



Activation Pro

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Welcome to the documentation for Reprise Software!

For questions, comments, or issues with the documentation, please contact support@reprisesoftware.com.

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RLM contains software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org>).

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RLM contains software ([Mongoose Web Server](#)), developed by Cesanta Software Ltd.

RLM contains software ([GoAhead WebServer](#)) developed by GoAhead Software, Inc.

The *rlmid1* devices are manufactured by Thales Group.

Activation Pro Basics

1.1 What's New in Activation Pro 15.2

This section lists the new features in RLM Activation Pro 15.2 along with pointers to the relevant sections in the manual.

Warning Before upgrading Activation Pro to v14.0 or later, please read [Section 3.5](#). If you fail to do this, your upgraded system may not work.

1.1.1 What's New

- Activation Pro now supports PHP 8.

1.1.2 API changes

- None

1.2 Activation Overview

1.2.1 Overview

RLM Activation Pro allows you to deliver a pre-generated **activation key** to your customer, and when they are ready to use your product, a transaction with the activation server running at your site allows the license to be fulfilled without manual intervention. When using activation, there is no need for you to get your user's hostid information - this is transmitted to the activation server automatically.

In the case of a node-locked product, a typical scenario would be that your customer runs the product on the desired machine, and if the license had not been fulfilled earlier, the product asks for an activation key. Once the activation key is supplied, the license is retrieved transparently. From this point on, the product runs with its license in place.

Floating licenses would operate in a similar manner, except that the number of floating licenses to be activated is required.

RLM Activation Pro utilizes a **MySQL** database for storing all activation data for quick access to large amounts of activation data. The RLC back office GUI is written in PHP and runs against the same databases as the activation license generator. The Activation Pro customer portal is also part of this same interface.

The RLM kit contains a demo of the activation capability. For more information on this demo and how to run it, see `actpro-gs`.

1.2.2 How Activation Works

RLM Activation is driven by two main data items - **Product Definitions** and **Activation Keys**. The RLM License Center tool (RLC) allows you to define various products to be activated.

Product definitions consist of a product definition name, a product name, version, expiration specification, and node-locked/floating indication. In addition, product definitions can contain additional attributes for the license. All product definition attributes are described in detail in [Section 1.6](#).

Once a product is defined, you can add additional licenses to the product definition by editing that product definition. Once the product definition is complete, **activation keys** can be created. An activation key specifies the product to be fulfilled, the type of fulfillment, and how many fulfillments are allowed by this activation key. In addition, activation keys allow you to specify the license expiration and/or additional attributes for the license. If any of the attributes specified in the activation key are non-zero and differ from the attributes specified in the **product definition**, the **activation key** version of these attributes will be used. All activation key attributes are described in [Section 1.5](#).

Once activation is set up, you give your customer an activation key, which they then use to retrieve the license for the particular machine which they are using. The license fulfillment happens via the internet, using the license generator (`isvname_mklic`) on your website (or on the Reprise hosted activation website if you are using our Hosted Activation product).

The request is made by your customer via either calls you make to the **activation request API** or the Reprise-supplied **activation GUI** built into the RLM web server.

If you use the activation request API (`rlm_activate()`), you will get another opportunity to add additional attributes to the generated license. These attributes will override any specified in either the activation key or the product definition.

Warning The system date/time on the requesting computer must be within 7 days of the system clock on the activation server. If the clocks differ by more than 7 days, an `RLM_ACT_CLIENT_TIME_BAD` error status will be returned, and no license will be generated.

1.2.3 Activation Pro Components

RLM Activation Pro consists of 5 components:

- Activation admin tool (RLC)
- Activation server license generator (`actpro_mklic + isvname.gen`, or `isvname_mklic`)
- Activation data
- Activation request API (`rlm_activate()`)
- Optional activation GUI (built into the RLM web server)

The activation admin tool, **RLM License Center** (RLC), allows you to set up the parameters for activation: product definitions; activation keys; list of banned hosts; and other setup data. It also allows you to view records of license fulfillments.

The activation server **license generator** (`actpro_mklic + isvname.gen`, or `isvname_mklic`) runs on your website (in the `cgi-bin` directory) and processes activation requests, recording

the results in the activation database.

The **activation data** consists of product and activation key definitions, banned host definitions, RLC setup data, as well as records of license fulfillments. The data is described in the [Section 1.5](#) section below, and is all stored in a MySQL database.

The **activation request API** (`rlm_activate()` or the older `rlm_act_request()`) allows you to embed activation requests within your application or your installation tools.

The **optional activation GUI** is built into the RLM web server (using the activation request API) to provide a generic activation user interface.

You will always be able to provide a simpler activation user interface to your customers by using the activation request API, since you know the answers to many of the questions which the Reprise-supplied activation GUI must ask. However, you can use the activation GUI in the RLM web interface to get started without modifying your applications.

1.2.4 Rehostable Licenses

Activation can be set up to support rehosting of licenses by the end user without ISV involvement. This involves the use of the rehostable `hostid` type, which was new in RLM v9.3. A rehostable `hostid` is requested at the time that `rlm_activate()` is called, and the activation server issues the license to this `hostid`. Later, if the user wishes to move this license to another system, the `rlm_act_rehost_revoke()` call can be used to revoke the rehostable license and allow it to be activated on another system.

Note Rehostable licenses work for nodelocked licenses only, and multiple-license product definitions cannot be activated with a rehostable `hostid`.

The rehostable `hostid` is a copy-protected file, and if the system should crash, the `hostid` cannot be retrieved. As an ISV, you will need a policy to deal with this situation – e.g., to give the customer another activation in order to continue. Since this situation should be rare, a non-automated request procedure might be quite sufficient. If you use the **Normal** fulfillment type with Rehostable licenses, the expiration date should be fixed. If you want an expiration date that is relative to the time of activation, you should use the **ReActivate** fulfillment type, and set the fulfillment count to the number of times you want to allow your customer to revoke and re-activate the license.

Why should **Normal** fulfillments use fixed license expirations? Well, when your customer revokes a rehostable license, the activation server returns the fulfillment count back to the activation key. If, for example, you issue 60-day licenses with Normal fulfillment type, your customer could fulfill the license, then on day 59 revoke that license and re-activate it and get a new 60-day license. If the activation key specifies a fixed expiration date, that is not an issue. Also, if you use a ReActivate fulfillment type, the original expiration date will be preserved on a new activation.

1.2.5 What happens if my customer doesn't have an internet connection?

For cases such as this, you can create a webpage so that your customer support people can activate the license for your customer, then email it to them. The RLM kit has an example HTML file that can be customized for this use. It is called `activation_example.html` and it is in the **examples** directory of the RLM kit. Modify this file for your use, and put it on an internal site for your support people to use.

1.3 Activation Use Cases

In the previous chapter we described what an activation system does and the architecture of RLM Activation Pro. This chapter will describe a number of use cases for activation.

1.3.1 The Simplest NodeLocked Activation Scenario

In its simplest usage, you give an activation key to a customer and they use this key to retrieve their license.

In ActPro:

1. You create a product definition which defines the license to be created, specifying a node-locked license.
 2. Then, you create an activation key for this product. In most cases, you use a “normal” activation key.
 3. When your customer purchases, you give them the activation key.
 4. Inside your software, if you cannot check out a license, you put up a “please enter activation key” dialog box and prompt for the activation key.
 5. Once you get the key from your user, call `rlm_activate()` to activate the license using the RLM ActPro server. `rlm_activate()` returns the license as a text string.
 6. Write the license to disk, then re-initialize RLM and check out the license.
 7. Subsequent invocations of the product check out the license without going through the activation sequence.
-

1.3.2 Creating DEMO Licenses Automatically

If you are using nodelocked licenses, you can create demo licenses automatically quite easily with Activation Pro. Assuming you are using the simple scenario above, proceed as follows.

In ActPro:

Create a demo product definition that specifies a limited duration, typically 30 or 60 days. Next, create an activation key with a fulfillment count of 0, which means unlimited fulfillments. This key would use the demo product definition you just created. Give the resulting activation key to all your prospects. When they activate with this key, they will get a license that runs for the number of days specified. If they attempt to reactivate with the same key on the same machine, the original license will be returned, i.e., they will not be able to extend the demo period by re-activating on the same machine.

1.3.3 Disabling Software for Customer Who Did Not Pay

Sometimes, you create an activation key and deliver your software to a customer, but that customer does not pay. In this case, you can turn your software off using the following technique. We will assume you are using the simple scenario described earlier.

In ActPro:

Once the customer has activated your software, and you decide that you no longer want them to be able to continue, take the following steps. This requires that you have saved the activation

key somewhere that you can retrieve it, for example, in the product definition you could specify the “Include activation key in license?” checkbox.

1. In RLC, disable the activation key in the RLM ActPro GUI (uncheck the “enabled” checkbox).
2. In your application, after the call to `rlm_checkout()` succeeds, call `rlm_license_akey()` to retrieve the activation key. Then call `rlm_act_info()` passing the activation key. If `rlm_act_info()` returns `RLM_ACT_KEY_DISABLED`, then the license is no longer valid. If `rlm_act_info()` returns 0, all is OK.

1.3.4 Subscription Licensing

If you sell nodelocked software using a subscription model, you can use the **Subscription** activation key type to manage the license.

In ActPro:

With a subscription activation key, you set 2 parameters: the **Subscription Interval** and the **Subscription Renewal Window**.

1. Your product definition should specify the “Include activation key in license?” checkbox, so that you can re-activate the license near the end of the subscription interval.
2. When your customer activates the license, the license generator writes the expiration date into the Activation Key.
3. At any time after the expiration date minus the Subscription Renewal Window, your customer can re-activate the license and the new license will have an expiration date equal to the current expiration plus the Subscription Interval. You can do this most conveniently in your code after calling `rlm_checkout()` by calling `rlm_license_exp_days()` to decide when to reactivate it and `rlm_license_akey()` to get the activation key.
4. When your customer decides to cancel the subscription, in RLC, disable the activation key or delete it. If they cancel before the end of the period, set the subscription window to 0 at that time, then disable the key on the day prior to the period expiration.

1.3.5 Subscription Licensing – Alternate Approach

If you do not want to use the Subscription activation key type, you might want to issue a long-term license and have the capability to disable the license at some point in the future if the customer cancels the subscription. You can use the following technique to accomplish this.

Once you issue a permanent license to a machine, it will work forever. However, you can use the activation server to disable the license if the customer no longer wants to pay for the subscription.

1. Your product definition can specify a long-term license (one year, two years, or as often as you are willing to give the customer a new activation key). In addition, the product definition should specify the “Include activation key in license?” checkbox.
2. When your customer decides to cancel the subscription, in RLC, disable the activation key.
3. In your software, after the call to `rlm_checkout()` succeeds, call `rlm_license_akey()` and `rlm_license_hostid()` on the checked-out license.
4. Using the activation key and hostid from step (3), call `rlm_act_keyvalid()` passing the activation key and the hostid. If `rlm_act_keyvalid()` returns `RLM_ACT_KEY_DISABLED`, `RLM_ACT_KEY_NOHOSTID`, or `RLM_ACT_KEY_HOSTID_REVOKED` then the license is

no longer valid. If `rlm_act_keyvalid()` returns 0, all is OK.

1.3.6 Dealing with Decommissioned Customer Machines

Let's say that your customer activated a license then, sometime later, told you that the machine has been decommissioned. You allowed them to re-activate on a new machine. How do you ensure they aren't using the original license?

In ActPro:

Once you issue a permanent license to a machine, it will work forever. However, you can use the activation server to detect that the customer continues to use the license on the old machine. This requires that you have saved the activation key somewhere that you can retrieve it.

1. When your customer tells you that the machine has been decommissioned, in RLC, delete the fulfillment for their activation key. This will allow them to activate using that activation key on a new machine.
2. In your software, after the call to `rlm_checkout()` succeeds, call `rlm_license_hostid()` on the checked-out license.
3. Using the `hostid` from step (2), call `rlm_act_keyvalid()` passing the activation key and the `hostid`. If `rlm_act_keyvalid()` returns `RLM_ACT_KEY_DISABLED`, `RLM_ACT_KEY_NOHOSTID`, or `RLM_ACT_KEY_HOSTID_REVOKED` then the license is no longer valid. If `rlm_act_keyvalid()` returns 0, all is OK.

1.4 Getting Started

First, you should read the [Section 1.2](#) section of this manual, if you have not already. Next, you should read the three setup chapters:

- [Section 1.4.1](#)

Note If you are using Reprise Hosted Activation, you can skip this chapter – we have already set up Activation Pro for you).

- [Section 1.5](#)
- [Section 1.9](#)

When you have performed these steps, you are ready to issue licenses for your product with RLM Activation Pro.

To use the RLM Activation Pro administration tool (RLC), point your browser to the URL where your system administrator set up the RLM Activation Pro software. The web server will prompt you for your username and password. Once you provide these, you will see the initial RLC screen. Login to RLC using the username and password you received from your system administrator (the login area is in the top right-hand side of the screen).

1.4.1 Activation Pro Setup

If you use Reprise's Hosted Activation service, in order to set up Activation Pro you will populate your database (as described in [Section 1.5](#)), then add activation request calls to your application (described in [Section 1.9](#)).

If you host the activation server on your own system, please refer to [Section 2.1](#) for details on how to set up your system.

Setting Up Activation Pro

To set up RLM Activation Pro using the Reprise hostedactivation.com site, there are 3 steps: 1. Install your License Generator Settings file from your RLM kit (see below). 2. Setup the [Section 1.5](#). 3. Add activation request calls to your application, or build a stand-alone activation utility (described in [Section 1.9](#)).

1.4.2 Install your License Generator Settings File

You can create the license generator settings file (*isvname.gen*) on any supported RLM platform. To create it, execute the following command in the configured RLM kit area:

```
rlmsign -generator
```

Install the resulting file (*isvname.gen*) to your ActPro system using the **Admin** → **Generator Settings** tab. Browse to the file, then click **Upload File**.

1.5 Your Activation Database

Once you have installed and configured your Activation Pro software (as described in [Section 1.4.1](#)), you are ready to set up your Activation Database.

All RLM activation activities are controlled by a database of **product definitions** and **activation key definitions**. In addition, you can create a **banned list** of domains which are not allowed to activate licenses.

Before you can begin to use RLM activation, you must set up at least one product definition and one activation key definition, as described below.

These operations are performed by **RLC** - RLM License Center. RLC is a web-based application which allows you to maintain your activation database.

RLC uses user access permissions to control access to the four main functions:

- Viewing and reporting on the activation database (**View Access**)
 - Editing activation keys (**Edit Key Access**)
 - Editing all items in the activation database (**Edit Access**)
 - Administering users/permissions/database (**Admin Access**)
-

1.5.1 Running RLC

You run RLC by pointing your browser to the URL where you installed the Activation Pro software. The server uses a MySQL database to store all the activation data.

1.5.2 RLC Access Control

Access control is performed by logging in as the **admin** user and creating individual user accounts. An account has one of 5 levels of access:

Level	Description
View	Can view the activation data, but cannot create or edit any data.
Edit Key	Can do anything an account with View access can do, as well as edit activation keys.
Edit	Can do anything an account with Edit Key access can do, as well as edit any other data except user accounts.
Admin	Can do anything an account with Edit access can do, as well as create and delete users, upload the activation license generator settings and perform other administration functions.
Portal (similar to View, for your customers)	Can view activation keys and fulfillments associated with the contact's company (see Section 1.13).

1.5.3 Using RLC

There are 3 main activities you will perform with RLC:

- Initial setup of your activation database
- Viewing and/or updating the activation data
- Generating individual licenses

When you run RLC, your browser will display a page that has a title and login area at the top, along with a row of tabs just below, and a main display area below the tabs.

The tabs are arranged by activation data and functions, as described:

- Dashboard – displays information about your database and a graph of fulfillments
 - Products – view or edit product definitions, and create new ones.
 - Activation Keys – view/edit activation keys and create new ones.
 - Fulfillments – view fulfillments, and delete fulfillment data.
 - Customers – list contacts/companies, edit, and add new ones.
 - Reports – Generate reports on activation activity.
 - Admin (admin users only) – administer the Activation Pro system
 - Profile – edit your account data.
 - About – lists information about ActPro (as shown above)
-

1.5.4 Logging In

If you are not logged in, at the top right-hand side of the screen, username and password boxes are displayed, along with a **Login** button. Enter the username and password assigned by your administrator (when Activation Pro is installed, an admin user is created with password "admin").

Once logged in, this area shows your username, access level, and a **Logout** link.

Note You can only log in to one account from a single browser at the same time, and it is also not possible to log into the same account from different browsers at the same time – if you log into the same account again, the first login will be effectively logged out.

To change your password, select the **Profile** tab, then press **Change Password**.

Note Passwords can consist of numbers, lowercase letters and uppercase letters only.

Logout logs you out.

You will want to have non-administrator users for the day-to-day operations of managing your activation server. To create these user(s) log in to the activation server as the *admin* user, then create a second user who can make changes to the activation database. Perform the following steps:

1. Point your browser to your installed version of Activation Pro, for example: <http://localhost/actpro/index.php>
 2. On the right-hand side of the screen, near the top, type "admin" in the Username box, and "admin" in the password box. Press "login". (This assumes you did not change the default admin user's password).
 3. Select the **Admin** tab, and the **Users** tab on the 2nd row.
 4. Press the **Create New User** button below the list of users.
 5. Select a username, Contact (if appropriate), email, and password, and **Edit** access in the **Create New User** page, then press the **Create User** button. Go back to the admin page by clicking on the "Admin Page" link. You should now see your new user, with Edit access.
 6. Log out (at the top right).
-

1.5.5 Minimum Setup

The minimal setup required to use Activation Pro is one product definition and one activation key. The next 2 sections describe how you create a product definition and activation key.

1.6 Product Definitions

Viewing, Editing, and Creating new products is done in the **Products** tab. When you press the Products tab, you will see a list of product definitions – these are all the product definitions in your Activation Pro system.

Note All products do not have a creation date. All products created prior to v11.2 will have blank creation dates.

At the bottom of the list there are 2 buttons (**Check All** and **Clear All**), and a red X.

Every product definition which can be deleted (i.e., product definitions with the red X on the right-hand side of the list) will have a checkbox on the left. If you would like to delete multiple product definitions in a single operation, check the boxes corresponding to these products then click the red X at the bottom of the form.

Note You cannot delete a product definition which has any activation keys defined using it, or any product definition that has multiple licenses associated. To delete a product definition with multiple licenses, edit the product and delete all the non-primary licenses first, then you can delete it in the main product definition screen.

You can control the number of product definitions displayed by changing the **Items to display** count at the bottom of the screen. You can also filter the list by entering text in the **Select:** text boxes at the top of the screen. If the list is longer than the number of items to display, RLC will display a pagination box at the end of the list.

The list filtering and pagination are common to all the tabs: **Products, Activation Keys, Fulfillments, Customers, and Reports.**

Both the primary and all secondary licenses in a product have a notes field, but the notes search box only searches the notes field of the primary license.

Product Definitions which are disabled or obsolete (not deleted) will appear in gray in the list, and can be re-enabled later.

The **Display Order** column is used to control the order of the list presented when an activation key is created. Lower display order products will be displayed first in the choicelist, higher last. Within a display order, the keys are presented alphabetically. Display Order defaults to 100.

Everything in RLC is driven from **product definitions**, so you should create at least one product definition first. Product definition allows you to specify a name for the “product” which is then associated with a license product name, version, and several other license attributes. When you press the **Add New Product** button, you will see the screen below:

A product definition consists of:

- Product definition name
- Product (license) name, i.e. what you check out in your application.
- Product version
- An optional upgrade-from version
- License type
- Optional Alternate Server Hostid parameters
- issued= flag
- customer= flag
- akey= specification
- License multiplier (for floating licenses only)
- Product expiration specification
- The license generator algorithm
- Optional text to prepend to the license (for primary products only)
- Optional product notes which you can search in the browser (otherwise unused in ActPro)
- The display order used to sort the list when creating activation keys
- List of allowed hostid types, if you want to override the default
- Optional additional attributes for the license (“Miscellaneous Options”)

The **product definition name** is the name used to refer to this product definition. It is not the name of the product license generated by RLM activation. This might be something like “Evaluation Office License”, in which case the actual product name might be “Office”.

