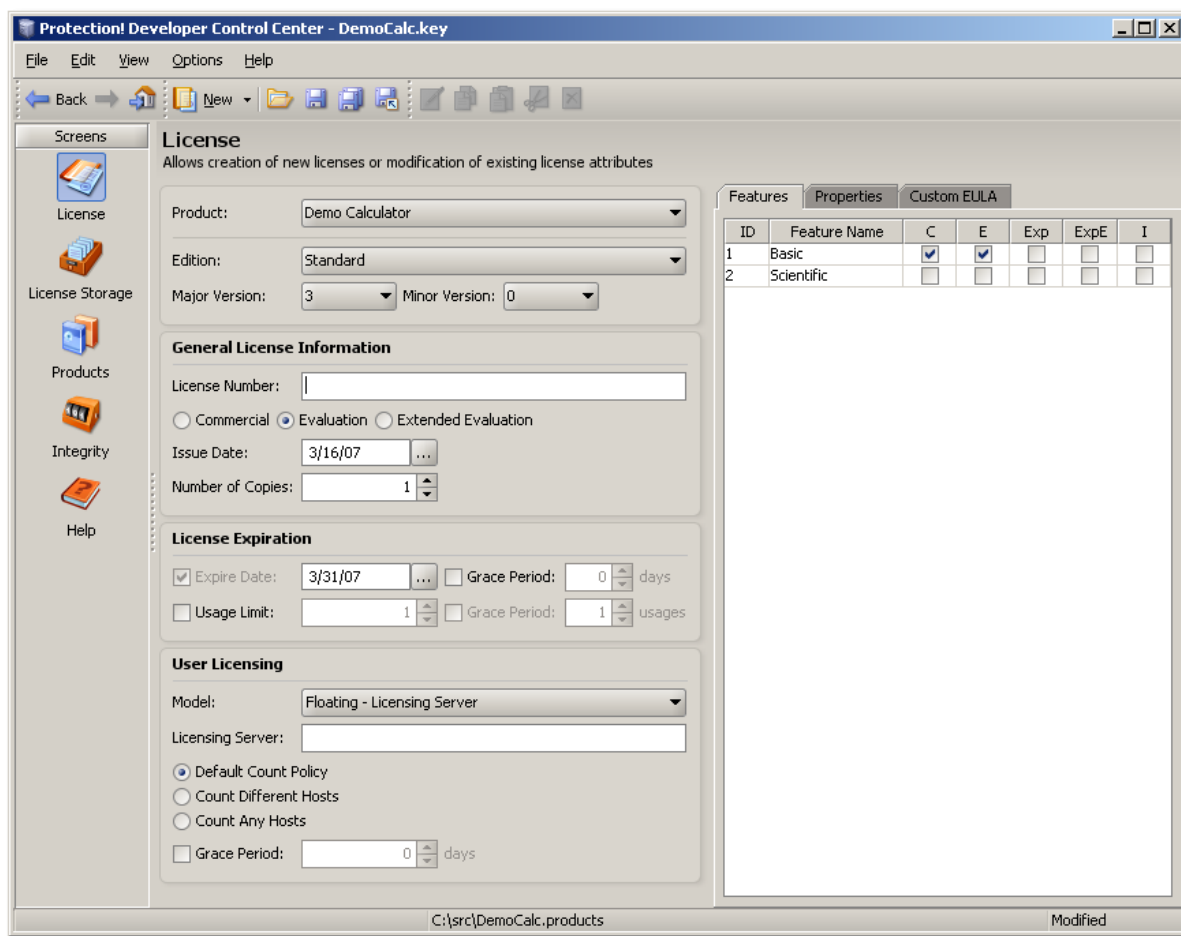



Figure 27: License Screen

The License Shortcut  on Control Center's Shortcuts Side Bar provides the way to activate the License Screen.

5.3.2 License Storage Screen

The License Storage Screen provides the ability to create and maintain license storages designed to store a set of licenses in one uniform location (container).

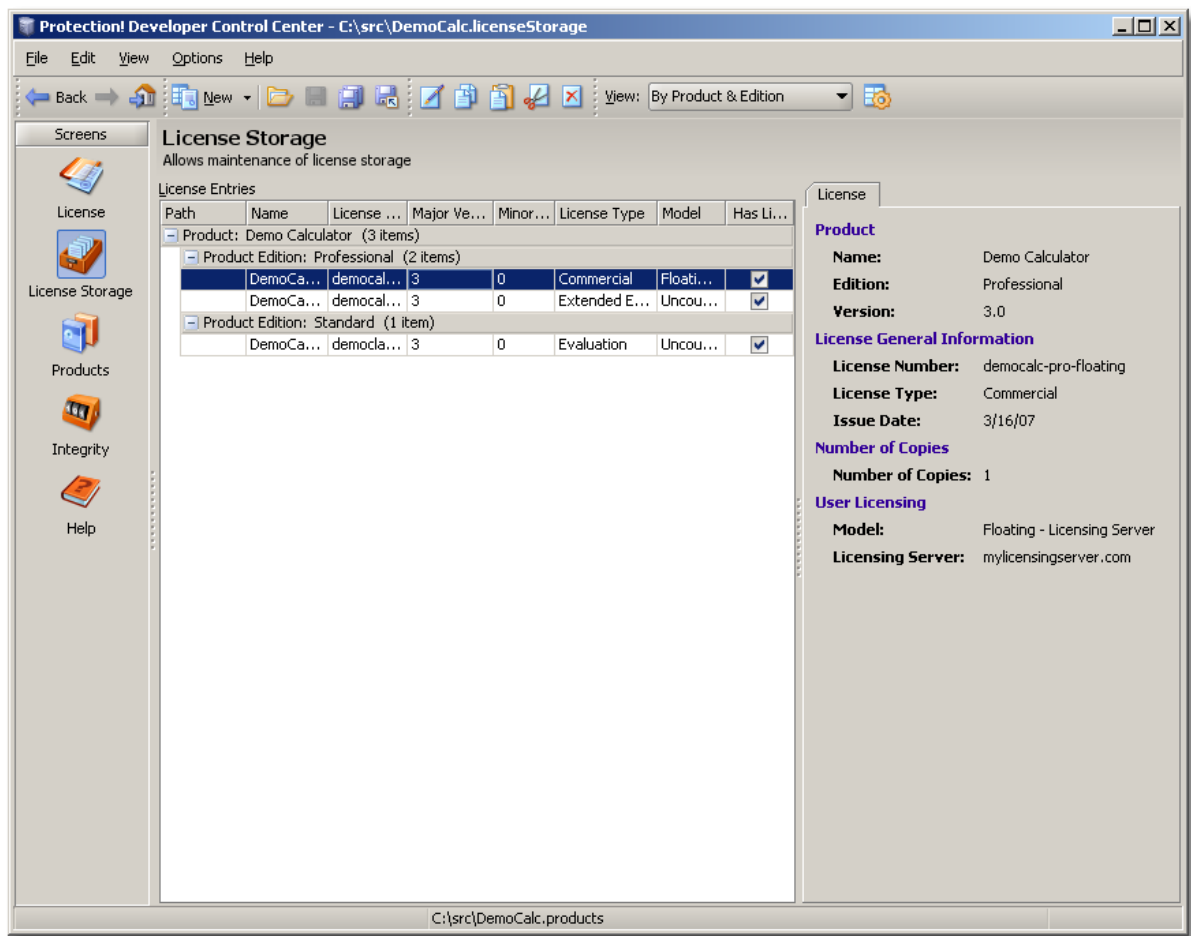


Figure 28: License Storage Screen

The License Storage Shortcut  on Control Center's Shortcuts Side Bar provides the way to activate the License Storage Screen

5.3.3 Products Screen

The Products Screen provides the ability to create and maintain products as well as provides an access to code snippets generated based on the product's configuration and used for Protection! implementation in the custom application.

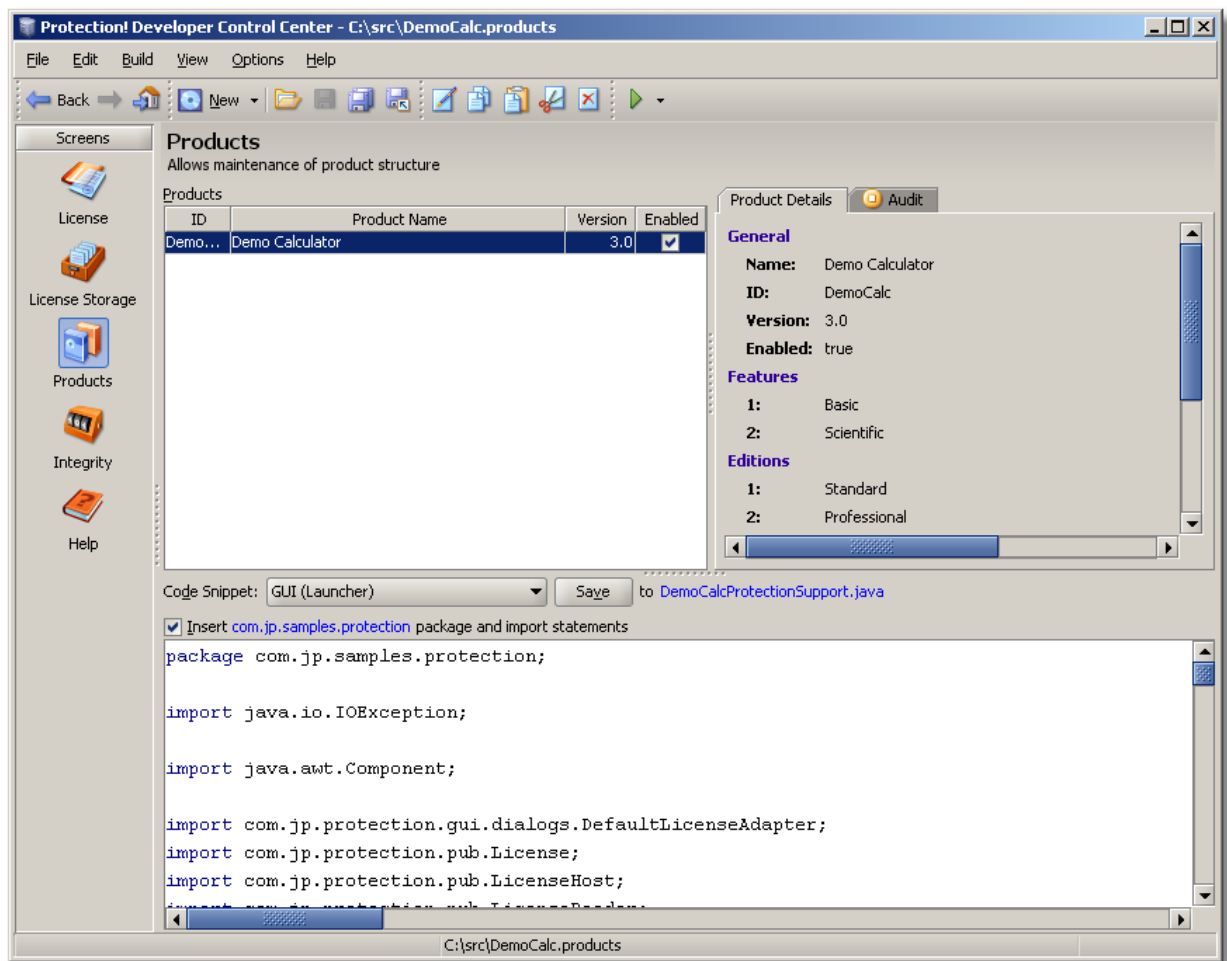



Figure 29: Products Screen

The Products Shortcut  on Control Center's Shortcuts Side Bar provides the way to activate the Products Screen.

5.3.4 Integrity Screen

The Integrity Screen provides the ability to create and maintain Integrity subsystem entries as well as provides access to generated code snippets to be used for Protection! implementation in the custom application.

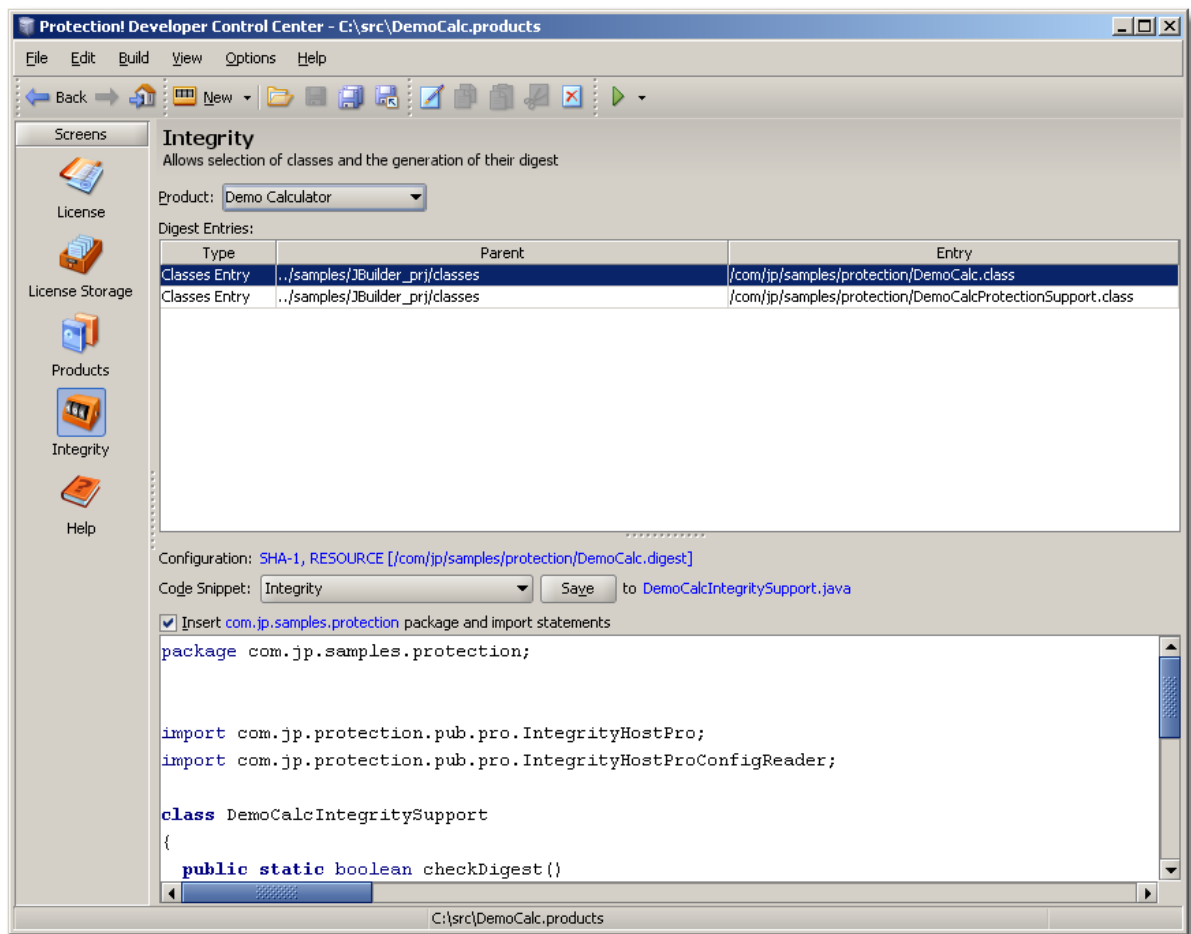



Figure 30: Integrity Screen

The Integrity Shortcut  on Control Center's Shortcuts Side Bar provides the way to activate the Integrity Screen.

5.3.5 Help Screen

The Help Screen provides the ability to get online help for Protection! Control Center.

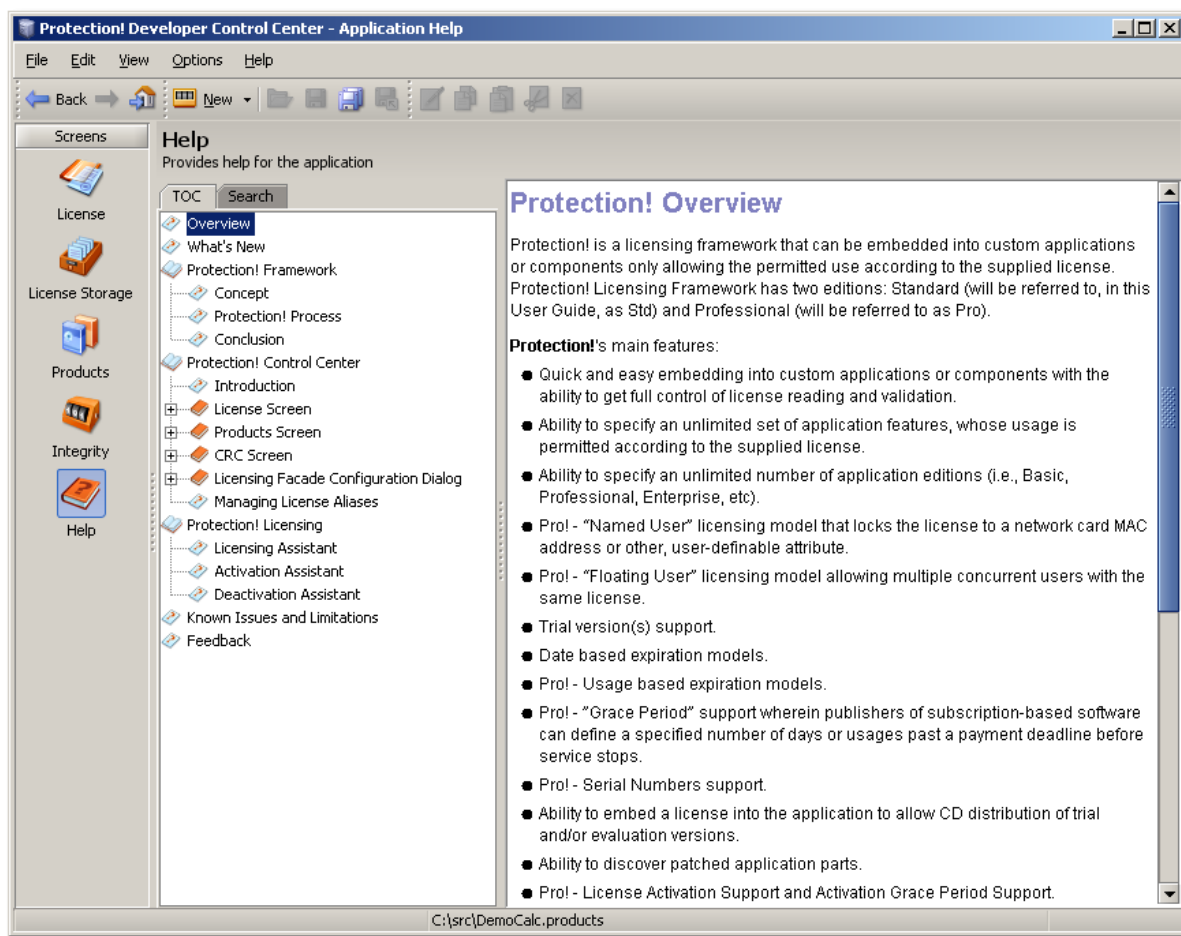




Figure 31: Help Screen

The Help Shortcut  on Control Center's Shortcuts Side Bar provides the way to activate the Help Screen. Note: pressing the *F1* key while in any part of the Protection! Control Center will open a context sensitive help Screen. See "Finding Information" chapter for more Help related topics.

5.4 Working with the License Screen

The License Screen provides the ability to create and maintain licenses for products defined in the currently opened product's storage. The License Shortcut  on Control Center's Shortcuts Side Bar provides the way to activate the License Screen.

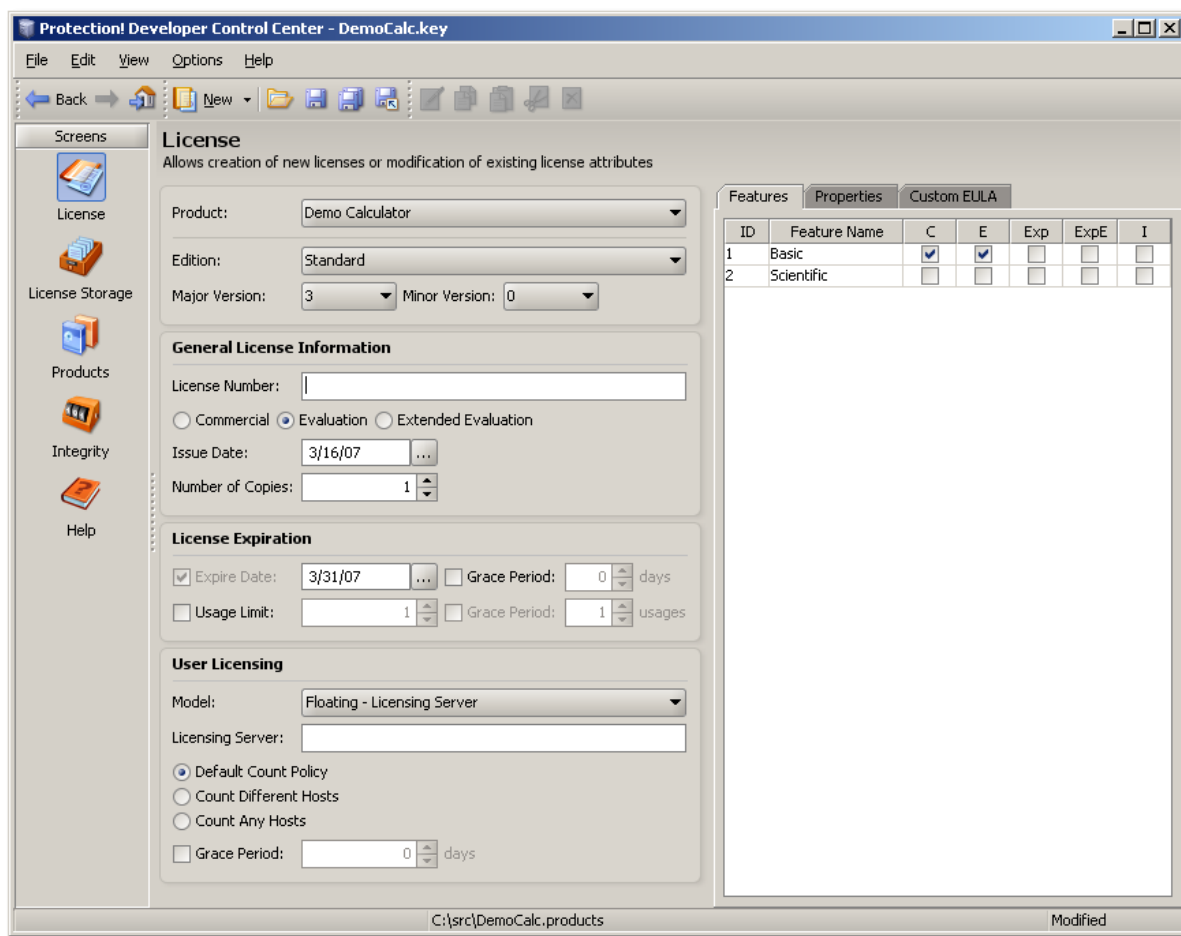



Figure 32: Control Center - License Screen

5.4.1 Creating a New License

The following procedure will generate a new license for a product: the License Screen by default is set to "New License" mode so you do not need to click the "New" button. However, if a new license needs to be generated, then you can use the following: a new License can be generated either by selecting the "File | New | License" on the menu bar or by selecting the drop-down icon on the "New" button and choosing the "License" option. A *Ctrl+Shift+L* key combination can also be used to generate a new License.

5.4.2 Opening an Existing License

The following procedure will open an existing license: select the "File | Open" on the menu bar or click the "Open" button  on the toolbar. A *Ctrl+O* key combination can also be used to launch the File Open Dialog.

It is possible to re-open previously opened licenses by choosing the desired license from the "File | Reopen" menu.

Please note that in order to open a license, the appropriate product should be available in the currently opened products file.

Additionally Protection! provides the user with ability to open existing licenses or parse order files via Drag&Drop. If the dropped file is not recognized as a license (by its extension) the user will be prompted with a menu allowing the user to choose whether

the dropped file should be processed as a license or as an order. More information on Drag&Drop will be available later in this guide.

5.4.3 Saving License

The modified license can be saved by clicking the "Save" button on the toolbar or selecting the "File | Save" menu item. A *Ctrl+S* key combination can also be used.

The license can be saved under a new name by clicking the "Save As" button on the toolbar or selecting the "File | Save As" menu item.

5.4.4 Specifying License Attributes

To specify attributes for a new license or change the attributes for an existing license you can use the following control groups.

Product Group

This group allows specifying product and products' attributes for which a license is being issued:

- "*Product*": allows selection of the Product.
- "*Edition*": allows selection of an appropriate edition. Please note: Protection! Control Center will automatically select the appropriate Product Features based on the Product Edition selection.
- "*Major*" and "*Minor Version*": allow selection of the license's Major and Minor versions respectively.

General License Information Group

This group allows specifying general license attributes:

- "*License Number*": allows typing a new license number.
- "*Commercial*", "*Evaluation*" and "*Extended Evaluation*": License Type radio buttons allow selection of an appropriate License Type (Commercial, Evaluation or Extended Evaluation).
- "*Issue Date*": allows specifying the license's issue date. This field has the current date value by default.
- "*Number of Copies*": allows specifying any applicable Number of Copies where the protected application will allow only a specified number of concurrent users with the same license.

License Expiration Group

This group allows specifying license expiration attributes:

- "*Expire Date*": allows specifying the license expiration date.
- "*Expire Grace Period*": For mission critical and subscription-based applications, software publishers can also indicate an Expiration Date Grace Period, which allows the developer to define a specified number of days past an expiration deadline before the application services stops.
- "*Usage Limit*": Indicate the appropriate application's Usage Limit (in usages).
- "*Usage Grace Period*": For mission critical and subscription-based applications, software publishers can also indicate a Usage Limit Grace Period, which allows the developer to define a specified number of usages past the Usage Limit deadline before the application services stops.

User Licensing Group

This group allows specifying applicable Licensing Model to which the generated license will adhere:

- *"Uncounted"*: With Uncounted Model any number of users can work concurrently with the license regardless of the license's "number of copies" value.
- *"Floating"*: With Floating Model only a certain number of users can work concurrently with the license according to the license's "number of copies" value. Actual usage check is done using the network broadcast facility. The following options are available:
 - *"Default Count Policy"*: With "Default Count Policy" the actual policy value is determined at runtime and in most of the cases is exactly specified by the client application developers.
 - *"Count Different Hosts"*: This counting policy defines a requirement to check the number of simultaneously running copies that are running on the different hosts. With "Count Different Hosts Policy" an actual usage check for the number of simultaneously running copies is done only if instances of the application are actually running on different hosts. Usage check against instances of the application running on the same host is ignored with this policy.
 - *"Count Any Hosts"*: This counting policy defines a requirement to check the number of simultaneously running copies that are running on any hosts. With "Count Any Hosts Policy" actual usage check for the number of simultaneously running copies is done if instances of application are running on either the same or different hosts.
- *"Named"*: With "Named" Model only a certain number of users can work with the license according to the license's "number of copies" value. This is done via the activation and/or activation-and-lock facility

The activation radio buttons allow specifying whether Activation Support is enabled. The goal of license activation is to reduce a form of piracy known as casual copying or "soft-lifting". Casual copying is the sharing and installation of software that is not in compliance with the software's end user license agreement and is estimated to contribute to half of all pirated installations. Protection! Licensing Toolkit provides an Activation support to assist software developers/publishers and help them ensure that each license is installed in compliance with their protected software's end user license agreement and is not installed on more than the limited number (usually one) of computers. Activation Support provides two options – "Activation" and "Activation and Lock".

Protection! generates an activation key on the user's computer based on the parameter(s) that the developer decided to use (e.g., MAC address, Host Name, Number of CPUs, etc). Protection! uses its own proprietary algorithm to generate the activation key.

When either the activation or activation-and-lock requirement is specified then there is always a round trip...

In general steps could be as follows - for GUI application (example only):

1. Vendor generates a license that requires "activation" or "activation and lock";
2. Vendor provides such license to the customer;
3. The customer copies a license file to its appropriate location manually or starts protected application and uses the Licensing Assistant to specify license file location;
4. The customer gets the License Activation Assistant prompting him/her to activate the license. If off-line activation is chosen then he/she should provide Activation Key shown in the Assistant back to the vendor (e.g. via e-mail or phone). If the on-line option is chosen then the Protection! Backend

- Application must be used and it would be responsible to license activation, generation and delivery of activated license back to the customer;
5. Vendor re-generates license turning on activation and lock and places supplied by customer Activation Key in the "Activation Key" field in the Protection! Control Center;
 6. Vendor provides activated license back to the customer (if lock option is used then such license will also be locked to a user's system).

Note: If Protection! Backend is used then steps 5-6 will be automatically handled by Protection! Backend.

The following options are available:

- "Activation": This option will require the application to be activated before its use. Activation could be performed either online via Direct or Proxy Internet connection or offline such as contacting the software publisher and providing the Activation Key.

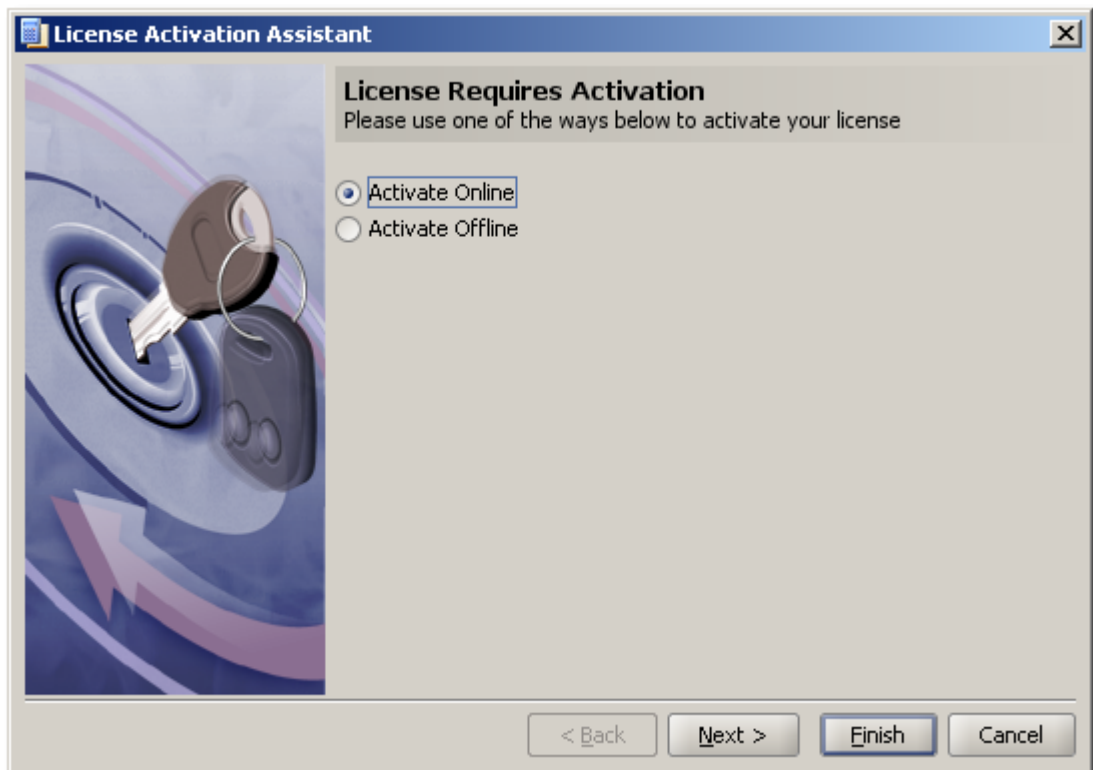


Figure 33: License Activation Assistant

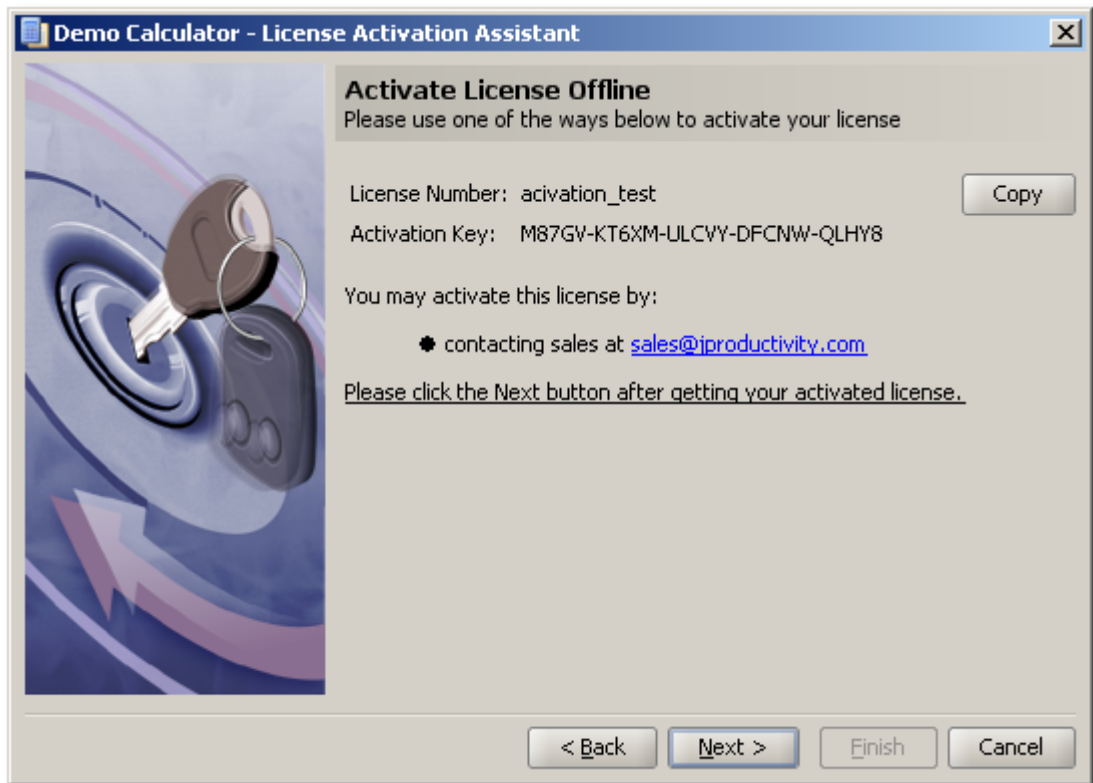


Figure 34: License Activation Assistant | Offline Activation

"*Activation and Lock*": This option will require the application to be activated and will optionally lock the application to a specific system. Protection!'s default implementation is able to lock the license to the following attributes:

- a) Network card's MAC address;
- b) Number of CPUs;
- c) Computer Name (Host);
- d) Computer IP address;
- e) User Name.

However, other user-definable attributes could be used by the application developer. Please see Protection! Developers Guide for additional information

- "*Provide User Information*": allows specifying whether the user information will be required during the License Activation process.

Figure 35: License Activation Assistant | Online Activation

- "Activation Key": provides a place to enter/view the license's "activation key". If the license was activated by the end-user via off-line mode and the activation key was supplied back to the developer/publisher then this activation key needs to be entered into the "Activation Key" field. If the license has been activated previously then opening this license in the Protection! Control Center would show the license's "activation key" in the "Activation Key" field.

Figure 36: Activation Key Field

In Protection! Sales there is the button at the right of the field that shows the Activation Key dialog. This dialog allows specifying a set of arguments like License Number, MAC Address and User Name to compose an Activation Key based on it.

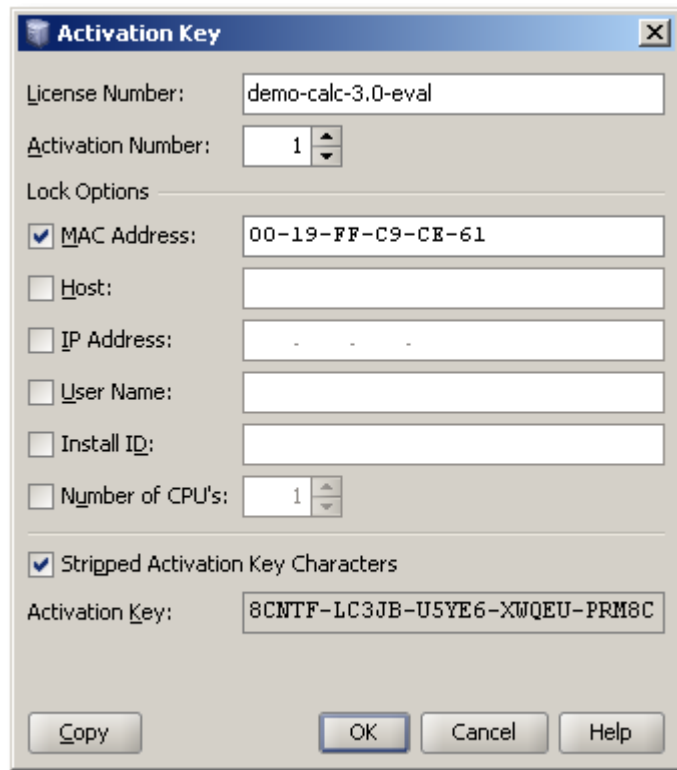


Figure 37: Activation Key Dialog – Protection! Sales

- *"Disallow Running Several Copies on the Same Host"*: This policy defines a requirement to check for the number of simultaneously running copies on the same host and to disallow running more than one instance of the application simultaneously.
- *"Activation Grace Period"*: indicates appropriate Activation's Grace Period (in days). Software Publishers can indicate an activation's Grace Period, which allows the developer to define a specified number of days past an activation requirement deadline before the application services stops.
- *"Floating – Licensing Server"*: Only a certain number of users can work concurrently with the license according to the license number of copies value. Actual usage check is done by contacting the Licensing Server and acquiring the license lock. The following options are available:
 - *"Licensing Server"*: provides a place to edit/view license's "licensing server" address.

