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TITLE

Software Repository Recommendation System

ABSTRACT

A third party server recommends new software packages to the user based on the software previously installed on the user's machine.

1. BACKGROUND

Problem or Opportunity

In the Linux/open source community, there is a wealth of software available for download. Many Linux distributions use a package manager to facilitate the download and installation of new software packages. Traditionally, package managers query repository URLs, provided by the user, and provide the user with a list of all the available packages on the repository server. However, there are thousands of available packages distributed across many repository servers. In addition, there may be several software packages designed to perform similar functions.

Finding relevant software and repositories can be overwhelming and confusing. The user may not know what software packages exist to suit his or her needs, or may not know the URL of the appropriate repository.

Background Publications

Existing publications that attempt to address the opportunity mentioned above are described below. These inventions fail to fully address the opportunity to provide software recommendations to a user.

US Patent Application Number 20090024712 describes a method for suggesting a new version of a piece of software. The usage patterns of a particular piece of software are monitored to determine if an upgrade would be useful. New editions of the software are recommended to the user when it is determined appropriate. This invention relates to

updates for a piece of software and does not facilitate the recommendation of entirely new software packages.

US Patent Number 6763517 describes a system for recommending patch files to a user. The system automatically analyzes the kernel of the operating system on a machine after an unexpected interrupt. The system compares the kernel to an online database and determines if any appropriate patches are available. Appropriate patches are recommended to the user for installation. However, this invention does not recommend new software applications.

2. SUMMARY OF INVENTION

Invention Summary

A package manager within the operating system periodically sends anonymous information about installed software packages to a Package Information Server. This information includes the frequency of use for each software package. The Package Information Server aggregates and stores this information from all users of the system. A list of the most commonly installed software packages and the URL of the corresponding Repository Server is maintained on the Package Information Server as well as likely associations between packages. For example, if many users who have a certain word processing package installed, also commonly have a spreadsheet package installed, this information is recorded on the Package Information Server. This way, users who have just the word processing package installed may be recommended the spreadsheet package. More frequently used software packages are more likely to be recommended to the user. This avoids the recommendation of commonly installed but rarely used programs.

When a User Machine connects, the Package Information Server is able to recommend software packages that the user may be interested in, based on the user's currently installed packages and information from the Package Info Database. These recommendations will make it much easier for the user to find useful software.

Unique Concepts

This invention is unique in that it uses information collected from a user's machine to recommend a collection of new software applications that is tailored to the user. The Linux operating system offers a unique opportunity for this invention because of the wide availability of free software.

3. DESCRIPTION OF THE INVENTION

Figure 1 shows the structure of the Software Repository Recommendation System.

The User Machine is a computing device such as a desktop computer, laptop computer, or mobile device.

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

The Package Manager is an OS module that downloads, installs, and manages software packages on the User Machine.

The Sources Index is a file containing the URLs of software Repository Servers.

The Software Index is a file containing a list of all software packages installed on the User Machine and their frequency of use.

Applications are the sum of software packages, which are not part of the OS that are installed on the User Machine.

The User Interface is a part of the operating system that manages interactions between the user and the User Machine.

The Repository Server is a server maintained by a software vendor, OS distributor, or other party, that stores a variety of software packages available for download.

The Package Information Server is a server that transmits and receives information about the aggregate use of software packages.

The Package Info Database is a database where the Package Information Server stores information about software packages. For all popular packages, the frequency of download, the frequency of use, the repository URL, and a list of related packages are stored in the Package Info Database.

