

## **Contact Information**

Publications@ipcg.com

ipCapital Group, Inc.  
400 Cornerstone Drive, Suite 325  
Williston, VT 05495  
United States of America  
(802) 872-3200 x214

## **Title of the Invention**

System for Enforcing Software Licenses Using User Accounts

## **Description of the Invention**

A system is established by which a username and password are used to verify that the user of a piece of software owns a license for the software. The user's account information (username and password) and corresponding software license information is stored on third party server. A License Module within the operating system prevents the use of an application until the user is logged in with the third party server.

## ***Problem or Opportunity***

When a software vendor sells a piece of software, the vendor expects that specific software to be used by only one user or organization. However, because of the nature of software, it is easy to reproduce and distribute illegal copies for little or no expense. The livelihood of the software vendor depends on individuals and organizations purchasing software from the vendor.

Software licenses traditionally consist of a simple, terms of use, agree/disagree decision. This method relies upon the integrity of the licensee and gives the licensor little assurance that the license agreement is not being violated. There is no mechanism for the enforcement of such software licenses and as such, software pirating is rampant. A method for enforcing and tracking software licenses is necessary.

## ***Detailed Description of the Invention***

This invention requires that a user establishes a user account on a third party server where a collection of software license information can be stored. Multiple applications supporting the License Account System may be registered to a single user account so that license information for all applications is stored in a single place.

Upon installation of an application, the user is required to log in and store this license information on the third party server. This registration will include a license ID, specific to the copy of the application possessed by the user, and be associated with the users

license account. Each time the application is initiated, a License Module, within the operating system, prompts the user to login to his or her account before the user can access the application. This ensures that each copy of the software may only be used by one user and cannot be copied and illegally distributed.

**Figure 1** depicts the system for tracking and enforcing software licenses using a License Account System.

The User Machine is the computing device (i.e. desktop computer, laptop, mobile device) on which the user desires to install and use a licensed piece of software.

The OS is an operating system, such as Linux, that manages applications and user interactions.

The User Interface is an interface such as a graphical user interface or command line interface that allows the user to interact with the User Machine.

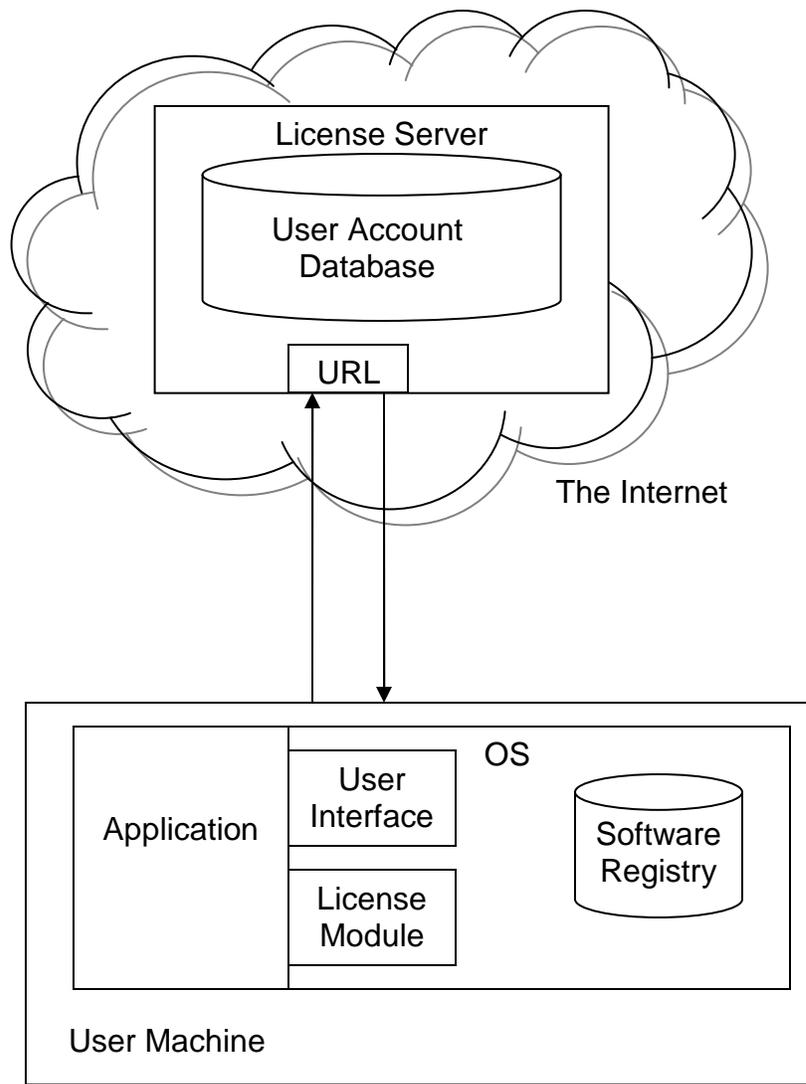
The Application is a software application that is licensed to the user.