The **product name** is the name of the RLM license to be generated. This is the name that appears on the LICENSE line in your RLM license file.

The **product version** is the version of the product on the generated LICENSE line. If you want to use a fixed product version, click the “Normal” radio button and enter the version number in the text box to the right of that button. This version must be a valid RLM version number, i.e. it must be a number in the format of a floating-point number, of less than 10 total characters. An example valid RLM version is 1.0 or 1000.27.

If you want to use a date-based version, click the **Date-Based** radio button, and enter the number of months after activation in the text box. A date-based version is of the form YYYY.MM (See main-thru-date in the RLM Reference manual for a description of how date-based versions work). So, for example, if you select 9 in the text box and the license is activated in January 2014, the resulting version will be “2014.10”.

The **upgrade from version** is the minimum version of the old product which is eligible for upgrades in an RLM UPGRADE license.

The license type controls the type of generated license. Choices are:

- Node-locked, uncounted
- Single
- Floating
- Upgrade of any of the 3 types above
- Alternate Server Hostid (new in RLM v11.2)

In the case of floating licenses, the requested count is the number of floating licenses generated. The requested count must be less than or equal to the remaining fulfillment count available in the activation key. (As a special case, a request for 0 licenses will fulfill all remaining licenses from the activation key). For the other license types, the requested count is ignored.

For Alternate Server Hostid licenses, you must also fill in the optional “Alternate Server Hostid” parameters – the serial #, Check interval, and type. When an Alternate Server Hostid license is generated, both the HOST/ISV lines and the license line will be generated. Alternate Server Hostid licenses utilize the license “options” and “issuer” fields, so you should not specify either of these in the “Other RLM keyword=value pairs” field. Also, you will most likely want to set “Include Activation Key in License” to “yes” when using this license type. Also, if you are using Alternate Server Hostids to provide rehostable licenses for your license server, you will want to select only the “rehostable” license type in the “Allowed hostid types” selection boxes at the bottom of the form, either in the product definition or in the activation key.

Warning When you create an alternate server hostid key, you almost certainly want to give it an activation count of 1. If you give it a count > 1, your user can create **multiple servers which have the same hostid**. This means that any license you issue to this hostid will work on each of the servers so activated.

For more details on Alternate Server Hostids, please see alternate-server-hostids RLM Reference Manual.

The **Alternate Server Hostid** parameters are used to specify the parameters required for an Alternate Server Hostid-type license. They are unused for all other license types. See the RLM Reference Manual for the meaning of these parameters.

The **Create issued=today?** checkbox controls whether the generated license contains an **issued=today** date attribute.

The **Create customer= in license?** checkbox controls whether the generated license contains a **customer=customer-name** field. Note that this field will only appear if the activation key used to generate the license has an associated contact-id. If the contact ID is present, then the company name will appear in the license.

The **Include activation key in license** radio buttons control whether the generated license contains an **akey=activation_key** attribute. The akey= attribute was added in RLM v11.0. If you deliver software built with pre-v11, the software won’t recognize the akey= license attribute, and the license will be invalid. By selecting 2 licenses (3rd choice), ActPro will generate one license with the akey= attribute and a 2nd license without the akey= attribute which will be usable by your pre-v11 applications. A second license will NEVER be generated for any counted license type, since this would yield extra licenses.

Note RLM has a 35-character limit for activation keys in the license, so while Activation Pro will allow an activation key up to 60 characters, you will need to limit the length of your activation keys to 35 characters if you intend to use them in the akey= license attribute in RLM.

The **Number of Licenses to Create per Activation** is a multiplier used for floating licenses only.

This number is multiplied by the requested count in the activation request to yield the total number of licenses created for this product name. For example, if the activation request is for a count of 7, and the number of licenses to create per activation is 5, the license count for this product name will be 35. You should note that the requested count is the amount deducted from the activation key's remaining count field, NOT the resulting license count from this computation. In other words, for this example, 7 would be deducted from the activation key's remaining count, not 35.

The License expiration date controls the expiration date for the generated LICENSE line. This is one of:

- 0 (or blank or "permanent") - for a permanent license
- An integer - the number of days from activation to expiration (i.e., 30 means the license expires 30 days after it is activated)
- An actual expiration date, in the form 1-jan-2013 - the actual expiration date, independent of the date of activation, in the standard RLM expiration date format. Beginning in ActPro v12.0, you can specify a fixed expiration date as YYYY-MM-DD, for example 2016-05-23 for May 23, 2016. The ActPro license generator will convert this date to the standard RLM format when the license is created. You can convert all expiration dates in your database to this format using the "Normalize Dates" function in the Admin/Database tab.

If you have an alternate license generator, specify the index of this generator in the **License Generator Algorithm**. This value should normally be left set to 0 – the default Activation Pro license generator.

You can cause the license generator to prepend up to 1024 bytes (30720 bytes starting in ActPro v15.0) of text to the license generated (for primary products only). This text can be any fixed string you want, but you should put a pound sign (“#”) at the beginning of each line so that you don't confuse the RLM license parser. Place your text in the **Text to prepend to license** text box.

You can add **notes** to a product definition, and these notes appear in the product browser. The notes are otherwise unused in Activation Pro. Both the primary and all secondary licenses in a product have a notes field, but the notes search box only searches the notes field of the primary license.

If you want to override the list of allowed hostids specified in `rlm_isv_config.c` with the `rlm_isv_cfg_actpro_allowed_hostids()` call, you can select a set of allowed hostids in the **Allowed Hostid Types** section of this form. If you leave all these checkboxes blank, the default from `rlm_isv_cfg_actpro_allowed_hostids()` will be used.

The **Miscellaneous Options** are additional RLM license attributes which will be placed into the generated LICENSE. Any options specified in the activation key override corresponding attributes in the product definition, thereby allowing you to have default attributes which you modify for a particular customer when you create their activation key.

Warning These options are treated AS A UNIT, so specifying any of them in the activation key overrides **ALL** the options from the product definition. (prior to RLM v12.3, this was a single field; it has been broken out in the GUI in v12.3 for convenience of specifying the individual options, but they are still bundled into a single field in the database.)

Also, if you specify other license parameters in your call to `rlm_activate()` or `rlm_act_request()` those parameters will override both the product definition *and* the activation key.

Once you have created a product definition, the list will be re-displayed.

A product definition can specify one or more licenses to be created. The first license you define is called the "Primary License" for this product definition. Once you have created the Primary License, you can add additional licenses by pressing the Edit icon on the right-hand side of this list. More on this later.

Product Name	License Name ▼	Version
test	thetest ...	1.0

Multiple-license product definitions are indicated by the trailing “...” after the Primary License name, as above for the “test”.

Note Multiple-license product definitions cannot be activated with a rehostable hostid.

If any product definition has no associated activation keys defined, you can delete it by pressing the red “X” in the far right-hand column.

If the product has multiple licenses, it cannot be deleted from this screen. You must first edit the product by clicking on the edit icon, then in that screen, you delete all the licenses other than the primary license. At that point, the product definition can be deleted on this screen by clicking on the red X on the right.

If the version for a product is a date-based version, it will be displayed as “+ N mo.”, where N is the number of months after activation.

When you click on the **Edit** icon (the pencil icon on the right-hand side of this screen), you will get the browser for that particular product definition, which allows you to create new licenses for that product, edit any of the existing licenses for the product, or copy/clone the product. The browser looks like this:

Product Definition for Product "multi"

All enabled licenses below will be created when product "multi" is activated.
Press "Add New License to this product" below to add additional licenses to this product definition or click the edit icon to edit the definition of an individual license.

License Name	Version	Upgrade Version	Expiration	License Type	# lic	Issued	cust=	key	Other License Data	Enabled	Obsolete	Notes	Display Order	Created		
<input type="checkbox"/> fixed	1.0		permanent	Nodelocked, Uncounted	1	no	no	no		yes	no		100	2023-10-09		Primary License
<input type="checkbox"/> floating	1.0		permanent	Floating	7	no	no	no		yes	no		-	2023-10-09		
<input type="checkbox"/> more_fixed	1.0		permanent	Nodelocked, Uncounted	1	no	no	no		yes	no		-	2023-10-09		
<input type="checkbox"/> disabled	1.0		permanent	Nodelocked, Uncounted	1	no	no	no		no	no		-	2023-10-09		

Note: A product cannot be deleted if there are either activation keys or fulfillments which reference it.

Records 1 to 4 of (4) displayed

Items to display:

In this example, the product “multi” has 3 associated licenses (plus one disabled license). When activated, all 3 of these licenses would be created. The primary license is the “fixed” license, and in addition, the “floating”, and “more_fixed” licenses would be created. For any license that is a nodelocked-type license, the # lic value should be 1, any other value will be ignored by the license generator. **Display Order** is only listed for the primary license.

If you want to add an additional license to this product definition, click the **Add New License to this product** button at the bottom, and you will be presented with the “Create Product” screen. In addition, you can edit the data for any of the licenses by clicking on the edit icon on the right. You can also delete any of the non-primary licenses in this screen at any time.

To return to the full list of products, click the **View Complete Product List** button at the bottom.

If you would like to copy this product in order to create a similar one, press the **Copy (clone) this product** button at the bottom.

Once created, a product can be **disabled** by unclicking on the “enabled” checkbox in the editor.

If a product is not enabled, licenses will not be created for this product. This means that for a multi-license product definition, you can selectively disable individual licenses in the product definition and these licenses will not be created by the license generator (as is the case for the “disabled” license in this example). If the primary license is not enabled, then activation keys can no longer be created for this product, either.

In addition, the primary license for a product can be marked obsolete. If marked obsolete, old activation keys continue to operate, however, new activation keys cannot be created.

1.7 Activation Keys

If you are going to use RLM Activation Pro, you will then need to create activation keys - these are the keys you give to your customers. When they have the activation key, they can then use Activation Pro to fulfill licenses for their products. Activation keys can be set up to allow unlimited use, or a fixed number of uses.

Note Single quote (‘), double quote (“) and semicolon (;) characters are illegal in activation keys.

Activation keys consist of:

- Activation type
- Product definition name to be fulfilled
- Fulfillment count
- Number of independent activation keys to create
- Hostid change (rehost) count (for rehostable hostid types)

In addition, when you create activation keys, you can also specify:

- Last date valid for this activation key
- Expiration date which overrides the expiration in the product definition
- License version which overrides the version in the product definition
- List of allowed domains for this key
- Optional additional attributes for the license
- Optional notes for the activation key (unused by RLM)
- The actual activation key string
- Contact person to associate with this activation key.
- List of allowed hostid types, if you want to override the default and/or product definition

When you select the **Activation Keys** tab you will see a list of activation keys:

11 Keys
 0 Expired
 11 Normal

Add New Activation Key

Select:

Activation Key	Enabled	Product	Count	# Fulfilled	Type	# revoked	Last Date Valid	Exp	Ver	Allowed Hosts	Other License Data	Notes	Contact	Email	Company	Created	SN	
2213-1582-4519-7060	yes	Flair7	1	1	normal	0		100 days								2021-06-13	11829	
2375-1582-4504-2576	yes	Flair7	1	1	normal	0		200 days				options=2				2021-06-13	11830	
5678-1645-0104-1787	yes	Flair7	1	1	normal	0		5 days				options=7				2021-06-19	11831	
3231-1577-4236-3255	yes	Flair7	1	1	normal	0		365 days								2021-06-12	11827	
4018-1577-3756-6555	yes	Flair7	1	1	normal	0		60 days				options=7				2021-06-12	11828	
7793-1661-2883-0230	yes	Flair7	0	8	normal	0		1 days								2021-06-20	11832	
6707-5374-2402-4119	no	One Fulfillment	1	1	normal	0										2022-06-07	11840	
7238-2276-8749-2861	yes	Activation_Pro_Demo	1	1	normal	0		2023-10-03								2023-10-03	12009	
3722-2274-8970-5765	yes	RLM_Server_Example	1	1	normal	0										2023-10-03	12008	
0509-0798-7682-7737	yes	ASh	1	1	normal	1										2023-05-16	11926	
3615-2274-3240-9695	yes	Activation_Pro_Demo	1	1	normal	0										2023-10-03	12007	

Check All Clear All

Records 1 to 11 of (11) displayed

Items to display:

The first 2 boxes at the top always appear, but for the last 5 boxes, each one will only appear if there are one or more keys of that type.

At the bottom of the list there are 2 buttons (“Check All” and “Clear All”), and a red X:



Every activation key which can be deleted (i.e., activation keys with the red X on the right-hand side of the list) will have a checkbox on the left. If you would like to delete multiple activation keys in a single operation, check the boxes corresponding to these activation keys then click the red X at the bottom of the form. You cannot delete an activation key which has any fulfillments associated with it.

The small “gear” icon on the far-right-hand side is the “activate license” button. This button allows you to fulfill the license directly from the ActPro GUI (new in RLM v14.2). If the fulfillment doesn’t work, first check your license generator URL in the admin->database tab – we have attempted to set a good default for this, but it might not always work. In particular, it won’t work on Windows servers, where the trailing “.exe” will not be present in the URL.

A sample URL would be:

https://hostedactivation.com/cgi-bin/your-isvname_mklic

When you press the “activate license” button, you will see the following form :

Create license for activation key 6235-7045-4196-4920

Click "Generate License" below to Create the license for this activation key

hostid: :

count: :

extra license parameters (no '+' chars): :

The hostid and count parameters are required, "extra license parameters" are optional, and consist of valid RLM **keyword=value** pairs. If the value has spaces, enclose it in double-quotes, for example:

```
options="a b c" customer="xyz corp"
```

If there are no REFRESH type activation keys, the # rehosts allowed column is not displayed.

In order to create an activation key, press the **Create New Activation Key** button at the top (or bottom) of the screen. When you do this, you will see the "Create Activation Key" screen, as shown here:

Create Activation Key

GENERATE Activation Keys(s)

Click "GENERATE Activation Key(s)" to create the activation key(s)

Activation Key Type:

Product Name:

of fulfillments for each Activation key (0 for no limit):

of rehosts allowed [0-9999, 0 for unlimited]:

of Activation keys to create [1-9999]:

Optional: Activation key expiration date:

Optional: License expiration date: (Overrides Product Definition) [0=permanent, number=# of days, string=fixed date]

Optional: *Product Version (Overrides Product Definition)*: Normal Date-Based

Optional: Allowed domains (whitelist - 64 bytes max):

Show All Miscellaneous Options

Optional: Notes (100 characters maximum):

Optional: Activation Key to use (rlc will generate if not specified): [40 characters maximum]

Optional: Contact Person:

Optional: Reseller owner of key:

Optional: *Allowed hostid types*:

Clear values from product definition

<input type="checkbox"/> rehostable	<input type="checkbox"/> isv-defined	<input type="checkbox"/> isv-string-hostid	<input type="checkbox"/> rimid	<input type="checkbox"/> ethernetMACaddr
<input type="checkbox"/> 32-bit	<input type="checkbox"/> diskSerial#	<input type="checkbox"/> IPaddress	<input type="checkbox"/> UUID	<input type="checkbox"/> AlternateServer/NodeLock
<input type="checkbox"/> username	<input type="checkbox"/> hostname	<input type="checkbox"/> serial#	<input type="checkbox"/> string	<input type="checkbox"/> demo
<input type="checkbox"/> any				

GENERATE Activation Keys(s)

CANCEL

Activation Key Type is one of the following:

- Normal
- Reactivate
- Normal-Regen
- Refresh (deprecated in RLM v9.3)
- Subscription

These are described in the [Section 1.7.1](#) section below.

The **product name** is the name of the product definition to be activated.

The **# of fulfillments** is the number of fulfillments allowed by this activation key. For Refresh and Subscription keys, this is always 1, and even if you enter a larger number, RLC stores the fulfillment count as 1. The meaning of fulfillment count depends on the type of fulfillment, see below.

The **# of rehosts allowed** is used for the revocation of rehostable licenses. Used for Normal, ReActivate and Subscription activation types, this controls the number of times your user can revoke their license and then re-activate it on any machine (including the machine it was revoked from). If set to 0, an unlimited number of rehosts are allowed. If set to a positive number, this is the total number of rehosts that are allowed. If an attempt is made to revoke a license which has already been revoked the # of rehosts times, the application will get

an RLM_ACT_TOOMANY_HOSTID_CHANGES error.

The **# of activation keys to create** controls how many activation keys are created with the data in this form. If the **key string** is specified (see below), this exact key will be used if the # of activation keys is 1. If the # of activation keys is > 1, then the key string will have a 16-digit string appended for each unique activation key generated.

The **Allowed domains (whitelist)** is a space-separated list of domain names which are allowed to activate using this activation key. If a request comes in from another domain, it is rejected with RLM_ACT_NOT_WHITELISTED. The names in this list can be a substring of the host-name requesting the activation. So, for example, if you put the string “com” into this field, activation will be possible from any domain with “com” in the name (i.e., most domains). All names are case-insensitive, and the whole list must be less than RLM_MAX_HOSTNAME (64) bytes. If an activation key specifies allowed domains, the domain requesting the activation must be part of the allowed domains specification.

The **Activation Key Expiration date** for the activation key is the last date when the activation server will generate a license for this activation key. The activation server will continue to send previously-generated licenses if so requested. *This is completely different from the license expiration date in the product definition* – the last date valid is the last date when the activation server will create a new license for this activation key. Beginning in ActPro v12.0, you can specify an expiration date as YYYY-MM-DD, for example 2016-05-23 for May 23, 2016. You can convert all expiration dates in your database to this format using the “Normalize Dates” function in the Admin/Database tab.

The **License Expiration Date**, if specified, will override the expiration date specified in the product definition. If not specified here, the license expiration from the product definition is used. The date is specified in the same way as in the product definition, i.e., a positive integer indicates a license that expires that number of days from the date of activation, and a fixed date specifies a fixed expiration date. Any expiration date specified here overrides the expiration date of all licenses created by the product definition for this activation key. Beginning in ActPro v12.0, you can specify a fixed expiration date as YYYY-MM-DD, for example 2016-05-23 for May 23, 2016. The ActPro license generator will convert this date to the standard RLM format when the license is created. You can convert all expiration dates in your database to this format using the “Normalize Dates” function in the Admin/Database tab.

The **Subscription Interval**, used for Subscription keys only, is the basic subscription interval. This can be “month”, “quarter”, “year” or a number of days.

The **Subscription Renewal Window** is the # of days, prior to the subscription license expiration, that a re-activation of the subscription license is allowed. Once the date passes the expiration date minus the Subscription Renewal Window, the license generator will update the expiration date in the Activation Key and allow a new license to be generated.

The **Product Version**, if specified, will override the version specified in the product definition. If not specified here, the license version from the product definition is used. The version is specified in the same way as in the product definition, i.e., either a “normal” floating-point format version number, or an integer number of months for a date-based version. Any version specified here overrides the version of *all licenses created* by the product definition.

The **Miscellaneous Options** (hidden in screenshot above) are additional RLM license attributes which will be placed into the generated LICENSE. Any options specified in the activation key override corresponding attributes in the product definition, thereby allowing you to have default attributes which you modify for a particular customer when you create their activation key. **These options are treated AS A UNIT**, so specifying any of them in the activation key overrides ALL the options from the product definition. If you specify other license parameters in your call to rlm_activate() (or rlm_act_request()) those parameters will override both the product definition and the activation key.

The **Disable**, **Allowed Platforms**, **Allowed Timezones**, **Share**, and **Hostid** parameters can override the corresponding values in the product definition by checking the box for “Clear values from product definition”. Prior to Activation Pro v14.2, there was not a way to clear these values if they were specified in the product definition.

If this box is checked the product definition values for this parameter will not be used. If the “clear values” box is checked and no boxes below the “clear values” checkbox are checked, the corresponding parameter is removed and will not appear in the license. If any of the boxes below the “clear values” checkbox are checked, those values from the activation key definition will be used, independent of the setting of the “Clear values from product definition” checkbox - this is exactly the behavior of the pre-v14.2 Activation Pro product. This means it is now possible for the activation key to clear the corresponding value in the product definition.