Note: Using "localhost" as the Licensing Server address can be unreliable as it may jeopardize the intended licensing model if the Licensing Server address is not specified in the license. In this case both the Licensing Server and the application can be started together on the same computer and each instance of the application will work with the local instance of the Licensing Server. This would allow the user to effectively bypass the "number of copies" check which in turn can lead to an unlimited number of unauthorized deployments of the application.

It is recommended either to leave the Licensing Server address blank or to specify it at runtime via an API call which could be initiated based on the appropriate user input and/or some application's configuration data.

- *"Network Check Counting Policy"*: With Floating- Licensing Server Model only a certain number of users can work concurrently with the license according to the license's "number of copies" value. Actual usage check is done by the Protection! Licensing Server by either allowing or disallowing the appropriate license lock. The following policies provide the developer with control over the number of running instances of protected applications on either the same or on different hosts
 - *"Default Counting Policy"*: With Default Count Policy the actual policy value is determined at runtime and in most of the cases is exactly specified by the client application developers.
 - *"Count Different Hosts"*: This counting policy defines a requirement to check the number of simultaneously running copies that are running on the different hosts. With Count Different Hosts Policy actual usage check for the number of simultaneously running copies is done only if instances of the application are actually running on different hosts. Usage check against instances of application running on the same host is ignored with this policy.
 - *"Count Any Hosts"*: This counting policy defines a requirement to check the number of simultaneously running copies that are running on any hosts. With Count Any Hosts Policy actual usage check for the number of simultaneously running copies is done if instances of the application are running on either the same or different host.
- *"Grace Period"*: indicates the period (in days) past a license lock acquisition requirement deadline before the application services stops.
- *"Named - Licensing Server"*: Only a certain number of users can work with the license according to the license number of copies value. Actual usage check is done by contacting the Licensing Server and acquiring the license lock.
 - *"Licensing Server"*: The Licensing Server field provides a place to edit/view the license's "licensing server" address.

Note: Using "localhost" as the Licensing Server address can be unreliable as it may jeopardize the intended licensing model if the Licensing Server address is not specified in the license. In this case both the Licensing Server and the application can be started together on the same computer and each instance of the application will work with the local instance of the Licensing Server. This would allow the user to effectively bypass the "number of copies" check which in turn can lead to an unlimited number of unauthorized deployments of the application.

It is recommended either to leave the Licensing Server address blank or to specify it at the runtime via an API call which could be initiated based on the appropriate user input and/or some application's configuration data.

- *"Disallow Running Several Copies on the Same Host"*: This policy defines a requirement to check for the number of simultaneously running copies on the same hosts and to disallow lock acquisition from the Licensing Server if more than one instance of the application is detected.
- *"Grace Period"*: indicates the period (in days) past a license lock acquisition requirement deadline before the application services stops

Features Tab

This tab shows the list of license features presented in the license and allows changing features' enabled states if needed.

- "ID": Indicates Feature's Unique ID
- "Feature Name": Indicates Feature's Name
- "C": Specifies that the feature is enabled for Commercial Licenses
- "E": Specifies that the feature is enabled for Evaluation Licenses
- "Exp": Specifies that the feature is enabled for Expired Commercial Licenses
- "ExpE": Specifies that the feature is enabled for Expired Evaluation Licenses
- "I": Specifies that the feature is enabled for Invalid Licenses

Properties Tab

This tab allows specifying unlimited License Custom properties. These properties represent name-value pairs that could be embedded into a license and used by the application during license reading/validation.

- "Name": Specifies the Property's unique name
- "Value": Specifies the Property's value
- "M": Specifies whether the given property is mandatory and must be specified during license generation. Ability to set property as mandatory can only be done via the "Product Edit Dialog | License" option.

Customer Tab

This tab allows specifying Customer information. If specified, then this information could be used:

- To optionally place customer information into the license (can be controlled via the "Options | Store Customer into the License" menu item).
- To accompany the license information during the writing of the license generation log file.
- To help compose an e-mail message for the license delivery via an email (e.g. by using the customer's e-mail address or embedding the customer's attributes into the e-mail's subject and/or body).
- To allow for the license delivery via Protection! Backend.

It is possible to specify that customer attributes should be cleared during license operations:

- For the new licenses via the "Options | Clear Customer for New Licenses" menu item.
- For an opened license via the "Options | Clear Customer for Opened Licenses" menu item.

Custom EULA Tab

It is possible to include a Custom License Agreement via the "Custom EULA" Tab. Protection! can handle several License Agreement types. One of them is a "Custom EULA". This license agreement is only for a TRULY custom license agreement. The user should only use custom license agreement in situations when he/she needs to create a special agreement for one customer, for some special case only!

Note: If Custom License Agreement via the "Custom EULA" Tab is used then this Custom License agreement is encoded into the license key. Therefore if the custom license agreement is large then the generated license key would also be increased in its size.

The "Include Custom End User License Agreement" check box specifies that the Custom End User License Agreement will be included in the generated license.

5.4.5 Parsing Orders

License order parsing allows extracting license and customer information directly from the order notification received from online E-Commerce stores like the [element-5](#). License Order Parsing is designed to reduce efforts and to eliminate errors during the license generation and re-entering customer details from the original order confirmation.

To enable this functionality an appropriate License Alias must be created for each particular product listed in the online store. The License Alias "ID" must correspond to the product id from the online store. Order parsing can be invoked via the "Edit | Parse Order" or "Edit | Parse Order from Clipboard" menu items. Additionally Protection! provides the developer/publisher with the ability to parse received order files via Drag&Drop. If the dropped file is not recognized as a valid order then the developer/publisher will be prompted with the pop-up menu allowing the developer/publisher to choose whether the dropped file should be processed as a license or as an order.

By default only the critical messages are shown during the order parsing process. However, it is possible to show messages for any low priority issues via the "Options | Warn on Any Order Parse Error" menu item.

Bellow is an example of the textual order notification which could be parsed by Protection! Control Center. Note: If your current order structure is not yet supported by Protection! order parsing functionality and you would like Protection!'s assistance in order parsing, then you can modify your current order to fit the generic format outlined bellow and then supply it to Protection! for automated parsing.

```
-----  
Product                = 1234  
Number of licenses    = 1  
License number        = 1234  
  
Net sales              = USD   1000.00  
Total                  = USD   900.00  
Payment                = Credit Card: Visa  
  
Salutation            = MR.  
Title                  =  
Last Name              = Doe  
First Name             = Joe  
Company                = Acme Corporation, Inc.  
Street                 = 1 Acme way  
ZIP                    = 90012  
City                   = Acme Industrial City  
Country                = USA  
State / Province      = California  
Phone                  = 555-555-1212  
E-Mail                 = john@acme.com  
  
-----  
#Generic License Order#  
-----
```

In this format the following tags are very important:

1. The "Product" tag specifies License Alias that corresponds to the license has been sold.

2. The "#Generic License Order#" tag specifies name of the generic format.

All the generic tags should have exactly the same names as stated above e.g. "Product = " but can be placed in a different order.

Note: currently only the generic, [element-5](#) and the [share-it!](#) Textual Order Notification formats are supported; more formats will be available in the future.

5.4.6 Validating Deactivation Key

License Deactivation Assistant provides the ability to deactivate the license on the local computer and to notify the vendor about Deactivation results. When using an off-line deactivation method with the License Deactivation Wizard the user is presented with the set of activation and deactivation keys. Both of these keys need to be provided back to the developer/publisher in order to complete the deactivation process. The following information must be provided – Product; Activation Key; Deactivation Key; License Number. For example:

```
Product: Demo Calculator
Activation Key: 8AXNK-ELHVE-863J9-U3HYT-F5XT9
Deactivation Key: 87LGV-EARKU-GWQBU-CYTAH-KUGRX
License Number: 1234
```

When the developer/publisher receives these key pairs he/she can validate deactivation of the user's protected application via Protection! Control Center. To validate a deactivation key the developer/publisher should select Products screen and choose the "Edit | Validate Deactivation Key" menu item.

This would launch the Validate Deactivation Key dialog. The developer/publisher could either paste received information from the user by clicking the "Paste" button or can type received information manually and chose for which product deactivation key was received by choosing the appropriate product from the Product dropdown box.

When the deactivation key is verified by the Protection! Control Center the Deactivation Status would change from "N/A" to "COMPLETED". When the deactivation status is set to "COMPLETED" this is an indication to the developer/publisher that the user has successfully deactivated the protected application on his/her computer system.

If deactivation status is set to "FAILED" it means that deactivation has failed on the user computer. The reason for "FAILED" deactivation status can be either missing or a read-only Secret Storages.

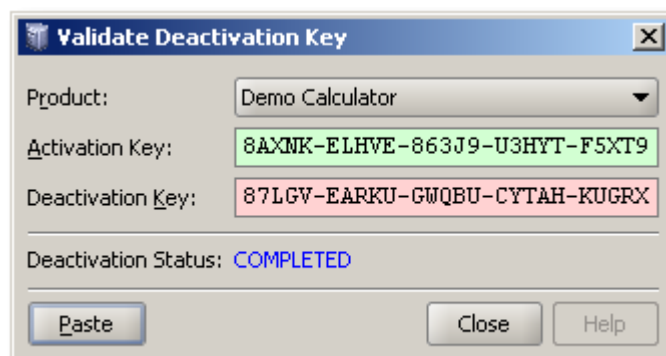


Figure 38: Validate Deactivation Key Dialog

When using online deactivation mode all of the above is performed automatically via Protection! Backend.

5.4.7 Logging Licenses Delivery

Protection! provides developer/publishers with the ability to log licenses delivery process by writing it to the comma-delimited format (file, e-mail and Backend delivery types are supported). Information for the following fields would be provided during the license delivery logging process:

"date", "deliveryType", "firstName", "lastName", "title", "company", "phone", "email", "address", "city", "zip", "state", "country", "contactMe", "licenseNumber", "product", "productEdition", "productMajorVersion", "productMinorVersion", "licenseType", "numberCopies", "licenseOptions", "licenseIssueDate", "licenseExpireDate", "gracePeriod", "activationKey", "activationGracePeriod", "usageLimit", "usageGracePeriod", "properties"

It is possible to control this functionality via the "Options | Log License Delivery" menu item. Developers/Publishers can control the logging process via the "Log License Delivery Options" dialog.

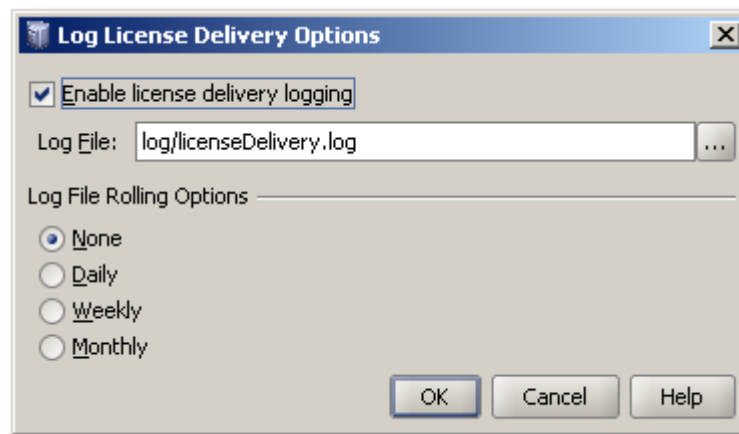


Figure 39: Log License Delivery Options Dialog

The "Enable license delivery logging" checkbox allows turning logging on/off.

The "Log File" field provides the ability to specify a path to the file where the log should be written.

The "File Rolling Options" option group provides the ability to select whether the log file should be rolled over at the user chosen frequency. It is possible to specify monthly, weekly, daily or none rollover schedules. For example, if log file named as *log/licenseDelivery.log* and the frequency is specified as "Daily" on 2007-01-01 at midnight, the log file *log/licenseDelivery.log* will be copied to *log/licenseDelivery.log.2007-01-01* and logging for 2007-01-02 will continue in *log/licenseDelivery.log* until it rolls over the next day.

5.4.8 Working with License Aliases

License Alias bundles together specific license type, license identifiers and some additional properties. License Alias concept provides a way to reference specific, pre-configured license settings by means of the Aliases' identifiers. This allows for further creation of the license with the predefined set of attributes where the created license is

based on the selected license alias. License Aliases can be used in various areas including:

- Order parsing: where License Alias's concept would allow for the creation of the specific licenses which are based on the product identifier assigned by the E-Commerce store. In this case each product identifier should have the corresponding License Alias created prior to the first order parsing.
- Serial Numbers v2 support to allow for creation of the licenses according to the alias attribute encoded into Serial Number.
- License Shortcuts shown in the Shortcuts Side Bar to allow quick creation of the licenses with the predefined set of attributes.

License Aliases are stored in the products storage and can be maintained via Products Screen – *"Edit | License Aliases"* menu item.

Now, the new license could be generated either by:

1. Order parsing: where a specific license is created based on the product identifier assigned by the E-Commerce store. Order parsing can be invoked via the *"Edit | Parse Order"*, *"Edit | Parse Order from Clipboard"* menu items or by means of Drag&Drop of the textual order file into the license screen.
2. Serial Number parsing: where a specific license is created based on the Serial Numbers v2 as the alias attribute is encoded into the Serial Number v2.
3. License Shortcuts shown in the Shortcuts Side Bar to allow quick creation of the licenses with the predefined set of attributes (illustrated in the next Figure)

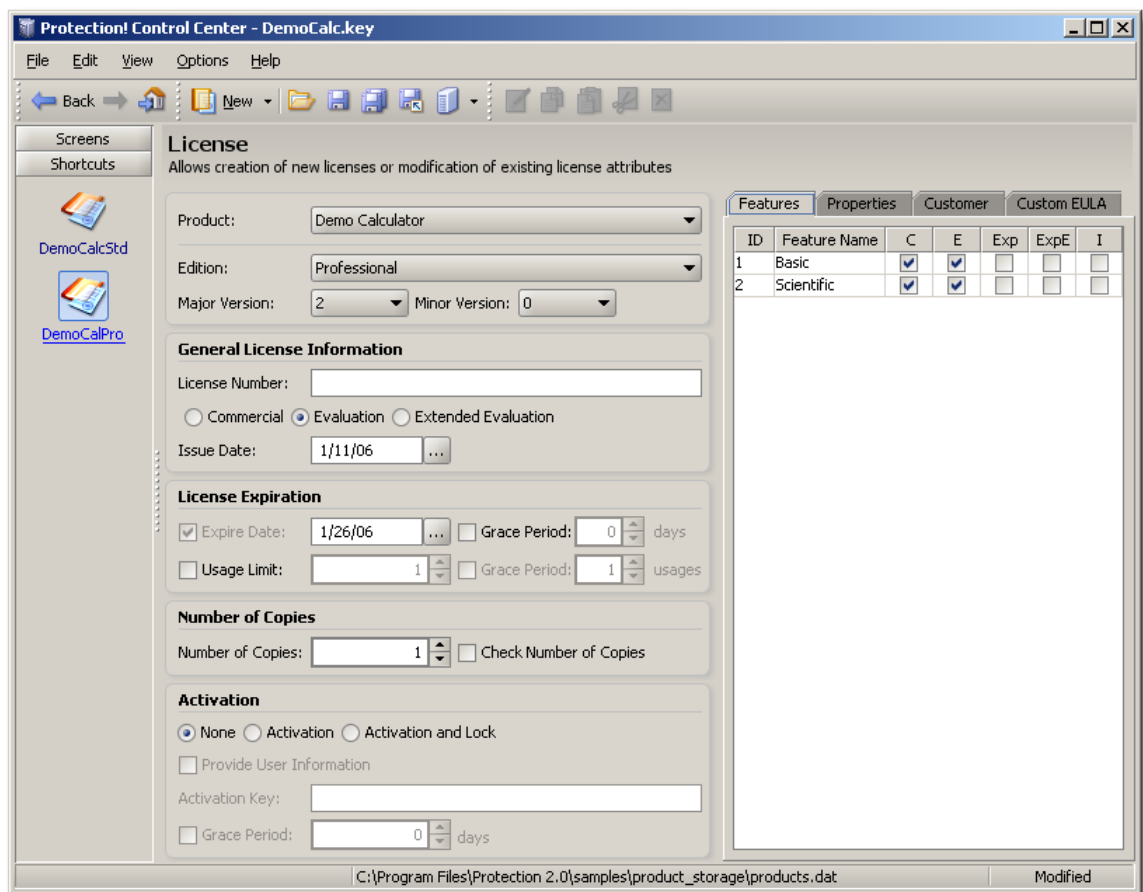


Figure 40: Generating License via License Alias Shortcut

5.4.9 Working with Serial Number(s)

A Serial Number is a textual representation of a license (e.g. SR84D-VBESQ-GK3RC-F9HM5-ESQGU) that can be printed on the product box or sent by a publisher as confirmation of purchase. Usually a Serial Number would be used by the end user to obtain a license using the Protection! Licensing Wizard.

Serial Numbers v2 are based on the concept of the License Alias. Serial Numbers v2 contain an encoded representation of the license number and license alias. Because Serial Numbers v2 refers back to the License Alias it is possible to associate an exact set of license attributes with each Serial Number. This eliminates a major limitation of Serial Numbers v1 where Serial Number v1 was able to hold only a limited set of license attributes.

Serial Numbers v2 is relatively transparent to the customers who are still using original Serial Number structure as Serial Numbers v1 are still supported. However, Serial Numbers v1 are now deprecated / obsolete. Special attribute in the products storage defines which version of Serial Numbers should be used. This could be controlled via the "Products Screen" - "Options | Use Obsolete Serial Numbers" menu item.

All of the Serial Numbers dependent functionality including API and the dialogs supports both versions of the Serial Numbers and provides specific implementation for the currently selected Serial Number version.

Working with (deprecated) Serial Numbers v1

Due to the limited length of the Serial Number, it includes the following license attributes only:

- Product "Short Identifier".
- Product "Short Edition Identifier".
- "Product Major Version".
- "License Number".
- "Number of Copies".
- Options
 - "Activation is Required".
 - "Activation and Lock is Required".
 - "Check Number of Copies".

The following procedure will generate a new Serial Number for a given license:

1. Fill in all required license attributes.
2. Select "Edit | Generate Serial Number" on the menu bar.
3. Click the "Copy" button to copy the generated Serial Number to the system clipboard

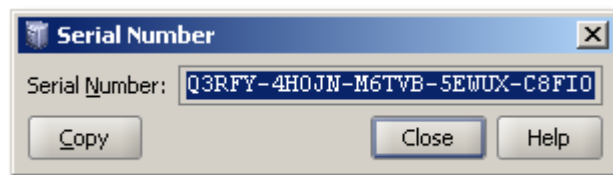


Figure 41: Generate single Serial Number v1 Dialog

The following procedure will generate Serial Numbers in bulk (Sale Pro):

1. Select "Edit | Generate Serial Numbers" on the menu bar.
2. Fill-in the License number.

3. Specify how many Serial Numbers you want to generate for a given license (the "Count" field).
4. Click the "Generate" button.
5. Click the "Copy" button to copy all of the generated Serial Numbers to the system clipboard.

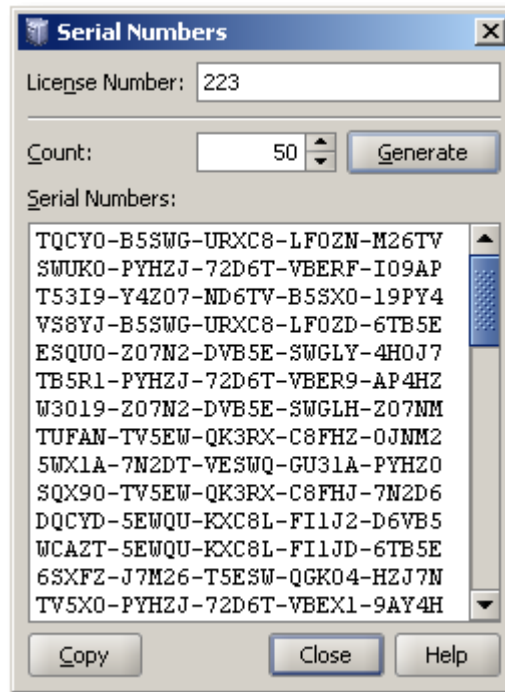


Figure 42: Generate Serial Numbers v1 in bulk Dialog

The following procedure will parse Serial Number and generate a new license based on information obtained from the Serial Number:

1. Select the "Edit | Parse Serial Number" on the menu bar.
2. Either type the Serial Number or click the "Paste" button if the Serial Number was previously copied into the system clipboard.
3. Click the "OK" button.
4. Protection! generates a new License based on the information obtained from the parsed Serial Number.
5. Adjust license attributes if necessary and save the newly generated license.

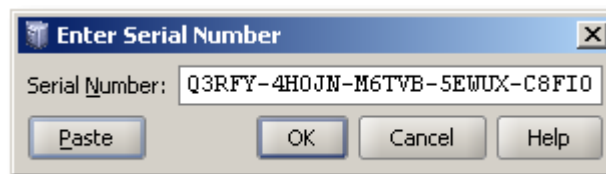


Figure 43: Parse Serial Number v1 Dialog

Working with Serial Numbers v2

Procedures to Generate Serial Number, Generate Serial Numbers in Bulk and Parse Serial Number are identical to the procedure outlined above for Serial Numbers v1. The only significant difference is that in order to use Serial Number v2 at least one valid License Alias must be created.

Note, unlike Serial Numbers v1 this version does not use any license attributes entered in the License Screen. Serial Number v2 uses its attributes from the License Alias as well as License Number and Number of Copies which are all entered in the Serial Number Dialog.

The following procedure will generate a new Serial Number:

1. Select the *"Edit | Generate Serial Number"* on the menu bar.
2. Select a License Alias from the *"License Alias"* combo box.
3. Specify number of copies using the *"Number of Copies"* field or turn off the *"Number of Copies"* checkbox to accept default value specified in the License Alias.
4. Specify the license number using the *"License Number"* field.
5. Click the *"Copy"* button to copy the generated Serial Number to the system clipboard.

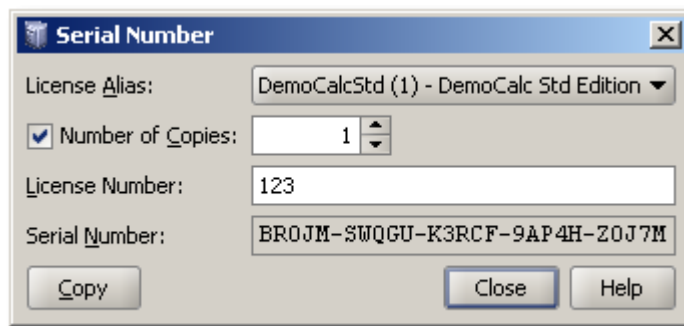


Figure 44: Generate single Serial Number v2 Dialog

The following procedure will generate new Serial Numbers in bulk (Sales Pro):

1. Select the *"Edit | Generate Serial Number"* on the menu bar.
2. Select a License Alias from the *"License Alias"* combo box.
3. Specify the number of copies using the *"Number of Copies"* field or turn off the *"Number of Copies"* checkbox to accept default value specified in the License Alias.
4. Specify the license number using the *"License Number"* field.
5. Specify how many Serial Numbers you want to generate for a given license using the *"Count"* field.
6. Click the *"Generate"* button.
7. Click the *"Copy"* button to copy all of the generated Serial Numbers to the system clipboard.

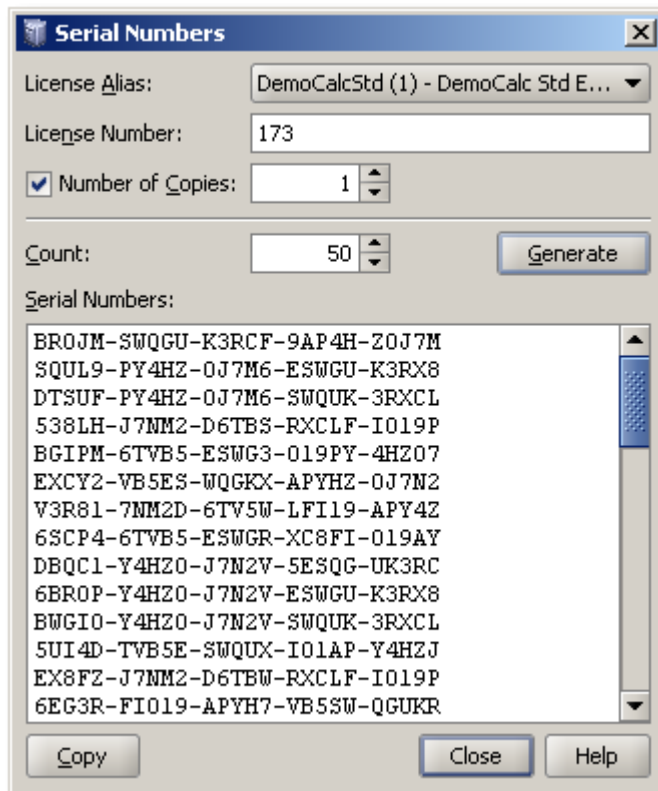


Figure 45: Generate Serial Numbers v2 in bulk Dialog

The following procedure will parse Serial Number and generate a new license based on information obtained from the Serial Number:

1. Select the "Edit | Parse Serial Number" on the menu bar.
2. Either type the Serial Number or click the "Paste" button if the Serial Number was previously copied into the system clipboard.
3. Click the "OK" button.
4. Protection! generates a new License based on the information obtained from the parsed Serial Number.
5. Adjust license attributes if necessary and save the newly generated license.

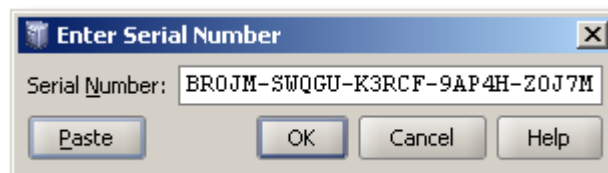


Figure 46: Parse Serial Number v2 Dialog

5.5 Working with the Products Screen

Before you can generate any license files, you must create a product using Protection! Control Center.

5.5.1 Products Screen Overview

The Products screen presents the user with a quick overview of all available products, the core product's information and a preview of the code snippet for Protection! implementation in the custom application. The following information is presented in the products screen:

Products List

This table outlines a list of products in the product's database. It provides standard table functionality such as column repositioning and resizing. A right click would launch the context popup menu, allowing the user to Create New Product, Edit an existing one or Delete the selected product. Popup context menus will also allow the user to perform standard Cut, Copy and Paste operations on the product. Operations such as Copy and Paste could be a tremendous time saver if a new product needs to be generated with information similar to an existing product. All above mentioned context menu icons are also located on the Control Center menu bar and toolbar for the user's convenience.

The following product attributes are shown in the table:

- "ID": Shows a unique application ID
- "Product Name": Shows Product (application) name
- "Version": Shows Product's version
- "Enabled": Shows if a product is an enabled product and therefore Protection! Control Center will be able to generate licenses for this product.

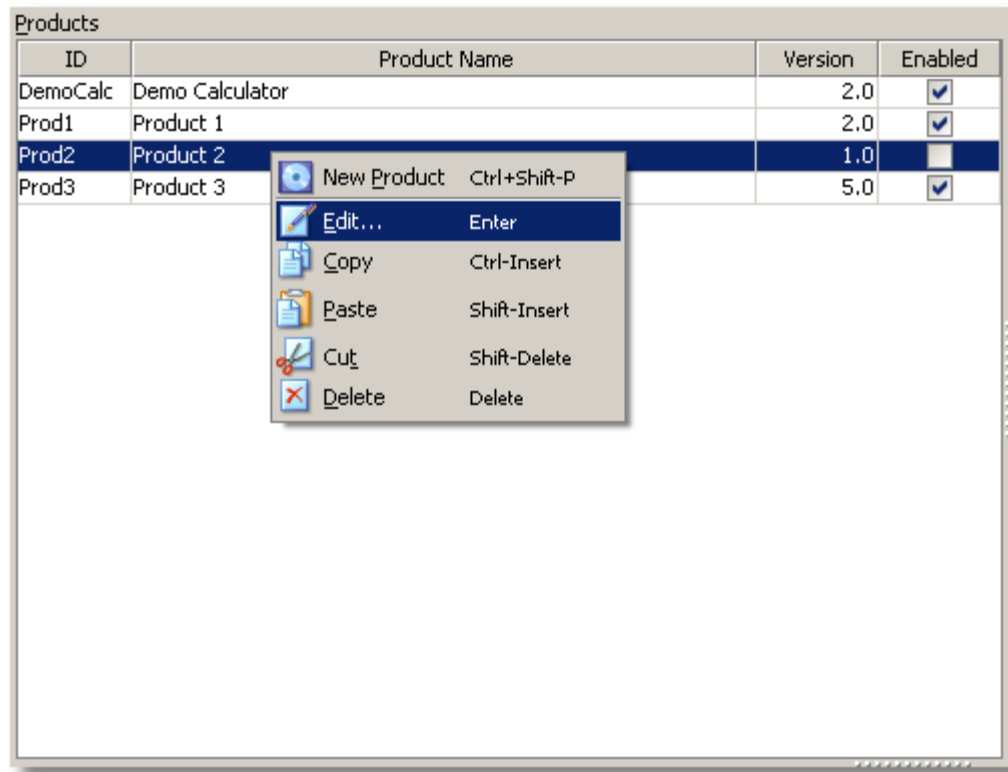


Figure 47: Products List Context Menu

Product Details Tab

The Product Details Tab shows a preview of core product attributes for a selected product:

- *"General"*: General section illustrates the product's general information: "Name", "ID", "Version", is product enabled or disabled;
- *"Features"*: Features section illustrates the products' features and their ID;
- *"Editions"*: Editions section illustrates the products' editions and their ID;
- *"Site"*: Site section illustrates the products' website related information (Site product links);
- *"Feedback"*: Feedback section illustrates the product's feedback related information (Feedback product links).

Audit Tab

Audit Tab shows results of the product auditing process. Product Auditing is an automated background process responsible for checking the currently selected product for errors, option conflicts and potential issues depending on the selected target (Code Snippet).

Note: The developer has the ability to ignore specific audits and maintain an ignore list using the "Edit Product | Audit" dialog.

"Issue List": This section shows a list of the audit results. Developers are able to quickly fix found audit issues by using the context menu. A default fix action can also be invoked by pressing the Enter key or double clicking the selected audit result.

"Issue Description": This section shows a detailed description for the selected audit topic. Description section also provides the developer with the ability to quickly fix found audit issues by clicking on hyperlinked text in the issue description.

Code Snippet

Code Snippet shows ready-to-use Java implementation files that could be added to a custom application in order to enable Protection! support. The user could choose to preview "GUI", "Headless" or "Custom" code snippets, enable or disable automatic package, import statements, and/or insert and save snippets to a specified file.

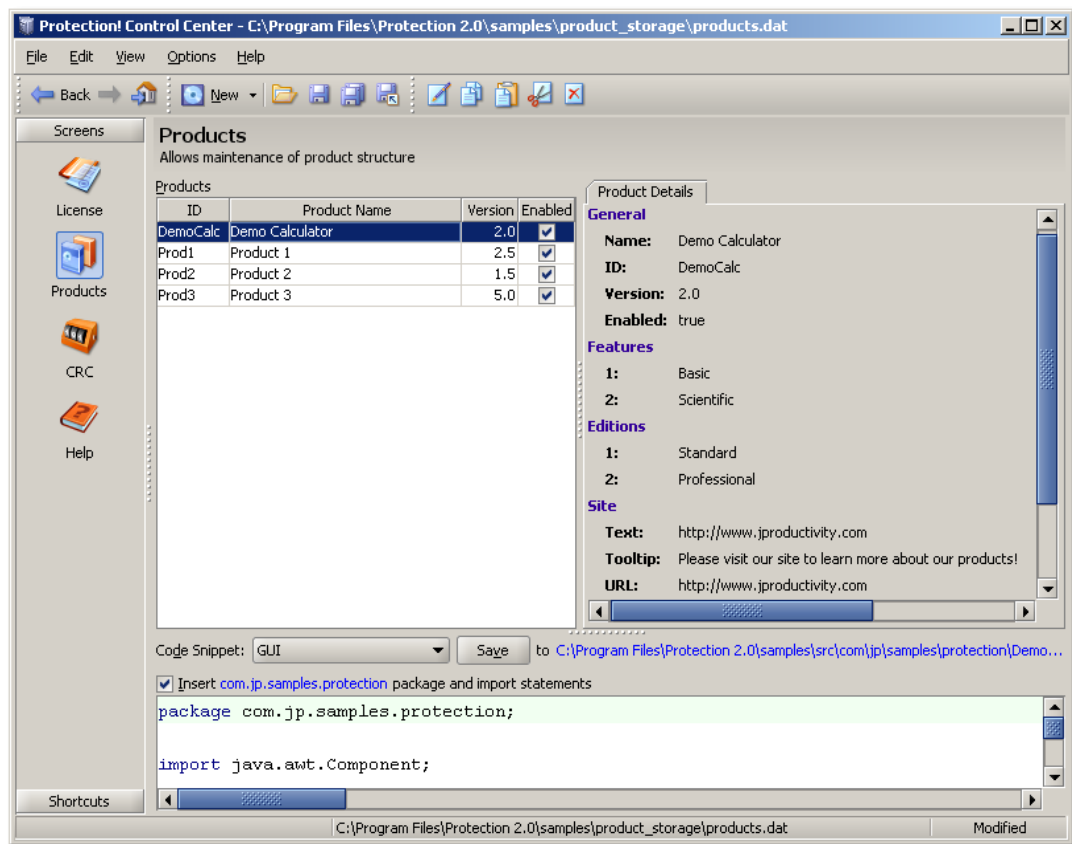


Figure 48: Control Center – Products Screen

The following options are available:

Code Snippet: Allows choosing one of the predefined Protection! snippet templates that could be used by the developer to generate the appropriate source code to be embedded into the protected application. The developer is free to create custom code snippets either from scratch or by importing and later modifying one of the default code snippet templates. Custom Code snippets are designed in Edit Product Dialog | Code Snippet section. The following code snippets are available:

- “GUI”: this snippet is designed to generate Protection! support code which will be embedded into a GUI based application.
- “GUI (Launcher)”: this snippet is similar to GUI template. However, the generated code snippet is designed to use the product’s Launcher as the entry point into protection system (see additional information on product launchers later in this guide). Note: Launcher can be generated via the *Products Screen* | *Build* | *Build Launcher* menu item.
- “GUI (License Storage)”: this snippet is similar to GUI template. However, the generated code snippet is designed to use product’s Launcher and the License Storage (see additional information on product launchers and license storage later in this guide).
- “Headless”: this snippet is designed to generate Protection! support code which will be embedded into a Headless application. Headless application refers to computer programs that either use textual input/output (console applications) to interact with users, instead of using graphical user interfaces (GUIs) or an application which runs on a server environment with no monitor.
- “Headless (Launcher)”: this snippet type is similar to Headless template. However, the generated code snippet is designed to use the product’s Launcher as the entry

point into protection system (see additional information on product launchers later in this guide). Note: Launcher can be generated via "Products Screen" - "Build | Build Launcher" menu item.

- "Headless (License Storage)": this snippet type is similar to Headless template. However, the generated code snippet is designed to use the product's Launcher and the License Storage (see additional information on product launchers and license storage later in this guide).

"Save" button and "Save to <class name>" (hyperlink)": If configured then "Save" button would save the currently selected code snippet to <class name> - a java source file shown by hyperlinked file name. Clicking on the file hyperlink would launch the "Edit Product Dialog | Code Snippets" section where name of this file could be changed.


Warning

If the file was modified with custom code then the developer should copy paste appropriate changes from the generated code snippet. Otherwise, the changes would be lost as the file would be overwritten.

"Insert <package name> (hyperlink) package and import statements": If checked this option would automatically insert necessary import statements and package name into the code snippet. If unchecked then an appropriate @todo javadoc statement would be inserted to remind the developer that the code is missing both the package name and import statement. Clicking on the file hyperlink would launch the "Edit Product Dialog | Code Snippets" where the package name could be changed.

5.5.2 Working with the Products Storage

Protection! Control Center saves all Product's data in a single file with a *.dat extension. The user can create as many product storage files as necessary. To open an existing product storage file:

1. Select "File | Open" on the menu bar or click the "Open"  button on the toolbar. A *Ctrl+O* key combination could be used to launch the "File Open" Dialog.
2. Navigate to the desired *.dat file
3. Click the "Open" button.

Additionally Protection! provides users with the ability to open existing product storages via Drag&Drop. If the dropped file is not recognized as the product storage (by its extension) the user will be prompted with a menu allowing the user to choose how the dropped file should be processed.

Modified products storage can be saved by clicking the "Save" button on the toolbar or by selecting the "File | Save" menu item. A *Ctrl+S* key combination can also be used.

Products storage can be saved under a new name by clicking the "Save As" button on the toolbar or selecting the "File | Save As" menu item.

5.5.3 Product Storage Protection

Product storage protection functionality allows protecting products storages for opening and modification.

Write Protection

This functionality allows protecting products storages against unauthorized or accidental modification. Write protection functionality is complementary functionality to Read protection. If write-protection is applied to the products storage then the correct password must be provided to be able to make any modifications to such products storage.