The License Module is a module within the operating system that manages the software licenses by communicating with the License Server and preventing unregistered applications from launching.

The Software Registry is a database within the operating system that contains a list of software attributes. These attributes include the executable name, location in memory, and software license ID.

The License Server is a third party server that manages user accounts and software license information.

The User Account Database is a database on the License Server that contains the registration information specific to each registered machine. The User Account Database maintains a list of valid user accounts, passwords, and license IDs associated with each account.



**Figure 1. License Account System**

**Figure 2** describes the method of installation for applications using the License Account System.

In step 1, the installation process is initiated by the user through the User Interface.

In step 2, the OS initiates the License Module.

In step 3, a dialog box appears in the User Interface containing the text of the license agreement. The user is asked to read the text and then choose to accept or decline the license agreement. If the user declines, the installation process terminates (step 9).

In step 4, the user is prompted to determine if a license account for the user already exists. If the user does not have an existing license account he must create one (step 5). If an account does exist, the installation continues (step 7).

In step 5, the License Module prompts the user with a dialog box to create a license account with the License Server. The user is asked create a username and password for the account and to enter personal information such as name and affiliations.

In step 6, the User Machine communicates the account information, entered in step 5 (username, password, etc.), to the License Server, and a new account for the user is established with the License Server.

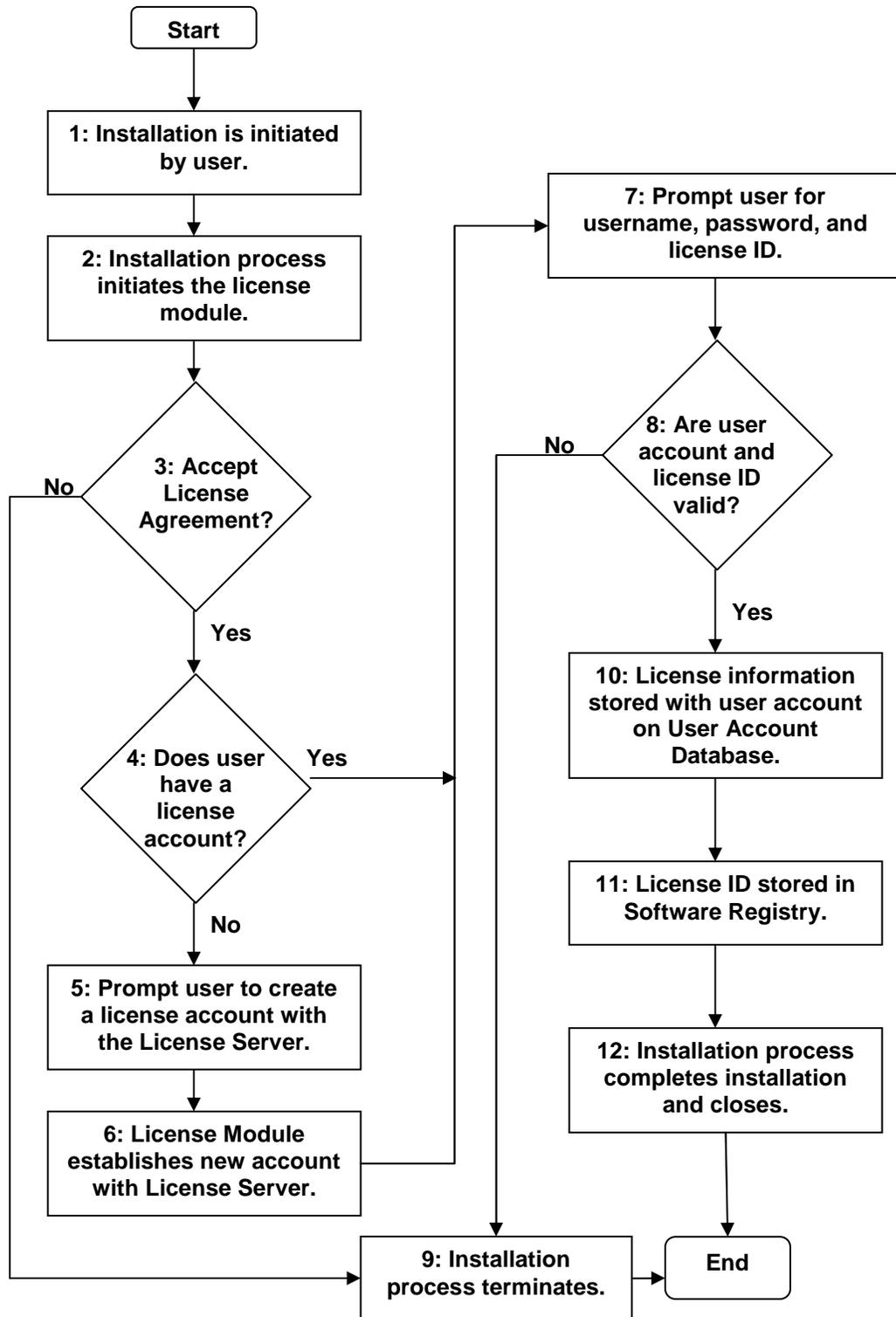
In step 7, the user is prompted by the User Interface to input the account username and password and the license ID of the software being installed.

In step 8, the information entered in step 7 is sent from the User Machine to the License Server. The License Server attempts to authenticate the user account, and verify that the license ID is not registered to another account by consulting the User Account Database. If the user cannot be authenticated, or the license ID is registered to another account, the installation process terminates (step 9).

In step 10, the license ID is then stored with the user's account in the User Account Database.

In step 11, the license ID and other information about the application is written to the Software Registry.

In step 12, the OS copies the necessary files to the user machine and completes the installation process.



**Figure 2. Method of Installing Applications Using License Account System**

**Figure 3** describes the method for launching and running and application using the License Account System.

In step 1, the application is initiated by the user through the User Interface.

In step 2, the OS initiates the License Module.

In step 3, the License Module determines if the user is already logged in to the license account.

In step 4, if the user is not logged in, he or she is prompted by the User Interface for the account username and password. The License Module then sends the login information to the License Server.

In step 5, the License Server attempts to authenticate the user by comparing the login information supplied by the user to the account information stored in the User Account Database. The License Server will not authenticate a user account that is already logged in from a different location or using a different IP address. If the user is not authenticated by the License Server, the application terminates (step 8).