The **Notes** field is unused by the activation software, other than in listings and reports.

The **Contact Person** choicelist allows you to associate a customer with this activation key. Create customers with the **Add Customer** button in the Setup Commands area at the top.

If you want to override the list of allowed hostids specified in `rlm_isv_config.c` with the `rlm_isv_cfg_actpro_allowed_hostids()` call (or the product definition, if specified there), you can select a set of allowed hostids in the **Allowed Hostid Types** section of this form. If you leave all these checkboxes blank, the default from `rlm_isv_cfg_actpro_allowed_hostids()` or the product definition will be used.

The **activation key** generated by RLC is a 16-digit number (with embedded dashes for a total of 19 characters) of the form:

aaaa-bbbb-cccc-dddd

For example:

4567-4997-7125-5436

Alternately, RLC will allow you to specify the activation key. If you specify a key and generate a single key, the exact key you specify will be used. If you generate multiple keys, RLC will append 16 characters (with 4 dashes) to the string you specified.


Note The total length of the activation key cannot exceed 40 characters, so if you are generating multiple keys, this string cannot exceed 20 characters.

This activation key is treated as a string by all RLM activation components.

When you have completed entering the data, press the **Generate Activation Key(s)** button at the bottom of the form. Once you do this, you will see a screen with the activation key name(s) displayed, and a **Back to List** button. Pressing this button re-displays the list of activation keys.

This list gives you an overview of the activation keys in your Activation Pro system. If any activation key has no associated fulfillments, you can delete it by pressing the red “X” in the far right-hand column.

While viewing activation keys, hovering the cursor above the product name will display a popup listing the primary product’s license name, version, and type.

You can also view the fulfillments done for a particular activation key by clicking on the “Show” icon () at the end of each row in the Activation Keys display.

Activation Keys which are disabled (not deleted) will appear in gray in the list, and can be re-enabled later.

When you edit an activation key, a **Clone this Activation Key** button will appear at the bottom of the form. Press this button, then you can provide a new activation key name and the selected key will be copied to the new key name. (This feature introduced in Activation Pro v14.0).

1.7.1 Activation Key Types

The **activation key type** controls how the activation server processes requests. In all cases, for a node-locked license, the fulfillment count field represents the total number of independent

licenses which can be generated. For floating licenses, the fulfillment count field represents the total license count of all floating licenses generated (multiplied by the individual license “# of licenses” multipliers, of course).

Note We use the terms “activation key type” and “fulfillment type” interchangeably in this document.

Normal

The **Normal** activation key type is the most straightforward activation type, and represents what most people think of as software activation: each request from a new hostid generates a new license, and this license’s expiration date is computed at the time the license is activated. A subsequent request from the same hostid will cause the old generated license to be retrieved, with exactly the same license parameters. If you use the Normal fulfillment type for Rehostable licenses, you should always use a fixed expiration date, not a # of days, since if the user revokes the first license and re-activates it, a new license will be created, and you probably don’t want to allow the expiration date to move past the original expiration date.

Normal-Regen

The **Normal-Regen** activation key type works just like the Normal fulfillment type, except that new activation requests from the same hostid generate a new license, and consume activation count. This means that your user can re-activate the license on the same hostid and get a different license.

Warning If you use this for any kind of counted license (floating or node-locked, counted), this means the customer can get N times the number of licenses you have authorized, SO PLEASE USE THIS ACTIVATION TYPE WITH CAUTION.

If you use the Normal-Regen fulfillment type for Rehostable licenses, you should always use a fixed expiration date, not a # of days, since if the user revokes the first license and re-activates it, a new license will be created, and you probably don’t want to allow the expiration date to move past the original expiration date.

Why would you want to use a Normal-Regen activation key type? The main reason would be for licenses where you do not really want to count how many fulfillments are done, but that you *do* want to change other parameters in the activation key so that your customer can re-activate the license using the same activation key and get their new license. With a Normal fulfillment, the customer would get the original license, which isn’t quite so useful.

Examples:

Licenses for RLM itself are not counted, but they are locked to an ISV name with the customer= field, and they specify the licensed RLM platforms using the platforms= field. We give activation keys to our customers for RLM, however, often a customer adds a platform. When this happens, we modify the platforms= definition in the activation key, and our customer can re-activate using the same activation key. (We also modify the version in the product definition when we release a new version of RLM.) We use a Normal-Regen key type for this.

Another example is our fulfillments for Activation Pro itself. We do not count the number of activation servers you run, but we do issue the licenses for one year. When you renew support, we update the expiration date in the activation key, and you are able to retrieve your new license with the same activation key.

Reactivate

For the **Reactivate** activation key type, additional activations on the same activation key are considered reactivations. A reactivation will have the same expiration date as the original activation. This can be used to allow your customer to move a time-limited license to a new host one or more times. So, for example, assume you sell a 1-year license, but you would like your customer to be able to move it one time during the year. In this case, set the fulfillment count to 2 and the activation type to Reactivation. Then, once your customer creates the first license it

will have an expiration date one year out, but he can come back sometime later during that year and reactivate the license on another system. The new license would expire on the original expiration date. If he waited more than one year, no new valid license could be generated.

You should use the Reactivate fulfillment type for Rehostable licenses if you want to deliver a license which expires some number of days after it is first activated. In the case of rehostable licenses, however, the fulfillment count will NOT control how many times they can revoke and re-activate the rehostable license, and should be set to the actual fulfillment count you desire, since a revocation of a rehostable hostid returns activation count to the activation key. The # rehosts parameter will control how many times your user can revoke the rehostable license and re-create it. If you set the fulfillment count to a number > 1, you should be sure to set the # rehosts high enough to accommodate all licenses which will be activated with that particular activation key.

Subscription

The **Subscription** activation key type is used to manage **Nodelocked License** subscriptions.

When you create a Subscription Key, you enter the initial expiration date of the license, as well as the **Subscription Interval** and the **Subscription Renewal Window**. If you leave the expiration date blank, the initial expiration will be the date of activation plus the Subscription Interval.

Warning You should NEVER use a relative expiration date (i.e., a positive integer) or "0" as the expiration date in a subscription key. (In ActPro v14+, the GUI will not allow you to enter a relative expiration date).

Also note that the expiration date from the product definition is never used for a Subscription-type key. Subscription keys allow a fulfillment count of 1 only, and in fact, the fulfillment count will be forced to 1 when you create the key.

Subscription keys can only be used for products with **Nodelocked**, **Uncounted** and **Single** license types. Any other license type specified in the product will result in an RLM_ACT_SUB_BADTYPE error return.

Once a subscription key is activated, the expiration date is written to the activation key. This will be the current date plus the Subscription Interval for the first activation if the actual expiration date was not specified when the key was created. At any time after the Expiration Date minus the Subscription Renewal Window, the license can be re-activated and the new license will expire on the Expiration Date plus the Subscription Interval. The license generator writes the new expiration date to the Activation Key. *You should never have to update the expiration date manually in the subscription key, but if you do, you would need to remove the existing fulfillment if you are extending the expiration date.*

If your customer attempts to re-activate a subscription license prior to the Subscription Renewal Window on a different hostid, the RLM_ACT_KEY_USED (-1005) error will be returned. Once the Renewal Window is reached, however, the license can be activated on any hostid.

If the customer re-activates a subscription license after the initial expiration, the subscription interval will be added to the current expiration date until a date later than the current-date plus the Subscription Window is achieved. For example, assume that the first activation results in a license which expires on Jan 15, the Subscription Interval is Monthly, and the Subscription Window is 5 days. If this license is re-activated on Jan 20, the new expiration will be Feb 15. If the license is re-activated on Feb 14, the new expiration will be Mar 15.

You should include the activation key in the license so that you can automatically request the new license. At any time after the expiration date minus the Subscription Renewal Window, you can do this most conveniently in your code after calling `rlm_checkout()` by calling `rlm_license_exp_days()` to decide that it is time to reactivate it, then `rlm_license_akey()` to get the activation key. Then you can call `rlm_activate()` to get the new license. If your window is set to 2 or 3 days, that means your customer will have 2 or 3 days for this activation to succeed.

The presumption with Subscription keys is that your customer continues to renew the subscrip-

tion; you have nothing to do in this case. When your customer cancels the subscription, you disable or delete the activation key.

Example:

Let's say you have a Subscription Activation Key that specifies a one-month subscription period and a 5-day Subscription Renewal Window. The activation key does not specify an expiration date.

If your customer activates this license on 12-Jan-2024, the generated license will expire on 12-Feb-2024, and this expiration date will be written to the activation key. Any attempts to reactivate the license prior to 7-Feb-2024 will result in the original license being returned (if from the same hostid) or RLM_ACT_KEY_USED if from a different hostid.

After 7-Feb-2024, a new activation request will cause the following to happen: The expiration date in the activation key will be updated to 12-Mar-2024. The fulfillment count will be decremented (to 0). The new activation will be allowed, and a license which expires on 12-Mar-2024 will be generated from the requesting hostid.

Now suppose the customer didn't use the software until 15-Mar. His original license expired on 12-Feb, so the new activation will proceed, but since the current date (on the activation server) is past the next expiration date, the server will increment the expiration date, first to 12-Mar, then, noting that 12-Mar has already passed, it will update the expiration date again to 12-Apr-2024, and the new license generated will expire on 12-Apr-2024.

In your code, we suggest an algorithm similar to the following:

- Check out the license.
- Get the license "days to expire" with `rlm_license_exp_days()`.
- If the days to expire is < your subscription renewal interval, call `rlm_license_akey()`, and re-activate the license.
- If the activation is successful, write the new license file out in place of the old one (i.e., overwrite the old license file).
- The next time the software runs, it will use the updated license file.

Refresh

Refresh-type activations were deprecated in RLM v9.3, and should no longer be used.

1.7.2 Activation Key Processing

The processing for each type of activation key is described in the following table:

Activation Type	New request from the same hostid (with same count)	New request from new hostid (or same hostid with different count)	Expiration date of license
Normal	Prior license returned.	New license generated if sufficient fulfillment count is available.	Computed at activation time.
Normal-Regen	New (different) license generated and returned if sufficient fulfillment count is available.	New license generated if sufficient fulfillment count is available.	Computed at activation time.
Reactivated	Prior license returned.	New license generated.	Same expiration date as first activation done with this activation key.

Subscription	Prior license returned before Renewal Window, new license after Renewal Window.	Only allowed during Subscription Renewal Window.	Computed at activation time; updated in each Subscription Renewal Window.
<i>Refresh (deprecated in RLM v9.3) – use REHOST licenses instead.</i>	<i>New license generated if request is on a new day, otherwise prior license returned.</i>	<i>New license generated until hostid change count exceeded, then RLM_ACT_TOOMANY_HOSTID_CHANGES error returned.</i>	<i>Computed at activation time</i>

In the table above, whenever the action listed is “prior license returned”, the remaining fulfillment count is not decremented. Whenever activation generates a new license, the remaining fulfillment count is decremented by the license count generated . If a rehostable hostid is revoked, the fulfillment count is incremented.

1.8 Other RLC Commands

Once you have set up a product definition and an activation key, you can begin using Activation Pro, as soon as you upload your license generator settings file and your Activation Pro license, as described in the sections below. There are, however, a number of other RLC commands in the “Fulfillments”, “Customers”, “Reports”, “Admin”, “Profile”, and “About” tabs which will be useful in the day-to-day operation of the system, so you will want to become familiar with them before you enable Activation Pro for your customers.

1.8.1 Fulfillments

The **Fulfillments** tab allows you to view the licenses which have been created by Activation Pro. In addition, you can delete an individual fulfillment, in order to re-enable the count consumed on that activation key by that particular fulfillment. This is helpful when you are testing the activation software and you want to be able to regenerate a license for a particular hostid, since a re-activation from the same hostid would return the old license. By deleting the old fulfillment, the activation software will generate a new license (with a new expiration date) for that activation key on the hostid. The Expiration Date displayed in the browser will be the earliest expiration date for all licenses in the case of a multiple-license product definition.

The left-hand box at the top shows the number of (net) fulfillments – these are the current fulfillments (i.e., current usable licenses) after taking revoked licenses into account. The second box shows the number of revoked licenses.

The “Last Check” column indicates the last time `rlm_act_keyvalid()` was called on this activation key/hostid combination. (This column is new in ActPro v11.2BL2).

The “Company” and “notes” from the activation key were added in ActPro v12.2.

As in all the lists, you can filter the list using the Select: box at the top:

Product Name	Activation Key	License Hostid	License Expiration	Activated From	First Fulfill	Last Check	Company	Notes	Logged Data	Show...	Clear Selections		
Select: <input type="text"/>													
Product Name ▲	Activation key	Hostid	License Exp	Count	Activated from	Activated from host	First Fulfill	Last Fulfill	# fulfill	Last Check	Company	Notes	Li
Activation Pro Demo	7238-2276-6749-2864	license-00000-00-000000-00-4083F8-0F-500688-E7-71	2023-10-03	4	76-436-23-8	TPU-063	2023-10-03 17:56:30		4				

To delete the fulfillment, click on the red X at the right-hand side. Alternately, at the bottom of the list there are 2 buttons (“Check All” and “Clear All”), and a red X. Every fulfillment which can be deleted (i.e., fulfillments with the red X on the right-hand side of the list) will have

a checkbox on the left. If you would like to delete multiple fulfillments in a single operation, check the boxes corresponding to these fulfillments then click the red X at the bottom of the form.

To view the fulfillment, click on the list icon  on the right. Clicking the list icon displays the fulfillment data:

```
Fulfilled License for activation key 7238-2276-8749-2861  
  
LICENSE demo actdemo 1.0 3-oct-2023 uncounted  
hostid=disksn=00000_00_000000_00_1C83E8_0E_5006B6_E7.7  
issued=3-oct-2023 akey=7238-2276-8749-2861 _ck=ab9d96d568 sig="60PG  
4580GAF3F8DWVQ4T0EVB79S8HMKVENQ7KUHWO8A5T2X6QM30TNYR75VPV3QN0DFCGP3  
822Y0"  
  
License first fulfilled at 2023-10-03 17:56  
Fulfilled from IP address: 76.135.33.8  
Remote host name: unknown hostname (reverse DNS lookup failed)  
  


```

1.8.2 Customer List

RLM Activation Pro allows you to maintain a customer list and associate customers with activation keys.

You manage customers by selecting the “Customers” tab.

Editing Customer Information

You can edit individual contacts with the edit button  on the right. If the contact is not associated with any activation key, pressing the delete button will confirm that you want to delete the contact. If you delete the last contact for a company, you will be prompted to delete the company record itself.

Merging Customers

If you have 2 contacts who represent the same person, or 2 companies which are the same, you can check the checkboxes at the beginning of the 2 lines, then press **Merge Contacts** or **Merge Companies**, as appropriate. You must select exactly 2 customers for the merge operation. Once you press the **Merge...** button, you will be prompted to select which of the 2 should remain after the merge operation.

A merge of contacts will update any activation key or user record which referred to the old contact to then refer to the new (surviving) contact. For a merge of companies, any contact associated with the old company will now be associated with the surviving company.

Once the merge is complete, in the case of Merge Companies, the other company will be deleted, and all data associated contained in company record will be lost. For the case of contacts, you will be prompted as to whether you want to delete the contact or not. If you delete it, all information in that contact record will be lost.

Starting in Activation Pro v14.0, if a small number of customers are displayed in the customer tab, their activation keys will be displayed at the bottom of the form as well. The number of customers is set to 5 by default, but can be changed in the Admin → Database tab. You may see duplicate activation keys in this list if multiple contacts for the same company appear in the customer list.

Creating new Customers

To create a new contact/customer, press the **Add Customer** button at the top or bottom of the screen, the “Add New Customer” form appears:

Add New Customer

Click "ADD Company Info" or "Add Contact Person Info" below to create the company or contact person record. If you are adding a completely new customer, add the company first, then add the contact person.

<p>Company Info</p> <p>Company: <input type="text"/></p> <p>Addr line 1: <input type="text"/></p> <p>Addr line 2: <input type="text"/></p> <p>Addr line 3: <input type="text"/></p> <p>City: <input type="text"/></p> <p>State: <input type="text"/></p> <p>ZIP/Postal code: <input type="text"/></p> <p>Country: <input type="text"/></p> <p>Notes: <input type="text"/></p> <p style="text-align: center;"><input type="button" value="Add Company Info"/></p>	<p>Contact Person Info</p> <p>Contact Person: <input type="text"/></p> <p>Contact Type: <input type="text" value="-none-"/></p> <p>Title: <input type="text"/></p> <p>Phone: <input type="text"/></p> <p>Fax: <input type="text"/></p> <p>Email: <input type="text"/></p> <p>Other Info: <input type="text"/></p> <p>Company: <input type="text" value="-None-"/></p> <hr/> <p style="font-size: small;">If you enter an account name and password below, an account will be created for this contact on the portal. If the account already exists, entering a password will reset the password for the account. Account names must be >= 4 characters and consist of lowercase letters and numbers. Passwords must be at >= 4 characters and consist of lowercase/uppercase letters and numbers.</p> <p>Portal Account: <input type="text"/></p> <p>Password: <input type="text"/></p> <p style="text-align: center;"><input type="button" value="Add Contact Person Info"/></p>
---	--

You add the company first, then add contact people for that company. You are not required to add company information for contacts if you prefer to have only the person’s name and other info from the Contact Person Info side of the form, however, the Activation Pro customer portal operates using Company Information, so if you plan to allow your customers access to the portal, you should add company names along with your contacts.

Once you have added some Contacts to the system, you can assign them to activation keys.

Starting in ActPro v12.5, the Portal account sub-form appears at the bottom right-hand side. This allows you to create a portal account for the contact without going to the Admin → Users tab. When you edit this contact, you can change their password in the form, also.

1.8.3 Reports

Activation Pro has a report generator, which you access via the “Reports” tab. The report generator is described in detail in [Section 1.10](#).

1.8.4 Admin

The admin tab, available to a user with “admin” access, provides access to a second level of tabs to perform a number of administration functions. Each of these functions is described in the sections which follow.

ActPro License

The license generator in Activation Pro requires a license from Reprise Software to operate. When you purchase Activation Pro, Reprise sends this license to you. To install the license, select the **ActPro License** tab, click the **Browse...** button to locate your license file, then press **Upload File**. Your license file will be uploaded to the website.

Audit Trail

All create/edit/delete operations on product definitions, activation keys, customer and contact data, as well as deletions of banned hosts and license fulfillments are recorded in the ActPro **Audit Trail**. Each entry in the audit trail lists the time of the operation, who performed it, the operation (add/edit/delete), the database table and the key in that table. The Audit Trail tab allows you to view the audit trail as well as clear old entries.

Banned List

RLM Activation allows you to specify a list of unauthorized domains - domains which cannot activate licenses. If you select the **Banned List** tab in the Admin tab area, you will see a list of banned domains. The last item in the list is blank and allows you to add a new domain. In addition, each domain in the list has a **Delete** button on the right to remove it from the list.

The banned list is a list of domain names which are not allowed to activate using this activation key. If a request comes in from any domain on this list, it is rejected with RLM_ACT_BLACKLISTED. Note that if any string you enter here is a substring of the domain name then that domain will be rejected. All names are case-insensitive, and each item in the list must be less than RLM_MAX_HOSTNAME (64) bytes.

The license generator automatically bans IP addresses which attempt a large number of incorrect activation keys. These IP addresses will appear in normal IP address format (a.b.c.d), rather than as domain names, and an exact IP address match is required to ban the address, rather than the substring match that happens with manually-banned domain names. When you are manually entering banned domains, do not enter them in IP address format. You can delete any automatically-banned IP address in this list by pressing the delete icon on the right-hand side of the list. For more information on the automatic banning of IP address see [Section 2.6](#).