Warning

If you lose your write protection's password you would not be able to make any modifications to write protected product storage. jProductivity's support engineers would not be able to assist in either opening your write protected product storage nor in the recovery of the lost password.

To apply or change write protection for specific product storage:

1. Select the "*File | Write Protection*" menu on the menu bar.
2. The following options are available:
 - "*On*" - Turns write protection on.
 - "*Change Password*" - Changes current Write protection password. A valid password will be required in order to change write protection's password.
 - "*Clear*" - Clears applied read protection. A valid password will be required in order to clear write protection's password.

The "Lock" decorations are shown in the Product and in the Integrity screens when write-protected products storage is opened. It is possible to double-click in the status bar to quickly turn ON/OFF write-protection.

Read Protection

This functionality allows protecting products storages against unauthorized access. Read protection functionality is complementary functionality to write protection. Applying read protection enforces strong encryption of the product storage. If read-protection is applied to the products storage then the correct password must to be provided to be able to open such products storage. After read-protection is applied to the product storage, such products storage will be strongly encrypted that in turn minimizes possible damages if products storage was stolen or lost.

Warning

If you lose your read protection's password you would not be able to open read protected product storage. It would not be possible to use such product storage for any purpose including licensing activities. jProductivity's support engineers would not be able to assist in either opening your read protected product storage nor recovery of the lost password.

To apply or change write protection for specific product storage:


1. Select the "*File | Read Protection*" menu on the menu bar.
2. The following options are available:
 - "*Apply*" - Applies Read protection to current product storage.
 - "*Change Password*" - Changes current Read protection password. A valid password will be required in order to change read protection's password.
 - "*Clear*" - Clears applied read protection. A valid password will be required in order to clear read protection's password.

5.5.4 Managing Products Structure

All of a product's related information could be managed via the New/Edit Products dialog. This dialog is used to provide all necessary product information and properties that will be used during license file generation. If no products exist in the Control Center, the "New Product" dialog could be launched using the following procedure:

1. Click the "New" button on the toolbar
2. A new Product can also be generated either by selecting the "File | New | Product" or selecting the drop-down Icon on the "New" button and choosing "Product". A *Ctrl+Shift+P* key combination can also be used to generate a new product. Generation of the new product would launch the "New Product" Dialog.

If Control Center already has one or more products set up, the "Edit Product" Dialog could be launched using the following procedure:

1. Select a desired product
2. Click the "Edit" button  on the toolbar, right-click on the desired product and choose the "Edit" from the pop-up menu, press the *Enter* key on the keyboard or choose "Edit | Edit" on the menu bar

5.5.5 New/Edit Product Dialog

This dialog is used to provide all necessary product information and properties that will be used during license file generation.

Product Page

The Product Page of the "New/Edit Product" Dialog has the following product attributes:

- "Name": specifies an application name.
- "ID": specifies a unique application ID (could be any combination of alpha-numeric characters).
- "Short ID": A unique read-only attribute assigned by Protection! Control Center. This value is being used to identify the product within Serial Numbers.
- "Major version": Application major version.
- "Minor version": Application minor version.
- "Enabled" – indication for the Control Center that this is a live product and therefore Protection! Control Center will be able to generate licenses for this product.
- "Encryption": allows for encryption algorithm selection which will be used for license encryption. **Encryption attribute can be specified during creation of new product only.** If encryption needs to be changed for existing product it can be done via the Change Encryption dialog which can be invoked by choosing the "Edit | Encryption" menu item.

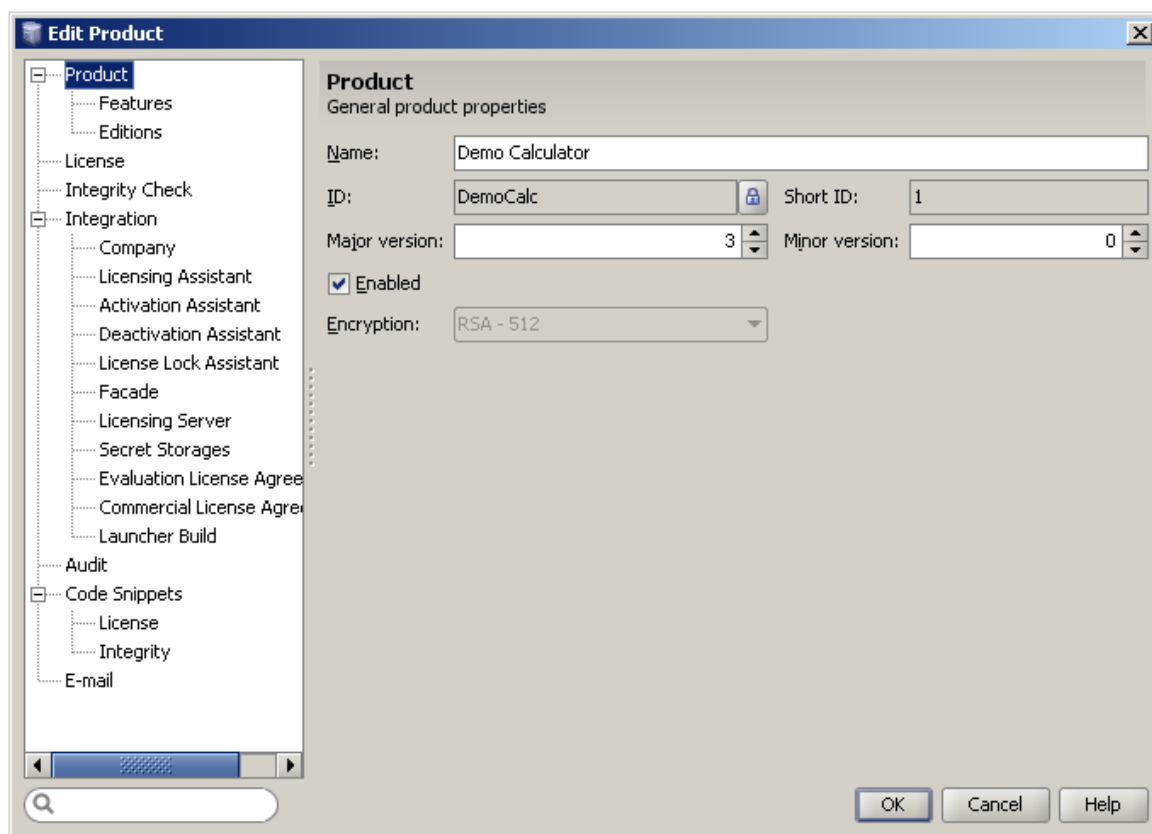


Figure 49: Edit Product Dialog – Product Page

Features Page

The Product's Features Page allows the user to define all product features. The page shows the features list as a grid where each feature occupies one row and features' attributes are shown as columns.

The following controls allow maintaining the features list:

- The "Add" button - adds new product's feature.
- The "Delete" button - deletes existing product's feature.
- The "Up" and "Down" buttons - rearranges feature's position in the features grid.

The following feature attributes are shown in the grid:

1. "ID" - a unique identifier for the product's feature.
2. "Feature Name" - the name of the feature.
3. "C" (Commercial) - indicates that the feature is enabled for the commercial license.
4. "E" (Evaluation) - indicates that feature is enabled for the evaluation license.
5. "Exp" (Expired Commercial) - indicates that the feature is enabled for the expired commercial license.
6. "ExpE" (Expired Evaluation) - indicates that the feature is enabled for the expired evaluation license.
7. "I" (Invalid) - indicates that the feature is enabled for the invalid license.

The user is able to enter feature attributes directly in the grid using in-place editing.

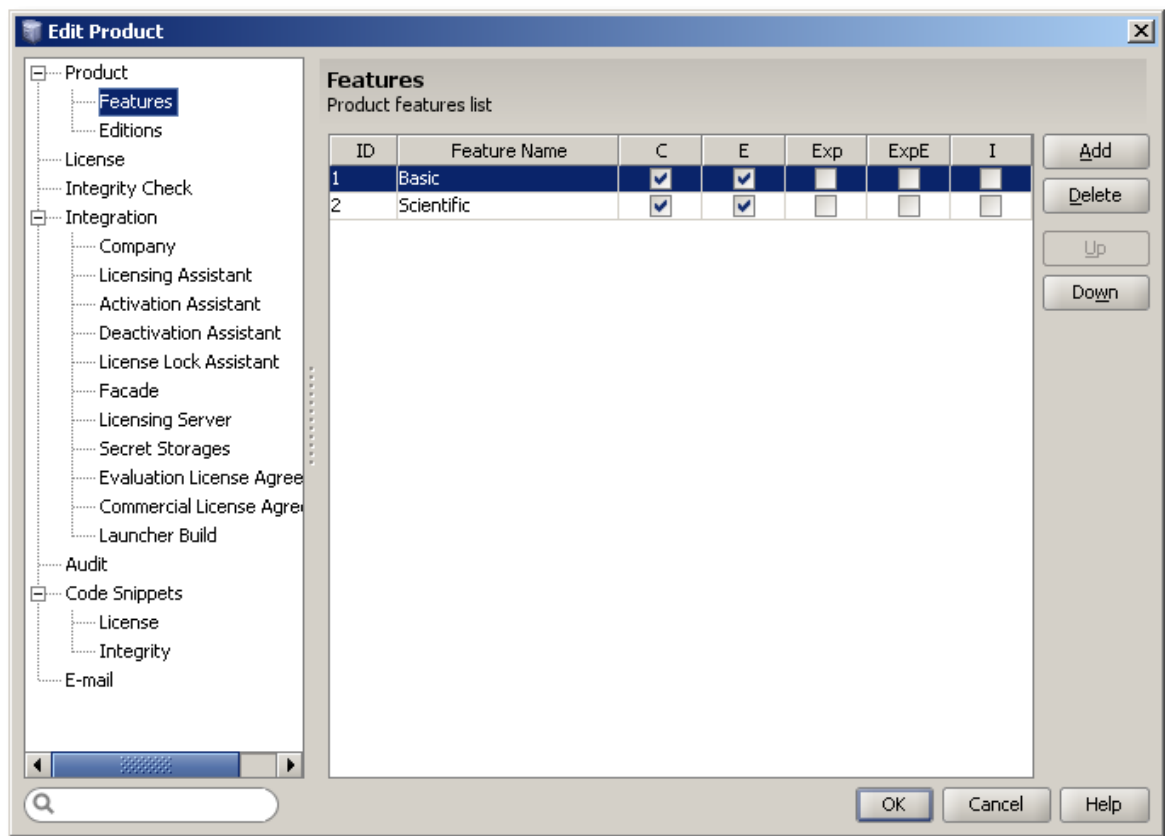


Figure 50: Edit Product Dialog – Features Page

Editions Page

The Product's Editions Page allows the user to define all product editions. This page shows the Editions list as a grid where each edition occupies one row and editions' attributes are shown as columns. The Features grid shows the features state for the currently selected edition.

The following controls allow maintaining the editions list:

- The "Add" button - adds new product's edition.
- The "Delete" button - deletes existing product's edition.
- The "Up" and "Down" buttons - rearrange edition's position in the edition's grid.

The following editions attributes are shown in the grid:

- a. "ID" field - a unique ID for the product's edition.
- b. "Edition Name" field - a name for the edition.

The user is able to enter edition attributes directly in the grid using in-place editing.

By default, features are selected (enabled) only for "C" (Commercial) and "E" (Evaluation) states for each of the application's edition although the user is able to make desired changes directly in the grid using in-place editing.

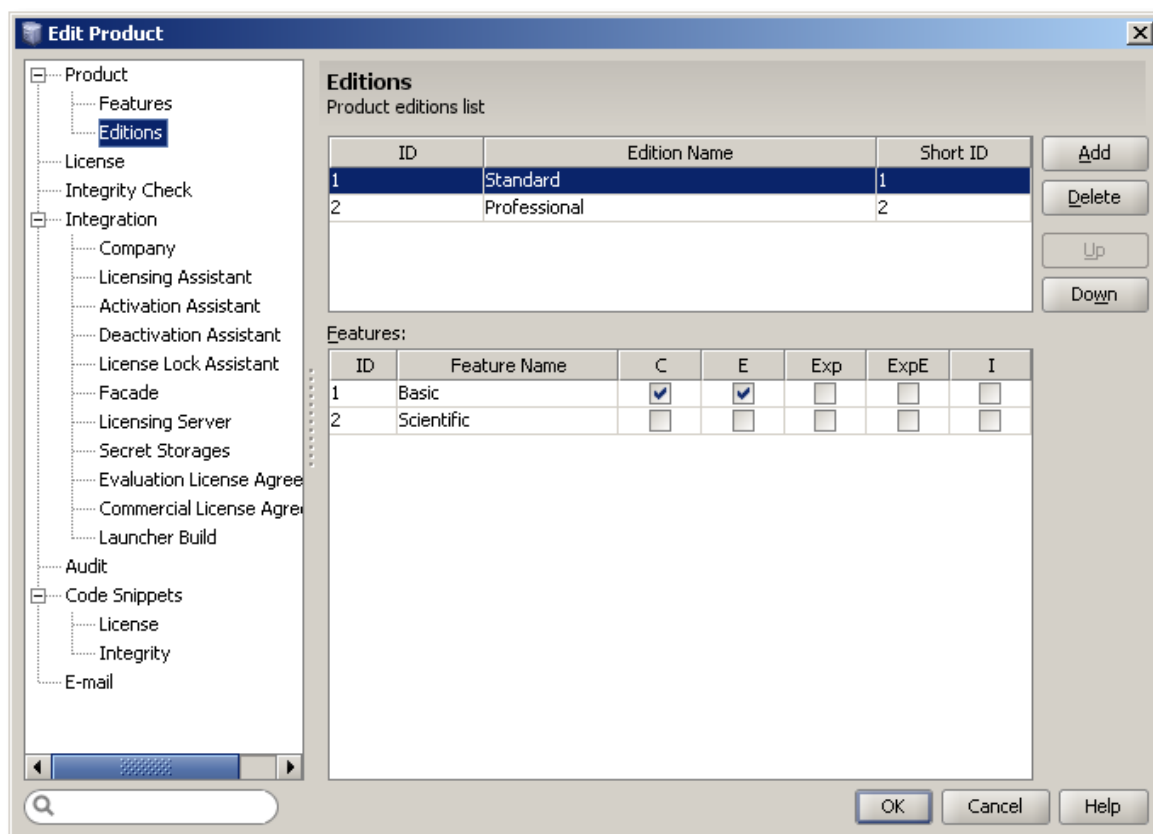


Figure 51: Edit Product Dialog – Editions Page

License Page

The License Page of the "New/Edit Product" Dialog has the following product attributes:

- "Evaluation Period" - will be used as default values for the Evaluation period during generation of the License File. This value can be changed at a later time when the developer is ready to generate a License File.
- "Grace Period" - will be used as default values for the Grace period during generation of the License File. This value can be changed at a later time when the developer is ready to generate a License File.
- "Properties" - will be used as default values for the Custom Properties during generation of the License File. Custom Properties values can be changed and new properties added at a later time when the developer is ready to generate a License File. The developer can specify an unlimited number of custom properties. These properties represent name-value pairs that could be embedded into a license and used by the application during license reading/validation. To add a new property click the "New" button and in the "New Property" dialog specify property name; specify if this property would be a mandatory property where its value would have to be filled-in prior to license generation; choose whether this property would be a value-based or a choice-based property:

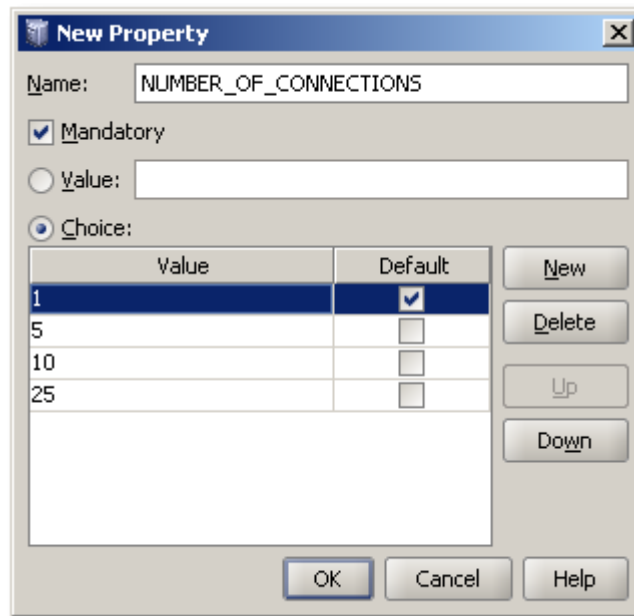


Figure 52: New Custom Property Dialog

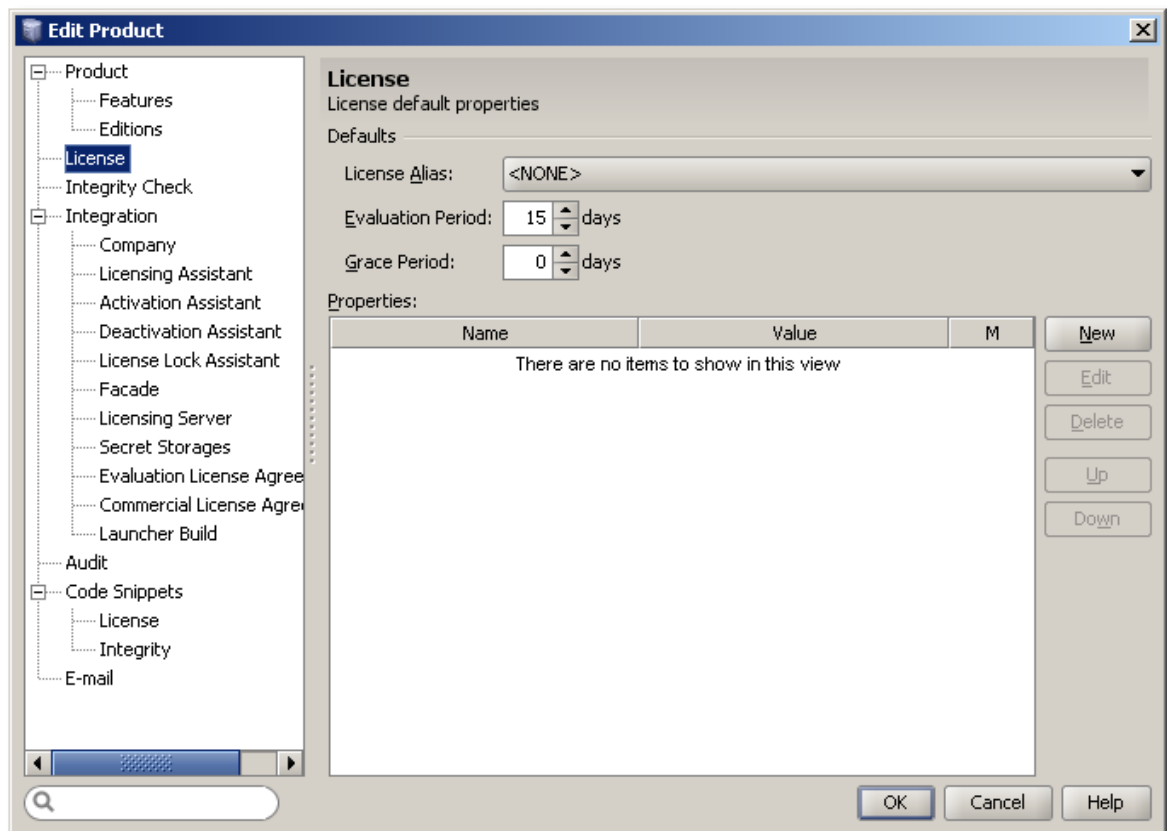


Figure 53: Edit Product Dialog – License Page

Integrity Check Page

The Product's Integrity Check Page allows the user to specify various Integrity Check configuration parameters which will be used by Control Center to generate appropriate integration code snippets and Integrity Build Configurations.

Here is the description of the configuration parameters:

- *"Algorithm"*: specifies Digest algorithm to be used. The developer has the ability to employ SHA-1, MD5 and CRC32 digest algorithms.
- *"Runtime Configurations - Type"*:
 - *"Source"* - deprecated configuration (pre v3.) where entries and digest are part of the source file.
 - *"Resource"* - entries and digest are placed in a resource which can be loaded and used at runtime.
 - *"File"* - entries and digest are placed in a file which can be loaded and used at runtime.

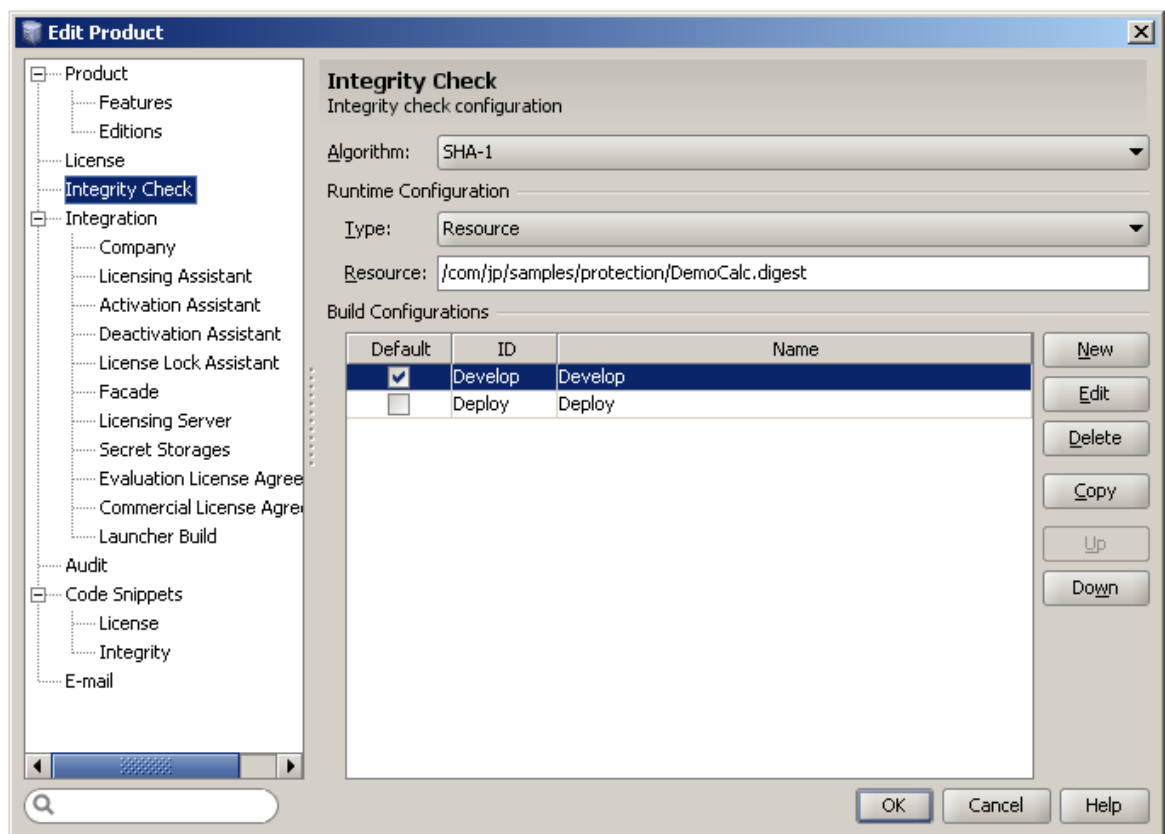


Figure 54: Edit Product Dialog – Integrity Check Page

- *"Build Configurations"* - provides the ability to maintain multiple Integrity digest build configurations. Each build configuration allows for specifying:
 - *"ID"* - unique build configuration identifier.
 - *"Name"* - Descriptive name for build configuration
 - *"Default"* - whether this configuration would be a default configuration
 - *"Target"* - either file or archive where digest data will reside.
 - Obfuscation type and location of generated by obfuscator change log file.
 - Mapping of Integrity entries for example to allow building Integrity for classes (development) or for archives (deployment).

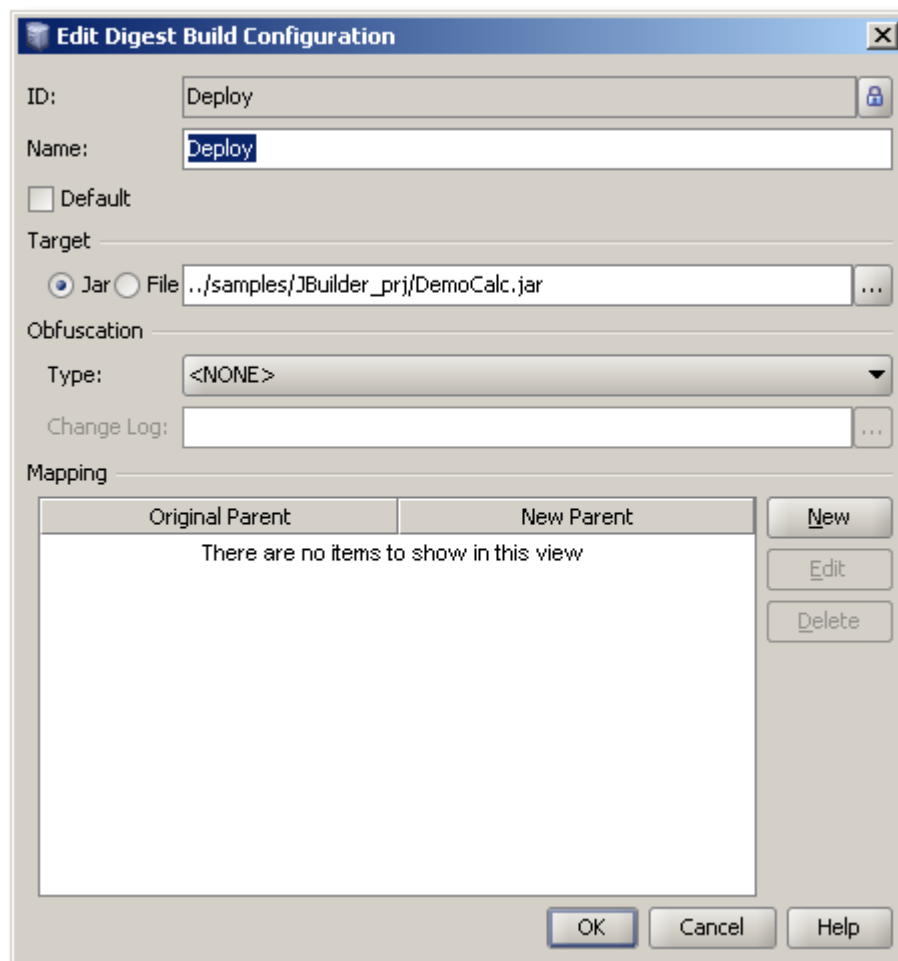


Figure 55: Integrity Digest Build Configuration Dialog

Integration Page

The Product's Integration Page allows the user to specify various Protection! API configuration parameters which will be used by Control Center to generate appropriate integration code snippets.

Note

Developers are strongly encouraged to use the generated code snippets as the main starting point during learning and integration of Protection! into their custom Java application.

Here is a brief description of the License Location group:

- The "Folder" field – used to specify the folder where Protection! should expect to find the license file for the application.
- The "File Name" field – used to specify the name of the license file.
- The "Relative to Users Home" option– if checked would inform Protection! to check for presence of the license file in the user's home directory.
- The "Resource Folder" field - is used to embed (usually Evaluation License) into the application archive. This allows the developer to distribute his/her protected application with the embedded evaluation license and therefore minimizes the need for evaluators to contact the original developer/publisher in order to obtain an evaluation key.

If the License should be locked to a specific computer system then the *"Lock License to"* section could be used to specify default system attributes supported by Protection! Note: Other, user-definable attributes could also be used by the application developer if needed. Please see Protection! Developers Guide for additional information.

It is possible to specify additional configuration options:

- *"Use Flexible Expiration"* - specifies whether the expiration date of the read license should be adjusted based on the combination of the current system date and the specified duration of the evaluation period. This option is useful when creating evaluation bundles where the end-user can use the product for a specified number of days starting from the application's first usage date rather than from the license issue date.
- *"Check Shutdown Date"* - specifies that checking for the application's previous shutdown date is enabled.
- *"Maintain Shutdown Date"* - specifies whether the application's previous shutdown date should be maintained.
- *"Use Stripped Activation Key Chars"* - specifies that usage of the stripped activation key characters is enabled. If enabled then usage of the following alpha-numeric characters: 2, Z, 0, O, I, L, 1, 5, S is removed from the alphabet that is used to generate Serial Number. Removal of these characters and numbers from generated Serial Number will reduce errors that could potentially occur during the manual typing of the Serial Number by the end-users.
- *"Allow Silent Activation"* - specifies that the Resolver should silently try to activate the license using the Licensing Facade without showing of any messages to the end-user. In such a case activation is fully transparent to the end-user. If silent activation is failed the end-user will be prompted for the input via License Activation Assistant Wizard.
- *"Accept License Agreement"* - specifies whether the end-user should be prompted to accept the terms of the license agreement.

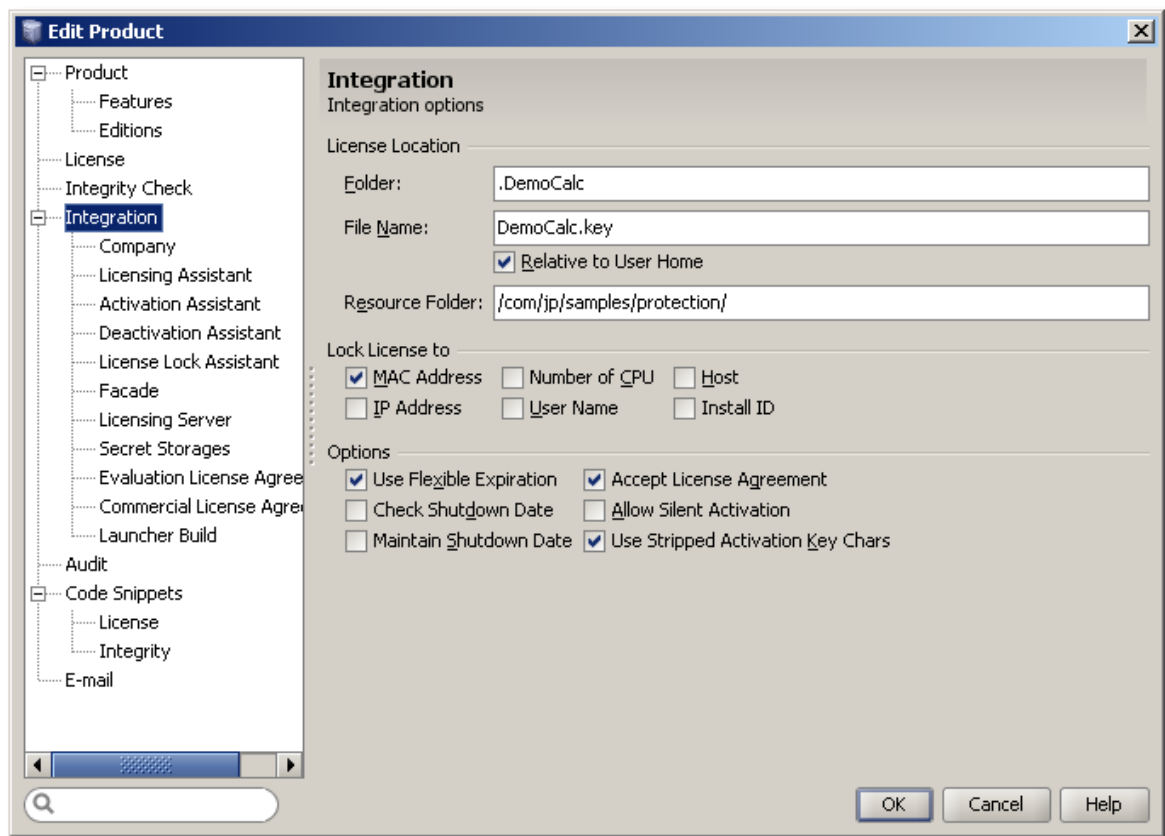


Figure 56: Edit Product Dialog - Integration Page

Company Page

The Product's Company page allows specifying information about the publisher/vendor company and product links.

The Product Links grid shows a list of the links where each link occupies one row and the link's attributes are shown as columns. There is a fixed set of product links so the user is able to specify only the link's attributes. The following attributes can be specified using in-place editing in the grid:

- "Text" - is the text that you would like end-users to see in Protection! Dialogs (Protection! has several helper dialogs such as the About Box. All Protection! dialogs are optional and can be turned on/off by developer). We will be using jProductivity website information to illustrate our example
- "URL" - a URL, such as <http://www.jproductivity.com>, which will be used when the user clicks on the website hyperlink in Protection! Dialogs. Note: mailto URL schema must be in conformance with the RFC 2368 <http://www.faqs.org/rfcs/rfc2368.html>
- "Tooltip" - is a Text that would render as a tooltip pop-up when the user moves his/her mouse pointer over the website hyperlink

The following company attributes can be specified:

- "Copyright" and "Company" sections. These should be representative of the developer company and its copyright statement.
- "Company/Product Logo" - either a path to the file or a path to the resource could be used.

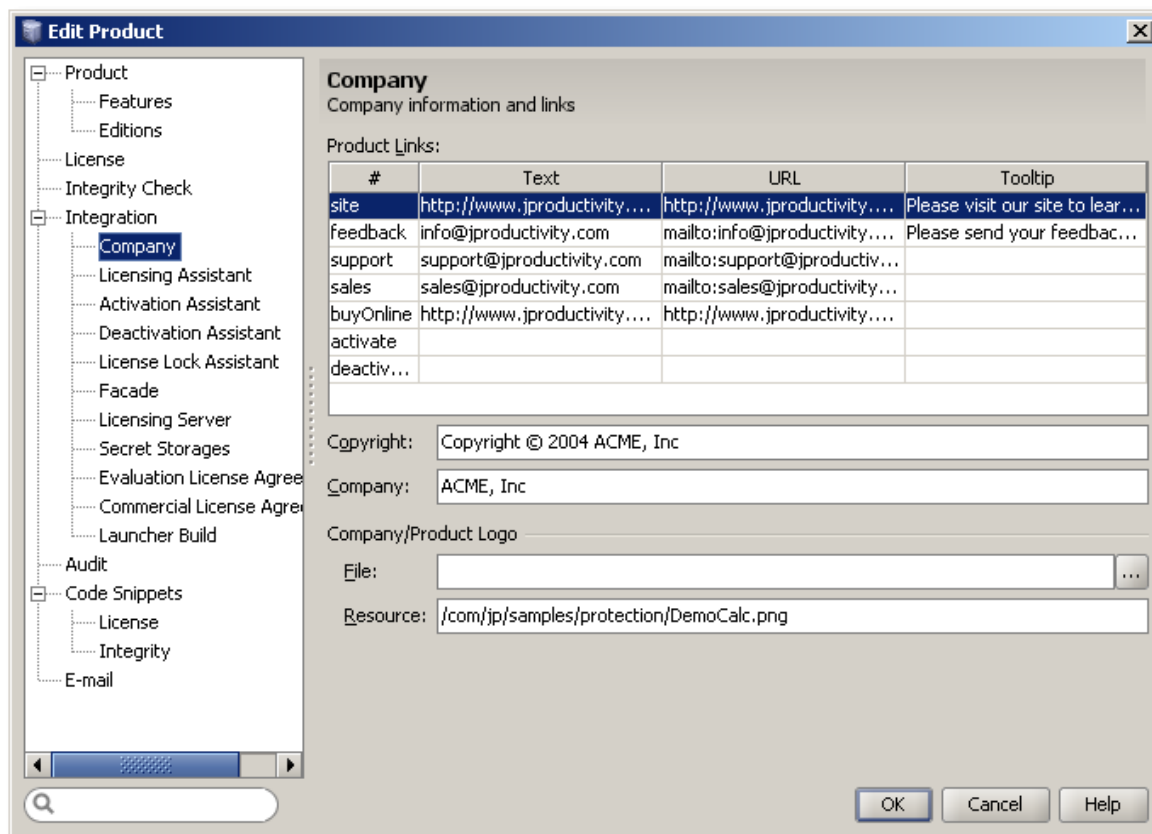


Figure 57: Edit Product Dialog – Company Page

Licensing Assistant Page

The Licensing Assistant Page allows specifying configuration options for Licensing Assistant that could be used to aid the end-user in such situations as Missing, Invalid and/or Corrupted License; obtaining new license via Serial Number; License Upgrades and similar.

The following options are available for Licensing Assistant:

- *"Licensing Assistant logo"* – allows specifying either a path to the file or a valid resource containing the desired logo. Note: Protection! provides high quality default logos to be used with Licensing Assistant, therefore the developer should only use this option if custom Logos must be used.
- *"Licensing Assistant Options"*. These options indicates what methods would be available to users when requesting either a new license or a license update:
 - *"Get by Serial Number"* - provides the end-user with the ability to request a license by Serial Number.
 - *"Get Evaluation"* - provides the end-user with the ability to request an Evaluation license.
 - *"Get Extended Evaluation"* - provides the end-user with the ability to request an Extended Evaluation license.
 - *"Get from Licensing Server"* – provides the end-user with the ability to request a license from the Protection! Licensing Server.
 - *"Get offline"* - provides the end-user with the ability to request a new license or a license update offline.

- "Skip Customer Information for Serial Numbers" - skips customer information request when getting the license by Serial Number.