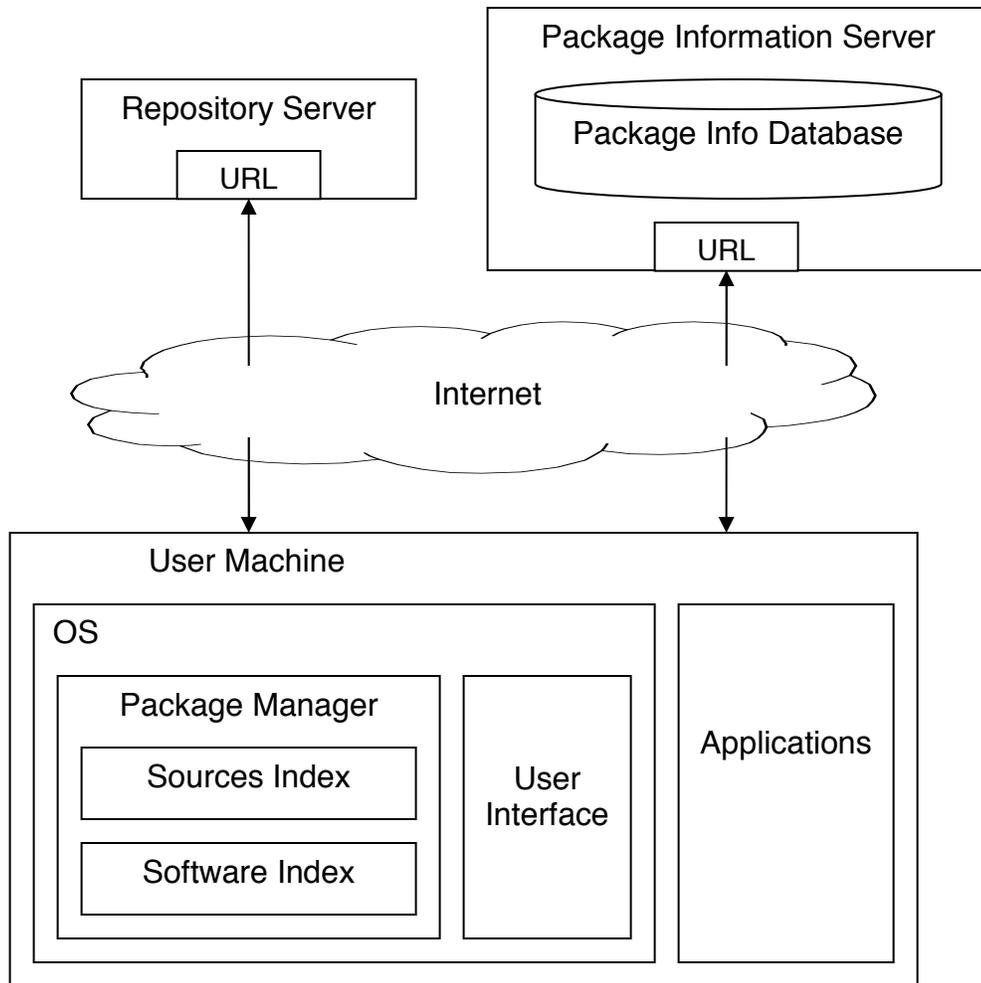


Figure 1. The Software Repository Recommendation System.

Figure 2 outlines the method for recommending new software to the user.

In step 1, the OS periodically launches the Package Manager.

In step 2, the User Machine sends information from the Software Index and the Sources Index to the Package Information Server.

In step 3, the Package Information Server compares the user data to the information stored in the Package Info Database and sends recommendations of software packages to the User Machine.

In step 4, the Package Manager prompts the user, via a pop-up dialog box in the User Interface, with the recommended software packages from the Package Information Server. If the user decides to install some or all of the recommended software packages, the method continues to step 5. If the user rejects the recommendations, the method continues to step 7.

In step 5, the User Machine downloads the Repository URLs from the Package Information Server and the Package Manager adds the URLs to the Sources Index.

In step 6, the User Machine downloads and installs new software packages from the Repository Server.

In step 7, no recommended software packages are installed.

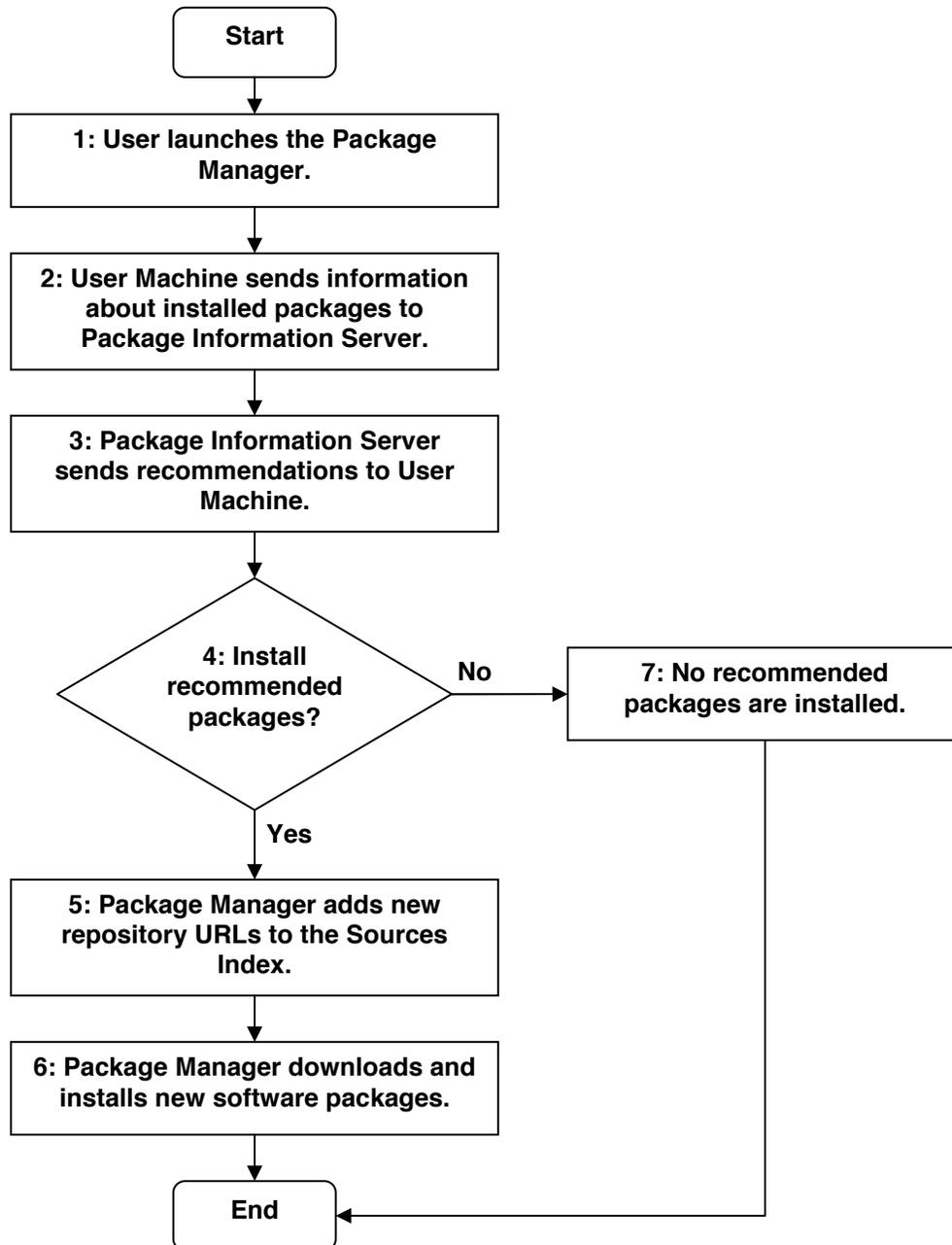


Figure 2. Method for the Software Repository Recommendation System