Database Tab

The **Database** tab selects a page of various database-oriented operations. On this page, you can:

- Backup your database
- Restore a previously-backed-up database (or just a part of a database)
- Perform a consistency check on the database
- Purge activation statistics
- Edit product definition defaults, activation key defaults, and ISV port # default
- Control whether revoked expired rehostable hostids return count to the activation key
- Set the automatic ban list parameters
- Allow expired licenses to be revoked
- Bulk-load customer data, and customize the customer data fields
- Set the activation server URL
- Set the license generator URL for fulfillments (new in v14.2)
- Delete activation keys which have previously been revoked from a rehostable hostid. (These keys cannot be deleted in the normal **Activation Keys** tab.)
- Normalize the dates in the database
- Specify the processing of "misc" license fields
- Blank (do not record) the IP addresses of successful activations
- Specify the maximum # of customers displayed in the customer browser that results in activation keys being displayed as well.
- Upload your logo to be used on the Activation Pro pages
- Specify the local timezone for time display (hostedactivation.com only)

Note that the **Specification of database fields which are not saved** option allows you to not record IP addresses of client machines which activate licenses. This is believed by some companies to be required for GDPR compliance. Even if this option is set, the IP addresses of failed activations are still recorded to enable the auto-banning of malicious systems, it is just the IP addresses of successful activations which are not recorded.

The **Upload your LOGO** option allows you to upload a logo that will replace the Reprise logo at the top of each page, for both regular and portal users. Select a file containing your logo (GIF or JPG format, max size of 120x100 pixels), then press the **Upload Your Logo** button. Activation Pro will now display your logo in place of the Reprise logo at the top of each page, for both regular and portal users.

In addition, on hostedactivation.com only, you have the options to **Set Actpro Timezone**. This command will re-write your entire licf (fulfilled licenses) table, so it can take a while. Reprise has approx 2500 fulfilled licenses in our database, and the command executes nearly instantaneously.

Debugging Tab

The Activation Pro license generator can write debug log information to the database. This is disabled by default, since the amount of data can become quite large, and it's generally only useful for diagnosing particular activation-related problems. Selecting the **Debugging** tab displays a page with 4 buttons: **View Debug Log**, **Enable Debug Logging**, **Disable Debug Logging**, and **Clear Debuglog**. If you are experiencing a problem with activations, you can go to this page, enable the debug logging, then re-try the activation and view the debug log. In addition, you can select (filter) the debug log using the **Select** box on the **View Debug Log** line. You can choose whether the debuglog is displayed in chronological or reverse chronological order.

While viewing the debug log, you can clear the log, and refresh the log while on the page.

In ActPro v15.0, the debug log displays the PID of the license generator process which generated the messages. The list will be sorted by PID, so that when there are multiple activations happening simultaneously, the debug output from each activation stream can be identified.

Delete Fulfillments Tab

The Delete Fulfillments tab, new in ActPro v12.4, allows you to purge old fulfillments which have expired. This is most useful for subscription-type activation keys. **USE THIS WITH CAUTION**. If you use normal activation keys, for example, deleting the old fulfillments will allow your customer to re-activate the license with a new expiration date if the activation key itself has not expired. It is generally MUCH SAFER to select the fulfillments you want to delete in the fulfillments browser, and delete them that way.

Generator Settings Tab

The RLM Activation Pro license generator is generic, and it is customized via a small settings file (similar to the ISV server settings file in RLM). This generator settings file, however, **contains your company private key**, so you need to be very careful with it. Before you can create licenses with Activation Pro, you need to upload the Generator Settings File to the website. To do this, select the **Generator Settings** tab, click the **Browse...** button to locate your settings file, then press **Upload File**. Your generator settings file will be uploaded to the website.

This tab also allows you to control whether requests to the activation server must be encrypted or not. Prior to ActPro v12.0, requests could be encrypted or unencrypted. The RLM web interface, for example, uses unencrypted requests, as does any web page you set up to do activation, whereas the `rlm_activate()` and `rlm_act_request()` calls always encrypt the request. The disadvantage of allowing an unencrypted request is that any user can set up a web page to access your activation server and pass data which you might not want to allow (such as values for optional RLM parameters.) ActPro v12 defaults to allowing unencrypted requests, but if you use optional parameters, you might want to turn these off.

Online/Offline Tab

The **Online/Offline** tab allows you to put your license generator online for normal operations, or offline if you want to perform database maintenance without customer activations making changes to the database. This tab brings up a form with a radio button to set your license generator online or offline. Be careful about setting your generator offline. The state of your license generator appears in the **About** tab for reference.

Resellers

The **Resellers** tab allows you to specify which fields in an activation key a reseller is allowed to edit. See [Section 1.12](#) for more information about this tab.

Users

The **Users** tab allows an administrator to view the list of authorized users, add new users, delete users, and edit an existing user.

At the bottom of the form is a list of checkboxes labeled **Visible Tabs**. By default, they are all checked. If you want to make a particular tab disappear for a user, uncheck the checkbox next to the tab name. For example, if you uncheck the **Profile** checkbox, the tab will not appear for this user, which means that the user cannot change their password or set defaults for product definitions or activation keys.

Note The **Admin** and **About** tabs cannot be hidden.

1.8.5 Profile

Clicking on the **Profile** tab allows you to edit the email address associated with your account, or change your password.

1.8.6 About

Clicking on the **About** tab displays a screen of information about this Activation Pro installation, including the expiration date of your Activation Pro license (The expiration date is updated by the license generator, so if the license generator has never run, this information will not appear. Also, the date won't be updated when you install a new license until the license generator runs again).

In addition, there is a link to the RLM Activation Pro Manual on this page.

1.9 Enabling Your Application for Activation

The last step in setting up Activation Pro is adding activation requests to your application, as described in this chapter.

On the client side, you must prepare your activation code and get the activation key to your customer.

1.9.1 Making the Activation Request for Your Customer

Using the Activation API

Once you are familiar with how to use the activation server and the activation GUI, you are ready to integrate the activation request into your application. To do this, embed a call to `rlm_activate()` at the appropriate point (usually after attempting to check out a license which fails), and, if you are successful at activating the license, perform the following steps:

- Call `rlm_close()` on your handle.
- Write out the activated license to a local license filename of your choice (Reprise Software recommends a file named *something.lic*).
- Call `rlm_init()`
- Re-attempt the license checkout.

For details on the activation API request call, see [Section 3.1](#).

Using the Activation GUI

You can get started right away by using the **activation GUI** supplied by Reprise Software. We recommend that you start this way, so that you can become familiar with the server side of activation without having to embed any code into your application. However, Reprise does not recommend using this method for production.

In order to proceed, make sure that you have set up the server side as described in [Section 1.4.1](#) and created at least one product definition and activation key as described in the [Section 1.6](#) and [Section 1.7](#) sections of Your Activation Database.

The activation GUI is built into the RLM web server. Run RLM (you don't need a license file), point your browser at port 5054 (or the port number you specified in the `-ws port#` specification) then select **Activate License** from the menu on the left-hand side. The GUI will guide you through the steps in activating a license.

When the RLM web server activates a license, the resulting license file will be placed in the directory from which RLM was started, and the file name will be "activateN.lic", where *N* is a sequence number. Each activation performed will get a new number.

Note RLM activation will only operate with non-zero `RLM_HOSTID_32BIT`, `RLM_HOSTID_ETHER`, or ISV-defined hostid types - all other hostid types will return an error.

Activation API or RLM Web Interface - Which to Use?

The RLM web interface is completely generic, and you can activate licenses for your products using this interface by setting up activation on your web server and specifying your URL. However, it will **always** be simpler for your customer if you integrate the RLM activation API into your product or installation tools, since you can preset many of the activation parameters, such as URL, ISV name, etc.

Reprise Software strongly recommends that you integrate the API into your product.

1.9.2 Other Client-side Activation Options

Alternatively, you can create a custom stand-alone activation utility for your customers, rather than building it into your application. Follow the steps above for using the Activation API.

Also, you can create an HTML page to activate licenses using your activation server. For an example of this, see "activation_example.html" in the RLM kit "examples" directory. This technique, however, will require your customer to cut and paste the resulting license file into

the appropriate file on their system, so it is inferior to integrating the activation API into your application.

1.9.3 Setting the Activation Timeout

In some cases, the activation process will time out, returning an RLM_EH_NET_RERR (-105) error. If your activation server is properly configured, this can happen either due to a proxy server or anti-virus software blocking the return, or if the activation server times out on the reverse DNS lookup of the client. See the next section for info on setting proxy server parameters.

The first thing you should try, however, is increasing the timeout on the client side. By default, this timeout is 15 seconds prior to RLM v14.1, and 20 seconds in v14.1. You set the client-side timeout by setting the environment variable **RLM_ACT_TIMEOUT** to the # of seconds you desire.

1.9.4 Using Proxy Servers

The RLM Activation client software (either the `rlm_activate()/rlm_act_request()` API calls or the RLM admin web interface) will make use of a user-defined proxy server. In order to use a proxy server, set the environment variable **HTTP_PROXY** or **http_proxy** to the hostname and port number of the proxy server.

For example, to utilize the HTTP proxy server running on “myproxyhost” on port 8765, use the following command on Unix:

```
% setenv HTTP_PROXY myproxyhost:8765
```

If your proxy server uses authentication, you use the **HTTP_PROXY_CREDENTIALS** environment variable to pass the credentials to the proxy server. This will be the username and password to authenticate you to the proxy server, in the format `user:password`.

For example, if your username is “joe” and password is “joes_password”:

```
% setenv HTTP_PROXY_CREDENTIALS joe:joes_password
```

Note RLM activation supports only the BASIC authentication type.

You can either set these environment variables before running your application, or use **putenv()** (or **rlm_putenv()**) to set them inside your application before calling `rlm_act_request()`.

Proxy Auto-Detection

Beginning in RLM v11.0, RLM will attempt to auto-detect the proxy server on Windows systems. If auto-detection fails, you can set the **RLM_PROXY_DEBUG** environment variable to get diagnostic information written to stdout. You can also replace RLM’s default auto-proxy detection on Windows, or add your own detection on other platforms. To do this, replace the **rlm_get_proxy.obj** or **rlm_get_proxy.o** module in the library. This module contains the single entry point **rlm_get_proxy()**.

`rlm_get_proxy()` is called as follows:

```
void rlm_get_proxy(const char *url, char *proxy)
```

`rlm_get_proxy()` attempts to locate the proxy server for the specified URL. If a proxy is located, the return string “proxy” is filled in with the hostname and port in the format `hostname:port`

If there is no proxy, or the proxy is bypassed, `rlm_get_proxy()` should return an empty string.

The proxy name is allocated by the caller, and is a string of 1000 characters.

1.10 Reporting

ActPro contains a reporting module which allows you to generate reports of products, activation keys, fulfillments, etc.

To use the reporting module, select the **Reports** tab; the first Reporting screen appears:

Standard Reports			
Report Name	Generate Report to...		
Activation Keys	Display	Tab-delimited	Comma-delimited
Disabled Activation Keys	Display	Tab-delimited	Comma-delimited
Fulfilled Licenses	Display	Tab-delimited	Comma-delimited
Fulfilled Licenses (brief)	Display	Tab-delimited	Comma-delimited
Permanent Licenses	Display	Tab-delimited	Comma-delimited
Products	Display	Tab-delimited	Comma-delimited
Revoked Licenses	Display	Tab-delimited	Comma-delimited
Statistics	Display	Tab-delimited	Comma-delimited
Unfulfilled Keys	Display	Tab-delimited	Comma-delimited

Create New User-Defined Report

The built-in reports appear in alphabetical order in the left-hand column: Activation Keys, Fulfilled Licenses, Fulfillment Summary, Permanent Licenses, Products, Revoked Licenses, Statistics, or Unfulfilled Keys.

The next 3 columns are buttons which direct the output either to the screen (Display), or a Tab-delimited or Comma-delimited file for download. Once you click this, you will see a screen allowing you to filter the output of the report. The contents of this screen are report-type dependent. The selection screen for the "Activation Keys" report is shown below:

Report: Activation Keys

--- **Selection Criteria** ---

Product Name:

Activation Key:

Other License Parameters:

Notes:

Whitelist:

Contact:

Company:

The **Product Name** choice list allows you to select an individual product or all products. The other text boxes allow you to filter the various fields in the activation key table.

In each text box, the text you type will be used as a regular expression to select the appropriate rows from the activation key table. So, for example, if you have an activation key which is "1234-5678-abcd-efgh", then typing "1234" in the Activation Key field will select this key (as well as any others with "1234" in the activation key string) for the report.

For the **Statistics** report, you can select the date to report. Enter the date as yyyy-mm-dd. If you enter only yyyy-mm, a report for that month will be produced.

Once you have made your selection, click **Generate Report**, and the report will be generated.

If you selected **Display**, you will see a form very similar to the "View Product Definitions" or "View Activation Keys" forms. You can page through the various pages as well as sort on the columns by clicking on the underlined column header.

If you selected either tab-delimited or comma-delimited output, you will be taken to a screen with a download link.

Note With comma-delimited and tab-delimited report output formats, newlines ('n') and carriage-returns ("r") in the input are replaced with spaces in the output, so that your spreadsheet will process these fields as a single field, rather than starting a new row. This change was made in ActPro v12.3.

1.10.1 User-Defined Reports

Beginning in ActPro v12.4, you can create user-defined reports with preset selection criteria. On Linux systems, these reports can be automatically emailed to a list of addresses on a preset basis, via a crontab entry.

To create a user-defined report, press the **Create New User-Defined Report** at the bottom of the form. When you do this, you will see the User-Defined Report form editor, as shown here:

Create User-defined Report

Report name:	<input style="width: 80%;" type="text"/>
Report header:	<input style="width: 80%;" type="text"/>
Use Builtin Report:	Activation Keys ▼
Report Output:	<input type="radio"/> tab-delimited (file) <input type="radio"/> comma-delimited (file)

Selection Data

Product Name:	<input style="width: 80%;" type="text" value="*ALL PRODUCTS*"/> ▼
Product Name:	<input style="width: 80%;" type="text" value="*ALL PRODUCTS*"/> ▼
Product:	<input style="width: 80%;" type="text"/>
Product:	<input style="width: 80%;" type="text"/>
Product:	<input style="width: 80%;" type="text"/>
License Hostid:	<input style="width: 80%;" type="text"/>
Activation Key:	<input style="width: 80%;" type="text"/>
License Hostid:	<input style="width: 80%;" type="text"/>
License Hostid:	<input style="width: 80%;" type="text"/>
Activation Key:	<input style="width: 80%;" type="text"/>
Other License Parameters:	<input style="width: 80%;" type="text"/>
Other License Parameters:	<input style="width: 80%;" type="text"/>
Notes:	<input style="width: 80%;" type="text"/>
Notes:	<input style="width: 80%;" type="text"/>
Whitelist:	<input style="width: 80%;" type="text"/>
Whitelist:	<input style="width: 80%;" type="text"/>
Contact:	<input style="width: 80%;" type="text"/>
Contact:	<input style="width: 80%;" type="text"/>
Company:	<input style="width: 80%;" type="text"/>
Company:	<input style="width: 80%;" type="text"/>

Report Scheduling and Output		
Report Schedule	<input type="radio"/> Daily <input type="radio"/> Weekly	<input type="radio"/> Monthly
Report Schedule Params	Day of Week: <input style="width: 40px;" type="text" value="Sun"/> ▼	Day of Month: <input style="width: 40px;" type="text" value="1"/> ▼
Email report to (space separated)	<input style="width: 95%;" type="text"/>	

The first section of the form allows you to name the report; do not use the name of a built-in report. Next, you can specify a report header, and pick which built-in report to base this on. Finally, you can specify whether the report is to generate a tab-delimited or comma-delimited file.

In the next section, you can specify pre-defined selection data which are applied when the report runs. The selection data options will change as you modify the **Use Builtin Report** choice list.

Finally, the last section allows you to specify the report schedule: either daily, or weekly on a particular day of the week, or monthly on day 1-28 of the month. The actual time your report will run depends on the settings in the crontab entry you create to auto-run the reports. This

section allows you to specify where the report is emailed as well.

Press **Save** when you have created the report. After creating one report, a **User-Defined Reports** table will appear under the **Reports** tab:

User-Defined Reports					
Report Name	Generate Report to...			Actions...	
example	Display	Tab-delimited	Comma-delimited	Edit	Delete

1.10.2 Setting up cron to run reports automatically

If your ActPro system is running on hostedactivation.com, we have already done all the setup for you. All you have to do is define the reports and they will be sent to you. The reports run daily at 6am PST. On hostedactivation.com you are limited to 100 reports emailed per month.

If you host your own activation server, you will have to do this setup. On Linux, you can have these reports run automatically via cron. To do this, set up a crontab entry to run:

```
php ${location of your actpro installation}/rlc_scheduled_report.php
```

If you have your own activation server, you will also need to be sure that sendmail is configured correctly to send the email. ActPro uses phpmail to send the email. You will need to download the phpmail software and configure rlc_scheduled_report.php with your sendmail credentials. Phpmail should be placed in the ActPro install directory and named "phpmail".

It is beyond the scope of ActPro support to help with configuration of cron or phpmail.

1.11 Release Checklist

With RLM Activation Pro, you control the activation server, so you can make changes at any time. However, there are a couple of issues that you need to consider before you ship your application:

- Review the **rlm_activate()** (or **rlm_act_request()**) call you make in your application to be sure that you have the correct URL for your activation server.
- Be sure that your activation license generator and data files are protected on your web server by limiting user access to **RLC**, especially **Admin** access.
- Be sure that your license generator (in the cgi-bin directory) , including any ISV generator settings file (isv.gen) is read-write-execute to the web user only.

1.12 Reseller Support

Activation Pro v12.5 includes support for license resellers. A reseller can be any company in the Activation Pro database, even companies who have activation keys assigned to a contact at that company.

A reseller cannot create or edit product definitions and has limited editing access for activation keys. Also, the reseller will have a limited view of the activation database in the GUI. A reseller can, however, create new companies and contacts and assign their activation keys to these new contacts. A reseller's ability to edit activation keys is specified by you, the ISV, in the **Admin** → **Reseller** tab. By default, resellers can assign contacts to their keys, modify the notes field of these keys, and set the whitelisted URLs for the keys.

In order to create a reseller, do the following:

- Make sure that the reseller company has at least one contact in your Customers tab.
- Create a login account for any contact at the reseller. This account should have an access type of “Reseller”.
- Create one or more activation keys for this reseller. When creating the activation keys, near the bottom of the form, select the reseller’s company from the choicelist in the **Optional: Reseller owner of key:** field.

That is all there is to do to set up a reseller.

When your reseller logs in to the Activation Pro software, their main menu will have some restrictions:

- No **Products**, **Admin**, or **Profile** tabs.
- The reseller will see only activation keys which they “own”, as well as activation keys where they are the contact on the key.
- A reseller will only see customers which they have created in the **Customers** tab.
- The reseller will have a more limited **Reports** tab, which does not contain any of the reports for products or statistics.

The reseller can create customers, assign their activation keys to these customers so that their customers can fulfill their own licenses for your software. You, as the ISV, will be able to see the status of all the reseller’s keys as well as the customers assigned.

You can set the fields available for editing by the reseller in the **Admin** → **Resellers** tab. If you want your resellers to be able to edit other fields in the activation key, check the appropriate boxes. Only the enabled fields will appear in the reseller’s edit screen for the key.

1.13 Customer Portal

In addition to the RLC administration program, Activation Pro includes a Customer Portal to allow your customers to view their own activation keys and fulfillments. The customer portal contains a subset of the RLC functionality, specifically the ability to view activation keys and license fulfillments. In all cases, only the activation keys and fulfillments associated with the **Company** of the logged-in user are displayed. Portal users log in at the same URL as your administrative users.

All portal users (starting in Activation Pro v13.0BL2-p5) are required to have an associated contact, and that contact must be associated with a company in the Activation Pro database. If either the contact or the company is not present, the user will be denied the ability to log in to the portal.

The interface is similar to RLC, but with only the **Activation Keys**, **Fulfillments**, **Reports** and **About** tabs. It is important that the “Portal” user has an associated contact which itself is associated with the Company of the user who is the contact on the activation key.

When **Activation Keys** is selected, all the activation keys assigned to contacts in the company are displayed. Your customer can filter the list using the **Select:** box at the top.

Selecting the **Fulfillments** tab allows your customer to view the licenses which have been fulfilled.