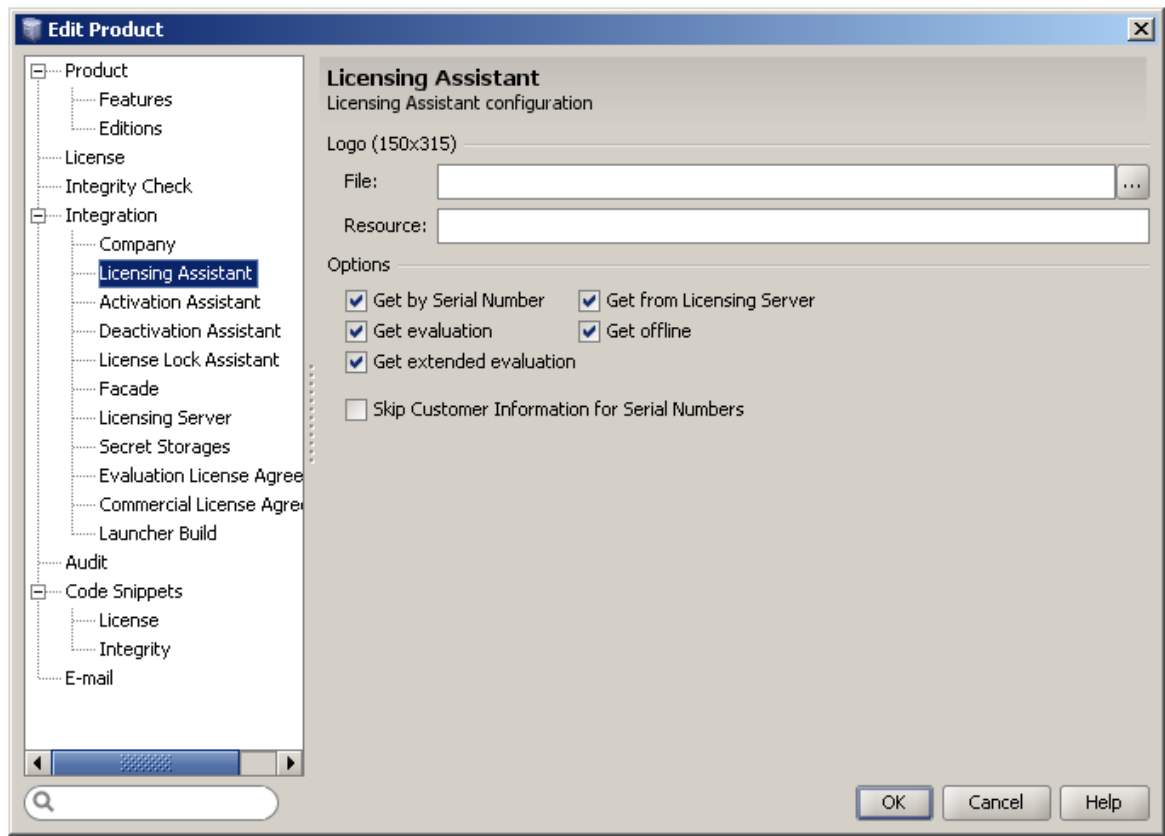


Figure 58: Edit Product Dialog – Licensing Assistant Page

Activation Assistant Page

The Activation Assistant Page allows specifying configuration options for Activation Assistant that could be used to aid the end-user in the license activation process when the license requires activation from the publisher/developer.

The following options are available for Activation Assistant:

- "Activation Assistant logo" – allows specifying either a path to the file or a valid resource containing the desired logo. Note: Protection! provides high quality default logos to be used with Activation Assistant, therefore the developer should only use this option if custom Logos must be used.
- "Activation Assistant Options". These options indicates which activation methods would be available to users when the license requires activation:
 - "Online activation" - would allow for online activation via direct internet connection
 - "Offline activation" - would allow for offline activation where activation key could be provided back to the developer by any means user deemed appropriate (email, phone, fax, etc.)

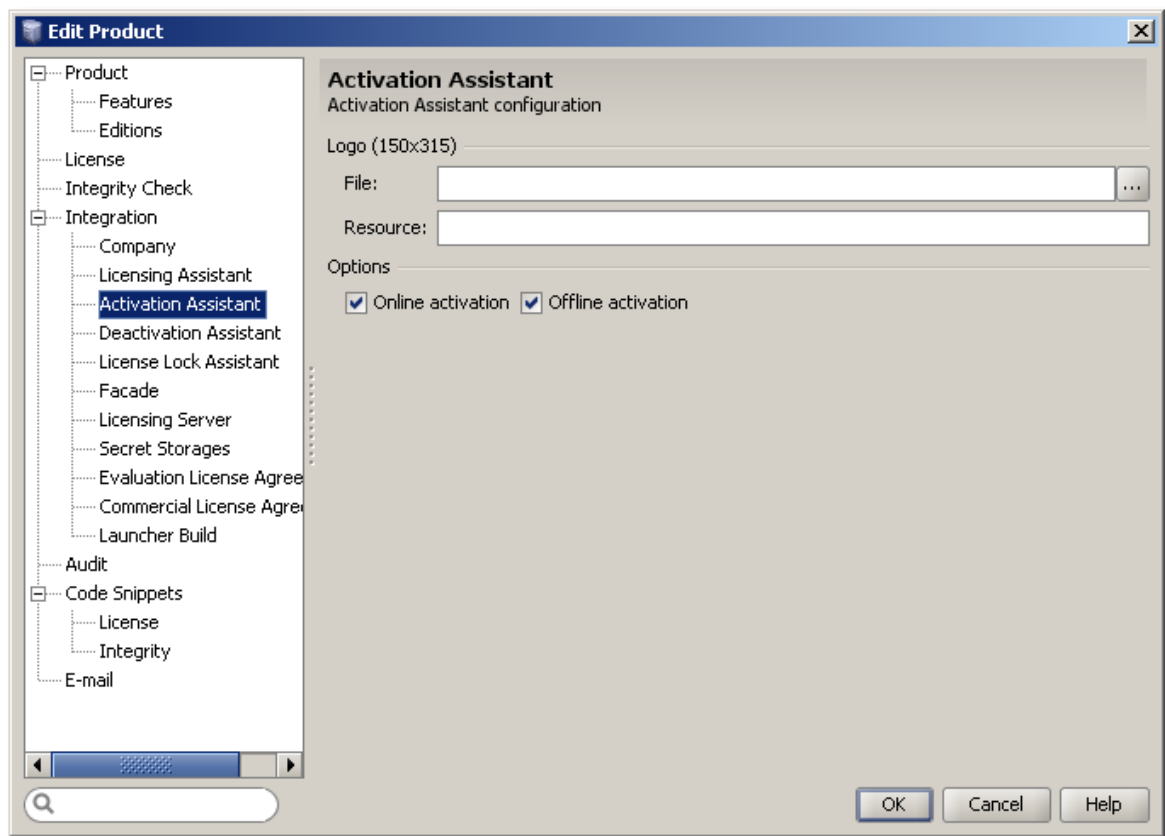


Figure 59: Edit Product Dialog – Activation Assistant Page

Deactivation Assistant Page

The Deactivation Assistant Page allows specifying configuration options for Deactivation Assistant that could be used to aid the end-user in the license deactivation process.

The following options are available for Deactivation Assistant:

- "*Deactivation Assistant logo*" – allows specifying either a path to the file or a valid resource containing the desired logo. Note: Protection! provides high quality default logos to be used with Deactivation Assistant therefore developer should only use this option if custom Logos must be used.
- "*Deactivation Assistant Options*". These options indicate which activation methods would be available to users when license should be deactivated:
 - "*Online deactivation*" - would allow for online deactivation of the license via direct internet connection.
 - "*Offline deactivation*" - would allow for offline deactivation of the license where original activation and associated deactivation keys could be provided back to the developer by any means user deemed appropriate (email, phone, fax, etc.).
 - "*Notify vendor on fail*" - would attempt to contact the vendor even if the activation failed. Contact would be initiated via either online or offline modes

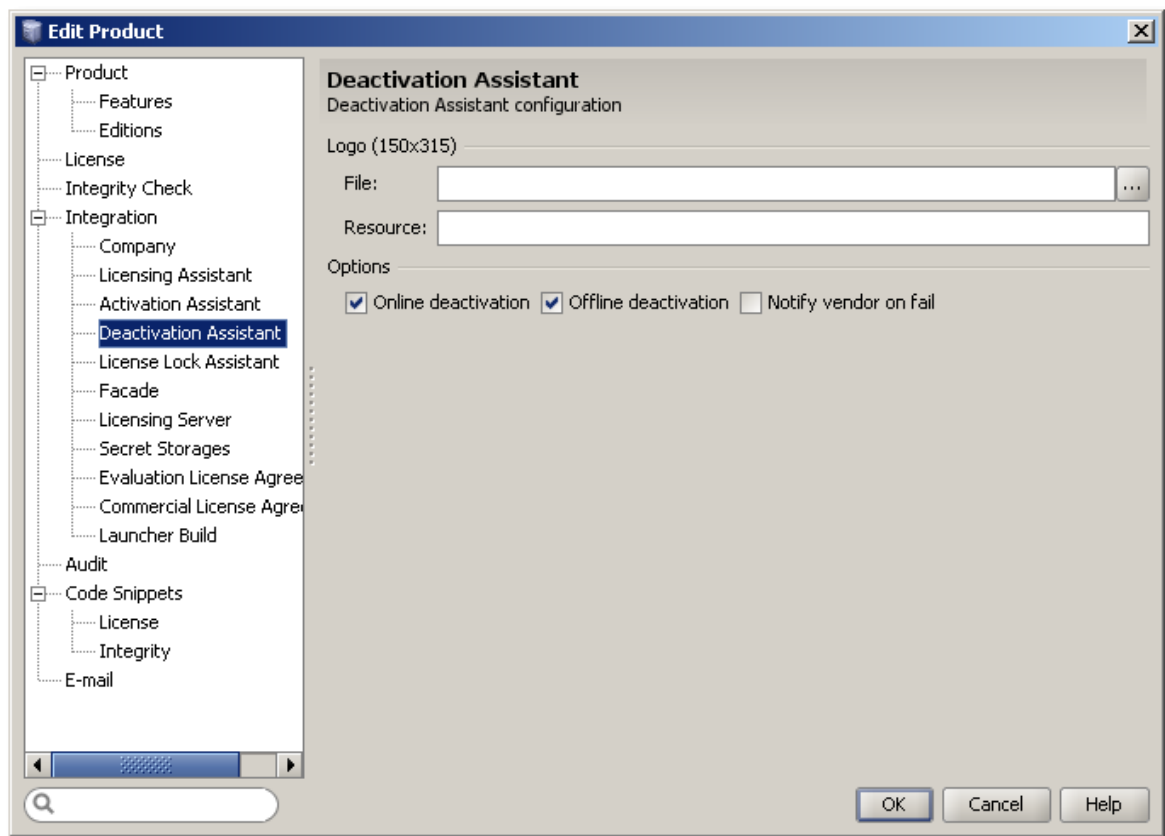


Figure 60: Edit Product Dialog – Deactivation Assistant Page

License Lock Assistant Page

The License Lock Assistant Page allows specifying configuration options for License Lock Assistant that could be used to aid the end-user during the process of the license lock request from the Protection! Licensing Server.

The following options are available for License Lock Assistant:

- "License Lock Assistant logo" – allows specifying either a path to the file or a valid resource containing the desired logo. Note: Protection! provides high quality default logos to be used with Deactivation Assistant therefore developer should only use this option if custom Logos must be used.
- "License Lock Assistant Options" - indicates which options would be available to users when the request for license lock from the Licensing Server failed:
 - "Try again" - will allow for the request to obtain license from the Licensing Server to be repeated.
 - "Wait Availability" - will allow the user to wait for availability of the license lock / Licensing Server. When the license lock / Licensing Server would become available the initial request for license lock would be initiated automatically.
 - "Choose Licensing Server" – would allow the user to choose Licensing Server if default (preconfigured by developer or specified in license) Licensing Server is unavailable.

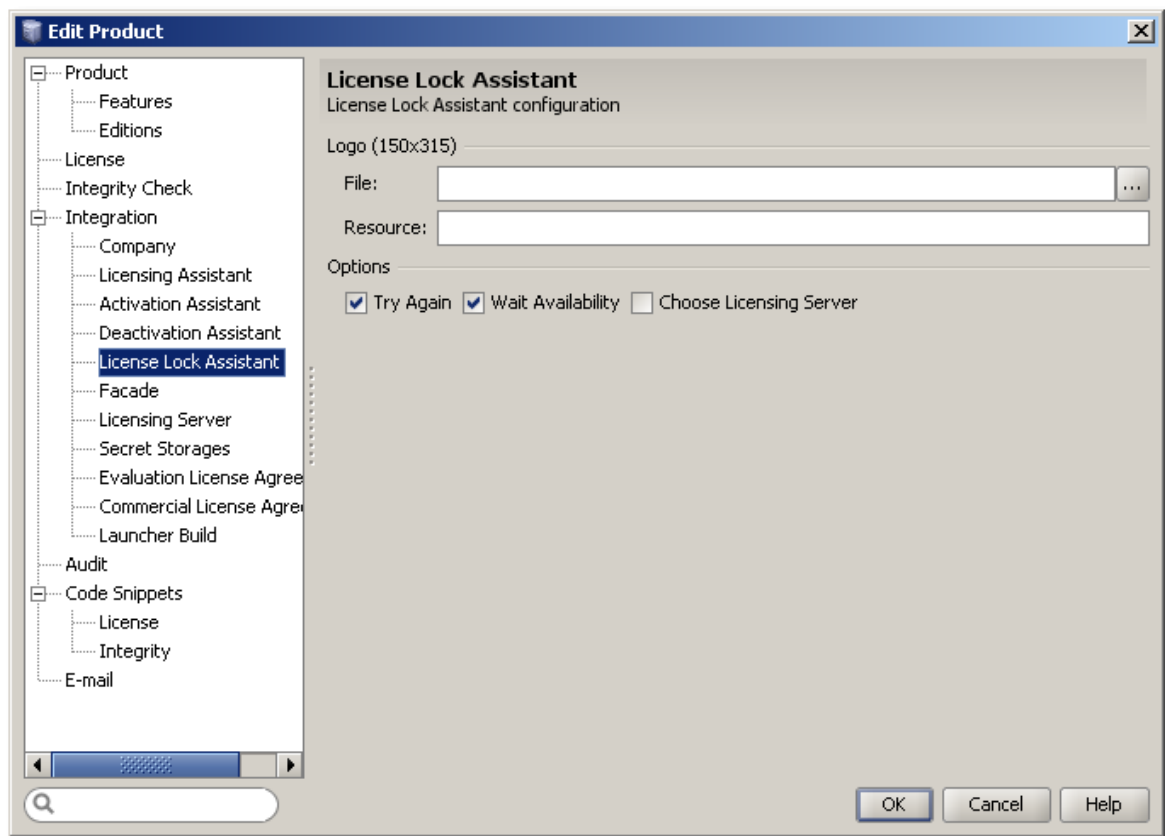


Figure 61: Edit Product Dialog – License Lock Assistant Page

Facade Page

The Facade Page allows for configuration of the Licensing Facade connection parameters.

The Facade Page has the following attributes:

- *"Connection"* - Protection! Professional Edition provides the ability to embed the process of license getting and activation functionality directly into the protected applications. This functionality, via remote connectivity, deals with the Protection! backend deployed at the vendors/publishers site. Even though Protection! currently includes only the Web Services based implementation it is possible to introduce other, different implementations e.g. RMI or raw TCP/IP based.
- *"URL"* – a URL to the Licensing Façade.
- *"Login"* and *"Password"* required for authentication.

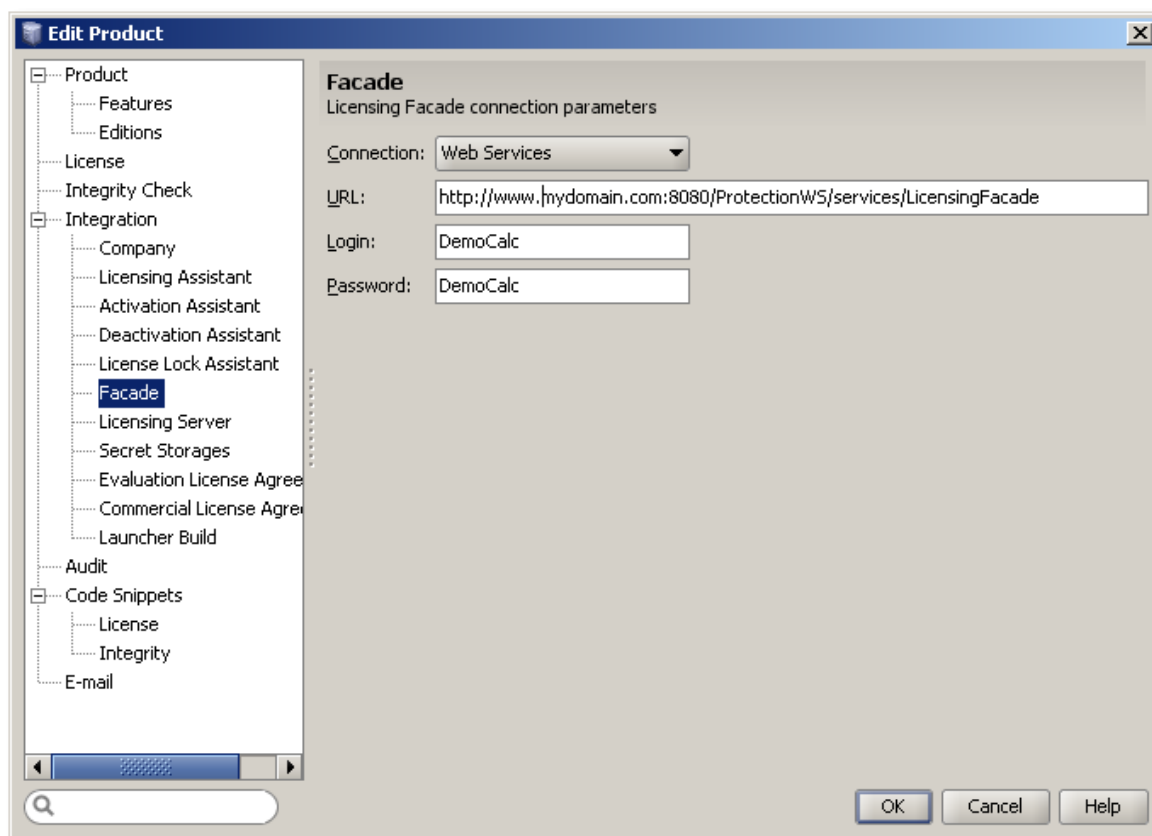


Figure 62: Edit Product Dialog – Facade Page

Licensing Server Page

The Licensing Server Page allows the developer to define connection parameters for the Licensing Server.

The Licensing Server Page has the following attributes:

- *"Connection"* - Protection! Professional Edition provides the ability to embed the process of requesting and obtaining the license from the Licensing Server functionality directly into the protected applications. This functionality, via remote connectivity, deals with the Protection! Licensing Server. Protection! currently includes only the RMI based implementation and it is not possible at this time to introduce other, different implementations in the Control Center.
- *"Address"* – a URL to the Licensing Server.
- *"Login"* and *"Password"* required for authentication.

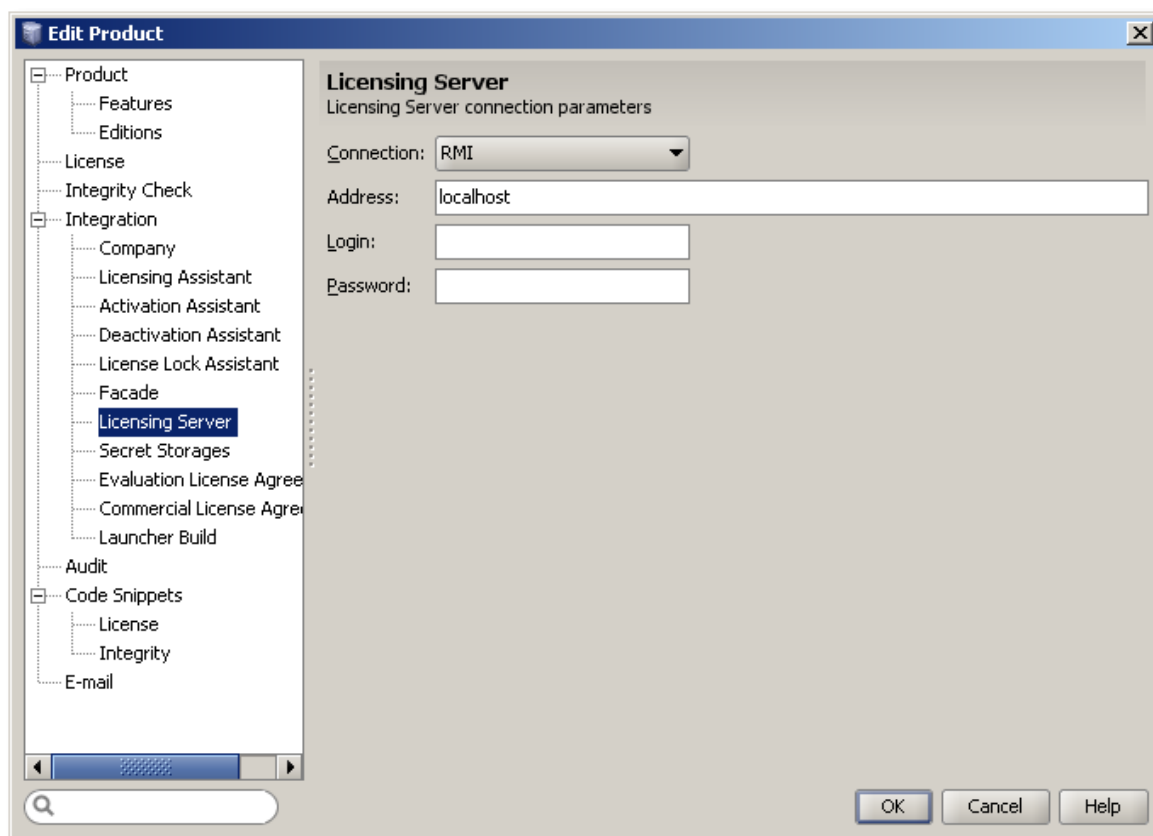


Figure 63: Edit Product Dialog – Licensing Server Page

Secret Storages Page

The Product's Secret Storages Page allows the developer to define parameters and location of the secret storages.

The Secret Storages grid shows a list of the Secret Storages where each Secret Storage occupies one row and Secret Storage's attributes are shown as columns. The following controls allow maintaining the Secret Storages list:

- The "New" button – creates a new Secret Storage by showing the "New Secret Storage" Dialog.
- The "Edit" button – provides the ability to change the currently selected Secret Storage.
- The "Delete" button – provides the ability to delete the currently selected Secret Storage.

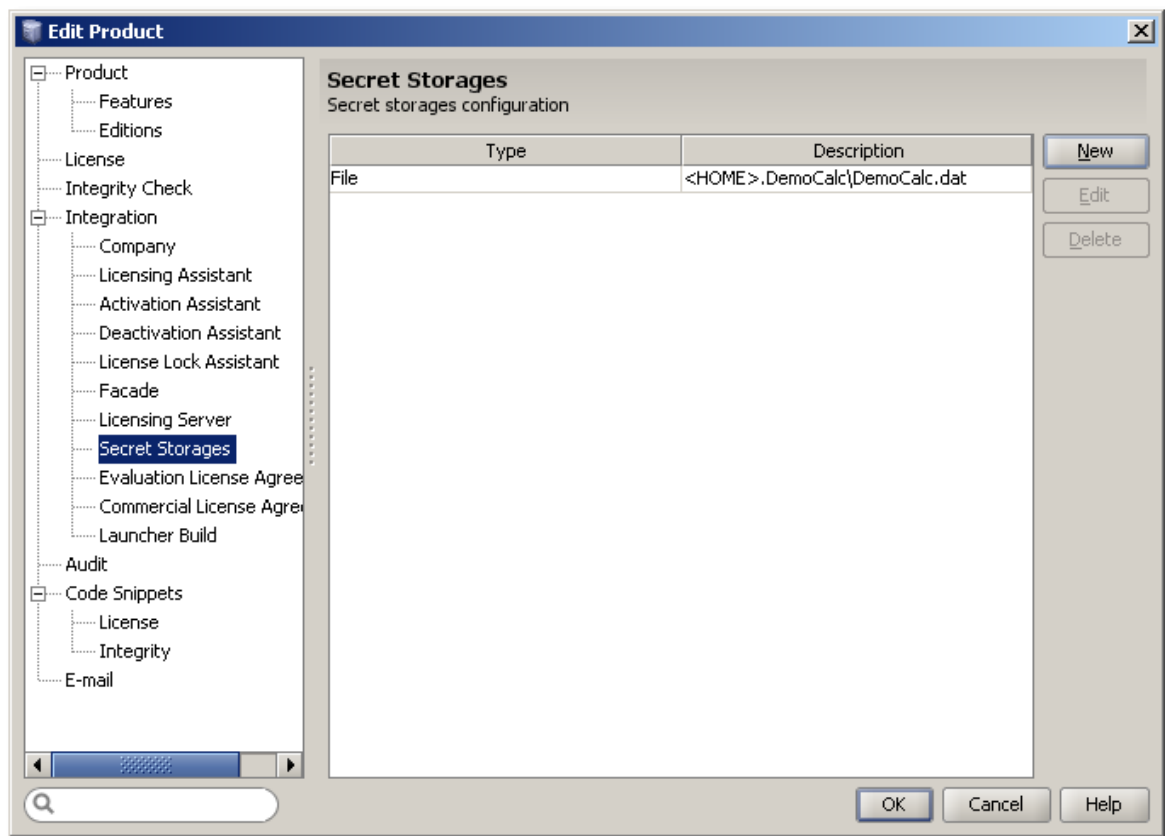


Figure 64: Secret Storages Configuration

In the "New Secret Storage" dialog it is possible to choose several secret storage types.

1. Choosing File Secret Storage. In this case the user is able to specify the name of the file to place Secret Storage in, its location and whether the Secret Storage file should be located under the user's HOME folder.

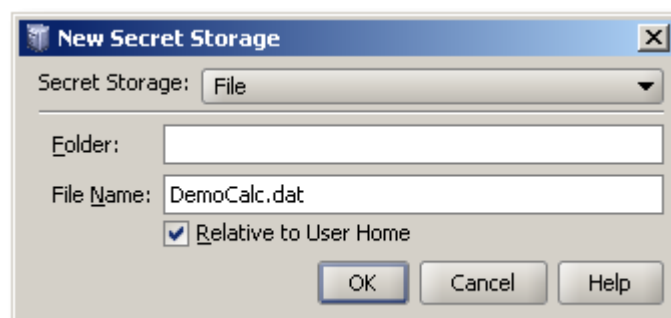


Figure 65: Adding a New File Secret Storage

2. Choosing Preferences Based Secret Storage. Preferences secret storage could be either System or User Preferences based. An appropriate Node where Secret Storage information should be saved must be specified (e.g. `com.mycompany.pref`) where "." denotes new child node (e.g. "`com.mycompany.org`" would be translated to the following absolute path "`com/mycompany/org`") Note: See Java [Preferences](#) specification for additional information on proper node naming conventions.

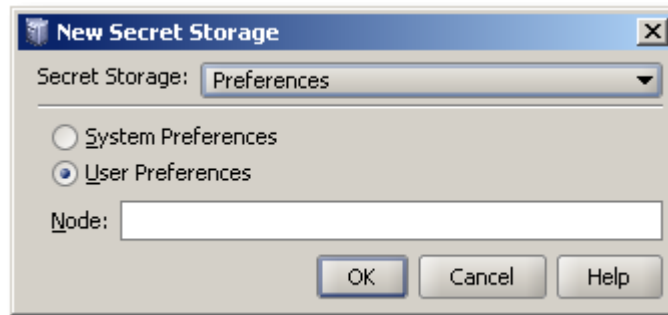


Figure 66: Adding a New Preferences Secret Storage

Evaluation and Commercial License Agreements Pages

Both Evaluation and Commercial License agreements pages have the following attributes:

- "Resource" – indicates the path to the resource containing the license agreement
- "Text" – license agreement text. Note : Both Evaluation and Commercial License Agreements use HTML tags for their formatting

Note: if Resource string is present Protection! Control Center would use this resource for the generated code snippet even if License Text is specified.

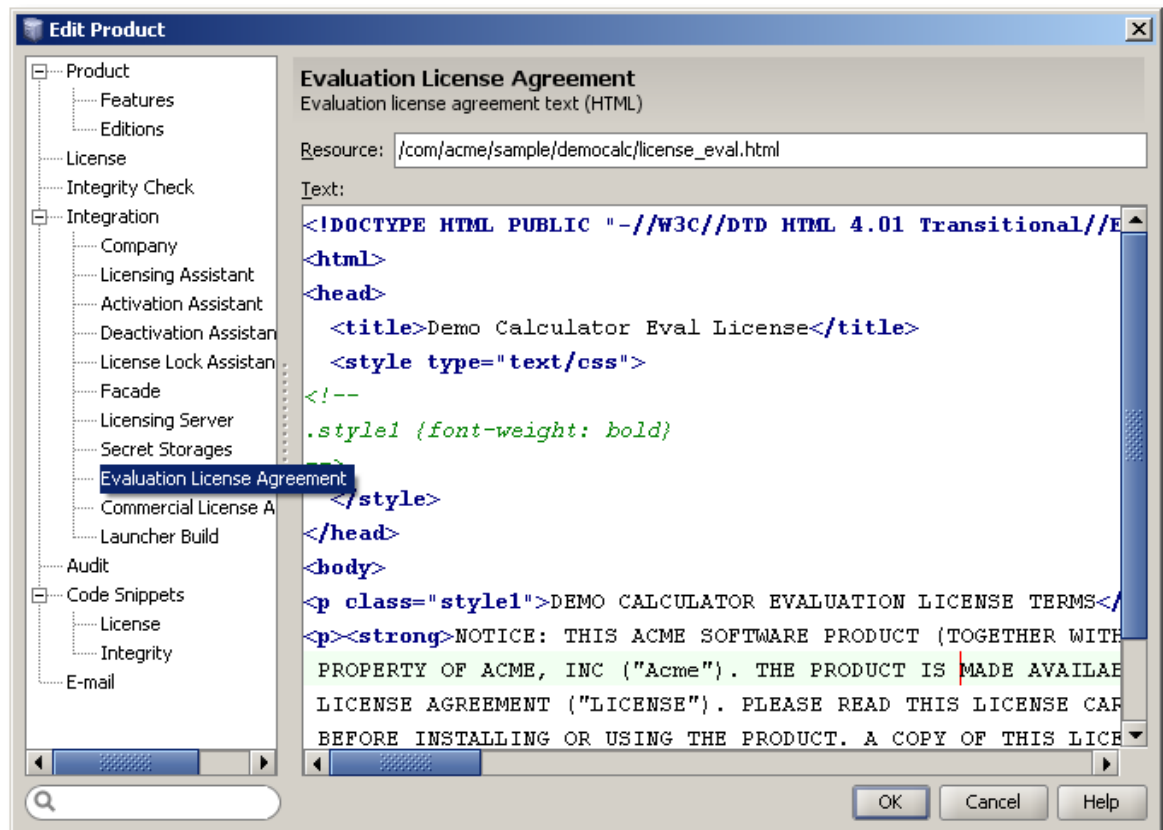


Figure 67: Edit Product Dialog – Evaluation License Page

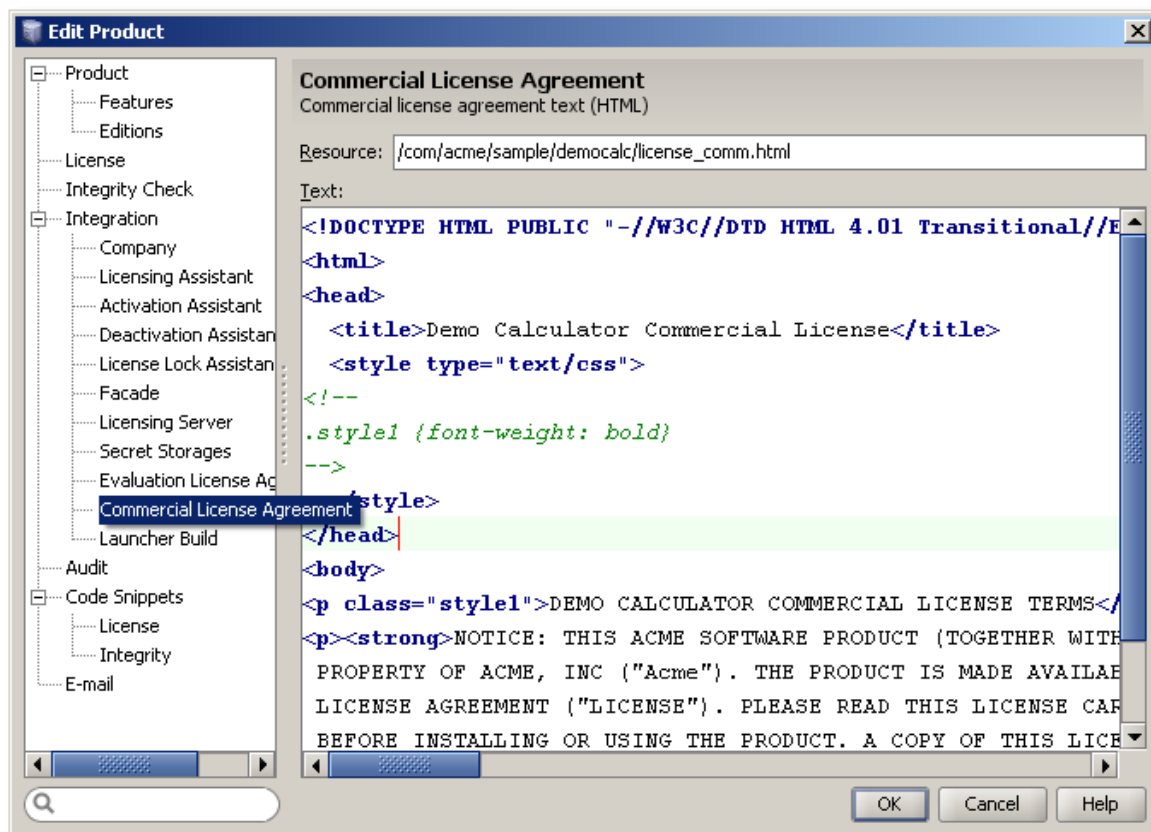


Figure 68: Edit Product Dialog – Commercial License Page

Launcher Build Page

Launcher is a concept where almost all of the Protection! initialization data (currently presented in standard GUI or Headless code snippet) is placed into the Launcher resource. After Launcher is successfully built Launcher can be loaded at runtime and used to initialize Protection! system. Use of the Launcher provides an easy way to update Protection! configuration (i.e., adding secret storages or changing some other configuration options) without the need to first manually modify source code and then requiring a rebuild of the application for the changes to take effect.

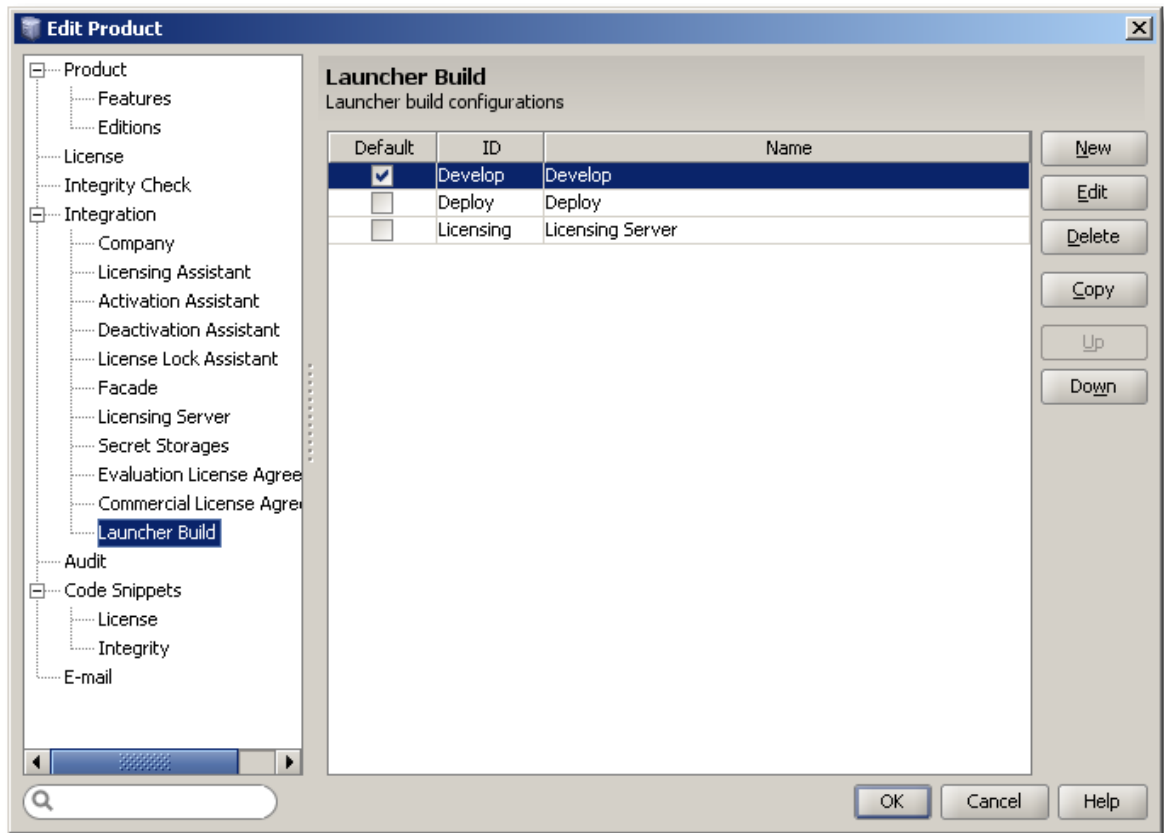


Figure 69: Launcher Build Dialog

Launcher Build Page provides the developer with the ability to maintain multiple Launcher build configurations. It shows the list of currently available configurations and provides actions to maintain and reorder them. The New/Edit Launcher Build Configuration dialog allows specifying configurations' attributes during creation of a new or changing the existing configuration.