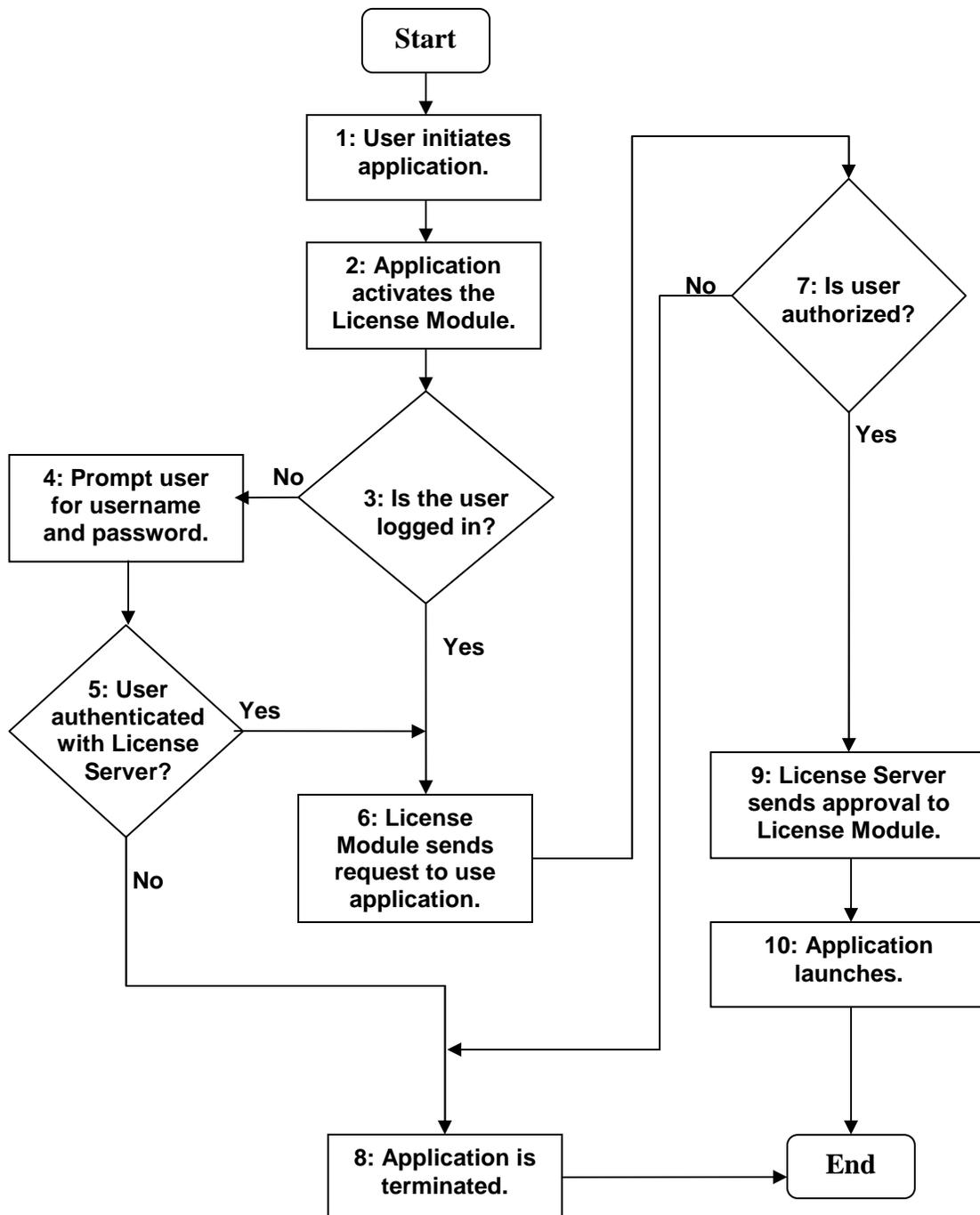
In step 6, the User Machine sends a request to the License Server to use the application. This request includes the license ID from the application from the Software Registry.

In step 7, the License Server consults the User Account Database and verifies that the user account owns a license to use that software. If the user account is not authorized to use the application, a notification is sent to the User Machine, and the OS terminates the application (step 8).

In step 8, the OS terminates the application.

In step 9, if the user account owns the required license, the License Server sends its approval to the User Machine.

In step 10, the License Module allows the application to launch.



**Figure 3. Method of Launching and Running an Application Using the License Account System**