1.13.1 Setting up the Customer Portal

Prior to Activation Pro v13.0, the customer portal required separate software setup, however in Activation Pro v13.0 and later, there is no setup to do. Simply create portal accounts for your customer, and they log in at the regular administrative URL.

1.14 Setting Defaults for Products and Activation Keys

Activation Pro allows you to set default values for most fields in the product creation/edit form as well as the activation key creation/edit form. In addition to setting default values, a field can be marked as “invisible”, which means that it will not appear in the create/edit form so it will always have the default value when created, and the value cannot be changed when edited.

There are 2 levels of defaults:

- System-wide defaults (edited by an administrator, with the **Admin** → **Database** → **Edit System Wide Product Definition Defaults**, or **Activation Key Defaults**)
- User defaults (edited by the user with the **Profile** → **Edit Product Definition Defaults** or **Edit Activation Key Defaults**).

If the “default” checkbox in the left-hand column is checked, then the value(s) in the right-hand column will be used as the default(s) for that field. If the “invisible” checkbox in the center column is checked, then the value(s) in the right-hand field will be used as the default(s) and that field will not appear in the new product or edit product form.

Note “invisible” sets “default” when saved.

If a field is set to “invisible” in the system-wide form, that field will not only be invisible in the appropriate form, it also **will not appear** on a user’s default editing form.

The Activation key default form is similar to the product definition default form. Also, the per-user forms look the same as the system-wide default forms.

Here is an example (complete) “Create Product” form:

Create Product Definition

Click “CREATE Product Definition” below to create this product definition record

Name of this product definition:

Product Name (in generated license):

Product Version (in generated license): Normal Date-Based

Required for UPGRADE license: Upgrade from Version:

License Type: Nodelocked, Uncounted Single Floating
 NL, Uncounted UPGRADE Single UPGRADE Floating UPGRADE
 Alternate Server Hostid Alternate Nodelock Hostid

Optional: Alternate Server Hostid parameters: Activation Server Check: None At Startup Daily Every 6 hours
Check failure tolerance:

Create issued=today? (yes if checked):

Create customer= in license? (yes if checked):

Include Activation Key in License: No Yes 2 licenses: one with and one without

of licenses to create per activation [1-9999]: [only used for floating licenses - multiplies requested count]

License expiration date: [0=permanent, number=# of days, string=fixed date]

License Generator Algorithm: [=0: RLM standard algorithm, !=0: ISV-defined]

Optional: Text to prepend to license:

Optional: Notes:

Display Order:

Optional: Allowed hostid types: (if any specified, overrides default)

rehostable isv-defined isv-string-hostid rimid ethernetMACaddr
 32-bit diskSerial# IPaddress UUID AlternateServer/Nodelock
 username hostname serial# string demo
 any

Now, after the “Upgrade From Version”, “Alternate Server Hostid”, “Issued”, “Include Activation Key”, “# licenses per activation”, “Other Parameters”, “License Generator Algorithm”, and “Allowed Hostids” fields were defaulted and made invisible, the form looks like this:

Create Product Definition

Click “CREATE Product Definition” below to create this product definition record

Name of this product definition:

Product Name (in generated license):

License Type: Nodelocked, Uncounted Single Floating
 NL, Uncounted UPGRADE Single UPGRADE Floating UPGRADE
 Alternate Server Hostid Alternate Nodelock Hostid

Create customer= in license? (yes if checked):

License expiration date: [0=permanent, number=# of days, string=fixed date]

Optional: Notes:

Display Order:

If a field is made invisible after products or activation keys are defined, editing the product or activation key will not affect the prior values of the invisible fields.

The activation key default forms work in exactly the same way as the product definition forms.

The following fields cannot be defaulted:

- Product name in product definitions
- License name in product definitions
- Active and obsolete flags in product definitions
- Activation key name in activation keys
- Product name in activation keys
- Active flag in activation keys
- # activation keys to create in activation keys
- Customer in activation keys

Advanced Topics

2.1 Activation Pro Setup (local server)

If you decide to host the activation server yourself, you will follow the installation instructions in this chapter. If you use Reprise's hosted activation, you can skip this chapter.

In order to set up Activation Pro, you configure your web server, then install the RLM Activation Pro software on the web server. Once this is done, you can populate your database (as described in [Section 1.5](#)), then add activation request calls to your application (described in [Section 1.9](#)).

If you use Reprise's hosted activation service, you can skip this chapter and refer to the setup instructions in [Section 1.4.1](#).

2.1.1 Requirements

Setting up RLM Activation Pro involves setting up a web server with PHP and MySQL support, as well as the RLM Activation Pro software. Ideally, you should be familiar with downloading and installing open-source tools and using Web infrastructure.

RLM Activation Pro requires:

- The Apache Web server, version 2.2 or greater
- PHP version 7, with MySQL extensions
- MySQL server, version 5.7 or greater
- MySQL Connector/C development kit (you will only need this for linking your license generator and you only need to do this if you are using ISV-defined hostids)
- A web browser for running RLC, the administration tool

To get you started as quickly and easily as possible with RLM Activation Pro we suggest that you install a pre-configured Apache/MySQL/PHP (AMP) stack. Reprise Software recommends the XAMPP stack from Apache Friends. This is the stack which we use to test Activation Pro. It is free, and it comes pre-built for all platforms on which we support RLM Activation Pro (although it is not appropriate for production, see below).

While it is certainly possible for you to install Activation Pro on an existing Apache/MySQL/PHP stack, please understand that Reprise cannot support every combination of these components. We are familiar with the XAMPP stack, and will be able to offer help on XAMPP. We strongly urge you to install Activation Pro on an XAMPP stack to become familiar with the product, then, once you are familiar with RLM Activation Pro, move your installation to your ultimate web server or web hosting company. This way, you will have a working refer-

enceimplementation. Note that XAMPP is not recommended for production installations, it is not secure.

If you are not comfortable setting up your own web server, you might consider Reprise Software's hosted activation service, which will save you the trouble of installing anything on your servers.

2.1.2 Setting Up Activation Pro

To set up RLM Activation Pro, there are 7 steps:

1. Install a pre-configured Apache/MySQL/PHP (AMP) stack (described in this chapter).
2. Install the Activation Pro software on your web server (described in this chapter).
3. Configure RLM Activation Pro (described in this chapter).
4. Install the Activation Pro license file you received from Reprise Software in the cgi-bin directory on your web server.
5. (Optional) Configure your License Generator if you use an ISV-defined hostid.
6. Setup the Activation Database (described in [Section 1.5](#)).
7. Add activation request calls to your application, or build a stand-alone activation utility (described in [Section 1.9](#)).

If you are using Activation Pro at a web hosting company, a different set of installation steps will be required. In particular, step 1 above isn't required. The differences will be outlined in the following sections.

If you are using Reprise Hosted Activation, we have done steps 1-4 for you, so unless you have an ISV-defined hostid (step 4), you can skip the remainder of this chapter and go straight to [Section 1.5](#).

Step 1. Install a Pre-configured Apache/MySQL/PHP (AMP) Stack

If you are installing RLM Activation Pro at your ISP, you can skip this section. If you are evaluating, however, Reprise Software recommends installing on a local AMP stack before you attempt to run RLM Activation Pro at your ISP.

To start, you need the stack of web services to support RLM Activation Pro. A pre-configured AMP stack called XAMPP is available for Windows and Linux systems at the Apache Friends website. Downloads and installation instructions can be found on the Apache Friends website: <https://www.apachefriends.org/index.html>

On Linux, after installing the package will be in /opt/lampp and you will need to execute the following commands as root:

```
chmod 777 /opt/lampp/cgi-bin
```

```
chmod 777 /opt/lampp/htdocs
```

Note These directories would not normally have 777 permissions, but we are doing this to make the rest of the setup easier. When you are finished, reset the permissions on cgi-bin and htdocs to their original settings.

Now you can log out as root.

Step 2. Install the RLM Activation Pro kit from the Reprise Website

RLM Activation Pro operates on a particular RLM binary platform, and is supported on Windows, and Linux systems (x86_w and x86_l):

On all Platforms

First, download the Activation Pro kit: go to the Reprise Website Download area, enter your username and password, and select the “RLM Activation Pro” kit. Pick the appropriate platform, and save this on your system.

Note If you are installing on your ISP’s web server, be sure to choose the RLM Activation Pro kit appropriate for your ISP’s operating system.

Continuing the Installation on Linux

Extract the kit files using gunzip/tar:

```
% gunzip actpro.platform.tar.gz
% tar xvf actpro.platform.tar
```

Continuing the Installation on Windows

On Windows, the kit is in a ZIP file. Unzip the file in the desired location.

Step 3. Configure RLM Activation Pro

Copy your License Generator Settings file from your RLM kit

You can create the license generator settings file (*isvname.gen*) on any supported RLM platform. To create it, execute the following command in the configured RLM kit area:

```
rlmsign -generator
```

Copy the resulting file (*isvname.gen*) to the main ActPro directory (e.g. *actpro.x86_i2*) and the *actpro_setup* directory. If you are copying between Unix and Windows systems, be sure that your copy program doesn’t insert carriage-control characters. The easiest way to make sure of this is to check the file size to make sure it is the same after copying.

- Install the RLM Activation Pro files on your web server
- FTP the contents of the *actpro_setup* directory to your ISP’s web server space, e.g. *//your-domain.com/actpro_setup* (or copy to your web server if it is local)
- Make sure that the *actpro_setup* directory is mode *rwX* to the web user.
- Make sure that *actpro_setup/actpro.php* is writable by the web user.
- Run the Activation Pro setup program.
- On Windows: Run the XAMPP control panel. Start the Apache and MySQL services. On Linux, this happened as part of installation. If you are running at your ISP, you can skip this step.
- Point your browser (Firefox or Chrome recommended) to: http://localhost/actpro_setup/setup.php
- The defaults in the form should be correct, so press “Setup activation database”. REMEMBER the admin account username and password – you will need this later. (The default is *admin* and *admin*).

Note If you are going to host your servers at your ISP, many ISPs have naming conventions for MySQL databases, and, in addition, many ISPs will not allow you to create a new database from a script, the way that Activation Pro’s *setup.php* software does it. If this is the case, simply create the database manually using your ISP’s administration tools, then run *setup.php* after the database is created.

Security Considerations

Once your Activation Pro software is installed, you will want to check the permissions on all files and perform other security checks on your website. While this list is not complete, it is

a good start:

1. Remove the directory `actpro_setup` on your web server. You no longer need this. (Note that setup normally does this).
2. Change the modes of the following files, as shown (the setup program attempts to do this, but on some servers the file modes are not set correctly):
 - all `.php` files – mode `0400`
 - all other files (including all files in the `images` directory) – mode `0444`
3. Make sure that your `cgi-bin/isvname_mklic` program (or `isvname.gen` file) is read-execute to owner, i.e., mode `500`.
4. You should set up a `.htaccess` file to protect access to the ActPro directory. Many ISPs have a tool to password-protect the directory. If they don't you can get help here: <http://www.htaccessredirect.net/>
5. Reset permissions of the `cgi-bin` and `htdocs` directories to their original settings.

Step 4. Install the Activation Pro License You Received from Reprise Software

- You will receive an email from Reprise Software with your Activation Pro license. Create a file named *something.lic* (typically `isvname.lic`) containing the LICENSE line(s) from this email. We will use this file in the next step.
- Once you have installed the Activation Pro software, then log in as an admin user in the GUI, and select the **Admin** tab. In the 2nd row of tabs, select **ActPro License**. On this screen, you can browse to the license file you created, and upload the file to the web server using the **Upload File** button.

You will need to update this license annually when you receive your new Activation Pro license from Reprise Software.

Step 5 (OPTIONAL) - Configuring Your License Generator with ISV-defined Hostid

Note Reprise Software does not recommend using ISV-defined hostids. Use of the newer ISV-string hostid type provides nearly all the functionality of the older ISV-defined hostid while still allowing you to use the generic server settings file and generator settings file, making the procedure in this section unnecessary.

If your software uses an RLM ISV-defined hostid, you will need to build a custom license generator for Activation Pro. In order to do this, you need the MySQL Connector/C development environment.

To install the Connector/C development environment:

1. Browse to: <http://dev.mysql.com/downloads/connector/c/>
2. Select the appropriate platform from the drop-down list
3. Select the most appropriate distribution for your operating system, and download that version. Follow the directions for installation. Select a mirror site and download the binaries. Save the file.
4. Install the connector kit in a convenient location.

Once the Connector/C development kit is installed, do the following:

1. Edit the makefile in the Activation Pro kit and change the definition of `MYSQLDEV` to be the directory where you installed the Connector/C kit.
2. Edit the makefile and change the definition of `ISV_DEF_HOSTID_OBJS` to point to your object files that implement your ISV-defined hostid.

3. Copy the RLM library (rlm.a or rlmclient.lib on windows) from a production RLM kit of the correct platform.
4. Create the custom generator by typing “make isvname_mklic” where *isvname* is your ISV name.
5. Copy the isvname_mklic binary to your web server cgi-bin directory, replacing the generic generator which was installed earlier when the kit was installed, or, if you have not installed the files yet, copy isvname_mklic to the actpro_setup directory before ftping the actpro_setup directory to your web server.

Note Additionally, the RLC admin account has an **Administer Database** menu item which contains an option to upload the license generator from your local system to the web server cgi-bin directory.

2.1.3 Using RLC with HTTPS

RLC can be configured to use the <https://> protocol. To do this, copy the file **htaccess.https** in the ActPro directory on your web server to **.htaccess** in the same directory. You may get a certificate warning message the first time you connect to the site, which you can ignore. If you want to fix the certificate warning, you will need to purchase an SSL certificate for your website.

The license generator itself, ISV_mklic, will not work with HTTPS. The traffic from the rlm_act_request() call to the license generator is **already encrypted**, so activation keys are not sent in the clear.

2.2 Upgrading from an earlier version of Activation Pro

If you are currently running Activation Pro, you can easily upgrade to the new version. (Hosted Activation customers do not need to worry about software upgrades – we do these for you).

You should follow these steps:

1. Back up your MySQL database. On recent versions of Activation Pro, there is a backup command in the **Admin** → **Database** tab. Select the backup file name and press **Backup Database**. If this command isn't in your version of Activation Pro or you prefer to backup outside ActPro, this can also be done with the phpMyAdmin program available as part of XAMPP and on most web hosting companies' admin pages. Select your database, click on the **export** tab, and press **GO** in the bottom-right hand corner. Save the file. While this step isn't strictly required, it is **strongly recommended** by Reprise Software.
2. Install the new Activation Pro software. Do this the same way you installed Activation Pro initially:
 - Extract the kit.
 - Copy your ISV generator settings file to the *actpro_setup* directory on the kit.
 - Remove the actpro_setup directory on your web server, if it is there (it shouldn't be).
 - FTP (or copy, if local) the “actpro_setup” directory and all it's contents to your website, as you did in the initial installation.
 - Browse to ../actpro_setup/setup.php on the web server, just like when you first set up Activation Pro. The setup program will detect that you have an installation present (unless you renamed the “actpro” directory to something else. If you did, you can rename it back to “actpro” before you browse to setup.php), and will prompt you to upgrade. If you select “yes”, it will then

back up the program directory (actpro), install the new software into a new ActPro directory, and upgrade the database from the old version to the new version.

- Make sure that your Activation Pro license file is present in the cgi-bin directory on your web server. Without this license file, when you attempt to activate, you will get the “RLM_EH_ACTPRO_UNLICENSED (-160)” error.

2.3 License Rehosting

2.3.1 Rehostable Licenses

Activation can be set up to support rehosting of licenses by the end user without ISV involvement. A rehostable hostid is requested at the time that `rlm_activate()` is called, and the activation server issues the license to this hostid. Later, if the user wishes to move this license to another system, the `rlm_act_rehost_revoke()` call can be used to revoke the rehostable license and allow it to be activated on another system. Note that the rehostable hostid is a copy-protected file, and if the system disk should crash, the hostid cannot be retrieved. As an ISV, you will need a policy to deal with this situation – e.g., to give the customer another activation in order to continue. Since this situation should be rare, a non-automated request procedure might be quite sufficient.

Rehostable license support is limited to nodelocked, uncounted (or single) licenses and product definitions that specify only a single license. In addition, only one version of any product can exist with a rehostable hostid on a system at any given time. Attempting to activate a 2nd product with a different version number will give an RLM_EH_REHOST_EXISTS (-153) error from activation. Attempting to activate either a counted license or a product with multiple licenses will give an RLM_ACT_NO_REHOST (-1035) error. Finally, you should always use a fixed expiration date if you are using the **Normal** fulfillment type for Rehostable licenses. If you want an expiration date that is relative to the time of fulfillment, then you should use a **ReActivate** fulfillment type and (beginning in RLM v11.0) set the count to the # of times you want your customer to be able to revoke and re-activate the license.

Note that you have a choice when it comes to the revocation of rehostable licenses. By default, RLM Activation Pro will delete the hostid when `rlm_act_rehost_revoke()` is called, but if the license has expired, the Activation Pro server will not return count to the activation key, and it will return the status RLM_ACT_REVOKE_TOOLATE to the application. However, you can configure Activation Pro to allow the server to return count to the activation key in this case, and return a good status to the application. See [Database Tab](#) for more information on setting this parameter.

Rehostable hostids do two checks at verification time which fail on certain systems. These checks are:

- Checking the file ID of each file in the rehostable hierarchy, and
- Checking the native hostid of the system (we refer to this hostid as the “reference hostid”)

The file ID check fails on Windows systems if drives are added or removed from the disk controller which has the rehostable file hierarchy. We have seen the native hostid change on CentOS systems when the network cable is unplugged. Beginning in RLM v12.3, you can disable the file ID checks on windows by calling `rlm_isv_cfg_disable_windows_fileid_check()`. You can disable the native hostid check by calling `rlm_isv_cfg_disable_reference_hostid_check()`. Note that you can call these functions in your `rlm_isv_config.c` file, so that they apply new defaults to all your RLM-licensed applications, or you can call them inline when you want to disable either check.

RLM selects a **reference hostid** automatically, however you can override this choice starting in

RLM v12.3 by calling `rlm_set_attr_reference_hostid()`. If you do override the reference hostid, you must be sure to set the same reference hostid that you set when you created the rehostable hostid when you attempt to call `rlm_act_rehost_revoke(... RLM_ACT_REVOKE_REFERENCE)` (or `rlm_act_revoke_reference()`). See `rlm-set-attr-reference-hostid` for a description of the call.

2.3.2 How to activate with a rehostable hostid

In order to create a rehostable hostid, you must set the activation handle to indicate that you want to activate with a rehostable hostid. To do this, you use code similar to the following (this code is from the example in the section below):

```
act_handle = rlm_act_new_handle(rh);
rlm_act_set_handle(act_handle, RLM_ACT_HANDLE_REHOST, (void *) 1);

stat = rlm_activate(
    rh,                /* RLM handle */
    "http://reprisesoftware.com", /* URL */
    akey,              /* Activation key */
    1,                 /* count - # of licenses */
    license,           /* Space for the returned license */
    act_handle         /* Activation handle data */
);

rlm_act_destroy_handle(act_handle); /* Done with this */
```

If you do not set the handle to `RLM_ACT_HANDLE_REHOST` before the `rlm_activate()` call, you will not create a rehostable hostid and the license will be activated using the default hostid on the machine.

2.3.3 If You Don't Want to Always Use Rehostable Hostids

Since a rehostable hostid must be requested at activation time by setting the handle before you call `rlm_activate()`, you must know before activation time whether you want to use a normal or a rehostable hostid. If you know this on a product-by-product basis, you can set the allowed hostids in the product definition, setting only "rehostable" in the product definition for a product that always uses rehostable hostids. If your products can use rehostable or regular hostids, but you know which at activation key creation time, you can set the allowed hostids in the activation key. In either case, use an algorithm similar to the following:

1. Attempt the activation for a "normal" hostid. If this succeeds, you are done.
2. If the normal hostid activation fails, re-attempt the activation specifying a rehostable hostid.
3. If both attempts (1) and (2) fail, then the product definition doesn't specify a rehostable hostid and the default hostid on this system isn't in the list of allowed hostids, either.

If you don't know before activation time, you will have to prompt the user and allow both rehostable and regular hostids in the product definition/activation key, then make the `rlm_activate()` request with the correct parameter.