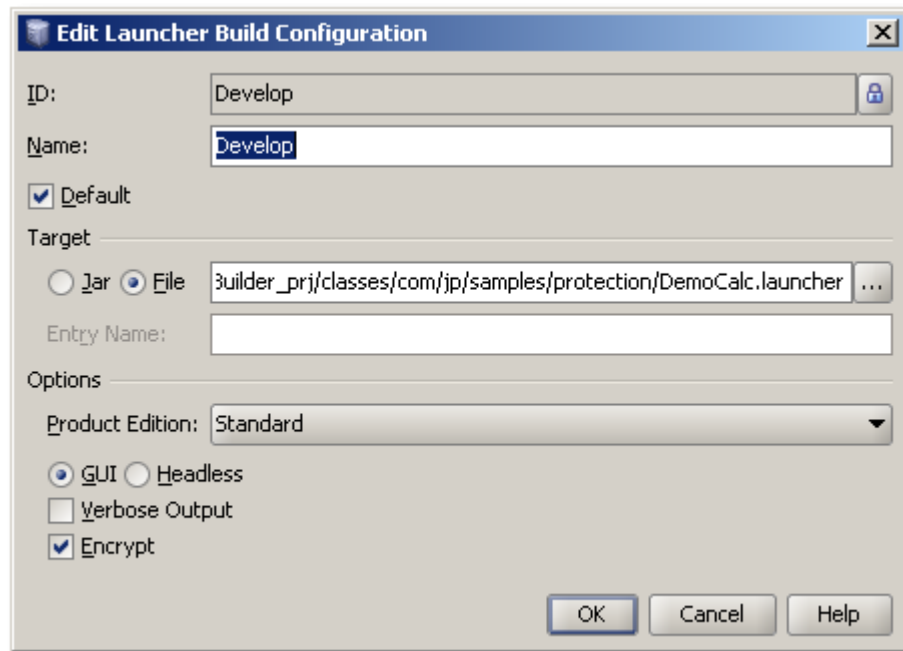


Figure 70: Launcher Build Configuration Dialog – File Based Target

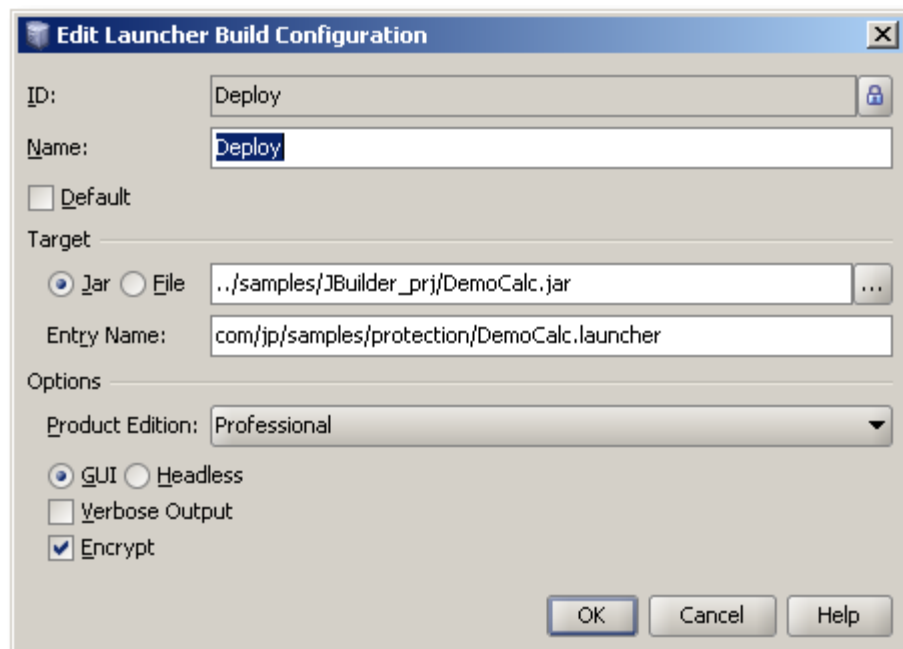


Figure 71: Launcher Build Configuration Dialog – Jar Based Target

The following configuration's attributes are available:

- "ID" - Indicates unique configuration's ID.
- "Name" - configuration Name
- "Default" - Indicates default configuration. This configuration would be used to build Launcher by default unless specific launcher build configuration is chosen.
- "Target" - Indicates what should be used as a launcher target. The user needs to choose either a file or an archive to generate Launcher.

- "Jar" - If chosen then launcher would be written into the existing jar file as a resource. The exact location where launcher would be created inside the jar file is specified via Entry Name option (see below).
- "File" - If chosen then launcher would be written to a file on the file system.
- "Product Edition" - Indicates for which Product edition Launcher will be built.
- "GUI" - Indicates if Launcher would be build for GUI based application.
- "Headless" - Indicates if Launcher would be build for Headless (GUI-less) application.
- "Verbose Output" - Indicates if verbose output needs to be turned on allowing printing messages and errors to standard output during license reading and checking.
- "Encrypt" - If turned on the generated launcher would be strongly encrypted. Note: encryption must be turned off for building Launchers which may be imported into the Protection! Licensing Server.

Audit Page

Audit Page provides management of the product auditing rules where the developer has the ability to ignore specific audits and maintain an ignore list.

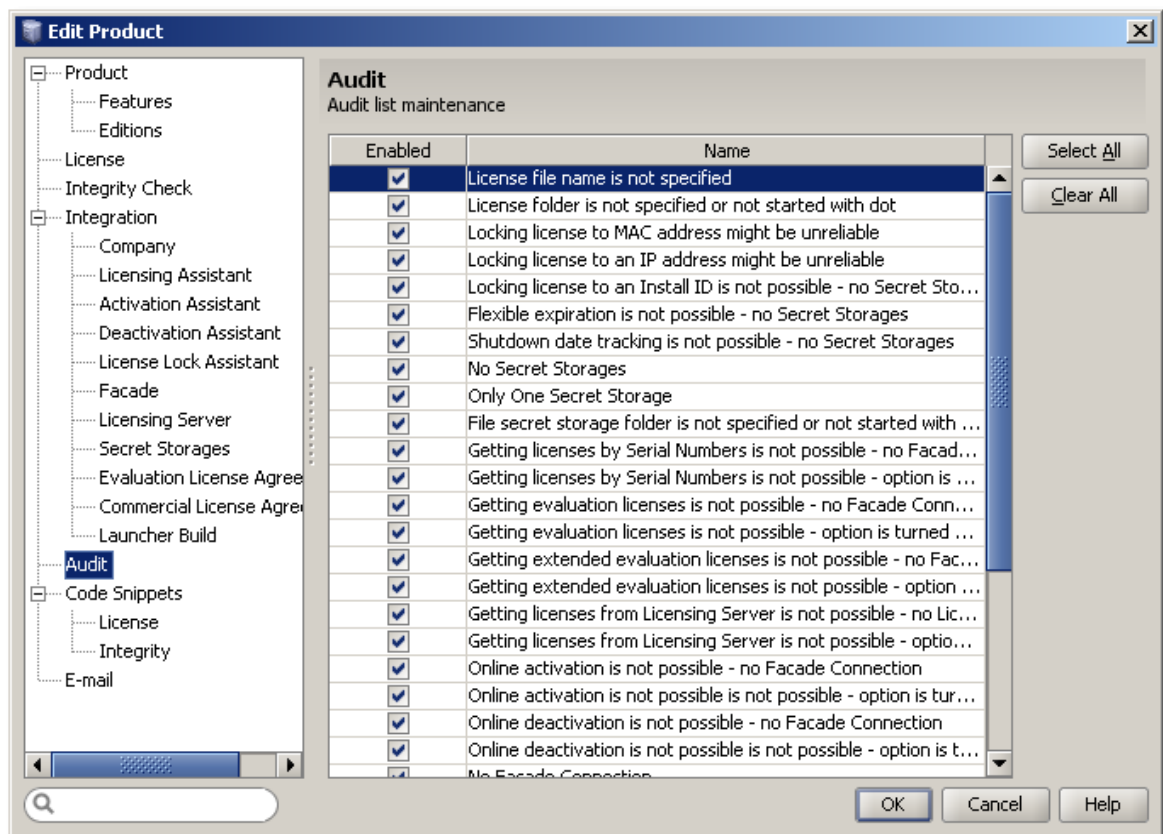


Figure 72: Edit Product Dialog – Audit Page

The list shows the following attributes of Audit rule:

- "Enabled" - Indicates that the selected audit rule is enabled and would be used during the audit process. Disabled audit rules will be skipped.
- "Name" - Specifies a descriptive name for the Audit rule.

It is possible to use the "Select All" and "Clear All" buttons to change the enabled state for all available rules.

Code Snippets Page

The Code Snippets Page of the "New/Edit Product" dialog allows specifying the Code Snippets attributes.

License Code Snippet section allows specifying Code Snippet attributes for license reading and checking:

- "File Name": Specifies the location of the License Code Snippet file. Control Center will save the License Code Snippet Java file using this specified location. When generated, this file is ready to be inserted into your Java Project structure.
- "Package": Specifies the package name to be used in the License Code Snippet file.
- "Class": specifies the class name to be used in the License Code Snippet file.

Integrity Code Snippet section allows specifying Code Snippet attributes for Integrity checking:

- "File Name": Specifies the location of the Integrity Code Snippet file. Control Center will save the Integrity Code Snippet Java file using this specified location. When generated, this file is ready to be inserted into your Java Project structure.
- "Package": Specifies the package name to be used in the Integrity Code Snippet file.
- "Class": specifies the class name to be used in the Integrity Code Snippet file.

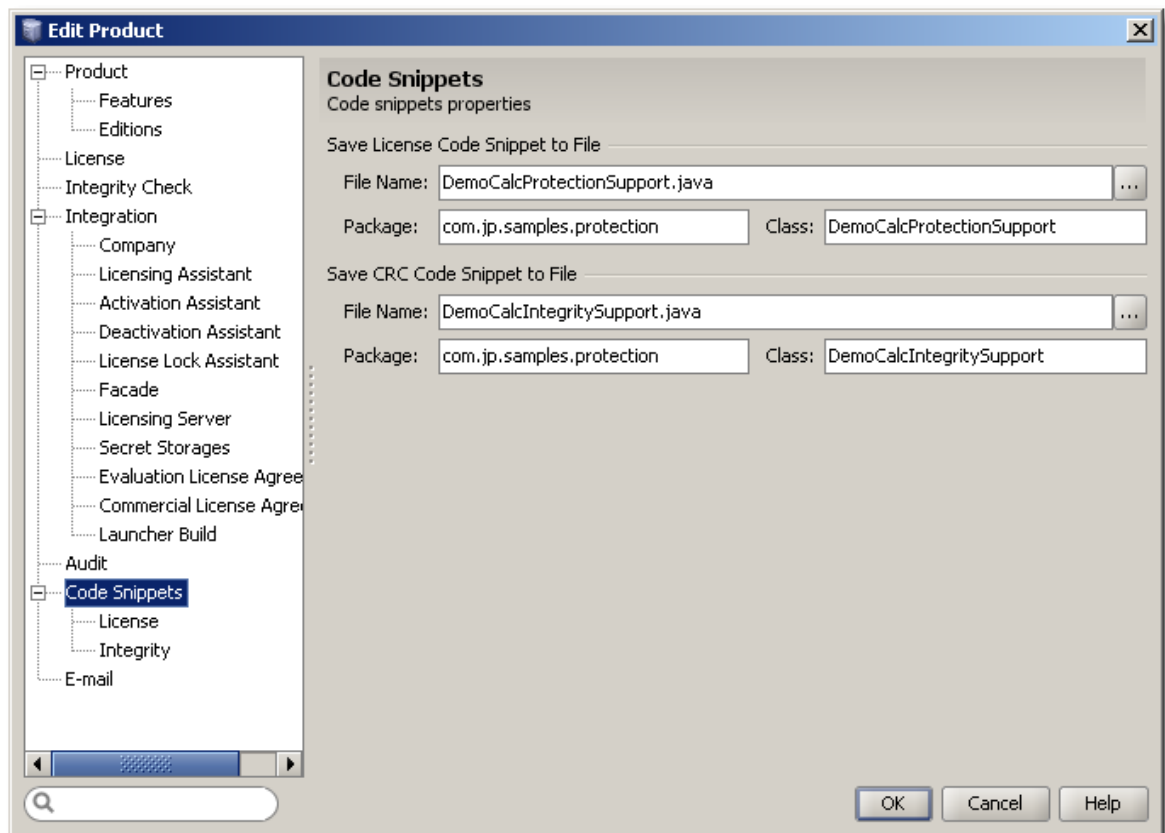


Figure 73: Edit Product Dialog – Code Snippets Page

License and Integrity Code Snippet Pages

License and Integrity Code Snippet Pages can be used to create custom code snippets for more advanced configuration. Both License and Integrity code snippet pages have two tabs: "Source" and "Preview". The "Source" tab is used to design a custom code snippet and the "Preview" tab is used to see the final result.

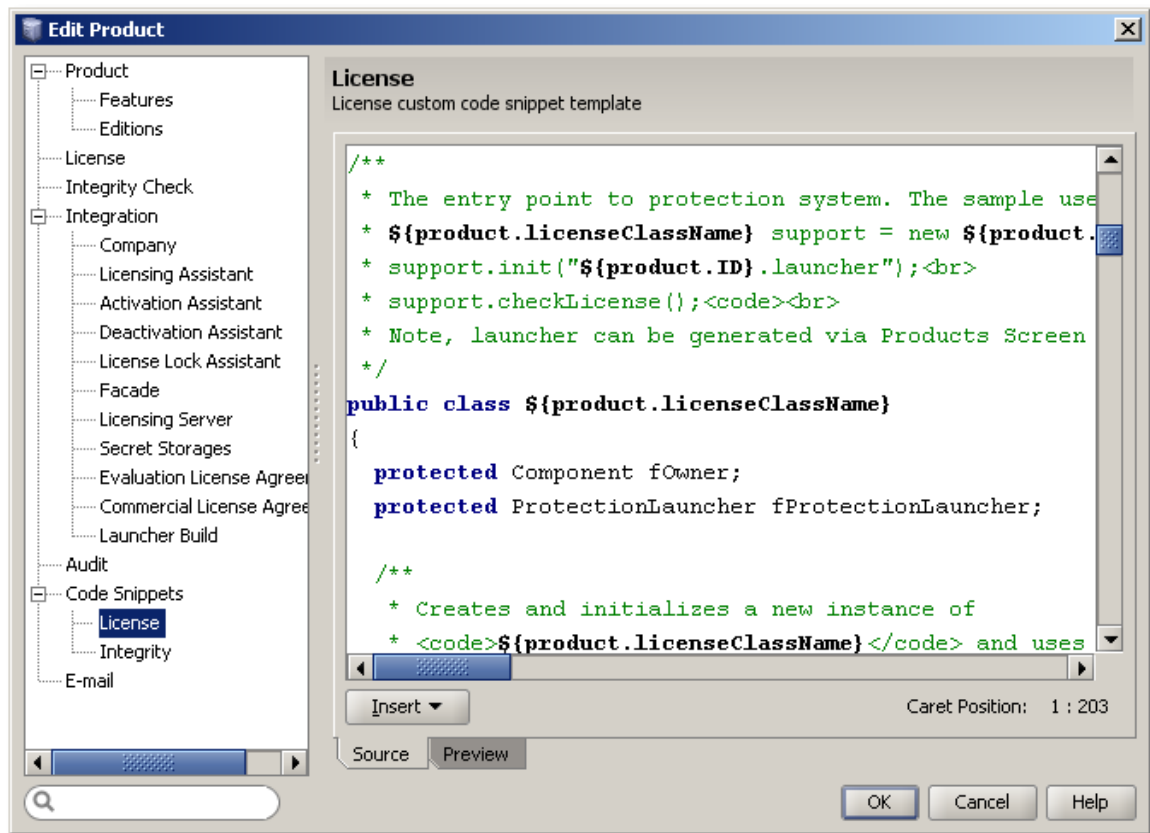


Figure 74: Edit Product Dialog – License Code Snippet Page

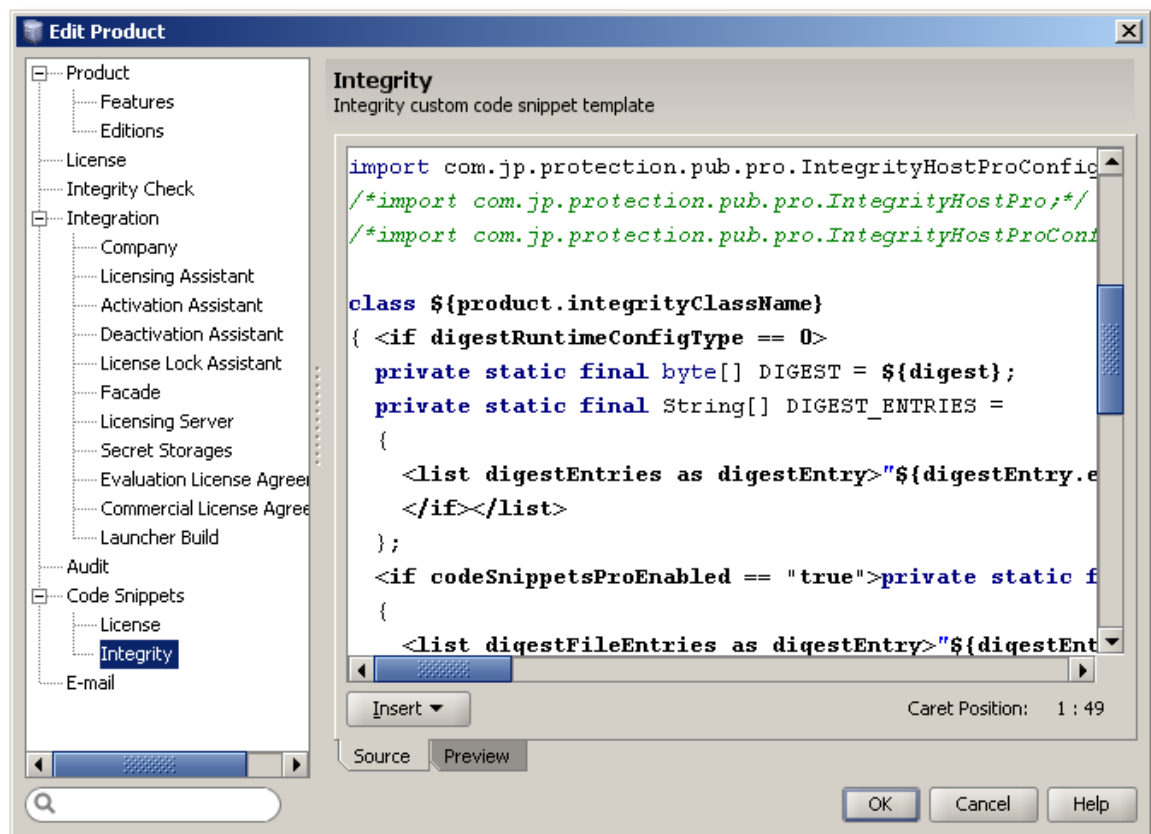


Figure 75: Edit Product Dialog – Integrity Code Snippet Page

An extensive collection of predefined parameters is available to the developer during custom code snippet generation. This feature can be used to insert a variety of information into the code snippet at the insertion point. An “Insert” operation could be executed either by clicking on the “Insert” button or by right-clicking within the Editor window and choosing the Insert menu (this is only available while in “Source” mode).

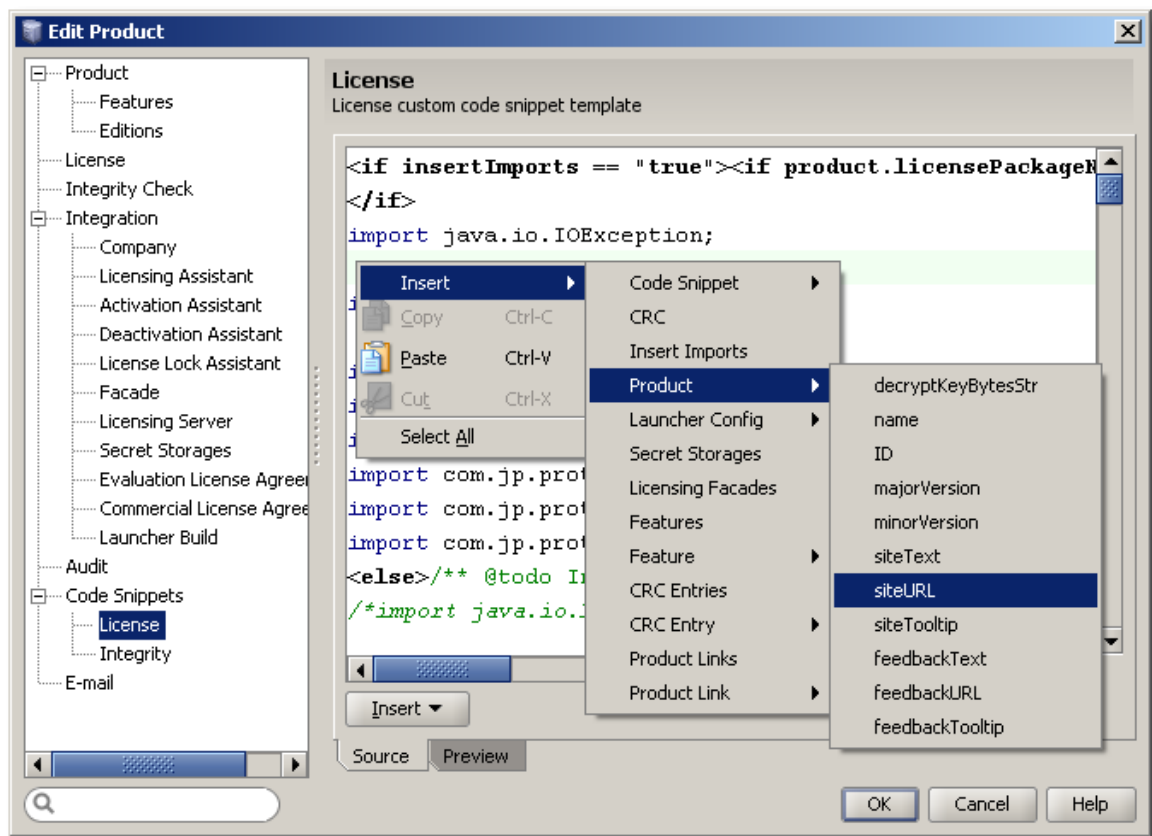


Figure 76: Adding Macros to the Code Snippet

A "Preview" mode of the License and the Integrity Code Snippet shows the final rendering of the code snippet. The developer can inspect the code snippet using the "Preview" mode in order to validate the desired result and eliminate errors.

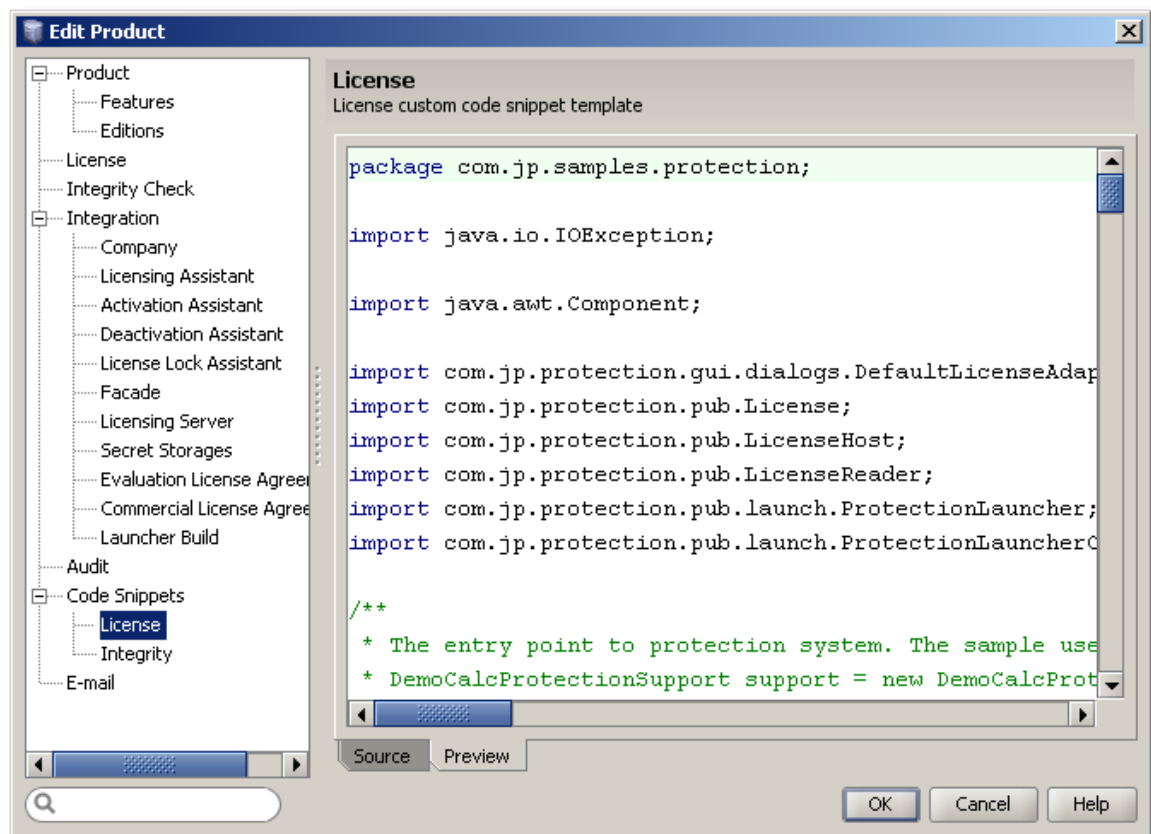


Figure 77: Edit Product Dialog – Previewing Code Snippet

E-Mail Page

The E-Mail Template can be used to create a custom template that would be used during license distribution via the e-mail mechanism. The E-Mail Template is broken into two parts – "Subject" and "Text" (e-mail body). Both parts have codes present in the "Source" view which could be previewed in its final form using the "Preview" button.

An extensive collection of predefined parameters is available to the developer during custom E-Mail Template design. This feature can be used to insert a variety of information into the E-Mail Template at the insertion point. An "Insert" operation could be executed either by clicking the "Insert" button or by right-clicking within the Editor window and choosing the "Insert" popup menu (this is only available while in "Source" mode).

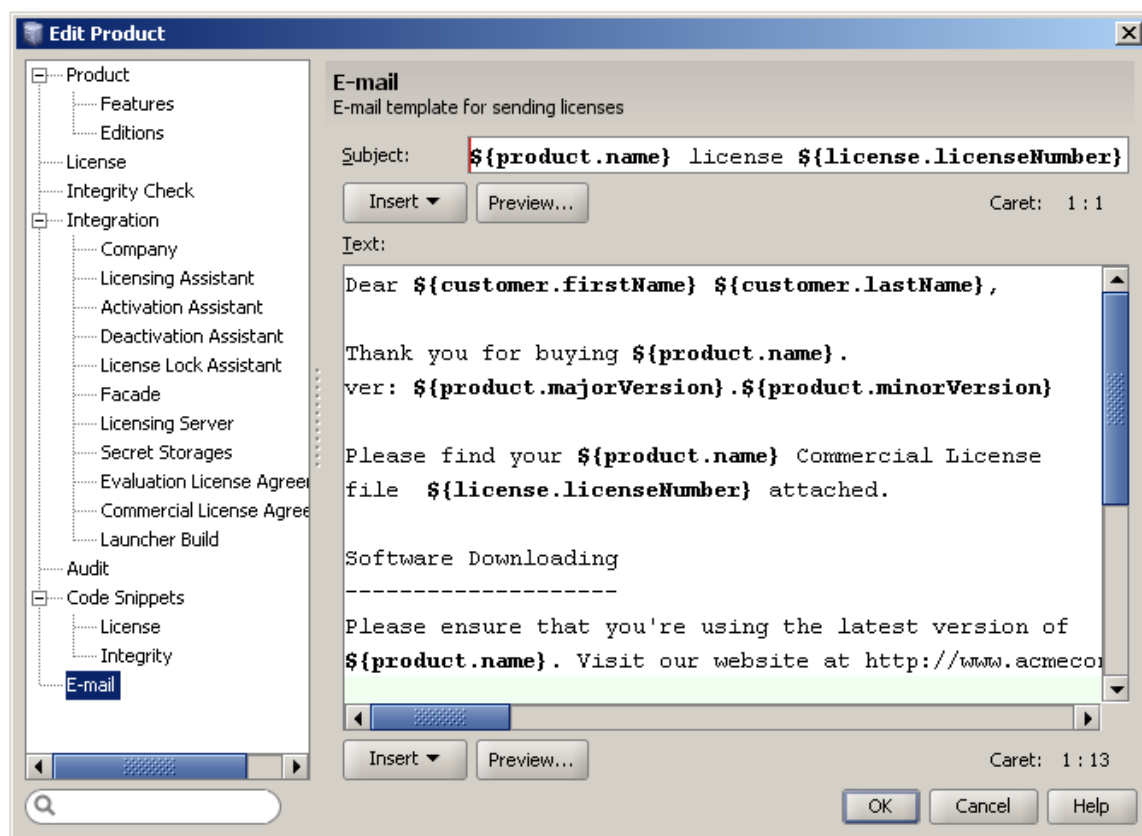


Figure 78: E-Mail Template Screen

5.5.6 Building Launchers

The following procedure allows building Launcher for a product based on predefined build configuration:

1. To build Launcher for default build configuration one of the following ways can be used:
 - Press the "Build" button on the Control Center's Toolbar;
 - Select the "Build | Build Launcher" menu item;
 - Type *Ctrl+F9* key combination.
2. To build Launcher for certain build configuration – select "Build | Build Launcher <digest name>" (for other preconfigured build configurations) on the menu bar or select the drop-down icon on the "Build" button and choose the appropriate Launcher build configuration.

5.5.7 Changing License Encryption

Protection! allows the selection of an encryption algorithm and generates encryption keys during creation of a new product. Any further changes of product attributes will not lead to changes of either encryption algorithm nor encryption keys.

There might be a need to change the encryption algorithm and/or encryption keys in some rare cases. In such a case it can be done via the "Change Encryption" dialog which can be invoked by choosing the "Edit | Encryption" menu item. In this dialog the user is able to choose different encryption via the "Encryption" combo box. After the user presses the "OK" button a new encryption algorithm and encryption keys will be

assigned to the selected product; encryption keys will be re-generated even if the encryption algorithm is not changed.

Changing encryption keys and/or the encryption algorithm can be dangerous for your business. This change would mean that:

- You will no longer be able to open licenses generated with the current (old) encryption keys or algorithm.
- Any applications that use the current (old) encryption key or algorithm will have to be rebuilt and redeployed.
- You will need to regenerate and deliver new licenses, along with rebuilt applications, to your existing customers.

5.5.8 Managing License Aliases

License Aliases are stored in the products storage and can be maintained via the "Products Screen" - "Edit | License Aliases" menu item.

Manage License Aliases Dialog

This dialog allows for management of License Aliases. It provides the grid that shows the list of existing License Aliases where each License Alias occupies one row and some of its attributes are shown as columns.

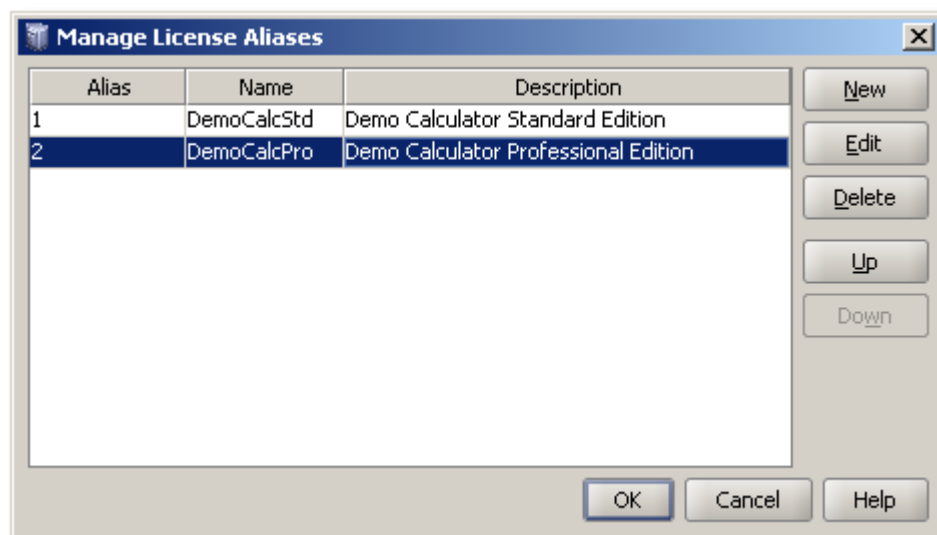


Figure 79: Managing License Aliases Dialog

The "New" button allows creation of new License Alias with help of the "New License Alias" dialog.

The "Edit" button allows changing attributes of currently selected License Alias with help of the "Edit License Alias" dialog.

The "Delete" button provides the ability to delete the currently selected License Alias.

The "Up"/"Down" buttons allow rearranging License Aliases in the list.

Edit License Alias Dialog

This dialog allows specifying attributes of License Alias and consists of two tabs: "General" and "Override".

The "General" Tab provides the ability to specify the following License Alias attributes:

- "Alias": This is a unique Alias identifier. If future order parsing based on a predefined alias would be required then this identifier must be equal to the product identifier assigned by the product supplier/E-Commerce store.
- "Name": A descriptive name for the alias. If a target such as "Shortcuts" would be used then this is the name that will appear on the Shortcuts Tab in the Control Center.
- "Description": A meaningful description of the alias.
- "Targets | Shortcuts": If chosen then the alias name will appear in the Shortcuts Tab in the Control Center.
- "Targets | Group": A name for the Group of the Shortcuts bar in the Control Center where a shortcut for the specific alias would be placed. Default Group name is "Shortcuts"; however, the developer is free to create his/her own groups by typing a new group name into the Group combo box.
- "Targets | Serial Numbers": If checked, then this option indicated that a specific alias could be used to generate a license based on the Serial Number. This also means that if a Serial Number is created based on the License Alias then Serial Numbers will contain an encoded representation of the license number and this license alias. Note: only Serial Number v2 support this functionality. See more information on Serial Numbers in this guide.
- "Targets | Orders": If checked, then this option indicates that functionality to create the specific licenses based on the product identifier assigned by the E-Commerce store would be available. Note: In order for the "order parsing" process to work the Alias Identifier (see above) must be equal to the product identifier assigned by the product supplier/E-Commerce store.

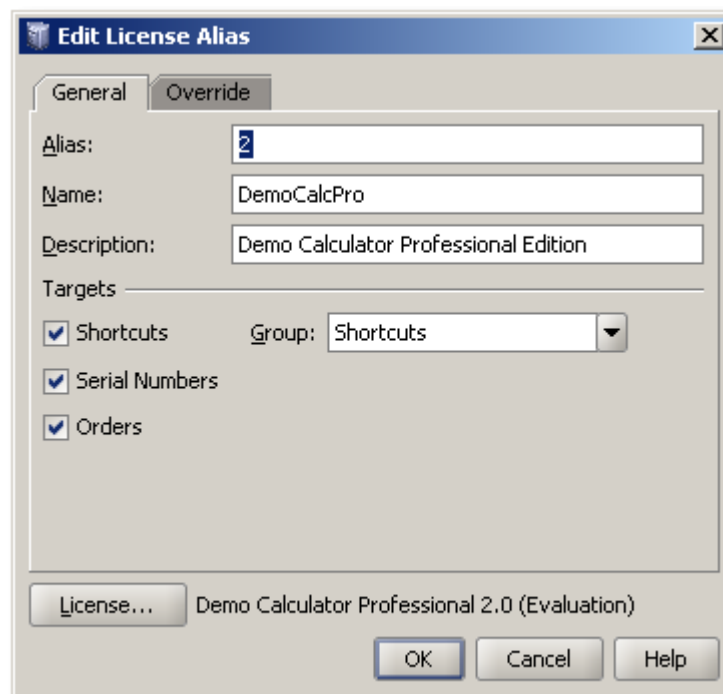


Figure 80: Edit License Alias Dialog – General Configuration Page

The "Override" page indicates setting of the additional parameters for the License Alias. When the license is created based on the License Alias then several license properties could be overridden at the time of the license creation. For example: when the license is created via Control Center's New License functionality, then the default expiration period for the evaluation license is calculated based on the value previously set in the "Edit Product Dialog | License section | Evaluation Period" value. However, a developer might desire to override this behavior for a specific License Alias. In such case the developer would raise an "Override" check in the "Date Expiration Period" property and would set up a new "Date Expiration Period" for the given license Alias.

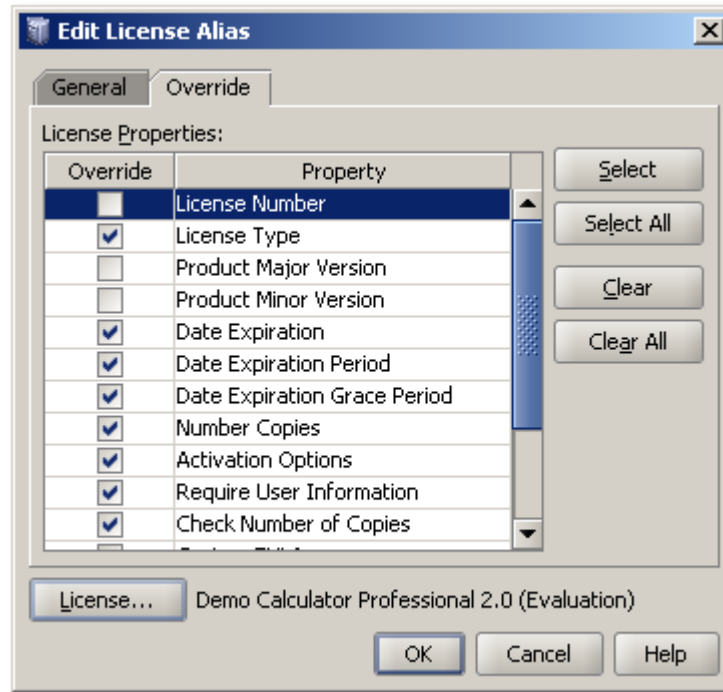


Figure 81: Edit License Alias Dialog - Override Page

Setting up License attributes for the given License Alias is achieved via the "License" button of the "New/Edit License Alias" dialog. A dialog similar to the Control Center's License screen allows developers to pre-configure all of the necessary license attributes. These attributes would be used in conjunction with the New/Edit License Alias's dialog Override Page to create new licenses based on the given License Alias.

All standard license parameters like "Product"; "Edition"; "License Type", including parameters like "Features"; "Custom Properties" and "Custom EULA" – all could be pre-configured for a specific License Alias. This ensures that no parameter could be either missed or badly entered when the license is created via the License Alias.

Such functionality could be extremely invaluable when Protection! Sales Edition is used by the sales staff. In the majority of cases the developer would pre-configure Product and the Products' License Aliases and the sales staff would use these pre-configured License Aliases to generate certain licenses.

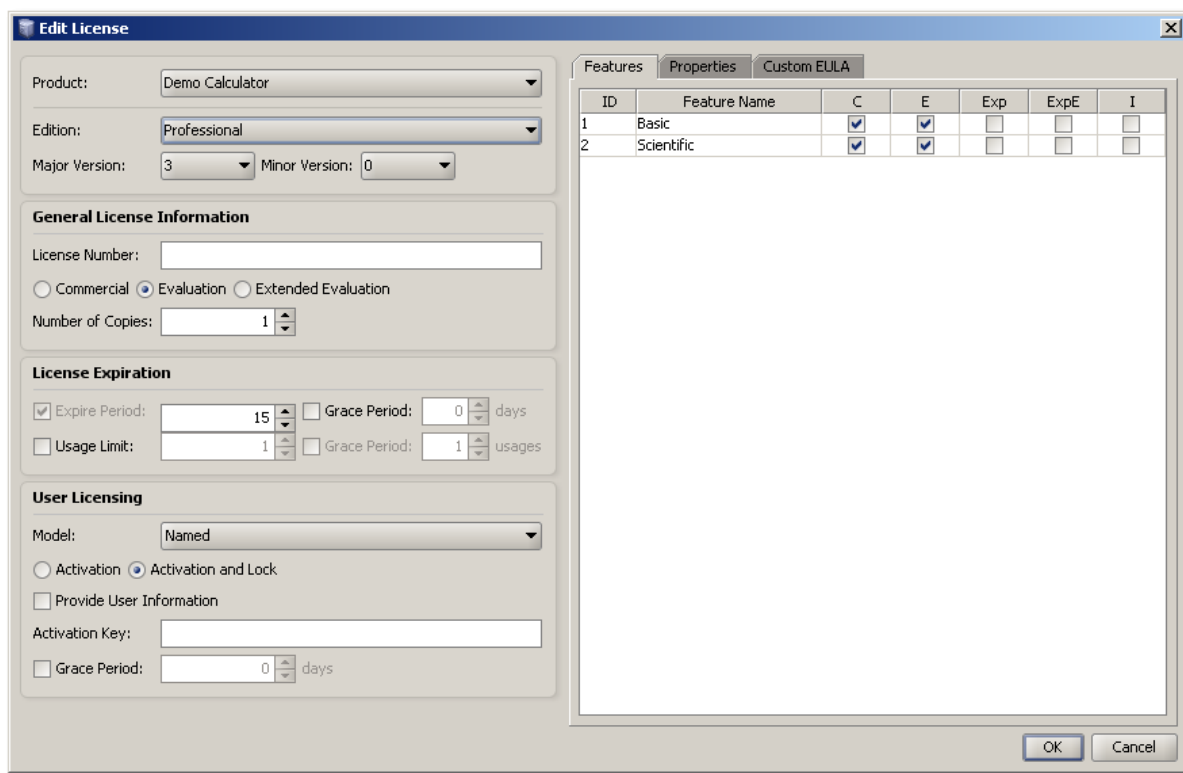



Figure 82: Edit License for a given License Alias

When License Aliases are fully configured and saved their names would appear in the "Shortcuts" page of the Control Center's Shortcuts Side Bar. Note: In order to see updated License Aliases in the Shortcuts Tab the product storage must be saved first.

5.6 Working with the License Storage Screen

The License Storage Screen provides the ability to create and maintain license storages designed to store a set of licenses in one uniform location (container). The License Storage allows holding and storing of an unlimited number of licenses and it is very useful in such situations when for example:

- There is a need for keeping together all the licenses for different products from one vendor.
- There is a server application that contains a number of different modules which could be licensed independently.

The License Storage Shortcut  on Control Center's Shortcuts Side Bar or the "View | License Storage" menu item provide the way to activate the License Storage Screen.

5.6.1 License Storage Screen Overview

The License Storage Screen shows the contents of the currently opened License Storage using the License Entries grid. The License Entries grid allows usual grid operations like columns moving and resizing, changing sort order, grouping License Entries by some attribute etc. It is possible to change how the grid appears by choosing one of the available views using the View toolbar. The currently selected view can be customized using the "Customize View" toolbar button or the "Customize View" menu item from the grid's context menu.

The "License" Tab shows license details for the currently selected License Entry if the License Entry's product could be found in the currently opened Products Storage.

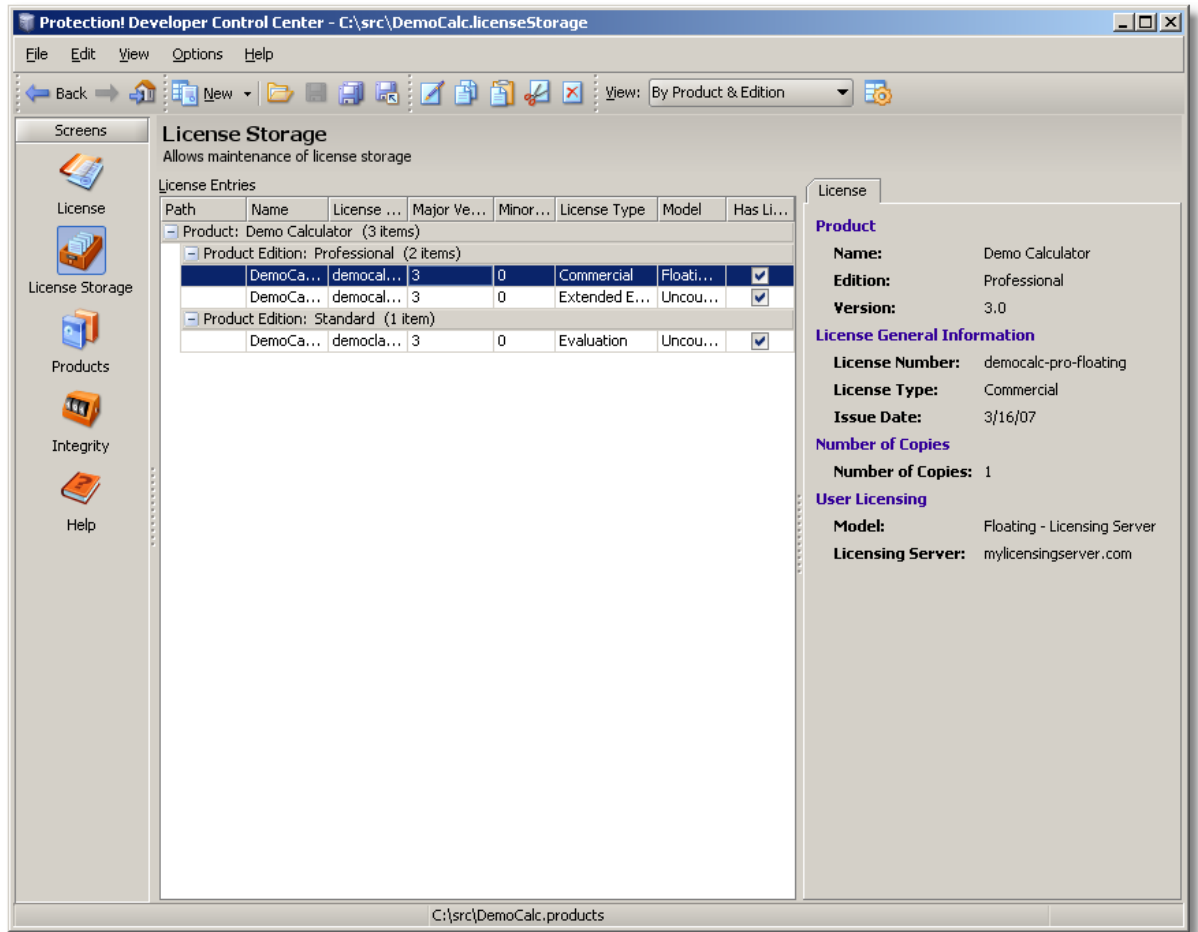


Figure 83: License Storage Screen

5.6.2 Creating New License Storage

A new License Storage can be created:

- By selecting the "File | New | License Storage" menu item.
- By selecting the drop-down icon on the "New" button and choosing the "License Storage" option.
- By pressing *Ctrl+Shift+G* key combination.

The above actions would generate new blank license storage. To work with such license storage either new license entries need to be created or an existing license(s) needs to be imported into the license storage.

5.6.3 Creating / Modifying License Entry

A new License Entry can be created:

- By selecting the "File | New | License Entry" menu item.
- By selecting the drop-down icon on the "New" toolbar button and choosing the "License Entry" option.
- By pressing *Ctrl+Shift+T* key combination.

An existing License Entry can be modified by double-clicking, pressing the "Edit" button on toolbar or choosing the "Edit | Edit" menu item.

The "New/Edit License Entry" dialog appears on the screen.

New/Edit License Entry Dialog

The "New/Edit License Entry" dialog allows entering the following License Entry attributes:

- "Name" – the name of the License Entry. It is possible to specify a value containing slashes to denote path element e.g. a/b/c/DemoCalc.license.
- "License" button – allows invocation of the "Edit License" dialog to specify license attributes.

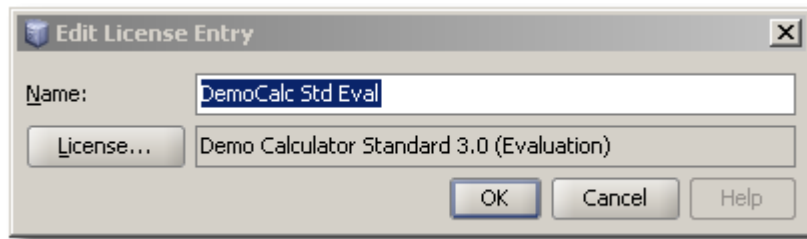


Figure 84: New/Edit License Entry

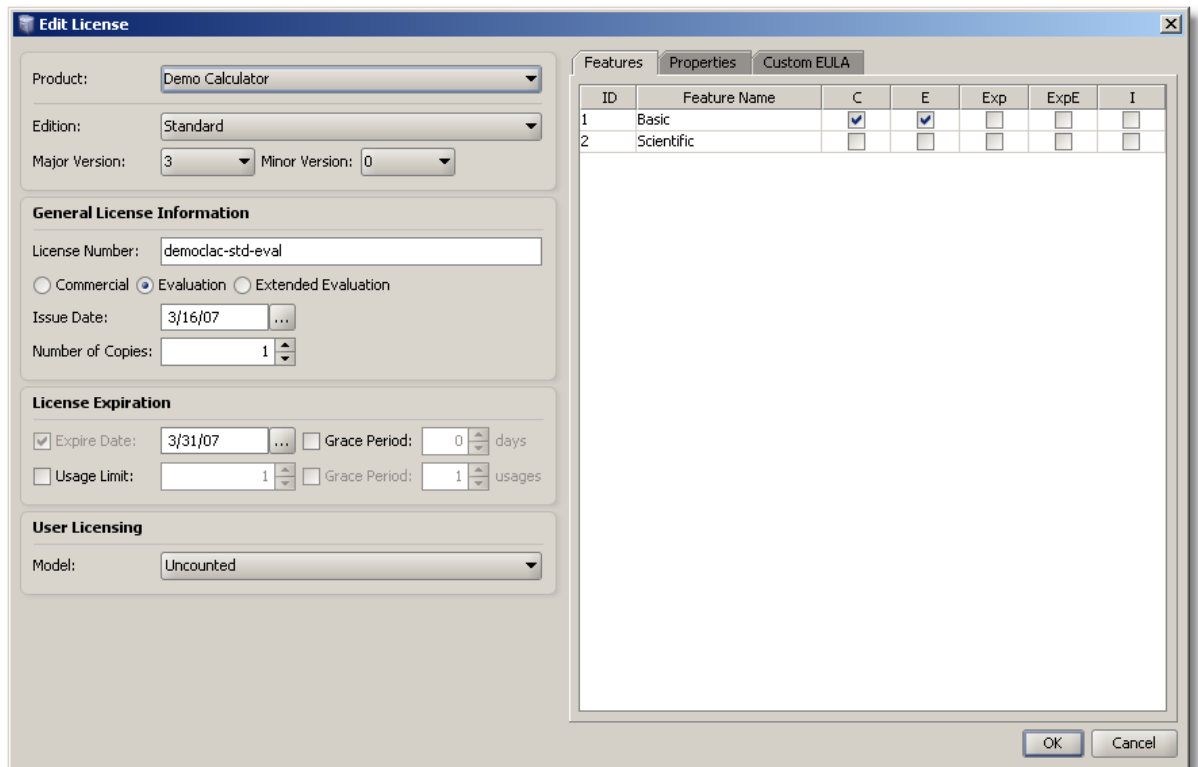


Figure 85: New/Edit License Dialog for License Entry

5.6.4 Importing Licenses into the License Storage

The following procedure will import an existing license file(s) into the License Storage:

1. Select the "File | Import Licenses" menu item.

2. Choose one or several licenses to import.
3. Press the "OK" button to start import.

5.7 Working with the Integrity Screen

The Integrity verification subsystem allows for checking and validation that the designated key classes/resources/files of the product have not been changed. This type of check is done by comparing the generated digest of those classes/resources/files with the original value stored somewhere in the product code, resources or files. The Integrity subsystem significantly increases the time and effort needed to diagnose and locate specific parts of the protection system in order to attempt to break it.

6.7.1 Integrity Screen Overview

Protection! provides the ability to check Integrity for the set of so-called Digest Entries. Each Digest Entry represents a class or resource within the application archive or a file. The Integrity screen provides the ability to maintain Integrity Digest Entries list, select an algorithm, and generate an Integrity Code snippet to be embedded in the application. Integrity check provides the ability to employ SHA-1 and MD5 digest and CRC32 algorithms.

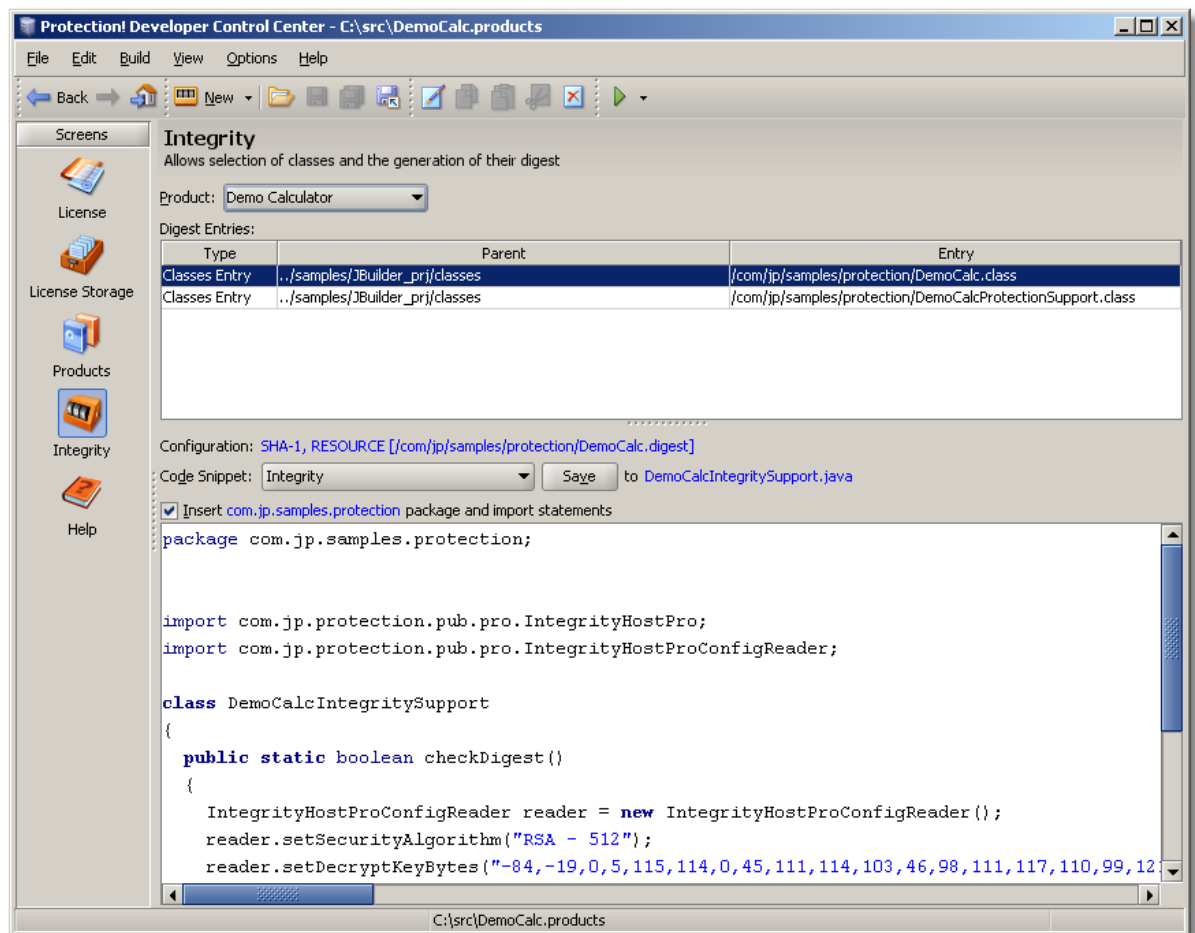



Figure 86: Control Center – Integrity Screen

The "Integrity" Shortcut  on Control Center's Shortcuts Side Bar or the "View | Integrity" menu item provides the way to activate the Integrity Screen.

5.7.2 Managing Digest Entries List

A new Digest entry for a product can be created:

- By selecting "File | New | Digest Jar Entry" or "File | New | Digest Classes Entry" or "File | New | Digest File Entry" on the menu bar.
- By selecting the drop-down icon on the "New" button and choosing the appropriate "Integrity Digest Entry" option.
- By using either `Ctrl+Shift+J` (for Digest Jar Entry) or `Ctrl+Shift+E` (for Digest Classes Entry) or `Ctrl+Shift+F` (for Digest Files Entry) key combination.

A new Integrity Digest Entry action will launch the appropriate "New/Edit Digest Entry" dialog. These dialogs allow the user to navigate to a desired archive (such as .jar, .zip, .war, or .ear archives), classes, or files and select the desired resources to be used in a digest calculation.

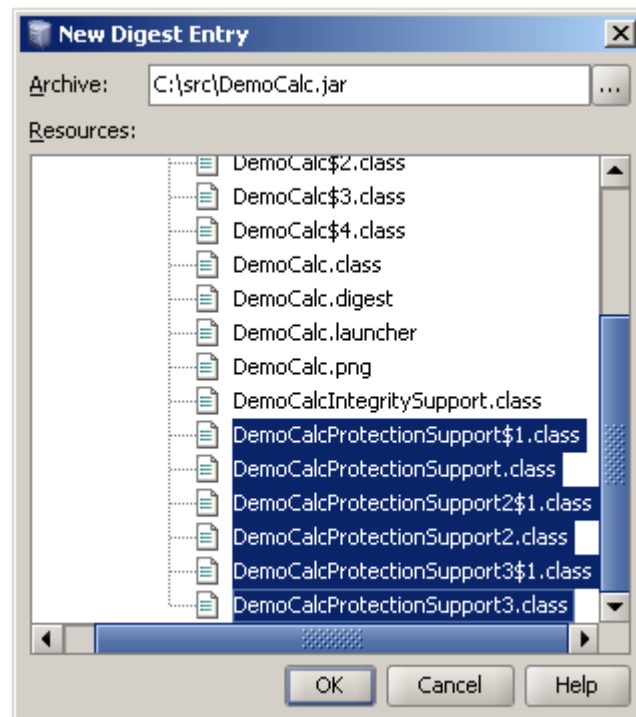


Figure 87: Integrity Digest Jar Entry Dialog

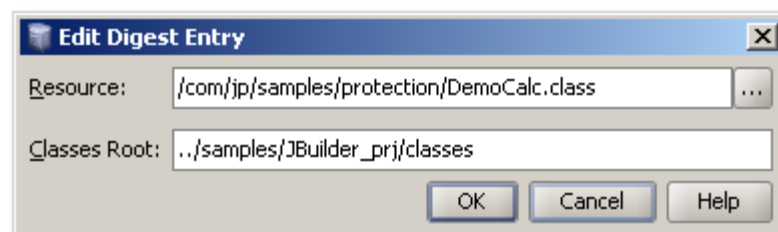



Figure 88: Integrity Digest Classes Entry Dialog



Existing Digest Entry can be modified by double-clicking, pressing the "Edit" button on toolbar or choosing the "Edit | Edit menu" item.

5.7.3 Configuring Digest Build Configurations

It is possible to maintain Digest Build Configurations via the "Edit Product | Integrity Check" dialog or via a dedicated "Digest Build Configurations" dialog. This dialog can be shown by selecting the "Build | Configurations" menu item or by selecting the drop-down icon on the "Build" button  and choosing the "Configurations" item. The "Digest Build Configurations" dialog shows the list of available configurations and allows maintenance and reordering of them.

5.7.4 Building Digest

The following procedure allows building Digest for a product based on predefined build configuration:

1. To build the digest for the default build configuration one of the following ways can be used:
 - Press the "Build"  button on the Control Center's Toolbar;
 - Select the "Build | Build Digest" menu item;
 - Type *Ctrl+F9* key combination.
2. To build the digest for a certain build configuration – select "Build | Build Digest <digest name>" (for other preconfigured build configurations) on the menu bar or select the drop-down icon on the "Build"  button and choose the appropriate Digest build configuration.

5.8 Help Screen

The Help Screen provides the ability to get online help for Protection! Control Center. Note: pressing the F1 key while in any part of the Protection! Control Center will open a context sensitive help window.

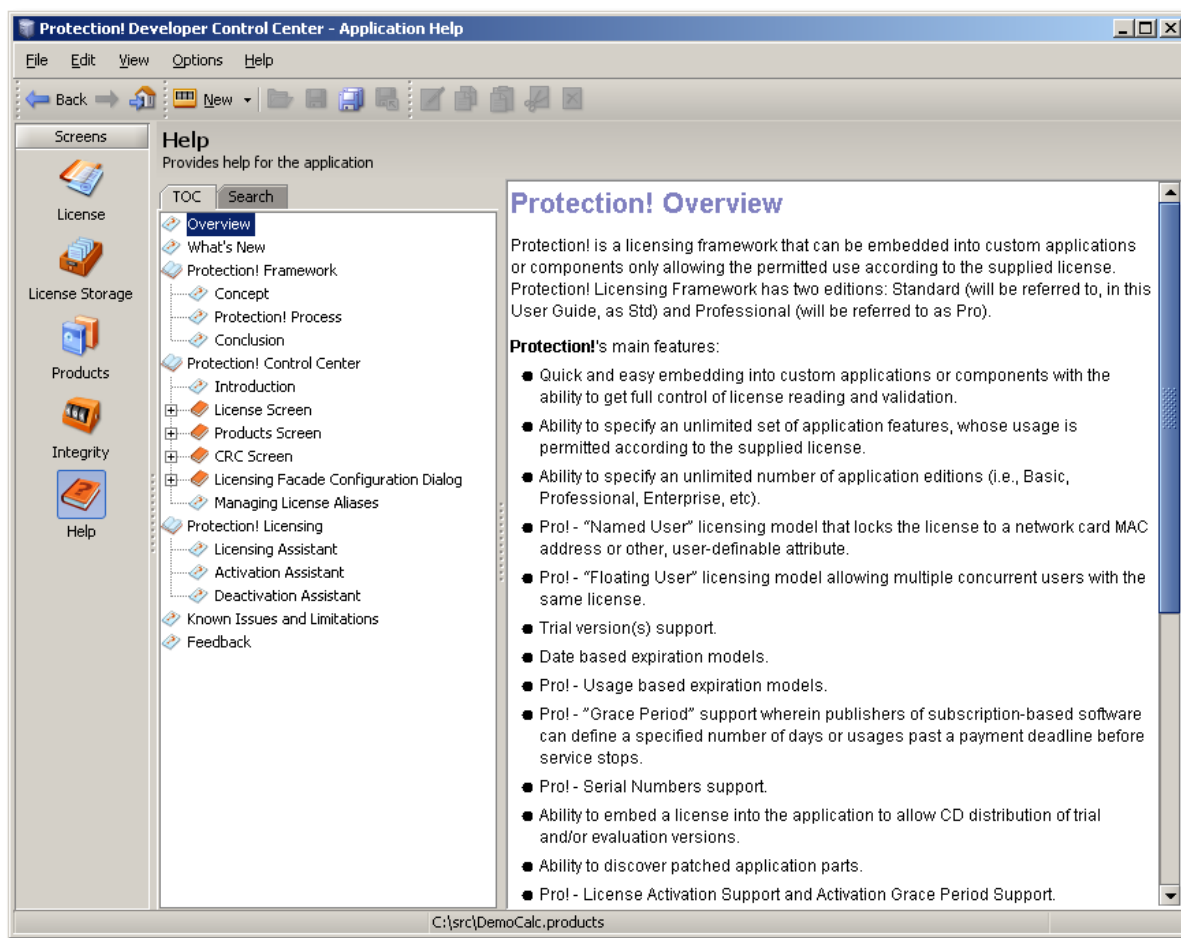




Figure 89: Online Help Screen

5.9 Delivering Licenses via E-mail

Protection! Control Center includes the ability to deliver licenses to the customers by sending license files via e-mail. To deliver licenses via e-mail use the following procedure:

3. Select the "License" Shortcut  on the Control Center's Shortcuts Side Bar.
4. Specify desired license attributes.
5. E-mail delivery can be initiated either by selecting "File | Deliver License | Send by E-mail" menu item on the menu bar or by selecting the drop-down icon on the toolbar and choosing the "Send by Email"  option. A *Ctrl+F* key combination can also be used to send license by E-mail.

The "E-mail Message" dialog will be pre-populated from the previously defined E-mail template and the newly generated license for the product would be attached. The Developer/Publisher can adjust/modify any of the email parameters (To; CC; BCC; Subject; E-mail body; specify E-mail priority; add/delete additional attachments) and click the "Send" button to send license via E-mail.

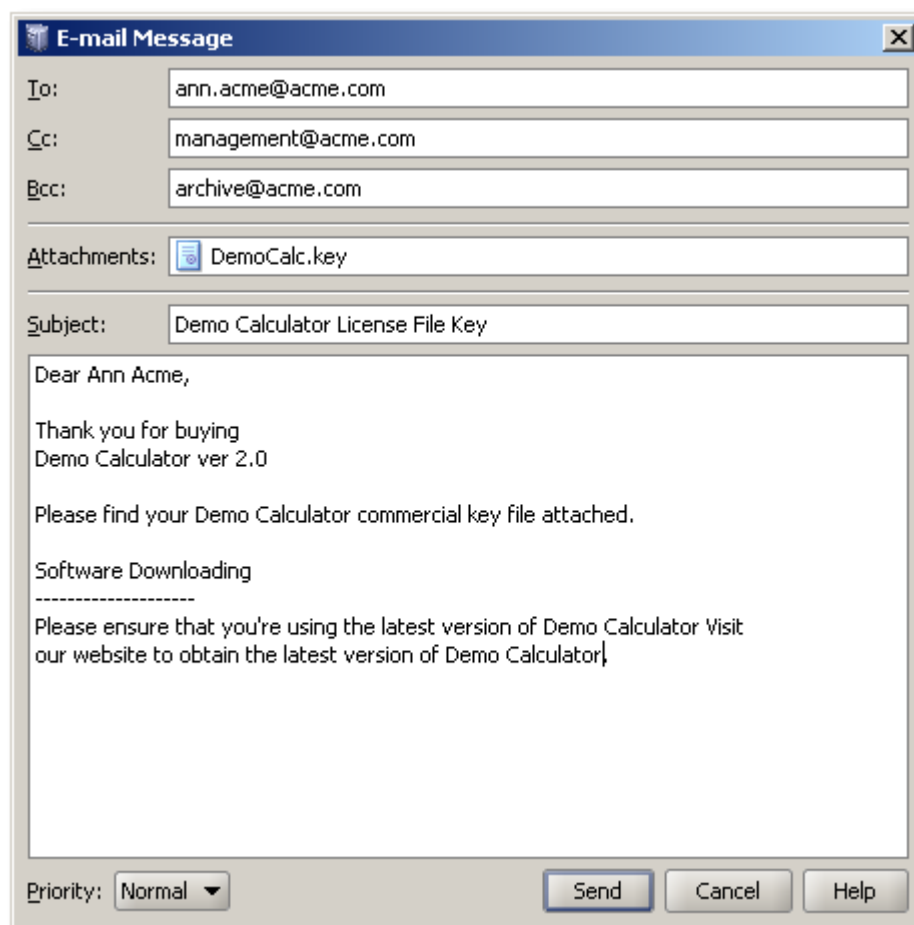


Figure 90: E-mail Sending Dialog

Note: Required E-mail configuration has to be completed in order to send a license via E-mail from the Protection! Control Center.

It is possible to employ customer information to compose an e-mail message. The "Options | E-mail Delivery | Require Customer" menu option specifies that customer information should be entered in order to deliver the license by e-mail if this option is checked.

5.9.1 E-mail Options Dialog

The "E-Mail Options" dialog has the following product attributes:

The "Enable E-mail Sending" checkbox allows specifying whether license distribution via e-mail would be allowed.

The "Server (SMTP)" section allows specifying server attributes:

- "Host": the address of your SMTP server to which all outgoing e-mail messages from the account will be sent.
- "Port": specifies SMTP port

The "Authentication" section allows specifying authentication properties:

- "User Authentication": specifies whether SMTP authentication should be used. SMTP authentication is optional. SMTP authentication involves a username and a password being transferred from the client to the server

- "User": specifies valid SMTP user
- "Password": specifies valid SMTP user password

The "Addresses" section allows specifying the default addresses that should be used during e-mail sending:

- "From": specifies the e-mail address that has been assigned to you by your Internet Service Provider or your organization's e-mail administrator.
- "Reply To": specifies the e-mail address to which replies must be sent (is usually the same as the originator's e-mail address [From]).
- "CC" (Carbon Copy): specifies the e-mail address of the recipient whom you want to "listen-in" on the message you are sending to the primary recipient
- "BCC" (Blind Carbon Copy): specifies the e-mail address to which the message would be delivered without letting the primary recipient know.

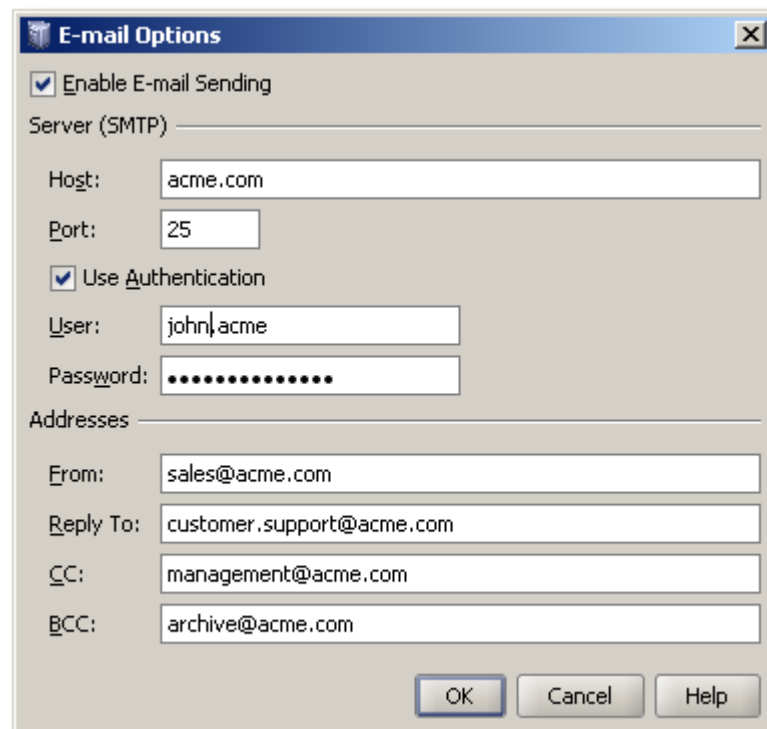


Figure 91: E-Mail Options Screen

5.9.2 E-mail Message Dialog

This dialog allows composing an e-mail message to be sent. It has the following attributes:

- "To": specifies the e-mail address of the primary recipient(s) of the message
- "CC": Will be automatically pre-populated if specified in E-mail Options. CC (Carbon Copy) specifies the e-mail address of the recipient whom you want to "listen-in" on the message you are sending to the primary recipient
- "BCC": Will be automatically pre-populated if specified in E-mail Options. BCC (Blind Carbon Copy): specifies the e-mail address to which the message would be delivered without letting the primary recipient know.
- "Attachments": will have the generated license file attached. Additional attachments could be added/removed via a right-click context menu.

- "*Subject*": specifies the subject of the message. Will be automatically pre-populated if specified in E-mail Template.
- "*Body*": specifies the Body of the message. Will be automatically pre-populated if specified in E-mail Template.
- "*Priority*": specifies the Priority of the outgoing message. The Priority is only meaningful to you and your recipients - it does not affect the way the mail transport systems handle the message. New messages are created with a Normal priority by default. To change the Priority of the current message, you can use the Priority drop-down box.

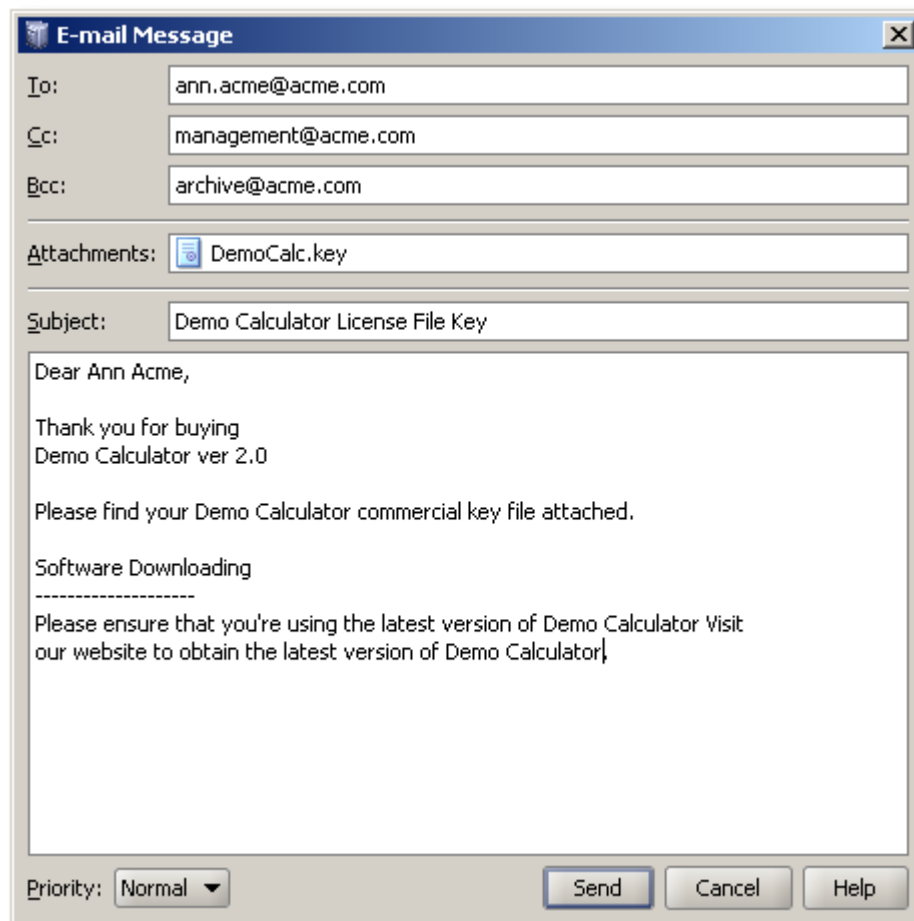


Figure 92: E-Mail Sending Screen

5.9 Licensing Facade Configuration Dialog

The Licensing Facade Configuration Screens provide the ability to specify the configurations necessary to generate and deploy Protection!'s Web Services application. The Licensing Facade Configuration Dialog can be invoked either by selecting the "*Edit | Licensing Facade Config*" menu item, or an *Alt+F* key combination while the Edit menu is active.