How do I set up Activation Pro to accept the correct type of hostid?

This is really straightforward.

- The only way to get a rehostable hostid is to request it explicitly, in which case, only the rehostable hostid will get sent to the ActPro server.

- If you don't request it, RLM will fill in the list of "standard" hostids and send those to the server.

Now, as far as your Activation Pro server is concerned:

- If your activation key specifies rehostables only, then only a rehostable will work.
- If your activation key specifies other types of hostids, then only those hostids will work.
- If your activation keys specifies nothing, then the hostid requirement falls back to the product definition:
 - If your product definition specifies rehostables only, then only a rehostable will work.
 - If your product definition specifies other types of hostids, then only those hostids will work.
- If neither the activation key nor the product definition specifies allowed hostids, then the default is used, which is set to include rehostables (unless you change it in `rlm_isv_config.c`).

2.3.4 What happens when my customer inadvertently deletes the rehostable hostid data?

When you create a rehostable license, you write a license file which specifies a rehostable hostid. The rehostable hostid is a copy-protected directory hierarchy on the computer. Sometimes, your customer will delete the license file or delete/invalidate the hostid. What do you do in this case?

If your customer deletes the license file, you first have to determine the hostid that was used for this product, then you must contact the activation server to retrieve the license. You can do this by first retrieving the rehostable hostid with the `rlm_get_rehost()` API call (v11.1), then asking the activation server for the license activated on that hostid with the `rlm_act_keyvalid_license()` call. You will need to know the product name and activation key to do this. The following code snippet illustrates this operation:

```
char product_name[RLM_MAX_PRODUCT+1];
char hostid[RLM_MAX_HOSTID_STRING+1];
char license[RLM_ACT_MAX_LICENSE+1];
char *akey;
stat = rlm_get_rehost(rh, product_name, hostid);
akey = "activation key";
if (!stat)
{
    /* Request the license from the activation server */
    stat = rlm_act_keyvalid_license(rh, "yourURL.com", akey, hostid,
license);
    if (!stat) /* Write license out to license file */
}
```

If your customer deletes or invalidates the hostid, you have the option of allowing them to revoke the license **on the same machine** where they activated it. In your call to `rlm_act_rehost_revoke()`, specify `RLM_ACT_REVOKE_REFERENCE` in the flags (4th parameter). `rlm_act_rehost_revoke()` is new in RLM v14.1, and should be used for all new applications. Prior to v14.1, the `rlm_act_revoke_reference()` call performed this function. Prior to RLM v14.1, you revoked by reference with the `rlm_act_revoke_reference()` call.

Note You should always attempt to do the `rlm_act_revoke()` operation first; only if it returns `RLM_EH_CANT_GET_REHOST` should you call `rlm_act_revoke_reference()`. The following

sample code snippet illustrates this operation:

```

stat = rlm_act_revoke(rh, "yourURL.com", product_name);
if (stat == RLM_EH_CANT_GET_REHOST)
{
    /* Some error message here, perhaps */
    stat = rlm_act_revoke_reference(rh, "yourURL.com", product_name);
}

```

2.3.5 Rehostable License Example Code

An example for rehostable licenses is on the RLM kit in the examples directory, called `rehost_example.c`. It is repeated here.

2.3.6 Rehostable Hostids on Disconnected Systems

Sometimes it is desirable to create a rehostable hostid on a system with no access to the internet. RLM allows you to do this; it is a 3-step process, with the first step performed on the disconnected system, then the next on an internet-connected system. Finally, the resulting license must be transferred back to the disconnected system. Similarly, revoking a rehostable hostid on a disconnected system is a 2-step process – first the revoke is started on the disconnected system, then finished on a system with a connection to the internet.

Creating a Rehostable Hostid on a Disconnected System

Normally, a rehostable hostid is activated by calling `rlm_activate()` with a handle that specifies the `RLM_ACT_HANDLE_REHOST` parameter and the activation key. When the system is disconnected from the internet, the procedure is as follows:

Step 1: call `rlm_activate()` with a handle that specifies `RLM_ACT_HANDLE_REHOST`, `RLM_ACT_HANDLE_DISCONN`, and the product name in `RLM_ACT_HANDLE_PRODUCT`. You must specify the product name on the disconnected system. The activation key is not required. `rlm_activate()` will return a set of data (in the “license” parameter) which you must then transmit to the system that is connected to the internet.

Step 2: On the internet-connected system, call `rlm_activate()` with a handle that specifies `RLM_ACT_HANDLE_REHOST`, `RLM_ACT_HANDLE_DISCONN`, nothing in the product name, and the data from step 1 in `RLM_ACT_HANDLE_HOSTID_LIST`. The activation key is required in this call, and it must correspond to the product name specified in step 1. This call will return the license (in the “license” parameter).

Step 3: take the license from step 2, and install it on the disconnected system.

For example:

Run this on the disconnected system:

```

#define URL "your-activation-server-URL"
#include "license.h"
RLM_ACT_HANDLE act_handle;
char data[3*(RLM_MAX_LINE+1)];
int stat;

    rh = rlm_init();
    act_handle = rlm_act_new_handle(rh);
    stat = rlm_act_set_handle(act_handle, RLM_ACT_HANDLE_REHOST, 1);
    stat = rlm_act_set_handle(act_handle, RLM_ACT_HANDLE_DISCONN, 1);
    stat = rlm_act_set_handle(act_handle, RLM_ACT_HANDLE_PRODUCT,

```

```
"product-name");
    stat = rlm_activate(rh, URL, "", 0, data, act_handle);
    (void) rlm_act_destroy_handle(act_handle);
```

Take the result in “data” and run this on the internet-connected system:

```
#define URL "your-activation-server-URL"
#include "license.h"
RLM_ACT_HANDLE act_handle;
char license[3*(RLM_MAX_LINE+1)];
char activation_key; /* should be set to the activation key */
int stat;

    rh = rlm_init();
    act_handle = rlm_act_new_handle(rh);
    stat = rlm_act_set_handle(act_handle, RLM_ACT_HANDLE_REHOST, 1);
    stat = rlm_act_set_handle(act_handle, RLM_ACT_HANDLE_DISCONN, 1);
    stat = rlm_act_set_handle(act_handle, RLM_ACT_HANDLE_HOSTID_LIST,
data);
    stat = rlm_activate(rh, URL, activation_key, 0, license, act_handle);
    (void) rlm_act_destroy_handle(act_handle);
```

Finally, take the result in “license” and install it in a license file on the disconnected system.

Revoking a Rehostable Hostid on a Disconnected System

Normally, a rehostable hostid is revoked by calling `rlm_act_rehost_revoke()` with the server’s URL and the product name. When the system is disconnected from the internet, the procedure is as follows:

Step 1: on the disconnected system, call `rlm_act_revoke_disconn()`, specifying a NULL URL and the name of the product in the third parameter. This will return a verification string in the last parameter.

Step 2: transfer the verification string to the the internet-connected system, call `rlm_act_revoke_disconn()` specifying the URL and the verification string in the third parameter.

For example:

Run this on the disconnected system:

```
#include "license.h"
char verification[3*(RLM_MAX_LINE+1)];
int stat;

    rh = rlm_init();
    stat = rlm_act_revoke_disconn(rh, "", "product-name", verification);
```

Take the result in “verification” and run this on the internet-connected system:

```
#define URL "your-activation-server-URL"
#include "license.h"
char license[3*(RLM_MAX_LINE+1)];
int stat;

    rh = rlm_init();
    stat = rlm_act_revoke_disconn(rh, URL, verification, (char *) NULL);
```

2.4 Activation Database

RLM activation uses a MySQL database to store all data. There are a total of 19 database tables:

active_users	The currently active users
--------------	----------------------------

audit	Audit trail
badhost	Used to automatically ban IP addresses
blacklist	Banned list definitions
company	Table of customer companies
contact	Table of customer contacts
contact_types	Table of contact types
debuglog	License generator debug logging information
defaults	Default values for product definition and activation keys
keyd	The Activation Key definitions
keyf	The Activation key fulfillment status,
licf	License Fulfillment data
prod	The product definitions
report_cols	Database columns which appear in reports
report_select	Selection criteria for reports
report_types	Report type definitions
setup	Activation setup data
stats	License generator statistics
users	Table of authorized users

Each table indicates whether the admin tool and/or the license generator read and write to it. The contents of these tables is as follows:

2.4.1 active_users - active RLC users

This table is used only by the admin tool. Unused by the license generator.

Column	Meaning	Data type
user	username logged in	string
timestamp	Time user logged in	integer

2.4.2 audit – database Audit Trail (v11.2)

This table is used only by the admin tool. Unused by the license generator.

Column	Meaning	Data type
date	Time of entry	integer
who	Username logged in	string
what	Operation performed	string
tablekey	Key in table modified	string
tablename	Table modified	string

2.4.3 badhost – automatic banned list data

This table is used by both the admin tool. and the license generator.

Column	Meaning	Data type
ip	IP address	string

first	First transaction	integer
last	Last transaction	integer
count	Transaction count	integer

2.4.4 blacklist – banned list definitions, one row per banned host

This table is written only by the admin tool. Read-only by the license generator.

Column	Meaning	Data type
id	Row ID	integer
domain	The hostname/domain of the banned host. If this string matches any part of the requesting host, that host is not allowed to use the activation server	string (255). No spaces.
type	Type of banned list entry	integer

2.4.5 company – customer company information

This table is used only by the admin tool. Unused by the license generator.

Column	Meaning	Data type
company_id	Company ID (primary key)	integer
company	Company name	string (60)
addr1	Address line 1	string (60)
addr2	Address line 2	string (60)
addr3	Address line 3	string (60)
city	City	string (60)
state	State	string (60)
zip	Zip/Postal code	string (60)
country	Country	string (60)
c_notes	Misc notes.	string (255)
companyowner	Reseller owner of this company	integer
u1	User-defined.	string (60)
u2	User-defined.	string (60)
u3	User-defined.	string (60)
u4	User-defined.	string (60)
u5	User-defined.	string (60)
u6	User-defined.	string (60)
u7	User-defined.	string (60)
u8	User-defined.	string (60)
u9	User-defined.	string (60)
u10	User-defined.	string (60)

2.4.6 contact – customer contact person information

This table is used only by the admin tool. Unused by the license generator.

Column	Meaning	Data type
contact_id	Contact ID (primary key)	integer
contact	Contact person name	string (60)
contact_type	Contact type	string (60)
title	Job Title	string (60)
phone	Phone #	string (20)
fax	Fax #	string (20)
email	Email address	string (60)
info	General notes	string (60)
company_id	ID of associated company record	integer
ccreate	Creation date	string (11)
contactowner	Reseller owner of contact	integer

2.4.7 contact_types – customer contact type definitions

This table is used only by the admin tool. Unused by the license generator.

Column	Meaning	Data type
contact_type	Contact type	string (60)

2.4.8 debuglog – license generator debug log

This table is written by the license generator and admin tool. Read by the admin tool only.

Column	Meaning	Data type
date	Date/time of entry	integer
logdata	The debug data logged	string (500)

2.4.9 defaults – default specifications for products and activation keys

This table is read and written only by the admin tool.

Column	Meaning	Data type
id	Row unique id	integer
user	Whose default (#SYS# for system default)	string (30)
tab	Which table (prod or keyd)	string (30)
col	Column in table	string (30)
value	Default value	string (80)
invis	Field is invisible	integer (1)

2.4.10 keyd - activation key definitions, one row per activation key

This table is written only by the admin tool. Read-only by the license generator.

Column	Meaning	Data type
akey	The activation key (35 character maximum).	string
active	0 if this definition is inactive, 1 if active.	integer
product id	Product identifier, from product definitions.	integer
count	The # of activations allowed, 0 = unlimited. Limited to 1 for Refresh-type activations.	integer
type	0 - Normal, 1 - Reactivate, 2 - Refresh	integer
rehosts	For revoked hostids, the number of hostid changes allowed.	integer
lastdate	Expiration date of activation key - key cannot be used after this date.	string
exp	If a number, number of days to expiration of the license after product activation. If == 0, the license does not expire. If a standard RLM date format, it is a fixed expiration date. If specified, this expiration date overrides the expiration date in the product definition.	string
kver	License version, to override product definition.	string (11)
kver_type	License version type.	integer
white	Domain whitelist for key - only domain names appearing in this list can use the key. This string can be a spaceseparated list. If any component of the string matches the requesting hostname, that host is allowed to activate using this key.	string (100)
misc	Any optional RLM license attributes.	string (255)
notes	Optional notes to allow you to identify the key - unused by RLM.	string (100)
contact_id	Contact ID of owner of activation key.	integer
key_allowed_hostids	Allowed Hostids for this activation key (overrides product definition).	integer
kcreate	Key creation time.	char (11)
ash_sn	Serial number for Alternate Server hostid.	integer
user_def	User-defined field (unused by Activation Pro).	char (32)
sub_interval	Subscription Interval (Subscription type only). -1 == month, -2 == quarter -3 == year, + == # of days.	smallint (6)
sub_window	Subscription Renewal Window (Subscription type only).	smallint (6)
keyowner	Company id of reseller who owns this key.	integer

2.4.11 keyf - activation key fulfillment information, one row per activation key

This table is written by both the license generator and RLC.

Column	Meaning	Data type
akey	The activation key	string
num	Number of (current) fulfillments from this key, not counting fulfillments which were subsequently revoked.	integer
date	For Reactivation: original expiration date of the license. For Refresh: last date license refreshed.	string
lasthostid	For Refresh type: Last hostid fulfilled.	string (80)
num_revoked	Number of licenses revoked .	integer

2.4.12 licf - license fulfillment information, one row per activation

This table is written by both the license generator and RLC.

Column	Meaning	Data type
id	Row ID	integer
akey	The activation key.	string
product_id	Product identifier	integer
count	Number of licenses activated.	integer
time	Time() value when activation was done.	time_t (integer)
license_hostid	Hostid for license.	string
reference_hostid	Reference hostid for rehostable licenses.	string
expdate	Expiration date of first license, in fmt yyyy-mm-dd.	string
hostname	Hostname on activated machine.	string
remote_host	IP address (typically) of machine requesting activation.	string
log	Log info from rlm_act_request() call.	string
license	Generated license. For floating licenses, this is just the LICENSE line.	string
last_fulfill	time() value at last fulfillment.	time_t (integer)
num_fulfills	Number of fulfillments of this license.	integer
revoked	"license was revoked" flag (1=revoked).	integer
revoked_time	Time license was revoked.	integer
last_check	Last time an rlm_act_keyvalid() called on this fulfillment.	integer
time_str	String version of time field.	string
last_fulfill_str	String version of last_fulfill field.	string
last_check_str	String version of last_check field.	string

2.4.13 prod - product definitions, one row per product definition

This table is written only by the admin tool. Read-only by the license generator.

Column	Meaning	Data type
id	Activation product identifier	integer

active	0 if this definition is inactive, 1 if active (product definitions are not deleted). The license generator doesn't create licenses for inactive products .	integer
obsolete	1 if this product definition is obsolete, meaning it can't be used to create new activation keys.	integer (1)
name	Product Definition name	string
version	The RLM product version	string
version_type	0 - normal version, non-zero - date-based version	integer
upgrade_version	Upgrade-from version number (UPGRADE licenses only)	string
exp	If a number, number of days to expiration of the license after product activation. If == 0, the license does not expire. If a standard RLM date format, it is a fixed expiration date.	string
lictype	0 = floating, 1 = node-locked, uncounted, 2 = node-locked, counted (unimplemented), 3 = single, 4 = UPGRADE (floating)	integer
issued	0 - do not include "issued=" in license, 1 - include "issued=[today's date]" in license.	integer
add_akey	0 - do not include "akey=" in license, 1 - include "akey="	integer
add_cust	0 - do not include "customer=" in license, 1 - include	tinyint
product	License product name .	string
misc	Any optional RLM license attributes .	string
generator	Used to specify alternate license generators. 0=standard RLM generator.	integer
prod_id	ID of the Primary License of this product definition. 0 for the primary license.	integer
nlic	Number of licenses to create per fulfillment request. Multiplied by request count. Unused for nodelocked or single licenses.	integer
prod_allowed_hostids	Bitmap of allowed hostid types. If 0, all hostid types are allowed.	integer
pcreate	Record creation date	string
ash_type	Alternate server hostid type	integer
ash_tolerance	Alternate server hostid tolerance	integer
lictext	Text to prepend to generated license	varchar (1024)
pnotes	Notes for this product definition	varchar (100)

2.4.14 report_cols – database columns which appear in report

This table is read-only by RLC. Unused by the license generator.

Column	Meaning	Data type
id	Primary key	integer
report	Report name	string (40)
displayorder	Order to display selections	integer (2)
tablecolumn	Column name from table	string (40)
display	Report column header text	string (30)
is_int	If non-zero, column contains integer data	integer (1)

2.4.15 report_select – report selection definitions

This table is read-only by RLC. Unused by the license generator.

Column	Meaning	Data type
id	Primary key	integer
report	Report name	string (40)
fixed	Is selection criteria fixed or variable	integer (1)
displayorder	Order to display selections	integer (2)
display	Text to display in UI	string (40)
var	POST variable name	string (20)
size	Size of text box in UI	integer (3)
op	Table for report data	string (20)
value	Value for fixed selection criteria	string (64)

2.4.16 report_types – report type definitions

This table is read-only by RLC. Unused by the license generator.

Column	Meaning	Data type
report	Report name	string (40)
sel	Used by report writer UI	string (2)
tablename	Table for report data	string (40)
displayorder	Order to display report names	integer (2)
report_header	Display header for report	string (80)
type	Report type (0-internal, 1-user-defined)	integer (1)
base_report	Base report for a user-defined report	string (40)
rep_output	Output for user-defined report	integer (2)
schedule	Schedule for user-defined report	integer (1)
subschedule	Sub-schedule for user-defined report	char (10)
email_to	Email list for user-defined report	char (80)

2.4.17 setup - RLC setup definitions, one row per setup item

This table is written only by the admin tool. Read-only by the license generator. This table contains data such as the activation URL for refresh, Activation Pro version, etc.

Column	Meaning	Data type
what	Description of the data item	string (30)
data	The actual data	string (64)

2.4.18 stats – Activation statistics

This table contains license generation statistics. This table is read-only by RLC. Read-write by the license generator.

Column	Meaning	Data type
date	Date in the format" yyyy-mm-dd hh". This record collects statistics for 60 minutes starting at the hour indicated. Primary key.	char (13)
total	Total transactions with the activation server	integer (11)
good	Completed license fulfillments	integer (11)
badkey	Unknown activation key supplied	integer (11)
blacklist	# of hosts automatically banned	integer
checks	Reprise pings the hosted activation servers with an invalid activation key to check that the website is up, the license generator is working and the database is working. This is a bad key where the key supplied is "rsi-check-act-server".	integer (11)
numfulfill	Number of "num fulfill" commands executed. Used by rlm_act_revoke()/rlm_act_rehost_revoke().	integer (11)
rmfulfill	Number of "remove fulfill" commands executed. Used by rlm_act_revoke()/rlm_act_rehost_revoke().	integer (11)
prod	Number of "list product" commands executed. Used by rehostable hostid activation.	integer (11)
badtime	Number of otherwise good requests from clients with clocks which are off by more than 7 days.	integer (11)
info	# of getinfo requests.	integer
keyvalid	# of keyvalid requests.	integer

2.4.19 users - authorized RLC users

This table is used only by the admin tool. Unused by the license generator.

Column	Meaning	Data type
username	Username	string
password	User's encrypted password	string
userid	User Identifier	string
userlevel	User access (1=view, 2=edit, 9=admin)	integer
email	User's email address	string (50)
timestamp	Last time user logged in.	integer
contact_id	User's contact_id	integer
vistabs	Visible Tabs bitmask	integer

2.5 Redirecting Your Activation Website

When you use RLM activation, your application contains the URL of the activation server. If you are running the activation server at your own website, it may be fine to hard-code this URL into your software.