Protection! provides core functionality for building integrated back-ends to allow remote license generation and activation. It has a powerful built-in default back-end implementation that provides a foundation for building any custom back-office system

integration. By providing plug-ins support, Protection! allows easy extension of default back-end implementation and generation of Protection!'s ready-to-deploy Web Services application. The Licensing Facade Dialog provides the ability to specify default values for Licensing Facade Configuration attributes that can be directly used or overridden by particular back-end/plugin implementation.

The Licensing Facade Dialog has the following pages:

5.9.1 General

This page allows configuration of general attributes.

"*Protection! Backend Deployment License*" section allows specifying the location of a deployment license to be bundled with the Web Services Application to allow only authorized use.

Please Note: a valid path to either Developer (evaluation or commercial) license or a valid path to Commercial (deployment) Protection! Backend license must be provided in this section. Developer (evaluation) Backend license is the same license that is used for Protection! Developer (i.e., protection.license). This license allows for full Protection! Backend functionality with the following limitations:

1. Evaluation Developer License
 - a. Commercial licenses cannot be issued.
 - b. All issued licenses will have 5 days expiration period.
 - c. All issued licenses will have number of copies not greater than 2.
2. Commercial Developer License
 - a. All issued licenses will have 5 days expiration period.
 - b. All issued licenses will have number of copies not greater than 2.

This and restrictions applicable to Protection! redistributables covered in the `license.html` are the only limitations of Protection! Backend Developer license.

Commercial edition of Protection! Backend Deployment license (it can be purchased at [jProductivity's site](#)) removes such limitations.

Please Note: if either no valid path to the backend license or a path to an invalid license is specified in the Protection! Backend Deployment License section then the developer would not be able to successfully build and deploy Protection! Web services Application.

"*Login*" section:

- Name: account's login name.
- Password: account's password. A valid login name/password combination should be provided in order to get access to the Licensing Facade functionality.

"*Actions Allowed*" section:

- "*Get*" – allows license request using full license information
- "*Get by Descriptor*" – allows license request by using product id; license type and product's major version Note: this should be used in the protected application.
- "*Get by S/N*" - specifies that Licensing Facade is able to generate commercial licenses by Serial Numbers
- "*Activation*" - specifies that Licensing Facade is able to activate licenses
- "*Deactivation*" - specifies that Licensing Facade is able to deactivate licenses

"*License Types Allowed to Get*" section:

- "Commercial" - specifies that Licensing Facade is able to generate commercial licenses
- "Evaluation" - specifies that Licensing Facade is able to generate evaluation licenses
- "Extended Evaluation" - specifies that Licensing Facade is able to generate extended evaluation licenses

"Delivery" section – allows specifying which delivery type Licensing Façade should use to deliver licenses to the customers.

"Other" section

- "Version" - specifies Licensing Façade's version information
- "Log Level" – used to control which events should be logged by the Protection! Backend

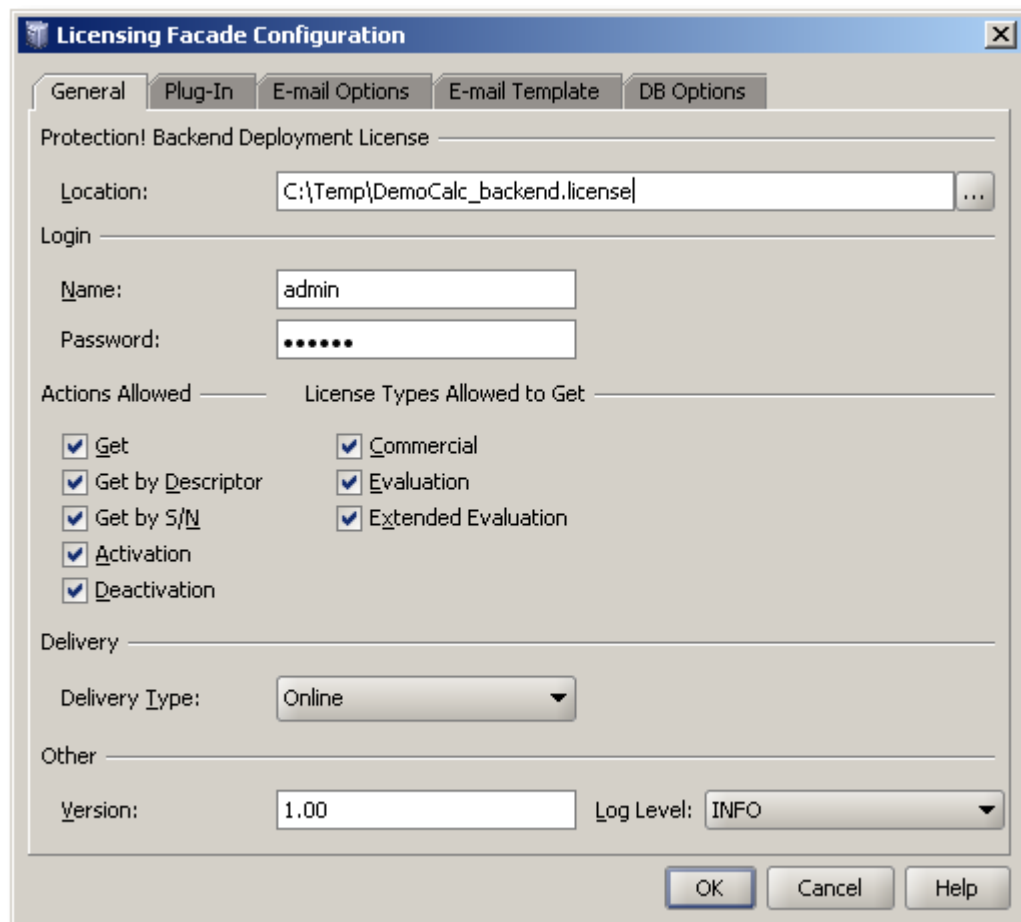


Figure 93: Licensing Facade General Tab

5.9.2 Plug-in

This page allows configuration of plug-in attributes.

- "Use Plug-in": specifies if plug-in support would be enabled
- "Factory Class": specifies the factory class responsible for plug-in creation. This class should be a valid implementation of the following interface:
`com.jp.protection.priv.pro.integration.LicensingFacadePluginFactory`

- "*Libraries*": the list of libraries, required by a plug-in, that needs to be included into the Web Services Application archive. These libraries should include code for Factory Class as well.

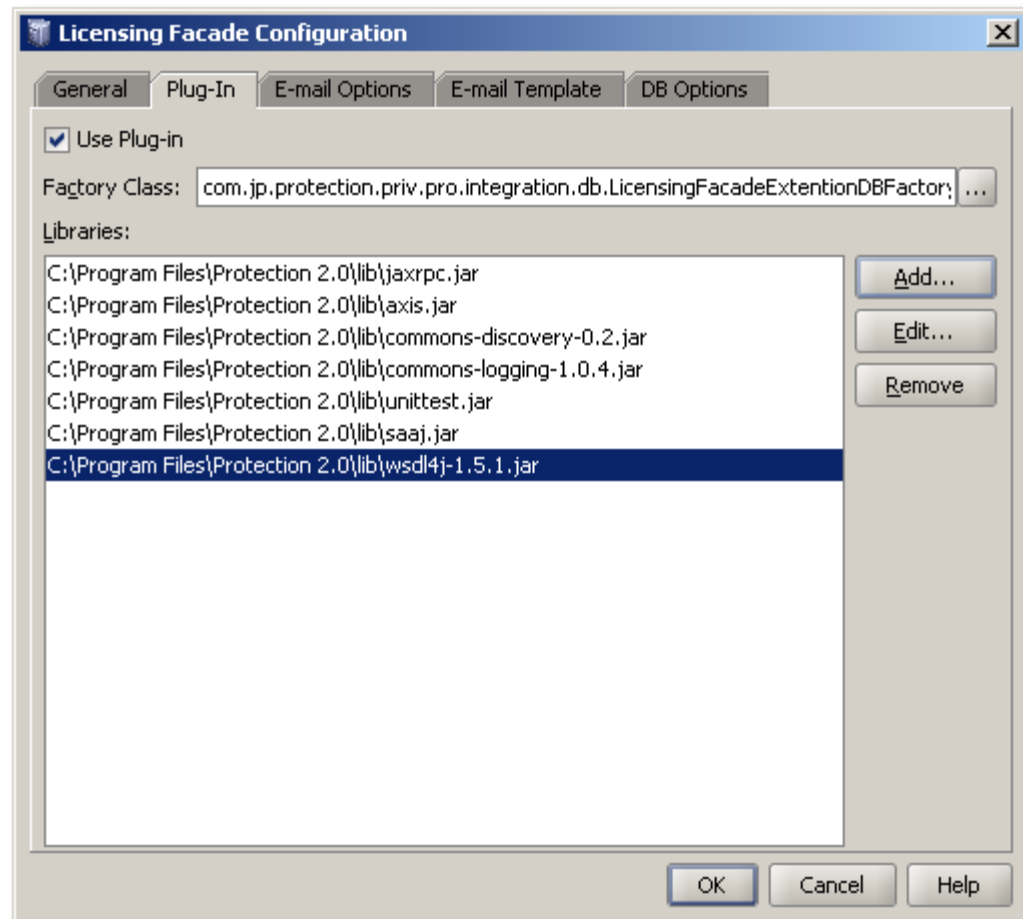


Figure 94: Licensing Facade Plug-in Tab

5.9.3 E-Mail Options

This page allows configuration of e-mail options.

"*Enable E-mail Sending*": specifies whether license distribution via e-mail would be allowed

"*Server (SMTP)*" section

- "*Host*": the address of your SMTP server to which all outgoing e-mail messages from the account will be sent.
- "*Port*": specifies SMTP port
- "*User Authentication*": specifies whether SMTP authentication should be used. SMTP authentication is optional. SMTP authentication involves a username and a password being transferred from the client to the server
- "*User*": specifies valid SMTP user
- "*Password*": specifies valid SMTP user password

Addresses section

- "From": specifies the e-mail address that has been assigned to you by your Internet Service Provider or your organization's e-mail administrator.
- "Reply To": specifies the e-mail address to which replies must be sent (usually the same as the originator's e-mail address [From]).
- "CC" (Carbon Copy): specifies the e-mail address of the recipient whom you want to "listen-in" on the message you are sending to the primary recipient
- "BCC" (Blind Carbon Copy): specifies the e-mail address to which a message would be delivered without letting the primary recipient know.

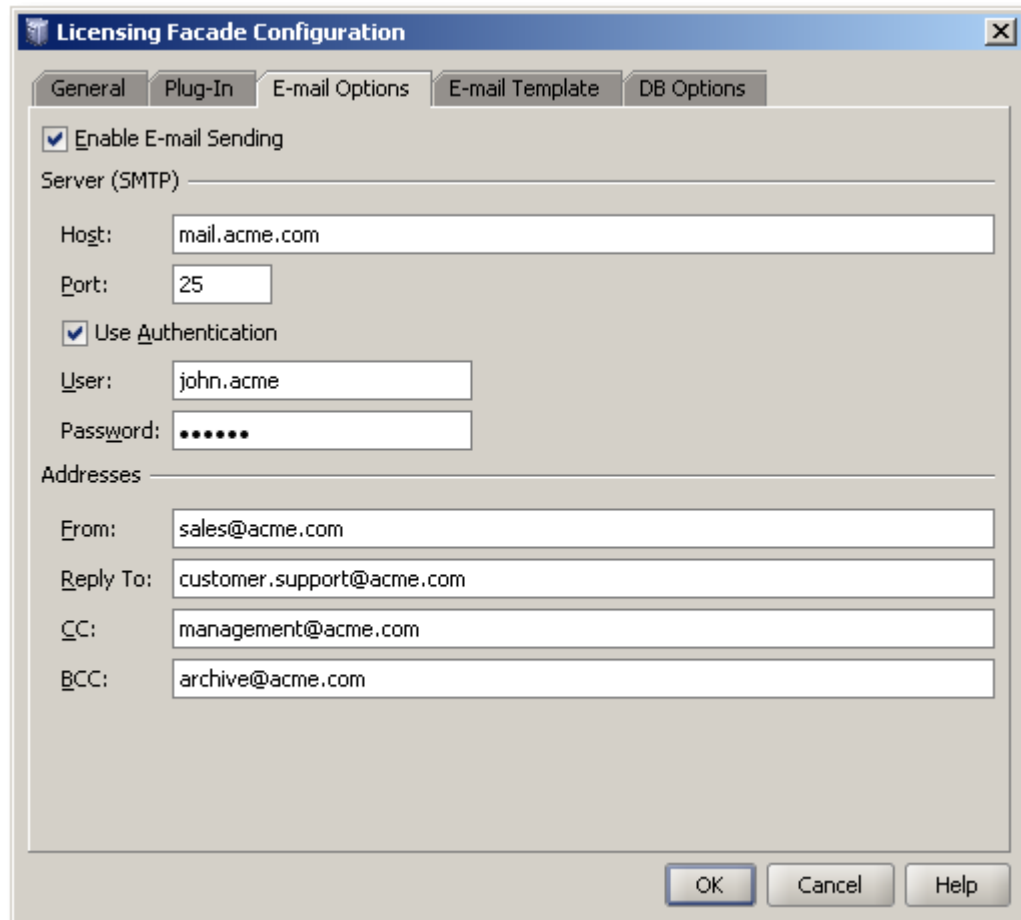


Figure 95: Licensing Facade E-Mail Options Tab

5.9.4 E-Mail Template

The E-Mail Template can be used to create a custom template that would be used during license distribution via the e-mail mechanism. The E-Mail Template is broken into two parts – "Subject" and "Text" (e-mail body). Both parts have code present in "Source" view which could be previewed in its final form using the "Preview" button.

An extensive collection of predefined parameters is available to the developer during custom E-Mail Template design. This feature can be used to insert a variety of information into the E-Mail Template at the insertion point. An "Insert" operation could be executed either by clicking on the "Insert" button or by right-clicking within the Editor window and choosing the "Insert" menu (this is only available while in "Source" mode).

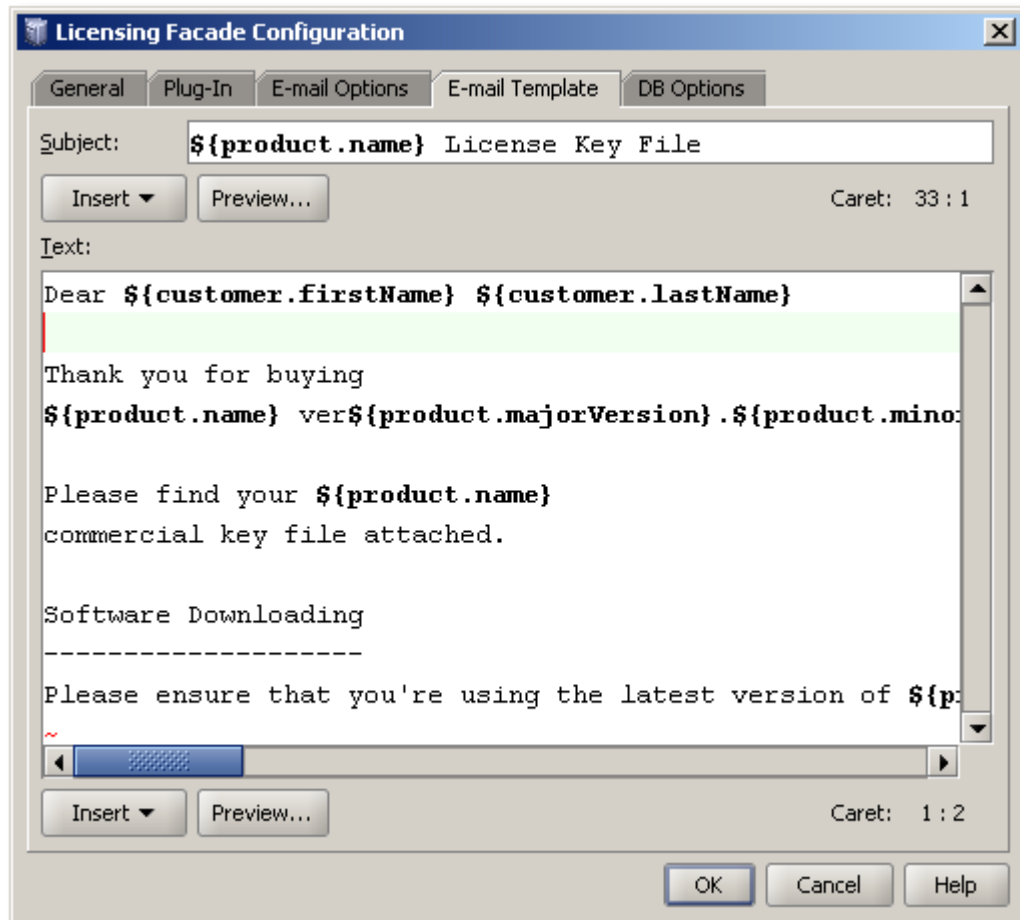


Figure 96: Licensing Facade E-Mail Template Tab

5.9.5 DB (Database) Options

This page allows configuration of database options that can be used by custom plug-in implementation.

Note

There is no default database that comes with Protection! Backend, and no dependencies to any other database. Protection! backend does not represent any kind of CRM/SFA/ERP application. If such functionality is required, the developer is responsible to link Protection! Backend to an existing database and/or existing CRM/SFA/ERP applications via Protection! Backend API.

The "Enable Database Support" section specifies whether database support is enabled.

"Location" section:

- "Driver": specifies the default class to be used when connecting to the database. Enter the fully qualified class name of your JDBC driver or select it from the drop down list
- "URL": The URL format specifies the pattern for the JDBC URL. A database/JDBC URL is of the form:

```
jdbc:[subprotocol]:[node]/[databaseName]
```

After you select your JDBC Driver from the drop-down list, an example JDBC URL will be displayed for your driver type. You may use it as an example of how to format your JDBC URL. You may need to refer to your JDBC Documentation for further assistance. Certain JDBC driver implementation should be in *classpath* of Web Container or all required libraries should be listed in the "Plug-in | Libraries" section.

"Authentication" section – "Login" and "Password" are optional but most databases require that they be specified.

- "Login": specifies a valid login for the database
- "Password": specifies a valid password for the above login

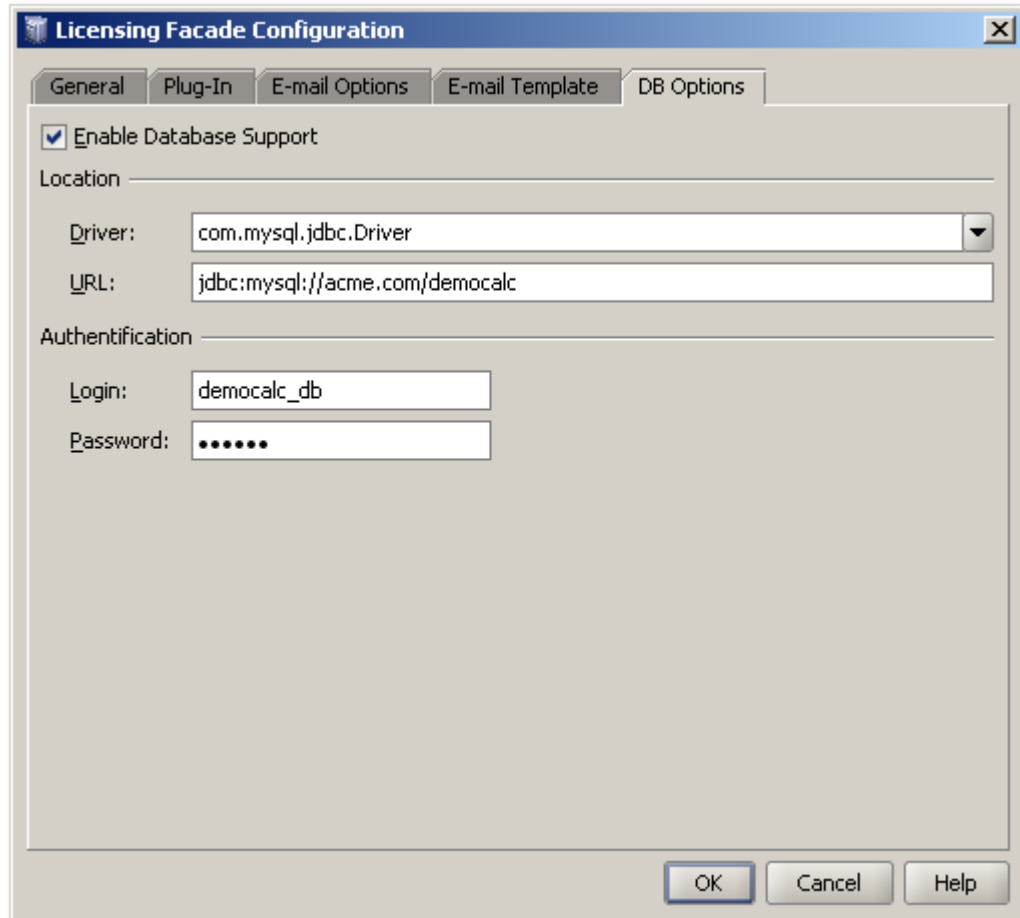


Figure 97: Licensing Facade Database Options Tab

5.9.6 Deploying Protection! Web Services Application to Compatible Container

When Protection! Web Services Application is properly configured with the help of Licensing Façade Configuration Dialog it should be deployed to the compatible Web container.

The first step is getting ready-to-deploy Web application (.war file). This can be done by using the "File | Generate WS" menu item at the Products Screen. This command bundles Protection! Deployment License, currently opened products storage, configuration with Protection Web Services Application core and saves the configured Web application to a specified file.

The next step is deploying the configured application to a compatible Web container e.g. to Apache Tomcat 5.x. Please refer to documentation of corresponding Web container to learn how to deploy Web applications. When Protection! Web Services Application has been deployed and is up and running it is ready to serve clients by allowing them to get or activate licenses.

The simple test that allows developers to see that Protection! Web Services Application is up and running is done by opening the Licensing Façade URL with the “?wsdl” command in your Web browser. For example the following link:
<http://services.jproductivity.net:8080/ProtectionWS/services/LicensingFacade?wsdl>
shows WSDL descriptor of running Licensing Façade at jProductivity Web site.



The current implementation does not provide any ability to configure an already deployed Protection! Web Services Application. To do so the application should be reconfigured and deployed/re-deployed again. This allows publishing changes of the product storage (e.g. products addition, removal or modifications) or changes of any other options.

5.10 Delivering Licenses through the Protection! Backend

Protection! Control Center includes the ability to deliver licenses to the customers by sending them to Protection! Backend. This allows for centralized control of how the licenses should be actually transported to the customers and provides a way to log all of the licensing activities in one place e.g. in the database.

Note, Protection! Backend should be properly configured first in order to allow for this functionality e.g. by providing e-mail licenses delivery.

To deliver licenses from the Protection! Control Center through the Protection! Backend use the following procedure:

1. Select the “License” Shortcut  on the Control Center’s Shortcuts Side Bar.
2. Specify the desired license attributes.
3. Specify Customer information if necessary. Note: If “*Options | Protection! Backend Delivery | Require Customer*” menu item is checked then delivery to Protection! Backend would not be allowed without complete Customer Information.
4. Backend delivery can be initiated either by selecting “*File | Deliver License | Send to Backend*” menu item on the menu bar or by selecting the drop-down icon on the toolbar and choosing the “Send to Backend”  option. A *Ctrl+B* key combination can also be used to send the license to the Protection! Backend.

Note: Backend connection should be properly configured using the “Manage Connections” dialog (this dialog can be invoked using the “*Options | Protection! Backend Delivery | Manage Connections*” menu item) in order to send licenses to Protection! Backend from the Protection! Control Center.

Delivery to Protection! Backend progress would be indicated in the status bar of the Protection! Control Center. If for whatever reason the delivery process must be stopped the “*Cancel*” button to the right of the progress bar should be used.



Figure 98: Delivery to Backend Progress

When delivery is successful an appropriate message will be shown in the Status Bar.

5.10.1 Manage Connections Dialog

The "Manage Connections" dialog provides the ability to maintain list of Backend connections can be used to delivery licenses through Protection! Backend.

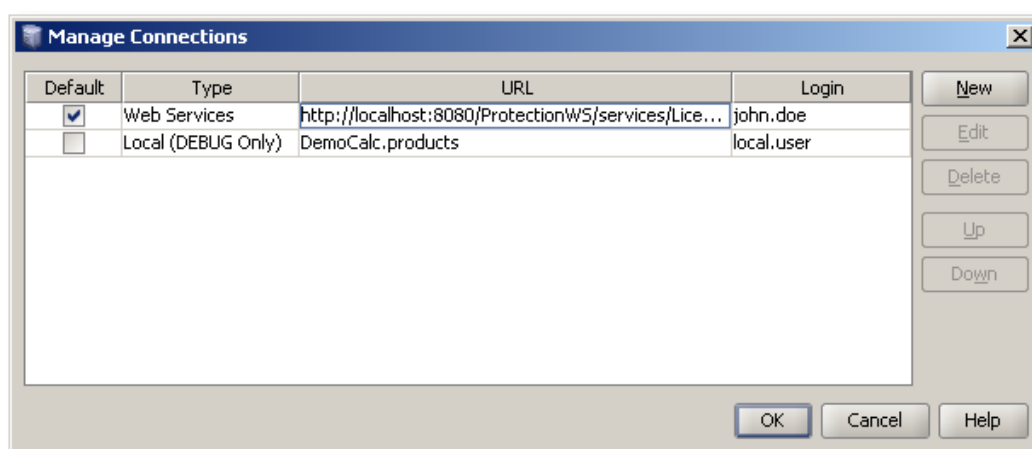


Figure 99: Manage Connections Dialog

5.10.2 Edit Connection Dialog

The "New/Edit Connection" Dialog provides the ability to configure the connection to Protection! Backend. It has the following attributes:

- "Default": specifies the default connection which will be used for the delivery of the licenses.
- "Connection": allows selection of the connection type. Note: Even though Protection! Control Center currently includes only the Web Services based implementation it is possible to introduce other, different implementations e.g. RMI or raw TCP/IP based when using Protection! Backend API.
- "URL": URL to the Protection! Web Application.
- "Login" and "Password" required for authentication

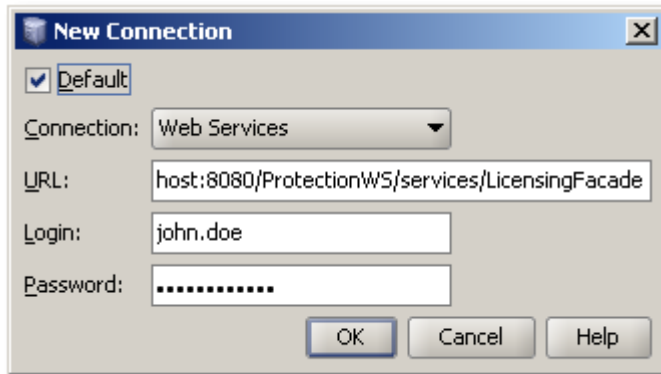


Figure 100: Backend Connection configuration Dialog

Licensing Assistant Wizard

Protection! provides a powerful Licensing Assistant Wizard that could be used to aid the end-user in such situations as Missing, Invalid and/or Corrupted License; obtaining new license via Serial Number; License Upgrades and similar ones.

Protection! presents the user with the following Licensing Assistant Wizard indicating issues with the license and providing several options in order to obtain a new license:

6.1 Choices Page

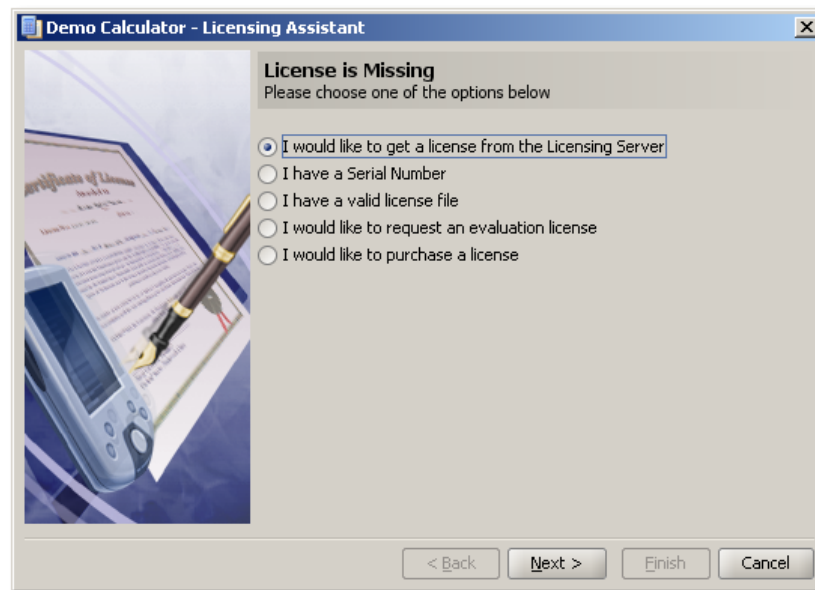


Figure 101: Licensing Assistant - Choices

In this page the user is presented with several options:

- *"I would like to get a license from the Licensing Server"* – this option will allow the user to request a license from the Protection! Licensing Server.
- *"I have a Serial Number"* – this option will allow the user to specify Serial Number in order to obtain a new license file
- *"I have a valid license file"* – this option will allow the user to browse his/her system for a valid license file
- *"I would like to get an evaluation license"* – this option will aid the user in providing necessary information in order to obtain an evaluation license for an application. The user is presented with either online and offline options or with offline options only (depends on if the ability to get a license via online option is enabled by the developer). If an online option is chosen by the user then after filling in user contact information the user would be presented with the Licensing Assistant Progress page. This page indicates progress for each event while obtaining the license. Note: If the

expiration day is past, the user would be informed that the license is expired and provided with the option to obtain a new extended evaluation license

- *"I would like to purchase a license"* – this option will aid the user in obtaining a new license by contacting the software publisher via e-mail, Internet, etc.

6.2 Licensing Server Page

This page allows the user to enter an address of the Protection! Licensing Server to get a license from.

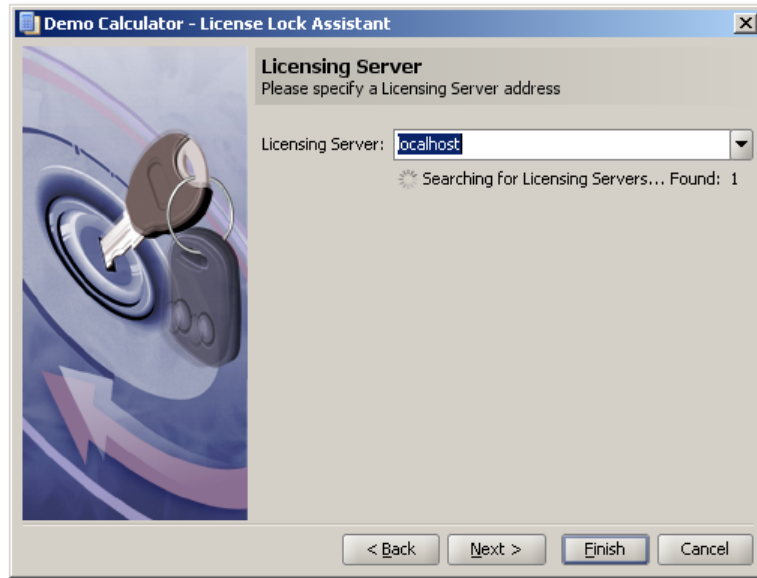


Figure 102: Licensing Assistant - License Location

6.3 Serial Number Page

This page allows the user to specify Serial Number in order to obtain a new license file.

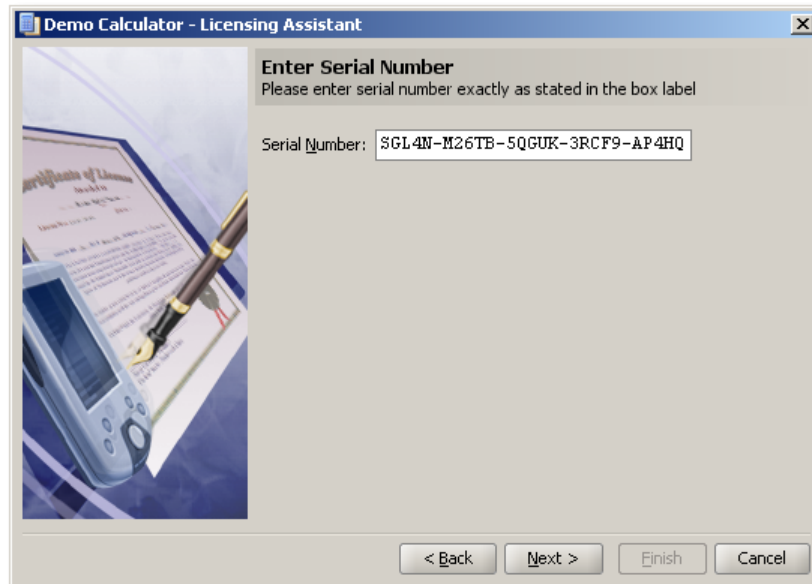


Figure 103: Licensing Assistant - Enter Serial Number

6.4 License Location Page

This page allows the user to browse his/her system for a valid license file.

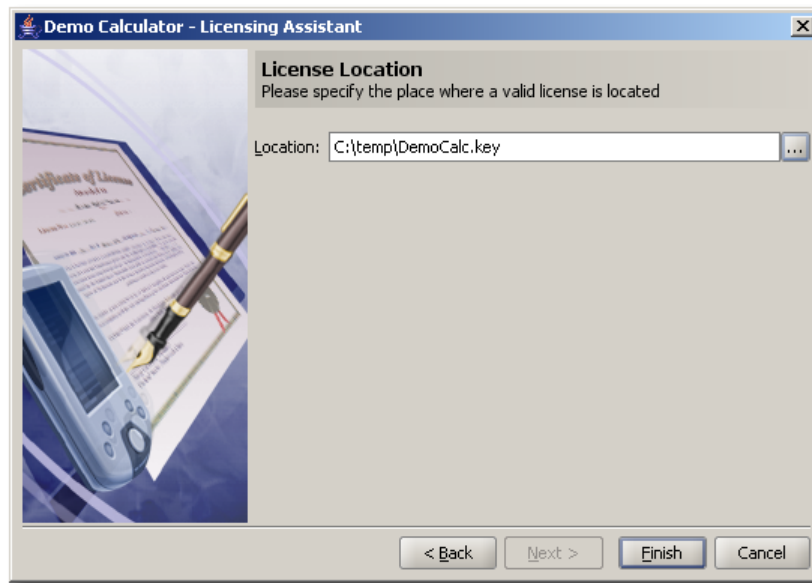


Figure 104: Licensing Assistant - License Location

6.5 Customer Information Page

This page allows the user to provide his/her personal and contact information.

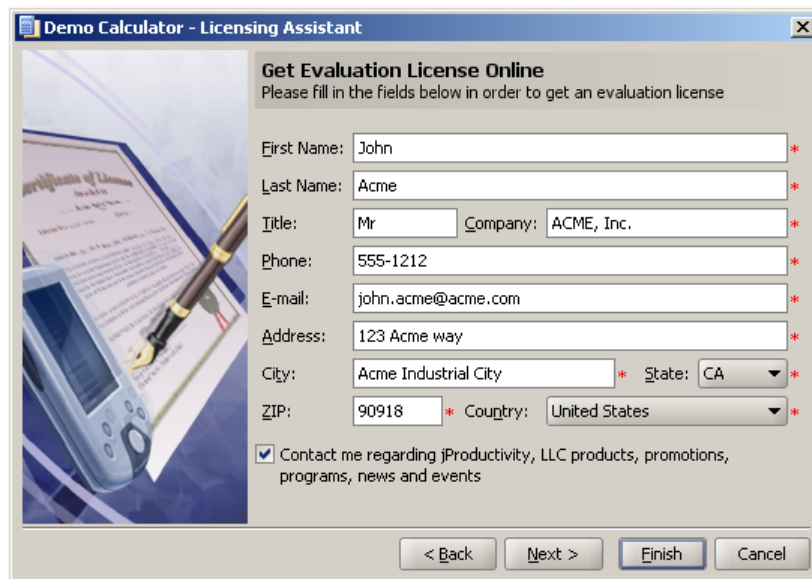


Figure 105: Licensing Assistant - Customer Information

6.6 Internet Connection Page

This page allows specifying connection attributes required to complete the operation. It is possible to choose "Direct" or "Proxy" Internet connection.

If "Proxy" Internet connection is chosen the "Proxy Host" and "Proxy Port" attributes should be specified. The "Login" and "Password" fields allow for specifying login credentials if proxy server requires authentication.