However, if you think that there may be a time when you might want to move the website, there are a couple of options you can employ to make this change more easily:

1. You could create some kind of configuration which your software reads at runtime to decide which URL to use to activate, or
2. You can use the `ISVNAME_ACT_URL` environment variable to override the activation URL in the `rlm_activate()` call (see `rlm-activate`), or
3. You can set up your URL to redirect to a different (presumably newer) URL.

If you use Reprise's Hosted Activation service, Reprise strongly recommends that you employ one of these techniques. Obviously, the first two techniques are more flexible, because they would allow you to continue operating even if the original URL goes away completely. This is what Reprise Software recommends.

If you wish to redirect your URL, you can do this with an `.htaccess` file if you are using a Linux server with Apache:

Set up a new domain which you use as your activation URL and redirect the whole domain to the actual activation domain. To do this, follow these steps:

1. Create the domain (usually a subdomain, e.g. `activation.yourcompany.com`).
2. In the top-level of the domain, create a `.htaccess` file with the following contents:

```
Options +FollowSymLinks
        RewriteEngine on
        RewriteRule (.*) http://actual-activation-domain.com/$1
[R=301,L]
```

Change *actual-activation-domain* to your domain name. This `.htaccess` method of redirection works **ONLY** on Linux servers having the **Apache ModRewrite** module enabled.

Note If you want to redirect just the `cgi-bin` directory, you will need to remove/comment out the `"ScriptAlias"` line from your apache conf file (`...../apache/conf/httpd.conf`).

2.6 Automatically Banning IP addresses

If someone writes a program to guess activation keys, they will present a large number of invalid activation keys to the server in a short period of time. Activation Pro has the capability to automatically ban this IP address based on parameters you specify.

The first time an invalid activation key is presented to the license generator by a particular IP address, the license generator logs the time. After this, if *N* bad keys are presented within a specified time interval, the IP address is automatically banned. Once this time interval passes without *N* bad keys being attempted, the whole process resets (in other words, *N* bad attempts will be required before the IP address is banned).

By default, the interval is 600 seconds (10 minutes) and the number of bad keys which cause

the IP address to be banned is 40. However, you can change both of these parameters in the **Admin** → **Database** tab (available to admin users), near the bottom of the form:

Automatic banning of IP addresses

If this # of bad keys are presented to the server within this # of seconds from one IP address, the address is banned.

of bad keys:

in this # seconds:

In this example, 50 bad activation keys within 600 seconds will cause the IP address to be banned. To set the parameters, enter the 2 parameters into the text boxes and press **Set Banned List Parameters**.

Once banned, the IP address will appear in the normal banned list. The banned IP address will have to match the IP address exactly, rather than the substring domain name match of normal banned hosts.

2.7 How Activation Pro chooses a Hostid

RLM Activation Pro will choose a hostid for the generated license based on the input from the RLM-licensed application.

If your application does not specify a hostid to the `rlm_act_request()` or `rlm_activate()` call, then the RLM client library supplies the standard set of hostids for the machine on which the software is running. Alternatively, you can specify a hostid-list in the `rlm_act_request()` call, or via the `rlm_act_set_handle()` call if you use `rlm_activate()`.

Prior to v11.0, RLM would only activate licenses with rehostable, non-zero RLM_HOSTID_32BIT, RLM_HOSTID_ETHER, RLMIDn, RLM_DISKSN, or ISV-defined hostids. Any other hostid will return an RLM_ACT_BAD_HOSTID_TYPE status from `rlm_act_request()`. You can specify exactly the hostids you will accept with the `rlm_isv_cfg_actpro_allowed_hostids()` call in `rlm_isv_config.c`, then either re-build your license generator or create a new generator settings file. See `customizing-rlm-isv-config` for more details.

The priority is (assuming the particular hostid type is enabled):

1. Rehostable Hostid
2. ISV-defined Hostid
3. ISV-string Hostid
4. rlmid1 Hostid
5. Alternate Server Hostid
6. Disk Serial Number
7. Ethernet Address
8. UUID
9. 32-bit Hostid
10. IP Address Hostid
11. User-based Hostid
12. Host-based Hostid
13. Serial Number Hostid
14. String Hostid

15. DEMO Hostid

16. ANY Hostid

If none of the hostid types above are present (or enabled), the activation software will return **RLM_ACT_BAD_HOSTID_TYPE**.

You can override RLM's notion of the hostid and specify an exact hostid to be used by the activation server by calling **rlm_act_set_handle()** with the **RLM_ACT_HANDLE_HOSTID_LIST** parameter (or passing the hostid-list parameter to **rlm_act_request()**). The **hostid_list** parameter can contain a list of hostids for use in nodelocked licenses. This is specified with the following syntax:

```
list:<list-of-hostids>
```

For example:

```
list:user=joe host=sam ip=192.16.7.23 3f902d8b0027
```

If a list is supplied, note the following:

- The activation software uses the hostids in the list as you specified, even if they are not enabled or "Secure."
- If the license to be activated is a served license (floating), only the first hostid in the list is used.
- The number of available activations on the activation key is decremented by 1 regardless of the number of hostids in the license created.
- The hostid list must be less than **RLM_ACT_MAX_HOSTID_LIST** characters long (205) including the "list:" prefix.
- The hostid list can contain no more than **RLM_MAX_HOSTID_LIST** (25) hostids.

This capability can be used to create a license which works on 2 (or more) systems, e.g. to create a license for a primary and a backup system. It can also be used to pass a hostid of a less secure type, or which is not enabled by default, to be used, e.g. the hostid-list "list:ip=172.16.7.12" will cause the activation software to use the IP address as a hostid without returning **RLM_ACT_BAD_HOSTID_TYPE**.

2.8 Using Custom License Generators

In some situations, you will want to develop your own license generator, to replace the standard RLM license generator. You can do this with Activation Pro.

To do this, take the following steps:

1. Define your license generation algorithm in the product definition. 0 is the standard RLM algorithm, any positive integer is defined by you. This integer will be passed to your license generator in step 2.
2. Create a function called "rlm_ext_sign_license()" similar to the example at the end of this section, except that you will parse the input LICENSE line and re-write the license in whatever (text) format you want.
3. Link your rlm_ext_sign_license() function into the license generator, placing your object file before the library so that your generator is used in place of the dummy function in the library. To build your license generator, [follow the instructions for building your license generator as if you had an ISV-defined hostid](#).
4. Install your license generator (ISV_mklic or ISV_mklic.exe) and you are ready to go.

The example rlm_ext_sign_license() function is here:

```

/*****
COPYRIGHT (c) 2007, 2013 by Reprise Software, Inc.
This software has been provided pursuant to a License Agreement
containing restrictions on its use. This software contains
valuable trade secrets and proprietary information of
Reprise Software Inc and is protected by law. It may not be
copied or distributed in any form or medium, disclosed to third
parties, reverse engineered or used in any manner not provided
for in said License Agreement except with the prior written
authorization from Reprise Software Inc.
*****/
/*
 * Function: stat = rlm_ext_sign_license(rh, algorithm,
 * server_hosid, license)
 *
 * Description: Create a license - ISV-defined
 *
 * Parameters: (RLM_HANDLE) rh
 * (int) algorithm - algorithm to use (ISV-defined)
 * (char *) server_hostid - Server hostid, if applicable
 * (char *) license - input/output license string
 *
 * Return: (char *) license - input/output license string
 * (int) status - status return
 *
 * M. Christiano
 * 7/27/12
 *
 * This function should be replaced by the ISV with an equivalent
 * function which creates the license in the string "license".
 */
#include "license.h"
int rlm_ext_sign_license(RLM_HANDLE rh, int algorithm, char *server_hostid,
char *license)
{
/*
 * If this were the real function, the string "license" would
 * be replaced by the actual generated license.
 *
 * Note that "license" has RLM_MAX_LINE allocated bytes only,
 * and is allocated on the stack.
 * In practice, however far fewer bytes can be transmitted
 * back to the client, since the whole HTTP message can be
 * no more than 1024 bytes.
 *
 * Return 0 for success, a non-zero error code using the status
 * in license.h for an error.
 */
(void) strcpy(license, "dummy externally-signed license\n");
return(0);
}

```

2.9 Bulk Loading Customer Data

It is possible to load customer data from an external source into Activation Pro and RLM Cloud. To do this, create a tab-delimited file with all the customer data. Once you have this file, in the **Admin** → **Database** tab, you will see **Bulk-Load Customer database data** at the bottom of the form. Browse to your file, then press **Upload File**. Your customer data will be loaded.

Warning Reprise STRONGLY suggests you upload a file with one customer first, so that you can verify your upload data format. If something goes wrong, you can delete this customer and try again.

This file **MUST** be tab-delimited, and it **MUST** contain all 26 fields below, in the order below. Only the contact name and email are required to be non-empty:

Data	Item meaning	Data type
contact	Contact person name	string (60)
contact_type	Contact type (types defined in the contact_types table)	string (60)
title	Job Title	string (60)
phone	Phone #	string (20)
fax	Fax #	string (20)
email	Email address	string (60)
notes	General notes	string (60)
company	Company name	string (60)
addr1	Address line 1	string (60)
addr2	Address line 2	string (60)
addr3	Address line 3	string (60)
city	City	string (60)
state	State	string (60)
zip	Zip/Postal code	string (60)
country	Country	string (60)
Notes	Company notes	string (255)
u1	Company User-defined	string (60)
u2	Company User-defined	string (60)
u3	Company User-defined	string (60)
u4	Company User-defined	string (60)
u5	Company User-defined	string (60)
u6	Company User-defined	string (60)
u7	Company User-defined	string (60)
u8	Company User-defined	string (60)
u9	Company User-defined	string (60)
u10	Company User-defined	string (60)

2.10 Customizing the Customer Data

The list of companies in Activation Pro contains a fixed set of data: Company Name, Address lines 1-3, City, State, Zip, Country. You can add up to 10 additional fields of your choice to this data. Any additional fields you add will appear in the Customer Editor as well as in the list of customers.

To customize the data, go to the **Admin** → **Database** tab. At the bottom of the form, press **Customize Company fields**. You will see the following form:

Setup Custom Fields for Company

Any non-blank field below will define the user-defined data for that position. Defined fields appear in the customer list and company editor.

first user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
second user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
third user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
fourth user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
fifth user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
sixth user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
seventh user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
eighth user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
ninth user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>
tenth user defined field:	<input type="text"/>	Numeric sort? <input type="checkbox"/>	Include in select box? <input type="checkbox"/>

The checkbox on the right controls whether the field in the browser sorts numerically or alphabetically. When you have added the fields you want, press the **Set User-Defined Customization** button at the bottom.

Note You can put values in any of the 10 user-defined fields. The strings you put on this form will appear in the Company Editor and will also be the headings on the customer list (so you probably want to keep them relatively short).

2.11 Importing Activation Keys to ActPro

On occasion, you might want to create activation keys outside of Activation Pro and then import those keys automatically. You might do this, for example, if you wanted your order processing system to create an activation key for your customer’s purchase, then populate ActPro with this activation key.

The Activation Pro kit contains an example program to accomplish this. This program is called **import_key.c** and it can be used as an example to write your own code, or it can be used as-is as a command-line utility.

Usage of `import_key` is as follows:

```
% import_key activation-key product-id [-c count] [-t n|r] [-e key-exp-date]
[-l lic-exp-date]
[-w whitelist] [-o other-params] [-n notes] [-z contact-id]
```

The **product-id** and **activation-key** are both required.

To determine the product-id, view the product definitions in the Activation Pro GUI, and hover over the Product name in the list. The product-id will be displayed. The activation-key can be any printable string of less than 60 characters.

To determine the person’s contact-id, view the customer list in the Activation Pro GUI, and hover over the contact name in the list. The contact-id will be displayed.

All parameters correspond to the parameter in the **Create Activation Key** GUI.

The **-t** parameter specifies whether this key is a “normal” (n – the default), or ReActivate key (r).

To build **import_key**, you must have the MySQL connector kit installed (instructions for this

are in [Step 5 \(OPTIONAL\) - Configuring Your License Generator with ISV-defined Hostid](#)). To compile and link `import_key` (where `sql` is the directory where the mysql connector kit is installed):

```
cc -c import_key.c -I sql/include
cc -o import_key import_key.o sql/lib/libmysqlclient.a -lm
```

Note As an alternative to this method, you can use Web Services to import activation keys into the ActPro database. See [Section 2.12](#).

2.12 Using Web Services to Access the ActPro Database

ActPro supports Web Services to access the ActPro database. This is implemented as a simple REST-style service, using JSON to encode the information going into and out of the database.

As of ActPro v12.4, there is a new functional interface, and the old interface is deprecated.

Documentation for the new interface is located at: <https://a2.hostedactivation.com/act-proapi/api.php>

2.13 Basic License Enforcement Using Web Services

Activation Pro includes a simple web service, called `actpro_keyvalid.php` that can be used to enforce basic licensing on any platform that supports a web services client, for example, mobile devices. This does not involve license authentication in the client or communicating with the RLM license server using the RLM SDK, therefore platform support is much wider than with the RLM SDK. All the web service client needs to be able to do is to connect via HTTPS to the web service where Activation Pro runs, supply an activation key and unique device identifier in the query string, and parse the JSON string returned.

2.13.1 Steps for Using `actpro_keyvalid.php`

Create an activation key in Activation Pro. This should be a Normal type activation key, should specify some number of fulfillments, and optionally a License Expiration Date. You may also populate the “Optional: Other RLM keyword=value pairs” box with a free-formatted string up to 255 bytes in length. Other fields in the Activation Key are ignored by the web service, as they are involved with creating license file-based licenses. Notes and Contact Person may be specified.

On the client device, connect to the URL: `https://<activation URL>?akey=<activation key>?hostid=<device ID>`

Where:

- **activation URL** is the host where Activation Pro is running.
- **activation_key** is the activation key created in RLC.
- **device ID** is a device identification string identifying the client device (for example a mobile phone’s phone number).

Note This is not a standard RLM hostid, it is any arbitrary string.

Example:

```
https://hostedactivation.com/reprise/actpro_keyvalid.php?akey=1234-5678-90ab-cdef?hostid=01
```

If there is available activation count on the key specified, this will create a fulfillment on that key for hostid "012069997400".

The web service will return a JSON string containing a status code, a status code description, and if successful, an expiration date and a string of extra license parameters from the activation key.

For example:

```
{"status":0,"description":"success","expiration":"2017-11-04","extra":"Some text from the activation key"}
```

Note The extra license parameters returned are the contents of the "Optional: Other RLM keyword=value pairs" box in the Activation Key edit screen in Activation Pro. While that box must contain keyword=value pairs when the activation key is used to make a standard RLM license, no specific format is required if the activation key is for use solely by this web service.

2.13.2 Return Status and Description

Status values and descriptions are as follows:

0	Success
1	No matching activation key exists
2	Activation key specified is inactive
3	No fulfillments left on specified activation key
4	Licf table update failed
5	Keyf table update failed
6	License expired
7	Activation key expired
8	Hostid supplied < 8 characters long
9	No hostid supplied in query string
10	No akey supplied in query string

2.13.3 Notes

- If no expiration date is specified in the activation key, the string "permanent" is returned.
- If a fulfillment already exists for the activation key / hostid pair passed in the query string, success will be returned, along with the expiration date of the fulfillment and the extra license parameters.
- If the Activation Pro server is running at hostedactivation.com, the activation URL must include the ISV name, for example:
`https://hostedactivation.com/reprise/actpro_keyvalid.php?...`

2.14 Loading Customer Data from your Activation Utility

Beginning in Activation Pro v14.0, you can include some basic customer data captured in your

activation utility. The data you can capture is:

- Contact Name
- Contact Email
- Company Name
- Company State
- Company Country
- Company ISV-defined u1
- Company ISV-defined u2

These values are specified in the activation handle, please see `rlm-act-set-handle` for details. Use of this data is 100% optional; Activation Pro does not depend on it for any operations.

If you specify any of these 7 variables, you must specify both the contact name and the company name, or an `RLM_ACT_CONTACT_BAD` error will be returned from `rlm_activate()`. All other data is optional. Also note that any semicolon characters (`;`) present in these fields will be changed to a space (`' '`).

These values are transmitted to the ActPro license generator, which, upon successful activation of the license, enters the customer information in the ActPro database. If the company already exists (indicated by company name, state, country, u1, and u2 all matching an existing company record), then a new company record is not created. Similarly, if the contact already exists (indicated by contact name, email, and the contact's `company_id` all matching), then a new contact record is not created. If any of the data does not match, a new company and/or contact record is created.

Reference Material

3.1 Appendix A - Activation API

The RLM Activation API consists of eight calls:

rlm_activate()	The new, preferred activation request call.
rlm_act_new_handle()	
rlm_act_destroy_handle()	
rlm_act_set_handle()	
rlm_act_rehost_revoke()	
rlm_act_keyinfo()	
rlm_act_fulfill_info()	
rlm_act_keyinfo2()	Supplies a superset of the information from either the rlm_act_keyinfo() or the rlm_act_fulfill_info() calls.

In addition, the following 4 calls are now deprecated:

rlm_act_request()	The old activation request call.
rlm_act_refresh()	
rlm_act_revoke()	
rlm_act_revoke_reference()	

These calls are all documented in the RLM Reference Manual.

3.2 Appendix B – Example Program

The following is the source code to the activation demo program actdemo. This example program (act_api_example.c) is contained on the RLM kit in the **examples** directory.

```

/*****
COPYRIGHT (c) 2005, 2022 by Reprise Software, Inc.
This software has been provided pursuant to a License Agreement
containing restrictions on its use. This software contains
valuable trade secrets and proprietary information of
Reprise Software Inc and is protected by law. It may not be
copied or distributed in any form or medium, disclosed to third
parties, reverse engineered or used in any manner not provided
for in said License Agreement except with the prior written
authorization from Reprise Software Inc.
*****/

```

```

*****
/*
 * Description: Example client for RLM internet activation
 *
 * M. Christiano
 * 6/18/07
 *
 * $Id: act_api_example.c,v 1.29 2022/03/08 17:06:26 matt Exp $
 */

#include "license.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

static int checkstat(RLM_HANDLE, RLM_LICENSE, const char *);
static int doactivation(RLM_HANDLE, const char *);

int
main(int argc, char *argv[])
{
    RLM_HANDLE rh = (RLM_HANDLE) NULL;
    RLM_LICENSE lic = (RLM_LICENSE) NULL;
    int unused, stat;
    const char *product = "actdemo";
    int pass;

    for (pass = 1; pass <= 2; pass++)
    {
        if (pass == 2)
        {
            /*
             * We did not get the license on the first pass. See
             * if we can activate it now.
             */
            stat = doactivation(rh, product);
            rlm_close(rh); /* Close the old handle */
            if (stat < 0) exit(2);
        }
        /*
         * NOTE that rlm_init() is in this loop. This is necessary
         * because if the license is not acquired on the first pass,
         * the activation request (above) will create a new
         * license file. rlm_init() must be called to see this
         * new license file.
         */
        rh = rlm_init(".", argv[0], (char *) NULL);
        stat = rlm_stat(rh);
        if ((pass == 1) && (stat == RLM_EH_READ_NOLICENSE))
        {
            /*
             * We didn't find a license. Checkout won't work, so just
             * skip to the 2nd pass where we try to activate it.
             */
            continue;
        }
        else if (stat)
        {
            (void) printf("Error %d initializing license system\n", stat);
            exit(1);
        }
    }
}

```

```

    lic = rlm_checkout(rh, product, "1.0", 1);

    stat = checkstat(rh, lic, product);

    if ((pass == 1) && (stat < 0))
    {
        /*
         *      Didn't get the license. Try a 2nd time to activate it.
         */
        if (lic) rlm_checkin(lic);
        lic = (RLM_LICENSE) NULL;
        continue;
    }
    else if (stat == 0)
    {
        /*
         *      We got the license
         */
        break;
    }
}

if (stat == 0)
{
    /*
     *      We got the license
     */
    (void) printf("Enter <CR> to continue: ");
    unused = fgetc(stdin);
    if (lic) rlm_checkin(lic);
    rlm_close(rh);
}
else if (pass == 2)
{
    /*
     *      checkout and/or activation failed.
     */
    (void)
        printf("Unable to check out/activate \"actdemo\" license\n");
}
return(0);
}

static
int
checkstat(RLM_HANDLE rh, RLM_LICENSE lic, const char *name)
{
    int stat;
    char errstring[RLM_ERRSTRING_MAX];

    stat = rlm_license_stat(lic);
    if (stat == 0)
        (void) printf("Checkout of %s license OK.\n", name);
    else
    {
        (void) printf("Error checking out %s license\n", name);
        (void) printf("%s\n", rlm_errstring(lic, rh, errstring));
    }
    return(stat);
}

#include <time.h>
#ifdef _WIN32