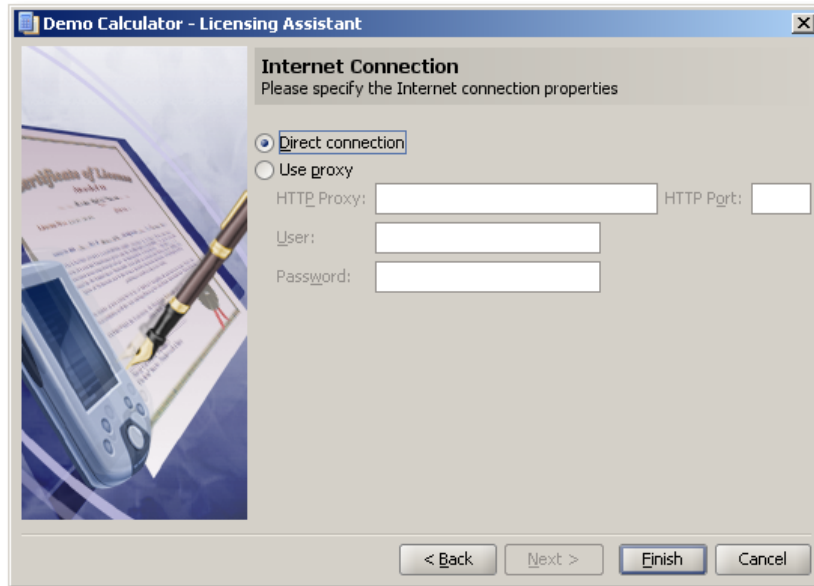


Figure 106: Licensing Assistant - Internet Connection

6.7 Progress Page

This page shows the visual feedback about the progress of operation being executed.

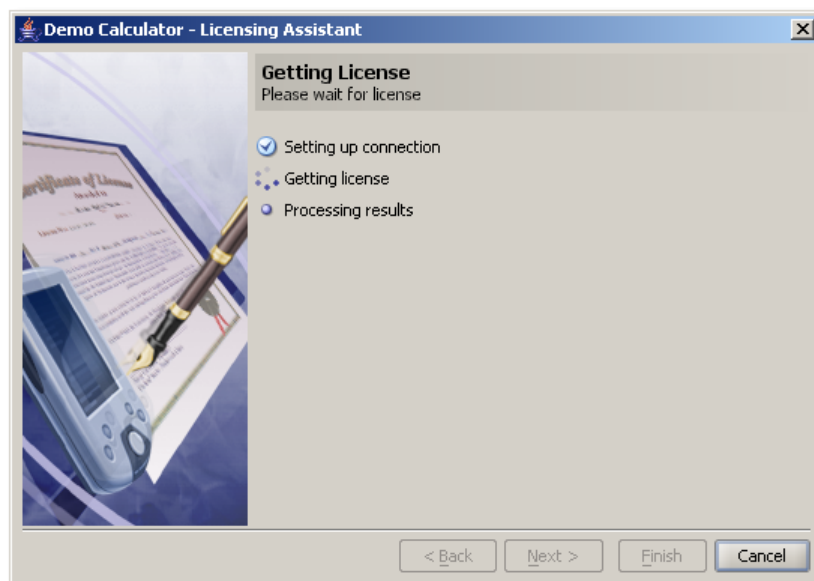


Figure 107: Licensing Assistant – Progress

6.8 Purchase Page

This page aids the user in obtaining a new license by contacting software publisher via e-mail, Internet, etc.

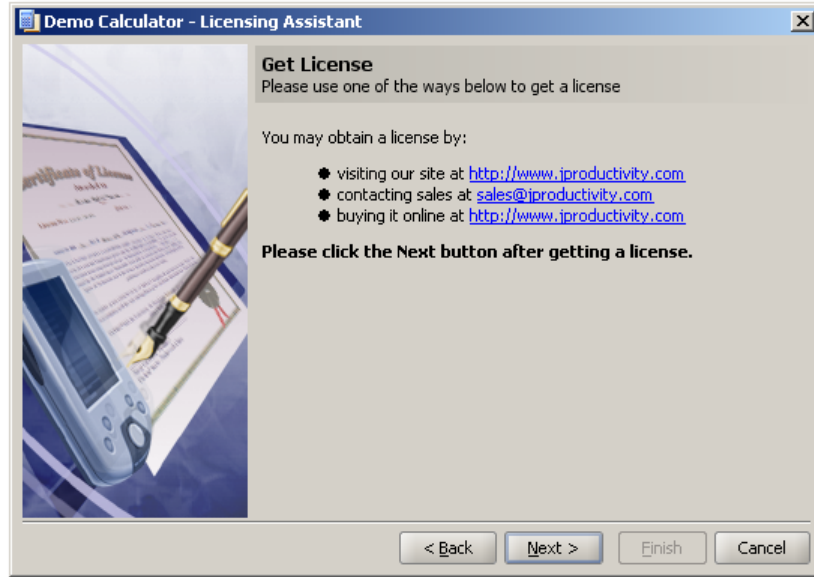


Figure 108: Licensing Assistant – Purchase License

If the user chooses to cancel Licensing Assistant wizard, Protection! will present the user with the following message box indicating that the license issue is still unresolved, and also showing the expected license location:



Figure 109: License is Missing Message

If the license is located in the correct place and is not corrupted then the user would see application's "License Agreement" dialog during the application's first run.

License Activation Assistant Wizard

If the application requires Activation before its use, Protection! will present the user with the following License Activation Assistant Wizard indicating that the license requires an activation and providing several options in order to activate the new license. Note: Activation could be performed either online via Direct or Proxy Internet connection or offline such as contacting the software publisher and providing the Activation Key.

7.1 Choices Page

Activation could be performed either online via Direct or Proxy Internet connection or offline such as contacting the software publisher and providing the Activation Key.

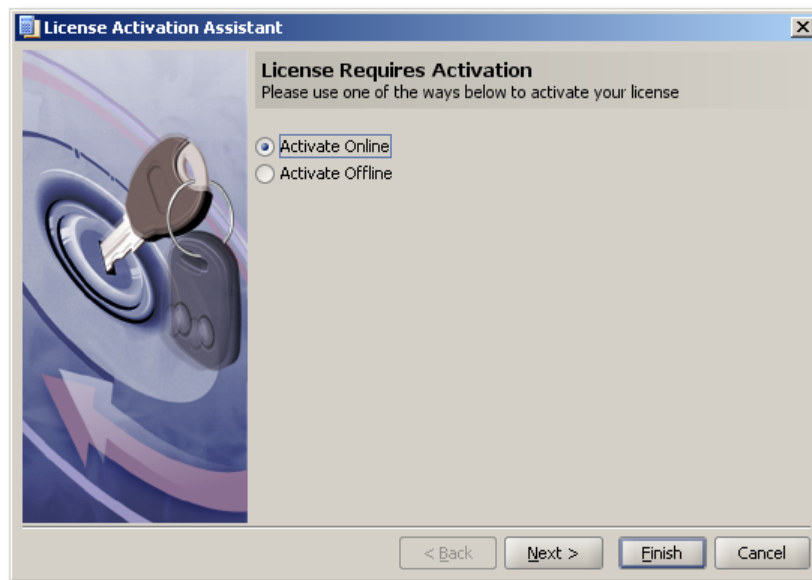


Figure 110: License Activation Assistant - Choices

7.2 Customer Data Page

This page allows the user to provide his/her contact information.

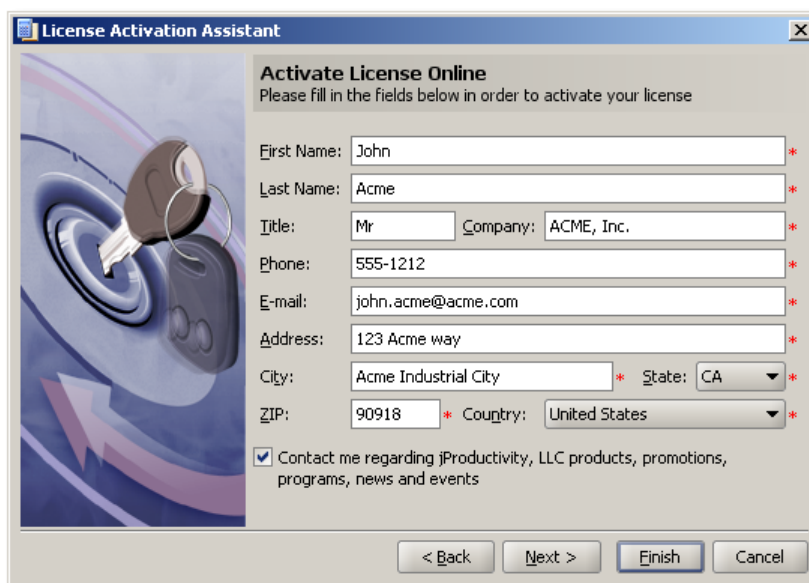


Figure 111: License Activation Assistant - Customer Information

7.3 Internet Connection Page

This page allows specifying connection attributes required to complete the operation. It is possible to choose "Direct" or "Proxy" Internet connection.

If "Proxy" Internet connection is chosen the "Proxy Host" and "Proxy Port" attributes should be specified. The "Login" and "Password" fields allow for specifying login credentials if proxy server requires authentication.

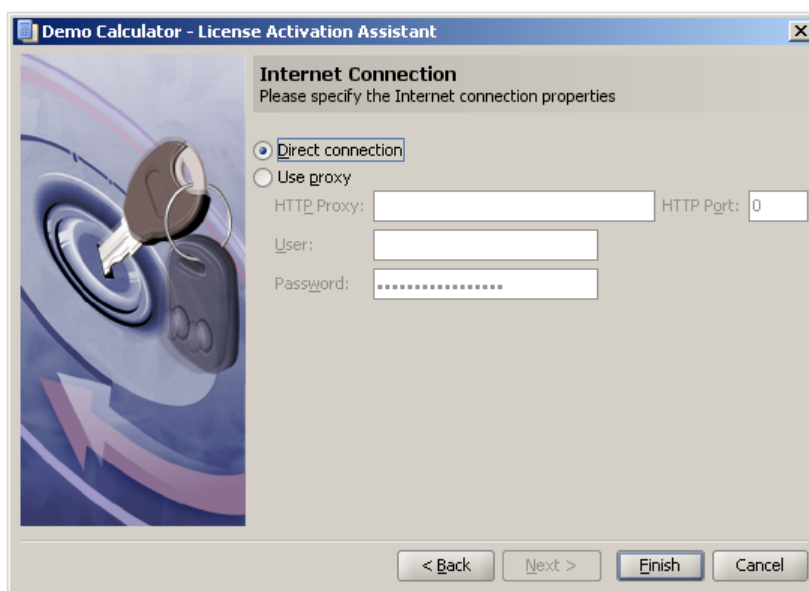


Figure 112: License Activation Assistant - Internet Connection

7.4 Progress Page

This page shows the visual feedback about the progress of operation being executed.

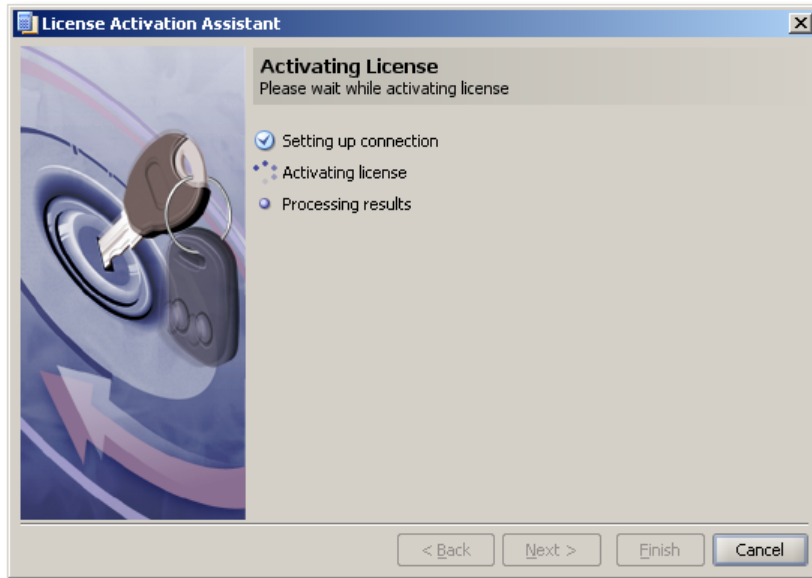


Figure 113: License Activation Assistant - Progress

7.5 Activate Offline Page

Offline Activation provides user with information necessary to contact the software publisher and provide the Activation Key in order to activate license file.

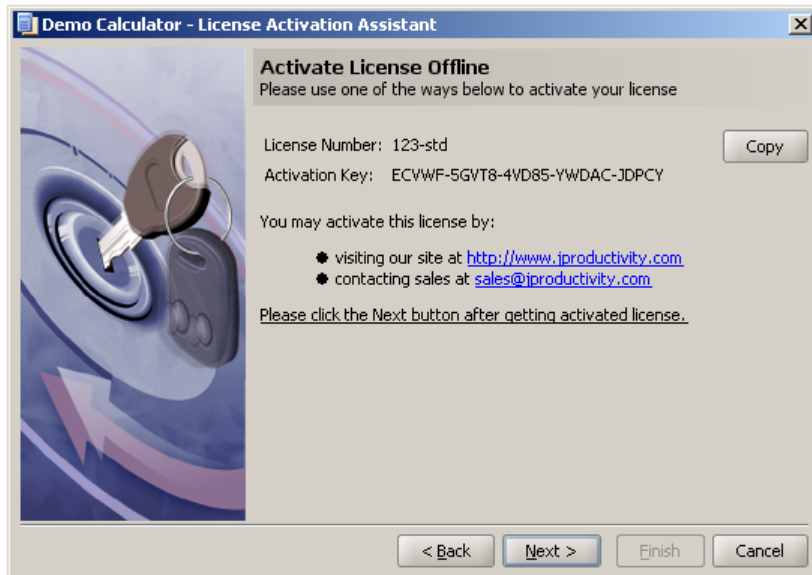


Figure 114: License Activation Assistant – Activate License Offline

7.6 License Location Page

This page allows the user to browse his/her system for a valid activated license file.

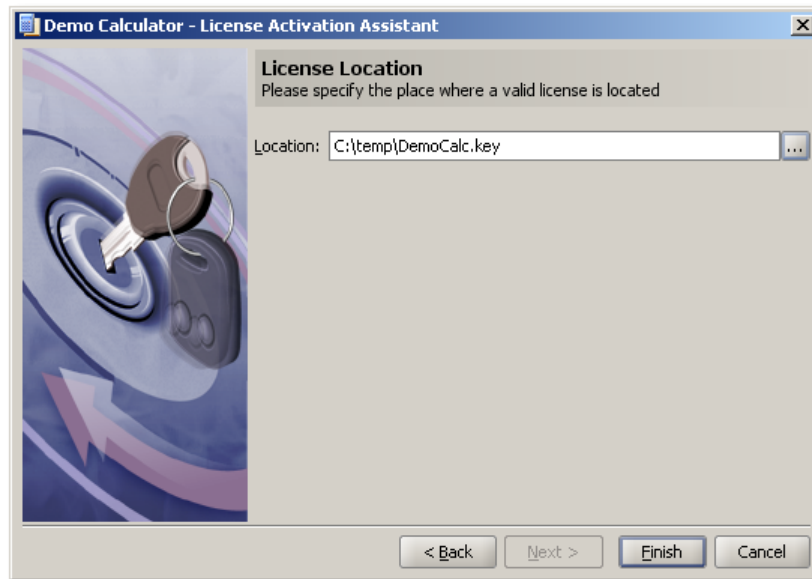


Figure 115: License Activation Assistant – License Location

License Deactivation Assistant Wizard

License Deactivation Assistant provides the ability to deactivate a license on the local computer and to notify the vendor about Deactivation results. Previously Activated license could be deactivated if the user would like to either move the license to another computer or stop using the protected application. Deactivation procedure could be initiated via License Deactivation Assistant Wizard.

If an attempt to deactivate the license which has not been activated previously is made then the License Deactivation Wizard would present user with the following error message box:

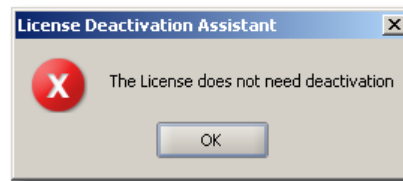


Figure 116: The License does not need deactivation

When the wizard is launched user would be presented with the following dialog.

8.1 License Deactivation Page

This page would deactivate the license for use on the user's computer system.

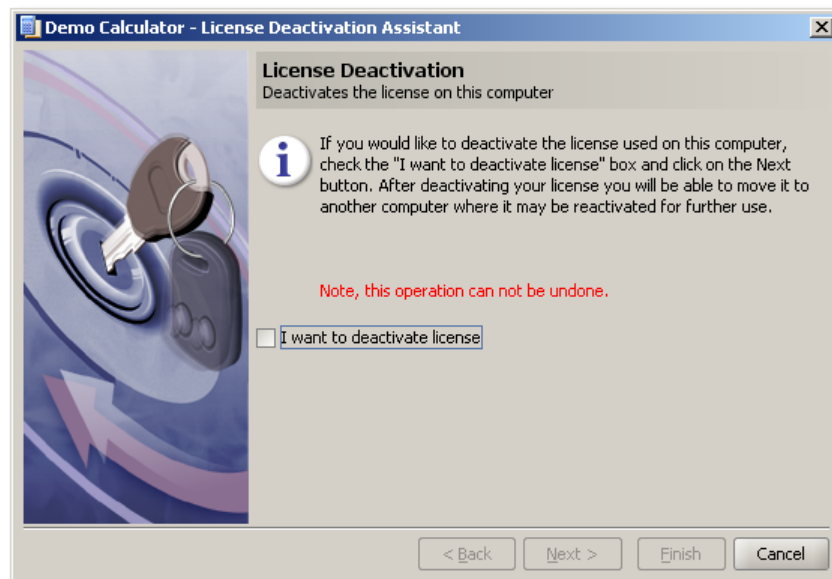


Figure 117: License Deactivation Assistant – License Deactivation Page

Clicking on the check box "I would like to deactivate my license" and clicking the "Next" button would deactivate the license for use on the user's computer system. After successful deactivation the license could be moved to another computer system where the license must be re-activated for further use of the protected application **Note: the Deactivation operation cannot be undone!**

8.2 Notify Vendor Page

This page allows choosing the way to notify vendors about results of deactivation process.

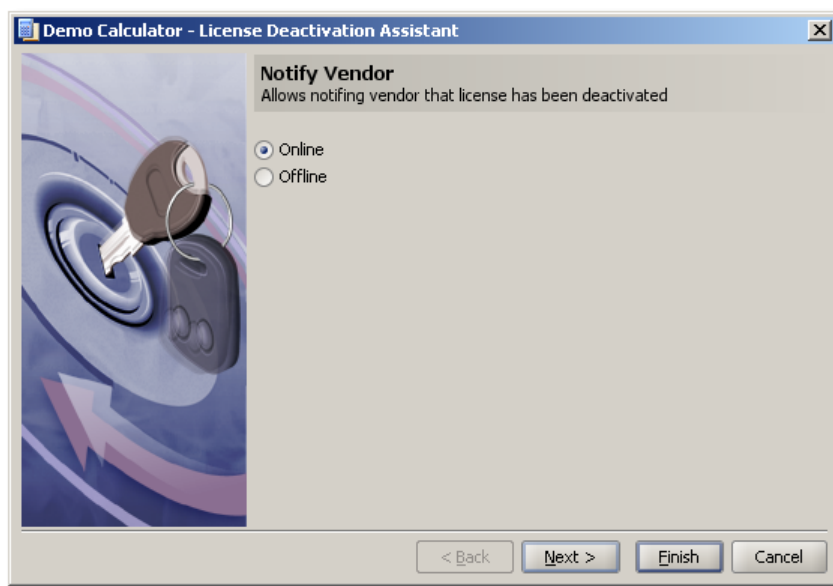


Figure 118: License Deactivation Assistant - Notify Vendor

Deactivation could be performed both online via Direct or Proxy Internet connection or offline by contacting the software publisher and providing the Deactivation Key.

8.3 Internet Connection Page

This page allows specifying connection attributes required to complete the operation. It is possible to choose "Direct" or "Proxy" Internet connection.

If "Proxy" Internet connection is chosen the "Proxy Host" and "Proxy Port" attributes should be specified. The "Login" and "Password" fields allow for specifying login credentials if proxy server requires authentication.

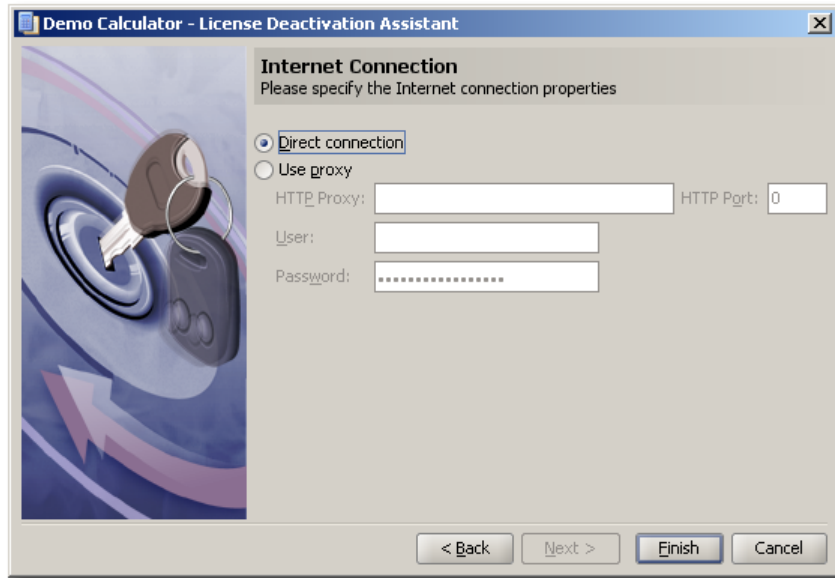


Figure 119: License Deactivation Assistant - Internet Connection Page

8.4 Progress Page

This page shows the visual feedback about the progress of operation being executed.

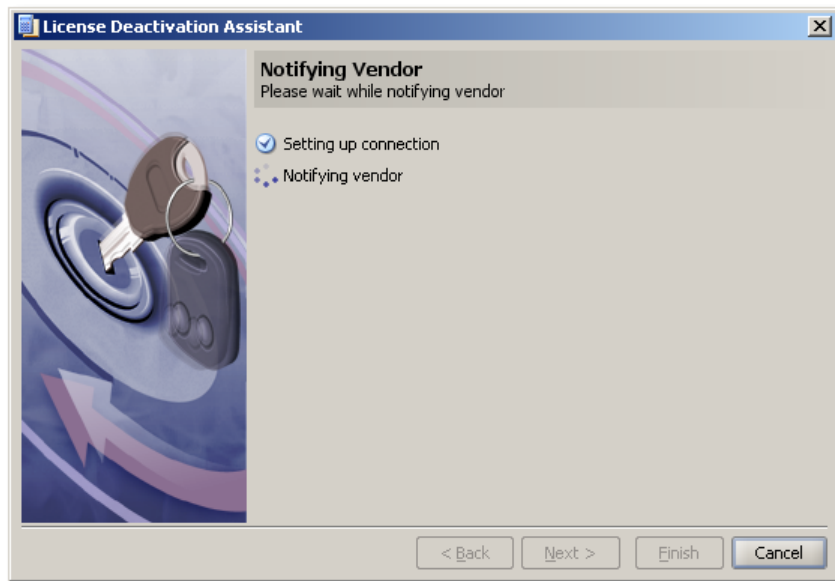


Figure 120: On-line deactivation progress dialog

8.5 Notify Vendor Offline Page

This page shows information that should be provided to the vendor offline (via e-mail, fax or phone) to confirm that the customer has actually deactivated the license.

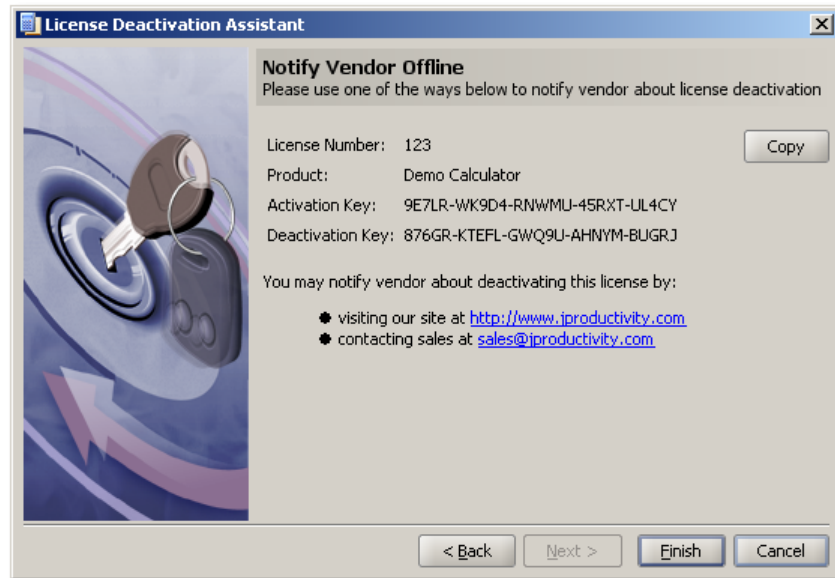


Figure 121: Off-line deactivation dialog

When using an off-line deactivation method the user is presented with the set of activation and deactivation keys. Both of these keys need to be provided back to the developer/publisher in order to complete deactivation process. The following information must be provided – Product; Activation Key; Deactivation Key; License Number. For example:

```
Product: Demo Calculator
Activation Key: 8AXNK-ELHVE-863J9-U3HYT-F5XT9
Deactivation Key: 87LGV-EARKU-GWQBU-CYTAH-KUGRX
License Number: 1234
```

When the developer/publisher receives these key pairs he/she can validate deactivation of the user's protected application via Protection! Control Center. To validate deactivation key the developer/publisher should select Products screen and choose the "Edit | Validate Deactivation Key" menu item. This would launch the Validate Deactivation Key dialog. The developer/publisher could either paste the received information from the user by clicking the "Paste" button or can type the received information manually and choose for which product the deactivation key was received by choosing the appropriate product from the Product dropdown box. When the deactivation key is verified by the Protection! Control Center the Deactivation Status would change from "N/A" to "COMPLETED". When the deactivation status is set to "COMPLETED" this is an indication to the developer/publisher that the user has successfully deactivated protected application on his/her computer system.

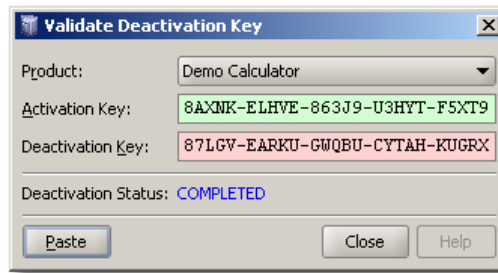


Figure 122: Validate Deactivation Key Dialog

When using online deactivation mode all of the above is performed automatically via Protection! Backend.

License Lock Assistant

License Lock Assistant provides the user with the ability to acquire license lock from the Protection! Licensing Server.

When the Assistant is launched the user will be presented with the following dialog.

9.1 Unable to Acquire License Lock Page

If license lock could not be acquired then License Lock Assistant will be shown where the "Unable to acquire license lock" page will allow user to either try to acquire lock again ("Try again" option) or to wait for lock availability ("Wait for availability" option).

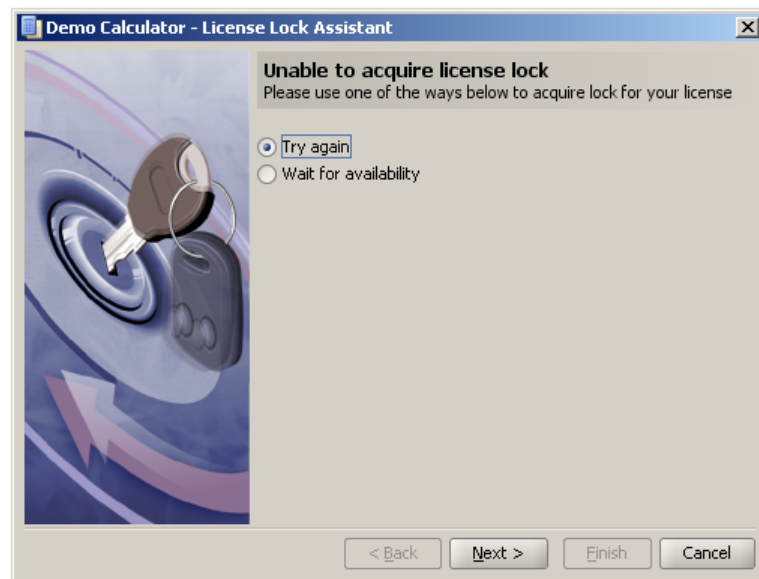


Figure 123: License Lock Assistant – Unable to acquire License Lock Dialog

There are many reasons why license lock could not be acquired (i.e., connection failure, license lock availability, etc). The user needs to contact his/her Administrator to determine the cause for such failure.

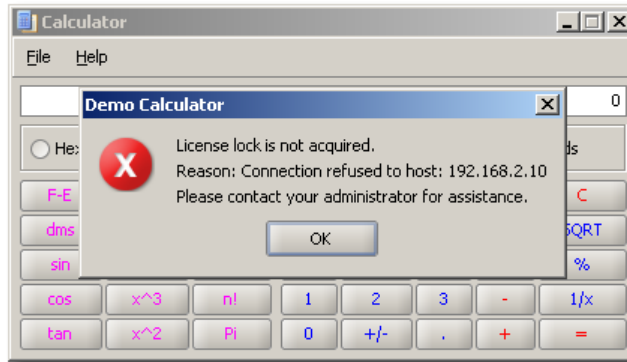


Figure 124: Unable to acquire License Lock – Connection Refused

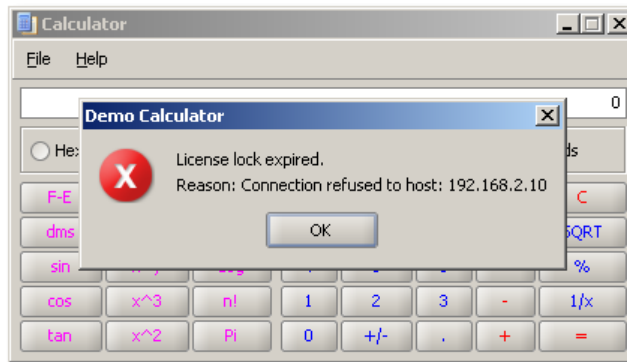


Figure 125: Unable to acquire License Lock – License Lock Expired

9.2 Acquiring License Lock Page

This page would attempt connection to the Protection! Licensing Server and if successful it will attempt to acquire license lock for the application.

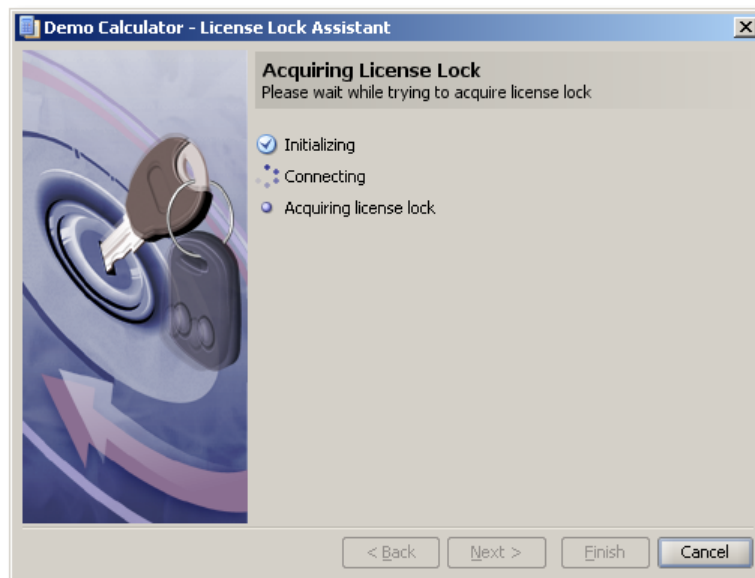


Figure 126: License Lock Assistant – Acquiring License Lock Dialog

Chapter 10

Protection! Builder Utility

This new command line utility allows building various Protection!'s resources. Protection! Builder Utility allows for use of various build systems (i.e., [Apache Ant](#)) and scripts to automate assembling of protected applications. Protection! Builder Utility allows for building:

- Protection! Launchers using specified configuration and optional target.
- Integrity Digests using specified configuration and optional target.
- Protection! Web Services application.

10.1 Command Line Options

Protection! Builder Utility launched via command line using the following parameters:

```
usage: ProtectionBuilderUtility [options]
  -digest <build config (id)>    build digest using specified
                                build configuration id
  -help                          print this message
  -launcher <build config (id)>  build Protection! Launcher using
                                specified build configuration id
  -password <password>          specifies password to open read-protected products
                                storage
  -product <product (id)>        specifies product to work with
  -storage <products storage>    specifies products storage to work with
  -target <file name>           specifies build target
  -ws                            generate Protection! Web Services
                                Application
```

To get help on Protection! Builder Utility it should be started without any arguments or with the `-help` option.

The `-password` option specifies the password required to open read-protected products storage. An argument following the `-password` option defines the password value.

10.2 Building Protection! Launcher

To build Protection! Launcher the `-launcher` option should be used. An argument after the `-launcher` option specifies a Launcher Build Configuration identifier that should be used to build Launcher.

Optional `-target` option allows overriding default target file name specified in particular Launcher Build Configuration. An argument after the `-target` option specifies a file name to build Launcher to.

Example: Builds Protection! Launcher using Launcher Build identifier called "Deploy" for product identifier called "DemoCalc" located in product storage called "DemoCalc.dat"

```
ProtectionBuilderUtility -storage DemoCalc.dat -product DemoCalc -launcher Deploy
```


10.3 Building Integrity Digest

To build Protection! Launcher the `-digest` option should be used. An argument after the `-digest` option specifies a Digest Build Configuration identifier should be used to build Digest.

Optional `-target` option allows overriding default target file name specified in particular Digest Build Configuration. An argument after the `-target` option specifies a file name to build Digest to.

Example: Builds Protection! Digest using Digest Build identifier called "Deploy" for product identifier called "DemoCalc" located in product storage called "DemoCalc.dat"

```
ProtectionBuilderUtility -storage DemoCalc.dat -product DemoCalc -digest Deploy
```

10.4 Building Protection! Web Services Application

To build Protection! Launcher the `-ws` option should be used. Mandatory `-target` option allows specifying a file name (via the following argument) to build Web Services Application to.

Example: Builds Protection! Web Services Application for product identifier called "DemoCalc" located in product storage called "DemoCalc.dat" and puts it to the file "ProtectionWS.war"

```
ProtectionBuilderUtility -storage DemoCalc.dat -product DemoCalc -ws -target  
ProtectionWS.war
```

Best Practices for Implementing Protection! – in a Nutshell

The following is brief description of best practices for implementing of Protection!:

- Design your application security logic. For example – your application's evaluation version could be limited in features in comparison to the full commercial license.
- Embed used Protection! classes with dependencies into your application archive.
- Obfuscate your application with good obfuscators like Zelix Klassmaster <http://www.zelix.com/klassmaster/> which allows 2nd level obfuscation which optionally can encode all string literals to make it completely unreadable.(At the very least you should obfuscate classes responsible for protection implementation)
- Utilize Protection! Integrity Module functionality to protect most critical classes from potential code patching.
- Make several different classes in different locations that check Integrity.
- And, of course, do not tell the world that you are using Protection! and because Protection! classes should be embedded into your application archive and obfuscated - there is practically no way for someone to find this out by simply looking at your obfuscated classes.
- NEVER show an explicit message to the end-user when you've discovered an integrity violation. Instead silently make some strange actions to complicate use of your application. Therefore a malicious user wouldn't be able to guess about the existence of such a check and therefore would never attempt to break it!

Known Issues and Limitations

1. Protection! contains a small amount of native code required when a license needs to be locked to a specific computer system. This native code supports the following platforms only:
 - Microsoft Windows – Intel x86
 - Free BSD – Intel x86
 - Linux – Intel x86
 - Mac OS X – PowerPC
 - Mac OS X – Intel x86
 - Solaris – SPARC
2. [Mac OSX] Most of Look&Feels bundled with Protection! does not respect the usual keyboard combinations (shortcuts) under Mac OSX e.g. by using CTRL key in place of COMMAND key. Therefore it is recommended using Aqua Look&Feel under Mac OSX or using the CTRL key instead the COMMAND one for invoking common shortcuts.
3. [Mac OSX] The editor used to show or modify code snippets does not respect the usual keyboard combinations (shortcuts) under Mac OSX e.g. by using CTRL key in place of COMMAND key.

Feedback

As part of the continuing effort to improve our product, we welcome your comments, suggestions and general feedback regarding the product.

If you have questions about Protection!, please feel free to contact us for further information at: protection@jproductivity.com, or visit jProductivity, LLC site at: <http://www.jproductivity.com>.

If you discover any issues or defects in Protection! please send the description of them to protection@jproductivity.com.

Acknowledgements

Protection! Licensing Toolkit is accompanied by, or makes use of third party software:

Protection! includes software developed by the Apache Software Foundation

<http://www.apache.org>

Protection! uses Bouncy Castle Crypto API developed by the Legion of the Bouncy Castle

<http://www.bouncycastle.org>

Protection! uses the FreeMarker "template engine" by the Karsten Lentzsch and Visigoth Software Society

<http://freemarker.org>

Protection! uses the JGoodies Looks libraries from JGoodies

<http://www.jgoodies.com>

Protection! uses the Alloy Look and Feel libraries from INCORS GmbH

<http://www.incors.com/lookandfeel/>

Protection! uses the Java Uuid Generator by Tatu Saloranta

<http://www.doomdark.org/doomdark/proj/jug/>