```

```

#include <sys/time.h>
#endif

static
int
doactivation(RLM_HANDLE rh, const char *name)
{
    char license[3 * RLM_MAX_LINE + 1]; /* Allow for HOST, ISV, and LICENSE */
    char akey[RLM_MAX_LINE+1];
    int stat = RLM_EH_READ_NOLICENSE; /* If they say NO, no license */
    int len;

    (void) printf("\nWould you like to activate this license now? ");
    fgets(akey, RLM_MAX_LINE, stdin);
    if (*akey == 'y' || *akey == 'Y')
    {
        (void) printf("Enter Activation key for \"%s\": ", name);
        fgets(akey, RLM_MAX_LINE, stdin);
        len = ((int) strlen(akey)) - 1;
        if (akey[len] == '\n') akey[len] = '\0';
        /*
         * Request the license
         */
        stat = rlm_activate(
            rh, /* RLM handle */
            "http://www.reprisesoftware.com", /* URL */
            akey, /* Activation key */
            1, /* Activation count - # of licenses */
            license, /* Space for the returned license */
            (RLM_ACT_HANDLE) NULL); /* No other optional params */

        if ((stat == 0) || (stat == 1))
        {
            char name[100];
            int attempt;
            FILE *f;
            /*
             * Activation was successful. Write the license out.
             * Note in this example, we try the license file name
             * aN.lic, and we only try 100 different names. You
             * should change this to whatever naming convention you
             * want to use.
             */
            for (attempt=0; attempt<100; attempt++)
            {
                sprintf(name, "a%d.lic", attempt);
                f = fopen(name, "r");
                if (f == (FILE *) NULL)
                {
                    struct tm *t;
#ifdef _WIN32
                    time_t ltime;

                    time(&ltime);
                    t = localtime(&ltime);
#else
                    struct timezone tz;
                    struct timeval tv;
                    time_t x;

                    gettimeofday(&tv, &tz);
                    x = tv.tv_sec;

```

```

        t = localtime((time_t *) &x);
#endif

        f = fopen(name, "w");
        if (f)
        {
            fprintf(f, "This license created by RLM Internet
Activation\n");
            if (t)
                fprintf(f, "Created on %02d/%02d/%04d at
%02d:%02d\n",
                    t->tm_mon+1, t->tm_mday,
                    t->tm_year+1900, t->tm_hour,
                    t->tm_min);

            fprintf(f, "\n%s\n", license);
            fclose(f);
            printf(
written\n",
                "Activation successful, license file \"%s\"
                name);
            break;
        }
        else
        {
            printf(
                "Error writing license file \"%s\"\n",
                name);
            stat = -1;
            break;
        }
    }
}
else
{
    printf("\n");
    switch(stat)
    {
        case RLM_EH_CANTCONNECT_URL:
            printf("You were unable to connect to
http://www.reprisesoftware.com.\n");
            printf("Please make sure that this system is able to\n");
            printf("access the internet and try again.\n");
            break;

        case RLM_ACT_NO_KEY_MATCH:
            printf("The activation key you supplied (%s) was \n",
                akey);
            printf("not found. Please check the key and ensure\n");
            printf("that you have entered it correctly.\n");
            break;

        case RLM_ACT_KEY_USED:
            printf("The activation key you supplied (%s)\n", akey);
            printf("has already been used to activate a license.\n");
            printf("Please check the key and ensure that you have entered
it correctly.\n");
            break;

        case RLM_EH_BAD_HTTP:

```

```
        printf("Bad HTTP transaction\n%s\n",
              rlm_errstring(0, rh, err));
        break;

    default:
        printf("Error %d requesting activation\n%s\n",
              stat,
              RLM_ACT_ERR(stat) ?
              rlm_act_errstring(stat) :
              rlm_errstring(0, rh, err));

        break;
    }
    printf("\n");
}
return(stat);
}
```

3.3 Appendix C - Frequently-Asked Questions

Reprise Software maintains a list of frequently-asked questions on our website.

For ISVs, see the FAQ at our website at: <https://reprisesoftware.com/support/publishers/faq/>

For Your Customers, see the License Administrator FAQ at: <https://reprisesoftware.com/support/admin/faq/>

3.4 Appendix D – Diagnosing Activation Problems

Beginning in RLM v11.0, the activation server writes debugging information to the database. This information contains, at a minimum, some request data and the status response. To see this debug data, select the **Admin** → **Debugging** tab. Here you will see 3 buttons: **View Debug Log**, **Enable Debug Logging**, and **Disable Debug Logging**. If you want to see the debug output, press the **Enable Debug Logging**, then **View Debug Log**. You can clear the log from within the page where you are viewing it.

Note You should not run continuously with debug logging turned on, since this will tend to fill your database with log data.

On the client side, you can set the environment variable `RLM_ACT_DEBUG` before running your activation utility (or RLM). With this environment variable set, debug output will be written to the process's stdout.

In addition, beginning in RLM v14.1, you can set the environment variable `RLM_ACT_DIAGNOSTICS` to the name of a file. This file will get the same output that `RLM_ACT_DEBUG` produces. This is most useful for GUI-based applications which do not have a convenient process stdout.

When you call `rlm_act_request()`, errors can come from either the server side, or locally. This section lists most of these errors and what they mean.

3.4.1 Errors Detected and Returned by the Activation Server (ISV_mklic)

Status Return	Problem	Solution
RLM_EH_BADPARAM (-123)	Error creating license	If RLM_EH_BADPARAM is returned without a corresponding secondary error, this is an error on the server side generating the license. Most likely, this means that some part of the license contains illegal characters – generally in the “extra” parameters supplied in the product definition, activation key, or in the rlm_act_request() call itself.
RLM_EH_ACT_BADLICKEY (-135)	Bad license key in activation binary/settings file.	Your ISV_mklic binary (or generator settings file) has incorrect RLM license keys. Re-build and install the new binary or settings file.
RLM_EH_BAD_HTTP (-136)	An unknown HTTP error was returned to the RLM activation client.	This is usually an installation problem. However, this can also be caused by antivirus or firewall software. Some installation software. error possibilities are: <ul style="list-style-type: none"> • You have specified an ISV name which is incorrect. • The ISV web server is not configured correctly. • The ISV_mklic binary is not for the correct architecture
RLM_EH_ACT_UNLICENSED (-159)	Activation platform unlicensed for RLM (in license_to_run.h)	This happens if you have built a custom license generator (for example, to support an ISV-defined hostid) and you are running ActPro on a platform which isn't licensed for RLM.
RLM_EH_ACTPRO_UNLICENSED (-160)	Activation Pro license missing or invalid.	Check the actpro.lic file in the cgi-bin directory. Make sure it is for “rlm_actpro_ISV-NAME” where ISVNAME is your ISV name, and that it hasn't expired.
RLM_ACT_NO_KEY (-1002)	No activation key supplied to the activation server.	This is an error in the configuration of your software.

RLM_ACT_NO_PROD (-1003)	Activation key specifies a non-existent product.	Make sure your activation key refers to an existing product. This is a setup problem.
RLM_ACT_CANT_WRITE_KEYS (-1004)	Cannot write the license key fulfillment data.	This is an internal server error. Check to make sure the MySQL server is running correctly.
RLM_ACT_KEY_USED (-1005)	Activation key already used.	The supplied activation key has already been used and no more activations are available.
RLM_ACT_BAD_HOSTID (-1006)	No hostid supplied to the activation server.	This is an error in the configuration of your software.
RLM_ACT_BAD_HOSTID_TYPE (-1007)	No acceptable hostid type transmitted to activation server.	By default, activation will only accept hostids of types: 32-bit, ethernet, disksn, uuid, rlmidN, or ISV-defined. In addition hostids with value 0 are rejected as is 32-bit hostid 7f0100 (the default Linux hostid). In addition, both the product definition and the activation key can specify the list of acceptable hostid types, you may not have passed one of these types. Finally, this error will also occur if there is an illegal character in a valid hostid type.

<p>RLM_ACT_CANTREAD_DB (-1010)</p>	<p>Cannot initialize MySQL or connect to the database.</p>	<p>Make sure that the isvname.mysql file in the cgi-bin directory contains the correct server name/-port/username/password. This error can also result from:</p> <ol style="list-style-type: none"> 1. A missing column in the "licf" table when attempting to revoke a license, or 2. A missing or empty or bad generator settings file in the case of RLM Hosted Activation. <p>To debug this problem, once you are sure you have a good generator settings file, set the environment variable RLM_ACT_SQL_DEBUG, then run the activation generator as follows:</p> <pre style="border: 1px solid black; padding: 5px;">ISV_mklic << EOF akey=1&hostid=2 EOF</pre> <p>The generator will then print (to stdout) the SQL error status.</p>
<p>RLM_ACT_CANT_WRITE_FULFILL (-1011)</p>	<p>Cannot write the license key fulfillment data.</p>	<p>This is an internal server error. Check to make sure the MySQL server is running correctly.</p>
<p>RLM_ACT_CLIENT_TIME_BAD (-1012)</p>	<p>Time on client machine is more than 7 days off from server machine.</p>	<p>Correct the time difference between client and server machines (must be < 7 days).</p>
<p>RLM_ACT_TOOMANY_HOSTID_CHANGES (-1014)</p>	<p>Refresh-type activation has had its hostid changed too many times.</p>	
<p>RLM_ACT_BLACLISTED (-1015)</p>	<p>Activation attempted from a host which is banned for this server.</p>	<p>Update the banned list if it is not accurate.</p>

RLM_ACT_NOT_WHITELISTED (-1016)	Activation attempted from a host not on the Allowed Hosts for this activation key.	Update the Allowed Hosts list if it is not accurate.
RLM_ACT_KEY_EXPIRED (-1017)	The activation key itself has expired.	This would be a normal error for your customer who attempts to use an expired activation key.
RLM_ACT_BAD_GENERATOR (-1020)	Generator settings file missing or empty. License keys in generator (ISV.gen) bad or expired, or the generator is missing.	Make sure that the <isv>.gen file is present and correct (it will be 0-length on install until replaced). If you built your own generator, check to make sure it was built with a correct license_to_run.h
RLM_ACT_NO_KEY_MATCH (-1021)	Activation Key can't be found in database.	This would be a normal error for a customer who uses an incorrect activation key.
RLM_ACT_DB_READERR (-1026)	Error reading data from MySQL.	The activation key table has the wrong number of columns (this can happen if you use a v9.1 database with the v9.2 software). The product definition table has the wrong number of columns.
RLM_ACT_GEN_PARAM_ERR (-1027)	Error in generator call to rlm_sign_license()	The license string passed into rlm_sign_license() is incorrect, most likely because something (in your extra license parameters) is invalid.
RLM_ACT_UNSUPPORTED_CMD (-1028)	Unsupported command.	This is an error that a non-Activation Pro server returns when an advanced command is issued to it. This error also results in ActPro when attempting to activate a multi-license product with a REFRESH activation key.
RLM_ACT_REVOKE_TOOLATE (-1029)	Revoke attempted after license expiration. This is a warning – the rehostable hostid has been deleted.	Licenses cannot be revoked after they expire. If you receive this error, you can reactivate the license if there is activation count remaining in the activation key. The activation server will NOT have returned count to the activation key, however, the rehostable hostid will be deleted.

RLM_ACT_KEY_DISABLED (-1030)	Activation Key Disabled	This results from an rlm_act_info() or rlm_act_keyvalid() call if the activation key has been disabled.
RLM_ACT_KEY_NO_HOSTID (-1031)	Key not fulfilled on this hostid.	This results from an rlm_act_keyvalid() call if the activation key has not been fulfilled on the specified hostid.
RLM_ACT_KEY_HOSTID_REVOKED (-1032)	Key revoked on this hostid.	This results from an rlm_act_keyvalid() call if the activation key has been revoked on the specified hostid.
RLM_ACT_NO_FULFILLMENTS (-1033)	No fulfillments to revoke.	This results from an rlm_revoke() call if the activation key has no fulfillments to revoke. This can be treated as a warning.
RLM_ACT_LICENSE_TOOBIG (-1034)	Generated license exceeds maximum size.	A product definition that specified multiple licenses created a license that exceeds RLM_ACT_MAX_LICENSE characters.
RLM_ACT_NO_REHOST (-1035)	Rehostable hostids not supported for this product.	A rehostable hostid cannot be used for a counted license, and it also cannot be used for any product definition that specifies multiple licenses.
RLM_ACT_NO_CLEAR (-1038)	Unencrypted requests not allowed on this server.	The Activation Pro server does not allow unencrypted requests. Set in the admin/-generator settings tab.
RLM_ACT_KEY_TOOMANY (-1042)	Request for more licenses than remain on the activation key.	Request fewer licenses.
RLM_ACT_SUB_BADTYPE (-1043)	A subscription activation key specifies a product with an invalid license type.	Subscription activation keys can only activate products with Nodelocked, Uncounted or Single license types.

3.4.2 Errors Detected and Returned Locally by rlm_act_request() or by the HTTP Server

Status Return	Problem	Solution
RLM_EH_NET_INIT (-103)	Can't initialize the networking code.	Most likely the URL specified in the call is incorrect.
RLM_EH_NET_WERR (-104)	Cannot write data to network.	Most likely the URL specified in the call is incorrect.

<p>RLM_EH_NET_RERR (-105)</p>	<p>Can't read returned message from network.</p>	<p>If the write succeeds and the read fails, there are several possibilities:</p> <ul style="list-style-type: none"> • The MySQL server is down or you have specified the wrong port. • The server, when it does the reverse DNS lookup on the client system, times out. This will be noted in the debug log as of v12.1. If this is the case, increasing the client-side timeout from the default 15 (or 20) seconds to 25 seconds should solve the problem. See Section 1.9.3 for more information. • Your connection might be slow. Activation uses a 10-20 second timeout by default, try setting the environment variable RLM_ACT_TIMEOUT to 45 or 60 to get a 45 or 60-second timeout, or • There is a proxy server in the middle. Try setting HTTP_PROXY. • Anti-virus or fire-wall software is blocking the return from the activation server.
<p>RLM_EH_BADPARAM with RLM_ACT_BP_TOOMUCH sub-error (-123)</p>	<p>Request is too long to communicate.</p>	<p>Check the length of the extra license parameters, the hostid list, and the log data. Each of these should be < 80 bytes.</p>

<p>RLM_EH_CANTCONNECT_URL (-132)</p>	<p>Can't connect to the specified URL.</p>	<p>Check that the URL is correct and that the activation server is installed in cgi-bin. Pass the URL without the trailing /cgi-bin, e.g. http://reprisesoftware.com, NOT http://reprisesoftware.com/cgi-bin Also, pre v14.1, you will get this error if your website redirects from HTTP to HTTPS.</p>
<p>RLM_EH_ACT_BADSTAT (-134)</p>	<p>rlm_act_request() received no status in the returned message from ISV_mklic</p>	<p>This is most likely a configuration error on the server side, which causes the ISV_mklic process to return an incomplete reply. The HTTP server error logs might well indicate the problem. If your server is known to be running correctly, this could be caused by a proxy server that isn't configured correctly. This can also be caused by the Avast antivirus software - which interrupts the return from the activation server and returns a partial buffer, causing this error. The work-around is to turn off the Avast "Web Shield". This can be turned off for 10 minutes in the Avast GUI.</p>
<p>RLM_EH_BAD_HTTP (with sub-error equal to HTTP status) (-136)</p>	<p>Other HTTP error</p>	<p>See the full error message for the HTTP status. Use RLM's extended error messages. For some HTTP 404 errors, we have encountered Apache installations that do not make cgi-bin files executable by default.</p>
<p>RLM_EH_UNLICENSED (-143)</p>	<p>RLM license keys missing or invalid.</p>	<p>Check your license_to_run.h include file and ensure your RLM keys are valid.</p>
<p>RLM_EH_ACT_OLDSERVER (-145)</p>	<p>Activation server version too old.</p>	<p>This happens when a pre-v9 activation server is used with a v9+ client which encrypts the request. This can also happen if there is a proxy server installed at the user site.</p>

RLM_EH_NO_REHOST_TOP_DIR (-148)	Can't create or chdir to rehostable top-level directory.	A rehostable hostid lives in the RLM temporary directory, which is /var/tmp on Unix and Mac, or %Program-Data%Reprise on Windows. The rehostable top-level directory is contained in the RLM temporary directory and has the name of the product. Either the top level directory doesn't exist, it is inaccessible by this user, or the files inside this directory can't be created or are inaccessible.
RLM_EH_CANT_CREATE_REHOST (-151)	The rehostable hostid for this product could not be created.	Verify that the user has write access to either /var/tmp/{isvname} on Unix/Mac systems, or %Program-Data%Reprise on Windows.
RLM_EH_REHOST_TOP_DIR_EXISTS (-152)	The directory which contains a rehostable hostid for this product already exists, so it cannot be created.	Verify that this product has not already been activated with a rehostable hostid. If it has, it cannot be activated again on the same machine.
RLM_EH_REHOST_EXISTS (-153)	The rehostable hostid already exists for this product, so it cannot be created.	Verify that this product has not already been activated with a rehostable hostid. If it has, it cannot be activated again on the same machine.
RLM_EH_NO_FULFILLMENTS (-154)	No fulfillments exist to revoke.	An attempt was made to revoke a license which had a zero fulfillment count on this server. This can happen if the revoke operation is attempted after already being revoked.
RLM_ACT_BAD_REDIRECT (-1013)	HTTP redirect does not specify hostname, or can't connect to specified hostname.	This is a web server redirect error – no redirected hostname was specified, or we can't connect to the redirected hostname. You will also get this error on a pre-v14.1 version of RLM if the redirect is from HTTP to HTTPS.
RLM_ACT_NO_PERMISSION (-1018)	HTTP server did not allow request to be processed.	This is a configuration error – your license generator cannot run on the web server.

RLM_ACT_SERVER_ERROR (-1019)	HTTP request returned HTTP status 500 - INTERNAL_SERVER_ERROR	The activation server is not configured correctly. Look at the web server error log files to find the source of the error. Without this information, it is not possible to diagnose the error. This could also mean incorrect permissions on your isv_mklic binary.
RLM_ACT_NO_AUTH_SUPPLIED (-1022)	Proxy requires authentication.	Supply proxy credentials via HTTP_PROXY_CREDENTIALS environment variable.
HTTP_PROXY_AUTH_FAILED (-1023)	Proxy credentials didn't work.	Proxy requires authentication and the credentials supplied failed.
RLM_ACT_NO_BASIC_AUTH (-1024)	Proxy does not support BASIC authentication.	RLM activation uses only basic authentication with proxy servers.
RLM_ACT_BAD_URL (-1036)	License generator not found at this URL.	The URL in the rlm_activate() call is incorrect, or your license generator is not present or not executable.

3.5 Appendix E – Upgrading to ActPro v12.4 or later

Note that if you are running on hostedactivation.com, we have done this check for you, and there is nothing you need to do, so you can ignore this chapter. **These notes only apply to ISV-hosted Activation Pro.**

If you are running Activation Pro v12.3 or earlier, and plan to upgrade to v12.4 or later, your system must have MySQL Native Driver support (mysqlnd). This support is documented to be in PHP v5.3.0 according to this page: <http://php.net/manual/en/intro.mysqlnd.php>, however, our development environment was using v5.3.1 and the support was not present. So you need to be careful before you do this upgrade.

Reprise recommends the following procedure:

1. Back up your database using phpMyAdmin or a similar tool.
2. Back up your ActPro directory
3. Do the upgrade.

After the upgrade, view an activation key and attempt to edit it. If editing is successful, then your system has the required support. If not, either upgrade your PHP version or continue to use the older Activation Pro product.

